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JANUARY 1—JUNE 15, 1959

(Pages 1–2480)

For alphabetical index of authors
and subjects see pages 2463–2477

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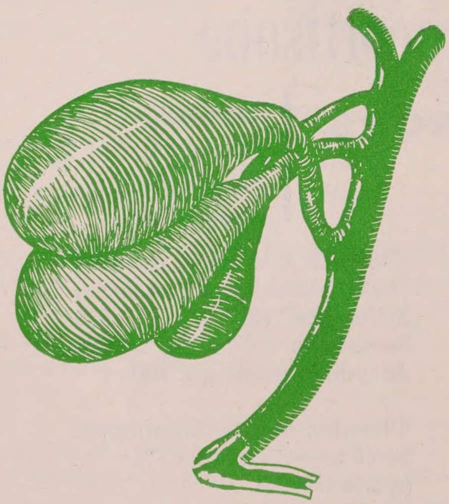

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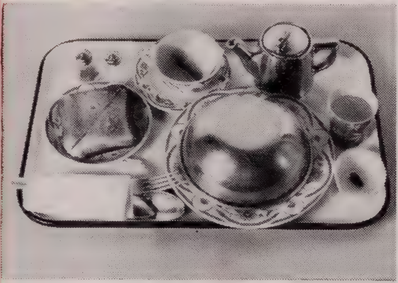

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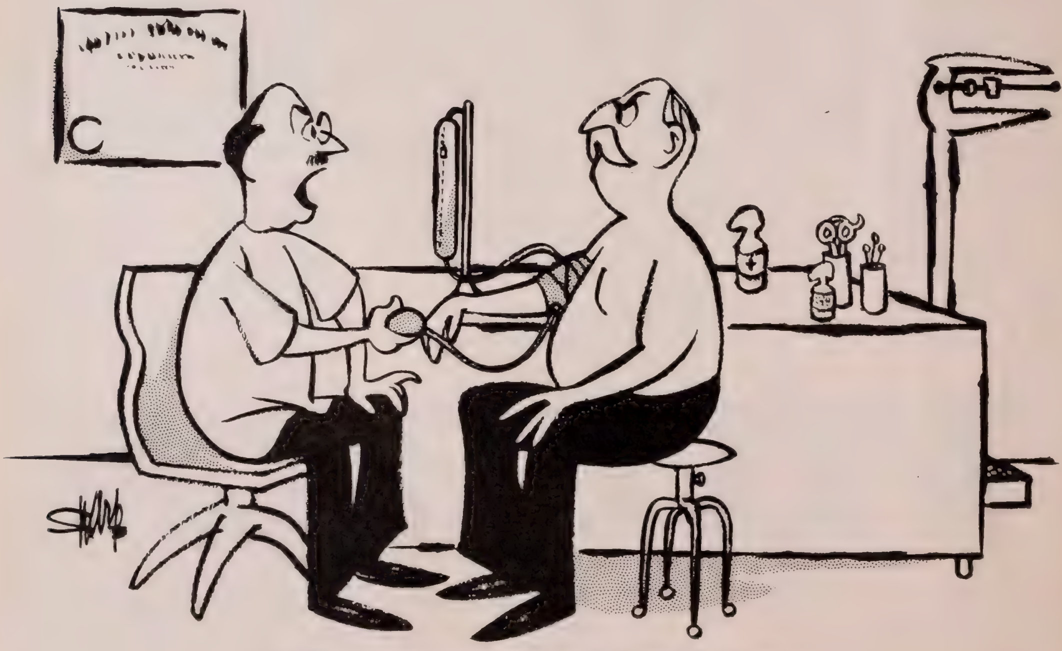

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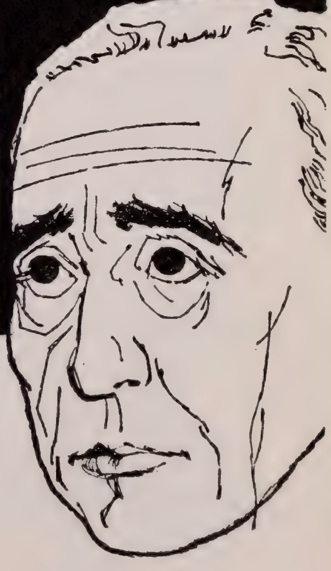

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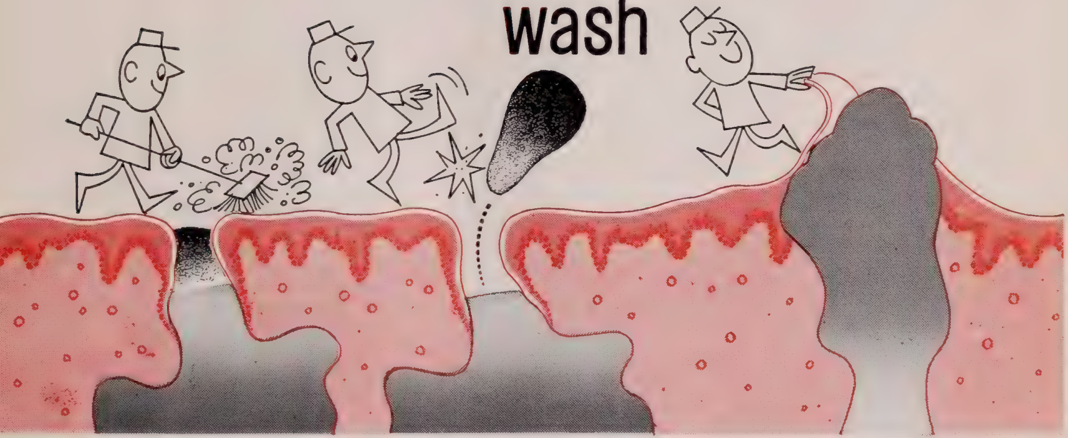

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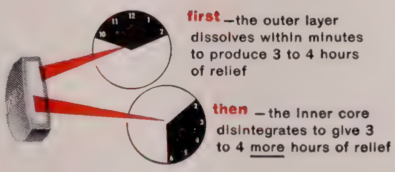
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One-half of this formula is in the outer layer, the other half is in the core.

Dosage: One tablet in the morning, mid-afternoon and in the evening, if needed.

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Also available: For the occasional patient who requires only half dosage: timed-release TRIAMINIC JUVELETS. Each Juvelet is equivalent to ½ of a Triaminic Tablet.

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pending on the type and severity of the in-
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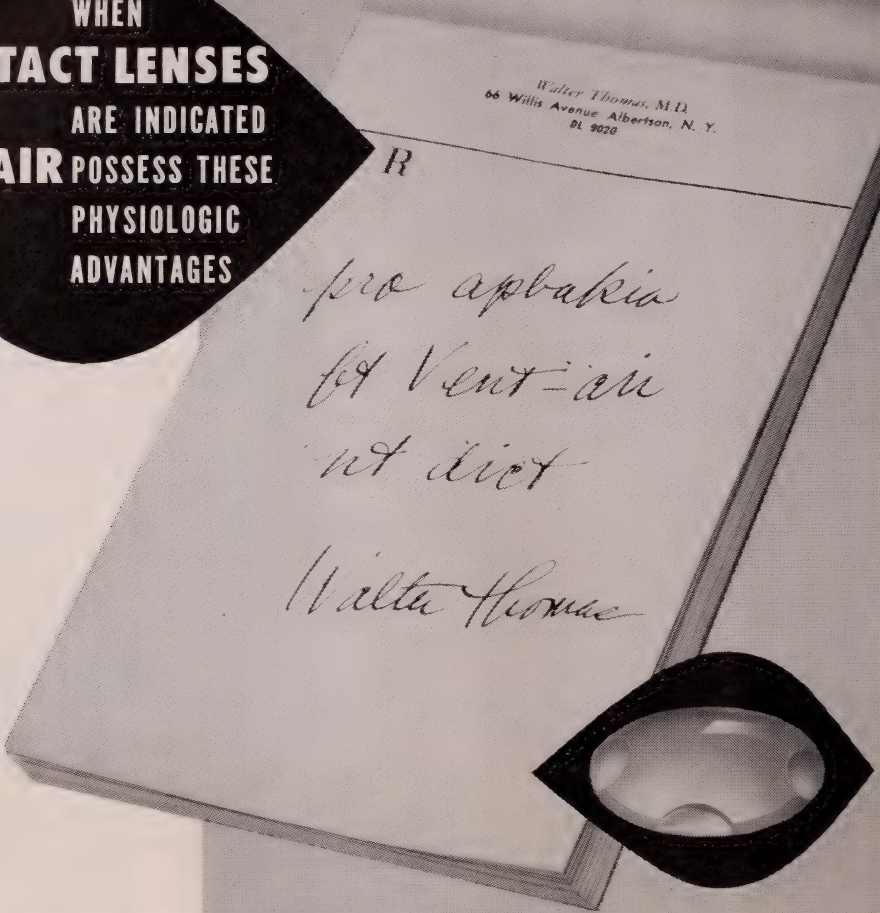

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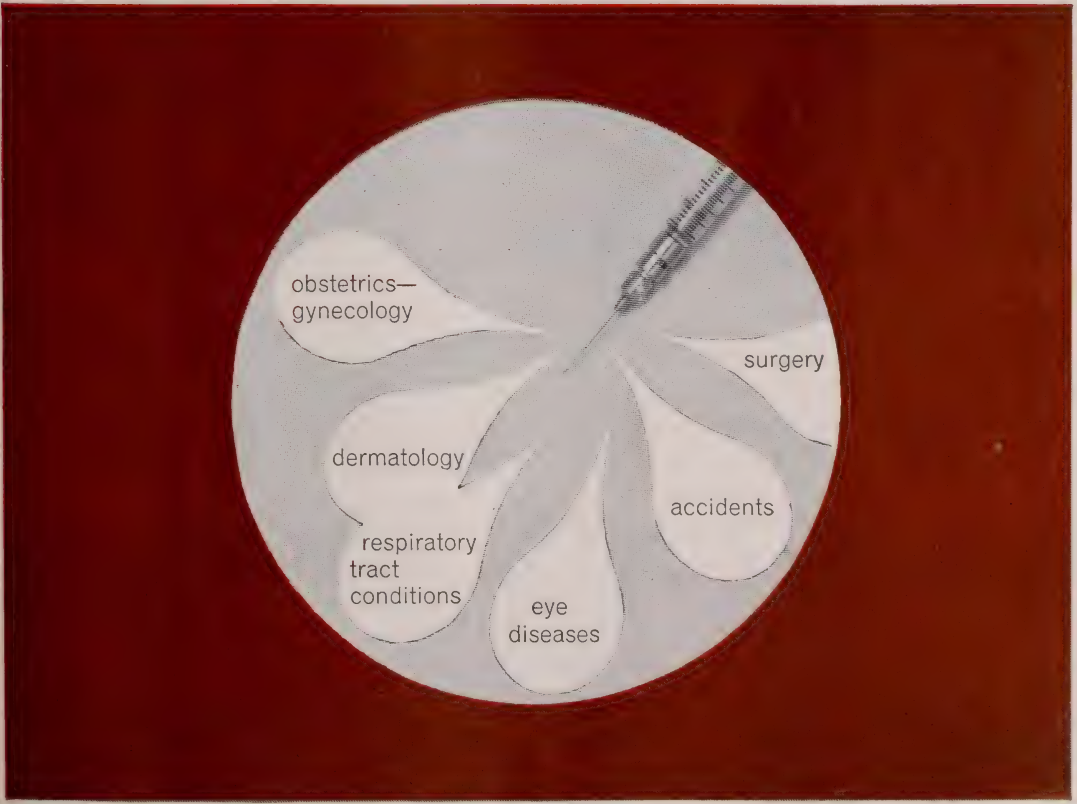
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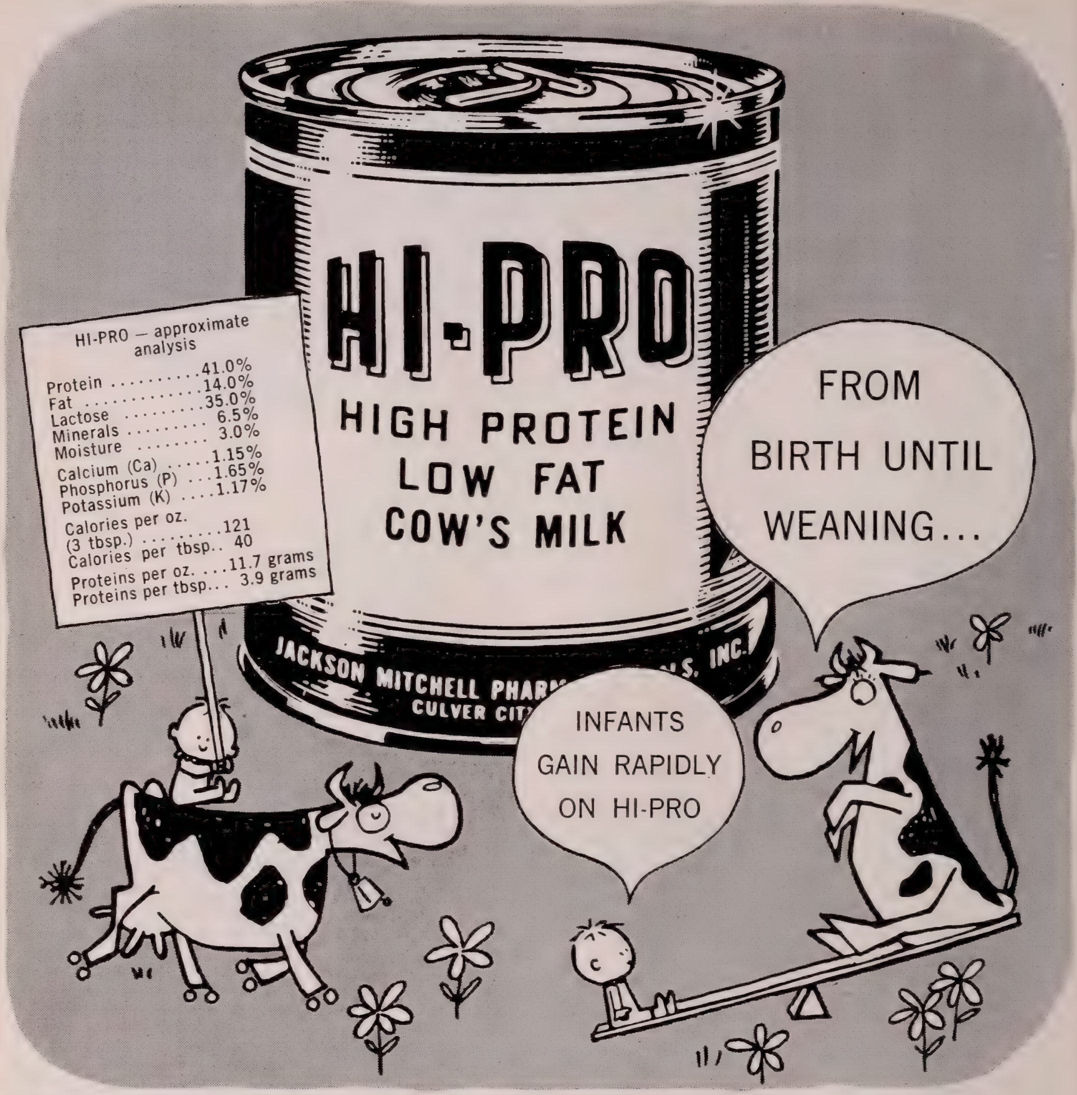
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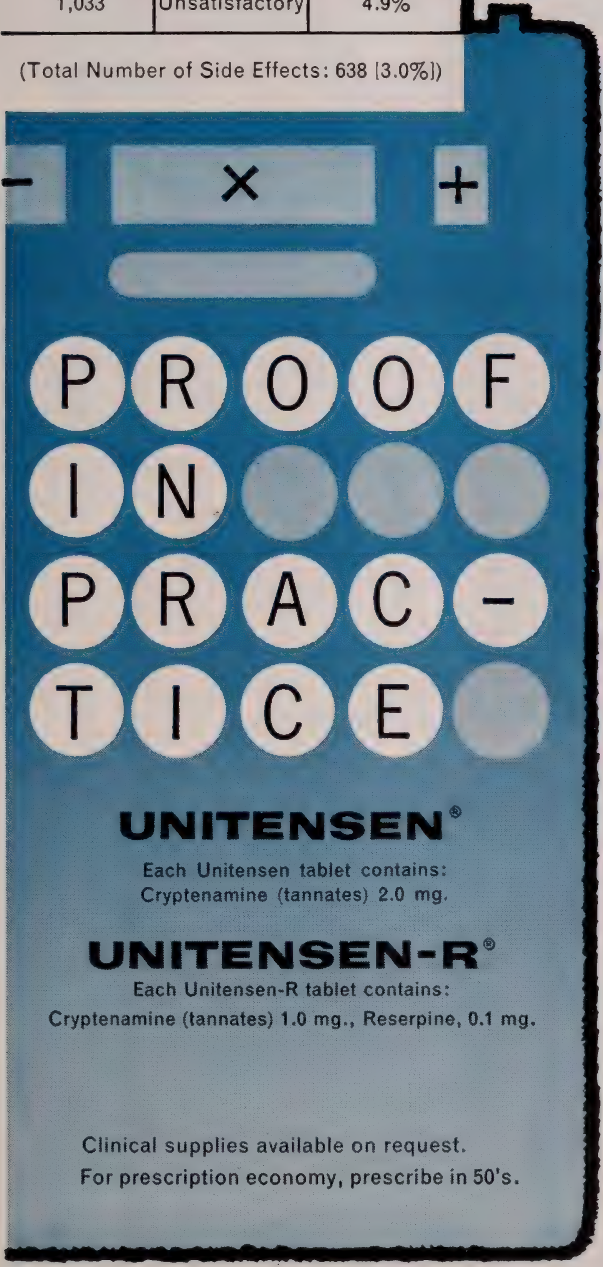
SUMMARY OF REPORTS

No. of Patients	Results	Percent
6,553	Excellent	31.0%
10,843	Good	51.3%
2,703	Fair	12.8%
1,033	Unsatisfactory	4.9%

(Total Number of Side Effects: 638 [3.0%])



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For prescription economy, prescribe in 50's.

A NEW DIMENSION IN RESEARCH

This data deals with the results obtained by 1,988 physicians, treating 21,128 hypertensive patients with Unitensen. The "Proof In Practice" study validates, *in day-to-day private practice*, the findings of clinical trials conducted in hospitals and institutions. It proves that Unitensen affords safe, dependable office management for the majority of hypertensive patients. Unitensen lowers blood pressure . . . improves cerebral and renal blood flow... exerts no adverse effects on circulation . . . and, is virtually free of side effects.

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to the
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of
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The Directors and Trustees of Physicians' Home extend their thanks to the members of the Medical Society of the State of New York for their past contributions which have made it possible to aid indigent physicians of New York State and their wives or widows. If you have not yet sent in your contribution to our current appeal, please do so. Your help is sorely needed and greatly appreciated by our elderly colleagues and widows.

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750 Third Avenue New York 17, N. Y.

Meat...

and Fat in the American Diet

In this era of public concern over the possibly deleterious influence of dietary fat on human health, a sober look at the facts as they exist today appears indicated.

After reviewing the evidence up to 1958, The Food and Nutrition Board of the National Research Council* defined the contribution of fat to American nutrition.

> "The human requirement for fat or for specific fatty acids, as well as the nutritional implications of a high content of fat in the diet, remains to be determined.
>
> "In the United States an average diet containing approximately 40 per cent of the calories in the form of fat has been consistent with the attainment of one of the best health patterns in the world."

This statement by unbiased authority demonstrates that drastic curtailment of fat intake is not indicated on the basis of current evidence.

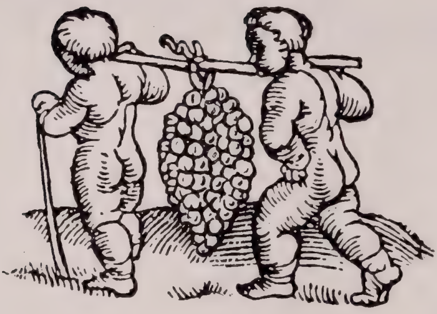
However, if special circumstances call for curtailment of fat intake, meat need not be denied the patient. Visible fat can be removed easily. In addition to its high protein contribution to tissue repair and maintenance, meat provides the gamut of B vitamins and important minerals essential to sound nutrition.

*The Role of Dietary Fat in Human Health: A Report of the Food and Nutrition Board, National Academy of Sciences—National Research Council, Washington, D. C., Publication 575, 1958.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

American Meat Institute
Main Office, Chicago...Members Throughout the United States

why wine in digestive disorders?



Although the effects of wine on the digestive system have been discussed for centuries, it has been only in recent years that many of its physiological attributes have been determined.

WINE AND THE SALIVARY GLANDS—The increase in salivary flow following a moderate intake of wine is apparent almost immediately,[1] such increase being attributed to direct sensitization of secretory nerve endings.[2]

WINE AND GASTRIC SECRETION—With a pH averaging 3.2, wine resembles gastric juice more closely than does any other natural beverage. Its tannins, organic acids and salts of these acids serve as buffering agents to maintain this pH. Relatively low in content of alcohol, table wine has been found to stimulate gastric secretion and induce production of gastric juice high in hydrochloric acid, sodium chloride, rennin and pepsin.[3]

WINE AND THE DIGESTIVE TRACT—With its low concentration of alcohol, wine in moderate consumption has been found to induce a marked increase in biliary flow.[4] This, together with increased function of pancreatic enzymes, may thus encourage better digestion of fatty foods.

THEREFORE—IN THE TREATMENT OF DIGESTIVE DISORDERS—Wine is being widely recommended in the treatment of anorexia, hypochlorhydria without gastritis,mucous colitis, spastic constipation and diarrhea, and in digestive disorders stemming from emotional tension and anxiety.

These and other modern ℞ uses for wine are discussed in the brochure "Uses of Wine in Medical Practice." For your free copy write—Wine Advisory Board, 717 Market Street, San Francisco 3, California.

[1] Winsor, A. L. and Strongin, E. I.: J. Exper. Psychol. *16*:589 (1933).
[2] Beazell, J. M., and Ivy, A. C.: Quart. J. Studies on Alc. *1*:45 (1940).
[3] Faroy, G., and Weissenbach, R. J.: Hôpital 25:306 (1937).
[4] Okada, S.: J. Physiol. *49*:457 (1915).

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New long acting[1,2,3]

Rynatan®

Keeps heads crystal clear

10-12 hours with a single **oral** dose
with remarkable lack of side effects[1,2]

Entirely new long acting oral nasal decongestant
chemically and physically different—utilizing
the DURABOND* principle[2,3]

Longest relief of any medication
comfort all day or all night with a
single oral dose[1]

Remarkable lack of side effects
"...of 311 patients, incidence of side effects
was only 2.2 per cent. Evidence of sedation was
(only) 1.2 per cent."[4]

Stops excessive post-nasal drip
and resulting night cough, irritation,
secondary infection

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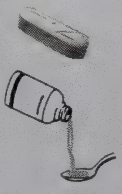
A new principle in medicine that controls absorption rather than dissolution or release, independently of gastrointestinal motility or specific pH. Maintains constant rather than sporadic blood levels, hence no over-release or under-release. This gives smooth therapeutic results, rare incidence of side effects. Works even in liquid form for children (Rynatan Suspension).

*Neisler Exclusive, Patent Pending

RYNATAN TABULES...
For adults and older children

RYNATAN SUSPENSION...
For children (as young as 6 months)



Rynatan contains:	**Each tabule**	**5 cc. suspension**
Phenylephrine tannate	25.0 mg.	5.0 mg.
Prophenpyridamine tannate	37.5 mg.	12.5 mg.
Pyrilamine tannate	37.5 mg.	12.5 mg.

Dose: q. 12 h.: Tabules 1-2. Suspension: Children under 6 yrs. ½-1 tsp.; over six 2-3 tsp.

1. Lawler, E. G. and Limperis, N.M.: Clin. Med. (Dec.) 1958. 2. Medical Science, 3:376-377 (Mar. 25) 1958. 3. Cavallito, C. J. and Jewell, R.: J. Am. Pharm. A. (Scient. Ed.) 47:165-168, 1958. 4. Antibiotic Med. & Clin. Therapy 5:578-581 (Sept.) 1958.

Samples and literature on request

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OMYCIN® V Tetracycline with Citric Acid *LEDERLE*

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Dear Doctor:

Dr. Perrin H. Long, at a recent meeting of the New York Academy of Sciences, pointed out that different antibacterial substances can "exercise their detrimental effect on different systems in the bacterial cell." For this reason he believes that with concurrent use of an antibiotic and a chemotherapeutic agent "one should achieve minimally an additive therapeutic effect."*

A new antibacterial -- high effectiveness and tolerance

Besides its advantages as a single antibacterial of choice, MADRIBON, which exerts its antibacterial effects by action on systems other than those affected by penicillin and the broad spectrums, can be efficiently used for conjoint therapy. For example: in the oral follow-up to penicillin injections, Madribon is superior because it is not antagonistic to penicillin or vice versa.

Furthermore, Dr. Long stresses the importance of the chemotherapeutic approach "in the treatment of infections, the causative organisms of which have proved to be resistant to the therapeutic effects of antibiotics."

In this respect it is interesting to note Madribon's reported success. Typical are such reports as Townsend and Borgstedt, who note that some penicillin-resistant infections (including staphylococcal and streptococcal) responded to Madribon; also the report of Leff, who records Madribon's control of a series of infections intractable to a most remarkably wide range of antibacterials.

As you may have noted, more and more reports on Madribon are establishing a whole series of new standards of efficiency in addition to the recognized efficacy of modern antibacterial therapy. For your patients, Madribon translates these new standards into a series of new clinical benefits:

1. The widest range of bacterial infections, particularly those of the respiratory tract, can be efficiently controlled with the most advantageous cost-care, safety-effectiveness ratios.

2. Known "penicillin reactors," known "broad-spectrum reactors," and some "resistant bacterial infections" may now be efficiently tackled with a new, better tolerated and highly effective antibacterial.

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Low-dosage,
long-acting
Madribon
combines ideally
with antibiotics
and/or
antipyretics

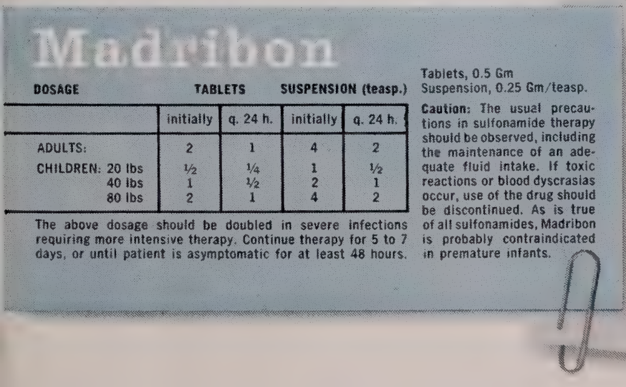
Sincerely,

S. Evert Svenson, M.D.
Director of Medical Services

---

*P. H. Long, Ann. New York Acad. Sc., 69:385, 1957.

MADRIBON T.M. (2,4-dimethoxy-6-sulfanilamido-1,3-diazine)
ROCHE—Reg. U. S. Pat. Off.



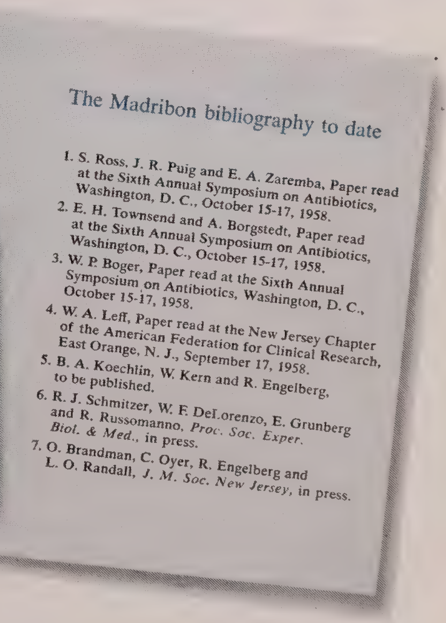
Madribon

DOSAGE	TABLETS initially	TABLETS q. 24 h.	SUSPENSION (teasp.) initially	SUSPENSION (teasp.) q. 24 h.
ADULTS:	2	1	4	2
CHILDREN: 20 lbs	½	¼	1	½
40 lbs	1	½	2	1
80 lbs	2	1	4	2

The above dosage should be doubled in severe infections requiring more intensive therapy. Continue therapy for 5 to 7 days, or until patient is asymptomatic for at least 48 hours.

Tablets, 0.5 Gm
Suspension, 0.25 Gm/teasp.

Caution: The usual precautions in sulfonamide therapy should be observed, including the maintenance of an adequate fluid intake. If toxic reactions or blood dyscrasias occur, use of the drug should be discontinued. As is true of all sulfonamides, Madribon is probably contraindicated in premature infants.



The Madribon bibliography to date

1. S. Ross, J. R. Puig and E. A. Zaremba, Paper read at the Sixth Annual Symposium on Antibiotics, Washington, D. C., October 15-17, 1958.
2. E. H. Townsend and A. Borgstedt, Paper read at the Sixth Annual Symposium on Antibiotics, Washington, D. C., October 15-17, 1958.
3. W. P. Boger, Paper read at the Sixth Annual Symposium on Antibiotics, Washington, D. C., October 15-17, 1958.
4. W. A. Leff, Paper read at the New Jersey Chapter of the American Federation for Clinical Research, East Orange, N. J., September 17, 1958.
5. B. A. Koechlin, W. Kern and R. Engelberg, to be published.
6. R. J. Schmitzer, W. F. DeLorenzo, E. Grunberg and R. Russomanno, *Proc. Soc. Exper. Biol. & Med.*, in press.
7. O. Brandman, C. Oyer, R. Engelberg and L. O. Randall, *J. M. Soc. New Jersey*, in press.

"ankle-itis"

there's pain and
inflammation here . . .
it could be mild
or severe, acute or
chronic, primary or
secondary fibrositis—or even
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more potent and comprehensive treatment than salicylate alone

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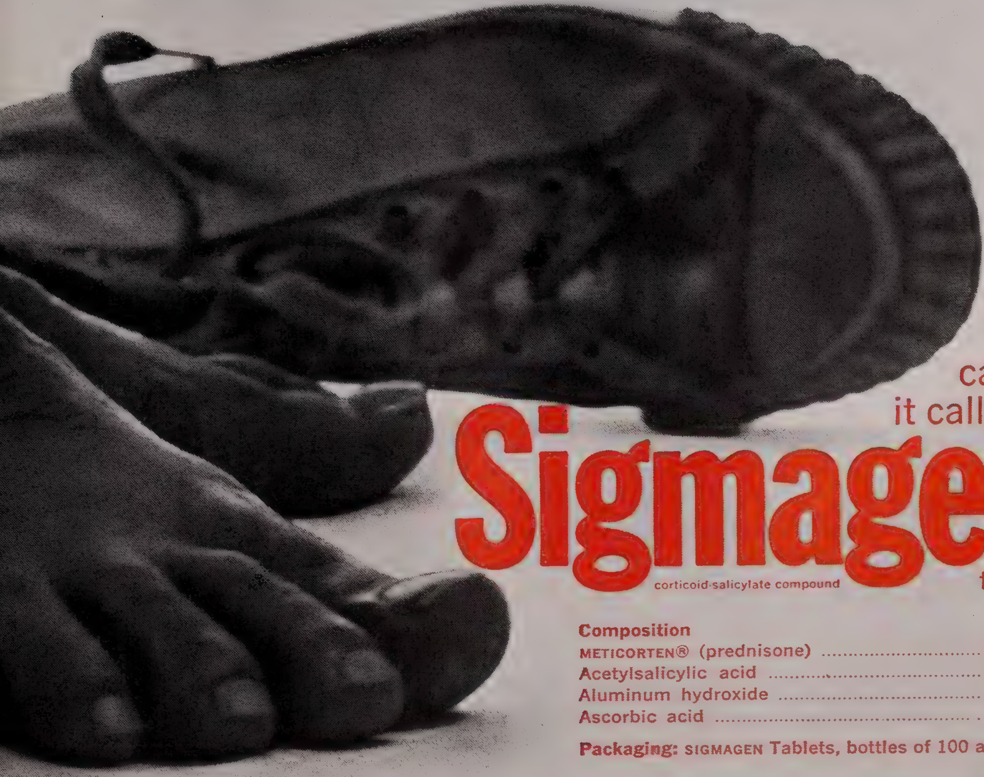
precautions: Because SIGMAGEN contains prednisone, the same precautions and contraindications observed with this steroid apply also to the use of SIGMAGEN.

References: **1.** Spies, T. D., et al.: J.A.M.A. 159:645, 1955. **2.** Spies, T. D., et al.: Postgrad. Med. 17:1, 1955. **3.** Gelli, G., and Della Santa, L.: Minerva Pediat. 7:1456, 1955. **4.** Guerra, F.: Fed. Proc. 12:326, 1953. **5.** Busse, E. A.: Clin. Med. 2:1105, 1955. **6.** Sticker, R. B.: Panel Discussion, Ohio State M. J. 52:1037, 1956.



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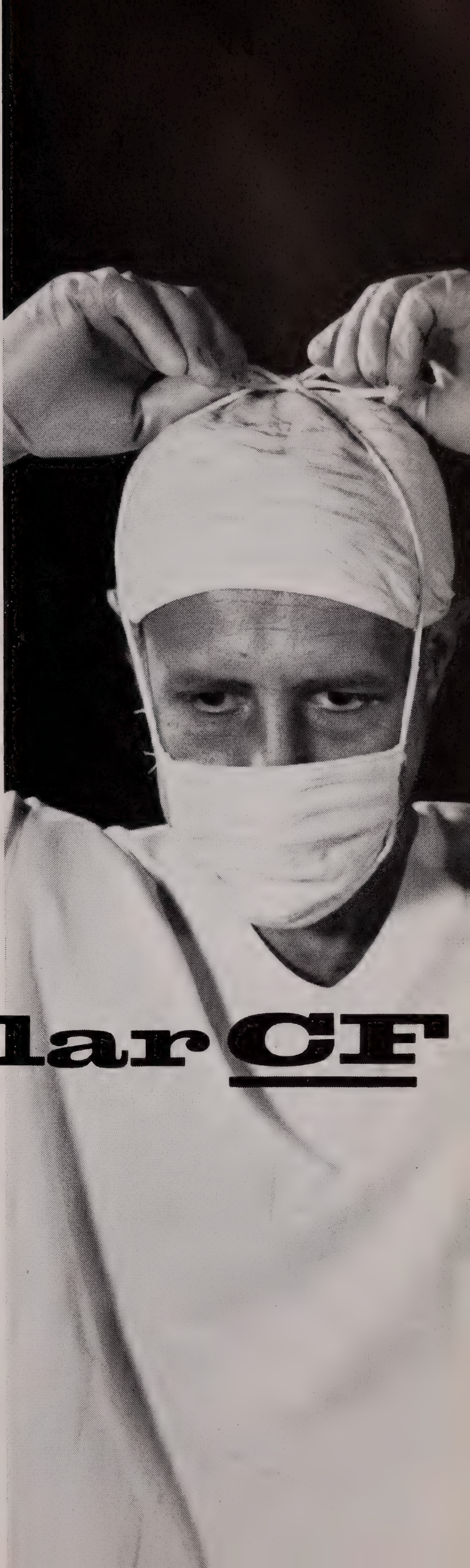

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*L. O. Randall and J. Selitto, *J. Am. Pharm. Assn. (Sc. Ed.)*, 47:313. 1958.

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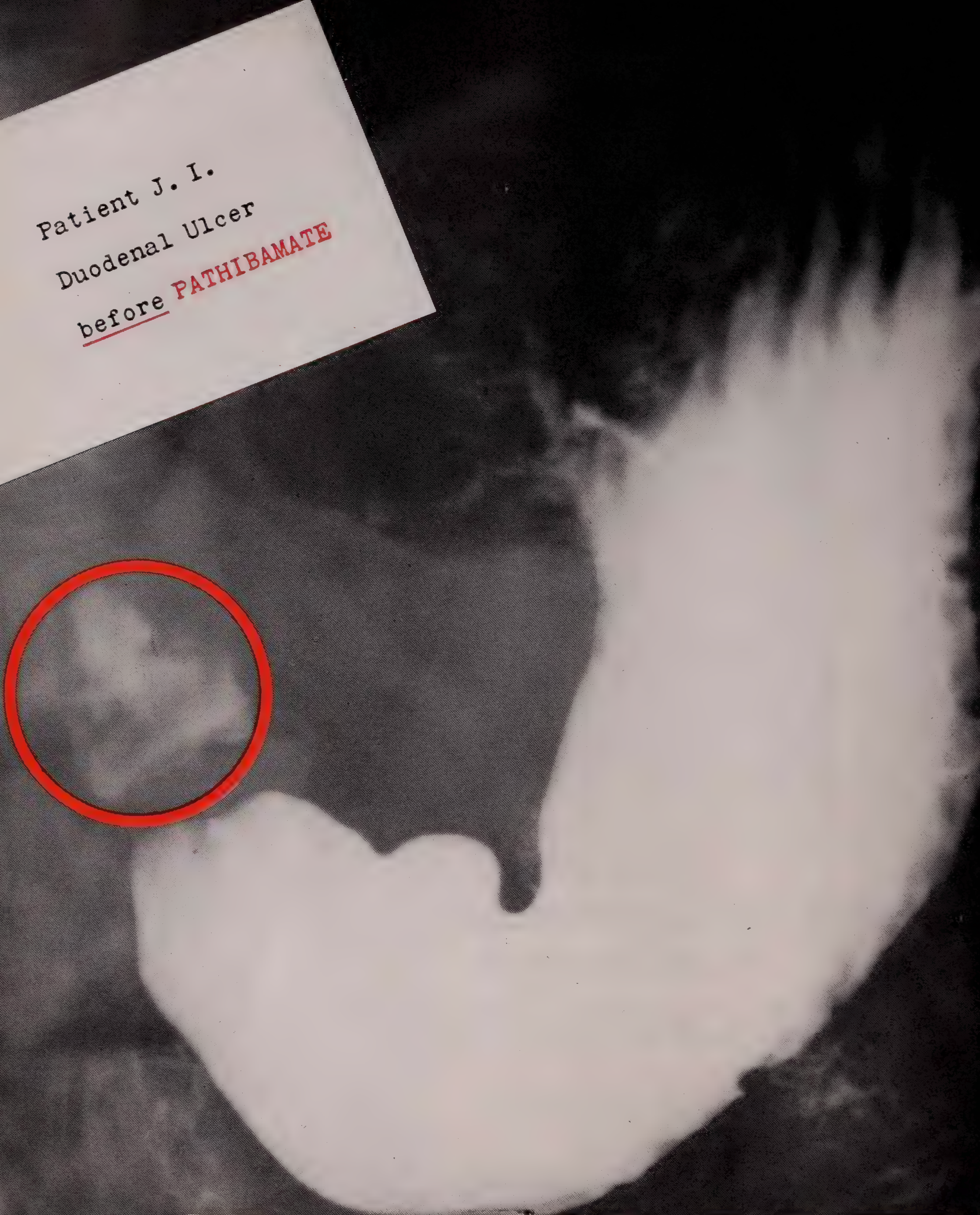

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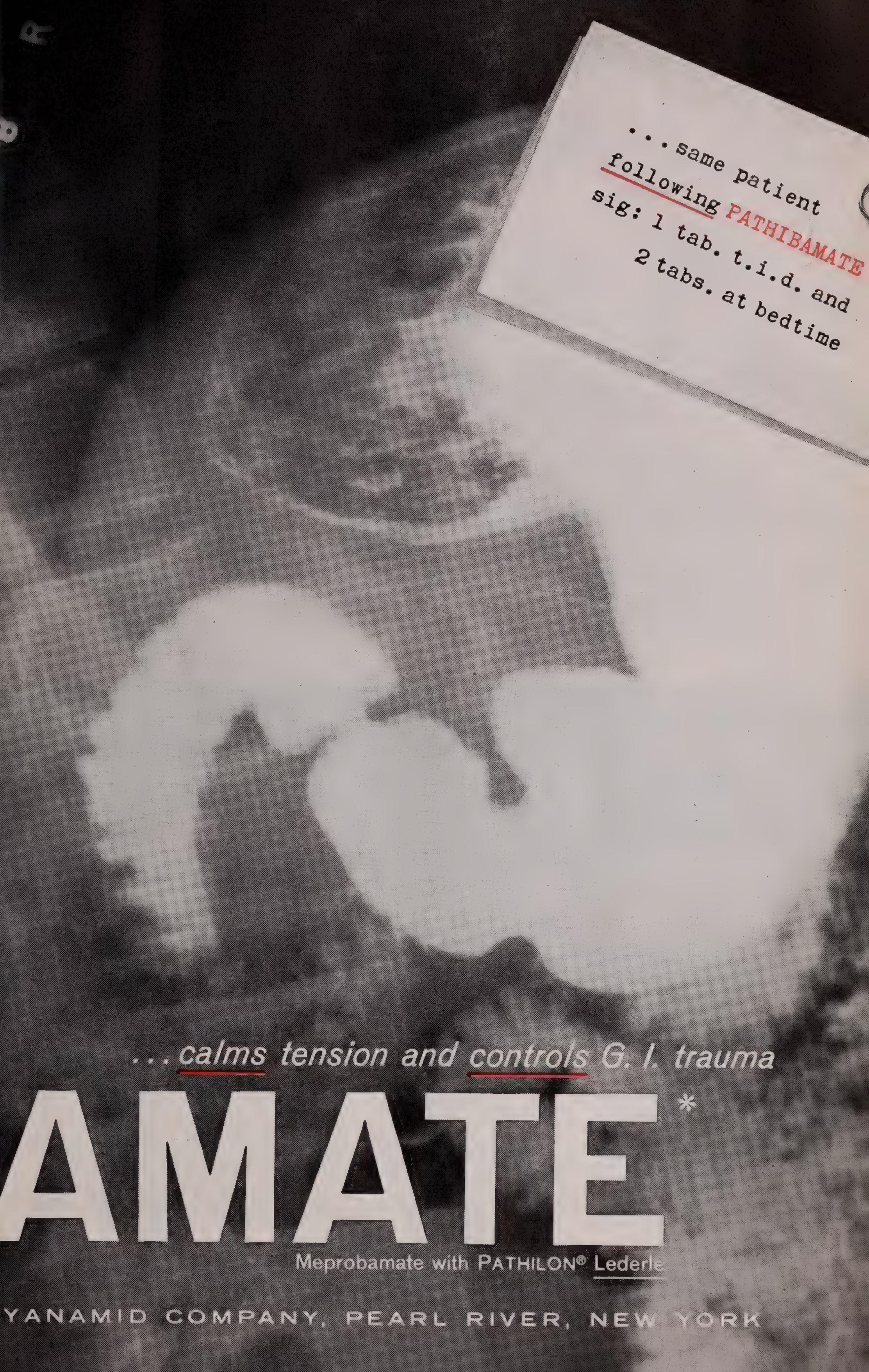
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Wilkins, R. W.: New England J. Med. **257**:1026, Nov. 21, 1957.

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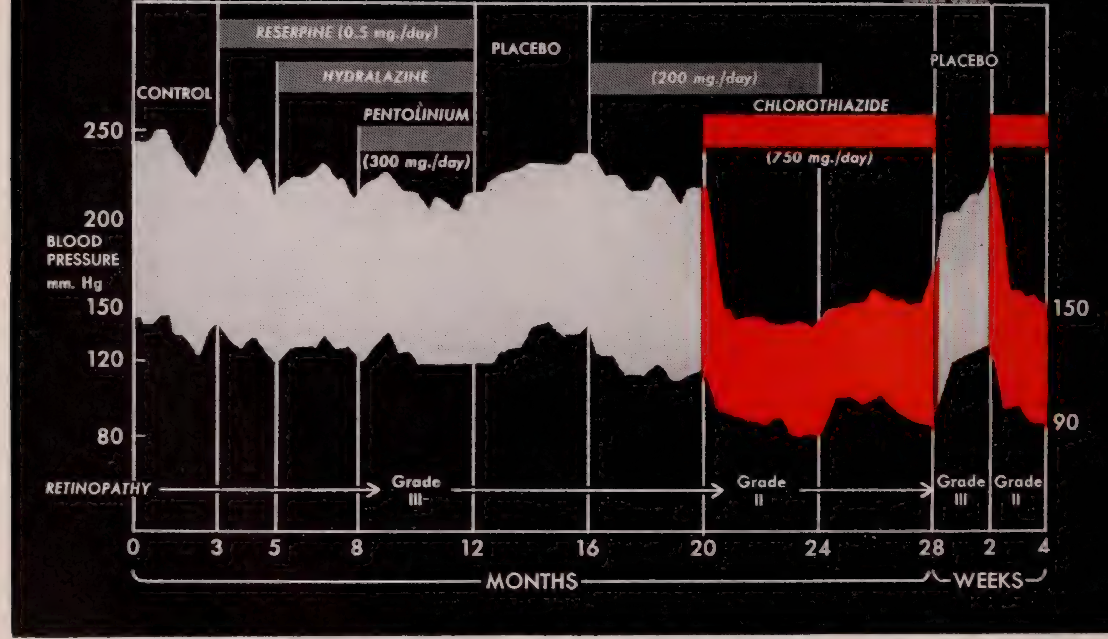
Freis, E. D., Wanko, A., Wilson, I. H. and Parrish, A. E.: J.A.M.A. **166**:137, Jan. 11, 1958.

"Chlorothiazide (maintenance dose, 0.5 Gm. twice daily) added to the regimen of 73 ambulatory hypertensive patients who were receiving other antihypertensive drugs as well caused an additional reduction [16%] of blood pressure." "The advantages of chlorothiazide were (1) significant antihypertensive effect in a high percentage of patients, particularly when combined with other agents, (2) absence of significant side effects or toxicity in the dosages used, (3) absence of tolerance (at least thus far), and (4) effectiveness with simple 'rule of thumb' oral dosage schedules."



In "Chlorothiazide: A New Type of Drug for the Treatment of Arterial Hypertension,"
Hollander, W. and Wilkins, R. W.: Boston Med. Quart. 8: 1, September, 1957.

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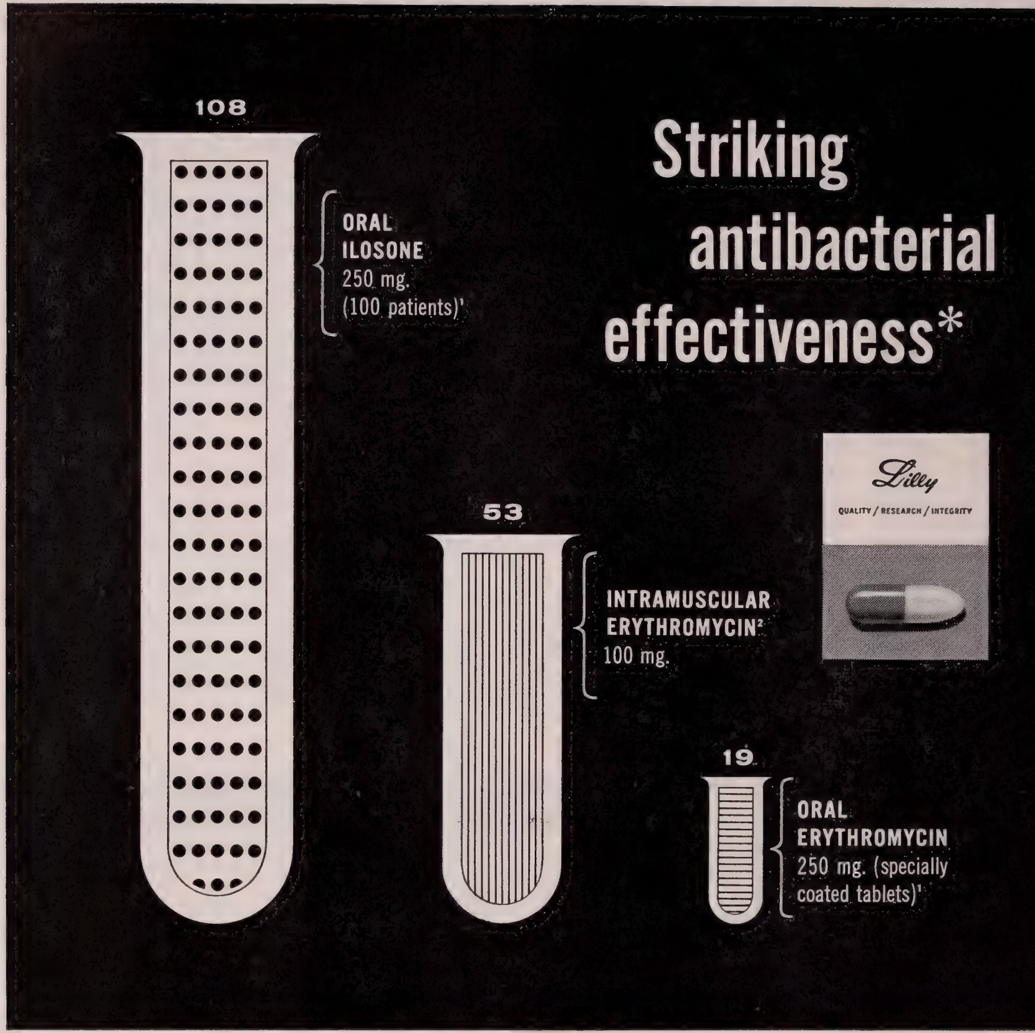

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1. Griffith, R. S., *et al.*: Antibiotic Med. & Clin. Therapy, *5*:609 (October), 1958. Note: Peak levels with the oral erythromycin tablets (thirty-three dilutions) were not observed until four hours after administration. 2. Data from Griffith, R. S.: Antibiotics Annual, p. 269, 1954-1955.

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EDITORIALS

Dr. Herbert T. Wagner

HERBERT T. WAGNER, M.D.

A first step in the implementation of the Society's reorganization plan has been taken in the appointment of Herbert T. Wagner, M.D., forty-six, of Bronxville, as Executive Director as of December 1, 1958.

In taking over his new duties, Dr. Wagner becomes the head of the largest state medical society in the United States and the third largest organized medical group in the world. Dr. W. P. Anderton, secretary of the Society for many years, who formerly had the dual position of secretary-general manager, continues as the Society's elected secretary.

As Executive Director, Dr. Wagner takes over the management of the Society's staff of 70 employes and its various functions. These include the membership and directory departments, the Bureau of Industrial Health and Workmen's Compensation, the Bureau of Medical Care Insurance, and the Bureau of Public and Professional Relations. He was responsible for the direction of the Infantile Paralysis Foundation's medical services program in 15 northeastern states. He also directed the 1954 Salk vaccine field tests in these states.

He was a consultant to the Commission on Financing of Hospital Care in 1953–1954 and a member of the program committee of the National Health Forum. Prior to becoming regional medical consultant, the Bronxville physician was director of hospital services for the Foundation from 1950 to 1955 in which latter year the Office of Hospital Services was abolished.

Dr. Wagner has had experience in the field of hospital administration. From 1939 to 1940 he was assistant director of Roosevelt Hospital, New York City. During the period 1940 to 1944, he was executive director of Stuart Circle Hospital, Richmond, Virginia, and from 1944 to 1945 he served as director of Meriden Hospital in Meriden, Connecticut. Commissioned with the rank of Surgeon in the United States Public Health Service from 1945 to 1949, he was hospital consultant and program director of the Division of Hospital Facilities, District Eight, which includes the States of Colorado, Utah, Idaho, Wyoming, and Montana. He acted as medical director of Utah Childrens' Hospital, Salt Lake City from 1949 to 1950 and was a University of Utah clinical lecturer in health education during that period.

Licensed to practice medicine in Indiana, New York, Connecticut, and Utah, Dr. Wagner, who was certified by the American Board of Preventive Medicine in 1953, holds a Bachelor of Arts Degree and a Doctor of Medicine Degree from the University of Indiana and a Master's Degree in Business Administration from the University of Chicago's Graduate School of Business.

In addition, Dr. Wagner has been active in many medical and hospital associations. From the foregoing it may be appreciated that he comes to the Society well qualified for his new duties. The JOURNAL is pleased to welcome him to the staff.

The New Year, 1959

To all members of the Medical Society of the State of New York wherever you may be, a happy and successful New Year from the officers and staff of your Society. This year these greetings come from new headquarters which should enable your working staff to serve you more efficiently and should inspire your officers and committees to the exercise of an even higher quality of leadership than ever before.

At the threshold of the new year we can look back with some satisfaction on a reasonably stable national economy and many professional triumphs, and forward with hope to vital changes for the betterment of medical service to the public and improved organization of our own Society. The delegates at the Annual Meeting this year will have some momentous decisions to make when the report of Rogers, Slade and Hill will be acted on. These changes will, if adopted, bring the Society more into line with modern organizational practices in our rapidly changing modern world.

Medical institutions in general were founded here when this country was largely an agrarian society, isolated from the rest of the world by two immense oceans and faced with the necessity of determining its own political and economic future. The State Society, founded in 1806, fulfilled its purpose with little necessity for radical changes until recently when it became evident that to exert its proper leadership in a world geared to streamlined structure and rapid progression, changes were necessary.

The year 1959 will see many changes in our structure and procedure following the meeting of the House of Delegates in May. It is to be hoped that the delegates will give careful consideration to the proposals so that the House may act wisely in the interest not only of the profession but of the public as well.

Editorial Comment

Occupational Hazards of Physicians. "Too much work and not enough play" is an occupational dilemma the U. S. physician should resolve if he wants to keep up his own health standards.

Evidence presented in the current issue of *Patterns of Disease* reveals that the average physician is so busy taking care of others that he doesn't have time to take care of himself.

Prepared by Parke, Davis & Company at the Science Information Bureau, 445 Park Avenue, New York 22, New York, for the medical profession, *Patterns of Disease* reports a special survey on physicians' health practices and standards. The survey, both the largest and most recent of its kind, was conducted among more than 9,000 practicing physicians under sixty-five years of age engaged in private practice in this country.

The U. S. physician undertakes a far heavier work load than the average person, *Patterns* reports. Half the physicians in this study reported a work week of fifty hours or longer—at least 20 per cent more than the accepted norm of forty hours. In fact, 13 per cent work sixty to sixty-four hours and 6 per cent eighty hours or more!

The result is he has very little leisure time. Close to 60 per cent of the physicians in the study stated they spend less than ten hours a week on recreation. Even the physician with a hobby has virtually no opportunity to pursue it. Of the 37 per cent who mentioned hobbies, for instance, half stated that they spent only four hours a week or even less on their particular hobby.

Vacations, too, tend to be inadequate. One out of 20 physicians reported they took no time off for vacations during the year, and more than one in ten took only a week or less.

Despite his crowded working schedule, the physician loses less time from work due to illness than the average man. Two thirds of the doctors in the *Patterns* study reported no time lost from work last year. The remaining third reported an average time of 3.8 days lost due to illness as against

7.4 days of work-loss by the average American man.

The practice of medicine poses occupational hazards, *Patterns* reveals. Illnesses resulting directly from their practice attacked one tenth of the physicians in the study during the past three years. Of these, three-quarters were laid low by infections and more than one-fifth developed allergic dermatitis or other forms of allergies. One in 30 with work-related illnesses was injured by over-exposure to radiation.

Does illness vary with the type of practice? Pediatricians are more prone to infectious diseases than their colleagues, according to *Patterns,* and the risk of radiation injuries is greater among radiologists than other members of the profession.

Infectious and parasitic diseases are the commonest ailments among physicians. In the *Patterns* study, they afflicted approximately 30 per cent of all physicians reporting illness during the past five years. Cardiovascular diseases were the second commonest, being reported by about 10 per cent. Accidents and injuries, gastrointestinal disease, and allergy all ranked third, each being reported by about 7 per cent.

In general, heart disease, sometimes called the doctor's disease, appears to be the leading mortality risk among U. S. physicians. Of causes of death reported among 2,700 physicians from July 1, 1957 to June 30, 1958, heart disease was the single or contributory cause of 50 per cent.

The highest death rates from coronary heart disease among physicians occur from the ages of sixty to sixty-four, according to *Patterns.* In the under forty-five age group, auto accidents ranked first as a contributory cause of death in the study, accounting for more than 40 per cent.

What's the average doctor like? From the results of its study, *Patterns* has assembled a composite "profile" of him. He is forty-four years old, 5 feet 10 inches tall and weighs 173 pounds. He works fifty-four hours a week, plays seven hours, and takes two and one-half weeks' vacation a year. His health record, at least in terms of his working schedule, is a good one. He only lost a fraction of a day from work last year, and has had one illness in the past five years.

Recent Catastrophes. According to the *Statistical Bulletin* accidents in which five or more persons were killed in the United States in the general population seem to have claimed fewer lives in the first half of this year than last year.[1]

> Catastrophic accidents killed more than 800 persons in the first half of 1958, compared with about 1,200 in the first six months of 1957, which total included the heavy loss of life caused by Audrey, the June hurricane of last year. Fatalities from both civil and military aviation were appreciably greater this year. Fires in dwellings and apartments also took substantially more lives. The death toll from motor vehicle mishaps in which five or more persons were killed was about the same as in the first six months of 1957. On the other hand, tornadoes and floods both showed a decrease in number of deaths.
>
> Through June of this year there were six disasters in which 25 or more persons were killed, three of them involving aircraft. On February 1, two military planes collided over Los Angeles, killing 48 persons. On April 6 a scheduled plane crashed near Midland, Michigan, taking 47 lives; later, on the 21st of the same month, another scheduled plane and a jet collided near Las Vegas, Nevada, resulting in 49 fatalities—the heaviest toll of the year. The only natural disaster of the year was a series of tornadoes which hit northwestern Wisconsin on June 4 and took 30 lives. The remaining two major catastrophes took place in late February. One involved the ingestion of poisonous liquor in New York City, causing 27 deaths. The other occurred when a school bus plunged over a cliff into a river near Prestonburg, Kentucky, drowning 27, all but one of them children.

---

[1] Statistical Bulletin, Metropolitan Life Insurance Company, **39**: 5 (July) 1958.

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*A Symposium on the Pharmacologic Effects of Dartal on the Liver, Chicago, Searle Research Laboratories, Feb. 7, 1958.

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1. Eisenberg, B. C.: Clinical Medicine *5:*897-904 (July) 1958.
2. Feinberg, A. R., et al.: J. Allergy *29:*358 (July) 1958.
3. Robinson, H. M., et al.: So. Med. J. *50:*1282 (Oct.) 1957.

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S C I E N T I F I C   A R T I C L E S

Chemotherapy of Renal Tuberculosis

HERMAN WECHSLER, M.D., BRONX, NEW YORK, JOHN K. LATTIMER, M.D., NEW YORK CITY, MIGUEL A. GARCIA, M.D., BRONX, NEW YORK, AND HAIK KAVOOKJIAN, JR., M.D., BRONX, NEW YORK

(From the Research Unit for Genito-Urinary Tuberculosis, Veterans Administration Hospital, Bronx, New York, and Columbia University College of Physicians and Surgeons, New York City)

THE concept that tuberculosis of the genitourinary tract is a fast disappearing disease is unfortunately not true. Despite the fact that better general health, housing, and food and modern methods of chemotherapy have helped to lower the incidence of tuberculosis, better case finding and reporting have increased the number of known cases. Actually, there has been no decrease in the number of new cases of renal tuberculosis, and the statistics from the Research Unit for Genito-Urinary Tuberculosis at the Bronx Veterans Administration Hospital show the same number of new cases each year. This may vary by a few cases, but it is surprising that the incidence graph has remained almost unchanged (Fig. 1).

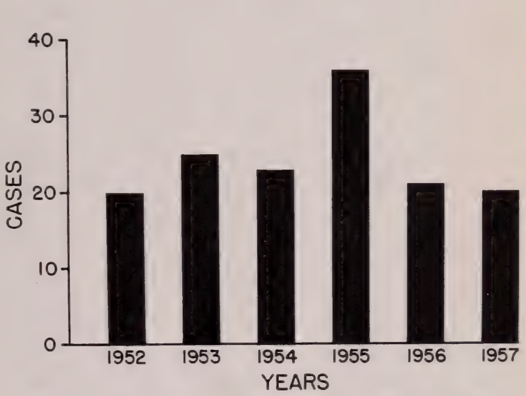

FIG. 1. Incidence of New Cases of Renal Tuberculosis (Noted by the Research Unit for Genito-Urinary Tuberculosis) for the Years 1952 to 1957.

Renal tuberculosis is usually secondary to tuberculosis in the lungs. The organisms are spread by way of the blood stream, and both kidneys are infected. The question why one kidney will go on to advanced changes while the other does not has not been answered. Perhaps the virulence of the organisms, resistance of the host, condition of the kidney, and specific immunologic conditions at that moment all influence a more intense "fall-out" of tubercle bacilli in one kidney.

The first cavitary lesion which can be seen by x-ray is found in the region of the narrow loop of Henle after organisms have first infected a glomerulus above this point. Perhaps the slow flow of urine at this point may be a precipitating factor. When such a tubercle in the renal medulla spills into a calyx, the urine becomes positive for Mycobacterium tuberculosis. The urine may then show six to eight white blood cells per high power field. As the cavity enlarges it will erode the calyx near the papilla. This open cavity is now visible on the pyelogram. Descending infection of the ureter and bladder eventually follows in the

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Presented at the 152nd Annual Meeting of the Medical Society of the State of New York, New York City, Section on Urology, May 16, 1958.

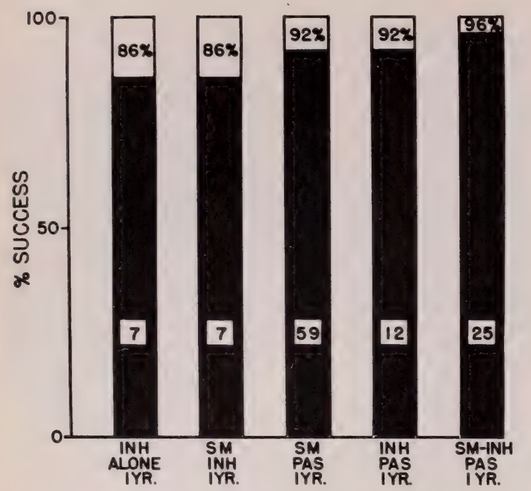

FIG. 2. Conversion of Urine Cultures to Negative Twenty-Four Months after Start of Various Regimens, with Iproniazid (INH), Streptomycin (SM), and Para-aminosalicylic Acid (PAS), of Chemotherapy.

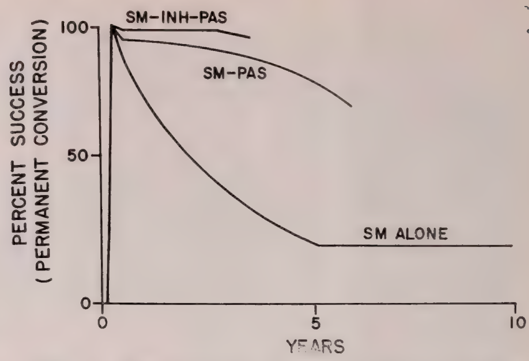

FIG. 3. Effectiveness of Three Regimens, with Iproniazid (INH), Streptomycin (SM), and Para-aminosalicylic Acid (PAS), in Treating Renal Tuberculosis.

normal course of events if the patient is not treated. Eventual intraluminal involvement of the prostate and epididymis completes the urologic invasion.

For chemotherapeutic treatment at this center combinations of drugs are always employed. Two-drug therapy may be used for lesions of small volume (groups 0 and 1, according to the classification of Lattimer). The advanced cavitary lesions (groups 2, 3, and 4) are now treated with triple drug therapy, using isoniazid 100 mg. three times daily, sodium para-aminosalicylic acid 5 Gm. three times daily, and cycloserine 250 mg. twice daily. This treatment is given for two years. The patient is usually kept in the hospital during the first six to twelve months, but treatment is continued for a second year after his discharge. We no longer insist on complete bed rest while the patient is in the hospital. A semiambulatory rest program is encouraged during the first six months of treatment, and rest is encouraged each day. The year in the hospital is also used for rehabilitation and job training for the future. We have found that the use of Clorpactin for local bladder therapy is a helpful adjuvant in relieving the pain of any bladder ulcers.

The results of treatment with chemotherapy alone have been encouraging. Conversions of the urine cultures to negative have been excellent after triple drug therapy with isoniazid, sodium para-aminosalicylic acid, and streptomycin, for one year. Ninety-six per cent of a group of 25 patients have maintained negative results for four years. Less effective were single drug regimens using streptomycin or isoniazid alone. Two-drug regimen using streptomycin 1 Gm. twice a week and sodium para-aminosalicylic acid 12 Gm. daily was also less effective. Figure 2 illustrates the effectiveness of these regimens. Follow-up studies (Fig. 3) have also shown the value of triple drug treatment. After streptomycin was given alone, patients relapsed at a prohibitive rate, with only about 20 per cent of the patients showing negative results by the fifth year of follow-up. The follow-up of streptomycin-para-aminosalicylic acid therapy revealed a drop to 70 per cent successful conversions by the sixth year, while three-drug therapy has stayed at 96 per cent success after four years. Since a combination of para-aminosalicylic acid and isoniazid has been so effective in treating pulmonary tuberculosis, this regimen deserves further trial with renal tuberculosis. Continued observation of these patients for at least ten years may indicate the optimum therapeutic regimen among the several combinations now under study. It is our conviction that these patients must be carefully surveyed for some ten years in order to evaluate the choice of drug and length of administration and time of follow-up.

We have withheld surgery even for the advanced cases of renal tuberculosis and will continue to do so unless relapses occur. At one time, if a lesion was located in one pole of a kidney and careful study showed no other lesion, we did a partial resection of the kidney preceded by chemotherapy. Results were good and pyelographic examinations showed satisfactory removal of the infected areas. However, since chemotherapy is so effective, we have abandoned partial nephrectomy as a treatment for kidney tuberculosis, at least for the time.

The status of the functionless kidney is one that concerns us, and we are observing a group of patients with this condition. It is too early for conclusions to be drawn. In some of our cases portions of bladders or ureters which have been damaged by tuberculosis have been replaced with portions of small intestine with fair success.

The status of chemotherapy is not static. With the discovery of new and better antituberculosis drugs, regimens will change, and it is anticipated that conversion rates of urine cultures may come even closer to 100 per cent in the future. Each year brings a list of new drugs which show promise. Two such are kanamycin and thiocarbanidin. Since there apparently is no cross resistance to these drugs, we may be able to substitute them for drugs which are now difficult to tolerate (para-aminosalicylic acid) or require injection (streptomycin).

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Discussion

Monroe E. Greenberger, M.D., *New York City.*—To discuss a paper on genitourinary tuberculosis in the year 1958, it seems necessary that you all should be acquainted with the changing picture of tuberculosis at Sea View Hospital. Sea View, since 1931, has been the "fountainhead" for the management and treatment of pulmonary, orthopedic, pediatric, ear, nose, throat, and genitourinary tuberculosis.

On my first visit to Sea View in 1931 my major impression was the over-all appearance of emaciation and immobility. Dr. E. H. Robitzek, Director of Medicine at Sea View, remembers patients who finally moved after an interminable period—and only then did one know that they were still alive.

Remember the orthopedic cases with draining sinuses from every possible part of the anatomy and dressings that virtually mummified the patient? Remember the often fatal dyspnea and oxygen tents? Remember amyloidosis, albuminuria, huge visible livers? Remember the hectic flush, poetically called "cemetery roses?" Remember fevers that refused to abate? The "galloping" cases? The teen-ager with arms and legs barely larger than the bones contained within them who arrived at Sea View in April and was dead in July? Remember the voice of tuberculous laryngitis and ear, nose, and throat records meticulously inscribed page after page with the words of futility "oil to larynx?" Remember the injections of heat-killed tubercle bacilli, chlorophyll tablets, sheep vaccine, Congo red, etc.? Remember medical-surgical conferences with waiting lists of 85 patients?

Residents in those days will recall night calls for the sole purpose of pronouncing the patient dead. They also will remember the empty bed in the morning after an evening off.

There used to be 2,200 tuberculous patients at Sea View and now 930, with three of the institutions in the New York City area, closed in 1958. As reported in April, 1958, by Dr.

I. D. Bobrowitz, Director of Tuberculosis, Department of Hospitals of New York City, between 1953 and 1958 bed occupancy has dropped from 5,000 to 3,700.

These days we mark the ascendance of bacteriology, of miracle drugs, and of patients who look healthier than those visiting.

In 1951 a drug named Rimifon, an isonicotinic acid hydrazide, became available for treating tuberculosis at Sea View Hospital. In the April 15, 1952, issue of the NEW YORK STATE JOURNAL OF MEDICINE we summarized, for the first time in medical literature, our preliminary experiences as follows:

> At the present writing the role of the isoniazides in the treatment of genitourinary tuberculosis is not predictable. The lengthy period of observation of the patients with follow-up pyelograms, repeat guinea pig inoculations, and cultures will necessitate delay in arriving at definite conclusions. Reduction in general toxicity and degrees of symptomatic improvement in these otherwise hopeless cases is evident. To stimulate further investigation of the hydrazine derivatives of isonicotinic acid in the field of urologic tuberculosis these early observations are being presented.

The last six years' experience is now known to all, since it was so graphically presented by Dr. Wechsler and his associates.

Genitourinary tuberculosis as I knew it prior to 1952 has practically disappeared. Surgical urologic procedures for tuberculosis at Sea View are almost never used. Our staff is kept busy with the care of nontuberculous urologic problems.

Parts Department

More than 500 plastic heart valve operations have been performed to date, according to the August 30 issue of *The Saturday Evening Post.* Ben Pearse's article, "Spare Parts for Defective Hearts," tells that 200 of these surgeries have been performed by Dr. Charles A. Hufnagel, professor of surgery at Georgetown University Hospital, who originated the technic.

The vast majority of the operations have been successful. The patient not only survived but was measurably benefited, usually to the extent of being able to resume work on a somewhat reduced scale.

Patients came to Georgetown from all parts of the United States and several foreign countries, including Sweden, Australia, Japan, and South Africa. Pearse also relates that the Brunswick Manufacturing Company of Quincy, Massachusetts, which worked closely with Dr. Hufnagel, lists four valve sizes in its surgical supply catalog, ranging from three quarters of an inch to one and one-eighth inch in diameter.

The author describes the case of a thirty-nine-year-old New York postal worker who two years ago was suffering from aortic insufficiency. The man's physician told him of the Hufnagel technic, first performed on a human patient in September, 1952, explaining how the operation involved the insertion of an artificial valve in the aorta to prevent the blood, or most of it, from flowing the wrong way back into the heart. The device consists of a transparent plastic tube about one-inch in diameter and an inch-and-one-half-long, and has a plastic ball inside that allows the blood to flow in only one direction.

The patient entered Georgetown University Hospital in May, 1956, and a few days later Hufnagel installed one of his plastic valves.

The recovery was uneventful. The man went back to his job in October and has been working steadily ever since.

Atopic Allergy and Atopic Dermatitis— A Discussion of Their Relationship

JOHN S. STRAUSS, M.D., BOSTON, MASSACHUSETTS

(From the Departments of Dermatology, Boston University School of Medicine and Massachusetts Memorial Hospitals, Boston, Massachusetts

The exact status of atopic dermatitis in relationship to the other clinical manifestations of atopy is uncertain. There is very little similarity between the eczematous or dermatitic reaction of the dermatitis and the purely vascular reaction of urticaria and angioedema, the proved allergic cutaneous expressions of the atopic state. These last two entities, as well as hay fever and asthma, are characterized by reproducibility on administration of the specific antigen and at least partial control with antihistaminics and epinephrine. Moreover, desensitization to the specific allergens often leads to abatement of the clinical symptoms. In contrast, atopic dermatitis does not show a specific response to antihistaminics or epinephrine, and in most cases specific therapy directed against an allergic cause (hyposensitization and avoidance of exposure) is unrewarding. Moreover, the application or injection of the atopen into the shock organ does not produce the characteristic dermatitic response, but, instead, a wheal and flare.*

Most of the evidence for considering atopic dermatitis to be a specific allergic disease rests on reported flare-ups of atopic dermatitis occurring after the exposure or administration of specific atopens to atopic individuals.[3-8] The word "flare-up" is to be emphasized because in all of these studies the reactivation of the disease is limited exclusively to previous sites of dermatitis, active or healed. Involvement of new sites has never been described.

These findings suggest that another mechanism may be involved—the specific atopens, although unable to provoke a primary dermatitic response, may be able to provoke flares of existing etiologically unrelated patches of dermatitis. Thus, the atopens are acting indirectly as secondary etiologic agents, a view already anticipated by Rostenberg.[9] The experimental studies to be described represent a demonstration of this mechanism.

Methods

Details of the experimental procedure are published elsewhere.[10] In brief, the experimental subjects were eight adult males who gave a strong reaction to one or more protein allergens with standard scratch tests. Seven of the subjects had an atopic background, but none had had atopic dermatitis. The dermatitis was produced by the application of measured amounts of 3-pentadecylcatechol (PDC), one of the antigens of the poison ivy plant. PDC was used because repeated patch testing of the type performed does not alter the level of contact sensitivity, and the intensity of the reaction is fairly constant from time to time.[11] The experimental plan was designed to show if the administration of the specific atopens by various routes could alter the patch test

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* Both Loveless[1] and Herrmann[2] have described a transitory dermatitis following topical applications of specific pollens to the normal skin. However, the specific atopens were applied to the normal skin of the volunteers in the present studies for three weeks without producing a dermatitis. Absorption certainly took place, for one subject had repeated asthmatic attacks following this surface application, and other subjects developed wheals. Furthermore, if a dermatitic response were to be seen, it undoubtedly would have been described more often following the uncountable number of patch tests that have been done.

TABLE I.—Effect of Administration of Atopens on Experimental Contact Dermatitis in Eight Subjects

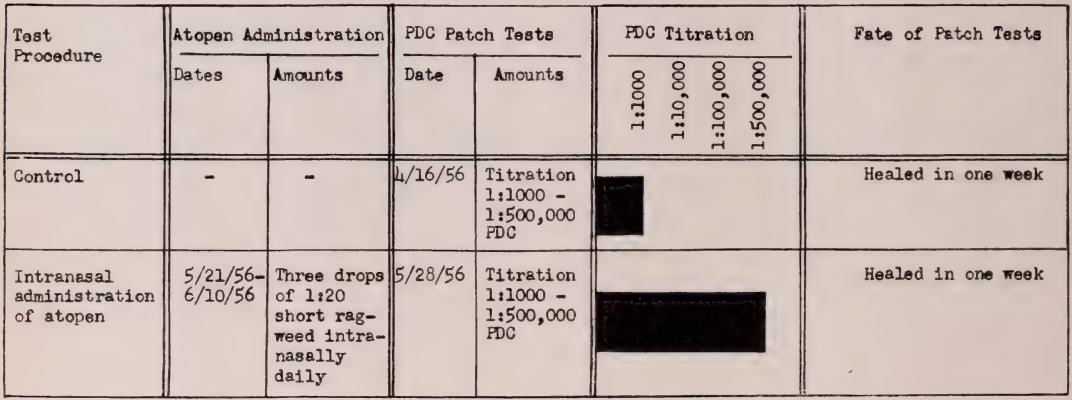
	Mode of Administration of Protein Antigens		
	Topical	Intranasal	Subcutaneous
Number with intensification of reaction or delay in healing—6	3	3	5
Number with intensification who developed lichenification—2	1	1	2
Number of subjects—8	6	4	7

result produced by PDC. In the various experiments the atopens were either applied directly to the area of experimental dermatitis, injected subcutaneously at a distant site, or dropped into the nasal mucous membrane.

Results

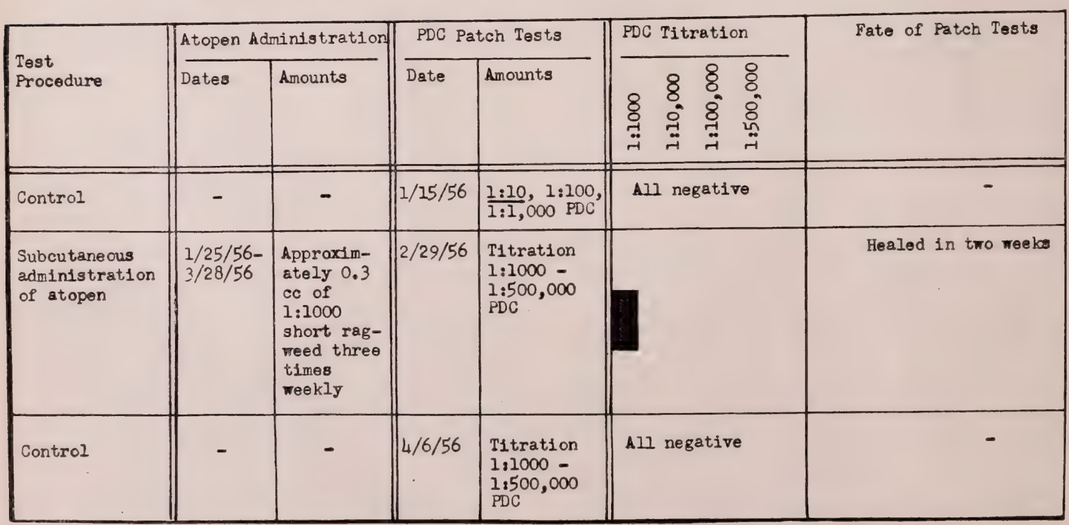
The detailed results of all of the experiments have already been reported[10] and are summarized in Table I. For the present discussion the specific reactions in four experimental subjects are outlined in Figures 1 to 4.

The first subject (Fig. 1) had had no allergic diseases. Scratch tests with a 1:20 pollen extract of short ragweed resulted in a 15-mm. wheal. There was no reaction to the daily application of short ragweed antigen to intact skin. There was a marked in-



Test Procedure	Atopen Administration		PDC Patch Tests		PDC Titration				Fate of Patch Tests
	Dates	Amounts	Date	Amounts	1:1000	1:10,000	1:100,000	1:500,000	
Control	-	-	4/16/56	Titration 1:1000 - 1:500,000 PDC	■				Healed in one week
Intranasal administration of atopen	5/21/56-6/10/56	Three drops of 1:20 short ragweed intranasally daily	5/28/56	Titration 1:1000 - 1:500,000 PDC	■	■	■	■	Healed in one week

Fig. 1. *Subject 1.*—Changes in the PDC patch test during administration of specific atopens.



Test Procedure	Atopen Administration		PDC Patch Tests		PDC Titration				Fate of Patch Tests
	Dates	Amounts	Date	Amounts	1:1000	1:10,000	1:100,000	1:500,000	
Control	-	-	1/15/56	1:10, 1:100, 1:1,000 PDC	All negative				-
Subcutaneous administration of atopen	1/25/56-3/28/56	Approximately 0.3 cc of 1:1000 short ragweed three times weekly	2/29/56	Titration 1:1000 - 1:500,000 PDC	■				Healed in two weeks
Control	-	-	4/6/56	Titration 1:1000 - 1:500,000 PDC	All negative				-

Fig. 2. *Subject 2.*—Changes in the PDC patch test during administration of specific atopens.

Test Procedure	Atopen Administration		PDC Patch Test		PDC Titration				Fate of Patch Tests
	Dates	Amounts	Date	Amount	1:1000	1:10,000	1:100,000	1:500,000	
Control	-	-	1/15/56	1:1000 PDC					Healed in three weeks
Subcutaneous administration of atopen	1/25/56-3/28/56	Approximately 0.2 cc of 1:1000 short ragweed three times week	2/29/56	Titration 1:1000 - 1:500,000 PDC	■	■	■	■	During healing developed marked flare with pruritus, erythema and definite lichenification. Healing delayed - took 5 weeks. Not healed until 4/9/56
Control	-	-	4/6/56	Titration 1:1000 - 1:500,000 PDC	■	■			Healed in ten days
Administration of atopen topically to patch of PDC induced dermatitis	4/11/56-5/1/56	one drop of 1:20 short ragweed rubbed in daily	4/6/56	1:1000 PDC					Treated area developed marked erythema. Marked pruritus. Transient lichenification. Lesion took 3 weeks to heal

FIG. 3. *Subject 3.*—Changes in the PDC patch test during administration of specific atopens.

Test Procedure	Atopen Administration		PDC Patch Tests		PDC Titration				Fate of Patch Tests
	Dates	Amounts	Date	Amounts	1:1000	1:10,000	1:100,000	1:500,000	
Control	-	-	1/15/56	1:1000 PDC	-				Healed in ten days
Subcutaneous administration of atopen	1/25/56-3/28/56	Approximately 0.5 cc of 1:1000 crab three times week	2/29/56	Titration 1:1000 - 1:500,000 PDC	■	■	■	■	Marked pruritus developed locally after each atopen injection. Excoriations and slight lichenification. Healing delayed. Not healed till 4/9/56
Control	-	-	4/6/56	Titration 1:1000 - 1:500,000 PDC	■	■	■	■	
Administration of atopen topically to patch of PDC induced dermatitis	4/11/56 - 4/25/56	One drop 1:10 crab rubbed in daily	4/6/56	1:1000 PDC					Slight increase in infiltration, increased pruritus. No delay in healing (control titration applied on 4/6/56)
Control	-	-	4/25/56	Titration 1:1000 - 1:500,000 PDC	■	■	■	■	Healed in ten days
Intranasal administration of atopen	5/21/56 - 7/4/56	Three drops of 1:10 crab intranasally daily	5/28/56	Titration 1:1000 - 1:500,000 PDC	■	■	■	■	Reaction prolonged - marked activity at 3 weeks with pruritus. Lichenification began at 3 weeks and was persistent. Lichenification and intermittent pruritus still present one month after atopen stopped.

FIG. 4. *Subject 4.*—Changes in the PDC patch test during administration of specific atopens.

crease in his sensitivity to PDC while he was receiving the specific atopen intranasally. A control titration with serial dilutions of PDC was positive only in a 1:1,000 dilution. While the subject was receiving the atopen, he reacted to a 1:500,000 dilution of PDC.

The past history of the second subject (Fig. 2) included asthma. Scratch tests with a 1:20 pollen extract of short ragweed resulted in a 9-mm. wheal. He had no reaction to daily application of short ragweed antigen to intact skin, nor did he have any reaction to 10 per cent PDC on numerous occasions both before and after the present experiment. However, while he was receiving specific atopen subcutaneously, he did have a positive patch test result to 1:1,000 PDC.

The past history of the third subject (Fig. 3) included severe asthma. Scratch tests with a 1:20 pollen extract of short ragweed resulted in a 5-mm. wheal. There was no local reaction to the daily application of short ragweed antigen to intact skin, but an occasional asthmatic attack did result. While he was receiving short ragweed injections subcutaneously, his titration to PDC increased from 1:10,000 to 1:500,000. The patient had intense pruritus and a delay in healing in this same experiment, and of greater interest is the fact that he developed definite lichenification. After the applications of the atopen directly to the dermatitic area there was a similar but less marked flare associated with transient lichenification.

The past history of the fourth subject included severe asthma. Scratch tests with a 1:10 unadulterated whole protein extract of crab resulted in a 13-mm. wheal. There was no reaction to daily application of crab antigen to intact skin. There was no change in the PDC titer throughout the experiments, but the patient was highly sensitive to PDC (control positive in a 1:500,000 dilution). If the titration had been carried to the extinction point, perhaps a change would have been evident. However, when the titration was done while the patient was receiving subcutaneous injections of crab protein, there was marked pruritus, a delay in healing, and slight lichenification. Moreover, while he was receiving intranasal instillations of the crab protein, the patient developed an area of lichenification which was still present at the last observation one month after the instillation of the antigen was stopped.

Comment

These studies demonstrate that the administration of specific atopens to susceptible subjects may increase the reaction produced by a contact allergen. This increased reaction may be represented by a response on the part of the host to quantities of the contact allergen which were previously innocuous or by a flare of a pre-existing dermatitis. The flares are often accompanied by marked pruritus, and in certain individuals, through scratching the patch of contact dermatitis is transformed into a lichenified plaque of localized neurodermatitis.

The administration of the atopens did not at any time produce new cutaneous lesions. Therefore, the atopens were only secondary or contributory etiologic agents. The contact allergen was not chosen because of any relationship to the atopic disease but rather because the resulting dermatitis was readily quantitatively reproducible. Actually, similar experiments were done with areas of dermatitis produced by primary irritants, vesicants (cantharidin), and thermal burns, but the results were not reproducible. Nevertheless, with the dermatitis produced by these agents flares also were seen on occasion after the administration of specific atopens.

The mechanism as described probably accounts for the flares of naturally occurring atopic dermatitis following exposure to atopens. In addition, it may account for other reactions said to be primarily allergic. Thus, many of the food allergies of the hands may represent only a flare of a pre-existing dermatitis when food is given. Certainly, the incidence of hand eruptions is high, and it is conceivable that a person with a mild dermatitis of the hands may have a flare accounted for by the mechanisms under discussion. The findings also are consistent with the reported instances of the success of desensitization in either atopic dermatitis or other eruptions such as the seasonal hand eczemas reported by Jillson, *et al.*[12,13] Even if these lesions are not primarily caused by the protein allergens, desensitization may remove the secondary factors, making therapy easier and more successful.

Many years ago Menkin[14] showed that blood-borne foreign proteins are selectively concentrated and fixed in areas of inflammation. This probably is the mechanism involved in the present experiments. The foreign protein is the specific atopen, trapped in the dermatitic area. If the characteristic vascular response of atopic allergy is produced by the locally concentrated atopen, the response is masked by the overlying dermatitis. During the course of these experiments histamine was injected and applied locally. It provoked intensification of the dermatitic response and pruritus, but no whealing was observed.

This phenomenon does not explain the cause of atopic dermatitis and must not be interpreted as applying in all cases. The basic cause of atopic dermatitis remains unknown. In only a very small percentage of patients is it possible to obtain a history of exacerbations following the exposure to specific atopens. It is only in these cases that the present phenomenon would be expected to be seen.

Summary

In susceptible individuals the intranasal, subcutaneous, or surface application of specific protein antigens to which the subject reacts on scratch testing may cause a flare-up of an existing area of contact dermatitis produced by a totally different antigen. The flare-up may be accompanied by marked pruritus, and through scratching the dermatitic area may even be transformed into a lichenified plaque of localized neurodermatitis.

The relationship of this reaction to atopic dermatitis and other types of dermatitis are discussed.

80 East Concord Street, Boston 18

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Discussion

Marion B. Sulzberger, M.D., *New York City.*—The experiments of Dr. Strauss and Dr. Kligman re-emphasize some very important points concerning not only atopic dermatitis but also pathogenesis in general.

In briefest summary and with the assumption that they have carried out all necessary controls (even though not all were mentioned in today's presentation), their results indicate that experimental contact dermatitis is aggravated, intensified, and/or prolonged while the specific atopen is circulating in the blood of patients urticarially sensitive to scratch or intradermal tests with that protein allergen.

Concerning the pathogenesis of disease in general, their results show again that two pathogenic factors when operating simultaneously at the same site will often produce more disease than either could when operating alone. In other words, in the induction of the local breakdown which we can discern and which we call local "disease," two potential pathogens acting together are better or, in this case, *worse* than one, and three are probably better or *worse* than two, and so on. This, of course, protects us from being diseased everywhere all the time, for the chances that a number of pathogens will by evil fortune meet at the same site at precisely the same instant become increasingly more remote with the increasing number of the pathogens required to produce the lesion.

The experiments of Strauss and Kligman also explain the Koebner phenomenon of isomorphic reaction to circulating noxious agents in some cases. These experiments are indeed a sort of Koebner phenomenon. They also show how circulating substances can concentrate in areas which happen to be nonspecifically damaged at just the right time and [illegible] just the right degree. This is a well-known phenomenon which many investigators have shown experimentally and clinically to be operating and to be at least in part responsible for localizing and eliciting a host of diseases, including fungous infections, tuberculoderms, as well as atopic dermatitis, hives, sweat retention syndromes, lichen planus, and psoriasis, to name but a few dermatologic examples.

I always have held and still hold the opinion that the local scratching and rubbing provoked by the local atopic itching may be the main factors in the production of the manifest visible clinical lesions, the papules and lichenifications, of atopic dermatitis. I still believe that the scratching, rubbing, and traumas, including the traumas of cold, heat, and sweat retention, may well play decisive roles in localizing and eliciting atopic dermatitis and causing either the circulating atopens or the circulating antibodies or both to leave the blood vessels and to become fixed to the skin tissues, probably around or on the walls of the vessels. I believe that these factors are much more important than the factor of a chance accompanying reaction of contact dermatitis as a localizing factor and that the latter must be, as Dr. Strauss says, a most exceptional happening. For, as found and reported years ago, the allergy of contact-type eczematous dermatitis may occur in persons with atopic dermatitis in lesser incidence than it does in individuals with normal skin. Moreover, the classic sites of atopic dermatitis, the cubital spaces and the popliteal spaces, are very rarely the sites of maximal exposure to eczematogenous contact-type allergens and are not the most common sites of contact dermatitis. In addition, the course of atopic dermatitis differs in practically every essential from the course and chronology of contact dermatitis from occupational and other exposures to contact allergens, either in industry or in the home.

Despite these reservations as to practical implications I feel that Dr. Strauss and coworkers are to be thanked for again calling to our attention the manner in which lesions can be produced, aggravated, or prolonged as a result of two or more potential pathogenic factors, when one alone of these factors would not suffice to bring about the same disease or in the same severity. For example, they have shown that a case of clinical contact dermatitis in an atopic person might persist because of exposures to atopens. They are also to be congratulated on showing again how the elimination of even a single nonspecific and contributory factor may sometimes lead to a cure of a disease which is actually and principally due to another entirely unrelated agent and mechanism. I myself recently have discussed this *multifactorial causation of disease* and the *multifactorial approach to remedying disease* in considerable detail.[a]

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[a] Sulzberger, M. B.: Dermatologica, in press.

Each year, 65,000 persons in the United States become diabetic, "Patterns" says. These were part of the group of potential diabetics who will develop diabetes during their lifetime. One person in four in the population is a carrier, a non-diabetic who can transmit to offspring the tendency to diabetes.

The Effects of Sunlight on the Skin

JOHN H. LAMB, M.D., OKLAHOMA CITY, OKLAHOMA

THE physiologic effects of sunlight on the human dermis have been of extreme interest to physicians and research scientists for the past hundred years. The older dermatologists were cognizant of its etiologic role in the skin manifestations of many dermatoses, such as lupus erythematosus, pellagra, and summer prurigo.[1-3]

The photosensitizing action of various drugs, plants, and volatile oils was soon recognized. The coal tars were used therapeutically in psoriasis with the added use of sunlight or radiation of the same spectrum (Goeckerman treatment).[4] Phytophoto dermatitis was described as perfume oils (berloque dermatitis), the oils of various weeds and plants, the volatile oils (psoralen or furocoumarin derivatives) of limes and other citric acid fruits plus sunlight.[5-8] Veterinarians of South Africa reported reactions in white sheep in New Zealand and South Africa from ingestion of plants, such as Hypericum (beer wort), clover, buckwheat, and Tribulus terrestris, the latter causing severe dermatitis on the heads (*gelde kopf*) and exposed areas of white sheep along with liver damage sometimes resulting in death.[9-11] A circulating blood substance resembling human porphyrins has been isolated and called phylloerythrin; it is thought to be the phytophotodynamic etiologic agent.

Causes of Light-Sensitive Dermatoses

Many classifications of the light-sensitive dermatoses, based on their causes, have been offered, but the most practical one is that suggested by a composite study of papers by Epstein,[12] Blum,[13] Brunsting,[14] and others.

One of the causes is a lack of physiologic protective factors—thinness of the epidermis, dyspigmentation (lack of protection from sunlight by melanin), and altered physiologic response of the skin to sunlight. Thinness of the epidermis is due to an inherited type of thin skin and to low levels of circulating testosterone or progesterone. Clinical manifestations of thin epidermis are: (1) degeneration of collagen and elastic tissue from long exposure to sun, (2) xeroderma pigmentosa, and (3) sun keratoses (sun cancer).

Dyspigmentation, also, is due to low levels of circulating testosterone or progesterone, which cause a derangement of the enzyme system (tyrosine to dopa to melanin system); low levels of the melanin-stimulating hormone (MSH) is another factor. The latter results in improper diffusion of melanin granules in the melanocytes,[15] a situation which perhaps gives rise to photoallergies and polymorphic light eruptions. This improper diffusion causes lightening of the skin in hypopituitary conditions, as evidenced in the inability of eunuchs to suntan and in the association of vitiligo with hyperthyroidism.

Altered physiologic response of the skin to sunlight arises from photoallergies (sensitization to a histamine-like protein substance) causing photourticarias and from avitaminosis, such as a B-complex deficiency (as in alcoholics and pellagrins); polymorphic light-sensitive eruptions are a result.

Other causes of light-sensitive dermatoses are the addition of local sensitizing agents, such as tar, crude oil, weeds, even light-screening ointments (for instance, digalloyl trioleate), on the skin[16] and the addition of circulating photosensitizers,[17] such as porphyrins (in alcoholics and approximately 1 per cent of all light-sensitive cases), sulfas (including Orinase, a new diabetic tablet), the thiazines (phenothiazine in orchard sprays, Thorazine and Sparine, and Diuril, a new diuretic), and the oxypsoralens (8-methoxypsoralen).

Presented at the 152nd Annual Meeting of the Medical Society of the State of New York, New York City, Section on Dermatology and Syphilology, May 14, 1958.

Normal Sunburn Reaction

In order to understand the abnormal reactions of the skin to sunlight, or phototoxicity, a review of the pathologic, physiologic, and chemical steps in the normal sunburn reactions may give a clue to the suspected disturbances in their abnormal reactions in the solar dermatoses. It is well to study the steps in the reaction as outlined by Laurens:[18]

1. Sunburn erythema is provoked by ultraviolet rays between 2,800–3,200 Å.

2. There is a photochemical change in the proteins of epidermal cells (ultraviolet rays of 2,800–3,200 Å. rarely pass on through the epidermis but stop at the malpighian layer in normal individuals).

3. There is an alteration of proteins with injury to epidermal cells.

4. There is elaboration of a histamine-like substance in these cells which has an indirect effect on the blood vessels in the corium, causing vasodilatation and erythema. (This protein may be changed later in the liver to creatine. This may account for the high levels of creatine in acute stages of light eruptions; the urinary creatines may reach as high a level as 300 mg. per twenty-four hours.)

5. Leukotactic properties and other inflammatory substances (proteolytic enzymes?) may be liberated in these photochemical changes in the epithelial cells. If the dosage of sunlight is excessive, there may be formation of vesicles and even a bullous reaction. There is edema in the corium and a migration of leukocytes.

6. As the process continues, the epithelial cells show degeneration, and finally a proliferation of the epithelium results.

7. Melanotic factors also are released in the initial stages. (The greater part of the pigment-producing ultraviolet rays are thought to be produced by the longer ultraviolet rays, 3,200–4,000 Å.) After the erythematous stage subsides, there is activity or diffusion of the melanin granules in the melanocytes in the basal layer of the epidermis, and melanization takes place with suntan.

Studies are now being made concerning step 4, the photoallergic properties of the histamine-like substance elaborated. In step 7 work is being done on the dispersion of melanin granules by various hormones and the influence of the gonadotropic hormone (pituitary-like) from a pregnant mare's serum, since it has had a curing effect on even the worst of the solar dermatoses. The brevity of this paper does not allow further elucidation of these factors, but references to this work are given.

A Working Classification

A simpler clinical working classification has been utilized by us in our everyday practice and is better for this discussion.

RARE LIGHT ERUPTIONS.—(1) Hydroa-aestivale or vacciniform with porphyrinuria, (2) hydroa-aestivale or vacciniform without porphyrinuria, and (3) epidermolysis bullosa-like lesions with porphyrinuria.

SOLAR URTICARIAS.—(1) Reactions to wave lengths of less than 3,700 Å., (2) reactions to wave lengths of 4,000–5,000 Å., and (3) nonconfluent urticarial reactions to infrared radiation of wave lengths between 7,900–14,000 Å.

POLYMORPHIC LIGHT-SENSITIVE ERUPTIONS.—These eruptions[12,19] on a clinical basis have been divided into four groups: (1) plaquelike, (2) papular and prurigenous, (3) eczematous (as in contact dermatitis or neurodermatitis), and (4) erythematous (erythema solare perstans).

In a current series approximately 75 per cent of patients with solar dermatitis presented plaquelike lesions. Of 62 cases the average age was forty-one years, the ages ranging from thirty to fifty-nine years of age. Ninety per cent of the cases were males.

The most common sites of this eruption are in the areas exposed to sunlight, such as the cheeks, pretragal areas, and sides of the neck below the mastoid region. The lesions range from 2 cm. in diameter to large plaques 4 cm. to 5 cm. in diameter. They present a pinkish color in contrast to the tanned, hyperpigmented, surrounding skin and are, in many instances, excoriated, lichenified, and scaly. Telangiectases are evident over the surface along with induration, which extends to a depth of 1 to 2 mm. Initially, some patients had a papular eruption which became lichenified and leathery. Pruritis, which lasts for variable periods of time, might occasionally be the first symptom, and scratching thus could cause the induration. Many patients showed concurrent, prurigo-like vesicular lesions. Thus, there was a mixture many times of all four types in one case. Clinical differentiation from discoid lupus erythematosus is not at all difficult in most cases.

Plaquelike Eruption	*Discoid Lupus Erythematosus*
1. Pinkish color with telangiectasis.	1. Purple-red color at peripherae with center white and scaly.
2. Slight plugging and dilatation of follicles.	2. More pronounced plugging and dilatation of follicles.
3. Heals with slight or no atrophy.	3. Heals with marked atrophy.
4. Clear with cooler weather.	4. Slight seasonal variation.
5. Posterior cheek areas and mastoid.	5. Butterfly areas of the nose and cheeks and upper lips are favorite sites.
6. Pruritus with excoriations.	6. Burning.
7. Predilection for left side of face and neck (exposure in motor vehicles).	

The problem of photosensitization to light has been a real one to us in Oklahoma and Texas. Drs. Shelmire, Sr. and Shelmire, Jr., of Dallas, Texas, and Dr. Lain of Oklahoma City have been students of this disease for years. Twenty years ago in their practices the diagnosis of the plaquelike type of light eruptions was lupus erythematosus with a question mark. Gold sodium thiosulfate was used intravenously. Some cases cleared up in summer (probably acquiring immunity), and others persisted until cool weather. Finally, after many conferences with Shelmire, we began to recognize that these diseases were not related in any way to true lupus erythematosus but were distinct entities. We have never yet seen a case of properly diagnosed plaquelike light eruption become discoid lupus erythematosus or vice versa.

Shelmire had a decided influence in establishing some of the ideas of light-sensitivity being a photoallergy. This allergen, produced undoubtedly by various wave lengths of light in the epidermis, as he has shown, is capable in many cases of producing an immunity in certain patients as the summer continues. This is especially noticeable in the urticarial and erythematous types of eruption. These people suffer a severe outbreak in the early spring but even without any treatment eventually develop an immune reaction to light.

In reviewing our cases we feel that most of them are triggered into a light eruption by heat. There apparently is a dilation of the blood vessels of the skin, which causes the polymorphic light-sensitive reaction to evolve. Many patients have reported that winter clearing means only cold weather. In December, 1957, four weeks of balmy weather in 75 F. temperatures in our part of the country caused a recrudescence of their summer prurigo, urticarial flares, and plaquelike lesions.

The second type, the papular and prurigenous polymorphic light-sensitive eruption, was seen in about 15 per cent of the patients. Some of the patients have had prurigo aestivalis since late childhood. The lesions ranged from small vesicles to prurigo-like lesions, accounting for the various names, such as summer prurigo, prurigo simplex, and so forth.

The third type of the polymorphic light eruption is the contact and eczematous type and is much more rare, occurring in only 7 per cent of cases. It is probably the most misdiagnosed entity. Two types of this manifestation of solar dermatitis are encountered, diffuse and localized.

In both types the skin is erythematous, thickened, and excoriated but not in a plaquelike arrangement. The lesions tend to be large and cover the entire surface of involvement. The eruption is so much like contact dermatitis and neurodermatitis that the diagnosis has been missed by reputable dermatologists over many succeeding summers. Several of our patients have been carefully examined for all of the contact allergies by both dermatologists and allergists.

The patient's history is a valuable clue in these cases. After prolonged exposure to the sun, the affected skin becomes edematous and covered with fine vesicles, with oozing and crusting following. Patch test results are usually negative to all known contactants, including weed oleoresins, dyes, and occupational contactants.

In the diffuse type all exposed areas are involved, the face, neck, dorsa of the hands, and even the dorsal surface of the forearms if the sleeves are rolled to the elbows.

In the localized type only certain exposed areas are involved, usually the cheeks and chin. The sides of the neck may or may not be involved.

A fourth type of light sensitivity was seen in 3 per cent of the patients. They showed erythema multiform-like lesions or erythema perstans solare on the face and neck. These manifestations were persistent and were not transient. They usually were from 0.5 to 5 cm. in diameter and were situated over the zygomatic area of the cheek.

Differentiation from the evanescent multiform type of lupus erythematosus is difficult, but there is a definite seasonal remission which is not observed in the multiform type of lupus erythematosus. The lesions are pink and not violaceous. The patient's general condition is good in the polymorphic light eruptions, but in those who have the evanescent urticarial eruption of lupus erythematosus there is evidence of a subacute infection, the symptoms of which are joint pains, weakness, low-grade fever, and general debilitation. The white and red cell counts, the albumin-globulin ratio, and the sedimentation rate are within normal range in this form of solar dermatitis, whereas in this type of eruption in lupus erythematosus there usually is a leukopenia, secondary anemia with a high sedimentation rate, and reversal of the albumin-globulin ratio. The sex incidence is of great importance, since a majority of those with erythematous type solar dermatitis are males and those with subacute lupus erythematosus are females.

The lupus erythematosus cell (Hargraves' cell) and the lupus erythematosus precipitin tests are positive early in some of these subacute lupus erythematosus cases and must be routine procedure in the laboratory studies of both the erythema multiform type of subacute lupus erythematosus and the erythema multiform type of solar dermatitis.

Light Testing

Valuable data on the light eruptions has been obtained by testing in the three ranges in the light spectrum outlined below. In our work the tests to sunburn spectrum violet light and infrared have been inconclusive. Why? The common plaquelike and prurigo polymorphic light-sensitive eruption is produced by constant repeated doses in the light-exposed areas and not by one test. In the diseased areas there are local changes:

1. The areas involved are depigmented due to local defects in pigment maturation and dyspigmentation.
2. Basophilic degeneration in connective tissue with homogenization occurs, a process in which the elastic fibers are curled and partially broken up. This change is caused by repeated injury due to sunlight and cannot be reproduced by one or two tests on a noninvolved test site.

These degenerative changes occur in a greater degree in those with the disease than is seen in normal individuals of the same age, location, and outdoor occupation. We tested 25 cases of polymorphic light eruptions, 22 males and three females. Crude light testing apparatus consists of the following sources of energy to produce a small range of light in the light spectrum of from 2,600–7,000 Å. units:

Light Range	*Source*
1. Ultraviolet (2,600–4,000 Å.)	1. Cold quartz

2. Longer ultraviolet (3,200–4,000 Å., 3,650–4,000 Å.)	2. Cold quartz with window glass, cold quartz with Corning filter number 7380.
3. Visible rays (4,000–7,000 Å.)	3. Two 5-watt fluorescent lights; 500-watt incandescent projection-type light.

With these two sources of blue light, this range can be narrowed by the addition of:

1. Corning filter number 3850 to 4,050–7,000 Å.
2. Corning filter number 3389 to 5,110–7,000 Å.
3. Corning filter number 3387 to 5,410–7,000 Å.
4. Corning filter number 3384 to 5,880–7,000 Å.

Our results with light testing, still inconclusive, were:

1. The plaquelike eruption was never reproduced in the test site.
2. Pathologic sunburn reaction to cold quartz in the test site light without filters was the only positive result found in 20 per cent of the cases.
3. In four cases of the erythematosus, urticarial form of light sensitivity (three females and one male) the exciting wave length was proved to be the violet light from fluorescent lighting. The history and clinical course gave us a positive clue to the causative wave lengths. Light tests in two cases were positive to the visible blue light range 4,000–6,000 Å. Passive transfer in one case was negative. Removal of lights prevented recurrences.
4. In two cases the tests caused severe flare of the previously involved parts. This possibility of causing a severe exacerbation of the eruptions by testing is remote but in our experience seems more probable in the contact eczematous-type cases. Two cases of contact-type light eruption of many years' duration were placed in hospital confinement for six to eight weeks because of exposure to cold quartz ultraviolet light. One case resulted from application of cold quartz ultraviolet light to a small 4-cm. circle on the back, with acute flare of the dermatitis on the face, arms, and neck in the sites of a previous light eczema resulting. This case has already been reported. The second case was diagnosed as an industrial dermatitis, and small doses of ultraviolet light were given to the affected areas as a tonic therapy while we attempted to study patch tests regarding contactants, liver function tests, and other laboratory tests. In twenty-four hours the patient suffered a severe generalized exfoliative erythroderma with edema of the face and was hospitalized for two months. After this reaction a diagnosis was, of course, obvious—a form of eczematous light-sensitive eruption. Therapy has been successful.

Since the majority of our patients were outdoor workers, many of them have been tested to both fresh leaves and oleoresins of Texas and Oklahoma weeds.[19] All tests gave negative results. The same individuals again were tested to the same oleoresins plus both the cold quartz ultraviolet light, and another group to the weed oils plus noonday sunlight. These tests for phytophotosensitivity gave negative results. These tests are again being repeated for the various spectra of light, but the results are not completed.

The porphyrins and their relationship to polymorphic light eruptions were also studied. None of our patients with light-sensitive eruptions who were treated showed any uroporphyrins, except for one female patient who had an epidermolysis bullosa type of eruption on the dorsa of her fingers, which was considered a rare type of polymorphic light eruption. She had a positive uroporphyrin and porphobilinogen. Thus, at least with our present knowledge of the chemistry of porphyrins and the present state of adequacy of the chemical tests in both urine and blood for them, we have concluded that porphyrins have little to do with the etiology of polymorphic light-sensitive eruptions.

Epstein,[12] Kesten,[20,21] and Cahn, *et al.*[22] have made detailed studies in light testing in all forms of light sensitivity, and Epstein and Cahn have been able to reproduce the papular and prurigenous lesions in their test sites.

Treatment

Photoallergy and self-desensitization to the phototoxin or the histamine light substance is an established fact in dealing with the sunlight sensitive person. Many patients suffer from a dermatitis from the sun in the early spring but by midsummer build up a tolerance to the sun's rays. After several years of winter remissions of their photosensitivity they develop a persistent eruption which lasts through the winter. Even minute amounts of sunlight cause a continuance of the dermatitis. A definite loss of resistance to the phototoxins seems apparent.

The light-screening preparations are well-known and are very helpful in these cases, for they filter out the sunburn fraction of light. They are:

1. Para-aminobenzoic acid (PABA) in ointment or liquid preparations.
2. Methyl anthranilate in ointment and lipstick (A-Fil).
3. Digalloyl trioleate in ointment base (Neo-A-Fil). (Sams,[16] however, points out that this is a photosensitizing agent.)
4. Physical agents, such as titanium dioxide, bentonite powders, and zinc oxide mechanically screen sun ray penetration.

The ointments are unpopular with feminine sun bathers. They prefer foundation lotions (Almay's) and lotions with PABA (Skol). However, these wash off in swimming and cease to be a protectant. Many use heavy applications of olive oil and red petrolatum.

The antihistamines are of value in solar urticaria, and some authors feel that they act as a filter to sunburn rays.

Hormonal therapy has been used previously by other dermatologists in the treatment of sunlight eruptions.[23,24] The efficacy of estrogens has been suggested for climacteric hypersensitivity to light in solar urticaria.

In the therapeutic use of hormones in 62 cases of polymorphic light-sensitive eruption the importance of the local effect of increased levels of circulating testosterone has been thought to be of major importance in the treatment of solar dermatitis for the following reasons:

1. It acts as a stimulant in the melanization processes.
2. It promotes vascular effects.
3. It increases sebaceous gland hyperplasia.
4. It causes increased keratinization.
5. It causes increase in collagen fibers and secretion of mucin.

There also is clinical evidence of low levels of circulating male hormones in the male patients:

1. Loss of libido (disinterest in sex).
2. Age of males—forty-five to sixty years.
3. Lack of energy, tiredness.
4. Low sperm count.
5. Chronic nonspecific infection in the ejaculatory genital tract (pus cells in the semen). However, no bacteria were found.

Ten cases showed abnormal liver function tests with an increased dye retention above the normal level of varying degrees in the bromsulphalein test. The cephalin flocculation test showed from 2 plus to 4 plus reactions in several of these same cases. If the liver of these patients is unable to inactivate the circulating steroids properly, this would account for depression of the pituitary gonadotropic hormones and low sperm count. Several alcoholic patients and one with cirrhosis of the liver were extreme examples of the inability of the liver to detoxify the circulating steroids. The effects of strong sunlight on the pituitary gland mediated through the eyes directly to the gland, with an inhibitory effect on the gonad-stimulating hormones and a low androgen production, has been also considered in these cases.

It is known that cyclic changes in spermatogenesis and androgen production may be caused to appear out of season in animals that have a cyclic breeding season (birds and ferrets of both sexes) by means of prolonged exposure to light.

Therapy of Light-Sensitive Eruptions

The use of the antimalarial drugs chloroquine, 250 mg. twice daily, and quinacrine, 100 mg. twice daily, has been satisfactory in mild cases of solar dermatitis, but in the severe cases they are not curative.

Hormonal therapy[25,26] with the chorionic gonadotropic hormone (Gonadogen) 500 international units daily subcutaneously or every other day in male patients if given over a prolonged period of time seems to effect a change in the sensitivity of the skin to light. Stimulation of the gonads to produce more testosterone with its profound effect on melanization and other actions on the skin is the rationale of this program. That this drug also contains melanotropic properties is suspected but has not been proved.

In the older male group 50 mg. testosterone intramuscularly is given weekly. A-Fil (5 per cent anthranilate) cream was given routinely in all cases. In those who showed white blood cells in the seminal ejaculate, chronic infection in the seminal vesicles or in the genital tract was suspected and the antibiotic therapy was added.

In the female, testosterone propionate (Oreton) 25 to 50 mg. weekly intramuscularly, with light-screening ointment and chloroquine 250 mg. twice daily, seemed to be adequate therapy in most cases.

In summary, hormonal therapy seems to be a permanent means of clearing these eruptions, but chloroquine acts only as a "crutch" or temporary improvement in solar dermatoses.

The use of chloroquine in patients with farmer's skin (multiple skin cancers) shows some promise, but more time is needed and many patients must be tested. Treatment with 8-methoxypsoralen (Oxsoralen), a 10-mg. tablet daily, has been reported to aid these patients, causing increased pigmentation and lessening the chance of the occurrence of keratotic and malignant lesions. This series of patients is too small yet on which to report, but encouragement as to the efficacy of the drug has been reported.

Conclusion

1. Most light-sensitive cases can be differentiated from lupus erythematosus clinically.

2. The therapeutic approach in the severe cases is made with hormonal therapy. The antimalarials are a useful adjunct and valuable in milder cases.

117 North Broadway

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Chlorothiazide in Edema of Pregnancy

ROBERT LANDESMAN, M.D., RONALD N. OLLSTEIN, M.D., AND
KEITH J. QUINTON, B.A., NEW YORK CITY

(*From the Department of Obstetrics and Gynecology, New York Hospital-Cornell University Medical College*)

CLINICALLY detectable edema may comprise one component of an otherwise normal pregnancy. However, when edema involves the face and/or hands, especially in the morning, and is of sufficient degree to be evident in a weight gain of 5 pounds in one week, edema alone may justify the diagnosis of toxemia. Diuretic therapy in edematous states in pregnancy has its rationale in the relief of fluid and electrolyte retention, in light of the apparent role of this factor in the pathogenesis of toxemia. In 1930 Harding and Van Wyck[1] observed that the intravenous administration of a 10 per cent sodium chloride solution to two toxemic patients resulted in a rise in blood pressure and an increase in albuminuria in both, and the typical convulsions of eclampsia soon followed in one. A normal patient and one whose diagnosis was doubtful were also treated with intravenous saline in this same series. Neither showed any effects. The authors concluded that a derangement of salt and especially of water metabolism had aggravated the toxemic process. It is now generally agreed that a derangement of this sort is of major importance.

The search for the ideal diuretic agent has been responsible for the early enthusiasm about chlorothiazide,* a new oral preparation. The disadvantages of the diuretics in current use have prompted this search. The shortcomings of acetazolamide† include a rapidly developing tolerance which causes a marked reduction in diuresis in three or four days and the production of a hyperchloremic acidosis.[2] Untoward reactions to the mercurials include electrolyte imbalances, allergic responses, and toxic reactions, such as nausea, vomiting, chills, and fever. The intramuscular route of administration is undesirable, and, in addition, resistance to the diuretic action of the mercurials may occur. Beyer[3] has noted that chlorothiazide inhibits renal tubular reabsorption, therefore promoting the excretion primarily of sodium, chloride, and water and to a much lesser extent potassium and bicarbonate without effecting any real change in glomerular filtration rate. This observation has been repeatedly confirmed. Chlorothiazide appears to have two actions. It is a potent carbonic anhydrase inhibitor, and it may also act directly on the renal tubules. Edematous states concomitant with congestive heart failure, cor pulmonale, cirrhosis, and nephrosis have responded with fluid mobilization and excretion when treated with chlorothiazide, 1 to 2 Gm. per day in divided doses.[4]

Finnerty, *et al.*[5] reported 144 cases of toxemia of pregnancy, of whom 80 manifested only variable grades of edema. The average weight loss in patients treated with chlorothiazide was 3 to 4 pounds. He noted the absence of toxicity and assumed the drug to be the ideal agent to prevent and treat toxemia. Side-effects reported in other chlorothiazide series have been minimal with rare mild nausea, transient skin rash, and no hematologic or liver toxicity demonstrable. However, in patients with refractory edema on a rigid low salt regime hypokalemia has

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* Chlorothiazide (Diuril) was obtained from Merck Sharp & Dohme, Division of Merck & Co., Inc., Philadelphia, Pa.

† Acetazolamide (Diamox) was obtained from Lederle Laboratories Division, American Cyanamid Company, Pearl River, N.Y.

TABLE I.—Edematous States in Pregnancy

Classification	Number of Cases
Normal with moderate edema	40
Acute toxemia (pre-eclampsia)	17
Hypertensive disease	
Without superimposition	27
With superimposition	16

occurred. When administered simultaneously with other diuretics, chlorothiazide enhanced the response to these agents, including acetazolamide and mercurials. Chlorothiazide has exhibited antihypertensive properties when administered alone and in combination with other hypotensives. In the latter instance the effect of other hypotensive drugs has been potentiated and the dosage requirement reduced, resulting in a diminished incidence of side-effects.[6]

Present Study

Chlorothiazide was administered in the toxemia clinic of the New York Lying-In-Hospital in an effort to determine the ability of the drug to control the edematous states in pregnancy. An analysis of this drug's effect on maternal weight and blood pressure, fetal loss, and incidence of small babies will be detailed.

One hundred patients were treated with oral chlorothiazide. These patients were classified in four groups (Table I) in accordance with criteria prescribed by the American Committee on Maternal Welfare in 1952. Superimposition of acute toxemia on a chronic hypertensive syndrome may be considered to have occurred in the presence of an increase in systolic pressure of 30 mm. mercury or more and/or an elevation of diastolic pressure of 15 mm. mercury or more and/or the development of a significant degree of albuminuria.

Mode of Administration

Oral chlorothiazide was administered in doses ranging from 0.5 to 1.5 Gm. per day, the usual amount being 1 Gm. per day in divided doses of 0.5 Gm. The initial daily dose was prescribed to be taken on arising and the second tablet in mid-afternoon so as to afford the patient an uninterrupted sleep, since the diuresis was then usually completed before retiring. The usual course of therapy was seven days. However some patients received daily chlorothiazide for several months. In rare instances administration of 1 Gm. per day produced nausea sufficient to require reduction in dosage to 0.5 Gm. per day with subsequent disappearance of symptoms. When diuresis did not follow chlorothiazide administration at 1-Gm.-per-day levels, a dosage increment to 1.5 Gm. per day was given. Several patients received oral reserpine,* 1 mg. per day, together with chlorothiazide. Acetazolamide was prescribed, 250 mg. per day for one week, in four cases.

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* Reserpine (Serpasil) was obtained from Ciba Pharmaceutical Products, Inc., Summit, N. J.

TABLE II.—Weight Changes in Edematous, Pregnant Patients After Chlorothiazide Therapy

Classification	Number of Cases	Response (Per Cent)	Average Weight Loss After First Week of Therapy (Pounds)	Maximum Weight Loss During First Week of Therapy (Pounds)
Normal	40	88	4.3	12.9
Pre-eclampsia	17	100	5.9	14.7
Hypertension				
Without superimposition	27	81	5.1	18
With superimposition	16	96	3.6	9

TABLE III.—BLOOD PRESSURE CHANGES IN EDEMATOUS, PREGNANT PATIENTS AFTER CHLOROTHIAZIDE THERAPY

Classification	Number of Cases	Percentage with Initial Decrease	Over-All Percentage Change in Mean Arterial Blood Pressure
Normal	40	35	+0.8
Pre-eclampsia	17	35	+0.3
Hypertension			
Without superimposition	27	74	−3.2
With superimposition	16	47	−0.9

Results

WEIGHT.—Patients were weighed at each clinic visit and daily when hospitalized. The results of chlorothiazide administered in producing weight change are summarized in Table II.

All groups demonstrated an initial weight reduction to chlorothiazide administration, most marked during the first week of therapy. In the presence of clinically detectable edema, the agent was universally effective. Little weight loss was noted in those with only slight edema. The response was approximately proportional to the amount of edema initially present. Severe salt restriction antedating initiation of chlorothiazide therapy was associated with the least fluid mobilization over a prolonged course of therapy. This is substantiated by the low average weight loss over several months in the hypertensive group, which had less salt and water retention because of frequent clinic visits and strict dietary regulation. Some patients demonstrated an initial weight loss, but on prolonged therapy the diuretic response lessened, and a gain in weight occurred. In most cases diuresis diminished on sustained therapy when an apparent low weight level was reached. Further increase in dosage had no effect in promoting diuresis. Diuresis was most marked approximately two hours after ingestion of the drug and appeared to continue for periods not exceeding eight hours. In several cases of ambulatory patients abrupt cessation of chlorothiazide after an adequate diuretic response was marked by a prompt reaccumulation of edema fluid, even with continuation of a low salt diet. In no instance, however, did patients accumulate massive edema fluid while receiving the drug.

BLOOD PRESSURE.—Blood pressure was recorded twice during each clinic visit and twice daily in hospitalized patients. Table III presents the changes in blood pressure noted after chlorothiazide administration. The mean arterial pressure, whereby the systolic and diastolic pressures in mm. of mercury are added together and divided by two, was considered to be a more accurate figure for evaluation.

It is clear that the uncomplicated chronic hypertensive patients comprised the only group to exhibit a significant blood pressure fall in response to this drug. Seventeen hypertensive patients simultaneously received oral reserpine, 1 mg. per day. The combination of the two drugs appeared to enhance the hypotensive effect. With the onset of an acute process the antihypertensive effect of chlorothiazide was negligible when at all present.

FETAL RESULTS.—Our primary considerations are fetal salvage and fetal weight. Small babies were defined as those showing a negative deviation of three weeks from the standard intra-uterine fetal weight levels as prepared by Streeter.[7] Chlorothiazide displays no apparent ability to reduce either fetal loss or the incidence of small babies (Table IV). Rates for small babies and perinatal deaths were calculated from an admittedly small group of 100 patients. Nonetheless, the trend seems to follow the rates established on larger groups of patients who had received no chlorothiazide.[8] Critical appraisal of all cases also did not indicate that this diuretic played any role in the fetal loss.

Several representative cases are detailed to demonstrate the marked diuresis and the varying effect on the outcome of pregnancy.

TABLE IV.—FETAL RESULTS IN EDEMATOUS, PREGNANT PATIENTS AFTER CHLOROTHIAZIDE THERAPY

Classification	Number of Patients	Number of Small Babies	Perinatal Deaths
Normal	40	0	0
Pre-eclampsia	17	4	2
Hypertension			
Without superimposition	27	4	1
With superimposition	16	3	1

Case Reports

CASE 1.—This twenty-six-year-old para 2 gravida 2 patient showed a marked increase in weight in the thirty-fifth week of pregnancy. She was treated with chlorothiazide, 1 Gm. per day for eight days, a weight loss of 15 pounds resulting, 7 pounds on an ambulatory basis, the remainder while on bed rest and a 3-Gm. salt diet. She demonstrated 1 plus proteinuria and a borderline blood pressure of 140/90. The patient went into spontaneous labor in the thirty-seventh week of pregnancy and was delivered of normal twins weighing 1,960 and 2,300 Gm.

Comment.—This patient had a mild pre-eclampsia with marked weight gain and clinically detectable edema in the presence of twins. There was a dramatic weight loss associated with the use of chlorothiazide, accentuated by bed rest and a low salt regime.

CASE 2.—This twenty-seven year-old para 0 gravida 1 patient followed a normal antepartum pattern until the twenty-sixth week of pregnancy when she experienced a 15-pound weight gain. She was given chlorothiazide, 1 Gm. per day for fourteen days, during which period she lost 14 pounds. Her blood pressure remained normal, but urinalysis demonstrated a trace of protein. In the thirty-seventh week no fetal heart was heard, and no fetal movements were noted. Several days later she was delivered a 1,600-Gm., macerated male infant.

Comment.—Chlorothiazide proved an effective diuretic in this instance of pre-eclampsia, restoring a previously normal weight situation, but with no apparent change in the toxemic process, which resulted in a deadborn infant.

CASE 3.—This thirty-seven year-old para 0 gravida 1 patient was examined at two-to-three-week intervals throughout her pregnancy, the only demonstrable abnormality being a blood pressure of 145/95. In the thirty-seventh week of pregnancy the patient was found to be moderately edematous, and chlorothiazide therapy, 1 Gm. per day, was begun, resulting in a rapid weight loss of 8 pounds. The drug was continued at this dosage, but in the thirty-ninth week 4 plus proteinuria and a blood pressure of 160/110 were noted. Uneventful induction of labor with oxytocin was performed, culminating in the birth of a 2,240 Gm. infant. This infant was markedly underweight for the duration of the pregnancy but was otherwise normal.

Comment.—This case represents that of a patient with mild chronic hypertension and associated fluid retention. Although the patient's weight responded to chlorothiazide therapy, she demonstrated increasing blood pressure and a 4 plus proteinuria in the thirty-ninth week. Induction was successful. The chlorothiazide, effective as a diuretic, did not in any way reverse the toxemic process.

Comment

Toxemia of pregnancy frequently is associated with fluid retention. Often, clinically detectable edema and weight gain are the initial stigmata of the process. Early reversal of this excess fluid retention was postulated to be a preventive and therapeutic measure. A trial of chlorothiazide was a natural outgrowth of this concept. Chlorothiazide is at present the most effective oral diuretic in pregnancy. As dramatic as its diuretic result has been, the drug in no way altered the fetal loss or incidence of small babies associated with toxemic pregnancies.

As an antihypertensive agent chlorothiazide appears far less valuable, but, nevertheless, in uncomplicated chronic hypertensive disease in pregnancy it has been capable of producing moderate blood pressure reduction and has enhanced the hypotensive response to simultaneously administered oral reserpine. Reserpine alone has been shown to be effective in reducing the blood pressure, but has no effect on improving fetal salvage or reducing the incidence of small babies.[9]

Electrolytes, including sodium, potassium, chloride, and total carbon dioxide, were studied before and after chlorothiazide administration in six patients. In no instance were any significant changes noted. Blood urea nitrogen was similarly unaffected by this drug, while an asymptomatic elevation in uric acid was observed. No clinical evidence of a potassium deficiency was noted in any patient. Side-effects noted with the drug included a transient skin rash in two patients, lassitude in two patients, and nausea. Most of the patients in this series did not require hospitalization for toxemia. When evidences of an acute process became obvious, the patients were not admitted because of edema but rather for albuminuria and blood pressure elevation. Seven patients required hospitalization for an average period of five days. No significant additional weight loss was noted after bed rest.

Drugs can reverse edema and blood pressure elevation, but in so doing they may obscure our guides to advancement of disease, and perhaps our dictates to more vigorous therapy or interruption of pregnancy. The clinical manifestations of edema and elevated blood pressure may be completely eliminated. In certain instances reduced rate of growth of the fetus and the presence of proteinuria are the only evidences of further advancement of the toxemic process. In this setting, proteinuria becomes ominous, for it is frequently the one sign that defies clearance and may indicate far-advanced toxemic disease.

Conclusions

1. Chlorothiazide is a safe, potent oral diuretic.
2. Optimum dosage schedule is 0.5 Gm. twice daily.
3. On a balanced low salt diet, chlorothiazide may be administered for periods up to four months without significant toxicity to mother or fetus resulting.
4. An antihypertensive effect may be observed in uncomplicated chronic hypertensive disease in pregnancy.
5. Chlorothiazide in no way reverses the toxemic process, as evidenced by continued high fetal loss and incidence of small babies.

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A dwarf standing on the shoulders of a giant may see farther than a giant himself.—Robert Burton

The Role of a Psychiatric Department in a General Hospital

MILTON ROSENBAUM, M.D., NEW YORK CITY

(From the Department of Psychiatry, Albert Einstein College of Medicine, and the Psychiatric Service of the Bronx Municipal Hospital Center)

In recent years there has been a pronounced trend to establish psychiatric units within general hospitals, both public and private. Thus, in 1939 only 137 general hospitals and six Veterans Administration hospitals throughout the country had inpatient psychiatric facilities, while at the end of 1954, 614 general hospitals admitted psychiatric patients. However, only about 55 per cent of these hospitals had separate departments of psychiatry with separate facilities for psychiatric patients.[1] At the present time, whenever a community considers building a new hospital or enlarging a hospital, a great deal of thought is given to including a psychiatric unit, and by and large it is now generally accepted that about 10 per cent of the total bed capacity of a general hospital should be given over to psychiatric beds.

This trend resulted primarily from the emergence of psychiatry as a major discipline both within medical schools and medicine as a whole; from the concurrent development of residency training programs in psychiatry, especially in the university teaching hospitals during the past fifteen to twenty years; and from the experiences in World War II which called attention to the tremendous disabilities due to mental and emotional illness and to the various possibilities of relief and cure of psychiatric illness. The resultant increase in the number of psychiatrists available to communities plus the interest and enthusiasm of boards of trustees, community agencies, and hospital administrators for the proposition that psychiatric illnesses can and should be treated in the community within the accepted medical setting of the community hospital were also important factors in this trend. Strange as it may seem, more often than not in private hospitals as well as in some public hospitals, the desire to establish a psychiatric unit is greater among the lay groups concerned with the hospital than with the medical staff.

In medicine as a whole, the stimulation for the return of psychiatry as a major discipline came primarily from two sources. These two sources at times reflect the extremes in attitude toward psychiatry in regard both to the understanding and the treatment of psychiatric disorders, and therefore to a certain extent they reflect the types of psychiatric departments and units established in general hospitals during the past few decades. One source has been the introduction of psychoanalytic concepts and understanding into the field of psychiatry and, indeed, into the fields of medicine and the social sciences as a whole; while the other source has been the introduction of the physical methods of treatment into psychiatry such as insulin, electric shock, and drug therapies. By and large, in those instances in which the psychiatric department is under the direction of psychiatrists who are psychologically or psychoanalytically oriented, psychotherapeutic technics and a psychotherapeutic approach are given high priority but not to the exclusion of the physical methods of treatment. In those instances in which the psychiatric leadership leans heavily toward the so-called or-

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ganic orientation or approach, the emphasis is on the physical therapies, and usually only little attention is given to psychotherapy. Most of the psychiatric units in the university teaching hospitals or in university-affiliated hospitals operate within the framework of the psychologically or psychoanalytically oriented approach.

As the psychiatric training center shifted from the state hospital and the private sanatorium to the general hospital, especially the university teaching hospital, more medical students and more interns and residents were exposed to and became interested in psychiatry and chose to go into this specialty. In addition, such trainees were exposed within the walls of the general hospital to colleagues from other disciplines and at least in some places the psychiatric trainees were considered as doctors and therefore were accepted as such when they settled in communities as practitioners.

To illustrate this, let me cite the experience which I had during the time I was connected with the psychiatric department and the medical school of the Cincinnati General Hospital. In 1939 there were three residents in the psychiatric department, and in 1955 there were 40 residents. In 1939 there were only a handful of psychiatrists practicing in the community and among them only two psychoanalytically trained psychiatrists. At the present time there are many psychiatrists practicing there, and those who have come into the community in the past ten years have either been analytically trained, or exposed to an analytically-oriented teaching program during their training period.

With the introduction of psychiatry into the community, and with the introduction of new insights into the care and treatment of psychiatric patients, it no longer was necessary for a community to send its psychiatric patients away to distant hospitals and sanatoria. As the psychiatrists joined the staffs of general hospitals, they began to demand the same privileges as their colleagues in other fields of medicine, namely, to have a place to hospitalize their psychiatric patients who needed such care. One of the main factors involved was an economic one, since it is well known that for many doctors the hospital provides the main source of income. This has happened not only in larger communities of 500,000 or over, but also in many smaller communities under 100,000, whenever a psychiatrist moves into the community and becomes involved in the general practice of psychiatry. Therefore at this point I believe I can say that in most communities with general hospitals but without psychiatric units, one way to establish a psychiatric unit within the hospital is to attract practicing psychiatrists to the community. Obviously one way to do this is to give them a place to work within the hospital.

Benefits to the Community Resulting from the Establishment of Psychiatric Units Within General Hospitals

1. The general hospital provides a place within the community where patients suffering from a variety of psychiatric disorders can be treated. I wish to emphasize the therapeutic value of treating psychiatric patients within the confines of their community, since contrary to popular opinion there is a distinct therapeutic value in maintaining contact between the patient and his family because feelings of being rejected and abandoned may be increased by sending the patient to a distant hospital or sanatorium, thereby separating and isolating him from his family and community. It is well known that when patients are sent to state hospitals located some distance from their communities there is a tendency for the family to lose contact and withdraw their emotional investment from the patient. Thus, if the patient is able to return home there may no longer be any real home to which to return. That is, he is no longer an integrated member of the family, and this is one of the reasons why some patients become chronic cases in institutions. They sense rejection from their own families and com-

munities and therefore the psychiatric hospital becomes their only home.

2. Standards of care of the mentally ill are improved since psychiatric patients are no longer considered second class citizens owing to the simple fact that they are accepted as sick people in the community hospital and are not looked upon as inferior or inadequate citizens.

3. It helps break down the resistance to and misunderstanding of psychiatric patients within the hospital community itself, that is, by the nurses, physicians, and administrators. It also helps break down the resistance of the community as a whole that supports a hospital, whether it be public or private. As previously mentioned, at times a paradoxic situation exists in which the resistance on the part of the lay members of the community is far less than that of the medical profession in the community.

4. It acts as a stimulus to the medical student, the intern, and the nonpsychiatric resident to become interested in psychiatry as a specialty.

5. The very presence of psychiatric units improves communication between the psychiatrist and the medical staff, and thereby helps introduce psychiatric concepts on the nonpsychiatric services, as well as stimulate and improve the functioning of the psychiatrist as a doctor. The essential psychiatric concepts that should be introduced on the nonpsychiatric services are those which increase the awareness of the importance of the doctor-patient relationship in all specialties and with reference to many issues that are daily encountered in the practice of medicine, ranging from what to tell the patient about his illness to the psychologic aspects of giving drugs and medication. Perhaps just as important is the opportunity for establishing personal contact and communication between the psychiatric staff and the nursing and social work staff on the nonpsychiatric services, since the relationship and attitudes of these personnel to the patient often plays an important role in modifying or influencing the course of the patient's illness.

6. It allows patients with acute psychiatric complications of medical and surgical illnesses to be treated within the hospital either by being transferred to the psychiatric unit or, more important, by being handled on the nonpsychiatric services because of the added support that comes from the psychiatric service.

7. A properly run psychiatric service is usually the most important factor in bringing the hospital into close contact with the community, so that the hospital can really become a social institution integrated in a dynamic manner into the community in which it exists and which it serves. Therefore, the psychiatric unit should be more than just a place where the private practitioner can hospitalize his patients. The psychiatrist, who is psychologically oriented and views mental illness as an expression of disturbance in interpersonal relationships both within the immediate family and the family of the community, must be interested in the total social environment of the patient, which includes the entire community: that is, schools, public and private agencies, courts, and so forth. Thus, a community-oriented psychiatric department helps make for a community-oriented hospital. In this way the hospital not only offers an opportunity for the diagnosis and treatment of the mentally ill, but also becomes the center for the promotion of mental health.

Possible Dangers Which Must Be Guarded Against in the Establishment of Psychiatric Units in a General Hospital

The general hospital, either public or private, is geared to take care of patients with acute illness, or in the acute phase of chronic illness. Thus the time factor of patient stay becomes important in a general hospital. Also, it is well known that it is very expensive to keep a patient in a general hospital whether it be public or private.

These factors, plus many of the misconceptions and misunderstandings which still exist about psychiatric patients, even in advanced communities—namely, that they are all violent, dangerous, incurable, and so forth—stimulate a desire to get the psychiatric patient out of the hospital as fast as possible. The psychiatrist responds to these pressures by feeling that he has to do something in a hurry, and this usually means a quick introduction of the physical methods of treatment such as shock and drugs, with little or no attempt to understand, let alone try to solve, the underlying psychologic problems which made the patient sick in the first place. This is no indictment of the physical therapies but, unfortunately, in too many psychiatric units this becomes the only therapy offered patients.

Another serious problem exists in those public-supported general hospitals with psychiatric units in which the psychiatric service has little or no control over the admission of patients. Because of the great pressure of admitting patients, especially in the larger communites, a psychiatric service may become nothing more than a way station for the patients, many of whom are admitted because of legal requirements rather than medical ones. The psychiatric unit instead of being treatment-oriented becomes more of an acute detention center, and the atmosphere created by overcrowding and rapid turnover of patients has a deteriorating and demoralizing effect on staff as well as on patients. Furthermore, the hospital, instead of being an institution which promotes health and alleviates suffering and pain, can play a negative role in the patient's illness, especially if patients are admitted, seen briefly, and then spend two weeks or so just sitting around the wards waiting for disposition, usually in the form of commitment. Another painful rejection is added to the life of the psychiatric patient who already feels abandoned and rejected, and his self-esteem, already low, drops further.

I wish to emphasize that in the larger cities, such as New York, part of the function of a psychiatric unit within public-supported hospitals is to help the flow of patients from the community into hospitals, usually state hospitals, where they can receive long-term treatment; but if this becomes the only function, then the psychiatric unit loses its medical and psychiatric flavor and it is no longer an effective force for the promotion of mental health in the community, let alone for the treatment and proper care of the mentally ill.

I realize that there are numerous factors responsible for this type of disastrous situation, but certainly the psychiatrists themselves must accept their share of the blame for not raising their voices loud enough in protest against conditions which they well know are medieval and intolerable and represent bad psychiatry and bad medicine.

The Physical Setup of a Psychiatric Unit

Despite the great advances made in the past quarter of a century in our understanding of psychiatric illness, most psychiatric patients in this country find themselves behind locked doors when admitted to a psychiatric service or a psychiatric hospital. The locked door still represents a reflection of ignorance of the behavior of psychiatric patients and also reflects the underlying fear and hostility of the community including its doctors and its psychiatrists toward psychiatric patients. The locked door policy has a deleterious effect on both patients and staff. There is pretty good evidence now that the locked door increases resentment of the patient against the hospital and staff, and many of the symptoms that the patient continues with while in the hospital are due to the restrictions imposed by the staff and the hospital rather than to his underlying illness. Certainly there is little doubt that the open door policy turns the hospital into a helpful and rehabilitative institution, rather than a restrictive and noxious one.

In pointing up and emphasizing the many advantages of the open door policy I wish to emphasize that I am not advocating removal of all restraints including locked doors in dealing with psychiatric patients, but rather that the question must be decided on medical and psychiatric grounds rather than on legal grounds and because of outmoded and irrational tradition and customs. As psychiatrists, we know that certain patients during the course of their illness may need the security and protection of a closed ward, and therefore a good psychiatric unit, especially the larger ones, should have facilities offering maximum security to a patient when such security in the form of physical restriction is indicated on psychiatric grounds. In all fairness to the community at large, including its judiciary, it should be pointed out that converting a locked door unit into an open door unit is no easy matter because of resistance on the part of the professional staff of the unit including both its psychiatrists and nurses, as well as resistance on the part of the hospital administrators especially in public institutions. The fear of the hospital administrator, especially in public institutions, in regard to this is often extreme to the point of being completely irrational at times. To state it succinctly and frankly, keeping psychiatric patients locked up makes life easier for the professional and administrative staffs, while opening doors increases the responsibility of the staff in caring for patients and usually means that more staff is necessary, and this again may not be easy to achieve.

In the 130-bed psychiatric unit of the Bronx Municipal Hospital Center, four of the six psychiatric wards are now open wards, including one which is currently being opened as a day care-night care center. Furthermore, there is no segregation of men and women on any of our wards including the closed ward for the most acutely disturbed patients. Certainly one must expect that occasionally a patient will walk out of an open ward, but obviously he cannot escape since one can only escape from a locked ward. The result of an occasional walkout is almost negligible when compared with the positive therapeutic effect on the psychiatric patients who find themselves on an open ward. It is also of interest to know just why patients walk out, and perhaps the following story will illustrate this. The afternoon of the first day we unlocked the doors of one of our wards, a young woman patient walked out. We quickly contacted her by phone at her home and asked her to come back, which she did on her own that same evening. We then learned that this particular patient had not felt that she was really a part of the group of patients on that particular ward before it was opened, and actually she felt rejected and abandoned. Therefore, the underlying reason for her walking out was to test us out to see whether or not we were really interested in her and wanted her back.

Although there has been some experience resulting from the establishment of day care and/or night care centers in a few psychiatric units within general hospitals, our experience in this area has thus far been too limited to permit of critical evaluation. However, it is our hope that the day care, night care unit in our hospital will represent a further step toward preventing regression in patients by preventing the exclusion of the psychiatric patient from his family, and also by preventing the loss of social skills.

The Psychiatric Outpatient Clinic

Our established concepts of proper psychiatric treatment are undergoing rapid changes. One such change has resulted from the observation that psychiatric hospitalization has a pernicious effect on many patients due to its tendency to further regressive forces already within the patient. In addition to this there is danger of isolating the patient from the family group, which I have already mentioned. Concurrent with these observations has come a mass of relatively undocumented experience on the part of psychiatric practitioners which indicates that many cases which we would previously have hospitalized are best treated on an outpatient basis. Furthermore, this experience leads us to believe that the earlier we see many of these cases, the more effectively we can cope with the patients' difficulties and so avoid hospitalization or more extensive forms of outpatient psychotherapy.

These data have placed a much larger therapeutic burden on the psychiatric outpatient clinic. Not only should the clinic be prepared to offer many types of outpatient care, but also these facilities certainly would have little effectiveness if they were not immediately available to the patient at the time of his acute crisis. Even the better psychiatric clinics in this country offer little more than long-term psychotherapy as a treatment modality. Once an outpatient clinic is opened in a hospital, it does not take long before it is flooded with referrals which it usually cannot handle. As more psychiatrists and social workers are added to the clinic, the patient load usually increases out of proportion to the added personnel. It soon finds the demands for treatment are so great that it is saddled with waiting lists of from six to eighteen months, thereby destroying its effectiveness since it can only see a patient long after the decompensation is deeply incorporated into his personality. In the most acute cases it can do no more than refer the patient on to an inpatient service, even though it is aware that this may not be the best form of care for the patient.

In setting up the outpatient clinic at the Bronx Municipal Hospital Center, we have attempted to create the type of clinic which answers the needs of patients and corrects the deficiencies I have discussed. In order to do this, we have created an emergency service* to which patients can come without appointment and be seen immediately by a psychiatrist. We have done this by taking a few hours from each third year resident's working day which is then devoted entirely to this service. By staggering the hours, we are able to see patients on a twenty-four-hour, seven-day-week basis. Once the resident has seen the patient, he can either refer the patient on to another treatment modality such as long-term psychotherapy, hospitalization, and so forth, or he can continue to treat the patient through brief psychotherapy, up to five sessions, or follow him at longer and varying intervals indefinitely. The decisions are based on the patients' needs because we have retained our flexibility in dealing with these situations by giving the resident time alloted for emergency service alone.[2]

One of the most interesting results of this procedure has been its effect on our waiting list for long-term psychotherapy. Because we can offer patients more than the choice of long-term psychotherapy or hospitalization, we find it necessary to refer fewer patients for long-term psychotherapy. Therefore, although we have seen and treated 1,210 patients on the emergency service in the past six months, only 127 (10 per cent) were referred on to long-term psychotherapy. This means we have virtually no waiting list for long-term psychotherapy, whereas with any other clinic setup it is probable that our waiting list would be near 600 and closed indefinitely.

We do not feel that the other 90 per cent are getting poor psychiatric treatment. On the contrary, they are getting forms of psychiatric help which are appropriate to their problems and they are getting this help at the time they need it most or when the family needs it. As an example of the latter we can cite experience with a few senile patients who were brought to the Emergency Clinic by their families. Instead of admitting the patients to the hospital we suggested to the families that we could arrange commitment to a state hospital through the Emergency Clinic. Therefore, we requested that the families return the patients to the clinic in two weeks for commitment and transfer to a state hospital. Many of these families did not bring the senile patients back to be committed because in the interim they had decided to keep the patients at home instead, and they were able to do this knowing that if acute situations developed in the future, we would be willing to help them.

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* The Emergency Clinic was started by Dr. Israel Zwerling, clinical director of the department, in the summer of 1956. Since July, 1957, the emergency service has been under the direction of Dr. Donald Coleman.

We believe that if these patients had been admitted directly to the inpatient service their clinical conditions would have deteriorated for the simple reason that the new and strange environment of the ward would have created serious stress beyond their adaptive capacities. Also, by being removed from the family for the two-week period awaiting commitment, the family might have had an opportunity to work through a grief reaction and would therefore no longer be emotionally attached to the patient. Thus, the family might be unwilling to accept the patient in the home even though the patient's condition was such that he might have been able to return home.

Our results from emergency psychotherapy have been most gratifying; we are convinced it has prevented hospitalization or more severe decompensation in a great many cases. We are especially successful in keeping a great many ambulatory schizophrenic patients functioning in the community by virtue of our continuing but intermittent contact which can be made more intensive during any period of crisis. The presence of a doctor who knows about their problems and to whom they may turn for immediate help if the going gets rough enables the patient and his family (or the social agency) to tolerate more anxiety and still permits the patient to remain in the community. As for the psychiatrist, the patient's crisis no longer necessitates hospitalization because this is no longer the only form of immediate help available.

Finally we believe this type of clinic experience is important in the training of psychiatric residents. It has mobilized the psychiatric resident to accept his responsibility as a doctor who must learn how to handle certain types of psychiatric patients without falling back on the easy way out, namely to admit them to the hospital or refer them to the clinic to be placed on the waiting list. Certainly this does not detract from or minimize in any way the development of their skills as psychotherapists derived from treating patients in long-term and intensive psychotherapy but rather it increases their functional capacity as psychotherapists and psychiatrists.

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Study of Stomach Cancer Undertaken

A long-term study of stomach cancer has been announced by the New York City Health Department. First stage of the program, which involved 6,000 persons, already has been completed. Remaining studies should take three to five years.

Cooperating in the program are five hospitals, a private medical group, and the department's East Harlem Cancer Prevention-Detection Center.

Previous investigations have found that persons with little or no stomach acids are three to four times more prone to get stomach cancer than those with normal acid levels. The acids aid food digestion.

In the current study, more than 1,000 of the 6,000 persons who have been examined had little or no stomach acids. Investigators will now follow the 1,000 cases to see if and when they develop cancer.

A secondary part of the study will seek possible relationships between gastric cancer and ulcers of the stomach. Pernicious anemia's relation to the cancer will also be investigated.

Directing the study is the Health Department's Bureau of Adult Hygiene, headed by Dr. Abraham Oppenheim. The hospitals involved are Beth El, Beth Israel, Brooklyn Jewish, Mt. Sinai, and Polyclinic Hospitals, and the Pack Medical Group which consists of private physicians who specialize in cancer.—*New York Herald-Tribune, November 24, 1958*

Comparison of Demerol, Nembutal, or Benadryl with Atropine or Scopolamine for Preoperative Medication

GERTIE F. MARX, M.D., AND LOUIS R. ORKIN, M.D., BRONX, NEW YORK

(From the Bronx Municipal Hospital Center and the Albert Einstein College of Medicine, Yeshiva University, New York City)

DURING the past decade dissenting opinions have been voiced as to the best drugs for preoperative medication. The purpose of premedication is threefold; it aims to provide the patient with psychic sedation and retrograde amnesia, to reduce the amount of anesthetic agent needed, and to minimize undesirable side-effects during the course of anesthesia. At the same time, it should depress the body's compensatory efforts as little as possible.

The question of whether analgesic or hypnotic drugs produce better euphoria, quiescence, and amnesia, has not yet been settled. Beecher,[1] among others, favors the use of a hypnotic for patients not suffering from severe pain. Antihistaminic drugs also may be useful, since they possess sedative action in addition to their specific effect against histamine-induced complications.

In order to compare the preoperative effect of the three types of drugs mentioned, a study was undertaken on 800 patients at the Bronx Municipal Hospital Center and Albert Einstein College of Medicine. Demerol (meperidine), an analgesic, Nembutal (pentobarbital), a hypnotic, and Benadryl (diphenhydramine), an antihistaminic, in combination with atropine or scopolamine, were compared to the effects of either belladonna derivative alone.

TABLE I.—SCHEMA OF STUDY OF PATIENTS RECEIVING DRUG AND PLACEBO COMBINED WITH ATROPINE OR SCOPOLAMINE

Number of Patients	Dose of Drug (mg.)	Belladonna Derivative (mg.)
25	50 (1 cc.)	Atropine 0.4
25	50 (1 cc.)	Scopolamine 0.4
50	100 (2 cc.)	Atropine 0.4
50	100 (2 cc.)	Scopolamine 0.4
25	150 (3 cc.)	Atropine 0.4
25	150 (3 cc.)	Scopolamine 0.4

Method

The investigation was designed employing a double-blind technic. The three drugs, each in a concentration of 50 mg. per cc., and a placebo (saline), were coded by a member of the staff who neither administered premedication or anesthesia nor ascertained the effects. The coding was changed weekly. Residents of the department had free choice in selecting any coded vial for their patients. Unselected good risk patients (Risk I, II, and V according to the classification of the American Society of Anesthesiologists)[2] between the ages of fifteen to sixty-five years were included in the study. The medication was administered by intramuscular injection from thirty to ninety minutes before induction of anesthesia. Two hundred patients were studied for each drug and the placebo preparation. They were divided into the groups outlined in Table I. The different groups were

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This study was supported in part by Parke, Davis & Co. The Benadryl was generously supplied by Mr. Frank Schley.

TABLE II.—Sedative Effect Found with Drugs and Placebo Combined with Atropine or Scopolamine

Drug	Sedative Effect with Atropine —Number of Patients— Sleepy	Normal	Apprehensive	Sedative Effect with Scopolamine —Number of Patients— Sleepy	Normal	Apprehensive
Benadryl	43	49	8	66	27	7
Nembutal	33	50	17	61	33	6
Demerol	40	49	11	82	15	3
Placebo	0	78	22	36	47	17
Total	116	226	58	245	122	33
Per Cent of total	14.5	28.3	7.2	30.6	15.3	4.1

studied sequentially. The following data were recorded:

Prior to Induction.—(1) state of sedation, graded as sleepy, normal or apprehensive, (2) size of pupils, (3) pulse rate, (4) respiratory rate.

During Induction.—(1) excitement stage (score 1–4), (2) excessive secretions (score 1–4).

During Recovery.—The extent of retrograde amnesia was ascertained on the first postoperative day. The patients were questioned by their own anesthesiologist as to whether they remembered (1) the injection on the ward (score 4), (2) the trip to the operating room (score 3), (3) the operating room proper (score 2), (4) the induction of anesthesia (score 1).

Results

The extent of sedation obtained with the different combinations tested is shown in Table II, and the data are depicted in Figure 1. The comparison of the two belladonna derivatives used with the placebo indicates that scopolamine resulted in 36 per cent sleepy patients as against none when atropine was given. Combinations of seda-

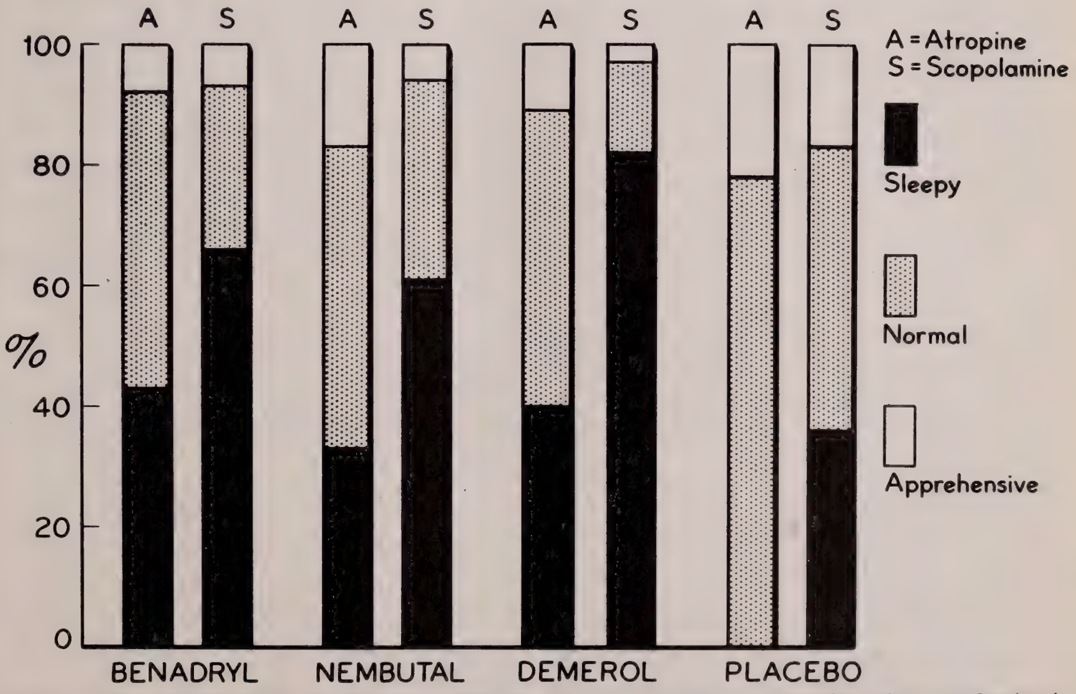

Fig. 1. Data of Table II in graphic form. Note the significant increase in sedation with scopolamine in every instance and the effect of scopolamine alone. Each bar represents 100 patients.

TABLE III.—Effect of Drugs on Degree of Sedation, Pulse Rate, and Respiratory Rate

	ATROPINE					*SCOPOLAMINE*				
	Sedation (Percentage)					Sedation (Percentage)				
Drug	Sleepy	Normal	Apprehensive	Pulse Rate Per Minute	Respiratory Rate Per Minute	Sleepy	Normal	Apprehensive	Pulse Rate Per Minute	Respiratory Rate Per Minute
Benadryl										
50 mg.	24	60	16	88.6 ± 16.5	20.4 ± 1.5	56	40	4	85.1 ± 11.5	20.3 ± 3.0
100 mg.	50	44	6	91.3 ± 12.0	20.2 ± 1.5	68	26	6	91.8 ± 18.0	20.6 ± 3.5
150 mg.	48	48	4	85.6 ± 15.5	19.0 ± 3.0	72	16	12	92.9 ± 19.0	20.5 ± 2.5
Average	43	49	8	89.2 ± 14.0	20.0 ± 1.9	66	27	7	90.4 ± 16.6	20.5 ± 3.1
Nembutal										
50 mg.	20	48	32	91.0 ± 14.0	20.1 ± 2.0	60	36	4	77.7 ± 9.0	19.2 ± 3.0
100 mg.	38	54	14	87.8 ± 10.0	20.0 ± 1.8	56	34	10	84.6 ± 13.0	19.2 ± 2.5
150 mg.	48	44	8	88.5 ± 13.0	20.7 ± 2.5	72	28	0	81.5 ± 11.5	19.5 ± 2.5
Average	33	50	17	88.8 ± 11.8	20.2 ± 2.0	61	33	6	82.1 ± 11.6	19.3 ± 2.6
Demerol										
50 mg.	28	44	28	97.6 ± 16.0	19.2 ± 2.0	76	20	4	89.1 ± 15.5	18.3 ± 3.0
100 mg.	40	58	2	92.6 ± 13.0	19.6 ± 2.0	82	14	4	95.7 ± 13.0	18.5 ± 4.0
150 mg.	52	36	12	94.8 ± 18.0	19.0 ± 3.0	88	12	0	93.2 ± 13.0	18.7 ± 3.5
Average	40	49	11	94.4 ± 15.0	19.4 ± 2.3	72	15	3	93.4 ± 13.6	18.5 ± 3.6
Placebo										
1 cc.	0	64	36	89.0 ± 16.9	20.1 ± 2.3	36	52	12	88.5 ± 18.9	19.5 ± 2.9
2 cc.	0	84	16	93.4 ± 14.0	20.8 ± 1.7	36	42	22	87.4 ± 14.1	20.4 ± 3.6
3 cc.	0	80	20	87.1 ± 13.0	18.9 ± 2.6	36	52	12	86.2 ± 11.0	20.2 ± 3.2
Average	0	78	22	90.7 ± 14.5	20.2 ± 2.1	36	47	17	87.4 ± 14.5	20.1 ± 3.3

tive drugs with scopolamine, as compared to combinations with atropine, shifted the effect toward the well sedated side with all three drugs studied. Table III demonstrates that this was most marked with 50 mg. of the drug and least pronounced with 150 mg. In the latter group. sedation was common with all drugs.

Comparing the three sedative drugs used, it becomes evident that the results varied with different doses and different belladonna combinations. Administered with atropine, the sedative effect of all three drugs was increased with each higher dose with the exception of Benadryl. Here, no improved effect with a dose of 150 mg. was noted over 100 mg. Demerol-atropine and Benadryl-atropine produced similar states of sedation which were superior to those attained with equal doses of Nembutal-atropine. When given with scopolamine, the three drugs showed greater individual variations. The sedative effect of Benadryl was better with 100 mg. than with 50 mg., but again the 150 mg. dose did not improve the result significantly over the 100 mg. dose. The effect of Nembutal showed little difference between 50 mg. and 100 mg. but was markedly heightened at 150 mg. The combination of Demerol with scopolamine produced the most marked sedation in the series. The effect of Demerol-scopolamine was only slightly increased with doses larger than 50 mg. Seventy-six per cent of the patients receiving this amount were sleepy and only 4 per cent apprehensive.

TABLE IV.—Comparison of Sedation in Different Age Groups

Age Group (Years)	Sleepy (Per Cent)	Normal (Per Cent)	Apprehensive (Per Cent)
15–24	51*	35*	14
25–34	44	43	13
35–45	46	43	11
46–55	40	51	9
56–65	34*	56*	10

* P = between 1 per cent and 0.1 per cent.

The relationship of sedative effect to time elapsed between premedication and induction was evaluated. The average time span was found to be 59.7 ± 15.5* minutes for the sleepy group (361 patients), 58.3 ± 15.5 minutes for the normal group (348 patients), and 58.6 ± 13.5 minutes for the apprehensive group (91 patients). Obviously, the time factor, always between thirty and ninety minutes, played no role in the development of the different states of sedation.

The average ages were calculated relative to the state of sedation. These were: 37.96 ± 13 years in the sleepy group, 41.29 ± 13 years in the normal group, and 38.02 ± 12.5 years in the apprehensive group. Thus, the normal group of patients was older than

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* Ranges given throughout paper are all standard deviations.

TABLE V.—SIZE OF PUPILS AT TIME OF INDUCTION OF SEDATION

Sedation	Pupils Constricted (Per Cent of Patients)	Pupils Normal (Per Cent of Patients)	Pupils Dilated (Per Cent of Patients)
Sleepy	16	68	16
Normal	14	76	10
Apprehensive	12	73	15

both the sleepy and the apprehensive. This difference was of statistical significance on the t-test ($P=0.001$). The patients were divided into five age groups and the state of sedation compared in 110 unselected patients of each group receiving the same medication (Table IV). The difference in sedation between the fifteen to twenty-four-year-old group and the fifty-six to sixty-five-year-old group was found to be significant by the Chi-square test ($P<1$ per cent >0.1 per cent). The number of normal patients was higher in the older group, and the number of sleepy patients was greater in the younger group.

The size of the pupil in the operating room showed no correlation to the state of sedation (Table V). Seventy-two per cent of the patients arrived in the operating room with normal sized pupils. Half of these had received atropine and half scopolamine. Fifteen per cent of the patients had constricted pupils. Seventy per cent of these had had atropine and 30 per cent scopolamine. The remaining 13 per cent showed dilated pupils, and here the relationship was reversed—70 per cent of the patients had had scopolamine and 30 per cent atropine.

Pulse and respiratory rates at the time of induction are shown in Table III. The average pulse rate was 89.0 ± 15.1 per minute in the sleepy group, 88.3 ± 14.5* per minute in the normal group, and 94.4 ± 20.0* per minute for the apprehensive group. The average respiratory rate amounted to 19.3 ± 2.6* per minute in the sleepy group, 19.9 ± 2.5* per minute in the normal group, and 21.0 ± 2.8* per minute in the apprehensive group. Thirty-three patients had a respiratory rate of less than 16 per minute (Table VI). Two of the patients had received only atropine and two only scopolamine. Six patients arrived in the operating room with a respiratory rate of 12 per minute or below. Of these, one had received Nembutal 100 mg. with atropine, three had been given Demerol 100 mg. with scopolamine, and two had received Demerol 150 mg. with scopolamine. Five of these patients with respiratory rates below 14 gave the clinical impression of having no distress from ventilatory depression. The remaining patient, a forty-four-year-old woman who came to the operating room with a rate of 10 per minute seventy minutes after an injection of Demerol 150

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* $P < 0.01 > 0.001$ per cent.

TABLE VI.—INCIDENCE OF DEPRESSED RESPIRATORY RATE BELOW 16 PER MINUTE

Drug and Dose (Mg.)	With Atropine			With Scopolamine		
	Average Rate Per Minute	Number of Patients	Per Cent	Average Rate Per Minute	Number of Patients	Per Cent
Benadryl						
50	...	...	...	...	...	...
100	14	2	4	...	...	...
150	14	3	12	14	1	4
Nembutal						
50	...	...	...	14	1	4
100	12	1	2	14	1	2
150	14	1	4	14	1	4
Demerol						
50	15	1	4	14	2	8
100	14	3	6	12	6	12
150	14	3	12	12	3	12
Placebo	14	2	2	14	2	2

TABLE VII.—COMPARISON OF PULSE AND RESPIRATORY RATES

Medication	Number of Patients	Pulse Rate Per Minute	Respiratory Rate Per Minute
Atropine plus Placebo	100	90.7 ± 14.5	20.2 ± 2.1
Scopolamine plus Placebo	100	87.4 ± 14.5	20.1 ± 3.3
Atropine plus Sedative Drug	300	90.8 ± 13.6	19.9 ± 2.1
Scopolamine plus Sedative Drug	300	88.6 ± 14.0	19.4 ± 2.3
Benadryl	200	89.8 ± 15.3	20.2 ± 2.5
Nembutal	200	85.4 ± 11.7	19.8 ± 2.3
Demerol	200	93.9 ± 14.3	19.0 ± 3.0
Placebo	200	89.1 ± 14.5	20.2 ± 2.7

TABLE VIII.—SCORE OF EXCITEMENT DURING INDUCTION*

Drug	Atropine	Scopolamine
Benadryl	18	23
Nembutal	24	14
Demerol	11	9
Placebo	44	11
TOTAL	97	57

* Scoring system used: Grade of severity (1 to 4) was multiplied by the number of patients to evaluate both the severity and frequency of excitement.

TABLE IX.—SCORE OF SECRETIONS DURING INDUCTION*

Drug	Atropine	Scopolamine
Benadryl	9	1
Nembutal	19	6
Demerol	3	2
Placebo	20	2
TOTAL	51	11

* Scoring system: Amounts of secretions (1 to 4) was multiplied by the number of patients to evaluate both the severity and frequency of secretions.

mg. with scopolamine, was given Lorfan 0.5 mg. with a resultant rise in respiratory rate to 16 per minute.

As seen in Table VII, the 200 patients who had received Benadryl had a mean respiratory rate corresponding to that of the patients who had been given only atropine or scopolamine. The 200 patients who had received Nembutal had a slightly lower respiratory rate, whereas the 200 patients who had been given Demerol had a significantly lowered rate ($P<0.001$ per cent).

The average pulse rate was highest in the Demerol group and lowest in the Nembutal group. This difference, although statistically significant ($P<0.001$ per cent between Demerol and Nembutal), is of no clinical importance. The 100 patients who had received atropine alone had an average pulse rate of 90.7 ± 14.5 per minute, compared to a rate of 87.4 ± 14.5 found in patients who had received only scopolamine. The 300 patients who had been given a sedative drug with atropine had a mean pulse rate of 90.8 ± 13.6 per minute. The 300 patients who had been given the drugs with scopolamine had a mean pulse rate of 88.6 ± 14 per minute. These differences were statistically not significant but indicate a trend toward a higher pulse rate following the administration of atropine.

The ease of induction in relationship to the number of patients exhibiting excitement and the severity of this reaction is shown in Table VIII. Ninety-five of the 800 patients (11.9 per cent) exhibited excitement. This occurred roughly in 25 per cent of the patients in whom anesthesia was induced by mask, in 10 per cent of the intravenous inductions, and in an insignificant number during regional anesthesia. The different methods of induction were distributed evenly among the different groups. In a breakdown of the number and extent of excitement stages encountered, the score is practically twice as high with atropine medication alone as with any of the seven other combinations.

Similar information as to secretions is recorded in Table IX. Excessive secretions were observed in only 35 patients (4.25 per cent). Scopolamine prevented excessive secretions better than atropine except in the group receiving Demerol. Here no difference was demonstrable.

The degree of amnesia is shown in Table X. Here again the difference in results between atropine and scopolamine is very evident. The score for production of amnesia with scopolamine is over three

TABLE X.—SCORE OF AMNESIA*

Drug	Atropine	Scopolamine
Benadryl	49	105
Nembutal	35	117
Demerol	46	164
Placebo	13	95
TOTAL	143	481

* Scoring system: 1 = amnesia for induction of anesthesia; 2 = amnesia for operating room; 3 = amnesia for trip to operating room; 4 = amnesia for injection on the ward. This was multiplied by the number of patients for a final score.

times that seen with atropine. The difference between the three sedative drugs per se is not remarkable, although the combination of Demerol with scopolamine doubtless produced the most desirable results.

Comment

This study substantiates the well-known differences between the two belladonna derivatives.[3] Scopolamine, although weaker as a cardiovagal blocking agent, enhances sedation and retrograde amnesia and inhibits secretions to a greater degree than atropine. Scopolamine, therefore, is more desirable as a preoperative medication except when cardiovagal blockade is of importance or when the central nervous system depression might develop into a state of confusion.

The effects of Benadryl on sedation, amnesia, and the extent of excitement during induction were similar to those found with Nembutal. However, excessive secretions occurred less frequently, and the respiratory rate was the same as that seen with atropine and scopolamine premedication alone. Thus, Benadryl can be recommended as a preoperative medicament in cases where antihistaminic and drying action are to be considered.

Demerol, combined with atropine, produced about the same degree of sedation and amnesia as either Benadryl or Nembutal with atropine. Excitement and secretions were encountered less frequently and to a lesser degree than with the latter two drugs. When combined with scopolamine, Demerol led to superior results in every respect. This was evident even with the relatively small dose of 50 mg. The heightening of results was so spectacular that one could suspect a synergistic action between Demerol and scopolamine. Demerol administration was followed by higher pulse rates and lower respiratory rates than found with the other drugs. This is in contrast to findings reported after the intravenous injection of Demerol alone, where a rise in respiratory rate but a decrease in tidal volume was noted.[4] Another previous study reported no change in respiratory rate in patients not adjudged to be "too depressed."[5] Two aspects should be kept in mind. Determination of the respiratory rate without additional data does not give an accurate picture of ventilatory depression. Nevertheless, the dose of 50 mg. of Demerol, which produced very desirable results as preoperative medication, was not followed by any unduly low respiratory rates (below 14 per minute).

The rather surprising finding that the older patient tended to remain "normal" confirms the impression of many physicians who believe that the older person is more serene and presents less psychic problems that the young adult.[6]

Summary

The utility of Benadryl, Nembutal, or Demerol with atropine or scopolamine as preoperative medication was evaluated in regard to sedation, retrograde amnesia, pulse and respiratory rates, excitement, and excessive secretions. The following conclusions can be drawn from this study.

1. Scopolamine is a better drug than atropine in relation to sedation, amnesia, and ease of induction.
2. Benadryl is commendable as medication when antihistaminic action and inhibition of secretions are important. The optimal dose is 100 mg.
3. The effects of Nembutal are proportional to the dose.
4. The combination of Demerol and scopolamine produces the most desirable

results, even in a dose as small as 50 mg.

5. A time span of thirty to ninety minutes between intramuscular administration of medication and induction into anesthesia is advisable.

6. The older patient tends to remain "normal" after receiving preoperative medication, whereas the younger patient is inclined to become either "sleepy" or "apprehensive."

References

1. Beecher, H. K.: J.A.M.A. **157**: 242 (Jan. 15) 1955.
2. Saklad, M.: Anesthesiology **2**: 281 (1941).
3. Orkin, L. R., Bergman, P. S., and Nathanson, M.: *ibid.* **17**: 30 (1956).
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Discussion

Sylvan N. Surks, M.D., *New Hyde Park.*—Drs. Marx and Orkin have, in a sense, understated the case when they said that "during the past decade, dissenting opinions have been voiced as to the best drugs for properative medication." The pendulum of enthusiasm has, of late, been swinging from the analgesics to hypnotics to the tranquilizers in varying combinations with one of the belladonna derivatives. Each has had its group of ardent supporters. In the face of such varying opinion a study such as this is valuable and timely.

A few years ago Beecher,[a] in disputing the time-honored use of narcotics in the preanesthetic regimen, studied some 558 patients who were given the following premedication: (1) morphine 15 mg. and atropine 0.6 mg., (2) pentobarbital 100 mg. and atropine 0.6 mg., and (3) atropine 0.6 mg.

From this study he concluded that "interrogation of the patients did not reveal lessening of unpleasantness of induction." Also, "discomfort, apprehension, or excitement were not less than otherwise when narcotic was used." When hypnotics were used along with atropine, the statistics of the paper presented this morning appear to corroborate these conclusions, but only as regards hypnotics and narcotics used with atropine. There is, however, quite a difference when scopolamine is substituted for atropine. The advantages of scopolamine over atropine have been attested to in the work of Wangeman and Hawk[b] in 1942 and confirmed in this paper. Here the percentage of apprehensive patients, when compared to the percentage in the atropine study, is reduced consistently for scopolamine being used alone and/or in combination with all other drugs in the study.

In a previous publication Orkin[c] showed that there was a "highly significant difference between atropine and scopolamine in the amount of Pentothal necessary to induce unconsciousness. The dose of Pentothal was reduced further by giving Demerol with scopolamine. Demerol with atropine showed a significant reduction from the control," but "there was no significant difference between meperidine with atropine and scopolamine alone. The results indicated that scopolamine in 0.4 to 0.6 mg. doses is almost as hypnotic as 100 mg. of Demerol." He also showed that "scopolamine increased the duration of the retrograde amnesia, and this effect was enhanced by meperidine-scopolamine" combination.

From the above it appears logical to conclude that Demerol-scopolamine produces very desirable results in terms of providing the patient with psychic sedation and retrograde amnesia as well as reducing the amount of anesthetic agent needed and inhibiting secretions most effectively.

Particularly noteworthy is the fact that Demerol in as small a dose as 50 mg. with scopolamine produced excellent results which were but little improved by higher doses. However, it must be recalled that those findings are at variance with those of Rovenstine and Batterman[d] in 1943. They found that for the twenty-to sixty-age group, doses of Demerol less than 100 mg. with scopolamine did not produce a satisfactory preanesthetic state.

One of the concluding statements of the study is that "the combination of Demerol with scopolamine produces the most desirable results even in doses as small as 50 mg." I presume that this is based on figures in Table II wherein, for all doses of Demerol with scopolamine used in the study, the number of sleepy patients was 82 with but three apprehensive—easily, by far, the best result of all the drugs tested. However, if one inspects the figures in Table III, Nembutal at the 150 mg. dose level with scopolamine resulted in 72 per cent sleepy patients and none apprehensive, comparing most favorably with the excellent results of Demerol at the 50 mg. dose level with scopolamine. The latter resulted in 76 per cent sleepy and 4 per cent apprehensive patients.

There are just a few points in this study which I find either lacking or not sufficiently emphasized.

1. Other than pulse rate, there is no data presented regarding the effect of these drugs on the circulatory system. As a minimum, the status of the blood pressure after administration of the drugs would have been worthy of note or comment.

2. The authors themselves point out that determination of respiratory rate without additional data does not give an accurate picture of ventilatory depression. Tidal and minute volume studies would have been most helpful, for it has been shown that these determinations do not necessarily follow changes of the respiratory rate in the same direction.

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[a] Beecher, H. K.: J.A.M.A **157**: 242 (Jan. 15) 1955.

[b] Wangeman, C. P., and Hawk, M. H., Anesthesiology **3**: 24 (1942).

[c] Orkin, L. R., Bergman, P. S., and Nathanson, M.: *ibid.* **17**: 30 (1956).

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Rules for Protecting Children from Sex Perverts

Nearly all sex offenders have one characteristic—timidity—that furnishes the most promising way to protect children from them, according to an American Medical Association publication.

Because the sex criminal is usually timid he will leave a child alone if he is resisted by the child at the outset of an encounter. Seldom will he pursue a girl or boy unless the child goes along with what is suggested.

Thus the child must be taught to resist firmly but politely all invitations from strangers, Beatrice Schapper, New York City, said in the November *Today's Health.*

Children learn without harm other safety rules from their parents, and they can be taught to be cautious with strangers without being told all the horrible things that could happen.

For instance, a parent can combine admonitions such as "Look to the left and then to the right before starting across the street, and don't get in a car with a stranger."

The article listed some rules based on the recommendations of authorities and suggested that families work out their own list, expressing them in the youngster's own words. They are:

—Children should be told to report to parents, teachers, a policeman, storekeeper, or other older persons any stranger who:

1. Asks a child to go anywhere with him—to a car, a private home, a movie, or for a walk. The child should say "no" politely and firmly.
2. Tries to talk with a child or touch him or his clothes in a theater. The child should tell an usher.
3. Tries to join children's games outside. Again, the man should be told "no" firmly but politely.
4. Offers candy or toys or a job with pay.

—Children should write down the license number of any stranger's car if the man invites them into the car. If they have no paper or pencil, the number can be scratched with a stick in the dirt or with a stone on the sidewalk.

—If children see the same man several times near the playground or along the street and he starts talking to them, they should tell him they want him to meet their teacher or parents. If he refuses, he should be reported.

—Children should be told not to play near public toilets, to stay with other children, to avoid playing in alleys or deserted buildings, and to take a pal along to the playground, church, movies, or store.

—Children should not go out alone late at night, not even in their own back yard.

—Any change in plans should be discussed with the parents over the telephone.

—Parents should never send a message via a stranger to a child at school or on a playground.

—If a driver attempts to push or pull a child into his car, the child should resist and run as fast as he can to the nearest store or house.

When a child has been involved in an unsavory incident, parents should never punish, shame, or frighten the child.

Miss Schapper admonishes parents: "Keep calm; don't jump to conclusions. By becoming upset, you may do the child more harm than the actual encounter. To react with disgust, fear, or hysteria may color permanently a child's attitude toward sex. The child may need just to talk out his experience."

Specialists report that most incidents, when properly handled, tend to be forgotten in time.

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Prophylactic and Adjuvant Measures in the Treatment of Carcinoma of the Colon

HARRY W. SOUTHWICK, M.D., AND WARREN H. COLE, M.D., CHICAGO, ILLINOIS

(*From the University of Illinois College of Medicine*)

THE definitive management of cancer of the colon, as of other malignant diseases, is directed not only to elimination of the tumor but also toward securing the maximum extension of useful life for the patient. All clinical and basic cancer research has its ultimate consummation in this objective.

Multiple and often apparently devious channels must be explored by the clinician to attain his goal. No single measure known today, including the various phases of surgery and chemotherapy, can in itself cure all cancers of the colon; utilizing present knowledge and methods we cannot expect five-year survival in many more than one half of our patients. Accordingly, until the day arrives when cancer can be cured by some selective chemical, antibody, or other potent agent, we must continue our search for ancillary methods of therapy, hoping that we can continue to make gradual progress. During the past several years slight improvement has been made in the five-year survival rate following resection of the colon for cancer by increasing the extent of the operation. However, the extent can be increased no further without removing vital structures. X-ray therapy is not effective in carcinoma of the colon, but improvement might be obtained from some other type of radiation such as the betatron; however, this is not a very hopeful possibility. Accordingly, other than decreasing the delay between onset of symptoms and operation, surgeons must find new modalities to improve results in cancer of the colon, if further improvement is to be achieved. These newer methods might include prophylactic and adjuvant measures for the prevention and treatment of known and potential spread of the disease. Some of these mechanisms will be described later.

The responsibility for early diagnosis and adequate treatment is a dual one. In this era of relative medical enlightenment, it is appalling that, as Coller, *et al.*[1] have noted, 40 per cent of the patients who come to operation are incurable. The authors,[2] as well as others,[3,4] have reviewed the findings and symptoms in patients with colon cancer.

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Every physician should be alert to these signals. Likewise, patients should be made more aware of the seriousness of rectal bleeding and changes in bowel habits. Articles in the lay press and instruction by the physician help. Serious evaluation of every patient who presents himself with these complaints serves the dual purpose of ruling out malignant disease (or detecting it), as well as convincing the patient that early examination is important and that his appearance for such examination is not a manifestation of hypochondria.

Present Status of Results

In their review of statistics from the Connecticut Tumor Registry, Ottenheimer and Oughterson[5] noted that cancer of the colon and rectum was the most common tumor (exclusive of skin, encountered in the state of Connecticut, being more common than breast cancer, three times as common as cancer of the cervix, and four times as common as cancer of the lung. However, in other areas, particularly during very recent years, carcinoma of the lung is perhaps the most frequent. If the greatest good is to be achieved for the greatest number of people, effective modifications in management and technic must be developed and employed in the treatment of cancer of the colon.

Five-year survival rates following resection of carcinoma of the colon have improved only slightly during the last fifteen years. Lahey and Sanderson[6] reported 57 per cent five-year survival in 1942. This figure compares favorably with the figures reported recently by our own group as well as by Coller, *et al.*,[1] Colcock,[7] Swinton and Counts,[8] and others. Operability rates in general have improved somewhat, but Stone and McLanahan[9] reported 77 per cent for lesions of the colon also in 1942. Their resectability was not necessarily for cure; a number of these were so-called palliative resections in the presence of liver or other metastases considered unresectable. Details of results are presented elsewhere in this text.

As was brought out earlier, it is probable that no single procedure can be expected to alter greatly the course of colon cancer. However, it seems logical that utilization of a combination of factors may significantly improve the outlook. Gilchrist[10] has stated that we should be able to expect to cure about 90 per cent of the patients without node metastases and about 60 per cent of those with such metastatic manifestations. We feel that these figures can certainly be approached by general acceptance and application of existing principles and technics.

Operative mortality is one feature of the treatment of colon cancer that has improved markedly in the last fifteen years. In 1942, patients dying during the postoperative period averaged 11 per cent or higher. Today, developments in the ancillary sciences, such as anesthesiology, biochemistry, and bacteriology, have resulted in improved knowledge of preoperative and postoperative care. Proper consideration given to malnutrition, blood needs, etc., during these periods has been an important factor in lowering the mortality rate. Welch and Giddings,[3] Coller and his associates,[1] and Grinnell[11] have reported mortality figures varying around 3 per cent—a change largely due to the acceptance and application of the above principles.

Surgical procedures have been improved somewhat during recent years because of more practical application of our knowledge of anatomy and the pathology of the disease. The importance of ligation of the inferior mesenteric artery for left colon lesions in order to obtain adequate removal of the lymph node-bearing tissues as well as its feasibility has been demonstrated by McElwain, Bacon, and Trimpi,[12] and Grinnell and Hiatt,[13] among others. Accordingly, the contributions of many in diverse special fields have made gradual improvements possible. Yet, as Grinnell[11] has stated, the absolute five-year survival today for tumors of this part of the gastrointestinal tract is only a little over 25 per cent. In other words, almost three fourths of the total number of patients who acquire this disease will ultimately succumb to it. Analysis of this majority group of treatment failures is a relatively new undertaking in the evaluation of the surgical treatment of malignant disease. Too often we concern ourselves chiefly with the presence or absence of evidence of metastases to regional lymph nodes in those patients who survive. Instead, a study of our failures and an attempt to assess the reasons therefore, may offer us new approaches to the problem of colon cancer. It would appear that development of prophylactic measures might allow us to achieve a significant break in the status quo of five-year survival which has existed for the past fifteen years.

Local Recurrences

The frequency of local recurrence became a cause for considerable concern to one of us (W.H.C.) a few years ago. The preliminary study took a five-year period between 1944 and 1950 for review.[14] In a group of 55 cases studied, local recurrences developed in nine, or 16 per cent. Six of these recurrences (10.9 per cent of the entire group) were at the suture line, while three were either distal to it or were general throughout the abdomen, (or both). Thus, at least in the six cases, there was the possibility that local implantation was the etiologic factor associated with the recurrent disease. Review of the original pathology protocols failed to reveal evidence of inadequate excision. Subsequently, the study was extended to include 140 cases of colon cancer.[15] One hundred and fourteen cases in the group were suitable for study; in the remaining 26 the patients either died in the postoperative period or had unresectable metastases at the time of the operative procedure. Of the 114 cases, 29 demonstrated metastases during the period of observation (Table I). Seventeen of these developed abdominal recurrence, and in 11 the disease was demonstrated to be at the suture line. Thus in 9.9 per cent of the extended series, local implantation appeared to be a potential factor in the etiology of the recurrent tumor.

TABLE I.—STATUS OF 114 PATIENTS FOLLOWING RESECTION OF COLON FOR CARCINOMA

Condition	Number of Patients
No evidence of recurrence (one month to fourteen years)	85
Recurrence or metastases manifest during period of study	29
Distant metastases	12 (10.5 per cent)
Abdominal cancer	17
Recurrence at suture line	11 (9.9 per cent)

At about the same time, Goligher, Dukes, and Bussey[16] reviewed 162 of their cases in an effort to determine the importance of local implantation as a cause of recurrent disease. Their cases had been treated either by resection and primary anastomosis or by colostomy and inversion of the rectal stump (Hartmann operation). In 16, or 10 per cent, local recurrence was noted. They concluded that about half of these resulted from implantation. However, credit for first calling attention to this possible explanation for the recurrences should go to Morgan and Lloyd-Davies.[17]

Black and Kelly[18] reviewed 116 cases of recurrent tumor following anterior resection for rectosigmoid lesions. They were able to place the exact site of recurrence in only 75 cases, but in 55 of these it was at the site of anastomosis. Lofgren,[19] studying the pathology specimens in this series, came to the conclusion that local implantation at the suture line accounted for at least 75 per cent of the recurrent tumors. Most recently, Lofgren, Waugh, and Dockerty[20] made an extensive study of the Mayo Clinic experience with anterior resection of the rectum and sigmoid for carcinoma. Ninety-eight specimens from the original operations were available for review following the development of local recurrence. Three of these showed inadequate excision of the primary tumor and 12 showed incomplete removal of satellite lymphatic or vascular extensions. In the remaining 76 cases, representing 77 per cent of the specimens reviewed, the recurrence could have developed secondary to local implantation. Arhelger, Jensen, and Wangensteen[21] likewise have emphasized the importance of such an occurrence.

In an effort to lend more support to the theory of implantation of cells from the lumen of the bowel into the suture line, we conducted a study of smears taken from the mucosal surface of the colon in the surgical pathology laboratory immediately after removal of the specimen.[22] Smears were made inside and outside the ligatures which were placed around the lumen of the bowel (several inches above and below the tumor) to prevent migration of cells, desquamated or dislodged from the tumor by operative manipulation, proximally or distally. If implantation is a cause of recurrence at the suture line, we should be able to recover malignant cells from the smear of the mucosal surface or contents of the lumen. Forty-two per cent of the smears taken from the proximal portion of the colon and 65 per cent of those from the distal portion were positive. Table II shows a comparison of smears taken from various parts of the colon. All smears taken outside the ligatures were negative. As will be discussed later, before we obtained these results we were very meticulous about irrigating the bowel near the suture line and excising tissue at the edge of the resection site to prevent possible contamination of the suture line. However, these data suggest that if ligatures are placed around the lumen of the bowel proximal and distal to the tumor, the desquamated cells will be trapped and thereby excluded from the future anastomotic site. Those present outside the ligatures presumably die in the interval between application of the ligature and examination in the surgical pathology room.

It might be argued, of course, that many other factors could be responsible for this apparent implantation recurrence, such as (1) inadequate excision, (2) growth from an adjacent metastasis into the bowel, (3) undetected submucosal extension of the primary tumor, or (4) a new primary growth.

There has been no evidence in our own group that inadequate excision was a factor in the suture line recurrence. However, Dukes and associates,[16, 23, 24] felt that in two of their own 16 cases and three of the seven outside cases which they reviewed, the distal margins were probably inadequate. The vastly preponderant number of patients in the two series, however, had perfectly adequate margins of excision, yet they developed local recurrent disease. In four of Dukes' patients this was particularly fascinating inasmuch as it occurred in the tip of the blind, turned-in rectal stump.

TABLE II.—POSITIVE SMEARS FROM SURGICAL SPECIMENS OF COLON (AFTER LIGATURE)

Location of Tumor	Smears from Proximal End (Per Cent Positive)	Smears from Distal End (Per Cent Positive)
Ascending colon	14	43
Transverse colon	33	50
Descending sigmoid colon	56	64
Rectum	42	76

The possibility that local metastatic disease secondarily involves the lumen of the bowel is unlikely. Adequate local excision today in the hands of a capable and conscientious surgeon coincides with adequate excision of the node-bearing area. While such recurrences can occur (four of 23 cases reviewed by Dukes, *et al.*), it is much less frequent than recurrence primarily involving the mucosa.

Distal lymphatic spread in cancer of the colon is insignificant. Gilchrist and David[25] found lymphatic spread 1 to 5 cm. distal to the primary tumor in only 4.9 per cent of their cases. Goligher, Dukes, and Bussey[16] found lymphatic involvement beyond 2 cm. distal in only 2 per cent. Quer, Dahlin, and Mayo[26] found only 1.5 cm. an apparently adequate margin. Since most surgeons remove 5 to 10 cm. of grossly normal bowel distal to tumor, it is unlikely that distal lymphatic spread is of much significance in the problem of local recurrence.

The possibility of a new primary tumor as the etiologic factor in the local recurrence must be admitted, but there is no good evidence to support this theory. In our own cases, we do not feel that this was a feasible explanation. Goligher, Dukes, and Bussey, however, were of the opinion that in three of their 23 cases of local recurrent disease a new primary tumor was possible. The work of Beal and Cornell[27] is pertinent in this regard. They found an over-all incidence of local recurrence of 15 per cent (21 of 140 cases). However, only two of the 21 local recurrences at the suture line developed proximal to the splenic flexure, even though approximately one third of the operative procedures were for lesions in the right or transverse colon. They noted the much higher incidence of polyps distal to the splenic flexure. Reviewing their specimens, they found papillomas associated with the carcinoma in 22.1 per cent. They concluded, as did Baker and associates,[28] who found a 30 per cent incidence of satellite polyps, that these were a significant factor in the local recurrent disease. However, it is our opinion that the role of polyps as a causation of local recurrence at the suture line is not a major factor, since recurrences or new tumors outside the area of the suture line are much less common than those at the suture line. A classic case reported by Ackerman and Wheat,[29] and the three reported by Fleischner and Berenberg,[30] in which sutures were found at the site of the recurrent tumor, microscopically, are difficult to refute. McGrew and her associates[22] have accurately demonstrated the presence of malignant cells within the lumen of resected specimens far from the primary tumor. To us it seems quite logical that they could be carried by the anastomotic sutures into a fertile field (the wall of the intestine) for growth or be implanted in the cut end of the bowel.

Another factor indicating that local recurrence at the suture line is not caused by inadequate excision is the rarity of recurrence at the colostomy stoma. We have seen only one such instance (in the absence of multiple polyps) in several hundred colostomies, while Dukes's group noted only three in over 2,000 colostomies associated with excision of primary tumors. The rarity of such a recurrence may be associated with one of three factors. Desquamated cells are not likely to be as frequent in the proximal bowel where both gravity and peristalsis are acting to prevent this (Table II). The importance of the number of cells necessary to produce a tumor "take" will be brought out later. Finally, most colostomies are placed without suture through the bowel; the only place where implantation could occur is the severed end, and this is crushed with a clamp, thus making it a very unfavorable medium for cell growth.

In addition to seeding at the suture line, there is a possibility that seeding might take place in the colon or rectum distal to the tumor if an open lesion should be present. Anal fissures present a break in the protective colonic mucosa that could provide a culture medium for tumor implants. Goligher, *et al.*[16] in 1951 reported such a tumor in the anal canal some distance below the primary lesion. Guiss[31] likewise observed an adenocarcinoma in a fistula-in-ano 20 cm. below the lower border of the primary tumor. Implantation in the wound following operation for cancer of the colon is known to all surgeons.

The open wound created by a hemorrhoidectomy might furnish a possible site for an implant if it should be done while a carcinoma is present in the rectum or colon. Beahrs, Phillips, and Dockerty[32] studied 1,796 patients having a resection of the sigmoid, rectum, and anus for cancer over a three-year period. One hundred and twenty-eight patients had been treated elsewhere for hemorrhoids as the presumed cause of their bowel symptoms. Examination of the specimens removed revealed carcinoma in the hemorrhoidectomy scar in five patients. The authors contended that five cases out of 1,796 represented a minor problem. However, of the 128 patients who had treatment for hemorrhoids, 50 had only symptomatic management. The possibility of a fertile field for implantation existed then only in the 78 who had had operative management of their presumed anal disease. Five patients in 78 represents an incidence of 6.4 per cent where an implantation of carcinoma could have been produced. Beahrs[33] was unable to clarify the case history of one of the five patients who developed an anal tumor, as his record mentioned only "treatment" of a supposed hemorrhoid elsewhere. Even eliminating this case, we consider the incidence of the development of anal cancer in four of 78 patients (5.1 per cent) to be significant, because the implantation of cells on the surface of badly infected tissue (i.e., the hemorrhoidectomy wound) would be much less conducive to a "take" than deposit of cancer cells in the wall of the intestine by the suture.

As Pomeranz and Garlock[34] have pointed out, local recurrence in the wound following surgical intervention may not come from seeding from the lumen of the bowel, but may be associated with the seeding of cells on the peritoneal surface from the serosal surface of the bowel containing the tumor. Using cotton applicators, they obtained smears from the serosal surface of 20 specimens at the time of operation. In two of these, previously unsuspected tumor cells were demonstrated.

Lymphatic Spread of Cancer of the Colon

The spread of cancer of the colon by way of the lymphatics has been studied in detail by numerous investigators.[25, 26, 28, 35] Of the precautionary measures from this standpoint, thorough excision of the lymph nodes and channels draining the tumor is most important. During the past few years the extent of excision of carcinoma of the colon has increased to a point where logically it can be extended no further. The excised specimen varies depending on the location of the tumor, as discussed elsewhere in the text. In any case, all surgeons would agree to resection of the entire right colon and right half of the transverse colon for tumor on the right side. Likewise, all surgeons agree to excision of the entire transverse colon along with as much mesocolon as possible for tumors in that area. There is considerable difference of opinion as to how much colon, mesocolon, and retroperitoneal tissue should be excised for tumors in the left colon. The chief purpose of wide excision in this instance is to remove as much of the lymphatic tissues as possible. Excision of large segments of normal bowel aids little in minimizing possible spread via the lymphatics, but it does tend to minimize the possibility of spread by implantation of cells into the suture line.

The precautions mentioned in the preceding paragraph are practiced by the majority of skilled surgeons. However, it is our contention that those performing colon surgery should make more effort to begin their dissection proximally, as far from the tumor as possible, as is done rather routinely in the treatment of cancer of the neck and breast. The purpose of such proximal dissection, of course, is to interrupt lymphatic as well as vascular channels as soon as is reasonably possible. Thus, cells dislodged by manipulation will not be carried to distant unsuspected nodes or produce nonresectable venous implants.

Spread by Venous Emboli

Although pathologists have been writing about this phenomenon for many years, it is our contention that until recently inadequate attention has been paid by surgeons to this mechanism of spread. This mechanism of spread is actually the most important, since it is usually the one which ultimately kills the patient. Metastases to the lungs, liver, and bones are examples of lesions created by venous spread. Of course, it is possible that these cells were carried to the venous system by way of the major thoracic duct, which empties into the jugular vein at the juncture with the subclavian. However, we greatly doubt that a significant proportion of cellular emboli arise by this mechanism. If this were the preponderant mode of spread, metastases from carcinoma of the colon should be found primarily in the lungs. Inasmuch as it is the liver that is most frequently involved, there appears to be ample proof of the importance of this mechanism. That there are demonstrable tumor cells in the venous blood draining from colonic and rectal tumor specimens, as reported by us[36] in 1954, has been corroborated by numerous investigators.[37–39] Actually, during the last fifty years, there have been several reports in the literature of cancer cells in the systemic blood of patients with cancer, but little attention has been paid to them, presumably on the assumption that identification of the cells was doubtful.

The significance of spread of cancer cells by the venous system is emphasized by Bacon and Jackson,[40] who found in reviewing 600 surgically treated cases that 25.8 per cent of the patients had grossly demonstrable hepatic metastases at the time of the original operation. Careful microscopic and cytologic studies have supported this clinical finding.

Dukes and associates found venous invasion in 17 per cent of their patients with rectal carcinoma and only slightly fewer in patients with colon cancer when reviewing microscopic sections of the specimens. Brown and Warren,[41] performing microscopic studies on autopsy material, where admittedly the incidence would be significantly higher, found evidence of venous invasion in 61 per cent of the rectal specimens. Grinnell,[35] again studying operative specimens, noted 33 per cent of the patients had microscopic evidence of venous invasion. In his series there was a significant correlation between this demonstrable invasion and the five-year survival. In 51 patients with venous extension the survival was 37.2 per cent, but it was 74.6 per cent in the 82 patients without such extension. Fisher and Turnbull[38] similarly found cancer cells in the veins of 32 per cent of 25 specimens of colon cancer removed at operation. Turnbull[42] also reports that malignant cells were found in the blood draining from the tumor in 28 per cent of 35 patients having a resection in which the tumor was handled in a routine way, but in only 13 per cent of 76 patients when the operation was performed without handling the tumor at all.

TABLE III.—EFFECT OF IRRIGATION (WITH CHEMICALS) OF WOUNDS INOCULATED WITH CANCER CELLS ONE HOUR PREVIOUSLY

Chemical	Number of Rats	Percentage of Takes
Control (no irrigation)	86	89
Physiologic saline	32	100
Terramycin, 25 mg. per 100 cc.	30	100
Distilled water	10	100
Heparin, 10 mg. per 100 cc.	10	100
Saline, 3 per cent	31	90
Phenol, 0.1 per cent	36	86
Zephiran 1:1000	35	71
Bichloride of mercury, 1:1000	30	66
Ethyl alcohol, 95 per cent	7	57
Lugol's (5 Gm. potassium iodide, 2.5 Gm. iodine crystals)	30	23
Clorpactin, 2 per cent	38	5
Nitrogen mustard (1 mg. per 100 cc.)	30	3

Using an injection technic, Madison, Dockerty, and Waugh[43] found venous invasion in 42.9 per cent of 42 specimens resected for carcinoma of the rectum. Excluding those removed for palliation, the incidence was 31.4 per cent. Barringer and associates[44] devised a rather ingenious technic of injecting the venous bed with a radiopaque medium. After the operative specimen had been removed, the venous bed was perfused with warm tap water to clear the specimen. Brominated olive oil was then injected into a large vein after the lumen of the bowel was filled with water and the ends closed. With the venous bed filled with the radiopaque material and the vein ligated, a roentgenogram was made of the specimen. Fifty-one per cent demonstrated venous occlusion while 38 per cent of the specimens showed microscopic venous invasion. Of particular importance is the fact that all except one of the specimens demonstrating microscopic venous invasion also showed venous obstruction.

Thus, no conscientious surgeon accepting the responsibility for the treatment of a patient with colon cancer can ignore the potentiality of not only seeding malignant cells but also of furthering the spread of tumor during the very procedure which he is employing to attempt to rid the patient of his disease process. Several adjuncts to the operative procedure have been devised to minimize this danger of "surgical metastases."

Actually the liver acts as a fairly effective filter for cells desquamating from malignant disease of the gastrointestinal tract, as is indicated by the fact that in patients with these tumors we seldom find cancer cells in the systemic blood unless the tumor is inoperable.[45] However, when metastases develop in the liver, one would expect that these deposits would disseminate cells into the systemic system.

Precautionary Measures to Prevent Local Recurrence in the Wound and Peritoneum

Although recurrence in the wound after celiotomy for cancer of the colon or other cancers within the abdominal cavity is comparatively rare, the seeding of the peritoneum before and after operation is frequent. The incidence of cells in the wounds of patients having operation for cancer was not fully appreciated until the publications of Smith and associates.[46] In 120 operations for cancer they studied washings from the wound and noted cancer cells in 26 per cent and suspicious cells in an additional 14 per cent. They noted a definite correlation between the positive cases and vessel invasion (microscopic) in the excised specimen; the incidence of cells in the wound was greater in patients with ulcerating malignant lesions. Moreover, local recurrence was more frequent in the positive cases. Any doubt about the seeding of the peritoneal cavity by colonic tumors should certainly be dispelled by the realization that diffuse miliary metastases on the peritoneum are so common at the time of operation; autopsy studies after unsuccessful resections will also reveal a remarkably high incidence of implants on the peritoneum. Numerous investigators, including ourselves, have noted malignant cells in smears taken from the peritoneal cavity; they should be, and are, more common when the lesion has ulcerated through the serosa of the colon. Unless meticulous care is taken to prevent seeding of the peritoneal cavity, cells may be spread throughout and develop into metastatic implants. This was strongly impressed on us a short time ago when we reoperated on a patient who had had a Miles operation for carcinoma of the rectosigmoid four months previously. At the initial operation it appeared that all cancer had been excised. At operation four months later, innumerable implants were noted on the peritoneum and in fact had permeated almost every needle puncture made in the peritoneum of the pelvic floor for its closure. In another patient we found and excised a recurrent mass at the site of a drain placed temporarily in the abdominal cavity at the time a carcinoma of the cecum was resected. Although recurrence in the wound itself is comparatively uncommon, unfortunately it occurs.

To prevent recurrence in the wound, it is essential to cover the wound edges with dry thick towels or gauze sponges immediately after the incision is made, and maintain them in position throughout the operation. If they become soaked with blood, they should be changed.

To prevent or minimize seeding of the peritoneal cavity by the cancer, the tumor should be covered with a thick, dry pad at the onset of the operation. As stated previously, Pomeranz and Garlock[34] have recommended that these packs be covered with impervious material so that cells cannot migrate through the gauze and escape into the free peritoneal cavity.

Following the work of Collier and Ey[47] in our laboratory, we recently have adopted the use of Clorpactin in prevention of growth of cancer cells in wounds which may have been contaminated with malignant cells during the operative procedure. Clorpactin XCB and WCS90 are organic hypochlorous acid derivatives, but the XCB product is more active than WCS90. Gliedman and associates[48] have reported tumorcidal effects of the drug in vitro. In an attempt to find an agent reasonably effective in killing cancer cells in wounds by irrigation, Collier and Ey have studied the efficiency of 20 to 25 chemicals including Zephiran, physiologic saline, hypertonic salt solution (3 per cent), alcohol, Lugol's solution, phenol (0.1 per cent), bichloride of mercury (1:1,000), nitrogen mustard (1 mg. per 100 cc.), Clorpactin (2 per cent), and many others. Wounds were made in rats, the skin dissected upward for 1 cm. on each side, and 10,000 Walker 256 cells inoculated into the wounds. The skin flaps were then put back in position and one hour allowed to elapse for the cells to become fixed in the tissues. At the end of this time the wounds were irrigated with 100 cc. of one of the numerous solutions mentioned. Results are listed in Table III. It can be seen that Clorpactin and nitrogen mustard are about equally effective in destroying these cells. We have adopted use of Clorpactin as a 0.5 per cent solution in the wash basins, where the gloved hands and certain instruments may be washed frequently during the operation. We are also using it as a 1 per cent solution to wash out the peritoneal cavity and wound except in patients in whom we are using nitrogen mustard. When the 1 per cent solution is used in this way for irrigation, meticulous care must be taken to remove as much as possible, because we know that a 2 per cent solution is toxic to animals (dogs). We have preliminary evidence to show that other agents such as Dakin's solution may be equally effective.

Prevention of Implantation of Cells in the Suture Line

During resection of the colon, Morgan and Lloyd-Davies,[17] as well as Goligher and associates,[16] have suggested rectal irrigation of the distal colon with a solution of 1:500 perchloride of mercury after the clamps have been applied, but before the bowel has been divided. After the tumor is resected, the open ends of the bowel are swabbed with a similar solution after the crushed edges have been excised and before the anastomosis is begun. Since the institution of this regimen, the two groups have noted only four local recurrences between them. In two instances there were inadvertent breaks in technic,[49] while in the other two, the possibility of a new primary tumor or inadequate local excision existed.

Our interest in taking measures to prevent recurrences in the suture line began in 1951.[50,51] It is our belief that implantation at the suture line can be minimized by ligation of the bowel several inches above and below the tumor as soon as operability is determined and before the operative manipulation is begun. When the tumor is located in the rectum (and an anterior resection is contemplated), it may be impossible and in fact undesirable to place a ligature on the bowel distal to the tumor. This is particularly true if the tumor has invaded the wall of the rectum at a point where application of the ligature in contemplated, because application of the ligature may actually displace cancer cells by crushing the wall of the invaded bowel. Our studies of smears taken from inside and outside the ligatures, as previously noted (Table II), support the effectiveness of these ligatures, particularly since all smears taken outside the ligatures were negative.[22] In addition, as an added precautionary measure we are irrigating the proximal and distal segments thoroughly with Clorpactin (1 per cent) or a comparable agent before the open primary anastomosis is performed. Reference has already been made to the animal experiments which have prompted us to use this drug. As additional experiments are carried out, more effective agents may be found. Finally, just before the suturing is begun, a narrow rim of tissue is excised from the cut end of each bowel segment in order to exclude by excision the cut edge where cancer cells might have become implanted when the bowel was severed.

Pomeranz and Garlock[34] employ a "colon cover" to eliminate seeding from the serosal surface. An abdominal pad 11 inches long is carefully wrapped and secured around the bowel with heavy black silk ties, not only to occlude the lumen but to cover the tumor site effectively.

Prevention of Venous Emboli During Operative Manipulation

Reference already has been made to the histologic evidence (by numerous authors) of venous erosion by the cancer in carcinoma of the colon and rectum. These reports, in addition to the serious and lethal effects of metastases in the liver and other distant organs, led us to examine the blood in veins draining the tumor. As indicated, we found cancer cells in blood perfused out of the tumor into the veins draining the tumor in patients with carcinoma of the rectum and colon.[36] Since the venous metastases into the liver and lungs are really the factors causing death of the patient with carcinoma of the colon, we would like to emphasize that more precaution be taken to prevent them. We admit that the normal flow of blood from the artery into the vein might result in venous emboli, aided by normal peristaltic movements. Although spread by these mechanisms cannot be considered preventable, many other phases of venous spread are preventable.

One of the first precautions in preventing spread of colonic cancer by venous emboli incident to operation is gentle preparation of the skin for operation. Although the soap, water, and alcohol technic is an admirable method of cleansing the skin to eliminate contamination and infection, it is too traumatic in the presence of malignant tumors. The danger of spread by such a mechanism would obviously be greater if a mass were palpable. In any case, the scrubbing process as carried out by a strong, vigorous intern can be somewhat traumatic. Accordingly, we recommend painting the skin of the abdomen with an appropriate antiseptic.

Another simple precaution in preventing dissemination of cancer cells during operation for cancer of the colon (and certainly not the least important) is gentle handling of the tumor. Rough handling of tissues has no place in surgery. During the determination of operability, such manipulation as is performed must be done with extreme caution. After the resection is started, every possible effort should be made to avoid handling the tumor again.

To further minimize the danger of spread by venous emboli, the major venous channels are carefully ligated early in the course of the operation before operative manipulation is begun. The posterior peritoneum is incised over the major vascular trunks. If the pulsating artery is not palpable, the incision is made in its expected anatomic location and the fat explored for the vessels. In thin individuals the arteries are readily palpable. On the right side the ileocolic, right colic, and right branch of the middle colic arterial and venous trunks are ligated. In the transverse colon the middle colic and collateral vessels are ligated. On the left, the inferior mesenteric and left colic arteries are ligated depending on the location of the tumor. The inferior mesenteric vein can usually be identified and ligated during dissection of the inferior mesenteric or left colic artery.

Use of Anticancer Compounds as Prophylactic or Adjuvant Agents at the Time of Operation for Cancer

Our apprehension over the numerous mechanisms by which cancer may be disseminated, particularly during operation, led us to carry out some experiments on animals, giving them anticancer agents at the time cancer cells were inoculated into the animals. We chose the Walker 256 rat carcinosarcoma and injected the cells into a branch of the portal vein to simulate the escape of cancer cells from a tumor of the intestinal tract (e.g. colon) into the liver via branches of the portal vein.[52,53] We realized that the anticancer agents being used at the present time are not very effective in "curing" a tumor already having a vascular attachment, but

TABLE IV.—Effect of One Dose (0.5 Mg. Per Kg. of Body Weight) of Nitrogen Mustard by One of Three Mechanisms, to Rats Having Cancer Cells Injected Into the Portal Vein[14]

Group	Administered Via Portal Vein		Administered Via Peritoneal Cavity		Administered Via Systemic Vein	
	Number of Rats	Per Cent of "Take"	Number of Rats	Per Cent of "Take"	Number of Rats	Per Cent of "Take"
A 110,000 cells injected	C 48	91.7	C 45	86.7	C 45	75.6
	T 45	17.8	T 46	41.3	T 56	35.7
	Difference:	73.9	Difference:	45.4	Difference:	39.9
B 220,000 cells injected	C 40	82.5	C 57	82.5	C 35	94.3
	C 37	27.0	T 66	66.5	T 38	78.9
	Difference:	55.5	Difference:	16.0	Difference:	15.4

TABLE V.—Effect of One Dose (2.0 Mg. Per Kg. of Body Weight) of Thiotepa Given by One of Three Mechanisms to Rats Having Cancer Cells Injected into the Portal Vein[54]

Group	Administered Via Portal Vein		Administered Via Peritoneal Cavity		Administered Via Systemic Vein	
	Number of Rats	Per cent of "Take"	Number of Rats	Per Cent of "Take"	Number of Rats	Per Cent of "Take"
A 110,000 cells injected	C 30	90.0	C 38	92.1	C 39	92.3
	T 28	7.1	T 39	17.9	T 37	16.2
	Difference:	82.9	Difference:	74.2	Difference:	76.1
B 220,000 cells injected	C 70	61.4	C 29	75.9	C 38	94.7
	T 73	24.6	T 28	14.3	T 39	38.4
	Difference:	36.8	Difference:	61.6	Difference:	56.3

thought these same agents might be effective against cells recently dislodged from the primary tumor and still floating in the blood stream, or so recently lodged in tissue that a separate blood supply has not yet developed. The drugs were administered by one of three routes: (1) a branch of the portal vein, (2) intraperitoneally, and (3) a systemic vein. We first tried azaserine, but found it to be without effect. We then tried nitrogen mustard, which revealed a definite effect in preventing takes when 110,000 cells were injected into a branch of the portal vein. Thiotepa was also effective. Tables IV and V reveal the relative efficiency of these two drugs.[54]

It will be noted that both drugs were less effective when the dose of cells was doubled. The explanation of this phenomenon is not clear but suggests a similarity between the growth and susceptibility of bacteria to host resistance. For example, it is well known that a contamination of a wound with a small number of bacteria will not result in an infection, whereas contamination with a large number of bacteria is apt to result in an infection. We noted also that if the chemicals were administered twelve to forty-eight hours after inoculation of the cells, they were only slightly effective, their value decreasing as the length of time increased between inoculation of cells and therapy.[55] Likewise, administration of nitrogen mustard several hours before inoculation of cells was not effective, or only slightly so. However, the results following use of other agents several hours before inoculation of cells might be positive, since nitrogen mustard is known to be destroyed rather rapidly after injection into the body, whereas many other agents are not.

The favorable effects obtained by these anticancer drugs in prevention of "takes" after inoculation of cells encouraged us to use the procedure in human patients. We started clinical use in March, 1956. We have confined our own therapy to carcinomas of the breast, colon, and rectum. In our recent experience carcinoma of the stomach is becoming less common, and when seen has usually progressed to inoperability. We chose tumors of the organs listed above because they metastasize by vein as well as by lymphatics.

In our own series we are using nitrogen mustard only, and in doses slightly lower than reported for palliative treatment not at the time of operation. We give 0.4 mg. nitrogen mustard as a course (over a period of two or three days), but limit the course dose to 30 mg. This eliminates the possibility of "overdose" in obese people. We are not using the drug in patients over seventy years of age because of toxicity and the fact that the normal death rate would be a strong factor in the five-year survival. In our cases of breast carcinoma we give half the course by systemic vein on the day of operation, one-fourth on the first postoperative day, and a fourth on the second postoperative day. In our patients with carcinoma of the colon and rectum we likewise give one-half the course dose on the day of operation. This half-course dose may be given in 400 to 500 cc. of physiologic saline into the peritoneal cavity at the end of the operation as the last peritoneal suture is tied, or a fourth of the course dose may be given that way, and one-fourth into a branch of the portal vein in 15 to 20 cc. of physiologic saline. The dose into the portal vein branch usually is given via a tiny plastic catheter inserted upward several centimeters in order to avoid extravasation with nitrogen mustard, which, if it occurred, would result in tissue necrosis. The second half of the course dose is split, so that one-fourth the course dose is given (via systemic vein) on the first postoperative day and one-fourth on the second postoperative day.

Utilizing the precautions regarding age and maximum dose as listed above, we believe we have eliminated practically all danger of serious toxicity. The complications are about equal in number in the two groups (Table VI) except that about 25 per cent of the patients given nitrogen mustard will get a leukopenia of 3,000 or less. However, the count returned to normal in all patients without evidence of jeopardy to their welfare. Early in our experience we gave the treated patients an average of 900 cc. more blood than the controls. However, it appears that this difference was due largely to apprehension, since the differential is now less than half that amount. Nevertheless, we want to emphasize that the bone marrow depression in the treated cases will truly make more blood necessary. As more data accumulate, we believe adjuvant therapy will prove to be a valid procedure, but do not expect one agent to be effective in all types of cancer.

TABLE VI.—Patients Developing Complications in Our Adjuvant (Prophylactic) Treatment in Carcinoma of the Colon and Rectum (25 Controls and 25 Patients Receiving Therapy)

Complication	Number of Controls	Number of Patients Receiving Nitrogen Mustard
Wound infection	1	0
Wound seroma	1	0
Bleeding from wound	0	1
Colostomy necrosis	1	1
Bowel obstruction	1	0
Shock during surgery	1	1
Wound dehiscence	0	1
Operative deaths	1	1

We are repeating the course of nitrogen mustard every three or four months until the patient has had three courses. This is being done with the hope that additional doses of mustard will retard the growth of cancer cells from cellular quiescent deposits into true metastases. It is well known that cellular deposits may be dormant for years and then grow into active fatal metastases. This added therapy is somewhat empirical, since we have no experimental evidence that such suppression would take place. After giving three courses of nitrogen mustard we then give three small courses of Thiotepa at four-month intervals. After this amount of therapy the bone marrow is too depressed to allow more of such therapy. Neither drug is given if the white blood count is less than 5,000.

Insufficient time has elapsed since instituting this adjuvant treatment to draw any conclusions regarding effect.

The results of recent experiments suggest that the toxicity of chemicals given as adjunct agents at the time of operation with the hope of destroying freshly disseminated cancer cells may jeopardize their efficiency. Some experiments performed by Lewis and Cole,[56] Buinauskas, *et al.*,[57] and Chan, *et al.*[58] in our laboratory indicate that stress itself (perhaps operative and chemical) lowers the resistance of the host (rats and mice) to cancer cells. Lewis injected 100,000 T241 cells into the hind foot of mice and determined when metastases to the lung took place by amputating the leg on various days after inoculation and following the animals thereafter. Metastases began on about the tenth day and by the twenty-second day almost all tumors had metastasized. Accordingly, the experiment was continued by amputating the extremity with the tumor on the twenty-second day after inoculation in half the mice, and leaving the other half alone after inoculation, as controls. Both groups were allowed to die, and at autopsy the lungs were examined for metastases. In the control group pulmonary metastases were found in 57 per cent, whereas they were present in 96 per cent of the animals having amputation of the extremity bearing the tumor. Buinauskas injected 25,000 Walker 256 cells (aged twelve hours, to reduce the percentage "take" to near 50 per cent) subcutaneously into rats and at the same time performed a celiotomy. An equal number were injected with the same number of Walker cells serving as controls without a celiotomy. In the group serving as controls "takes" were observed in 56 per cent, compared to 85 per cent "takes" in the rats having a celiotomy. In another experiment Chan gave carbon tetrachloride in toxic doses for three consecutive days (to produce hepatic damage) to a group of rats, and then injected a branch of a portal vein with 25,000 Walker 256 cells (aged twelve hours). To an equal number of rats not having carbon tetrachloride he gave the same number of Walker cells into a branch of the portal vein. "Takes" were observed in 62 per cent of animals having the carbon tetrachloride, but in only 21 per cent of controls not receiving the tetrachloride.

The data presented above indicate that operative stress increases the incidence of pulmonary metastases in one experiment and the incidence of "takes" following inoculation of cancer cells in another. In a third experiment it appears that acute toxic (chemical) hepatitis decreases the resistance of the host so that the incidence of "takes" following inoculation of cancer cells increases over the incidence in control animals.

If the decrease in host resistance due to the damaging effect of the toxicity of the anticancer agent more than neutralizes the anticancer effect of the drug, the drug may actually do more harm than good. If the reverse is true, benefit should be obtained. However, it has not yet been determined whether a stress reaction (operative or chemical as described above) will affect the human being as it does rats and mice; we suspect it will. If it does, such data might be interpreted as being bad news for cancer operations. However, the reverse is actually true. We already know that reasonably good results can be expected for surgical intervention and know also that surgical treatment is the most effective single modality in the treatment of cancer. Accordingly, if operative stress does produce a temporary decreased resistance to cancer cells in the human being, and we could neutralize it, we might appreciably improve our five-year results. We believe that an optimistic attitude in this respect is justified.

Polyps of the Colon

It is agreed by all pathologists and surgeons that colonic polyps may be precancerous and transform into a carcinoma. Accordingly, their eradication becomes an important item in the prophylactic measures to be adopted in the prevention of carcinoma of the colon. It is also agreed that certain types are more apt than others to become malignant. In general, colonic polyps may be divided into "nonfamilial" and "familial" (diffuse polyposis). Since numerous features of the two types are so different, they will be considered separately.

NONFAMILIAL.—This type is much more common than the familial type. Cattell[59] estimates that at least 3 per cent of adults have polyps, but that no more than one-third have symptoms. In a survey of 50,000 proctosigmoidoscopic examinations in people with no digestive complaints (in a cancer prevention center) Portes and Majarakis[60] found polyps in 7.9 per cent and cancer in polyps in 0.65 per cent.

Practically all pathologists agree that there are two types of nonfamilial polyps, adenomatous polyps and papillary adenomas. Adenomatous polyps may be defined as an elliptical or rounded mass of branching glandular tubules lined by adenomatous epithelium. They are commonly about 1 cm. in diameter and are usually pedunculated; the pedicle is covered with normal mucosa. Papillary adenomas are sessile tumors with innumerable branching villi. They are usually 3 to 4 cm. in diameter, soft and velvety, and are covered with a coating of mucus which is secreted in large quantities. There is some controversy as to the relationship of the two types just described, but Dukes[61] believes that the papillary adenoma is merely a growth variant of the adenomatous polyp.

In a study of 1,856 polypoid lesions of the colon in 1,335 patients, Grinnell and Lane[62] report that 6.3 per cent were associated with a carcinoma. Of the adenomatous polyps, 2.9 per cent were malignant, whereas 31.9 per cent of the papillary adenomas were malignant. However, the low incidence of malignancy in adenomatous polyps is predicated on the fact that so many of them are small at the time of their removal. If only those lesions greater than 1 cm. in diameter are considered, the incidence of malignancy was 12 per cent. In the 311 patients of their series with carcinoma in a polyp, other (benign) polyps were present in 34 per cent, but the polyps were multiple in only 17 per cent of patients with benign lesions.

The diagnosis of polyps is not always made readily. The barium enema, with or without double contrast studies, is perhaps our best diagnostic medium, but Bacon and Peale[63] report a diagnostic error of about 50 per cent with the x-ray. Utilizing colotomy and coloscopy, the error was reduced to about 21 per cent. Slightly over half the patients diagnosed as having polyps will have bleeding, but in Grinnell and Lane's series, there was little difference between the benign and malignant lesions, 57 per cent of the former and 64 per cent of the latter having a history of bleeding.

As stated above, colotomy and coloscopy (with a sigmoidoscope) will minimize the diagnostic error greatly. If celiotomy is being performed for a colonic polyp, it is essential that a sigmoidoscope be inserted into the opening in the colon and the lumen inspected as far proximally and distally as possible. If more than one polyp is found through the initial bowel incision, it is often desirable to make one or more additional incisions for coloscopy, particularly to inspect the lumen of the transverse colon even though palpation is negative.

Treatment.—Although practically all surgeons would advise removal of a colonic polyp regardless of the patient's age (excepting those with expected longevity of less than a year or two), there is no agreement as to whether it should be done locally or with resection of a segment of colon. Lillehei and Wangensteen[64] are perhaps most radical, recommending a subtotal colectomy with a cecorectal anastomosis if more than two or three polyps are found. For a solitary polyp, Welch[65] recommends segmental resection of the colon because of the high incidence of malignancy. However, Grinnell and Lane[62] as well as most other surgeons prefer local excision (i.e., polypectomy), on the basis that the added mortality rate produced by resection of the colon would more than neutralize the patients saved by the more radical procedure.

The present authors agree to local excision (without removing a segment of bowel) if the polyp has a long pedicle and a typical benign appearance. However, if there is ulceration, or the mucosal surface is roughened and thickened, we recommend removal of a segment of colon because a high percentage of such polyps will be malignant. A frozen section should be obtained after removal of the polyp, and if it is malignant, a radical resection should be performed. When the polyp can be visualized with the sigmoidoscope, Turell and associates[66] recommend removal by a high frequency snare, performing the excision in the office if the polyp is located below the peritoneal reflection, and in the hospital if above the reflection. They emphasize that diathermic destruction of the polyp is unwise, since no microscopic examination is then possible, although diathermic destruction of multiple small polyps without evidence of ulceration or mucosal thickening is permissible.

Since papillary adenomas seldom have a pedicle, they can be excised only by resection of a portion of the bowel. Preliminary biopsy should be done to eliminate the diagnosis of cancer. If the lesion is malignant, a radical resection obviously should be performed.

Results.—If the polyp is benign and it is removed by colotomy, results will of course be good, with a mortality rate of no more than 0.5 per cent. In general, the five-year survival rate for malignant polyps is good. If the malignancy is confined to the tip of the polyp, the five-year survival rate should approach 90 to 95 per cent. In Grinnell and Lane's series of 24 patients with malignant colonic or rectal polyps removed by proctoscopy or colotomy, the five-year survival rate is 87 per cent, compared to 61 per cent in 31 patients having radical resection. The higher survival rate in the patients having "local" removal is presumably explained on the basis that they were earlier lesions, or revealed little evidence of invasion. The comparatively good results following removal of malignant polyps can be explained by the less invasive character of the lesion. For example, in Grinnell and Lane's series there was nodal metastasis in only 11 per cent of patients with malignant adenomatous polyps and in 23 per cent of patients with malignant papillary adenomas.

DIFFUSE (FAMILIAL) POLYPOSIS.—Multiple polyposis is a familial disease, transmitted by both sexes as a mendelian dominant. Usually the polyps are so numerous that very little normal mucosa can be seen. They may be found at various levels in the large bowel from the cecum down to and including the rectum. Although the polyps no doubt develop in early childhood, they are often asymptomatic for years. In a study of 95 cases, Mayo and associates[67] noted that 77 per cent were between the ages of twenty and thirty-nine years. All surgeons and pathologists agree that all patients with this disease will develop a carcinoma in one or more polyps before life expectancy is reached. Mayo and associates have estimated that all patients with diffuse polyposis will develop a carcinoma before they reach fifty years of age unless the colon is resected. Welch[68] has placed this age at forty.

Blood in the stool and mild diarrhea are the most common symptoms. Indeed, cancer often has already developed in one or more polyps by the time the patient comes to operation. In a study of 35 consecutive patients (seven of their own) having colonic resection for diffuse polyposis, Hoxworth and Slaughter[69] noted that carcinoma was present in 17.

Treatment.—As soon as the diagnosis is made, subtotal colectomy (ileoproctostomy) should be performed, leaving 4 to 6 inches of rectum which should be cleared of polyps by fulguration before resection is carried out. Other members of the family should be questioned for symptoms and a proctoscopy should be performed, even though no symptoms are present. After resection the patients should return every four to six months for proctoscopy and fulguration of any newly formed polyps. Unless this routine is carried out, a carcinoma usually will develop within a few years in the newly formed polyps. In a collected series of 115 cases having subtotal resection (ileosigmoidostomy), Everson and Allen[70] noted that 5.2 per cent later developed carcinoma. Most of these were in patients who had not returned at regular intervals for examination and fulguration. In spite of this relatively high incidence of malignancy after subtotal resection, it is doubtful that complete colectomy (with ileostomy or anastomosis of the ileum to the rectum just above the sphincter) is justified as a routine because of the inconvenience of the ileostomy and high incidence of malfunction if anastomosis is performed near the sphincter. The result following resection of a carcinoma in a patient with diffuse polyposis is about the same as colectomy for other types of carcinoma—near 50 per cent five-year survival.

Chronic Ulcerative Colitis

Somewhat analogous to polyps of the colon, chronic ulcerative colitis may be considered a premalignant lesion, and its long-term management falls into the sphere of prophylactic measures to combat colonic cancer because the incidence of cancer in patients having ulcerative colitis longer than five years is quite high.

Ulcerative colitis, although of unknown etiology, is a specific disease entity with characteristic clinical, pathologic, proctologic, and roentgenologic features. Although antibiotic and steroid therapy have improved the outlook as far as the medical management of the disease is concerned, many of the patients continue to experience acute exacerbations of their disease over a number of years. It is with this group that we are particularly concerned.

EDITOR'S NOTE: At the time of publication of this material, reports of the experimental studies and clinical trials of a new anticancer serum are appearing. Although the positive results are encouraging indeed,[71] there has been no evidence of cure in any patients. Further developments of this investigation are eagerly awaited.

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Chronic Diseases Take on New Importance

Extraordinary progress in the control of the acute diseases has resulted in steadily growing importance of the chronic diseases as causes of death in the United States, according to statisticians of the Metropolitan Life Insurance Company.

The acute diseases—those developing rapidly or coming speedily to a crisis—accounted for over 40 per cent of the deaths at the turn of the century; currently the proportion is not quite 10 per cent. During the same period the chronic diseases—those of long duration or characterized by slowly progressing symptoms—increased from 46 per cent of the deaths to 81 per cent.

Progress in the control of the acute diseases is illustrated by the experience for pneumonia and influenza. At the beginning of the century, these diseases had a combined death rate of about 200 per 100,000 population and led all causes of death. In recent years they have ranked sixth, with a death rate averaging less than 30 per 100,000.

Other acute diseases, including typhoid fever, diarrhea and enteritis, diphtheria, measles, scarlet fever, and whooping cough, have been reduced to the vanishing point among the causes of death.

The major cardiovascular-renal diseases and cancer currently account for 54 per cent and 16 per cent, respectively, of all deaths. Thus, together they now include 70 per cent of the total mortality.

Tuberculosis is the prime exception to the general trend for the chronic diseases, the statisticians point out.

The ratio of tuberculosis deaths to total deaths declined from 11 per cent in the early years of the century to only 1 per cent in 1955. At the same time the tuberculosis death rate fell from nearly 200 to less than 10 per 100,000.

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ST. JOSEPH'S HOSPITAL

ELMIRA, NEW YORK

Conducted by JOSEPH F. SHORTSLEEVE, M.D. MAY 14, 1958

Discussed by THEODORE H. NOEHREN, M.D. BUFFALO, NEW YORK

Case History

A sixty-four-year-old white man was admitted to the hospital at 3:00 A.M. because of chest pain.

The patient's wife phoned the physician about 2:15 A.M. She said that her husband was a very apprehensive person and thought he was having a heart attack, but she felt some reassurance by telephone would be sufficient. Because of the commotion in the background, and obvious crying out with pain, the physician decided to make the call.

The patient had had a thyroidectomy in 1923, an appendectomy in 1940, and a right inguinal herniorrhaphy in 1952. He also had seen physicians for midepigastric distress and substernal pressure but had always been reassured and felt better. For the last three days he had had a grippe-like illness with upper respiratory symptoms, nausea, and slight diarrhea. The substernal pressure which he said he had felt intermittently in the past few days became severe while he was vomiting in the bathroom.

By the time the doctor arrived the patient was in severe distress with a substernal pressure-like sensation that penetrated to the back and to the left chest. A quarter grain of morphine sulphate was administered immediately but gave no apparent relief. He was advised to lie quietly and allow the morphine to take effect but seemed to be too ill at ease to do so. He finally got up from the bed and said he could not sit, stand, or lie down in any comfortable position. Another quarter grain of morphine was administered twenty minutes after the first injection. Because of extreme restlessness Seconal, $1^1/_2$ gr., was also administered, and an ambulance was summoned to take the patient to the hospital.

It was shortly after 3:00 A.M. when he was placed in an oxygen tent in the hospital. His temperature was 99.6 F., respirations 26, and blood pressure 110/68. Physical examination then disclosed a heart rate of 100 with a regular rhythm. There were no murmurs or detectable cardiac enlargement. The lungs were clear to percussion and auscultation. The abdomen was rigid, and adequate evaluation was not possible. Another Seconal capsule, $1^1/_2$ gr. was administered twenty minutes after his arrival at the hospital. By 4:00 A.M. he was drowsing in the oxygen tent and was aware of pain only if aroused.

He slept through until morning. At 7:30 A.M. when he was next examined by his physician he had acquired a moderate cyanosis of the lips. On examination of the lungs a crunching sensation could be heard along the left border of the sternum. The heart rate was 120. The rhythm was regular. The blood pressure was 120/80. The abdomen was still tense, slightly distended, and tympanitic. No bowel sounds could be heard.

The red cell count was 5.5 million with 17.3 Gm. of hemoglobin. The white cell count was 10,000 with 80 polymorphonuclears, 14 stabs, three lymphocytes, and three monocytes. The sedimentation rate was 7 mm. in one hour. The urine specific gravity was 1.020 with a 1 plus albumin and a few granular casts.

An electrocardiogram showed a sinus tachycardia. A chest x-ray and flat plate of the abdomen disclosed a shadow overlying the cardiac shadow to the left of the spine and up into the left cervical region. There was obliteration of the left costophrenic angle. The heart shadow appeared larger than normal.

Later that day a procedure was carried out which clarified the diagnosis.

Discussion

Dr. Theodore H. Noehren: I would like to say, first of all, that I doubt that I would have been quite as smart as the doctor who took care of this man at three o'clock in the morning by going to see him. The wife was willing to minimize his difficulties, but the patient and his physician had a much better interpretation of what was going on than she did.

We are taught that the history is 90 per cent of the diagnosis. This case seems to bear out this old adage. I would like to discuss several points of the history in detail. The first is the onset and character of the chest pain. There are certain characteristics about chest pain which can be helpful, if not diagnostic. The pressure-like sensation we all associate with coronary artery disease. This particular patient complained of pressure in the midepigastrium and retrosternal area for some period of time. Each time he had been reassured by his physicians. I must accept that at face value because I am sure that if this pressure had been significant, the physician would have considered an electrocardiogram. The fact that his current episode came on in relation to upper respiratory distress plus a gastrointestinal upset would make a possible gastrointestinal disturbance a little more likely. However, the two words "pressure" and "gastrointestinal" do not necessarily go well together. "Knife-like" or "gnawing" might fit much better with what we expect of patients with gastrointestinal complaints. I think one of our problems is that in an attempt to get a history quickly, but not necessarily accurately, we use terms like "pressure," "knifelike," "radiating," or "heavy" and plant a concept into a patient's mind and then into our interpretation when frequently the patient is only trying to accommodate us. This may lead us off the track, and I hope that "pressure" is the patient's term and not the doctor's. It makes a difference.

The second point is the relatively acute onset of pain. Even with the background of some distress I gather that his acute situation had come on rather quickly or, at least, had reached a peak quite suddenly while he was vomiting in the bathroom. A most interesting aspect of this pain was that he could not lie, stand, or sit in a comfortable position. Coronary pain may be severe but, generally speaking, it is not such that the patient can't find some position in which he is relieved by lying down or sitting up. In mediastinal type pain the patient usually must sit. He cannot lie down in comfort. Generally, he locates an aggravation or the peak of his pain in the suprasternal notch.

Another important point in the description of this pain is the inability to relieve it. To administer a half of a grain of morphine without relieving pain is quite unusual for a patient with a coronary occlusion which, of course, from a percentage point of view would be our number one diagnosis here. Then in addition to morphine, he was given at least 3 gr. of Seconal before he finally quieted down. Indeed, this pain is a peculiar and special type which in itself should lead us to some diagnostic possibilities.

In addition to the pain, there are associated pulmonary findings. The description of the physical signs in the lungs does not help much. They were clear to percussion and auscultation, but the fact that he was cyanotic is of some significance. He was cyanotic but not in shock. A coronary occlusion severe enough to give cyanosis should be reflected in some peripheral effect, yet his pulse was 100 with a regular rhythm, and his blood pressure was 110/68. We have no reference to previous blood pressures, but at the risk of this possible red herring I will assume that it was within normal range.

We have, in addition to the foregoing considerations, the associated abdominal findings. The difficulty in evaluating the rigid abdomen I assume was because the patient was unable to lie in a comfortable position and also because of actual rigidity.

The combination of chest pain of sudden onset with increasing severity and a rigid abdomen leads us to consider several differential diagnoses. The first, coronary occlusion, I have already discussed. The fact that the pain did not radiate would make me even more skeptical of this diagnosis. Of course, the fact that he had a board belly would fit in with a coronary occlusion, particularly for a case reported in a clinicopathologic conference. Percentage-wise, the frequency of a board belly with a coronary occlusion is rather small, but certainly from the literature we know it is frequent enough for the abdominal surgeon to always consider a coronary occlusion and chest man to consider abdominal problems when confronted with so-called coronary-type pain.

The second consideration with this combination of symptoms is acute pancreatitis. We all know that acute pancreatitis can cause one of the severest of pains and would go along with a board belly. To cause pain of this type, however, would be really quite unusual. I remember a paper by one of the Fellows at the Mayo Clinic in which he discussed the accuracy of the diagnosis of acute pancreatitis. As I recall, the total accuracy was in the range of about 15 to 20 per cent, even at a place that prides itself on its diagnostic ability. The irony of the study was that the diagnosis was in direct proportion to the service to which the man was admitted. If he came in on the urology service, the diagnosis was in 90 per cent of the cases a kidney stone. If he came in on the abdominal-surgical service, the diagnosis 80 to 90 per cent of the time was either ruptured ulcer or acute pancreatitis. If he came in on the medical service, they would think of chest conditions or abdominal aneurysm or some other lesion within the scope of the particular specialty blinders. The fact that no bowel sounds were heard fits in with a ruptured ulcer but doesn't really help us in making the diagnosis one way or the other.

Another diagnosis that must be considered is a spontaneous pneumothorax. The fact that the breath sounds were not abnormal can be very deceiving, for there can be pain, sometimes severe, even though the breath sounds are normal, particularly if there is an adhesion. We generally think of spontaneous pneumothorax as a lung that collapses completely and as a quiet sort of affair, the sort of thing we used to see when we were treating tuberculosis. But if you can imagine an adhesion with some fluid or with some trauma in that area, it is possible to have a spontaneous pneumothorax which would produce this type of cyanosis. Furthermore, if you do have an adhesion and the pneumothorax is severe enough, you can cause a tear in that adhesion which may result in hemopneumothorax. This can be painful and shock-producing. It may take as many as seven to nine pints of blood to bring a patient with a hemopneumothorax back into normal range. It is an acute situation, as acute as a bleeding ulcer. It is more severe than you would imagine it to be. It would seem that in a closed space like this the hemopneumothorax would control itself, but it doesn't. You can pour blood in as fast as the patient is pouring it out, and you have to get the patient to the operating room for this situation to be handled before he goes into extremis. There at least should be some dullness of that side if there were a hemopneumothorax.

The next diagnosis, which should have been put much higher on the list since it was the first thing that came to my mind in reading the case history, was an acute dissecting aneurysm of the aorta. The patient is sixty-four years of age. This is a characteristic history for a sharp dissecting pain that goes from front to back with the patient unable to find a comfortable position in which to control the pain. The fact that his pressure did not drop is against the diagnosis, but as we all know this can happen. These patients occasionally live after a dissection. It is one of the most painful substernal pains and certainly would have to be considered in the differential diagnosis.

A ruptured diaphragm should be considered in the differential diagnosis. It would not seem logical, however, that it would cause this type of pain.

Another diagnosis which should, perhaps, be given a little more weight, particularly in view of his previous episode of substernal pressure, is an incarceration of a hiatal hernia. I have never seen it. I am surprised that we don't see it considering the large number of hiatal hernias there are. I imagine, however, that it might produce a rather acute emergency-like situation with pain and vomiting and all. Basically, we should look for a cause for his vomiting. We were told in the case history that it was due to influenza. An incarcerated hernia could cause vomiting.

This case reminds me of one of the students at the University of Utah with a history of sudden onset of pain. He wasn't able to lie down, but he felt well when he sat up, and the diagnosis, after prolonged observation, turned out to be acute idiopathic pericarditis. It is a little hard to explain why he had such pain when pericarditis in other forms is not that painful. Perhaps he had some mediastinal irritation. His condition cleared spontaneously.

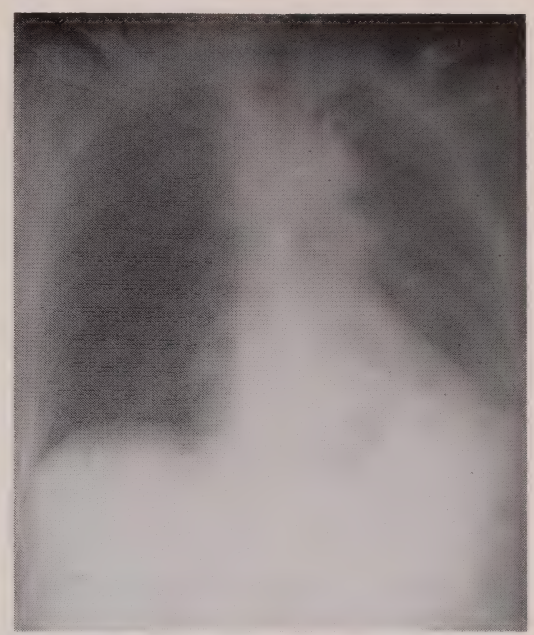

FIG. 1. Chest roentgenogram six hours after the onset of acute distress.

In a patient with this much pain who is severely ill an electrocardiogram without changes in the segments would be most unusual, but, of course, everybody has had the experience of seeing electrocardiographic changes occur over a period of time. I understand that this electrocardiogram was taken early the next morning. This would be against a coronary occlusion, of course, but it would not necessarily rule it out.

A chest x-ray (Fig. 1) and a flat plate of the abdomen (Fig. 2) disclosed a shadow overlying the cardiac shadow to the left of the spine and up into the left cervical region. It is true that vascular lesions can do this, but for all practical purposes, a shadow which extends up into the cervical region suggests a mediastinal lesion, usually esophageal. There is obliteration of the left costophrenic angle, and the heart shadow appears larger than normal. I wasn't able to decide how much this enlargement of the heart shadow meant. From the obliteration of the left costophrenic angle we would assume

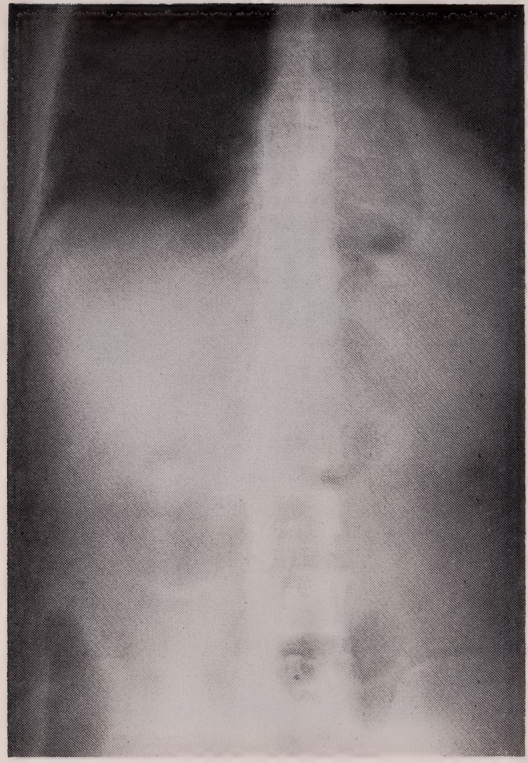

FIG. 2. Flat plate of the abdomen six hours after the onset of acute distress.

that it is probably fluid, but the rest of the film shows air. I don't know if you can see it, but the shadow which is overlying the heart is not of the same consistency as the heart shadow. The difference in roentgen penetration has to be due to either fat or air because they are more radiolucent than the solid heart muscle. The clue is the fact that around the aortic arch you can see a collar of air which extends up into the cervical region. Now, the only false note to this interpretation is that there is nothing said in the case history about air felt up in the neck, or mediastinal emphysema. I would guess or I would hope that after the x-ray, air had been demonstrated going up that high. At any rate, the film narrows the differential diagnosis considerably. Something has ruptured to produce this air and to produce this mediastinal widening. This fits in with the mediastinal symptoms of acute pain related to change of position. The presence of air would rule out coronary occlusion, dissecting aneurysm, and pancreatitis. It would not rule out the spontaneous pneumothorax, and it would not necessarily support the incarcerated hiatal hernia.

Air and the sudden onset associated with vomiting would suggest that the viscus that ruptured was either the stomach or the esophagus. Generally speaking, rupture of an ulcer either in a hiatus hernia or in the stomach is related to a traumatic accident—a blow, a kick, or an automobile accident. This man doesn't give a history of that. I have never seen a ruptured esophagus. After reading this protocol, I discussed it with men who have seen one. They tell me this case conforms to the textbook picture. They say one should be able to make the diagnosis over the telephone. The classic picture is one in which the patient tells you he felt well until he started to vomit, the vomiting usually occurring after some excessive alcoholic intake.

If this is a ruptured esophagus, percentage chances will also tell us where the rupture is. There is an area at the lower end of the esophagus which is the most usual site, on the left side, usually posterior. The air in our patient has escaped on the left side. Whether or not it is posterior certainly couldn't be ascertained from the x-ray. It usually is not located in relation to any previous ulceration or any previous gastrointestinal disease, either hiatal hernia or esophagus erosion. It can be in a completely clean esophageal mucosa. The problem, of course, is that after the onset it is difficult microscopically to tell whether the inflammatory disease was there before the rupture or after the rupture, but when examined early enough, the general consensus is that this accident occurs without previous disease.

We are told a procedure was done which defines this. I expect that lipoidal or other contrast media was introduced by tube or swallowing. Escape of the lipoidal into the mediastinal air sac locates the lesion and tells you where to go in. Now, this same method can be used for diagnosing ruptures of the esophagus higher up. If you give the patient a swallow of opaque medium and the dye does not go through the esophageal wall, the chances are that this leak has either closed over or is so small that the leak at this point is not significant and surgery is not necessary. If dye leaks out, surgery is necessary to produce drainage. What happens is that as the air pressure increases, compression of mediastinal tissues occurs. This partly explains the distress and the cyanosis that these patients have. As soon as a drain from the mediastinal area is established considerable relief both in the symptoms and the general clinical picture results. I expect, therefore, that the procedure carried out was the defining of the location of the rupture by means of a lipoidal.

Question: Could the opacity overlying the heart shadow represent something rupturing up through the diaphragm?

Dr. Noehren: Yes, it could. This could be the extension of that hiatal hernia, if you want, which would be extending over into that area. It could represent either a collection of gastric contents or omentum that has been pushed over into that corner. I suppose I must leave the door open slightly for the diagnosis of ruptured hernia.

Comment: There was no emphysema in the subcutaneous tissues to my knowledge, but there was crunching heard over the mediastinum.

Dr. Noehren: That would fit with air in the mediastinum.

Diagnoses

Clinical.—*(1) Ruptured esophagus; (2) ruptured hiatal hernia.*

Dr. Noehren.—*(1) Ruptured esophagus, lower third left, posterior; (2) possibly, ruptured hiatal hernia.*

Pathologic.—*Ruptured esophagus, lower third, left, posterior.*

Pathologic Report

Operating Surgeon: We saw this patient around noon. By that time the differential diagnosis was fairly obvious. We remarked at that time on the absence of subcutaneous emphysema which we thought should have been present, but he did have a collection of air in the mediastinum. We elected to omit any further diagnostic studies and to operate, feeling that he either had an incarcerated hiatal hernia with rupture or a ruptured esophagus. A transthoracic approach was made coming down across the costal margin because of the possibility of a ruptured hiatal hernia. However, it was obvious when the pleura was opened that this man had a ruptured esophagus in the classical position, posterior on the left just above the cardia. The air that you see by x-ray was all confined to the mediastinum. It had not broken through. The pleura had a small amount of turbid fluid which at the time I didn't think was gastric contents. The entire mediastinal area had a peculiar greenish discoloration from gastric secretions and bile. It looked just like a great big, long, green balloon projecting inferolaterally from the esophagus with a broad base toward the diaphragm. We found about an inch-long, longitudinal slit in the esophagus. Some would have just drained this and treated him with antibiotics, considering it a situation in which there obviously is going to be a fistula but with the hope that the fistula would close. We elected to close the esophagus with two layers of interrupted black silk, and we drained the pleura. He did remarkably well for about six days and then blew his closure, not an unusual outcome of one done fourteen hours after rupture. The golden opportunity to do an operation of this type is immediately, or at least within six hours. Otherwise, you get into this type of trouble with an infected empyema with a fistula.

Had we known then what some surgeons now are doing, this man might be alive. They still will do a primary closure, but if it reopens within three or four days, the procedure of choice is to tie off the esophagus above the cardia and at a point higher up and then either remove that portion of esophagus, or leave it. A gastrotomy and/or a jejunostomy then may be done. This takes the fistula entirely out of the picture. You then have a patient dependent on tube feeding. These patients all do well. Later, some form of esophagus is reconstructed, either substernally or by some tunneling procedure. This man died, incidentally, in about thirty days. On the sixth day, when the rupture reopened, we made another attempt at closure by means which I am now sure could not be successful. We tried to close the rupture by using pleura and muscle from the diaphragm. The infection was controlled somewhat, and the patient improved a little for a short time. The primary slit was still about the same. Unfortunately, however, all was to no avail. The rupture promptly reopened.

Dr. Shortsleeve: Thank you very much. Early in the case the opacity overlying the heart in the x-ray film was quite confusing. It apparently did represent gastric contents spilling out from the esophagus still contained within the mediastinal space. The diagnosis was made fairly certain four to five hours after the acute onset by the crunching sound that was heard beneath the mediastinum. However, the critical time element for surgical intervention was not entirely appreciated, I'm afraid. By the time further consultation was allowed to take its normal course, it was quite late when surgical intervention occurred.

Dr. Noehren: I remember, Dr. Earl Mahoney, whom most of you know in Rochester, in 1942 showing us a patient like this —sitting in bed and quite comfortable—and saying to us: "I want you to take a look at this man. Tomorrow he will be dead." We took a look at him and, sure enough, the next day he was dead.

The mortality rate from ruptured esophagus in 1943 was 100 per cent. The mortality rate today is reported to be about 35 per cent in patients operated or unoperated, and the curve is very steep. Three quarters of them will die within the first forty-eight hours, one half within the first twenty-four hours. This man, then, should have been considerably sicker the following morning as time progressed. The only way I can explain the absence of shock is that the perforation, with its migration of air, had not as yet gone out of the mediastinum. When this does happen and gastric contents are spilled into the pleural space, shock usually ensues.

Question: Is the physiology of perforation from trauma and spontaneous rupture the same?

Dr. Noehren: No. It apparently makes a big difference where the esophagus is ruptured. The mother of one of my friends complained of some pain in her throat the day after esophagoscopy, and nothing was done. She went home and was a little sick and had a little discomfort. She had a perforation of her esophagus, but by the time the x-rays were ready for interpretation, she was better. It had taken care of itself. Perforations in the upper third of the esophagus apparently are a relatively more benign problem. Ruptures in the lower third of the esophagus, on the other hand, are acute surgical emergencies, primarily because they occur under pressure at which time the gastric contents with their acids, digestive enzymes, food, etc. will spill out into the mediastinal space, where it doesn't take long for them to continue their erosion, and eventually end up in the pleural space. Therefore, it makes a difference where this rupture occurs.

Operating Surgeon: I think that everybody who does esophagoscopy work will eventually come across a traumatic rupture of the esophagus. We have had two where the blowout was in the lower third, about the same position as in this case. One occurred when we were putting down a plummer dilator tube with a pressure bag. The bag blew out and blew the side of the esophagus out. The patient immediately developed hemoperitoneum, and a crunching sound could be heard substernally. This patient was operated on within two hours and did exceedingly well. The second case ruptured at the site of a previous biopsy. We operated within three to four hours, and this patient did very well also. There is a marked difference when you know what caused the rupture and can get to it early.

DR. NOEHREN: An interesting aspect of this problem to me is why a carcinoma of the esophagus can rupture into the mediastinum, even in this area, without this acute fulminating situation occurring. And yet, in a clean-cut rupture like this there is such a terrific reverberation. They say that the same thing happens in the belly—a ruptured carcinoma of the colon generally does not produce an acute profound peritonitis. I do not know why the situation that develops slowly and yet perhaps has the same physiologic setup does not produce the same picture that you ordinarily get in a clean case like this.

ANNOUNCEMENT

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 9 to 15, 1959, in Buffalo.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

The following conditions must be observed:

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1959,* and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

ANDREW A. EGGSTON, M.D., *Chairman*
Committee on Prize Essays

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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GEORGE WALLACE, M.D.

Hypotension Due to Hemorrhage

IN PREVIOUS recent Clinical Anesthesia Conferences attention was given to some of the various conditions resulting in arterial hypotension during surgical anesthesia. Conditions such as adrenal insufficiency, various circulatory reflexes, drug effects, or positional changes do not require blood transfusion or the administration of a vasoconstrictor in order to restore the patient's arterial blood pressure. What these situations do require is an alertness of what is going on during surgical intervention and the combatting of the appropriate disturbing cause. In the present conference on arterial hypotension due to hemorrhage, blood transfusion is the treatment of choice, but we should like to stress some difficulties both in the diagnosis of blood loss and in the evaluation of proper replacement therapy.

Hemorrhage during surgical intervention has been known to result in arterial hypotension. In fact, the syndrome of hemorrhagic shock is one of the earliest known in clinical surgery. However, recent newer developments in anesthesiology pertaining to a wider choice of anesthetic agents and various drugs may alter the usual syndrome of hemorrhagic shock, which is characterized by tachycardia and cold, clammy, skin in addition to arterial hypotension. In fact, tachycardia and peripheral skin changes may be totally lacking even in the presence of obvious hemorrhage, as illustrated in the following case reports.

Discussed at a conference held at the Hospital for Special Surgery, New York City, October 6, 1958. Clinical Anesthesia Conferences are held on the first Monday of every month.

Case Reports

CASE 1.—A sixty-three-year-old woman had a painful left hip for which it was proposed to do a left suprapelvic obturator neurectomy. She was an obese woman with hypertensive cardiovascular disease. For preanesthetic medication she was given 75 mg. of Demerol combined with 0.3 mg. of scopolamine hydrobromide by intramuscular injection. An hour later on arrival in the operating room, she seemed properly sedated. Her arterial blood pressure was 210 mm. Hg systolic and 140 diastolic. Her heart rate, as determined on the electrocardioscope, was 90 per minute with a regular sinus rhythm. General anesthesia was produced by the intravenous drip infusion of 0.2 per cent Viadril followed by maintenance with cyclopropane and oxygen. Because of the patient's obesity dissection of the obturator nerve was difficult.

A certain amount of bleeding occurred during the first hour and was treated by slow intravenous drip of 500 cc. of blood. During this time the patient's arterial pressure had stabilized at 170/90 with a heart rate of 84 per minute. An hour later a sudden hemorrhage occurred when the left iliac artery was severed inadvertently. The patient blanched suddenly. Her blood pressure dipped to 120/90, but her heart rate remained at 90 per minute. A minute later her arterial pressure and pulse were unobtainable. Yet, the electrocardioscope showed persistence of a heart rate at 90 per minute without change in configuration of the electrocardiogram. Although the skin was white, it remained dry. The lacerated artery was clamped proximally. Seven additional pints of blood were required before the arterial pressure returned to 150/90 and the color of the skin became pink. The heart rate still remained unchanged. Attempts to repair the bleeding point again caused severe hemorrhage with blanching of the skin and a precipitous fall of blood pressure to an unobtainable level but without change in either heart rate or configuration of the electrocardiogram. Again, the bleeding artery was clamped proximally, and it required 5 more pints of blood to return the arterial pressure to 150/90. It was deemed necessary to repair the defect in the iliac artery by means of an arterial graft. The left femoral vein was ligated also. The operation lasted ten hours. A total of 17 pints of blood had been administered.

Postoperatively, amazingly, the patient's course was uneventful. A hemoglobin determination done immediately postoperatively and repeated on the following day showed a content of 12 Gm. per 100 cc., which was similar to what it had been preoperatively. Another happy twist was that when this woman was seen three months later she said her hip was less painful and, in addition, she was happy that her varicose veins had disappeared.

CASE 2.—A fifty-two-year-old woman had a giant-cell tumor of her left femoral condylar area. It was proposed to resect the lower end of the affected femur and then apply tibial and femoral bone grafts about a Küntscher nail. Anesthesia was obtained by means of thiopental drip and nitrous oxide-oxygen. The operation lasted five hours.

Extreme care was exerted by meticulous hemostasis to prevent bleeding. It appeared that no more than 500 cc. of blood were lost during this lengthy procedure. A blood transfusion was started after the first hour, and it was administered slowly so that 500 cc. were given by the end of the operation. The patient's skin had remained pink and dry throughout, while her heart rate had remained fairly constant, between 66 and 78 per minute. The only significant change observed was in the arterial pressure which fell progressively, although slowly, after the first hour, so that during the last four hours it diminished from 150/90 to 90/60. On the patient's arrival in the recovery room there was a marked change noticeable in her, although the time which elapsed from discontinuing anesthesia to arrival in the recovery room was only two minutes. The patient had become pale. On attempting to determine her blood pressure only one beat could be heard at the 60-mm. Hg level. The pulse was weak and 120 per minute. Additional blood was administered, and it required 1,000 cc. more before the blood pressure returned to normal.

Comment

Both cases manifested arterial hypotension due to hemorrhage, but the usual clinical signs, such as tachycardia with cold, perspiring skin, were absent. Such absence of clinical signs of hemorrhagic shock may be observed during anesthesia when there is interference with compensatory mechanisms. For instance, it is known that in spinal anesthesia ensuing sympathetic paralysis often prevents a tachycardic response. A similar lack of tachycardia during general anesthesia when obvious hemorrhage is present may be due to high oxygen in the breathing atmosphere being forced into the patient by assisted or controlled respiration technics.

A number of valuable determinations have been suggested to diagnose impending shock due to surgical trauma or hemorrhage. These include reduction in venous pressure,[1, 2] digital plethysmography,[3] hemoconcentration determinations,[4] and the measure of loss of electrolytes.[5] More recently, recommendations have been made to determine the volume of circulating blood after the intravenous injection of a known quantity of a radioactive isotope.[6, 7] Such serial blood volume determinations are expected to become routine practical technics in helping to determine both the amount of blood lost during surgical intervention and the amount of blood transfusion necessary to reach a normal volemic state.

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(*Number fifty-six of a series of Clinical Anesthesia Conferences*)

ANNOUNCEMENT

SCIENTIFIC EXHIBITS

1959 ANNUAL CONVENTION MEDICAL SOCIETY OF THE STATE OF NEW YORK

Applications for space for the scientific exhibits should be made directly to the Chairman of the Scientific Exhibits Subcommittee of the Convention Committee:

William L. Watson, M.D.
340 East 72nd Street
New York 21, New York

The Annual Convention will be held May 9 to 15, 1959, at the Hotel Statler, Buffalo.

No applications can be considered after January 15, 1959.

There will be two groups of awards:

Group I: Awards in Group I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.

Group II: Awards in Group II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of presentation and correlation of facts.

W. P. Anderton, M.D., *Secretary*
Medical Society of the State of New York

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Oil of Wintergreen, Camphor, and Lye Ingestions

The following ingestion accidents involving oil of wintergreen, camphorated oil, and lye and their mode of occurrence have been reported to the New York City Poison Control Center.

Incident Involving Oil of Wintergreen

The mother was cleaning the medicine cabinet and had placed the bottles and other contents of the cabinet on a chair. When her attention was distracted for a moment, her eighteen-month-old son picked up a half-full, three-ounce bottle of oil of wintergreen and ingested some of its contents. When the mother took the bottle away from the child, she noticed her son had ingested half of the contents. She did not know that oil of wintergreen was harmful. Later, however, when the child began to vomit, he was taken to the hospital emergency room where his stomach contents were evacuated. The child expired about eight hours after he was admitted to the hospital.

This needless death occurred because the medication was readily accessible to the child and because the mother was ignorant of the fact that oil of wintergreen could have harmful effects.

Incidents Involving Camphorated Oil

While the therapeutic value of camphor is questionable, it is still widely used in the United States. Camphor, rather mistakenly, is looked on by the laity as a valuable therapeutic agent in infections. Some parents even put camphor bags on their children to ward off colds, polio, and other infections.

The ingestion of camphor preparations by children is a direct cause of camphor poisoning. Camphor stimulates the central nervous system and its action is more marked on the higher centers.

The symptoms of camphor intoxication occur quickly and include burning sensation in the epigastrium, thirst, nausea, vomiting, headache, a feeling of warmth, excitement, restlessness, confusion, delirium, hallucinations, unconsciousness, and convulsions. The face may be flushed. Pulse is rapid and the blood pressure is elevated. The salient features are anxiety and convulsions. There is also a characteristic camphoraceous odor of the breath. (The odor should not be confused with the odor of naphthalene and paradichlorbenzene which are loosely and erroneously referred to as "camphor.") At times, depression may be the primary symptom.

Mode of Occurrence.—*Case 1:* A two-year-old boy obtained a bottle of camphorated oil from a table next to his bed in the bedroom and drank about two teaspoonfuls. His parents detected the odor on his breath and rushed him to the hospital. The child recovered.

Case 2: A twelve-year-old boy was sent to the drugstore for a bottle of castor oil.

The child was erroneously given two small bottles of camphorated oil. The parent failed to read the label and gave each of the three children a teaspoonful of the castor oil which was actually camphorated oil. (The other two children were a one-year-old girl and a ten-year-old boy.) The children immediately complained of abdominal pains and vomited. The oldest child also remarked about the odor of the preparation. All three recovered.

Case 3: While the grandmother was in the kitchen, her fifteen-month-old granddaughter climbed on a chair, took a bottle of camphorated oil from a dresser in the living room, opened it, and drank about a teaspoonful. The child immediately had abdominal pains, stupor, convulsions, etc. The child recovered completely.

Case 4: A seven-year-old girl complained of a cold, and her mother told her to go into the kitchen for a spoonful of cod-liver oil. The child disliked cod-liver oil so she went instead to the bathroom to take castor oil. She mistakenly obtained a bottle of camphorated oil and ingested one tablespoonful. The child immediately complained of a burning in the mouth and throat and was rushed to the hospital. She subsequently recovered.

Case 5: A two-year-old boy was playing in the bedroom and obtained a bottle containing spirits of camphor from the dresser. He drank about half an ounce. (The bottle was in an open dresser within the child's reach.) He immediately complained of burning in mouth and throat and had difficulty breathing. The child was rushed to the hospital. He made a complete recovery.

Case 6: A bottle of camphorated oil was on the dresser in the bedroom. While the mother was in the bathroom, her four children were playing in the bedroom. The mother smelled the odor of camphorated oil and went to the bedroom to investigate. She found her eighteen-month-old daughter covered with camphorated oil. The other children also had some on their faces and bodies. The infant soon had a convulsion and was taken to the hospital. She was admitted several hours after ingestion of the drug. At the hospital, the patient had generalized convulsions, right facial twitchings, and twitchings of the right leg. The infant soon became comatose and expired four hours after admission to the hospital. In camphor poisonings, death usually results from respiratory failure.

Treatment.—Camphor poisoning treatment consists of removal by lavage of the gastric contents. However, lavage should not be done during a convulsive attack. Convulsions may be controlled by sedatives. Short-acting barbiturates may be administered. Opiates should not be used. If respiration is impaired, artificial respiration and oxygen may be necessary. The best treatment, of course, is total prevention.

A teaspoonful of camphorated oil can be fatal to a child. It is obvious that all of the above cases of camphor poisoning could have been avoided if ordinary precautionary measures were taken. In every case, the toxic agent was made readily accessible to the child. In some instances, the children were given the wrong medication owing to the parent's failure to read the label on the bottle.

Physicians are requested to constantly remind parents to keep medications out of reach of children, to keep harmful drugs under lock and key, and always to read carefully the label on any medication or household preparation. Physicians are also requested to acquaint parents with the potential dangers of medications and other household preparations.

Incidents Involving Lye

Recently, there has been a noticeable increase in poisonings due to lye. Since the establishment of the Poison Control Center on March 9, 1955, a total of 225 lye poisonings have been reported. Twenty-five per cent of these accidents involved children between two and three years of age.

A fatal case of lye poisoning involving a three-year-old boy was recently reported to the Center. While the mother was busily engaged in an interview with a representative from the Department of Welfare, the child obtained a glass filled with lye solution which had been left on the sink. The child's cry attracted the mother's attention. The child was taken to the hospital with the following symptoms: burning in the mouth and throat, and vomiting. The lips were hyperemic, and the mucosa in the throat was also hyperemic and denuded. The breathing was labored and the lungs congested. The child was restless and drowsy. He was admitted to the hospital where he remained for twenty days. The child expired on the twentieth day in spite of therapy.

It may be well to cite a few other examples of lye poisonings, particularly with regard to their mode of occurence.

Mode of Occurrence.—*Case 1:* A two-year-old boy obtained a can of Drano (commercial lye preparation). He ingested some of its contents. The child was hospitalized for eleven days and made an uneventful recovery.

Case 2: A two-year-old girl obtained a can of lye which the mother had placed under the bed. The child crawled under the bed to play with her dog, obtained the preparation, and ingested some of the contents. She recovered.

Case 3: The mother used lye preparation for cleaning the clogged sink drain. Some pieces fell on the floor and her nine-month-old daughter picked up some of the fragments and ingested them. She recovered.

Case 4: The mother was cleaning the bathroom sink with Drano. She put the tablespoon she had used on the toilet seat. Her four-and-one-half-year-old daughter picked up the spoon and licked the residue. She recovered.

Case 5: A three-year-old girl found a can of Drano in the bottom of a clothes basket (her mother had put it there). She ingested some of the contents. The patient recovered.

Case 6: The grandmother had cleaned the stove with lye and put the container in the closet near the stove. Her one-year-old granddaughter obtained the container and ate some of the contents. She recovered.

Case 7: The can of lye was stored on the outside bedroom windowsill. While the mother was out of the room her two-year-old daughter obtained the can and ingested some flakes which she had picked off the can. She immediately complained of burning in the mouth and throat and was rushed to the hospital. The patient completely recovered.

Case 8: A three-and-a-half-year-old child obtained a can of lye from the kitchen closet while her mother was talking to a friend. The child took a kitchen knife, opened the can, and ingested some of its contents. She immediately started to cry because of burning in her mouth and throat. The mother first went to the pharmacist who advised her to put some milk of magnesia on the child's mouth. The mother then took the child to the hospital. In the emergency room the patient was treated with one-half a glass of vinegar followed by a glass of milk. The patient was further observed for three days and was finally discharged as improved. This child is apparently accident-prone. Last summer she fell from the stairway. The fall caused only a stiff neck which was treated at home.

Case 9: While the mother was preparing lunch, her four-year-old daughter took a can of lye from the drawer in the kitchen, opened it with a kitchen knife, and ingested some of the contents. The mother said: "It all happened so fast." The child was taken to the hospital where her stomach was lavaged. Treatment consisted of spraying the mouth and throat, cortisone, and feeding by gavage. The child remained in the hospital for six weeks. Because of burns of the esophagus, the child had to make several follow-up visits to the clinic.

Case 10: Two male siblings, one two years of age, the other three years of age, obtained a can of lye which the mother had left in the soap closet in the kitchen. Before the mother awakened, they opened the can and ingested one-half teaspoon each. The children complained of burning of the tongue and mouth and were taken to the hospital where they were immediately treated with vinegar and water and vinegar solution. They were discharged from the emergency room with mild burns of the lips.

Lye is a common household article used extensively for grease cleaning purposes. It is a highly corrosive agent and may dissolve the mucous membranes. Burning of the mouth and throat and difficulty in swallowing are common findings. It must be emphasized that even small quantities may be fatal.

TREATMENT.—A weak acid of 0.5 to 1 per cent of hydrochloric or acetic acid administered orally is recommended. This should be followed by the administration of salad oil and other demulcents.

It must be remembered, however, that the antidote must be administered as quickly as possible after ingestion because of the possible danger of necrosis. The hazard attendant with lavage must also be considered. In any event only a small, well-oiled tube should be used in its administration.

Physicians are reminded that strictures, scarring, and stenosis are frequently the result of lye poisonings. It is, therefore, recommended that patients be hospitalized and carefully observed for developing symptoms. Even in cases where no symptoms are presumably present and the patients are sent home, frequent follow-up visits are recommended to rule out any complications.

(*Number twenty-two in a series of Briefs on Accidental Chemical Poisonings*)

Food Faddism Has Emotional Appeal

Food faddism, which is economically wasteful, scientifically unsound, and a source of great distraction to physicians, nutritionists, and health agencies, persists and grows in this country, according to Dr. Robert E. Olson, Graduate School of Public Health of the University of Pittsburgh.

Writing in *Nutrition Reviews,* a monthly scientific publication of the Nutrition Foundation, Dr. Olson expressed the view that the persistence of food faddism is based on the emotional rather than intellectual appeal used by faddists.

Food has always had an emotional value. One of the primordial human urges is the urge to eat, and today, with the scarcity of food no longer a problem, it is still meaningful as a symbol of acceptance, friendliness, and socialization. Studies suggest that infants regard food as being equated with love, pleasure, protection, and comfort, and food faddists appreciate this symbolic value of food better than those concerned with the nutritional sciences.

VISUAL EDUCATION IN MEDICINE

COLGATE PHILLIPS, M.D., *Editor*

Chairman, Scientific Motion Picture Subcommittee
Medical Society of the State of New York

A Short Course in Medical Photography

JOSEPH P. HACKEL, NEW YORK CITY
(*President, Medical Film Guild, Ltd.*)

How can one go about acquiring a fundamental knowledge of medical photography in record time and with minimal effort?

A PERSON desiring to take a short course in medical photography must be aware of what he needs to learn, where he can receive his instruction, and how he can apply his new-found knowledge.

Becoming knowledgeable about medical photography presents a few more obstacles than taking a postgraduate or refresher course in some clinical problems. In the latter, the postgraduate student has the advantage of continuing studies in his chosen field, about which he may have considerable background. This same individual, most proficient in making a medical diagnosis, may be at a considerable disadvantage because of his lack of knowledge in medical photography, and thus consider this field an illusive and difficult study. However, all that is necessary to take a good picture is the same faith in his photographic ability that he has in his acumen to make a correct clinical diagnosis.

All those who profess to be somewhat expert in the visual arts are self-taught and have used the time-tested method of trial and error and the power of observation to become proficient in their chosen fields. More often than not the doctor taught the photographer what was needed and thus developed in him a sixth sense which can be classified as speaking the doctor's language.

One becomes proficient in the photographic arts by reading the literature and every once in a while trying out a new technic. When he achieves a good result, he becomes aware of his heightened knowledge.

The ability to take a good picture presents no greater difficulty in medicine than it does in the home. In fact, to acquire a knack for taking a medical picture, all one has to do is to carefully examine the photographic journals, such as *Modern Photography, Popular Photography,* and *Industrial Photography.* There is always an article on how to take a picture along scientific or technical lines. The position of the camera, illumination, lens opening, and other points are described in detail. One can learn a lot from such source material.

Progressing somewhat further, Eastman Kodak Company publishes a series of data books which, although elementary, have a good deal of common sense suggestions in them. These booklets are titled: *Flash*

Technique, Developing, Printing and Enlarging, Editing for Better Movies, Kodacolor Pictures, Kodak Ektachrome Film, and *Photography Through the Microscope.* The price range for these is from 35 to 50 cents each and are well worth reading.

The advanced student can progress to *Medical Radiography and Photography* published by Eastman Kodak Company. While designed mainly for the radiologist, one can always find something of general interest to the medical photographer. For example, in two recent issues this year, one article discussed "A Hobby Horse for Pediatric Photography," and a second bore the title, "High Speed Cinephotomicrography of Human Spermatozoa."

For people interested in biologic photography, a recommendation would be to subscribe to the *Journal of the Biological Photographers Association.* This organization was founded at Yale University in 1931, and the editor of the *Journal* is chief of the Department of Illustration at Marquette University, Milwaukee, Wisconsin. He is also president of the Biological Photographers Association this year. Those in New York State who wish to subscribe to this *Journal* should address the Biological Photographers Association, Inc., Box 1668, Grand Central Post Office, New York 17, New York.

The man who has time to attend a convention and desires a liberal education in the visual aid field is advised to attend the annual meeting of the Biological Photographers Association which was held in Washington, D.C. this year. A letter addressed to the editor will bring you information on when and where their next convention is scheduled.

What does a person do who has limited opportunities to travel and still would like to devote a useful period of time to acquire fundamental knowledge of medical motion pictures or clinical photographic experience? In New York City there are several courses in photography. One of particular note is that given by the City College Institute of Film Techniques. Its daytime film course leads to a Bachelor's Degree. Its specialized evening courses are for beginners and professionals in film and television.

A few examples of the subjects covered are the documentary film, fundamentals of film productions, motion picture photography, motion picture writing, motion picture editing, sound editing, motion picture directing, and recording and use of sound in films and television.

To encourage creative work in the documentary films, the Institute sponsors the annual C.C.N.Y. Robert J. Flaherty Film Award for creative achievement in the field of the documentary film. Named in memory of the pioneer film producer, the competition is judged by a panel of distinguished film critics, producers, and educators.

Another interesting series of lectures by experimental film makers is being presented at the Brooklyn Museum, located at Eastern Parkway and Prospect Park in Brooklyn. Such vital topics as: new direction in animation, color and focus, an exploration of new effects and uses of sounds, optical printing and experimental projection technics, and camera distortion are to be presented. The tuition fee is nominal.

For those who have time to read but not to take courses, there are the books, *The Film and The Director*, and *Film Making From Script to Screen and Movies for TV.*

In the specialized field of medical photography, an outstanding book is *Medical Photography* (Radiographic and Clinical) by T. A. Longmore, F.S.R., principal of the Kodak School for Medical Photography and senior instructor at Royal Army Medical College. The book, published in England, contains 200,000 words and nearly 1,000 pages. The work discusses photographic problems of both the radiographic and clinical camera user. It assumes neither previous theoretic knowledge nor practical experience on the part of the photographer. However, it makes every effort to be both factual and exhaustive, reaching well beyond the boundaries of common knowledge.

An interesting meeting to look forward to is that of the Educational Film Library Association which is scheduling an American Film Festival for April, 1959, in New York City. Part of this festival will be a judging of prize-winning films with a section devoted to medical films. Interesting educational materials should be anticipated from this group whose board of directors is made up of educators from Yale University, the University of New Hampshire, the University of Minnesota, and others.

Much has been mentioned of what goes on in New York City but that doesn't mean that everything photographic is localized in this metropolis. To mention only a few enterprising individuals from out of this city, there is Dr. Bedell of Albany, whose interesting reviews of eye ground patterns in ophthalmology are always a revelation. Likewise, the work of Doctors Watson, Ramsey, and Feinberg at the University of Rochester in cinefluorography is astonishing. The photographic excellence of scientific exhibitions put up by the Roswell Park Memorial Institute in Buffalo, which can be seen at the annual conventions of the Medical Society of the State of New York, is always worth mentioning.

Space does not permit further exemplification of the good work being done by others. What is needed in this State and in this country is an open forum where such activity can be demonstrated on a permanent basis. What is most needed is some demonstration by the medical profession that they, individually and collectively, stand ready to appreciate pioneering work being carried on in their behalf. Such a demonstration of appreciation can take the form of a prize given annually for the best film production.

Somewhat less spectacular but more worthwhile would be the constant use of the experimental films produced by those authors who have hit the mark in their search for new and novel methods of teaching medicine by visual aids. Such a definite expression of appreciation on the local level, represented by the showing of a film at various hospital staff conferences and repeated hundreds of times, would be a greater reward to the doctor (who is experimentally minded to make a film) than if he were awarded the Nobel Prize for his efforts and then forgotten one week later.

(*Number seventeen of a series on Visual Education in Medicine*)

Alaska Improves Health Record

Alaska, soon to take its place as the 49th state in the Union, has improved its health record measurably in the last ten years, it is reported by statisticians of the Metropolitan Life Insurance Company.

Between 1947 and 1957, the recorded mortality rate in the white population of Alaska decreased from 8.7 to 4.6 per 1,000, and among the nonwhites from 15.2 to 10.7 per 1,000. Particularly impressive have been the marked gains in the control of tuberculosis. Although the disease continues to be a major health problem in Alaska, the recorded death rate from tuberculosis fell more than 80 per cent between 1947 and 1957 in both the white and nonwhite populations. Actual decreases in the death rate were from 28.8 to 4.7 per 100,000 among white persons and from 574.3 to 88.4 among nonwhites. At the same time infant mortality, usually a sensitive index of general health conditions, also showed an appreciable downward trend.

Accidents ranked first among the causes of death in Alaska in 1957, accounting for nearly one fifth of the total deaths. Heart disease was a close second, and diseases of early infancy ranked third, reflecting in part the high birth rate in Alaska. Cancer and influenza and pneumonia combined were next in rank.

SELECTED REPRINTS

EDITOR'S NOTE: *Occasionally the editors of the* JOURNAL *find articles or editorials in other medical publications which seem to us so noteworthy that reprinting them for the information of the readers of the* NEW YORK STATE JOURNAL OF MEDICINE *seems to be indicated as a function of good medical journalism. These reprints will appear from time to time in this department.*

*Pourquoi Tout Ce Rhubarbe**

HENRY E. McGARVEY, M.D., BRONXVILLE, NEW YORK

(*Vice-President, United Medical Service*)

UNDOUBTEDLY the languages of Romance are far more expressive than is English. This euphony prevails whether one revels in repartee, indulges in badinage, or gets involved in acrimonious debate.

It is claimed that even the lowly tomato osmoses glamour right through the tin of its can when identified as *La Pomme D'Amour*. Certainly, *Mon Dieu* is more dramatic than *Jeez, Bonjour Mademoiselle* transcends *Hiya Babe* in debonairness, and whatever you call it at your house lacks the delicate nuance of *Cabinet de Toilette*.

Assuming that this premise is acceptable and because this article has to do with an unfortunate and unhealthy state of affairs, it would seem altogether fitting to tee off in French, perhaps the most expressive of them all.

Now abruptly to the point. At the present time the Associated Hospital Service is being subjected to a terrific verbal shellacking by far too many physicians, and exploitation of its facilities is rife in practically every community hereabouts.

The medicos are livid for sundry reasons, mostly however for three in particular:

1. They claim that AHS subjects too many hospital admissions to a long-winded medical review which much too often results in a denial of the privileges they rightfully deserve.
2. AHS dictatorially attempts to limit adequate inhospital medical care to the provisions of its contract which, in their opinion, are both utterly ridiculous and absolutely impossible, and
3. The paper work necessitated by these medical reviews has long since become an intolerable nuisance.

Strange as it may seem, most people, including a host of physicians, think that AHS and the United Medical Service are one and the same thing. Far from it. They are two separate and distinct corporations.

However, as some 4,500,000 of AHS' more than 6,000,000 contracts have a UMS piggy on their backs, many of their problems are similar—quite a few identical.

Noteworthily, they have one thing in common that is of paramount importance at the present time. They have the same Achilles' heel. Neither could exist very long without harmonious liaison with the medical profession and either could be debt-ridden into bankruptcy in a very short time were the spurs of exploitation driven in up to the boot too long.

As the vital, harmonious liaison is at a very low ebb at the present moment, let us contact 80 Lexington and get the AHS rebuttal pitch from the top medical brass. Possibly it might ameliorate to some extent the existing dissidence.

We are informed that AHS subscribers represent more than half of the total "private patient population" of the area in which it operates—the 17 lower counties in New York State—and that AHS pays more than 90 million dollars a year to its 264 member hospitals for care rendered to more than 600,000 subscriber admissions.

Also, that if the over-all interests of subscribers, member hospitals, and physicians are to be protected in such a tremendous scope of operations, certain controls, limitations, and exclusions are essential, particularly in hospital admissions where there seems to be a valid and reasonable doubt as to the availability and extent of AHS coverage. Application of these controls requires a medical review.

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* Reprinted by permission from *Westchester M. Bull.* **26:** 13 (July) 1958.

The cases held for reviews include many which are beyond the control of the admitting physician. Perhaps the patient has not been enrolled long enough to rate coverage, perhaps his contract excludes coverage for the condition in question, or perhaps there is no further coverage available for the condition during the current contract year.

Aside from these factors the two main reasons why physicians are asked for more information are these:

1. In many hospitals, staff regulations do not permit the record librarian to furnish data concerning private patients, so form requests are of necessity handed over to the physician to fill in.
2. Quite frequently the admission data given the hospital by the physician are totally inadequate, even meaningless.

We are advised that the AHS medical examiner must be guided solely by the data submitted, since he does not know the history, nor does he see, examine, or treat the patient. It follows that since an admitting diagnosis of "gallbladder," "possible ulcer," "thyroid," "heart condition," or "hemorrhage" is not very enlightening, he must, if he is to arrive at a proper and equitable decision as to the availability of AHS coverage, send in a form request for more information. Most assuredly he does not do so because of a pointless desire to add to the burden of the physician or to add to his own administrative effort and expense.

Pertinent and adequate data submitted by the physician originally would cut down to a major degree both the number of cases subjected to unnecessary delay and the number of form requests for more information.

According to AHS figures, there are only 1,600 private cases a month wherein physicians are sent form requests concerning admissions held for medical review. The medical department feels that this number culled out of more than 50,000 admissions, spread over 264 member hospitals and more than 20,000 physicians in the operating area, is not excessive, and therefore, the physician complaint about the great number of cases held for medical review is not justifiable.

Maybe so, but I seem to remember that circa some time or other way back yonder, the first sign of the deluge that Elijah prayed so long and hard for was a cloud about the size of a man's hand. History has a nasty way of repeating itself. Let us hope not.

As regards exploitation, AHS' medical departments admits that undoubtedly there are physicians who seem to feel that ethical training stops at the patient-physician relationship and does not apply to financial considerations whether the carrier be Blue Cross, Workmen's Compensation, or Commercial Insurance. It is their opinion, however, that such doctors represent a relatively minute percentage of the profession as a whole.

To my way of thinking, financially devastating overutilization of AHS facilities is practiced by great numbers of physicians thoughtlessly and without malice aforethought. For example:

The Breakwaters are friends of yours. You do an appendectomy on Gwen, and, come a Tuesday, you tell her she can go home tomorrow. She informs you that while she has been in the hospital Gus has been staying in town to catch up on some work, that he always plays golf on Saturday, and has a standing date with the Jolly Boys to play canasta Saturday night, so she would rather stay where she is until Sunday as she wouldn't want to cramp his act. What's your answer? Undoubtedly. Figure out what this unnecessary hospitalization costs AHS, stick that figure in your IBM, and multiply by thousands, and you will discover one of the major reasons why AHS is at the present moment facing the necessity of having to bust its piggy bank in order to meet current financial obligations.

Down where I auscultate and percuss we have a Long Stay Committee.

Its function is to make a report to the Medical Board each month on all patients who have been in the hospital six weeks or more and why they have not been discharged.

It is true that this committee was not appointed primarily to case the joint for AHS. It was appointed to relieve the acute bed shortage but it works both ways, and I can highly recommend its dual efficacy.

It might be wise to give the AHS pitch a reasonable amount of thought as it would be silly to choke a goose to death unknowingly that had a golden egg practically on the perineum.

What is charm? It is what the violet has and the camellia has not.—Francis Marion Crawford

SUMMARY OF COUNCIL MINUTES

There follows a summary of the minutes of the October 9, 1958, Council meeting, as adopted November 13, 1958.

A meeting of the Council convened from 9:12 a.m. to 12:05 p.m. at the Society's headquarters, 750 Third Avenue, New York City, Dr. Leo E. Gibson, president of the Society, presiding.

The minutes of the September 11 meeting were approved.

Executive Committee

Communications.—Dr. Anderton stated: "Mr. President, the Executive Committee yesterday considered correspondence:

"1. A letter of September 16, 1958, from Dr. John F. Kelley, chairman of the Malpractice Insurance and Defense Board, requesting the Council to consider the possibility of complementing the Board's efforts toward obtaining increased participation in the Group Insurance Plan within the New York City area by making a direct appeal to the Officers of the county societies.

"The Executive Committee recommends to advise the Malpractice Insurance and Defense Board to write a letter to each president of the five county medical societies in Greater New York, urging them to make this effort."

It *was so voted.*

"2. The next was a letter of September 26, 1958, from Dr. John C. McClintock, regarding Resolution 58–49, 'Medical Care, the Job of the Medical Profession.'

"The Executive Committee recommends that the Council rescind its action at the September meeting (page 3908, New York State Journal of Medicine for December 1, 1958) and reaffirm the original motion passed last June by the Council that a special committee be appointed by the president consisting of personnel from the Planning Committee and from the Public Health and possibly Rural Health Committees."

It *was so voted.*

"3. The Executive Committee recommends the Council approve the draft of a letter to treasurers of county medical societies in New York State in regard to the pension assessment which was passed at the last House of Delegates.

"Our Counsel has advised that it would be inappropriate to ask men to pay who were elected before the House of Delegates voted that assessment.

"Another point is that men who join or are reinstated after the first of October of any year pay dues for the following year and are presented with their membership for the final quarter of the year. That would leave the new members and reinstated members who would be requested to pay this assessment for the employes' pension plan, those who came in during May after the House of Delegates meeting, during June, July, August, and September. This leaves us less than five months, so that the Executive Committee thinks we should write a letter of explanation to the different county societies and offer them copies of a note that they would enclose with their 1959 bills to the men who are liable for that assessment, asking them to pay it in 1959. I so move."

After discussion, approval *was voted.*

"4. The minutes of the September 10, 1958, meeting of the Interprofessional Association of New York State were summarized for your Executive Committee. The committee recommends that the Council approve the formation of the Interprofessional Association of New York State and ask counsel if it would be legally wise for us to participate in the membership because this organization is not incorporated."

Approval *was voted.*

"5. Mr. President, there was a letter of October 6, 1958, from Dr. Thomas M. d'Angelo, requesting the Council to reconsider his position as alternate to the A.M.A.

"The Executive Committee recommends that the Council reaffirm the action taken at the September meeting."

After discussion, approval *was voted,* with Dr. Givan and Dr. Wolff voting in the negative.

"6. A letter to Dr. Gibson from Dr. Henry T. Randall, Clinical Director, Memorial Center for Cancer and Allied Diseases, New York City, proposing that there be set up a tripartite liaison group consisting of representatives of the State Medical Society, of the medical schools (clinical members of the faculty who are in senior positions, at least part of whom are full-time), and the State Hospital Association; and that this group be substituted for the combined committee of the State Society and the State Hospital Association.

"The Executive Committee recommends that the secretary be instructed to write to the Hospital Association and the Deans Committee of the Education Department, suggesting that the tripartite group consist of nine members, three from each of these bodies, to consider matters of importance from the three organizations."

After discussion, it *was voted* that action be postponed and that a copy of the letter be sent to each member of the Council so it can be studied.

"7. Dr. Moore brought to the attention of the Executive Committee in September a communication that the chairman of the Child Accident Subcommittee wished to send to all members of this Society. After discussion of cost and other factors, the Executive Committee recommended that this proposal be submitted to members of the Child Accident Subcommittee for further study.

"The Executive Committee recommends to the Council that the Board of Trustees be requested to appropriate an amount not to exceed $750 to distribute this communication to our membership."

Approval *was voted*.

"8. The Executive Committee recommends that the Council rescind its previous vote to reprint Medicare fee schedules, without fees, and instead vote to distribute the new Medicare Schedule, with fees."

It *was so voted*.

Dues Remission.—At the recommendation of the Executive Committee, the Council remitted 1958 annual State Society dues of nine members because of illness and voted to request remission of 1958 American Medical Association dues of five members.

Secretary's Report

Dr. Anderton announced the appointment of Dr. Alfred P. Ingegno to the New York State Board of Medical Examiners. He cataloged meetings he had attended during the preceding month and his schedule the day before the Council meeting.

The report *was approved*.

The Treasurer's report *was also approved*.

Reports of Committees

Blood Banks Commission.—Dr. Henry I. Fineberg, chairman, stated that a meeting of the Blood Banks Commission was held October 8. Present were Drs. Berger, Gibson, Moore, Rogers, Anderton, and the chairman. The organization of the Commission and the Blood Banks Association of New York State and the North East District Clearing House was clarified. The following conclusions were reached.

The Commission acts as the State Society liaison with the Blood Banks Association of New York State. The Blood Banks Association is concerned with education, the establishment of blood banks, improvement of the standards of blood banks, advice to donor procurement programs, establishment of educational programs, and a general policy of publicity and promotion. The Blood Banks Association also acts as the sponsor of and directs the North East District Clearing House, which functions primarily as a bookkeeping agency for the member banks to provide the following services:

1. Handling exchange of donor replacements between blood banks;

2. Facilitating borrowing and lending of blood between banks whenever and wherever necessary;

3. Keeping records, balancing accounts, and arranging settlements to cancel interbank indebtedness; and

4. Engaging in those auxiliary services that are best conducted through a central agency.

The member banks pay a transaction fee. There are three types of membership: individual, institution, and affiliate.

Dr. Fineberg stated: "I would like to bring to your attention this *Newsletter* of the Blood Banks Association. The September, 1958, issue describes the staff. Miss Evelyn Clark is carrying the responsibility for both the activities of the Blood Banks Association and the public relations and educational aspects of the North East District Clearing House program. Miss Jan Ritzler is the clearing house secretary and is carrying responsibility for the actual operational details of the clearing house. This *Newsletter* contains a description of the members of the board of directors and also the various committees.

"From information that we have been able to gather, it appears to be reasonably certain that the North East District Clearing House will, in the not too distant future, become financially solvent and self-supporting. However, the Blood Banks Association will still require subsidization in the amount of between $8,000 and $10,000 annually."

It *was voted* to approve the report.

Dr. Wurzbach stated: "Knowing the lack of knowledge throughout the State as to the functions of the three different parts, I recommend to the Publication Committee that the first portion of this report, giving an analysis of what the three parts are and their functions, be included in an editorial in the JOURNAL."

It *was voted* that this be done.

Budget.—Dr. Dattelbaum and the Council discussed the 1959 budget in executive session.

The budget *was adopted* as amended.

Constitution and Bylaws.—Dr. Ezra A. Wolff, chairman, advised approval of amendments to the constitution of the Medical Society of the County of Erie and the revised constitution of the Medical Society of the County of Rensselaer.

Approval *was voted.*

Convention.—Dr. Samuel Z. Freedman, chairman, reported.

It *was voted* that the annual convention be held in Rochester in 1961 if invited by the Medical Society of the County of Monroe.

Economics.—Dr. John C. McClintock, chairman, submitted the following report:

"George P. Farrell, director of the Bureau of Medical Care Insurance and Administrative Officer of Medicare, attended the Sixth District Branch meeting September 24, 1958, at Cooperstown.

"A special newsletter has been prepared outlining the change in the Medicare Program which became effective October 1, 1958.

"On September 18, 1958, a letter was received from Lt. Colonel Walker W. Evans, Contracting Officer, Office for Dependents' Medical Care, in Washington, D.C., to the effect that, unless a new schedule of allowances was made available to physicians, of the new procedures and codings, it might affect the statistics as well as produce difficulties in their office as far as payments are concerned. It was requested that the Schedule of Allowances Manual be printed without fees if desired by the State Society. The printing and distribution of the Manual would be charged to the contract, and it was necessary to obtain bids for this work and advise their office."

Dr. Anderton stated: "Mr. President, in Dr. McClintock's absence, may I report to the Council that we have received from the United States Government a supplemental agreement regarding Medicare. This includes the changes in policy which go into effect October 1. I move that the chairman of the Board of Trustees be requested to sign this supplemental agreement subject to approval of legal counsel."

Approval *was voted.*

Labor Union and Industrial Health Centers.—Dr. Joseph A. Lane, chairman, reported progress.

Legislation.—Dr. Anderton reported for Dr. James M. Blake, chairman: "There has been no meeting of the Committee on Legislation since this Council last met. We are completing plans for regional meetings of county legislation chairmen. We hope to have the county chairmen informed of the legislative program as early in the year as possible."

It *was voted* to approve the report.

Federal Legislation Subcommittee.—Dr. John F. Rogers, chairman, presented the following:

"Each year, more and more health and medical bills are introduced. In the 85th Congress, 704 medical bills were watched, along with resolutions, of the 20,604 total legislative proposals introduced during the two-year period.

"The American Medical Association was fortunate in its legislative work, for it supported most of the 19 major medical bills passed, and not a single major bill opposed by the Association became law.

"A recent telegram on October 1 from Dr. Blaisdell, a member of the A.M.A. Legislation Committee, requested comment and criticism on all aspects of the A.M.A. legislative program and activities, including the Washington office.

"I drew up such a letter, a short summary of my own opinion, plus other peoples. I don't feel that I should take your time to read it."

It *was voted* to adopt the report.

Special Committee to Study the 1958 Management Survey Report.—Dr. Renato J. Azzari, chairman, reported: "The committee met last Sunday and devoted most of the time to a review and evaluation of the qualifications of applicants for the position of executive director.

"We have no recommendations, but the committee is making arrangements for interviews with the applicants, and we hope to bring in a recommendation on November 13.

"Allow me to request some member of the Council to move a recommendation to the Board of Trustees that $500 be appropriated for expenses that will be involved in travel for the applicants who are invited to appear before the committee."

It *was voted* to approve.

Moving.—Dr. Gerald D. Dorman, chairman, reported: "Tom Alexander and Walter Anderton have been busy about certain deficiencies in the catering department which are necessary when our meetings are held in this room. I hope shortly we will be able to ask for discharge of the committee."

It *was voted* to accept the report.

Nursing Education.—Dr. John M. Galbraith, chairman, stated: "The Nursing Education Committee reports that Drs. Anderton, Wurzbach, and Galbraith attended the Nurse Resource Study Group meeting sponsored by the State Education Department on October 7.

"If anybody wants copies of this report on Nursing Education and Resources, I will ask Miss Manley to send you one."

Office Administration and Policies.—Dr. John J. Masterson, chairman, stated: "Because Christmas and New Year's Day fall on Thursdays, it was decided to allow each member of the staff to have off either Friday, December 26 or January 2.

"The committee received a request for permission to sell Christmas cards in the office to staff members. The proceeds of the sale would go to the United Nations Children's Emergency Fund. After discussion, it was voted not to grant permission for reasons of setting a precedent.

"After discussion, it was voted that the committee study the entire program as to employes' physical examinations, both annual and pre-employment."

The report *was accepted*.

Publication.—Dr. Alfred P. Ingegno, chairman, reported: "The committee held its regular monthly meeting on October 7. The 1959 budgets for the JOURNAL and the *Directory* were approved. It was voted that the Council be requested to add $750 to the JOURNAL budget with a like amount added to the annual meeting budget to cover recording and transcribing panel discussions at the 1959 Buffalo annual meeting."

It *was voted* to approve.

"I have here the letter from the International Recording Guild, which contains the conditions of service. It requires signature of the chairman of the Board of Trustees, which is recommended.

"Dr. Redway proposed that we prepare a four-page color brochure showing views of our new office. This would be bound into an issue of the JOURNAL. In addition, the Public Relations Committee would use about 8,000 copies. After discussion, it was the sense of the meeting to discuss the matter further and to invite Dr. Rogers, chairman of the Public Relations Committee, to our next meeting.

"It was also voted to increase the selling price of the 1959 *Directory* from $15 to $20."

It *was voted* to approve this portion of the report and the report as a whole.

Planning Committee for Medical Policies.—Dr. Frederick A. Wurzbach, chairman, reported progress.

Public Health and Education.—Dr. Norman S. Moore, chairman, presented the following report:

"One resolution from the House of Delegates referred to this committee recommended that 'diligent and persuasive methods be found to impress medical school administrations in New York State with the importance in the community of the general practitioner.' Accordingly, your chairman wrote to the deans of all the medical schools in the State requesting their comments—as a follow-up of the meeting held last February, when the same subject was discussed.

"There has been an excellent response, indicating that all is being done that possibly can be done to orient medical students to general practice. When replies from the four remaining schools have been received, we shall report the results to the *Subcommittee on General Practice* and the New York State Chapter of the Academy of General Practice.

"The resolution from the Dutchess County Medical Society regarding the 'Prenaphos Protection Program,' referred to this committee at the September meeting of the Council, has been transmitted to the *Subcommittee on Maternal and Child Welfare*.

"On September 11 a postgraduate program on school health recommended by the *Subcommittee on School Health* and planned under the direction of its chairman, Dr. William E. Ayling, was presented at the State University College of Medicine in Syracuse. Dr. Ayling reports a most successful meeting attended by over 50 physicians.

"Since the report at the September meeting of the Council, 19 postgraduate education meetings have been arranged in seven counties."

It *was voted* to accept this portion of the report.

Dr. Moore supplemented his report by stating: "The *Subcommittee on Heart Disease*, which has been inactive for a good deal of the time for many years, had two very productive meetings last year. The Subcommittee on Heart Disease has an ad hoc subcommittee working on the problem of the cardiac in industry. This ad hoc committee is meeting next week regarding an item we can take to the Associated Industries and insurance companies, regarding the cardiac in industry.

"The office has received word that Dr. Willis Weeden, whom the Council recommended to the Governor's Committee on Employment of the Physically Handicapped, has received a citation for meritorious service and hence is recommended for the national competition. A recommendation was received yesterday that I request the presentation to be made as suggested by Miss Parisi, at a luncheon on October 23 during the Workmen's Compensation Institute at the Hotel Statler Hilton."

Approval *was voted*.

Dr. Moore continued: "I am sure you realize that for the past ten years there has been a Medical Society page in *Health News*. This usually discusses the feature article. *Health News* goes to every doctor in upstate New York. It does not go to the doctors in New York City because that area is under the New York City Department of Health. I have tried hard to obtain articles, and this past month I canvassed Columbia University, Cornell, New York University, Rockefeller Institute, and Sloane-Kettering. I even went to Brookhaven to get somebody to write comments on medical genetics. I finally got a colleague of mine, a Ph.D. who is a good geneticist.

"In talking with Dr. Hilleboe, Dr. Quinlivan, and Mrs. Hurell, the editor, I suggested that we give up the practice and that we use this as a Medical Society page for current information that should be given to doctors upstate on medical and health matters. Instead of commenting on an article that is already written and gilding the lily, it is suggested we use the page constructively, and I have a letter from Dr. Quinlivan accepting the deal. With your permission I would like to work with the Public Relations Committee on that page."

This portion of the report *was adopted.*

Dr. Moore added: "All medical salaries in the Department of Mental Hygiene were reviewed by our *Mental Hygiene Subcommittee* last year, and they put a resolution in the House of Delegates requesting the Commissioner to raise salaries in the mental hospitals among the medical personnel. This was delegated to me to implement, and I have done so. I have received a letter from Dr. Hoch giving his appreciation for the medical support behind a very knotty problem.

"Following that I became cognizant of the same problem in the State Health Department hospitals, Roswell Park, and the tuberculosis hospitals, where staff is being depleted to clinics and private practice. We are getting into a sorry state also in health departments, full-time health departments, upstate.

"In looking into this, I find Civil Service has geared all medical salaries in the State to the commissioner's salary. After finding out this, I spoke to the deputies, Dr. Ingraham and Dr. Larimore. Here is a list (*indicating*) of people who have resigned from Rosewell Park in the last year because of salary. Here are the people (*indicating*) who are being weaned away from these institutions on salaries up to $40,000. Here are the competing offers, and we can't do anything about them. After giving this much consideration and knowing that Dr. Hilleboe would have to give authority to someone to get medical support, as we did for Dr. Hoch, I asked him if he would give me authority to go ahead. He said, 'Yes, but I don't want to have anything to do with it; I know it is important but I feel that I should not have anything to do with it.' "

Dr. Moore spoke off the record.

A proposed letter to Governor Harriman was read. After discussion, it was referred back for revision. The version, revised as per suggestions by councillors, is as follows:

Dear Governor Harriman:

The Medical Society of the State of New York has long maintained a concern with the quality of governmental medicine, which traditionally has been of the highest order in New York State. The continually increasing complexity of all phases of medicine, the ever larger part that it is playing in the lives of all citizens, and the continuing interest of the State of New York in preventive medicine, teaching, research, and medical care necessitate that New York State's employed physicians be of the first rank.

The number of defections of State Health Department medical personnel to fields which provide increased income is eloquent testimony to the need for upward revision of salaries for the attraction and retention of the best qualified men in such key posts as the professors in the State medical school, research physicians at the Roswell Park Memorial Institute, psychiatrists in State mental hospitals, and health officers in State and local health departments. It is not necessary that incomes in other fields which compete for medical personnel be equalled monetarily by State salaries but merely that the margin between the two not be excessive.

Last year the Federal Government took cognizance of raising the salaries of its medical scientists and this year has similarly raised the salaries of its administrative and executive physicians in the National Institutes of Health.

The most important position in governmental medicine in New York State is that of the Commissioner of Health. All other State medical salaries must inevitably be related to this position. The present compensation paid to the Commissioner of Health is not commensurate with the responsibilities involved and also has a depressing effect on the salaries of other medical personnel. The present incumbent is, of course, of world-wide repute and could command a much higher salary elsewhere, but, entirely apart from personalities involved, it is believed that the salary for this position should be raised to $25,000 a year. We regard this as the most important single step which should be taken to maintain New York State's leadership in its official health responsibilities.

Your consideration of this matter will be appreciated.

Dr. Moore concluded by praise of Dr. James Greenough's work as chairman of the Ad Hoc Committee on Staphylococcal Infections.

It *was voted* to approve Dr. Moore's report for the Public Health and Education Committee as a whole as amended.

Public Relations.—Dr. John F. Rogers, chairman, presented the following: "Attendance at the district branch meetings, preparation for the annual conference of county medical society public relations chairmen, and the publishing of a special issue of the *Newsletter* were some of the activities in which the Public and Professional Relations Bureau participated during the past month.

"Representatives of the Bureau aided in registrations at the district branch meetings, and attended to publicity.

"Arrangements have been completed for the annual conference of county medical society public relations chairmen at the Hotel Roosevelt on Saturday, October 25. Mr. Leo Perlis, director, Community Activities, AFL-CIO Services Committee, will discuss various matters of interest to the medical profession. Dr. Joseph A. Lane, chairman of the

Council's special Ad Hoc Committee on Union Health Clinics, will also speak. Senator Metcalf and Assemblyman Ryan have agreed to take part in the program pertaining to medical legislation. Dr. James Blake, your Legislation Committee chairman, will be lead-off speaker.

"Addresses by members of our Society at the PR Institute of the A.M.A. in Chicago recently were distributed to county medical society public relations chairmen. The titles were 'Reducing Staphylococcal Infections,' by Dr. James Greenough of Oneonta; 'Physician's Guide to Social Services for the Older Patient, by Dr. Joseph J. Witt of Utica; and 'Promoting Community "Weeks," ' by Dr. Edgar C. Beck of Buffalo.

"Mr. Martin Tracey attended the first meeting of the Committee on Legislation. It is the intention of your committee to work closely with the Legislation Committee and to be helpful to other committees.

"Among requests from writers for help during the past weeks were two for articles intended for *Better Homes and Gardens* and the *New York Herald-Tribune*.

"As a means of stimulating county medical societies to renewed activity, a new 'PR Target for 1958–59' was distributed to public relations chairmen. This outlines eight basic projects. Eighteen supplemental projects are listed to add strength.

"Following the selection of the Outstanding General Practitioner of the Year 1958 by the Council at its September meeting, a release, accompanied by a brief biography, was sent to newspapers in the metropolitan area and throughout the State.

"On September 24, the Bureau again cooperated with the Fannie Hurst television program 'Showcase,' televised over Channel 5, now WNEW-TV, formerly WABD. We obtained a psychiatrist, member of our State Society, to participate with a Hollywood producer and the editor of a mystery magazine. The title was, 'Are Horror and Mystery Films and Literature Good Psychological Entertainment?' The psychiatrist condemned both the use of films and books for the purpose of bringing horror stories to children. The State Medical Society was given credit for its cooperation in producing the show.

"Publicity was given to postgraduate lectures by releases to newspapers in Jefferson, Steuben, and Suffolk Counties.

"The Speakers Service cooperated with the Rockland County Medical Society in planning six talks on the progress of medicine and surgery for part of the Nyack adult education program.

"To bring changes in the Medicare program, effective October 1, to the attention of all physicians in New York State, a special issue of *Newsletter* was distributed."

Dr. Rogers supplemented his report as follows: "We have before you the PR target for 1958–1959. I hope you will all look over the eight basic public relations projects which we hope every county will put into operation. The television programs are working up added interest. Those who may receive the New York County medical bulletin, *New York Medicine,* would be interested in an editorial on so-called M.D. pitchmen, which is recommended for reading. Since some of the television networks, CBS in particular, have made an agreement they will no longer have white coated men, not physicians, discussing the relative need of medication, they are approaching recent graduates or young physicians who are not as economically well situated as those in the older group to discuss the merits of some particular pill or drug.

"Our General Practice Award achieved considerable publicity. There are editorials in several county and town newspapers, and news articles. A comment in *New York Medicine* was that they were disappointed their candidate did not receive the nomination. It was stated that they thought a big city physician might have a chance to go after the national honors. They forgot that in 1954 Dr. Pisani received our State Society award.

"District branch publicity and speeches received a nice reaction. Here is an article that appeared in a newspaper with a picture of our president.

"You are all familiar with your *Newsletter* that was a special edition for the 1958 convention. Our regular issue of the *Newsletter* costs $450. This particular edition costs $1,300, and this year it is estimated it would probably be at least $850 over a regular edition, and perhaps it might run to $950. The Public Relations Committee is willing to go along, but I would move that this special *Newsletter* convention issue be printed for the 1959 convention with the understanding that the difference between our normal cost and the extra cost of this issue be borne by the Convention Committee."

It *was so voted.*

Approval of the report as a whole *was voted.*

Rural Medical Service.—Dr. Edward C. Hughes, chairman, reported: "Mr. President and members of the Council, the Committee on Rural Medical Service would like to have you approve their program. Statistics reveal that the inhabitants of rural areas are becoming extremely interested in medical care, which is changing considerably. Some rural areas are critical and are not desirous of subsidized medical care. They desire and are able to pay for better and more complete service for their families. Statistics reveal that they have spent considerably more money on their medical care and insurance in the past few years. The farmers are interested in keeping their medical care in the local areas in which they live and are not interested in government interference. Although medicine in general is improving in these areas, there is still room for progress.

After careful consideration of the possible functions of the Committee on Rural Medical Service, it is the opinion of its members that there are many diversified yet coordinated educational services that can be rendered to the rural communities which will improve medical care and service. It is also the thought of the committee that the Medical Society of the State of New York should take an active part in the improvement of this service. The committee feels that in order to be effective, their services must extend to every rural county. Therefore, the committee proposes the following program:

"It is anticipated that an educational program be set up in these areas by using the combined efforts and skills of the local physicians and health officers with those of State and local lay and farm organizations.

"The individuals and agencies involved would be:

"1. Local physicians and health officers designated by their local county medical societies to become active in the program.

"2. Local county farm groups involved in this program would be (*a*) agricultural extension service, (*b*) home demonstration committees, (*c*) farm bureau, (*d*) 4-H Clubs, (*e*) local grange, (*f*) Dairymen's League.

"3. Field representatives of the Committee on Public Relations and coordinated medical and lay groups should help to plan this program.

"4. The Committee on Public Health and Education should be a part of the program and could provide educational facilities.

"5. Other committees of the Medical Society, such as the Subcommittee on Maternal and Child Welfare and the Subcommittee on Accident Prevention of the Public Health and Education Committee, should share in the educational effort.

"6. A meeting of these groups will help decide methods of communication and will determine the rural health problems as seen from the lay angle.

"Inasmuch as each county in the rural areas is involved, it is necessary that the Committee on Rural Medical Service be enlarged in the following manner:

"1. The State will be divided into the eight districts of the New York State Department of Health. The center of each district will be in the corresponding medical center. These are in Buffalo, Rochester, Syracuse, Albany, and some downstate city.

"2. A district chairman will be selected by the Rural Medical Service Committee to serve as coordinator in each district. This chairman should be chosen by the committee instead of the county medical society. Representatives from lay and farm groups would also be selected in these key cities. A coordinated program will be arranged by the district chairman and these representatives to extend into the rural counties.

"3. Each rural county medical society will be asked to select a doctor in its county to represent the rural medical service in his area. This appointment will be rotated every two years so that several doctors will have an opportunity to serve on this committee. The health officer in each area also will be invited to take part in the program. Representatives of the local county farm organizations will be appointed by the district chairman of these respective lay organizations.

"4. Field representatives of the Committee on Public Relations of the State Medical Society will also act as the coordinators in the individual areas.

"5. Speakers designated from the roster of speakers of the Committee on Public Health and Education will be used to provide whatever lectures will be necessary.

"The following methods of disseminating the educational media are suggested:

"1. Articles will be written by members of the rural medical service or other special committees to be published in all farm journals which will go to the homes of the constituents.

"2. Lectures given by local doctors or doctors designated by the committee on special topics will be given at combined meetings of doctors and lay organizations in respective counties. This could be arranged through the local grange.

"3. Educational material will be printed in health journals that go to the doctors of the counties.

"4. Any other method of legitimate dessemination of educational material will be used such as radio and television program. All material will be approved by the coordinator. Examples of topics that could be used for discussion are as follows: (*a*) open meetings for the discussion of diabetes, (*b*) prenatal care, (*c*) survey of cancer, (*d*) control of accidents, (*e*) insurance plans, (*f*) yearly physical check-ups, (*g*) relationship of local committees to the medical centers of the area, (*h*) dangers of farm hazards, (*i*) articles on veterinary medicine, and (*j*) articles describing the function of the Medical Society of The State of New York and many other articles of lay interest.

"There are a great many topics that could be discussed and carried to these areas. The committee is aware of the fact that this is a long-time program. This cannot happen overnight. We would like the approval of the Council at this time."

After discussion, approval *was voted.*

Staphylococcal Infections.—Dr. James Greenough, chairman, stated: "At the time of our last report I hoped that the rough draft could be ready at this time. However, the rough draft as circulated was found to be much too long, involved, and rather poorly written. As a result, four members of the advisory committee plan on October 18 and 19 to review and finish it. Then on October 30 it is planned to have a meeting of the joint committee to review the draft.

"After that, it is the plan of the joint committee to submit it to the American Medical Association, the American Hospital Association, and the United States Public Health Service so there will be no conflict. Dr. Hilleboe has offered to ask Dr. Larimore to take the draft to Chicago to save time. If satisfactory, it would then go for printing.

"At Dr. Hilleboe's suggestion, it is going to be published in the same size as the Guide for Prevention of Infection in Hospitals because it will be a supplementary article to that, and it is hoped that the two could be distributed together to all of the doctors in the hospitals involved in New York State.

"I would like information on one question, is it the desire of the Council that the final draft be submitted to the Council for approval before we go ahead with the other steps? You have appointed two members of the joint committee with, I understood, authority to act.

"This does not involve the Medical Society alone; it involves also the State Health Department, the Department of Social Welfare, and the Hospital Association, so that we are only one quarter of this proposition. We also have a committee of experts as advisers, and if it gets by them I think it should be fairly correct. If the draft must be submitted to the Council for approval, it will probably be postponed for a month or so.

It *was voted* that the draft not be submitted to the Council for approval.

Woman's Auxiliary.—Dr. Thurman B. Givan, chairman, stated: "It gives me great pleasure to report that at the New York State Fair in Syracuse two county auxiliaries received special awards. The Cattaraugus County Auxiliary received a first prize for its work in behalf of retarded children, and the Jefferson County Auxiliary received a second prize for its work in nurse recruitment.

"Mrs. Maurice G. Sheldon, president, and Mrs. James McCartney, president-elect, attended the Labor Day program at the Fair when these awards were made. Later Mrs. Sheldon presented the Auxiliary's objectives in a broadcast from a local radio station.

"Plans for the Fall Conference at Kingston, and for the program book, containing the State Auxiliary's suggestions for county auxiliary activities for the coming year, have been completed. Mrs. Sheldon also has attended the meetings of the Sixth, Seventh, and Eighth District Branches and is planning to attend the meeting of the Fifth District Branch.

"I should note that both our State and county auxiliaries have long been engaged in nurse recruitment and would be most willing to cooperate with any of our State Society committees interested in the problem."

Approval of the report *was voted.*

Workmen's Compensation.—Dr. Gerald D. Dorman, chairman, reported: "Tomorrow Miss Angela Parisi has asked that the president of the Society and myself meet her in regard to the fee schedule.

"On October 22 and 23 there is a two-day forum on workmen's compensation at the Hotel Statler in New York City, and on October 30 there will be a workmen's compensation discussion at the district branch in Amsterdam. Miss Parisi will be in Amsterdam where I am also scheduled to speak."

Dr. Dorman made a statement off the record, and discussion followed.

It *was voted* to accept the report of the Committee on Workmen's Compensation.

Unfinished Business

Certificates for Sponsoring Physicians' Office Assistants Courses.—Dr. John F. Rogers stated: "Mr. President, I have one item of unfinished business. At the November, 1957, Council, you approved awarding a certificate to county societies that had conducted courses for medical assistants. During the interim we have been working in the Bureau of Public and Professional Relations on the type of certificate. Yesterday, although late, we brought this to the Executive Committee. I might pass this draft among you. It was felt that the third line was not necessary, that the Medical Society of the State of New York is awarding these to the county societies. Although the Committee on Public Relations developed it, we feel that a formal certificate need not carry the name of the Council Committee on Public Relations. I would like to see the committee name stay on, but I feel that the Medical Society of the State of New York is really the one that is sponsoring the whole award, and perhaps the committee name should be left off and it should be signed by the president and the secretary. I so move."

It *was voted* that Public Relations Committee be not named on such certificates.

Resolution 58–49.—President Gibson stated: "I would like to go back for a moment to Resolution 58–49, Dr. Wertz's resolution. It has given us a lot of trouble. The Council did one thing, and then rescinded its action, and then the resolution went back to a special committee as the Council directed in the first place. I appointed a special committee consisting of Dr. Aaron, Dr. Hughes, and Dr. Gagan. I would like permission to add to that special committee Dr. Wertz, who introduced the resolution."

Permission *was granted.*

New Business

Resignation of Dr. Calihan.—Dr. Anderton stated: "Mr. President, under new business, I take the liberty to bring up two points. One, the resignation of Dr. Robert J. Calihan, of Rochester, from the Legislation Committee effective October 17, 1958. I move its acceptance with regret, and that the president be requested to appoint his successor."

Approval *was voted.*

"Mr. President, your secretary takes the liberty to suggest that the Council empower him to conduct a membership drive. There are several thousand physicians in this State who are not members of our Society. There are many reasons why they all should be.

"I move that a membership drive by the secretary is hereby endorsed by the Council."

After discussion, approval *was voted.*

Dr. Anderton added: "And as a corollary, sir, I move that the Council request the Board of Trustees to allow the secretary to spend up to $1,000 in his projected drive for new members.

Approval *was voted.*

Amendment to Educational Department Regulations Relating to Unprofessional Conduct.—Mr. William F. Martin, Counsel, stated: "This is a matter that we put over last time because the meeting ran rather late. It is a letter our secretary sent me asking my thoughts about the matter. This is a letter from the Assistant Commissioner of Education, to Dr. Anderton, under date of June 27, 1958, which reads: 'Chancellor Brosnan of the Board of Regents is desirous of having Section 30 of the Regulations of the Commissioner relating to unprofessional conduct in the practice of medicine amended by adding a final clause to paragraph (*c*) of Subdivision 4 so that said paragraph will read as follows:'

"I am going to skip some of this. It relates to the disclosure by a physician of confidential communications and data from his office records. The additional language is: 'nor shall the revealing of such facts, data, or information by a physician or a hospital to attorneys to aid in defense of a suit or claim against them by a former patient constitute unprofessional conduct.'

"Dr. Anderton points out that grammatically the words 'or a hospital' do not seem to relate to anything previously said about a doctor making disclosures. However, it is our thought that it is very useful language to have in there."

After discussion off the record, Mr. Martin stated: "I think we should let the Assistant Commissioner know we approve of this suggested amendment by the Chancellor of the Board of Regents."

After discussion, approval *was voted.*

Social Security.—

It *was voted* that the Federal Legislation Subcommittee, with the advice of Counsel, look into the subject matter of social security for the membership of the Medical Society of the State of New York.

Physicians and Surgeons Day.—Dr. Gibson stated: "Gentlemen, under New Business I would like to make a few remarks about Physicians and Surgeons Day. You will remember that we had this last year, and I would like to make the following remarks:

"Governor Averell Harriman, in a proclamation to be made public tomorrow, has designated Saturday, October 18, 1958, as Physicians and Surgeons Day. This observance is to commemorate the feast of the Evangelist Saint Luke of Antioch, patron saint of physicians.

"The Governor calls upon the people of the State to observe this occasion 'in every appropriate way.' He points to the 'almost incredible advances of medical science and to the practical application of that science by our increasingly skilled physicians and surgeons,' and to resulting increase in life expectancy year by year.

"It is gratifying to learn of this new recognition of the continuous service of the medical profession to the public and of its constant devotion to the improvement of its abilities to minister to the health of the people. There has been a great increase in recent years in the appreciation of the technical advances made in the medical field. It is fitting that there be a day set aside so that the dedicated men and women who make those advances possible and put them into practice are suitably honored.

"Very recently Governor Harriman also set aside the week of October 19 to 25 as 'Family Doctor Week,' honoring the general practitioner for his knowledge, skill, and devotion in tending the health needs of the whole family. To this, as a state medical society, we can add our hearty endorsement.

"I think it would be appropriate for us to officially acknowledge the Governor's action and to express to him the thanks of our Society on behalf of the physicians and surgeons of New York State and also to send a message of felicitation to the New York State Chapter of the American Academy of General Practice in recognition of 'Family Doctor Week.'

"I should also like to recommend that the county medical societies in the State be urged to lend their full cooperation to the observance of Physicians and Surgeons Day on October 18 by enlisting the aid of their local newspapers, radio and television stations to bring home to the people of the State the significance of this celebration."

Approval *was voted.*

NECROLOGY

Nathaniel Berg, M.D., of Sunnyside, died on November 26, 1958, at the age of forty-seven. Dr. Berg graduated in 1937 as a Licentiate of the Royal College of Physicians and Surgeons of Edinburgh and of the Royal Faculty of Physicians and Surgeons of Glasgow and interned at Knickerbocker Hospital. He was chief and an associate attending physician in peripheral vascular diseases at the Queens General Hospital Outpatient Department. Dr. Berg was a member of the Queens County Medical Society, the Medical Society of the State of New York and the American Medical Association.

Donald Francis Buschle, M.D., of Syracuse, died on November 14, 1958, at the age of thirty-three. Dr. Buschle graduated in 1949 from Syracuse University College of Medicine and interned at St. Joseph's Hospital. He was an associate in anesthesiology at St. Joseph's Hospital. Dr. Buschle was a Diplomate of the American Board of Anesthesiology and a member of the American Society of Anesthesiologists, Inc., the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John William Carter, M.D., of Syracuse, died on November 11, 1958, at his home at the age of fifty-nine. Dr. Carter graduated in 1927 from Syracuse University College of Medicine.

Herman Cohen, M.D., of the Bronx, died on November 26, 1958, at the age of seventy-seven. Dr. Cohen graduated in 1905 from Columbia University College of Physicians and Surgeons. He was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George William Cumbler, M.D., of White Plains and New York City, died in his office on November 14, 1958, at the age of sixty-five. Dr. Cumbler graduated in 1920 from New York University and Bellevue Hospital Medical College and interned at Bellevue Hospital. He was an associate attending physician at St. Agnes Hospital and chief of the Arthritis Clinic of the White Plains Hospital Outpatient Department and St. Agnes Hospital Outpatient Department, and an honorary member of the staff of Grasslands Hospital. Dr. Cumbler, who founded the arthritis clinics at the White Plains and St. Agnes Hospitals as well as the one at Grasslands, was also a former instructor at the Neurological Institute, Columbia-Presbyterian Medical Center. He was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the American Rheumatism Association, the New York Academy of Medicine, the New York Rheumatism Association, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Maurice G. Der Brucke, M.D., of Brooklyn, died in Caledonian Hospital on November 15, 1958, at the age of fifty-nine. Dr. Der Brucke graduated in 1920 from Long Island College Hospital Medical School. He was director of obstetrics and gynecology at Coney Island Hospital and an associate in obstetrics and gynecology at Caledonian Hospital. Dr. Der Brucke was a Diplomate of the American Board of Obstetrics and Gynecology and of the International College of Surgeons, a Fellow of the American College of Surgeons the International College of Surgeons, and the American College of Obstetrics and Gynecology, and a member of the Brooklyn Gynecological Society, the Kings County Medical Society, and the Medical Society of the State of New York.

Francis J. Doyle, M.D., of Fort Lauderdale, Florida, formerly of South Ozone Park, died on July 18, 1958, at the age of eighty. Dr. Doyle graduated in 1902 from Long Island College Hospital Medical School.

Wilfred Vincent Egan, M.D., of Brooklyn, retired, died on November 29, 1958, at his home at the age of sixty-eight. Dr. Egan graduated in 1914 from Long Island College Hospital Medical School. He was a consultant in obstetrics and gynecology at the Hospital of the Holy Family and St. Peter's Hospital. Dr. Egan was a Fellow of the American College of Surgeons and a member of the Brooklyn Gynecological Society.

Bernard Friedman, M.D., of the Bronx, died on October 21, 1958, at the age of sixty-five. Dr. Friedman graduated in 1925 from the University of Maryland School of Medicine and College of Physicians and Surgeons.

David D. Friedman, M.D., of Brooklyn, died on November 7, 1958, at the age of fifty-nine. Dr. Friedman graduated in 1924 from Long Island College Hospital Medical School.

Charles F. Gay, M.D., of Brockport, died on November 9, 1958, in Lakeside Memorial Hospital at the age of forty-seven. Dr. Gay graduated in 1936 from the University of Rochester School of Medicine and Dentistry and served with the Army during World War II. He was a member of the American Academy of General Practice, the Rochester Academy of Medicine, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ernst Jolowicz, M.D., of New York City, died on November 12, 1958, at the Lenox Hill Hospital at the age of seventy-six. Dr. Jolowicz received his medical degree in 1907 from the University of Munich. He had served as a psychiatrist at the New York State Training School for Boys in Warwick. Dr. Jolowicz was a Fellow of the American Psychiatric Association and a member of the Association for the Advancement of Psychotherapy, the Rudolf Virchow Society, the New York County Medical Society, and the Medical Society of the State of New York.

Joseph Kasmer Kiebala, M.D., of Buffalo, died on September 1, 1958, at the age of sixty-six. Dr. Kiebala graduated in 1913 from the University of Buffalo School of Medicine. He was a member of the Erie County Medical Society and the Medical Society of the State of New York.

Isaac Horatio Marcus, M.D., of Brooklyn, died on October 11, 1958, at the age of seventy-four. Dr. Marcus graduated in 1908 from New York University and Bellevue Hospital Medical College.

Robert Francis McDonald, M.D., of Brooklyn, died on November 21, 1958, in St. Mary's Hospital at the age of seventy-eight. Dr. McDonald graduated in 1901 from Cornell University Medical College and interned at Gouverneur Hospital. He was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lewis Walter Pearson, M.D., of Brooklyn, died on November 25, 1958, at the age of ninety-two. Dr. Pearson graduated in 1888 from Bellevue Hospital Medical College. He was a member of the Brooklyn Surgical Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ethel Freund Reisner, M.D., of New Rochelle, died in New Rochelle Hospital on November 16, 1958, at the age of sixty-three. Dr. Reisner received her medical degree in 1922 from the University of Zurich. She was a member of the American Association on Mental Deficiency and the American Psychiatric Association.

Irving Somach, M.D., of New York City, died in his office on November 30, 1958, at the age of fifty-seven. Dr. Somach graduated in 1925 from New York University College of Medicine and interned at New York Post-Graduate Hospital. He was senior clinical assistant physician at Mount Sinai Hospital. For many years he had served as a police department surgeon. Dr. Somach was a Diplomate of the American Board of Internal Medicine and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James Casper Plimpton Van Loan, M.D., of Keene, died on November 14, 1958, at his home at the age of ninety. Dr. Van Loan graduated in 1891 from Columbia University College of Physicians and Surgeons.

A man is very apt to complain of the ingratitude of those who have risen far above him.—Samuel Johnson

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shortens the "miserable" period by:

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Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

Organization and Membership

COUNTY auxiliary objectives are to assist the county medical society in its program for the advancement of medicine and public health, to cultivate friendly relations, to promote understanding among families of physicians, to assist in entertaining at medical conventions, and to serve as a liaison between the county medical society and the public in the community. All counties in New York State now have auxiliaries except Bronx, Essex, Chemung, Chenango, Franklin, Lewis, New York, Otsego, Tioga, Putnam, and Sullivan. The Woman's Auxiliary to the Medical Society of the State of New York feels there should be an auxiliary for every county medical society and would like to enlist the aid of doctors familiar with the workings of the Auxiliary to promote county auxiliaries in these counties.

The State Membership Chairman's primary task is the organization of new county auxiliaries, and this requires the consent of the county medical society and adequate leadership in the county. After receiving the consent of the county medical society, the chairman meets with the president and local leader acceptable to the medical society for a meeting with potential auxiliary members at a time and place suited to the needs of the county. At the first meeting it is best to have the president of the county medical society serve as opening presiding officer and make known the wishes of the medical society. Present at the same meeting should be the president of the Woman's Auxiliary to the Medical Society of the State of New York who gives a brief talk on Auxiliary history, aims, and purposes; then the State chairman of organization conducts the meeting using parliamentary procedure.

Auxiliary membership comprises three categories—active, associate, and honorary.

Active members.—Active members are wives of physicians who hold active or service membership in the American Medical Association and who are members in good standing in their constituent state, and widows of physicians who at the time of their death were in good standing in the state and county societies.

Associate members.—Associate members are wives of physicians who are members of state and county medical societies but not of the American Medical Association.

Honorary members.—Honorary membership may be conferred by the house of delegates upon the recommendation of the board of directors on a member who has rendered long and signal service to the Auxiliary. Honorary members pay no dues but have all rights and privileges of active members.

Only active members are eligible to vote and to hold office.

The publication, the *Distaff*, of the Woman's Auxiliary to the Medical Society of the State of New York is an assist to the doctor's wife as an individual and as a member of the Auxiliary. It gives rapid reading reviews of significant events, interpretations by top officials of the problems facing medicine, Auxiliary leaders, and other experts, "how to do it" programs and projects for the auxiliaries, specific changes of ideas on health education, community service, and also the news of the auxiliary activities in each county. It also serves as a guide for Auxiliary members and is a constant source of reference and useful means of helping to coordinate the activities of our Auxiliary with those of other states and national groups.

Some of the major projects undertaken by the Auxiliary are: assisting medical education through support of the American Medical Education Foundation, increasing the circulation of *Today's Health*, recruiting youth to the many organized paramedical careers, safeguarding the health of America by observing safety in every activity, promoting the health poster contest for students, and educating more and more people to enjoy better health through the sponsoring of a health booth at the State Fair each year.

It is hoped that the doctors will help the Woman's Auxiliary to the Medical Society of the State of New York in promoting the organization of auxiliaries in those counties where there are none and will, consequently, increase the support of their aims in serving mankind.

MRS. H. F. POHLMANN, *Chairman*
State Membership

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Middletown, New York

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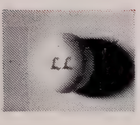
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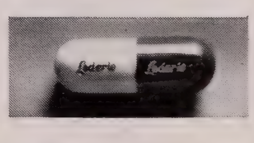

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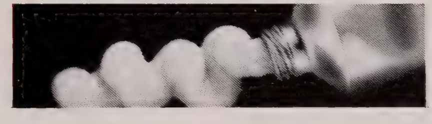

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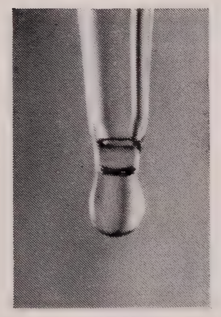
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MEDICAL NEWS

Psychiatric Society Elects—The Central New York District Branch, American Psychiatric Association, and the Finger Lakes Neuropyschiatric Society have elected the following officers to serve the Central New York Branch of the affiliate society of the American Psychiatric Association:

President, Dr. Thomas H. Fox, Clifton Springs; Vice-President, Dr. Roy B. Greer, Rochester; Secretary-Treasurer, Dr. Murray Bergman, Newark; Council Members: Dr. Benjamin Pollack, Rochester; Dr. Louis Lopez; Dr. Daniel Davis, Canandaigua, and Dr. Robert A. Wise, Sonyea.

Doctor to Lecture Abroad—Dr. B. Raymond Fink, assistant professor of anesthesiology, College of Physicians and Surgeons, Columbia University, will lecture in 1958–1959 on anesthesiology at the University of Turku, in Finland.

Allergy Society Elects—The following is a list of officers for 1958–1959 elected at the annual meeting, November 17, of the New York Allergy Society.

President, Dr. Aaron D. Spielman; President-Elect, Dr. S. Senior Sack; Vice-President, Dr. Russell C. Grove; Secretary, Dr. Sheppard Siegal; Treasurer, Dr. Joseph H. Fries; Assistant Secretary-Treasurer, Dr. Murray Dworetzky.

Radiation Center—Work has begun on a $400,000 radiation therapy center for Strong Memorial Hospital, University of Rochester Medical Center, that will provide Rochester and Western New York with facilities equal to the best in the country for the diagnosis and treatment of cancer and other diseases. The building is expected to be completed in about ten months.

The John Hartford Foundation has given Strong Memorial Hospital a grant of $203,200 for the purchase of equipment and payment of part of the estimated $150,000 annual operating costs of the Center for three years. The University is providing the new building and will pay the balance of the operating expenses.

The new equipment will include a two million volt Van de Graaff electrostatic generating unit and a Cobalt 60 Picker rotational unit with between one and two million volt energy for deep therapy.

Diseases of the Chest—The Council on Postgraduate Medical Education of the American College of Chest Physicians will present the twelfth annual postgraduate course on diseases of the chest at the Sheraton Hotel, Philadelphia, March 30 through April 3, 1959.

Further information may be obtained by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

Bibliography of Aviation Medicine—The Aero Medical Association, in cooperation with the Library of Congress, has completed arrangements to publish a comprehensive annotated bibliography of aviation medical literature for 1953. The volume will be available in January, 1959.

Entitled, **Aviation Medicine: An Annotated Bibliography, Vol. 11 (1953) Literature,** the work includes 1,386 references and abstracts from nearly 200 American and foreign journals. Subsequent annual volumes will contain published reports from the literature of 1954 to the present.

Hill-Burton Grants—The Department of Health, Education, and Welfare Reports the status of all Hill-Burton Grants for the State of New York as of October 31 as follows:

Projects in operation, 102 at a total cost of $125,552,595, including a Federal contribution of $32,409,236.

Projects under construction, 33 at a total cost of $80,663,836, including a Federal contribution of $12,293,878.

Projects initially approved, nine at a total cost of $26,751,739, including a Federal contribution of $4,059,598.

Cardiovascular Diseases—The sixth annual seminar on cardiovascular diseases will be held February 19 through 21, 1959, at the Prudential Auditorium in Jacksonville, Florida. This course is sponsored by the Northeast Florida Heart Association in cooperation with the Division of Postgraduate Education of the College of Medicine of the University of Florida. It has been accepted for credit by the American Academy of General Practice.

Dr. Irving S. Wright, professor of medicine, Cornell University School of Medicine, will be among the speakers. For further information write to: Dr. Daniel R. Usdin, Chairman, Cardiovascu-

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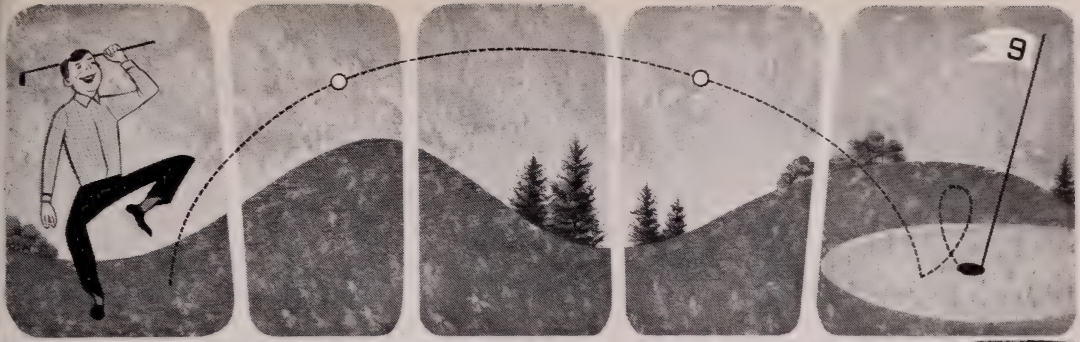

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Hycodan®		
Dihydrocodeinone Bitartrate (Warning: May be habit-forming)	5 mg.	6.5 mg.
Homatropine Methylbromide	1.5 mg.	
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Literature on request

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[Continued from page 138]

lar Seminar, Northeast Florida Heart Association, 1628 San Marco Boulevard, Suite 7, Jacksonville 7, Florida.

Existential-Analytic Group—An existential-analytic supervisory group is now being organized. For information contact Dr. Samuel V. Dunkell, 1130 Park Avenue, New York 28, New York. Telephone ATwater 9–4243.

Postgraduate Course on Diabetes—A postgraduate course on "Diabetes and Basic Metabolic Problems" will be given in St. Louis January 21 through 23, 1959. Headquarters for the course will be the Chase-Park Plaza Hotels.

The course is being offered by the Committee on Professional Education of the American Diabetes Association in cooperation with St. Louis University School of Medicine, Washington University School of Medicine, and University of Missouri School of Medicine. For additional information write to the American Diabetes Association, Inc., 1 East 45th Street, New York 17, New York.

Telephone Lecture—A unique telephoned lecture on the present status of polio vaccination took place on November 25 at the State University Upstate Medical Center.

Dr. Albert B. Sabin, chief of the Division of Infectious Diseases of The Children's Hospital Research Foundation of Cincinnati, Ohio, spoke from Cincinnati via a two-way closed circuit telephone to the audience in the auditorium of the Medical Center's Basic Sciences Building.

Members of the audience asked Dr. Sabin questions over the special telephone system and were able to hear his answers and all conversations through amplifiers. The "teleposium" was sponsored by Lederle Laboratories.

Fellowship in Dermatology—Phi Delta Epsilon Fraternity's Charles R. Rein Memorial Fund has awarded a fellowship in dermatology to New York University. It honors the late Dr. Charles Rein of the Department of Dermatology and Syphilology of the New York University Post-Graduate Medical School and is to go annually to the candidate selected by Dean Donal Sheehan and the chairman of the Department of Dermatology and Syphilology.

Dr. Laszlo Biro, a resident in the dermatologic service at The Bellevue Hospital Center, has been selected to be the first recipient of the fellowship.

Laboratories Dedicated—The new Laboratories for Therapeutic Research, Brooklyn College of Pharmacy, Long Island University, were dedicated on November 20. The laboratories, which will be fully staffed by research specialists, are located at 598–608 Lafayette Avenue, Brooklyn, on the college grounds.

Among the speakers at the dedication ceremonies were Dr. Arthur M. Sackler, director of the new laboratories, who spoke on "Exploration of Inner Space" and Dr. Austin E. Smith, editor of the *Journal of the American Medical Association* who spoke on "Scientific Manpower."

Grants Announced—The Nutrition Foundation has announced 12 new grants-in-aid to universities and medical schools in the United States, Canada, and Central America. Grants given locally are: Columbia University—D. H. Andersen and P. A. di Sant'Agnese for investigations on celiac disease and cystic fibrosis of the pancreas; $5,000 annually, for two years. Teachers College of Columbia University—R. R. Fields for research on nutrition education in elementary schools; $5,700 for one year.

The Nutrition Foundation is a nonprofit research organization, industry-financed, and operated in the public interest. During the past year the Foundation has distributed more than a million dollars in grants.

Fracture Course—A three-day "Fracture Course" will be held in Niagara Falls, Ontario, October 7 through 9, 1959. Sir Reginald Watson-Jones, London, England, and Dr. Preston A. Wade, New York City, will direct the course.

The course will be cosponsored by the Greater Niagara Medical Society and the Surgical Section of the Ontario Medical Association.

For information and registration apply to: Dr. C. A. Kyle, Greater Niagara Medical Society, Niagara Falls, Ontario, Canada.

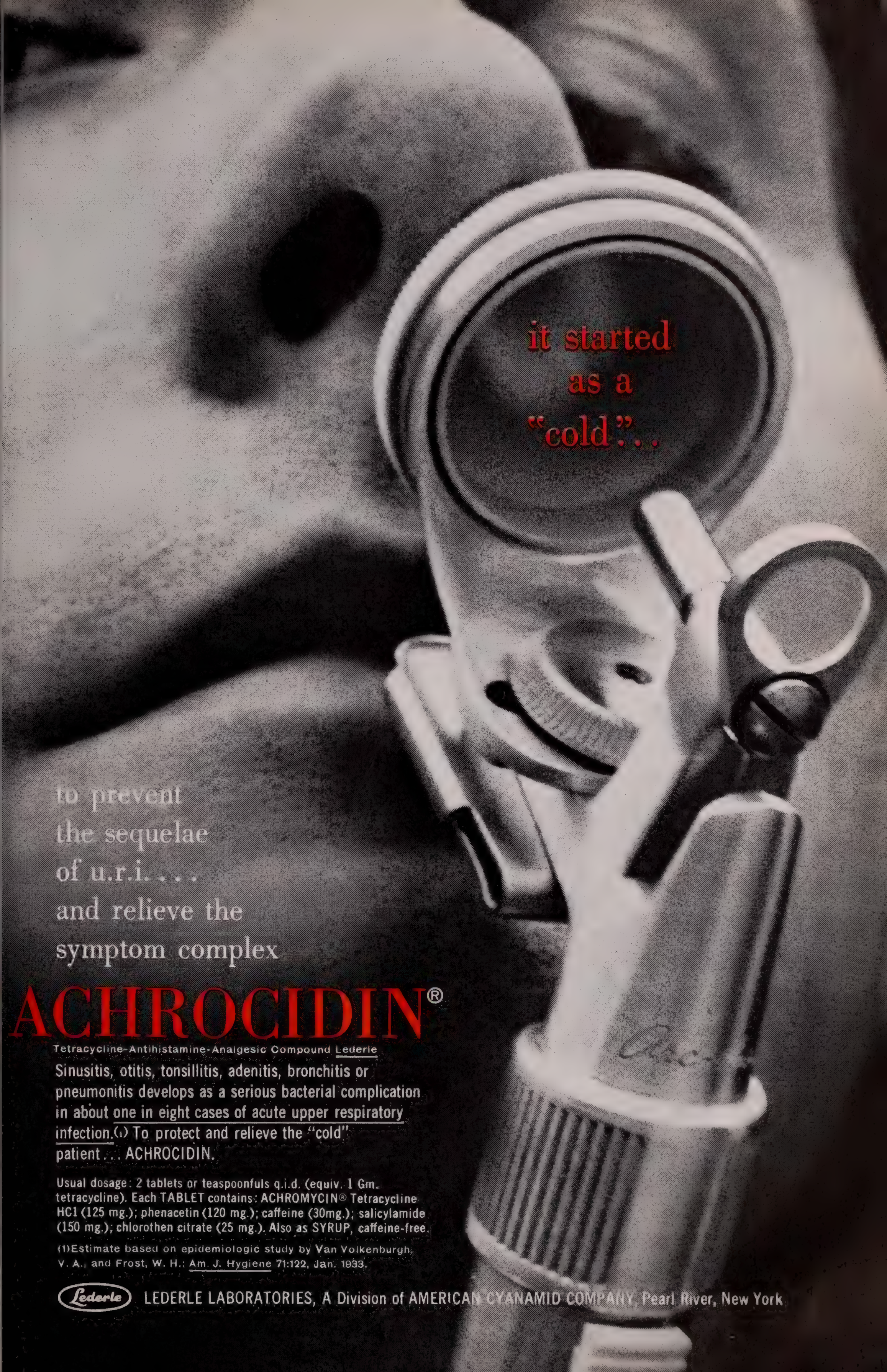
Booklets on Accident Prevention—Two new publications dealing with accident prevention in the home are now available from the New York State Health Department. They are the pamphlet, *Prevent Child Poisonings*, and the booklet, *Stairway to Safety*. They were prepared by the State Health Department's Division of Medical Services and Office of Public Health Education.

Prevent Child Poisonings discusses measures parents can take to make certain that poisonous substances are kept out of the reach of young children, and the action that should be taken if an accidental poisoning occurs in the home.

Stairway to Safety offers tips for safe living in the home. It lists measures which should be taken to avoid falls, fires, and burns. It also stresses the need for "home safety" programs to eliminate accident hazards.

Copies are available without cost to residents of

[Continued on page 142]


it started as a "cold"...
to prevent the sequelae of u.r.i. . . . and relieve the symptom complex

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Sinusitis, otitis, tonsillitis, adenitis, bronchitis or pneumonitis develops as a serious bacterial complication in about one in eight cases of acute upper respiratory infection.(1) To protect and relieve the "cold" patient . . . ACHROCIDIN.

Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline HC1 (125 mg.); phenacetin (120 mg.); caffeine (30mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP, caffeine-free.

(1) Estimate based on epidemiologic study by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122, Jan. 1933.

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[Continued from page 140]

New York State from: Office of Public Health Education, State Health Department, 84 Holland Avenue, Albany 8, New York.

Personalities

Elected

Dr. Ralph Camardella, Malverne, as president of the Nassau Division of the American Cancer Society. . . Dr. Abraham Stone, New York City, as an honorary vice-president of the Planned Parenthood Federation of America.

Reappointed

Dr. Herman E. Hilleboe, as State Commissioner of Health by Governor-elect Nelson A. Rockefeller.

Speakers

Dr. M. Donald Coleman, New York City, before the fifty-ninth annual meeting of the New York State Welfare Conference, November 19. . . Dr. Sol Wiener Ginsburg, New York City, before a conference of the National Jewish Welfare Board, December 1. . . Dr. Ira I. Kaplan, before the annual meeting of the Radiological Society of North America in Chicago, in November. . . Dr. Elliott Hurwitt, New York City, at a clinical conference at Forest Hills General Hospital, November 17. . . Dr. W. Henry Sebrell, Jr., New York City, at a luncheon at the Waldorf-Astoria Hotel where he was honored by his associates from Columbia University. . . Dr. Harvey J. Tompkins, New York City, before the National Association for Mental Health, November 20. . . Dr. Harold G. Wolff, New York City, before the hospital staff of the Veterans Administration Hospital, Northport, December 1.

MEDICAL MEETINGS

Medicolegal Institute

A Medicolegal Institute will be presented by the American Board of Legal Medicine, Inc., at the South Room of the Hotel Commodore, New York City, on Sunday, January 18, 1959, from 10:00 A.M. to 5:00 P.M.

The following will be the subject of the Institute: "Stress: a Medicolegal Entity"; "Blood: A Medicolegal Entity": "Breach of Warranty as a Theory of Liability"; "Advertising, Medicine and the Law"; "Allergy and the Law"; and "An Analysis of Recent Medicolegal Decisions."

Those wishing to register should write to the secretary, George A. Friedman, M.D., LL.M., 133 East 58th Street, Suite 410, New York 22, New York. All persons interested in medicolegal matters are invited to attend.

American College of Surgeons

The following is a list of the 1959 meetings of the American College of Surgeons.

January: Sectional meeting, Francis Marion Hotel, Charleston, South Carolina, January 19 through 21. Dr. Kenneth M. Lynch, Jr., Charleston, local chairman.

February: Sectional meeting, Shamrock Hilton Hotel, Houston, Texas, February 2 through 4. Dr. J. Griffin Heard, Houston, local chairman. Sectional meeting, Hotel Vancouver, Vancouver, B.C., February 26 through 28. Dr. T. R. Sargeant, local chairman.

March: Four-day sectional meeting for surgeons and nurses, Kiel Auditorium, St. Louis, Missouri, March 9 through 12. Dr. Frank McDowell, St.

[Continued on page 148]

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Clinically confirmed in over 2,500 documented case histories[1,2]

CONFIRMED EFFICACY

Deprol

- ► acts promptly to control depression *without* stimulation
- ► restores natural sleep and reduces depressive rumination and crying

DOCUMENTED SAFETY

Deprol is unlike amine-oxidase inhibitors

- ► does not adversely affect blood pressure or sexual function
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Deprol is unlike central nervous stimulants

- ► does not cause insomnia or depress appetite
- ► no amphetamine-like jitteriness; no depression-producing aftereffects

Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

Composition: Each tablet contains 400 mg. meprobamate and 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl).

Supplied: Bottles of 50 scored tablets.

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1. Alexander, L.: Chemotherapy of depression—Use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride. J.A.M.A. **166**:1019, March 1, 1958.
2. Current personal communications; in the files of Wallace Laboratories.

Literature and samples on request

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Exactly how does new Halodrin* restore the "premenopausal prime" in postmenopausal women?

Webster defines "prime" as the period of greatest health, strength, and beauty. In a woman, these are the childbearing years between puberty and menopause—the years when her hormone production is highest.

The inevitable reduction in this hormone production as she enters the menopause often results in physical discomfort in the form of hot flushes, nervousness, insomnia, or a multiplicity of other symptoms with which you are familiar. Superimposed on this physical picture is the psychic trauma brought on by this unavoidable evidence of aging. The thing that brings her to a physician is simply that she "feels bad."

You can't make her 35 again—but the odds are good that you can make her **feel** like it! The secret is a combination of reassurance and hormones. The exact form and amount of the former defy objective analysis, but the latter can now be provided with scientific precision. Reduced to essentials, here is the explanation of exactly how hormones—in the form of Upjohn's new Halodrin—restore the "premenopausal prime."

The normal premenopausal woman **excretes** estrogens in the urine in the form of estradiol, estrone, and estriol, in an approximate 28-day average ratio of 39:15:46. Starting with this urinary excretion of estrogens, it is possible to calculate backwards and estimate the amount of estradiol that must have been secreted endogenously in order to produce these urinary levels. This is possible because the proportion of estrogens which appears in the urine following parenteral administration has been established in castrated women.

On this basis, the average endogenous output of estrogens is about 160 micrograms per day during a menstrual cycle, and 80 micrograms per day in postmenopausal women (see chart opposite). Therefore, the restoration of the "premenopausal prime" in the postmenopausal woman requires the replacement of approximately the equivalent of the 80 micrograms of estradiol per day that she no longer secretes endogenously.

Oral ethinyl estradiol is about 2 to 2½ times as potent as **parenteral** estradiol. Therefore, **the replacement of 80 micrograms of endogenous estradiol production per day is accomplished by the oral administration of 32 to 40 micrograms of ethinyl estradiol per day.**

Each Halodrin tablet contains 20 micrograms of ethinyl estradiol, which means that the recommended dosage of 2 tablets per day provides 40 micrograms of ethinyl estradiol. This offsets the loss of 80 micrograms of endogenous estradiol production in the menopausal woman; i.e., restores the "premenopausal prime."

Each Halodrin tablet also contains 1 mg. of Upjohn-developed Halotestin* (fluoxymesterone) —the most potent oral androgen known. The primary purpose is to "buffer" the ethinyl estradiol just enough to prevent breakthrough bleeding, which is obviously undesirable in the menopause. It also exerts other beneficial hormonal effects, one of which, in common with ethinyl estradiol, is a powerful anabolic action so desirable in patients of advanced years.

Upjohn

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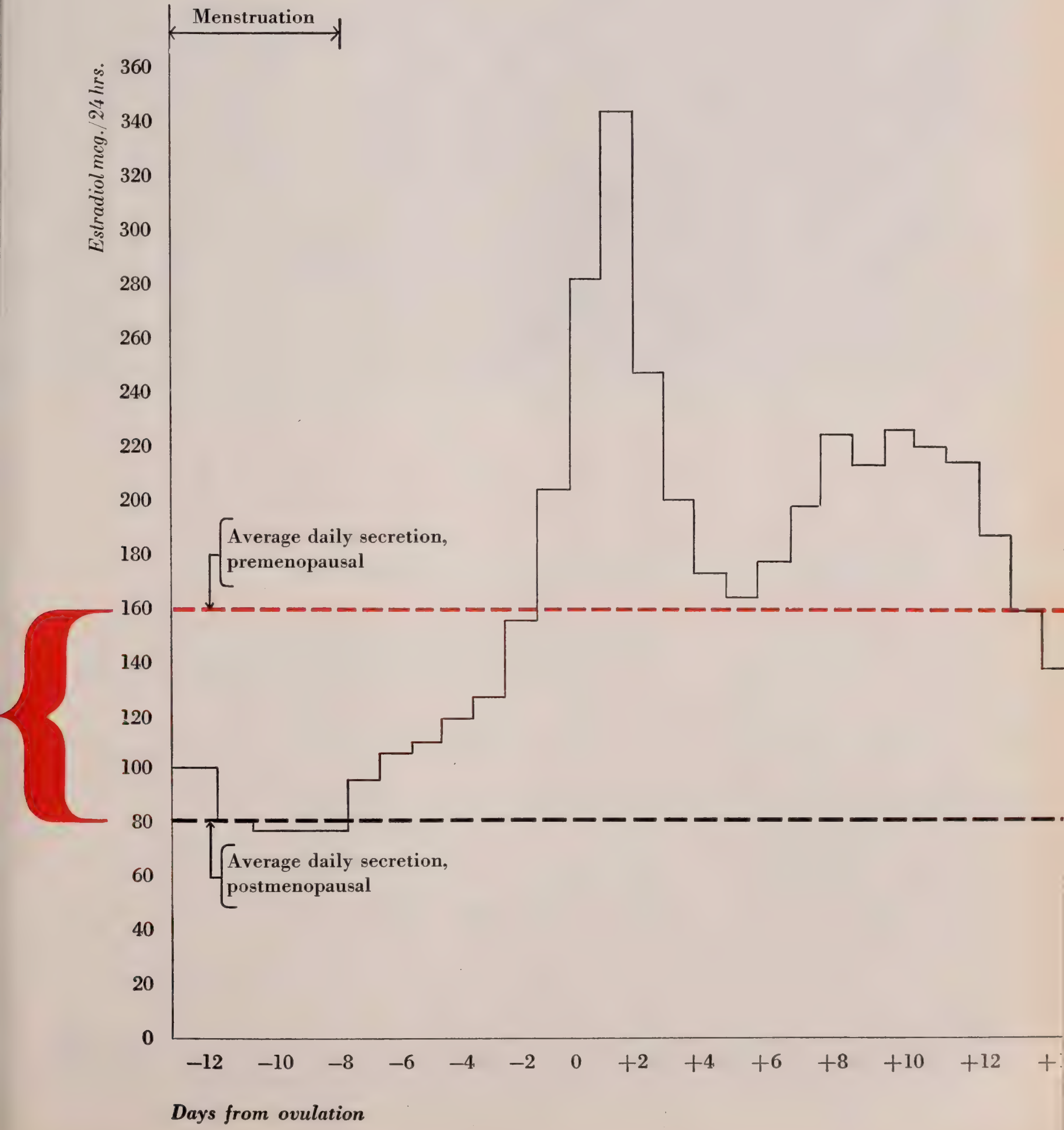
Endogenous estrogen secretion (mcg./24 hours)
(calculated from average 24-hour urinary excretion
of estradiol, estrone, and estriol)



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And now in practice

4. More rapid clinical response

5. Unexcelled toleration

REFERENCES: 1. Carlozzi, M.: Antibiotic Med. & Clin. Therapy 5:146 (Feb.) 1958. 2. Welch, H.; Wright, W. W., and Staffa, A. W.: Antibiotic Med. & Clin. Therapy 5:52 (Jan.) 1958. 3. Marlow, A. A., and Bartlett, G. R.: Glucosamine and leukemia, Proc. Soc. Exp. Biol. & Med. 84:41, 1953. 4. Shalowitz, M.: Clin. Rev. 1:25 (April) 1958. 5. Nathan, L. A.: Arch. Pediat. 75:251 (June) 1958. 6. Cornbleet, T.; Chesrow, E., and Barsky, S.: Antibiotic Med. & Clin. Therapy 5:328 (May) 1958. 7. Stone, M. L.; Sedlis, A., Bamford, J., and Bradley, W.: Antibiotic Med. & Clin. Therapy 5:322 (May) 1958. 8. Harris, H.: Clin. Rev. 1:15 (July) 1958.

thank you, doctor”

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[Continued from page 142]

Louis, local chairman for surgeons meeting, Miss Joyce Brueggeman, R.N., local chairman for nurses meeting.

April: Four-day sectional meeting for surgeons and nurses, The Queen Elizabeth Hotel, Montreal, Quebec, April 6 through 9. Doctor Harry S. Morton and Doctor Charles Edouard Hebert, Montreal, local chairmen for surgeons meeting, Miss Moyra Allen and Sister Denise Lefevre, Montreal, local chairmen for nurses meeting.

September: Annual Clinical Congress, Atlantic City, New Jersey, September 28 through October 2.

For information concerning these meetings write to: Dr. Michael L. Mason, secretary, 40 East Erie Street, Chicago 11, Illinois.

Buffalo Surgical Society

On February 10, 1959, the Buffalo Surgical Society will sponsor the Roswell Park Lecture, to be given by Dr. Michael DeBakey, professor of surgery and chairman of the Department of Surgery, Baylor University College of Medicine. The title of this year's lecture will be "Some Observations on Aortic and Arterial Surgery."

Dr. DeBakey will be awarded the Society's Gold Medal being given for the twelfth time in honor of Dr. Roswell Park, professor of surgery, University of Buffalo, 1883–1914. Previous lecturers and recipients of the medal are as follows: Dr. Allen O. Whipple, 1948; Dr. Evarts A. Graham, 1949; Dr. Dallas B. Phemister, 1950; Dr. Frederick A. Coller, 1951; Dr. Edward D. Churchill, 1952; Dr. Warren H. Cole, 1953; Dr. I. S. Ravdin, 1954; Dr. Alfred Blalock, 1955; Dr. Robert E. Gross, 1956; Dr. Alton Ochsner, 1957; and Dr. Richard B. Cattell, 1958.

Symposium on Fertility Trends

An international symposium on "Differentiation in Current Mating and Fertility Trends" will be held on Saturday, February 14, 1959, at the New York Academy of Medicine Building, 2 East 103rd Street, New York City. The all-day conference, sponsored by the American Eugenics Society, brings together a panel of European and American experts in the fields of clinical and population genetics, psychiatry, and demography.

The morning session will be under the chairmanship of Frederick Osborn, President of the Population Council and Secretary of the American Eugenics Society. The afternoon program will be chaired by Dr. Paul H. Hoch, New York State Commissioner of Mental Hygiene. Dr. Franz J. Kallmann of the New York State Psychiatric Institute (Columbia University) is chairman of the program committee.

American College of Allergists

The American College of Allergists Graduate Instructional Course and Annual Congress will be held March 15 through 20, 1959, at the Mark Hopkins Hotel, San Francisco.

For information contact Dr. John D. Gillaspie, Treasurer, 2049 Broadway, Boulder, Colorado.

American Society of Facial Plastic Surgery

Future meetings of the American Society of Facial Plastic Surgery will take place on March 18 and July 15, 1959, in New York City. For information concerning these meetings contact: Office of Secretary, American Society of Facial Plastic Surgery, 123 East 83rd Street, New York 28, New York.

Medicolegal Conferences

The American Medical Association has announced another series of three regional medicolegal conferences to be held in March and April, 1959.

Dates and locations for the conferences are: at the District of Columbia Medical Society headquarters, Washington, March 20 and 21; at the Hotel Cleveland, Cleveland, April 4 and 5, and at the Hotel Utah, Salt Lake City, April 18 and 19.

Advance registrations should be mailed to the Law Division, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

Conference on the Vagina

The New York Academy of Sciences is sponsoring a conference on "The Vagina" on April 10 and 11, 1959, 9:00 A.M. to 5:00 P.M., at the Barbizon Plaza Hotel, New York City.

Only fundamental aspects of vaginal diseases will be considered; therapy will *not* be included. Interested physicians, if nonmembers of the Academy, should write to the Executive Director of the Academy, 2 East 63rd Street, New York City, for programs which will serve as tickets of admission. There is no registration fee.

I am not a politician, and my other habits are good.—CHARLES FARRAR BROWNE

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NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Grant—A grant of $6,500 was received by the College from Smith, Kline & French Foundation and awarded to Dr. Robert E. L. Nesbitt, Jr., professor and chairman, Department of Obstetrics and Gynecology. Dr. Nesbitt will use the gift for research. He is best known for his study of perinatal mortality and morbidity and of early cervical cancer in gynecologic patients.

New York University

Fellowship—Phi Delta Epsilon Fraternity's Charles R. Rein Memorial Fund has awarded a fellowship in dermatology to the University. Dr. Laszlo Biro, resident in dermatology at The Bellevue Hospital Center, has been selected to be the first recipient of the fellowship.

He will engage in research on the serology, immunology, and epidemiology of both treponemal and staphylococcal diseases as well as other types of infections.

State University of New York College of Medicine at Syracuse

Syracuse Research Club—The fall meeting of the Syracuse Research Club was held on November 18, 1958. The Research Club is sponsored by the Medical Center and holds four meetings during the academic year. Dr. William R. Ruegamer, assistant professor of biochemistry, described his research on the effect of thyroid hormones on fat in the body; Dr. Eugene D. Jacobson reported on how neomycin could affect absorption by the intestine; Dr. Harry A. Feldman, professor and chairman, Department of Preventive Medicine, spoke on the current Asian influenza antibody status of Upstate Medical Center students, and Dr. Albert J. Schneider, assistant professor of pediatrics, described a test for the determination of infectious hepatitis in children who do not have symptoms of the disease. This test is an enzyme called serum transaminase.

Conference—A conference on "Choosing and Preparing for a Medical Career" was held at the Center on November 22, 1958. Dr. Carlyle Jacobsen, president of the Upstate Center, gave the opening remarks; Dr. Lawrence K. Pickett, clinical associate professor of pediatric surgery, discussed "The Choice of Medicine as a Career"; Dr. Gordon K. Moe, professor and chairman, Department of Physiology, described research careers in the medical sciences; Dr. Jay Tepperman, professor of experimental medicine, spoke on "Education for Medicine as a Career"; Dr. Eugene A. Kaplan, a 1957 graduate, discussed a recent medical student's view of choosing and preparing for medicine as a career, and Dr. Davis G. Johnson, assistant dean and chairman of Admissions Committee, discussed the admission to the study of medicine.

Appointed—New appointments in the Department of Psychiatry include Dr. John J. Danehy as the new acting chief of the psychiatric service at the Syracuse Veterans Administration Hospital, replacing Dr. Warren Mann who has been named coordinator of the Department's residency training program at the Medical Center; Dr. Judson Albaugh to the mental health post to succeed Dr. Danehy, and Dr. Richard H. Phillips to coordinate the undergraduate training program.

State University of New York Downstate Medical Center

Research Society Meeting—The Research Society of the State University Downstate Medical Center in Brooklyn held its second meeting of the year on November 12, 1958. The following papers were read and discussed: "Electrolyte Studies of the Perfused Rabbit Heart; Weight Gain and the Control of Osmotic Pressure"—Drs. J. McGinn, D. Savino, V. Schenker, and J. N. Edson, Department of Psychiatry; "Accommodation of the Eye Produced by Stimulation of the Cerebral Cortex of the Macaque"—Dr. R. Jampell, Department of Ophthalmology, and "Inhibition of Thyroid Uptake of I^{131} in Vitro"—Dr. Harold A. Levey, Department of Physiology.

First Dave Luckman Scholarship—The first annual Dave Luckman Memorial Foundation Scholarship of $1,000 has been awarded to Barbara Starfield Holtzman. The Dave Luckman Memorial Foundation, which has made possible the award of this annual scholarship to an outstanding student selected by the Downstate Medical Center Faculty, was organized in 1955 by the friends and associates of Dave Luckman to provide trust funds for the establishment of scientific educational endeavors.

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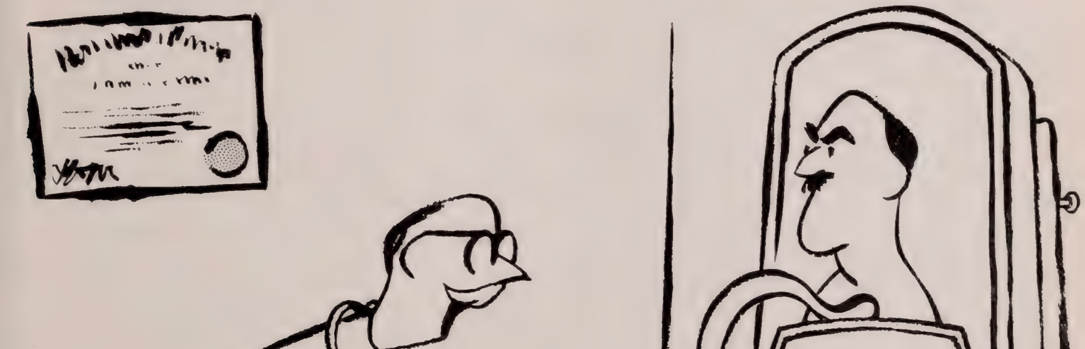

"You'll have to chew your food more thoroughly."

LETTERS TO THE EDITOR

Comment on "Cancer Research—Does It Help You?"

To the Editor:

The radio talk entitled "Cancer Research—Does It Help You?"[1] includes the following statement: "The heart and soul of the research approach to the nature of cancer lies in the science of chemistry. The secret of malignancy may well be hidden in the detailed functioning of the individual cell."

It seems to me that this is a rather inadequate statement of the probable nature of cancer and of the appropriate direction of the research approach to it. Cancer cells undertake to secede from the integrated community of differentiated cells which constitute the organism. Something seems to have happened to weaken the internal unity of the organism, its so-called homeostasis, so that some cells can set out to reproduce themselves independently. Hence, there is reason to doubt that a study of the chemistry of these cells alone will ever reveal what happens to the organism as a whole when it is exposed to conditions of existence which are damaging to its biologic integrity. The questioned statement should lead one to wonder how much the orientation of approved cancer research allows attention to be given to the effects of the very artificial mode of life that our culture imposes on us. May not the chemical changes in malignant cells be the result rather than the cause of the general pathology?

Joseph H. Toomey, M.D.

5424 Arlington Avenue
New York 71, New York

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[1] Mahoney, J. F.: New York State J. Med. **58**: 3171 (Oct. 1) 1958.

The Outpatient Department—A Problem in Medical Reorganization

To the Editor:

Since the end of World War II there has been considerable growth and expansion of hospital construction, and with new and improved methods of diagnosis and treatment, the care given the intramural hospital patient has reached higher scientific levels. Extramural care given at a distance, especially for prolonged illness at all ages, has been provided by the growing adoption of home care programs of all varieties. However, another type of extramural care alongside of the hospital proper, given to ambulatory patients in outpatient clinics within the hospital complex, still falls far short of that which is given to patients who, being bedridden rather than ambulatory, gain admission to hospital wards or private rooms.

The failure of outpatient care generally to keep up with the organizational progress in the medical care fields is costly both to the individual and to the community, although this is not known to the superficial observer. Where the outpatient clinic is lacking in the essentials for diagnosis and treatment by a responsible and authoritative medical staff, remediable disease goes unrecognized or is discovered only when it has reached an advanced stage where hospitalization to undo the damage as far as possible is unavoidable. In other cases, patients are sent to hospital wards for diagnosis by methods which should be available on equal terms in the outpatient clinic. This means transferring the patient from the warm environment of his home to that of the hospital, an experience likely to be disturbing even to the healthy temperament. Frequently it aggravates the patient's condition because of his loss of income while he is unnecessarily confined to the hospital. The welfare of the individual patient, as well as the monetary cost to the community, makes it imperative to review the quality of care given to the ambulatory patient who has been given no other choice.

In a typical large voluntary hospital in New York City in 1957 the cost of hospital care per patient day was approximately $26. Outpatient care came to about $6.00 per visit according to prevailing methods of cost accounting. High and progressively increasing cost of inpatient care should by itself compel communal consideration of the possibilities of improving the care of patients in outpatient clinics. They are the first alternative for those who are unable to meet the full cost of private care. High

[Continued on page 154]

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[Continued from page 152]

quality service to the ambulatory patient will detect and treat the early stages of illness and lessen the need for hospitalization and, by continuing the care of patients on their discharge from the wards, keep them well.

To realize its full potential the outpatient department must be adequately staffed, housed, and equipped with laboratory facilities within easy reach. There must be sufficient auxiliary personnel, such as secretarial and nursing help, and social workers.

Prominent among conditions preventing high-grade medical care are overcrowded clinic and waiting rooms, excessive patient load per doctor, delay in getting laboratory reports, and lack of a unit record system combining in a single folder the inpatient and outpatient records. Shortages in outpatient facilities often compel unnecessary hospitalization, costly not only to community through the hospital, but often to the patient in needless loss of the time spent in making a living.

While there is a wide variation in the quality of care given outpatients generally, even where the greatest progress has been made, the full opportunities of ambulatory care are still to be grasped. Dr. Elaine P. Ralli, under whose leadership outpatient care at Bellevue Hospital in New York City has reached a considerably higher level since 1950, writes: "The future of Outpatient Services actually is unlimited and can provide unparalleled opportunities for caring for patients, teaching medical students, training the resident staff, and studying disease."[1]

One cannot stress too strongly the need for creating conditions under which outpatient clinics can give high quality care. For too long a period of time the outpatient department has been treated as the stepchild in the hospital family. It is clear that the emphasis in the prevention and the care of illness must be shared by the ambulatory patient. The needs of the outpatient clinic must therefore be given at least equal consideration with those of the hospital wards.

Any plan for improving outpatient care requires more detailed and exact information on its present work and organization than is presently available. For this purpose an up-to-the-minute study of selected clinics by a mixed group of skilled researchers is proposed. Since the internal medical clinic is customarily the distributing center for the outpatient service, as well as a screening clinic for admission to the hospital wards, this study might well begin with this department. Such a study should aim toward improving the services of outpatient clinics and should therefore include a study of present and an estimate of future costs in relation to the over-all hospital budget.

Among subjects to be scrutinized with particular care would be the record system; the method of organization; the relation to inpatient service, including information on patients referred to and from hospital and clinic, and reason for the transfer; the laboratory service; the physical equipment; the conditions under which the doctors serve the patients; the doctor-time per patient; the auxiliary personnel available to the doctors, such as secretaries, nurses, social service workers, dietitians, and interpreters; the use of volunteer help; the adequacy and arrangement of space for waiting rooms and examining rooms with emphasis on the amount of privacy afforded.

Medical executives and hospital trustees would serve their communities well by undertaking a constructive study of the outpatient facilities of their hospitals. If this study could be made by a representative communal organization covering a wider area than that of a single hospital, it could exert a correspondingly greater influence on hospital policy and on the attitude of communities generally to the problem of the ambulatory patient. The medical profession owes it to itself not to delay such an investigation into its own conscience.

Arthur Bookman, M.D.

33 East 70th Street
New York 21, New York

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[1] Report on the reorganization of Outpatient Department Services, Department of Hospitals, City of New York, with special reference to the Bellevue Outpatient Department, period covering January to December 1956, Submitted by Dr. Elaine P. Ralli.

Well, if I called the wrong number, why did you answer the phone?—James Thurber

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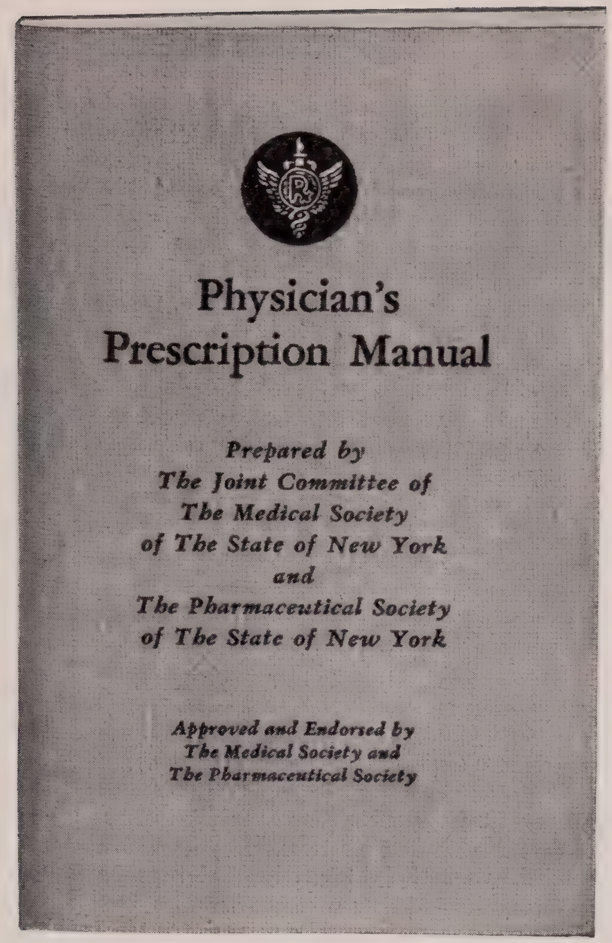

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BOOKS RECEIVED

(The following books were received during the month of October, 1958)

Cerebral Vascular Diseases. Transactions of the second conference held under the auspices of the American Heart Association, Princeton, N. J., January 16–18, 1957. Irving S. Wright, Chairman, and Clark H. Millikan, Editor. Octavo of 224 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $4.00.

Tumors and Tumorous Conditions of the Bones and Joints. By Henry L. Jaffe, M.D. Octavo of 629 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $18.50.

Poisoning. A Guide to Clinical Diagnosis and Treatment. Second edition. By W. F. von Oettingen, M.D. Octavo of 627 pages. Philadelphia, W. B. Saunders Co., 1958. Cloth, $12.50.

Injuries and Surgical Diseases of the Ischium. By Henry Milch, M.D. Octavo of 163 pages, illustrated. New York, Paul B. Hoeber, Inc., 1958. Cloth, $10.50.

Heredity of the Blood Groups. By Alexander S. Wiener, M.D., and Irving B. Wexler, M.D. Octavo of 150 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $6.00.

Schizophrenia. By Manfred Sakel, M.D. Octavo of 335 pages. New York, Philosophical Library, 1958. Cloth, $5.00.

Head Injuries. Mechanisms, Diagnosis and Management. By E. S. Gurdjian, M.D., and J. E. Webster, M.D. Octavo of 482 pages, illustrated. Little Brown & Co., Boston, 1958. Cloth, $14.

Administrative Medicine. Transactions of the 5th Conference. October 29, 30 and 31, 1956. By George S. Stevenson, M.D. Octavo of 197 pages. New York, Josiah Macy, Jr. Foundation, 1958. Cloth, $3.75.

Cold Injury, Ground Type. By Col. Tom F. Whayne and Michael E. DeBakey, M.D., Medical Department, United States Army. World War II. Octavo of 570 pages, illustrated. Washington, D.C., Office of the Surgeon General, Department of the Army, 1958. Cloth, $6.25.

Ideals in Medicine. A Christian Approach to Medical Practice. By Vincent Edmunds, M.D., and C. Gordon Scorer, M.D. Duodecimo of 192 pages. Chicago, The Christian Medical Society, 1958. Cloth, $3.00.

Infectious Diseases of Children. By Saul Krugman, M.D., and Robert Ward, M.D. Octavo of 340 pages, illustrated. St. Louis, The C. V. Mosby Co., 1958. Cloth, $10.

Diagnostic Anatomy. By Weston D. Gardner, M.D. Octavo of 376 pages, illustrated. St. Louis, The C. V. Mosby Co., 1958. Cloth, $10.

Bailey's Textbook of Histology. Fourteenth edition. By W. M. Copenhaver, Ph.D., and Dorothy D. Johnson, Ph.D. Octavo of 633 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $11.

Rehabilitation Medicine. By Howard A. Rusk, M.D. Octavo of 572 pages, illustrated. St. Louis, The C. V. Mosby Co., 1958. Cloth, $12.

Pathophysiology in Surgery. By James D. Hardy, M.D. Octavo of 704 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $19.

Sex and the Adolescent. By Maxine Davis. Duodecimo of 317 pages. New York, The Dial Press, 1958. Cloth, $5.00.

The Road to Emotional Maturity. By David Abrahamsen, M.D. Duodecimo of 388 pages. Englewood Cliffs, N.J., Prentice-Hall, Inc., 1958. Cloth, $4.95.

Treatment of Breast Tumors. By Robert S. Pollock, M.D. Octavo of 147 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $6.00.

The Care of the Geriatric Patient. By E. V. Cowdry. Duodecimo of 438 pages. St. Louis, The C. V. Mosby Co., 1958. Cloth, $8.00.

Emergency War Surgery. U. S. Armed Forces issue of NATO Handbook prepared for use by the Medical Services of NATO Nations. Washington, D.C., The United States Government Printing Office, 1948. Cloth, $2.25.

What We do Know About Heart Attacks. By John W. Gofman, M.D. Duodecimo of 180 pages. New York, G. P. Putnam's Sons, 1958. Cloth, $3.50.

[Continued on page 158]

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[Continued from page 156]

Russian-English Biological and Medical Dictionary. First edition. By Dr. Eugene A. Carpovich. Duodecimo of 398 pages. New York, The Technical Dictionaries Co., 1958. Cloth, $12.

Labor Union Monopoly. By Donald R. Richberg. Duodecimo of 177 pages. Chicago, Henry Regnery Co., 1957. Paper, $1.00.

Myasthenia Gravis. By Kermit E. Osserman, M.D. Octavo of 286 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $10.

Bacterial and Mycotic Infections of Man. Third edition. By René J. Dubos, Ph.D. Octavo of 820 pages, illustrated. Philadelphia, J. B. Lippincott, Co., 1958. Cloth, $8.50.

The Principles and Practice of Medicine. A textbook for students and doctors. Fourth edition. By Sir Stanley Davidson, M.D. Octavo of 1,067 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $8.00.

Clinical Radiology of Acute Abdominal Disorders. By Bernard S. Epstein, M.D. Octavo of 352 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $15.

Obstetrical Practice. Seventh edition. By Alfred C. Beck, M.D. Octavo of 1,115 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $14.

Physiology of Prematurity. Transactions of the Second Conference, March 25, 26 and 27, 1957. By Jonathan T. Lanman, M.D. Octavo of 160 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1958. Cloth, $3.75.

Progress in Radiation Therapy. By Franz Buschke, M.D. Octavo of 284 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $9.75.

Method of Anatomy. Descriptive and Deductive. Sixth edition. By J. C. Boileau Grant. Octavo of 879 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $11.

Advances in Pediatrics. Volume 10. By S. Z. Levine. Octavo of 362 pages. Chicago, The Year Book Publishers, 1958. Cloth.

Remedies and Rackets. The Truth About Patent Medicines Today. By James Cook. Duodecimo of 252 pages. New York, W. W. Norton & Co., 1958. Cloth, $3.75.

Hemophilic Arthropathies. By Henry H. Jordan, M.D. Octavo of 255 pages, illustrated. Springfield, Ill., Charles C Thomas, 1958. Cloth, $8.50.

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Carcinoma of the Lung. Volume 1. By J. R. Bignall, M.D., Neoplastic Disease at Various Sites, by D. W. Smithers, M.D. Edinburgh, E. & S. Livingstone, Ltd., 1958. Cloth, $10.50.

Negroes and Medicine. By Dietrich C. Reitzes. Octavo of 400 pages. Cambridge, Mass., Harvard University Press, 1958. Cloth, $7.00

Technic and Practice of Psychoanalysis. By Leon J. Saul, M.D. Octavo of 244 pages. Philadelphia, J. B. Lippincott Co., 1958. Cloth, $8.00.

Water and Electrolyte Metabolism in Relation to Age and Sex. Ciba Foundation Colloquia on Ageing. By G. E. W. Wolstenholme and Cecilia O'Connor. Duodecimo of 327 pages, illustrated. Boston, Little Brown & Co., 1958. Cloth, $8.50.

Radioactive Isotopes in Clinical Practice. By Edith H. Quimby, Sc.D., Sergei Feitelberg, M.D., and Solomon Silver, M.D. Octavo of 451 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $10.

Know Your Doctor. First edition. By Paul E. Craig, M.D. Duodecimo of 179 pages. New York, Exposition Press, 1958. Cloth, $3.50.

Neurological Basis of Behaviour. Ciba Foundation Symposium. By G. E. W. Wolstenholme and Cecilia M. O'Connor. Duodecimo of 400 pages illustrated. Boston, Little Brown & Co., 1958. Cloth, $9.00.

The Management of Emergencies in Thoracic Surgery. By John Borrie, M.D. Octavo of 340 pages, illustrated. New York, Appleton-Century-Crofts, Inc., 1958. Cloth.

The Cerebrospinal Fluid. Production, Circulation and Absorption. Ciba Foundation Symposium. By G. E. W. Wolstenholme and Cecilia M. O'Connor. Duodecimo of 335 pages, illustrated. Boston, Little Brown & Co., 1958. Cloth, $9.00.

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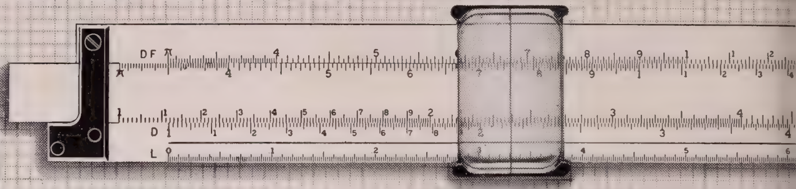
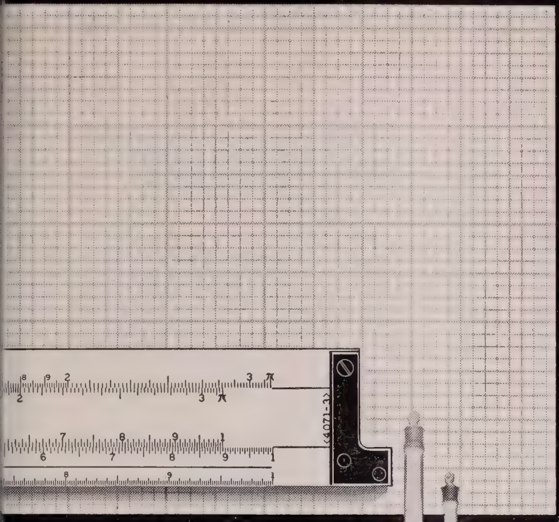
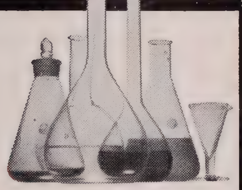


in the patient:

95% effective in published cases[1-8]

Conditions treated	No. of Patients	Cured	Improved	Failure
ALL INFECTIONS	**558**	**448**	**80**	**30**
Respiratory infections	**258**	**208**	**31**	**19**
Pharyngitis and/or tonsillitis	65	58	5	2
Pneumonia	90	66	17	7
Infectious asthma	44	38	—	6
Otitis media	31	29	2	—
Other respiratory (bronchitis, bronchiolitis, bronchiectasis, pneumonitis, laryngotracheitis, strep throat)	28	17	7	4
Skin and soft tissue infections	**230**	**191**	**38**	**1**
Infected wounds, incisions and lacerations	41	33	8	—
Abscesses	51	43	8	—
Furunculosis	58	51	6	1
Acne, pustular	43	28	15	—
Pyoderma	19	19	—	—
Other skin and soft tissue (infected burns, cellulitis, impetigo, ulcers, others)	18	17	1	—
Genitourinary infections	**28**	**19**	**3**	**6**
Acute pyelitis and cystitis	10	8	2	—
Urethritis with gonorrhea or cystitis	8	8	—	—
Pyelonephritis	4	1	—	3
Salpingitis	5	1	1	3
Pelvic inflammation with endometriosis	1	1	—	—
Miscellaneous (adenitis, enteritis, enterocolitis, subacute bacterial endocarditis, fever, hematoma, staphylococcus carriers, osteomyelitis, tenosynovitis, septic arthritis, acute bursitis, periarthritis)	**42**	**30**	**8**	**4**

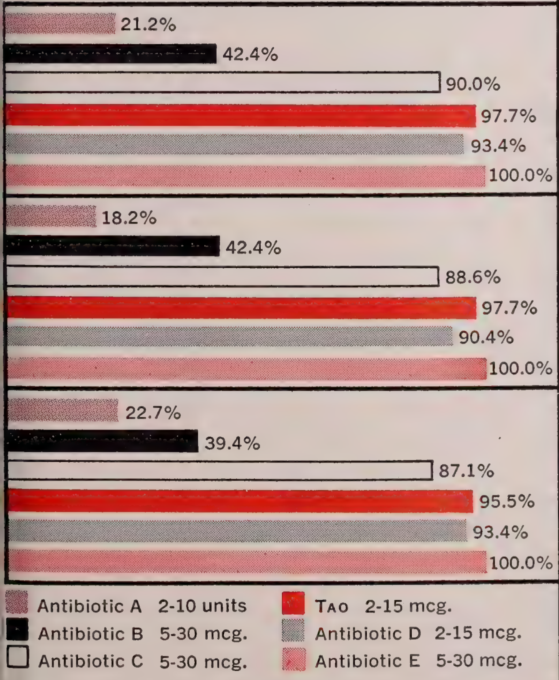




in the laboratory:

over 90% effective against resistant staph

COMPARATIVE TESTS BY THREE METHODS (DISC, TUBE DILUTION, CYLINDER PLATE) ON 130 STAPHYLOCOCCI[9]



Percentage of organisms inhibited by the range of concentrations listed for each antibiotic.

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Low in toxicity—freedom from side effects in 96% of patients treated; cessation of therapy is rarely required

Highly palatable—"practically tasteless"[7] active ingredient in a pleasant cherry-flavored medium.

Dosage and Administration: Dosage varies according to the severity of the infection. **For adults,** the average dose is 250 mg. q.i.d.; to 500 mg. q.i.d. in more severe infections. **For children** 8 months to 8 years, a daily dose of approximately 30 mg./Kg. body weight in divided doses has been found effective. Since TAO is therapeutically stable in gastric acid, it may be administered without regard to meals.

Supplied: TAO Capsules—250 mg. and 125 mg., bottles of 60. TAO for Oral Suspension—1.5 Gm., 125 mg. per teaspoonful (5 cc.) when reconstituted; unusually palatable cherry flavor; 2 oz. bottle.

References: 1. Koch, R., and Asay, L. D.: J. Pediat., in press. 2. Leming, B. H., Jr., et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 3. Mellman, et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 4. Olansky, S., and McCormick, G. E., Jr.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 5. Shubin, H., et al.: Antibiotics Annual 1957-1958, New York, N. Y., Medical Encyclopedia, Inc., 1958, p. 679. 6. Isenberg, H., and Karelitz, S.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 7. Wennersten, J. R.: Antibiotic Med. & Clin. Therapy 5:527 (Aug.) 1958. 8. Kaplan, M. A., and Goldin, M.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 9. Truant, J. P.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958.

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BOOKS REVIEWED

The Treatment of Fractures. Volume III. By L. Böhler, M.D. Octavo of 2307 pages, illustrated New York, Grune & Stratton, 1958. Cloth, $21.

This volume is devoted to the consideration of fractures and related injuries of the lower extremity, involving the area from the knee-joint to the toes. Every type is thoroughly considered from the standpoint of diagnosis and treatment, and in detail not to be found in most books on fractures.

The illustrations are numerous and, for the most part, good. Of particular interest and value is the section "Questions we should ask ourselves to avoid failures in . . ." which follows at the end of each presentation of the treatment of a particular fracture or dislocation.

Among the many interesting chapters in the appendix are those dealing with unavoidable unfavorable consequences of injury and avoidable complications of treatment, the economic significance of accident surgery, reasons for the unsatisfactory results of treatment, and how to avoid unfavorable results, and disability evaluation.

This work, truly encyclopedic in scope, is heartily recommended to all who are interested in traumatic surgery.—Mayer E. Ross

Ascites Tumors as Tools in Quantitative Oncology. By Theodore S. Hauschka, Ph.D. (Conference Chairman), C. M. Ambrus, M.D., J. L. Ambrus, M.D., D. B. Amos, *et al.* Octavo of 393 pages, illustrated. New York, New York Academy of Sciences, 1956. Paper, $4.50. (*Annals of the New York Academy of Sciences*, v. 63, Art. 5, pp. 637–1030)

This volume is a scholarly, lucid, and absorbing treatise by a combination of international authorities on the various phases of the subject and is presented in four parts. Part I deals with growth and population analysis, part II with cytologic merits of ascites tumors, part III with ascites tumors as assay tools, and part IV with advantages of free-cell suspensions for metabolic studies.

This volume should interest in particular the geneticist, the biochemist, the cytologist, the microbiologist and last, but not least, the pathologist. The references are exhaustive. The text is erudite and extremely well illustrated. It is presented so lucidly that even the average physician should find it extremely interesting, enlightening, and even thrilling, for it embodies exciting phases of progress in medical research an example of which is the use of the electromicroscope over a period of thirty years, since Hess in 1927 demonstrated the transmissibility of the Flexner-Jobling rat carcinoma by the ascitic fluid produced by the "ascites tumor" in the peritoneal cavity.—Silik H. Polayes

Office Gastroenterology. By Albert F. R. Andresen, M.D. Octavo of 707 pages, illustrated. Philadelphia, W. B. Saunders C., 1958. Cloth, $14.

The author, a gastroenterologist of many years experience, has succeeded in making available to the physician a practical as well as a comprehensive book dealing with the problems of gastroenterology.

The plan of making a diagnosis and the discussion of therapy of diseases of the gastrointestinal tract are simplified and very instructive.

To the reviewer, it seems that the author is placing too much emphasis upon allergy as a cause of gastrointestinal and biliary tract conditions.

The book is well written, to the point, delightful to read, and will prove very helpful to the genera practitioner as well as to the gastroenterologic internist.—James Tesler

J.A.M.A. Queries and Minor Notes. Octavo o 354 pages. St. Louis, Published for the American Medical Association by The C. V. Mosby Company 1956. Cloth, $5.50.

Perusal of the weekly section on Queries and Mino Notes in the *Journal of the American Medica Association* is always an interesting and instructive interlude. A compilation of some of the mos pertinent items published during parts of 1954 and 1955 is offered in book form. The selection o subjects is excellent and grouping in related categories increases their value still further. The reade may not agree at all times with the therapy suggested or the advice offered. This is natural because o divergences of opinion, which is frequently voiced in the columns of the *Journal*, but this in no way detracts from the value of the broader viewpoin which competent consultants can afford to the seeke of information. In fact this easy-reading book can substitute for the useful "refresher course

[Continued on page 164]

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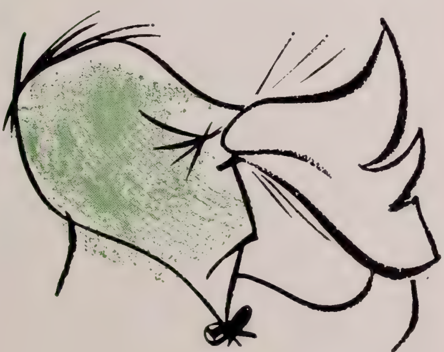

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[Continued from page 162]

which the busy practitioner rarely has time to attend. A collection of yearly editions of this book would make a most valuable addition to any medical library.—Jerome Weiss

General Techniques of Hypnotism. By André M. Weitzenhoffer, Ph.D. Octavo of 460 pages, illustrated. New York, Grune & Stratton, 1957. Cloth, $11.50.

This book is a scientific approach to the general subject of hypnotism and suggestibility. The various methods of induction, maintenance, and achieving depth are simply and adequately described. It is an exhaustive review of the history of the development of our knowledge in this sphere. The author repeatedly cautions the reader that there are many limitations to hypnosis and that it can be dangerous in inexperienced hands. The reference material is both extensive and complete. It is to be well recommended to anyone interested in this subject.—Alexander Levine

Practical Cardiology. By A. S. Hyman, M.D. Duodecimo of 307 pages. New York, The Blakiston Division of the McGraw-Hill Book Co., 1958. Cloth, $7.00.

The author makes it very clear in the preface that it is not his purpose to write a complete treatise on modern cardiology, but rather a practical book which may be of service to the busy general practitioner. Very early in the book he stresses the importance of a good, careful, physical examination. He feels that although a vast array of apparatus is available for cardiovascular study, less than ten per cent of the cases are so complicated or obscure that they require such scientific examination. He, therefore, questions whether or not the general practitioner should burden himself with expensive equipment which he will use infrequently.

The author thinks that the basic tools which every physician has for diagnosis—stethoscope, blood pressure apparatus, a watch, and his own experience—may be sufficient equipment in many cases to make a working diagnosis. Rating the special tools in order of their relative, practical importance, he places the electrocardiograph first, followed by a fluoroscope or other x-ray equipment, then vital capacity apparatus, oscillometric devices, heart sound recorders, pulse wave or arteriogram machines, circulation time material, kymographic attachments, catheterization equipment, strain gauges, exercise tolerance equipment for cardiopulmonary function tests, and the special electronic equipment required for isotope work.

Although there are 30 pages on "Medical History," it is time well spent in reading because they very carefully go into many factors which are important in the diagnosis and treatment of heart disease. Described graphically is the fear of the cardiac patient in going to sleep, a situation which is often lost sight of and which is highly important in the improvement of the patient. The book contains excellent chapters for the general practitioner on x-ray of the heart, peripheral vascular examination, functional capacity of the heart in health and disease, cardiac function tests, the arrhythmias, acute pulmonary edema, and hypertension.

The author challenges the undue emphasis placed on the pseudoclinical sanctity of the upright T-wave. He feels that the electrocardiogram is only as valuable as its interpretation and like every other laboratory report, it receives its importance only within the framework of clinical correlation. Its interpretation is an electrocardiographic diagnosis and not a clinical one.

The most impressive chapter of the book is that on angina pectoris, coronary insufficiency, and coronary occlusion, to which 54 pages are devoted. Every phase of the subject is dwelt upon in proportion to its importance, and sound reasons are given for suggested treatment. All in all, the author, who is a master of the English language, has written a very concise, inspiring little volume which covers the subject "Practical Cardiology" very well. It is highly recommended to the general practitioner as a very practical guide in the many problems which daily confront him.—Burton L. Zohman

Year Book of Neurology, Psychiatry and Neurosurgery. 1957–1958 Series. By Roland P. Mackey, M.D., S. Bernard Wortis, M.D., and Oscar Sugar, M.D. Duodecimo of 624 pages. Chicago, The Year Book Publishers Inc., 1958. Cloth, $8.00.

This is a collection of abstracts from neurologic, psychiatric, neurosurgical, and other pertinent literature which appeared mostly in 1956 and 1957. Interspersed between these are many comments by the editors attempting to place the arguments and conclusions of various papers in proper perspective. Many additional references are given.

Although the selection of the abstracted papers is of necessity arbitrary, the book nevertheless offers an excellent, accessible, and time-saving survey of domestic and foreign literature which the average reader would not ordinarily encounter. It is impossible to indicate the wide variety of topics. Suffice it to say that there is something interesting for everybody in it. The abstract, if not the original paper, about the emotional impact of ward rounds on the patient is a must for every physician and particularly for the surgeon. Modern concepts and management of cerebral vascular disease, pain

[Continued on page 166]

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[Continued from page 164]

problems, dyskinesias, and psychiatric conditions will interest any physician who wishes to treat his patients rationally. Recent advances in psychopharmacology should also be of general interest.

A specialist will find a wealth of information in the fields of basic as well as clinical neurologic sciences. Some of the more unusual topics deal with the psychiatric problems of accident prone drivers, cigaret smokers, "brain washing" processes of communist inquisitors, psychologic development of van Gogh, and the importance of whiskers for the survival of rats.

Most of the abstracts are easy to read. This book should prove a handy and quick reference to the latest in neurology, psychiatry, and related fields.—Ladislav P. Hinterbuchner

Physical Dynamics of Character Structure. By Alexander Lowen, M.D. Octavo of 358 pages, illustrated. New York, Grune & Stratton, Inc., 1958. Cloth, $7.75.

The author states that the purpose of the book is "to make available to analytic therapists an understanding of the dynamic somatic processes which underlie psychic phenomena." Dr. Lowen, the leading exponent of bioenergetics, gives detailed theoretic formulations as well as clinical discussions about the method. Exactly what constitutes bioenergy is not clear but a fragment of the author's concept is as follows:

> Clinical observation places this block (of energy) in the deep muscles of the base of the skull. In the psychotic condition, the block is so strong that very little of the aggressive material impulses get into the brain. That little which does get in reaches only the subcortical centers. It does not reach the center of consciousness in the neopallidum. When the energy of these strong aggressive impulses meets the block at the base of the skull it is deflected out backwards, some of it through the ears, a part through the eyes. When the energy is deflected backwards it charges the atmospheric field surrounding the back of the head. Thus we can understand why they would have the feeling that 'something is going on behind my back.'

The patients with the various character disorders have definite muscle contraction patterns and it is the purpose of bioenergetic therapy "to release the physical tension which is found in contracted and spastic muscle. The work is done on a physical as well as a verbal level." To answer the question how bioenergetic movements differ from physical exercises, the author states that in the former "the total organism partakes in the movement."

The author, in the exposition of his ideas, uses arguments from the various fields of neurophysiology, Freudian psychology, and general medicine. Many of these are open to question, such as the idea that consciousness and the ego "lie at the surface of the cortex"; that some motion of a part must occur for "perception to be possible"; or that chronic contraction of the chest and abdominal muscles diminish the intake of oxygen and so depresses affect from diminished metabolism. It cannot be considered a wise practice, as in one of the cases quoted, to consider recurrent jaundice as an emotionally caused rigidity of the biliary system.

This book is recommended to the psychiatrist who can separate fact from fancy and profit from the author's experience with one of the numerous methods of treating the mentally ill.—Arthur J. Lapovsky

The Neuroses and Their Treatment. By E. Podolsky, M.D. Duodecimo of 555 pages, illustrated. New York, Philosophical Library, 1958. Cloth, $10.

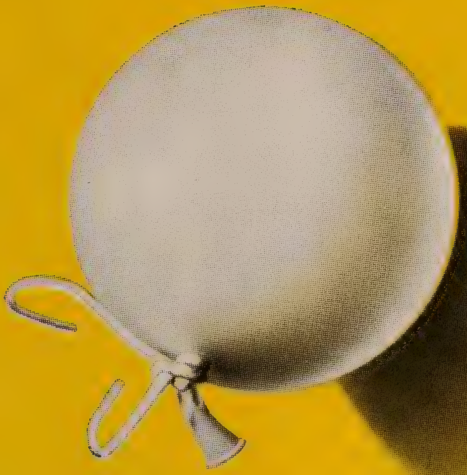
Here is a collection of monographs of 37 contemporary psychotherapists. As the title indicates, these monographs deal in general with the manifestations of neurotic defense reactions stemming from unresolved problems of maladjustment and misinterpretation of experiences in reality. The overlapping and repetition which, of necessity, occurs in this type of book is not objectionable.

The restatement of a principle from different points of view and the application of theory resulting from the individual experiences of the several writers are more instructive than the usual type textbook by a single author.—C. Milton Meeks

Endocrine Pathology of the Ovary. By J. M. Morris, M.D., and R. E. Scully, M.D. Octavo of 151 pages, illustrated. St Louis, Mo. The C. V. Mosby Co., 1958. Cloth, $8.50.

Morris and Scully have combined their talents to produce a unique and much needed book dealing with ovarian abnormalities that underlie clinical cases of endocrine disorders. The book correlates and evaluates pathologic changes in the ovary with resultant clinical endocrine findings. Numerous microphotographs are used to illustrate ovarian morphology. Endocrine assays, sex differentiation, testicular feminization, and gonadal dysgenesis are among the topics thoroughly discussed. Actual case histories add emphasis and interest to the presentation.

It is a well organized, well written, and a much needed book which should be read by all gynecologists.—John M. Tortora



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REFERENCES: 1. Campbell, M. F.: Principles of Urology, Philadelphia, W. B. Saunders Co., 1957, p. 101. 2. Carroll, G.: Bacterial Infections of the Urinary Tract (Male), in Conn, F.: Current Therapy 1956, Philadelphia, W. B. Saunders Co., 1956, p. 301. 3. Jawetz, E.: A.M.A. Arch. Int. M. 100:549, 1957.

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Herkimer	Robert C. Ashley	Little Falls	Mary K. Irving	Little Falls	Mary K. Irving	Little Falls
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*1. Bickerman, H. A.: *In* Drugs of Choice 1958-1959, ed. by W. Modell, Mosby, St. Louis, 1958, p. 562.

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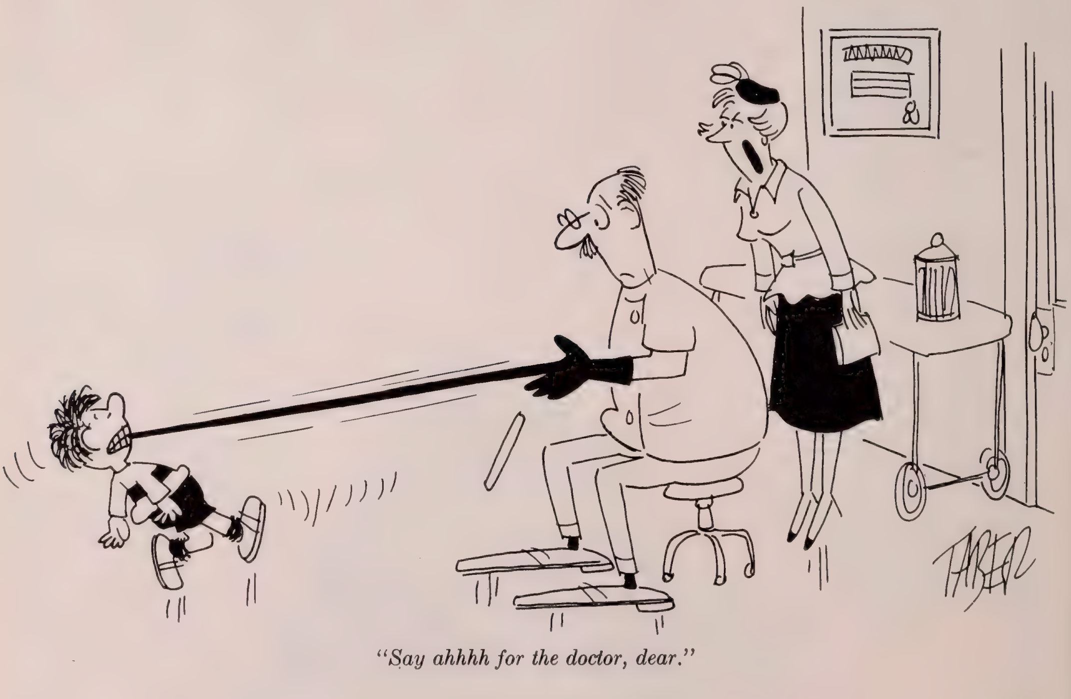

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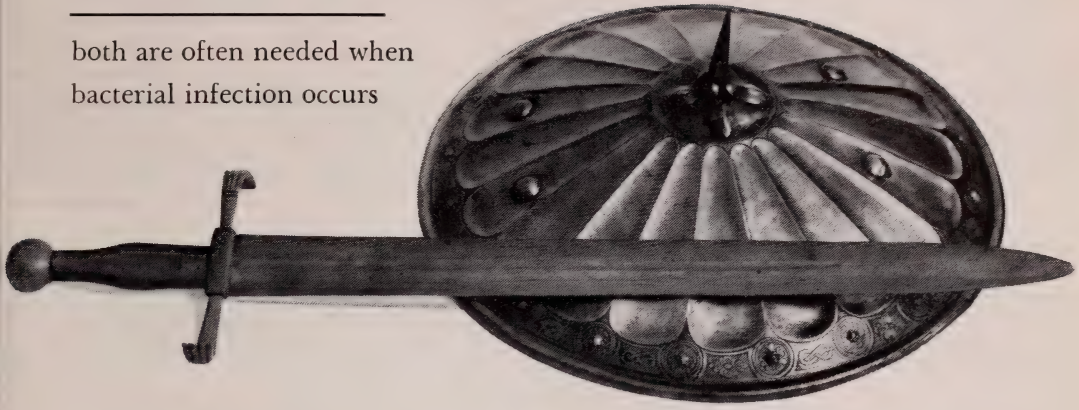

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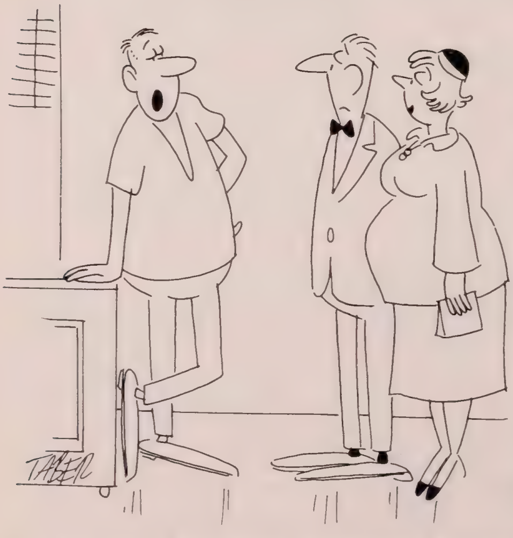

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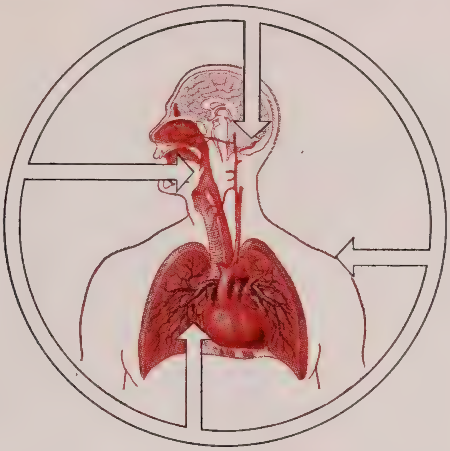

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† Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957. Fabricant, N. D.: E. E. N. T. Monthly 37:460 (July) 1958. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958.

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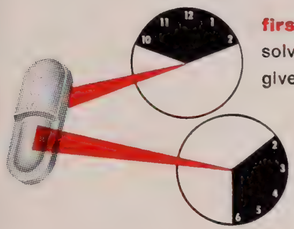

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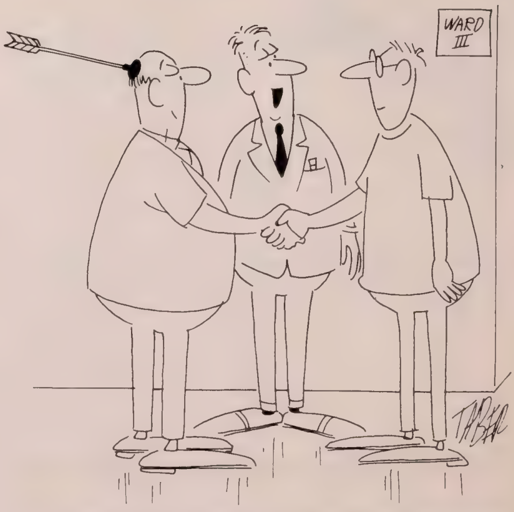
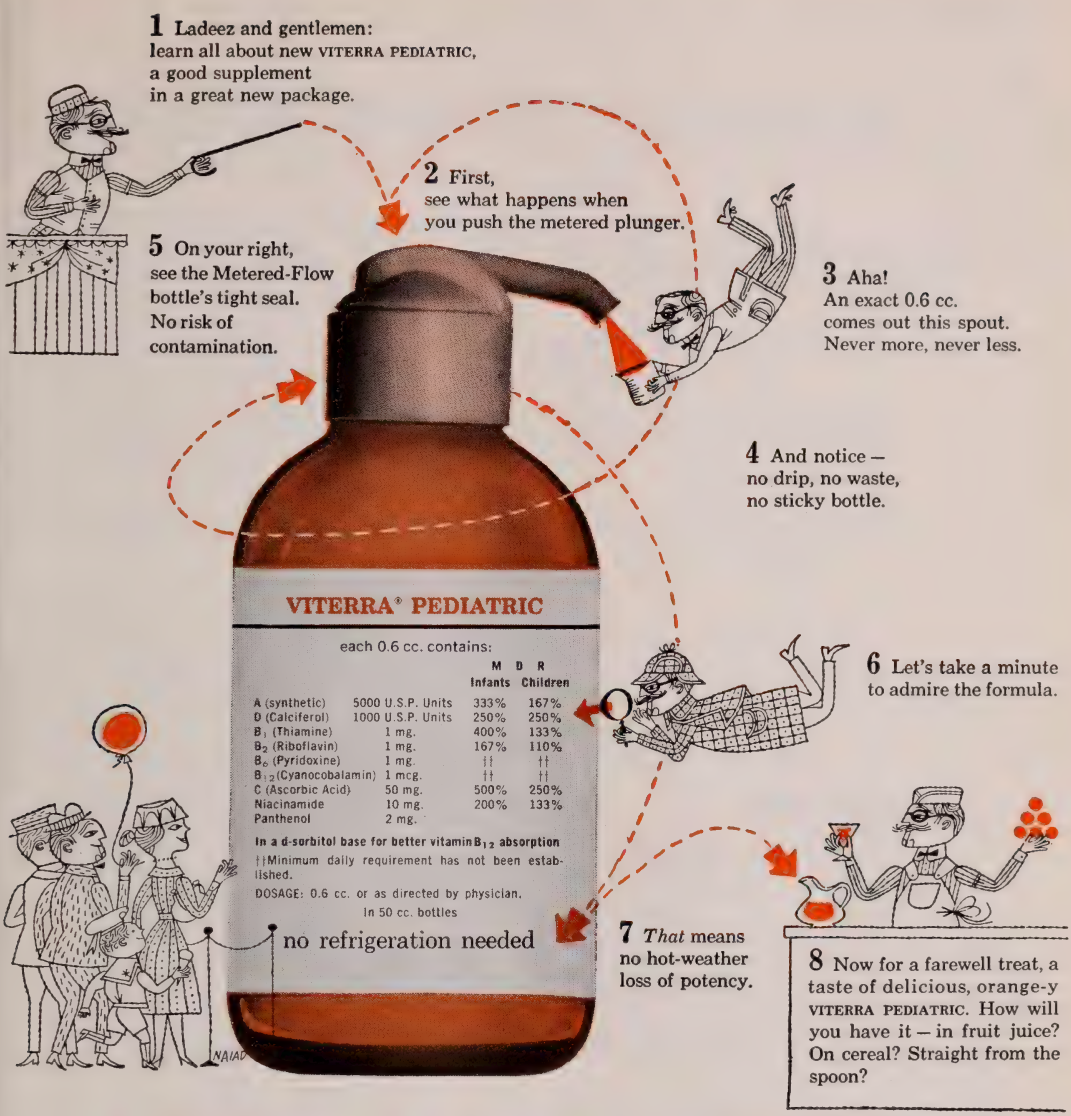


". . .and this is Dr. Hecht. Dr. Hecht is in pediatrics."



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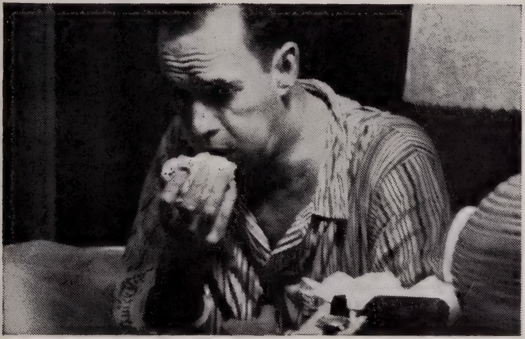

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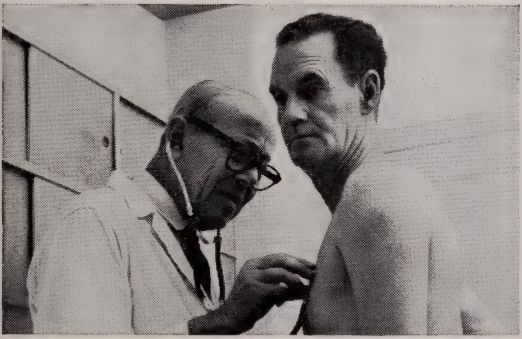

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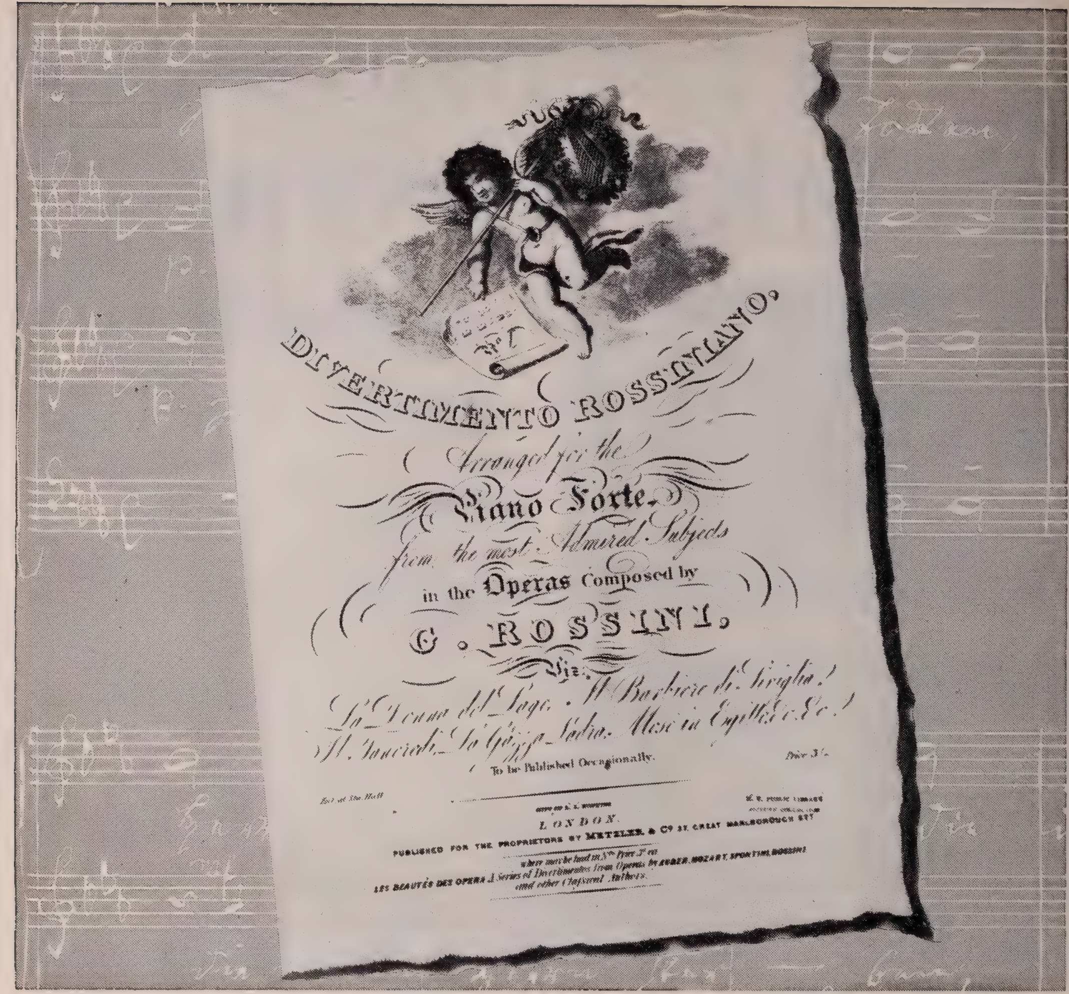

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VOLUME 59 JANUARY 15, 1959 NUMBER 2

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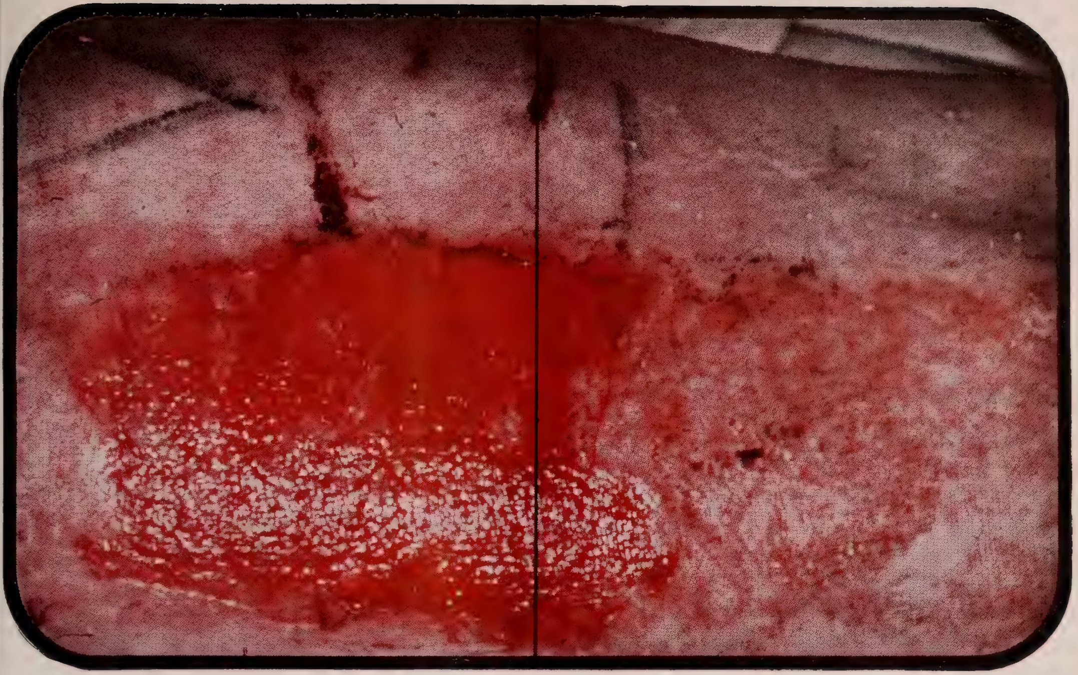

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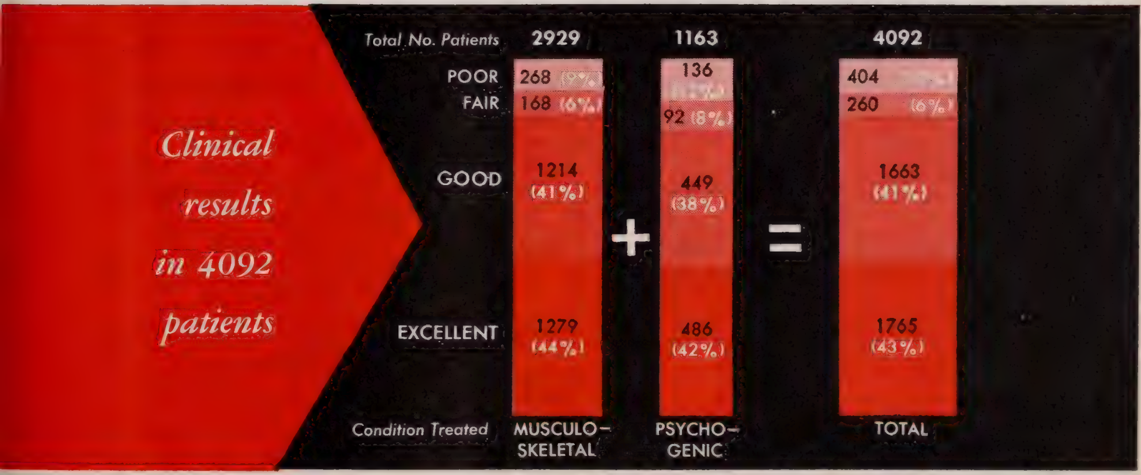

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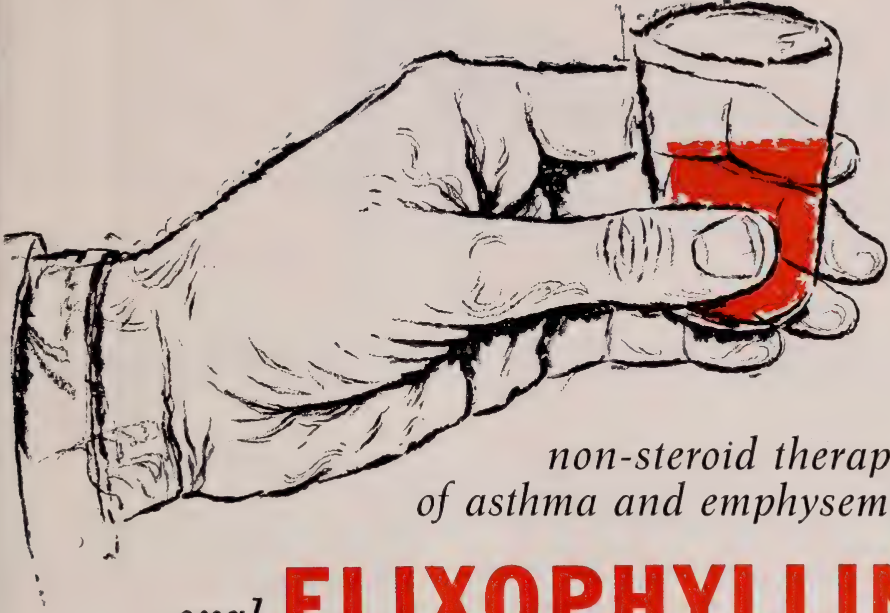

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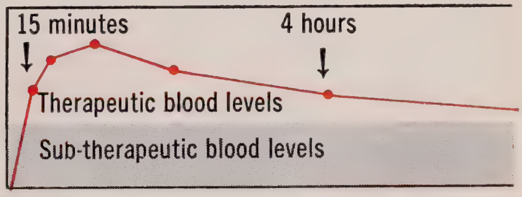

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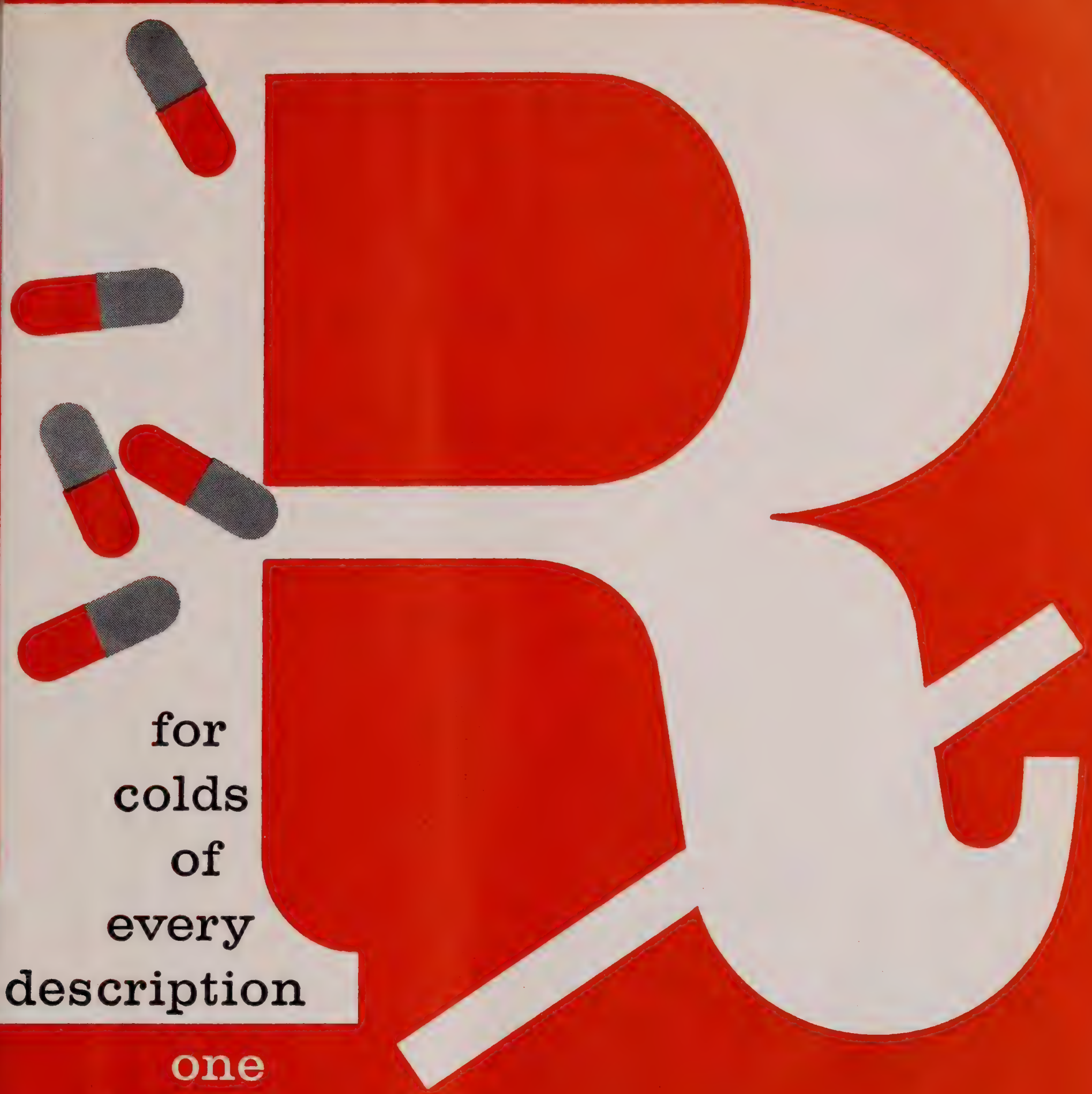

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(1) McMahon, M. F.: Rheumatism 13:17, 1957. (2) Robins, H. M.; Lockie, L. M.; Norcross, B.; Latona, S., and Riordan, D. J.: Am. Pract. & Digest Treat. 8:1758, 1957. (3) Stein, I. D.: Circulation 12:833, 1955.

*Complete bibliography furnished on request.

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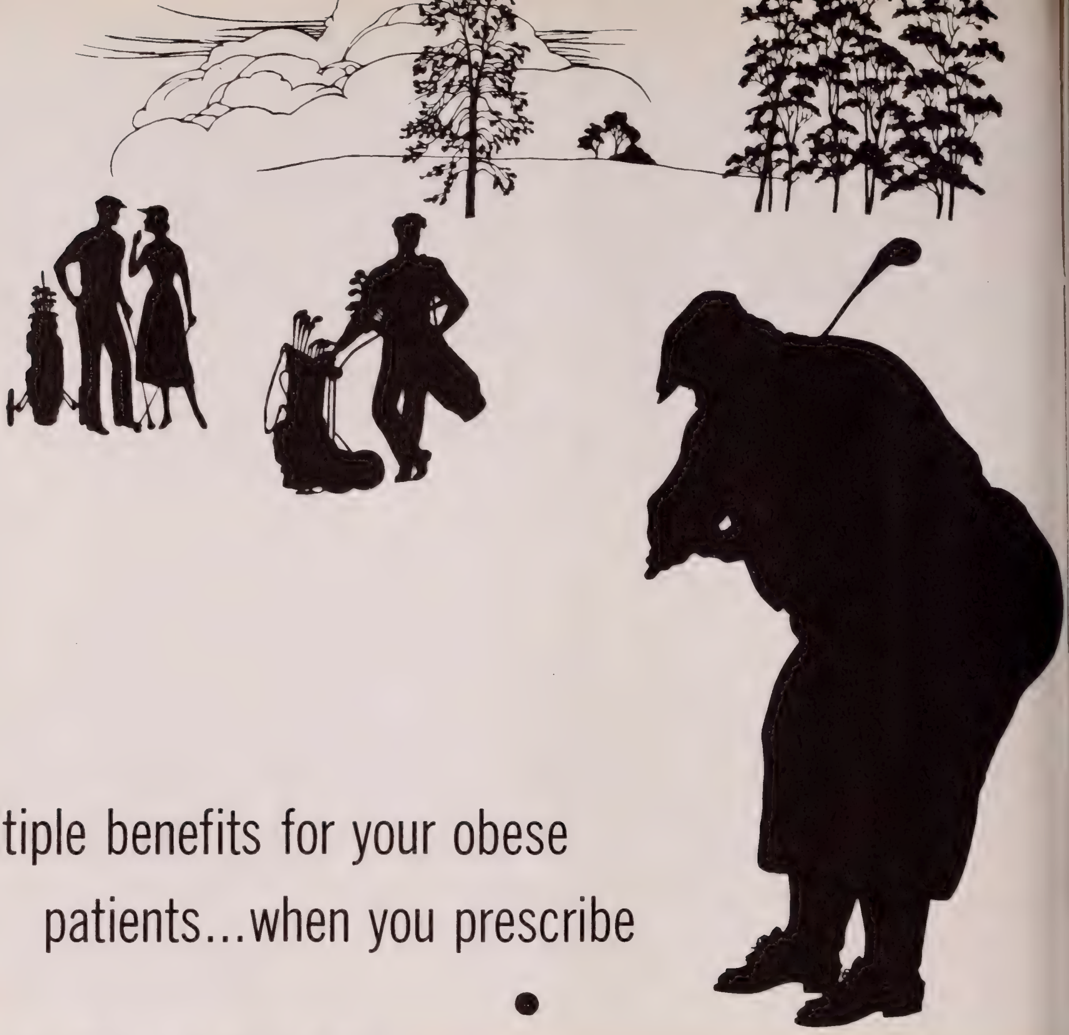
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(1) Council on Pharmacy and Chemistry, New and Nonofficial Remedies: J.A.M.A. **163**:356 (Feb. 2) 1957. (2) Martel, A.: Canad. M.A.J. **76**:117, 1957. (3) Ressler, C.: J.A.M.A. **165**:135 (Sept. 14) 1957. (4) Natenshon, A. L.: Am. Pract. & Digest Treat. 7:1456, 1956.

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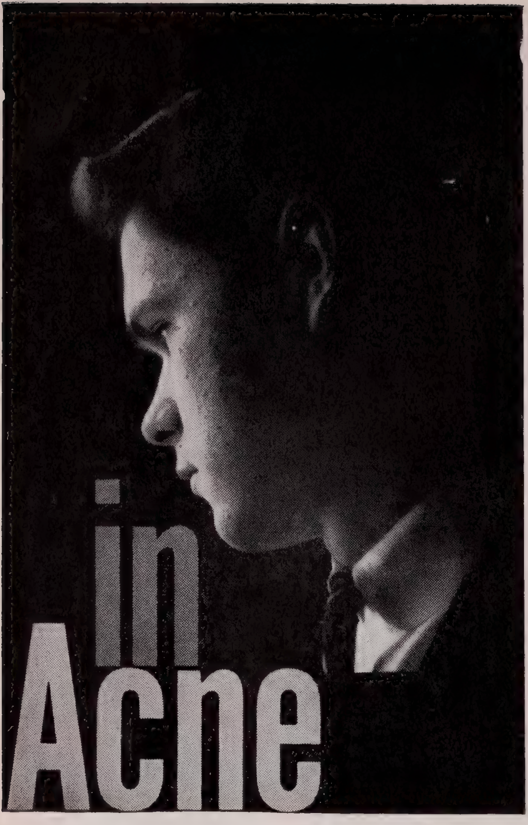

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1. Hodges, F. T.: *GP* 14:86, Nov., 1956.

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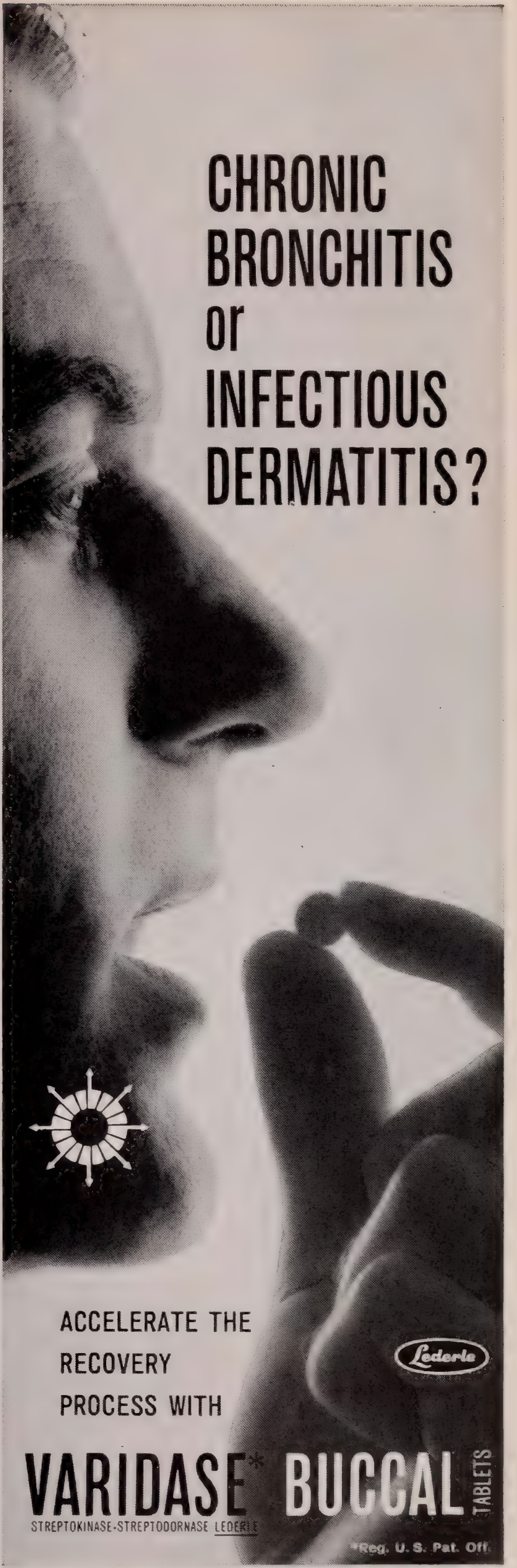
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[1] Sadove, Max S. and Schwartz, Lester: An Evaluation of Buffered Versus Nonbuffered Acetylsalicylic Acid, Postgraduate Medicine; 24:183, August, 1958

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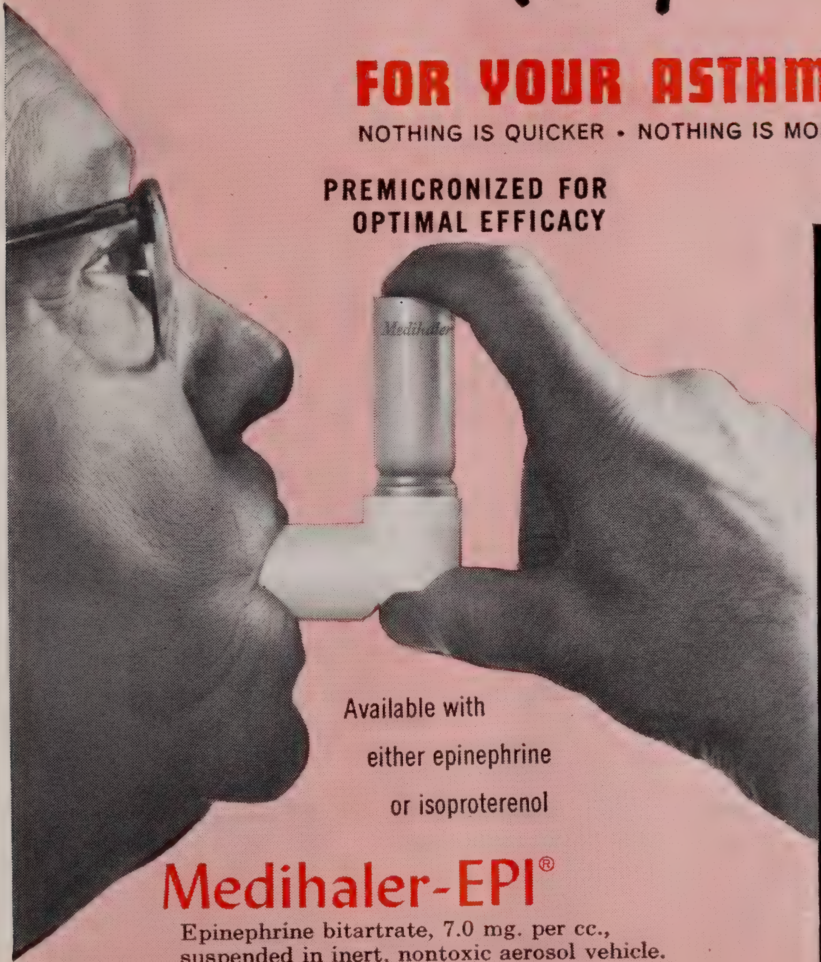

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1. Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958.

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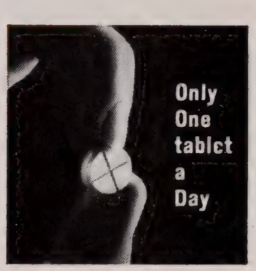

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references:
1. Grieble, H. G., and Jackson, G. G.: Prolonged Treatment of Urinary-Tract Infections with Sulfamethoxypyridazine. *New England J. Med.* 258:1-7, 1958.
2. Editorial: *New England J. Med.* 258:48-49, 1958.

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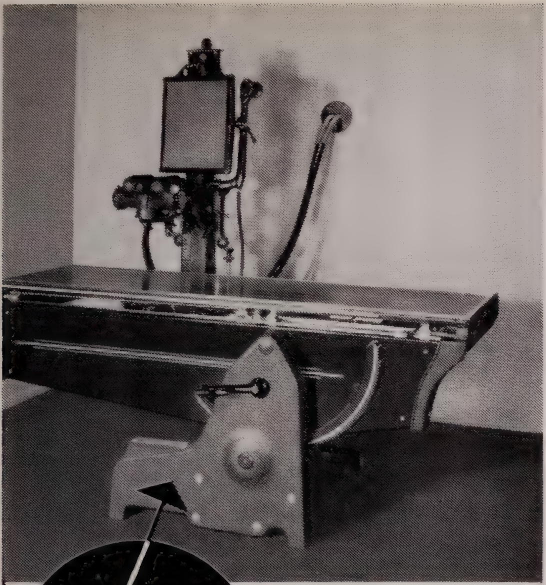

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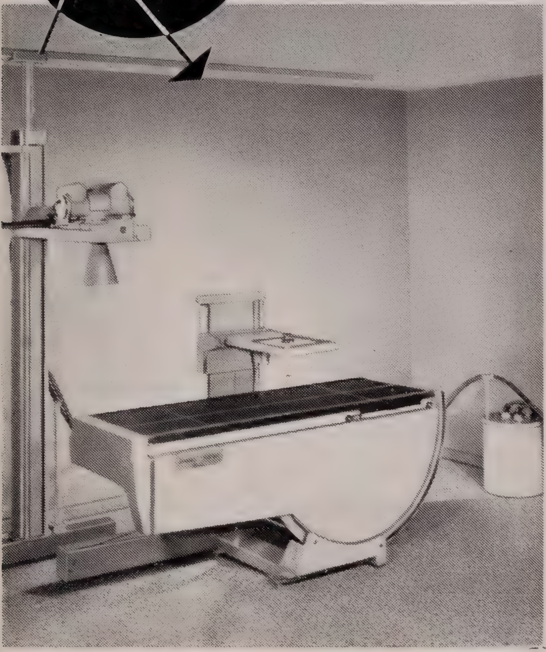

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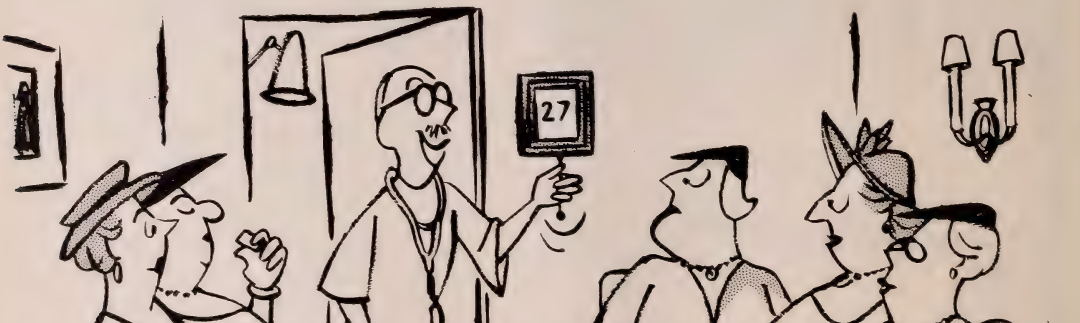

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1. Alexander, L.: Chemotherapy of depression—Use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride. J.A.M.A. 166:1019, March 1, 1958.
2. Current personal communications; in the files of Wallace Laboratories.

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REFERENCES: (1) Holloway, W. J., & Scott, E. G.: *Delaware M. J.* 30:175, 1958. (2) Roy, T. E., *et al.*: *Canad. M.A.J.* 77:844, 1957. (3) Markham, N. P., & Shott, H. C. W.: *New Zealand M. J.* 57:55, 1958. (4) Royer, A., in Welch, H., & Marti-Ibañez, F: Antibiotics Annual 1957-1958, New York, Medical Encyclopedia, Inc., 1958, p. 783. (5) Blair, J. E., & Carr, M.: *J.A.M.A.* 166:1192, 1958. (6) Caswell, H. T., *et al.*: *Surg., Gynec. & Obst.* 106:1, 1958. (7) Fekety, F. R., *et al.*: *Am. J. Pub. Health* 48:298, 1958. (8) Godfrey, M. E., & Smith, I. M.: *J.A.M.A.* 166:1197, 1958. (9) Kessler, A. D., & Scott, R. B.: *J. Dis. Child.* 96:294, 1958. (10) Shaffer, T. E.: *J. Michigan M. Soc.* 57:851, 1958.

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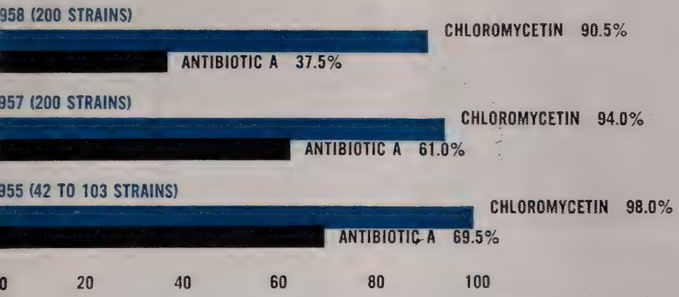

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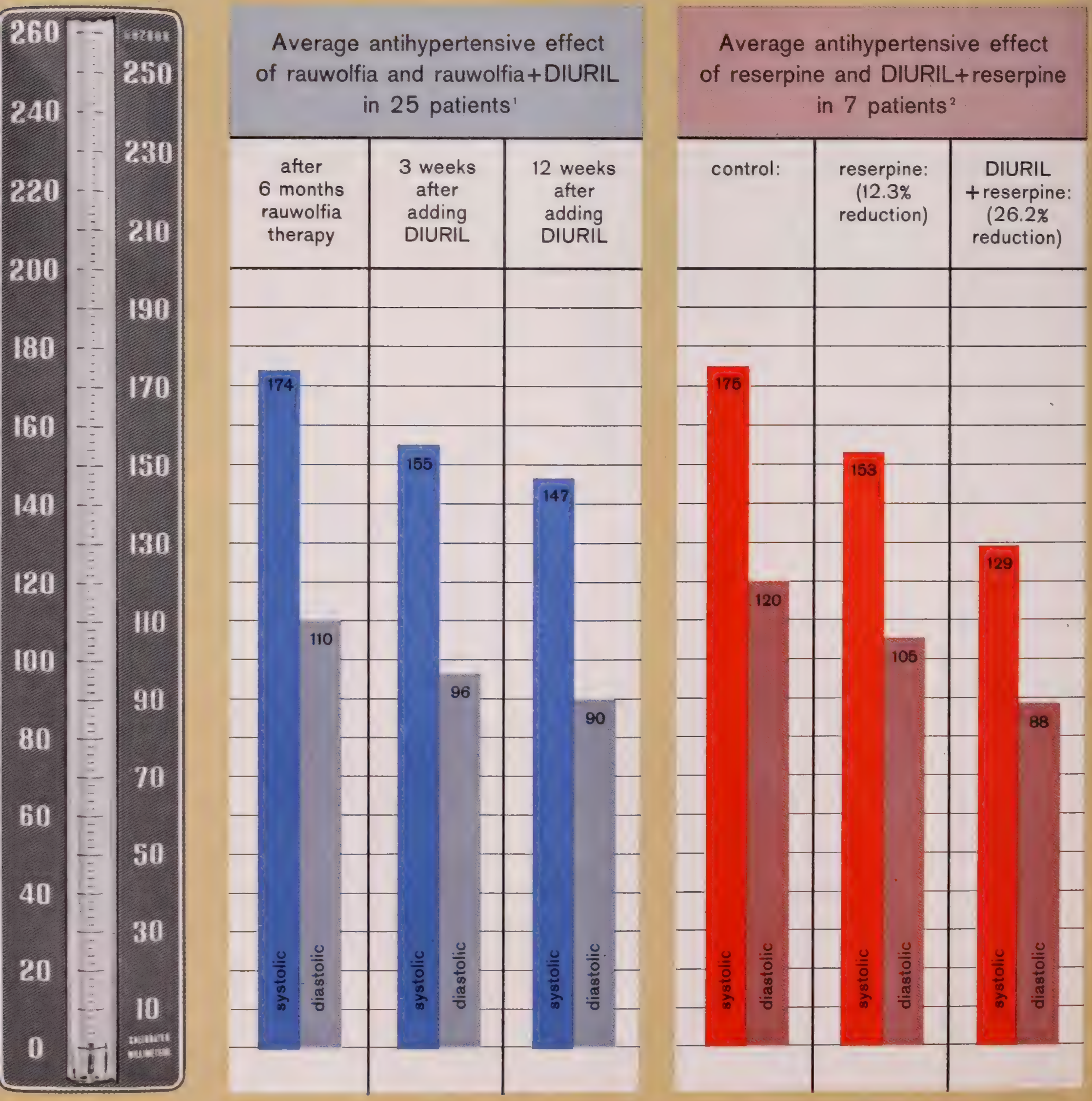

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DIUPRES by itself usually provides effective therapy for a majority of patients with mild or moderate hypertension, and even for many patients with severe hypertension. Many patients now treated with other agents which frequently cause distressing side effects can be adequately managed with well tolerated DIUPRES.

provides basic therapy

Should other drugs need to be added to DIUPRES, they can be given in much lower than usual dosage so that their side effects are often strikingly reduced.

rapid onset of effect

The antihypertensive action of DIUPRES is rapidly evident. (Considerable time may elapse before the antihypertensive effect of reserpine alone is observed.)

fewer and less severe side effects

DIUPRES may be expected to cause fewer and less severe side effects than are encountered with other antihypertensive therapy. (Since DIURIL and reserpine potentiate each other, the required dosage of each is usually less when given together as DIUPRES than when given alone. Such reduction in dosage makes side effects less likely to occur.)

often obviates weight gain

DIUPRES minimizes the problem of weight gain seen with reserpine (reserpine alone has been reported to produce weight gain in 50 per cent of patients).[1,4]

virtually eliminates fluid retention

DIUPRES is not likely to cause either clinical or subclinical retention of sodium and water. (Hypotensive drugs, particularly rauwolfia[5] and hydralazine,[6] may cause fluid retention. Even when such retention is subclinical, their antihypertensive effectiveness is diminished.[6])

diet more palatable

With DIUPRES, there is less need for rigid restriction of dietary salt, which patients find so burdensome.

> "*It may well be that the drug* [DIURIL] *produces the benefits of a markedly restricted low sodium diet but without its hardships.*"[3]

subjective and objective improvement

DIUPRES allays anxiety and tension, thus reducing the emotional component of hypertension. Organic changes of hypertension may be arrested and reversed. Headache, dizziness, palpitations and tachycardia are usually promptly relieved by DIUPRES. When the *anginal syndrome* accompanies hypertension, the administration of DIUPRES may also cause diminution or even disappearance of this syndrome concurrent with control of the hypertension.

convenient, controlled dosage

Instead of two separate prescriptions, you write one prescription... the patient takes one tablet, rather than two different tablets... and the dosage schedule is easier for the patient to remember and follow.

> "*patients have fewer lapses and make fewer mistakes in dosage, the simpler the regimen can be made. Therefore I do not hesitate to use more than one medicament combined in one tablet, provided this gives approximately the correct dosage of each.*"[6]

economical

DIUPRES will cost the patient less than if he were given two separate prescriptions for its components.

Indications:

DIUPRES is indicated in hypertension of all degrees of severity. It can be used in the following ways:

- as total therapy
- as primary therapy, adding other drugs if necessary
- as replacement or adjunctive therapy in patients now treated with other agents

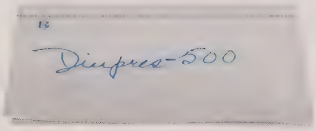
Precautions:

The precautions normally observed with DIURIL or reserpine apply to DIUPRES. Additional information on DIUPRES is available to physicians on request.

Recommended dosage range:

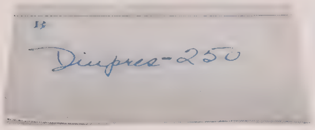
DIUPRES-500—one tablet one to three times a day.
DIUPRES-250—one tablet one to four times a day.

If necessary, other agents may be added. If the patient is receiving ganglion blocking agents or hydralazine, their dosage should be cut by 50 per cent when DIUPRES is added.



DIUPRES-500

500 mg. DIURIL (chlorothiazide), 0.125 mg. reserpine. Bottles of 100, 1000.



DIUPRES-250

250 mg. DIURIL (chlorothiazide), 0.125 mg. reserpine. Bottles of 100, 1000.

the first "wide range" antihypertensive

DIUPRES

DIURIL® WITH RESERPINE

1. Rochelle, J. B., III, Bullock, A. C., and Ford, R. V.: Potentiation of antihypertensive therapy by use of chlorothiazide, *J.A.M.A.* 168:410, Sept. 27, 1958. 2. Freis, E. D., Wanko, A., Wilson, I. M., and Parrish, A. E.: Treatment of essential hypertension with chlorothiazide (Diuril), *J.A.M.A.* 166:137, Jan. 11, 1958. 3. Freis, E. D.: Treatment of hypertension. (Presented at the Annual Meeting of Southern Medical Association, Nov. 13, 1957.) 4. Moyer, J. H., Dennis, E., and Ford, R.: Drug therapy (Rauwolfia) of hypertension, *A.M.A. Arch. Int. Med.* 96:530, Oct. 1955. 5. Perera, G. A.: Edema and congestive failure related to administration of rauwolfia serpentina, *J.A.M.A.* 159:439, Oct. 1, 1955. 6. Wilkins, R. W.: Precautions in use of antihypertensive drugs, including chlorothiazide, *J.A.M.A.* 167:801, June 14, 1958.

MSD MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

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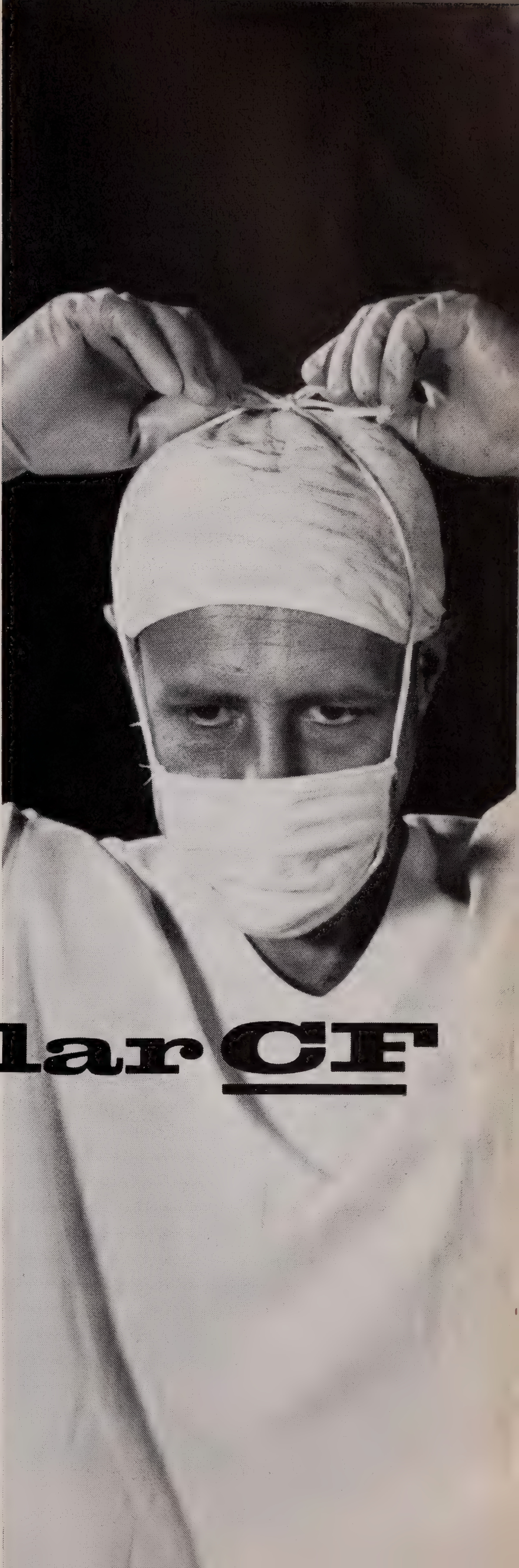

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Romilar Cold Formula controls the entire symptomatology of colds, including coughs. A synergistic combination,* Romilar CF

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suppresses coughing
relieves congestion
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Each teaspoonful (5 cc) of pleasantly flavored syrup, or each capsule, contains: 15 mg Romilar HBr (non-narcotic antitussive); 1.25 mg Chlorpheniramine maleate (antihistamine); 5 mg Phenylephrine HCl (decongestant); 120 mg N-acetyl-p-aminophenol (analgesic-antipyretic).

*L. O. Randall and J. Selitto, *J. Am. Pharm. Assn. (Sc. Ed.)*, 47:313, 1958.

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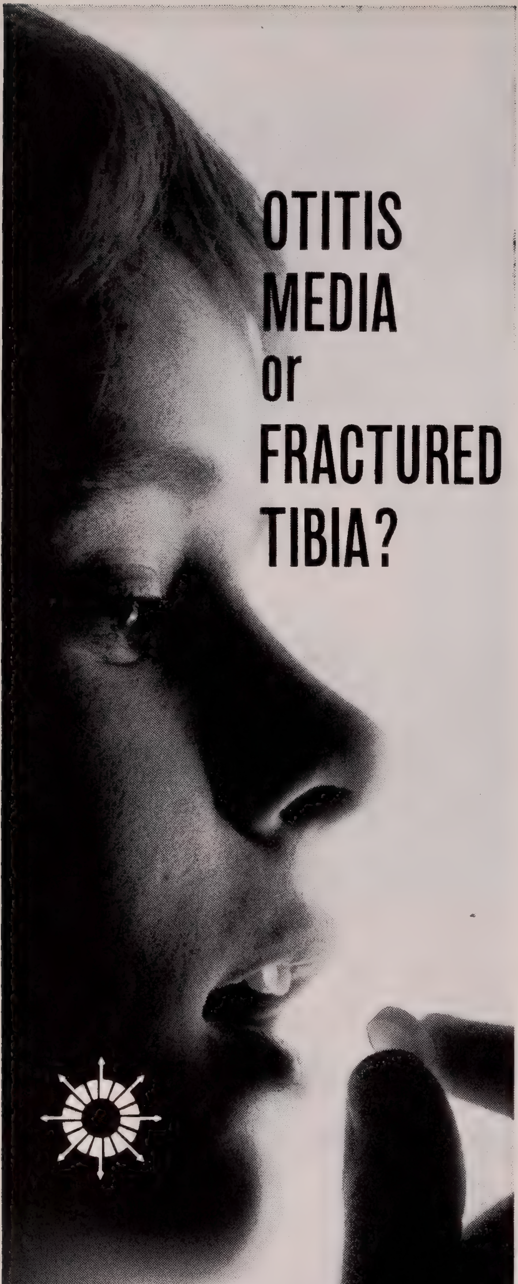

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Longest relief of any medication
comfort all day or all night with a single oral dose[1]

Remarkable lack of side effects
"...of 311 patients, incidence of side effects was only 2.2 per cent. Evidence of sedation was (only) 1.2 per cent."[4]

Stops excessive post-nasal drip
and resulting night cough, irritation, secondary infection

1. Lawler, E. G. and Limperis, N.M.: Clin. Med. (Dec.) 1958. 2. Medical Science, 3:376-377 (Mar. 25) 1958. 3. Cavallito, C. J. and Jewell, R.: J. Am. Pharm. A. (Scient. Ed.) 47:165-168, 1958. 4. Antibiotic Med. & Clin. Therapy 5:578-581 (Sept.) 1958.

Samples and literature on request

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A new principle in medicine that controls absorption rather than dissolution or release, independently of gastrointestinal motility or specific pH. Maintains constant rather than sporadic blood levels, hence no over-release or under-release. This gives smooth therapeutic results, rare incidence of side effects. Works even in liquid form for children (Rynatan Suspension).

*Neisler Exclusive, Patent Pending

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For adults and older children

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For children (as young as 6 months)

Rynatan contains:	Each tabule	5 cc. suspension
Phenylephrine tannate	25.0 mg.	5.0 mg.
Prophenpyridamine tannate	37.5 mg.	12.5 mg.
Pyrilamine tannate	37.5 mg.	12.5 mg.

Dose: q. 12 h.: Tabules 1-2. Suspension: Children under 6 yrs. ⅓-1 tsp.; over six 2-3 tsp.

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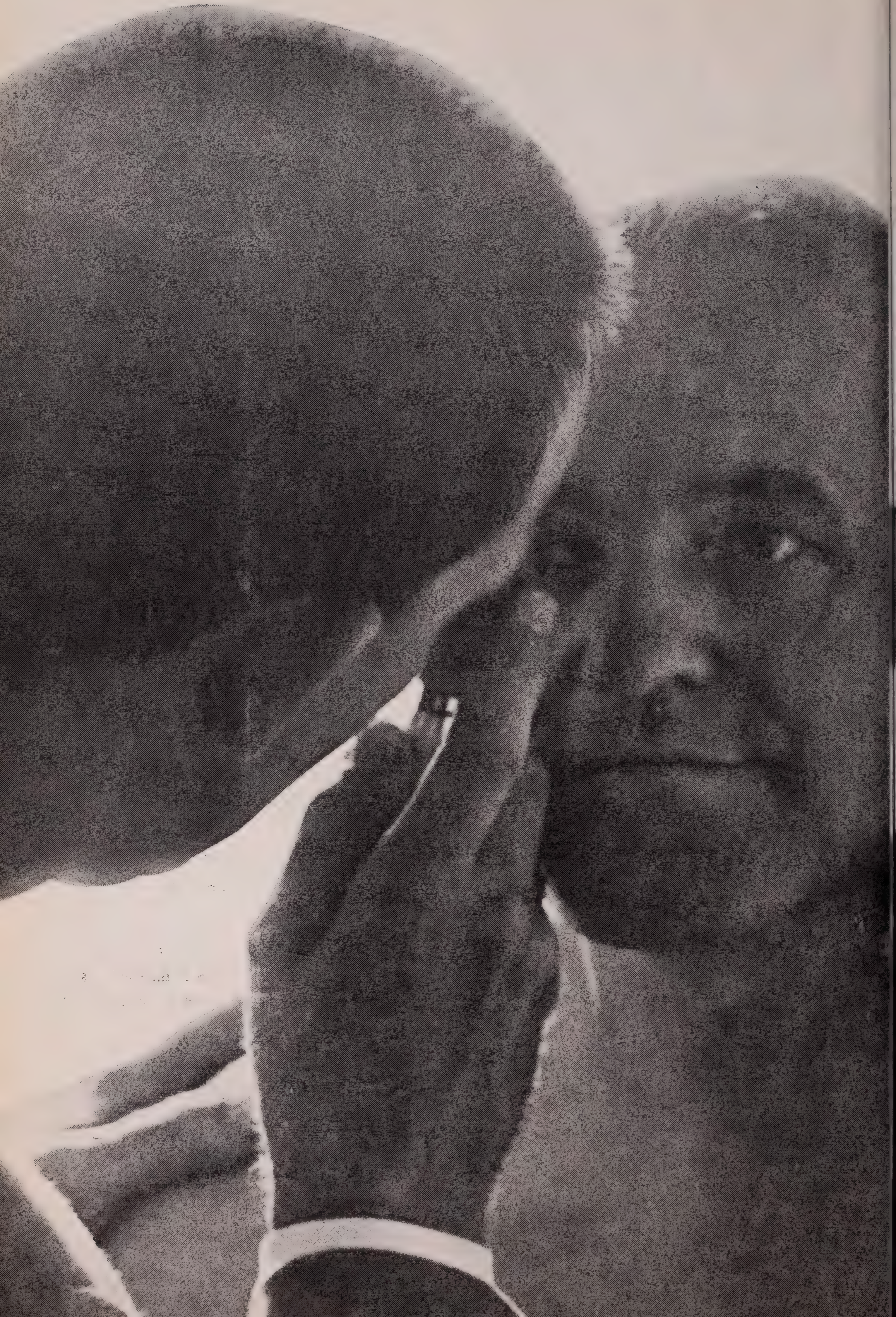


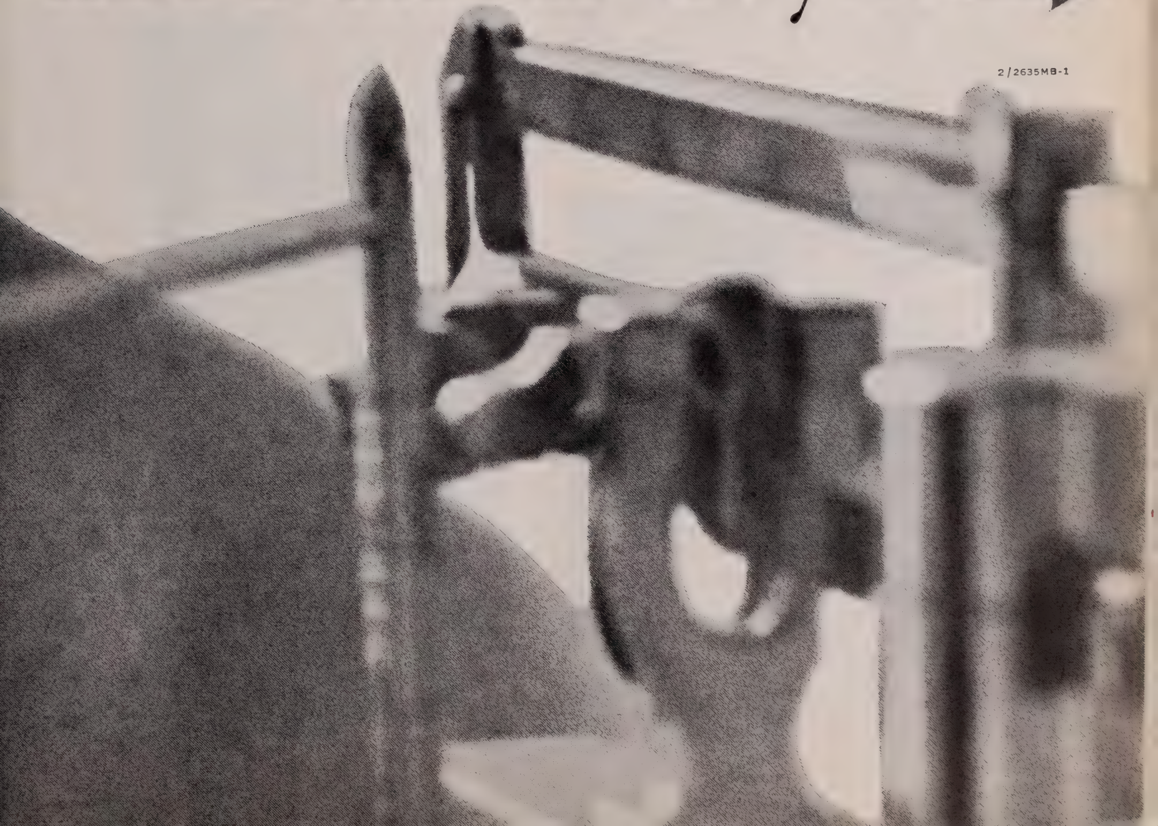
The drug that lowered this patient's blood pressure *for the first time without side effects* is now available for your prescription…

Created by C I B A
World Leader in
Hypertension Research

SingoserpT.M.
(syrosingopine CIBA)

here is the full story… *please turn*

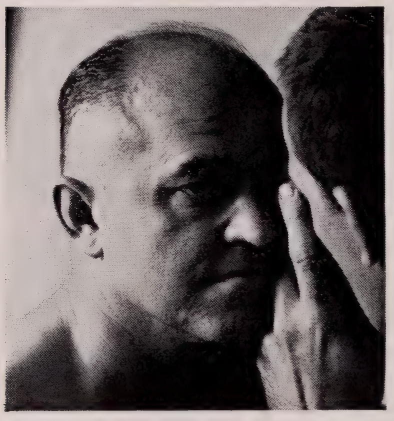
2/2635MB-1



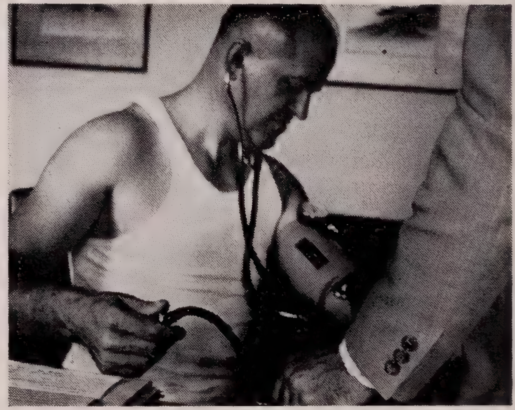
a major improvement in rauwolfia
a major advance in antihypertensive therapy

Developed after three years of basic research, proved during one of the most extensive clinical trials in pharmaceutical history, here is what **Singoserp** *can do:*

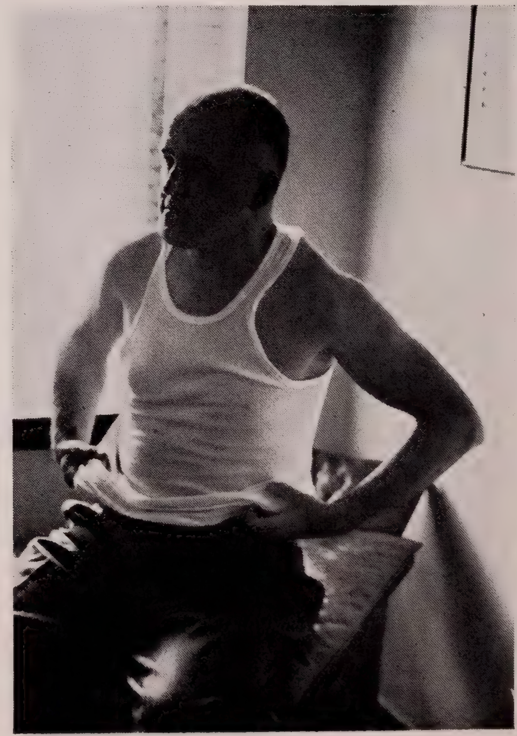
Patient P. K. was first seen with a blood pressure of 220/138 mm. Hg; he complained of headache, palpitation, nervous tension and hyperhidrosis.

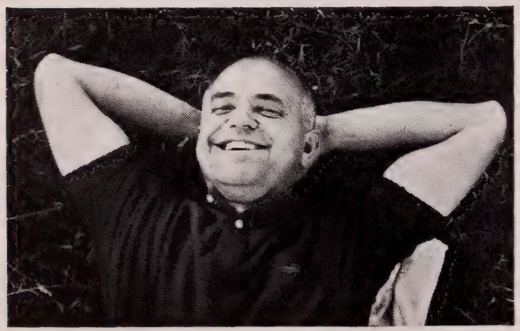


Hospitalized briefly for observation and treatment, he was placed on a 4-Gm. sodium diet, plus chlorothiazide and mecamylamine regulated according to b.p. reading, which he was taught to take himself.



One month later his blood pressure was 140/104; he complained of dryness of mouth, chest pain, constipation and nocturia (twice a night). He was then started on Singoserp (0.5 mg. daily) with instructions to reduce the other medications to the extent possible, as evidenced by his b.p. readings. ▶





After five months on Singoserp the patient's blood pressure ranged between 120/84 and 140/100. No mecamylamine was required; only ⅓ the original dose of chlorothiazide was required. One month later, chlorothiazide was stopped and the patient was maintained on Singoserp alone, .1 mg. b.i.d. Favorable blood pressure response continues and patient feels well. Since taking Singoserp patient reports *no* chest pain, *no* mouth dryness, *no* other side effects.

SingoserpT.M.
(syrosingopine CIBA)

Solves the Side Effects Problem in Most Hypertensive Patients

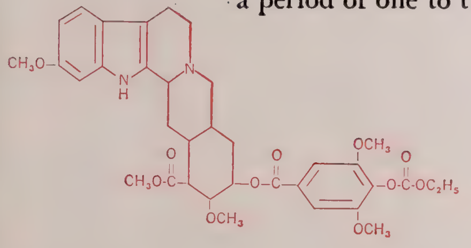
1. For new hypertensive patients Singoserp is the ideal antihypertensive drug for new patients because it lowers blood pressure without creating the side effects problem posed by conventional rauwolfia agents.

2. For hypertensive patients already undergoing drug treatment Singoserp, added to any antihypertensive regimen, makes it possible to maintain blood pressure levels achieved with more potent agents, while reducing their dosage requirements—or even eliminating them altogether in some cases.

Infrequent side effects—"The chief advantage of [Singoserp] over other Rauwolfia derivatives seems . . . to be the relative infrequency with which it produces disturbing side effects."[1]

Less sedation—"It [Singoserp] is approximately equipotent to reserpine as a hypotensive agent but is definitely less sedative or tranquilizing."[2]

Depression relieved—"In those patients who had been depressed, [Singoserp] was substituted for other Rauwolfia preparations and within a period of one to two weeks this depression was relieved."[3]



Created in the laboratory by altering the reserpine molecule so as to preserve its antihypertensive property and virtually eliminate its undesirable side actions.

Dosage: *In New Patients:* Average initial dose, 1 to 2 tablets (1 to 2 mg.) daily. Some patients may require and will tolerate 3 or more tablets daily. Maintenance dose will range from ½ to 3 tablets (0.5 mg. to 3 mg.) daily. When necessary for adequate control of blood pressure, more potent agents may be used adjunctively with Singoserp in doses below those required when they are used alone. *In Patients Taking Other Antihypertensive Medication:* Add 1 to 2 Singoserp tablets (1 to 2 mg.) daily. Dosage of other agents should be revised downward to a level affording maximal control of blood pressure and minimal side effects.

Supplied: Singoserp *Tablets,* 1 mg. (white, scored); bottles of 100.

References: 1. Herrmann, G. R., Vogelpohl, E. B., Hejtmancik, M. R., and Wright, J. C.: To be published. 2. Wolffe, J. B.: Mod. Med. *26*:253 (Feb. 1) 1958. 3. Bartels, C. C.: To be published.

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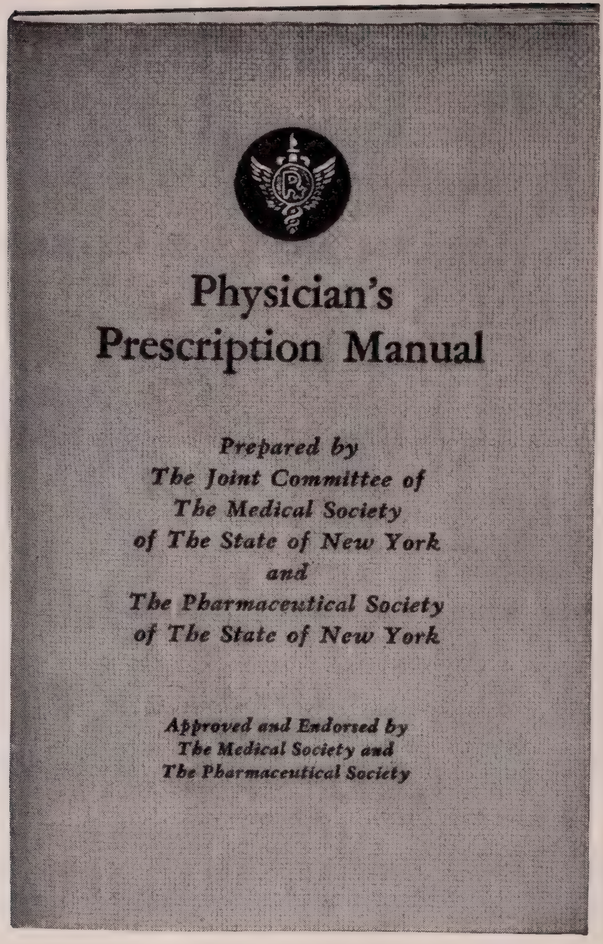
**A booklet
that has already
improved relations
between Medicine
and Pharmacy**



Physician's
Prescription Manual

*Prepared by
The Joint Committee of
The Medical Society
of The State of New York
and
The Pharmaceutical Society
of The State of New York*

*Approved and Endorsed by
The Medical Society and
The Pharmaceutical Society*

The Manual is a handy pocket-sized compendium (actual size—4 in. x 6½ in.) of popular drugs and *NYPM formulas designed to simplify your prescription-writing problems. If you have mislaid your copy, send for another.

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of the
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***New York Physician's Prescription Manual**

re-evaluating tranquilizers?

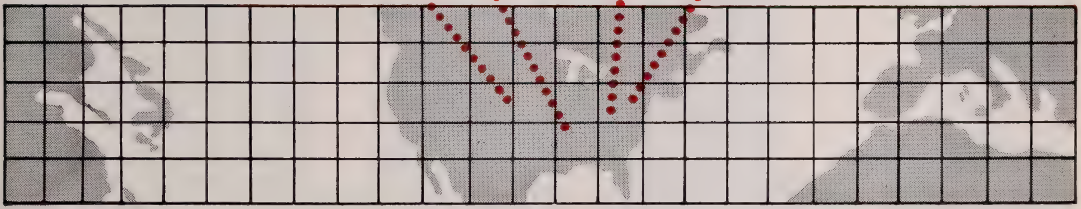
READ WHAT CLINICIANS ARE NOW SAYING ABOUT ATARAX®
(brand of hydroxyzine)

IN GERIATRICS
"ability to decide correctly has increased, while the illogical response to anxiety has diminished."[1]

IN WORKING ADULTS
"especially well suited for ambulatory patients who must work, drive a car, or operate machinery."[3]

IN PEDIATRICS
"ATARAX appeared to reduce anxiety and restlessness, improve sleep patterns and make the child more amenable to the development of new patterns of behavior . . . ."[2]

IN GENERAL
ATARAX is "effective in controlling tension and anxiety . . . . Its safety makes it an excellent drug for out-patient use in office practice."[4]



INVESTIGATORS AGREE ON OPTIMAL ATARAX DOSAGES

For childhood behavior disorders	10 mg. tablets Syrup	3-6 years, one tablet t.i.d. over 6 years, two tablets t.i.d. 3-6 years, one tsp. t.i.d. over 6 years, two tsp. t.i.d.
For adult tension and anxiety	25 mg. tablets Syrup	one tablet q.i.d. one tbsp. q.i.d.
For severe emotional disturbances	100 mg. tablets	one tablet t.i.d.
For adult psychiatric and emotional emergencies	Parenteral Solution	25-50 mg. (1-2 cc.) intramuscularly, 3-4 times daily, at 4-hour intervals. Dosage for children under 12 not established.

Supplied: Tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution, 10 cc. multiple-dose vials.

References: 1. Smigel, J. O., et al.: J. Am. Ger. Soc., in press. 2. Freedman, A. M.: Pediat. Clin. North America **5**:573 (Aug.) 1958. 3. Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957. 4. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. 5. Coirault, M., et al.: Presse méd. **64**:2239 (Dec. 26) 1956. 6.Bayart, J.: Presented at the International Congress of Pediatrics, Copenhagen, Denmark, July 22-27, 1956.

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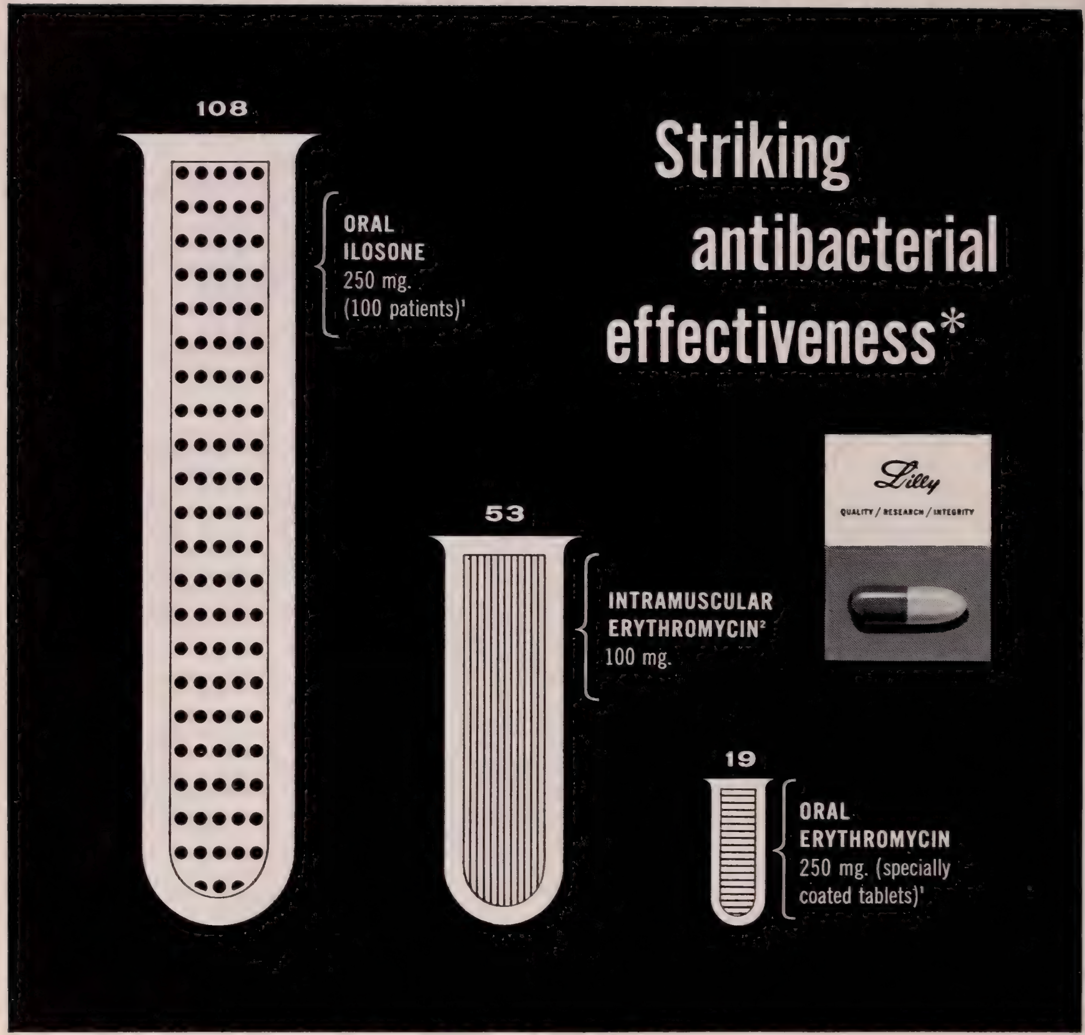

ILOSONE™ *assures a more decisive clinical response in almost every common bacterial infection*

(erythromycin ester, Lilly) as the propionate

Ilosone provides more potent, longer-lasting therapeutic levels in the serum within minutes after administration. A fast, decisive response is assured in almost every common bacterial infection.

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1. Griffith, R. S., *et al.:* Antibiotic Med. & Clin. Therapy, 5:609 (October), 1958. Note: Peak levels with the oral erythromycin tablets (thirty-three dilutions) were not observed until four hours after administration. 2. Data from Griffith, R. S.: Antibiotics Annual, p. 269, 1954-1955.

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EDITORIALS

Hospital Admission of Alcoholics

The pioneering work of Dr. Marvin Block of Buffalo culminated in the passage of resolutions by both the American Medical Association and the American Hospital Association advising hospitals to admit alcoholics. The House of Delegates of the Medical Society of the State of New York passed a similar resolution in the 1957 meeting and requested the Blue Shield Plans to insure these patients. Several of our members have served on the Advisory Committee of the Interdepartmental Health Resources Board, a New York State government body, in helping that body to formulate methods by which interested communities can attack their alcoholic problem. The NEW YORK STATE JOURNAL OF MEDICINE has made its contribution during the past year by publishing a series of papers on alcoholism to bring information on this symptom complex to the practicing physicians in our State.

These and many other approaches to the problem by local committees and by various other organizations devoted to research and study indicate a growing awareness that for too long our profession has been willing to "let George do it." "George" has been, all too often, the police, the courts, the Salvation Army, or Alcoholics Anonymous. Despite the best offices of all of these and the salutary work of the latter, a large portion of these citizens have no medical care available. Their alcoholic debauches terminate only with their last breath on some "Skid Row."

Yet all informed opinion recognizes now that the alcoholic is not willfully evil but is, instead, sick; a person who uses alcohol in an effort to make himself feel better. The material he takes for relief is, in the doses he ingests, a poison. Medicine can no longer ignore this obligation to the sick.

If we are to bring the great weight of medical skill and research to bear on alcoholism, we must prepare our workshops, the hospitals, to admit them. The excellent survey on hospital practices concerning this condition, conducted by Dr. I. J. Brightman and his associates and appearing elsewhere in this issue, indicates how woefully inadequate our efforts have been in the past to meet our responsibilities.

Alcoholism is a community problem—social, legal, religious, and medical. It must be managed locally by teams representing all of these disciplines. The neighborhood hospital is a natural center for the amalgamation of all these activities.

Does your hospital accept alcoholics?

Does it discharge them on sobriety (the completion of the first and easiest step in the therapy of this disease) without a referral for further care, as did 28 per cent of New York hospitals?

Does your hospital discharge these patients if there is no concomitant injury or illness, as 66 per cent of our institutions do, thereby ignoring the greater part of the problem?

Do insurance plans in your community cover other varieties of poisoning but not this one?

Do your interns and attending staff have sufficient experience with this disorder to understand it?

Medicine has never ignored a disease in the past because it was difficult to manage. This survey shows that we are now beginning to accept our responsibilities for the alcoholic as well.—H. B.

Payment for Completion of Insurance Forms

The House of Delegates on May 13, 1958, adopted a resolution as follows: "Resolved, that this House of Delegates of the Medical Society of the State of New York recognizes that the completion of insurance company forms is a task for which a fee should be paid."

An editorial in the August 1, 1958, issue of the New York State Journal of Medicine comments, "Many companies, of course, have established the practice of paying for these services. In the case of those who do not, the doctor is well within his rights to require it."

Further clarification of this problem still seems desirable. Forms relating to applications for life insurance, forms requested by the insurance company, with a proper release from the patient, pertaining to a past illness in relation to current insurability—these constitute compensable work on the part of the doctor. However, the completion of forms to establish a period of disability and such forms as are minimally necessary to record continuation and/or termination of said disability or furnish routine information for payment of hospital, surgical, or medical benefits constitute a service to the patient and therefore do not carry a fee for the physician.

In the event that the insurance company demands an excessive number of forms or requires forms to be filled out with an unjustifiable frequency, the physician may well request the company to pay for such extra service. Each physician must settle such problems directly with the insurance company on an individual basis. More widespread use of the standard forms as advocated by the Health Insurance Council should minimize unnecessary forms to establish and terminate a period of disability.—J. C. McC.

Editorial Comment

What is Public Health? The answer is supplied clearly and succinctly in an editorial by Herman E. Hilleboe, M.D., Commissioner, New York State Health Department.[1] To describe such a vast enterprise in relatively few words is in itself a notable accomplishment.

We think that our readers will benefit from Dr. Hilleboe's clear statement and therefore reproduce his editorial in full.

> Hardly a week goes by that someone doesn't ask me: "What is public health?" or "What do public health workers do in the State Health Department?" Even some physicians, whose medical school days go back several decades, still consider public health largely a matter of the control of communicable diseases and activities in environmental sanitation, especially the abatement of nuisances that clutter up streets, or odors that emanate from vacant lots and alleys.
>
> Too many people, including physicians, are exposed only indirectly and occasionally to a modern, well-run public health department. The health officer is looked on, too often, as just another government official who wants the government to run everything. Perhaps a good share of this lack of information about public health in mid-twentieth century is the fault of the health officer himself. He is so busy seven days a week, fifty-two weeks a year, carrying out his many duties as a specialist in community preventive medicine that he doesn't find or take time to tell the public about his work.
>
> Public health practice has been aptly defined by the American Public Health Association as "the application of medical, social, and allied disciplines in an organized community activity primarily to protect and advance the health of the people."
>
> Actually, public health activities carried on today by official health agencies in New York State are precisely what the people of the State want them to be. The health department passes no laws, appropriates no funds, has no lobby or pressure group at its command. Its duties and responsibilities are clearly set forth in the Public Health Law and the State Sanitary Code. The State Department of Health carries out its activities to the extent that funds and personnel are provided each year by executive and legislative action; this support has been both wise and generous during the last several decades.

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[1] Health News: Aug., 1958, p. 3.

Over the years, numerous health programs have been added to the domain of health departments in New York State. Communicable diseases could be controlled only by community action. This included specialized medical care in hospitals, immunization campaigns supported by public funds, isolation of patients, quarantine of contacts. Water, milk, and food supplies had to be protected by organized community action because such practice was for the common good and could not be done as cheaply or as effectively by the individual citizen.

Soon it became evident that certain diseases and disabilities resulted in an intolerable economic and social strain on the family. To meet this need the leaders in government directed that health departments not only prevent, but also discover, diagnose, and treat the tuberculous, the crippled, and those with malignant disease, mostly in publicly-owned and operated facilities.

Maternal and child health services were established for bettering the health of mothers and babies by prevention rather than by remedial care after damage had been done. Why? For years it has been the conviction among our leading citizens in and out of government that no child should be denied his birthright of health by the strained economics of his parents.

The extensive activity in the rehabilitation of crippled children in our State is the direct result of aroused public interest and public demand that everything possible be done for these unfortunate youngsters. The definition of a handicapped child has been broadened so that not only orthopedic defects but also cardiac, visual, and hearing defects, dental deformities, narcotic addiction, and prematurity are included. The State and counties together spend over five million dollars a year to give these helpless and deformed children a new chance in life.

To these examples could be added many more—coronary artery disease, hemiplegia, diabetes, glaucoma, motor vehicle accidents—all important problems affecting the health of our people that require organized community action to complement the work of the private practitioners of medicine. Environmental sanitation activities have expanded into the complex fields of air and water pollution and radiologic health.

The answer to the question: "What is public health?" is not a static one. It varies with time and place, depending on the changing needs, resources, and attitudes of the people of the State.

What is accepted as public health practice in New York might not fit conditions in New Mexico, Georgia, or Minnesota. Public health, as far as the official health agencies' role is concerned, will be exactly what the people want it to be.

The present generation of public health physicians, specially trained, highly skilled, and dedicated to their complex tasks merit the growing respect for their specialty by their colleagues in private medical practice. Through rewarding joint action in organized community health enterprises, the public health practitioner and the private medical practitioner can best serve the people of our State in the maintenance and improvement of health and well-being.

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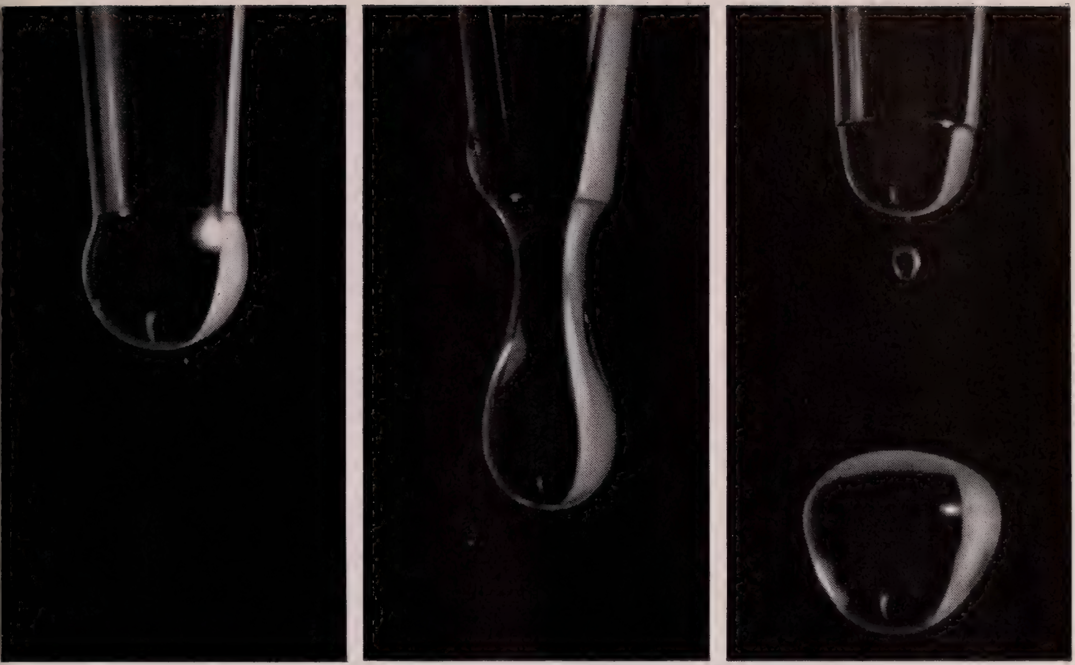

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(1) Hagedorn, A. B.: Proc. Staff Meet. Mayo Clin. **32**:705 (Dec. 11) 1957. (2) Best, W. R.; Louis, J., and Limarzi, L. R.: M. Clin. North America (Jan.) 1958, p. 3.

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SCIENTIFIC ARTICLES

Behavior Disorders in Childhood—A Challenging Problem in General Practice and Public Health

WILFRED C. HULSE, M.D., NEW YORK CITY

(From the Division of Child Psychiatry, Mount Sinai Hospital)

INTEREST in the behavior problems of our young generation is not confined to child psychiatrists or even to physicians generally. Almost any person active in public life, such as sociologists, judges, lawmakers, educators, ministers, teachers, writers, social workers, and political functionaries, is concerned about these sick children and the horrors of their existence. We have failed thus far to handle this problem adequately and to make it a concern of the pediatricians, the general practioners, and the public health officers.

Childhood behavior disorders as a disease sui generis were first described by the New York psychoanalyst J.A.W. Van Ophuijsen.[1] He divided them into conduct disorders, habit disorders, and neurotic traits. Enuresis, soiling, thumbsucking, nailbiting, excessive masturbation, and similar undesirable habits are classified as habit disorders. Tics, phobias, stammer, and similar afflictions are called neurotic traits. Our main interest in this paper, however, because of their importance in general practice and public health, belongs to the conduct disorders.

According to Blau and Hulse,[2] conduct disorders present a variety of symptoms, such as running away, tantrums, abnormal aggressiveness, destructiveness, disobedience, disrespectfulness, lying, truancy, stealing, fighting, sexual excesses, and others. Parents and schools complain that these children, boys in the majority, do not respond to routine disciplinary measures and are disliked wherever they go. People are shocked to see that they do not show feelings of guilt or remorse, that they are boastful and conceited, displaying a grandiosity which is in pitiful contrast to their actual failure. Still, they are of normal or better than average intelligence. Because neurologic findings and signs of psychopathology are inconspicuous, we speak of "primary" behavior disorders in cases of this kind. Two additional features are of significance. First, as a carefully taken history will reveal, the illness invariably starts early in life, the latest occurring at the age of three years. Second, there is always serious disharmony in the families of these children, with at least one parent being severely disturbed or inadequate. The family trouble usually dates back to a time when the child was not yet born or was still very young.

These findings relate closely to what we know about the psychologic development of the newborn, the infant, and the toddler. By studying the influence of different environments on the actions and reactions of the young child, we have learned that prenatal factors are subject to a great deal of change and remolding after birth.[3–5] The psychologic and neurologic apparatus are immature at birth, much more so in man than in other mammals. It might well be that an early postnatal exposure of this immature apparatus to environmental factors is responsible for the exceptional status of humans among mammals. It might explain our highly sensitive and individualized emotionality, intelligence, and morality which have freed man increasingly from the domination of primitive and semiautomatic instinctual functions.

However, what constitutes the primary environment of the young child is actually nothing else but his intimate family, possibly also nurses or maids. Other environmental influences are not met at this early age. The infant is not dumb, as was thought for a long time. He absorbs readily, like a sponge, whatever the environment offers, thus forming the basic structure of his emotional pattern and his character. Observation has demonstrated that character traits, which we observe in the newborn, are not persisting. Re-examination after one or two years reveals that in the majority of children the impact of the environment has altered their presumably constitutional traits.[4]

Early personality development is closely related to the topic of childhood behavior disorders. From psychotherapeutic experience with these children we have learned a great deal about their real emotional make-up, about their personality structure behind the façade of aggression, bravado, callousness, defiance, and big-mouthed grandiosity. One invariably finds frightened, disorganized, and desperately unhappy youngsters, who in therapy soon become aware of the emptiness, lonesomeness, and hopelessness of their existence. Their acting-out behavior, their denial of the values of ethical codes, personal relations, and sound living are the frantic attempts of a depressed and anxious immature personality to save its own frail existence by seeking to release some of the overwhelming inner tension through motor activity, running, fighting, shouting, restlessness, and destructiveness, and by denying at the same time the inner turmoil behind the acting-out behavior.[2]

Treating these sick patients brings surprising results. In children of preschool and school age, the outcome is invariably poor when the parents or foster parents do not submit to or cannot be reached through psychotherapy. But the results are very satisfactory when one or, better, both parents submit to intensive psychiatric or casework treatment. We can go one step further and state that a good number of primary behavior disorders in young children clear up without any direct treatment of the child, if the parents alone go into intensive psychotherapy.

From the treatment of the parents and the study of the social background the reasons why these youngsters are emotionally neglected have become accessible to our understanding. In child guidance practice they are called "rejected children." By this it is not meant that all of them have been abandoned, or are beaten up daily and left without food and shelter. A good number of them, however, have gone through one or another experience of this kind, since they come from broken and poorly accultured families.[6–10] This is illustrated by the following experience.

When especially severe behavior problems became manifest in a girls' dormitory at a shelter for dependent and neglected children, an investigation into the backgrounds of each girl was made. It was found that 80 per cent had been brought up by at least one, some even by two, psychotic parents who were, or had been, in institutions at the time of the study. Many of these parents were already irrational at the time when they were still at home with their children, but the children themselves were not psychotic, and were accessible to the regular therapeutic approach. They had become sick not so much because of inherited traits, but as the result of faulty handling and neglect by mentally disturbed parents. Unfortunately, children do not have to be exposed to such extreme traumas as psychotic parents, broken homes, abandonment, beatings, and starvation in order to develop severe behavior disorders. Many more subtle ways of rejecting and neglectful child rearing may produce similar disturbances. This is true not only for the deprived, migratory, economically lowest strata of our society; middle and upper classes, urban and rural areas alike, have their full share.

Blau and Hulse[2] have written of the

hostility and the lack of loving care that reigns in the homes of these children. Strecker's[11] and Levy's[12] studies on mothers show how overprotective and domineering maternal attitudes smother the ego development in young children and make them submissive and passive on the surface, but hostile, aggressive, and delinquent in the deeper layers of their characters. We know that the overbearing, overanxious attitudes of mothers are not the expression of love and secure concepts about the natural needs of the child, but are an overcompensating defense against the mother's ambivalence and hostility, born out of her own inability to deal with the demands which life makes on her. She frequently projects the frustrations of an unhappy marriage on the child and in her own confusion tries to inhibit the child's expanding growth. She clings to the child as her only safe possession and tries to convince herself and others that her behavior toward the child is the manifestation of love, while it actually is the projection of her own fears and desperations into the immature and defenseless child.

Many of these women are very difficult to treat. They have been efficient and independent in their earlier days as working girls, when they were well able to manage their jobs. They often did a man's job, took over a man's responsibilities, and often had the "good sense" to marry a man who also liked to be managed. They actually had no genuine desire to have a child, but they had always wanted to "do the right thing," as their compulsive mothers had taught them. They conform to social standards, and therefore "have to have a baby." But soon trouble starts. They try to apply the rigid office routine to their housekeeping and, as long as their weak husbands submit, everything goes well. But a young child, a growing human being, does not do well on his mother's attempts to strictly enforce preconceived ideas. She buys one book on child rearing. When its prescriptions do not work, she looks for the next one. She consults the family physician, the pediatrician, and the child psychologist. She spends all the money her husband can give her on the child. For her, to handle the child is not a matter of affection and love, it's a job that has to be "done to perfection."

The baby does not thrive on the all too literally taken advice of the books and the consultants. The infant is not so much in need of a rigid routine of cleanliness and feeding schedules as that the mother's parents, her neighbors, and the mother herself may appreciate the "job well done." The child is an individual, not a machine; he needs loving care, closeness, understanding, and a feeling of belonging. The child becomes irritable and dissatisfied. He cries, does not sleep well, becomes a feeding problem, does not respond to the mother's early attempts to wean him from the bottle, or to get him toilet-trained. He does not gain weight at the normal rate, and as he gets older, he stamps his feet and has tantrums. When he gets spanked, he stamps and shouts even more and defies mother.

That is the time for her to call in father, who until now has been kept out of the baby's way. Father should know how to "discipline his boy." At that point, the mother gets another great disappointment: father is never home, and when he gets home, he is tired, fatigued, and wants to be left alone. She finds out, but usually does not understand it yet, that she does not have a strong and active husband, that she had always wanted to be the king-pin, and that she had subconsciously chosen and married a passive, weak man, who is satisfied with the role of an outsider, a "good guy" who brings home the weekly paycheck and good naturedly, at least on the surface, lets his wife manage things in her own way. She was a good office manager once, and she still tries hard to "manage," but the child is by now highly disturbed and unhappy. When he reaches school age, his maladjustments cannot be kept under cover any more. The teacher consults with the mother, the school social worker refers her to the Bureau of Child Guidance, and on the record there appears, in clear print, "Primary Behavior Disorder."

Several months ago a pediatrician referred the following case to me. The school had told the family that a ten-year-old boy would be expelled because of constant fighting, disobedience, and misbehavior. The parents were deeply shocked because he was "a bright, nice boy." Indeed he was! In the interview with me he appeared very pleasant but showed great anxiety and confusion. In contrast to the wild, provocative, and defiant behavior described by his parents and by the psychiatrist and social worker of the Child Guidance Bureau, he was amazingly well behaved with me. Likewise, the young staff psychiatrist to whom I referred the boy for psychotherapy called me indignantly: "Why do they threaten this boy with expulsion? He is such a frightened kid, but bright and pleasant!" I had anticipated already what was at the bottom of the boy's behavior disorder because in talking with the pleasant and bright mother, I realized how desperate she was in her inability to handle the "defiant" child ever since he was an infant. Nothing was said about the father and how he faced the situation. When asked about him, she said sadly: "Oh, Charlie is very good with his father, but my husband is never around. He is a lawyer, keeps very long office hours, and is working evenings and weekends on piles of material which he brings home. I hardly get any attention from him." The boy was well behaved in his contact with me and with the young male psychiatrist, but he was a devil with his mother, his teacher, the Bureau's psychiatrist and social worker—all women! The boy needed a man to bring him up, to become a man himself, but his father kept conspicuously away from him.

In the child psychiatry literature, in child guidance practice, in the courts, and in public, mothers and their inadequacies and emotional peculiarities have received much unfavorable criticism. Let us now examine the fathers. Judging from our own experience, it is not coincidence that the rate of behavior disorders occurring in boys is considerably higher than that observed in girls. To become well-adjusted men, boys need their fathers. In some way, girls need their fathers too. But when they do not have them, girls rarely develop conduct disorders because they identify closely with their mothers. If emotional reactions occur in father-deprived girls, they take the form of psychoneurotic and character disturbances.

It is very disquieting to observe how the pater familias of today is turning more and more away from participating in the upbringing of his children. Of course, more men diaper babies, cook formulas, and wash bottles today than fifty years ago. However, in doing so they do not implement the functions of a father but try to be second-rate mothers. Fathers of our modern times do not share life with their families to the extent of their children's needs. When most people still lived in rural areas and small towns, boys used to help their fathers in business, in the fields, in the shop, carrying tools, cleaning floors, and being sent on errands. Today, you may ask any group of six- to eight-year-old boys what their fathers are doing for a living, and half of them will answer, "He goes to work," but will not know what kind of work he is doing. I have seen numerous little boys who knew that father was a lawyer but had not the vaguest idea of what that meant. They had never seen the father's office, not to speak of a courtroom.

We have good evidence that inadequate television programs, movies, comic books, lack of structure in school, and bad neighborhoods play a secondary role in the genesis of behavior disorders. Their unwholesome influence sets in relatively late in the child's development, when the groundwork already has been laid for his future character. The old Jesuit saying is still true: "Give me the child up to seven and you can have him ever after."

Concepts of sound living, morality, the ability to take frustration, to love others and to care for them—all this, like charity, begins at home. It is here where the behavior disorders in childhood originate. If we want to prevent them, we have to focus our efforts on the intimate family circle of the young child. There is good will but also much confusion, emotional illness, and discord in many families. Not only the youngsters, but the parents also are often "crazy, mixed-up kids." To reach the families at that early time when emotional troubles first become manifest presents considerable difficulties. When mental health clinics and social agencies establish contact with these families, they usually find a situation which has developed far beyond the initial stage of the emotional conflict. The same holds for the Youth Board and still more for the psychiatrist. Health centers in New York City are now dealing with early emotional conflicts in the economically lower strata of our population. The "attitude study" conducted by Dr. David M. Levy for the New York City Board of Health demonstrates that new approaches are developing. However, we rarely reach the middle classes where behavior disorders are rampant.[13–15]

Recent discussions with mental health authorities have shown that no organized effort has yet been made to enlist general practitioners and practicing pediatricians as allies in combating behavior disorders and delinquency in children. Aside from the clergy and the visiting nurse, the practicing physician is the only professional person who has easy and frequent access to the families in their homes. He often still holds the unique position as adviser in matters of health, of family relationship, of education, of social difficulties, and even of economic welfare. The doctor is one of the first to whom conflicting, harrassed, unhappy people openly let out their cries and tears. He witnesses young mothers and fathers handling their children in the home, at his office, in days of sickness, and when they come for regular check-ups.[16]

What are the contributions these physicians are expected to make towards reducing the incidence of behavior disorders and obtaining adequate treatment for the greatest possible number of afflicted children? First, an early diagnosis must be made, based on keen observation of child and parents. Crying, colicky, restless babies who are difficult to feed, who vomit frequently, who are fretful and easily startled are not just "born this way." They are not just bad eggs laid into the clean and warm nest of a faultless young family. Their pattern of behavior is often the result of distorted mother-child relationships, provided physical illness can be ruled out. The physician should not consider it enough to diagnose a "nervous baby" or a "nervous mother," to change the formula, or to prescribe a placebo or a sedative. Neither should he feel that treating psychologic conflicts is something outside his legitimate field, nor should he be awed by the "big words" of the psychologist's vocabulary. We have tried to show that minor, that is, early psychiatric disorders, especially in children, can be sucessfully dealt with by the practitioner in his daily office practice.[17–21] This kind of treatment is urgently needed. The main trouble is that family physician and pediatrician have once more to find the time which it takes to handle emotional disturbances. Symptomatic drug therapy is often very effective, but it should be deferred until the causative conflict is fully explored. Otherwise, the symptoms of the disorder are temporarily repressed while the illness persists and becomes less and less accessible to social and psychologic readjustment.

Understanding the needs of the infant and preschool child can be taught to mothers, according to the accepted principles of child rearing. This is actually done with gratifying results by public health nurses working with ward patients in modern maternity hospitals. It also can be done by the physician who is supervising the child's growth and development.

There is, for instance, a good deal of controversy about breast feeding as a means of promoting close bonds between infant and mother. Their physical closeness during the period of nursing is certainly highly desirable, since it provides the infant with a feeling of warmth and security and gives the mother a sense of personal fulfillment. But nursing is not indispensable. Bottle feeding can promote the same satisfaction of psychologic and physical needs, provided it is not mechanized, that is, if the mother holds the baby in her arms throughout the period of feeding. However, bottle feeding will result in frustration when the baby has to suck without being held, from a bottle that rests on a pillow, possibly at a wrong angle to the child's mouth, which may interfere with the free flow of milk into the nipple. It is the warm interest of the mother for her child which we try to promote, rather than to set up rigid, unflexible rules. Another illustration is the "case of the missing father." Even in a few brief interviews with the father one can often make him aware of his children's emotional needs, can permit him to ventilate marital discords, can help him and his wife to straighten out their problems, or one may refer them to a marriage counselling agency.

On the other hand, there is no doubt that the therapy of fully-developed emotional illness in the parent, or of a severe behavior disorder in the child, is outside the domain of pediatric and general practice. Many serious behavior disorders can, however, be prevented if parents, both father and mother, are made aware in time by the family physician that their own faulty handling is the cause of the child's disturbance, that their shortcomings are not due to ill will but to their own emotional maladjustment, and that treatment of one or both parents is indicated.

To promote sound mental health principles in the population and to extend prevention of emotional illness to the broad masses, we need the cooperation of general practitioners and pediatricians. Without their active participation our advances in the understanding of the intrafamily origin of behavior disorders will not reach the families of young children and will go to waste. Physicians will have to share to a much larger degree the responsibilities for their community mental health programs, in order to enable our society to prevent and care for the large number of behavior disorders and juvenile deliquents in our society.

350 Central Park West, New York 25

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Admission of Patients with Alcoholism to General Hospitals in New York State

I. JAY BRIGHTMAN, M.D., CHARLES M. ROYLE, BERNARD FERBER, PAUL F. ROBINSON, AND WILLIAM T. ROBINSON, ALBANY, NEW YORK

(From the New York State Interdepartmental Health Resources Board and the Hospital Association of New York State)

THIS is a report of a study of the current policies of general hospitals in New York State in regard to the admission of patients with a primary diagnosis of alcoholism. The study was conducted as a joint effort of the New York Interdepartmental Health Resources Board and the Hospital Association of New York State. Its objectives were as follows:

1. To determine the extent to which current policies of general hospitals now provide for the admission of patients with alcoholism, including acutely intoxicated persons, patients with delirium tremens, and sober alcoholics requiring observation and treatment.
2. To determine the influence of such factors as size, geographic location, or type of ownership on the likelihood of a hospital's accepting alcoholic patients.
3. To identify the reasons why hospitals adopt policies of nonadmission of alcoholic patients and to determine what barriers might be overcome.
4. To determine the management and fiscal experiences of hospitals admitting patients with alcoholism.
5. To lay the foundation for an educational program designed to increase the number of hospitals admitting patients with alcoholism by pointing up favorable experiences which have been encountered by hospitals now admitting such patients.
6. To establish a base line of current policies against which the success of any educational program may subsequently be measured.

Background

The acceptance of patients with alcoholism by general hospitals is a matter of particular concern to both the New York State Interdepartmental Health Resources Board and the Hospital Association of New York State. The board is a special State unit responsible for study and program planning in health areas which are of direct concern to two or more State departments or agencies. The association is a nonprofit membership corporation whose members are 325 voluntary and public nonprofit hospitals located throughout the State.

The patient suffering with alcoholism needs a variety of community resources, depending on the particular nature of his problem and the stage of his disease. The community general hospital ranks high in importance among these resources. Such a facility is present in most communities and is best equipped to handle patients in the stages of acute intoxication or delirium tremens, or in the interval between alcoholic episodes in instances where there is need for complete diagnostic evaluation and observation. In formulating plans for adequate facilities for the alcoholic patient, it is important to determine the extent to which the general hospital actually serves as such a resource and the potentialities for increasing its availability for this purpose.

It seemed particularly fitting to conduct the study at this time because of the considerable interest in the problem expressed by the American Medical Association and by the American Hospital Association. On November 29, 1956, the American Medical Association's House of Delegates passed a resolution which had been prepared by the Committee on Alcoholism of the Council on Mental Health, dealing with the hospitalization for patients with alcoholism.[1] Part of this resolution reads as follows:

"One of the most consistent complaints of physicians who wish to care for these patients is that many hospitals will not admit such patients with a diagnosis of alcoholism. Many feel that these people are intractable, uncooperative, and difficult to handle. Because of their untoward behavior, hospital authorities feel that they are not equipped to take care of the medical treatment of such overactive patients. Where such patients are unruly and uncooperative, this attitude is understandable. However, for many of these sick people who express a wish to be treated in a general hospital, it has been generally found that cooperation is forthcoming and that no special attention or equipment is necessary for treating these patients. . . .

"The Council on Mental Health, therefore, urges hospital administrators and the staffs of hospitals to look upon alcoholism as a medical problem and to admit patients who are alcoholics to their hospitals for treatment, such admission to be made after due examination, investigation, and consideration of the individual patient. Chronic alcoholism should not be considered as an illness which bars admission to a hospital, but rather as qualification for admission when the patient requests such admission and is cooperative, and the attending physician's opinion and that of hospital personnel should be considered. The chronic alcoholic in an acute phase can be, and often is, a medical emergency."

A similar action was taken by the American Hospital Association Board of Trustees on September 29, 1957, when it approved a statement on admission of alcoholic patients to the general hospital.[2] Part of this important statement reads as follows:

"There are still many hospitals that deny admission to all alcoholic patients despite the availability of improved methods of treatment and demonstration by experience that only a minority of patients with acute alcoholism are uncooperative.

"Such a policy denies to the alcoholic patient benefits which would be available to him were his acute poisoning from another source, such as food, etc. It also denies to hospital attending and house staffs opportunities for education in the management of the alcoholic patient.

"The American Hospital Association urges general hospitals to develop a program for the care of alcoholics and, having done so, to base the decision as to admission or nonadmission of the patient with a diagnosis of alcoholism upon the condition and needs of the individual patient.

"This progressive step would keep pace with increased recognition of (1) the general hospital as the community health center, and (2) alcoholism as a medical problem requiring broad-scale attack if it is to be solved."

Methodology

The data for the study were collected by means of mailed questionnaires. The questions were limited to information which we believed could be readily supplied by the hospitals. To simplify the answering, two forms were devised and sent to each hospital with instructions that only one form be returned. Form A was to be completed by hospitals that do admit patients with alcoholism and included questions concerning admission requirements, behavior of patients, use of tranquilizing drugs, services of hospital to which alcoholic patients were assigned, length of hospital stay, criteria for discharge, arrangements for follow-up or after-care, and payment for services rendered. Form B was a much shorter form for use by hospitals that do not admit patients with alcoholism. It was limited to questions relating to the reasons for exclusion of such patients and the disposition made if they are presented.

A total of 356 facilities listed as general hospitals by the New York State Joint Hospital Survey and Planning Commission were included in the survey. Excluded were all State hospitals, specialty hospitals, and chronic disease and convalescent facilities.

TABLE I.—GENERAL HOSPITALS* RESPONDING TO STUDY QUESTIONNAIRE AND ACCEPTING PATIENTS WITH ALCOHOLISM, NEW YORK STATE, 1957

Item	Number	Per Cent
Total hospitals canvassed	356	100.0
Hospitals responding	315	88.5
Hospitals not responding	41	11.5
Total hospitals responding	315	100.0
Hospitals accepting alcoholics	64	20.3
Hospitals not accepting alcoholics	251	79.7

* Excludes State hospitals, specialty hospitals, and chronic disease and convalescent facilities.

A pretest was run with six hospitals which were chosen at random. All of these hospitals responded and none indicated any difficulty in completing the questionnaire appropriate for the institution.

A few days prior to the mailing of the questionnaires to the remainder of the hospitals, the Hospital Association of New York State sent out a letter informing its members of the study and soliciting their cooperation. Hospitals which were not members of the Hospital Association did not receive any preliminary correspondence. After one month, a follow-up letter was sent to all nonresponding hospitals.

In addition to the general hospitals, the questionnaires were sent to 24 hospitals for mental and nervous patients. As the majority of these hospitals are established to handle alcoholic patients in addition to other patients, the findings were not included with those of the general hospitals. Nevertheless, several interesting observations were made and these are discussed separately.

Findings

RESPONSE TO QUESTIONNAIRE (TABLE I).—The response to the questionnaire was most satisfactory, with 315 of the 356 general hospitals, or 88.5 per cent, returning the appropriate forms. With relatively few exceptions, the questions were answered completely. All calculations regarding a particular question were made in reference to the number of hospitals answering that question. About 20 per cent of the responding hospitals indicated that they admit patients with alcoholism and about 80 per cent stated that they did not. For the sake of brevity, these two groups will be referred to as "admitting" and "nonadmitting" hospitals, respectively.

STUDY OF ADMITTING HOSPITALS BY SIZE AND TYPE OF OWNERSHIP (TABLE II).—When the general hospitals were analyzed by size (line 4), utilizing categories of less than 100 beds, 100 to 299 beds, and 300 beds and over, no significant differences in the proportion of admitting hospitals were observed.

When an analysis was made by type of ownership (see Total column), about 20 per cent of the voluntary hospitals, 35 per cent of the public hospitals, and 9 per cent of the proprietary hospitals were found to admit alcoholic patients. While the differences are statistically significant, ($P = < .01$), the fact remains that the majority of hospitals, regardless of ownership, do not admit alcoholic patients.

No important differences by size were observed within the voluntary, public, and proprietary general hospital groups (lines

TABLE II.—GENERAL HOSPITALS ADMITTING ALCOHOLIC PATIENTS BY SIZE AND OWNERSHIP OF HOSPITAL, NEW YORK STATE, 1957

	Less Than 100 Beds			100–299 Beds			300 Beds and Over			Total		
Ownership	Number of Hospitals	Number Admitting Alcoholic Patients	Per Cent	Number of Hospitals	Number Admitting Alcoholic Patients	Per Cent	Number of Hospitals	Number Admitting Alcoholic Patients	Per Cent	Number of Hospitals	Number Admitting Alcoholic Patients	Per Cent
1. Voluntary	74	17	23.0	101	19	18.8	39	7	17.9	214	43	20.1
2. Public	11	5	45.5	9	2	22.2	26	9	34.6	46	16	34.8
3. Proprietary	34	4	11.8	21	1	4.8	0	0	...	55	5	9.1
4. TOTALS	119	26	21.8	131	22	16.8	65	16	24.6	315	64	20.3

TABLE III.—GENERAL HOSPITALS ADMITTING ALCOHOLIC PATIENTS BY REGIONAL LOCATION OF HOSPITAL, NEW YORK STATE, 1957

Region	Number of Hospitals (1)	Hospitals Admitting Alcoholic Patients: Number (2)	Hospitals Admitting Alcoholic Patients: Per Cent $\left(\frac{(2)}{(1)} \times 100\right)$
Buffalo	32	4	12.5
Rochester	33	19	57.6
Syracuse	44	17	38.6
Albany	35	10	28.6
Northern Metropolitan	39	5	12.8
Long Island	23	2	8.7
New York City	109	7	6.4
TOTAL	315	64	20.3

1, 2, and 3).

STUDY OF ADMITTING HOSPITALS BY REGIONAL LOCATION (TABLE III).—An attempt was made to identify any difference in the proportion of admitting hospitals by location. For this purpose, the regional pattern adopted by the New York State Joint Hospital Survey and Planning Commission was used.

The Rochester region, including Monroe County and ten other contiguous counties extending from Lake Ontario to the southern border of the State, showed the most favorable picture, with about 58 per cent of its general hospitals admitting patients with alcoholism. It is noteworthy that the Rochester region, with about 10 per cent of the responding hospitals, had almost 30 per cent (19 out of 64) of the total number of the admitting hospitals. On the other hand, Buffalo and the three regions in the southeastern part of the State showed very low figures.

Because of the possibility that the largest city in a particular upstate region might unduly affect the figures for the whole region, a separate analysis was made for the hospitals in such cities and for those in the remaining area. However, no significant differences were observed. (For the particular problem of New York City, see discussion following.)

An attempt to interrelate the differences in the regions with the sizes of the hospitals revealed no significant findings.

REASONS FOR NOT ACCEPTING PATIENTS WITH ALCOHOLISM, AS GIVEN BY NONADMITTING HOSPITALS (TABLE IV).—About 50 per cent of nonadmitting hospitals stated that their regulations precluded their accepting alcoholic patients. It is interesting that this reason was given by 75 per cent of the public nonadmitting hospitals.

On the other hand, the public nonadmitting hospitals offered such reasons as "lack of facilities," "lack of personnel," "availability of other facilities in the community," and "troublesomeness of alcoholics" much less frequently than did the voluntary or proprietary nonadmitting hospitals.

DISPOSITIONS BY NONADMITTING HOSPITALS OF ALCOHOLIC PATIENTS PRESENTED TO THEM (TABLE V).—The vast majority of nonadmitting hospitals (88 per cent) referred to other hospitals alcoholic patients who

TABLE IV.—NONADMITTING GENERAL HOSPITALS BY OWNERSHIP AND REASONS FOR NONADMITTANCE, NEW YORK STATE, 1957

Reasons for Nonadmittance	Voluntary: Number of Hospitals	Voluntary: Per Cent*	Public: Number of Hospitals	Public: Per Cent*	Proprietary: Number of Hospitals	Proprietary: Per Cent*	Total: Number of Hospitals	Total: Per Cent*
Hospital regulations	74	43.5	21	75.0	26	57.8	121	49.8
Lack of facilities	145	85.3	10	35.7	29	64.4	184	75.7
Lack of personnel	92	54.1	5	17.9	18	40.0	115	47.3
Other facilities in community available	62	36.5	3	10.7	24	53.3	89	36.6
Alcoholic patients troublesome	45	26.5	3	10.7	16	35.6	64	26.3
Hospitals answering this question	170	100.0	28	100.0	45	100.0	243	100.0

* Percentages do not add up to 100 inasmuch as a hospital may have more than one reason for refusing admission to alcoholic patients.

TABLE V.—NONADMITTING GENERAL HOSPITALS BY DISPOSITION OF SUCH PATIENTS IF THEY ARE PRESENTED, NEW YORK STATE, 1957

Disposition	Number of Hospitals	Per Cent*
Referred to other hospitals	210	88.2
Referred to police department	67	28.2
Referred to Alcoholics Anonymous	13	5.5
Referred to nursing home	6	2.5
Other dispositions†	19	8.0
Hospitals answering this question	238	100.0

* Percentages do not add up to 100 inasmuch as a hospital may make referrals to more than one agency or organization.

† Includes referrals to social service, Salvation Army, patient's own physician, and detainment in emergency ward until sober.

TABLE VI.—GENERAL HOSPITALS ADMITTING ALCOHOLIC PATIENTS BY CLINICAL CONDITION UNDER WHICH PATIENTS ARE ACCEPTED, NEW YORK STATE, 1957

Clinical Condition	Number of Hospitals	Per Cent*
Sober but requiring observation and treatment	52	81.2
Severely intoxicated but conscious	53	82.8
Severely intoxicated and unconscious	47	73.4
Delerium tremens	44	68.8
Other alcoholic psychoses	41	64.1
Hospitals answering this question	64	100.0

* Percentages do not add up to 100 inasmuch as there are usually several clinical conditions under which hospitals will accept alcoholic patients.

might be presented. About 28 per cent referred such patients to the police department. These figures are not mutually exclusive, as several hospitals indicated multiple types of disposition, apparently depending on the circumstances.

An attempt to identify possible regional variations in the frequency of nonadmitting hospitals referring alcoholic patients to the police revealed no significant differences.

CLINICAL CONDITIONS ACCEPTED BY ADMITTING HOSPITALS (TABLE VI).—The admitting hospitals appeared to show some variations in policies in regard to the clinical conditions of alcoholic patients being admitted. About 83 per cent stated that they admitted persons who were severely intoxicated though conscious. The remaining 17 per cent apparently restricted admissions to the other clinical categories listed. We can assume that the 27 per cent of the hospitals that did not indicate that they accepted severely intoxicated and unconscious patients (about 73 per cent stated that they did) did not reject any unconscious person but admitted him under an undetermined diagnosis. The categories of "delirium tremens" and of "other alcoholic psychoses" were each accepted by about two thirds of the admitting hospitals. Of particular interest is the finding that about four fifths of the hospitals admit alcoholic patients who are sober at the time but require observation and treatment.

TABLE VII.—GENERAL HOSPITALS ADMITTING ALCOHOLIC PATIENTS BY ADMINISTRATIVE CRITERIA UNDER WHICH SUCH PATIENTS ARE ACCEPTED, NEW YORK STATE, 1957

Administrative Criteria for Acceptance	Number of Hospitals	Per Cent*
None	15	23.4
Referral by a responsible person	48	75.0
Assurance of payment	5	7.8
Agreement to stay in hospital a stipulated number of days	2	3.1
Patient must have someone in attendance	10	15.6
Hospitals answering this question	64	100.0

* Percentages do not add up to 100 inasmuch as there are usually several administrative critiera under which hospitals accept alcoholic patients.

ADMINISTRATIVE CRITERIA GOVERNING ACCEPTANCE OF ALCOHOLIC PATIENTS BY ADMITTING HOSPITALS (TABLE VII).—About 23 per cent of admitting hospitals indicated no special administrative criteria governing the acceptance of alcoholic patients. Referral by a responsible person, such as a physician, social worker, friend, or family member was required by 75 per cent. Assurance of payment and agreement by the patient to stay a stipulated number of days were very infrequent requirements, being reported by only about 8 per cent and 3 per cent of the hospitals, respectively. About 16 per cent of the hospitals did require that the patient have someone in attendance,

TABLE VIII.—General Hospitals Admitting Alcoholic Patients By Management Experiences with Such Patients, New York State, 1957

Management Experience	Number of Hospitals	Per Cent
Behavioral Experience		
Patients most often troublesome	38	60.3
Patients most often not troublesome	25	39.7
Hospitals answering this question	63	100.0
Tranquilizing Drug Experience		
Helpful in quieting disturbed alcoholic patients	55	96.5
Not helpful in quieting disturbed alcoholic patients	2	3.5
Hospitals using tranquilizing drugs and answering this question	57	100.0

such as a family member, friend, AA member, or private nurse.

Management Experiences of Admitting Hospitals (Table VIII).—Although about 60 per cent of the admitting hospitals stated that they found the alcoholic patients to be troublesome in most instances, the remaining 40 per cent indicated just the opposite experience. Almost all admitting hospitals replying to the question indicated that the tranquilizing drugs were helpful in quieting disturbed alcoholic patients.

Service Assignment of Alcoholic Patients by Admitting Hospitals (Table IX).—Among admitting hospitals without organized psychiatric services, almost 96 per cent assigned alcoholic patients to the general medical service. Two hospitals, or 4 per cent, utilized special wards or sections, and one hospital indicated use of the emergency ward or admission room only. Among admitting hospitals with organized psychiatric services, almost 94 per cent indicated assignment of alcoholic patients to the psychiatric service. However, 50 per cent indicated use of the general medical service for alcoholic patients and almost 19 per cent maintained special wards or sections for alcoholism. Thus, several of these hospitals used two or even three types of service, apparently in recognition of the clinical condition and needs of the individual patients.

Range of Stay of Alcoholic Patients in Admitting Hospitals (Table X).—The admitting hospitals indicated a range of stay of from two to eight days. These figures are the respective medians for the upper and lower limits of the ranges of stay indicated by the individual responding hospitals. The median range was lower for the voluntary general hospitals, one to seven days, than for the public general hospitals, two to ten days.

Criteria for Discharge of Alcoholic Patients by Admitting Hospitals (Table XI).—About 66 per cent of the admitting hospitals discharged alcoholic patients only after medical examinations indicated no injuries or illnesses requiring hospital care, and another 31 per cent delayed discharge until a psychiatric examination had been completed. Significant differences were observed between the practices of voluntary and public hospital groups in regard to the inclusion of psychiatric services in the work-

TABLE IX.—General Hospitals Admitting Alcoholic Patients by Service Assignment of Such Patients in Hospitals with and Hospitals without Organized Psychiatric Service, New York State, 1957

Service Assignment	Hospitals Without Organized Psychiatric Service Number	Per Cent*	Hospitals With Organized Psychiatric Service Number	Per Cent*	Total Number of Hospitals	Per Cent*
Emergency room or admission ward only	1	2.1	0	0.0	1	1.6
General medical service	46	95.8	8	50.0	54	84.4
Psychiatric service	..	...	15	93.8	15	23.4
Special ward or section	2	4.2	3	18.8	5	7.8
Hospitals answering this question	48	100.0	16	100.0	64	100.0

* Percentages do not add up to 100 inasmuch as a hospital may assign alcoholic patients to more than one service.

TABLE X.—GENERAL HOSPITALS ADMITTING ALCOHOLIC PATIENTS BY OWNERSHIP AND RANGE OF LENGTH OF HOSPITAL STAY, NEW YORK STATE, 1957

Ownership	Number of Hospitals Answering Question	Median Number of Days* of Hospital Stay Lower Range	Median Number of Days* of Hospital Stay Upper Range
Voluntary	39	1	7
Public	15	2	10
Proprietary	4	4	11
TOTAL	58	2	8

* To the nearest full day.

up. About 63 per cent of the public hospitals included the completion of a psychiatric examination as a criterion for discharge, while only 19 per cent of the voluntary hospitals did so. Only two hospitals, both voluntary, indicated discharge of alcoholic patients as soon as they were sober. The number of proprietary hospitals was too small to warrant analysis of this factor.

ARRANGEMENTS FOR AFTER-CARE OF ALCOHOLIC PATIENTS MADE BY ADMITTING HOSPITALS (TABLE XII).—About 24 per cent of the admitting hospitals indicated no provisions for care of alcoholic patients after hospitalization. On the other hand, almost 62 per cent referred the patient to a private physician. About 8 per cent indicated that the referral was made only to a psychiatrist, 30 per cent only to a general practitioner or internist, and 24 per cent to either group. About 44 per cent indicated referral to Alcoholics Anonymous. This figure was much higher among the public hospitals, with 75 per cent making such referrals. About 22 per cent referred patients to an outpatient clinic of the same hospital, 6 per cent to an alcoholism clinic in the community, and 6 per cent to a social agency.

PAYMENT TO ADMITTING HOSPITALS BY ALCOHOLIC PATIENTS (TABLE XIII).—According to reports by the admitting hospitals regarding payments made by or on behalf of discharged alcoholic patients, a surprisingly high per cent of all patients (79 per cent) made payments in full or in part. Of particular significance was the figure of almost 92 per cent for the alcoholic patients discharged from the voluntary general hospitals. This is almost as high as the 94 per cent figure for the few proprietary general hospitals admitting alcoholic patients. A much lower, though still significant, figure of about 48 per cent was noted for the public general hospital patients. Information was not obtained in regard to the relative frequency of full and part payments.

In regard to the source of the payment, 35 per cent of the alcoholic patients discharged from the hospitals had payments made by themselves, friends, or family members; 21 per cent by insurance companies; about 18 per cent by public welfare agencies; and about 6 per cent by other sources such as Workmen's Compensation and community mental health boards. The public hospitals received payments from private sources and from insurance companies far less fre-

TABLE XI.—GENERAL HOSPITALS ADMITTING ALCOHOLIC PATIENTS BY CRITERIA FOR DISCHARGE OF SUCH PATIENTS AND HOSPITAL OWNERSHIP, NEW YORK STATE, 1957

Criteria for Discharge	Voluntary		Public		Proprietary		Total	
	Number of Hospitals	Per Cent	Number of Hospitals	Per Cent	Number of Hospitals	Per Cent	Number of Hospitals	Per Cent
Patient is sober	2	4.8	0	0.0	0	0.0	2	3.3
Patient is sober and medical examination indicates no injury or illness requiring hospital treatment	32	76.2	6	37.5	2	66.7	40	65.6
Medical work-up including psychiatric examination completed	8	19.0	10	62.5	1	33.3	19	31.1
Hospitals answering this question	42	100.0	16	100.0	3	100.0	61	100.0

TABLE XII.—General Hospitals Admitting Alcoholic Patients by Arrangements for After-Care, New York State, 1957

After-Care Arrangement			Number of Hospitals	Per Cent*
No after-care arrangements made			15	23.8
Referral to a private physician			39	61.9
General practitioner or internist, only	19	30.2		
Psychiatrist only	5	7.9		
General practitioner, internist, or psychiatrist	15	23.8		
Referral to Alcoholics Anonymous			28	44.4
Referral to outpatient clinic of hospital			14	22.2
Referral to alcoholism clinic†			4	6.3
Referral to a social agency			4	6.3
Hospitals answering this question			63	100.0

* Percentages do not add up to 100 per cent inasmuch as a hospital may make several different arrangements for after-care.

† Not associated with reporting hospital.

quently than did the voluntary hospitals. The public hospitals also received payments from public welfare agencies less frequently, but this may be attributable to the fact that in many areas money is not exchanged between the public welfare agency and the public hospital unless State reimbursement is involved.

Special Study of Nervous and Mental Hospitals

Although this study was designed to determine the policies and experiences of general hospitals regarding admission of patients with alcoholism, the questionnaires were also sent to nervous and mental hospitals so that a more comprehensive picture of resources could be obtained. The State hospitals for the mentally ill, operated by the State Department of Mental Hygiene, were not included because these institutions are required by law to limit admissions of alcoholic patients to those with psychoses.

Of the 24 nervous and mental hospitals listed by the Joint Hospital Survey and Planning Commission, 4 were voluntary and 20 proprietary. Among the voluntary hospitals, two reported that they admitted alcoholic patients and two stated that they did not.

Responses were received from 16 of the 20 proprietary nervous and mental hospitals. This included one hospital which was specifically designated as a facility for the treatment of patients suffering from alcoholism and narcotic addiction. The pertinent findings follow:

1. Fifteen of the 16 responding hospitals indicated that they admit patients with alcoholism. This high percentage would be

TABLE XIII.—Payments for Alcoholic Patients by Source of Payment and Hospital Ownership, New York State, 1957

Source of Payment	Voluntary Number of Patients	Voluntary Per Cent	Public Number of Patients	Public Per Cent	Proprietary Number of Patients	Proprietary Per Cent	Total Number of Patients	Total Per Cent
Number of patients for whom no payment was received	104	8.2	279	51.3	1	5.6	384	21.0
Number of patients for whom payment was received	1,161	91.8	265	48.7	17	94.4	1,443	79.0
Number of patients for whom payment was received from:								
Patient or private individual	561	44.3	71	13.1	8	44.4	640	35.0
Insurance company	300	23.7	74	13.6	9	50.0	383	21.0
Public welfare agency	242	19.1	78	14.3	0	0.0	320	17.5
Other sources*	58	4.6	42	7.7	0	0.0	100	5.5
Total number of discharged alcoholic patients	1,265	100.0	544	100.0	18	100.0	1,827	100.0

Note: Payment information based on 37 voluntary, 7 public, and 5 proprietary general hospitals completing appropriate section of questionnaire.

* Includes payments received from Workmen's Compensation and community mental health boards.

expected by the very nature of the hospitals.

2. The majority of these proprietary nervous and mental hospitals are located in New York City and the adjacent counties, with only a few being found in other areas. Most contain less than 100 beds.

3. Sixty per cent of the proprietary nervous and mental hospitals required assurance of payment before admission, and about 67 per cent required an agreement by the patient or his family that he remain in the hospital a stipulated number of days. In comparison, only about 8 per cent of the general hospitals required assurance of payment and 3 per cent required an agreement regarding length of stay.

4. The median range of stay at the proprietary nervous and mental hospitals was seven to thirty days. This is considerably longer than the range for the general hospitals, which was two to eight days.

5. As would be expected by the nature of the facilities, practically all (15 out of 16) of the proprietary nervous and mental hospitals required psychiatric evaluations before discharge. This compared to about 63 per cent for the public general hospitals and 19 per cent for the voluntary general hospitals.

6. Over 99 per cent of the patients discharged from proprietary nervous and mental hospitals paid for their care or had payments made in their behalf. This compares with about 92 per cent for the voluntary general hospitals and 49 per cent for the public general hospitals. The payments were made by private sources in 98.6 per cent of the instances.

Comment

It must be recognized that the data presented previously refer to stated hospital policies and despite the fact that they were submitted and accepted in good faith, they may not always be an accurate reflection of actual practices. It may well be that several hospitals whose policies permit them to admit patients with alcoholism actually do so to a very limited degree. On the other hand, we have been informed that in some hospitals with policies calling for exclusion of alcoholic patients physicians may occasionally arrange for the admission of alcoholic patients under other diagnoses.

Regardless of the extent to which there may be divergences between policy and practice, we believe that the identification of the number and the characteristics of hospitals with policies that provide for the admission of patients with alcoholism is very significant. Based on these data an educational program may be directed at encouraging nonadmitting hospitals to change their policies. This is the important first step in arranging for hospital admission of alcoholic patients on a broader scale.

It should be emphasized that the figures presented in this report give a State-wide picture, and the situation may be more or less favorable in individual communities. Analysis of the data upon a regional basis showed that the Rochester region, consisting of 11 counties, presented a much more favorable picture than any other area. We would surmise that this is attributable to a significant extent to the high level of educational activities conducted by the Committee on Alcoholism of the Health Association of Rochester and Monroe County and to the progressive leadership in the field of modern hospital practices exerted by the Rochester Regional Hospital Council. However, we must recognize that the situation may not be favorable in every community in the Rochester region, and conversely there may be several communities elsewhere in which the local situation is more favorable than that of the region as a whole.

The public hospitals, which are generally of greater size than the voluntary or proprietary hospitals, have the highest proportion of admitting hospitals. Acceptance of alcoholic patients at a public hospital may provide for the hospitalization of a large number of alcoholic patients in the community despite exclusion of these patients by all other hospitals. However, such a situation can not be considered as entirely satisfactory since the attending physician is not permitted to place his private alcoholic patients in the hospital of which he is a staff member; thus there is interference in the free choice of physician and hospital, and in the physician-patient relationship.

Some special comment is required in reference to the municipal hospitals in New York City. Although the questionnaires were initially sent to each of the municipal hospitals, the official reply came from the central office of the New York City Department of Hospitals, in accord with the general practice of that department. The following information was provided:[3]

1. As a matter of departmental policy, admissions of patients whose primary problem is alcoholism are, as a rule, concentrated in the two major municipal psychiatric units, namely Bellevue and Kings County Hospital centers. General hospitals admit on an emergency basis patients who are acutely sick due to an alcoholic condition.

2. The municipal general hospitals do not as a rule accept for treatment patients whose main problem is alcoholism but refer them to two main psychiatric units of the department (Bellevue and Kings County). However, as mentioned, they admit such patients on an emergency basis. Due to the complexity of the problem, there are in practice exceptions to the general policy.

3. The approximately 235,000 patients discharged in 1956 from the aggregate of all municipal hospitals included nearly 7,400 patients with the main diagnosis of either alcoholic psychosis or alcoholism. The majority, namely 6,040, or 82 per cent, of these patients were discharged from the psychiatric units in Bellevue and Kings County Hospital centers.

As our classification was based on the policy stated by the hospitals, and since the general policy of the New York City municipal hospitals, other than Bellevue and Kings County, is not to admit patients whose primary diagnosis is alcoholism, we would classify only the latter 2 of the 15 municipal hospitals as admitting hospitals. As about 18 per cent of the total number of patients with the diagnosis of alcoholic psychosis or alcoholism were admitted to the remaining 13 hospitals, a strong case might be presented for including all municipal hospitals in New York City as admitting hospitals, and this would give a much more favorable picture for New York City. It is true that alcoholic patients are admitted by all municipal hospitals when they are considered as emergencies, but we would expect this to be true of practically every hospital. We recognize that there may be considerable variation between hospital definitions of emergencies. However, as indicated, our figures refer to stated hospital policies and not necessarily to hospital practices.

Despite an apparent policy shift, the situation has not changed much in New York City since 1945. A study conducted by the Committee on Public Health Relations of the New York Academy of Medicine in 1945 and 1946 reported that "Since January 1, 1945, all municipal hospitals receive alcoholics, although. . . . Bellevue and Kings County still take care of the majority of this class of patients."[4] Figures for the year 1945 indicated that 9,155 of 11,467 alcoholic admissions to the municipal general hospitals, or 80 per cent, went to Bellevue or Kings County Hospitals. This compares closely with the figure of 82 per cent of discharged alcoholics in 1956 coming from Bellevue and Kings County. While the first year deals with admissions and the second with discharges, it is believed that a comparison of the data is permissible.

The findings reported in this study are subject to various interpretations, depending on whether emphasis is given to the positive or to the negative data. Our own interpretation is that, while the present situation regarding admission of alcoholic patients to general hospitals leaves a great deal to be desired, there is much in these findings on which we can base an educational program directed at improving the situation and which gives us hope for the future. The facts that 20 per cent of voluntary and 35 per cent of public hospitals admit patients with alcoholism, that 40 per cent of all these admitting hospitals do not find the patients particularly troublesome, that practically all have found the tranquilizing drugs to be very useful in quieting the patients, and that the financial problems have not proved to be quite so unfavorable as might have been predicted, indicate that these experiences can well be carried over to many additional hospitals. Also, the large number of admitting hospitals that accept alcoholic patients who are sober but in need of treatment and observation show a growing acceptance of alcoholism as a disease rather than as a periodic bout of acute intoxication.

It is hoped that this important problem will be studied by administrators of general hospitals, the medical profession, and the various community agencies, both public and voluntary, that are concerned with patients suffering with alcoholism. As indicated before, the actual evaluation of an existing situation must be done on a community basis. If communities throughout the State study their local problems and, utilizing the findings reported here plus much other pertinent information in the scientific literature, attempt to encourage the admission of alcoholic patients to general hospitals, in line with the recommendations of the American Medical Association and the American Hospital Association, a repeat survey of this type in three to five years may show a much improved situation.

The special study of proprietary nervous and mental hospitals revealed, as would be expected by the nature of the facilities, a favorable picture, with 15 out of 16 accepting alcoholic patients. These hospitals provide psychiatric evaluations before discharge in practically all instances and keep the patients for longer periods of time than do the general hospitals. However, they provide a relatively small number of beds, are not widely distributed throughout the State, and, for the most part, serve only those who have adequate financial resources.

Summary

1. This is a report of a survey of general hospital policies in regard to admission of patients with a primary diagnosis of alcoholism. A total of 315 general hospitals out of 356 canvassed responded to a questionnaire survey. Separate observations are reported on proprietary nervous and mental hospitals.

2. Twenty per cent of voluntary general hospitals and 35 per cent of public general hospitals indicated that their policies provided for the admission of alcoholic patients. Only 9 per cent of proprietary general hospitals admitted such patients.

3. Among hospitals rejecting patients with alcoholism, in only 50 per cent were the rejections due to hospital regulations.

4. About 40 per cent of the admitting hospitals found the patients to be not too troublesome, and almost all found that tranquilizing drugs were particularly helpful.

5. An unpredicted large proportion of alcoholic patients paid for part or all of their care or had such payments made in their behalf.

6. The figures present a State-wide picture only, and it may be expected that there will be much variation when the situations are studied on a community basis. It is hoped that the communities will study their local problems and attempt to encourage the admission of alcoholic patients to general hospitals, if this policy has been deficient in the past.

7. A comparable study of proprietary nervous and mental hospitals indicated that 15 out of 16 admitted alcoholic patients.

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Fluoxymesterone (Halotestin) in the Treatment of Advanced Breast Cancer

KENNETH B. OLSON, M.D., ALBANY, NEW YORK

(*From the Subdepartment of Oncology, Department of Medicine, Albany Medical College*)

SIGNIFICANTLY, potent androgenic hormones useful in the treatment of advanced breast cancer have been limited to testosterone, usually administered as the propionate, dihydrotestosterone (stanolone) and methyltestosterone. Recently, Herr *et al.*[1] synthesized a new halogenated corticosteroid, 9α=fluoro=11β=hydroxyl=17-α=methyltestosterone, or fluoxymesterone* (Halotestin). Lyster *et al.*[2] reported that this compound has a myotropic effect 22 times greater and an androgenic effect 8.5 times greater than that of 17-methyltestostosterone in castrated immature rats. Gordon[3] has achieved full androgenic effects in hypogonadism with doses of 1.5 to 2 mg. per day in humans. Kennedy[4,5] has reported objective remissions of advanced breast cancer in 16 of 30 patients and subjective improvement in 17. Androgenic side-effects were noted by him with doses of 20 mg. per day. Field[6,7] has noted remission in four of seven cases of metastatic breast cancer with daily oral doses of 20 to 30 mg. McGavack and Seegers[8] have reported on the low toxicity, favorable effect on nitrogen balance, and depression of 17-ketosteroid excretion in a number of patients with metabolic diseases. Kennedy[4] indicates that this material is about five times as potent as methyltestostertone in humans and possibly less androgenic. Further trial of this interesting compound seemed indicated.

TABLE I.—RESULTS OF FLUOXYMESTERONE TREATMENT OF ADVANCED BREAST CANCER

Case	Age	Menstrual Status	Previous Hormone Therapy	Response to Previous Hormone Therapy	Length of Fluoxymesterone Therapy (Days)	Total Dose (Gm.)	Improvement Objective (Range of 0 to 4)	Improvement Subjective (Range of 0 to 4)
1	61	PM*	None	...	659	13.18	3	4
2	72	PM	Estrogen	Responded	251	3.49	3	3
3	57	PM	None	...	158	2.33	2	1
4†	62	PM	Estrogen	No response	31	0.620	2	2
5	66	Cast. PM**	Estrogen Androgen	No response No response	256	5.12	0	0
6	58	PM	Estrogen Androgen	No response	84	1.68	0	0
7	59	PM	None	...	203	3.77	0	3
8	72	PM	Estrogen	No response	210	4.18	0	0
9	40	Cast.††	None	...	90	1.88	0	0
10	69	PM	None	...	76	0.76	0	2
11	62	PM	Androgen Estrogen	Responded No response	24	0.48	0	0
12	45	AM***	None	...	100	2	0	2
13	50	AM	None	...	84	1.68	0	0
14	39	Cast.	Androgen	No response	90	1.80	0	0
15	55	PM	Androgen	No response	41	0.82	0	0

* Postmenopause.
† Hypophysectomy prior to treatment.
** Castrated after a natural menopause.
†† Castrated in premenopausal period.
*** Premenopausal.

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* The Upjohn Company, through the courtesy of Dr. R. W. Tally, furnished the fluoxymesterone for this study and provided funds to defray the cost of this investigation.

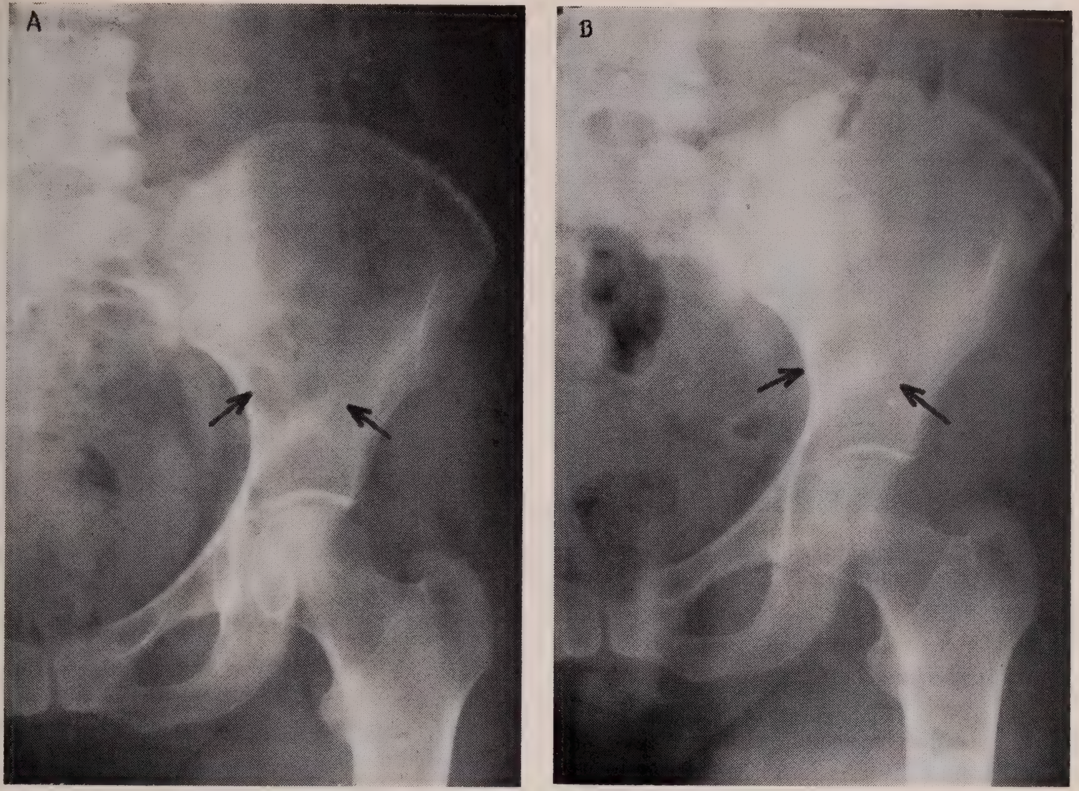

FIG. 1. *Case 1.*—Roentgenograms of the left hip and pelvis taken (*A*) September 8, 1956, and (*B*) October 17, 1957, revealing evidence of healing of an osteolytic lesion above the left acetabulum and recalcification in the region of the left sacroiliac joint.

Material

Fifteen cases of advanced breast cancer were treated for periods of thirty-one to 540 days (Table I). Radical mastectomy had been previously performed on 13 cases and breast biopsy on the other two cases. Eight cases had previously been treated with either androgens or estrogens, but in seven cases fluoxymesterone was the initial treatment. Two patients were premenopausal and had previously been castrated without remission of their disease. One patient was treated on exacerbation of her disease after a remission following hypophysectomy.

Fluoxymesterone was initially administered in doses of 10 mg. per day orally. As will be shown, this dose later was increased in all patients to 20 mg. daily.

Serial roentgenograms were taken at four to six week intervals, as were hemograms. Serum calcium, phosphate, alkaline phosphatase, and protein determinations and urinalyses were also done at these times. Serial vaginal smears for estrin effect were obtained in several patients, and liver function tests were performed when indicated.

Results

Subjective improvement of some degree, consisting of a sense of well-being, increase of appetite, and a decrease of pain, was noted in six patients (40 per cent). Objective improvement, as measured by healing of skeletal lesions and reduction of the size of lymph nodes by more than 50 per cent, occurred in four of these six patients (26 per cent). These results are detailed in Table I.

Three patients who failed to benefit from

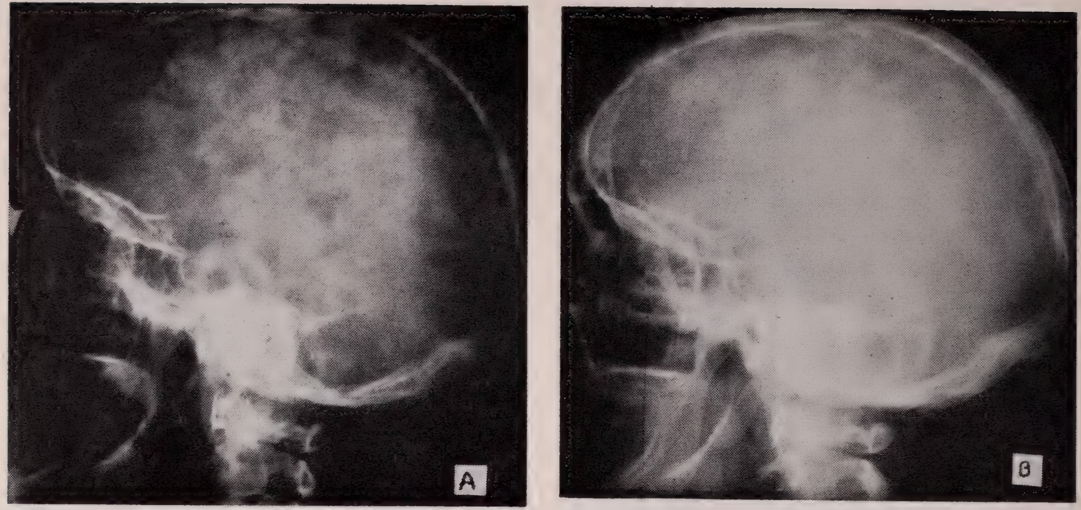

Fig. 2. *Case 2.*—Skull roentgenograms taken in (*A*) November, 1956, and (*B*) May, 1957, demonstrating healing of metastatic breast lesions.

fluoxymesterone therapy subsequently had a hypophysectomy, and one of these cases had an objective remission. One patient who previously had a hypophysectomy experienced a short objective remission and is described later in more detail. Neither of the two menstruating patients who failed to respond to surgical castration had any response from fluoxymesterone therapy.

Eight patients received no benefit from treatment and all of them subsequently died. Two patients who had objective remissions of their disease died.

Those patients obtaining an objective remission are reported in more detail.

Case Reports

Case 1.—A sixty-one-year-old, white female twelve years previously had experienced a radical mastectomy on the right side for an adenocarcinoma of the breast with metastases to several lymph nodes. She now complained of pain in the left hip and back. Significant findings on physical examination included an enlarged left axillary node (2 cm.) and marked limitation of motion of the left hip. Roentgen ray examination of the pelvis revealed an osteolytic lesion of the left ilium and destruction of the left half of the sacrum. Laboratory examinations, including serial urinary calcium excretions with a three-day period of estrogen administration, were within normal limits.

Fluoxymesterone in a dose of 20 mg. per day was started on September 28, 1956. In approximately six weeks there was complete relief of pain, and by December 12 definite recalcification of the lytic lesions was observed in roentgenographs (Fig. 1 A and B). This patient has continued on therapy and was well until February, 1958, when she noted pain in the left midthoracic area and shoulder, and exacerbation of the disease was suspected. She has subsequently received radiotherapy with some relief of pain, although there was no radiologic evidence of disease. Initially, she noted considerable increase of libido and some clitoral enlargement which subsided in about two months. There was moderate hair growth on the upper lip and legs and a definite deepening of the voice. There was no edema, vaginal bleeding, or other side-effects. She is considered to have had an eighteen-month remission with moderate virilization.

Case 2.—A seventy-two-year-old, white female was admitted to Albany Hospital on August 24, 1954, with proptosis of the right eye. Twenty years previously a right radical mastectomy for carcinoma of the breast had been performed. Biopsy of the skull revealed a metastatic scirrhous carcinoma believed to be from the breast. She was treated with diethylstilbestrol for about one year with subsequent marked decrease of the proptosis and evidence of healing of the skull lesions. Hormone therapy was voluntarily stopped, and on November 8, 1956, the patient was readmitted with ascites and increase of metastatic disease in the skull. The ascitic fluid revealed malignant cells by smear, and fluoxymesterone was given in a dose of 20 mg. daily. There was no further accummulation of ascitic fluid and roentgenographs of the skull revealed evidence of healing (Fig. 2 A and B). She died suddenly on August 6, 1957, what was believed to have been a cardiovascular death, and autopsy was not permitted. She is considered to have had an eight-month remission with evidence of mild virilization.

Case 3.—A fifty-seven-year-old, white female was admitted to Albany Hospital on January 18, 1957, because of an enlarging node in the right axilla, which measured 1.5 by 3 cm. A left radical mastectomy for medullary breast carcinoma had been performed twenty months previously. Needle biopsy of the node revealed metastatic carcinoma, and she was given fluoxymesterone in a dose of 20 mg. per day. By June 7 the node had decreased in size to 1.2 by 1 cm. and could be felt with difficulty. There was considerable subjective improvement and an increase of erythrocytes and hemoglobin. The hematocrit increased from 48 to 57 per cent, and there were mild signs of polycythemia, peripheral edema, and orthopenia. Fluoxymesterone was stopped because of suspected cardiac failure believed due to sodium retention as a result of therapy. She is considered to have had a remission of five-and-one-half months duration with mild virilization. There were no skeletal metastases.

Case 4.—A sixty-two-year-old, white female with advanced breast cancer of the chest wall was admitted to Albany Hospital on November 24, 1956. A hypophysectomy was performed and was followed by remission of the disease with decrease in size of all lymph nodes and skin nodules and complete healing of extensive chest wall ulceration. This remission lasted six months, until May, 1957, when regrowth of lymph nodes and skin nodules with skin ulceration occurred. She was started on brom-ketoprogesterone* in a dose of 300 mg. daily, and this was continued for three months at which time there was marked edema of the lower extremities, pleural effusion, and orthopnea. The metastatic lesions continued to progress. She was treated for cardiac failure. Six weeks later, on September 10, fluoxymesterone in a dose of 20 mg. per day was started, and there was subjective improvement noted within three weeks. After five weeks of treatment the pleural effusion cleared, and the chest wall and node lesions decreased in size. She remained in remission for two-and-one-half months when exacerbation of the disease was again noted. It was assumed that this patient had a complete hypophysectomy, since the urine contained less than five units of gonadotropin (mouse uterine weight) on repeated determinations of twenty-four-hour urine specimens, and the I^{131} uptake of the thyroid gland was about 5 per cent or less in twenty-four hours. Following hypophysectomy and during brom-ketoprogesterone therapy, she was continuously maintained on cortisone in a dose of 50 mg. per day and thyroid extract in a dose of 120 mg. per day as replacement therapy. Continued Pitressin therapy was not necessary, but mild thirst and increased urinary output was present. Death occurred seven months after cessation of fluoxymesterone therapy.

Comment

Fluoxymesterone appears to be a potent androgen and capable of producing objective remission in advanced breast cancer. If the present cases are combined with those of Kennedy and Field[4–7] there have been 24 objective remissions in 52 cases (46 per cent). The number of cases treated is not large, and it is premature to state that this steroid is superior to other androgens. It does seem probable that this compound is at least as good as other effective androgens and warrants further trial. It has the advantage of being an oral preparation which is well-tolerated in effective doses. It is not known if doses of more than 20 mg. per day will be more effective, but no remissions were noted with doses lower than this amount in the present study.

The usual effects of androgenic hormones were noted in most cases continuing therapy for more than one month, as evidenced by hirsutism, acne, increased libido, edema, and increased erythropoiesis, but the impression was gained that these effects were slower to develop and not of such magnitude as develop with testosterone propionate and methyltestosterone. Acne was minimal, and hair growth was moderate even in patients continued on therapy for several months.

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* Courtesy of E. R. Squibb & Sons, New York City.

Jaundice was not noted in this series, but a verbal report from another investigator[9] indicates that this has occurred in one case and is similar to the type of jaundice noted with methyltestosterone and subsides rapidly with withdrawal of the steroid. From the structural formula and excretion pattern of this corticosteroid, this might be expected.

The rather short but definite remission in one patient after hypophysectomy suggests that this compound may possess an activity other than that of suppression of pituitary function. In view of the variable course of breast cancer and the previous therapy administered, no definite conclusions are possible.

Fluoxymesterone was used in two cases of multiple myeloma, two cases of Hodgkin's disease, one case of Hürthle cell carcinoma of the thyroid, and one case of malignant melanoma with variable but slight subjective improvement and no evidence of objective benefit.

Summary

Fluoxymesterone, an oral androgen, was administered to 15 patients with advanced breast cancer, and subjective improvement occurred in six patients and objective regression in four. Androgenic effects were noted in most patients but were mild in degree.

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153rd Annual Meeting

Medical Society of the State of New York

May 9 to 15, 1959

HOTEL STATLER HILTON **BUFFALO**

Panel Discussion

EARLY RECOGNITION OF PSYCHIATRIC CONDITIONS

Moderator

WALTER C. ALVAREZ, M.D., CHICAGO, *Editor-in-Chief,* **Modern Medicine**

Panelists

HENRY L. RUTZLER, M.D., NEW YORK CITY, *Assistant Attending Physician, University Hospital*
GEORGE READER, M.D., NEW YORK CITY, *Director, Comprehensive Care Clinic, New York Hospital; Professor of Medicine, Cornell University Medical College*
ARTHUR J. LAPOVSKY, M.D., BROOKLYN, *Attending Neuropsychiatrist, Maimonides Hospital and Jewish Chronic Disease Hospital; Assistant Clinical Professor of Neurology, State University of New York Downstate Medical Center*
ABE PINSKY, M.D., BROOKLYN, *Clinical Assistant Professor of Psychiatry, State University of New York Downstate Medical Center; Lecturer, American Institute for Psychoanalysis*

DR. WALTER C. ALVAREZ: We are going to talk about the problems that arise when a physician must call in a psychiatrist. That is one of our big problems.

Some may wonder why a man who has spent his life studying gastroenterology has wound up interested largely in neuroses. I could not help myself. When I found that a third of the patients who were referred to me for "stomach trouble" turned out to have a pure neurosis, I willy-nilly had to become, to some extent, a psychiatrist.

Now, with all of our wonderful advances in medicine, there is still one place in which most of us tend to fall down badly, and that is in the recognition of mild psychoses. During my twenty-five years as a teacher of young physicians, I was distressed over their frequent lack of interest in nervous troubles, and their lack of desire, in making a diagnosis, to look beyond the laboratory and x-ray reports. For instance, if they found that a woman had gallstones, that satisfied them. They thought all they had to do was to remove them and the woman would be cured. It did not occur to them that the woman might be dying of a broken heart because her only son had been shot down in Korea, or that she might be going insane. Usually, I couldn't get them interested in such problems. They couldn't see that many of the patients they studied had primarily what, for want of a better term, we can call a nervous breakdown.

I tried hard to teach my physician-

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students how to recognize the person headed for a nervous crack-up and in need of expert psychiatric treatment, but few were interested. Some of them could recognize that a patient was nervous; that was as far as they would go. What they failed to realize was that many a nervous person was mildly psychotic and facing serious trouble. Most of my students couldn't recognize a schizophrenic person at sight, as they should have done. Worse yet, able teachers of medicine often failed to recognize a typical, shy schizophrenic person.

One of America's ablest professors of medicine one day sent me a patient, saying that the patient had a diarrhea and he and his staff had been trying for two years to prove that the man had chronic ulcerative colitis. He said, "Will you look at his colon and tell us what you think." I'm no psychiatrist, but when I met the man, I immediately recognized his schizophrenic symptoms. He wouldn't look me in the eye and he wouldn't shake hands with me. When I shook his hand, he pulled it away quickly as these people do. Also, the hand was typically cold and wet. Soon I asked the patient a question (and this is one I could never teach my students to ask), "Did you ever work?" And he, a man aged fifty, answered, "No, I never could hold a job." I said, "How did you live?" And he said, "I have always lived off my mother." I asked,"Did you ever go out with a girl?" And he said, "Oh, God, no!" I asked, "Did you ever have intercourse with a woman?" And again he answered, "Oh, no!" I said, "How would you like to go into a mental hospital?" And he said, "I would like it. Living out in a world into which I cannot fit has been a terrible problem for me."

I have seen hundreds of shy, schizoid people, whom I call "touch-me-nots," who are somewhat schizophrenic all their days. Many are depressed and some are paranoid, and many are full of psychotic fears and compulsions. In the worst cases, these people lose contact with the world; they cannot love anyone. Often, I make the diagnosis in a minute by asking, "Do you go to movies any more?" And a young woman will say, "I used to love to go to movies. But I don't now because I can't get interested in those people up there on the screen. I don't care what they do." Then, I may say, "Do you still love mother?" And the woman answers, "I used to adore mother, but then after I cracked up, when my baby was born, I couldn't love even mother, and this has worried me." Unfortunately, we doctors were not taught at college to ask such questions.

Many schizophrenic persons can quickly be recognized when they complain of weird sensations in their body, such as worms crawling in their abdomen or under their skin, or pus running from their pelvis up into their brain, or blood trickling in their thorax.

One day, my assistant came and said, "There is a beautiful woman in my examining room and I don't know what to make of her story." I went in and asked the woman what was the trouble. She answered, "I have a tape worm." And I said, "How do you know you have a tape worm?" She said, "I feel it crawling around in me. Sometimes, I feel it biting me, and at night I can hear its teeth clicking together." Soon she told me that she was the morganatic wife of the Prince of Wales. After we had visited awhile, I told her I didn't know much about tape worms and so I referred her to a colleague.

Before we go further, I want to tell you of a conclusion that I've arrived at after fifty-four years of studying the nervously ill. This is that there are two main types of nervous people: (1) good, sane, sensible people who have a neurosis, and (2) odd, eccentric people who have a mild psychosis or a submerged epilepsy.

Here, for instance, is a pleasant, sensible nice-looking woman who admits she is nervous. Her husband tells me she has always been a good wife and mother and a hard worker. She never has been a complainer. Then her mother got a hopeless cancer and had to be nursed day and night for six months (or her child got paralytic polio or had a bad asthma), and the woman got but little rest and sleep. Slowly, she was worn down. Now, if you give that woman a little rest, she'll soon straighten out and get well. Here is an important point; if you ask her about her family you will find usually that there isn't a single "screwy member" in either her father's or her mother's stock; they are all fine people.

But here comes another type of woman who looks as if she had been born to be always a "nervous mess," a complainer, a weakling, a whiner. If she had been born a kitten or a puppy, she would have been drowned. Any wise old doctor knows that he is not going to cure her. Often, when I send such a woman to a psychiatrist I fear it is a mean trick I am playing on him. I don't see how he can ever accomplish much with her. She may not have sense enough to listen to what he says to her. She may not even be much interested in getting well. She may be one of those women who insists that she be cured by a surgeon. As many a woman like this has said to me angrily, "I won't be a 'neuro.' I had a nervous breakdown once and it took me a year to get over it; this time you take out my gallbladder, so I can be well immediately."

As a similar instance, the other day I was visiting in Southern Illinois with one of my ablest students, a surgeon, and he said that his greatest problem today is to try to talk psychotic women out of having a hysterectomy. "They all want one," he said, "it is so popular nowadays!"

Perhaps we now can get Dr. Rutzler to give us some of his impressions of the type of person that we all should send to a psychiatrist or neurologist.

Dr. H. L. Rutzler: The question of when to refer a patient to a psychiatrist is very difficult to answer in a categorical fashion. When we speak of the type of patient who should be referred to a psychiatrist we might differentiate a little more carefully, perhaps, than did the preliminary remarks of Dr. Alvarez about the major psychoses versus the minor psychiatric disturbances. Major psychoses, such as schizophrenia and endogenous depression and the others, I believe, should be treated only by the psychiatric specialist. If we consider neuroses as minor psychiatric problems, I think we include a large portion of the psychologic problems seen by the nonpsychiatrist of which depression is the one most frequently missed by the general practitioner. The recognition of a depressive personality is important to the general practitioner because it can warn him of the possibility of suicide. It is only by very careful, calm, considered, and unhurried talking with these people that they sometimes reveal that their life is not worth living, and they don't intend to continue it much longer.

It seems to me that if we keep in mind a thumbnail sketch of the depressed person as a guilty perfectionist who isn't getting much kick out of life and certainly is not getting any joy out of it, and who feels that some organ in his body is acting up and will probably have to be removed, we should suspect quickly that he is a depressed person. In depression guilt is a very important factor. The depressed person feels responsible for all kinds of sins, crimes, and wrongdoings which do not exist actually. Hatred and aggression are turned inward against himself because for any number of reasons he feels he cannot yet express them directly for fear of loss of love. Being a perfectionist he easily becomes self-critical, self-accusatory, and self-deprecatory. Couple this with sleep disturbance, especially early morning awakening, weight loss due to anorexia, and lack of energy, then the physician should prick up his ears because this patient is a depressed one. From then on, one has to keep eyes and ears open and listen for the hint that the patient may be a potential suicide.

The other thing that we have to keep our eyes open for is the fact that a psychotic, schizophrenic person will give you a long list of diseases and complaints and symptoms, but with definitely inappropriate effect, i.e., he gives them with a silly grin on his face or he doesn't recite his symptoms seriously. And if you ask him what his most serious symptom is, almost invariably, in my experience, it is something that he hasn't previously mentioned. He uses this as a face-saving device, something he actually invents and then comes himself to believe exists. A clear history is difficult to elicit from these patients because their stories are vague, disconnected, and rambling, given in a flat unemotional manner without any semblance of sequence. The inability of the physician to follow this illogical jumping from one thing to another should make him suspicious especially if the patient believes in a bizarre cause for his complaints. These vary anywhere from the body turning to jelly to cosmic influences being exerted on the organs.

There are other conditions, of course; but as a starter I believe that patients presenting symptoms such as those mentioned should be sent for specialist care. Other conditions will be considered, I am sure, in the course of this discussion.

Dr. Alvarez: Dr. Reader, do you have something you would like to say at this point?

Dr. George Reader: I should like to start out by saying that I think every practicing physician needs a personal psychiatrist. What I mean by this is that we should have a working relationship with some psychiatrist, not only so that we can refer some of our patients to him, but also so that we can get psychiatric advice and consultation on patients we are treating ourselves. My associates and I have had considerable experience now at the New York Hospital in having a psychiatric consultant on our teaching clinic staff. The way he works is not to see the patient himself, except when it is necessary for him to decide some problem of obscure diagnosis, but he is available to all members of the staff to consult with them on problems that they are facing in dealing with their patients. And it is in this way that one should begin to learn which problems in patients one should refer to a psychiatrist and which ones can be treated by oneself, perhaps with psychiatric help.

Now, I have had a different experience from Dr. Alvarez—I find that almost all of our medical students nowadays are able to diagnose the major psychoses almost on sight. They are well trained in psychopathology; they don't miss schizophrenia, and they don't miss major depression. One of the problems that is missed, however, is organic brain disease, particularly in the older patient. If you are not careful to test the patient for orientation, for memory function, you may find you have a patient who is unable to cooperate with you on the management of some relatively simple problem, such as the taking of insulin. He may not have enough functional tissue to manage a problem of this sort—and it is very important to determine this—this point is easy to overlook because a patient may not be particularly depressed.

Another thing that is overlooked is that anxiety operates in the same way as loss of brain function. A patient who is severely anxious because of fears in his life, or because he is afraid of what you are going to tell him about his disease, may be so anxious that he is unable to think or remember. He may not even hear what you say to him, and it may be quite possible for him to go out with an impression completely opposite from what you told him.

A good relationship with patients allows the patient to tell enough for you to determine whether he has problems that you should try to deal with yourself or that need the advice of a psychiatric consultant. The important thing here is giving the patient an opportunity to talk—of not asking him direct questions where he has to give you "yes" and "no" answers, a failing I think many of us fall into, especially under the pressure of time. Ask open-ended questions such as Dr. Alvarez mentioned, for example, "What kind of job have you had?" or something that allows the patient to get started on his own story of what troubles he has at home. If you ask anyone, "Do you get along well with your wife?" unless he knows you very well, he'll say, "Of course, I get along well with my wife"; it is not appropriate to say anything different. But if you say, "How is your wife these days?" the patient may come out with some statement like, "The old woman is giving me a lot of trouble," or, "She is always sick and complaining," or something else which will be a real lead into the dynamics of the interfamilial situation.

We have spent a good deal of time in trying to give medical students an understanding of this process by using the technic of the one-way screen or window. A student or an instructor interviews a patient so that the students can watch through the screen, seeing and hearing what goes on between patient and doctor much as you would on a stage. It is better than sitting in where you also become part of the interview and miss some cues. When you have the glass between you, you are sufficiently separated from the doctor and patient so that you can see how they interact on one another, without necessarily feeling that you have to come to any decision about it, as you might if you were in the same room.

You will notice a number of things that block patients from responding. One is this business of direct questioning. We set the stage by saying, "What is your name?" "Where were you yesterday?" and so forth, like a district attorney. The patient will not respond spontaneously throughout the interview if you begin by writing down everything he says. If the patient knows that anything he says is to be written down, he will try to cooperate by telling you things to write down, when what you may want most to know may be something he doesn't want to be recorded. The patient feels he couldn't possibly elaborate on his story and take up your time to write all this out. You have to allow the patient time to tell his story, and then you have to go after some of these things fairly specifically. When I see a new patient, I try to go over with him some of the things that Dr. Alvarez has mentioned. I usually ask him what kind of person he thinks himself to be, whether he is a volatile person, who is easily upset and easily angered, or whether he is the kind of person who holds things in. And here you can go on to ask whether he has ever been so upset by anything that he couldn't work or had to give up work for a few days. Often at this point a patient who has consistently avoided mentioning a hospitalization for mental illness that took him out of circulation for a year or so will say, "Well, yes, I was pretty sick at one point and I was away at a hospital awhile resting." The patient can say it in this way without implying that he has had a major breakdown.

Getting a systematic personal history in every case, particularly the work history, is essential. How old was the patient when he finished school? How much education did he have? What was his first job? What kind of jobs has he had since? What kind of work is he doing now? Does he feel that he can do a different kind of work more satisfactorily, and is he making enough money? These questions, I think, should be part of the routine part of the examination of every patient, so that the doctor can come to some decisions early as to what his diagnosis will be in terms of mental illness, and what he is going to do in terms of managing the illness.

Dr. Alvarez: Thank you, sir. Someone asked me this morning, "Do you ever ask a person if he is thinking of suicide?" I used to be afraid of this. As a young physician, I wouldn't ask it, but as I have become older, I have lost my fear of it. Now I will often say to a patient who I think is depressed, "Do you ever think that it would be better for you and your family if you were to get out of the way?" And I find most people will answer me frankly. Some will say, "Yes, I would like to do it, but I haven't the courage," or "It is against my religion," or "It would hurt my mother terribly." And then I can help the person by saying, "Well, then, if you are never going to commit suicide, and you are going to live, you had better start right now trying to do a better job of living."

Another hint that I would like to give you, out of years of experience on how to recognize the schizophrenic person, is to note that he or she answers questions irrelevantly. You can say, "Where is this pain you have?" And the patient will answer, "Well, you know, my aunt went to a chiropractor and he gave her an adjustment." When you ask, "Show me where the pain is in your stomach," the woman may say, "Well, my doctor said that nobody ought to be as constipated as I am." This sort of answering can go on as long as you care to keep asking questions. In the patient's mind, there is apparently no connection between what you ask and the response. Years ago, Dr. T. A. Ross of England told me that such history giving is typically schizophrenic.

Another good hint I can give you is that you are likely to waste your time on a patient if she hasn't the intelligence to know what you are talking about, or the will power to start on a course of treatment and then follow it. I always try quickly to get rid of the psychotic person who is stupid. I learned much from Charles Darwin's story of a man in London who used to train monkeys for the vaudeville stage. Usually, he could buy one monkey from a store for £ 5, but if the storekeeper would let him take home a dozen monkeys and then buy one of these, he would pay him £ 25. Darwin asked the man, "How can you tell so quickly which monkey you can train and which monkeys you can't train?" The man answered, "I choose only a monkey who will listen to me when I talk to him." It is the same with patients. I can help only the man or woman who, in the office, will listen to me.

Dr. Lapovsky, do you have something you want to add?

Dr. Arthur J. Lapovsky: The modern advances in psychiatry are such that they demand early recognition of symptoms, and we fortunately are able to help a good many "lemons." And, unfortunately, a good many physicians hold on to "lemons."

The symptomatology of psychiatric disorders is vast. I know of no specialty of medicine that requires greater sharpness from the practitioner than that of psychiatry. There is no physical disorder that cannot be simulated by a psychiatric disorder. This holds true in every phase of life, from infancy to old age.

The reason that psychiatric disorders are missed is because they simulate organic disease so closely. The symptoms of a patient with ulcer can be exactly duplicated by people with psychiatric disorders. And because of the present-day increase in medical articles in lay magazines, the patients learn the exact behavior of an illness so that they can give you an exact duplication of the syndrome of an ulcer, for example. We also see various combinations of psychiatric disorders and organic disorders. It is amazing how often a patient with a definite psychiatric disorder, at the same time masking some organic condition, is referred to us. He can have a brain tumor, and yet, at the same time, will present himself as a psychiatric problem. Even with a frank psychosis—depressive state or pseudoschizophrenic state—the patient may still have an underlying bodily disease. And then, again, in diagnosis, one will see the patient who simulates organic central nervous system disease and still has just hysteria. We had a girl in the clinic the other day who seemed to have a cerebellar syndrome, and she simulated this to such a degree that I was hard put to differentiate whether or not this woman had a real ataxia. It took an Amytal Sodium interview for us to be able to determine just what her problems were.

The exact diagnosis in psychiatric conditions is very important. In some psychiatric circles the medical diagnosis is looked down upon, but to us it is a very important element. In some psychiatric circles it is considered that the psychodynamic mechanism by which the person has developed a symptom is the important thing. But in view of the difference in therapy which follows in various types of psychiatric conditions, it is very important to make a differential diagnosis between a neurosis, a hysteria, a brain tumor, an involutional depression, or a senile psychosis.

Some of the best illustrations of the importance of accurate diagnosis in the recognition of early symptoms are found in the middle-age and in the older-age periods. Many patients who come to us in their fifties have had "miles" of electrocardiograms done and have had innumerable x-rays. And these patients will have not only psychiatric symptoms like guilt and excessive rigidity of personality, but also they will present themselves with loss of appetite, loss of sleep, a bad taste in the mouth, a burning of the tongue, loss of 35 pounds in weight, pallor, insomnia, and noises in the head, and the doctor will be hard put to it to explain all these symptoms. Only when one looks more closely does one see the psychiatric derivation of these manifold signs. Many of these involutional patients today are curable, and that is the really important reason why one should recognize the condition. If one takes these involutional patients at the age of fifty, and goes ahead with them into the sixties and sixty-five, a differential diagnosis has to be made between the senile disorders, the arteriosclerotic disorders, and delayed involutional melancholia.

The differentiations are important again because one has to give the treatment that will help the person. For the person who is senile, we have so far been able to accomplish nothing. But for the arteriosclerotic patient who has had a stroke and then developed a depression, the case is not hopeless. Some of these people are benefited by psychotherapy, some by electroshock treatment, and some by Marsilid. The patient with the delayed involution has the same good prognosis.

How does one differentiate this group? It is not as difficult as it seems because of the amount of memory impairment. With the senile individual, the memory fails intensely; he will develop considerable confusion, and he may get lost. Even though he may be confused, he may have euphoria and will look pretty bright. But if one will start testing these patients, one will find that they don't remember what they had for breakfast; they don't know where they put their hats or their coats, and frequently they don't know where they live. These people are not helped by any treatment.

I see here a question: what about toxicity of Marsilid? Recently, according to the newspapers, the drug was not considered trustworthy, and, as yet, we haven't been able to make up our minds about it. I, personally, have had no trouble with toxicity, although at the hospital, in a clinical conference, someone presented a case of hepatitis in which the patient had taken some Marsilid. Whether or not there was any causal relationship was difficult to determine. But nowadays our medical practice is determined to such a large extent by what the lay press writes that I think we ought to use our heads a little bit more and properly evaluate the drug. I have seen no real side-effects from Marsilid, and I feel that the smaller dosage we use is as effective as the larger dosages that some men have used. I feel we should give it a further trial.

DR. ALVAREZ: Dr. Pinsky, may I ask you to discuss one of the problems that has overwhelmed me through the years, and that is to find, for a patient of moderate means, a psychiatrist who can and will take time, and who has the devotion and idealism to sit down with the patient and try to help him with the particular problem he has at the time. While I was talking to some doctors at this meeting, I found that my friends here have had the same difficulty I have had of finding, even in a big city, a psychiatrist who will help the patient with a small income.

What are you and I to do when faced by the problem that every so often is put up to me. Here comes a woman who says, "What am I going to do? My husband comes home drunk every so often and beats up the whole family. Can he be treated psychiatrically, and, if so, where?" To begin with, how could she get him to a psychiatrist, if she found one? She tells me that once she was seen by a social worker who advised having the man arrested. The wife had him arrested, but all this did was to so anger the man that he came home and gave his family the worst beating they had had. Could you perhaps tell us, Dr. Pinsky, what on earth we nonpsychiatrists can do to help some of these unhappy people?

Dr. Abe Pinsky. Yes, I think I have quite a bit of information that I might try to give you. The answer to the question of psychiatric fees is, of course, that these patients take up a great deal of time. Usually a session is fifty minutes or one hour long, and for that amount of time the fee can go very high. There are a number of low-cost psychiatric institutions in New York City but people don't know where to look for them. Just the other day there came to my office in the mail a directory compiled by the Department of Mental Hygiene of the State of New York. This directory listed the low-cost psychiatric clinics in the five boroughs of New York City, particularly Manhattan. It seems that general practitioners know more about these clinics than do special workers and psychologists, and this, I think, is unfortunate.

The next questions is: What do you do with certain types of patients who are refractory to the idea of psychiatric care or are negative in their attitude toward psychiatrists. In New York State alcoholic persons are not commitable but in certain western states I believe they may be. One has to face the issue squarely. Alcoholics are not very amenable to treatment in the private offices of analysts; they aren't reliable; they break appointments and they are not trustworthy. We analysts are only human; if a patient won't meet us halfway, what are we supposed to do? The reason that I bring this up is that, every so often, the public at large expects psychoanalysts to be magicians, able to solve all problems. Alcoholism is as much an economic and social problem, or perhaps even a political problem, as a psychoanalytic one, and the problem should be attacked simultaneously from various disciplines. To ask a psychoanalyst to help you out of this muddle, while it is a tribute and compliment to his supposed ability, takes the psychoanalyst away from his other patients as it does the general practitioner.

Some say that 50 or 75 per cent of their patients come in with symptoms predominantly of emotional origin, but there is one aspect besides the preventive medical aspects in connection with today's round table; there is the public health aspect. About two years ago, a teen-age boy in Bergen County, New Jersey, killed a young girl. This boy was supposedly a model boy, one who attended church and was supposed to have been no problem at all. This is what hit the newspapers first. A few days later, it became known that the boy had been known to psychiatric agencies many years before, and nothing had ever been done about it. The fellow was obviously a schizophrenic person. Just a month or so ago, in Long Island, a young fellow took a shotgun that had been recently bought by his father, and killed a schoolmate. Again, the papers wrote that this particular youngster had been no problem.

It is relatively easy to pick up a bizarre conglomeration of symptoms or peculiar groupings of various bodily changes which you recognize as not following any particular pattern; but it is the subtle changes, such as the fact that the youngster isn't doing so well in school or that he tends to become somewhat withdrawn and seclusive, changes which are not enough to "write home about," which should put you on the alert and make you say to yourself, "This boy may bear some watching."

About sixteen years ago, a young fellow was examined for the Army. The psychiatrist for the draft board rightly diagnosed him as psychoneurotic with some obsessive features. He was rejected, but nothing was ever done about it; he just didn't serve in the Army. Then, sixteen years later, he came down with a full-blown, severe avalanche of psychoneurotic symptoms which could be labeled schizophrenic. Had this youngster been given some kind of therapy sixteen years ago, he would not be in such a deplorable situation today. What does this mean? It means that his treatment now is going to be more prolonged, and his prognosis is going to be a little more doubtful. Psychoses don't necessarily begin in adolescence; physicians who are practicing pediatrics could look for the symptoms even in the youngsters they take care of. For example, one of my patients in my psychoanalytic practice said to me the other day, "My older boy was accepted into a private school, one that is highly sought after, and he had to take a competitive examination to get in. We were happy about this. Then, I spoke to my younger son about this. He will be going there soon, and he remarked to me, 'I don't know, it will take a couple of years and an accident might take place or something might happen before I get in.' " My patient was a little disturbed by this. This seems like a harmless remark; how many children haven't made such remarks. And interestingly enough, it *does* sound like a harmless remark, but how can we be sure? I didn't suggest to my patient that she immediately get him to a child psychatrist. But I did tell her to talk to the boy on occasion and to watch him, to draw him out a bit, to see what he has to say, to watch for other manifestations of pessimism in an eight-year-old boy.

A youngster who is a neighbor of ours was found playing around with some rope and fastened a noose around his neck. When asked what he was doing, he said he was just playing and it didn't mean anything. It most likely didn't mean anything, because this incident happened a couple of years ago. But these phenomena bear watching, and if we are going to disregard them the way we did the "growing pains" of rheumatic fever many years ago, we are going to get into serious trouble.

Similarly, in regard to work, the important point is not so much whether the patient works or doesn't work but whether there has been a recent change in the work pattern. An individual may have had a steady job for ten years, and then, last year, he may have been fired. That, to me, is much more important than that the individual has been pretty irresponsible for fifteen or twenty or thirty years, because the question before us is: How are we to evaluate this change that took place only a year ago?

There is only one more comment I would like to make, and that concerns the problem of tranquilizers. Analysts in general and I in particular am not against tranquilizers as such. The fact that they have achieved such world-wide acceptance, and the tremendous number of papers that have been written about them indicate that they do have value. Certainly, if they were not of value, nobody would be bothering with them. However, like everything else, use of them can be abused, or they have disadvantages even when not abused. Very often, the general practitioner may be partly at fault; he tends to prescribe them indiscriminately before he even listens to the patient. There is no reason why you have to give a tranquilizer like Miltown on the basis of the first contact. There is no harm done in requesting your patient to come back for another consultation. After a number of interviews, if you feel that a tranquilizer is indicated, fine; but if you give it immediately you might be masking something that is serious. It is quite true that certain tranquilizers, like Thorazine and reserpine, sometimes exert phenomenal effects in warding off an outbreak of a schizophrenic psychosis. And in doing so, the physician may develop a spurious confidence that he is licking the problem. In a situation like this, a psychiatric consultation would definitely be in order.

Dr. Alvarez. Thank you, Dr. Pinsky. As you all can see, the problem is so huge, and there are so many ramifications to it, that we could be talking about it here for hours.

When the question of a poor nervous heredity comes up, I sometimes tell the story about the doctor who came up to me after a panel like this in St. Louis and said, "I'm an old general practitioner, and I know families, and I don't think you paid enough attention to the fact that some of these people were born to be incurable. We know that some of them come of such bad stock.

"One of my patients who is a census taker went down to the mud flats by the Missouri River and he went up to a house made of boxes and tin cans. A slatternly woman came to the door and because he didn't think he could get much information out of her he asked, 'Is your father in?' And she said, 'No, dad's up at the State Penitentiary.' 'Well,' he said, 'Maybe your mother is in?' 'No, Mom is up at the State Hospital.' 'Have you got a brother?' 'Yes, but he is in the reform school.' 'Well, have you got an older sister?' 'Yes, but she works over in the red light district.' 'Well, maybe you've got another brother I could see?' 'Yeah, I got another brother, but he is in the Medical School at Harvard.' The poor census taker said, 'My God, you don't mean to say you've got a brother who is a doctor at Harvard?' 'No, he ain't a doctor, he's got two heads; he's in a bottle of alcohol!' " I am sure that all of you who have been in general practice as I have know families like that, and to my way of thinking they cause many of our troubles in this world.

Incidentally, one problem that we haven't yet had time to mention here is that of the many psychotic people that we are constantly seeing nowadays. I am ashamed to think that in my earlier years I must have seen hundreds of them and not recognized them for what they were. They are patients who have violent tempers and who can't get along well with anyone. Many always have had weird nightmares; some walked in their sleep, or wet the beds late, or were hard to discipline. If you will ask about the family of such a person, you will often learn that he has epileptic relatives, perhaps an aunt or an uncle or a grandfather or a brother. Then have electroencephalograms made and you may find a typical dysrhythmia. The patient is what I call an epileptic without fits. The world is full of such people, and we doctors usually miss the diagnosis because we were never trained to think of this disease. Incidentally, we haven't gotten into the habit of using the electroencephalograph as often as we should.

Now, we have a few minutes left, and there is just one thing that I would like to say, something which is obvious. I was recently talking to a very able physician who has a large practice, and he was telling me that he is seeing from 50 to 60 patients a day. When you see 50 or 60 patients a day, you cannot make diagnoses of neuroses, and if you do, you won't be able to do anything about them. You can't even take time to refer the patient to a psychiatrist. Obviously, we cannot be good doctors unless we give each patient enough time.

Sometimes a patient says to me, "I would rather go to a quack than to a regular doctor because the quack will sit and talk with me, and that is what I so want and so need." And we doctors can get a great lesson from what this patient said. In medicine today we are failing to help many people because we do not talk to them. Many of us won't even answer the questions our patients ask us so anxiously.

Perhaps Dr. Rutzler would give us a windup, giving us some ideas on this problem of getting some of our our patients into the hands of a good psychiatrist.

Dr. Rutzler. First, in regard to Marsilid, I would agree that it should be given further study. There are two practical things about Marsilid that I don't believe have been sufficiently emphasized. (1) In all likelihood, a smaller dosage would do everything that the larger dosage will do. After a few days of 150 mg. per day, reduce the dosage rapidly, but in diminishing quantities. Often 25 mg. a day maintain patients exceedingly well. (2) We should know that it could make a depression worse. Watch the patient and if he should get worse, get him off the drug as quickly as possible, because it can do a lot of harm.

And while on the subject of Marsilid I should say that I believe that much of the adverse publicity this drug has had is due to the doctors themselves. They rely much too much on the promotional literature and never bother to read the package inserts. A great deal of information can be gained if we just take the time to learn about the preparations we use. The manufacturers do a lot of research before giving us the drugs, and this information is to be found in the package inserts. We are much less likely to get into trouble if we pay better attention.

The question of what to do with a lot of these people who cannot afford private psychiatric treatment: One possibility has been omitted that is quite important. A lot of the patients that we see in the practice of psychosomatic medicine cannot afford to have it for long because the treatment must necessarily be costly. We men can see only a limited number of patients in a day. But I think that with the rapid growth of the group therapy idea, things will get better. A group therapist can, for awhile, see a patient on an individual basis and then, later, put him into a suitable group for therapy, in which he can talk over problems in common with other members of the group and get constructive ideas from the experience and from the experiences of the others, which is healing.

The other thing I want to say is something about the use of tranquilizers. I certainly agree that anybody who goes to a psychiatrist with psychiatric complaints should not be given a tranquilizer on the first visit. I think that this situation is somewhat different with the internist or the general practitioner who has sat down with the patient for an hour and has talked over the situation long enough to realize that the patient needs something to quiet him.

The internist then can use one of the milder tranquilizers to get the patient over the edgy part of his disease, and can make it easier for him to talk, and maybe a little easier for him to sleep at night. I do not believe, and I want to make this perfectly clear, that the phenothiazine derivatives, or reserpine, are indicated in this situation.

There is a product known as Nostyn which works admirably in such situations. It may be given in doses of 300 to 600 mg. (one or two tablets) every three to four hours if necessary. Nostyn is remarkable in that it does not impair the patient's mental functions and indeed the effects are so subtle, the onset of the drug's action so smooth, that the patient feels no sedation and therefore may not notice immediately the disappearance of his symptoms. It is only in retrospect that he eventually recognizes the lack of his old symptoms, tensions, and anxieties. This is the very quality of the drug which makes for its excellence but obviously it has drawbacks for patients who insist on feeling some effect in order to believe it is working. It is important to make it clear to the patient at the outset that this is a crutch; it is something to help him get started. He must be told that his problem is not primarily organic and that we must search out what is wrong in his interpersonal relationships and life-stress situations, and then make it possible for him to understand his symptoms and better adapt or adjust his life under these particular circumstances.

Dr. Alvarez: I would like to mention one solution to our problem which I had a chance to observe recently when I was in Berkeley, California. I visited with Dr.

A. E. Bennett, a forward-looking psychiatrist, who got the directors of one of the best hospitals in Berkeley to build a wing where mildly psychotic patients are taken care of. Going to a general hospital enables patients to avoid the stigma of having been in a mental hospital, and helps in taking care of people who otherwise wouldn't go for proper treatment. The stigma of having been in a mental hospital is bad because often the patient, when cured, cannot get a job; no one will trust him. In Berkeley Dr. Bennett is using the technics of sometimes keeping a person in for only the day or the night; the rest of the time he can spend at home or at work.

There is one thought that I would like to leave with you and that is: Many very nervous patients who have a number of insane relatives get diarrhea whenever they get panicky, fearing that they, too, are about to go insane. When I see a patient with an occasional brief spell of diarrhea I ask, "When you got the diarrhea, were you scared?" And the patient says, "Yes, I felt woozy or dizzy or funny and I thought, 'Here I go; in a minute I'll be crazy like Aunt Lucy; I'll be screaming and they'll take me to the mental hospital.' " I think that if you or I had such great fear we, too, would get diarrhea.

Often, I help these people tremendously by saying, after studying them carefully, "I don't think that you will ever go insane. You are fifty years old and you have been sensible all your days. You are not going to change now. The nervousness you have now is your little share of what upsets your relatives." After this explanation, I have been able to send home many a previously much-worried person, happy and reassured.

Now that we have only a few minutes left, I wonder, Dr. Lapovsky, if you will wind things up.

Dr. Lapovsky. It is hard to summarize. The question has come up as to who should give treatment to these afflicted patients? When I was reading a review of a new book by Hollingworth on social class and mental disorder, I noted that the reviewer said, "What is needed in America is a better $3.00 psychotherapist." Well, actually, the country has a good $3.00 psychotherapist; he is the good general practitioner. And it is my hope that the general practitioner will not be overwhelmed by some of the literature which surrounds him today. I hope he will keep trying to understand some of these problems. In a work which came out of England, written by Dr. Michael Balint, the author said that the duty of psychiatrists was to instruct the general practitioner; the psychiatrist will simply be his aid. I hope that this is the way that it will be in the near future.

The tranquilizers play a very important part in psychiatry, not only in the treatment of these patients that we see, but also in the production of disease. Marsilid has been criticized as a creator of psychosis. Any potent drug can produce severe mental changes. The other day in the hospital I saw a girl who was put on salicylates and developed a delusional psychosis. When she was taken off this drug, the psychosis disappeared.

Now, these drugs euphemistically called tranquilizers are not always tranquilizers; they are sometimes stupefiers. When they are given to the depressive patient especially, they will knock the patient out so that he really becomes depressed. Many patients who get the drugs for hypertension will develop a depression. It is important today in the middle-aged patient, to find out whether he is taking a tranquilizer. And patients today are constantly looking for tranquilizers or psychic energizers. One of the functions that a practitioner can fulfill is to explain to patients that they have tranquilizers within themselves and energizers within themselves which they should have confidence in and use.

A doctor here mentioned Nostyn. There are many drugs, and various patients will respond to one drug and not to another. I was amused by a patient of mine who tried the several tranquilizers, and she said to me, "Doctor, I still take my red bottle of phenobarbital and I think it's the best."

There is one phenothiazine derivative that produced a syndrome I had seen. I thought that it was something new, but it was just another behavior pattern and it has turned up in a few other patients. A doctor called me and said, "I have a patient with an acute hysteria. She won't talk; she says her jaw is dislocated, her tongue is sticking, and she is spitting all over the place. I would like to have you look at her right away." I asked him if she was getting Trilafon. He said, "How did you know?" I told him that this happened, also, to a patient of mine.

In closing, I would like to stress the good medical maxims of listening to your patients and examining your patients. And if you do those things, especially the listening, you will learn a great deal about your patients, and you will often get the diagnosis.

Dr. Alvarez. Yes, that is so true. I would add this note. Dr. Charles H. Mayo once told me, "If you can't make the diagnosis, ask the man's wife, and often she'll give it to you." And he was right. I remember a farmer's wife with a diarrhea which I could not relieve. I could not guess the cause. When I admitted to the farmer that I was stumped, he said, "I would like to see Dr. Charlie." I went along to see what Dr. Charlie would do. He said to the man, "What do you think is the cause of the diarrhea?" And the farmer replied, "It's them damn chickens; ever since they got the diarrhea she's been nursing them and now she's got the trouble." Doctor Charlie asked the man to bring in some of the sick chickens to be examined in the laboratory. He did, and the chickens had avian tuberculosis. When we examined the woman, we found she had one of the rarest cases in history, of avian tuberculosis of her bowel.

Another time, I was stumped by the case of a man who had severe nausea in spells. I couldn't find anything wrong. He was a big jolly farmer so I could hardly call his trouble neurotic in origin. Again, remembering Dr. Charlie's advice, I asked the wife what was the matter with the man. She said disgustedly, "I don't know why he comes here to waste our money; he knows what is wrong. He goes on a binge of chewing tobacco and swallowing the juice and then he gets nauseated." The man grinned sheepishly and admitted his wife was right. So, there is a hint for you; often when puzzled about the triggering cause of a patient's neurosis, just ask the spouse and you'll have the diagnosis.

The other day a neurotic man was telling me how his father had dominated him and had ruined his life. The story sounded pathetic and I felt sorry for the fellow, but then I remembered Dr. Charlie's advice, and asked the man's brothers about him. They said, "We had the most wonderful father in the world, he spent many thousands of dollars trying to get our brother straightened out, he would help our brother in any way he wanted to be helped. No, our brother's troubles were of his own making." I have seen several instances in which a doctor got into trouble sympathizing with an insane person who was accusing his wife of going crazy. If the doctor had only talked to the man's friends, he would have found out who the insane person really was.

Now, I would like to thank all of you doctors here on the panel, and also all of you who were so patient and attentive here this morning. Without your interest, we would not have had such a fine discussion. Thank you very much.

All the world is queer save thee and me, and even thou art a little queer.—Robert Owen

Medical Aspects of Functional Disorders of the Esophagus

CHARLES A. FLOOD, M.D., NEW YORK CITY

(From the Department of Medicine, College of Physicians and Surgeons, Columbia University, and The Presbyterian Hospital)

FUNCTIONAL disorders of the esophagus can be defined as those conditions which are characterized primarily by a disturbance in physiology as contrasted with conditions in which an organic lesion is the dominant finding. Functional disorders may be regarded in some instances as of psychic origin.

The chief functions of the esophagus are motor. Recent physiologic studies have resulted in the development of a number of methods for investigation of the motor behavior of this organ. Both clinical and laboratory methods now are available which make it possible to study the propulsive motility of the body of the esophagus and the action of its sphincters. While the various methods are only roughly quantitative, they are of sufficient accuracy to be applicable to many clinical problems.

The motor disorders which are observed in diseases which involve the esophagus may be classified into those which affect predominantly the sphincteric activity at the lower end of the organ and those which affect chiefly the body of the esophagus. Although such a classification is quite artificial because impairment of motor function is usually not limited to one or another part of the organ, it is useful for convenience.

Persistent spasm of the region of the cardia is encountered mainly in patients with so-called achalasia. The reverse of cardiospasm, incompetence of the cardia is observed in a number of diseases. Perhaps the most common of these disorders is hiatus hernia. A group of other functional disorders primarily affect the motility of the body of the esophagus. The pathogenesis of the latter is not as well understood as that of the disorders which involve the sphincteric area. The present discussion will be devoted chiefly to the conditions in which spasm or incompetence of the cardia are the predominant features.

Achalasia

Achalasia, or idiopathic cardiospasm, is a disease in which the motility of both the body of the esophagus and the lower esophageal segment are affected. The smooth muscle at the cardiac end of the esophagus is spastically contracted, and the contents of the esophagus are prevented from entering the stomach. Peristalsis in the body of the esophagus is also impaired in this disease, the smooth muscle tone is diminished, and dilatation takes place. The intimate basis for these motor changes is believed by most workers to be an impairment in the intramural nerve supply in the esophageal wall.[1–5] Degeneration of the ganglion cells in the wall of the lower esophagus has been demonstrated on histologic examination by most investigators.

Achalasia recently has been subject to intensive physiologic investigation.[6–8] The available evidence supports the view that the disorder is a result of impaired cholinergic function. This view explains the loss of propulsive peristalsis and the failure of the cardia to relax as due to a derangement in the postganglionic parasympathetic nerve supply. Much of the evidence for this is based on studies at the clinical level. In fact, the clinical diagnosis of achalasia is based primarily on the demonstration of those physiologic abnormalities which are characteristic of the disorder.

For the most part the symptoms of achalasia are manifestations of the obstruction due to spasm at the lower end of the esophagus. The chief symptom of achalasia is dysphagia. The difficulty in swallowing may be constant or intermittent. Regurgitation occurs, especially during the night, and may give rise secondarily to pulmonary complaints. The spasm of the cardia is usually not painful. Pain is strikingly absent in most patients, but some individuals complain of episodes of pain which are usually referred to an area under the midportion of the sternum. Heartburn is seldom a symptom in patients with this disease.

The spasm at the cardia in achalasia is readily demonstrable on radiologic examination. The barium shadow of the filled esophagus tapers to a narrow point at the lower esophageal segment, a short distance above the diaphragm. During fluoroscopic examination the column of barium may be held up for many minutes at this point. After a time a thin trickle of barium usually can be seen to enter the stomach in interrupted jets.

A valuable method for the demonstration of the spasm of the lower esophageal segment is examination by means of bougienage. The spastic character of the obstruction generally is evident when the constricted area is palpated by this indirect method. A large bored stomach tube containing a flexible metal obturator has been proved useful for this purpose.[9] The instrument is passed to the level of obstruction. Gentle pressure fails to overcome the obstruction. Moreover, palpation reveals that the obstructed area is not fixed and tends to move up and down with the diaphragm during respiration. If gentle pressure with the bougie is maintained, the bougie will suddenly pass into the stomach after a period of time, denoting relaxation of the cardia. At times it may be necessary to wait for many minutes before the relaxation occurs. The length of time which elapses before relaxation occurs is usually greater in those patients who present an advanced stage of the disease.

Palpation by means of bougienage also may be of considerable value as an aid in the diagnosis of a variety of esophageal diseases. It aids in the differentiation between achalasia and obstruction at the cardia due to an organic lesion, such as carcinoma or stricture. The palpation of this region in patients who have a localized organic lesion usually reveals a point of fixed obstruction. Motion of the diaphragm during respiration is not transmitted, a sign which was designated by Crump as a "fixed point."[10] Moreover, the sudden relaxation of the cardia which denotes spasm in patients with achalasia fails to take place when there is organic obstruction.

The impairment in the motor activity of the body of the esophagus which occurs in patients with achalasia is readily seen during radiologic examination.[11] Primary peristaltic waves which are initiated by the swallowing of barium usually do not pass below the cervical portion of the esophagus, and the thoracic esophagus remains dilated. Peristaltic constrictions may occur in the midesophagus, but they fail to progress downward and are nonpropulsive in character, the so-called "phasic" or tertiary contractions. The absence of primary peristalsis following the swallowing act in achalasia has been demonstrated more precisely by intraesophageal pressure recordings registered by means of an open-tipped catheter or an intraluminal balloon.[6,7]

Nevertheless, the esophagus in achalasia does retain some ability to propel its contents distally.[12] In a recent study, it was noted that intraluminal distention of the upper esophagus will cause a propulsive contraction. If a condom balloon is introduced into the upper esophagus and is distended sufficiently with air, contraction of the esophageal wall takes place, and the balloon is propelled downward. The responsiveness of the esophagus to this type of stimulation tends to diminish from above downward. In most cases of achalasia little response takes place if the tip of the balloon is placed initially in the lower esophagus 35 cm. or more distal to the incisor teeth. The esophagus usually will propel a distended balloon down to the lower half of the organ. At times the balloon may even enter the stomach. Propulsive contractions secondary to intraluminal distention probably play a role clinically in the emptying of the esophagus in this disease. Moreover, such contractions may account for the hypertrophy of the muscle wall which frequently occurs.

The mechanism whereby the cardia opens from time to time in untreated achalasia and permits the esophageal contents to enter the stomach is not entirely clear. In the normal individual, the opening of the cardia which follows the swallowing act has been attributed to a coordinated relaxation of smooth muscle which occurs with the approach of a primary peristaltic wave. Since there is no evidence of a primary wave in the lower two thirds of the esophagus in the majority of patients with achalasia, some other stimulus must be responsible.

Patients with untreated achalasia often find that they are able to empty the esophagus partially during a meal by taking a drink of water. It seems likely that the column of esophageal contents may act in a manner similar to that observed during balloon distention and perhaps thus stimulates the opening of the cardia.

As a rule, the diagnosis of achalasia can be made readily on the basis of the clinical and radiologic picture and the characteristic findings on bougienage. In problematic situations, additional information may be proved by esophagoscopic examination and by the use of the "mecholyl test." On esophagoscopy the characteristic picture of achalasia is a dilated lumen with a mucosa which is thinly coated by adherent mucus. There may be evidence of esophagitis, particularly in the lower part of the organ.

When doubt exists as to diagnosis, the mecholyl test has been useful.[13] The subcutaneous administration of a small dose of a cholinergic stimulant, such as mecholyl or urecholine, produces severe substernal pain which is followed, at times, by retching or vomiting. Fluoroscopic examination at this time will reveal deep phasic contractions in the body of the esophagus. This type of reaction usually does not occur in patients with obstruction of the lower end of the esophagus due to other diseases. This abnormal response in achalasia has been attributed to denervation of the esophageal musculature. The dose of cholinergic drug which is usually sufficient to produce this response is less than the amount which is needed to produce a physiologic response in a normal individual.

Management in Achalasia

The treatment of patients with achalasia is designed primarily to relieve the obstruction in the region of the cardia. This obstruction can be relieved by the forcible stretching of the muscle at the cardia by instrumentation or by surgical intervention.

Forcible divulsion at the cardia can be accomplished in several ways. A variety of instruments are available which differ somewhat in principle. The Starck type of dilator which divulses the cardia by means of a system of distending metal blades controlled by the application of manual pressure affords the advantage that the degree of resistance of the cardia to stretching can be directly appreciated by the palpating hand.[14] Accordingly, the amount of pressure which is applied can be varied in relation to the resistance of the muscle at the cardia. The instrument is passed into the stomach and withdrawn to engage the cardia. The latter is then stretched by steady pressure until the muscular resistance is felt to yield. The degree of resistance of the spastic muscle is quite variable and may be extremely marked in some cases. The patient usually experiences moderately severe pain at the moment of stretching.

A variety of other types of instruments are available for divulsion of the cardia. In these the lower end is covered by a bag which is used for distention. The bag may be distended either with air or water. The pressure which is applied to the region of the cardia is measured manometrically. Using an air bag, a pressure of approximately 15 pounds per square inch is required in most instances in order to achieve an effective divulsion of the muscle. An important objection to the use of instruments which depend on measurements of manometric pressure as a guide is that they afford no information as to the degree of resistance of the cardia. This objection does not apply to the Starck dilator.

The effectiveness of treatment by divulsion can be estimated in several ways. Effective divulsion should enable the patient to eat a normal diet without symptoms. Subsequent examinations of the esophagus by bougienage should reveal no sense of obstruction at the level of the cardia. Radiologic study should demonstrate that barium passes continuously from the esophagus into the stomach.

The results of divulsion have been satisfactory in approximately 90 per cent of patients with achalasia treated in this clinic.[15] The patients have been able to eat a general diet and have experienced very little dysphagia, in most cases, since the time of treatment. In most patients only one attempt at divulsion has been required. However, sometimes the first attempt at divulsion fails, and the procedure may need to be repeated. An initial failure may be attributable to the application of insufficient force during the divulsion or to malpositioning of the instrument so that all of the contracted segment of the lower esophagus is not stretched. Occasionally a third attempt will be necessary.

After satisfactory results have been obtained, it is of interest that a number of factors may still produce transitory dysphagia in some patients, lasting for a few moments or throughout a whole meal. Episodes of unusual emotional distress may cause temporary dysphagia. An upper respiratory infection also may be accompanied by a transitory reappearance of difficulty in swallowing. Patients may complain of the need to eat slowly. This is particularly true of those with a markedly dilated esophagus and seems to be due to the accumulation of food in the esophagus which flows out slowly, much as material flows out slowly through the neck of a funnel.

After successful divulsion of the cardia has been carried out, the result is usually permanent. Occasionally recurrence of the symptoms of achalasia takes place in later years. In a follow-up study of 69 patients, recurrences were recorded in three patients after intervals of three to seven years.[15]

The relief of the obstruction at the cardia is not followed by a restoration of tone and peristalsis in the body of the esophagus. The latter changes are permanent and are apparently not the result of the presence of continuing obstruction at the cardia. Follow-up radiologic examinations after treatment may reveal that the degree of dilatation of the esophagus is less marked than that recorded before treatment. This difference is more apparent than real because the barium now leaves the esophagus more readily. Delayed emptying of the esophagus also can be demonstrated in a simple manner by the administration of 200 cc. of water and aspiration of the esophagus five minutes later. Although the esophagus will be found to be empty in most cases after successful treatment, a considerable residue of water may remain in some individuals, even though they are symptom-free and no palpable obstruction remains at the cardia.

The chief risk in the treatment of achalasia by divulsion is rupture of the esophagus. This occurred once in a series of 85 patients who were subjected to one or more divulsions. The patient whose esophagus was ruptured developed empyema from which he recovered after surgical drainage was performed. There has been no serious bleeding noted after divulsion.

No late sequelae are observed after divulsion. There are no symptoms which might suggest peptic esophagitis. A study of a series of 24 patients who have been subjected to successful divulsion failed to demonstrate evidence of reflux such as may occur after extensive destruction of the sphincteric mechanism.[16]

Divulsion of the cardia is either impossible or unsuccessful in approximately 10 per cent of patients with achalasia. Inability to introduce an instrument through the cardiac orifice is the chief difficulty in performing the procedure. This occurs principally in some of the patients who have a hugely dilated esophagus.

Occasional patients with achalasia in whom divulsion is technically feasible fail to respond to repeated attempts at this procedure. Two patients who were recently observed were subjected to repeated attempts at divulsion with only transitory relief. Both individuals appeared to have typical achalasia as appraised in terms of the diagnostic criteria described, and no explanation was apparent for the failure of repeated efforts at treatment.

A number of other conservative measures are sometimes recommended for the management of patients with achalasia. In our experience these measures have been of little value. Various drugs, including the nitrates, belladonna derivatives, and the newer anticholinergic drugs are ineffective in relieving cardiospasm as estimated either by symptomatic response or by resistance to bougienage. From a theoretic viewpoint, anticholinergic drugs seem contraindicated because they inhibit propulsive peristalsis. The introduction of local anesthetics such as pontocaine into the lower esophagus in an effort to relax the cardia has, in our experience, yielded disappointing results.

Gentle bougienage of the esophagus by means of the Hurst mercury-weighted dilators may afford transitory relief in achalasia.[17,18] Stretching of the cardia by this technic may facilitate the intake of food for a brief period. However, the Hurst type of mercury-weighted bougie does not divulse the contracted muscle at the cardia. Passage of the Hurst dilator usually fails to result in any lasting benefit, and these instruments should not usually be used in this disease to the exclusion of definitive therapy.

Incompetence of the Cardia

In recent years the clinical importance of the mechanism at the lower end of the esophagus which prevents the reflux of the gastric contents into the esophagus has become generally appreciated. The loss of this mechanism permits the regurgitation of the gastric contents into the esophagus and in time may result in the development of esophagitis. This phenomenon may take place in a number of disorders of which the most important is hiatus hernia. Loss of the sphincteric mechanism is also an important consideration in esophageal surgery, and surgical procedures which remove or bypass the region of the cardia may also result in the development of esophagitis.

The basis for the sphincteric type of action which normally prevents gastroesophageal regurgitation has been the subject of considerable study in recent years. It appears that three mechanisms may play some role in the prevention of gastroesophageal reflux. The actual importance of each is not fully settled at the present time. One factor is the angle of junction of the esophagus and the stomach.[19] Normally the lower end of the esophagus and the fundus of the stomach join at an acute angle. This is believed to result in a one-way valve effect, and while the esophageal contents may enter the stomach readily, the distended fundus tends to compress the lower end of the esophagus, thereby preventing reflux. The circular constriction of the lower esophagus by the diaphragm, the fibers of which insert into the esophageal wall, also may play a role in preventing the reflux of esophageal contents.[20]

The tonic contraction of the lower end of the esophagus constitutes a third mechanism for the prevention of reflux. Studies of intraluminal pressure in this region have shown that there is a zone of increased resting tonus.[21] There appears to be a sphincteric action at the lower end of the esophagus, although there is no anatomically demonstrable sphincter in this region.

The competence of the cardia in the prevention of gastroesophageal reflux can be tested clinically in several ways.[22] Radiologic demonstration of cardiac incompetence can be carried out readily. The stomach is filled with barium, and the patient is placed in the head-down position and is asked to strain. The patient is meanwhile rotated into various positions on the fluoroscopic table. If the cardia is incompetent, barium may be seen to well up from the stomach into the esophagus for variable distances. Gastroesophageal reflux likewise may be tested for by means of esophageal intubation. A small-bored stomach tube is passed, so that the lower tip lies in the esophagus. Histamine is administered, and the patient is placed in the Trendelenburg position. The esophageal contents are then aspirated periodically and tested for the presence of free hydrochloric acid. Recently a glass electrode has been placed in the esophagus in a similar manner for the purpose of making a continuous recording of changes in pH of the esophageal contents.[23]

It appears that the mechanisms for the prevention of esophageal reflux are less effective in the infant than in adults. Regurgitation of gastric contents is encountered commonly in infants who are subjected to radiologic examination.[24–26] This occurs in normal infants and also in infants who suffer clinically from frequent regurgitation. The clinical picture has been called chalasia. Apparently chalasia is most important clinically in the neonatal period but also occurs in older infants. The chief symptom is vomiting. The picture has been attributed to either excess cholinergic stimulation or inadequate sympathetic stimulation. Occasionally there has been recourse to surgery for the purpose of constricting the hiatus of the diaphragm.

In the normal adult evidence of incompetence of the cardia is an infrequent finding, and the gastroesophageal sphincteric mechanism is usually very effective. Radiologic examination reveals gastroesophageal reflux in only a very small percentage of individuals who are without esophageal symptoms. The intubation test for reflux, carried out in asymptomatic patients, yields evidence of gastroesophageal regurgitation in only a small proportion of individuals. In a recent study this procedure yielded positive findings in approximately 10 per cent of normal individuals.[22]

Cardiac Incompetence in Hiatus Hernia

Although hiatus hernia is really an organic or structural disease, it seems justifiable to include it in a discussion of functional disorders because the associated disturbances in function appear to play a dominant role in this clinical picture. The importance of cardiac incompetence as a factor in the clinical picture presented by some patients with hiatus hernia is generally appreciated. It is possible to demonstrate gastroesophageal reflux by the various technics mentioned in a substantial proportion of the patients. Thus, in a study of a group of patients with hiatus hernia, it was possible to demonstrate reflux in approximately 50 per cent of individuals by radiologic examination.[22] Intubation studies yielded evidence of reflux in a similar proportion of patients. The results were not always consistent when repeated in individual patients, and while such investigations support the concept of the importance of reflux in this disease, observations for the occurrence of reflux are of limited value in management of the individual patient.

Incompetence of the cardia is an important factor in the production of at least part of the clinical picture which is presented by patients with hiatus hernia. Reflux esophagitis has been recognized as a complication of hiatus hernia for many years.[19,27,28] It appears to be due to the contact of gastric juice with the squamous epithelium which lines the lower end of the esophagus. In patients with esophagitis and hiatus hernia, esophagoscopic examination typically reveals changes in the lower several centimeters of the esophageal mucosa immediately above the cardioesophageal junction. The change may consist merely of reddening of the mucosa. Superficial ulceration, granularity, and friability of the mucosa may be noted. Esophagoscopic examination often reveals that the cardiac orifice is unusually patulous, and that gastric contents tend to be regurgitated freely during the examination. Occasionally the inflammatory changes at the lower end of the esophagus may be associated with scarring, with resulting narrowing of the lumen and formation of a stricture.

Esophagitis is frequently the explanation for some of the symptoms of hiatus hernia. It may result in dysphagia because of organic obstruction. It probably is also the source of hemorrhage in many of the patients with hiatus hernia in whom bleeding occurs.

While esophagitis often accounts for hemorrhage or dysphagia occurring with hiatus hernia, the basis for the various types of distress which occur in patients with this disease is less well understood. The distress which accompanies hiatus hernia may be described as a substernal pain, resembling somewhat the epigastric pain which is typical of peptic ulcer. In other patients the distress often consists only of substernal burning. The majority of the patients with hiatus hernia also complain of a "gas pressure," which is usually referred to the xiphoid region.

These various types of distress often occur in patients with hiatus hernia who have definite gross evidence of esophagitis visualized at esophagoscopy. However, all of these types of pain or distress may likewise be encountered in patients with hiatus hernia who present no evidence of esophagitis on esophagoscopy. Heartburn, periodic substernal pain, or epigastric bloating are common complaints in patients with hiatus hernia whose esophagus appears essentially normal on esophagoscopic examination. A clinical diagnosis of reflux esophagitis on the basis of the symptom picture alone, without esophagoscopic confirmation, is therefore not always justified.

The medical management of hiatus hernia consists chiefly of measures which are symptomatically effective and tend to prevent gastroesophageal reflux and esophagitis. An ulcer type regimen is employed, and the horizontal position is avoided. A regimen of frequent feedings and alkalies similar to that prescribed for peptic ulcer is designed to aid in the neutralization of gastric acidity and in the treatment of esophagitis. The patient should be cautioned never to lie flat and to attempt to avoid positions which favor herniation of the cardia through the hiatus and which also favor gastroesophageal reflux. This program is advisable for patients who have peptic esophagitis as well as those patients in whom esophagitis is not demonstrated.

This type of program of medical management of patients with hiatus hernia yields relatively satisfactory symptomatic results. A recent survey of the long-term results of medical treatment in a group of 100 patients indicated that patients with hiatus hernia remain either free from symptoms or, at most, suffer from only mild symptoms readily relieved by medication during about half of the years of patient observation.[29] Incapacitating symptoms occurred rather uncommonly in the group studied and averaged only once in every ten years of patient observation. Complications such as hemorrhage or stricture usually could be treated effectively by conservative measures. There was no mortality due to hiatus hernia or to its complications in this group of 100 patients.

Surgical intervention was recommended and carried out in 15 per cent of this group of patients because medical treatment was unsatisfactory. A number of patients were satisfactorily relieved of symptoms after surgery, while in others the results were disappointing. At the present time the results of surgery in patients with hiatus hernia with intractable symptoms seem uneven, and the problem merits further study.

Simple Heartburn

Heartburn is a common complaint of many patients who present no evidence of organic disease of the esophagus. It may be an isolated symptom, but it is also rather common in patients with peptic ulcer, gallbladder disease, and other diseases of the gastrointestinal tract. It occurs characteristically as a burning sensation beneath the lower sternum. The patient often indicates that the sensation originates high in the epigastrium and travels upward. Simple heartburn, unlike the heartburn of patients with hiatus hernia, seldom has any relation to position and movement. It occurs chiefly after meals and does not wake the patient at night.

There is some evidence that patients with simple heartburn may suffer from incompetence of the cardia. Thus, in a study of a group of individuals with heartburn and miscellaneous gastrointestinal disorders without hiatus hernia, reflux of free hydrochloric acid into the esophagus was demonstrated in about 50 per cent of subjects by means of the intubation technic. Radiologic study yielded a smaller incidence of patients with demonstrable reflux, positive evidence having been encountered in only 10 per cent of patients by this method.[30]

The evidence that patients with simple heartburn have incompetence of the cardia is inconclusive, and the problem merits further study. However, esophagoscopic examination in such patients occasionally demonstrates the presence of esophagitis. The mucosa in the distal esophagus may be hyperemic, and superficial ulceration may be present at times.

The medical treatment of simple heartburn consists primarily of the use of diet and alkalies in a manner similar to that employed in hiatus hernia. The symptom usually can be readily relieved by the use of a variety of alkaline preparations. When heartburn is associated with an organic lesion elsewhere, it often responds to the treatment of the associated disease.

Incompetence of the Cardia in Other Disorders

Incompetence of the cardia may occur in a variety of other conditions. Surgical procedures which destroy the sphincteric mechanism may result in a free regurgitation of gastric contents into the esophagus and complicating esophagitis. It is apparent that operative procedures which may give rise to esophagitis should be undertaken only when the risk is justified.

Scleroderma probably results at times in incompetence of the cardia when this disease involves the esophagus. The patient with scleroderma may have an associated hiatus hernia which appears to be due to shortening of the esophagus. Esophagitis and stricture formation may supervene.

Miscellaneous Motor Disorders

There is a variety of other motor disorders involving the body of the esophagus which are less well defined than most of the disturbances that we have discussed. These are conditions which may or may not be associated with difficulty in swallowing. Their presence is usually revealed by radiologic examination.

Tertiary contractions of the esophagus are encountered not infrequently during x-ray examination of the esophagus. They may appear by x-ray as fine serrations or may be very prominent and produce a picture which is characterized by multiple saclike dilations. In the extreme form the condition is sometimes called diverticulosis of the esophagus.

A considerable number of the patients who present tertiary contractions belong to the older age group and have no symptoms which are related to the esophagus. Here the finding appears to lack clinical significance. Similar contractions also may be noted in patients who have idiopathic cardiospasm.

There is a group of patients who suffer from dysphagia, which appears to be due to spasm of the esophagus, and who do not fulfill the criteria which have been laid down for the diagnosis of achalasia. This condition has been referred to as diffuse spasm of the esophagus or sometimes as esophagitis.[31–33] The symptoms are essentially the same as those observed in typical achalasia. Radiologically the esophagus may be dilated and also present some of the features seen in achalasia. Johnstone[34] recently has directed attention to the fact that there may be radiologic evidence of diffuse muscular hypertrophy of the organ. Radiologically the thickened esophageal wall can be seen as a line running parallel to the column of barium. Large saccular dilatations of the esophagus may occur. Examination of the esophagus by means of bougienage characteristically reveals a sense of obstruction with delay in the passage of the bougie, involving at least a portion of the body of the esophagus, in contrast to typical achalasia in which the spasm is at the cardia.

Other patients present a somewhat different picture of diffuse esophageal spasm. Radiologic examination reveals diffuse narrowing of the esophagus. Examination by bougienage reveals a diffuse resistance throughout most of the esophagus.

These atypical instances of esophageal spasm are at present poorly understood. Some relief of dysphagia may result from periodic bougienage. Forcible divulsion of the region of the cardia is ineffective, and this procedure should not be expected to influence spasm in the body of the esophagus.

Another motor abnormality is the so-called contraction ring at the lower end of the esophagus.[35] This is revealed by x-ray as a zone of concentric narrowing which is located above the cardia. It occurs at times in association with hiatus hernia as well as without evidence of hernia. It is often an asymptomatic finding, but at times it appears to occasion dysphagia. Radiologic examination may reveal that a barium capsule is held up by the ring of contracted muscle. Spasm also may be detected at times by bougienage. When the condition is symptomatic, periodic bougienage may provide relief.

Summary

Functional disorders of the esophagus may be divided into those which affect chiefly the sphincteric activity at the cardia and those which affect principally the body of the esophagus. Spasm of the cardia is the outstanding characteristic of achalasia. It can be satisfactorily relieved by adequate divulsion of the muscle in 90 per cent of patients. Incompetence of the cardia occurs in a wide variety of conditions, including hiatus hernia and probably scleroderma and simple heartburn. Medical management of patients with an incompetent cardia is designed to prevent the esophagitis which may develop as a result of reflux of gastric contents. A variety of motor disorders which affect the body of the esophagus resulting in spasm also may give rise to dysphagia. The basis for the various types of diffuse spasm of the esophagus is not well understood. These conditions are often benefited by periodic bougienage.

180 Fort Washington Avenue,
New York 32

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Pediatric Surgery. Its Special Problems and Its Differences from Adult Surgery

GEORGE H. HUMPHREYS, III, M.D., NEW YORK CITY

(*From the Department of Surgery, Columbia University College of Physicians and Surgeons*)

IN PRIMITIVE times, when a high birth rate was counterbalanced by an equally high death rate and life for most people was a bitter struggle for survival, it was natural that children should receive little special attention. They were born, they survived or succumbed, and others took their places, but they did not count as individuals until they had weathered the vicissitudes of infancy and emerged as adolescents to contend for a place in the adult world. It was natural then for the child to be thought of, when he was thought of at all, as a small and inconsequential replica of his parents. He was dressed like them, his play imitated their work, and as soon as he was able, he was put to work learning the skills or trade of his parent. Even the artist, whose ability to reproduce what he saw was fundamental to his art, reflected this attitude. Throughout primitive art and down through the middle ages children and even babies were represented simply as small adults. Perhaps this was due not so much to lack of observation as to the concept that the child ought to be a small edition of his parents, and so he was represented, as the adult himself was represented, not literally, but in idealized or stylized form.

It was the artists of the Renaissance, however, with their keen sense of the realities of nature, who first broke with this tradition and recognized children and babies for what they were, special and different creatures from the adults they would become. It is curious that the doctor has been so slow in following the artist's lead. And among doctors the surgeon has been slowest of all. With few, though notable, exceptions, children's surgery is still done largely by men whose interests, knowledge, and skills center mainly on adult problems. Too often the child is still thought of as different merely in scale, smaller, and less important.

Now, however, the surgeon, spurred on by nonsurgical colleagues whose understanding of the special qualities of childhood antedate his by a generation, is coming to recognize better his own problems in this field. It is not the purpose of this discussion to enter the current controversy as to whether strict specialization in pediatric surgery is desirable. Rather, it seems important to emphasize at this time some of the important differences from adult surgery of which a surgeon must be aware if he intends to treat his children in a more enlightened way than did the medieval artist.

The artist noted mainly anatomic differences, and these are equally important to the surgeon. The child is not only smaller, but also differently proportioned. The younger the child, the greater is the difference, and the differences apply as much to internal as to external anatomy. The infant is all head and belly, but while his nervous system at first functions only at a primitive level, his gastrointestinal tract must function immediately and with a proportionate volume and efficiency which will never be equalled in later life. Thus pediatric and adult gastrointestinal surgery is technically similar even in the infant, and in the older child operations on stomach, intestine, and even esophagus do not differ in kind, although they do in both cause and

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effect, from operations on the same organs in adults.

Neurosurgery in infants, on the other hand, differs greatly from that in adults, because it deals with lesions never seen in adult life, and because its objective is future development rather than immediate function. The cardiorespiratory system goes through a complete metamorphosis at birth, and for months thereafter is changing rapidly, not only anatomically but functionally. The lungs, although relatively smaller in proportion to the infant's body, are more accessible than in adults, and intrathoracic operations are better tolerated, possibly because there is little negative intrathoracic pressure, and respiration normally depends more on muscular effort than skeletal rigidity. There is evidence that differentiation is not complete in the lungs at birth, and that loss of pulmonary tissue may be compensated for by true regenerative hypertrophy. This may also be true of the liver and kidney in infants.

The immaturity of the musculoskeletal system is one of the most well-known of differences. Not only are the bones soft and cartilagenous, making fractures less likely and less serious than in comparable injuries in adults, but all of the fibrous support of the body is softer, more clearly defined, and more readily manipulated, the younger the child. Thus corrective manipulations increase in ease and effectiveness with youth.

In all operations the factor of growth, which is unique to childhood, is of great importance. The effect of any injury which modifies or interferes with growth will be exaggerated with time, but growth is kind to the surgeon who works with its potential in mind, reducing and often all but eliminating the traces of past injury or intervention.

From a pathologic standpoint childhood also has its own problems. Peculiar to it are many congenital anomalies, some of which will have fatal results if not corrected. Atresias of the esophagus or intestine are examples. Less lethal but equally demanding of prompt and skillful attention are the anomalies of lip and palate at one end of the intestinal tract and of the anus and urogenital system at the other. Here there is need for that blending of delicacy of handling, boldness of concept, and discriminating timing which is essential in the often multiple-stage program which is necessary. Crude or inept surgery at the start may negate the most expert attention later and result in permanent crippling, both physical and psychologic, of an individual who could have been completely rehabilitated.

The possibilities of surgical correction of cardiac and vascular anomalies has in recent years added a new and brilliant chapter to pediatric surgery. If at times there has been overemphasis on the spectacular, the solid accomplishment and the promise of further progress is nonetheless real. But in this field there is still great need for the surgeon's complete understanding of the child as a whole, as well as the anatomic physiologic and technical problems of great complexity with which he is dealing.

While the surgeon's attention is inevitably directed largely to correction of anatomic abnormalities, he must not disregard the great physiologic differences of his child patient from the latter's adult counterpart. As with the factor of growth, the rapid metabolism of infancy both helps and hinders. Response to infection and trauma is vigorous, making relatively simple measures more promptly effectual than in later life. But if the potential result of the injury is not recognized or the treatment is tardy, severe or even irreparable damage may occur with alarming rapidity. On the other hand, healing and restoration of function is more rapid, and it is well that this is true, for childhood reserves are not as great. The balance between dehydration and overtreatment is delicate, and small errors make big differences. The relatively greater need of adequate nutrition is of far greater importance when procedures on the gastrointestinal tract are done. The stomach, especially, cannot be as successfully manipulated as it can in the adult, although technically the problems may seem comparable and relatively simple, for the child, and especially the baby, travels on its stomach more literally than any army. The child who cannot eat withers quickly. Chronic obstruction or abnormal losses from diarrhea or enterostomy are poorly tolerated. On the other hand, corrective procedures, from simple removal of a gangrenous appendix to the total evisceration which may be required to correct a severe malrotation, usually are not followed by prolonged dysfunction. Hence the experienced surgeon knows that if a child will not eat, he must search for what is wrong, whereas if appetite and defecation are normal he can count on the basic resiliency of childhood to overcome many problems which would be appalling in an adult.

The special psychologic aspects of childhood determine the surgeon's success to a greater degree than he is apt to realize. Normally a child is uncompromisingly honest, and he expects his elders to be the same. He withstands pain better than an adult, but he objects to being hurt. He objects even more to physical coercion, and he cannot forgive deception. To be stared at, especially by someone whose intentions he distrusts, is worst of all. Even at an early age he becomes rapidly and strongly conditioned against situations associated with these experiences.

The influence of parental attitudes on a child's behavior is well known to pediatricians, but too few surgeons realize how many parents bring their child to him with far greater fear than they would feel in going to him themselves as patients. This fear has often been transmitted unconsciously to the child, especially if the parents have been foolish enough to be evasive or deceptive in explaining the reason for the visit. Since a child lives from moment to moment there is no need for him to be apprehensive about entering a hospital unless he feels his parents' anxiety or has already been conditioned against it. But he must be told, by the surgeon if necessary, that he is going to stay. He must be made to feel that his parents have not deserted him and that he can trust the new people who are taking care of him.

Bearing these generalizations in mind, the surgeon who cares for children has in addition certain specific problems. His first object, whether the problem is an obvious injury or an obscure illness, is to establish confidence. For, without discounting the parents' history or the conclusions of the referring doctor, the surgeon can often learn most from his own experienced observation of the trustful child. This observation should at first be indirect, almost casual, till the child feels at ease in his presence. Physical signs in childhood, especially those involving pain or tenderness, are unconfused by the interpretive overtones of the more sophisticated adult, but they should be elicited with the greatest gentleness and sympathy. No child who is not already badly conditioned or deceived will resent being hurt if it appears to be unintentional. If he must be hurt deliberately he should be warned immediately in advance. The hurt must be acknowledged and the need for it made as comprehensible as possible. When bad conditioning occurs, a studied effort must be made to overcome it, for if this is not done, the scars it leaves may be far deeper and more serious than the injury the surgeon corrected.

The surgeon must be constantly aware of the possibilities peculiar to the age of his patient. He must, more often than in adult surgery, decide to operate without a clear-cut diagnosis, basing his decision on principle and probability. He must not be confused in operating for obstruction in the newborn, for example, if he encounters an anomaly of rotation instead of the atresia he had expected. At an older age the same clinical picture may result from a perforated appendix or an intussusception. He must weigh more carefully the risks of elaborate diagnostic methods, which result in no direct therapeutic gain, against the risk of an operation which may establish the diagnosis directly and at the same time provide the treatment. Choice of timing in elective operations, especially in the multiple procedures often required in reconstructive surgery, requires nice judgment and a high degree of individualization rather than rule of thumb.

Technically there is less contrast with adult surgery than might be expected. The problem of scale, though disturbing to a surgeon accustomed to adults, is balanced by clarity of anatomic structure and relative ease of dissection. There is no excuse for any surgeon to be rough, but the penalty of a heavy hand or a heavy instrument is greater, the smaller the child. Since every cubic centimeter of blood lost is a larger proportion of the child's total reserve, meticulous hemostasis is imperative. Similarly, loss or deprivation of food and fluid is proportionately greater each hour that it continues, and supportive treatment both during operation and in the postoperative period often plays a more important role in a sick child's recovery than does the actual operative procedure.

Finally, no surgeon who does not tenderly love his most recalcitrant patient, or consider the life of the tiniest baby as equal in value to any adult, should operate on children. Indeed, he is playing for far higher stakes in terms of human years of health or illness when he operates on a baby than when his patient is an elderly, albeit prominent, citizen. If he is as perceptive as he is skillful, he will be rewarded in ways that he cannot be by any adult. For his patients will hide nothing, revealing by every act their illness or their health. They will respond faithfully to his treatment, letting him know directly when he chooses the wrong course, and recovering, sometimes almost miraculously when his judgment has been right. Above all, they will trust him as no adult can do, and will give him, lest he betray that trust, a limitless inspiration to improve.

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ROBERT TURELL, M.D., *Editor*

Present Status and Recent Advances in Surgery of the Esophagus

FRANK GLENN, M.D., AND BJORN THORBJARNARSON, M.D., NEW YORK CITY

(*From the Department of Surgery, The New York Hospital-Cornell Medical Center*)

THE first successful operation for esophageal atresia was performed in 1941 after many unsuccessful attempts to correct this anomaly. The etiologic factors are not known. There does not seem to be a familial incidence, and the anomaly has been found in one of identical twins without occurring in the other. Detection of esophageal atresias is the responsibility of obstetricians and those trusted with the care of the newborn. Usually the symptoms follow the first attempt at feeding but may occur before. There is regurgitation of mucus and saliva and the feedings. This again is easily aspirated by the baby, and respiratory difficulties follow. These symptoms should encourage immediate investigation. According to DeBoer and Potts,[1] the newborn infant who chokes, breathes poorly, and whose nose and mouth are filled with excessive secretions has atresia of the esophagus until proved otherwise. The same is true of the infant who always coughs and regurgitates immediately when fed.

Diagnosis is established when the gavage tube meets resistance in the esophagus. Delineation with contrast material further establishes the diagnosis. The degree of the defects varies. The most common area for stenosis and atresia is at the level of the bifurcation of the trachea. Often an associated communication with the trachea or the right main stem bronchus exists. As a rule, this communication is with the distal segment of the esophagus and accounts for the often remarkable distention of the stomach with air. In the most common type of the anomaly, the upper end of the esophagus ends blindly, and fluids and food overflow to the tracheobronchial tree. DeBoer and Potts found most of their patients to be of this type—107 of a total of 113. Dr. Cameron Haight[2] has recently published his observations on over 200 patients with atresia of the esophagus. Surgical intervention is essential at the earliest possible opportunity. Gastrostomy alone does not help, since death is not caused by alimentary problems but aspiration pneumonia. The surgical approach now is through the right chest transpleurally. The operation consists of freeing the lower esophagus without injury to the blood supply. Intramural blood supply often is enough for maintaining a viable lower segment, but this may not be depended on. The esophageal hiatus may be dilated from the thoracic side and the cardia end of the stomach pulled up through the hiatus into the right chest to supply additional length. When a tracheo-esophageal fistula is present, there is usually enough length of the esophagus for primary anastomosis. In this respect it is important to observe whether air is in the stomach preoperatively. If gas is seen in the stomach, the operator may feel reasonably sure that the lower segment will be long enough to allow for primary anastomosis. If no air is seen in the stomach, it may mean that an atretic lower segment exists. Haight recommends in the case with no air in the stomach to do first a gastrostomy and probe the distal esophagus from the gastrostomy. In this way it may be determined if a patent lower segment exists. If primary anastomosis cannot be carried out, a cervical esophagostomy should be performed and a gastrostomy for feeding purposes and reestablishment of continuity left to a later date.

In a series of 201 patients, 42.7 per cent are still alive. Since 1947 over 60 per cent have survived.[2] Other congenital anomalies are quite common among these patients. Thus, in the series referred to, significant cardiovascular anomalies were found in 31 patients, none of whom survived. Gastrointestinal anomalies were found in 24, and only 5 survived. Even though a successful primary anastomosis has been carried out, late deaths may occasionally be expected resulting directly from the operation. These may occur from dilatations, or strictures resulting from the anastomosis, or recurrent fistulas. Occasionally, after healing of the anastomosis sudden death may occur from obstruction and dilatation of the proximal segment which presses on the trachea and causes suffocation. Late deaths also occur from associated congenital anomalies, such as heart disease and neurologic abnormalities. Haight recommends the use of the right colon and the right half of the transverse colon for esophageal reconstruction when this is needed. This has been used through a substernal tunnel in 7 patients. The age of the patients when this transplant was carried out varied from two to seven years. It is considered advisable to excise the distal segment of the esophagus if possible, since spontaneous perforation has been observed to occur in this location. High values for hydrochloric acid and pepsin in the stomach of these children have been observed.[2] It was suggested by the author that peptic ulceration of the colon used for replacement might occur. This has not been seen to happen as yet, but the question of performing vagotomy and a pyloroplasty at the time of reconstruction is raised. In the last 100 of Haight's patients, primary esophageal anastomosis was carried out in 77, and 67.5 per cent recovered from the operation. Fifty-three per cent are still living. Tracheoesophageal fistula without atresia is quite rare. When this occurs, it is much higher in the trachea than when associated with atresia. Symptoms of regurgitation and reflux into the tracheobronchial tree may occur early, since surgery was needed before three weeks in 5 of 7 patients.[2]

Diverticula of the Esophagus

Pulsion diverticula occur mainly at the upper end of the esophagus. The opening into these pouches is always posterior in the midline, at the junction of the oblique and lower transverse fibers of the inferior constrictor muscle or the cricopharyngeal muscle. This weak area is supposed to be where the food impinges in the first act of swallowing. The pouch, or diverticulum, is formed from only the mucosal lining with some muscular fibers around its neck. As the diverticulum enlarges it usually points to the left side of the neck. It is commoner in males than in females. According to Ingram and Foster[3] there are three males for every one female with the condition. The etiologic factors responsible for the formation of these diverticula, according to the same authors, are hypopharyngitis, healed inflammatory lesions of the cricopharyngeal fold leading to contraction and scarring, excessive contraction, and lack of relaxation.

This is usually a disease of adults and elderly people. The diverticulum produces symptoms by the stagnation of food and obstruction of the gullet. As the diverticulum enlarges it may descend through the thoracic inlet into the mediastinum. With the descensus of the diverticulum, the opening into the esophagus, instead of being on the posterior wall of that organ, becomes dependent from the weight of the sack, and any tubes or instruments passed into the esophagus from the oral side automatically end in the diverticulum. Hence the danger of instrumental perforation. The earlier successful surgical attacks on this problem by Lahey and others were often performed in two stages. The first consisted of exposure of the diverticulum and suspension of its dependent part from high up in the neck to promote drainage and decrease infection and induration around its neck. In a second stage the sack would then be excised and the opening in the esophagus closed.

The two-stage operation is not much used at present but is still to be considered when large diverticula accompanied by infection are encountered. The operation as it is performed now should carry a mortality of less than 1 per cent. It is performed through an incision parallel to the anterior border of the sternomastoid muscle. A collar-type incision also may be used. The location of the incision depends on which side the diverticulum descends. After exposing the diverticulum its neck is freed and the division started about 2 cm. from the wall of the gullet, since retraction may be expected from the muscle fibers and mucosa. There is often marked angulation of the lumen of the esophagus at this point. If an instrument or a rubber tube can be passed into the distal esophagus from the mouth, it often helps in defining the lumen and avoids encroachment. The closure is preferably carried out with silk in layers, one for each of the mucosa and muscle layers. Surgical excision of pharyngo-esophageal diverticula is advisable whenever the diagnosis is made. Often establishment of the diagnosis is easy, since there may be a palpable enlarging tumor in the neck with regurgitation of food into the mouth when this is pressed. The diagnosis is further confirmed by radiologic means. To visualize the smaller diverticula multiple exposures in different planes often are necessary to outline the diverticulum and separate it from the esophagus. Investigation by esophagoscopy is a valuable help in expert hands, but utmost care has to be exercised, since the walls of the long-standing diverticula often are friable, and perforation may occur easily.

Epiphrenic Diverticula

Epiphrenic diverticula arise about 5 to 6 cm. above the cardia and point anteriorly and to the right. These are sometimes true pulsion diverticula, but occasionally degenerative changes are found in the ganglia of the esophagus at this level. The changes in the ganglia, the ingestion of excessive amounts of alcohol, and peptic esophagitis have been implicated as etiologic factors.[4] Obstruction due to spasm or failure to relax of the circular musculature distal to both epiphrenic and pharyngeal diverticula also have been suspected of playing a part, but in spite of conflicting testimony achalasia does not seem to be a complicating factor. Various symptoms have been ascribed to epiphrenic diverticula. However, the symptoms usually are not characteristic for this condition, and the present feeling is that unless other diseases can be completely excluded or the diverticulum has reached enough size to retain contrast material on radiographic examination, surgery should be deferred. However, isolated reports do occur of serious complications resulting from diverticula in this region. One such is a report by McDaniel and Knepper[5] of an esophagopericardial fistula. It eventually led to the death of the patient.

Traction diverticula of the esophagus occur at the level of the bifurcation of the trachea and are usually associated with fibrous inflammatory bands between the esophageal wall and the tracheal lymph nodes. The wall consists of the full thickness of the esophagus and they rarely reach enough size to cause symptoms or require therapy. Before surgery is embarked on for any of these diverticula it is of utmost importance to obtain a complete examination of the entire gullet by radiologic and endoscopic means. In particular it is necessary to rule out obstructing lesions distal to the diverticulum. The surgery for traction diverticula and epiphrenic diverticula is carried out through the left side of the chest. The preferred method is excision with primary closure, but occasionally it may be indicated to suspend the diverticulum from a higher level and thus promote emptying. Certainly this has to be done if inflammatory changes seem to endanger secure closure of the esophagus.

Achalasia, Cardiospasm, Mega-Esophagus, and Idiopathic Dilatation of the Esophagus

With minor variations, it may be assumed that the names used above pertain to the same disease in different forms. According to Wilkins,[6] it seems to be agreed by most authorities that the basic problem is one of faulty innervation residing in Auerbach's plexus. Degenerative changes, absence, or reduction in number of ganglion cells have been described. The findings usually are present throughout the organ. A tight pinchcock mechanism at the cardia was once offered as an etiologic factor, but cases have been reported with hiatus hernia and achalasia.[7] In normal persons there is a decrease in pressure in the lower esophageal segment at the end of deglution; this is rarely observed in patients with achalasia. The disease is found in all age groups, but it is more common in women. The diagnosis is established by history of dysphagia and regurgitation. The radiographic examination may not reveal dilatation of the esophagus, but there is always a smooth narrowing at the lower end. On endoscopy ulceration and esophagitis may be apparent if stasis is present, and at the cardia there is a smooth concentric narrowing which yields to steady pressure. Endoscopy is of utmost importance in many of these people, since both organic strictures and neoplasms in their early stages may mimic achalasia.

Mecholyl (acetyl-beta-methylcholine-chloride) is used in the differential diagnosis of achalasia. When it is given to patients with this condition, the esophagus goes into characteristic violent tonic contraction which is not seen in normal individuals. Sweet[8] describes two types of achalasia. One is characterized by a narrow segment with a thin wall, the other by hypertrophied muscle around the lower end of the esophagus. The treatment of achalasia aims at eliminating the functional narrowing of the esophagus. This has been and often may be done successfully by hydrostatic dilatation. When the dilatations do not suffice, operative intervention is indicated, but it is a difficult problem to increase the lumen without causing regurgitation. Sweet advocates the Heller type myotomy for his type II achalasia and esophagogastrostomy for type I with added pyloroplasty and vagotomy. Herron *et al.*[9] evaluated the use of Finney pyloroplasty after the Heller operation in preventing esophagitis in dogs since its occurrence has been reported in up to 21 per cent of patients. The pyloroplasty was found quite effective in preventing this complication. Wangensteen[10] suggests placing an inflatable balloon inside the esophagus through a gastrostomy during the performance of a Heller myotomy and finds that the results are improved. Sellors[11] states that reflux does not occur after Heller myotomy. Brewer *et al.*[12] from this institution reported 89 patients with achalasia. Thirty of these patients were operated on. Esophagitis developed in 75 per cent of the patients when the operative intervention destroyed the normal sphincter mechanism at the cardia. The Heller myotomy gave satisfactory results in 10 of 12 patients.

The Heller type myotomy is probably the best operation for achalasia available at present. Serious consideration should be given to performing a pyloroplasty at the same time to facilitate gastric emptying and prevent regurgitation. Other operations on the esophagogastric junction for achalasia certainly should be combined with efforts to reduce acidity and facilitate gastric emptying as outlined.

Hiatus Hernia

Hernias through the esophageal hiatus usually have been divided into three types—the sliding hernia, agreed to be the most common; the para-esophageal, implying that the esophagogastric junction remains at the proper level but the fundus forms the herniated part, and the short esophageal type. Considerable discussion has centered on the frequency of occurrence of the short esophageal type, some authors maintaining that it is hardly ever seen, others meeting it fairly frequently. According to Humphreys and his associates,[13] the true congenital short esophageal hernia is characterized by the fact that the intrathoracic portion of the stomach derives its blood supply from the thoracic aorta but not from the branches of the celiac artery. Some evidence has been forwarded that the short esophagus encountered with symptomatic hiatus hernias is the result of peptic esophagitis rather than the cause of it.

The main symptoms of hiatus hernia, common to all the types, are caused by esophagitis, and hiatus hernia is generally considered the most frequent cause of reflux esophagitis. Lindskog and Kline[14] report that of 41 patients with sliding hiatus hernia, 29 per cent had esophagitis. Hiatus hernia is found by various estimates in from 2 to 9 per cent of all people having radiologic examination of the upper gastrointestinal tract.

All the causes of reflux esophagitis have not yet been fully elucidated, but there is inherent lack of resistance of the esophageal mucosa to gastric and intestinal secretions. Some of the factors involved in reflux esophagitis have been investigated and brought to light. Normally the esophagogastric junction is maintained below the level of the diaphragm. Among the mechanisms responsible for this is the action of a muscular sling formed by fibers of the right crus of the diaphragm. Another important element is the esophagophrenic ligament formed from fibers of the transversus abdominis muscle and extending from the undersurface of the diaphragm to the circumference of the lower esophagus. The left gastric artery which comes off the celiac artery is a large vessel accompanied by stout elements of the gastrohepatic ligament and also affords some support. The proper intra-abdominal pressure plays some part, and obesity with its increase in intra-abdominal contents and weakening of lean tissues probably plays an important part in some instances.

As long as the normal anatomic relationships are maintained there is an acute angle between the esophagogastric junction and the fundal part of the stomach. With distention of the fundus (the normal gas bubble) the spur formed by this angle has a valvelike action, allowing entrance into the stomach but preventing reflux. When this angle is lost, as always happens when herniation occurs, reflux is apt to result.

Two other elements may be mentioned as contributing to the symptomatology of esophagitis and hiatus hernia. Normally during the daytime the esophagus is bathed in the soothing and buffering solutions of saliva and mucous secretions. During sleep the stimuli necessary for production of saliva are absent, which may contribute somewhat to the frequent occurrence of pain during the night—usually only associated with recumbency. Most of the acid-pepsin producing part of the gastric mucosa is in the upper half of the stomach. Reflux of duodenal contents and the antral secretions tend to lower the acidity. When a hiatus hernia is present, there often may be a relative narrowing of the stomach at the level of the diaphragm, trapping acid contents in the pouch above with resulting undue potent action. Effler and Groves[15] think this may be a factor in the unusually severe symptoms often associated with the short esophagus hiatal hernias. All hiatus hernias are not symptomatic, and great care has to be exercised before symptoms may be justly attributed. Diseases of the stomach, duodenum, gallbladder, colon, and the heart all may appear in disguise and have to be ruled out. According to Lindskog and Kline,[14] 42 to 75 per cent of patients with peptic esophagitis also have a peptic ulcer. Saints triad, or the combination of gallstones, hiatus hernia, and diverticulosis of the colon, was found by Palmer[16] in 12 per cent of 214 patients. In the same group there was heart disease in nine instances, but 7 per cent of the group had symptoms mimicking angina or myocardial infarction. Duodenal or gastric ulcers were found in 58. Over a third of Palmer's patients were judged never to have had symptoms from the hernia, and only 13 per cent had classical symptoms. Maurer and Keirle[17] found that among 57 patients with symptomatic hiatus hernia, 67 per cent had symptoms which were caused by complications of the disease, and strictures were found among 10 in the series.

The evaluation of the patient with hiatus hernia must include endoscopy to prove or disprove the presence of esophagitis, in addition to ruling out symptomatic disease in the organs already enumerated. Once satisfactory evidence exists that a symptomatic hiatus hernia is present, surgical correction should be recommended.

For the uncomplicated hernia the best results have been obtained utilizing a transthoracic approach as described by Allison.[18] For the cases which have an esophagus which is too short to allow reduction of the stomach below the level of the diaphragm, Effler and Groves[15] recommend transplanting the esophagus anteriorly into a new hiatus combined with crushing of the phrenic nerve. Collins[19] recommends splitting the cardia to form a gastric tube distal to the esophagus allowing reduction of the remainder of the stomach below the diaphragm. Fisher and Johnson[20] report 7 patients with a short esophageal hiatus hernia which they treated by distal gastric resection, with the result that the hernia spontaneously disappeared, apparently from the reduction achieved in the acid-peptic factor. Strictures secondary to hiatus hernia and esophagitis introduce another factor difficult to overcome. Lindskog and Kline[14] advise distal esophagectomy combined with vagectomy, extensive proximal gastric resection, and gastrojejunostomy for irreversible stricture formation. Others advocate resecting the involved area along with the proximal part of the stomach and interposing a jejunal segment between the esophagus and pyloric part when stricture formation has occurred.

Whatever the procedure chosen for irreversible stricture formation, it has to fulfill two conditions: it must eliminate the problem of recurrent esophagitis and leave sufficient food reservoir to insure adequate nutritional status. Both these conditions are difficult to fulfill, and in some ways this is still an unsolved problem.

Caustic Burns of the Esophagus

Caustic burns of the esophagus commonly occur among two types of patients—children who accidentally find the harmful liquid, and adults bent on suicide. Most commonly the burns are caused by household lye, a crude mixture of sodium hydroxide with some sodium carbonate. The pathologic changes and course of events have been well described by Burford *et al.*[21] and Bosher *et al.*[22]

The earliest change is one of edema and congestion, especially of the submucosal layer, followed by inflammation and thrombosis of vessels. Sloughing of the superficial layers and muscle occurs to a varying extent. The healing process is one of fibrosis—formation of granulation tissue and irregular delayed epithelization. Bacterial invasion with some abscess formation may be seen in forty-eight hours. This infection is particularly prominent when slough is marked. Apparently the same rule holds for the esophagus as the skin integument; that healing is most complete after early epithelization. The older methods of treatment often have stressed early bouginage and dilatation. The authors here quoted showed that early bouginage in animals resulted in denuding the organ of its new epithelium so that the process had to start all over again. On the basis of experimental studies and clinical material it appears proper to give the esophagus complete rest in the early stages of the burn. When swallowing is possible, offer liquid by mouth but refrain from any attempts at dilatation for at least three weeks. After three weeks cautious esophagoscopy and judicious dilatation, preferably by following a swallowed string, may be carried out to determine the extent of damage done. Strictures which do not respond promptly to dilatation should be treated surgically immediately. Burford prefers to perform esophagogastrostomy, bringing the stomach into the chest. Other methods for esophageal replacement also may be used according to individual preference. Based on the studies reported, [21-23] the authors recommended that caustic burns of the esophagus be treated in the following manner:

1. Acute phase, invasive infection and tissue necrosis.
    - a. Absolute rest for the esophagus
    - b. Intravenous and gastrostomy feedings along with supportive therapy
    - c. Antibiotics
2. Acute phase over, oral feedings allowed.
3. By the end of the third week, endoscopy over a thread and judicious dilatation.
4. If several dilatations have no effect, surgery.
5. Surgery. Short strictures up to 5 cm., local resection with end-to-end anastomosis. Longer strictures, replacement with any of different methods. (The authors themselves used esophagogastrostomy.)

The utilization of the substernal route to bring the substitute esophagus up to the neck would seem desirable, since this would obviate the necessity for a thoracotomy. However, it should be borne in mind that carcinoma not infrequently arises in old burns of the esophagus, and excision at the time of reconstruction should be considered.

Carcinoma of the Esophagus

Cancer of the esophagus is not a common disease. It ranks as the seventh most common cause of death among carcinomas of the digestive organs and peritoneum, and every year over 4,000 people succumb to it in the United States.

The cause of carcinoma of the esophagus is not known, although chronic irritation and infection may play a part, as seems to be indicated by its occurrence in patients suffering from old lye burns of the gullet. Carcinoma of the esophagus is more common in men than women. Estimates vary from a ratio of 2:1 to 5:1. Although the largest number of cases is encountered in the older age groups, it also is found among younger patients. Postlethwait *et al.*[24] found 3 younger than 30 in a group of 253. Incidence according to location also varies with different reports. Mustard[25] finds the highest incidence in the upper third, Burnett and Moore,[26] and Postlethwait *et al.*[24] in the middle third.

With few exceptions this cancer is of the epidermoid type. Symptoms of dysphagia often arise early, and thus small lesions are not infrequently found. Diagnosis usually is easily established from history combined with roentgenologic studies and esophagoscopy. There is some evidence that distant spread may occur fairly late. Among 40 patients with resection of the esophagus done by Postlethwait *et al.*[24] only half were found to have lymph node metastases. Twenty-five autopsy studies in the same series showed no lymph node metastases in

5, although these were all late unresectable cases. Invasion of neighboring organs was found in 34 cases considered unresectable. Fourteen times the invasion of a single organ (bronchus, trachea, aorta) was the only reason why a definitive procedure could not be carried out.

Two methods of treatment have been used in combating this disease; radiotherapy and surgery. Since most of the lesions are squamous cell carcinomas, response to radiation is often good, and it is common to almost all reports that the initial salvage rate is higher for radiotherapy than surgery. When three years have lapsed since treatment was instituted, however, most of the survivors are surgical patients. The reason for this discrepancy rests on the high operative mortality, which averages about 25 per cent for curative resections. Mustard[25] feels that cobalt therapy may be as efficacious as surgery for carcinoma of the esophagus and observes that surgery is more successful in the lower third of the esophagus. Smithers[27] reports on 314 patients. Sixty-five of these were never treated in any way, 62 were dead within six months, and none survived two years. Twenty were treated by resection, 12 died within six months, and 1 survived over two years. Radiation therapy was given to 229 patients. One hundred twenty of these were dead within six months, and 20 lived for over two years. Mustard[25] had 381 cases. Over half of these died within six months regardless of therapy; four fifths were dead within one year. One of each 10 lived for two years, and only 3 per cent lived for five years or more. There were 8 five-year survivors in his group. Five of the lesions were located in the hypopharynx, one in the midesophagus, and two were adenocarcinomas of the lower third (where origin from the esophagus might be questioned). All but one of these eight lesions were treated by surgery. Postlethwait *et al.*[24] and Petrow[28] observe that resectability of esophageal lesions seems to be increasing and operative mortality decreasing. In Petrow's series of 10 patients operated on in 1952, only 1 died.

The majority of patients with carcinoma of the esophagus are in poor physical condition when they present themselves for therapy. There is almost invariably marked weight loss and often borderline cachexia from progressive dysphagia. The problem of building up these persons and preparing them for surgery is severe. Correction of electrolyte imbalance and blood deficits is essential. Proper mouth care and antibiotic therapy for fungating and infected lesions are also important. Sometimes small caliber tubes may be threaded through the lesion into the stomach and feedings thus supplemented. Gastrostomy and tube feedings often are successful in building up the depleted strength of the patients, but occasionally debilitating diarrhea results. As a rule better results are observed from using whole meals of different foodstuffs prepared in a mechanical blender than from the classical tube feedings. The role of gastrostomy in palliative treatment of carcinoma of the esophagus is debated. Although occasional benefit may be derived by controlling dehydration, symptomatic relief is seldom marked, and life is usually prolonged for only short periods compared to no treatment at all.[24]

Surgical Approach

Because of the tendency to submucosal spread of carcinoma of the esophagus, it is important to remove an adequate length of this organ on either side of the primary lesion. The lymphatic drainage of the lower esophagus, in addition to going to mediastinal nodes, also extends down along the left gastric vessels and lesser curvature of the stomach. To effect a radical excision of lesions in the lower third, the upper half of the lesser curvature of the stomach along with the fundus and spleen also should be removed en block. The stomach tube remaining derives its blood supply from the right gastric and right gastroepiploic vessels and may be comfortably anastomosed to the proximal esophagus under the aortic arch through a left thoraco-abdominal approach. The left-sided approach to malignant lesions of the middle esophagus at a higher level always has been a problem because of the aortic arch. Postlethwait *et al.*[24] recommends a left-sided thoracotomy with removal of the fourth and ninth ribs to give adequate exposure of the entire thoracoesophagus. A right-sided thoracic approach gives excellent exposure of the entire thoracic esophagus. However, in order to complete the operation additional incisions usually are needed in the abdomen and neck regions to permit mobilization and anastomosis of the stomach or another organ to be used for re-establishment of continuity. When this is done in one stage, it is a procedure of major undertaking, especially for the debilitated patients. A more elaborate approach which might result in lower mortality and greater salvage rate is recommended by Scanlon.[29] This consists of a two-stage operation. The first stage is a total esophagectomy through a right thoracic approach combined with proximal gastrectomy and splenectomy. The proximal esophagus is brought out as a fistula in the neck and a gastrostomy is performed for feeding purposes. Six months later, after irradiation, continuity is established by performing esophagocologastrostomy, using the right colon as a transplant through a substernal tunnel. The Wookey operation still has a place for hypopharyngeal lesions. According to Mustard, a few of these have resulted in five-year cures. The surgical treatment of carcinoma of the esophagus is still not standardized. As long as operative mortality varies from 10 to 50 per cent and five-year survivals vary from 3 to 5.5 per cent, there is room for improvement. Proper attention to preoperative nutrition and properly staged procedures when this is difficult seem to offer hope of better results in the future. These efforts should be persisted in, since most of the long-term survivors of this disease have been treated surgically.

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NEW YORK ALLERGY SOCIETY

SHEPPARD SIEGAL, M.D., *Editor*

Held at the HOTEL PIERRE FEBRUARY 27, 1958

Dinner in Honor of Robert A. Cooke, M.D.

LEONI N. CLAMAN, M.D., *President, Chairman*

DR. LEONI N. CLAMAN: Dr. Cooke, ladies and gentlemen, I take great pleasure in greeting you this evening, on an important occasion—the founding of the first Allergy Clinic, forty years ago. The opening of this clinic paved the way for the establishment of allergy as a medical specialty.

In observing this anniversary, we are gathered here to honor the man who had the vision and ability to start this new specialty on its way, who has established it on a firm, scientific basis, and who has from the very beginning continued to seek out improved methods of diagnosis and treatment. More than that, he has continually added to the body of knowledge in this field, has continued to integrate this knowledge with that of related fields in medicine, and has fulfilled his sense of obligation to teach and train other physicians so that this work and this knowledge can be carried out in all the far places of the world.

This man, as we all well know, is Dr. Robert Anderson Cooke, director of the Institute of Allergy at the Roosevelt Hospital, founder and past president of the Association for the Study of Asthma and Allied Conditions, consultant, author, educator, honorary fellow of the American Academy of Allergy and of the Allergy Societies of Argentina, Brazil, Cuba, France, and Spain.

It is a great privilege to hear from Dr. Cooke, who, I think you will agree with me, bears to allergy the same relationship that Pasteur does to bacteriology or Freud to psychiatry; to hear from Dr. Cooke his own ideas and views on the past, the present, and the future of his chosen field. Before we hear him, however, we have a pleasant prologue.

Some of you may have wondered at one time or another how to become a president. Perhaps the gentleman I am about to introduce will tell us, or perhaps it is a secret. Anyway, there is a very interesting story connected with this gentleman.

It seems that early in the days of the Allergy Foundation of America, when it was still the American Foundation for Allergic Diseases, a request for the first pamphlet, which was called "Hay Fever and What You Can Do About It," was received at the office on very elegant stationery and very discreetly up in the left hand corner of this stationery in very small print was the word "President."

The gentleman who wrote that letter is with us tonight. He's now president of the Allergy Foundation of America, as well as president, as attested by the word on the stationery, of the Seamen's Bank for Savings. I think the interesting part of the story is what happened between the request for information and becoming president, and perhaps he will tell us.

Ladies and gentlemen, I would like to introduce Mr. John D. Butt, president of the Allergy Foundation of America.

MR. JOHN D. BUTT: Thank you very much, Dr. Claman. Distinguished guests, distinguished ladies and gentlemen, see how you can get into a thing like this so innocently. I did write for one of those darn old hay fever pamphlets, but I never thought I'd end up here. The occasion tonight, of course, is a grand one. It is a privilege to have the opportunity to share with you this public recognition of the profound achievements made in the field of allergy by Dr. Robert A. Cooke.

We of the Allergy Foundation of America feel singularly fortunate to have his unerring judgment as guidance of our scientific and educational council. Now, on this occasion to honor him, I have a pleasant, a most pleasant role, the presentation on behalf of the Allergy Foundation of America of a scroll of remembrance to Dr. Cooke, which I should like to read to you.

> "The Allergy Foundation of America, dedicated to the advancement of allergy as a medical science, and as a clinical discipline, joins with the New York Allergy Society on this 27th day of February, 1958, to salute Robert Anderson Cooke, A.B., A.M., M.D., D.Sc., chairman of the Scientific and Educational Council, Allergy Foundation of America, a distinguished scientist and a superb physician. Dr. Cooke has made fundamental contributions to the knowledge and understanding of the problems of hypersensitivity and therapeutic measures for their relief.
>
> An inspiring teacher, he has trained many of those who now world-wide serve eminently as teachers, investigators, and practitioners in the field of allergy.
>
> Dr. Cooke founded the first Allergy Clinic at the New York Hospital in 1919. He subsequently developed at the Roosevelt Hospital in New York City, the Institute of Allergy, which has become under his direction and guidance a model for similar institutions everywhere.
>
> Dr. Cooke personifies the great physician in his meticulous attention to his patients and his sympathetic concern for their well-being. Throughout his long, continued participation in medical education, undergraduate and postgraduate, he has been the exemplification of the great teacher. He has written many scientific papers and books and in 1923 founded the Association for the Study of Asthma and Allied Conditions.
>
> Most noteworthy is the respect, admiration, and warm, deep-seated affection which he has invoked in those privileged to work with him. For great accomplishments in the past, for the enrichment of the present, and for the continued achievements of the future, the Allergy Foundation of America is proud to salute Dr. Robert Anderson Cooke."

Signed by myself and Dr. Murray Peshkin, secretary.

Address by Dr. Robert A. Cooke

DR. ROBERT A. COOKE: Madam President, Mr. Butt, honored guests and fellow members of the New York Allergy Society: As I receive this scroll from you, Mr. Butt, it is understandable that there should arise within me many and various emotions and thoughts of the past, the present, and even the future. But first of all I feel that I am merely one of the many men whom it has been my good fortune to have as associates in my professional life, and that I am accepting this tribute as the representative of this loyal and industrious group of physicians dedicated to work and study in allergy. In addition to the natural sense of pride that I should be thus honored by the American Foundation for Allergy and the New York Allergy Society, there is also stimulated a keen sense of the continuing responsibility to attack the many problems still confronting us in this field.

When the matter of this delightful occasion was brought to my attention and with it the suggestion that I would be called upon for a talk, it seemed to me that perhaps reminiscences of the past might be most appropriate.

How did you get started in this kind of work?—it wasn't called allergy in those days—what led you into this particular field?—these are perhaps the commonest queries that are made.

Well, as I have thought it over there are three factors that I think are the responsible determinants for my course in life, and as I relate the story I think you will agree that it was "a natural" for me to go into medicine and into the branch of medicine to which I have given largely of my time and attention.

So I shall ask you to go back with me to those earlier starting years and tell you some of the happenings over the years, some events that seem to have been significant and interesting to me, and I hope to all of you. As Browning said it, "Grow old along with me. The best is yet to be, the last of life for which the first was made." How true that is—but likely many of you are not yet old enough to realize it.

The first of these factors, I believe, was my inheritance for which I can claim not the least responsibility. That eminent physician and metaphysician of olden times, Sir Thomas Browne, when honored by knighthood by his king about 1730, made comment to this effect, though unfortunately I cannot quote him precisely—"For whatever of these virtues of integrity, piety, industry, courage, and intelligence I may have exhibited in life, for whatever I may have worthily accomplished in life, I can claim no responsibility nor be prideful because of them, for they were laid down in the same egg and came into the world with me." We cannot get away from those determining and determined little genes. And so it was with me, for my great-grandfather was a physician in the Revolutionary War, then his oldest son, my grandfather, and again his oldest son, my father, and finally his oldest son, who turned out to be myself, all carried on the medical tradition.

The second element that fostered my natural interest was the fact that from the age of eight I was an asthmatic child and continuously so, inhaling little volcanos of Himrod's asthma powder and vomiting from syrup of ipecac and squill. Adrenalin was not yet known. After two or three years of this, in 1890 I was finally shipped off to boarding school and after twenty-four hours, much to everyone's surprise and delight, breathing was normal—no asthma! Vacations were a nightmare as asthma always returned at home. This was my earliest experience with environmental factors in asthma.

Through college and medical school the attacks of asthma were clearly traceable to two factors—contact with animals especially horse, which was the primary one in childhood, and infections such as bronchitis.

At this time Adrenalin was the new miracle drug of the day, and what a boon! I judge I have put as much Adrenalin under my skin as any human alive and fortunate it was, for the years 1905 to 1907 were still the horse and buggy days when I was an intern at the Presbyterian Hospital—we didn't have residencies in those halcyon years. Horse-drawn ambulances were the order of the day, and my second six months as bus-surgeon would have been impossible were it not for my Adrenalin kit.

Then in 1908 came the third, and a crucial event it was, in commanding my interest and course in life. As an assistant attending on the Cornell division at Bellevue under Frank Meara, I volunteered to assist Dr. Josh Hartwell in an emergency tracheotomy on a ward patient. The next day we were told she had laryngeal diphtheria and that we must be immunized. Although human deaths from the antitoxin were occasionally reported and Theobold Smith had written on sensitivity to serum in animals, using Richet's term anaphylaxis, there still was no clear conception of the relationship of the two phenomena, serum shock and asthma from horse contact. Howard Mason and I were living together at that time and he gave me the immunizing dose of antitoxin. Before he had finished I was gasping for breath. It was a close call. Adrenalin and artificial respiration pulled me through, and I regained consciousness some ten hours later. Though we were then M.D.'s of less than four years, nothing of this sort was being taught; in fact it would be accurate to say little of anything was being taught in medical schools; one had to pay for an extracurricular quiz in order really to learn medicine in preparation for hospital exams. Immunology as a field in its own right was not yet born.

So you can see how with inheritance factors predisposing to medicine and inherited genes for allergy I can take no personal credit for being what I am, but only a pride in what my ancestors provided in the assortment of genes that accidentally fell in the same ovum that in due time was christened with the name I bear.

Thus it was that in 1910 Bert Vander Veer, a hay fever subject, and I, an asthmatic, began studies of these hypersensitivities in humans. How to do tests, the significance of positive reactions, and how to make test extracts were the principal problems of the time.

Careful histories of patients soon disclosed the familial relationship, the curious association in one patient of many clinical manifestations or idiosyncrasies, as they were then called. We settled on the intracutaneous method of testing, the standardization of extracts by the nitrogen content, and the collection of air-borne pollens, animal danders, and various foods which were suspected from patients' histories. This led to our first major publication in 1915 on "Human Sensitization," relating our work beginning in 1911. This created considerable attention in the medical world and resulted in plenty of material for clinical study.

At Cornell the Division of Applied Immunology under the Department of Bacteriology was created for me, and by that time Richard Weil and Arthur Coca were deep in the study of anaphylaxis, a subject which literally took by storm the workers in laboratories of medical schools over the world. Lectures to medical third-year students were given at Cornell, and in 1918 we were ready to open the first clinic for diseases of allergy under the medical division of the New York Hospital at its 16th Street location. Arthur Coca had joined me there in charge of the laboratory for preparation of extracts and for research. In the preliminary discussions with Walter Niles, then dean of the Cornell Medical College, three points were made outlining the scope of our work and its necessity. Our purpose was to treat patients up to this time neglected, to teach medical science in this new subject of immunology, and to carry on research in a virgin and promising field.

Since the board of governors of the Hospital was concerned by the possible cost of such a venture we secured gifts from some patients to the extent of $15,000 over a period of two years. I remember that Jesse Straus, later ambassador to England, and his brother Percy, Frederick Pratt of Brooklyn, and one or two others were our guarantors. For this reason monies from clinic patients were kept in a segregated account, and it is of interest to note that up to 1932 when the New York Hospital moved to its present quarters on East 68th Street and our clinic moved to Roosevelt Hospital, we had managed to pay all clinic and laboratory expenses and still had a balance of $15,000 which was graciously turned over to the Roosevelt Hospital trustees who have perpetuated this system to the present. Active among my associates were Bob Chobot, Selian Hebald, both still members of our group, Bill Spain, now deceased, Aaron Brown, Matty Walzer, and others.

I still remember that day in the spring of 1918 when we opened our doors to a surging crowd of patients who had gotten word from some advance news publicity. Bert Vander Veer, Aaron Brown, and I were very busy beavers that afternoon. Shortly other doctors joined us, intrigued by this new procedure, until we carried a staff of ten distributed over the four clinic sessions each week.

It was an interesting, exciting time, and so busy that in 1922 we had gathered data and written articles on various subjects sufficient to fill the March issue of the *Journal of Immunology* which had only just reached its seventh year of publication. We were then working on technics for testing, for making better extracts, seeking new causes, and improving specific therapy.

It might interest you to hear of how we uncovered a few new and heretofore unsuspected agents. Remember my personal experiences with environmental factors. World War I was still in progress when a young soldier with asthma was referred to us. From childhood he had had asthma until he was drafted and sent to an army camp in Texas, whereupon his asthma promptly vanished only to return on his furlough home. All tests with our then known agents were negative. He was instructed to bring a supply of vacuum dust from his house. An extract made from this gave not only a positive skin test reaction but precipitated a prompt asthmatic attack. Here was impressive evidence of a new environmental cause which has turned out to be one of the most frequent of inhalant factors, although we still do not know just what its origin is since it is independent of all known sources such as pollen and danders.

Another instance of the finding of a new environmental agent was in the case of a boy of five years. Bert Vander Veer and I drove out to Coney Island one afternoon to find a youngster severely dyspneic, propped up in bed with a mountain of pillows. Our curiosity led us to open a pillow, and we were amazed to find it stuffed with rabbit hair, a common middle-European practice. The boy was moved to the hospital, and in less than two days was entirely free. We took the pillow—an extract of the hair gave a positive reaction. Shortly after we came upon goat hair used in pillows and mattresses by immigrants from the Mediterranean area. This, too, was a frequent cause among our clinic patients. It is interesting that a year or so after these disclosures of the extensive use and danger of unprocessed filling then used for upholstery, the practice in the New York area ceased to exist. The same thing held for the use of cotton containing the hulls and seeds of the plant.

Through the years of the twenties there was great activity in the field of allergy, as it now was generally known—medical men taking it up as a work of special interest, new clinics being established at the hospitals, and research in immunology, especially anaphylaxis, in progress in many laboratories. For allergy an event of outstanding importance took place in 1921 when Prausnitz and Küstner demonstrated that the active factor of reaction, an antibody so-called, was present in the serums of certain allergic patients, and this reaction could be transferred to nonsensitive normals by the injection of these serums into the skin—the Prausnitz-Küstner phenomenon of passive transfer.

This too was a time when discussion groups were formed, and the Society for the Study of Asthma and Allied Conditions was born in 1923. I remember the Saturday afternoon when Warfield Longcope, Oscar Schloss, Bert Vander Veer, Arthur Coca, Will Spain, Harry Alexander, and perhaps one or two others met in my office and organized the Society for the Study of Asthma and Allied Conditions. Shortly after we had a first meeting in Atlantic City on a Sunday in May preceding the meeting of the Association of American Physicians. It was a small but enthusiastic group and the details are recorded in the archives of the existing American Academy of Allergy which grew out of the amalgamation of this Eastern with the so-called "Western" allergists.

I recall too how another society, your society, was founded. Shortly after our clinic was started in 1918 all of the men connected there used to meet evenings once or twice a month at my office to discuss our work and review articles appearing in various foreign magazines. With new clinics started and more doctors engaged, it outgrew that cramped space and we held meetings in the Erdmann auditorium of the Post-Graduate Hospital. It was from this informal study group that steps were taken to organize our New York Allergy Society, which now occupies an important place in the life and work of all of us members.

Another important step for allergy was taken about this time when the American Board of Internal Medicine, recognizing the value of the allergy concept in medicine, established the subspecialty board for allergy certification, and the Council on Medical Education of the American Medical Association and the American College of Physicians began the approval of hospitals for residency training in allergy.

It was in the early thirties that New York Hospital and Cornell Medical College had completed their plans and were ready to move to their present home on the East River at 68th Street. A clinic the size of ours, with a patient attendance of about 200 a day, did not fit well into the new scheme of teaching. We were invited to join the Roosevelt Hospital, and in 1932 we moved lock, stock, and barrel with our staff, both medical and clerical, our patients and their records; and the governors of the New York Hospital graciously gave to the trustees of Roosevelt Hospital the balance of our funds so that the transfer was completed without expense or financial risk. Facilities for therapy and laboratories for research were prepared, and so we continued to prosper along all lines, giving postgraduate courses in allergy for the American College of Physicians, conducting research, and treating patients.

Mr. Dominick was president of the board of trustees at Roosevelt Hospital when in 1950 at his suggestion the Institute of Allergy of the Roosevelt Hospital was created, merely a new name and recognition of our work in the Hospital. Then in 1952 came the fortunate move to a fourth floor in the new Tower Building with splendidly equipped research facilities and treatment quarters.

At present we have a clinic staff of 20 and an attending staff of six, each with two months a year of allergy ward service. There are three or four residents, all of whom have previously qualified for their boards in internal medicine or pediatrics, and from time to time graduate fellows. For research in chemistry, immunology, bacteriology, and pathology there is a full-time staff there. That is as far as our present facilities and space will permit. Now that is a rapid and cursory review of the developments of that first allergy clinic whose forty years of treatment and activity are being recognized tonight. But what of the future—the future for the Institute and the future of allergy.

It would be foolhardy for anyone and certainly for me to predict what the future may hold. We know our needs and what we would like to do. For one thing we could use more space, particularly to enlarge our research facilities to embrace other lines of endeavor, for as one learns new avenues of approach are revealed. We need experts in virology, enzymology, physiology, genetics, and tissue culture, for example, for research is a highly technical field and every problem today requires a coordinated study along several different lines and the clinician must be a member of the team, for in allergy we are dealing with a problem of man; and while animal research is vital, we still must not lose sight of the human subject, for what may apply for the animal does not necessarily apply for man. It is the mechanism of disease that is the dominating factor today in all investigative medicine, and that is what we are striving for—the basic facts—how, why, and where does sensitization develop for all types and manifestations of allergy that exhibit themselves in such a variety of ways?

In closing let me say to you, Madam President, to you, Mr. Butt, and to my confreres in the New York Allergy Society how deeply moved and grateful I am for the honor bestowed upon me tonight. To all of you practicing clinical allergy today, let me say that you have gotten yourselves into one of the most important, interesting, and exciting specialties in the field of medicine. Your satisfaction and success will depend largely on how successful you are in internal medicine, for allergy is and must always be a part of the broad field of medicine. There are many diseases of unknown cause and mechanisms in which an allergic component may explain some crucial part or phase of the reaction we call disease.

So guard your specialty well—don't be led astray with hasty and unproved etiologies and conclusions. Be your own severest critic; thus you will be successful and your specialty will command the respect that is its due. Thank you.

Introduction of Guests and Tributes to Dr. Cooke

Dr. Claman: Dr. Cooke, thank you very, very much. I am sure I speak for everyone when I thank you for this fascinating talk.

Before we go any further, I would like to introduce our guests at the speaker's table: Dr. Horace Baldwin on the left, chairman of the Board of the Allergy Foundation of America. Next Dr. Justin M. Andrews, director of the National Institute for Allergy and Infectious Diseases; Dr. William B. Sherman, past president of the American Academy of Allergy; Dr. Richard Kern, past president of the Association for the Study of Asthma and Allied Conditions, his other title will come in his introduction when he speaks; Dr. Francis Rackemann, on my left, another past president of the Association aforementioned, and his other titles will come when he speaks.

And then, on Dr. Cooke's right, Dr. Leslie Gay, another past president of the Association for the Study of Asthma and Allied Conditions, and Dr. Orville Withers, president of the American College of Allergists, who has come all the way from Kansas City to be here tonight. Then, Dr. Joseph Harkavy, who was the first president of the New York Allergy Society; Dr. Aaron Spielman, who is the president-elect of the New York Allergy Society; Dr. Walter Winkenwerder, Baltimore, past president of the American Academy of Allergy; and last but not least, Dr. Robert Chobot, another past president of the American Academy of Allergy.

We have other guests who are at the table before me—Mrs. Bush, the president of Roosevelt Hospital, and Mr. Bush, and Mr. George Roberts, the chairman of the board of Roosevelt Hospital, and Mrs. Roberts. Then we have some more presidents: Dr. Hershey, president of the New Jersey Allergy Society; Dr. Weiner, president of the Connecticut Allergy Society; and Dr. Pettit, president of the Philadelphia Allergy Society. We also have Dr. Charles Marple, who is the medical director of the Allergy Foundation of America—and if I have forgotten any other president present, please tell me and I'll introduce him.

At this point I know you want to hear from the other speakers, but if you will bear with me for a moment, I would like to read a few telegrams and letters that have come. There is a letter from Dr. Vander Veer, which was the first one that we received when we invited him to the dinner, and among other things, he says, "Naturally I would enjoy nothing better than to be there and see many of my old friends, but unfortunately I have to watch my step and a trip to New York in February might not be the wisest thing to do. Please give my best wishes to all and good luck in the coming year."

Dr. Albert Rowe, who says, "Please extend to Dr. Cooke my best wishes and my sincere appreciation for his great fundamental contribution past and present to our challenging allergy."

Mr. Morris Bonderesky, "Congratulations on the progress of allergy in your fortieth year. I can remember when you started this."

From Dr. Stanley Hampton, "Congratulations and best wishes to you and the New York Allergy Society. It is with deep regret that I cannot be present at this momentous occasion this evening."

From Dr. Becker, "Sorry I cannot be present to offer my most sincere congratulations on this noteworthy occasion. May God give you health and strength to continue your inspiring achievements. I am proud to be one of Cooke's boys."

Dr. Max Samter, who is president of the American Academy of Allergy and who is very sorry that he couldn't come, says, "In behalf of the American Academy of Allergy, I am sending you greetings and congratulations. I am sorry that I cannot be with you at this festive occasion. Rich honors to Dr. Robert A. Cooke and the fortieth anniversary of the first allergy clinic, and with sincere good wishes for this evening and the years ahead."

Dr. Harry Alexander: "Regret I cannot be present tonight to celebrate allergy's coming of middle age. Congratulations to Dr. Cooke and to those who participated with him in the clinic, which through the years has represented allergy at its best."

"Congratulations, your leadership has inspired thousands. Stay well, live long, we need you," from Dr. Samuel Feinberg.

"To the accolades of the occasion may I add my tribute to an outstanding humanitarian and a great physician," from Marguerite Arneth.

"Congratulations on celebrating fortieth anniversary of first allergy clinic. Sorry I cannot be with you," from Dr. Carl Arbesman.

"Dear Bob, congratulations on this much deserved honor to one who has pioneered in the specialty of allergy. No one has made greater contributions and no one man has done more to raise the standards of our specialty. Circumstances beyond my control prevent my presence on this happy and significant occasion. I hope that you will be blessed with good health and will celebrate many more such happy events," from George Piness, M.D.

"Congratulations and salutations to the most distinguished allergist in the United States. His scientific contributions, his devotion to the care of allergic patients, and his eagerness to share his knowledge with physicians everywhere rank him as a truly great man. Let me add my best wishes to those already received," from Dr. M. Coleman Harris, San Francisco.

Now, we have been hearing for quite a while that our lives are very much influenced by television. Don't worry, we are not going to play "Truth and Consequences," but I have borrowed another idea from another television program, and I will tell you the reason why. A number of these gentlemen here are going to speak to us quite briefly, and it wouldn't be quite fair if they are brief and at the end of each one of their little brief talks, I get up and make a speech of my own. Of course, I'd like to do that; those who know me know I like to talk, but I will control myself for the moment, so I have figured out a way to keep from talking too much this evening, and it is very simple.

As each gentleman makes his speech he will read from a card with which he has been furnished the introduction for the speaker following him. Then you won't hear from me again until it is all over. Thank you.

Now, I just have one more word to say, to introduce the first speaker to start the ball rolling. The gentleman on my left is well known to most of you. He has been active in the field of allergy for many years, as a practitioner, as a teacher, as an author, and editor.

He is a past president of the Association for the Study of Asthma and Allied Conditions, and also of the American Association for the Study of Allergy. He is a consultant, and formerly was chief of the Allergy Department at the Massachusetts General Hospital. I present Dr. Francis M. Rackemann.

Guest Speakers

Dr. Francis M. Rackemann: Dr. Claman, and especially Dr. Cooke, ladies and gentlemen, when I received this invitation I had two emotions. The first was of great delight and I thought to myself, what a wonderful idea it was of the New York Allergy Society to organize this dinner and do such honor to Dr. Cooke, who deserves it so richly.

My second thought, however, was one of a little anxiety, because I thought to myself, I wonder if they really will tell the truth here of all they should tell about Dr. Cooke, and you have just heard a good deal about his scientific achievements. I may say that just this afternoon in New York City between the train and dinner, I fell in with a friend and she said, "Oh, you are going to Dr. Cooke's dinner, isn't that nice." No, she didn't say give him my regards because she didn't want her name to appear, but she said, "I think that's wonderful because you have no idea what this man has done for me." In other words, this gentleman here is a doctor as well as an allergist, as you all know.

Now the thing I really want to talk about, though, is the struggle which he has supported through many years to keep the study and the treatment and the practice of allergy on a proper level.

I am not sure that you realize how hard Dr. Cooke has struggled in this direction. It was in 1936 that the American Board of Internal Medicine was organized. It was pretty soon after that in 1941, five years later, that Dr. Weil and others wanted advice about the practice of allergy, advice about teaching the young men in allergy, and finally advice about the qualifications of these men.

And so, after that it was Dr. Cooke himself who organized the Advisory Board of Allergy, and tonight all of us are here who attended that meeting in his office, Dr. Gay, Dr. Cooke, myself, and Dr. Kern, and with us was Dr. Alexander Clark, and Dr. George Piness of California.

A little later on the list was changed; Dr. Gay, myself, and Dr. Cooke were still here, but now we had Dr. Schloss and Dr. Alexander and Dr. Black. I can assure you I remember those meetings very well. They were always in Dr. Cooke's office, and I may say that after the meeting we went to the University Club and had a delicious lunch, of course on Dr. Cooke. It was always a rather exciting occasion, but the issue was so important at that time. The practice of allergy had spread and a lot of people were practicing allergy. That would be questionable, in my mind anyway, and I am quite sure in his mind, as to whether they were really qualified to practice allergy, and the whole problem was different.

Now that has been straightened out, and, thank God, people are beginning to understand that you cannot practice allergy, as Dr. Cooke himself said a minute ago, you cannot practice allergy unless you are a doctor first and an allergist second.

All I want to do is to just make quite sure that you will know and recognize and thank him and appreciate what he has done, not only to lead us in the scientific development of the theories and the practice of allergy, but in raising standards, in giving to the practice of allergy some dignity, some real authority, and some basic understanding, which puts it on a proper foundation, as he says, makes it a part of internal medicine.

I am sure that you keep this idea thoroughly in mind and that you are appropriately grateful to this man who is behind the whole thing. Thank you.

I missed my cue, you see. Now, after me comes an important gentleman, important because he epitomizes the development of allergy, the coming of age of allergy, when allergy is recognized by the government, and his branch of the government is supporting it and supporting it generously, in all our studies and work in allergy.

It gives me great pleasure to introduce Dr. Justin M. Andrews of Bethesda, who is director of the National Institute of Allergy and Infectious Diseases.

Dr. Justin M. Andrews: Madam President, Dr. Cooke, members and guests of this distinguished Society, I can't tell you how happy I am that circumstances conspire to permit me to be here and join in the honors which are being done to Dr. Cooke this evening.

I am sure that our Surgeon General, Dr. Leroy Burney, and the director of the National Institutes of Health, Dr. James Sherman, would desire to have me present their compliments and their congratulations to the object of your adoration this evening, and to wish him life long happiness, and a continued productive career.

As many of you know, at least some of you know, the Institute of which I have the honor of being the director was not always known by its present name. Up until two years ago it was called the National Institute of Microbiology, and as such it dealt exclusively with infectious, parasitic, and fungous diseases.

Then it was decided that the time had come when allergy and immunology should be given a much more prominent place in the research stimulation which is our principal function. So the name of the Institute was changed to the National Institute for Allergy and Infectious Diseases. This was a scant two years ago.

We have, I think, in the interval made real progress. We have spirited away one of the senior citizens of this great city, Dr. Jules Freund, to head up our endeavors. As a result of his own productive, sage wisdom and counsel and the advice of a number of consultants who visit us periodically, I believe we have the nucleus at least of a challenging and imaginative program.

Dr. Freund has added to the professional staff this year and is on the lookout for still others to come. I am sure that in the not too distant future our scientists in allergy and immunology will distinguish themselves to the same extent that those who have come before them in infectious disease have already done.

It has been a great honor for me to be here this evening.

And now it is my happy privilege to introduce the next speaker whose name is much more familiar to you than mine. This is Dr. Richard A. Kern of Philadelphia. Dr. Kern, as many of you know, is past president of the American Association for the Study of Allergy and of the Association for the Study of Asthma and Allied Conditions. He is professor emeritus, former professor of medicine, and head of the Department of Medicine at Temple University Medical School. I give you for the next speaker, Dr. Richard A. Kern, author and editor.

Dr. Richard A. Kern: Dr. Claman, Dr. Cooke, and friends of Dr. Cooke. Each one of us has entrusted to him at the outset a life that might be compared to an uncut precious stone. The activities of our lives determine whether we make or mar that uncut gem.

Each activity in which we interest ourselves, to which we devote ourselves and perpetuate and perfect ourselves, is a new facet of what will eventually be the completed gem of our lives. To an occasional person, it is given, by reason of manifold interest, intense application, hard work, and the spark of genius, to polish numerous facets of the gem of life, so that it winds up a beautiful full-cut stone. Such a man is Robert Cooke.

You have heard about the facets of allergy thus far, but there are many others that could be alluded to if I were speaking as an educator. I might point out the work that he has done for Rutgers University. Or if I were interested in Aberdeen Angus cattle, I could point out that he is the first organizer or the first president of that particular association in this country. I might refer to him in connection with a small group of interested, scientific-minded, research-minded men, who forty-five years ago, before the clinic was even a gleam in the eye of its founder, got together and founded the Cosmopolitan Medical Club, a group in the city that in addition to Robert Anderson

Cooke included such individuals as Alphonse Dochez, Eugene DuBois, Walter Niles, Walter Palmer, Albert Lamb, William Herrick, Homer Swift, and Carl Vogel, all names that I know ring a bell in this audience.

I could regale my friends from Boston with names like Howard Means, Roger Lee, and Francis Peabody, and in Baltimore with Charles Austrian, Maurice Pincoffs, and others. This shows the breadth of interest of our honored guest this evening.

It also points out his durability—and more power to him—because most of the names I've mentioned have long closed the chapters of their lives. I would like to speak of yet another facet, in my capacity as president of the American College of Physicians. I would like you to know the part Bob Cooke has played in that body, as a governor in New York, as a regent, as a member of its committee on credentials, as a vice-president.

There are nearly 10,000 members of the American College of Physicians. There are some 3,000 that are on the bottom rung, there are over 6,000 fellows, but there are living today only 26 who hold the title of master. There are two masters in the State of New York, and you have one of them right here, Bob Cooke.

Now it is my great pleasure to present another past president of the Association for the Study of Asthma and Allied Conditions, attending physician to the Johns Hopkins Hospital, director of the Allergy Clinic and consultant at the U. S. Marine Hospital, consultant at the Walter Reed Hospital, associate professor of medicine at Johns Hopkins University, Dr. Leslie M. Gay of Baltimore.

Dr. Leslie M. Gay: Madam President, Dr. Cooke, members of the New York Academy of Allergy: It gives me great pleasure to participate in the fortieth anniversary of the founding of the first clinic which dealt with allergy in this country, but more especially to pay tribute to my friend and former teacher, Dr. Robert Cooke.

It may surprise the audience to know that I am probably one of the oldest living students of Dr. Cooke. It was in 1916 as a third year medical student that I came to New York City at the Post-Graduate, and during the summer months acted as a substitute intern. The visiting physicians at the Post-Graduate on service where I was assigned were Dr. Cooke and Dr. Chase.

In those days, as you can imagine, forty-two years ago, the ward was filled with patients suffering with malaria, typhoid fever, thromboangiitis obliterans, and many obscure things. I assure you, as a clinician and diagnostician, Dr. Cooke really excelled. It was in 1925 that I was again given the opportunity to meet Dr. Cooke when he was the president of the Association for the Study of Asthma and Allied Conditions.

We were indeed thrilled whenever Dr. Cooke addressed that group, and I assure you we profited by his many dissertations. I feel that we all are aware of his accomplishments as a clinician in the field of allergy, as well as his scientific investigations. I think it would be of interest to you to have me just read a letter which he wrote to me about twelve years ago, if I may just quote this letter: "I was first approached to get a panel on Allergy for the American College on April 1st, next. Further consideration of the problem and a growing awareness of the importance of the relation of allergy to basic science has given me the idea that our usual approach has been given so many times to these clinics that I should try and make this particular program a little different.

"In talking the matter over with Dr. Palmer, he agreed that it would be an excellent idea if I tried to present the opinions from authorities in the fields of immunochemistry, pathology, immunology, and pharmacology. In other words, make an attempt to show the internist how important allergy problems are in the basic science field relating to medicine.

"In view of this, I have asked Drs. Klemperer, Heidelberger, Chase, and Gilman to sit on the panel with me at that time and they have assented."

I believe that I am correct in saying that this vision of Dr. Cooke has brought about a much closer relationship of the allergist to the internist and to the basic scientist, and to you, Dr. Cooke, we are greatly indebted.

I would now like to introduce to you Dr. Orville R. Withers of Kansas City, Missouri, president of the American College of Allergists, associate professor of medicine of the University of Kansas.

Dr. Orville R. Withers: Madam President, Dr. Cooke, members, friends, and guests of the New York Allergy Society: As a representative of the American College of Allergists I am certainly delighted to meet with you this evening in honor of our friend, Dr. Robert Cooke. As a guest speaker of the college two years ago, he stated that allergy had arrived as a recognized specialty. Now we are all aware, I am sure, of the great importance and influence his work has had over the years in forming the basis and framework of allergy as it is practiced today.

For this reason, if for no other, Dr. Cooke is truly the master physician and certainly the number one allergist of this country, if not the world.

Dr. Cooke, we salute you as being a true scientist, a dedicated and devoted physician, as well as a very fine gentleman.

Our next speaker, Dr. Joseph Harkavy of New York City, will need no introduction to this group, since he was a first president of the New York Allergy Society. He is consultant in allergy at Mount Sinai Hospital, associate physician and head of the Allergy Department of Montefiore Hospital, and lecturer in medicine at Columbia University.

Dr. Joseph Harkavy: Dr. Claman, honored guest, ladies and gentlemen, I feel greatly honored in being asked to say a few words at this anniversary meeting; for many reasons I feel particularly happy to be able to say that I as well am in good company, because I also was one of the early students of Dr. Cooke. He may not remember it, but he lectured to us at Cornell on hay fever and asthma way back when I was a student. These lectures were most stimulating and inspired in me a desire to know more about the field of allergy.

The work of Arthus and Richet was quite well known in those days, and I also felt that anaphylaxis was an important branch of medicine and would lead us to an understanding of the mechanisms of many problems in medicine. I was glad to hear Dr. Cooke say this evening that it is the mechanisms in medicine that we are interested in. The spread of this idea should stimulate us to study other fields than merely those represented by hay fever and asthma. It was this idea which suggested to me to approach the field of allergy as it unfolded itself in the fields of cardiovascular disease and allied subjects.

Having had a basic training in medicine, that was always my first love, but as I learned more and more about allergy, I felt that allergy was one of the keys to the understanding of clinical medicine. I always told students that in order to be a better doctor you should learn something about allergy and in this way you will learn something more about medicine. I think that Dr. Cooke represents all these ideals to every one of us, and it requires not only enthusiasm to become adept in the field, but also imagination and also knowledge of allied fields. Being equipped thus, you can employ the field that you work with with greater energy and earnestness of thought.

About two thousand years ago, Confucius said that thought without learning is dangerous; learning without thought is useless. I think that Dr. Cooke, in his demand for scientific and basic information as being prerequisite in elaborating ideas and fields, is a model for what Confucius said two thousand years ago.

The next speaker is Dr. Horace Baldwin of New York City, the associate attending physician and chief of the Allergy Clinic at New York Hospital. He is also associate professor of medicine at Cornell University Medical College; he is chairman of the board of the Allergy Foundation of America and former president of the American Academy of Allergy.

Dr. Horace Baldwin: Dr. Claman, Dr. Cooke, members and guests ot the New York Allergy Society, it is a great privilege for me to be here and speak at this occasion.

I am filled with a feeling of the great clinics for allergy that Dr. Cooke started. When one realizes that in this metropolitan area today there are over 70 allergy clinics; all over the country there are hundreds more; one realizes, during the last forty years. how tremendously important in the lives of many, many people has been the work of the allergy clinics, how many asthmatic children, how many sufferers from hay fever and so on, have been returned to useful productive life because of the work of these clinics.

I believe that we, here, members of the New York Allergy Society, would be less than realistic if we did not realize how many lacks our clinics have, how much in need we are for men trained in allergy to conduct our clinics in the future and at the present time, how great are the lacks of equipment, social service facilities, and so on.

Dr. Cooke, with his great intellectual honesty, which to me has always been one of his most outstanding characteristics, I am sure would agree with me that much more can be done along these lines of humanitarian service, and I think that all of us can do most to carry on the torch which Dr. Cooke gave us all when he founded the first allergy clinic at the old New York Hospital forty years ago, if we make our services to our clinics mean more and more to the many, many sufferers of allergic diseases, for whose care we are responsible.

It gives me great pleasure to introduce Dr. Chobot,* a president of the American Association of Allergy, first president of the American Academy of Allergy, and a distinguished author of a textbook on pediatric allergy, Dr. Robert Chobot.

Dr. Robert Chobot: Dr. Claman, Dr. Cooke—I guess I am one of the few survivors of the old black hole of Calcutta that was known as New York Hospital. It seems hard to revere the physical setup at that place, because it was dank, dismal, and horrible, but we had a brilliant leader and we had a very exciting time.

When I look back and remember what went on in those days and compare it with the routine functioning of clinics today, it seems like a different world and yet not so long ago. Every week or every month, there was a new discovery. I remember very clearly the time that Dr. Cooke came out with this business of dust sensitivity. You have no idea what happened. We had a very large immigrant population at that time and we implored them to bring mattresses from which we made dust extracts. The late Alec Clark, whom some of the oldtimers remember, had a philosophy that if you shot these patients thoroughly enough with constitutionals, you could really cure them of asthma.

Well, needless to say, for a long time we shot and reshot with dust and whatnot, and we didn't cure them of asthma, but discoveries were coming thick and fast and it was a very exciting and very stimulating period, particularly under the leadership of the gentleman whom we are honoring here tonight.

There are one or two things that come to my mind that might be worth repeating. You recall in the early days of allergy that there was a great controversy between interdermal and scratch testing which still rears its head in some quarters. I remember a case, and probably Dr. Cooke does too, of a woman who had a child with pediculosis capitis. She had rubbed its head with Black Flag and there was a huge edema of the forearms and hands. She brought the bottle of material with her. Dr. Cooke, very properly, said of course this is a contact allergy of some sort that probably produced this. He took the cork of the bottle, moistened it and touched it to her forehead, and we had the worst constitutional from unbroken skin we ever did see.

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* Dr. Chobot died on September 26, 1958.

Then there was the time when Dr. Cooke was working with Dr. Coca on histamine wheals, and he was testing. Dr. Coca looked at the chief and said, "I'm going out," and Dr. Cooke said, "Well, go ahead," and Dr. Coca promptly fell on his face.

We had some very interesting periods, plus the fact that we had weekly conferences on all sorts of literature. It was very thrilling and very exciting, and all I can say is that the time seems just a moment. Maybe two years have passed or thirty-two years have passed in the almost shortest possible time and I can add nothing to these remarks that previous speakers have made. You all know Dr. Cooke is a wonderful clinician. He has extraordinary patience; he gets his teeth into a problem and he doesn't quit until he gets it solved, if it can be solved. He is a perfectionist; he's a hard task master; but he is a great big wonderful guy, and I still say he is the greatest allergist of them all.

Dr. Claman: Well, all I can say now is, thank you very much, Dr. Cooke and all our guests for coming, for speaking, and for giving us a wonderful, wonderful evening. May I also express my thanks to the officers of the New York Allergy Society and the chairmen of the committees who have helped so much to make this evening a pleasant one for all of us.

Infants Have a Mind of Their Own Concerning Food

Despite the trend toward the introduction of solid foods into the diet at increasingly early stages, a ten-year study of food patterns in infants concludes that the average age of acceptance of solid foods by the "crib set" has not changed greatly in the past decade.

This finding, reviewed in *Nutrition Reviews,* monthly scientific publication of the Nutrition Foundation, resulted from a study by the Child Research Council of the University of Colorado. The Council studied, collected data, and took nutritional histories of 57 children, at monthly intervals during the first six months of life and subsequently at intervals of three months.

The average age of introduction of foods other than milk into the diet in 1946 varied from two months for cereal to eight months for meat. By 1955 both cereal and other foods were being offered at the age of one month, with the introduction of vegetables, meat-soup, and meat by the age of four and one-half months. Interestingly, in 1946 solid foods were accepted by the infants when offered, but after 1948 increasing difficulty was encountered in the early months of life. The most common infant resistance was via crying or fussing until acceptance readily occurred between the ages of four to six months. A less frequent pattern was the acceptance of solid foods for a month or two followed by a period of refusal, indicating that even at this early age Junior has a mind of his own.

However, once the infant was accustomed to solids, there was recorded a more rapid change from strained to chopped foods and then to the regular family diet. In 1946 this final transition occurred between the ages of twenty-one and twenty-five months, but by 1955, the average child in the study changed to the family diet by the age of thirteen months.

Another interesting sidelight of the study was that the intake of calories of the infants rose rapidly during the first year and then less rapidly until the age of four, when another increase occurred. Also, in spite of a marked decrease in appetite found during the preschool years, the caloric intake did not decrease.

This was due to the greater ingestion of carbohydrates and fat since there was a plateau in the median protein intake of the group.

In the light of these experiments, the ultimate success of any prescribed feeding regimen depends, as with adults, upon its acceptance by the individual consumer.

TWO-WAY RADIO CONFERENCES FOR POSTGRADUATE MEDICAL EDUCATION*

Albany Medical College
Albany, New York

Editors

WILLIAM P. NELSON, III, M.D., *Assistant Dean, Assistant Director of Postgraduate Medical Education, Associate Professor of Medicine*
FRANK M. WOOLSEY, JR., M.D., *Associate Dean, Director of Postgraduate Medical Education, Associate Professor of Medicine*

Indications for Surgery in Chronic Abdominal Disease

A two-way discussion, March 29, 1957, between the Albany Medical Center and:

BENEDICTINE HOSPITAL, KINGSTON
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VASSAR BROTHERS HOSPITAL, POUGHKEEPSIE
KINGSTON HOSPITAL, KINGSTON

Discussants

NATHAN F. FRADKIN, M.D., *Assistant Clinical Professor of Medicine, Albany Medical College*
PELHAM GLASIER, M.D., *Associate Clinical Professor of Surgery, Albany Medical College*

Moderator

WILLIAM P. NELSON, III, M.D.

DR. PELHAM GLASIER: I will attempt to introduce the subjects of peptic ulcer and diverticulitis relative to indications for surgery in chronic abdominal conditions. The indications for operation for duodenal ulcer are now well established, consisting of perforation, hemorrhage, pyloric obstruction, and intractable pain.

For many years the accepted surgical therapy for the perforated duodenal and rare gastric ulcer has been emergency suturing of the perforation, followed by medical management of the ulcer on re-

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covery from the operation. Since anywhere from 30 per cent to 70 per cent of patients who have had a previous perforation eventually come to gastrectomy because of the same or other complications, gastrectomy rather than simple suturing alone has been resorted to in some clinics in recent years. Where conditions are satisfactory and where there is an indication for emergency gastrectomy for a perforation, there is no doubt that this change in the philosophy of therapy for the perforated ulcer is justified. However, the following conditions should pertain before this more radical approach is decided on with any given patient:

1. There must be a competent surgical team.
2. The perforation must be of short duration with only local peritonitis from the spillage.
3. The patient's general medical status must warrant such extensive emergency surgery.
4. Surgical complications should have existed prior to this perforation, such as a previous perforation, one or more prior episodes of hemorrhage, etc.

Hemorrhage demands immediate emergency surgery when it is massive and uncontrollable by conservative means. This occurs in about one patient out of ten with a bleeding episode. However, it must be recognized that the greatest postoperative mortality associated with upper gastrointestinal tract surgery still exists where emergency surgery is done for such massive uncontrollable bleeding. Such mortality almost always occurs when there has been a delay in accomplishing the surgery in the poor risk, the obese patient, and in the geriatric group. An elective operation for recurrent bleeding and elective resection after one massive hemorrhage are frequently indicated.

Pyloric obstruction is an out-and-out indication for operation. However, it is important to distinguish between true cicatricial pyloric obstruction and pylorospasm with edema. When a question exists, the patient should be treated initially by a strict medical regimen. The gastrointestinal series should be repeated ten days later, during which interval the obstructive element will clear unless there is true scar stenosis. For true obstruction the generally accepted operation is a subtotal gastrectomy. However, in the aged group, or among the medically infirmed, and where the pyloric obstruction has existed for a considerable period of time with secondary marked malnutrition, a gastroenterostomy may be the operative procedure of choice.

When one deals with intractability of a duodenal ulcer, great variability exists from patient to patient. Such factors as emotional stability, pain threshold, the discipline with which the patient has maintained himself on the medical regimen, and disability resulting in absence from work are all important factors. It is my own opinion that a surgeon should never decide on his own regarding operation in this category. He should remain in close consultation with the family physician who has treated the patient and knows him best, as well as with the gastroenterologist. Thus a team decision for or against operation is made.

There are at present four different types of operations used for complications of duodenal ulcer. These are (1) the conventional 75 per cent subtotal gastrectomy (Billroth I or II), (2) vagotomy and gastroenterostomy or pyloroplasty, (3) vagotomy and hemigastrectomy (Billroth I or II), and (4) a 75 per cent subtotal gastrectomy and vagotomy.

The choice of operation for the intractable duodenal ulcer should fit the problem of the individual patient. Abdominal surgeons should be familar with all four types and be prepared to vary a technical procedure without regard to personal choice or prejudice. Some of the features which influence the choice of operation include nutritional factors, obesity, old age, and the medical status of the patient.

Particularly with those patients who have a high subtotal gastrectomy, the dumping syndrome must be reckoned with in a considerable percentage of patients. Careful postoperative dietary management is essential and includes the avoidance of glucose and emphasis on a high protein, high fat regimen.

The problem of the gastric ulcer is in some ways different from that of the duodenal ulcer. Regardless of whether or not gastric cancer may develop in a certain small percentage of benign gastric ulcers, there is an appreciable diagnostic error amounting to about 10 per cent with any and all criteria used. It is best to resect a gastric ulcer if after three to four weeks of intensive ulcer therapy, significant evidence of healing or, preferably, complete healing is not readily apparent. Those patients who do not have an operation because of healing should be watched for six to eight months with one or more repeat gastrointestinal series. The unhealed gastric ulcer should always be resected, and it is the general feeling that with a one-time recurrence of a previously healed gastric ulcer, gastric resection should be carried out.

Turning now to diverticulitis of the colon, the therapy of diverticulitis of the sigmoid colon has undergone profound change in recent years. The most important factors that have led to revision of older therapeutic measures include a better appreciation of the severity of the complications of this disease, the increasing frequency of diverticulitis in an aging population, and a falling mortality rate from resection of the colon. It is not surprising, furthermore, that more radical measures, carried out in an earlier phase of the disease, have become more common.

The incidence of diverticulitis of the colon has been stated by Dr. Claude E. Welch to be as follows: Diverticula are present in 5 to 10 per cent of all individuals over forty years of age. About one fifth of these individuals develop clinical diverticulitis, and one fifth of those with diverticulitis will require surgery. Diverticula of the colon as demonstrated by the barium enema are almost never seen before the age of thirty-five years. From that point on there is a steady increase in the frequency as age progresses, so that at age eighty-five diverticula can be demonstrated in approximately two thirds of all patients. Because of the rising average age of our population as much as other factors, diverticulitis from a surgical point of view has had a sharp increase in the past ten years.

The standard indications for surgical intervention in diverticulitis are (1) perforation with peritonitis or abscess, (2) obstruction, (3) recurrent moderate or even massive, uncontrollable hemorrhage (the latter rare), (4) fistula formation commonly with the urinary bladder, occasionally with the vagina, uterus, or small intestine, and (5) the suspicion of malignancy.

Actually coexistent diverticulitis and cancer are quite rare. However, there are times, in spite of a careful history and a good radiologic study, when a differential diagnosis between these two entities cannot be made. There are times even in the operating room with the lesion in the surgeon's hands when it is still impossible to make a differential diagnosis. In such instances resection surgery is mandatory. An attempt at biopsy of the mass for frozen section or a colotomy to examine the mucous membrane are to be condemned, since either of these procedures will almost certainly result in leakage, peritonitis, and a fecal fistula.

A word must be said about the types of operations used. A three-stage operation is necessary in perforations, in most cases of sigmoidovesicle fistula, and in complete or almost complete obstruction from stenosis.

A more radical attack has been added in recent years, by several surgeons. It is recommended for patients who have intractable symptoms in spite of careful adequate medical therapy. In those patients with a fistula operated on during a quiescent phase, those with bleeding as the cause of the surgery, and in those patients electively operated on for intractability, a single stage operation may be utilized. It is particularly recommended for the patient with colonic diverticulitis before the age of fifty years because at the earlier age they are relatively good risk patients, while they tend to be more prone to surgical complications as they get older. The most frequent surgical complication is a colonic perforation with either abscess or peritonitis. Obstruction, then fistula formation, and finally bleeding are the next most common complications.

In this single stage operation for diverticulitis of the colon, when there is any question about the security of the suture line, either a concomitant transverse colostomy or a decompressing cecostomy may be used with great wisdom. This is the only time that a cecostomy should be used, this type of enterostomy being inadequate for complete defunctionalization where a three-stage operation is planned. It is my own feeling that in carefully selected cases where there has been a combined team decision in favor of elective surgery for the reasons stated above, this newer, more radical attack is appropriate.

Occasionally a very poor risk patient is seen who requires a transverse colostomy, particularly for perforation. Such a patient being considered too great a risk to undergo the definitive resection should not have the transverse colostomy closed at a future date because of the high incidence of recurrence of the complication requiring the transverse colostomy in the first place.

In the resection of the diseased segment of bowel, it is important to emphasize the need for a wide resection. This may include the transverse colon, or rarely may include the entire colon. The effort is to prevent either an early suture line breakdown with peritonitis or fecal fistula, or a later recurrence of diverticulitis at a higher level possibly resulting in perforation, obstruction, or fistula formation.

With proper evaluation, preparation, and the use of the correct operative technic, the mortality rate of resection today should be under 5 per cent. Generally speaking, the final results have been excellent.

Dr. Nathan Fradkin: I should like to confine my remarks to regional enteritis and chronic ulcerative colitis.

It is now twenty-five years since the original description of regional enteritis as a clinical and pathologic entity. Sufficient time has elapsed to evaluate the efficacy of medical and surgical measures, and several generalizations can be made safely. The fact that the Mayo Clinic group recently could publish 600 cases studied at their clinic, and Crohn has studied a similar number in his private practice, would indicate that this is not an uncommon disease.

No medical or surgical therapy is curative. Conservative medical therapy is supportive only, and is indicated in acute ileitis, chronic enteritis without complications, recurrent disease, and ileojejunitis. It is aimed at maintaining nutrition, allaying diarrhea, restoring blood loss, and controlling infection.

All are now agreed that the mere detection of a lesion radiographically is in itself *not* an indication for surgery. Surgical therapy, with few exceptions, has hardly fulfilled its original promise; however, it is indicated for patients who cannot maintain a satisfactory state of health on medical therapy, for obstruction, for perforation with peritonitis, for fistulization, and for a large, tender, abdominal mass.

The type of operation to perform when surgery is indicated has become a matter of great controversy. The Mt. Sinai Hospital group prefers a simple, short-circuiting procedure, namely, ileotransverse colostomy with exclusion of the distal ileum, well proximal to the diseased bowel. They report a zero mortality and a recurrence rate around 23 per cent. Equally experienced surgeons throughout the country believe that wide resection of the bowel along with its mesentery is the surest way to eradicate the disease. They report recurrence rates from 50 to 70 per cent; 87 per cent of these recurrences occur during the first two years after surgery, but recurrences may occur up to ten to twenty years later. The fact of the matter is that recurrence rates are high, probably generally in the neighborhood of 50 per cent, following any surgical procedure, and it is this fact that makes surgery a palliative rather than a curative measure.

In the majority of cases where surgery is indicated I personally favor the simple short-circuiting operation with exclusion. I believe that in the hands of the average surgeon it is an easier operation than resection, and the mortality rate will be lower. I have seen surgeons struggling with the tremendously enlarged lymph nodes and enlarged lymphatics of regional enteritis, cutting across them to do a resection, leaving behind great raw areas, and opening up new areas to lymphatic spread, and I have wondered if it makes sense to attempt to cut out this disease. This is especially important in view of the fact that a carefully done sidetracking operation with exclusion of the distal bowel can be done without any of this trauma. Furthermore, let me remind you that simple short-circuiting does tend to heal the excluded loops of small bowel. It was this very observation that made the Mt. Sinai group abandon resection, which they had originally practiced. However, let us not delude ourselves. Recurrences are high, around 50 per cent, following any surgical procedure for this disease. And, unfortunately, once the disease has recurred there is an ever-increasing frequency of further recurrence after each attempt at surgical therapy. Shortcircuiting, on the other hand, should not be done when there is internal fistulization. Here resection is the procedure of choice.

A word about fistulas! The clinical significance of recurring perianal and perirectal infections and fistulas is still not widely appreciated. They may be present as local disease, to be sure, but more commonly they are complications of regional enteritis or ulcerative colitis, and whenever present, the gastrointestinal tract should first and always be investigated for these two diseases before some injudicious local operation is performed on the rectum or anus. An ischiorectal abscess should be drained surgically when there is localization. However, all other surgical intervention for anal and rectal fistulas should be avoided until any possible abdominal lesion is under control. Indiscreet surgical attack on an anal fistula may lead to disastrous complications. I have seen repeated local operations on fistulas about the rectum and anus, in the presence of regional enteritis, so destroy the sphincteric mechanism that an ileostomy was ultimately required.

There is also the controversial problem of whether or not to perform an appendectomy in the patient with acute regional ileitis, whose abdomen is mistakenly but understandably opened for acute appendicitis. Some feel that to perform an appendectomy under this circumstance invites postoperative fistulization; others remove the appendix with no untoward result. I believe that if the cecum is not involved, the appendix should be removed. In this way, future uncertainty regarding the presence of appendiceal disease is avoided. On the other hand, when the cecum is grossly involved by regional enteritis, a normal appendix should not be removed for fear of causing a fistula.

To summarize, the high recurrence rate following any and all operations is leading to a re-evaluation of the criteria for operation. The current trend is to defer operation until the pathologic process appears to be quiescent and to restrict surgery to the complications of this disease, such as obstruction and fistulization.

The treatment of chronic ulcerative colitis, like regional enteritis, is primarily medical.

Lasting cures with medical therapy are few, but about 75 per cent of the patients can be fairly satisfactorily carried along with supportive medical measures despite chronicity and recurrences. However, the tendency to recurrences and complications necessitates frequent prolonged and expensive hospitalizations. Surgical treatment is required in 10 to 20 per cent of patients with ulcerative colitis.

The two major indications for surgery which will encompass most of the patients operated on are (1) chronic disabling disease so severe as to be beyond medical salvage, and (2) acute fulminating disease in which a fatal outcome seems likely without surgery. The first group includes patients with so-called intractable disease, such as chronic malnutrition, anemia, focal infections, rectal complications, arthritis, abdominal pain, and diarrhea. Our experience with the use of adrenocorticotrophic hormone (ACTH) and cortisone in this chronic form of this disease has not been impressive, despite recent reports. We have had several serious complications, such as massive hemorrhage and perforation. We do not recommend their use in the chronic form of the disease. With surgery these patients can be restored from semi-invalidism to a healthy, useful life. However, many so-called intractable cases require careful scrutiny, for some will respond effectively to sympathetic, interested, prolonged, and detailed medical management. In certain large clinics in this country nearly all cases are regarded as intractable as soon as the diagnosis is established, the rationale being that since the disease is recurrent and incurable, the operation might as well be done immediately, thus avoiding years of semi-invalidism with the inevitability of surgery at a later date. This, in my opinion, is an extreme and untenable view.

Acute fulminating colitis constitutes about 5 to 10 per cent of all cases and is the most controversial of all indications for surgery. It requires astute clinical judgment and extensive experience with this disease to decide when medical measures have failed in a severely ill patient. Yet we must avoid turning over to the surgeon a moribund patient as a desperate last measure when death is imminent. The use of ACTH and cortisone has changed the serious aspect of this form of the disease considerably. Our experience suggests that the use of these hormones in these acute fulminating cases may produce sufficient improvement to permit the performance of a surgical procedure with considerably less risk than heretofore.

Other indications for surgery in ulcerative colitis are massive hemorrhage, perforation, obstruction, carcinoma, and perirectal abscesses and fistulas. When operation is indicated, there is little question today that ileostomy, colectomy, and combined abdominoperineal resection are mandatory, usually in two stages. Rarely can this be accomplished in one stage. Ileostomy alone does not cure ulcerative colitis. Later attempts to re-establish intestinal continuity after ileostomy and colectomy should never be attempted. This is almost invariably futile and invites immediate recurrence of the disease in a most fulminating form. In regional colitis with a normal healthy rectum, segmental resection of the colon with direct anastomosis is done, usually ileosigmoidostomy.

Ileostomy, with or without the Rutzen bag, is still not a very pleasant condition. Our experience has been that an ileostomy is a much better tolerated procedure if it is not rushed into and forced on the patient. It has been our practice to allow the patient to live with his disease long enough to really understand its ravages and debilitating course and its accompanying social and economic ostracism. Only then will he tolerate the ileostomy, for only then does he realize that it is the price he must pay for restoration to full health, efficiency, and ability to work. Under these conditions we have never had a patient who ever regretted having an ileostomy. Actually, the life of an ileostomy patient is not an unhappy one. The operation is followed by a gain in weight, ravenous appetite, and an optimistic outlook on life. Sex libido and sex life follow a normal pattern. There are now ileostomy clubs throughout the country—group meeting places for ileostomy patients where they congregate, discuss mutual problems, have guest speakers, develop romances, intermarry, and beget children!

*Questions Received by Radio from Participating Hospitals**

St. Peter's Hospital, *Albany:* Can you tell us something regarding the etiology of ulcerative colitis and regional enteritis?

Dr. Fradkin: The precise etiology of neither one is known. There is probably no one etiologic factor for ulcerative colitis, although numerous attempts to find one have been made. Some cases may be due to infection, some to allergy, some follow chronic amoebic or chronic bacillary dysentery. Regarding regional ileitis, we are even more in the dark. Numerous attempts have been made to reproduce this disease, but all have been uniformly unsuccessful. A recent rather attractive theory suggests that it is due to lymphatic obstruction, that it is a primary lymphatic disease. The disease has been suggestively developed in animal experiments by lymphatic obstruction. Actually, however, I think we must answer this question by stating that the precise etiology of these diseases is not known.

Dr. William P. Nelson: Dr. Fradkin, do you think psychosomatic factors are any more important in one than in the other?

Dr. Fradkin: Yes, I do. While I don't think that psychosomatic factors are important in the etiology of ulcerative colitis, I do think they are very important in the control of this disease. I have never seen a patient in whom I thought a psychosomatic impact caused the disease, but such factors have unquestionably influenced the course of the disease. I have never been impressed that regional enteritis has any psychosomatic factors.

Castle Point V.A. Hospital, *Castle Point:* Please discuss the management of external duodenal fistula.

Dr. Glasier: This is a complication which we don't like to see and is due to failure of duodenal stump closure. One must have a good laboratory to help with the control of the primary problem, fluid and electrolyte balance. The important therapeutic approach is to get or keep the patient in good water and electrolyte balance, initially by parenteral and later by oral fluid therapy. Occasionally an important approach to the fluid therapy may be to enter the abdomen surgically on the left side away from the duodenal fistula and bring up a proximal loop of jejunum, creating a feeding jejunostomy for alimentation. Often proteins become depleted, requiring their augmentation in the feeding program. Whole blood transfusions may be indicated. One should protect the skin around the fistula from digestion by the draining pancreatic juice. This can be done by inserting a sump drain with positive aspiration of the draining contents.

Dr. Fradkin: I should like to ask Dr. Glasier what he thinks about sewing in a drainage catheter when resecting a pyloric ulcer in a situation where duodenal stump healing may be anticipated to be poor. This was first described by Claude Welch.

Dr. Glasier: The use of a catheter in this situation is, at times, a very good idea.

Benedictine Hospital, *Kingston:* What is your experience with the use of antibiotics, bismuth subgallate, and olive oil as an enema in treatment of ulcerative colitis?

Dr. Fradkin. Because the disease, although starting in the rectum, usually has spread well up the colon, these various types of enemas never seem to have much value. Recently, Trulove has recommended the use of cortisone as a rectal instillation, but the follow-up so far is too short to know the true effect.

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* Only selected questions from participating hospitals are included.

Dr. Nelson: What about amelioration of symptoms which is sometimes noted following barium enema examination?

Dr. Fradkin: Yes, occasionally the local astringent effect seems to be beneficial. In acute toxic fulminating colitis, an enema should not be done because it cannot give any worth-while new information. Later, when enema is done, a soft rubber, rather than metal, tube should be used, and only a small amount of barium usually is needed.

Dr. Glasier: The same cautious remarks apply to the surgeon in making his examination. His proctoscopy should not be transformed into a sigmoidoscopy which can easily trigger a fulminating state of the disease.

Kingston Hospital, *Kingston:* What is your suggested treatment for the mild but recurrent diverticulitis case?

Dr. Fradkin: I think they should be handled medically, and in our experience, they can be so handled. They should be on a carefully controlled, bland, low residue diet. Frequently such a patient should receive 15 cc. of mineral oil every morning and evening to control a tendency to constipation. Spasm is often present and responds well to antispasmodic treatment.

Dr. Glasier: With pain, tenderness, and palpable sigmoid colon, along with repeated urinary tract symptoms and maybe some rectal hemorrhage, a team decision may then be required regarding surgery. In other words, I agree entirely with Dr. Fradkin, but sometimes it is difficult to determine where mild stops and moderate to severe diverticulitis begins.

Dr. Fradkin: At the other end of the spectrum, I would like to suggest that patients with extensive diverticulosis, even without many symptoms, should probably be placed on medical therapy, since this procedure may well avoid progression of the disease and later complications.

E. Horton Memorial Hospital, *Middletown:* What are the minimal diagnostic tests which should be done before exploration for unexplained abdominal disease, and what are the minimal indications for such exploration?

Dr. Glasier: That is an excellent question. I would like to say, first of all, that it is not a decision for a surgeon alone. Obviously, it must be a team decision between the physicians and the surgeons involved. In that way the number of so-called exploratory laparotomies that are going to be done will be minimized and restricted to cases where a number of observers feel that in spite of negative studies, both x-ray and laboratory-wise, the patient has disease and warrants such an exploratory laparotomy. On the basis of this approach one is then gratified to find, in a high percentage of cases, organic disease which could not be diagnosed preoperatively.

As far as what studies should be done prior to the laparotomy, I hardly think one can minimize this phase, at least on the first attempt. One must exhaust the diagnostic possibilities before arriving at the decision to explore. It is difficult to name specific tests without a specific case.

Dr. Fradkin: I agree with Dr. Glasier wholeheartedly. I think that after all reasonable diagnostic measures, including x-rays and biochemical tests, have been accomplished, if a patient still has recurring, severe pains, despite the negativity of all findings, carefully selected patients must have an operation. When we have used such criteria, it has been a combined decision between the surgeon and ourselves. Our exploratory operations on these people have yielded a high batting average. In the last two years, operating on about ten people under these conditions, we have found two or three large hiatal hernias that x-ray failed to disclose. We have found also one carcinoma of the pancreas, and one very large gastric ulcer, a superficial gastric ulcer that would not be demonstrated by numerous gastrointestinal series. Dr. Glasier will tell you that he found a large congenital band in a young woman who had recurring abdominal pain. We had thought her problem might be due to an intermittent obstruction, despite repeatedly negative x-ray findings.

CASTLE POINT V.A. HOSPITAL: Will you comment on the development of pulmonary tuberculosis following gastric resection, Dr. Fradkin?

DR. FRADKIN: No doubt there is an increased activation of tuberculosis. This may be related to the marked malnutrition which some of these patients demonstrate.

DR. GLASIER: In this connection, I should like to suggest that a vagotomy or a hemigastrectomy might be better in a poorly nourished patient than a wide subtotal gastrectomy. This is what I referred to earlier regarding "fitting the surgery to the patient."

KINGSTON HOSPITAL: What is the treatment of the dumping syndrome?

DR. FRADKIN: This condition may occur after any operation, but rarely after a gastroenterostomy, less commonly after hemigastrectomy, and most commonly after a wide resection. An important factor suggested in the etiology is a profound shift of fluid into the gastrointestinal tract, producing intestinal distention from the fluid accumulation along with contraction in blood volume.

Since carbohydrate seems to be an important offending agent, we restrict carbohydrate in the diet. This means a high fat and protein diet, which is also desirable because of the large protein and fat loss, up to 25 per cent, in the stool which occurs in the dumping syndrome. Very frequent small feedings are also advised to reduce fecal loss.

DR. GLASIER: It should be indicated that commonly the dumping syndrome improves considerably with time.

(*Number three of a series of Two-Way Radio Conferences. These will appear in the* JOURNAL *from time to time.*

New Six-Ounce Heart Monitor

A tiny device that can be set on a surgical patient's arm and gives off a "beep" if his heart is functioning normally has been developed. Cardiac monitors are used to warn surgeons and anesthesiologists when the heart ceases to function properly. If the heart stops, it frequently can be started again through the use of heart massage and electric shock, but these must be done instantaneously.

The new monitor, weighing only six ounces, records the heart's electrical activity, the "most accurate index" of its function, according to Dr. William F. Veling, Detroit. Writing in the October 11 *Journal of the American Medical Association,* he said the miniature monitor has many advantages over the standard larger machines.

A self-contained unit powered by batteries, it needs no long complicated electrical wiring and its audible "beep" overcomes the disadvantage of the older machines which need constant visual attention. "It enlists the attention of the entire operating room team but frees their eyes and hands for other duties," he said.

Another possible use for the device is that of monitoring the hearts of critically ill patients, especially those with heart disease. Because it is small, relatively inexpensive, and easily stored, a hospital could keep a number on hand for use in patients' rooms. In conclusion, Dr. Veling said, "Small, reliable, rugged and easy to operate and maintain, a miniature cardiac monitor with its reassuring 'beep' could become as commonplace as the stethoscope in the operating room."

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies in the operating room including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ELIZABETH CRAWFORD, M.D.
LESTER C. MARK, M.D.
VALENTINO D. B. MAZZIA, M.D.
GEORGE WALLACE, M.D.

Hypotension in Spinal Anesthesia for Cesarean Section

ARTERIAL hypotension during high spinal anesthesia is a common complication. There is general agreement that this condition is due to lack of compensatory vasoconstriction in the unanesthetized area. This lack of vasocompensation may occur in certain patients, for example elderly individuals with significant arteriosclerosis, when the sensory level of spinal analgesia is relatively low, such as at the tenth thoracic dermatome. In certain robust and young individuals compensatory readjustment may be possible when the sensory level of spinal analgesia attains the fourth thoracic dermatome.[1] Occasionally, it is disconcerting when arterial hypotension occurs during spinal anesthesia in a healthy, young individual when a high level is not required nor sought for. This may be observed in pregnant women undergoing cesarean section during spinal anesthesia as the following case report illustrates.

Case Report

A twenty-nine-year-old woman was scheduled for elective cesarean section. She was of average size and weight. Her antepartum course was essentially uneventful. Her preoperative physical examination gave normal results. The night prior to surgery she was given 100 mg. of Seconal at bedtime. The following day she was given as preoperative medication 100 mg. of Seconal and 0.4 mg. of scopolamine hydrobromide by hypodermic injection ninety minutes prior to induction of anesthesia. Results of this medication were judged to be good. Her arterial blood pressure prior to induction of anesthesia was 124/72, and her pulse rate was 88 per minute.

She was positioned in the left lateral decubitus, and a subarachnoid injection of 6 mg. of Pontocaine (1 per cent) and 100 mg. of dextrose (10 per cent) were introduced through a number 22

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gauge needle following an atraumatic spinal tap. The patient was immediately turned supine, and an infusion of 5 per cent dextrose in water was started in an arm vein. Blood pressure recordings were taken within three minutes after the spinal injection was made, and the reading was then 120/74 with a pulse rate of 90 per minute. After ascertaining that spinal analgesia had its onset, the surgeons were permitted to prepare and drape the operative field.

Sensory analgesia levels were obtained by skin testing and were found to be at the eighth thoracic level five minutes after onset of anesthesia. After another five minutes the sensory level had attained the sixth thoracic level. Blood pressure determinations made at approximately one-minute intervals within the first ten minutes revealed a progressive decline in systolic and diastolic levels. There had been no attempt to influence the flow of the anesthetic solution within the spinal canal by means of gravity. When the sensory level had attained the sixth thoracic level, the blood pressure had fallen to 80/50. The pulse rate diminished initially to 70 per minute and then rose to 94. The patient complained of nausea and was beginning to show diaphoresis.

At this point, 12.5 mg. of ephedrine sulfate were given intravenously and 25 mg. intramuscularly. Oxygen by mask was administered also. Skin testing still revealed a level at the sixth thoracic level. There was good response to the intravenous vasopressor and the continued flow of intravenous fluids. Within three minutes the blood pressure returned to preoperative levels. The patient was again comfortable. The operative procedure was begun and it was completed uneventfully with delivery of an apparently normal baby. There was no further change in blood pressure or pulse, and the patient was brought to the recovery room in good condition.

Comment

The ease with which this type of patient, a young woman in the last stage of pregnancy who requires cesarean section, can develop a high level spinal anesthesia when a low level is sought for and the lack of vasocompensation in the unanesthetized area are problems which have been difficult to explain.[2] Certain anatomic and physiologic alterations may be considered to account for these reactions.

It should be remembered that in view of the exaggerated lumbar lordosis occurring in the pregnant woman controllability of spinal anesthesia is often unpredictable. When such a patient is placed supine, the spinal curvature is such that the lumbar area is higher than the midthoracic area, so that when a hyperbaric solution is injected intrathecally it will tend to gravitate to the lowermost thoracic area. Also, it is recognized that sensory levels which may be obtained as an indication of the level of spinal anesthesia are not always indicative of the amount of sympathetic paralysis which occurs concomitantly and which is usually several dermatomes higher. Yet, it is the amount of sympathetic paralysis that actually affects vasomuscular paralysis of the involved circulatory channels with ensuing lack of vasoconstrictor response of terminal vessels in the unanesthetized area. These considerations should be emphasized in the administration of spinal anesthesia in the pregnant patient.

Another factor which may play a role in producing high level spinal anesthesia in the pregnant patient, even when smaller doses of a local anesthetic drug are used, may be that the pregnant uterus may act like other intra-abdominal masses which tend to cause circulatory disturbances during spinal anesthesia. Added to this are other alterations, such as induced changes in cerebrospinal fluid pressure, that may be occasioned by movements of the fetus and by the increased respiratory efforts of the pregnant woman. Finally, the increased circulatory load imposed by progressive pregnancy may cause interference of vasoconstrictor ability so that assistance is required by the administration of a vasopressor.

To obviate alarming arterial hypotensive effects during spinal anesthesia in patients requiring cesarean section it has been suggested that the smallest possible dose of a local anesthetic agent should be administered in these patients. For example, if 10 mg. of

Pontocaine is usually employed for an ordinary abdominal operation, such as an appendectomy, only 5 or 6 mg. should be used for a cesarean section. In addition, this smaller dose should be injected at a slower rate than usual. Furthermore, great care should be exercised in the turning of these patients or in the use of gravity in an effort to increase the desired level. Another prophylactic measure recommended is the institution of an intravenous infusion prior to administration of spinal anesthesia. Vasopressor drugs should be available. Some anesthesiologists administer a vasopressor drug intramuscularly prior to lumbar puncture and repeat additional quantities intravenously and/or intramuscularly as required. Others prefer to prepare a dilute solution of a vasopressor, which is administered by intravenous infusion at a rate titrated against the requirements of the patient.

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(*Number fifty-seven of a series of Clinical Anesthesia Conferences*)

Reserve the Dates . . .

153rd Annual Meeting

Medical Society of the State of New York

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BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Grandparents, Children, and Poisons

THE following ingestion accidents and their mode of occurrence were recently reported to the New York City Poison Control Center. What makes them especially interesting is that all the accidents reported in this article occurred while the children involved were under the care of or with their grandparents.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Chlorpromazine	5 years	Female

While waiting to move out-of-town, the family moved in with the grandmother and an aunt. The aunt, who was a recently-discharged psychiatric patient and still under follow-up treatment in a psychiatric clinic, left her medicine on the bureau in the bedroom. The child confused the brightly-colored, hard-coated medication with candy tablets and ingested them. In the morning, the child was very drowsy and when questioned by the family, admitted she had taken the pills. The child was taken to a hospital emergency room in a stupor. Her stomach was lavaged. The patient was said to have taken more than 12 50-mg. chlorpromazine tablets. After three days of hospitalization and supportive therapy, the patient made a complete recovery.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Moth Balls	3 and 4 years	Male and Female

A brother and sister, aged three and four respectively, were being cared for by their maternal grandmother and uncle. While the grandmother and uncle were in the kitchen, the siblings went into the bedroom and climbed up on a chair to have access to a dresser drawer. They located a box of moth balls and ingested some of them. Although the children were asymptomatic, they were immediately taken to a hospital emergency room where their stomachs were lavaged. Both children made a complete recovery.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Clinitest Tablets	2 years	Male

While the mother was in the kitchen, preparing dinner, the child wandered into the grandmother's room where the grandmother was cleaning out her closet. The bottle of the grandmother's Clinitest tablets had fallen to the floor, and some of the tablets rolled out of the bottle. The patient apparently licked four of the tablets. He complained of burning in the mouth and throat and was taken to a hospital emergency room where he was observed for several hours and then sent home.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Amphetamine Capsules	2 years	Male

The child had a toy stepladder which he continuously carried around with him. The grandparents, who were visiting, noticed that the patient had a medicine bottle which he had obtained from the bathroom medicine cabinet with the aid of the stepladder. The grandparents thought the bottle was empty, but actually it contained amphetamine capsules. It is not definitely known how many of the capsules the patient ingested. Twelve hours after ingestion the patient began to vomit, became extremely nervous and talkative and shook all over. He was taken to the hospital where the following symptoms were noted: abdominal pains, nausea, vomiting, and maniacal behavior. At the hospital he was given rectal anesthesia for sedation and intravenous fluids. After five days of hospitalization the patient was discharged as improved.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Unknown Pills	2 years	Male

The child was being taken care of by his maternal grandmother. Presumably he was taking his midday nap but when the grandmother went to check on him she found him with an empty bottle of sleeping pills. Although she did not know whether he had ingested any of the sleeping pills, she immediately rushed him to the hospital. On admission to the hospital his stomach was lavaged, and since the patient was asymptomatic, he was sent home after several hours observation.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Ammonia	3 years	Male

The child was visiting his paternal grandmother. They were both in the kitchen, but when the grandmother left the room for a few minutes, the patient entered a storage cabinet where he obtained some cleaning equipment and ingested some ammonia from a bottle which was stored there. He immediately complained of burning in the mouth and throat and vomited. He was rushed to a hospital. His stomach was lavaged in the emergency room and he was immediately admitted to the inpatient service for further follow-up and treatment. During his stay at Babies Hospital, the patient had an esophagoscopy and bouginage performed for burns of the mouth, hypopharynx, and upper esophagus. He remained in the hospital for thirteen days and was later discharged with instructions for follow-up visits to the outpatient department.

Household ammonia has dangerous potentialities and deserves far better security safeguards than are ordinarily employed.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Chlorpromazine	2 years	Female

The child obtained the medication from a box in her grandmother's bedroom dresser, while the grandmother was busy hanging up clothes and the mother was dressing the other siblings. The child soon fell asleep and the parents were unable to awaken her.

The mother relates that the grandmother is very careless about leaving her medicines around the house. The child was taken to a hospital where her stomach was lavaged with saline.

The symptoms on admission were diarrhea, miotic pupils, generalized hypotonicity, and a comatose state. She was treated with two doses of caffeine and six doses of Benzedrine and made a complete recovery within twenty-four hours.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Chlorpromazine	16 months	Female

The child and two other siblings were under the supervision of the grandmother. While the grandmother was bathing the other siblings in the bathroom, the child went into the bedroom, opened a night table drawer, obtained medication, and ingested some of it. The child was observed with the medication in her hands. The grandmother's suspicions were aroused when the child became nauseated and vomited. The patient was taken to a hospital several hours after ingestion, and since she was asymptomatic, she was treated merely with bed rest and observation for three days. The patient was finally discharged as fully recovered.

It is good practice to hospitalize children who ingest potent medications even though they may appear asymptomatic on admission. City hospitals, we have found, adhere to this policy.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Wine	4 years	Female

According to the grandmother, the family members were having wine with their noon meal. The patient went to the refrigerator where the wine bottle was kept and drank some of its contents. She went to the living room to watch television and soon had convulsions. She was taken to the hospital where her stomach was lavaged; she apparently made a complete recovery soon after. She was discharged as improved after several hours of observation.

The general accessibility of alcoholic beverages to children constitutes a major hazard. Security measures in its storage and handling should be employed.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Furniture Polish (Containing Naphtha)	18 months	Male

The child was under the care of his maternal grandmother and a maid. The maid left the furniture polish on the top of the television set. The patient climbed up, obtained the bottle of furniture polish, and spilled most of it. The grandmother thought he might have ingested some of the polish. She telephoned the family physician who advised taking the child to a hospital for a stomach lavage. The child was immediately taken to a hospital emergency room where the stomach was lavaged about one-half hour after ingestion. Since the child was apparently in good condition, he was returned home.

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Turpentine	$2^1/_2$ years	Male

While the father and grandfather were building a closet in the cellar of their new home, the child was riding on his bicycle and playing around in the cellar. The patient became thirsty, and since there was no water in the cellar, he obtained a can with fluid. It was an orange juice can filled with turpentine which also contained a small brush and some varnish. It is believed that the patient ingested a very small amount of the turpentine mixture.

The patient was taken to a hospital where the stomach was lavaged with water. During his hospital stay the child had two chest x-rays and three urinalyses—all of which gave negative results. After twenty-four hours of hospitalization, the patient was sent home as asymptomatic and well.

This case illustrates the inherent danger of removing a substance from its original container and transferring it to some other receptacle.

INCIDENT 12

Toxic Agent	*Age*	*Sex*
Boric Acid Solution	$5^1/_2$ years	Female

The patient was under the supervision of her paternal grandmother. The child obtained a drinking glass containing boric-acid solution from the sink and ingested about two ounces of its contents. This again illustrates the hazard of putting medications in household utensils, drinking glasses, jars, or beverage bottles.

The patient was put under the care of a private physician and made a complete recovery.

It may be mentioned that thus far no serious case of boric-acid poisoning has been reported to the New York City Poison Control Center.

INCIDENT 13

Toxic Agent	*Age*	*Sex*
Camphorated Oil	13 months	Female

While the grandmother was rubbing some camphorated oil on the baby's abdomen, the patient picked up the bottle which was on the bed, and put some of its contents in her mouth.

Fortunately, there was very little camphorated oil left in the bottle when the child ingested its contents. Two hours after ingestion the patient began to vomit and also developed convulsions. She was taken to the hospital where her stomach was lavaged three hours after ingestion. The presenting symptoms at the hospital were nausea, vomiting, dyspnea, convulsions, cyanosis, tachypnea, and coma. The convulsions were tonic in character and lasted for thirty-five minutes.

The patient was treated with oxygen and sodium luminal. After four days stay at the hospital, the child made a complete recovery.

INCIDENT 14

Toxic Agent	*Age*	*Sex*
Barbiturate	$2^1/_2$ years	Male

While staying with his grandmother the patient obtained sleeping tablets from a night table in the bedroom. He ingested two 90-mg. tablets. He became nauseated and stuporous and was taken to the hospital. About one-and-one-half hours after ingestion, his stomach was lavaged with potassium permanganate and sodium bicarbonate. On admission, the patient had bradycardia, mydriasis, drowsiness, a rash on his abdomen and lower extremities, and swollen lips. He was given 125 mg. of caffeine sodium benzoate intramuscularly, and 20 mg. of benadryl.

Since the parents of the patient refused admission to the hospital, the patient was very carefully watched in the emergency room. After eight hours the toxic erythema and most of the symptoms had subsided and the child was sent home as completely recovered.

INCIDENT 15

Toxic Agent	*Age*	*Sex*
Antihistaminic Tablets (Tripelannamine)	2 years	Male

While visiting his grandmother, the patient walked into the bedroom and found a bottle of pills on the bedroom night table. He opened the bottle and ingested an unknown quantity of its contents.

As soon as it was discovered, the patient was taken to the hospital emergency room where his stomach was lavaged with saline and water. Since the child was asymptomatic, he was sent home after several hours observation.

INCIDENT 16

Toxic Agent	*Age*	*Sex*
Furniture Polish	2 years	Male

The patient was visiting his grandmother who was busy polishing furniture in the living room. After finishing, the grandmother placed the bottle of furniture polish on the kitchen table. The patient walked into the kitchen and while the grandmother looked away for a moment opened the bottle and ingested some of its contents. After several hours, the patient began to vomit and was taken to a hospital emergency room. After several hours of observation, the vomiting stopped, and the patient was sent home. His parent was instructed to return the child the following day for an x-ray.

INCIDENT 17

Toxic Agent	*Age*	*Sex*
Belladonna Combination	18 months	Male

This medication was prescribed for the child's maternal grandmother. It was kept in the bedroom dresser drawer. The mother had just cleaned the dresser drawer in which the medicine was kept and left it partly open. The child reached for and got the bottle of medication and ingested some of its contents. The child became stuporous and was taken to a hospital where the stomach was lavaged and he was treated with supportive therapy and stimulants. After two days in the hospital the child was discharged but was seen for periodic check-ups in the outpatient department for several weeks.

INCIDENT 18

Toxic Agent	*Age*	*Sex*
Nitroglycerine Tablets	$2^1/_2$ years	Female

This accident occurred at the home of the child's great-grandmother. The mother left the child for a minute with great-grandmother who is nearly blind. While under the care of her great-grandmother, the child opened a dresser drawer in great-grandmother's bedroom and obtained some of the medication which she thought was candy.

Although the child was asymptomatic, she was taken to a hospital emergency room where her stomach was immediately lavaged. The patient subsequently was sent home in good health.

These particular ingestion accidents point out the following important points.

1. Adults past middle age are frequently in possession of potent medications which are very hazardous to young children.
2. These medications are usually easily accessible to children.
3. The inexperience, lack of caution, and exploratory instincts of children make them easy victims of ingestion accidents.
4. While we in no way suggest children refrain from visiting or being with grandparents, it is urged that parents make the above facts known to grandparents and strongly request caution with respect to handling and storing of potent medications—especially when children are present.

(*Number twenty-three in a series of Briefs on Accidental Chemical Poisoning*)

Misery acquaints a man with strange bedfellows.—SHAKESPEARE

CASE REPORTS

Transmission of Serum Hepatitis in Heroin Addicts

VERONICA I. BATONBACAL, M.D., BROOKLYN, NEW YORK, AND ALVIN SLIPYAN, M.D., F.A.C.P., ELMHURST, NEW YORK

(From the Medical Service, Greenpoint Hospital, Brooklyn, New York)

VIRAL hepatitis transmitted by syringe is well documented. Studies made regarding transmission pathogenesis attributed the disease largely to the common practice of addicts of employing a single syringe and needle for a series of injections from one addict to another without sterile precautions. Luttgens[1] mentions a crude method used by some addicts, the use of an instrument consisting of an ordinary medicine dropper and a hypodermic needle with a bit of cigaret paper or segment of a catheter as adapter.

Most[2,3] reported more than 200 cases of malaria in drug addicts in New York City. Doane[4] added three cases of tetanus acquired by narcotic addicts to the total of nine cases previously reported by other authors. In addition, he reported the occurrence of monilia infection in the blood stream of drug addicts as well as three cases of mycotic endocarditis. Hussey *et al.*[5] observed three cases of septicemia in heroin addicts; they had acute bacterial endocarditis, two due to Staphylococcus aureus and the other due to Bacillus pyocyaneus.

A statistical report from Harlem Hospital, New York City, reveals that five proved cases of viral hepatitis were found among 72 addict admissions in 1950, one of which died of acute yellow atrophy.[6] Of 104 cases of viral hepatitis reported from the Third Division of Bellevue Hospital from 1948 to 1952, 32 were known addicts, 87.5 per cent of whom were under thirty years of age and 90.6 per cent of whom were Negro or Puerto Rican. Only 6.3 per cent were Caucasian and 3.1 per cent Oriental. One third of the 104 cases reported lived in the Harlem area.[7]

The 23 cases reported from the Department of Internal Medicine and the Hektoen Institute for Medical Research of the Cook County Hospital, Chicago, show the majority of the patients to be in the fifteen- to twenty-four-year age group. Seventeen were males and six were females; only one was white, and the others were colored.[8–10]

Three cases were reported by Appelbaum and Kalkstein, [11]who believed that the spread of hepatitis from one addict to the other was induced through an infected needle and assumed that the minimum incubation period was seventy days.

Ten cases of viral hepatitis were admitted to the medical service of Greenpoint Hospital between October, 1956, and October, 1957. Of these ten patients, five were heroin addicts all under twenty-two years of age and all Puerto Rican.

It is the purpose of this paper to report these five cases of hepatitis in heroin addicts, all of whom used the needle and medicine dropper with an adapter borrowed from friends. The first four patients claimed that none of their friends were jaundiced. However, the most recent patient admitted to the hospital revealed that a friend of his with whom he often shared the same needle developed jaundice one week prior to the development of jaundice in himself and that the last injection they had together was one month before the onset of jaundice.

Case Reports

CASE 1.—A seventeen-year-old Puerto Rican male was admitted with the chief complaint of yellowish discoloration of the skin and sclerae of two weeks duration. Since the onset, he felt tired and lost his appetite. Three days prior to admission he noticed that his urine was highly colored and stained his underwear. He denied any history of transfusions, pruritus, fever, diarrhea, epigastric distress, nausea, or vomiting. On repeated questioning, however, the patient admitted that he had been getting diacetylmorphine intravenously once a week for about one year. This was taken by an unsterile hypodermic, borrowed from a friend. The last dose he received was two days prior to admission.

Examination revealed a well-developed, well-nourished, and conscious male, highly icteric but in no acute distress. His blood pressure was 130/70, temperature 99 F., and pulse 80 per minute, regular and full. His skin was warm and normal in turgor, but jaundiced. His heart and lungs were normal. His abdomen was tense, the liver and kidneys were not palpable, and the spleen was slightly enlarged. All the other physical findings were not remarkable.

Laboratory Findings.—The urine was negative for bile and apparently normal, except for occasional granular casts and on one occasion traces of albumin. Serologic findings gave negative results. The thymol turbidity was 31.8 units. Blood chemistry (nonprotein nitrogen, blood urea nitrogen, creatinine, and blood sugar) was within normal limits. The icteric index was 31.6 units, van den Bergh immediate direct, alkaline phosphatase 7.6 mg., total proteins 7.1 mg., albumin-globulin ratio 4.2:2.7, cephalin flocculation 3 plus, cholesterol 280, and esters 185. The stools were found to be positive for hookworm ova. Prothrombin time was 17.6 seconds with a control of 15.2 seconds. The blood count was within normal limits.

The patient had an afebrile course and was placed on complete bed rest for five weeks. A high protein, high caloric, low fat diet was prescribed. Vitamins parenterally with liver extracts and 50 mg. methionine were given three times daily. The parasitic infestation was treated vigorously. After six weeks, when all symptoms and signs returned to normal and all liver function study findings were reported as normal, the patient was discharged.

Case 2.—A twenty-two-year-old Puerto Rican male was admitted with the chief complaint of pain in the right upper quadrant of the abdomen, yellowish discoloration of the sclerae, highly colored urine, and clay-colored stools of one-and-one-half weeks duration. The patient stated that he had been a heroin addict for eight to nine months and had had intravenous injections once or twice a month, the last injection being two weeks prior to admission. He borrowed the needle from a friend who had never been jaundiced. Five days after the last injection he had pains in the right upper quadrant of the abdomen, and severe anorexia. Later, he became intensely jaundiced and constipated.

The past history and family history was noncontributory.

Present examination revealed a well-developed, well-nourished, conscious male patient in no acute distress. His pulse was 60 per minute, regular and full, blood pressure 110/65, and temperature 98 F. The skin was normal in turgor and elasticity but not jaundiced. The pupils were equally dilated and reacted sluggishly to light and accommodation. The tonsils were large and congested. The tongue was dry and coated, and palpable lymph nodes on both sides of the neck were present. The heart and lungs were normal. The abdomen was soft, and the liver was enlarged 3 fingerbreadths below the right costal margin and of normal consistency but quite tender. The spleen was slightly enlarged. The extremities and reflexes were normal.

Laboratory Findings.—Urinalysis findings were normal and negative for bile. The blood count was normal, except for a slight leukocytosis of 12,700, with a normal differential count. Blood chemistries were within normal limits. Liver studies revealed the prothrombin time to be fourteen seconds with a control of thirteen seconds, the icteric index 34.8 units, and the van den Bergh immediate direct. The total proteins, albumin-globulin ratio, and cholesterol and ester determinations were within normal limits. The thymol turbidity was 15.4, cephalin flocculation 4 plus, bromsulphalein 85 per cent retention. Serologic findings were positive.

The patient had an afebrile course and was placed on bed rest and on a high protein, high caloric, high vitamin diet. Repeat liver studies showed marked improvement of the patient, and he was discharged.

Case 3.—A twenty-one year-old Puerto Rican male was admitted with the chief complaint of progressive yellowish discoloration of the body and sclerae, tea-colored urine, malaise, and loss of appetite of four weeks duration. The patient stated that he was in apparent good health until four weeks prior to admission, when after a drinking spree, he had epigastric pains associated with vomiting and loose bowel movements. This, however, subsided without any medication. Abdominal pains were present on and off but were not related to food intake, and he noticed a gradual yellowish discoloration of the skin. He could not tolerate fatty foods but could eat raw apples and fresh fruit without difficulty. The urine was highly colored. There was no change in the color of the stools. The patient admitted to being a heroin addict for four months; the last intravenous injection was two months prior to admission.

Family History.—Father died of cancer of the gastrointestinal tract and a brother died of tuberculosis.

Physical examination revealed a well-developed, well-nourished, not acutely ill, conscious, icteric male. The eyes were dilated, equal, and regular, and reacted to light and accommodation. The tongue was dry and red; there was congestion of the throat. There were palpable, beadlike lymph glands along the anterior border of the sternocleidomastoid muscle. The heart was normal in size with a regular rate of 68 per minute and sounds of good quality. A soft systolic murmur was heard at the fourth left intercostal space at the parasternal line. P_2 was accentuated. The lungs and abdomen were normal. The liver, spleen, and kidneys were not palpable. The inguinal glands were palpable. The extremities and reflexes were normal except for hyperactive knee jerks.

Laboratory Findings.—The blood count was normal. The nonprotein nitrogen was 37.5, blood urea nitrogen 18, creatinine 1.5, and blood sugar 64 mg. per cent. Serologic findings were negative. Urinalysis findings were negative for bile, and stools were negative for ova and parasites. Prothrombin time was 14.7 seconds with a control of 14.1 seconds, thymol turbidity 31, icteric index 32.4, and van den Bergh immediate direct and indirect 4.6 mg. Alkaline phosphatase was 3 King-Armstrong units, total protein 6.8, albumin-globulin ratio 4:2.8, cholesterol 185, esters 57, and cephalin flocculation 3 plus.

The patient was placed on complete bed rest, high protein, high calorie, and low fat diet, and supportive treatment. The patient signed out of the hospital on the twelfth day.

Case 4.—A seventeen-and-one-half-year-old Puerto Rican male was admitted because of yellowish discoloration of the sclerae and skin of five days duration. The patient claimed that he was in perfectly good health, although jaundiced. There were no symptoms of weakness or anorexia. He had had no blood transfusions in the past but admitted having had an injection of diacetylmorphine intravenously about five months prior to the onset of jaundice. His recollection of the injection was quite hazy as to time, and it could have been within two months prior to his admission. He used a needle borrowed from a fellow addict whom he claimed had never been jaundiced. Past history was noncontributory.

Physical examination revealed a well-developed, well-nourished, and conscious male, icteric, afebrile, but in no acute distress. His blood pressure was 130/70, temperature 99 F., and pulse 80 per minute, regular and full. The skin was normal in turgor and elasticity with slight yellowish discoloration. There was slight enlargement and congestion of the faucial tonsils. A pea-sized, nontender, movable cervical gland was felt in the left side of the neck. The heart and lungs were normal. The abdomen was soft and the liver was palpable 2 fingers below the right costal margin, nontender, and smooth. The spleen and kidneys were not palpable. The extremities and reflexes were normal.

Laboratory Findings.—Urinalysis and blood chemistry (nonprotein nitrogen, urea, creatinine, and blood sugar) were within normal limits. Complete blood count revealed a leukocytosis of 12,200, hemoglobin 17 Gm., and 5.25 million red blood cells, and a differential showed 20 segments of four staff cells, 64 lymphocytes, and 12 eosinophils. Serologic findings were normal. Thymol turbidity was 9.5 units, alkaline phosphatase 5.2 King-Armstrong units, icteric index 10.9, van den Bergh immediate direct with 2.7 of the indirect, and cephalin flocculation 2 plus. On admission, the urine was positive for bile. There were no ova or parasites found in the stools.

The patient was afebrile, and complete bed rest was employed. A high carbohydrate, high protein, low fat diet with massive doses of vitamins was prescribed. Two weeks later the liver function tests were repeated. The icteric index was 1.8 units with a negative direct van den Bergh; The indirect was below 0.2 unit. Thymol turbidity was 9.5 units, total proteins 6.4 with albumin-globulin ratio of 3.7:2.7, and cholesterol and esters 150 and 50. A repeat complete blood count revealed a persistent lymphocytosis of 63 per cent, and 6 per cent eosinophils; other hemic components were within normal limits. The patient improved and was discharged and was referred to the clinic for follow-up.

CASE 5.—A twenty-year-old Puerto Rican male was admitted with the chief complaint of yellowish discoloration of the skin and sclerae for three weeks. The patient stated that he had been in apparent good health until three weeks prior to admission, when his friends noticed that he was "turning yellow." This, however, did not bother him, and he continued his work as a truck driver. There were no other symptoms until one week prior to admission, when he developed malaise, loss of appetite, low-grade fever, and nonradiating epigastric pain associated with nausea. He lost 10 pounds in one week. He had three loose stools the day before admission which were described as watery and lighter in color than normal. The urine was highly colored and stained his underwear. He denied any history of previous blood transfusions, injections, and exposure to hepatotoxic drugs. However, one month later he admitted having had intravenous diacetylmorphine injections for the last six months. The last dose was one month prior to the onset of the above symptoms. He also claimed that one week before he had jaundice a fellow addict who used the same needle was brought to another hospital with hepatitis.

Physical examination on admission revealed a well-developed, well-nourished, conscious, and cooperative patient, mentally alert, in no acute respiratory distress, with generalized jaundice. His blood pressure was 120/80, pulse 80 per minute, respiration 20 per minute, and temperature 99 F. His skin was normal in turgor and elasticity with generalized yellowish discoloration. The heart and lungs were normal. The abdomen was soft with slight tenderness on deep pressure over the right hypochondrium. The liver was palpable 3 fingerbreadths below the right costal margin, soft, smooth, and nontender with regular margins. The extremities and reflexes were normal.

Laboratory Findings.—On admission, the urinalysis, blood chemistry, and complete blood count were within normal limits. The urine was positive for bile and negative for urobilinogen. The icteric index was 39 units and the van den Bergh was immediate direct with 10 units of the indirect. The alkaline phosphatase was 17.4 King-Armstrong units, thymol turbidity 11.9 units, and total protein 6.4 mg. The albumin-globulin ratio was 3.5:2.9, cholesterol 249, and esters 50. The prothrombin time was fourteen seconds with a control of fourteen seconds, and cephalin flocculation was 4 plus. The stools were negative for ova, parasites, and bile and positive for urobilin. Serologic findings were negative.

The patient was placed on complete bed rest, high carbohydrate, high protein, and low fat diet, and massive doses of vitamins. Succeeding liver function study findings showed marked improvement before discharge. The patient was discharged as cured after six weeks.

Summary

This paper reports on five cases of proved hepatitis following intravenous injections of diacetylmorphine as practiced by addicts. All the patients were Puerto Rican and in the age group of fifteen to twenty-four. The incubation period could not be ascertained accurately in any case because of the repeated injections.

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Beauty without grace is the hook without the bait.—RALPH WALDO EMERSON

Microdrepanocytic Anemia in a Jewish Negro Woman

MARTIN H. FLOCH, M.D., BROOKLYN, NEW YORK, AND HENRY GREENWALD, M.D.,
LEON SUSSMAN, M.D., AND JOSEPH LITWINS, M.D., NEW YORK CITY

(From the Department of Medicine and Laboratories of Beth Israel Hospital, New York City)

SINCE Cooley and Lee[1] described thalassemia in 1925, a much greater understanding of the disease and related anemias has evolved. Thalassemia was, and still is in many circles, thought of as a disease of Mediterranean origin. However, it has been reported in Indians,[1] Chinese,[2] Negroes,[1-4] Kurdistan Jews,[5] Siamese,[6] and English[2,3] families of seemingly pure descent. With the relatively recent advances in hemoglobin study, it has become evident that many of the cases of anemias are combinations of abnormal hemoglobins and hereditary hemopoietic development.[7] It is the purpose of this paper to add to the literature what the authors believe is an interesting case and family study of an anemia due to the combination of sickle cell trait and thalassemia minor.

Case Report

A twenty-five-year-old, married Jewish Negro woman was admitted to Beth Israel Hospital because of intermittent epigastric pain of three weeks duration. The pain was not associated with any other symptomatology and was described as of moderate severity. She denied epistaxis, melena, excess vaginal bleeding, or any history of bleeding. She had two previous admissions for normal spontaneous term deliveries of normal babies. She had three well children. Review of symptoms, family history, and past history gave essentially negative results.

Physical examination revealed a well-developed, well-nourished Negro woman in no distress. Her temperature was 98 F., pulse 90 per minute and regular, and blood pressure 120/65 mm. Hg. The head, ears, eyes, nose, and throat were all within normal range. A few shotty nodes were present in the anterior cervical area. The lungs were clear to auscultation and percussion, and breasts were normal. The heart was not enlarged but revealed a Grade II systolic murmur at the apex. Her abdomen was slightly tender in the upper quadrants, and both the liver and spleen edge were palpable on respiration. The rest of the physical examination gave findings within normal range.

On admission the urine analysis showed negative findings. Erythrocytes were 1.69 million per cu. mm., hematocrit was 16 per cent, and hemoglobin 5.2 Gm. Leukocytes were 9,300 with 80 per cent neutrophilic polymorphonuclear leukocytes, 15 per cent lymphocytes, and 5 per cent monocytes. Mean corpuscular volume was 95 cu. microns, mean corpuscular hemoglobin 31$\mu\mu$g., and mean corpuscular hemoglobin concentration was 32.5 per cent. Numerous target cells with poikilocytosis and microcytosis were evident on smear. Fasting blood sugar was 89 mg. per cent, blood urea nitrogen 7.9, bilirubin .40 mg. per cent with a direct fraction of .16 mg. per cent, thymol turbidity 4 units, total protein 6.87 Gm. per cent with albumin 3.94 Gm. per cent and globulin 2.93 Gm. per cent. Alkaline phosphatase 3.3 Bodansky units, amylase 62 units (Somogyi), and erythrocyte sedimentation rate (Westergren) 95 mm. Further work-up revealed the urine to be negative for bile, and there was no increase in urobilinogen. The hemoglobin on repeated examination was between 5.2 and 7.3 Gm. per cent, the hematocrit between 16 and 26 per cent, and the erythrocyte count between 1.69 and 1.70 million per cu. mm.

An occasional normoblast was seen on the peripheral smears. The white cell count and cells remained within normal range, and platelets were recorded between 160,000 and 270,000 on wet examination. Reticulocyte counts varied but were recorded as high as 6.5 per cent. Serology tests showed negative results. A sickle cell preparation was positive for approximately 20 per cent sickling. Bone marrow examination revealed 60 per cent normoblasts with a normal distribution of other elements. Serum iron was 188 μgm. and the iron-combining power 489 μgm. Erythrocyte fragility was decreased with control hemolysis beginning at 0.46 and complete at 0.36. The patient's erythrocyte hemolysis began at .42 and was complete at .24. The paper electrophoresis (Fig. 1) revealed approximately 60 per cent A hemoglobin and 40 per cent S hemoglobin.

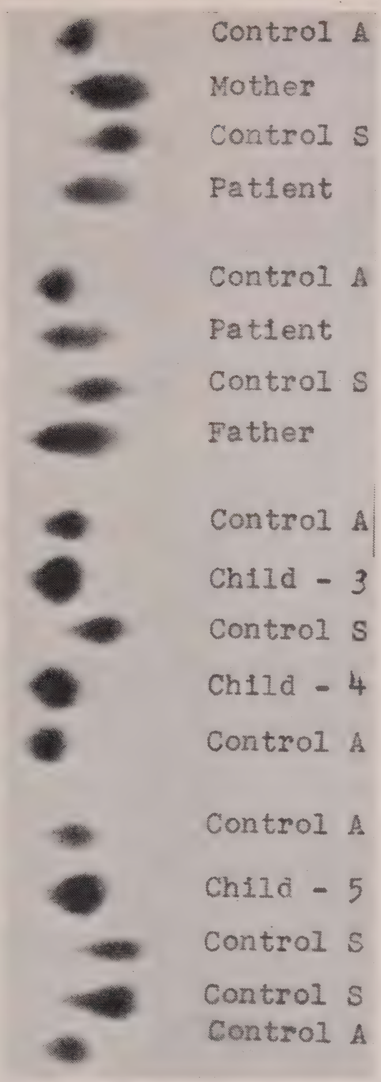

FIG. 1. Paper electrophoresis.* A bimodal pattern corresponding to hemoglobin A and S was exhibited by the mother, father, and patient. The division of the hemoglobins showed approximately 60 per cent A and 40 per cent S. The three children all had a unimodal hemoglobin pattern identical with that of hemoglobin A. The test was run in a veronal buffer at a pH of 8.8 (ionic strength 0.025) and performed over a five-hour period at 400 volts.

Electrocardiogram, intravenous pyelogram, oral cholecystography, chest film, gastrointestinal series, and barium enema were all within normal range except for slight fullness of the pulmonary artery and a small hiatus hernia. Repeat stools were negative for occult blood, ova, and parasites.

A diagnosis of microdrepanocytic anemia was made, bearing in mind the severe normocytic, normochromic anemia with target cells and normoblasts peripherally, a normoblastic marrow, increased red blood cell osmotic resistance, normal serum iron with increased combining power, elevated reticulocyte counts, a positive sickle preparation, and the electrophoretic pattern. The patient received two transfusions and was discharged to the clinic where she has had an excellent course to this date.

We were able to obtain hemoglobin patterns and peripheral hemograms on the mother, father, and three children of the patient as demonstrated in Table I and Figure 1. The patient's mother was born on the island of Nevis in the British West Indies. She claims her parents were born on Nevis and were descendents of Hebrew Ethiopians. She has a negative medical and hematologic history except for mild hypertension and was never hospitalized. The patient's father was born in Haiti of Haitian parents and claims he is of Hebrew Ethiopian descent. He has a negative medical history except for one hospitalization in 1944 for renal colic.

All of the patient's three children, aged five, four, and three years, had normal growth and development with a negative medical history.

Comment

We believe this is the first report of a case of microdrepanocytic anemia in a Jewish Negro. The patient came to us with a marked anemia. At first it would seem to be sickle cell anemia, but the electrophoretic pattern of the patient and the parents reveals only the trait to be present. With both parents carrying the trait and the patient exhibiting such a severe anemia, it seems logical that the patient could have sickle cell disease. However, the presence of only 40 per cent S hemoglobin in the patient rules this out. In no case has the sickle trait alone been proved to cause an anemia of such severity. All sources of blood loss were investigated and ruled out. The presence of target cells, an increased red cell osmotic resistance, normoblastic marrow, elevated reticulocyte count, and normal serum iron make one suspect sickle cell trait in association with thalassemia minor.

Thalassemia may be divided into the severe symptomatic disease referred to as (1) thalas-

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* The electrophoresis was done at New York Medical College through the Courtesy of Dr. A. Leonard Luhby.

TABLE I.—HEMOGLOBIN PATTERNS OF PATIENT, PARENTS, AND CHILDREN

Family	Red Blood Cells (Million)	Description	Hemoglobin (Per Cent)	Hematocrit (Per Cent)	Reticulocytosis	MCH*	MCV†	MCHC**	Hemoglobin A (Per Cent)	Hemoglobin S (Per Cent)
Patient	1.69	Targets	5.2	16	6.5	31	95	32.5	60	40
Mother	...	Rare target	10	40	0.9	..	...	..	60	40
Father	...	Poikilocytosis anisocytosis	13.5	41	0.1	..	...	..	60	40
Five-Year-Old-Child	3.75	Poikilocytosis anisocytosis	10	39	1	26.6	104	25.6	100	0
Four-Year-Old-Child	4.02	Normal	10.5	36	0.4	26.1	89.3	29.2	100	0
Three-Year-Old-Child	4.06	Slight poikilocytosis	11	34	0.8	27.1	83.9	32.4	100	0

* Mean corpuscular hemoglobin.
† Mean corpuscular volume.
** Mean corpuscular hemoglobin concentration.

semia major with marked anemia and bone changes which occurs early in life,[8] and (2) thalassemia minor, which at most is a mild anemia and usually asymptomatic.[6,8] Many subdivide this disease further, but in all actuality there can be gradations from asymptomatic to fatal cases with no absolute demarcation. Genetically, the major form is considered to occur in individuals who are homozygous for the gene and the minor form to occur in those who are heterozygous.[7]

The combination of sickle cell trait and thalassemia minor has been documented by many authors[9–12] and is called microdrepanocytic anemia. It is of great interest that the hemoglobin S in smaller quantities will not cause an anemia but in combination with thalassemia minor may cause a severe anemia. One postulates that the abnormal hemoglobin in combination with the poorly-constructed red cell of thalassemia may cause a severe anemia, whereas each trait alone will be asymptomatic. Singer *et al.*[12] in their cases of microdrepanocytic anemia demonstrated that S hemoglobin was present in amounts greater than 50 per cent when in association with A hemoglobin, and that an S + A or S + A + F pattern was pathognomonic for microdrepanocytic anemia. In our case the S fraction of the hemoglobin was approximately 40 per cent, or less than half. With the discovery of C, D, E, G, H, and I hemoglobins and syndromes associated with all sorts of hereditary combinations, it is not possible with our present knowledge to make a general statement on which hemoglobin pattern will demonstrate what disease. Thalassemia minor has been demonstrated in combination with C and in combination with E hemoglobins.[7,13,14] With an improvement in our technics and a more thorough study, it seems inevitable that the thalassemia trait will be demonstrated with all forms and combinations of hemoglobins.

Genetically, our patient had to inherit the thalassemia from one of her parents. The father's peripheral blood demonstrated poikilocytosis and aniscytosis but no anemia, and the mother had occasional target cells but no anemia. Thalassemia minor may be asymptomatic and certainly was so in one or both of the parents where it was present in association with S hemoglobin. This further emphasizes the fact that this may be an asymptomatic syndrome or one of a marked anemia.[12,15] All three of the patient's children did not have S hemoglobin, yet one child demonstrated aniscytosis and poikilocytosis and may prove to have thalassemia minor. The family background is of great interest, and the fact that this syndrome can occur in all ethnic groups should keep us more frequently on our guard for these cases.

Summary

1. A case of microdrepanocytic anemia (sickle cell trait plus thalassemia minor) is reported in a Jewish Negro woman.

2. A brief discussion of the disease is presented with the idea of keeping in mind the importance of abnormal hemoglobin-thalassemia minor combination as a cause of anemia which may be severe.

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Hunt Radium Dial Workers

A world-wide search has been launched to find at least 2,000 persons who survived radium poisoning during the 1920's. These include persons who ingested radium during their work as luminous watch dial painters or during medical treatment. Between 1915 and 1930 radium was an accepted medical treatment for a number of disorders. Contrary to popular belief, many of these people are still alive, probably in good health. If they can be found, and studied, some questions about the puzzling effects of radioactive deposits in the body may be answered. After all, they have carried radioactive material in their bodies for thirty years—a full generation.

American physicians have been asked to help find these individuals, many of whom have probably forgotten, or never knew, that they were once exposed to radium. Writing in the October 11 *Journal of the American Medical Association,* Dr. Samuel D. Clark, Cambridge, Massachusetts, asked doctors, nurses, and medical records departments to report to a newly organized central catalog agency any persons who suffered radium poisoning. The catalog is being set up at the Radioactivity Center of the Massachusetts Institute of Technology, Cambridge. Cooperating in the project is the Division of Biology and Medicine of the Atomic Energy Commission.

Dr. Clark noted that most medical records of these persons have been destroyed through accident or inadvertance. By collecting information about them in a central place, there will be available for study such data as the amount of internally deposited radioactivity, shortening of life span, susceptibility to disease, and the incidence of bone changes and tumors.

The Radioactivity Center wants information about three types of persons, Dr. Clark said. They are:

—Those who ingested radium compounds of any sort either during their work (as watch dial painters) or during medical treatment.

—Those who received injections of radium compounds for such conditions as arthritis, hypertension, or gout.

—Those who suffered exposure in the process of radium research or the manufacture of radium products.

There are several conditions that should make a physician suspicious of radium poisoning. They are: spontaneous fractures without evidence of cancer at the site of fracture; osteogenic sarcomas, a type of bone tumor; and cancers of the sinuses. Many watch dial painters had unusual trouble with their teeth, losing them at an early age and having long convalescences after extraction.

Dr. Clark of the Department of Medicine at M.I.T. is handling the medical supervision of the project, which is headed by Professor Robley D. Evans. Collaborating in the study are researchers at the Argonne National Laboratory and Cancer Research Hospital, Lemont, Illinois; the New Jersey State Department of Health; and the Royal Cancer Hospital, London, England.

SELECTED REPRINTS

Editor's Note: *Occasionally the editors of the* Journal *find articles or editorials in other medical publications which seem to us so noteworthy that reprinting them for the information of the readers of the* New York State Journal of Medicine *seems to be indicated as a function of good medical journalism. These reprints will appear from time to time in this department.*

*Surgical Diathermy (Electrothermia) of Cancer of the Rectum**

IRVING I. ROSENTHAL, M.D., AND ROBERT TURELL, M.D., NEW YORK CITY

(From the Department of Surgery, Mount Sinai Hospital)

Shortly after the publication by Strauss and others[1] of their favorable results following electrothermal coagulation of rectal cancer, one of us (R. T.) began to investigate seriously the merits of this form of therapy. Electrothermia was limited to nonulcerating lesions that were regarded as unresectable either after exploratory celiotomy or on a clinical basis, such as fixation, and in patients who were regarded as extremely poor risks for an abdominoperineal resection of the rectum. In the first series of 15 patients, only one tumor disappeared completely following electrothermal coagulation. On purely clinical grounds we could not explain why this tumor should have responded well when similar tumors in the remaining patients were unaffected by this modality. Continued clinical investigation in more than two score of other patients yielded the same end-results, namely, an occasional unexplainable brilliant success in the midst of discouraging failures in the preponderance of other patients. In fact, some patients were even made clinically worse after electrocoagulation by virtue of the increase of tenesmus or bleeding or both. After treatment some patients could not tolerate instrumentation, even diagnostic endoscopy, without regional anesthesia.

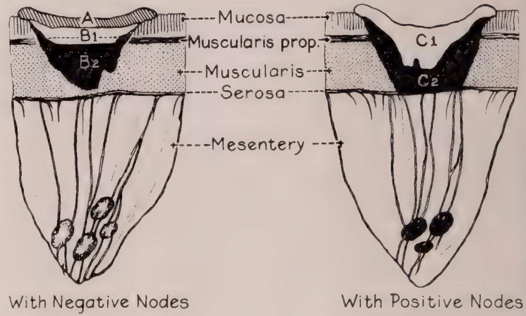

Fig. 1. Modified Dukes classification: *A*, lesion is confined to mucosa; *B1*, lesion extends into muscularis mucosae, but not through it, with negative lymph nodes; *B2*, lesion extends through muscularis mucosae, without nodal involvement; *C1*, lesion of type *B1* or *B2* is limited to intestinal wall, with involved lymph nodes; *C2*, lesion extends through all layers of the intestinal wall, with positive lymph nodes. (Reproduced with permission from *The Surgical Clinics of North America* **35**: 1295 [Oct.] 1955.)

Even today we still have great misgivings about treating rectal cancer by electrocoagulation, because in most cases we are unable to remove the entire lesion for microscopic study (total biopsy) to determine the presence or absence of invasiveness. Because of the flatness of many lesions, we are usually forced to resort to multiple fractional biopsies, which hardly ever permit, with any degree of exactitude or certainty, the detection of the extent of invasion into or beyond the muscularis mucosae, which we consider the determining line of invasion (Fig. 1). As in the case of malignant transformation in adenomas[2] (a lesion we decidedly excluded from considera-

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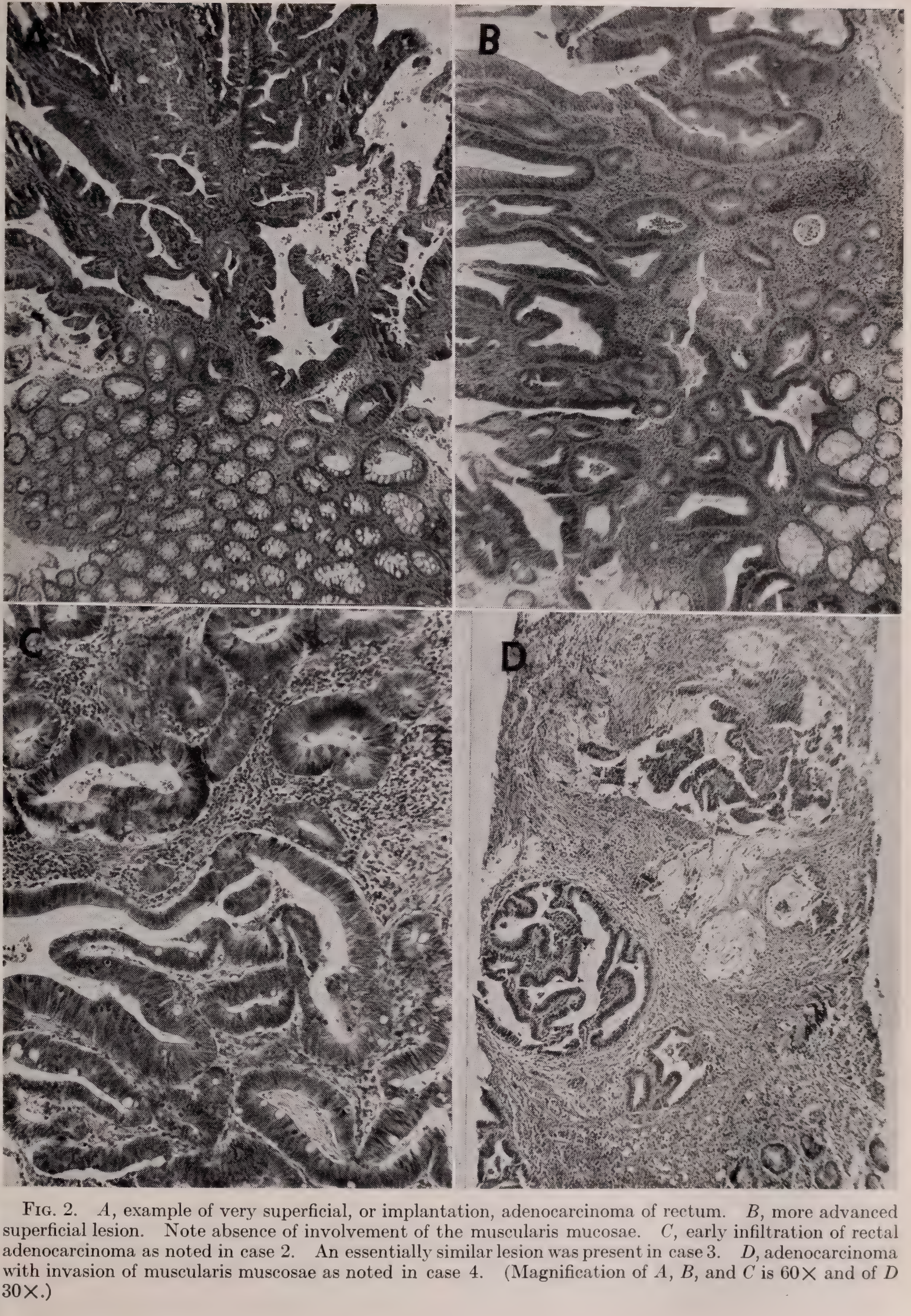

FIG. 2. *A*, example of very superficial, or implantation, adenocarcinoma of rectum. *B*, more advanced superficial lesion. Note absence of involvement of the muscularis mucosae. *C*, early infiltration of rectal adenocarcinoma as noted in case 2. An essentially similar lesion was present in case 3. *D*, adenocarcinoma with invasion of muscularis muscosae as noted in case 4. (Magnification of *A*, *B*, and *C* is 60× and of *D* 30×.)

tion in this paper), involvement of the lamina propria without invasion of the muscularis mucosae for the purposes of this paper is not considered invasive cancer. We are, however, mindful of the possible embolic route of dissemination of malignancy. It is known that cancer cells may fortuitously enter the lymphatic or blood vessels and thus cause regional or distant metastases without direct invasion of the muscularis mucosae or the intestinal wall.

During the past decade, in private and in clinical practice, the value of electrothermal coagulation for the treatment of rectal cancer by a technic similar to the one described by Strauss and others[1] or Turnbull[3] has been reinvestigated. This form of therapy has been limited to (1) adenocarcinoma that is confined to the mucosa (superficial) (Figs. 1A, 2A, 2B) in a patient who is either a poor risk for a serious operation or in one who refuses surgical intervention, usually colostomy, which is a rather uncommon occurrence nowadays, and (2) carcinoma which extends into the muscularis mucosae (Fig. 1B) in patients who are regarded as poor risks for radical surgical intervention. Patients with ulcerating lesions who refuse operation or even those who are considered poor risks have, as a rule, not been treated by electrocoagulation.

Report of Cases

For illustrative purposes, the following description of several recent selected cases is presented:

Case 1.—A sixty-two-year-old man had had multiple admissions to the Mount Sinai Hospital for a period of over twenty years. He had also been followed in the arthritis, diabetes, and peripheral vascular disease outpatient clinics over this period of time. In 1950, he had a cerebral vascular accident with resultant permanent paresis of his left arm and leg. In April, 1957, he reported intermittent bleeding per rectum of three to four months duration as well as increasing constipation and tenesmus. Digital rectal examination and sigmoidoscopy revealed a flat but polypoid mass about 2 cm. in diameter that was located on the left posterolateral wall 9 cm. cephalad to the anal verge.

Several biopsy specimens (Fig. 2A and 2B) of this lesion revealed noninfiltrating (superficial) adenocarcinoma (without adenomatous tissue). The patient was therefore admitted to the hospital on April 23, 1957, for definitive therapy. Because of his poor general physical condition and an unexpected finding of leukemia, the rectal neoplasm was treated by electrothermia. On May 13, 1957, biopsy of the coagulated area revealed atypism of cells without evidence of malignancy. Repeated endoscopic examinations at two-month intervals showed a healed scar. The patient was last seen in January, 1958, at which time there was no gross or microscopic evidence of recurrence of the rectal lesion.

This is an instance of superficial cancer confined to the mucosa (Fig. 1A). It is our present clinical feeling that this type of lesion, especially when located in the posterior and/or lateral walls of the rectum, may be treated conservatively. This is especially true in the presence of systemic contraindications to major surgery or when patients refuse surgical intervention.

Case 2.—A sixty-four-year-old man first entered the Mount Sinai Hospital July 31, 1953, because of hemoptysis of seven months duration. Bronchoscopy and roentgenography of the chest revealed a lesion in the lingular division of the left upper lobe, which on biopsy proved to be a squamous cell carcinoma and for which a left pneumonectomy was performed. Microscopy of the excised lung again revealed the presence of squamous cell carcinoma with early infiltration but without involvement of the lymph nodes.

The patient was readmitted to our hospital on November 23, 1956, because of the passage of black stools for one week and bilateral lower abdominal pain for one month; this pain radiated to the back but was relieved by defecation. He had been entirely free from pulmonary symptoms, but he developed increasing joint pain which was relieved by cortisone therapy. Roentgenography of the chest revealed a "coin lesion" in the right lower lobe. Double contrast barium enema showed a small, irregular, sessile defect, about 1 cm. in diameter, at the rectosigmoid. Sigmoidoscopy confirmed the presence of a rectosigmoidal sessile lesion. Microscopy of specimens removed by biopsy revealed infiltrating adenocarcinoma (Fig. 2C). Laboratory studies revealed a hemoglobin value of 10.4 Gm. per 100 cc. of blood and a sedimentation rate of 107 mm. per hour. The latex fixation test for rheumatoid arthritis was strongly positive. The postoperative pulmonary lesion noted on roentgenography was presumed to be either a primary or metastatic neoplasm.

Because of this pulmonary finding and the patient's poor general physical condition, it was elected to treat the rectal malignancy by electrocoagulation. Endoscopic examination on December 24, 1956, ten days after electrocoagulation, revealed the usual superficial necrotic reaction. He was discharged on December 26, 1956. Sigmoidoscopy on February 6, 1957, disclosed small heaped-up nodules, 0.25 cm. in diameter, at the site of the previous coagulation; these, on biopsy, proved to be only fibrous tissue. The patient was last seen in November, 1957, at which time there was no gross evidence of rectal malignancy. The pulmonary lesion was, however, progressing in size, and there was gradual deterioration of the patient's general physical condition.

Case 3.—A sixty-four-year-old man first entered the Mount Sinai Hospital on Oct. 28, 1953, because of hematuria and urinary frequency. Cystoscopy revealed a papillary carcinoma at the dome of the bladder. A partial cystectomy was performed, and pathologic studies showed transitional cell carcinoma with early muscle infiltration. The patient was discharged on November 22, 1953, and subsequently received radiation therapy to the suprapubic area. On February 12, 1955, recurrent carcinoma of the bladder was recoagulated. About this time the patient developed an acute coronary artery occlusion with infarction.

On January 11, 1956, he was readmitted to the hospital because of increasing dysuria. On rectal examination a mass was felt. Double contrast barium enema showed a possible polyp of the upper segment of the descending colon. Sigmoidoscopy disclosed a sessile lesion 2.5 cm. in diameter on the right posterolateral aspect of the rectum about 8 cm. cephalad to the anal verge. Biopsy of the rectal lesion revealed infiltrating adenocarcinoma. An electrocardiogram taken at this time still demonstrated myocardial disease associated with a bundle branch block. Cystoscopy revealed recurrent infiltrating cancer of the bladder. For these reasons, the rectal malignancy was treated by electrocoagulation. Ten weeks after coagulation of the rectal lesion, endoscopy revealed the rectum to be free from cancer.

On January 11, 1957, the patient was readmitted because of another recurrence of the cancer of the bladder. At this time he began to complain of pain in the right shoulder. On March 12, 1957, on physical examination the liver border was felt two fingerbreadths below the right costal margin. A roentgenogram of the right humerus revealed a lytic lesion. Biopsy of the osseous lesion disclosed anaplastic carcinoma with a microscopic pattern identical with the malignancy of the bladder. Sigmoidoscopy again revealed normal mucosa at the site of coagulation of the rectal neoplasm. He was discharged on May 25, 1957, and subsequently died at another hospital. Autopsy was not performed.

CASE 4.—A fifty-eight-year-old woman (reported on through the courtesy of Dr. Bernard Friedman) was first seen on September 27, 1952, at which time she complained of rectal pain of four to five years duration. In 1946, she had had an episode of rectal bleeding, and a barium enema at that time revealed a defect of the rectosigmoid which corresponded to the endoscopic finding described below. Therapy was refused. Four months prior to her admission to the hospital she developed increasing constipation and rectal bleeding associated most often with a bowel movement. She was subsequently examined with the sigmoidoscope, a small sessile mucosal elevation 15 cm. above the anal verge was removed with a cold biopsy forceps, and the base was coagulated. Microscopy of the specimen revealed infiltrating adenocarcinoma (Fig. 2D). Double contrast barium enema and sigmoidoscopy about a fortnight later failed to reveal the site of the biopsy or the presence of any other lesions. Nevertheless, laparotomy was advised, but the patient refused. She was last seen in December, 1957, at which time she was free from gross evidence of rectal malignancy.

In cases, 2, 3, and 4 are examples of rectal cancer with infiltration that responded to electrothermia. In cases 2 and 3 it is possible that the infiltration had not extended through the muscularis mucosae, while in case 4 the infiltration appeared to have extended beyond this anatomic structure. This matter could have been resolved by the local excision of the lesion (this patient refused surgical intervention). However, theoretically, we eschew this procedure because it carries potential harm of dissemination of cancer cells and because this procedure still falls short of revealing metastatic involvement of the mesenteric lymph nodes.

For the present, or until more experience is accumulated, we intend to continue to treat infiltrative cancer of the rectum in good-risk patients by the currently accepted surgical procedures. Electrothermic coagulation is reserved for invasive rectal cancer in patients who are extremely poor risks for major operation.[4]

Summary and Conclusions

In view of the reawakening of interest in the treatment of rectal cancer by means of electrocoagulation, this report is concerned with the good results that have been obtained in the treatment of three recent cases of infiltrative adenocarcinoma. At this time we have no uncontested explanation for these good results, particularly in view of the fact that our over-all results with electrothermia for the treatment of similar lesions have been almost universally unfavorable in a series of over 50 unreported cases. Also reported is one favorable result after electrocoagulation of a noninfiltrating (superficial) adenocarcinoma. This good result corresponds to that obtained in 12 other, unreported, followed cases.

For the present, electrothermia is utilized for the treatment of rectal adenocarcinoma in selected cases of poor-risk patients or for the rare person who refuses colostomy. In spite of the occasional apparent but unexplained therapeutic success, electrothermia should be regarded as a palliative procedure for the treatment of invasive cancer of the rectum. For the good-risk patient with invasive rectal cancer, we are continuing to advise accepted surgical procedures as the proper prevailing treatment.

25 East 83rd Street, New York 28, New York
(Dr. Turell)

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Food Fads Fooling Fickle Public

There are two general types of food faddisms, claims Dr. Robert E. Olson, Graduate School of Public Health of the University of Pittsburgh. The first is the individual type stemming from acute or chronic psychologic aberration, including psychosis. The second type is collective and comes about through the acceptance by a group of stereotyped dietary practice designed supposedly to improve health or "cure" disease.

Dr. Olson points out that the first or individual type includes the odd dietary practices indulged in during pregnancy and is represented by cravings for cornstarch, chalk, clay, charcoal, tree bark, or to such "gourmet" leanings as kangaroo tails, fried grasshoppers, and pickled ants.

The second, or collective type, Dr. Olson reports, includes the numerous food fallacies subscribed to by various groups, cults, or individuals. These include:

—The fallacy that ascribes to a single food or group of foods a special attribute or power which is out of proportion to its nutritional content. These include yogurt, blackstrap molasses, wheat germ oil, brown sugar, "live" honey, and seaweed.

—Another fallacy states that currently available fresh fruits and vegetables are nutritionally barren because most of them are grown with chemical fertilizers.

—A third fallacy is that which advocates the daily fortification of the American diet with vitamins, trace minerals, and other nutrients on the grounds that such fortification will improve health beyond that of the usual adequate diet.

—A fourth fallacy is the belief that certain foods or systems of dieting have specific value, out of proportion to the established facts of diet therapy, in the treatment of given diseases. A host of "elimination" regimens to promote defecation have been popularized to "cure" hypertension, cancer, heart disease, diabetes, anemia, and obesity.

—Still another fallacy is the regimen being advocated as specifically useful for the treatment of obesity, including such restricted menus as bananas and milk, steak and prunes, raw tomatoes, and hard boiled eggs. Most of these diets are nutritionally inadequate as well as calorically inappropriate and expensive.

—Recently, Dr. Olson reports, much attention has been given to the possibility that low fat, low cholesterol diets were useful in the lowering of serum cholesterol, and possibly in improving the prognosis in coronary artery disease. There is some evidence to support this type of diet therapy in selected individuals, but the extent to which this mode of dieting has won adherence by patients, some not under a physician's care, is approaching a faddism, Dr. Olson warns.

Nutritional authorities agree, says the Pure Food and Drug Administration, that the best way to buy vitamins and minerals is in the package provided by nature—vegetables, fruit, milks, meat, eggs, fish, whole grain or enriched bread, and cereals.

MONTH IN WASHINGTON

It is now well-recognized that the new 86th Congress, heavily spiced with newly-elected Democratic liberals, will set out to make an impressive record for itself. Health legislation will not be neglected.

On the basis of developments last session, and the known interests of many of the new members of Senate and House, here are the health areas where intensive activity is assured, with prospects for enactment of a number of bills either this year or next year, the final session of the 86th and also a presidential election year:

Social Security.—Labor has announced that it will work this year for substantial changes in Social Security, the most important being a program for hospital-nursing home care for the aged and other beneficiaries. On this the unions are supported by the Democratic Advisory Council, which reflects the views of the Truman-Stevenson-Butler element of the party but generally finds itself to the left of Senate Leader Johnson, House Speaker Rayburn, and some other Congressional leaders.

Under Social Security, the AFL-CIO and the Democratic Council also would lower or drop the age fifty requirement for disability payments, increase the OASI taxes, bring more income under the taxes, and raise benefits all up and down the line.

American Medical Association, joined by scores of other associations and individuals in health and other activities, successfully opposed the Social Security hospitalization plan last session. They are prepared to wage just as determined a fight this year.

Aid to Medical Schools.—An effort was made in Congress last session to provide grants to medical schools for building and equipping teaching facilities in order to complement the research grants program already in effect. While the administration supported the attempt, it did not throw behind it all the energy it is expected to exert this year. Top officials of the Department of Health, Education, and Welfare, from Secretary Flemming on down, have been talking up aid to medical schools all fall. When the time comes to testify, they will be strengthened by the activities of a new committee appointed to look into the schools' problems, as well as by the Bayne-Jones report which calls for the immediate start on construction of between 14 and 20 medical schools.

American Medical Association supports construction and equipment grants for medical teaching facilities. Strongest opposition this year is likely to come from some influential members of Congress, who succeeded in bottling up the legislation last session.

The Keogh Bill.—Last session this legislation to permit the self-employed to pay taxes on money withdrawn from retirement funds passed the House but failed to get out of committee in the Senate. Its sponsors, including the A.M.A., are hopeful that the Senate objections can be removed this year.

Medicare.—Congressmen already have received protests from back home about restrictions imposed on the civilian phase of Medicare, mostly the channeling of service families to military facilities. This issue is sure to come up when appropriations hearings start on the Defense Department's budget. It may come up sooner if Medicare runs out of money and requires a deficiency appropriation.

The Doctor Draft.—The special draft, which hasn't actually been used in two years, may be invoked by the Defense Department this spring, if there isn't a better response on the part of interns and residents to the appeals for volunteers. Should the law have to be used this year, the Defense Department will have a pretty convincing argument that it should be extended beyond its scheduled expiration date of next June 30.

Medical Research.—While the Federal government currently is spending at a rate of more than 324 million dollars on medical research through the National Institutes of Health, a still higher record of appropriations is in prospect for next year. The Senate Appropriations Committee has announced that never again will the pace of research be slowed through lack of dollars. This is also the attitude of the AFL-CIO and the Democratic Advisory Council, among other groups. The pattern usually is for the House to moderately increase Budget Bureau figures for medical research, then for the Senate to vote large additional increases. The House then generally agrees to spend close to what the Senate wants.

Contributory Health Insurance for Federal Workers.—A new effort to bring about a contributory health insurance program for civilian Federal workers is expected, with Federal employe

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Prepared by the Washington Office of the American Medical Association, Washington, D.C.

unions leading the drive.

Other Prospects.—A number of amendments will be proposed for the Hill-Burton act. Some effort will be made to strengthen the law under which labor-management health and welfare funds must keep records and file reports. Hospitals are looking forward to low-cost loans under a community facilities bill and nursing homes to mortgage guarantees. The feud over VA's closing of 5,000 beds likely will be renewed.

FILM REVIEWS

The following films have been selected by the Subcommittee on Film Review of the Medical Society of the State of New York. These films are available on request from the Medical Film Library of the New York State Department of Health, 84 Holland Avenue, Albany 8, New York. Films will be sent on request to any qualified individuals or organizations. Return postage is paid by the user. Catalogs of films available for both professional and lay use are available on request.

The subcommittee believes that films are essentially audio-visual aids, and best effects are obtained by preceding or following a film with a discussion or question and answer period presided over by a professional person familiar with the topic presented.

Surgical Treatment for Splenic Flexure Carcinoma with Solitary Liver Metastases. Classification: Oncology; Surgery. Color, silent, 45 minutes. Year of Production: 1947; Author and Producer: Philip Thorek, M.D., Chicago; Camera: Jerome J. Moses, M.D.

An interesting record film of a case of carcinoma of the splenic flexure of the colon resected in three stages, with resection of the left lobe of the liver for a large solitary metastasis. The surgical rationale is controversial, but the film is adequately produced.

Suggested Audience: Residents in surgery, surgeons.

Transthoracic Esophageal Diverticulectomy. Classification: Surgery. Color, silent, 24 minutes. Year of Production: 1948; Author and Producer: Philip Thorek, M.D., Chicago; Camera: Jerome J. Moses, M.D.

A record of the transthoracic removal of a diverticulum of the lower third of the esophagus, done by an accepted approach with good technic which is dated in certain minor respects. The operative procedure is, on the whole, clearly presented, and anatomic orientation by pointing to structures is occasionally provided.

Suggested Audience: Residents in surgery and general surgeons.

The Use of Digitalis in Heart Failure. Classification: Cardiology; Internal Medicine; Pharmacology. Color, sound, 31 minutes. Year of Production: 1947; Sponsor: Wyeth, Inc.; Technical Adviser: Department of Pharmacology, Cornell University School of Medicine, New York City; Producer: Transfilm, Inc., New York City.

An adequately produced illustrated lecture film on the nature of digitalis action, the criteria of effectiveness of digitalis preparations, and the superiority of the glycoside digitoxin. The film's content is somewhat controversial, but the presentation will be stimulating if presented with competent discussion.

Suggested Audience: Medical students, general practitioners.

Vagotomy and Gastroduodenostomy for Duodenal Ulcers with Partial Gastric Resection. Classification: Surgery (Abdominal Surgery). Year of Production: 1948; Author: Lawrence S. Fallis, M.D., Henry Ford Hospital, Detroit; Producer: Davis and Geck, Inc., New York City.

This is a film record of an accepted surgical treatment for a chronic duodenal ulcer which has caused complete obstruction. Two thirds of the stomach are removed proximal to the ulcer, and the gastric stump is anastomosed to the second part of the duodenum; both vagus nerves are divided. Although the surgical technic is good, the film suffers in places from lack of visual detail, omissions, and insufficient anatomic orientation.

Suggested Audience: Residents in surgery, surgeons.

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NECROLOGY

Clayton Morgan Axtell, M.D., of Deposit, died on November 25, 1958, at Binghamton City Hospital at the age of seventy-two. Dr. Axtell graduated in 1909 from Cornell University Medical College and interned at Bellevue Hospital. In 1912 he was named a State health officer and worked principally in the village of Deposit and town of Sanford. Dr. Axtell was the 1957 and 1958 Broome County Medical Society's candidate for the outstanding general practitioner of New York State. He was a member of the Broome County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Julius W. Blakely, M.D., of Highland, died on August 14, 1958, at the age of eighty-four. Dr. Blakely graduated in 1896 from Albany Medical College.

William Braunstein, M.D., of Long Island City, died on November 30, 1958, at the age of sixty-three. Dr. Braunstein received his medical degree in 1928 from the University of Brunn. He was a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Harvey Ding, M.D., of Orleans, Cape Cod, Massachusetts, formerly of Brooklyn, died on October 7, 1958, at the age of eighty-four. Dr. Ding graduated in 1906 from New York Homeopathic Medical College and Flower Hospital. He was an honorary physician at Prospect Heights Hospital. Dr. Ding was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Douglas Eller, M.D., of New York City, died at the Midtown Hospital on December 9, 1958, at the age of forty-eight. Dr. Eller graduated in 1941 from the University of Arkansas School of Medicine. He was an associate in dermatology and syphilology at Elmhurst General Hospital and an associate attending in dermatology and syphilology at University Hospital. Dr. Eller was a Diplomate of the American Board of Dermatology, Inc., and a member of the Pan-American Medical Association, the American Academy of Dermatology and Syphilology, the Society for Investigative Dermatology, the Association of Military Surgeons of the United States, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Victor Feith, M.D., of New York City, died on October 5, 1958, at the age of seventy-one. Dr. Feith received his medical degree in 1911 from the University of Wurzburg. He was a member of the New York County Medical Society and the Medical Society of the State of New York.

Vincent W. Haight, M.D., of Buchanan, died on December 7, 1958, at the age of sixty-four. Dr. Haight graduated in 1919 from Columbia University College of Physicians and Surgeons. He was an honorary physician at Peekskill Hospital. Dr. Haight was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Joseph McAuliffe, M.D., of Buffalo, died on May 3, 1958, at the age of forty-nine. Dr. McAuliffe graduated in 1934 from Long Island College of Medicine.

John Gerard McNamara, M.D., of Brooklyn, died on December 2, 1958, in Long Island College Hospital at the age of sixty-three. Dr. McNamara graduated in 1921 from Long Island College Hospital Medical School. He was orthopedic surgeon and assistant director in orthopedic surgery at Long Island College Hospital and attending in orthopedic surgery at Lutheran Medical Center and St. Charles Hospital. In June, 1958, he was named "Doctor of the Year" by the Bay Ridge Medical Association of which he was a past president. Dr. McNamara, a past president of the Catholic Physician's Guild of the Diocese of Brooklyn and of the Celtic Medical Association of New York, was a Diplomate of the American Board of Orthopedic Surgery, a Fellow of the American College of Surgeons, and a member of the American Academy of Orthopaedic Surgeons, the Brooklyn Surgical Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

[Continued on page 338]

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References: 1. Finkelstein, Murray: Journal of Pharmacology and Experimental Therapeutics, in press. 2. Winkelstein, Asher: Paper in preparation.

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REFRACTORY CASES RESPOND

[Continued from page 336]

Max Minkoff, M.D., of Brooklyn, died on September 25, 1958, at the age of seventy-four. Dr. Minkoff graduated in 1911 from New York Eclectic Medical Institute.

Alban Elliott Munson, M.D., retired, of Santa Barbara, California, formerly of Nyack, died on September 22, 1958, at the age of eighty-four. Dr. Munson graduated in 1899 from New York University and Bellevue Hospital Medical College and interned at City Hospital (now Elmhurst General Hospital). Dr. Munson was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gilbert Joseph Palen, M.D., of Roxbury, died on September 6, 1958, at the age of eighty-eight. Dr. Palen graduated in 1895 from Hahnemann Medical College of Philadelphia. He was superintendent of the Margaretville Hospital. Dr. Palen was a Fellow of the American College of Surgeons and a member of the American Institute of Homeopathy and the New York State Homeopathic Society.

Samuel A. Preiser, M.D., of New York City, died on December 4, 1958, at the age of seventy-four. Dr. Preiser graduated in 1910 from Long Island College Hospital Medical School and interned at Beth Isreal and Montefiore Hospitals. He was a member of New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Samuel Rumore, M.D., of Coral Gables, Florida, formerly of Brooklyn, died on September 22, 1958, at the age of fifty-nine. Dr. Rumore received his medical degree in 1928 from the University of Naples. He was a member of the associate staff of the Prospect Heights Hospital. Dr. Rumore was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Marek M. Segal, M.D., of Mahopac and New York City, died on December 7, 1958, at the age of sixty-one. Dr. Segal received his medical degree in 1924 from the University of Warsaw. He was an associate in gynecology at the Hospital for Joint Diseases. Dr. Segal was a Fellow of the American College of Obstetrics and Gynecology and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Paul Kuhlmann Shirk, M.D., of Watervliet died on August 27, 1958, at the age of sixty-four. Dr. Shirk graduated in 1930 from Jefferson Medical College of Philadelphia. He was a member of the staff of the Veterans Administration Albany office.

Jacob Smith, M.D., of the Bronx, died on December 5, 1958, at the age of sixty-four. Dr. Smith graduated in 1920 from Cornell University Medical College. He was an associate physician at Morrisania Hospital. Dr. Smith was a member of the Bronx County Medical Society and the Medical Society of the State of New York.

Samuel Soifer, M.D., of Forest Hills, died on December 4, 1958, at the age of fifty-nine. Dr. Soifer graduated in 1924 from New York University and Bellevue Hospital Medical College. He was an associate in urology at Maimonides Hospital and Kings County Medical Center, an assistant in urology at Long Island College Hospital Outpatient Department and an assistant professor of urology at State University of New York College of Medicine at New York City. Dr. Soifer was a Diplomate of the American Board of Urology and a member of the New York Society of the American Urological Association, the Brooklyn Urological Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Samuel Spiegel, M.D., of New York City, died on December 6, 1958, in his home at the age of eighty-one. Dr. Spiegel graduated in 1898 from Bellevue Hospital Medical College. He was a Fellow of the American College of Surgeons and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles S. Steierman, M.D., of Far Rockaway, died on December 4, 1958, at the age of sixty-one. Dr. Steierman graduated in 1924 from Boston University School of Medicine. He was an assistant physician at St. Joseph's Hospital, Far Rockaway, and an assistant in eye, nose, and throat at Queens General Hospital. Dr. Steierman was a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Christopher Smith Williams, M.D., of La Fayette, died on December 6, 1958, at the age of eighty-six. Dr. Williams graduated in 1897 from the University of Buffalo School of Medicine. He was a member of the Syracuse Academy of Medicine, the Onondaga County Medical Society, the Medical Society of the State of New York, and American Medical Association.

[Continued on page 340]

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[Continued from page 338]

Archibald Carter Worth, M.D., retired, of Albany, died on November 29, 1958, at the age of seventy-three. Dr. Worth graduated in 1910 from New York Homeopathic Medical College and Flower Hospital. He was a member of the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

MEDICAL MEETINGS

Congress on Maternal and Infant Care

"Modern Maternal and Infant Care in Illinois" will be the theme of the third Illinois Congress on maternal and infant care to be held at the Hotel St. Nicholas, Springfield, January 28 through 30, 1959.

Further information and registration forms may be obtained by writing to Dr. Robert A. Beebe, Program Committee, Illinois Committee on Maternal Welfare, 116 South Michigan Avenue, Chicago 3, Illinois.

Cardiac Teaching Day

The third annual cardiac teaching day sponsored by the Broome County Medical Society will be held on Wednesday, February 4, 1959, in the Arlington Hotel, Binghamton.

Guest physicians at the sessions will be: Dr. Dwight E. Harken, associate clinical professor of surgery, Harvard Medical School; surgeon, Peter Bent Brigham Hospital; surgeon and chief of Department of Thoracic Surgery, Mount Auburn and Malden Hospitals; who will show two motion pictures on "The Pathology of Acquired Valvular Disease" and "Heart Surgery." Dr. Leroy D. Vandam, clinical professor of anesthesia, Harvard Medical School; director of anesthesia, Peter Bent Brigham Hospital; who will speak on "Safe Conduct of the Poor Risk Patient Through Surgery" and "Cardiac Arrest and Resuscitation." Dr. Laurence B. Ellis, associate clinical professor of medicine, Harvard Medical School; chief of Cardiac Clinic, Boston City Hospital, who will discuss "Hemodynamic and Clinical Evaluation of Patients with Heart Disease" and "Late Improvement and Deterioration of Patients Who Have Had Heart Surgery."

Reservations may be made with the Society office at 42 Front Street, Binghamton.

Biggs Memorial Lecture

Dr. Hubertus Strughold, professor of space medicine and advisor for research, United States Air Force School of Aviation Medicine, Randolph Air Force Base, San Antonio, Texas, will be the speaker for the 1959 Hermann M. Biggs Memorial Lecture, on "Space Medicine." The lecture will be presented in Hosack Hall in The New York Academy of Medicine Building, 2 East 103rd Street, New York City, on Thursday, February 5, 1959, at 8:30 P.M.

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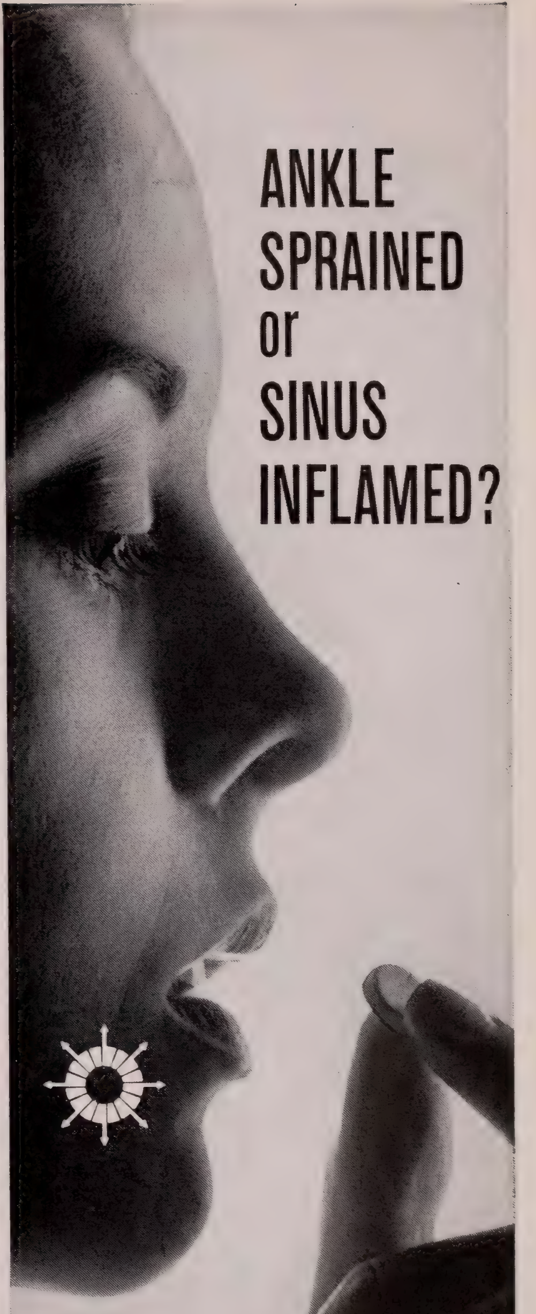
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MEDICAL NEWS

Stricter Labeling Regulations—New and stricter regulations governing the labeling of industrial and household compounds which cause about 2,000 accidental poisonings a year in New York City will soon be adopted by the Board of Health, Dr. Leona Baumgartner, City Commissioner of Health, has announced.

Such compounds, the Commissioner explained, often contain dangerous chemicals such as benzol, carbon tetrachloride, and other solvents or corrosive alkalies and toxic acids. When the products contain harmful amounts of such substances the compound will, for the purposes of the new regulations, be classed as "hazardous substances." About 8,000 poisonings a year are reported to the Health Department's Poison Control Center and Dr. Baumgartner has estimated that fully 25 per cent of those cases involve accidents with household or industrial compounds containing "hazardous substances."

The new regulations will have two fundamental purposes. The first is to protect the consumer or user by requiring that any product which is hazardous or which contains a hazardous substance be labeled with signal words such as "danger" or "warning" or "caution," with statements listing the principal hazard of the substance, such as "flammable" or "vapor harmful," with precautions on how to use them safely and instructions for first aid treatment.

The second purpose is to get quicker and better medical care when the compounds are misused. This will be done by requiring that the label list the hazardous ingredients, and in certain cases the antidote as well. With such information doctors will be able to give quick, specific treatment in accidental poisonings cases.

Under the new regulations which have been approved by the Board of Health, substances and chemicals are considered "hazardous" when experience shows that they are harmful "when used or handled in a customary manner, or in a manner which may be reasonably anticipated." The "reasonably anticipated use" is defined as including "its use in a manner not intended by the manufacturer, such as ingestion by children."

The regulations cover a new hazard: "Strong sensitizers." The regulations set forth: "A strong sensitizer means a substance which causes through allergic process a hypersensitivity to a reapplication of the same substance and which offers a significant potential for causing injury."

While many manufacturers now voluntarily name hazardous ingredients and list antidotes on labels this is not done by all. Under the new proposal the Department of Health will determine what products are poisonous or hazardous and what warnings and label declarations must be made.

The new regulations were drafted under the guidance of a Board of Health subcommittee headed by Dr. Lewis Thomas. Representatives of the trade associations of the chemical industry were consulted and also gave technical help.

Newton Memorial Hospital Closed—Newton Memorial Hospital at Cassadaga, Chautauqua County, was closed on December 31.

The tuberculosis hospital was operated by Chautauqua County since 1920. Tuberculosis hospital care for residents of the county will be provided at the State Health Department's J. N. Adam Memorial Hospital at Perrysburg. Outpatient services in Chautauqua County will be conducted by Dr. Walter E. Lawrence, superintendent of Newton Memorial Hospital.

Monroe County Honors Physicians—Doctors who have treated area patients for over fifty years were honored by the Monroe County Medical Society on December 16.

The ceremonies were held on the 138th anniversary of the founding of the Monroe County Medical Society. The following physicians were honored: Drs. E. Howard Burnes (posthumously), Alfred F. Cassebeer, George H. Clark, Lloyd H. Clark, Austin G. Morris, C. Clyde Sutter, Raymond Wafer, and Karl M. Wilson.

Officers of the Medical Society of the State of New York, including president, Dr. Leo E. Gibson, and executive director, Dr. Herbert T. Wagner, also attended.

Psychiatrists Elected—Four New York City psychiatrists have been elected officers of the American Psychoanalytic Association. They are: Dr. Jacob A. Arlow, president; Dr. David Beres, secretary; Dr. Harry I. Weinstock, treasurer; and Dr. Charles A. Brenner, counselor. Dr. Heinz Hartmann, also from New York City, received the Charles Frederick Menninger Award for research accomplishment in psychoanalysis.

[Continued on page 346]

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Indications: "COTHERA" Syrup is specifically indicated for irritating, useless, or chronic coughs such as those associated with the common cold, children's diseases, excessive smoking. It may be used safely for short-term or prolonged treatment.

Dosage: Adults and children over 8 years — 1 to 2 teaspoonfuls (25-50 mg.) three or four times daily. Children, 2 to 8 years—½ to 1 teaspoonful three or four times daily.

Supplied: 25 mg. per 5 cc. (teaspoonful), bottles of 16 fluidounces and 1 gallon.

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[Continued from page 342]

Speech and Hearing Association—The American Psychological Speech and Hearing Association has been formed for the purpose of fostering keener understanding in the psychologic study of and research in speech, hearing, and communication problems.

Officers of the newly-formed association are: Dominick A. Barbara, M.D., president; Murry Snyder, Ph.D., vice-president; John A. Miele, Ph.D., treasurer; and Franklyn Elliott, M.A., secretary.

For further information write to Dr. Dominick A. Barbara, 147 East 50th Street, New York City.

New Pamphlets—Information concerning strep throat, whooping cough, and influenza are contained in pamphlets available from the State Health Department.

Strep Throat explains that this highly communicable disease is not "just another cold" and should be treated early. The pamphlet discusses symptoms of strep throat and points out that while strep throat is more common among children, adults also can contract the disease.

Influenza gives the causes of and ways to guard against influenza and explains that while flu is similar to a bad cold, it hits the victim harder.

Whooping Cough emphasizes the importance of vaccination against whooping cough and explains that unless a child has been inoculated against it, he is not safe from the danger of the disease, regardless of his age. It also explains that there is a triple vaccine which gives protection against diphtheria and tetanus (lockjaw) as well as against whooping cough.

Copies of the pamphlets are available without cost to residents of New York State from the Office of Public Health Education, State Health Department, 84 Holland Avenue, Albany 8, New York.

New Manual—A new manual designed to help combat staphylococcal infection problems in hositals has been prepared by an advisory group of the Joint Committee to Combat Staphylococcal Infections. The committee, of which Dr. James Greenough, Cooperstown, is chairman, includes representatives from the Medical Society of the State of New York, the New York Hospital Association, and New York State Departments of Health and Social Welfare.

The 48-page manual, entitled *Control of Staphylococcal Infections in Hospitals*, was published by the State Health Department. Members of the advisory group were drawn from the fields of epidemiology, nursing, hospital administration, laboratory directors, and clinical specialists.

Copies are being distributed by the committee to hospitals and medical societies throughout the State.

Health Service Examinations—Competitive examinations for appointment to the commissioned corps of the United States Public Health Service will be held throughout the nation in March and April, Surgeon General Leroy E. Burney has announced.

Regular corps examinations for physicians, dentists, sanitary engineers, clinical psychologists, and biochemists will be held April 21 through 24. Applications for these examinations must be filed with the Surgeon General no later than March 6.

Application forms and further information may be obtained by writing to the Surgeon General, United States Public Health Service (P), Washington 25, D.C.

Neuropsychiatric Day Center—The Veterans Administration has established its first Neuropsychiatric Day Center at the Outpatient Clinic, Brooklyn, as an integral part of the existing Mental Hygiene Clinic.

The Day Center is open daily. Selected psychiatric patients spend the major portion of each day receiving psychotherapy within the framework of social, educational, diversional, occupational, and manual arts activities. It is hoped this new approach to treatment will provide the needed transition between the hospital and the community.

The Center is staffed by a team of psychiatrists, psychologists, social workers, and other specialized personnel.

Nursing Home Association—Reaching the full potential of the nursing home would be helped by "considering it as an extension of the home care program so successfully developed in many of our municipal and voluntary hospitals," Dr. James M. Rosen, Bronx, president of the New York City Nursing Home Association, stated at a meeting held December 3 to discuss "Nursing Homes, Our Community Looks at the Present and Future Services."

Other speakers at the meeting were: Dr. Hayden C. Nicholson, New York City, executive director of the Hospital Council of Greater New York; Dr. Henry W. Kolbe, New York City, director of the Bureau of Medical and Hospital Services, Department of Hospitals, New York City; and Dr. Leroy E. Burney, Surgeon General of the United States Public Health Service, Department of Health, Education, and Welfare.

[Continued on page 348]

Until the discovery of DECADRON* by MERCK SHARP & DOHME, when your diabetic patients were also in need of corticosteroids, you were often faced with a difficult therapeutic dilemma. Diabetes mellitus was a recognized contraindication to the use of corticosteroids, since they not only aggravated the existing diabetic symptoms, but often precipitated latent diabetes.

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DECADRON—the new and most potent of all anti-inflammatory corticosteroids—is remarkable for its **virtual absence of diabetogenic effect** in therapeutic doses.

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[Continued from page 346]

Pediatric Teaching Day—Albany Medical College held its annual pediatric teaching day on December 11. Dr. Paul R. Patterson, professor of pediatrics and chairman of the department was chairman of the program. Among the topics covered were: problems in the newborn infant, abdominal pain in infancy and childhood, diagnosis of congenital heart disease, and clinical and laboratory aspects of staphylococcal infections.

Proctologic Society Elects—Officers elected for 1959 by the New York Proctologic Society are: Dr. Saul Schapiro, Brooklyn, president; Dr. Maus W. Stearns, Jr., New York City, vice-president; and Dr. Norman L. Freund, Brooklyn, secretary-treasurer.

Academy of Psychosomatic Medicine Elects—At a recent meeting of the Academy of Psychosomatic Medicine the following physicians from the New York area were elected officers: Dr. Wilfred Dorfman, Brooklyn, president-elect; Dr. Maury Sanger, Brooklyn, vice-president; and Dr. Murray Peshkin, historian.

Films Presented—The plastic surgery department of Baylor University, Dallas, Texas, has completed a presentation of films on plastic and reconstructive surgery by Dr. Morton I. Berson, New York City.

Ophthalmology Review Course—Medical specialists in ophthalmology from New York State attended the ninth annual postgraduate review course in ophthalmology December 5 and 6 sponsored by the State University Upstate Medical Center in Syracuse.

Sixty-seven ophthalmologists, including three from Carbondale, Scranton, and Wilkes-Barre, Pennsylvania, attended a series of lectures and round table discussions.

Chairman of the program was Dr. James L. McGraw, professor and chairman of the Department of Ophthalmology of the Upstate Medical Center.

Examinations Scheduled—The next scheduled examinations (Part II), oral and clinical for all candidates of the American Board of Obstetrics and Gynecology will be conducted at the Edgewater Beach Hotel, Chicago, by the entire Board May 8 through 19, 1959. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates who participated in the Part I examinations will be notified of their eligibility for the Part II examinations as soon as possible.

Current bulletins of the American Board of Obstetrics and Gynecology, outlining the requirements for application, may be obtained by writing to the secretary: Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6, Ohio.

Personalities

Reappointed

Dr. Paul H. Hoch, New York City, as Commissioner of Mental Hygiene for New York State.

Appointed

Dr. Henry Brill, Albany, as director of Pilgrim State Hospital.

Elected

Dr. Lee B. Lusted, assistant professor of radiology at the University of Rochester School of Medicine and Dentistry, as a Fellow of the Institute of Radio Engineers, the first physician to be so honored.

Awarded

Dr. Wilfred Dorfman, Brooklyn, a bronze plaque, by the Academy of Psychosomatic Medicine for "his devotion, dedication and brilliant achievements towards the attainment of the ideals and objectives of the Academy". Dr. J. G. Fred Hiss, Syracuse, chairman of the Subcommittee on Heart Disease of the Council Committee of Public Health and Education and president of the Heart Association of Onondaga County, the Award of Merit of the American Heart Association. Dr. Jerome M. Schneck, New York City, the Gold Medal of the Society for Clinical and Experimental Hypnosis, for "the most outstanding contribution to the development of scientific hypnosis."

Honored

Dr. Frederick Reiss, associate clinical professor of dermatology, New York University Postgraduate Medical School, as an Honorary Member of the Sociedade Portuguesa de Dermatologia e Venereologia.

Speakers

Dr. Hanna Grunwald, consultant at the Brooklyn Bureau of Child Guidance, before the Eastern Group Psychotherapy Society, December 5, on the subject "The Emergence of Group Psychotherapy as a Powerful Treatment Tool". Dr. Alexander Hamilton Leighton, Trumansburg, professor of social psychiatry, Cornell University Medical College, the Thomas William Salmon lecture at the New York Academy of Medicine, December 4th. . . .

[Continued on page 352]

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Exactly how does new Halodrin* restore the "premenopausal prime" in postmenopausal women?

Webster defines "prime" as the period of greatest health, strength, and beauty. In a woman, these are the childbearing years between puberty and menopause—the years when her hormone production is highest.

The inevitable reduction in this hormone production as she enters the menopause often results in physical discomfort in the form of hot flushes, nervousness, insomnia, or a multiplicity of other symptoms with which you are familiar. Superimposed on this physical picture is the psychic trauma brought on by this unavoidable evidence of aging. The thing that brings her to a physician is simply that she "feels bad."

You can't make her 35 again—but the odds are good that you can make her feel like it! The secret is a combination of reassurance and hormones. The exact form and amount of the former defy objective analysis, but the latter can now be provided with scientific precision. Reduced to essentials, here is the explanation of exactly how hormones—in the form of Upjohn's new Halodrin—restore the "premenopausal prime."

The normal premenopausal woman **excretes** estrogens in the urine in the form of estradiol, estrone, and estriol, in an approximate 28-day average ratio of 39:15:46. Starting with this urinary excretion of estrogens, it is possible to calculate backwards and estimate the amount of estradiol that must have been secreted endogenously in order to produce these urinary levels. This is possible because the proportion of estrogens which appears in the urine following parenteral administration has been established in castrated women.

On this basis, the average endogenous output of estrogens is about 160 micrograms per day during a menstrual cycle, and 80 micrograms per day in postmenopausal women (see chart opposite). Therefore, the restoration of the "premenopausal prime" in the postmenopausal woman requires the replacement of approximately the equivalent of the 80 micrograms of estradiol per day that she no longer secretes endogenously.

Oral ethinyl estradiol is about 2 to 2½ times as potent as **parenteral** estradiol. Therefore, **the replacement of 80 micrograms of endogenous estradiol production per day is accomplished by the oral administration of 32 to 40 micrograms of ethinyl estradiol per day.**

Each Halodrin tablet contains 20 micrograms of ethinyl estradiol, which means that the recommended dosage of 2 tablets per day provides 40 micrograms of ethinyl estradiol. This offsets the loss of 80 micrograms of endogenous estradiol production in the menopausal woman; i.e., restores the "premenopausal prime."

Each Halodrin tablet also contains 1 mg. of Upjohn-developed Halotestin* (fluoxymesterone) —the most potent oral androgen known. The primary purpose is to "buffer" the ethinyl estradiol just enough to prevent breakthrough bleeding, which is obviously undesirable in the menopause. It also exerts other beneficial hormonal effects, one of which, in common with ethinyl estradiol, is a powerful anabolic action so desirable in patients of advanced years.

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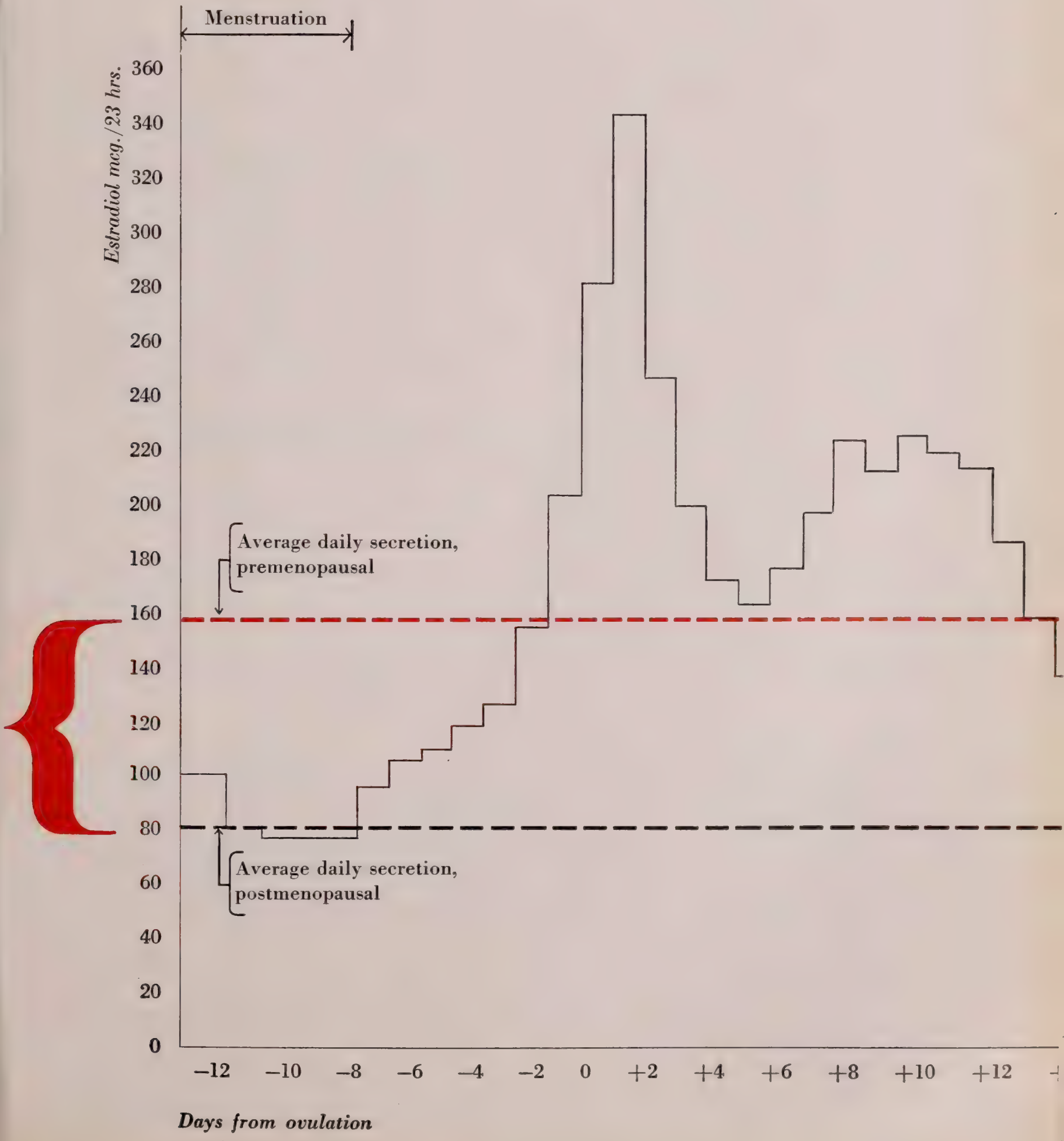
(calculated from average 24-hour urinary excretion
of estradiol, estrone, and estriol)



[Continued from page 348]

Dr. George T. Pack, New York City, before the Jamaica Cancer Society, Kingston, B.W.I., on November 24, on the subject "Treatment of Sarcomas of the Soft Somatic Tissues" . . . Dr. Olof H. Pearson, White Plains, before the Southeastern Surgical Congress, Miami Beach, on the subject "Management of Adrenal Hyperfunction" on March 9, 1959. . . Dr. Howard A. Rusk, New York City, director of the Department of Physical Medicine, New York University-Bellevue Medical Center, before the Ninth International Conference of Social Work, Tokyo, on the subject "The Role of International Voluntary Effort in Mobilizing Resources to Meet Social Needs" on December 3. . . . .Dr. Isidore Snapper, director of medicine and medical education, Beth-El Hospital, Brooklyn, on the subject "Modern Aspects of Lupus Erythematosis" at a clinical conference at Forest Hills General Hospital, December 1.

ANNOUNCEMENTS

The following announcements concerning probation and restoration have been received from Dr. Stiles D. Ezell, secretary, Board of Medical Examiners, University of the State of New York, State Education Department:

On Probation.—LESTER E. SANFORD, Port Ewen, New York: medical license number 13553, permitting him to practice medicine in the State of New York and revoked on March 18, 1957, was placed on probation on July 3, 1958, to July 3, 1961.

License Restored.—CARNES WEEKS, Easton, Maryland, medical license number 17904, issued under date of June 28, 1923, permitting him to practice medicine in the State of New York, restored. The Order of Restoration was served on Dr. Weeks on August 14, 1958, and his medical license, therefore, stands restored as of that date.

License Restored.—ISIDORE M. TURNER, Flushing, New York, medical license number 33755, issued under date of July 1, 1937, permitting him to practice medicine in the State of New York, restored. The Order of Restoration was served on Dr. Turner on August 1, 1958 and his medical license, therefore, stands restored as of that date.

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LETTERS TO THE EDITOR

Comment on Rattlesnake Poisoning

To the Editor:

A recent paper[1] referred to the literature on surgical refrigeration and described detailed experiences with this treatment of rattlesnake bite with obvious benefit and without tissue injury. The frequently reiterated adverse opinion, always without evidence, as illustrated in a single case report,[2] is traceable to a muddled concept of "immersion foot" by alleged authorities who should be called on for their actual experience with refrigeration for snake bite or any other use.[3] It is rational to make use of the known ability of cold to abolish pain, arrest enzymic and bacterial action, and greatly retard absorption. Hot applications are best calculated to augment local damage and toxic absorption.[2] The large surgical literature proved that amputation wounds can heal satisfactorily after several days or even weeks at ice temperature. Also, Kross's case of a leg scheduled for amputation because of a critically infected burn, and saved by several days of radical refrigeration followed by eleven weeks of milder hypothermia, should serve as a test of the imagined tissue damage. Misapprehensions are illustrated by references to "freezing," which is certainly harmful. Under Stahnke's plan for emergency refrigeration, the limb, wrapped in several thicknesses of gauze or cloth, is sprayed occasionally with a refrigerant such as ethyl chloride to freeze the outer layers. My own experiments verify that the limb is not thus frozen or harmed. Stahnke's plan is also thoroughly scientific in keeping the enzyme action inhibited by cold until after sixteen to twenty-four hours, when the poison has been removed by slow absorption.

Refrigeration does not conflict with the use of antivenin when it is available, or of antihistamine drugs for insect stings, especially in allergic individuals. But while a search is made for these remedies, a physician may venture to apply ice immediately and keep it in place for one or any number of required hours. In the case of bee, wasp, scorpion, or similar stings it is probable that the other remedies will not be used, because of absence of the acute pain and of subsequent evidence that there was any sting. If physicians will begin with these simple trials and report them, they can provide means for deciding between facts and superstition in regard to refrigeration for venomous bites and stings.

Frederick M. Allen, M.D.

1031 Fifth Avenue
New York City

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[1] Stahnke, H. L., Allen, F. M., Horan, R. V., and Tenery, J. H.: Am. J. Trop. Med. **6**: 323 (Mar.) 1957.

[2] Ruggiero, A.: New York State J. Med. **58**: 3114 (Oct. 1) 1958.

[3] *Ibid.:* J.A.M.A. **167**: 2256 (Aug. 30) 1958.

Comment by Dr. Ruggiero

To the Editor:

Crymotherapy, or hypothermia, is both a valuable adjunct in the treatment of poisonous snake bites and one used in surgery to produce anesthesia (Arnott's anesthesia). The lowered temperature induced by refrigeration in the affected tissue slows down the physiology of the area, and produces an adequate anesthetic affect. Wounds caused by snake fang punctures, with envenomation, produce intense pain. The action of chilling exerts its effect on the terminal sensory nerve endings. Crymotherapy has practically no effect, as far as we can learn, on the toxicity of the venom and its enzymatic action in producing destruction of tissue, and in many incidences subsequent mutilation of the tissue.

Neutralization of the venom with an adequate amount of antivenom serum is the only secure measure for combating tissue destruction, thus avoiding surgery and saving life.

There is practically no evidence that hypothermia by chilling, although it may somewhat retard certain enzymatic functions, will significantly interfere with tissue destruction or reduce the activity of other toxic principles which are present. Chilling of the tissue has been adequately described by Stahnke and coworkers.[1] These measures may be permitted temporarily in an effort to alleviate pain. When antivenom serotherapy has begun, application of

[Continued on page 356]

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[Continued from page 344]

cold is unwarranted and should be discontinued.

Conservative measures are important in the treatment of poisonous snake bites, but the speedy administration of an adequate dose of antivenom serum is paramount.

Anthony Ruggiero, M.D.

Ellenville, New York

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[1] Stahnke, H. L., Allen, F. M., Horan, R. V., and Tenery, J. H.: Am. J. Trop. Med. 6: 323 (Mar.) 1957.

[2] Wyeth Laboratories: Directions for use of Antivenom (Crotalidae) Polyvalent (North and South American Antisnakebite Serum).

Why?

To the Editor:

Blue Cross members (subscribers) are taxed to pay other peoples' bills, including costs of maintaining a school to educate nurses, costs of education of intern and resident doctors, costs of "research," if any, and "reserve funds" for future building plans.

Earlier in this century annual hospital deficits were liquidated by wealthy friends. This resource has been drained dry today by the income tax collector. The "little fellow" must now pay. This means everyone.

In this new era the hospitals calculate the per day and per patient average. Everything is thrown in, and the outcome is the "per diem charge." With the approval of the New York State Insurance Department, Blue Cross, some years back, made an agreement with the Hospital Association to pay each institution on the basis of its "per diem charge," with no exact specification of what goes into such calculation.

In October, 1957, the local Blue Cross applied to the Insurance Commissioner for a rate increase because current income was not sufficient to meet the out-go for the care of its members. The application was denied. The officers of the plan were told, "Spend your surplus." In June, 1958, much of the surplus having been dissipated, a new application was made, and a halfway measure was authorized. At the same time the Commissioner demanded of the nonprofit plans (Blue Cross and Blue Shield of New York State) to provide $150,000 to finance a "study" by a university staff. The 1958 Legislature had failed to enact a special appropriation of $100,000 for the same type of project.

What can come of such "study" is anybody's guess. One fact is certain: if they can turn up a plan to provide more benefits at less cost, they will put Mr. Houdini to shame.

Blue Cross plans everywhere are being brought up to the need for increased resources. Our people demand more hospitalization. Relief for the plans is being generally denied by political sources.

One observer predicts that the doctors will be blamed for it all and that a system of "per capita panel doctoring" will be proposed as the only remedy. This could be the first step to state medicine. This is a silly outcome when the application of Blue Cross for additional funds amounted to less than the cost of two cigarets a day per subscriber.

Frederick E. Elliot, M.D.

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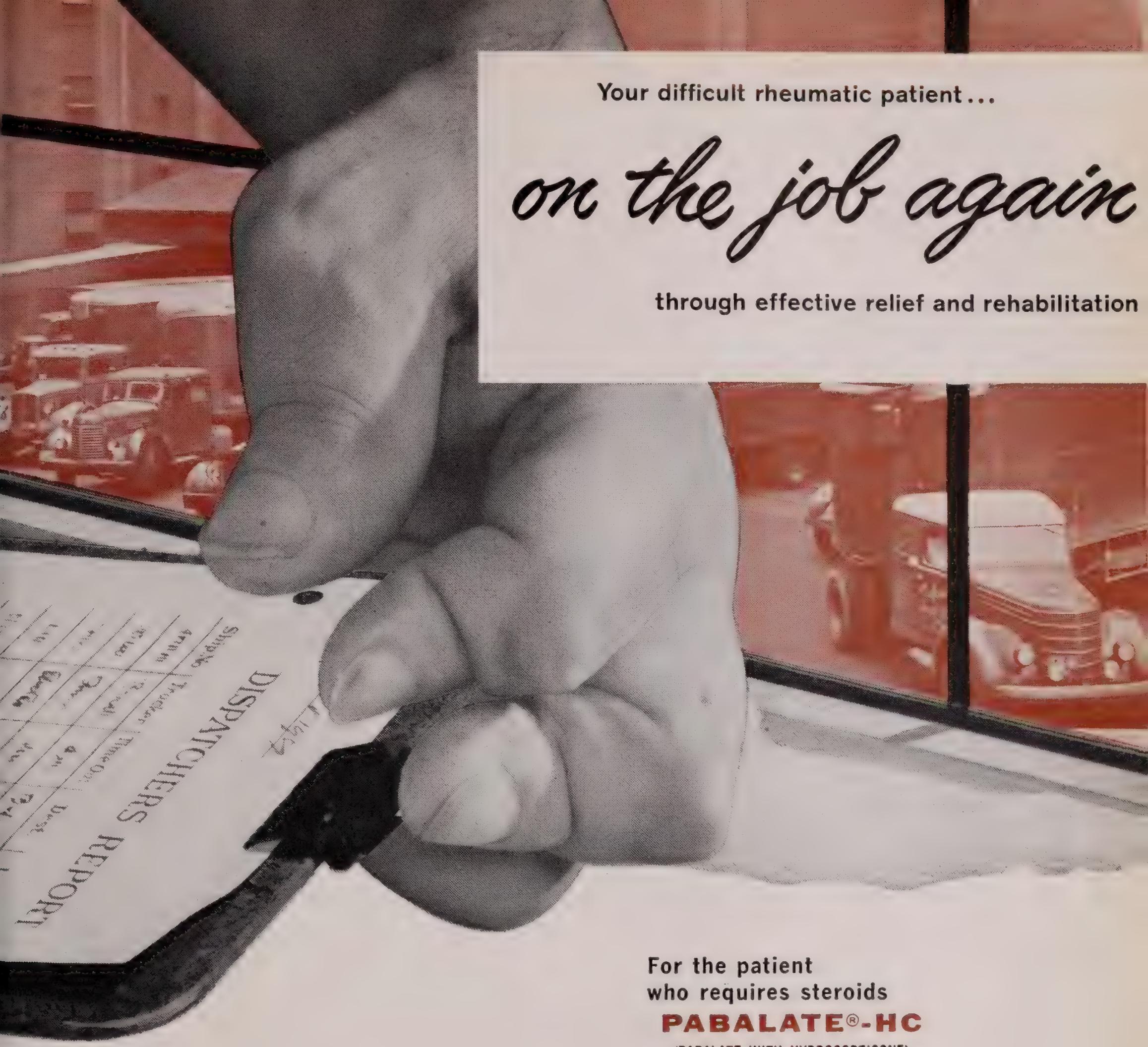

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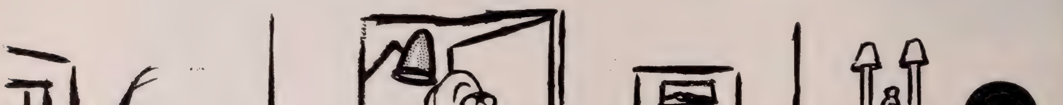

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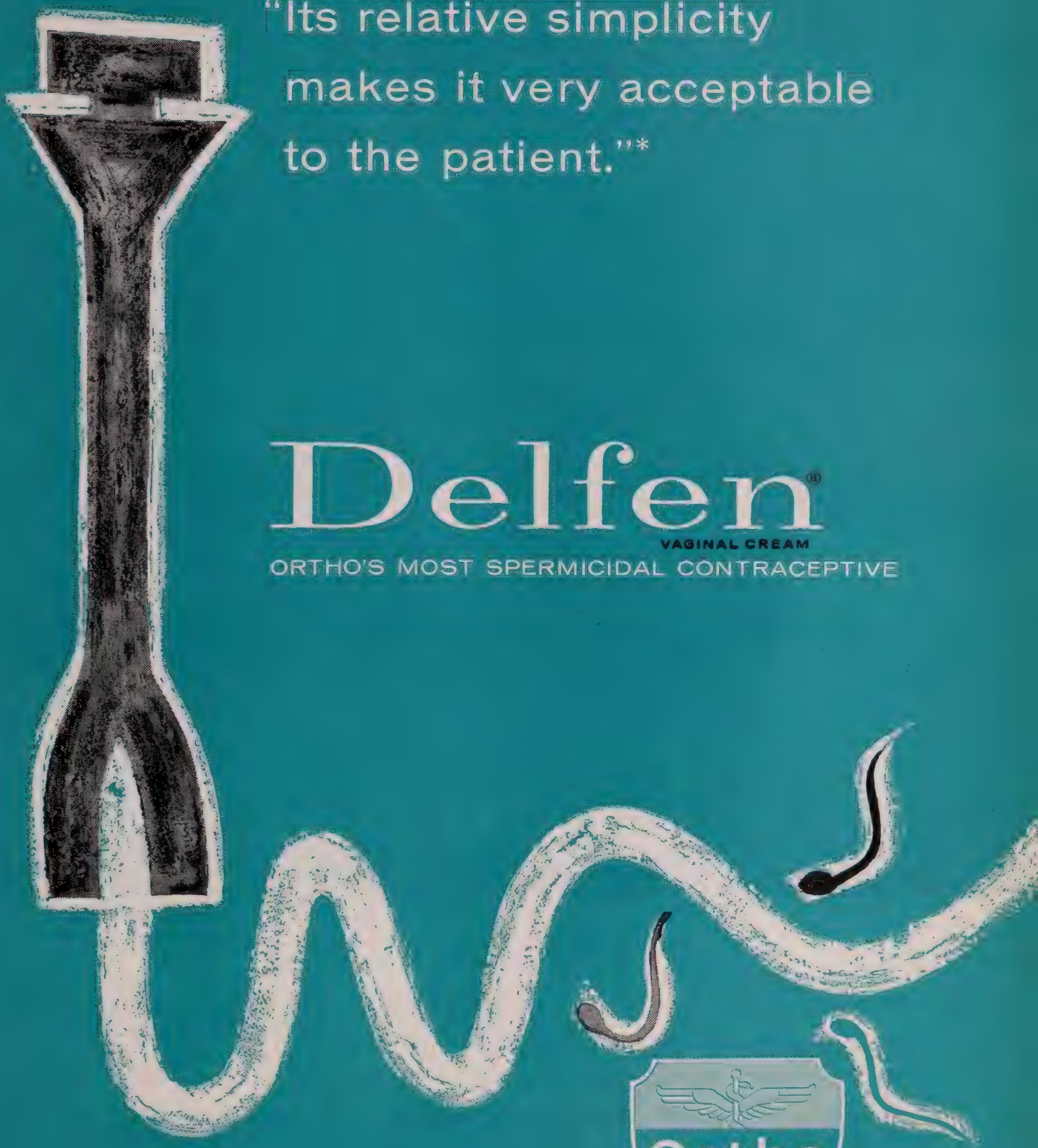

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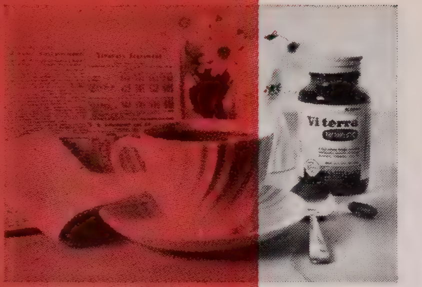

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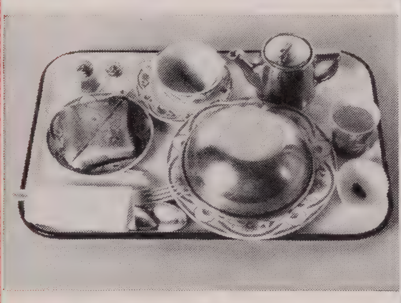

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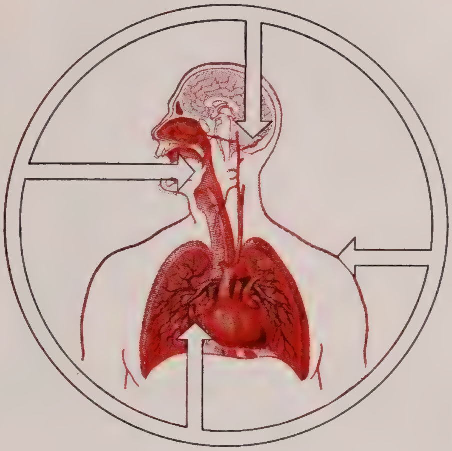

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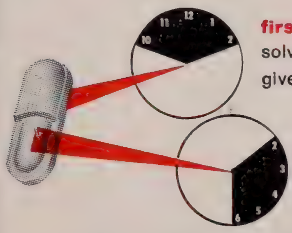

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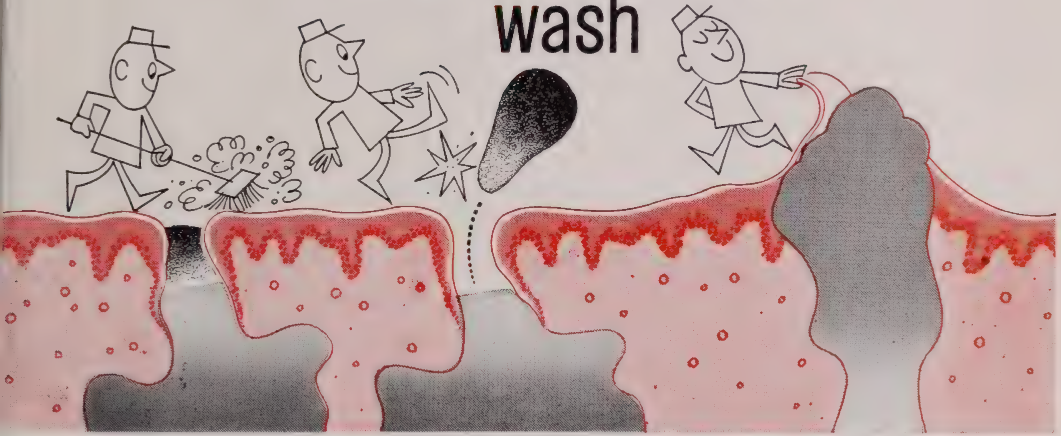

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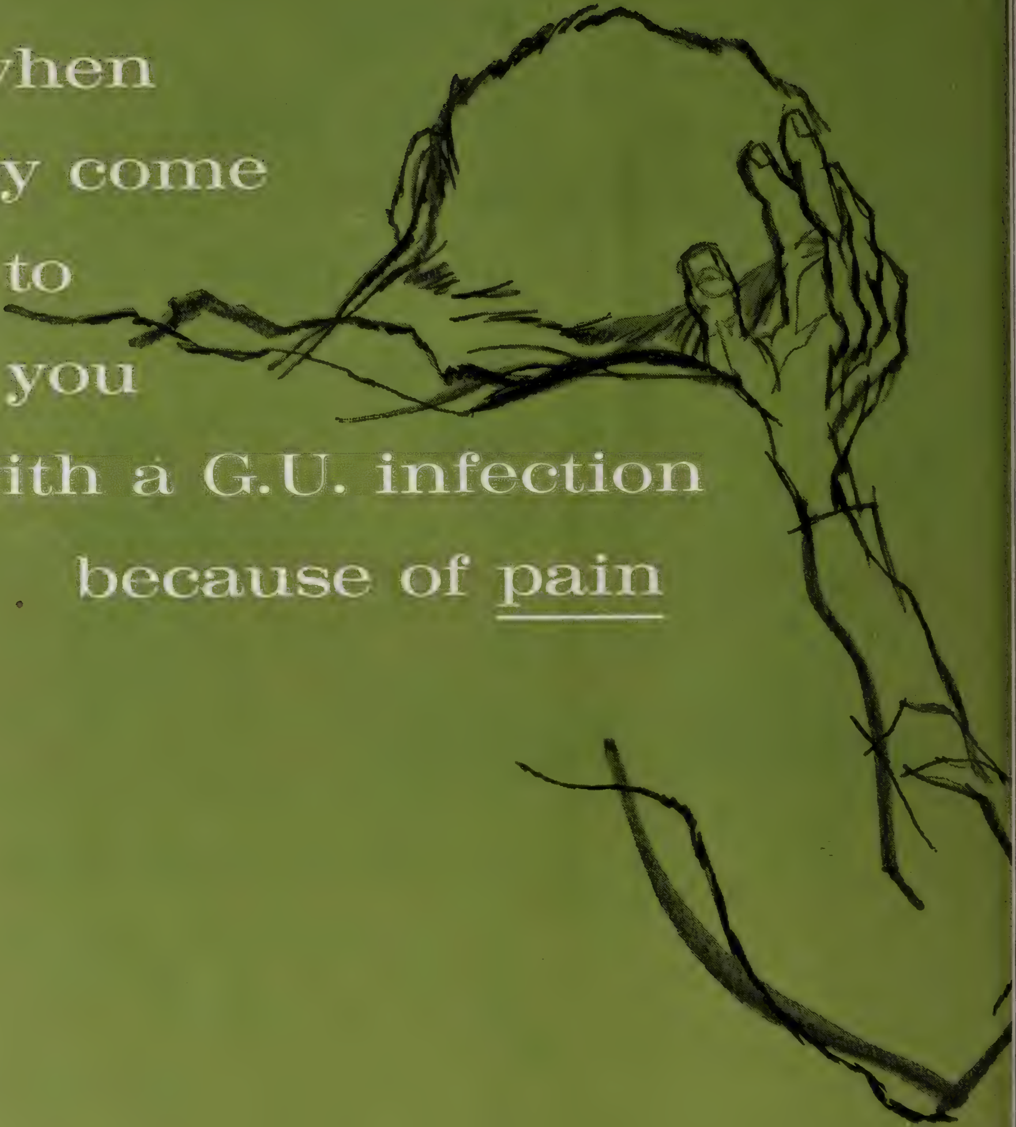
. . . in bar form. For therapeutic washing to keep the skin dry and free of blackheads during maintenance therapy. Also used in relatively less oily acne.

WESTWOOD PHARMACEUTICALS Buffalo 13, New York

when
they come
to
you
with a G.U. infection
because of pain



Azotrex

Symptoms of urgency, frequency, painful urination, incomplete emptying of the bladder, and backache usually first cause the patient to seek help from his physician. AZOTREX Capsules provide both the rapid symptomatic relief desired by the patient, and the vigorous antibacterial measures required for control of the underlying infection.

rapid relief of pain

Specific urinary analgesic action of *phenylazo-diamino-pyridine HCl*—long noted as the standard G.U. tract analgesic—offers dramatic relief of painful symptoms. Visual confirmation of prompt action is the change in the color of urine the patient sees shortly after taking his first capsules of AZOTREX.

early control of infection

Combined activity of TETREX *(tetracycline phosphate complex)* and Sulfamethiazole offers unusually effective control of the gram-negative and gram-positive bacterial components identified in a great number of acute and chronic infections of the urinary tract. AZOTREX is especially indicated in mixed infections.

TETREX is the rapid and efficiently absorbed oral form of the antibiotic well-known for its broad-spectrum activity; singular freedom from such dangerous toxic reactions as blood dyscrasias, renal toxicity, hepatitis, neurotoxicity, anaphylaxis; and minimal undesirable side effects. TETREX is effective against a wide variety of organisms, including *streptococci, staphylococci, pneumococci, gonococci, E. coli, A. aerogenes, Shigella.* The excellent clinical results achieved with *Sulfamethiazole* in urinary tract infections[1] are based on its remarkably high solubility (130X as soluble as sulfadiazine—the standard of comparison in sulfa therapy), low degree of acetylation in urine (only 5-7%), rapid and complete urinary excretion[2]. . . and broad-range usefulness, particularly in those patients sensitive to other sulfonamides.[3] Sulfamethiazole is effective against sulfonamide-sensitive organisms, including *E. coli,* streptococci, pneumococci, *B. faecalis,* gonococcus.

With regard to *B. proteus, Pseudomonas* and *Aerobacter aerogenes* results are unpredictable and sensitivity determinations are necessary to determine beforehand the effectiveness of any sulfonamide or antibiotic. Well-tolerated, with a wide margin of clinical safety, AZOTREX offers unsurpassed antibacterial treatment of urinary tract infections due to sulfonamide-sensitive and tetracycline-sensitive organisms.

an excellent choice in G.U. infections

Azotrex®

TETRACYCLINE—SULFONAMIDE—ANALGESIC

Azotrex Capsules

each capsule contains:

TETREX (tetracycline phosphate complex equivalent to tetracycline HCl activity)	125 mg.
Sulfamethiazole	250 mg.
Phenylazo-diamino-pyridine HCl	50 mg.

minimum adult dose:

One capsule q.i.d.

supplied:

Bottles of 24 and 100 Capsules.

Bristol
LABORATORIES INC.
SYRACUSE NEW YORK

References: 1. Buckwalter, F. H. and Cronk, G. A.: Antibiotic Med. & Clin. Ther. 5:46-51 (Jan.) 1958. 2. Osol, A., and Farrar, G. E., Jr., eds.: The Dispensatory of the United States of America. 25th Edition, Philadelphia, J. B. Lippincott Co., 1955, p. 1881. 3. Council on Pharmacy and Chemistry. J.A.M.A. *161*:971 (July 7) 1956.

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The *cough control* provided by homarylamine (a non-narcotic antitussive) approximates that of codeine.

Three antibiotics (bacitracin, tyrothricin, neomycin) act in combination against a wide variety of pathogens—with little danger of side reactions.

The anesthetic-analgesic effect of benzocaine brings *soothing relief* to inflamed tissues of mouth and throat.

PENTAZETS now extend the therapeutic usefulness of convenient troche medication. Each pleasant-tasting PENTAZETS troche acts promptly against the most bothersome aspects of mouth and throat irritations.

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antitussive—antibiotic-anesthetic—analgesic troches

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– the remarkably efficient skeletal muscle relaxant, unique in chemical formulation, and outstanding for sustained action and relative freedom from adverse side effects.

PUBLISHED REFERENCES: 1. Carpenter, E. B.: Southern Medical Journal 51:627, 1958. 2. Forsyth, H. F.: J.A.M.A. 167:163, 1958. 3. Little, J. M., and Truitt, E. B., Jr.: J. Pharm. & Exper. Therap. 119:161, 1957. 4. Morgan, A. M., Truitt, E. B., Jr., and Little, J. M.: J. Am. Pharm. Assn., Sci. Ed. 46:374, 1957. 5. O'Doherty, D. S., and Shields, C. D.: J.A.M.A. 167:160, 1958. 6. Park, H. W.: J.A.M.A. 167:168, 1958. 7. Truitt, E. B., Jr., and Patterson, R. B., Proc. Soc. Exper. Bio. & Med. 95:422, 1957. 8. Truitt, E. B., Jr., Patterson, R. B., Morgan, A. M., and Little, J. M.: J. Pharm. & Exper. Therap. 119:189, 1957.

Supply: Tablets (white, scored), 0.5 Gm., bottles of 50 and 500.

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Summary of four new published clinical studies:

Robaxin Beneficial in 95.6% of Cases of Acute Skeletal Muscle Spasm [1, 2, 5, 6]

CONDITION	NO. PATIENTS	RESPONSE			
STUDY 1 [1]		"marked"	moderate	slight	none
Skeletal muscle spasm secondary to acute trauma	33	26	6	1	—
STUDY 2 [2]		"pronounced"			
Herniated disc	39	25	13	—	1
Ligamentous strains	8	4	4	—	—
Torticollis	3	3	—	—	—
Whiplash injury	3	2	1	—	—
Contusions, fractures, and muscle soreness due to accidents	5	3	2	—	—
STUDY 3 [5]		"excellent"			
Herniated disc	8	6	2	—	—
Acute fibromyositis	8	8	—	—	—
Torticollis	1	—	—	1	—
STUDY 4 [6]		"significant"			
Pyramidal tract and acute myalgic disorders	30	27	—	2	1
TOTALS	138	104 (75.3%)	28 (20.3%)	4	2

THE JOURNAL of the American Medical Association

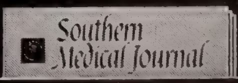
"In the author's clinical experience, methocarbamol has afforded greater relief of muscle spasm and pain for a longer period of time without undesirable side effects or toxic reactions than any other commonly used relaxants. . ."[2]

THE JOURNAL of the American Medical Association

"An excellent result, following methocarbamol administration, was obtained in all patients with acute skeletal muscle spasm."[5]

THE JOURNAL of the American Medical Association

"In no instance was there any significant reduction in voluntary strength or intensity of simple reflexes."[6]



Southern Medical Journal

"This study has demonstrated that methocarbamol (Robaxin) is a superior skeletal muscle relaxant in acute orthopedic conditions."[1]

"finger-itis"

there's pain and inflammation here... it could be mild or severe, acute or chronic, primary or secondary fibrositis—or even early rheumatoid arthritis

more potent and comprehensive treatment than salicylate alone

- ... assured anti-inflammatory effect of low-dosage corticosteroid[1]
- ... additive antirheumatic action of corticosteroid plus salicylate[2-5] brings rapid pain relief; aids restoration of function.
- ... wide range of application including the entire fibrositis syndrome as well as early or mild rheumatoid arthritis

more manageable corticosteroid dosage

- ... much less likelihood of treatment-interrupting side effects[1-6]
- ... simple, flexible dosage schedule

in any case
■ it calls for

Sigmagen®

corticoid-salicylate compound

tablets

Composition

Meticorten® (prednisone)	0.75 mg.
Acetylsalicylic acid	325 mg.
Aluminum hydroxide	75 mg.
Ascorbic acid	20 mg.

Packaging: Sigmagen Tablets, bottles of 10(and 1000.

References: **1.** Spies, T. D., **et al.:** J.A.M.A. 159:645, 1955. **2.** Spies, T. D., **et al.:** Postgrad. Med. 17:1, 1955. **3.** Gelli, G., and Della Santa, L.: Minerva Pediat. 7:1456, 1955. **4.** Guerra, F.: Fed. Proc. 12:326, 1953. **5.** Busse, E. A.: Clin. Med. 2:1105, 1955. **6.** Sticker, R. B.: Panel Discussion, Ohio State M. J. 52:1037, 1956.

6G-J-648

Acute conditions: Two or three ablets four times daily. After desired response is obtained, gradually reduce daily dosage and then discontinue.

Subacute or chronic conditions: nitially as above. When satisfactory control is obtained, gradually reduce the daily dosage to minimum effective maintenance level. For best results administer after meals and at bedtime.

Precautions: Because SIGMAGEN contains prednisone, the same precautions and contraindications observed with this steroid apply also to the use of SIGMAGEN.

Schering

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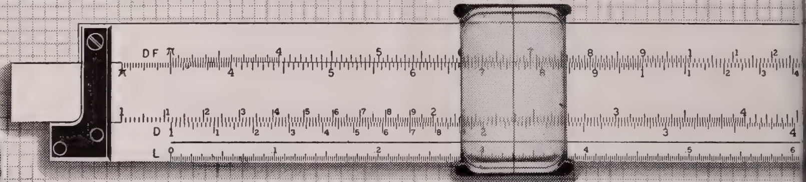
PRONOUNCED TAY-O

℞ Tao* designed for superior control of common Gram-positive infections

(triacetyloleandomycin)

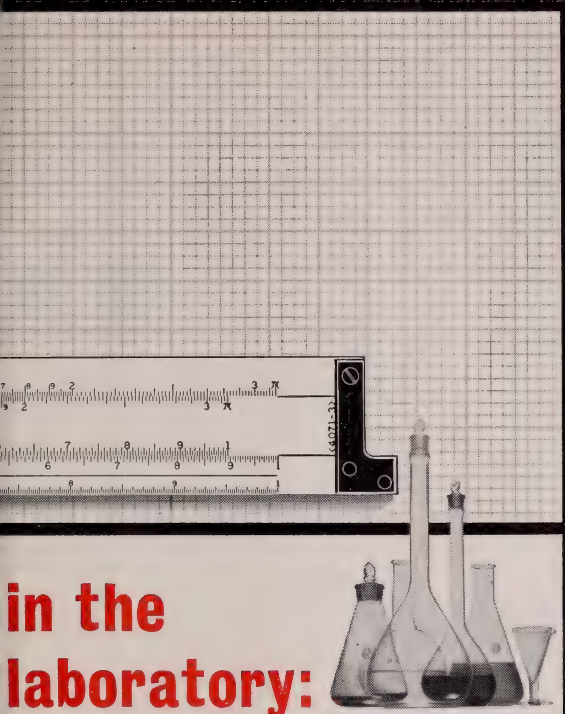
Capsules / Oral Suspension



in the patient:

95% effective in published cases[1-8]

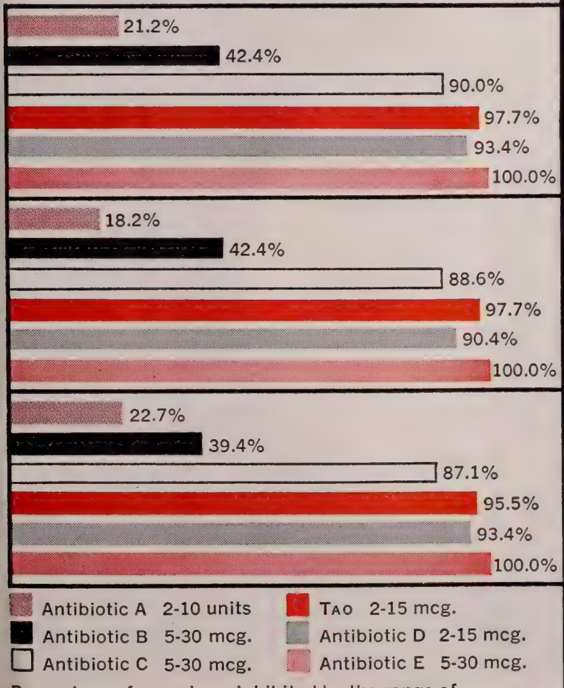
Conditions treated	No. of Patients	Cured	Improved	Failure
ALL INFECTIONS	**558**	**448**	**80**	**30**
Respiratory infections	**258**	**208**	**31**	**19**
Pharyngitis and/or tonsillitis	65	58	5	2
Pneumonia	90	66	17	7
Infectious asthma	44	38	—	6
Otitis media	31	29	2	—
Other respiratory (bronchitis, bronchiolitis, bronchiectasis, pneumonitis, laryngotracheitis, strep throat)	28	17	7	4
Skin and soft tissue infections	**230**	**191**	**38**	**1**
Infected wounds, incisions and lacerations	41	33	8	—
Abscesses	51	43	8	—
Furunculosis	58	51	6	1
Acne, pustular	43	28	15	—
Pyoderma	19	19	—	—
Other skin and soft tissue (infected burns, cellulitis, impetigo, ulcers, others)	18	17	1	—
Genitourinary infections	**28**	**19**	**3**	**6**
Acute pyelitis and cystitis	10	8	2	—
Urethritis with gonorrhea or cystitis	8	8	—	—
Pyelonephritis	4	1	—	3
Salpingitis	5	1	1	3
Pelvic inflammation with endometriosis	1	1	—	—
Miscellaneous (adenitis, enteritis, enterocolitis, subacute bacterial endocarditis, fever, hematoma, staphylococcus carriers, osteomyelitis, tenosynovitis, septic arthritis, acute bursitis, periarthritis)	**42**	**30**	**8**	**4**



in the laboratory:

over 90% effective against resistant staph

COMPARATIVE TESTS BY THREE METHODS (DISC, TUBE DILUTION, CYLINDER PLATE) ON 130 STAPHYLOCOCCI[9]



Percentage of organisms inhibited by the range of concentrations listed for each antibiotic.

Other Tao advantages:

Rapidly absorbed—stable in gastric acid,[7] TAO needs no retarding protective coating

Low in toxicity—freedom from side effects in 96% of patients treated; cessation of therapy is rarely required

Highly palatable—"practically tasteless"[7] active ingredient in a pleasant cherry-flavored medium.

Dosage and Administration: Dosage varies according to the severity of the infection. **For adults,** the average dose is 250 mg. q.i.d.; to 500 mg. q.i.d. in more severe infections. **For children** 8 months to 8 years, a daily dose of approximately 30 mg./Kg. body weight in divided doses has been found effective. Since TAO is therapeutically stable in gastric acid, it may be administered without regard to meals.

Supplied: TAO Capsules—250 mg. and 125 mg., bottles of 60. TAO for Oral Suspension—1.5 Gm., 125 mg. per teaspoonful (5 cc.) when reconstituted; unusually palatable cherry flavor; 2 oz. bottle.

References: 1. Koch, R., and Asay, L. D.: J. Pediat., in press. 2. Leming, B. H., Jr., et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 3. Mellman, et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 4. Olansky, S., and McCormick, G. E., Jr.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 5. Shubin, H., et al.: Antibiotics Annual 1957-1958, New York, N. Y., Medical Encyclopedia, Inc., 1958, p. 679. 6. Isenberg, H., and Karelitz, S.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 7. Wennersten, J. R.: Antibiotic Med. & Clin. Therapy 5:527 (Aug.) 1958. 8. Kaplan, M. A., and Goldin, M.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 9. Truant, J. P.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958.

TAO dosage forms—for specific clinical situations

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For children—flavorful, easy to administer.

Supplied: When reconstituted, 100 mg. per cc. Special calibrated droppers—5 drops (approx. 25 mg.) and 10 drops (approx. 50 mg.). 10 cc. bottle.

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To eradicate pain and physical discomfort in respiratory disorders.

Supplied: In bottles of 36 capsules.

TAOMID* (TAO with triple sulfas)

For dual control of Gram-positive and Gram-negative infections.

Supplied: Tablets, bottles of 60. Oral Suspension, bottles of 60 cc.

Intramuscular or Intravenous

For direct action—in clinical emergencies.

Supplied: In 10 cc. vials.

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CHYMAR® **AQUEOUS** is indicated as: # a therapeutic agent—Chymar abolishes inflammation, hastens absorption of edema and blood extravasates, relieves pain, restores impaired local blood and lymph circulation. # a prophylactic agent—Chymar, when given early, suppresses the development of the inflammatory tissue reaction and edema. # an adjunctive agent—Chymar supplements antibiotics in local infections and is useful in inflammatory dermatoses. # Supplied: 5 cc. multiple dose vials. Each ml. contains 5,000 Armour Units of chymotrypsin. Also available—Chymar in Oil.

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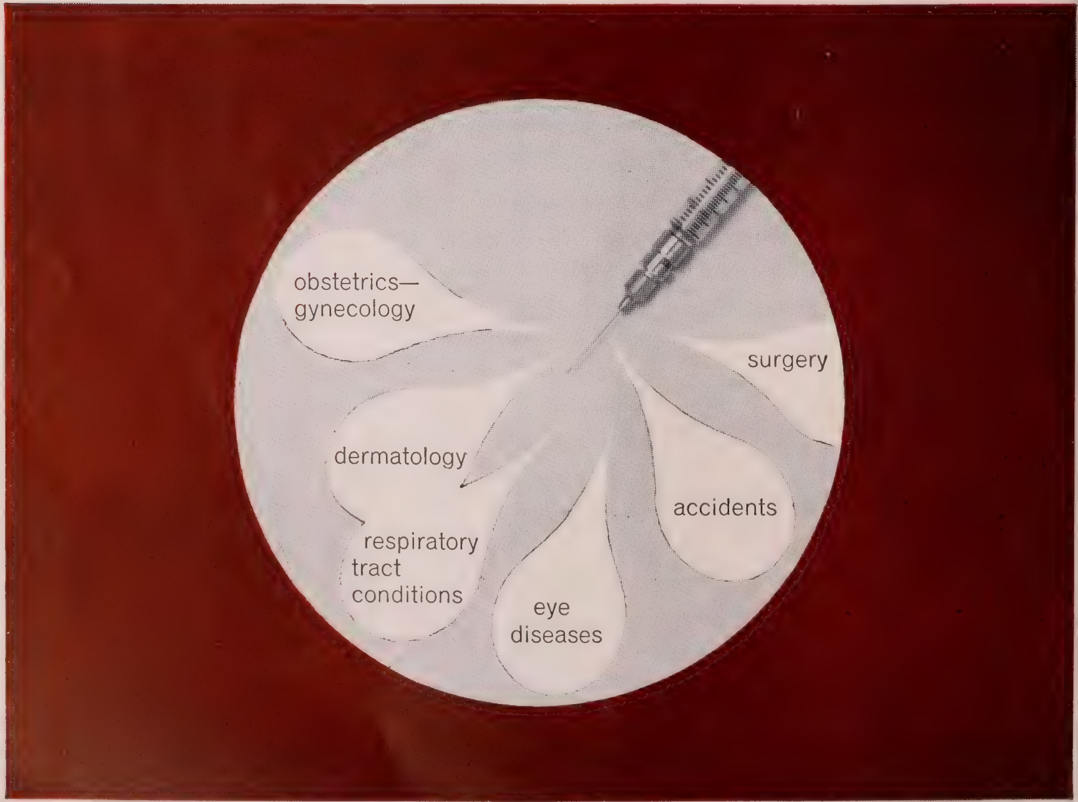
PREFERRED FOR SYSTEMIC ANTI-INFLAMMATORY ACTION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stimulates the appetite,

increases the flow of digestive juices,

provides: supplementary amounts of vitamins, minerals and soluble proteins,

extra-dietary vitamin B_{12},

protective quantities of potassium, in a palatable and readily assimilated form.

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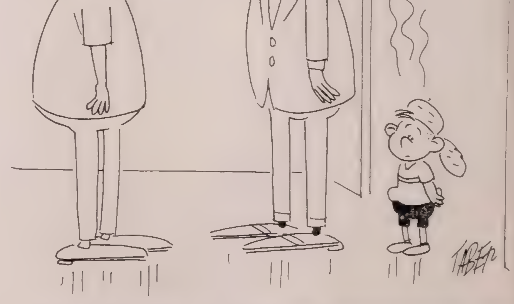
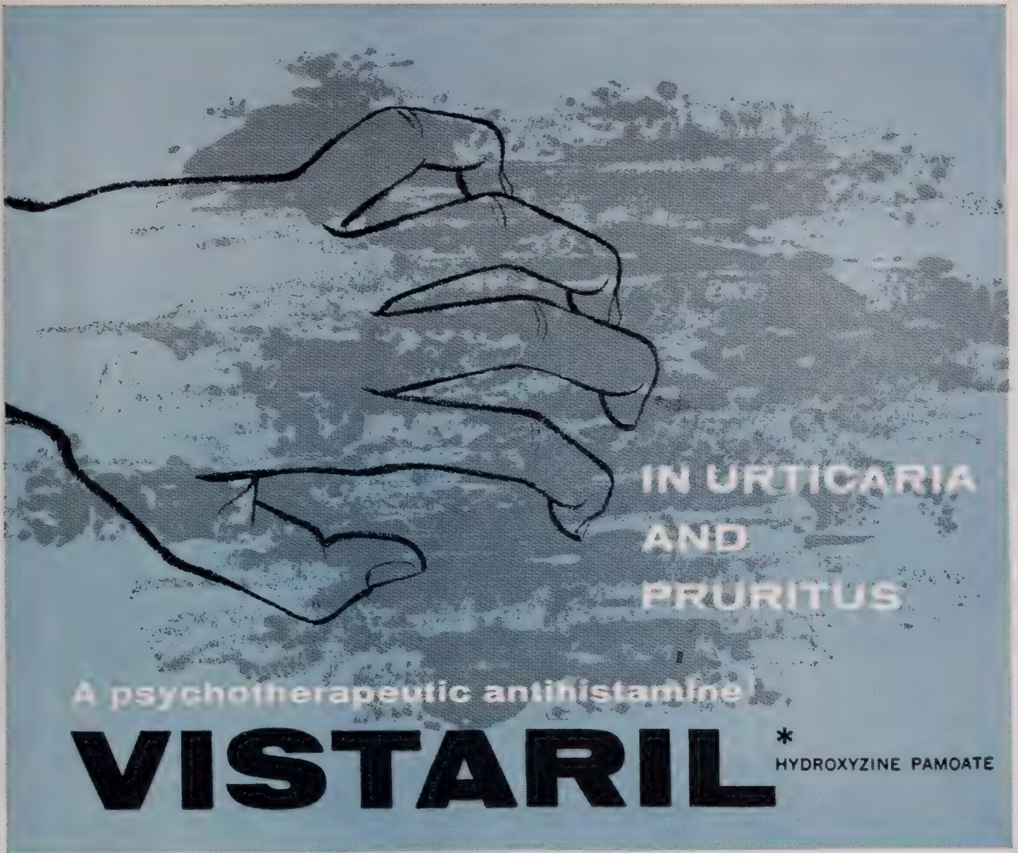


"Try a solution of potassium permanganate, one part to 500 of water, and in the future keep him away from skunks."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PRURITUS
A psychotherapeutic antihistamine†
VISTARIL*
HYDROXYZINE PAMOATE

†as designated by the A.M.A. Council On Drugs, 1958

Specific Antihistaminic Effect
reduces—erythema, excoriation and extent of lesions.[1-4]

Recommended Oral Dosage:
50 mg. q.i.d. initially; adjust according to individual response.

References: 1. Feinberg, A. R., et al.: J. Allergy *29*:358 (July) 1958. 2. Eisenberg, B. C.: Clinical Medicine *5*:897-904 (July) 1958. 3. Robinson, H. M., et al.: J.A.M.A. *161*:604-606 (June 16) 1958. 4. Robinson, H. M., et al.: So. Med. J. *50*:1282 (Oct.) 1957.

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Psychotherapeutic Potency
relieves—tension, anxiety and itching.[1-4]

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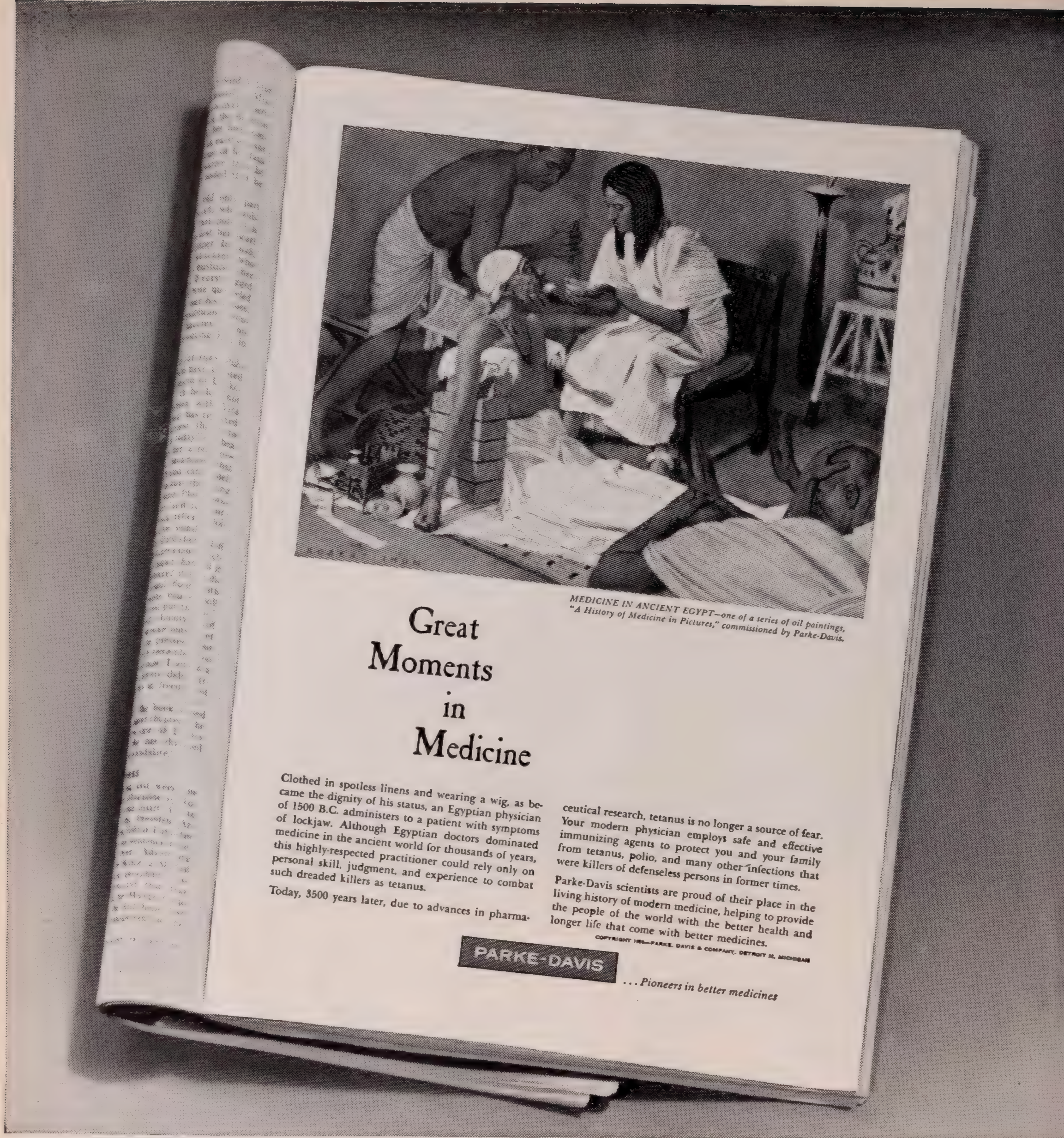

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Medicine's priceless past is but prologue to its brilliant present and future. To help provide a better public understanding and awareness of Medicine's proud traditions, Parke-Davis will launch a unique and informative new institutional advertising campaign this month. GREAT MOMENTS IN MEDICINE will depict historically accurate scenes of advancements in Medicine through the centuries. This very colorful and interesting Parke-Davis campaign will appear regularly during 1959 in LIFE, SATURDAY EVENING POST, TIME, READER'S DIGEST, and TODAY'S HEALTH. As a preview to the medical profession, the first ad in this series is reprinted above. Within a few weeks millions of people throughout the United States—and the world—will also see it.

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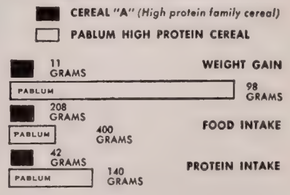
This chart shows results of a test in which laboratory animals were fed under scientifically controlled conditions for six weeks. Note the better weight gain, food intake, and food efficiency of Pablum High Protein Cereal as compared to "Cereal A" (high protein family cereal).



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PABLUM HIGH PROTEIN CEREAL • OATMEAL • RICE CEREAL
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Symbol of service in medicine

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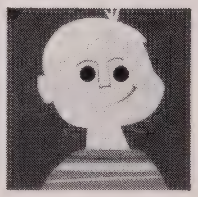
UNIQUE VITAMIN SUPPLEMENT

NEW VIGRAN CHEWABLES

SQUIBB MULTIPLE VITAMIN SOFT TABLETS

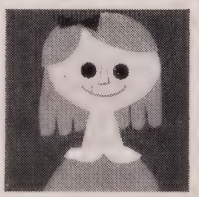
fruit-punch flavored tablets that will actually "melt in the mouth"



can be chewed like candy

can be crushed and sprinkled on cereal or other food

can be dissolved in water, juice or milk



can be sucked and will dissolve like a lozenge

can be easily swallowed (small tablet size)

VIGRAN CHEWABLES *taste like candy*, but contain *no ingredients harmful to teeth.* Important, too, is that VIGRAN CHEWABLES *dissolve easily* in the mouth and *smell good.* These advantages will also appeal to your elderly patients. And VIGRAN CHEWABLES provide at least 125% of the minimum daily requirements for vitamins A, D, B_1, B_2, niacinamide and C, and significant amounts of other essential vitamins.

Each VIGRAN CHEWABLE tablet contains:

Vitamin A	5,000 U.S.P. units
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Vitamin C	75 mg.
Vitamin B_1	3 mg.
Vitamin B_2	3 mg.
Vitamin B_6	2 mg.
Niacinamide	25 mg.
Calcium Pantothenate	3 mg.
Vitamin B_{12}	5 mcg.

Available in Rx-size bottles of 30 and 90.

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"THE MOST EFFECTIVE DRUG EVER USED"[1]

before the "morning spin" sets in

BONAMINE*

brand of meclizine hydrochloride

to prevent vertigo, nausea, vomiting *as in* pregnancy

BONAMINE gives more complete and longer-acting protection—often for 24 hours, with a rare incidence of untoward effects.[2] In contrast to other agents, "percentage of patients obtaining an excellent response...is greater... Also, there are fewer therapeutic failures"—"at least 90 per cent of the patients improve under this medication"[2]

Also indicated for vertigo, nausea, vomiting in: cerebral arteriosclerosis ▪ other geriatric conditions ▪ pediatric infections ▪ postoperative patients ▪ opiate or other drug therapy ▪ radiation therapy, Menière's syndrome, fenestration procedures, labyrinthitis ▪ motion sickness.

BONAMINE Tablets, scored, tasteless, 25 mg. Boxes of 8, bottles of 100 and 500.

BONAMINE Chewing Tablets, pleasantly mint flavored, 25 mg. Packages of 8.

1. McKenna, C. J.: Am. Pract. & Digest Treat. 6:417, 1955. 2. Moyer, J. H.: M. Clin. North America, March, 1957, p. 405.

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DELICIOUS CHERRY-FLAVORED
NEW
BONAMINE
ELIXIR
12.5 mg. per 5 cc.
FOR VERTIGO • NAUSEA • VOMITING

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Pearl River, New York

NOW!
ONLY
2 DAYS'
THERAPY[2]

prevents painful engorgement *New 2-day*

TACE 25mg.

(chlorotrianisene)

over 3,000 patient studies[1,3,4] have proved TACE 12 mg. unsurpassed[2] in prevention of painful breast engorgement. Now, these same advantages are available in a shorter term 2-day course of therapy with TACE 25 mg. capsules.[2]

recurrent engorgement and withdrawal bleeding rare[1,3,4] (just 3 cases of refilling and 9 of withdrawal bleeding among 3,251 patients), because TACE is longer acting. TACE 25 mg. retains these advantages of unique storage in body fat. All TACE forms are released gradually, like a natural hormonal secretion, even after therapy stops.

ALSO NEW TACE with Ergonovine—convenient, combination therapy for relief of painful breast engorgement *and* prevention of postpartum hemorrhage due to uterine atony.[2] (Composition: Each capsule contains TACE 25 mg. and Ergonovine Maleate 0.1 mg.)

dose for both forms: 2 capsules every six hours for six doses, beginning immediately after delivery.

1. Nulsen, R. O. et al.: Am. J. Obst. & Gynec. 65:1048, 1953. 2. Nulsen, R. O.: Concurrent administration of TACE and Ergonovine, Ohio State M. J. *(in press)*. 3. Bennet, E. T. and McCann, E. C.: J. Maine Med. Assoc. 45:225, 1954. 4. Eichner, E. et al.: Obst. & Gynec. 6:511, 1955.

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260
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170
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110
90
50
40
30
20
10
0

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DIURIL® WITH RESERPINE

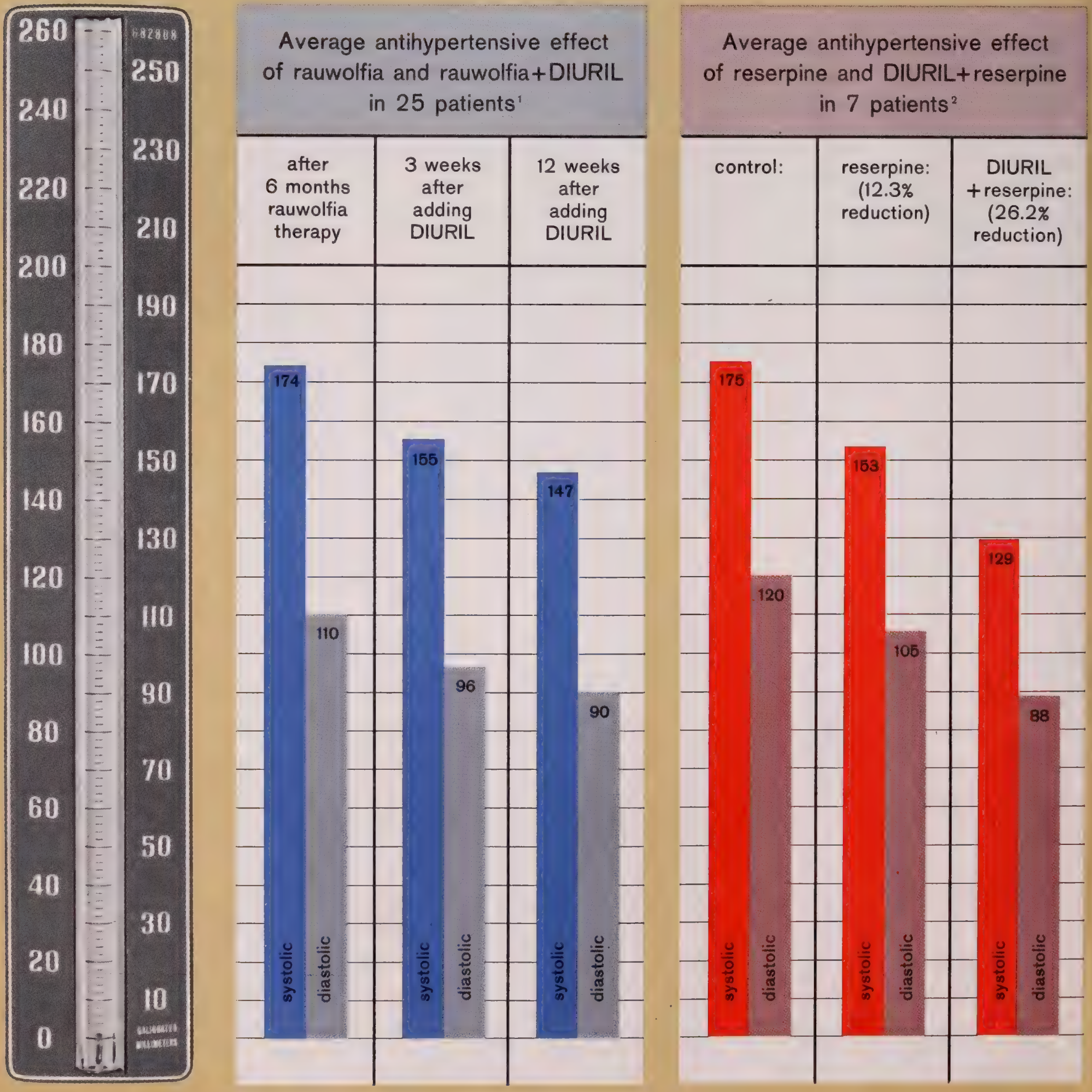
more hypertensives can be better controlled with **DIUPRES** than with any other agent ...with greater simplicity and convenience

a logical alliance of two antihypertensives
you know and trust provides

increased effectiveness, decreased side effects

potentiated effect

DIUPRES produces an effect greater than either DIURIL or reserpine alone. It is effective in many patients who respond inadequately or not at all to either DIURIL or reserpine.



DIUPRES

DIURIL® WITH RESERPINE

effective therapy for most patients

DIUPRES by itself usually provides effective therapy for a majority of patients with mild or moderate hypertension, and even for many patients with severe hypertension. Many patients now treated with other agents which frequently cause distressing side effects can be adequately managed with well tolerated DIUPRES.

provides basic therapy

Should other drugs need to be added to DIUPRES, they can be given in much lower than usual dosage so that their side effects are often strikingly reduced.

rapid onset of effect

The antihypertensive action of DIUPRES is rapidly evident. (Considerable time may elapse before the antihypertensive effect of reserpine alone is observed.)

fewer and less severe side effects

DIUPRES may be expected to cause fewer and less severe side effects than are encountered with other antihypertensive therapy. (Since DIURIL and reserpine potentiate each other, the required dosage of each is usually less when given together as DIUPRES than when given alone. Such reduction in dosage makes side effects less likely to occur.)

often obviates weight gain

DIUPRES minimizes the problem of weight gain seen with reserpine (reserpine alone has been reported to produce weight gain in 50 per cent of patients).[1,4]

virtually eliminates fluid retention

DIUPRES is not likely to cause either clinical or subclinical retention of sodium and water. (Hypotensive drugs, particularly rauwolfia[5] and hydralazine,[6] may cause fluid retention. Even when such retention is subclinical, their antihypertensive effectiveness is diminished.[6])

diet more palatable

With DIUPRES, there is less need for rigid restriction of dietary salt, which patients find so burdensome.

> *"It may well be that the drug* [DIURIL] *produces the benefits of a markedly restricted low sodium diet but without its hardships."*[3]

subjective and objective improvement

DIUPRES allays anxiety and tension, thus reducing the emotional component of hypertension. Organic changes of hypertension may be arrested and reversed. Headache, dizziness, palpitations and tachycardia are usually promptly relieved by DIUPRES. When the *anginal syndrome* accompanies hypertension, the administration of DIUPRES may also cause diminution or even disappearance of this syndrome concurrent with control of the hypertension.

convenient, controlled dosage

Instead of two separate prescriptions, you write one prescription...the patient takes one tablet, rather than two different tablets...and the dosage schedule is easier for the patient to remember and follow.

> *"patients have fewer lapses and make fewer mistakes in dosage, the simpler the regimen can be made. Therefore I do not hesitate to use more than one medicament combined in one tablet, provided this gives approximately the correct dosage of each."*[6]

economical

DIUPRES will cost the patient less than if he were given two separate prescriptions for its components.

Indications:

DIUPRES is indicated in hypertension of all degrees of severity. It can be used in the following ways:

- as total therapy
- as primary therapy, adding other drugs if necessary
- as replacement or adjunctive therapy in patients now treated with other agents

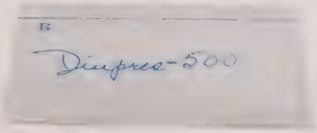
Precautions:

The precautions normally observed with DIURIL or reserpine apply to DIUPRES. Additional information on DIUPRES is available to physicians on request.

Recommended dosage range:

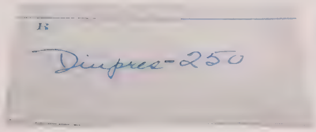
DIUPRES-500—one tablet one to three times a day.
DIUPRES-250—one tablet one to four times a day.

If necessary, other agents may be added. If the patient is receiving ganglion blocking agents or hydralazine, their dosage should be cut by 50 per cent when DIUPRES is added.



DIUPRES-500

500 mg. DIURIL (chlorothiazide), 0.125 mg. reserpine. Bottles of 100, 1000.



DIUPRES-250

250 mg. DIURIL (chlorothiazide), 0.125 mg. reserpine. Bottles of 100, 1000.

the first "wide range" antihypertensive

DIUPRES

DIURIL® WITH RESERPINE

1. Rochelle, J. B., III, Bullock, A. C., and Ford, R. V.: Potentiation of antihypertensive therapy by use of chlorothiazide, *J.A.M.A.* 168:410, Sept. 27, 1958. 2. Freis, E. D., Wanko, A., Wilson, I. M., and Parrish, A. E.: Treatment of essential hypertension with chlorothiazide (Diuril), *J.A.M.A.* 166:137, Jan. 11, 1958. 3. Freis, E. D.: Treatment of hypertension. (Presented at the Annual Meeting of Southern Medical Association, Nov. 13, 1957.) 4. Moyer, J. H., Dennis, E., and Ford, R.: Drug therapy (Rauwolfia) of hypertension, *A.M.A. Arch. Int. Med.* 96:530, Oct. 1955. 5. Perera, G. A.: Edema and congestive failure related to administration of rauwolfia serpentina, *J.A.M.A.* 159:439, Oct. 1, 1955. 6. Wilkins, R. W.: Precautions in use of antihypertensive drugs, including chlorothiazide, *J.A.M.A.* 167:801, June 14, 1958.

MSD MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

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Even with a cold

New long acting[1,2,3]

Rynatan®

Keeps heads crystal clear

10-12 hours with a single **oral** dose with remarkable lack of side effects[1,2]

Entirely new long acting oral nasal decongestant
chemically and physically different—utilizing the DURABOND* principle[2,3]

Longest relief of any medication
comfort all day or all night with a single oral dose[1]

Remarkable lack of side effects
"...of 311 patients, incidence of side effects was only 2.2 per cent. Evidence of sedation was (only) 1.2 per cent."[4]

Stops excessive post-nasal drip
and resulting night cough, irritation, secondary infection

DURABOND oral repository

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A new principle in medicine that controls absorption rather than dissolution or release, independently of gastrointestinal motility or specific pH. Maintains constant rather than sporadic blood levels, hence no over-release or under-release. This gives smooth therapeutic results, rare incidence of side effects. Works even in liquid form for children (Rynatan Suspension).

*Neisler Exclusive, Patent Pending

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For adults and older children

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For children (as young as 6 months)

Rynatan contains:	**Each tabule**	**5 cc. suspension**
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Pyrilamine tannate...........	37.5 mg.	12.5 mg.

Dose: q. 12 h.: Tabules 1-2. Suspension: Children under 6 yrs. ⅓-1 tsp.; over six 2-3 tsp.

1. Lawler, E. G. and Limperis, N.M.: Clin. Med. (Dec.) 1958. 2. Medical Science, 3:376-377 (Mar. 2 1958. 3. Cavallito, C. J. and Jewell, R.: J. Am. Pharm. A. (Scient. Ed.) 47:165-168, 1958. 4. Antibiot Med. & Clin. Therapy 5:578-581 (Sept.) 1958.

Samples and literature on request

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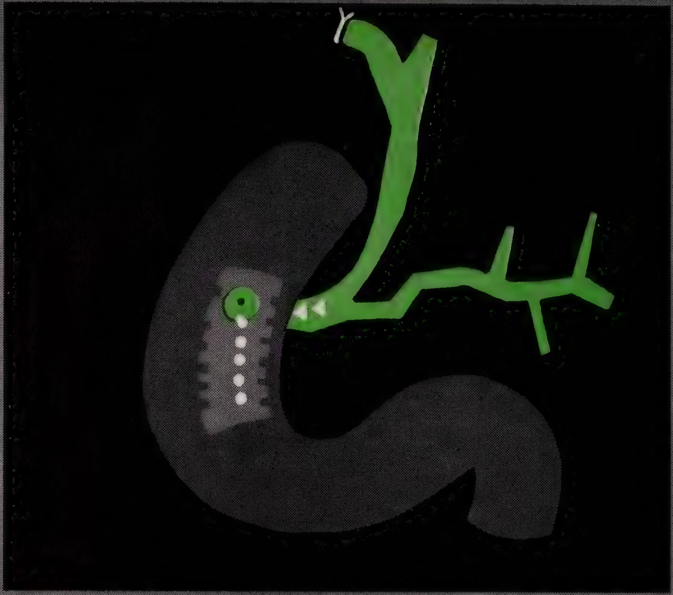

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How can the problem of "postcholecystectomy syndrome" be reduced?

A "routine" operative cholangiogram is now recommended in addition to thorough surgical exploration, reducing the number of cholecystectomized patients later presenting the same symptoms as before the operation.

Source: Vazquez, S. G.: J. Internat. Coll. Surgeons *28*:394, 1957.

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- corrects excessive bile concentration
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- improved liver function

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it started
as a
"cold"...

to prevent the sequelae of u.r.i.... and relieve the symptom complex

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Tetracycline-Antihistamine-Analgesic Compound Lederle

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Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline (125 mg.); phenacetin (120 mg.); caffeine (30 mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP (lemon-lime flavored), caffeine-free.

1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

In potential
serio
infections

*TRADEMARK, REG. U. S. PAT. OFF.

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Make new
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(Panmycin† Phosphate plus Albamycin**)

your broad-spectrum antibiotic of first resort

effective against more than 30 common pathogens, even including resistant staphylococci.

Available forms:

1. Panalba Capsules, bottles of 16 and 100 capsules. Each capsule contains:

Panmycin phosphate (tetracycline phosphate complex) equivalent to tetracycline hydrochloride ....250 mg.
Albamycin (as novobiocin sodium)...125 mg.

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Panmycin (tetracycline) equivalent to tetracycline hydrochloride ....125 mg.
Albamycin (as novobiocin calcium)..62.5 mg.
Potassium metaphosphate ....100 mg.

Dosage:

Panalba Capsules. Usual adult dosage is 1 or 2 capsules 3 or 4 times a day.

Panalba KM Granules
For the treatment of moderately acute infections in infants and children, the recommended dosage is 1 teaspoonful per 15 to 20 lbs. of body weight per day, administered in 2 to 4 equal doses. Severe or prolonged infections require higher doses. Dosage for adults is 2 to 4 teaspoonfuls 3 or 4 times daily, depending on the type and severity of the infection.

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The Pioneer Norwegian Cod Liver Oil Powder for the Relief of
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Contains: Norwegian Cod Liver Oil, Zinc Oxide, Talcum Powder, Magnesium Oxide

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EDITORIALS

Nutrition Excerpts Series

The series of annotations on topics in the field of nutrition, which have appeared at intervals in the JOURNAL for many years, are now to become a regular feature. They will be published once each month under the title of "Nutrition Excerpts."

These articles will be written by members of the faculty of the Graduate School of Nutrition, Cornell University, or for the faculty by experts in the field working in other institutions. They will be planned to provide relatively brief information on topics in nutrition which are likely to be of particular interest to the practicing physician, helping either in his clinical work or in answering questions which patients may ask. The physician interested in collecting reprints may obtain them from the Graduate School of Nutrition, Cornell University, Ithaca, New York, and should accumulate, in time, a valuable source of reference on nutritional matters.

Present Status of Blood Banking

Because there have been so many changes occurring during the past few years in relation to the purpose and function of the following groups, it was suggested at the October meeting of the Council of the Medical Society, following the report of Dr. Henry Fineberg, Chairman of the Blood Banks Commission this year, that an editorial be written in the JOURNAL in order to help interpret the present program of these groups to the medical profession in New York State.

BLOOD BANKS COMMISSION.—The Blood Banks Commission of the Medical Society of the State of New York was created by the House of Delegates in 1951. Its purpose is to act as the State Society's liaison with the Blood Banks Association of New York State. The Commission is composed of the President of the Medical Society, the President-elect of the Society, who is the Chairman of the Commission, the Chairmen of the Public Health and Education Committee and of the Public Relations Committee, a representative of the American Red Cross, a representative of Hospital Blood Banks, a representative of the New York State Health Department, and a representative of the Blood Banks Association of New York State.

BLOOD BANKS ASSOCIATION OF NEW YORK STATE, INC.—In January, 1953, after several years' study and discussion of the problems of procuring and distributing blood in the State, the Blood Banks Association of New York State was incorporated under the sponsorship of the Medical Society of the State of New York. The purposes of the Association were to federate into one organization the blood banks of the State of New York, to foster cooperation between blood banks, to encourage the development of blood banks where needed, to extend medical knowledge and advance the science and use of blood, to promote and encourage all phases of research in the use of blood, to enlighten the public in regard to the problems of blood, and to plan for needs in time of disaster.

In line with this purpose, the program of the Association has been to develop the scientific, educational, and public relations aspects of blood banking. The work is carried out through a Board of Directors and various committees of the Board.

THE NORTHEAST DISTRICT BLOOD BANK

CLEARING HOUSE.—One of the first projects undertaken by the Association was the organization of a New York State blood exchange program. This project was started primarily to help alleviate shortages of blood by putting blood banks with shortages in touch with banks reporting surpluses. Approximately 35 banks in New York State cooperated in this statewide program which was operated successfully from 1953 through 1956. Representatives of the New York State Department of Health participated in the development of the program.

Meanwhile, the American Association of Blood Banks in 1955 announced its National Clearing House Program as a step toward the development of a national network of efficient and cooperative blood banks to work toward the improvement of blood collection and distribution. Because there was a local New York State organization in existence, it was logical that the American Association of Blood Banks should turn to this group to sponsor the national program in this part of the country. It was almost two years ago, in January, 1957, that the Board of Directors of the Blood Banks Association of New York State voted to merge the local New York State program with the National Clearing House Program of the American Association of Blood Banks. Since then, approximately 75 blood banks have joined the Northeast District, and during 1957 over 10,000 transactions were handled by the Northeast District Clearing House. For the first nine months of 1958, 14,814 transactions have been handled.

As the name implies, the program is administered through a network of five district clearing houses located in San Francisco, Chicago, Dallas, Jacksonville, and New York City. The Northeast District central office is located in New York City. It serves Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, and Washington, D.C.

The most important function of the National Clearing House is the exchange of distant donor replacement credits. Thus, through one account with the Clearing House, it is possible for blood banks in New York State to carry on transactions with blood banks located in any section of the United States. Patterned after a monetary bank clearing house, the Clearing House functions primarily as a bookkeeping agency for member banks to provide the following services: (1) handling the exchange of donor replacements between blood banks, (2) facilitating the borrowing and lending of blood between banks, wherever and whenever needed, (3) keeping records, balancing accounts, and arranging settlements to cancel interbank indebtedness, (4) engaging in those auxiliary services that are best conducted through a central agency. To defray the expense of operating each clearing house, member banks pay transaction fees.

It is hoped that this brief statement of the functions and relationships of the organizations relating to the procurement and distribution of blood operating under the Medical Society of the State of New York will clarify the matter for our membership as requested by the Council.

Editorial Comment

Broad Education of Physicians Needed. The most satisfactory solution for reducing the time required to produce a physician may lie in strengthening and vitalizing the period of secondary and college education, a leading medical educator suggested recently.

Dr. Willard C. Rappleye, former dean of

the faculty of medicine and former vice-president for medical affairs of Columbia University, made the suggestion in his last annual report to Dr. Grayson Kirk, president of the University. Dr. Rappleye retired last June.

"The very nature and breadth of community and public, as well as professional responsibilities which devolve upon the physician," Dr. Rappleye said, "require sound, thorough and comprehensive preparation for the study of medicine. A true liberal education is an essential requirement for the physician of the future."

Dr. Rappleye said medicine and the community need physicians who are broadly educated men and women, rather than narrowly trained technicians and craftsmen.

"The preprofessional preparation," he said, "should provide the student with an appreciation of his own as well as other cultures, and the historical record of man's achievement—social, intellectual, and artistic—as well as an understanding of the physical and biological world. The most important objective may be knowledge of himself, his gifts, limitations, motivations, and aspirations.

"The question of adequate preparation in liberal education for the needs of medical education introduces the complex problem of the length of time required to produce a physician.

"Telescoping the professional and the undergraduate college courses was a common practice for years and is now being revived. The introduction of the longer hospital period of training, plus the requirements of military service after graduation have intensified the challenge to reduce the long span of professional education. In the long run the most satisfactory solution may not be to interfere with the medical course per se, which is currently undergoing intensive revisions and improvements, but to strengthen and vitalize the period of secondary and college education."

Dr. Rappleye, who had served as dean of Columbia's Faculty of Medicine and College of Physicians and Surgeons since 1931 and vice-president for Medical Affairs since 1949, titled his report "The Current Era of the Faculty of Medicine, Columbia University, 1910–1958."

The report includes a comprehensive study of the many changes which have taken place in the medical faculty during the forty-eight-year period, and the revolution that has taken place in the philosophy of educating a physician.

Medical Society of the State of New York

153rd Annual Meeting—May 9 to 15, 1959

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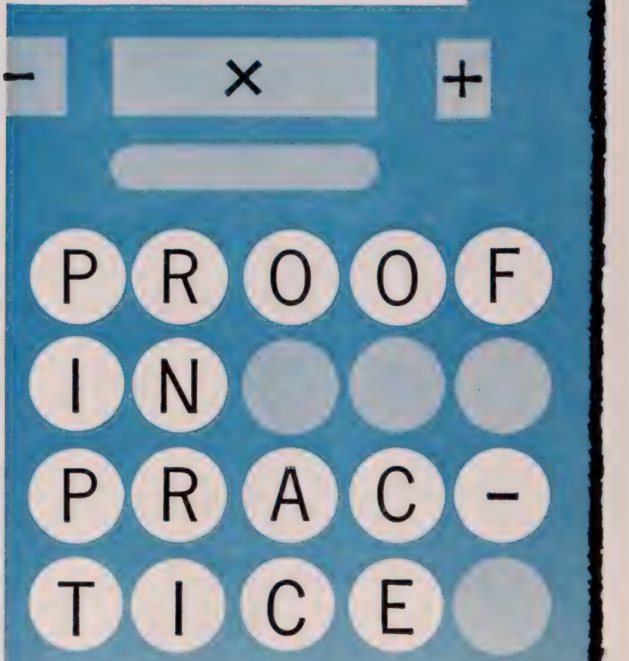
SUMMARY OF REPORTS

No. of Patients	Results	Percent
6,553	Excellent	31.0%
10,843	Good	51.3%
2,703	Fair	12.8%
1,033	Unsatisfactory	4.9%

(Total Number of Side Effects: 638 [3.0%])



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SCIENTIFIC ARTICLES

Wilms Tumor: Improved Results with Modern Therapy

*Review of Seventy-One Cases**

JOHN K. LATTIMER, M.D., MEYER M. MELICOW, M.D., AND AURELIO C. USON, M.D.

(From the Pediatric Urological Service, Babies Hospital, and the Squier Urological Clinic, Columbia-Presbyterian Medical Center, New York City)

Wilms tumor killed all but 9 per cent of children so afflicted before 1934. However, since the advent of modern methods of diagnosis and therapy (surgery, x-ray therapy, and so forth) the over-all survival rate has improved from 9 per cent up to 40 per cent at this hospital. Among the patients who could be operated on, the survival rate has risen to 45 per cent. A detailed analysis of the 42 cases treated since 1934 revealed that both sexes were equally represented, that the tumors were equally frequent on both sides, and that there were 4 patients with bilateral Wilms tumor among this group. The age incidence study, shown in Table I, revealed that the majority of these tumors occurred in children under the age of five years. The age of onset appeared to be extremely important because those children whose Wilms tumors were discovered before the age of two years had a 70 per cent survival rate, while those whose tumors were discovered after the age of two years had only an 18 per cent survival rate. In fact, those children whose tumors were treated before the age of one year had a 90 per cent survival rate.

TABLE I.—INCIDENCE OF 42 WILMS TUMORS ACCORDING TO AGE AND SEX

	Sex		
Age	Males	Females	Total
Less than 1 year	2	7	9
From 1–2 years	3	3	6
From 2–3 years	5	2	7
From 3–4 years	2	6	8
From 4–5 years	2	3	5
From 5–6 years	1	3	4
From 6–7 years	1	. . .	1
From 7–8 years	. . .	1	1
From 8–9 years	1	. . .	1
	17	25	42

Since the Wilms tumors were ordinarily large and globular when first detected, an intravenous urogram usually indicated considerable distortion of the renal pelvis and calyces (Fig. 1). It required a retrograde pyelogram, however, for precise diagnosis and to differentiate Wilms tumor from adrenal sympathicoblastoma or from benign renal lesions such as cystic kidney, hydronephrosis, and so forth. Only rarely were the tumors discovered when small, although the smallest Wilms tumor in our series weighed 78 Gm. and was discovered incidentally by a medical student during physical examination of a nine-month-old

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Presented at the 152nd Annual Meeting of the Medical Society of the State of New York, New York City, Section on Pediatrics, May 16, 1958.

* Aided in part by grants from the New York City Cancer Committee, the Irene Heinz Given and John La Porte Given Foundation, and the William J. Wollman Foundation.

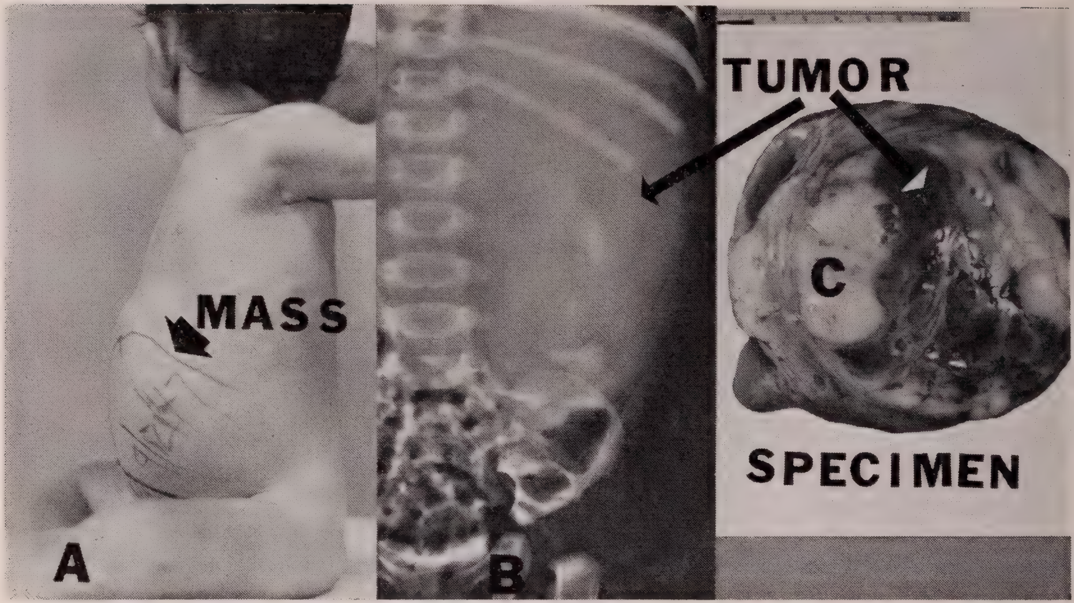

FIG. 1. M. S.—A seven-month-old female with a large left flank mass which proved to be a Wilms tumor. Patient is alive eleven years after nephrectomy. Note that mass is confined to flank, as seen in clinical photograph (*A*) and in the urogram (*B*). Opened specimen (*C*) revealed a spherical tumor occupying midrenal segment and causing dilatation of the calyx (arrow). Specimen weighed 640 Gm.

TABLE II.—COMPARISON OF TREATMENT REGIMENS FOR WILMS TUMOR

Treatment	Number of Patients	Per Cent Survival
No treatment	5	0
Radiotherapy only	1	0
Preoperative radiotherapy and then nephrectomy	5	20
Nephrectomy and postoperative radiotherapy	26	47
Nephrectomy alone	5	80

girl brought to the hospital for evaluation of a persistent urachal discharge. This patient's kidney tumor was removed and the child has done well since.

Therapeutic Regimens

Table II shows the several regimens which have been used in treating these patients. It was apparent that the patients who received preoperative radiotherapy followed by nephrectomy did poorly. It was our observation that while some of these tumors decreased markedly in size owing to preoperative radiotherapy, viable tumor cells were still continuing to divide in the radiated tumors at the time of their removal. Furthermore, we have observed in the 1934 to 1940 period that a number of children had received vigorous radiotherapy to kidney masses which at operation were found not to be tumors. Any unnecessary radiation is a serious mistake, as documented below.

The largest group, 27 patients, underwent immediate nephrectomy followed by postoperative radiation with the 500 K.V. machine and only in one case was the 24-million-volt betatron employed. Nephrectomy followed by radiotherapy is our standard treatment regimen at this time, and its effectiveness is demonstrated by the 47 per cent of survivals in this group. Surprisingly the 5 patients who underwent nephrectomy only have done well, with 4 of the 5 still alive. The entire group of 42 patients has been followed for at least two years at this writing.

Radiotherapy may be effective in causing the disappearance of occasional lung metastases, such as that lesion shown in Fig. 2. However, radiotherapy is not without its ill effects on the body of the patient since we

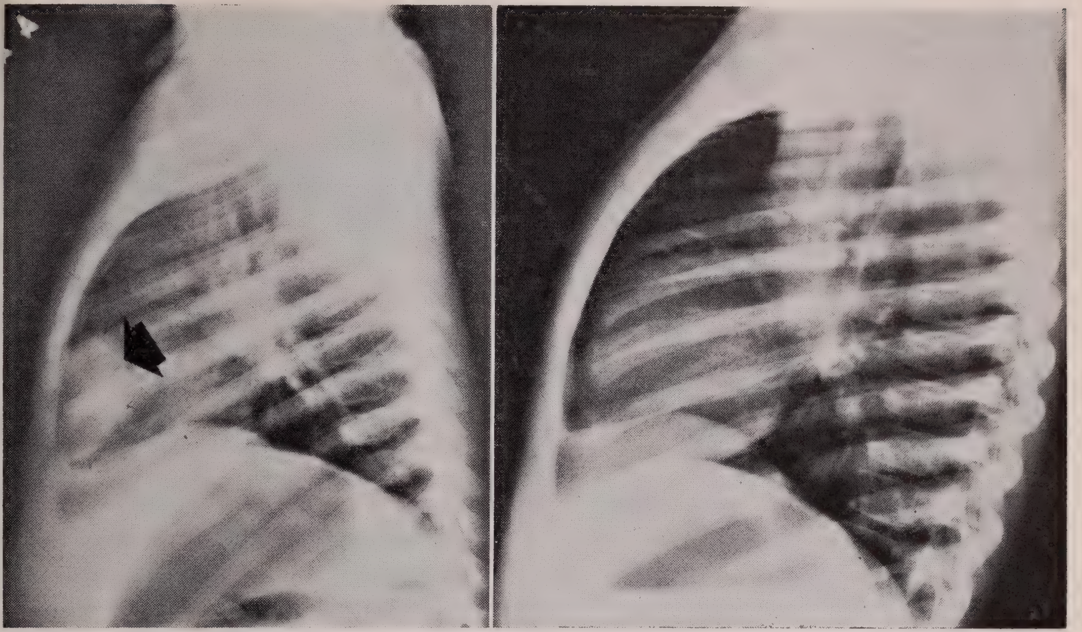

FIG. 2. S. V.—Chest x-ray (*left*) showed metastasis one month after nephrectomy. Radiotherapy caused disappearance of lung metastasis (*right*). Patient is alive and well five years later.

TABLE III.—YEAR OF DEATH POSTNEPHRECTOMY FOR WILMS TUMOR

Survival Rate	Number of Patients
Operative deaths	0
Died within 2 years	17 (85 per cent)
Died in third year	1
Died in fourth year	1
Died after 10 years	1 (not due to tumor)

TABLE IV.—SURVIVAL IN RELATIONSHIP TO SEGMENT OF KIDNEY INVOLVED BY WILMS TUMOR

Location	Alive (Per Cent)
Entire kidney	25
Upper pole	29
Middle	43
Lower pole	63

have had several children whose bones have been stunted on one side by radiotherapy and one patient whose ovary was completely atrophied on one side by radiotherapy. It is desirable to irradiate both sides of the spine in order to prevent asymmetric growth and development.

Table III shows that 85 per cent of the patients who died postoperatively died within the first two years after nephrectomy. This leads us to the conclusion that if a patient survives two years after nephrectomy there is a fair chance that he may be cured despite the fact that there are occasional cases reported with recurrences many years later. As indicated in Table IV, it was no surprise to find that the kidney tumors in the lower pole did best, presumably because they were more easily palpable and were surrounded by fatty coverings which could absorb some local extension and still be removed successfully with the tumor. On the other hand, upper pole tumors were not easily palpated, were not padded by surrounding fat, and were so close to the diaphragm that invasion of this organ was frequent, with attendant poor survival. It also was not surprising to find that the patients whose tumors were encapsulated did well, whereas those whose capsules were penetrated or broken at operation did poorly. The patients whose tumors invaded the renal vein also did poorly, as might be expected.

A review of the symptoms and findings of these Wilms tumors shows that all of them

TABLE V.—285 ABDOMINAL MASSES IN CHILDREN: BABIES HOSPITAL 1934–1956

Type		Total Cases
Renal		
Wilms tumor		42
Hydronephrosis		56
Cystic renal lesions		31
Miscellaneous		10
		139
Nonrenal*		
Sympathicoblastoma		48
From adrenal medulla	29	
From pararenal sympathetic ganglia	19	
Intraperitoneal lesions		57
Primary liver neoplasms	17	
Appendiceal abscesses	26	
Gynecologic lesions	14	
Retroperitoneal lesions		29
Lymphomas	9	
Sarcomas	4	
Teratomas	7	
Miscellaneous neoplasms	9	
Miscellaneous nongenitourinary lesions*		12
		146

* Obvious palpable abdominal masses due to splenomegaly and/or hepatomegaly in children with Banti's syndrome and/or leukemias are not included in this study.

had a palpable abdominal mass; many had a high sedimentation rate which was a bad prognostic point; 60 per cent had hypertension which was cured by removing the tumor; and a surprisingly large percentage had either gross hematuria or erythrocytes in the urine, findings which have not been reported in many publications on this subject.

Differential Diagnosis

In order to study the differential diagnosis of the various conditions which cause abdominal masses, some 5,000 hospital records were carefully reviewed by two of us (M. M. M. and A. C. U.) with the findings shown in Table V. Renal and nonrenal masses were about equally common in this series of 285 patients with abdominal masses. Among the renal masses, hydronephrosis was the largest single cause for abdominal mass. It should be stated that obvious hepatic or splenic enlargements due to Banti's syndrome or leukemia were not included in this study, although they were frequently found.

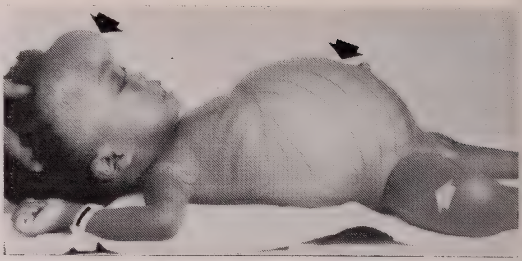

FIG. 3. R. D.—Eighteen-month-old boy with right adrenal sympathicoblastoma which grew rapidly (as shown by black lines on abdomen drawn at weekly intervals) and metastasized to liver, skull, and right leg, causing death of patient in spite of all attempts at therapy.

Sympathicoblastoma

Sympathicoblastomas frequently resemble Wilms tumors to a considerable degree. Since they frequently originate in the adrenal gland or in its vicinity, sympathicoblastomas usually displace the kidney or distort it enough that retrograde pyelograms are necessary to differentiate these neoplasms. Sympathicoblastoma tends to metastasize to bone, whereas Wilms tumor does not. If a patient with an abdominal tumor has an obvious metastasis in the frontal bone or in the orbit or in one of the long bones, the diagnosis is more likely to be sympathicoblastoma. If the mass grows rapidly and extends across the midline, becoming nodular and fixed, it is more likely sympathicoblastoma than Wilms tumor.

Most Wilms tumors confine themselves to one side of the abdomen, are somewhat globular, and are somewhat mobile. Sympathicoblastomas frequently tend to have calcification in their substance whereas Wilms tumors very rarely contain calcium. Only 2 of our series of 42 Wilms tumors showed calcium, whereas over 30 per cent of those with sympathicoblastoma showed calcium.

Figure 3 shows a baby with a rapidly growing mass, demonstrated by the marks on the abdomen, which were made at weekly intervals, and with metastases to the skull and left leg. This mass was a sympathicoblastoma. While the treatment for sympathicoblastoma consists of an attempt at complete excision plus radiotherapy, it is important to point out that this tumor is more radioresistant and more malignant than Wilms tumor.

In our series of 285 palpable abdominal masses, hydronephrosis was more common than any other single cause. Masses due to hydronephrosis frequently can be transilluminated if the patient is taken into a dark room and a strong light is applied behind the mass. Retrograde pyelographic studies will almost always reveal the diagnosis in advance. Another cause for an expanding mass in the upper pole of the kidney is a double renal pelvis, one half of which is obstructed. We have seen ureteroceles at the lower end of a double ureter which obstructed one of the ureters, causing the corresponding pole of the kidney to expand in a manner suggesting tumor. These cases were easily cured by heminephrectomy.

Increase in size of the kidneys may come about through the development of polycystic disease, infiltration with lymphosarcoma, or infiltration with amyloid disease. Cystic disease of the kidneys was found in approximately 30 cases among the 285 with palpable abdominal masses, and half of these were serous cysts of the kidney (multicystic, multiple cysts, multilocular cystic kidney, and solitary cyst of kidney). Pheochromocytoma, of which we have seen 4 cases in children, rarely grows large enough to cause an abdominal mass, although some of our 50-odd pheochromocytomas in adults did grow to weigh in excess of 300 Gm.

Benign lesions causing enlargement of the kidneys occur so frequently that they must be differentiated from malignant lesions before vigorous measures such as radiotherapy are applied. This is one of the strong arguments against preoperative radiotherapy for suspected malignant condition of the kidneys. We have observed several instances in which such preoperative therapy was given; then at the time of subsequent operation it was found that the lesion was benign. The children involved suffered the ill effects of radiation therapy unnecessarily.

Summary

1. Of 71 cases of Wilms tumor, 25 were observed before 1933. Three of these were inoperable and the rest were treated by methods available at that time, with an over-all survival rate of only 9 per cent. Of 46 patients seen from June, 1934, through June, 1956, one died of encephalitis, and a Wilms tumor 1 cm. in diameter was an incidental finding at autopsy. In 3 other cases a clinical diagnosis of Wilms tumor with metastases was made, and for that reason no surgical treatment was carried out. The remaining group of 42 patients with proved Wilms tumor showed an over-all survival rate of 38 per cent.

2. Thirty-six of the 42 patients with proved Wilms tumor underwent nephrectomy and of these 16 (44.4 per cent) are alive (5 from two to five years, 5 from five to ten years, and the remaining 6 from ten to twenty-three years). Patients who survived beyond two years usually continued to do well.

3. Of the children who died following nephrectomy for Wilms tumor, 85 per cent succumbed within a two-year period.

4. Of the 42 patients since 1934, 25 were females and 17 males. Their ages ranged from four days to eight years. Fifteen of the children were under two years of age (35 per cent). The four-day-old infant in this series may be among the youngest patients reported to date to undergo nephrectomy for Wilms tumor. This child is alive and well more than two years since operation.

5. The age of the patient at the time of surgery was an important factor in prognosis:

   Of the children operated on before the age of two years 73.3 per cent are alive.

   Of the children operated on between three and nine years of age 18.5 per cent are alive.

Apparently the disease is much more amenable to treatment in children under two years of age.

6. Abdominal mass was the presenting complaint in 60 per cent of the cases and a mass was palpable in every patient. Vomiting, abdominal pain, fever, or hematuria occurred in some of the children. Five patients had gross hematuria.

7. Hypertension was found in 60 per cent of those patients in whom the blood pressure was recorded.

8. The erythrocyte sedimentation rate was measured in 20 patients, and of 11 in whom the range was high, 35 to 90 mm. during the first hour, none survived.

9. The urographic study was the most important single procedure in confirming the clinical impression of Wilms tumor. Radiographs of the chest and skeleton were taken to rule out metastases which, when they occurred, were usually in the lungs but not in the bones.

10. Preoperative radiotherapy proved to be an unsatisfactory procedure in the 4 cases in which the full course was given. Better results were obtained with prompt nephrectomy, followed by immediate postoperative radiotherapy.

11. The smallest Wilms tumor weighed 78 Gm., the largest surgical specimen 1,850 Gm., and the heaviest specimen found at autopsy 3,000 Gm. The average weight was 540 Gm.

12. A Wilms tumor in a horseshoe kidney and another in an innocent-appearing multilocular cyst of the kidney were encountered.

13. Of 14 patients whose tumors involved the upper pole, 10 are dead, while only 3 died out of the 8 whose tumors were in the lower pole.

14. Of 16 patients whose tumors were well encapsulated, 12 are alive (74 per cent).

15. The histologic picture was as follows: pattern predominantly carcinoma in 20 tumors, carcinosarcoma in 18, sarcoma in 3, and in one instance the pattern was unknown. No significant relationship between the histologic picture alone and survival could be demonstrated in the first two groups. However, 3 patients whose Wilms tumors were of a sarcoma pattern survived, although one died ten years after nephrectomy of renal failure due to hydronephrosis caused by a congenital stricture at the ureteropelvic junction. There was no evidence of residual or metastatic Wilms tumor.

16. The following factors usually showed a favorable prognostic correlation.

Patient's age: Best results obtained if tumor was removed during first year of life.

Site of tumor: Better results obtained if tumor was localized to lower pole.

Condition of capsule: Good results obtained if tumor removed with capsule intact.

Tumor spread: Good results when neither invasion nor metastases were present.

17. The following factors were found to have an unfavorable prognostic correlation.

Patient's age: Poor results obtained if tumor was removed during the second through the fifth years of life.

Site of tumor: Usually poor results obtained if tumor was localized to upper pole.

Condition of capsule: Poor results obtained if capsule was torn or penetrated by tumor.

Tumor spread: Bad results obtained when invasion or metastases were present.

Erythrocyte sedimentation rate; Poor results obtained when the rate was above 35 mm. during the first hour.

18. The good outcome in 3 patients (cases 28, 29, and 37) was paradoxic in view of the presence of a multiplicity of unfavorable prognostic factors.

19. Accurate differential diagnosis between Wilms tumor and other abdominal masses should be possible in practically all cases, provided an adequate study and interpretation are made of the clinical his-

tory, physical examination, and laboratory and radiographic findings. Retrograde pyelograms proved by far the most accurate diagnostic measure.

20. It appeared from our review of 285 palpable abdominal masses in children that the kidney was the organ which produced more palpable abdominal masses than any other organ or tract. Not all of these masses were malignant and even the malignant growths, such as Wilms tumor, are being treated more effectively by modern methods.

21. A complete physical examination of a newborn infant should include a careful and systematic palpation of the abdomen. Thereafter, periodic clinical check-ups should be performed. Any child with fever of unknown origin, pyuria, hematuria, or any other urinary symptom, with or without an abdominal mass, should have a thorough urologic investigation. These measures, if carried out, should bring about earlier diagnosis and thus increase the number of cases with a favorable prognosis, according to the findings of this study.

We wish to thank Dr. G. F. Cahill, Dr. G. W. Fish, Dr. Ch. T. Hazzard, Dr. J. N. Robinson, Dr. R. Yeaw, Dr. R. Seidel, Dr. T. J. Sullivan, and the other members of the Squier Urological Clinic for allowing us to include in this review their private patients. Thanks also to Dr. R. McIntosh, director of Babies Hospital; Dr. T. V. Santulli, Babies Hospital General Surgical Service; Dr. D. H. Andersen, Pediatric Pathology, Babies Hospital; and Dr. H. W. Jacox, Radiotherapy Department, Presbyterian Hospital, for their courtesy and cooperation.

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Discussion

Archie L. Dean, M.D., *New York City.*—This is a valuable study of Wilms tumors because it so closely analyzes the clinical and laboratory findings in the disease, it describes the best treatment known, it classifies as well as possible the complex pathologic pictures of the growths, and it reports good end results with a useful description of the reasons for failure. There is little for me to do but emphasize or amplify some of Dr. Lattimer's observations.

As to incidence, studies at the Memorial Hospital of all malignant growths of childhood showed Wilms tumors to be second in frequency to neoplasms of the eye.

In an attempt to clarify the variable natural history of these growths, their different pathologic pictures, and unpredictable responses to the same treatment, it should be remembered that Wilms tumors arise from the kidney anlage, and growths which originate at different developmental periods of the embryo may vary considerably in these respects. These variations are frequent and may be of considerable degree even in tumors which apparently have the same microscopic structure. Therefore, with the clinical course of the individual patient uncertain, to give each infant with an abdominal mass its best chance of survival requires that no time be lost. A history, physical examination, excretory urograms, and roentgenograms of the lungs should be completed in two hours; and if the mass is found to be in the kidney and no metastases can be discovered a cancer operation through a suitably large exposure should be performed. Usually this can be done immediately because, in my experience, at the time a Wilms tumor is discovered and if no metastases can be found, practically all patients are in a sufficiently good condition for operation.

Prompt treatment is not careless treatment. Each infant should be protected by every necessary preoperative test and by the same supportive treatment given adults both during and after the operation. Such treatment now is available in the best urology departments, such as the one Dr. Lattimer directs. The reason I emphasize prompt treatment is because the successful treatment of patients with Wilms tumors still depends on removal of the primary growth before metastasis has occurred. I say this despite the patients Dr. Lattimer describes who survived after the disease had spread. While one enjoys achieving miracles they are difficult to classify and unfortunately cannot be counted on to recur.

There may be great differences in the radiosensitivity of different Wilms tumors and, as has been mentioned, this cannot be predicted even after careful pathologic study. I have seen huge masses disappear to palpation within a week and others remain unchanged for three months after daily doses of 100 r had been given. Changes of various degrees also have been observed between these extremes. While aware of the statistics indicating greater survival rates from a combination of surgery and radiation, I believe the patients so treated are too few for statistical significance. If radiation is given to produce a cure, maximal tolerated doses must be approached because the radiosensitivity of each patient's tumor is unknown. Such treatment is likely to produce deformities of the body if the infant survives. I would, therefore, advise against routine postoperative irradiation and would use this agent only on the rare occasions when all visible tumor tissue cannot be removed surgically or when there has been spillage. Marking these affected areas with a few metal skin clips will help to direct subsequent irradiation more accurately. Patients with metastases should be treated with radiation and cancerotoxic agents because nothing better is available. In my experience, however, only transitory improvement can be expected.

It was noted that infants of a year or less had a greater chance for survival. Since their tumors did not differ in any recognizable way from those of older children it appears likely that more frequent handling of the babies led to earlier discovery and treatment of the abdominal masses.

There is general agreement among urologists in this country that prompt and complete surgical removal is the most effective treatment now known for Wilms tumors.

With uniformity of treatment the end results will reflect the alertness of the pediatricians and general practitioners of each community because early recognition is now the most important variable factor in the successful treatment of Wilms tumors.

Reserve the Dates . . .

153rd Annual Meeting

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Management of Nasal Polypi

MICHAEL H. BARONE, M.D., BUFFALO, NEW YORK

(From the Ear, Nose, and Throat Department, Buffalo Eye and Ear Hospital and Wettlaufer Clinic)

REVIEW of the literature on nasal polyps reveals that allergy as an etiologic factor was not mentioned by the early authors. Most textbooks and articles mentioned that polypi were inflammatory outgrowths and were the products of infection. It is interesting to note the description of polyp formation given by Hajek:[1] "Polyps are typical products of chronic inflammation of the covering of the ethmoid bone. The edematous infiltrated parts of the mucous membrane hang downward as the result of their weight, whereby a kink of the blood vessels occurs. This leads to stasis, which is favorable to the further increase in volume of the polypi."

It was not until the early thirties that the condition was described as one due to allergy, and as time went on, the connection of allergy with nasal polypi began to appear more frequently in the literature. At the present time it is doubtful that anyone can question the fact that allergy is responsible for the formation of the nasal mucous polyps.

In order to carry out the proper form of therapy in nasal polyposis, it is necessary to correctly determine the type of pathologic condition present in the nose. Kern and Schenk[2] gave an excellent account of the types of nonmalignant forms of nasal polyps most commonly seen and classified them as follows.

1. Mucous polyps, edematous fibromas
2. Mixed polypoid hyperplasia, glandular hyperplasia, or glandular polyp
   Angiomatous hyperplasia, or angiomatous polyp
3. Papillary hypertrophy, or mulberry polyp

In this paper, I will not attempt to discuss the treatment of all of the above nonmalignant types of polypi but will limit myself to the edematous mucous polyp, which is the one most commonly found and the one in which allergy is the causative factor.

The treatment of the other types is primarily one of surgical interference. We have seen in our ear, nose, and throat practice a number of cases of nasal polyposis of the mixed polypoid and mulberry type, with a definite history of nasal allergy. Although many observers state that allergy is not an etiologic factor, our observation has been that allergy cannot be ruled out entirely.

Polyps are most frequently found in what is known as the respiratory contact zones. These regions are the ethmoid cells, middle meatus, anterior tip and edge of the middle turbinate, and the posterior end of the middle turbinate. A number of reasons may account for these areas being more prone to polyp formation. One reason is that they are in the direct path of the respiratory current and are thus subject to the direct contact of irritants or allergens to which the patient may be sensitive. It is the repeated insults to these areas that bring about the edema and finally the formation of polyps.

Another contributing factor is the histologic structure of these areas. The mucous membrane has a loose arrangement of the alveolar tissue with increased vascularity and thus becomes edematous very readily. The mucous membrane of other areas of the nose is structurally composed of a compact subepithelial layer and thus is not prone to edema. Polyps are seldom found on the septum and inferior turbinate, owing to the compact structure of the mucous membrane.

It will not be necessary to go into a detailed description of the polyps seen on

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examination. To review briefly, the nasal mucous polyps are multiple and bilateral. They are soft on probing, either gray or white in appearance, and are associated with a marked pallor of the nasal mucous membrane. If complicated with infection, the polyps may have a red appearance due to the inflammation present. If there is a history of chronicity, the polyps are more firm on probing, due to tissue replacement of the alveolar area with fibrous tissue. If at all possible, polyps should be sectioned on removal. It has been our practice to do this in all cases. This will help to establish the nature of pathologic condition present, thereby enabling one to determine the proper method of treatment to be instituted.

Hansel[3] reported that the chief histopathologic structure of the mucous polyp was one of edema and eosinophilic infiltration. The subepithelial layer is the one that shows the most involvement. There are changes in the epithelium, such as edema or hyperplasia of cells, thickened basement membrane, and in chronic cases a loss of cilia.

In our series of 100 cases of nasal polyposis, this histopathologic picture was seen in 75 cases, and these were considered to be mucous polyps. A definite diagnosis can be established by carrying out the following procedures:

1. Careful nasal examination using shrinkage solutions and the nasopharyngoscope.

2. Cytologic studies of the nasal secretions.

3. Removal and section of the polypi. If section reveals a histopathologic picture of allergy, a very careful and complete allergy history, using the Anderson[4] questionnaire, and complete skin testing to foods and inhalants are necessary.

In the treatment of mucous polyps, removal of polyps without allergic management will not produce the best results. Another factor to be considered is the presence of a superimposed infection, and this must be eradicated before the allergy therapy is instituted. Any marked obstruction to the airway, other than that caused by the polyps, must be eliminated. If the polyps have formed to a degree where there is complete nasal obstruction, allergy management alone will not produce the desired result. These polyps must be removed in order to establish a proper respiratory airway, and this procedure should be followed with allergy therapy.

In our experience the only polyps that have been controlled by allergy therapy alone are the mucous ones seen during the hay fever season or during an acute phase of an allergic reaction. These may be considered as the simple reversible types and will respond to allergy therapy. Polyps that are seen in long-standing cases or those with recurring history are considered irreversible and cannot be eradicated without surgery. In surgical removal, complete exenteration of ethmoid cells or other radical procedures in mucous polyps is not advocated. It is best to preserve as much mucous membrane as possible.

In reviewing the different forms of therapy that have been instituted in the treatment of nasal mucous polyps, other than their surgical removal, the following have been reported.

Ruskin[5] reported the use of procaine penicillin in nasal polyposis. He instilled 10 cc. of this solution into each antrum and 5 cc. into the sphenoid sinus. This produced a continuous drip through the natural ostium, the solution thus bathing the lateral nasal wall, nasopharynx, and pharynx. Ruskin states that his results with this method were favorable. He does not concisely explain what specific effect this treatment had on the polyps.

Cervantes[6] used Ruskin's method on a number of cases and reported that this treatment produced no improvement or any significant change in the nasal polyps. Bordley[7] reported very good results in nasal polyps with complete disappearance of the polyps on oral medication with steroids.

Hansel[8] and Hotchkiss[9] reported the use of steroids either in oral form or spray solutions in nasal polyposis. They found improvement as long as the drug was continued, and on its cessation, the symptoms would recur.

Myers[10] injected the polyps with prednisolone TBA and reported partial or complete recession of the polyps. He advocates repeated injections rather than removal by surgery. He states that steroids caused a regression of allergic reaction. Semenov[11] injected steroids in nasal polyps with systemic reaction resulting. He advises caution in this type of procedure.

We have used steroids, in the form of nasal spray or oral medication, in many cases and found that they had very little effect on the nasal polyps. In some cases the polyps would recede, and in cases with chronic changes in the polyps the results were not as marked as in the reversible polyps. Our observations coincided with those of all the other observers in that the beneficial effects of steroids are only of temporary nature.

The dangers involved in the use of steroids are such that we are not justified in prescribing them unless we are dealing with a serious allergic state, a condition which is seldom seen in our office practice. The use of steroids should not be condemned. If prescribed in ear, nose, and throat disease, they should be used with care and only for a short period of time or used as an adjunct in acute exacerbation of nasal allergy until the patient responds to the conventional type of allergic therapy.

As stated previously, the best and only method of approach in nasal mucous polyps, if they are producing complete obstruction, is their removal followed with allergic management. Unless this is done, the results will be unsatisfactory. The most common cause of mucous nasal polyp is the inhalants, the most common of the set being house dust, animal dander, pollen, tobacco, fungi, molds, and insect emanation. House dust was found to be the chief offender in this group.

Mucous polyps were frequently found in those patients who gave a history of long-standing symptoms with allergic manifestations throughout the whole year. These perennial cases have a multiple sensitivity, and although house dust was the most important causative factor, other allergens, such as food, air-borne molds, and insect emanations, may be involved.

In treatment, all etiologic factors must be considered in order to obtain the desired results. All patients should have complete skin testing, using the scratch test for pollen and the intracutaneous testing for foods and other inhalants. House dust is composed of many substances, such as orris root, feathers, kapok, silk, animal hairs, jute, cotton, and tobacco. The allergens in these substances are formed by the breakdown which occurs in the aging process in the fabrics. A stock house dust extract is used containing all the substances mentioned previously along with the addition of the common air-borne molds in a 9:1 dilution.

Before instituting treatment in the dust-sensitive patients, the relative degree of skin sensitivity must be determined, and this is accomplished by testing with serial dilutions of the extract. In order to avoid undue reactions, it is best to test with the higher dilutions first. Testing is begun with dilutions ranging from one million to ten thousand. If positive reactions are obtained in the first three ranges, no further testing is done. If there is no reaction, testing is continued, using the next three dilutions. In testing, about 0.01 to 0.02 cc. of the extract in the previously mentioned dilutions is injected. The amount injected will produce a wheal of 3 or 4 ml. An increase in the size of the wheal with an area of erythema is considered a positive reaction. The size of the wheal is recorded in millimeters.

In house dust therapy the end point of reaction is not as important a factor as in pollen titration. The end point of reaction in house dust skin testing is usually at a much stronger dilution. Thus, the employment of the low dosage form of therapy in the dust-sensitive cases is of great value.

Treatment was carried out in these cases by using the principles of low dosage or optimal dosage as advocated by Hansel.[12] This form of therapy is based on the principle of injections of allergenic or antigenic agents in the smallest amounts that will produce a satisfactory physiologic response. Treatment is started with an injection of 0.1 cc. of one million dilution and increased by the same amount at each injection up to 0.3 to 0.5 cc. and then proceeding to the next dilution, which is 1:100,000, and so on until the optimal dosage is reached. When this point is reached, the dosage remains the same and the interval between injections is lengthened. The interval between injections depends on the relief obtained by the patient. When the patient obtains relief with the interval at four to six months, treatment may be stopped and the patient told to report back as soon as symptoms recur. Treatment at this time is begun with one half of the last dose given and continued as previously described.

In the cases that have a superimposed infection which is not due to an acute process bacterial vaccine was added to the house dust extract. Although the concept of bacterial allergy is not accepted by everyone, we are of the opinion that it merits some consideration. A stock vaccine which contains a mixture of bacterial vaccine and immunogens was used. This vaccine contains the most common organisms that are found in respiratory tract infections.

The literature advises an initial dose of 0.1 cc. either subcutaneously or intracutaneously and an increase by the same amount every four to seven days until 1 cc. is reached. Employing this method, we had an exacerbation of symptoms in a number of patients, so that the optimal-dosage form of therapy was carried out.

The vaccine used contained 500 million organisms per cc. This was diluted so that each cc. contained 500 organisms, and treatment was started with an initial dose of 0.01 cc. of the number five dilution and increased by the same amount at each injection to a dosage of 0.1 cc. The next dose would be 0.01 cc. of the number four dilution, continuing in this manner until the optimal dosage was obtained.

In those cases which did not respond too well with combinations of dust and stock bacterial vaccine, an autogenous vaccine was made from the nasal secretions of the patient and given in the same method as the stock vaccine previously described.

We cannot give any definite proof as to the efficacy of the use of bacterial vaccine, but we did find that it was beneficial in a certain number of cases that manifested the signs and symptoms of a superimposed chronic infection.

Another causative factor to consider in nasal polyposis is food allergens. Although they play only a minor role, they should receive some consideration. When feasible, complete skin testing to foods should be done, and all foods showing positive reactions should be eliminated from the diet. It is not necessary for the otolaryngologist to be fully equipped to carry out these procedures. He must have a working knowledge of allergy as well as a set of important food allergens. Food testing is not too reliable, and a careful history with a food diary and careful observation by the patient of the suspicious foods can give you a great deal of information as to the possible food allergens. Usually, the most common foods in a patient's diet are the ones to be suspicious of.

Therefore, in nasal polyposis, the recurrence of polyps after their removal can be avoided by combining surgical and allergy therapy. In cases with recurrence in spite of this therapy, we found that the interval until recurrence was prolonged.

Summary

1. Nasal mucous polyposis is very commonly found in cases of perennial nasal allergy.
2. Proper management can be determined only after establishing a histopathologic study of the type of polyp present.

3. Treatment for mucous polyposis by urgical removal without allergy therapy vill yield unsatisfactory results.

4. In dust-sensitive cases, optimal dosage herapy, with the addition of bacterial vacine in certain cases, was very beneficial as method of therapy.

5. Avoidance of all other etiologic factors, uch as food and other inhalant allergens, hould be carried out.

6. With this method of treatment, the ecurrence of nasal polypi after surgical emoval could be avoided or their growth etarded.

268 Delaware Avenue, Buffalo 2

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Discussion

Russell Clark Grove, M.D., *New York City.*—It is a great pleasure to discuss Dr. Barone's paper. Through the years he has contributed greatly to our knowledge of the importance of allergy in the treatment of rhinitis and sinusitis. This paper re-emphasizes this importance.

Thirty years ago the management of nasal polypi presented an even greater problem to the rhinologist than it does today. Improvement in surgical technics and the discovery of the antibiotics, antihistamines, and the steroids have helped us tremendously, but the absolute cure of polypi still is not at hand.

Thirty years ago when I began the study of otolaryngology, which was about the time Dr. Hajek, whom Dr. Barone quoted, was writing his famous textbook, allergy was first being considered very seriously as the cause of nasal polypi by American physicians. Foreign doctors, such as Dr. Hajek, knew very little about allergy. In our clinic at the Roosevelt Hospital we have emphasized the importance of allergic factors in hyperplastic sinusitis since 1930. Treatment of these factors both preoperatively and postoperatively will often enable us to obtain a better result and perhaps prevent recurrences as stated by Dr. Barone. Unfortunately, the best results by injection therapy are obtained in the reversible stage, and these cases are much fewer than the chronic or irreversible ones. In these chronic cases a large percentage are absolutely negative allergically on skin testing and therefore no antiallergy treatment with injections is indicated. These are the ones whose pathologic condition we believe is due to a bacterial allergy; in other words, the tissues are reacting to the bacteria or to their products. If there is an associated secondary infection with pus in the sinuses, treatment with the proper antibiotic after cultures and sensitivity tests will often produce excellent results. We find that the addition of steroids to the antibiotic therapy is even better. However, many cases do not respond sufficiently well to the steroids, and unfortunately when the therapy is stopped, the polyps revert back to their original size.

We are now faced with the question of what to do with these patients, and there are many of them who do not respond to the antiallergy and other conventional forms of medical treatment. I think Dr. Barone has presented an outline of the antiallergy treatment in an excellent manner, but I also think he has minimized the importance of surgery in the treatment of these difficult cases. He states that "polyps that are seen in longstanding cases or those with recurring history are considered irreversible and cannot be eradicated without surgery. In surgical removal complete exenteration of ethmoid cells or other radical procedures in mucous polyps is not advocated. It is best to preserve as much mucous membrane as possible." I agree with this wholeheartedly, but I think he has made it seem that surgery should be considered a minor form of therapy. My experience and that of many other rhinologists has shown us that surgery is still indicated; in fact, it is the only form of successful therapy in many cases. I do not believe in removing any mucous membrane that is not diseased, but it is important to remove thoroughly and completely the membranes that are diseased. This surgical treatment is advocated very strongly by Simonton.[a] He found that 62 to 74 per cent of 120 patients had no recurrence of nasal polyps, depending on how complete the surgery was. He states that "removal of polypi is, in a sense, removal of nasal mucosa.

Repeated partial polypectomy results in a much higher incidence of surgical atrophy than does a single operation of sufficient scope[a] to cure the disease." Diamant and Ottosson in another series of cases obtained 80.3 per cent of nonrecurrence with even more radical surgery. In our clinic we have found that complete surgery, as differentiated from partial surgery, has produced the best results.

In this last part of my discussion I have tried to emphasize the fact that antiallergy treatment is important in many cases, but it should not be prolonged indefinitely if good results are not being obtained. Let us ignore once and for all the old statement "never let a nose and throat doctor operate on your sinuses." Surgery is still indicated in properly selected cases and, when combined with proper antiallergy treatment, excellent results can be obtained.

I congratulate Dr. Barone on this timely presentation, and I hope all of us will be stimulated to render better treatment to the patients with nasal polypi.

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[a] Simonton, K. M.: Tr. Am. Acad. Opthal. **62**: 75 (1958).

Modern Day Tomahawk Wound

The case of a modern man who suffered a tomahawk injury and was treated by a prehistoric method has been reported by an Iowa physician.

Writing in the November *Archives of Internal Medicine*, published by the American Medical Association, Dr. Thomas B. Summers, Iowa City, said the head injury was treated by trephination, in which holes are bored in the skull to relieve pressure on the brain. Trephination was practiced extensively by prehistoric South American Indians.

The patient was a fifty-seven-year-old man who operated a trailer camp. He was struck on the cheek with a tomahawk after he had stopped a resident of the camp from beating his wife.

About two weeks after being hit, the patient began having pain in both temples. During the next weeks he experienced increasing waves of pain in the head. At times his fingers, tongue, and lips became numb. After a severe attack of pain during which he also could not speak for thirty minutes, he went to the doctor. During examination he experienced numbness and weakness of the left hand and forearm. Examination indicated that something was creating pressure on the brain, probably a tumor containing blood (a subdural hematoma).

Holes were made on both sides of the skull and liquid removed. He remained in the hospital for nine days. During the next month, he was readmitted to the hospital twice for removal of more fluid from the skull cavity. Seven months later, a further brain operation was performed. Now two years later, he is free of symptoms and is working.

Trephination (also called trepanation) was performed by the Incas to treat wounds from a macana, a wooden weapon edged with sharp flint, and also to allow "evil spirits" to escape from the head. American Indians also performed the operation, apparently to treat tomahawk wounds.

In Peru and Bolivia, where the technic reached its highest development in prehistoric times, at least one skull has been found with signs of five successful trephinations. With rare exceptions, the operation among the Indians was followed by normal healing. The native surgeons apparently had the knowledge of liquids and powders that acted as antiseptics.

If the Iowan had not had the benefit of modern surgical treatment, it is very likely that he would have died and been buried in some contemporary cemetery, Dr. Summers said.

As it is, sometime in the distant future an archeologist may come across a skull showing signs of a tomahawk wound and trephination and "speculate upon the anachronism of tomahawk injuries in the twentieth century," he concluded.

The Acute Respiratory Disease Problem in Industry

NORMAN J. ASHENBURG, M.D., ROCHESTER, NEW YORK

(*From the Medical Department, Eastman Kodak Company*)

Acute upper respiratory disease continues to present extremely difficult medical and economic problems in industry. Several reports have indicated that upper respiratory infections comprise the highest morbidity among employes and the commonest cause of illness absenteeism.[1-7] As high as 50 per cent of absences and 25 per cent of total time lost, representing more than 150 million work days annually, may be attributed to this group of illnesses.[3] In addition to actual absence from the job, one must also contend with the decreased efficiency of those employes ill-disposed with a cold who remain at work.

From June 30 to December 14, 1957, the National Health Survey revealed that upper respiratory disease accounted for about 363 million days of illness in bed, equivalent to 994,000 person-years lost from work, housekeeping, or school.[8] These astounding data include the brief influenza epidemic in this country during the latter portion of September and October.

It is difficult to determine accurately the total cost related to respiratory disease in terms of sickness allowance and productivity loss. However, the relative magnitude of the economic problem is quite obvious.

From the point of view of preventive medicine, one cannot minimize or underestimate the potential dangers of upper respiratory infection as the precursor of much more serious illnesses—sinusitis, middle ear disease and deafness, pneumonia, valvular heart disease, and disabling chronic pulmonary disease.

Research interest in this medical problem has at times been diverted or overshadowed by the attraction of the more dramatic infectious diseases. Until recently, progress has been hampered by the lack of satisfactory viral culture technics. There is no small, susceptible laboratory animal available for studying the common cold. Because of these and various other factors, there are still many unanswered questions about acute upper respiratory disease. Definitive knowledge regarding etiology, susceptibility, and resistance is meager. Studies on the practical aspects of prevention, control, and therapy have not yielded effective solutions.

Of immediate concern to the industrial physician are the answers to these questions. For with more complete understanding of the host-parasite relationship will come knowledge of control, prevention, and treatment.

This paper presents an experience with upper respiratory disease during the past three years among employes of the Eastman Kodak Company in Rochester, New York. In addition, various aspects of the general problem will be discussed. No attempt will be made to present an exhaustive survey of the subject, inasmuch as a number of excellent reviews are available in the literature.[9-14]

Method and Scope

Beginning in 1955, all absences at one of the plants of the Eastman Kodak Company were tabulated. Cause, frequency, and duration of the absences were recorded in order to provide a basis for a detailed analysis of the lost time of employes by age, sex, payroll classification, type of work, skill level, marital and dependent status, day of the week, and department. In the case of

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TABLE I.—INCIDENCE* OF ACUTE UPPER RESPIRATORY DISEASE AMONG 4,800 EMPLOYES IN THE EASTMAN KODAK SINGLE-PLANT STUDY FROM 1955 TO 1957

	Cases		Hours Absent				Illness with Next Highest Morbidity			
							In terms of Cases		In terms of Hours Absent	
Year	Number	Percentage (Of All Illness)	Total Number	Percentage (Of All Illness)	Average Per Case	Cases Consulting Physician (Per Cent)	Illness	Number (Cases)	Illness	Number (Hours)
1955	579	31.5	54,675	15.2	94.4	58.9	Nervousness	55	Heart disease	10,417
1956	499	28.8	42,976	12.8	85.7	54.1	Gastroenteritis	50	Heart disease	10,859
1957	1,012	50.5	89,267	26.5	88.2	50.8	Low back pain	48	Low back pain	6,599

* Absences of more than three working days.

illness absences lasting longer than three days, data were collected on the diagnosis and whether or not a physician was consulted. Through the Kodak visiting nurse service and by virtue of the fact that all employes must report to a plant physician or nurse prior to return to work following an illness longer than three days, it was possible to obtain historic data from employes who did not consult their own physicians. The illness absenteeism data served as the basis for the first part of the present report. An average of 4,800 employes comprised the total employment census at this plant.

In September, 1957, a separate and concurrent study of upper respiratory disease and total illness absenteeism was undertaken among employes of all Kodak plants in Rochester. The original purpose of this survey was to follow the severity of absenteeism related to the anticipated influenza epidemic. Data were collected on a daily basis from the visiting nurse reports and included the date of onset of illness, diagnosis, age, sex, payroll classification, department, date of return to work, and physician consulted. The average employe population involved in this study was 33,500 persons. The illness absenteeism data include cases lasting three or more working days.

In both studies, "acute upper respiratory disease" represents those clinical syndromes classified according to the International Statistical Classification in categories 470 and 475, listed as acute nasopharyngitis and acute upper respiratory infection of multiple or unspecified sites. Influenza-like diseases are also included because of the difficulty frequently encountered in the clinical differentiation between influenza and a severe common cold.

Major Findings

The data for the three-year, single-plant study are summarized in Table I. It should be pointed out that these figures represent absences because of illness lasting more than three working days. If one were to include illness absenteeism of shorter duration plus the number of persons ill with a cold who remain at work, the upper respiratory infection morbidity would indeed be considerably greater. During 1955 and 1956, acute upper respiratory disease accounted for essentially the same percentage of all illness absenteeism, 31.5 per cent and 28.8 per cent respectively. In terms of hours absent, upper respiratory disease comprised 15.2 per cent and 12.8 per cent of the total absenteeism time during these two years. Although these figures are somewhat lower than the maximum reported in some studies, they fall within the range observed in other reports on upper respiratory disease in industry. In a United States Public Health Service industrial sickness absenteeism study for the years 1942 to 1951, acute upper respiratory disease accounted for about 32 per cent of all illness absenteeism.[3] This study was based on data obtained from periodic reports of industrial sick-benefit organizations. Two additional studies showed an incidence of

TABLE II.—Frequency of Acute Upper Respiratory Disease* During 1957 in the Eastman Kodak Single-Plant Study

Attack Frequency	Number of Employes	Percentage of Total Cases	Hours Absent— Number	Hours Absent— Per Cent of Total Number
1	793	78.3	68,936	77.2
2	80	15.8	15,655	17.5
3	14	4.2	3,236	3.6
4	3	1.2	1,036	1.2
			404	0.5
5	1	0.5		

* Absences of more than three working days.

34.3 per cent[4] and 41.2 per cent.[7] In the 1957 Kodak single-plant data, which include the large number of influenza cases, one finds that acute upper respiratory infections accounted for half (50.5 per cent) of all the illness absenteeism in number of cases and for one quarter (26.5 per cent) of the total illness absenteeism in hours. Of the total employes in 1957, 17.5 per cent were involved in the 50 per cent absenteeism from acute upper respiratory infection.

The impact of upper respiratory disease on the total illness absenteeism picture in the study becomes more apparent if one notes that the illness with the next highest morbidity during 1955 and 1956 in terms of total cases was only one tenth that of upper respiratory disease. In terms of total work hours lost, the illness with the closest incidence accounted for only about one fifth to one quarter that caused by upper respiratory infections. During 1957, upper respiratory infection accounted for 21 times more cases than the illness with the next highest morbidity and for 13.5 times more total hours lost.

The average number of hours of illness per case ranged from 85.7 to 94.4. It was of interest to note that during 1957 fewer employes consulted a physician despite the general public awareness of the influenza epidemic. In the 1957 single-plant study, 50.8 per cent of those ill with an upper respiratory infection consulted a personal physician. The National Health Survey of upper respiratory disease from June 30 to October 26, 1957, reported 52 per cent medically attended cases.[8] Of interest in the National Survey was the fact that during the summer, when the frequency of upper respiratory disease was lowest, the proportion of medi-

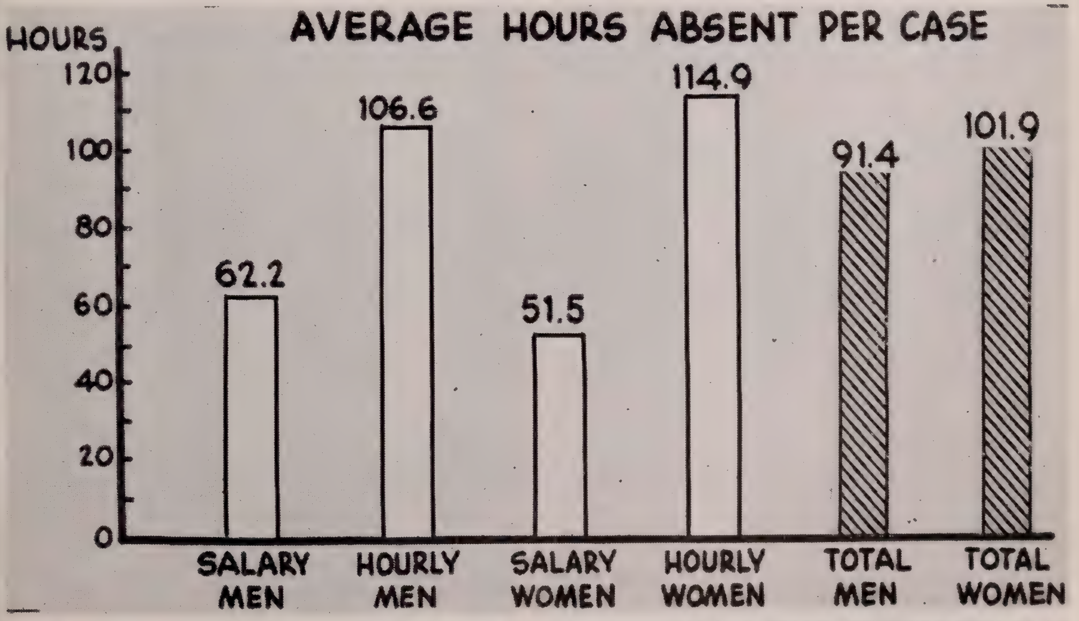

Fig. 1. Average number of hours absent per case of acute upper respiratory disease according to sex and job classification in single-plant study for 1955.

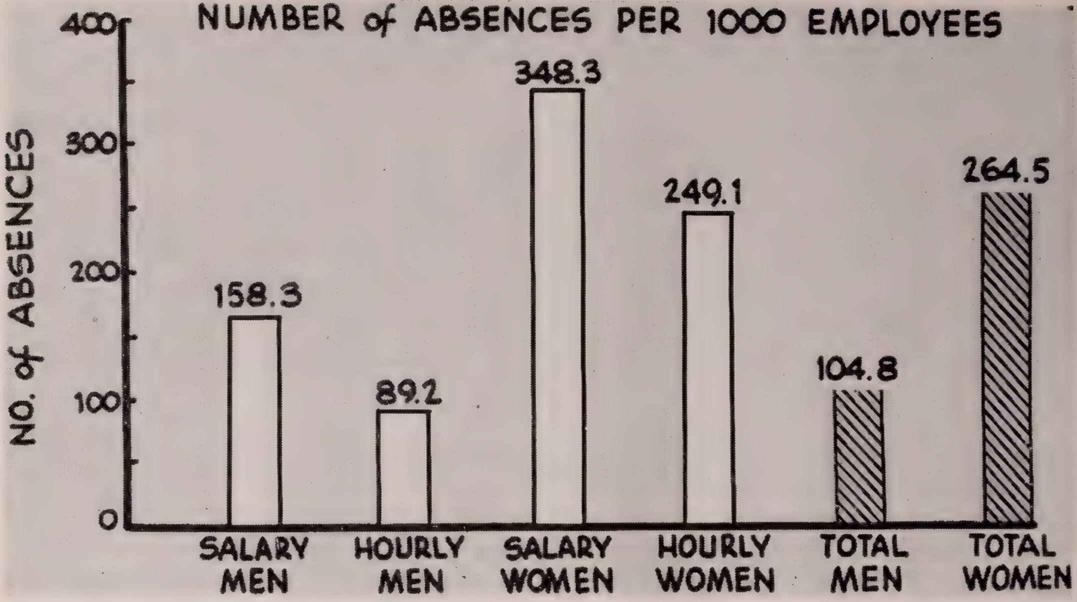

FIG. 2. Number of absences due to acute upper respiratory disease per 1,000 employes according to sex and job classification in single-plant study for 1955.

cally attended cases reached 60 to 70 per cent.

Inquiry into the attack frequency in the 1957 single-plant study (Table II) revealed that, contrary to other reports,[5,15] the majority of upper respiratory disease was not confined to a small group of employes with repeated attacks throughout the year. Seventy-eight per cent of the total cases were represented by single attacks. Furthermore, those employes who experienced more than one respiratory infection were not ill for an abnormal length of time. However, as noted previously, if one considers the total employe population and the total illness absenteeism, 17.5 per cent of the employes accounted for 50.5 per cent of all cases of illness because of upper respiratory disease in 1957. In terms of hours lost, this 17.5 per cent lost 26.5 per cent of the total hours through respiratory disease. In this frame of reference, a small percentage of the employes accounted for a large portion of the illness experience in the 1957 study.

The 1955 single-plant data were analyzed according to sex and job classification. Considering the average hours absent per case (Fig. 1), women were ill 11.5 per cent longer than men. Hourly-paid employes were absent 51 per cent longer per case than were salaried employes. In terms of number of cases per 1,000 employes (Fig. 2), women were sick 2.5 times as frequently as men, and salaried employes were absent 41 per cent more frequently than hourly-paid employes. Other industrial studies of respiratory infection report a similar 2:1 incidence ratio in comparing women with men.[3,4] Various speculations can be made to explain these observations, but factual data are not available in this study to support such speculation.

The experience with upper respiratory infection in all Rochester Kodak plants is recorded in Fig. 3. These data represent illness absences of three or more working days. From a low point in September there was a marked rise during the next month when three quarters of all illness absenteeism was caused by upper respiratory disease. It has been estimated that during mid-October, 1957, there were about 12 million cases of upper respiratory disease in the United States.[8] A gradual fall-off is noted in the

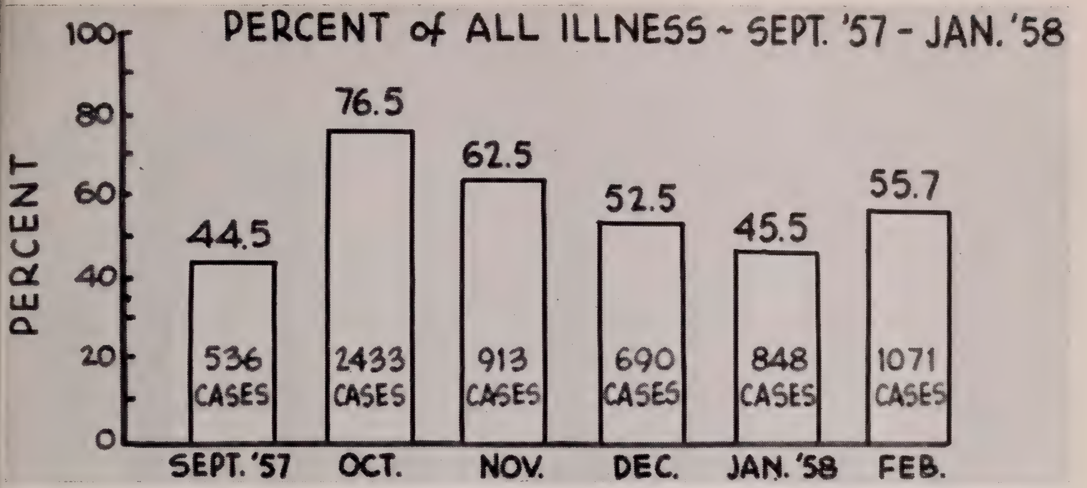

FIG. 3. Relation of incidence (absences of three or more working days) of acute upper respiratory disease to all illnesses among 33,500 employes from September, 1957, through February, 1958.

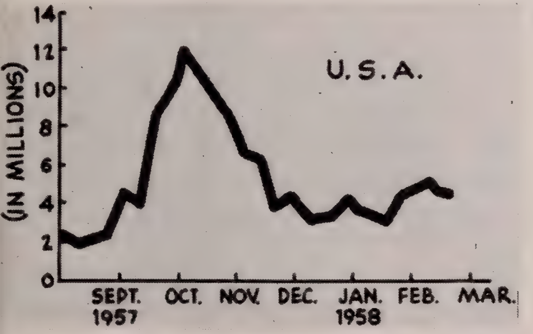

FIG. 4. Incidence (one or more days in bed) of new cases of acute upper respiratory disease in the United States from September, 1957, to March, 1958.

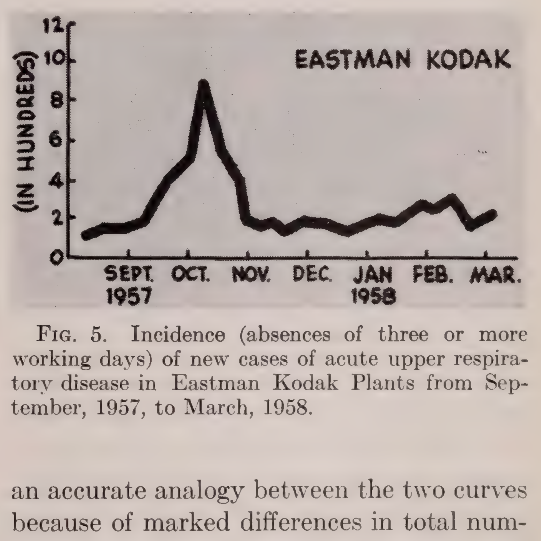

FIG. 5. Incidence (absences of three or more working days) of new cases of acute upper respiratory disease in Eastman Kodak Plants from September, 1957, to March, 1958.

Kodak incidence through December, 1957. A second rise, in terms of new cases, begins in January, 1958. However, because of an increase in total illness absenteeism, the percentage for upper respiratory disease dropped to the September level. The total number of cases continues to rise throughout February, 1958. Although there was a clinical impression that a new outbreak of influenza was prevalent in the community early in 1958, laboratory evidence was not available to verify this impression.

Comparison of the distribution curve of acute upper respiratory infection in the nation with the curve recorded for Kodak employes is of considerable interest (Figs. 4 and 5). Although it is not possible to draw an accurate analogy between the two curves because of marked differences in total numbers involved, age range differences, and other factors, it seems appropriate to point out the strikingly similar trend of acute upper respiratory infection in the two curves.

There has been interest in previous illness absenteeism studies on the prevalence of illness according to the day of onset. This matter was investigated during a four-month period of the 1957–1958 total Kodak study (Fig. 6). The onset of both upper respiratory infections and all other illness seemed to occur most frequently on Monday and fall off during the rest of the week. This is in concurrence with another study except that in that study, Friday showed a slight rise,

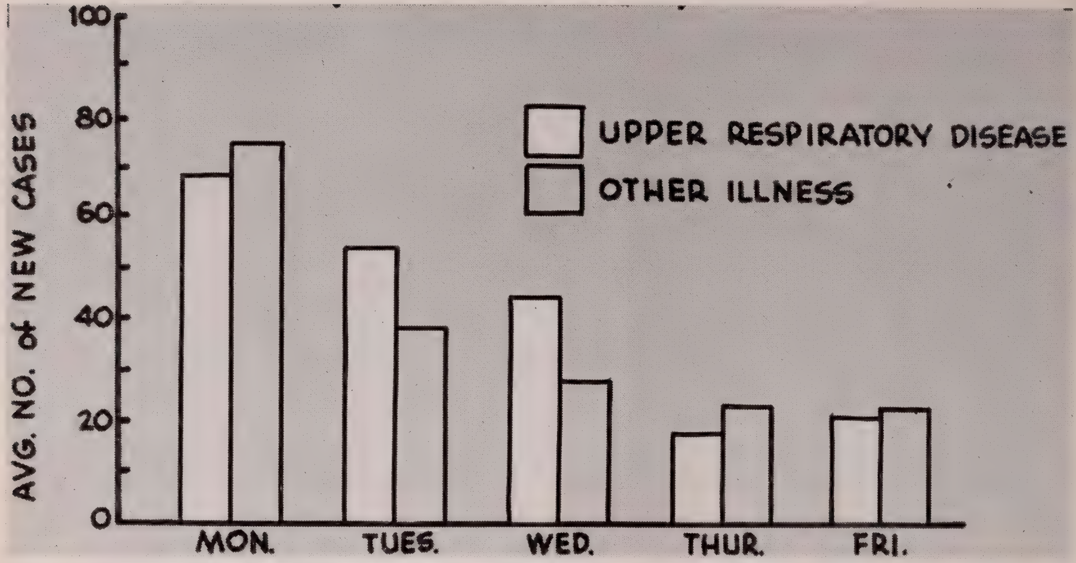

FIG. 6. Incidence (absences of three or more working days) in Eastman Kodak Plants of upper respiratory disease in comparison with other illnesses according to day of onset during four-month period.

higher than the three previous working days.[1] Obviously, these observations are not related to the specific illness per se but must reflect many nonspecific human factors involved in all absenteeism.

Comment

The data from the Kodak studies contribute factual evidence to support previous observations on the high morbidity and the importance of upper respiratory infections as a cause of illness absenteeism in industry.

There was no attempt to inquire into problems of pathogenesis, epidemiology, control, and treatment. However, it seems appropriate to reflect briefly on such matters.

Regarding pathogenesis, it is becoming more acceptable to consider illness in man in terms of multiple factors operating in a common open system.[16] The single cause-and-effect concept, popular during the golden age of bacteriology and for many years thereafter, is becoming outmoded even in the infectious diseases. "Cause," as Armstrong puts it, "usually means the factor or factors most accessible to manipulation toward improving an unsatisfactory state of affairs.[17] The modern point of view is aptly expressed by Mirsky[18] when he says, "Even the bacteriologist no longer regards Koch's postulates for the development of infection as dogmatically as in the past; he now appreciates that a specific bacterium may produce a specific disease in animal or man only after 'a long chain of relevant circumstances' has made the host sufficiently susceptible." It seems appropriate then, in terms of upper respiratory disease, to direct attention not only to viral agents but also to biochemical, physiologic, psychologic, and sociologic factors that may so alter the internal equilibrium of the host as to reduce his ability to resist clinical infection. Actually it is well known that the nasal mucous membrane changes of a cold (hypersecretion, edema, and obstruction) may appear in response to physical and chemical irritants, to allergens, and to psychologic stress.[14,19] It has been pointed out that situational threats involving interpersonal and social adjustment may result in changes similar to those caused by cutaneous chilling, exposure to cold, and experimentally induced pain.[19–21] Thus, physical as well as psychologic threats to "bodily security or integrity" were trigger mechanisms for physiologic changes in the nasal mucous membranes. To quote Mirsky further, "Every level of organization from the social to the molecular is involved in the predisposition, the precipitation, and the perpetuation of the various derangements that plague man and his society."

Turning briefly to the epidemiology of the common cold, the question has been raised whether cold viruses may remain latent in the host's tissues and then become activated by various factors, causing recurrent colds.[22,23] The matter of latent viruses is a well-known and frequently-observed phenomenon.[24] Inapparent infections with influenza virus are known to occur.[25] Furthermore, the intranasal installation of normal chorioallantoic membrane and yolk sac extracts precipitated the same symptoms with the same incubation period as did filtrates containing cold virus.[23] The hypothesis was put forth that a latent cold virus had been activated by foreign protein. The problem of recurrent herpes simplex infection may be very similar to the situation in the case of the common cold. Many different external and internal stimuli may activate a dormant herpes virus. Typical lesions may appear despite the presence of neutralizing antibodies in the host.[26] This situation is difficult to explain. However, as Dubos[26] points out, the answer to such epidemiologic enigmas may be found in transient biochemical or metabolic changes in the host, increasing his susceptibility to infection independent of his immunologic state. He suggests further that as one gains more knowledge about these biochemical determinants of infection it may be possible to devise methods of control aimed at the biochemical alterations that occur in the host.

The control and prevention of upper respiratory infections in industry are unsolved problems. Excellent reviews are available covering the vast amount of effort already applied to try to achieve some solution.[12,27] Only a few points will be made.

Isolation of every employe with a cold is not a practical matter, and in view of the low degree of contagiousness it probably is not necessary.[9,11] Furthermore, virus may be present in nasal secretions of persons who are symptom-free.[9,11] Of course, all would agree that the employe with fever or the person with considerable malaise should be off the job and in bed. The best one can do at present is to encourage and teach employes general hygienic measures. Adequate ventilation, elimination of chilling and sudden temperature changes, and reduction of dust, fumes, and smoke in the plant may have some preventive value.[27] Certainly the food handlers with upper respiratory infection should not be permitted to engage in their regular duties. In this connection, Bliss and Long[28] report that five of 15 apes kept in isolation developed colds forty-eight hours after eating food prepared by a food handler who had a cold. The man had no direct contact with the apes or with their attendants who wore masks and gowns and remained healthy.

At present, based on the high degree of effectiveness of adenovirus vaccines among military personnel in the prevention of what has been called "the uncommon cold," it seems as if the development of a cold virus vaccine may be one fruitful attack in the prevention of the common cold.[29] In this regard, it should be pointed out that the "JH" virus, believed to be the cause of some portion of the common colds, has been isolated[30] and vaccine studies are under way. In a preliminary report it was stated that this vaccine reduced the incidence of mild upper respiratory infection about eightfold in an outbreak with which the "JH" virus was associated.[31] This is indeed an important area for future research.

Several years ago, in a discussion of treatment of the common cold, it was stated that therapy had varied "from therapeutic nihilism to the recently introduced antibiotics and to ritualistic and traditional household remedies."[32] One may say categorically that no specific, effective treatment has been forthcoming.

One by one, the vitamins, antihistamines, and flavanoids have fallen by the wayside as effective therapeutic agents as a result of well-controlled, double-blind studies.[33–38] Yet, there still are many proponents of all these materials who base their confidence on poorly controlled studies and impressionistic data. It has been pointed out in one study in which lactose controls were employed that a high percentage reported such good results that the comments of these volunteers "would serve admirably as testimonials concerning the value of these tablets for the treatment of colds."[39] The unwarranted use of penicillin and other antibiotics in treating the common cold has been pointed out repeatedly.[40–42] Yet, one still hears of high usage of these drugs for this very purpose. Except for the large particle viruses, such as trachoma and the psittacosis group, current antibiotics seem to be ineffective and certainly have no place in treating the person with a cold, except in certain situations to be mentioned.[41] The potential hazards of antibiotic therapy—mild as well as serious hypersensitivity reactions, superinfections, and emergence of resistant strains—are well known to all physicians.

There are special situations in which antibiotic therapy is justified in the person with a common cold. One would, for example, want to protect the individual with valvular heart disease from secondary bacterial infection during a cold. The patient with chronic pulmonary disease and decreased pulmonary reserve would represent another situation that might warrant antibiotic protection with each upper respiratory infection. Finally, one would treat a specific secondary bacterial infection, such as acute sinusitis accompanying a common cold.

One must look to the development of specific antiviral therapeutic agents in the event that cold virus vaccines prove to be ineffective immunizing agents because of their small antigenic mass or for other reasons.

It is quite obvious that continued and extended research is needed on all phases of this major public health problem. One must be concerned not only with basic viral studies but also with further inquiry into the many other factors involved in understanding the host-parasite relationship in the common cold.

In this connection, one would be remiss not to mention the excellent contributions of the Common Cold Foundation in this country. This Foundation is a nonprofit organization dedicated to the encouragement and direction of financial aid to the support of research on the common cold. In addition to this important activity, the Foundation acts as a clearing house for the collection and dissemination of various types of data and new knowledge dealing with the common cold.

The direction and stimulation from this organization already have borne fruit in common cold research, and future progress during the current "golden age of virology" seems inevitable.

Summary

Data are presented reporting an experience with upper respiratory disease during the past three years among employes of the Eastman Kodak Company.

This study supports previous observations of the high morbidity of upper respiratory infections and the significance of such infections as a cause of illness absenteeism in industry.

Certain features of the common cold problem are discussed.

209 Dartmouth Street, Rochester 7

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153rd Annual Meeting

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HOTEL STATLER HILTON **BUFFALO**

Medical Supervision in the Child Health Conference

NINA BLEIBERG, M.D., M.P.H., NEW YORK CITY

(From the Infant and Preschool Division, Bureau of Child Health, Department of Health, City of New York)

DURING 1957 the New York City Child Health Conference gave health supervision to about 160,000 infants and preschool children.[1] The medical part of this gigantic task was carried out by 170 part-time physicians.

In the administration of a program of this kind there must be as much concern with service quality as there is with community needs. It is obvious that services rendered depend to a large measure on the competence and caliber of the staff. Great effort was therefore made to select and recruit as many pediatrically-trained physicians as possible.

A review of the qualifications of all physicians on the panel of the Infant and Preschool Division reveals that 20 per cent of the physicians meet the requirements of the American Board of Pediatrics; an additional 13 per cent have had at least one year of pediatric residency training; about two thirds of all physicians rendering services in the division are general practitioners. Although this compares very favorably with the statistics of child health services for the nation, it is felt that some measures must be adopted to raise standards and to safeguard good service quality.

In addition to the careful selection of the staff before assignment, two measures are found useful in this task. One is the preservice training course which is held before candidates are appointed to work in child health stations, and the other measure is a system of teaching, or supervision, which operates continuously.

It is the purpose of this paper to describe the latter and to outline important areas and methods used. Supervision is rendered by a staff of ten qualified part-time pediatricians who are responsible to the full-time pediatrician-in-charge of the division. All supervisors are practicing pediatricians affiliated with hospital services. They also have public health experience. In addition to an excellent pediatric background, supervising physicians have received a great deal of inservice training in their long affiliation with the Department of Health. This has been done through regular staff meetings and special conferences, particularly in relation to mental health. Such outstanding teachers as Dr. Benjamin Spock, Dr. Milton Senn, Dr. Mabel Huskha, and others have at one time or another taught in the Bureau of Child Health, and the supervising staff has been continuously exposed to the mental health teachings of experts in this field. In recent years they have received additional training from Dr. David M. Levy[2] in the attitude study project, and from Dr. Mary E. Mercer[3] through field visits and staff conferences. Each supervising physician is a liaison officer between the central office and field work. The central office is responsible for the program planning, the program content, and the setting of policies and standards. The child health station physician translates the program into action and administers services to the clients.

Sections of the Sanitary Code, the Manual of the Child Health Conference, and other notices and instructions issued periodically by the commissioner and the assistant commissioner-in-charge of maternal and child health services serve as guide lines in terms of standards. These communications are re-evaluated frequently in the light of changing medical concepts and community needs. Continuous efforts are being made by the central office staff, the division head, supervising physicians, and consultant public health nurses to facilitate the dissemination of all information that is given in the literature outlined previously. This is done through group meetings and individual conferences.

However, one can judge whether the outlined standards are met only through continuous observation of the service which is being rendered to the patient. The supervising physician is primarily concerned with this area. For many reasons this is indeed a challenging and baffling task. First of all, the concept of "quality of care" is a difficult one; second, physicians are used to working independently and do not adapt readily to set standards or to a system of supervision. This is not true of other public health workers. Public health nurses, statisticians, social workers, and sanitarians are accustomed to work under supervision. They expect to get assistance and guidance from their supervisors, and are used to a periodic evaluation of their performance. This approach is quite foreign to the graduate of a medical school.

The quality of service rendered by a physician is determined by his training, ability and desire to absorb medical progress, and his general philosophy and approach to life. True, his behavior will be influenced by the prevailing trends and practices in the community, by the success or failure of his approach, and by a number of other factors. Yet in the last analysis he himself measures his performance against his own standards. While this system is workable in private practice, in a public health program it is mandatory to set standards and to adopt measures which will safeguard them in order to facilitate proper program administration.

Because of the many difficulties which are inherent in the task of the supervisor, the pediatrician-in-charge suggested at the beginning of the last year that part of each staff meeting, which is held every month, be devoted to a brief presentation of activities that were carried out by one supervising physician in a typical child health station session. The selection of the child health station was left entirely to the supervisor.

Although it was realized that the sessions reported on did not necessarily represent a random sample, they nevertheless reflected typical activities carried out by the staff and indicated the methods used. The suggested project was carried out during 1956 to 1957. It was hoped that these reports would help to define more clearly problem areas involved in the process of supervision. By the exchange of observations and experiences, a common denominator might also be found in terms of teaching. Two supervising physicians have been appointed since the project was started, so that only eight staff members participated in this project.*

A review of the material presented last year reveals that the following areas took most of the supervisor's time, and represent high lights of a typical supervisor's day.

The Public Health Point of View

One of our supervising physicians reported on the visit of a diabetic mother who had three children. She came for the health supervision of the youngest child. From the case history which was obtained by the public health nurse it was apparent that the first baby had been premature, the second one had weighed 8 pounds and $9^1/_2$ ounces, and the third one had weighed 11 pounds and 6 ounces at birth. During the conference with the physician it became clear that what the mother was most concerned about was the oldest child's dental caries. While the child health station physician concentrated only on medical care for the infant, the supervising physician took the opportunity to discuss with this mother in the presence of the child health station doctor not only the dental care but also the total care for herself and the other children. He asked, for instance, whether the mother knew what coma is and whether she had received information regarding insulin shock. He inquired what observations she had made on her other children with regard to diabetes. This was an excellent case in terms of demonstration to the physician that public health should be practiced with concern for the entire family.

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* This material is based on reports of the following members of the supervising staff of the Infant and Preschool Division: Dr. E. M. Di Tolla, Dr. I. Kowaloff, Dr. M. Lenarsky, Dr. P. Lustbader, Dr. I. Miller, Dr. B. Newman, Dr. P. Perillo, and Dr. E. Tannenbaum.

Another supervisor reported the case of a young mother who came to the child health station with her infant. The child health station physician suspected that this mother suffered from thyrotoxicosis and referred her for study. His impression was subsequently verified and the mother received care. When she returned to the station with her infant several weeks later, she expressed her gratitude to the physician who, although concerned primarily with her infant, had given her advice regarding her own health.

The socioeconomic implications of a third case were given by another supervisor who mentioned that an infant was brought to the child health station by a friend of the family. While the child health station physician gave care to the infant, the supervisor inquired why the mother of the child had not come to the Child Health Conference. In this way, the entire family constellation was again discussed. It was established that the mother was working —an important factor in the life of an infant.

These cases illustrate a problem that arises constantly in the Child Health Conference. The importance of caring for the family as a unit cannot be sufficiently underscored. If one member of the family is ill, this usually has important repercussions for all the other members of the family. This is particularly true if the breadwinner is incapacitated. The social and economic implications of each case are frequently already recognized by the public health nurse when she obtains an initial history. However, it is important that the physician review the case record and become aware of these factors that might influence the family constellation. Because the average physician is usually concerned with one patient, the tendency is to pay little attention to the patient's environment and the social and other factors. It is in this area that the supervising physician can make a significant contribution.

The Pediatric Interview and Parent Counseling

A great deal has been said recently about the pediatric interview. Pediatricians and psychiatrists have become interested in this problem, and considerable effort has been made in medical centers all over the nation to teach better interview technics. The New York City Department of Health has been a pioneer in this area. Through the attitude study project,[4] which has been described in detail in many papers, teaching situations were created in five child health stations for the purpose of demonstrating improved interview technics in a typical child health station setting. Great effort was also made to demonstrate to our physicians better parent counseling. Four supervising physicians are now intimately concerned with this project, and the entire child health station staff is being given an opportunity to attend some of these teaching sessions. It is the task of the supervisor to follow through and to assess in child health stations the impact that the teaching of the attitude study project has made on the child health station physician.

Infant Feeding

Few areas in pediatric practice show a more erratic approach today than infant feeding. While most doctors show some uniformity in their approach to pneumonia and diarrhea, there are many differences of opinion regarding infant feeding. The general practitioner in the community tends to introduce concentrated formulas much too early and likes to prescribe all sorts of proprietary products, when evaporated milk and sugar would be just as good and more economical. Even if the practicing physician does not approve of this approach, he is almost pushed into it by the attitude of mothers who compare their infants' diets with those of their neighbors and friends. An outline of a reasonable feeding schedule is therefore given in detail in each preservice training course. A series of feeding leaflets has also been prepared and serves as a guide to staff and parents. A great deal of reinforcement of this basic outline, however, is necessary. It is difficult for some physicians to follow one routine in their offices and to apply another set of rules when they work in the child health station. While these standards might have to be modified in certain instances, they are found to be very helpful and timesaving in a large program.

Immunization

The few points made regarding feeding apply also to immunization. Although there is less disagreement among physicians in this area, the child health station schedule differs slightly from the one employed in the community by the general practitioner. Time intervals between D.P.T. shots are, for instance, slightly longer. This schedule offers certain administrative advantages and must be adhered to in order to smooth the functioning of the Child Health Conference and to accommodate as many children as possible. The number of injections administered in the baby stations is staggering. Meticulous adherence by doctors to hygiene is therefore important. Simple self-understood procedures must sometimes be emphasized with tact and patience, and the skill of the supervisor in this area sometimes goes through a hard test.

Some physicians are also less skilled than others in organizing their workload. The supervisor can frequently be very helpful by demonstrating how immunization technics can be simplified and how the work can be better organized so that time and energy are saved.

Case Consultation

Although the Child Health Conference is primarily concerned with preventive care, a great many youngsters present pathologic conditions and require treatment. This was borne out by a recent study. That many sick children come to the child health station is not surprising, since in many instances parents are not aware of an existing problem, and if they are they do not know where to seek help. Almost every supervising physician reported on a number of cases which presented problems in terms of diagnosis or management or both. In those instances, the child health station physician presented the history and the physical findings, and the supervising physician was used as a consultant. Such situations are typical and represent perhaps a less difficult phase in the process of supervision. Child health station physicians, as pointed out, are mostly general practitioners and know that the supervisor is a specialist. They are therefore able and eager to accept his advice. This situation resembles the kind of approach which is commonly practiced in hospitals in the community, and physicians are accustomed to it. If the supervising physician is a good teacher, consultations are very much appreciated and looked forward to. In many instances the general practitioner is also not aware of the special services which are available within the health department or in other agencies. The supervising physician, who has continuous contact with the health department and who is also active on a pediatric service, can frequently assist the child health station physician with the proper referral. According to the reports of the supervising staff, consultation is given in a great variety of cases ranging from relatively simple pathologic conditions to the severest forms of abnormalities and acute illnesses.

Administration

The administration of the Child Health Conference is an interesting process, which is achieved through the cooperation of public health workers at different levels of the line and staff structure of the department. The supervising physician has an important role to play in this area also. He spends a great deal of time in the child health station observing and evaluating. He is in touch with the local administrative representative of the department personified by the health officer, and he communicates regularly and meets with the division head, who works from the central office. As can be seen from this description, the supervisor operates within a rather complicated machinery. His field of activities is, however, narrowed by geographic boundaries. In assigning the supervisor to a given area, his place of residence and practice are carefully considered. Because of his frequent visits to relatively few child health stations, the supervising physician may be the first person to become aware of too heavy case loads, staff grievances, and other administrative matters that need to be remedied by either the health officer or the pediatrician-in-charge. Other common problems which were reported on by the staff were: difficult staff relationships in certain units, tardiness of physicians, and shortcomings in the physical plant. A minor item like the arrangement of furniture can sometimes hinder the proper functioning of a conference. Such an item can be easily corrected, and may add to the comfort of the patient and the caliber of the work performed. Because of his unique position in the department, the supervisor can do much in terms of raising staff morale. Since he is a link between the district and the central office he can help to strengthen relationships and clarify policies so that child health station physicians need not feel isolated but may get a sense of being part of the organization.

Methodology

The assessment of quality of care is the basis for its improvement and has intrigued many an administrator. In order to be objective, some workers have attempted to determine quality of care by the study of medical records.[5] While this method might be very useful in a program where total care (inclusive of total therapy) is rendered, it is felt that this method alone could not do justice to the type of service that is given in the Child Health Conference. Recording is but a small part of the physician's job and does not always mirror the caliber of his performance. Some physicians render superior services and strive toward perfection also in their recording. There are, however, others who are genuinely interested in the patient and his family and who conduct excellent conferences, and yet there is little evidence of their efforts on the chart. There are, on the other hand, other physicians whose records look a lot better than their service really is.

For want of a more objective method, evaluation of medical care rendered in the Child Health Conference is based primarily on observation by a competent, mature, and experienced pediatrician, whose concept of what good care should be serves as a yardstick. This method has admittedly many pitfalls. It measures the performance of one physician against the standards of another. Even in the hands of the very best, it is a subjective and relative method. Since human relationships and attitudes play such an important role in public health, one may assume that there are no absolutes, and that constant striving toward the improvement of the relative and subjective method is as good an approach as one can hope to make. How can one then obtain a measure of truth if an assessment of care is based on observations and subjective findings? The answer may lie in the consistency of the observations made by one or more people.

In the process of supervision, an inventory is first taken of the child health station units in a bailiwick. The supervisor clarifies in his own mind where the strong and weak points of each child health station are. This applies to the plant as well as to the personalities involved. Such an inventory has to be taken over and over again, since there are constant staff changes, and such events may influence the functioning of an entire unit for better or for worse.

Name of Physician________________________ CHS__________ District__________ Date__________

	Rating*	Remarks
General attitude toward child health services, and interest in program	______	______________
Relations and attitudes		
With parent	______	______________
With child	______	______________
With child health station staff	______	______________
With supervisory personnel	______	______________
Technical knowledge and skill		
Knowledge of pediatrics	______	______________
Medical history and family background	______	______________
Growth and development	______	______________
Physical examination	______	______________
Immunization procedures	______	______________
Emotional needs	______	______________
Follow-up	______	______________
Health guidance		
To parent and child	______	______________
To child health station staff	______	______________
To others	______	______________
Recording		
Utilization of 3K	______	______________
Utilization of 103S	______	______________
Utilization of 12K	______	______________
Other forms	______	______________
Knowledge and utilization of community resources		

SUMMARY: Brief but pertinent comments on personality, initiative, resourcefulness, interest, and punctuality.

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Supervising Physician

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* Ratings: E—Excellent
G—Good
F—Fair
P—Poor

FIG. 1. Evaluation record of child health station physician.

The frequency of the supervisor's visits to a child health station depends on this basic inventory. Units that function harmoniously need obviously less effort and fewer visits than those that are in turmoil.

An inventory of individual performances according to areas outlined above is helpful, since it clarifies the strong and weak spots of the service rendered by individuals. The form (Fig. 1) was developed for the evaluation of individual performances. It is helpful also in terms of teaching. For instance, if it is found that there are several physicians who need assistance and guidance in one area, such teaching can appropriately be covered in a staff conference. On the other hand, if an individual's performance is very uneven, a great deal of time may have to be spent with this individual in an effort to determine the real difficulties of the situation and to find possible avenues for their solution. Such difficulties may be due to personality traits that are not caused by the work situation but have an important bearing on it. In such instances, personnel changes or transfers may be necessary.

Preceding such steps, conferences are usually held with the pediatrician-in-charge and the respective health officer.

Few physicians are found to be unsuitable for teamwork. Most doctors are quite eager to establish a good relationship with their coworkers and patients and are eager to learn if they are properly approached. There are, of course, a few who regard the supervisor as a nuisance and resent his presence, which they interpret as policing and time-consuming. There are others to whom the supervisor represents a father figure, whom they expect to solve all problems, including those that obviously cannot be remedied by him. The majority of physicians, however, establish a good relationship with the supervising physician and regard him as a senior colleague whose guidance is welcome and whose teaching is appreciated.

After a basic evaluation of assets and liabilities has been attained, the supervisor's function is an educational job. All the general principles that apply to teaching anywhere are also true of the teaching at this particular postgraduate level. The goal of each supervisor is to help the physician approach his ultimate potential for the benefit of the service and the patient. Teaching methods vary considerably according to the individual's endowment and his or her professional training and attitude. A casual remark, quite effective with the sensitive physician, has absolutely no meaning in a conference with the apathetic and disinterested. To arouse interest and to inspire the latter is a very challenging and most difficult job.

The recognition of an individual's good and healthy traits is considered an excellent first step in a teaching situation. It is a sound beginning, since it raises morale and cements relationships, both factors essential in teaching. Areas that need to be improved are then handled either by direct demonstration in relation to case material seen in the particular session, or by informal discussion that may follow the case conference. Group conferences of several physicians with the supervisor as chairman are also helpful since they give the staff an opportunity to air their feelings, again an important step in the process of learning and relearning.

Summary

The large-scale operation of the Child Health Conference in New York City warrants special concern for the maintenance of quality of service. The importance of adequately-trained staff is stressed, and an analysis of the qualifications of child health station physicians is given.

An attempt is made to describe the present system of supervision. Areas of particular importance are highlighted and include:

1. The public health point of view.
2. The pediatric interview and parent counseling.
3. Infant feeding.
4. Immunization.
5. Case consultation.

Methods of supervision and teaching within the administrative framework of the child health station are outlined.

It is realized that this system is at best an imperfect tool which seems nevertheless useful. It is hoped that further social and psychiatric research will contribute to its improvement.

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A sharp tongue is the only edge tool that grows keener with constant use.—Washington Irving

Venereal Disease Control in New York City

A Backward Glance

THEODORE ROSENTHAL, M.D., NEW YORK CITY

(From the Department of Health, New York City)

An attempt to inquire into the early history of venereal disease in New York City, utilizing health department records and other available data, has led to the uncovering of many fascinating facts. The year 1804 marks the date of the earliest known public record of syphilis in the New York City Department of Health. During that year nine deaths from lues venerea were recorded in the city inspector's department.

Colonial Times

The early medical history of the New Amsterdam colony was not clearly recorded.[1] The colony was in close touch with both England and Holland in the period when Harvey (1578 to 1657) and Sydenham (1624 to 1689) were doing their great work in England; and when Leyden had become the center of medical education and young graduates, students of Boerhaave and Sylvius, found opportunity in their chosen profession in the colony. Zieckentroosters (caretakers of the sick), who held religious services also, were brought from Holland in 1626. Michaelius, the first ordained clergyman who had some medical knowledge, arrived in 1628. La Montagne, a Huguenot graduate of Leyden, came in 1637. Physicians came over as ship doctors or military surgeons, and sometimes remained in New York. By the middle of the seventeenth century, qualified practitioners of Dutch, French, and English origins had settled in the province. In a new world, with a host of diseases, fevers, and epidemics to struggle with in addition to their political duties, it is not surprising that syphilis is hardly mentioned in such records as the Cadwallader Colden papers which contain considerable medical information and include letters from Dr. Douglass of Boston, a Leyden graduate.

Governor John Winthrop described an outbreak of syphilis in Boston in 1646.[2] The account, quoted here in full, is significant of the times. Apparently the disease did not spread to neighboring cities.

> "1646: There fell out also a loathsome disease at Boston which raised a scandal upon the town and country, though without just cause. One of the town (blank) having gone cooper in a ship into (blank), as his return, his wife was infected with lues venerea which appeared thus: being delivered of a child, and nothing then appearing, but the midwife, a skilful woman, finding her breast, whereupon divers neighbors resorting to her, some of them drew her breast, and others suffered their children to draw her, and others let her child suck them, (no such disease being suspected by any) by occasion whereof about 16 persons, men, women and children, were infected, whereby it came at length to be discovered by such in the town as had skill in physic and surgery, but there was not any in the Country who had been practiced in that cure. But (see the good providence of God) at that very season there came by accident a young surgeon out of the West Indies, who had had experience of the right way of the cure of that disease. He took them in hand, and through the Lord's blessing recovered them all (blank) in a short time. And it was observed that although many did eat and drink and lodge in bed with those who were infected and had sores, etc.; yet none took it of them, but by copulation or sucking. It was very doubtful how this disease came at first. The magistrates examined the husband and wife, but could find no dishonesty in either, nor any probable occasion how they could take it by any other, (and the husband was found to be free of it). So it was concluded by some that the woman was infected by the mixture of so many spirits of men and women

as drew her breast (for thence it began). But this is a question to be decided by physicians."

New York escaped the rigid discipline and severe punishment for violation of the Puritans' moral code. While no definite reference to venereal disease in the first decades of the Dutch colony had been discovered in this brief survey, a series of ordinances point to unhealthful conditions quite closely associated with the spread of infection.

April 15, 1638, an ordinance[3] was adopted by the States General of United Netherlands forbidding sailors belonging to ships, yachts, and sloops, to remain on shore at night, but to return on board by sundown. ". . . Furthermore, each and everyone must refrain from Fighting, Adulterous intercourse with Heathens, Blacks, or other persons, Mutiny, Theft, False Swearing, Calumny and other Immoralities . . ."

An early reference to the presence of syphilis in New York City is to be found in a description of the first poorhouse in the City, opened in 1736. A room was set aside for use as an infirmary under the medical supervision of the eminent John van Beuren, student of Boerhaave and graduate of the University of Leyden. Dr. Carlisle,[4] in describing the ward, compared it with the Bellevue of his day, 1893. "Here is an old Dutchman, perhaps, and a Frenchman, Irishman, ... What are the diagnoses? Here are bronchitis and Asthma, lues venerea, peripneumonia also and dropsy of the chest." Not until a hundred years later, 1836, was the first dispensary in America for treating skin and venereal diseases opened in New York City: The Broome Street Infirmary for Diseases of the Skin.

Some effort to establish uniform prices for treatment of diseases was made in the beginning of the nineteenth century. In 1801, at a meeting of the Medical Society of the State of New York, a schedule of prices was adopted.

> "For curing a simple or virulent gonorrhea, from $10.00 to $20.00; For curing confirmed syphilis, from $25.00 to $100.00."

Obviously syphilis remained unchecked. By the nineteenth century there is more frequent reference to its prevalence. Of interest are the quarantine restrictions, dating back to 1798, which attracted public attention as a result of the yellow fever, cholera, and smallpox epidemics that had raged in the City at different times. Dr. Elisha Harris,[5] testifying before a Senate select committee in February, 1857, gave the following answer to the question, "What is the law with regard to the removal of the sick?"

> "First of all, foreign immigrants who have resided in the City of New York less than 5 years, when suffering from any form of infectious or contagious disease, except venereal diseases and the itch, are liable to quarantine restrictions."

It is noteworthy that our medical predecessors were alive to the important role played by syphilis and gonorrhea in public health. That so little practical progress was made by these early pioneers was due mainly to the state of medical science at that time. The modern knowledge of venereal disease dates from the latter part of the nineteenth century, when the gonococcus was discovered by Neisser (1879). It was not until 1905 that the causative agent of syphilis, the Treponema pallidum, was discovered by Schaudinn and Hoffman.

Syphilis

There are indications that syphilis may have existed in Europe before the Middle Ages, but it seems to have appeared first in epidemic form in 1495. At the siege of Naples during that year, it is said to have been communicated to the French invaders by Spanish mercenaries who, according to incompletely substantiated reports, acquired it from Columbus' sailors, a "visitation" from the New World. As it spread through Europe during the period immediately following, syphilis was manifested in a form much more virulent than is known today, suggesting that the disease fell upon virgin soil. It ranked with plague as a great scourge of the period. If the disease existed before this time, it was only after it assumed pandemic proportions that its venereal nature was clearly recognized. Fracastor in his "De Contagione" recognized this. Fracastor also originated the name syphilis in a Latin poem published at Verona in 1521, and applied it to the hero, Syphilus or Syphylus, a shepherd, who is represented as the first to have been smitten with the disease, for disrespect shown the gods.

Syphilis was not clearly differentiated from other venereal diseases until relatively recent times. John Hunter in 1767, after inoculating himself with the disease, distinguished between the hard (hunterian) chancre of syphilis and the soft chancre or chancroid, but confused syphilis with gonorrhea. Ricord in 1832 first differentiated clearly between syphilis and gonorrhea, divided the disease into its primary, secondary, and tertiary stages, and noted the rarity of reinfection.

The causative agent of syphilis, Treponema pallidum, remained undiscovered until 1905, when it was found by Schaudinn and Hoffman in chancres and inguinal glands of syphilitic humans. Before this time numerous attempts had been made in this direction and a variety of organisms had been described as the causative agents. Hoffman (1905) noted that Bordet and Gengou had observed a slender spirochete in the deeper parts of a chancre and in a mouth papule in 1903 but was unable to repeat the observation and attached no significance to it.

Important experimental studies of syphilis, however, had been undertaken before this time. Klebs, in 1879, produced a papular eruption in a monkey six weeks after inoculating the skin with portions of a hard chancre. In 1881, Haensell succeeded in conveying the disease to rabbits, producing a local lesion by eye inoculation. Metchnikoff and Roux successfully transmitted the disease to apes in a series of striking experiments. Subsequently Hoffman (1906) unearthed the fact that Julius Bettinger had conducted and published anonymously a series of successful human inoculations in 1855. In 1906, Wassermann, Neisser, and Bruck applied the principle of alexin fixation to the diagnosis of syphilis in the now familiar Wassermann reaction. With the publication of the salvarsan treatment of syphilis by Ehrlich and his collaborators in 1910 and of the fever treatment of paresis by Wagner-Jauregg in 1918, our knowledge of the disease reached a high point.

Gonococcal Infections

Gonorrhea is a disease of antiquity. Although it is not known in what country or at what time the malady first made its appearance, references to a condition symptomologically similar to it are present in the earliest writings (Crabtree). The papyri of the Egyptians (3400 B.C. to 1500 B.C.) mention the symptomology and treatment of a disease which appears to have been gonorrhea. Likewise, the Chinese emperor, Hoang Ty, in 2637 B.C. probably referred to this malady when he wrote, "Among the external diseases is one that is different from all others, the symptoms of which are easy to recognize. They are (1) affection of the urethra and vagina at the same time as the bladder. (2) drainage of corrupt materials white or red by the urethra or vagina."

The contagiousness of the disease was recognized by the early Hebrews and Hindus, while the Greeks looked upon the affliction as a punishment from the gods, and the Romans, perhaps for the first time, emphasized its "shameful nature." Galen is credited with having given the name gonorrhea to this malady since he thought the purulent discharge was an involuntary emission of semen. Unlike syphilis, which today exists in a form milder than in centuries past, gonorrhea, as shown by its clinical picture, has apparently lost none of its pristine malevolence.

John Hunter in 1818 acquired syphilis and gonorrhea after inoculating himself deliberately with pus from a case of gonorrhea and concluded that the two diseases were merely different manifestations of the same malady. His deductions passed unchallenged until Ricord in 1832 proved experimentally that the two diseases were really separate entities; however, he maintained gonorrhea in contrast to syphilis was of nonspecific origin. It remained for Albert Neisser in 1879 to terminate this long period of uncertainty by describing a diplococcus present in the pus of gonorrhea as the causative agent. He found the coccus in a number of cases of urethral gonorrhea, vaginitis, ophthalmia neonatorum, and ophthalmia of adults in the absence of other microorganisms and therefore concluded that it was the specific cause of the disease. Since then Neisseria gonorrhoeae has been generally accepted as the causative agent of this malady, although it was not until a few years later, when the organism had been grown in vitro and the disease had been produced experimentally in man by means of pure cultures of the coccus, that its etiology was established (Leistikow and Lieffler, 1822; Baum, 1885; Werthheim, 1891; Finger, Ghon, and Schlagenhaufer, 1894).

Biggs and the Control of Syphilis

The first really effective measures to deal with syphilis as a public health problem were those inaugurated in 1912 by Dr. Hermann M. Biggs, at that time General Medical Officer of the City of New York Department of Health. In fact, the program initiated and put into operation by this remarkable leader in public health was so well planned that it is practically the same as the one now being followed. Biggs's program[5] embraced the following pioneer steps:

1. Including syphilis and gonorrhea among the diseases which must be reported to the health department by private physicians, hospitals, and clinics.
2. Offering the services of the health department's diagnostic laboratory for making Wassermann tests free of charge. (Microscopic examinations of smears from suspected cases of gonorrhoea had long been a routine service given by the laboratory.)
3. Advocating the establishment by the health department of special clinics where modern methods of diagnosing and treating the venereal diseases would be followed. Special emphasis was placed on facilities for early diagnosis by means of dark field microscopic examinations, and of salvarsan for treatment of syphilis.*
4. Providing special hospital facilities where, if necessary, certain types of patients would be forcibly detained until no longer infectious.
5. Carrying on an educational campaign against patent nostrums and quackery in the field of venereal diseases.

Biggs's guiding principle in developing this program was to deal with the venereal diseases purely as a public health problem, for, to use his words, "as health officials, we have nothing to do with the moral and social problems presented by prostitution."

It is interesting to note also that in his medical service at Bellevue Hospital, Biggs had routine Wassermann tests made on all patients in his wards.

That Biggs was mindful of the private physician in the campaign against the venereal diseases is indicated by the appointment of a specially-trained physician to serve as medical adviser in the diagnostic clinics. The duties of this physician consisted in advising patients as to the nature of the diseases, the necessity for proper medical care, the danger of self-treatment, and the importance of obeying the orders of their physicians. The work of this medical adviser, therefore, in no way interfered with the legitimate activities of private physicians; on the contrary, it helped the practitioners materially in treating their patients successfully.

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* The special clinics established by the Department of Health at that time were for diagnosis and advice only. Treatment was given at certain established clinics approved by the department. Five years later treatment was included among the services of the department's clinics.

In his campaign against advertising medical quacks, Biggs fought this group on their own ground by having the Department of Health run a paid advertisement in those newspapers publishing the advertisements of quacks.

The department's announcement, published daily over a long period, offered free advice regarding venereal diseases at its headquarters and emphasized the fact that all consultations were strictly confidential. In addition to this, the Department of Health posted signs bearing similar announcements and warnings against quacks in the toilet rooms of saloons and public comfort stations. Soon after his appointment as Commissioner of Health of the State of New York, Biggs secured the enactment of legislation prohibiting advertising for treatment of venereal diseases.

That Biggs did not regard the program inaugurated in 1912 as complete is indicated by the reference which he made to follow-up of patients in the home. He pointed to the great value of such work in tuberculosis and, although he foresaw many practical difficulties, he felt "no doubt that some form of individual supervision of the venereally infected will gradually be evolved by sanitary authorities." In other words, he foresaw the application of epidemiologic methods to the control of the venereal diseases. Biggs stated, however, that he was not yet prepared to outline this part of the program.

From what has been said it is clear that credit for inaugurating the first practicable program for the control of the venereal diseases, which provided nearly all of the activities now being carried on, should go to the distinguished General Medical Officer of the City of New York Department of Health, the late Hermann M. Biggs, M.D.

Modern Control Efforts

The Chamberlain-Kahn legislation was enacted by Congress in 1918 under the stimulus of wartime realization of the need of physical fitness. Funds were made available to the United States Public Health Service by Congress for distribution to the various states. After two years, however, with the demobilization of the armed forces and consequent lack of interest in venereal disease control, funds for this work were not reappropriated. Public interest in venereal disease control entered the doldrums; for fifteen years there was no evidence of Federal participation, until the Social Security Act became a law in August, 1935. Title VI of this Act provided $8,000,000 to be made available annually for grants-in-aid to the states for their public health services, individual grants to be made on the basis of population, special health problems, and need.

Funds from Title VI aided the New York City Syphilis Control Program until the passage of the Federal Venereal Disease Control Act in 1938. This Act, known as the LaFollette-Bulwinkle Bill, authorized the expenditure of Federal funds for venereal disease control activities for a three-year period beginning July 1, 1938. The appropriation for the year ending June 30, 1939, was for $3,000,000; for the year ending June 30, 1940, $5,000,000; and for the year ending June 30, 1941, $7,000,000; with such sums annually thereafter as were considered necessary. Appropriations to the states were made by the Surgeon General on the basis of (1) population, (2) the extent of the venereal disease problem, and (3) the financial needs of the respective states. These sums were authorized in addition to the amounts already being expended for the purpose from the Public Health Service's existing funds of the Social Security Board's grants-in-aid previously mentioned.

Modern venereal disease control thus received an enormous impetus, beginning with 1935. The Federal funds from the Social Security Act, and later from the LaFollette-Bulwinkle Bill, supplemented local funds and made it possible to expand activities to include all necessary phases of a proper and complete venereal disease control program, such as health education, information to physicians, free drug distribution, intensive epidemiology, and an increase in the number of clinics and clinic sessions.

At approximately the same time (1935) specific chemotherapy was introduced for the treatment of gonorrhea by the advent of the sulfonamide drugs. For centuries physicians had treated gonorrhea empirically; for the first time a specific chemotherapeutic weapon was available for the control of gonococcal infections.

The minor venereal diseases—chancroid, granuloma inguinale, and lymphogranuloma venereum—were never a problem in New York City; numerically, only a few hundred cases of each were reported to the health department each year.

Chancroid

Chancroid is an acute, localized, autoinoculable, genitoinfectious disease characterized clinically by necrotizing ulcerations at the site of inoculation. The genital lesions are frequently accompanied by an inflammatory swelling and suppuration of the regional lymph nodes. In the medical literature the lesions are often referred to as ulcus molle, or soft chancre, and in the vernacular as soft sore.

The infectious agent is the Hemophilus ducreyi. It is a fine, short, gram-negative bacillus with rounded ends. It is often referred to as a streptobacillus because of its tendency to group itself in chain formation, especially in cultures.

Granuloma Inguinale

Granuloma inguinale, as the name implies, is a granulomatous process which usually occupies the inguinal region. It is a mildly contagious, chronic, and progressive autoinoculable disease involving skin and corium and occasionally the lymphatics. The well-known proclivity of the disease for the external genitalia has earned for it a place in the category of the venereal diseases. Its venereal origin, however, has never been absolutely proved. Granuloma inguinale has been absolutely proved. Granuloma inguinale has been known by a multitude of names such as ulcerating granuloma, granuloma pudendi tropicum, sclerosing granuloma, granuloma inguinale tropicum, granuloma contagiosa, chronic venereal sores, and granuloma venereum.

The etiologic agent of granuloma inguinale is the Donovan body. Donovan bodies are probably protozoans and are not culturable in vitro by methods used to propagate fastidious bacteria, rickettsial bodies, and viruses. The disease has been reproduced in humans by inoculation of aspirated pus from pseudobuboes of granuloma inguinale which contained no other organisms than Donovan bodies.

Lymphogranuloma Venereum

Lymphogranuloma venereum is a virus disease acquired venereally and is characterized by a small evanescent initial lesion somewhere on the genitalia which is frequently followed by a subacute regional lymphadenitis and/or a chronic inflammatory neoformative reaction in the subjacent connective tissues of the infected parts. The disease is also known by such names as lymphogranuloma inguinale, Nicolas-Favre disease, proadenitis, and lymphopathia venereum. It is a disease of the lymph channels and lymph nodes and may be manifest in a variety of ways, mainly by bubo formation, rectal stricture, genital elephantiasis, and ulceration.

To enable the reader to evaluate properly the statistical picture over the years, Table I shows reported cases of venereal disease in New York City for 1946 (the year of greatest incidence) and for 1957, after a decade of public health control and antibiotic therapy.

The War Years

The expansion of the venereal disease control service in the City of New York Department of Health in the last years of the 1930's was a fortunate prelude to the period

Table I—Reported Cases of Venereal Disease in New York City, 1946 and 1957

Venereal Disease	1946	1957
Primary and secondary syphilis	6,063	635
Early latent syphilis	7,338	1,556
Gonorrhea	24,350	11,478
Chancroid	522	115
Granuloma inguinale	161	17
Lymphogranuloma venereum	233	56

of military and industrial mobilization which took place in 1940–1941. The organization of the Bureau of Social Hygiene was sufficiently elastic to enable it to assume many new and enlarged responsibilities, despite the concomitant loss of medical and other personnel to the armed forces.

The war years were truly hectic; the outstanding achievement here was the close cooperation maintained between the various branches of the armed forces and the health department. At this time there was created by the military the Armed Forces Disciplinary Control Board, to secure even closer cooperation with the various agencies in the civilian community charged with the control of prostitution, sale of alcoholic beverages, and allied matters. The reports to the City of New York Department of Health of venereal disease contacts from members of the armed forces who had allegedly been infected in the New York area was truly enormous, amounting to over 10,000 each year. The health department in turn made every effort, on the basis of the information supplied by the armed forces, to investigate, locate, and secure the medical examinations of the persons named.

Antibiotic Therapy

The discovery by Mahoney of the effectiveness of penicillin in the treatment of syphilis heralded a new era in venereology. As adequate supplies of the drug became available in the last years of World War II, the problem of the treatment of both syphilis and gonorrhea was greatly simplified. Case holding was no longer the bugbear of every venereal disease clinic. The potential and actual toxicity of arsenical drugs and heavy metals was no longer a factor in the proper and efficient and nonhazardous treatment of the patient. This can be seen graphically in the statistics for the last ten years; in 1946 there were reported 6,013 cases of primary and secondary syphilis while in 1957 only 635 were reported.

Money Savings in Modern Venereal Disease Control Program

A precise cost accounting of all the dollar savings of the venereal disease control program is not possible. An attempt has been made to calculate the more tangible factors. Not included, for example, are public welfare costs of dependent families where the breadwinner has been hospitalized for long periods of time and costs of maintenance of persons disabled through blindness (congenital or acquired) or other disabling complications of late syphilis and gonorrhea.

The benefits deriving from improved public health control and the use of penicillin in the treatment of syphilis and gonorrhea may be demonstrated by comparing 1946, the year in which penicillin became a routine treatment, with 1957.

In 1946 there were 13,400 cases of primary, secondary, and early latent syphilis reported in New York City, that is, cases of communicable and potentially communicable disease. In 1957 there were 2,191 such cases of syphilis, a drop of 84 per cent over the period.

In 1946 there were 123 cases of congenital syphilis reported in infants under one year of age. By 1957 this number had been reduced to four. The vast majority of patients were treated in hospitals and Health Department clinics. Treatment of congenital syphilis formerly averaged ten years, involving hundreds of injections. An average of 40 injections per year for ten years at $2.00 per clinic visit, or $800 per patient, multiplied by 100 cases, gives a total of $80,000 now saved in congenital syphilis annually.

Prior to 1946 the treatment for syphilis consisted of an average of 100 injections of arsenic and heavy metals, ranging from a minimum of 60 to a maximum of 200 or more; in 1957 the treatment consisted of four to five injections of penicillin. In 1946 there were 304,000 visits for treatment to health department venereal disease clinics; in 1957 there were 66,944 such visits for treatment. At an average cost of $2.00 per visit (a very modest estimate) this represents a saving of more than $400,000 annually.

In 1946 health department clinics arranged for hospitalization of 2,252 patients with communicable venereal disease; in 1957 such hospitalizations were practically eliminated. At the per capita rate of $20 per day for an average stay of fourteen days, if the 1946 hospitalizations had prevailed, the cost to the municipal hospitals would have been more than $600,000 annually.

Additional contrast is furnished by a recent hospital discharge study conducted by the Departments of Health and Hospitals which showed 490 patients with noncommunicable venereal disease discharged alive or dead from municipal hospitals during a six-month period of 1952, with an average stay of approximately thirty days per patient. This makes an annual total of 980 venereal disease patients discharged during the year. The last previous hospital discharge study showed 10,604 patients with venereal disease discharged during the year 1933.

The greatest savings in human life and in hospitalization cost are among those persons who manifest late syphilis, especially late syphilis of the central nervous system. These are the patients who are hospitalized for years, often until the patient dies. In 1946 there were 384 admissions from New York City to State hospitals for general paresis and syphilis of the central nervous system. In 1954 there were 167 such admissions. This means at least 200 patients saved from being central nervous system cases in State hospitals. Since an average stay is at least five years, the saving is as follows: five years at $1,176 cost per year per patient, multiplied by 200 patients, equals $1,176,000 annually.

In the 1952 hospital discharge study, 40 per cent of the syphilitic cases were patients with central nervous system involvements. For the most part these cases came from among those persons who had been infected with syphilis but had never been treated with penicillin.

Considering only the decade immediately preceding the introduction of penicillin, there were 300,000 cases of syphilis reported in the City. If this reservoir of latent syphilis could have been treated with penicillin and thereby progress of the disease arrested, the cost involved would have more than paid for itself if only 50 cases of late crippling manifestations had been prevented. The hospitalization cost per patient with late crippling manifestations can be estimated at approximately $5,000 per year. If only 50 cases per year had been prevented from becoming such chronic hospital patients, the City would have been saved $25,000 annually.

Recapitulation

Estimated savings in congenital syphilis	$ 80,000
Estimated savings in clinic visits	400,000
Estimated savings in hospitalization	600,000
Estimated savings in syphilis of central nervous system	1,176,000
Estimated savings in late crippling manifestations—cost of hospitalization	250,000
TOTAL ESTIMATED SAVINGS	$2,506,000

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The Clinical Usefulness of Measurement of the Diffusing Capacity of the Lung

LENORE R. ZOHMAN, M.D., AND M. HENRY WILLIAMS, JR., M.D., VALHALLA, NEW YORK

(From the Cardiorespiratory Laboratory, Grasslands Hospital)

THERE is no single test capable of detecting every abnormality of pulmonary function. Spirometry affords a method of evaluating ventilatory function.[1] Arterial blood gas analyses help to define the severity and nature of abnormal pulmonary function.[1,2] Measurement of expired air composition during oxygen or helium breathing permits evaluation of the distribution of inspired air within the lung, and tests of compliance and airway resistance provide information about the mechanics of breathing.[2] Measurement of the diffusing capacity of the lung provides additional information regarding pulmonary function in that it determines the facility with which gases diffuse between the alveoli and pulmonary capillaries.[1] Since diffusion limitation may occur in the presence or absence of obvious derangement of other tests of pulmonary function, measurement of the diffusing capacity of the lung is a useful adjunct to the clinical and laboratory evaluation of the dyspneic patient.

Physiologic Considerations and Methods of Measurement

Carbon monoxide is useful for measuring the diffusing capacity. The carbon monoxide diffusing capacity of the lungs (D_{CO}) is defined as the amount of carbon monoxide transferred across the alveolar-capillary membrane each minute for each mm. Hg difference in partial pressure of carbon monoxide (the pressure gradient) across the alveolar membrane. The rate of diffusion is influenced by the surface area available for diffusion and by the thickness and permeability of the tissues through which the carbon monoxide must pass. Completely unventilated alveoli have the same limiting effect on diffusion as destroyed alveoli, both decreasing the effective surface area for diffusion.[3] Since breathing low concentrations of carbon monoxide is harmless, and since the uptake of carbon monoxide from the alveoli is limited only by diffusion because of the lack of "back-pressure" from carbon monoxide in the pulmonary capillary blood where it is rapidly combined with hemoglobin, this test provides an innocuous and valuable adjunct to the clinical evaluation of pulmonary function.

One method for measurement of the diffusing capacity of the lungs consists of having the patient breathe a mixture containing room air and about 1,000 parts per million (0.1 per cent) carbon monoxide. The difference between the amount of carbon monoxide inspired and the amount expired per minute is the carbon monoxide uptake ($\dot{V}_{CO}$), or the amount transferred across the alveolar-capillary membrane. To calculate the pressure gradient across the membrane it is necessary to know the mean alveolar carbon monoxide tension and to subtract the mean capillary carbon monoxide tension. The latter is small enough to neglect, and the mean alveolar carbon monoxide tension may be calculated from measurements of the arterial carbon dioxide pressure and the partial pressure of carbon dioxide in the expired air.[4] The diffusing capacity (D_{CO}) is obtained by dividing the carbon monoxide uptake ($\dot{V}_{CO}$) by the mean alveolar carbon monoxide pressure ($P_{A_{CO}}$). Normal diffusing capacity measurements are

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about 15 cc. per minute per mm. Hg at rest and greater than 25 cc. per minute per mm. Hg during exercise.[5,6] Since the normal subject considerably increases his diffusing capacity on exercise and patients with pulmonary disease do not, the difference between normal and abnormal lungs is greatly accentuated by exercise study. In addition, for technical reasons the diffusing capacity is more accurate during exercise than at rest.

The measurement of diffusing capacity is not an office procedure, since it not only requires arterial puncture but necessitates the use of chemical blood and gas analyses and an instrument for determining the concentration of carbon monoxide in the inspired and expired air. Performance of the test and analyses is a time-consuming procedure. Recently, however, a simple method has been devised which does not require arterial puncture.[7] Certain assumptions can be made regarding $P_{A_{CO}}$ in the absence of airway obstruction so that the "estimated D_{CO}" agrees within 25 per cent of the value obtained with arterial blood gas analyses. The test and analyses may be completed in the laboratory within fifteen minutes, and the clinician is provided with a useful assessment of the diffusion process in his patient.

Clinical Implications

DETECTING OCCULT LUNG PATHOLOGY.—Knowledge of the diffusing capacity of the lung has both diagnostic and therapeutic implications. The following case history illustrates how the detection of occult lung pathology is facilitated by measurement of the diffusing capacity.

Case 1.—A twenty-seven-year-old Negro male hospital employe demonstrated a reduction of vital capacity on a routine spirographic survey. He was completely asymptomatic and could climb three flights of stairs without breathlessness. The chest x-ray revealed diffuse fibrosis throughout both lung fields which, however, was not striking, and which had been considered "probably not significant" for at least four years. On five occasions vital capacity was reduced, never being greater than 61 per cent of normal, and there was never evidence of airway obstruction. Maximal mid-expiratory flow rate (MMF) was always normal.[8] D_{CO} during exercise was 15.2 cc. per minute per mm. Hg on June 13, 1957, and 14.1 cc. per minute per mm. Hg on November 14, 1957. Because of the low diffusing capacity and decreased vital capacity, a diagnosis of pulmonary fibrosis was established. The tuberculin test was found to be negative to 0.1 mg. old tuberculin, and sarcoidosis was then considered as a possible cause.

The following case demonstrates how the finding of impaired diffusion may support the clinical impression of abnormal lung function despite normal ventilatory studies.

Case 2.—A thirty-eight-year-old Negro male had recovered from a spontaneous pneumothorax. Although he was asymptomatic with a normal vital capacity, one-second vital capacity, and MMF, his D_{CO} was 10.6 cc. per minute per mm. Hg during exercise. This finding was consistent with the x-ray studies which revealed extensive bilateral bullous emphysema.

The two patients cited above were asymptomatic with moderate derangement of diffusion. In the first case, diffuse fibrosis resulted in a decreased diffusing capacity because of increased thickness of the alveolar-capillary membrane, whereas in the second case diffusion limitation resulted from a decrease in the surface area available for diffusion.

EVALUATING UNEXPLAINED DYSPNEA.—The ensuing case history illustrates how the cause of unexplained dyspnea may be elucidated by the diffusing capacity measurement.

Case 3.—A forty-eight-year-old mechanic with arrested moderately advanced tuberculosis since 1951 first noted exertional dyspnea during pneumoperitoneum therapy in 1954. Dyspnea persisted, however, long after termination of the pneumoperitoneum. Ventilatory studies from April, 1957, to September, 1957, revealed a vital capacity of 72 to 103 per cent, one second vital capacity of 72 to 99 per cent, and MMF of 1.3 to 6.9 liters per second. Psychoneurosis was seriously considered in view of the patient's continuing complaints despite evidence of adequate ventilation. At his insistence cardiac catheterization was performed with measurement of the diffusing capacity. Normal pulmonary artery pressure and cardiac output at rest and during exercise excluded a cardiac basis for his dyspnea. The D_{CO} of 8.7 cc. per minute per mm. Hg at rest and 8.8 during maximal exercise provided evidence of severe diffusion limitation, presumably the result of pulmonary fibrosis due to tuberculosis, which was responsible for his symptoms.

DISTINGUISHING ASTHMA FROM EMPHYSEMA.—Severe airway obstruction may be present both in pulmonary emphysema and in bronchial asthma. The destruction of lung parenchyma which distinguishes emphysema from asthma and which is probably responsible for the relatively poor prognosis is not readily apparent.[9] Since clinical estimate of the severity of asthma or emphysema is based primarily on the degree of airway obstruction rather than the degree of alveolar wall destruction, it is not unusual to find an asthmatic with severe airway obstruction given a poor prognosis and an emphysema patient with only moderate airway obstruction thought to be progressing satisfactorily. Both asthma and emphysema patients may demonstrate a reduction of vital capacity and severe expiratory delay. Carbon dioxide retention and hypoxemia may be just as severe in the asthmatic as in the emphysema patient. Measurement of the diffusing capacity provides further diagnostic aid in that it makes available a means of distinguishing between asthma and emphysema.[10] Despite the similarity of the ventilatory defect in these two diseases, diffusing capacity is usually low in emphysema and near normal in asthma, implying that lung parenchyma is destroyed in emphysema and preserved in asthma.[10] Finding a D_{CO} of 20 cc. per minute per mm. Hg in the asthmatic, and 8 cc. per minute per mm. Hg in the emphysema patient during exercise enables the clinician to be more optimistic concerning the asthmatic, who probably possesses considerably more normal lung parenchyma than does the emphysema patient. Pathologic studies correlating the degree of D_{CO} impairment and the extent of destruction of alveolar walls are needed to confirm these implications and may help to explain some of the discrepancies between clinical and pathologic estimates of the severity of these diseases.[3]

EVALUATING MEDICAL THERAPY.—In addition to its diagnostic usefulness, the diffusing capacity measurement provides another yardstick for evaluation of the efficacy of a particular form of therapy. The following patient with acute tuberculosis was markedly benefited by steroid therapy according to clinical criteria, yet the D_{CO} remained low.

Case 4.—A fifty-seven-year-old Negro female was given a three-month course of prednisone in addition to antituberculous drugs because of the extreme toxicity of her illness. Ventilatory studies on admission were normal. Three months later her x-ray showed remarkable clearing and the patient was asymptomatic. Ventilatory studies were normal, but the diffusing capacity remained only 9 cc. per minute per mm. Hg on exercise. In this situation despite the excellent clinical and x-ray improvement which accompanied steroid therapy, the diffusion process remained abnormal.

As in the above case, a diffusion limitation need not necessarily result in symptoms. However, such limitation, even in the absence of symptoms, may be a relatively poor prognostic sign, indicating the presence of permanent lung dysfunction.[9]

PREOPERATIVE STUDIES.—Preoperative evaluation of the patient with chronic pulmonary disease is also facilitated by knowledge of the D_{CO}. A preoperative appraisal of the alveolar-capillary surface available for diffusion may be of critical importance, since in dogs the limiting factor in resectional surgery of the lung is the pulmonary vascular bed.[11] Thus a patient with a normal diffusing capacity may be able to withstand resectional surgery without resultant respiratory insufficiency, whereas the risk is greater if the diffusing capacity is reduced. The following case history illustrates this point.

Case 5.—A forty-nine-year-old white male with a life-long history of episodic cough developed mild exertional dyspnea in 1950, which was controlled with bronchodilators. From October 27, 1955, until July 20, 1957, vital capacity was usually about 80 per cent of normal, one second vital capacity usually 53 per cent of normal, MMF about .74 per second. Pulmonary artery pressure was 30/10 mm. Hg at rest and rose to 56/20 mm. Hg with moderate exercise. Cardiac output was slightly low at rest (2.66 cc. per minute per m^2) and failed to rise normally during exercise. The D_{CO} was 17.0 cc. per minute per mm. Hg during exercise. Pneumonectomy for carcinoma of the lung was performed in December, 1957, without anesthesia difficulty, postoperative complications, or postoperative pulmonary insufficiency. In this case pneumonectomy was successfully performed on a patient who had evidence of fairly pronounced ventilatory impairment and pulmonary hypertension, but only moderate lowering of the diffusing capacity.

Summary

Measurement of the rate of diffusion of low concentrations of carbon monoxide across the alveolar capillary membrane provides information about the diffusion process which is useful in detecting occult pulmonary disease, defining or excluding pulmonary fibrosis as a cause of exertional dyspnea, distinguishing asthma from emphysema, assessing the effects of therapy on diffusion, and evaluating the preoperative patient with chronic lung disease.

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Subluxation of the Shoulder in Hemiplegic Patients

OSVALDO MIGLIETTA, M.D., ASTORIA, NEW YORK, ALEXANDER LEWITAN, M.D., F.A.C.R., BROOKLYN, NEW YORK, AND JOSEPH B. ROGOFF, M.D., NEW YORK CITY

(*From the Physical Medicine and Rehabilitation and Radiology Departments, Jewish Chronic Disease Hospital, Brooklyn*)

SUBLUXATION of the shoulder in hemiplegic patients seems to be a well-known occurrence. Its frequency, however, is not well emphasized, and its presence is often overlooked or, if noticed, treated with the application of an occasional and frequently inadequate arm sling.

A search of the literature back to 1940 failed to reveal a comparable study dealing with the incidence of subluxation of the shoulder in hemiplegia.

The only mention of it by Bierman and Licht[1] is as a legend to an illustration: "Sling suspension in preventing subluxation of the glenohumeral joint and frozen shoulder. This device is useful in both central and peripheral neuropathy, especially in hemiplegia." A recent article by Tobis[2] discusses the shoulder pain in hemiplegia, indicating the presence of subluxation as the principal causative factor.

The purpose of this article is to call attention to this complication and to elucidate its pathogenesis. We feel that it is important to do so not only because of the high incidence of this type of subluxation complicating hemiplegia, as our study reveals, but also because of the role that it can play in producing shoulder and arm pain, frequently complained of by hemiplegics.[2]

Method of Results

Fifty patients, 20 males and 30 females, chosen at random from the hemiplegic population of the Jewish Chronic Disease Hospital, were examined clinically and radiologically for the presence or absence of subluxation of the shoulder on the involved side. This was done with the patient either sitting or standing. Subluxation is readily verified by the altered anatomic profile of the involved shoulder and the presence of a groove below the acromion on the outer aspect. This groove is often quite visible and always easily palpable. In fact, it usually is possible to place a finger in this groove. In these cases there is complete or almost complete paralysis of the shoulder musculature, which appears atrophic.

TABLE I.—AGE, SPASTICITY, RANGE OF ABDUCTION, AND DURATION OF HEMIPLEGIA IN 28 HEMIPLEGIC PATIENTS WITH SUBLUXATION OF THE SHOULDER

Case	Age (Years)	Duration of Hemiplegia		Spasticity	Range of Abduction (Degrees)
		Years	Months		
1	66	..	7	P*	0
2	51	..	5	NP†	0
3	46	..	4	P	0
4	62	2	6	P	0–30
5	67	..	6	P	0–35
6	60	..	20	P	0
7	66	..	17	P	0
8	71	..	19	P	0
9	79	..	5	P	0
10	49	..	11	P	0
11	59	..	9	P	0
12	68	..	16	P	0
13	73	15	..	P	0
14	94	10	..	NP	0
15	56	..	5	P	0
16	56	2	..	P	0
17	84	2	6	NP	0
18	78	3	..	P	0
19	77	9	..	P	0
20	60	8	..	P	0
21	69	12	..	P	0–15
22	76	3	..	P	0–30
23	61	..	5	NP	0
24	62	..	3	NP	0–15
25	71	..	4	P	0
26	60	3	..	NP	0–15
27	74	..	5	P	0
28	61	..	5	P	0

* Present.
† Not present.

Twenty-eight of 50 hemiplegic patients, or 56 per cent, presented positive clinical findings of subluxation of the shoulder on the involved side (Table I). The x-rays

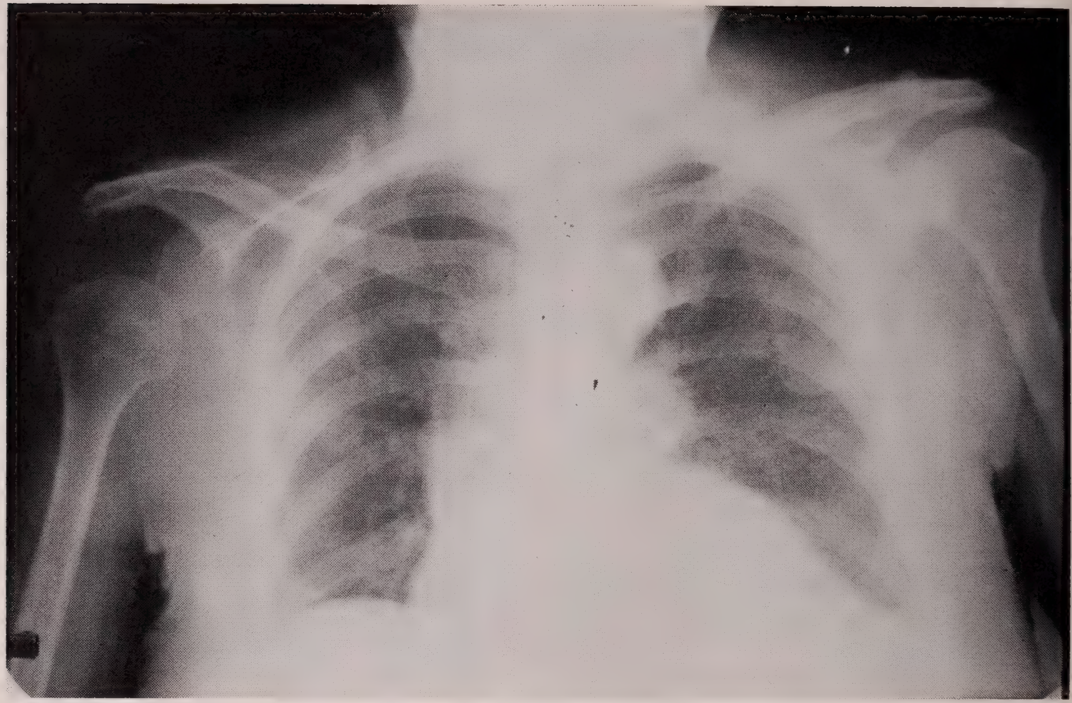

Fig. 1. Shoulder subluxation of a few millimeters in a hemiplegic patient

were obtained with the patients in both the erect and supine positions and in both external and internal rotation. Among the 50 patients surveyed, 25 patients, or 50 per cent, had subluxations, which correlates rather closely with the clinical findings.

A small percentage of cases with definite subluxation clinically were normal in this regard on x-rays. Re-examination left no doubt as to the clinical certitude of the presence of the subluxation. When x-rays were repeated with the upper extremity hanging freely, the presence of this subluxation was easily verified and the clinical impression confirmed. We feel that it is important to point out this occurrence since the presence of the subluxation can be overlooked even at x-ray, if attention is not paid to proper technic and positioning of the arm.

The degree of subluxation varied from a few millimeters to almost complete subluxation, with the humerus seen below the glenoid fossa (Figs. 1 and 2). In the majority of cases, however, the subluxation was only

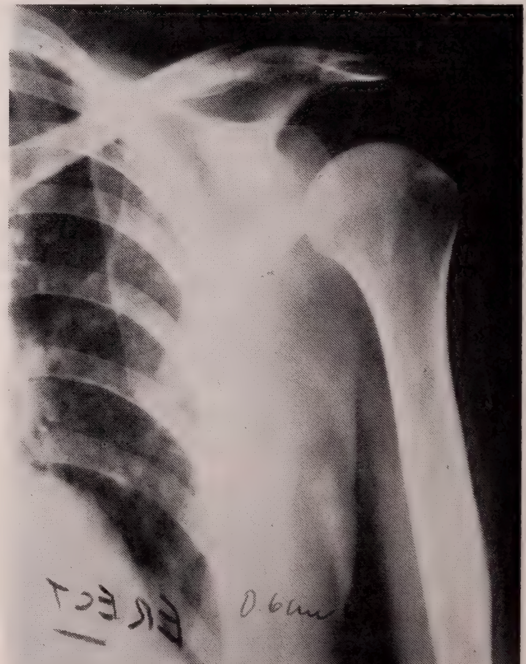

Fig. 2. Complete shoulder subluxation, with the humerus seen below the glenoid fossa, in a hemiplegic patient.

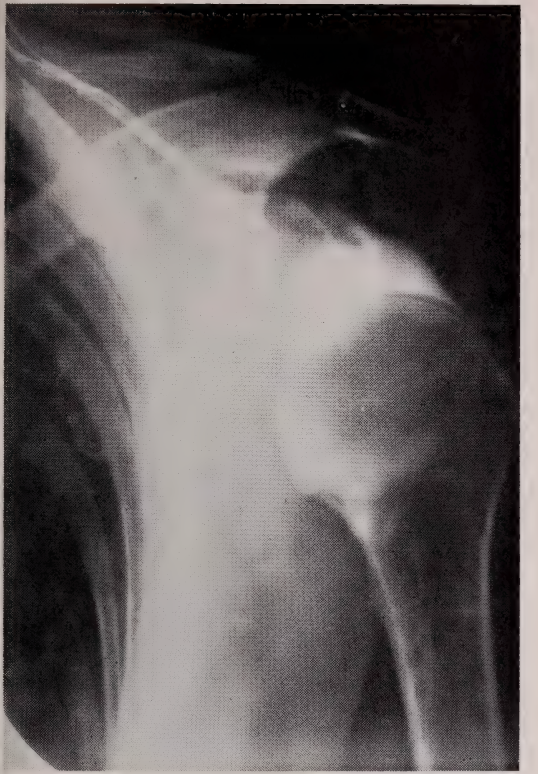

Fig. 3. Injected joint showing a striking increase of fluid in the superior portion, indicating that the capsule had been stretched.

about 1 cm. In order to evaluate this finding more closely, injection of the shoulder joint followed by x-rays in the erect and supine projections were done.

In most instances, the injected joints showed a striking increase of fluid in the superior portions, which would indicate that the capsule had been stretched (Fig. 3). Occasionally, a tear was also demonstrated, with abnormal communication of the shoulder joint and the subacromial bursa.

We attempted to ascertain if age, duration of hemiplegia, presence or absence of spasticity, and range of motion were related to the presence of subluxation. The age group ranged from forty-six to ninety-four years. The duration of hemiplegia was from a minimum of three months to a maximum of twenty-four years. Neither the patient's age nor the duration of the hemiplegia appeared to have any relation to the presence or absence of subluxation (Tables I and II).

TABLE II.—AGE, SPASTICITY, RANGE OF ABDUCTION, AND DURATION OF HEMIPLEGIA IN 22 HEMIPLEGIC PATIENTS WITHOUT SUBLUXATION OF THE SHOULDER

Case	Age (Years)	Duration of Hemiplegia		Spasticity	Range of Abduction (Degrees)
		Years	Months		
1	55	3	. .	P*	0–70
2	64	1	. .	P	0–30
3	68	5	. .	P	0
4	66	. .	14	P	0–40
5	59	24	. .	P	0–70
6	70	6	. .	P	0–50
7	72	. .	10	P	0
8	58	. .	6	P	0–50
9	51	12	. .	P	0–90
10	56	8	. .	P	0–60
11	68	2	. .	P	0–25
12	62	5	. .	P	0–90
13	87	5	. .	P	0–45
14	60	6	. .	NP†	0–65
15	70	7	. .	P	0–85
16	55	7	. .	P	0–40
17	57	5	. .	P	0–60
18	63	11	. .	P	0–75
19	53	15	. .	P	20
20	64	8	. .	P	0–80
21	66	. .	20	P	0–75
22	72	. .	3	P	0–75

* Present.
† Not present.

TABLE III.—RELATIONSHIP BETWEEN SHOULDER SUBLUXATION AND ACTIVE SHOULDER RANGE OF MOTION IN 50 HEMIPLEGIC PATIENTS

Patients	Number of Patients	Number of Patients With Range of Motion	Number of Patients Without Range of Motion
With subluxation	28	6	22
Without subluxation	22	20	2

Spasticity, which was present to a greater or lesser extent in 43 patients, or 86 per cent, also had no influence on this sign (Tables I and II). A certain relationship does seem to exist, however, between subluxation and active shoulder range of motion. Twenty-two patients out of 28 with subluxation showed no active motion whatsoever at the shoulder, and 6 had varying degrees of active abduction, ranging from 15 to 35 degrees. Of 22 patients with no subluxation, 20 showed active abduction, ranging from 25 to 90 degrees, while 2 patients had no active abduction at all (Table III).

It might be too ingenuous to draw the

general conclusion that subluxation is directly related to the ability to abduct the arm. On the other hand, we cannot disregard the evidence, which seems to indicate a relationship between the degree of arm function and the presence of subluxation.

It is known that the musculature of the involved side remains flaccid for a variable period of time and that spasticity does not become manifest for weeks or even months after the onset of the hemiplegia.[3] Our dynamic approach to the treatment of hemiplegia, which includes having the patient out of bed even a few days after the onset of the cerebral vascular accident, may be a factor in the high incidence of subluxation of the shoulder, especially if adequate corrective measures are not promptly taken. When the patient stands or sits without support of the upper extremity during the period of flaccidity, the muscles about the shoulder joint, particularly the deltoid and the supraspinatus, which normally retain the humeral head in the glenoid fossa, are stretched by the weight of the dependent upper extremity and create favorable conditions for the downward subluxation of the humerus. This condition, if not corrected, can lead to irreversible alterations in the bone and the capsular and muscular components of the affected joint and might be in its turn a principal cause of the irreversibility of the subluxation and of the shoulder and arm pain in the hemiplegic patient.[2] The overstretched capsule and muscle and the altered anatomic structure also may be factors which limit the residual function, which might return long after the onset of the hemiplegia.

Chronaxie determinations of the deltoid and the supraspinatus muscles were carried out on all patients showing subluxation of the shoulder. These were all found to be within normal limits, which would appear to eliminate the possibility of a lower motor neuron lesion.

Electromyography studies were obtained in 6 patients with marked subluxation and revealed electrical silence when the shoulder muscles were at rest. This appears to indicate that this was not a true flaccid paralysis caused by a secondary lower motor neuron lesion following traction on the brachial plexus or the fifth and sixth spinal nerve roots.[4]

Since the degree of return of motor power and function cannot be predicted, it would appear important to attempt the prevention of subluxation of the shoulder in the hemiplegic patient by every means possible. This is particularly true during the period of flaccidity. The main goal should be to prevent the arm from remaining in a dependent position. An adequate arm sling applied early may be of service. This sling should support the involved extremity principally at the elbow. It may be found that the wearing of a sling disturbs body balance and impedes proper ambulation; its use may have to be abandoned in some instances for this reason.

Electrical stimulation of the muscles of the shoulder girdle has also been attempted, but the success of this method appears doubtful.

Summary

1. The occurrence of shoulder subluxation in the hemiplegic patient has been studied.
2. The incidence found in 50 patients was 56 per cent.
3. The mechanism of its formation and the importance of its prevention and correction is considered.

We wish to thank Murray Chrystal, chief physical therapist, and Stanley Schulman, chief x-ray technician, for their cooperation and technical assistance.

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RECENT ADVANCES IN MEDICINE AND SURGERY

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ROBERT TURELL, M.D., *Editor*

Recent Advances in the Care of Fractures in the Aged

EDGAR M. BICK, M.D., F.A.C.S., NEW YORK CITY

(*From the Department of Orthopedics, Mount Sinai Hospital*)

A POPULATION of 15 million aged persons is anticipated in the census of the United States by 1960. The continual rise in the accident rate which ordinarily accompanies an expanding industrial economy with its necessary increase in the density of mechanical means of transportation must inexorably create a marked increment in traumatic incidents among this aging population. Until recently the so-called "problem of the aged" as been chiefly considered in the fields of sociology, psychology, physiology, and internal medicine. Except for occasional case reports, little study was given to the possibility of required modifications of known surgical procedures in the management of such individuals. Not until the present decade was a persistent effort begun to study the effects of accepted methods of fracture therapy on the aging skeleton. This study soon received the support of the New York-Brooklyn Regional Committee on Trauma of the American College of Surgeons whose chairman appointed a subcommittee on fractures of the aged devoted to the problem. This subcommittee presented its accumulated material at the meeting of the Medical Society of the State of New York in 1956, next at the convention of the American Medical Association at New York City in 1957, and last at the 1958 meeting of the American Academy of Orthopedic Surgeons, also in New York City. The subcommittee was subsequently expanded into a subcommittee on Trauma of the Aged and continues its investigations into this broader field.

Along with this stimulating effort, the Orthopedic Section of the A.M.A. conducted what was probably the first symposium held on fractures of the aged at its Chicago meeting of 1956, and this was followed by a similar symposium at the 1957 meeting of the American College of Surgeons at Atlantic City. All of this represented a sustained effort to bring the subject to the attention of a large audience of physicians and surgeons and to emphasize what had been learned of the special characteristics inherent in the recovery of the aged from fractures. These special characteristics, developed from the studies of a few investigators within the present decade, will be discussed herewith.

One must of course first mention the long-existent problem of the fractured hip. The fractured hip has been for the most part a problem of the aged since the nineteenth century.[1] The great Astley Cooper[2] then expressed both the pessimism and the hope of its therapy. He recognized the overwhelming probability of failure of union and the high fatality rate from a prolonged period of bed rest. It was Cooper who in the 1820's first stated the need for early ambulation. He planned a regimen of brief bed rest with the limb resting on pillows until the shock and severe pain subsided. As soon as possible the patient was to be placed daily in an easy chair and at the earliest feasible time introduced to cane or crutch walking. He believed the treatments in common use in his day to be ineffectual and accepted nonunion with shortening as inevitable. Although much has changed since Cooper's day, it is unfortunate that his insistence on early mobilization of patients with fractured hips was generally disregarded for over a hundred and twenty years, and its readoption has become one of the relatively recent advances.

Briefly, the first "advance" since Cooper in the treatment of fractured hips was the method of reduction proposed by Royal Whitman[3,4] in 1902. This required twelve weeks in bed in a plaster of paris cast. Leadbetter[5] in 1933 advocated the use of a "skin-tight plaster" for these cases, and Kleinberg[6] used this as a means of early mobilization. He walked his patients in the plaster using crutches shortly after reduction. This was 1937, the year that Smith-Petersen introduced an effective nail which maintained the fragments of the fracture in position without the necessity of applying the large plaster. This operative procedure has been improved in recent years so that few surgeons today can justify any but the surgical approach of internal fixation of a fractured hip no matter what the age of the patient. With improvement in technics and apparatus, the period of bed rest has been immeasurably shortened. The elderly patient whose hip has been successfully pinned, nailed, or screwed may be helped out of bed within a few days of operation, but unlike Cooper's day, there is a very fair probability of successful union of the fracture.[7]

Subsequent avascular necrosis of the head, a too frequent late result of fracture of the femoral neck even when healed, is another problem. In 1950 the Judet brothers[8] in France introduced artificial hip prosthesis. Originally an acrylic device, it rapidly became popular in the surgical replacement of a "dead" femoral head. The device was an important contribution to the treatment of nonunion in fractures of the hip, but it presented several inadequacies in design and material. It was soon improved by later construction and gave to orthopedic surgeons a new solution to the failures of internal fixation.[9-11] One of the most important attributes of this procedure is the fact that the patient may start walking in two or three weeks following its insertion.

This fact has induced a number of surgeons to use the artificial prosthesis as a primary treatment in place of internal fixation since, it must be recalled, the main objective in treating fractures of the hip in the elderly is early ambulation. The value of hip prosthesis as a primary treatment is at the moment a matter of active polemic, and like all good polemics, has cogent evidence on both sides.

In 1949–1950 another very common fracture of the aged, compression fracture of the vertebra, came under study.[12,13] There were two aspects of this; first, the truly traumatic symptomatic fracture, and second, the asymptomatic compression fractures of the osteoporotic spine. At that period the hyperextension treatment of such compressed vertebra had attained almost the status of dogma. This treatment consisted of either rapid or prolonged reduction of the vertebra in a position of hyperextension of the spine, followed by a plaster of paris body jacket applied to maintain this position. A study of the records of such instances had shown that in almost every record investigated, the elderly patient had been unable to tolerate the plaster for any significant length of time, the procedure of reduction was shocking in a large number of cases, and the patients did rather well symptomatically in spite of the early removal of the plaster.[12] It also showed that few if any of the compressed vertebrae had been reduced.

Shortly thereafter a series of cases was published in which compression fractures of the vertebrae in the aged were treated by a week or two of unencumbered bed rest; that is, until the immediate symptoms of pain and physiologic reaction to the trauma had subsided. This was followed by early ambulation in a light brace or corset.[14] Patients so treated had no more or less after-pain than individuals allowed longer rest periods. Residual back pain, when it persisted, usually bore little relation to the site of fracture but was more apt to be found in the lumbosacral ligaments or at sites of vertebral osteoarthrosis or osteoporosis which perhaps had been aggravated by the trauma. In fact, the use of the brace, corset, or belt was required more for the relief of these areas than for splinting the fracture.

This view of treating compression fractures of the vertebrae in the elderly "with a light rein," and permitting early return to activities normal to their age was further encouraged in 1953, when a report appeared of a large series of asymptomatic compression fractures of the vertebrae found in x-ray studies of osteoporotic spines.[15] Such individuals often had no significant back pains yet often showed multiple fractures. It must be emphasized that the uncomplicated compression fracture of the vertebrae is being discussed. The severe traumatic fracture-dislocation of the vertebral column with spinal cord injury is quite another matter.

There are no new special technics to be described in the treatment of fractures of the long bones. However, within the growing armamentarium of fracture therapy procedures, one must be aware of "the organic limitations of aging structures, the lessened resiliency of the tissues, and the choice of tools and forces to meet these circumstances."[16] The recent study of a large series of cases of fractures in the aged has produced certain observations special to their circumstances.[16,17] These may be summarized in the following generalizations.

1. Due to the lessened resiliency of the elderly individual to shock, a more prolonged period of rest between trauma and definitive treatment is necessary. Surgical intervention or manipulation of a fracture are in themselves an added trauma and in this group of patients may not with impunity be added to the physiologic effects of the original trauma. This is, of course, true of all patients. In trauma in the aged, such consideration may be vital. Anesthesia, closed reduction, or open reduction must be postponed until the patient's vital processes have been stabilized. Immediate splinting, traction, or other means of immobilization may be used in the interim, but the ordinary rule of early reduction must be used with even greater caution than might be acceptable in the less advanced adult age group. In print this reads as an obvious statement; unfortunately, in practice it has been too often honored in the breach.

An elderly patient whose hip has been fractured early in the afternoon has suffered a rather shocking trauma. He or she has been lifted or carried about in the home or from street to home, an hour or so later transferred from stretcher to ambulance, from stretcher to x-ray table, from x-ray table to stretcher, and again to hospital bed. In all probability the patient has been examined by intern or resident, family doctor, and specialist. The aged and traumatized patient has had to withstand enough stress that day. A nighttime emergency reduction and internal fixation is too much. Eighteen or twenty-four hours of respite in simple Buck's extension traction should be allowed before operative procedures are begun. A similar sequence may be described for other fractures of the long bones.

2. Aged bone may be soft and often will not withstand the leverage of forced manipulation. At an advanced degree of

senile osteoporosis the bone structure will not support the internal pressures of metallic fixation. Recognizing the limited functional demand on the activities of an aged skeleton, a degree of reduction adequate to this restricted demand is a wiser procedure than would be the forcible attainment of an anatomic perfection during the process of which further bone destruction or secondary necrosis is invited. This observation proved particularly true in the common fractures about the lower end of the radius and ulna.

3. One of the histologically demonstrable effects of age is the loss of elasticity in the connective tissues of joint capsule and particular fascia. The common use of resistance exercises and postfracture mobilizing therapy must be curtailed in the aged in order to avoid such strains as may be suitable in more elastic adult connective tissues but which become pathologic in the less elastic older tissues. It is a good rule in these cases to employ the principle of "purposeful activity" rather than the more forceful formal exercises. Here the common fracture of the shoulder is a case in point. Enthusiastic encouragement of painful exercise is far more apt to retard the return of motion than to encourage it.

These observations were not the result of speculation or laboratory data. They were the findings in series of cases of fractures of the long bones in the aged which had been treated "by the latest methods of fracture therapy." It is in the choice of available methods and in the timing of their application that the treatment of fractures in the aged differs from that in less advanced age groups. This was what was meant by the introductory statement that there were no special technics, but rather a recognition of limitations.

The clinical observations discussed in summary above followed and were accompanied by the physiologic and pathologic studies of Albright,[18] Albright and Reifenstein,[19] Bick,[20,21] and others[22] on senescent and osteoporotic bone. It was shown that although the actual healing point of a fracture cannot as yet be determined within the bounds of clinical perception, the fracture of an aged skeleton heals within the same time period as does that of any adult age group. Only in the still growing bone of children is reparative osteogenesis more rapid. However, the quality of the uniting callus is conditioned by the quality of the bone which has been fractured. In the healthy or "physiologically young" old skeleton, the callus is that which would be anticipated in any similar fracture. However, osteoporotic bone or simple senile atrophic bone will produce a callus of that quality. As pointed out by Albright, too long a period of immobilization of an elderly bone already affected by senile atrophy merely increases the atrophy. A certain degree of less than anatomic excellence may be better accepted in order to preserve strength of intrinsic bone structure.

The senescent vertebral body is osteoporotic. The degree of resistance to compression is obviously related to the degree of osteoporosis. The processes of osteogenesis and bone resorption run parallel throughout life. In the growing child the rate of the former is greater than that of the latter; during adulthood they are more or less equal. In the aging skeleton the childhood ratios are reversed, and bone resorption goes on as osteogenesis falters. Ossification, it must be remembered, is first the formation of protein bone matrix. The deposition of bone salts in the matrix, that is calcification of bone, is a subsequent chemical reaction. In all considerations of fractures of the aged, this primary biologic fact is basic. Reparative ossification, which is a function of protein metabolism, proceeds as in all periods of life from the stimulation of trauma. Without adequate protein intake, it may be retarded. The fractures will heal unless extraneous factors intervene. The nature of the new bone formation, its vascularity, resistance to stress, response to surgical intervention, and reaction to metallic appliances, may not be the same in aging bone as in adult bone in a more virile state.

Summary

There are as yet no new technics to be learned in the management of fractures in the aged. To paraphrase Zeman's[23] very perceptive remark, "there are no fractures of the aged, there are only fractures in the aged." As such, the modifications and special aptitudes required in the management of these cases are those conditioned by the response of aging tissues to the stimulation of direct trauma and their later response to curative measures. The problem of the surgeon is to recognize these limitations—the restricted potential response of aged damaged bones, articulations, and periarticular tissues to measures designed for the recovery of more virile tissues.

30 EAST 60TH STREET

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Doctor Wants Out

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CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D.
AND WILLIAM B. OBER, M.D.

MARCH 26, 1958

Discussed by BENJAMIN E. KRENTZ, M.D.

Case History

DR. THOMAS N. SILVERBERG: A seventy-three-year-old Norwegian-born white male entered Knickerbocker Hospital for the first time because of shortness of breath and chest pain.

On admission he seemed dazed and sluggish, speaking in a halting fashion, often failing to complete his sentences, and showing some memory loss for recent events. However, when questioned diligently, he could describe his symptoms with reasonable accuracy and provide a consistent account of his illness.

For about seven years he had been aware of exertional dyspnea, at first very mild, then becoming more noticeable, and quite severe for the last three years. During the latter period he had developed gradually increasing orthopnea, recently finding that he could only lie down comfortably using three or four pillows.

His doctor had been giving him "small round white pills" for more than two years. The patient insisted that he had been taking two, and sometimes three, of these pills daily, while a note from the doctor stated that the tablets were digitoxin and the dosage 0.2 mg. a day.

Six months before admission the patient noticed pretibial edema for the first time. He said that his legs had been constantly swollen from then on, even though he had been going to the doctor once a week for mercurial injections. He had become much worse in the last six months, having developed dyspnea even at rest and being troubled by severe attacks of paroxysmal dyspnea almost every night.

In addition, he had been disturbed by frequently-occurring chest pain, dull in character, felt mainly over the precordium and left lateral chest, lasting from several hours to as much as a day. The pain did not seem to be related to effort, did not radiate beyond the chest, and was not associated with nausea, sweating, or weakness. The patient said that his appetite had grown poor, but he denied loss of weight, cough, fever, or hemoptysis.

During his youth he had had pneumonia once, and he recalled that fluid had been removed from his chest at the time. At the age of fifteen he had been ill with joint pains and fever. He could not remember how long he had been sick but was positive that he had had only one such episode. Three years before admission a doctor he visited had told him he had high blood pressure. No other significant history was obtained, and the review of systems elicited only urinary symptoms consistent with chronic prostatism.

Physical examination disclosed a well-developed elderly man who appeared sallow, rather depressed, and chronically ill. He was noticeably dyspneic sitting upright. The temperature was 98 F., the respiratory rate 32, and the blood pressure 115/80. Examination of the head and neck revealed only Grade I arteriosclerotic retinal changes and marked distention of the cervical veins. The hepatojugular reflux was positive with the patient sitting at an angle of 45 degrees. There was no enlargement of the thyroid gland.

The chest showed increase in antero-posterior diameter, and the diaphragmatic excursions were decreased. There was dullness to percussion over the left lower quarter of the chest. A loud-squeaking friction rub could be heard over the area of dullness. There were many moist rales at the right posterior base and occasional rales at the left base. The cardiac apex beat was maximal at the fifth intercostal space in the anterior axillary line, forceful, and heaving to palpation. The rhythm was apparently regular with occasional premature contractions. A definite diastolic gallop was both heard and felt. The second pulmonic sound was normal in intensity, but the second aortic sound was diminished to absent. A Grade III blowing and musical systolic murmur was heard at the apex along the left sternal border, transmitted toward the axilla. A Grade II to III systolic murmur of harsher quality was heard over the second right intercostal space and transmitted to the neck. There were no thrills or rubs.

The abdomen was obese, soft, and non-tender. A sharp liver edge was felt 2 cm. below the right costal margin. No other organs or masses were palpable. Rectal examination showed both lobes of the prostate to be enlarged three times normal size, smooth, and not nodular. The rectal ampulla contained soft brown stool, and no masses were felt.

There was 3 plus pitting pretibial edema to both knees. The nail beds were slightly cyanotic. Venous varicosities were present over both legs. All peripheral pulses could be felt. There were no neurologic abnormalities.

Urinalysis on admission showed a specific gravity of 1.008, an acid reaction, a trace of albumen, no sugar or acetone, and six to ten white blood cells. The hemoglobin was 15 Gm. The white blood count was 15,700 with 73 per cent neutrophils, 22 per cent lymphocytes, 3 per cent eosinophils, and 2 per cent monocytes. Three days later it had fallen to 11,000, with an essentially normal differential count, and two weeks after admission it was still 11,000. The sedimentation rate was 64 mm. per hour. The serology was negative. The blood nonprotein nitrogen was 58.5 mg. per 100 ml. on admission and ranged from 53.5 to 68.5 mg. during his hospital stay. On admission the serum sodium was 145 mEq. per L., the potassium 5.5 mEq., the chlorides 102 mEq. per L. and the carbon dioxide 23 mM. per L. Three days after admission the sodium had fallen to 134 mEq., the potassium to 5.3 mEq., the chlorides to 100 mEq., and the carbon dioxide to 20 mM. About three weeks after admission the sodium had fallen to 129 mEq., the potassium was unchanged at 5.3 mEq., and the chlorides were 97.4 mEq., the carbon dioxide having risen to 24 mM.

An electrocardiogram taken on admission showed occasional auricular and ventricular premature beats. The P-R interval was prolonged to 0.22 second. There was high grade incomplete left bundle branch block. There was T-wave inversion in left ventricular type leads. Ten days later there were only occasional ventricular premature beats, the P-R interval was increased to 0.26 seconds, and there were large QRS deflections. About three weeks after the second electrocardiogram there was high grade partial or complete A-V block with sinus rhythm (rate 88) and ventricular beats from multiple foci (rate 100). An electrocardiogram taken two days before death showed a sinus rhythm (rate 90) interrupted by frequent idioventricular beats, some of which occurred in runs. There were frequent auricular premature beats and runs of auricular tachycardia. There were runs of complete right bundle branch block associated with auricular tachycardia and incomplete left bundle branch block associated with sinus rhythm. An electrocardiogram taken the day before showed a sinus tachycardia (rate 130) with occasional ventricular premature beats. There was pronounced RS-T depression in leads I, II, aVL, aVF, and V4-7.

The patient was put at complete bed rest and given a salt-free diet and Mercuhydrin 2 cc. intramuscularly on the day of admission. In two days he lost nine pounds and seemed somewhat less dyspneic.

During the next two days he failed to lose any further weight, although he was given chlorothiazide (Diuril) 1 Gm. daily. It became apparent that the patient was coughing frequently, producing greenish sputum, and that his temperature was elevated. Penicillin 1.2 million units daily was administered, and the dosage of Diuril was increased to 2 Gm. daily. During the next week his cough diminished, the temperature returned to normal, and he slowly lost another ten pounds.

However, he remained mildly edematous and short of breath, and for the next few days his weight remained the same. Several attempts at thoracentesis yielded no pleural fluid from the left lower chest. The patient's venous pressure was measured at 170 mm. saline and his circulation time (succinate) was sixty seconds. The physical findings were unchanged except for diminution of leg edema and partial clearing of the lung fields. He complained of "tight" pain across the upper chest which bothered him, especially at night. On one occasion he developed this chest pain with marked diaphoresis while walking to the bathroom.

Diuril was discontinued, and on a regimen of ammonium chloride 8 Gm. daily for three days followed by Mercuhydrin 2 cc. the patient lost another five pounds. His circulation time was reduced to forty seconds, and he felt considerably better. After a few days of improvement he again complained of severe dyspnea, was disoriented at times, and developed Cheyne-Stokes respirations.

At this time he was given digoxin 3.5 mg. over a three-day period and put on a maintenance dose of 0.5 mg. daily. He lost another ten pounds in five days and displayed remarkable clinical improvement, seeming alert, much stronger, and scarcely dyspneic when walking. His circulation time was then recorded at thirty seconds.

This improvement was maintained for about two weeks. The patient then suddenly developed Cheyne-Stokes respirations and again became confused and agitated. His pulse was found to vary between regular and bigeminal types of rhythm. Digoxin was discontinued for the next four days, and the patient received potassium chloride by mouth and aminophylline intravenously. When sinus rhythm returned and the rate was 90, digoxin 0.25 mg. daily was reinstituted.

A day later the patient became dyspneic and developed a tachycardia (rate 120). Coarse rales were heard over the right lower lung field. There was no elevation of temperature. Until his death two days later the patient's pulse continued rapid as seen in the last two electrocardiograms. Terminally, he became unresponsive, went into shock, and expired after an hour.

Discussion

Dr. Benjamin E. Krentz: Today's case is one of relentlessly progressive heart failure in a seventy-three-year-old white man. The outstanding historical fact is an illness characterized by joint pains and fever at the age of fifteen. At the age of sixty-six cardiac failure developed. This was mild for about four years. At that time he showed overt signs of diminished cardiac reserve, and in the last six months became intractable to therapy. During these final six months of life, angina pectoris, at first typical and episodic, developed and progressed to a state of coronary insufficiency. For two years he had been taking 0.4 to 0.6 mg. of digitoxin daily.

Physical examination demonstrated the usual signs of congestive heart failure without hypertension. There were occasional premature contractions, diastolic gallop, and systolic murmurs differing in quality and transmission at the apex and over the right base. Needless to say, the heart was diffusely enlarged. An area of dullness was present over the left lung base. An electrocardiogram, taken the day after admission, is consistent with severe myocardial damage, possibly on the basis of digitalis intoxication. There is no evidence of recent myocardial infarction. May we now see the x-rays?

Dr. Joseph M. Moynahan: The chest film shows moderate generalized cardiac enlargement, probably predominantly left ventricular. There is slight straightening of the left cardiac border and prominence and calcification of the aortic knob. There are prominent hilar regions, a generalized accentuation of pulmonary markings, and a left pleural effusion. The left diaphragm is slightly elevated, and there are questionable parenchymal changes at the left base. A barium swallow shows the esophagus displaced posteriorly by a dilated left auricle, but enlargement of this chamber is not disproportionate to the generalized cardiomegaly.

Dr. Krentz: With this evidence at hand, we can delineate the nature of the cardiac disorder. The presence of significant murmurs and the size and shape of the heart speak for valvular heart disease. A history of rheumatic fever in adolescence coupled with a harsh systolic murmur at the base transmitted to the neck and a diminished aortic second sound point classically to some degree of aortic stenosis. If aortic stenosis is present, and I believe it is, one must explain the relatively long symptom-free interval from the age of fifteen to the age of sixty-six by inferring that the stenosis was only moderate and that it may well have been mitigated by a concomitant mitral stenosis and insufficiency. The clinical course of patients with combined valvular lesions is usually more benign than those with lesions involving only one valve.

However, in patients in the older age group it is not wise to ascribe the cardiac status to only one cause. The presence of progressively more severe angina pectoris can only point to coronary arteriosclerosis, or some other impedance to coronary flow. It is conceivable that the deposits of calcium on the aortic aspects of the stenotic cusps of the aortic valve became progressively larger and impinged on the ostia of the coronary arteries. However, were this the case, the degree of calcific aortic stenosis would have to be severe, more severe than I would think indicated by his relatively bland clinical course until the age of sixty-six. If one hesitates to make the diagnosis of calcific aortic stenosis unless all the classical cardinal criteria are fulfilled, one will overlook a good many cases, notably the ones in which the stenosis is less severe, as I believe to be the case in this patient. In the light of increasing surgical access to the aortic valve, such oversight may be more than academic.

Most instances of aortic stenosis are due to a healed rheumatic valvulitis. Calcification is accomplished by infiltration of lipid into the previously inflamed area with subsequent deposition of calcium salts. This occurs more often in men than in women, and is also a function of time, found increasingly in patients in the older age groups. By study of the systolic pressure gradients across the aortic valve, it is possible to assess the degree of stenosis before calcification sets in and select favorable candidates for surgery.

Although frequently the systolic murmur of aortic stenosis is transmitted undiminished to the apex, here an apical systolic murmur of somewhat different quality was recorded with transmission laterally. This should be interpreted as the murmur of mitral insufficiency. Uncomplicated mitral valvulitis is the most common lesion in rheumatic heart disease, followed by combined mitral and aortic valvulitis. Since a scarred, shrunken, deformed mitral valve results in some stenosis, even though the dynamic defect may be insufficiency, it is not unwise to predict the finding of a diminished mitral area even in the absence of the diastolic murmur considered so essential for clinical diagnosis.

Angina pectoris is quite frequent in cases of aortic stenosis. Its occurrence has been thought to be due to obstruction of the coronary ostia by calcific deposits which creep along from the aortic side of the valve cusp. Another mechanism that has been considered is the diminished minute volume flow through the coronary arteries occasioned by the increased and prolonged contractions of the left ventricle necessary to overcome the aortic valve block, thereby unduly compressing the coronary vessels. The afore-mentioned theories to account for coronary insufficiency and angina presuppose uninvolved coronary arteries. However, the most obvious cause for angina in aortic stenosis is concomitant coronary arteriosclerosis.

The well-known progression of clinical symptoms—dyspnea, orthopnea, paroxysmal nocturnal dyspnea, and finally dyspnea at rest—was typical in this patient, and can be correlated with the progression of his anatomic derangements, especially in respect to the progression of left ventricular hypertrophy.

The infiltrative lesion in the left lower lung field responded well to antibiotics and may have been a straightforward pneumonitis. However, one cannot exclude pulmonary infarction on either clinical or radiologic grounds. The presence of varicose veins in this patient suggest the leg veins as a possible source for embolic thrombi rather than, for example, the pelvic veins or the chambers of the heart itself. Pulmonary infarcts may be silent, and they may be multiple. These two observations are most frequently cited by those who advocate anticoagulant therapy.

The enlarged prostate is sufficient cause for the patient's minimal urinary findings. Such partial obstruction may serve as the background for pyelonephritis, which, when accompanied by heart failure, is most likely to lead to azotemia.

We may now consider the management of the case. It appeared logical and certainly safest to suppose that the patient was suffering from digitalis intoxication at the time of admission. This view is supported by the history of daily ingestion of 0.4 to 0.6 mg. of digitoxin and by the electrocardiograms which showed premature beats, partial A-V, and bundle branch blocks, and T-wave inversions. Complete withdrawal later followed by slow and careful resumption of digitalis resulted in only limited and temporary improvement. The electrocardiographic patterns continued to be bizarre. Aortic stenosis, particularly when accompanied by coronary sclerosis, affects the conducting system either by calcific infiltration or by anoxia secondary to insufficiency. This may be represented electrocardiographically by many varying types of block. Digitalis intoxication in this instance appears to play a minor role in the electrocardiographic parameter. Parenthetically, it may be worth mentioning that in aortic stenosis sensitivity to digitalis is usually increased.

The response to diuretics was more or less to be expected, the major decline being in sodium, somewhat less in chloride, and relatively little in potassium. Obviously, the house staff was alert to the possibility of a low-salt syndrome, for the electrolytes were so carefully followed. The response to oral potassium when the patient was overdigitalized was also gratifying to note.

Dr. Maxwell S. Gelfand: I have no doubt that this was a case of calcific aortic stenosis. The murmur was one murmur arising from the aortic valve and transmitted to the base. One should not hesitate to make the diagnosis of calcific aortic stenosis, even though all major criteria are not

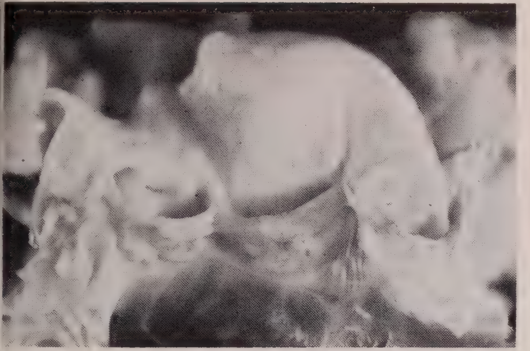

FIG. 1. Close-up view of aortic valve showing the scarred, thickened cusps held rigidly and narrowing the outflow tract.

satisfied. Although over 90 per cent of the cases of calcific aortic stenosis are on a rheumatic basis, only about 30 per cent of the patients give a history of rheumatic fever. I doubt that there was any disease of the mitral valve.

DR. JOSEPHINE NORTON: Did anyone consider using quinidine for the treatment of the numerous ventricular arrhythmias?

DR. MICHAEL S. BRUNO: While this patient was being studied on the ward, it was not obvious whether he had severe calcific aortic stenosis or less severe aortic stenosis plus some other disease. Because of the high degree of A-V block, quinidine was not used to control the arrhythmia.

Diagnoses

Clinical.—*Arteriosclerotic heart disease; rheumatic heart disease with combined lesions of aortic stenosis, mitral insufficiency, and ??mitral stenosis; pulmonary emphysema; benign prostatic hypertrophy.*

Dr. Krentz.—*Rheumatic heart disease with moderate aortic stenosis and mild mitral insufficiency and stenosis; arteriosclerotic heart disease with coronary insufficiency; ?pulmonary infarction, ?pneumonitis; benign prostatic hypertrophy with secondary pyelonephritis.*

Anatomic.—*Rheumatic heart disease with moderate aortic stenosis and mild mitral insufficieny and stenosis; arteriosclerotic heart disease with coronary occlusion and old myocardial infarction; pulmonary infarction; systemic atherosclerosis, severe, with mural thrombosis of aorta and iliac arteries; benign benign nephrosclerosis; benign prostatic hypertrophy.*

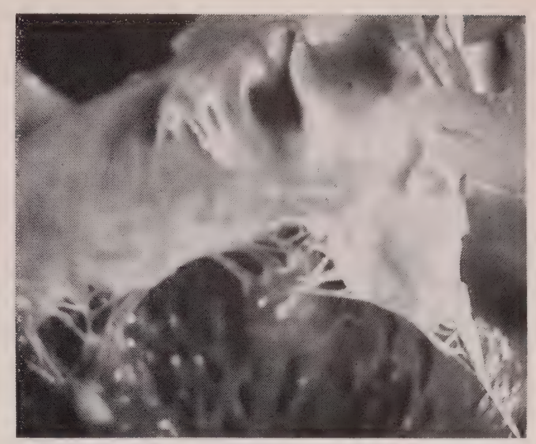

FIG. 2. Close-up view of the posterior leaflet of the mitral valve, showing fibrous thickening as well as some thickening and foreshortening of the chordae tendineae.

Pathologic Report

DR. WILLIAM B. OBER: Autopsy disclosed the combined lesions of old rheumatic heart disease and arteriosclerotic heart disease. The heart weighed 650 Gm. and the left ventricle was 19 mm. in thickness. The aortic valve showed a moderate degree of calcific stenosis (Fig. 1). The cusps were fused at the commissures and were maintained in a fixed, rigid position by scarring and calcification, thereby reducing the caliber of the outflow tract. The mitral valve showed fibrous thickening of the posterior leaflet, thickening and fusion of the chordae tendineae, and slight reduction in total valve circumference (Fig. 2). There was slight narrowing of the inflow tract, and the reduced mobility of the posterior leaflet made the valve incompetent. There was also a severe degree of coronary arteriosclerosis with areas of calcification and narrowing in all three major coronary arteries. An old occlusion was demonstrated in the left descending coronary artery, and a small zone of healed infarction was

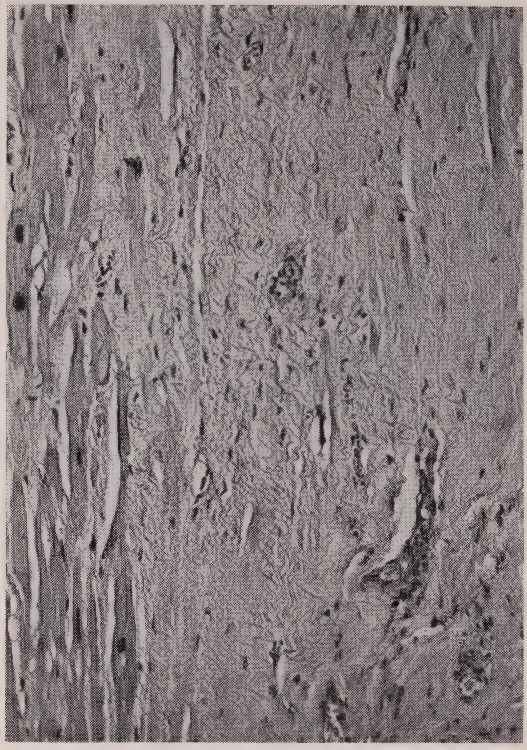

Fig. 3. An area of myocardial scarring representing a healed infarct.

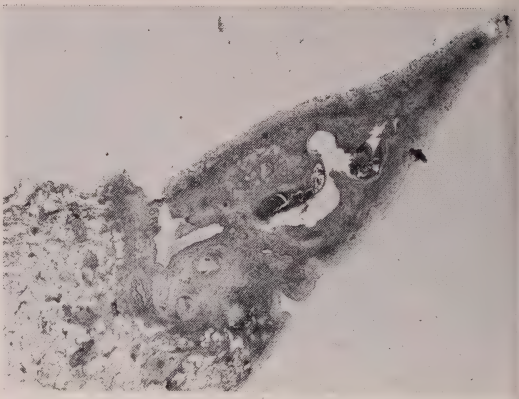

Fig. 4. Low power view of a pulmonary infarct. An organized thrombus is seen in the center.

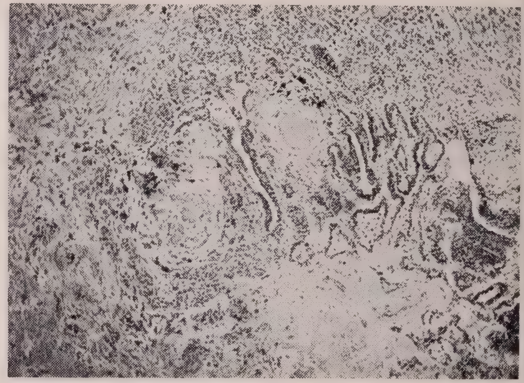

Fig. 5. Medium power detail of Fig. 4 showing scarring of lung tissue with cuboidal cell metaplasia.

present in the anterior wall of the left ventricle (Fig. 3). There was severe aortic and iliac arteriosclerosis with mural thrombi adherent over ulcerated atheromatous plaques. The pulmonary artery and its major branches showed atheromatous plaques. Thrombotic material was present in some of the major arteries of the left lower lobe and there was an infarct at the peripheral margin (Figs. 4 and 5). The liver did not show much passive congestion. The kidneys showed benign nephrosclerosis of moderate degree. There was benign prostatic hypertrophy.

The usual percentages for the distribution of rheumatic valvular lesions are as follows: mitral valve alone, 40 per cent; aortic valve alone, 20 per cent; combined mitral and aortic lesions, 30 per cent. Survival time can be reasonably well correlated with the severity of the valvular deformity, barring recurrent attacks of acute rheumatic carditis. The presence of a mild to moderate degree of mitral incompetence protects the left ventricular myocardium from strain due to aortic stenosis. When aortic stenosis is moderate, as in this case, and there is a protecting mitral lesion which serves to decrease intraventricular pressure during systole, optimal survival times can be recorded. It is noteworthy that this patient, who had a single episode of rheumatic fever at the age of fifteen, had no cardiac symptoms until the age of sixty-six, an interval of fifty-one years. During the seven years of his progressive cardiac failure, most of his symptomatology was referable to his coronary insufficiency although the murmurs indicated the pre-existing rheumatic damage. It was formerly thought that the presence of rheumatic heart disease protected against the development of coronary artery disease. This misconception was based largely on the fact that most patients with rheumatic heart disease did not survive to the age when degenerative processes take their toll. The two processes are separate and independent. Patients with rheumatic valvular deformities who survive into the seventh and eighth decades are subject to coronary artery disease to the same degree as other members of their age groups.

DR. MICHAEL S. BRUNO: There are a number of rather important points to be learned from this morning's case, and most of them are based on accepted clinical and pathologic ideas. First, in the diagnosis of any valvular defect, for example, aortic stenosis, our criteria cannot be rigid because of the variability necessarily imposed by the degree of such defects. In our case the discussor deduced correctly that the degree of aortic stenosis was only moderate at best. Second, because of the long interval between the episode of rheumatic fever and the development of congestive heart failure in this case of aortic stenosis, involvement of the mitral valve was inferred. This was based less on the presence of the mitral systolic murmur than on the known high incidence of combined mitral and aortic valve involvement, particularly in the patient who has lived in a compensated state to a ripe old age. The combination of a moderate degree of aortic stenosis and the "protecting" mitral lesion resulted in fifty-eight years survival after the epifode of rheumatic fever at age fifteen.

Finally, the most common cause of angina pectoris or coronary insufficiency or both in a patient of this age who has rheumatic heart disease is still coronary atherosclerosis.

What Foods Do Soldiers Want Most if Given Their Choice?

One hundred typical American youths, all soldiers stationed at Fort Carson, Colorado, were allowed complete self-selection of a variety of acceptable foods at meals for twenty-eight days to measure and compare nutrient intake of a regular Army mess and special menus.

The results of the study, reviewed in *Nutrition Reviews*, monthly scientific publication of the Nutrition Foundation, among other things, showed that the one food item under greatest demand was fresh, fluid milk.

All foods used during the test period were prepared under the supervision of a dietician with emphasis on maximum acceptability by the men. Choice meats were used and canned items limited.

Average daily caloric intake of the subjects, who averaged 21.5 years in age, 5.8 feet in height and 155 pounds in weight, totaled 3,669. Of this total, only 4.1 per cent of the calories were consumed outside of the mess hall, compared to 18 per cent consumed outside of the regular Army mess hall.

Average fluid milk consumption was slightly over one and one-half quarts per man per day, as contrasted to the one pint per day allowance in regular mess. One soldier consumed four quarts in one day. Surprisingly, meats, fish, and poultry were consumed in relatively smaller amounts than is common among troops subsisting under regular mess. The same trend was noticeable in the consumption of fats, butter, and spreads. Yet, almost all of the subjects gained weight. It was then determined that the energy needed for maintenance equalled an average daily caloric intake of 3,173. The difference between this amount and the 3,669 calories actually consumed could account for the weight addage.

NUTRITION EXCERPTS

Prepared with the cooperation of the Faculty of the Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.B., M.S., *Editor*

Diet, Blood Cholesterol, and Atherosclerosis

RICHARD H. BARNES, PH.D., ITHACA, NEW YORK

NUTRITIONISTS today are faced with the greatest strain on their interpretive ability that has existed for many a year. The importance of nutrition factors in the development and control of diseases associated with atherosclerosis is suggested by many reported investigations. In most instances correlated observations in population groups are open to interpretation on the basis of cause and effect. Studies in experimental animals provide data that are subject to interpretation on the basis of observed relationships being applicable to man. In essentially all of these situations serious gaps in our knowledge exist and, therefore, interpretation involves a large element of speculation. In spite of these obvious shortcomings, the physician frequently must draw certain conclusions in order to provide his patient with the best advice that he can give. Repeated reviews of this subject probably confuse more than they clarify the situation, but with the possibility in mind that a short statement might bring out some factors not previously understood, this brief excerpt has been prepared.

Fat has held a central position in recent discussions of atherosclerosis and heart disease. The proponents of the fat hypothesis present these arguments: (1) certain dietary fats cause a rise in blood cholesterol, (2) sustained elevation of blood cholesterol predisposes to the development of atherosclerosis, and (3) dietary fat may cause the shortening of blood coagulation time and also inhibit the natural fibrinolytic enzymes that protect against intravascular clotting.

Specific metabolic effects resulting from fat ingestion may be measured objectively in man or in experimental animals. Atherosclerosis can be developed in experimental animals, although rather extreme conditions are required. However, the formation of coronary thrombi, although the incriminating factor in coronary heart disease in man, has not as yet been accurately reproduced in experimental animals. Population studies involving the establishment of correlations between dietary intakes and mortality data must be included in order to validate the dietary fat-heart disease hypothesis. Each link in the chain is supported by a host of confirmatory evidence, but at the same time each link is weakened by gaps that can be bridged only by speculation. Taking these steps one by one the following points appear o be particularly pertinent.

Can Dietary Fat Cause a Rise in Blood Cholesterol?

There is no question about this point, for t has been shown repeatedly in man and in a variety of experimental animals that certain fats do cause an elevation in blood cholesterol. The controversial aspects of this question concern the relative effects of saturated and unsaturated fats, the relative contribution of the component unsaturated fatty acids and perhaps certain unidentified factors in natural fats, and finally the biochemical mechanisms that are involved. The ingestion of a fairly large percentage of the total calories in the form of highly unsaturated fats, such as cottonseed oil, corn oil, or olive oil, will tend to lower the blood cholesterol if the initial level is high. The extent of lowering may equal that which is obtained by ingesting an extremely low fat diet. Some investigators[1] believe that the final level achieved is a function of the relative proportions of linoleic acid and saturated fatty acids that are present in the fat. Others[2] believe that the more conservative interpretation is that the average degree of unsaturation of the fatty acids governs the cholesterol level that is achieved. Still others[3] present evidence that in addition to the effect of unsaturation, certain natural fats contain an unidentified blood cholesterol-raising principle, while other fats contain a lowering principle. Perhaps the truth lies somewhere in the realm of a compromise among these three views. Alteration of natural fats by hydrogenation makes the fat more saturated, and this usually means that elevation of blood cholesterol follows its ingestion. Examples of this are found in such commercial products as margarines and shortenings. The blood cholesterol response to fat ingestion can be observed within a week, but its persistence with certain types of fat has not yet been definitely established. The biochemical explanation for the fat effects could involve alterations in rate of cholesterol biosynthesis in the body, change in rate of degradation of cholesterol to the bile acids, or variations in transport and storage of cholesterol.

Will the Elevation of Blood Cholesterol Cause the Development of Atherosclerosis?

The atheromatous plaque has been shown to be rich in lipids and to have a particularly high concentration of cholesterol. Furthermore, it has been known for many years that in certain animal species, such as the rabbit and chicken, high blood levels of cholesterol resulting from the simple dietary addition of cholesterol may cause atheroma to develop. Other species require more complex treatment including the development of hypothyroidism or the feeding of bile salts in order to achieve sufficiently high cholesterol levels. In man cholesterol plaques such as those found in xanthomatosis usually are associated with high blood cholesterol levels. Frequently, but by no means consistently, elevated blood cholesterol is found in atherosclerosis and coronary heart disease.

Statistical evidence gained through extensive population surveys shows a high correlation between the level of blood cholesterol and the incidence of heart disease, but it is difficult for many to believe that the small differences in blood level that are found can reflect a causal relationship. This remains an open question, for the majority of evidence is still indirect, and other factors could be of great importance. Nevertheless, without more information to judge the case, the level of blood cholesterol is generally considered of sufficient importance that its maintenance at a low level is a most desirable medical achievement.

Does Dietary Fat Affect Blood Coagulation and Fibrinolytic Activity?

Since the ultimate damage in atherosclerosis involves the formation of a clot, this is an extremely important point. A number of laboratories have reported on the coagulability of blood following the ingestion of a fat meal. Several of these have shown that whole blood coagulation time in silicone-coated tubes or plasma clotting-time accelerated by Russell's viper venom (Stypven time) are decreased during the postprandial hyperlipemia.[4,5] Others[6,7] have failed to obtain statistically significant changes in siliconized tube blood coagulability after fat ingestion. Measurements of total fibrinolytic activity following streptokinase activation have indicated that during the hyperlipemic phase following fat ingestion there is a decrease in fibrinolytic destruction of preformed clots in vitro.[8,9] The implication that postprandial hyperlipemia may encourage intravascular clotting is strong, but obviously much more work must be done before this concept can be accepted as proved.

The above discussion briefly covers some of the general aspects of the dietary-fat-atherosclerosis problem. The physician, however, is frequently confronted with more specific questions. Although there is undoubtedly a wide range of answers that can be given for most questions in this area, an attempt has been made to provide a few simple statements that may help to clarify four points that are frequently raised.

Questions Frequently Encountered

CAN BLOOD CHOLESTEROL BE LOWERED BY ADDING EXCESSES OF UNSATURATED FAT TO THE NORMAL DIET?—By actual experimentation one laboratory says yes and another laboratory says no.[10,11] Perhaps the answer requires another compromise. It is well established that if a large enough addition of unsaturated fat is given, the blood cholesterol will drop. The differences in results that have been obtained probably are explained on the basis of "how much is enough." Obviously a very significant increase in fat intake is called for, and in view of man's very poor regulation of food intake, body weight gain may well be the undesirable consequence of this form of therapy. The alternative approach, although not as simple, is to reduce the total fat intake significantly.

HOW IMPORTANT IS THE LOW CHOLESTEROL DIET IN MAINTAINING A LOW BLOOD CHOLESTEROL LEVEL?—One of the first observations to be reported in the problem of dietary fat and atherosclerosis was that within reasonably normal limits of dietary intake, cholesterol in foods has relatively little effect on the blood cholesterol level in man.[12] Unfortunately, even this simple statement can be misleading. Cholesterol is rather universally distributed in animal tissues, but it is not found in plants. With the exception of certain shell fish, cholesterol in such foods as meats, eggs, and dairy products is closely associated with the saturated animal fats that have hypercholesterolemic effects. Therefore, a low cholesterol diet will tend to lower the level of blood cholesterol even though the change may be due only in small part to the reduced cholesterol intake per se.

DOES DIETARY PROTEIN HAVE AN EFFECT ON BLOOD CHOLESTEROL?—There is no clear-cut answer to this question. High-fat diets are frequently also high-protein diets, and conversely low-fat diets usually means low protein. Therefore, in population group studies and in poorly controlled mixed diet studies in man, confusion may exist as to whether the observed levels of blood cholesterol are influenced by fat or by protein. The effect of protein intake has been examined in short-term studies with human subjects receiving mixed diets. One report shows no effect of protein level in the diet, while another claims that serum cholesterol decreased when protein intake was low.[13,14] Neither study was carried on long enough for any significant change in body stores of protein to take place. However, this situation would be difficult to achieve in experimental work with man. A number of studies on the effect of dietary protein level have been reported with chickens and rats as experimental animals. In these investigations blood cholesterol was raised to high levels by feeding cholesterol or a combination of cholesterol and bile acids. Under these circumstances there was uniformly an increase in cholesterol associated with the feeding of a low protein diet.[15–17] Unreported observations from the author's laboratory have shown that with adult swine fed a purified diet without the inclusion of any hypercholesterolemic agent, low protein diets had no effect on the level of blood cholesterol. Obviously this is a problem that needs further work before any practical conclusions can be drawn.

Can the Atherosclerotic Process Be Reversed?—This is, of course, the most important question of all. Unfortunately, it is one on which only meager information is available. In experimental animals it is difficult to score quantitatively the severity of atheromatous lesions. Although reports are equivocal, there is some hope that at least with extreme experimental conditions some reversal of plaques can be achieved. Even more difficult to evaluate is the situation in man. An optimistic view can be taken in light of the very meager observations that have been reported, for after all, what attitude other than optimism can one assume? However, the surface has been barely scratched, and a great deal of tedious, carefully-controlled experimentation must be conducted before this important question will have a reliable answer.

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(Number one in a new series of Nutrition Excerpts)

Leather Tanning Substance Causes "Shoe Dermatitis"

A chromium salt used to tan leather has been found to cause skin eruptions on the feet, according to a Boston dermatologist.

The material has long been suspected of causing dermatitis but it has never—until recently—been available for use in patch testing which would prove its effect on the skin, Dr. George E. Morris said.

His is the first report of a study in which persons suspected of having shoe dermatitis have actually been tested with the chrome salt found in their shoes, he said in the November, *Archives of Dermatology*, published by the American Medical Association.

He found four patients with shoe leather dermatitis who reacted positively to the chrome salt. In addition, two leather workers who previously had "chrome dermatitis" reacted positively to the material. The chrome salt joins a number of other substances found in shoes that cause dermatitis. They include dyes and other chemicals in the leather, the material used in the box toes of shoes, and rubber adhesives. The chrome salt is leached from shoe leather by an acid in perspiration and deposited on the skin, Dr. Morris said.

He noted that it has long been believed that the chrome salt could not be separated from the leather. However, two leather chemists recently proved that it could be.

The dermatitis will clear if the patient stops wearing leather shoes.

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ELIZABETH CRAWFORD, M.D.
VALENTINO D. B. MAZZIA, M.D.
LESTER C. MARK, M.D.
GEORGE WALLACE, M.D.

Hypotension During Thoracic Sympathectomy

ALTHOUGH the surgical approach to the treatment of essential hypertension has decreased in recent years, bilateral thoracolumbar sympathectomy is still resorted to in certain selected cases. The anesthetic management for this procedure has been described elsewhere.[1,2] Arterial hypotension during the second stage is to be expected but severe, uncontrolled depression of blood pressure is to be avoided. The following case report illustrates this.

Case Report

A forty-seven-year-old man had malignant hypertension with left ventricular hypertrophy and 4-plus albuminuria. A left thoracolumbar sympathectomy had been performed quite uneventfully, and two weeks later he returned to the operating room for a similar sympathectomy on the other side. His arterial blood pressure prior to surgical intervention had been 240/170. When he arrived in the operating room for the second time, his blood pressure was 220/150 with a pulse rate of 84 per minute.

Anesthesia was induced by the intravenous drip of 600 mg. of thiopental sodium and was maintained with cyclopropane and ether. Characteristic of the anesthetic record were the several episodes of marked fluctuations in blood pressure. The problem was one of adequate titration of the patient with an intravenous drip of Neo-Synephrine, 10 mg. in 500 cc. of 5 per cent dextrose in water, while the sympathetic chain was being extricated. It was found necessary to vary the rate of flow of the vasopressor to avoid marked depressions of blood pressure at five different intervals. The dips in arterial blood pressure were as follows: from 220/130 to 90/66, 180/140 to 115/96, 180/145 to 110/90, 160/100 to 100/80, and finally and less drastically 150/120 to 120/90. At the end of the procedure, with the Neo-

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Discussed at a conference held at the Columbia-Presbyterian Medical Center, New York City, November 3, 1958. Clinical Anesthesia Conferences are held on the first Monday of every month.

Synephrine drip flowing at what was deemed a satisfactory rate, the blood pressure appeared to be stabilized at 160/120. The Neo-Synephrine drip was maintained in the immediate postoperative period, diminished the following day, and finally discontinued on the second postoperative day.

Comment

With the advent of ganglion-blocking drugs, such as hexamethonium, and other antihypertensive drugs, such as Rauwolfia serpentina, and Apresoline, there has been a tendency to treat pathologic hypertension with them. In some cases, however, surgical therapy by means of bilateral thoracolumbar sympathectomy is advisable. When this operation is completed, the two cervical sympathetic chains are the only sympathetic innervations left. Lack of compensatory vasoconstriction may result so that arterial hypotension ensues, and this is actually the basis for the surgical therapy.

Sympathetic denervation is known to cause vasodilatation of the affected blood vessels. When the upper thoracic sympathetic nerves are extirpated on both sides, most of the sympathetic innervation to the heart is interrupted, and acute cardiac dilatation is liable to occur. This is a probable explanation for the acute arterial hypotension that usually occurs at the time when the upper thoracic sympathetic chain is removed on the second side. Although circulatory readjustment at a level of 60 to 70 per cent of the initial level usually occurs within a day or two after the operation, the immediate postoperative effect may be so drastic that the arterial blood pressure drops to below 40 per cent of the initial preoperative level. It is to prevent the results of excessive hypotension that treatment with a vasopressor is resorted to.

Several other problems in management for bilateral thoracolumbar sympathectomy should be considered. Positioning such a patient for operation should be performed slowly and carefully to avoid precipitous drops in blood pressure. Preferably, the patient should be placed on his side while conscious, then anesthetized, and his endotracheal intubation performed in that position.[3] Avoidance of an excitement stage, of bucking on the endotracheal tube, and of asphyxia are important considerations in management. The open chest during the surgical procedure requires assisted respiration to insure proper oxygenation. Intravenous therapy should be regulated judiciously. Blood replacement should be adequate to diminish the additive effect of blood loss on hypotension accompanying sympathectomy. Circulatory disturbances due to dilatation of a considerable portion of the vascular bed during extensive sympathectomy should be remedied by administration of a vasopressor. In general, in patients with essential hypertension it is advisable not to permit the systolic arterial blood pressure to drop below 100 mm. Hg during the surgical procedure.

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(*Number fifty-eight of a series of Clinical Anesthesia Conferences*)

Music is well said to be the speech of angels.—Thomas Carlyle

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Pocketbooks and Poisons

The following incidents were recently reported to the New York City Poison Control Center.

Incident 1

Toxic Agent	*Age*	*Sex*
Belladonna Derivative	18 months	Female

While her mother was in the kitchen, the child went into the living room, climbed on a chair, and obtained the mother's pocketbook which contained the capsules of antispasmodic sedatives (barbiturate-hyoscyamine-astropine). The medication was in a plastic bottle. The child chewed and swallowed several capsules and spilled the remainder on the floor. The bottle was about half full when the child obtained it. The exact amount ingested, however, is unknown. The child became stuporous and was taken to the hospital about one hour after ingestion. On admission to the hospital the child was no longer lethargic; nevertheless, her stomach was lavaged with water. After an observation of one hour the child was sent home as asymptomatic and well.

Incident 2

Toxic Agent	*Age*	*Sex*
Dimenhydrinate Tablets	18 months	Female

While her mother was in the hallway, the child obtained her pocketbook, which lay on the bureau in the bedroom. The pocketbook contained some of the antimotion-sickness pills. The child took them and ingested some. When the mother returned, she noticed a few pills in the child's mouth and several crumpled ones on the floor. One hour after ingestion the child became stuporous and was taken to the hospital, where her stomach was lavaged. She was hospitalized and observed for twenty-four hours.

Incident 3

Toxic Agent	*Age*	*Sex*
Iron and Molybdenum Pills	3 years	Female

A child obtained "iron tonic" pills, which were prescribed for her mother, from the dresser. The number of pills ingested is unknown. The only symptoms were low blood pressure and vomiting. The child was taken to the hospital. Since the patient had vomited copiously, her stomach was not lavaged. The patient remained in the hospital for one day and was then discharged as well and asymptomatic. It may be of interest to note that the same child swallowed some pills about one year previously for which she was treated at Kings County Hospital. (The mother did not know the nature of the pills.)

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Antihistamine Tablets	2 years	Female

The mother states that she had the "cold" tablets in her purse. An older sibling opened the pocketbook in order to take some cellophane tape and left the purse open. The patient removed and ingested the tablets. She was immediately rushed to the hospital, and although she was asymptomatic, a urinalysis was done as well as a complete examination.

At first the mother thought that the child had eaten the entire 25 tablets which were in the purse, but en route to the hospital 23 of them were retrieved. The child apparently had ingested only two. The patient was symptom-free and nontoxic and therefore was sent home without treatment.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Tripelannamine	22 months	Female

When the mother returned from work, she left her handbag on the bed in the bedroom. She then went to the kitchen to prepare dinner. The child was in the bedroom alone and unsupervised. She opened the mother's pocketbook, obtained the medication, and ingested one or two pills. She was taken to the hospital, and her stomach was lavaged. Since there were no symptoms, the patient was observed in the emergency room for several hours and then was discharged as improved.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Perphenazine	3 years	Male

While the rest of the family were still asleep, the child awoke, went to the chest drawer in the bedroom, removed the "tranquilizer" pills (eight or ten of them) from his mother's pocketbook, and apparently ingested them. When his mother awakened, she found the child in a mild stupor. She called the Poison Control Center for advice and was advised to contact a private physician at once. When the physician saw him, the child appeared lethargic but otherwise well. The child was under his care for several days and finally returned to normal.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Diphenylhydantoin	2 years	Male

The mother kept the medication in her pocketbook, which she left in the living room. While she was preparing supper, the patient opened the pocketbook, obtained the anticonvulsant medication, and ingested eight $1^1/_2$-gr. tablets. When found by the parents, he appeared drowsy and unable to stand or hold his head up. He was nauseated and complained of headache. He was taken to the hospital where the following symptoms were presented: vomiting, stupor, ataxia. The child remained in the hospital for five days, where he was observed and treated with supportive therapy. He made a complete recovery.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Nitroglycerine	$5^1/_2$ years	Male
	$6^1/_2$ years	Female

The children were playing in their grandmother's bedroom. The grandmother had left her purse on the bed. They obtained a box containing the medications from the purse and ingested its contents. Together the children ingested 14 tablets. When the grandmother returned, she noted that the children did not look particularly well. On questioning, they admitted swallowing the tablets. They were taken to the hospital where their stomachs were lavaged and where they were observed for several hours.

They were discharged without being admitted to the inpatient services.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Belladonna Derivative	3 years	Male

The father put a small bottle of these antispasmodic pills (ergotamine-bellafoline-phenobarbital) in his pants pocket. He left his pants on a chair in the bedroom where the child found them and removed the medication from the pocket. A twin brother told this to the mother, who was in the kitchen at the time the accident occurred. The child complained of burning in the mouth and was taken to the hospital. On admission his face appeared flushed, and he complained of dryness in the mouth. There was also some drowsiness. His stomach was lavaged and he remained in the hospital for a twenty-four-hour period of observation. Whether the child was imitating the father is not known.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
L-tri-iodothyronine	$2^1/_2$ years	Male

The mother kept reducing pills in a box on top of a kitchen cabinet. While her back was turned for a moment, the child climbed on a chair, obtained the box containing the medication, and ingested some of its contents. He was immediately taken to a nearby hospital emergency room where two glasses of warm milk were given with intent to induce vomiting. The patient was then transferred to Kings County Hospital for treatment and observation. On admission to the hospital the patient was asymptomatic, but a history of vomiting was obtained. His stomach was lavaged, and ipecac was administered. After a period of observation in the emergency room the patient was sent home as asymptomatic.

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Tranquilizer Pills	43 years	Male

The patient took the medication with suicidal intent. He was taken to the hospital emergency room, and his stomach was lavaged within one hour after ingestion. The patient was also treated with caffeine and sodium bicarbonate. He was later transferred to a psychiatric hospital for observation and possible treatment.

INCIDENT 12

Toxic Agent	*Age*	*Sex*
Tranquilizer Pills	41 years	Female

This patient ingested 400 mg. tablets of meprobamate in a suicidal attempt. She was taken to the hospital several hours after ingestion in a stuporous condition. Prior to admission to the hospital she was treated by the family physician with stimulants, but on admission to the hospital she was still lethargic. In the hospital she vomited. After emergency treatment the patient was transferred to the Psychiatric Division of the Queens General Hospital.

INCIDENT 13

Toxic Agent	*Age*	*Sex*
Tranquilizer Pills	18 years	Male

This patient ingested 17 pills of a tranquilizing drug. Dosage per pill is unknown. The patient was taken to a hospital in a stuporous condition where vomiting was induced and his stomach lavaged with water within three hours after ingestion. He was treated with the "universal antidote" and caffeine sodium benzoate. Following emergency treatment this patient was transferred to Queens General Hospital for observation and care.

The above three cases illustrate the variety of symptoms encountered in patients who ingest widely-used tranquilizing drugs. Some patients are entirely asymptomatic whereas others show very severe symptoms, including stupor and even coma. Not infrequently, the New York City Poison Control Center is contacted in cases of overdoses with inquiries whether meprobamate is dialyzable since dialysis is at times considered by the treatment agency. The manufacturer could not give a definite answer to this question although it was thought that the answer would probably be "yes."

Tranquilizers and sedatives are the most likely drugs to be used in suicidal attempts; therefore, the answer should be available for both old and new drugs in this category. Anything which can be done to publicize the need for such information and the responsibility of drug companies for having it available would be an aid to therapy. In addition, any support which can be obtained from the United States Food and Drug Administration to require that such information accompany new drug applications would, in our opinion, be most beneficial.

INCIDENT 14

Toxic Agent	*Age*	*Sex*
Baby Aspirin	2 years	Female

According to the mother, the child had insomnia, "heavy breathing," and was drooling. Also, the child complained of abdominal pains the evening before.

The mother did not know what caused these symptoms, but in the morning she noted that the aspirin bottle was empty. The bottle presumably contained 40 tablets of $1^1/_4$-gr. aspirin. The child admitted that she ate the aspirin contained in the bottle the previous day since they were "tasty." The mother immediately took her to the hospital emergency room from which she was admitted to the inpatient service.

A gastric lavage was not done because of the long time which elapsed since ingestion. On admission to the hospital the patient suffered from abdominal pains, hyperpnea, stupor, hypersalicylism, acidosis, and insomnia. The blood analysis gave the following findings: salicylate level 55 mg. per cent, carbon dioxide 15 mEq. per L., potassium 44 mEq. per L., sodium 142 mEq. per L., and chloride 101 mEq. per L.

The patient was treated for the acidosis and also was given Bicillin intramuscularly. She remained in the hospital for three days and was discharged as recovered.

Attention is directed to a fatal case of salicylate poisoning.[1] This patient ingested from 30 to 40 aspirin tablets, believed to be the 150-mg. size ($2^1/_2$ gr.). The salicylate blood level in this case was 120 mg. per 100 cc.

It has been stated, however, that toxic blood levels of salicylate may be considered to be 30 mg. per 100 cc. and above.

In New York City in 1957, 788 aspirin poisonings were reported in children, 604 of which were in children under five. Happily, for the first time, during 1957 there were no fatalities of aspirin poisonings reported to the Poison Control Center.

There is a wide variation both in clinical symptoms and duration of illness. While many show no symptoms, others show severe symptoms and signs of salicylate intoxication.

INCIDENT 15

Toxic Agent	*Age*	*Sex*
Package Dehumidifier Devices	2 years	Female
	$2^1/_2$ years	Female

Anxious mothers continue to call the Center when their children eat the contents of plastic dehumidifying devices (capsules or envelopes) in bottles of vitamins, containers of hard candies, and so forth.

These capsules are usually labeled "Do not eat" and therefore arouse the apprehensions of mothers. Needless heartaches would be avoided if the packagers would indicate the harmless nature of the contents, such as "Harmless–but do not eat." The contents are usually silica or alumina gels.

Reference

1. Glicklich, D.: New England J. Med. 259: 144 (July 17) 1958.

(*Number twenty-four in a series of Briefs on Accidental Chemical Poisonings*)

CANCER ALERTS

A series of radio talks for the practitioner
presented over Station WNYC-FM under the sponsorship of the

New York Academy of Medicine
with the cooperation of the
New York Cancer Committee

The Clinical Significance of Hoarseness

BERNARD J. WATTIKER, M.D., NEW YORK CITY

A DISCUSSION of the symptoms of hoarseness must impinge on many specialized fields of medicine. However, this symptom cannot be discussed intelligently by adherence to arbitrary confines on an anatomic or pathologic basis.

We may define hoarseness as any change in quality of the normal speaking voice, varying from slight changes in timber to complete aphonia. To become aware of the magnitude of the diagnostic problems hoarseness may present, one has to but peruse the 50-odd causes of this symptom listed by Jackson[1] in his textbook.

Every practitioner of medicine faces this problem often. It frequently is the presenting symptom of many patients. The physician should promptly investigate for the underlying cause, using all diagnostic means at his disposal. Hoarseness is all too often treated symptomatically for prolonged periods when its appearance should have been at least a clue leading to the establishment of a definite diagnosis of its cause.

A careful and detailed history is often of immeasurable aid. One must solicit from the patient an accurate account of the mode of onset, duration, relationship to voice usage, its course, and associated symptoms. Analysis of a detailed history often will give the first clue to a cause for the hoarseness.

Many physicians for one reason or another feel that investigation of this symptom beyond a history and physical examination lies within the realm of the specialist. This is most certainly a fallacy, for each of us should go a step further and become familiar with a technic for indirect laryngoscopy. With practice, perseverence, and reassurance of the patient this diagnostic procedure in most instances can be safely carried out in the physician's office with simple equipment. In a small percentage of patients, the use of a topical anesthetic agent is necessary for proper visualization of the hypopharynx and larynx.

Clear phonation depends on the ability of the cords to approximate, draw tense, and vibrate. Anything interfering with any of these functions will cause hoarseness. With the exception of functional disease, hoarseness invariably is due to either intrinsic laryngeal disease or changes or to interference with the nerve supply. Thus, it is apparent that we must first investigate for changes within the larynx. This can be accomplished by indirect laryngoscopy.

The vast majority of cases of acute hoarseness is due to acute laryngitis. This condition usually runs a short clinical course, and the diagnosis is readily made on history and indirect laryngoscopic examination. Thus, in most instances it presents no great problem.

Chronic hoarseness may be due to a variety of inflammatory or neoplastic lesions. Intrinsic chronic inflammatory lesions usually will produce prolonged hoarseness.

Conditions such as chronic hypertrophic laryngitis, the sequel of repeated episodes of acute laryngitis, tuberculous laryngitis, usually associated with pulmonary tuberculosis, and luetic laryngitis, a manifestation of secondary or tertiary lues, are but a few which give rise to chronic lesions which may produce hoarseness. Intrinsic laryngeal neoplastic processes are often the cause of chronic hoarseness. Papillomata and polyps are the common benign neoplastic processes causing interference with the normal function of the vocal cords and are readily visualized by indirect laryngoscopy. However, differentiation between inflammatory and neoplastic processes is often difficult, and biopsy of the lesion becomes necessary. This is best left to one familiar with the field of laryngology.

Carcinoma of the larynx is the commonest malignant lesion producing hoarseness, the largest percentage being epitheliomas. This entity is subdivided into carcinoma of the intrinsic larynx and subglottic region and carcinoma of the extrinsic larynx, which may originate in the epiglottis or in the aryepiglottic folds or posterior surface of the cricoid. Carcinoma of the extrinsic larynx will cause hoarseness at a very early stage and because of the slow growth of the lesion offers an excellent prognosis if therapy is instituted early. Carcinoma of the extrinsic larynx produces hoarseness only after extension to the cords and is much more likely to produce dysphagia before producing hoarseness.

Frequently, lesions remote from the larynx may produce hoarseness by involvement of the nerve supply to the larynx. Certain neurologic lesions, such as disseminated sclerosis and progressive bulbar palsy, may have hoarseness associated with them. It usually is a late manifestation, frequently occurring long after a diagnosis is established.

As we all know, the motor supply to the laryngeal muscles passes through the recurrent laryngeal nerves, which originate from the vagus nerves, on the right at the level of the subclavian artery and on the left at the level of the arch of the aorta. Thus, any lesion along the course of the vagus nerves above the origin of the recurrent nerves may produce hoarseness, likewise any lesion involving the recurrent laryngeal nerves.

Lesions are recorded as causing hoarseness simply by exerting pressure on the nerves. This phenomenon has been reported in cases of aneurysms of the subclavian artery and the aorta, mitral stenosis with auricular enlargement, and pericardial effusions. However, its occurrence in these instances are rare, and cord paralysis should be considered due to a malignant process until proved otherwise.

Excluding intralaryngeal malignancy, the most frequent lesions of a malignant nature producing hoarseness are carcinoma of the thyroid, bronchogenic carcinoma, and mediastinal lymphoma. In these lesions hoarseness is produced by actual invasion of the nerves rather than by pressure on them. It is often stated that the benign thyroid lesions may produce hoarseness by pressure on the nerves. This occurs only in rare instances and is produced much more frequently by carcinoma of the thyroid.

This short account of the various causes of hoarseness is far from complete; however, it was meant to be schematic in illustrating the wide diversity of lesions producing this symptom. In closing may I once again emphasize the necessity for investigating every case of hoarseness. This can be done only by complete history and physical examination, indirect laryngoscopy, and by using every necessary diagnostic means at our disposal to establish a definite diagnosis.

59 East 65th Street

Reference

1. Jackson, C.: Cancer of the Larynx, Philadelphia, W. B. Saunders Co., 1939.

(*Number seventeen in a series of Cancer Alerts*)

ANNOUNCEMENT

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 9 to 15, 1959, in Buffalo.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

The following conditions must be observed:

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1959,* and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

Andrew A. Eggston, M.D., *Chairman*
Committee on Prize Essays

CASE REPORTS

Total Gastrectomy and Right Hemicolectomy for Recurrent Primary Cancer of the Stomach and Appendix in the Same Patient

GEORGE T. PACK, M.D., AND DAVID W. MOLANDER, M.D., NEW YORK CITY

(From the Memorial Center for Cancer and Allied Diseases)

This case report is presented because of certain unique features about the case—multiple cancers of the gastrointestinal tract in the same patient, incomplete operations twice done elsewhere for independent cancers of the stomach and appendix, and secondary resections for both recurrent cancers which were later successfully accomplished. The significant points are:

1. The occurrence of primary unrelated cancers of the stomach and appendix in the same patient is uncommon.

2. The original classification of the gastric cancer as incurable and the decision to perform a palliative subtotal gastrectomy were errors in prognostic evaluation and surgical judgment, as proved by the patient's course after execution of an extended total gastrectomy.

3. A six-year definitive cure after total gastrectomy, splenectomy, and distal pancreatectomy for cancer recurrent after subtotal gastrectomy and with metastatic involvement of splenic, mesenteric, and superior pancreatic lymph nodes was achieved.

4. The presence of an appendiceal cancer was first heralded by the onset of acute abdominal pain, fever, and localized tenderness, suggesting the syndrome of acute appendicitis. At the emergency laparotomy, a perityphlic abscess was drained, and a huge, grossly inflamed appendix was removed.

5. The intact excised appendix was retained without section in the Museum of Pathology as a curious specimen because of its enormity. Six weeks later, an inquisitive visiting surgeon suggested that a sagittal section be made which showed the lumen to be occupied by a massive tumor and not by pus.

6. Barium enema and roentgenograms of the colon revealed a nodularity at the base of the cecum which proved to be residual adenocarcinoma fungating from the base of the appendix. A right hemicolectomy was performed with uneventful convalescence.

Case Report

First Episode.—The patient, an Australian, white male, age fifty-two, experienced vague symptoms of indigestion in August, 1951. X-rays of the upper gastrointestinal tract showed an irregularity of the gastric outline compatible with an advanced carcinoma of the stomach. The roentgenograms showed a projection on the lesser curvature of the stomach which appeared to be a large crater or niche.

In October, 1951, a subtotal gastrectomy was done in Sydney, Australia, for a carcinoma of the lesser curvature beginning in the pars media and extending within 2 or 3 cm. of the esophageal orifice. The procedure was considered to be palliative because large, hard perigastric and mesenteric lymph nodes were left intact. The pathologic diagnosis was adenocarcinoma of the stomach. Following this procedure, the patient had temporary relief of his complaints and experienced some gain in weight. In January, 1952, he complained of severe, burning epigastric postprandial pain lasting one to two hours. Anorexia, nausea, and belching also occurred. In the succeeding three months he lost 20 pounds, an occurrence associated with progressive severity of his symptoms.

Physical Examination.—When first seen by us on March 5, 1952, the patient was found to be a thin, well-developed, intelligent male in no acute distress. He presented evidence of weight loss. His blood pressure was 110/80, and his pulse was 100 and regular. There was no significant lymphadenopathy. The abdomen was soft with some tenderness elicited in the upper half on palpation. The liver was not palpable. No rectal pouch deposits were noted. Repeat x-ray films of the stomach showed a partial gastric resection with a marked and irregular filling defect of the remaining portion of the stomach.

Extended Total Gastrectomy.—The abdomen was entered through a left paramedian incision extending from the costal margin to well below the umbilicus. The previous subtotal gastrectomy was noted. Residual cancer was evident at the site of the gastrojejunostomy. The liver was free of evidence of metastatic cancer. The previous gastrojejunostomy was antecolic in position. Two large, firm lymph nodes were palpable adjacent to the superior mesenteric vessels, and a similar group of nodes was also palpable along the splenic vessels and along the superior margin of the distal pancreas. The estimated size of these nodes was 2.5 to 3 cm. in diameter. The cardiac portion of the stomach and distal esophagus did not appear to be grossly involved by the cancer. Numerous adhesions were present throughout the region of the previous operation and between the liver and the site of anastomosis.

In order to facilitate the operation, a T-extension was made to the left of the operative wound, connecting the abdominal and thoracic cavities and entering the thoracic cage. All adhesions were divided to mobilize the gastrojejunostomy. The distal esophagus was sectioned after application of a heavy, right-angled clamp, and the specimen was removed from above downward. The spleen was delivered into the wound and its hilum freed, after which the vessels were ligated with heavy silk. It was then possible to swing the specimen down and remove it with the tail of the pancreas. The nodes, previously seen in the region of the superior mesenteric and splenic vessels, were removed, the former prior to removal of the specimen and the latter with the specimen. A terminolateral jejunojejunostomy was then constructed between the proximal transected jejunal stoma and the side of the distal jejunum, employing interrupted silk sutures. The efferent limb was then brought up, and an end-to-end anastomosis between the jejunum and the esophagus was performed by the Roux-en-Y technic. An adequate stoma was thus achieved. At the completion of the operation all hemostasis was complete. The thoracic and abdominal wounds were closed by the conventional technic with transient drainage of the thoracic cavity.

Gross Pathologic Anatomy.—The stomach lesion was a thick, necrotic ulcer measuring 7.5 cm. long and 6 cm. wide, centered exactly on the lesser curvature. Infiltration with normal mucosa overlying it extended for 2 cm. into the submucosa on both anterior and posterior walls of the stomach. The ulcer itself was covered with a shaggy, brownish-yellowish, tenacious exudate. The section of the anastomosis itself revealed minimal infiltration of a tumor into the small bowel, but the anastomosis both anteriorly and posteriorly seemed to have locally recurrent cancer within it, although the anastomosis was widely patent. Both proximal and distal stomas each measured 2 cm. in width, and the attached small bowel, except for the anastomosis, was entirely normal. Section of the outer wall of the stomach revealed no direct infiltration through serosa except on the lesser curvature where the infiltration extended into the lesser omentum. In the splenic hilum there was one node 0.5 cm. in diameter, and adjacent to this but inferior to the splenic vessels was a large node, 3 cm. in diameter, almost completely infiltrated by cancer. Along the splenic vessels many hard lymph nodes were found.

Microscopic Anatomy.—Pathologic examination revealed a recurrent anaplastic adenocarcinoma of the stomach with metastases to multiple nodes along the splenic vessels, at the hilum of the spleen, and within mesenteric nodes.

Convalescence.—The patient made an uneventful recovery and regained his normal body weight. He did not experience the dumping syndrome. Repeat radiographic study of the upper gastrointestinal tract in 1953, 1954, and 1956 showed no evidence of recurrent cancer to be present. In 1955 he developed mild diabetes mellitus which was controlled with small amounts of insulin (12 units U 40) and by mild restriction of carbohydrates in his diet.

Second Episode.—In September, 1957, the patient experienced symptoms of acute partial bowel obstruction and again had an operation in Sydney. The abdomen was opened by a right paramedian lower abdominal incision. An enormous swollen appendix was found lying within

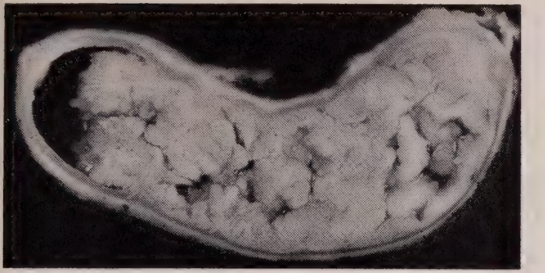

FIG. 1. Surgical specimen showing massive polypoid adenocarcinoma of the appendix.

the right lumbar gutter. There was an abscess between it and the terminal ileum. The abscess was evacuated. The terminal ileum and adjacent loops of the small intestine were firmly adherent to the pelvic wall by organizing fibrinous exudate. These adhesions were freed in order to relieve the small bowel obstruction. The abscess cavity was drained. There was no evidence of metastases or recurrence of the previous carcinoma of the stomach.

The intact excised appendix was retained without section in the Museum of Pathology as a curious specimen because of its enormity. Six weeks later an inquisitive visiting surgeon suggested that a sagittal section be made. Longitudinal section of the appendix revealed a massive polypoid tumor. Microscopic examination of the neoplasm led to the diagnosis of adenocarcinoma of the appendix (Fig. 1).

Physical Examination.—The patient was again seen at the Memorial Center on November 5, 1957. Physical examination showed the patient to be a thin, well-developed male without striking pallor. There was no significant peripheral lymphadenopathy. In the right lower quadrant there was a recently-healed scar beneath which there appeared to be a moderate amount of induration and a palpable mass. No rectal deposits were palpated.

Laboratory Studies.—The blood sugar was 125 mg. per cent, and the blood urea nitrogen 15 mg. per cent. X-ray examination of the chest revealed it to be normal. A barium enema and roentgenograms of the colon showed a defect at the base of the cecum where the appendix was inverted.

Right Hemicolectomy.—The patient was readmitted to the Memorial Center. After preparation of the bowel with Sulfasuxidine and colonic irrigation the patient underwent a right hemicolectomy on November 18, 1957. Under general anesthesia a right Battle incision was made with retraction of the right rectus muscle to the midline and incision of the posterior rectus sheath at its lateral aspect. There were multiple adhesions, attributable to the old peritonitis, which had to be removed before the adhesions of the small bowel were released. A nodule was palpable at the base of the cecum where the appendix had previously been removed. There were nodes both in the mesentery and mesocolon. The distal 10 cm. of ileum, the entire right colon, and half of the transverse colon were removed. The transected colon was inverted with layers of interrupted silk sutures. At a level 2 cm. distal, a terminolateral anastomosis of the colon was effected to the end of the ileum. The rent between the transverse mesocolon and the distal mesentery was closed by a running catgut suture.

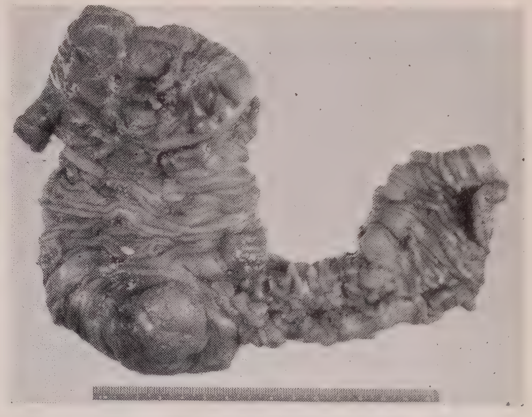

FIG. 2. Surgical specimen secured by right hemicolectomy showing fungating recurrent carcinoma in the base of the cecum, originating from the appendiceal stump.

Pathologic Anatomy.—A polypoid sessile tumor was found on the mucosal aspect of the cecum, originating at the base of the appendix. This tumor mass measured 3.5 by 4 cm. and projected into the cecum for a distance of 3 cm. (Fig. 2). On section, the tumor yielded a large amount of gelatinous material. Microscopic examination revealed a mucinous adenocarcinoma originating in the appendix and invading the cecum. There was no microscopic evidence of metastatic involvement in the numerous lymph nodes which were examined.

Convalescence.—The patient made an uneventful convalescence and was discharged from the hospital on the thirteenth postoperative day.

Summary

A patient with carcinoma of the stomach originally believed to be inoperable underwent a subtotal gastrectomy elsewhere as a palliative measure. Six months later an extended total gastrectomy was done at the Memorial Center for recurrent gastric cancer metastatic to many regional lymph nodes.

Five-and-one-half years later, after symptoms of partial bowel obstruction, another operation was done elsewhere at which time an enormous appendix was removed and a pericecal abscess drained. Six weeks after the appendectomy a delayed longitudinal section of the specimen revealed an unsuspected polypoid adenocarcinoma. The patient again flew to the United States where a laparotomy at the Memorial Center and a right hemicolectomy and ileotransverse colostomy were performed for residual cancer involving the base of the cecum.

139 East 36th Street
New York 16, New York

Children are Taller and Heavier Today

Today's children are taller and heavier than those of a generation ago, according to statisticians of the Metropolitan Life Insurance Company.

Comparison of measurements for Michigan children made recently with those in 1937 to 1939 shows consistently higher figures for today's children. Among boys under nine, average heights were greater by a fraction of an inch, and at ages nine and over by an inch or more. Among girls the difference was an inch as early as age eight. The increase in average weight ranged from more than 2 pounds at age seven to as much as 13 pounds at age fourteen.

Similar trends for the average heights and weights of elementary school children are evident elsewhere in this country and in Great Britain and the Commonwealth countries.

With the accelerated rate of child growth, full adult height is approached at a somewhat earlier age than in the past, according to the statisticians. Moreover, the ultimate adult height has increased gradually. Evidence for this is available from data on adults in successive age groups, from father-son and mother-daughter comparisons of college entrants, from Selective Service data for the two World Wars, and from comparative figures on conscripts in various European countries.

"Acceleration in the rate of growth of school-age children reflects a number of factors," the Metropolitan statisticians conclude. "Of major importance are increased knowledge of the principles of good nutrition, the availability of a wide variety of foods, and the rise in living standards. Another contributing factor has been the decreased frequency of debilitating diseases among children. A number of childhood diseases have been brought almost to the vanishing point through immunization, and in many others the course of the disease has been made milder and shorter through modern drug therapy."

"Better knowledge of the factors that affect good health and the application of this knowledge in daily living also have had a salutary influence on the development of school-age children."

Two Unusual Cases of Gunshot Wounds of the Uterus

F. DONALD NAPOLITANI, M.D., BRONX, NEW YORK

(From the Department of Obstetrics, Harlem Hospital, New York City)

THE following two case histories show the diversity of treatment for gunshot wounds of the uterus. Although not revolutionary in treatment, these two cases are presented for their unusual results. Both cases have been authenticated.

Case Reports

CASE 1.—A thirty-two-year-old Negro female, gravida 10, para 7, who had had two abortions, each at two months gestation with no dilatation and curettage either time, was admitted to the Obstetrical Service of Harlem Hospital Clinic on February 7, 1958, because of a gunshot wound in the abdomen sustained on March 6, 1955. At that time, the patient was taken to Roper Hospital, Charleston, South Carolina, where a gunshot wound of entrance and exit was noted. Blood pressure at the time was 130/80. Toxin-antitoxin, 1,500 units, Terramycin, 500 mg. intravenously, and whole blood transfusion were given as soon as the patient was admitted. Immediately afterwards she underwent an exploratory laparotomy with closure of 15 perforations of small bowel and suture of a perforated uterus. The postoperative course was uneventful.

At our hospital it was ascertained that the patient's last normal menstrual period was on June 30, 1957, and her expected date of confinement, March 8, 1958. Physical examination revealed that the breasts had undergone gestational changes. The lungs were clear to auscultation and percussion. The heart showed a regular rhythm with no murmurs and no thrill palpable.

Inspection of the abdomen revealed an old, right oblique paramedian scar about 20 cm. in length and globular in shape. Palpable metal sutures were found in the fascia at the right lower quadrant. The fundus of the uterus was 4 fingerbreadths below the xiphoid.

The corpus of the uterus had a regular surface containing a fetus in the vertex presentation with small parts in the right side. No contractions were felt. The fetal heart was heard in the left lower quadrant of the abdomen at 140 beats per minute and of good quality. Amniotic fluid was of a normal amount. X-ray of the abdomen on February 18, 1958, revealed a full-term, single pregnancy of occiput presentation.

On the day of admission the patient was seen by the visiting staff, and an elective cesarean section was advised in view of the old uterine perforation. On February 22, two weeks after admission and two weeks before the expected date of confinement, the patient went into labor, and an immediate cesarean section was advised. Prior to operation a Levin tube was inserted in anticipation of bowel pathology. Then the abdomen was entered through a left paramedian and infraumbilical incision. On opening the abdominal cavity, the anterior wall of the uterus was found to be clear of adhesions, and a low flap (transverse) cesarean section was performed.

A female child weighing 6 pounds $1^1/_2$ ounces was delivered from a left occipitotransverse position. The infant cried and breathed spontaneously. After the uterine incision was closed in two layers and a peritoneal flap, the abdominal cavity was inspected, and a portion of ileum was found to be attached in the posterior wall of the uterus in its upper portion and to the right side. About ten silk sutures were seen in this portion of ileum, distributed on the serosal surface. No attempts were made to separate this portion of ileum from the uterine surface. The omentum was attached in the parietal peritoneum on the right side of the abdominal cavity and about 10 cm. from the umbilical scar, the place through which the bullet probably entered in the abdominal cavity. Two Kelly clamps were inserted, one in the junction of omentum and parietal peritoneum, and the second about 1 cm. away. We then cut into the omentum between clamps and sutured ligature.

Almost at the level of the hepatic flexure of the transverse colon there was a fibrotic band which was attached in its distal end to the parietal peritoneum in the same place as the omentum. This was cut between the Kelly clamps and the sutured ligature. Another fibrotic band, diverticula-like in appearance, was found to be attached from one end in a portion of ileum and from the other end in the right half of the transverse colon. Kelly clamps were placed at both ends and cut in between with consecutive sutured ligature. No bleeding point was seen and the abdominal cavity was closed in layers. The postoperative course was uneventful.

The pathologic report revealed fibrous adhesive bands. There were fragments of fibrous adipose tissue, probably from the omentum, showing subacute inflammation.*

Case 2.—This case of a seventeen-year-old girl was reported by Captain L. G. Capers after the Civil War. It is remarkable in its unusualness and in the treatment of the gunshot wounds of the uterus which resulted.

While stationed with a regiment on May 12 during the battle of R, his regiment met the advance of the enemy. One mile from the village of R about 100 yards in the rear of the regiment was a fine mansion where a matron and her two daughters and servants were standing about 3:00 p.m. in the afternoon. The battle was raging furiously, and the woman and her two daughters were filled with extreme interest, standing bravely in front of the house, hoping to give some degree of aid to any of the wounded soldiers. Our men were fighting bravely, but pressed by superior forces, they had gradually fallen back to about 100 yards of the house.

Since Captain Capers was stationed with the brigade, he suddenly beheld a gallant young lad stagger and fall to the earth. At the same moment a piercing scream came from the vicinity of the house. The young man was examined and found to have a compound fracture with extensive involvement of the left tibia. The bullet evidently had ricocheted from the left portion of the abdomen and in its upward flight passed through the scrotum, carrying away the left testicle. The matron came running in the greatest distress, begging Captain Capers to go to the assistance of one of the daughters, who had been badly wounded. A few moments later, after examining the young lady, who was sitting on the steps and groaning severely, the seriousness of the wound was apparent.

The bullet evidently had perforated the girl's abdomen in the left abdominal parietes about midway between the umbilicus and the anterior spinal process of the ilium. Evidently the bullet was still in the spinal canal, and the wound itself was very ragged and irregular. Dressings were applied and medication given, and since the Army had first call on Captain Capers' services, he left after prescribing a sedative. The town was soon left in the hands of the enemy, but several days later the rest of the brigade settled in the village of R, and Captain Capers had the opportunity of treating the young lady for the next few months. It was apparent that she seemed to have recovered from the severe peritonitis which resulted from the injury.

About six months after her recovery, the movement of our Army again brought Captain Capers to the village of R, and again he was sent for by the young lady's mother. The young lady herself appeared to be in excellent health, but her abdomen had become enormously enlarged, resembling pregnancy of the seventh or eighth month. Captain Capers stated that if it were not for the fact that he knew the injury and had known the family, he should have diagnosed the case as a definite pregnancy. Therefore, under the circumstances, he failed to give a positive diagnosis, determining to keep the young lady under surveillance.

Two hundred and seventy-eight days from the receipt of the wound by the young lady, a fine boy weighing 8 pounds was delivered by Captain Capers, since there were very few doctors available at this time in the vicinity of the town. The mortification and mystification of the young lady and her entire family was apparent! In fact, before the examination Captain Capers stated that he gave no credence to the young girl's assertion of her innocence and virgin purity!

About three weeks after this remarkable birth, the Captain was called to see the baby by the grandmother, who stated that there was something wrong about the infant's genitals. Examination revealed an enlarged, swollen, sensitive scrotum containing in the right side a hard and roughened substance, evidently foreign. The doctor decided to operate for the removal of this object at once. In doing so, he extracted from the scrotum a mass which was mashed and battered as if it had met in its flight some hard, unyielding substance. Captain Capers stated that he was astonished and that he finally decided, after several days of seriously considering the matter, just how the incident had occurred. He surmised and stated that no other way was possible—that the mass taken from the scrotum of the baby was the identical one which on the twelfth of May had shattered the tibia of the young soldier and then had plunged through the air into the abdomen of the young lady, carrying particles of semen and spermatozoa through her left ovary and into the uterus, in this manner impregnating her! No other solution to this birth was apparent. Captain Capers explained this to the family, and at their solicitation visited the same young soldier, who at first was most skeptical but then appeared very interested in the young lady. Before four months had passed, he had married the young girl. Several years later Captain Capers received a letter from the young man stating that they were happily married and that they now had three children but the last two not resembling to the same marked degree as the first, the young hero, or the young soldier.

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* This diagnosis was given by doctors M. L. Hammerschlag, M.D., and A. Golindo, M.D.

This case occurred on May 12, 1863, and was reported November 7, 1874 in the medical annals.[1]

1381 Bronx River Avenue, Bronx 59

Reference

1. Med. Ann. 1: 62 (Nov. 7) 1874.

Air Embolism During Intravenous Infusions

JOHN W. PICKREN, M.D., GORYUN NIGOGOSYAN, M.D., AND JAMES H. KERR, M.D.,
BUFFALO, NEW YORK

(*From the Roswell Park Memorial Institute*)

The hazard of air embolism from intravenous therapy is compounded by the use of "Y"-type infusion sets. From the reports in the literature one can assume that few physicians know about the inherent dangers in the use of these sets. In fact, death resulting from air embolism through all types of intravenous infusions is regarded as rare. Furthermore, most reports concern air embolism that occurred when fluid was administered under pressure.[1,2] Even air embolism occurring in blood donors has been ascribed to positive pressure developing in defective vacuum bottles.[3-5] Only one report of air embolism occurring without positive pressure has been published since 1940.[6] In this patient the air entered the tubing through a leak at its attachment to the air chamber. Kerr[7] has shown, however, that air may enter through improperly adjusted "Y"-type infusion sets.

Recently a patient in this hospital in a terminal condition from cancer of the lung died of air embolism. We report the clinical history of this patient, the probable mechanism of air embolism, and a method of preventing air embolism.

Case Report

A sixty-six-year-old white male was admitted to this hospital in a semicomatose state. He was dehydrated, and his blood pressure was 70/0 mm. Hg. Intravenous fluids with norepinephrine were administered daily through apparatus with "Y" tubing arrangements. The patient died two days after admission without regaining consciousness.

An autopsy performed forty-five minutes after death showed a carcinoma of the lung with extensive metastases. Coma was the result of dural metastases. After opening the chest cavity, before severing the internal jugular veins or opening the pericardial sac, the prosector suspected a definite cardiac hypertrophy because the heart appeared so large and distended. However, in the course of the autopsy it was learned that the heart weighed only 260 Gm.

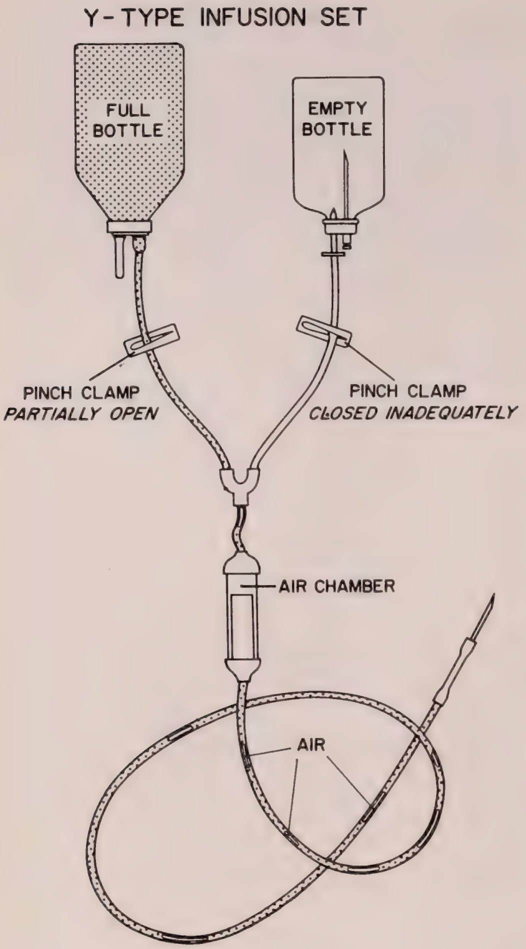

FIG. 1. Infusion sets with clamps so arranged may allow air in the empty bottle to enter with the infused fluid.

After the pericardium was incised, the right atrium, ventricle, and auricular appendage were found conspicuously distended but not firm. Pressure on the chambers produced air filling of both internal jugular veins. The heart was opened in situ, and air and large amounts of foam were found in the right atrium, right ventricle, and pulmonary arteries.

Comment

A technic to prove the presence of air in the heart consists of filling the pericardium with water and observing the escape of air bubbles when the cardiac cavities are incised.[8] In this instance the large amount of air and foam in the right side of the heart made it unnecessary to use the technic. However, the autopsy surgeon may easily overlook the findings of air embolism unless he uses this water technic. If the clinical history does not indicate the possibility of air embolism, the pathologist may not examine the body properly. Therefore, it is necessary for the pathologist to realize that air embolism may occur through intravenous fluid administration.

The exact mechanism of air embolism in this case cannot be stated, since the intravenous apparatus was discarded without examination. However, practically all of this patient's intravenous therapy was given through the apparatus shown in Figure 1. Maladjustments or defects in such an arrangement may give rise to air embolism. Kerr[7] has demonstrated that the following maladjustment may result in air embolism. When one of the bottles is empty and the clamp on its tube incompletely occludes the lumen, air may be drawn into the system via the empty bottle if the clamp controlling the rate of flow is placed between the air chamber and the bottle of fluid being infused (Fig. 1). Furthermore, defective equipment may result in air embolism if the system is not airtight below the clamp regulating the rate of flow. If the defect occurs above the air chamber, the fluid level in the air chamber will disappear. A defect below the air chamber may allow air to enter, even though the fluid level in the air chamber is maintained. Air may enter even through leakage around the connection to the needle if there is negative pressure in the vein.

In this patient air probably entered through the empty bottle. An incomplete occlusion of the lumen of the tubing attached to the empty bottle is more likely than a defect in the tubing because the clamp present on the apparatus is such that airtightness of the tubing is not easily verified (Fig. 2). Furthermore, a few days after the death of this patient, columns of air and fluid were seen to enter the vein of another patient in this hospital through a "Y" tubing where one of the bottles was empty, and the clamp incompletely obliterated the lumen of the tube attached to it. Intravenous administration was stopped at once, and the patient showed no clinical signs of air embolism. The result of air embolism depends on the amount and speed of entry of air into the vein and the condition of the patient.

To prevent the occurrence of air embolism through a similar apparatus, there are three necessary precautionary measures:

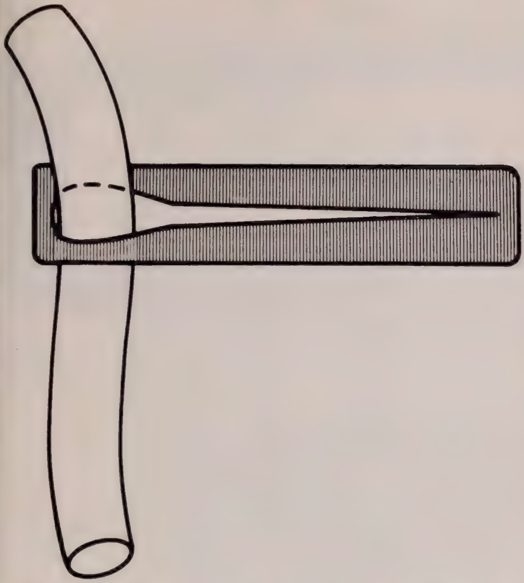

FIG. 2. Clamps of this type are unsuitable for the purpose of selecting bottle of fluid to be infused because of inherent difficulty of verifying complete closure of the tubing.

1. The clamp regulating the rate of flow must be placed on the tubing as near as possible to the vein, i.e., within 3 inches of the needle.
2. The clamps used to select the bottle of fluid to be infused must allow only complete closure or complete opening of the tubing. A hemostat is satisfactory.
3. The vein in which the needle is inserted must be below the level of the heart while the fluid is being infused. The patient's arm, therefore, must be secured so that the patient may not alter its position to a higher level, thereby allowing a negative pressure in the vein.

Summary

The history of a case of fatal air embolism which occurred during intravenous administration of fluid without positive pressure is presented. Although air embolism under certain circumstances may occur in any type of defective infusion set, an additional factor of maladjustment may allow air to enter through a "Y" type even though no defect is present. The procedures to follow in the use of "Y" sets to prevent air embolism are given.

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153rd Annual Meeting

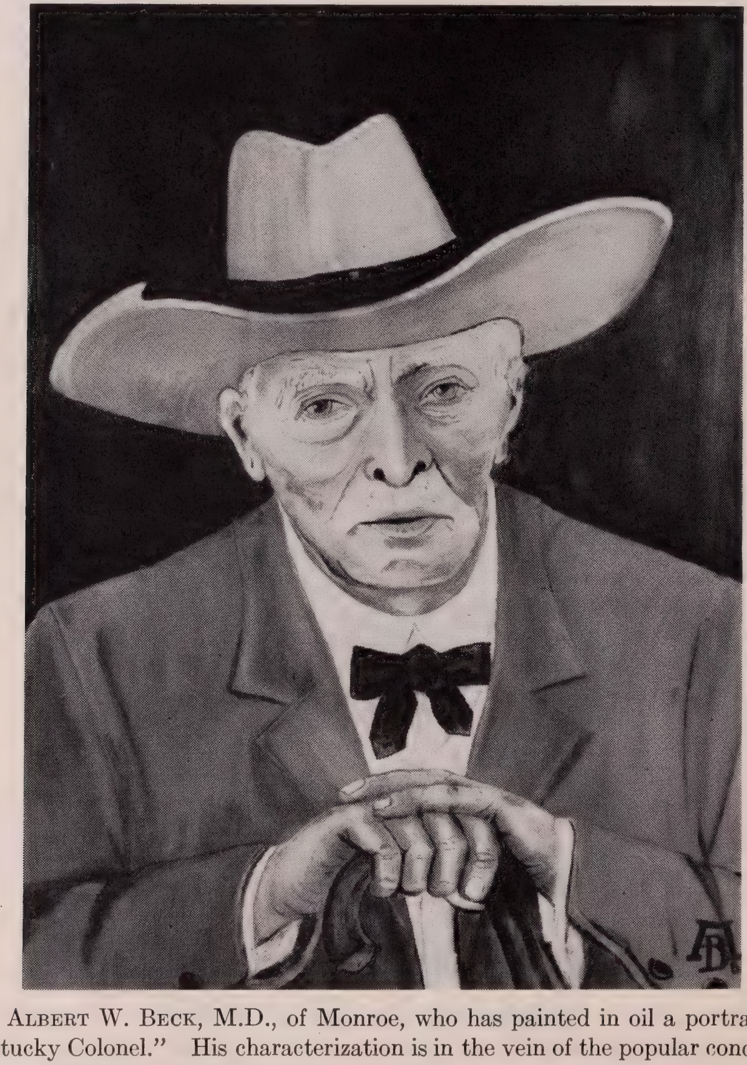
Medical Society of the State of New York

May 9 to 15, 1959

HOTEL STATLER HILTON **BUFFALO**

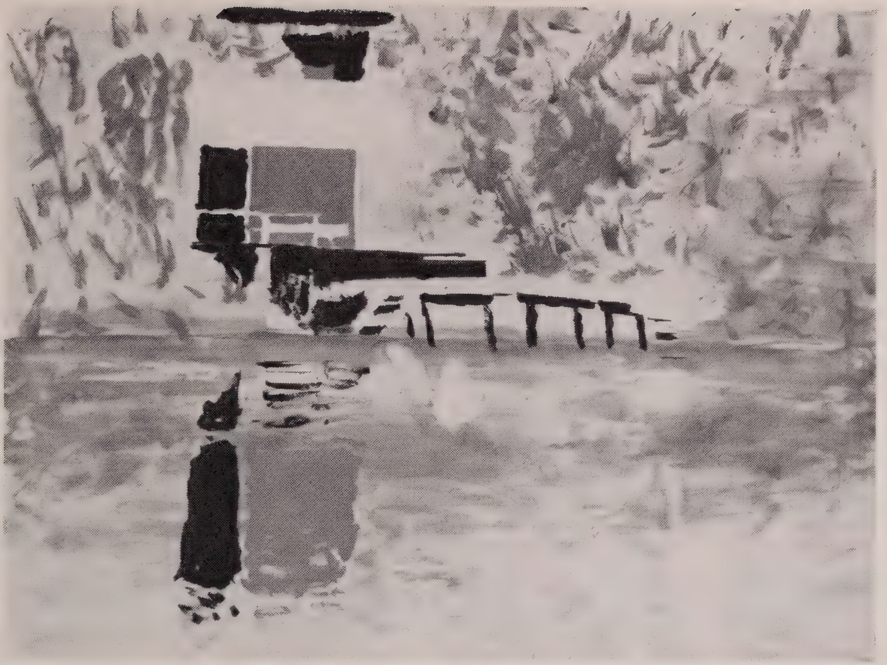
the Gallery

WALTER J. ALEXANDER, M.D., EDITOR



By Albert W. Beck, M.D., of Monroe, who has painted in oil a portrait of a "Kentucky Colonel." His characterization is in the vein of the popular conception of a colonel from the South.

The rhythm in the hat is seen echoed in that of the arms and hands and in the crown. The portrait carries well and lends itself for good reproduction because of correct values. The face and hands vie for attention.



Visitor's Dock, by DAVID G. GREENE, M.D., of Buffalo. Dr. Greene, of the Department of Medicine of the University of Buffalo School of Medicine, has painted this Brackney, Pennsylvania, vacation spot. It is done in tempera on cardboard.

INFORMATION ABOUT "THE GALLERY"

On these pages, the JOURNAL is presenting a series of reproductions of physician art work, and each member of the Medical Society of the State of New York is invited to contribute to this feature.

If you would like to participate, please furnish an 8 by 10 inch black and white glossy print of good quality suitable for reproduction. Prints of the art work are not returnable. This should be sent in a cardboard back manila envelope to the editor of "The Gallery":

Walter J. Alexander, M.D.
333 Main Street
Binghamton, New York

Please include the following information:

1. Your name and address
2. Title of picture
3. Where and when painted or sculpted
4. Where previously exhibited; any prizes received
5. Short interpretation of the work
6. How long you have painted; any instruction you have had.

NECROLOGY

Francis Cornelius Ansanelli, M.D., of the Bronx, died on December 17, 1958, at the age of fifty-three. Dr. Ansanelli graduated in 1932 from Georgetown University School of Medicine. He was an associate in neurology at Presbyterian Hospital and a consultant in neurology at Bronx Eye and Ear Infirmary and Union Hospital of the Bronx. Dr. Ansanelli was a Diplomate of the American Board of Psychiatry and Neurology (Neurology), and a member of the American Academy of Neurology, the Bronx County Medical Society, and the Medical Society of the State of New York.

Robert Forrest Barber, M.D., retired, of Sea Girt, New Jersey, formerly of Brooklyn, died on October 5, 1958, at the age of seventy-five. Dr. Barber graduated from Long Island College Hospital Medical School in 1908. He was a clinical professor emeritus of surgery at State University of New York College of Medicine at New York City. During World War I he served in France and was made a Chevalier of the Legion of Honor by the French government. Dr. Barber was a founder of the American Board of Surgery and had served on the staffs of the Long Island College, Kingston Avenue, and Kings County Hospitals, and he had also been a consulting surgeon for the police department. Dr. Barber was a past vice-president of the Kings County Medical Society of which he was an honorary member.

Vernon Leslie Bishop, M.D., retired, of Penfield, died on October 5, 1958, at the age of seventy-four. Dr. Bishop graduated in 1907 from the University of Buffalo School of Medicine. He was a Diplomate of the American Board of Otolaryngology and a member of the Rochester Academy of Medicine.

Harry Delbaum, M.D., of Brooklyn, died on October 12, 1958, at the age of forty-nine. Dr. Delbaum graduated in 1935 from Long Island College of Medicine. He was an assistant attending physician at Unity Hospital. Dr. Delbaum was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alvin Cash Drummond, M.D., of New York City, died on December 22, 1958, at the age of fifty-five. Dr. Drummond graduated in 1932 from Columbia University College of Physicians and Surgeons and interned at Post-Graduate Hospital. He was an assistant attending in urology at University Hospital and an attending in urology at Gouverneur Hospital. Dr. Drummond was a Diplomate of the American Board of Urology and of the International College of Surgeons, a Fellow of the American College of Surgeons and of the International College of Surgeons, and a member of the American Urological Association, the American Geriatrics Society, the New York Academy of Medicine, the New York Society of the American Urological Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gustavus William Faber, M.D., of New York City, died on December 17, 1958, at the age of seventy-seven. Dr. Faber graduated in 1907 from Columbia University College of Physicians and Surgeons. He was a member of the Rockland County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Frederick Finsterwald, M.D., of New York City, died on July 28, 1958, at the age of seventy-three. Dr. Finsterwald graduated in 1916 from Ohio State University College of Medicine and interned at Post-Graduate Hospital.

Emil Louis Froelicher, M.D., of New York City, died on December 10, 1958, at the age of fifty-two. Dr. Froelicher received his medical degree in 1933 from the University of Basel. He was a member of the American Psychiatric Association, the American Psychoanalytic Association, the New York Psychoanalytic Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Burke Coonley Hamilton, M.D., of New York City, died on December 21, 1958, at the age of seventy-seven. Dr. Hamilton graduated in 1906 from Syracuse University College of Medicine. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sigmund W. Lipschutz, M.D., of Brooklyn, died on September 12, 1958, at the age of sixty-one. Dr. Lipschutz graduated in 1921 from New York Homeopathic Medical College and Flower Hospital. He was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gustav Joseph Loewenstein, M.D., of Rochester, died on December 9, 1958, at the age of sixty-one. Dr. Loewenstein received his medical degree in 1922 from the University of Konigsberg. He was an assistant attending physician at Genesee Hospital and an attending physician at Park Avenue Hospital. Dr. Loewenstein was a member of the Rochester Academy of Medicine, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Anthony Ferdinand Mazzacano, M.D., of Flushing, died on December 21, 1958, at the age of fifty-four. Dr. Mazzacano graduated in 1931 from New York Homeopathic Medical College and Flower Hospital. He was an assistant in obstetrics and gynecology at Flushing Hospital and Dispensary. Dr. Mazzacano was a member of the Queens County Medical Society and the Medical Society of the State of New York.

Jules Mark Nova, M.D., of Freeport, died on December 12, 1958, at the age of seventy-nine. Dr. Nova graduated in 1902 from Long Island College Hospital Medical School. He was an adjunct in ophthalmology at Brooklyn Eye and Ear Hospital. Dr. Nova was a Diplomate of the American Board of Ophthalmology and a member of the American Academy of Ophthalmology and Otolaryngology, the Brooklyn Ophthalmological Society, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Samuel Pennell, M.D., of Brooklyn, died on January 1 at the age of fifty-eight. Dr. Pennell graduated in 1926 from Cornell University Medical College. He was an assistant attending physician and transfusionist at Maimonides Hospital. He had written several articles on blood transfusions and invented an apparatus for performing direct transfusions which bears his name. Dr. Pennell was a Diplomate of the American Board of Pathology (Clinical Pathology) and a member of the Society for the Study of the Blood, the Kings County Medical Society, and the Medical Society of the State of New York.

John A. Shields, M.D., of Brooklyn, died on December 16, 1958, at the age of eighty-one. Dr. Shields graduated in 1898 from Columbia University College of Physicians and Surgeons. He was a senior proctologist at St. Mary's Hospital. Dr. Shields was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Morris Smith, M.D., of New York City, died on September 28, 1958, at the age of seventy-five. Dr. Smith graduated in 1913 from Long Island College Hospital Medical School. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Clara Mabel Thompson, M.D., of New York City, died on December 30, 1958, at the age of sixty-five. Dr. Thompson graduated in 1920 from Johns Hopkins University School of Medicine. Working with Dr. Eric Fromm and the late Dr. Harry Stack Sullivan, Dr. Thompson helped develop the school of psychoanalysis based on the theory of interpersonal relationships. She founded the White Institute in 1946 and was president of the board of trustees. The author of several papers and a coauthor of a book, she had served as assistant executive director of the Washington School of Psychiatry from 1943 to 1946. Dr. Thompson was a Fellow of the American Psychiatric Association and a member of the American Psychoanalytic Association, the William Alanson White Psychoanalytic Society, the Academy of Psychoanalysis, the New York Academy of Medicine, the New York Society for Clinical Psychiatry, the New York County Medical Society, and the Medical Society of the State of New York.

Ilse Sigrid Wapstra, M.D., of New York City, died on December 29, 1958, at the age of fifty-five. Dr. Wapstra received her medical degree in 1930 from the University of Berlin. She was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Valentina Pavlovna Wasson, M.D., of New York City, died on December 31, 1958, at the age of fifty-seven. Dr. Wasson graduated in 1928 from the University of London Westminster Hospital Medical School. She was an associate in pediatrics at the New York Infirmary for Women and Children and an assistant in pediatrics at St. Luke's Hospital Outpatient Department. Dr. Wasson with her husband was one of the world's greatest amateur authorities on mushrooms. She was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the

State of New York, and the American Medical Association.

Percy Herbert Williams, M.D., of New York City, died on December 31, 1958, at the age of eighty-three. Dr. Williams graduated in 1901 from Columbia University College of Physicians and Surgeons and interned at Bellevue and New York Lying-In Hospitals. He was a consultant in gynecology and obstetrics at Lincoln and Lenox Hill Hospitals. A former chief of staff at Lenox Hill Hospital, he had also served as director of gynecology at Lincoln Hospital from 1924 to 1934. In 1914 he joined the staff of the Belgian relief organization organized by Herbert Hoover and received the King Albert Medal for his services abroad, and when the United States entered World War I he was appointed a lieutenant colonel in the Army Medical Corps and was placed in command of Evacuation Hospital 21 in France. Dr. Williams was a Fellow of the American College of Surgeons and a member of the New York Academy of Medicine, the New York Obstetrical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

MEDICAL MEETINGS

Blue Shield Conference

The 1959 Blue Shield Professional Relations Conference will be held February 9 through 11 at the Drake Hotel, Chicago.

Among the speakers at the conference will be Dr. Louis M. Orr, Orlando, Florida, president-elect of the American Medical Association; Dr. Leland McKittrick, Brookline, Massachusetts, chairman of the American Medical Association's Council on Medical Education and Hospitals; and Dr. Donald Stubbs, Washington, D.C., chairman of the Board of Blue Shield Medical Care Plans.

New York Proctologic Society

The New York Proctologic Society will hold its next scientific session on Thursday, February 19, at 8:30 P.M., at the New York Academy of Medicine, 2 East 103rd Street, New York City.

The program will be as follows: "Current Concepts of Wound Healing and Anorectal Anatomy as Applied to an Anorectoplasty for Complicated Hemorrhoids" by Dr. Emil Granet; "Thiersch Operation" by Dr. Norman L. Freund and Dr. A. W. Martin Marino, and "Rectal Prolapse" by Dr. E. Parker Hayden (by invitation). The medical profession is invited to attend.

Radiological Society

The Radiological Society of the State of New York will hold a spring conference in Nassau, B.W.I., March 6 through 13. Travel to the conference will be via the *S.S. Nassau* and Pan American Airlines.

Speakers at the conference will be: Dr. John Caffey, pediatric radiology; Dr. Barton R. Young, general radiology; Dr. Maurice Lenz, radiation therapy; Dr. Richard D. Chamberlain, radioactive isotopes and protection in radiology.

For information concerning the conference write to: Dr. Percival A. Robin, chairman, Convention Committee, 175 Quaker Ridge Road, Manhasset, New York.

Karen Horney Lecture

The Association for the Advancement of Psychoanalysis announces the seventh annual Karen Horney Lecture to be given by Dr. Leo Kanner. The title of the lecture will be "Centripetal Forces in Personality Development."

The lecture will be held on March 25, at 8:30 P.M. in Hosack Hall at the New York Academy of Medicine, 3 East 103rd Street, New York City. A dinner honoring the guest speaker will precede the lecture.

Dietetic Association

The annual convention of the New York State Dietetic Association will be held April 15 through 17 at the Hotel Sheraton in Rochester. For further information write to: Mrs. Joan H. Wunrow, Publicity Chairman, 229 Birch Lane, Webster, New York.

MEDICAL NEWS

Brookhaven Medical Research Center—The nation's newest atomic medical research center, including the world's first nuclear reactor designed specifically for medical use, was dedicated December 16, 1958, at Brookhaven National Laboratory, Upton, Long Island.

Brookhaven is operated by Associated Universities, Inc., for the United States Atomic Energy Commission. In addition to the reactor, the new Brookhaven Medical Research Center includes a 48-bed hospital for research patients and laboratories for studies on medical applications of atomic energy.

Albany Postgraduate Program—A winter schedule of postgraduate teaching programs and lectures has been announced by Dr. Frank M. Woolsey, Jr., associate dean and director of postgraduate education at Albany Medical College.

A series of Thursday teaching days will be held at 10:30 A.M. in Huyck Auditorium at the medical college. The Thursday schedule of topics is as follows: January 15, Acute and Chronic Pyelonephritis; January 22, Prophylactic Use of Antibiotics; January 29, Recent Advances in Endocrinology; February 5, Recent Advances in Diagnosis and Treatment of Heart Disease; February 12, Recent Advances in Surgery; February 19, Recent Advances in Medicine; February 26, March 5, March 12, and March 19, Recent Advances in Obstetrics and Gynecology.

The teaching days are approved for Category I credit by the American Academy of General Practice.

Committee Appointed—In accordance with the provisions of the Occupational Loss of Hearing Law enacted during the 1958 Legislative Session, Miss Angela R. Parisi, chairman of the Workmen's Compensation Board, has announced the appointment of a committee of expert consultants on industrial noise and occupational loss of hearing.

The committee will present recommendations as to the most reliable and acceptable damage risk criteria and standards for the measurement and determination of occupational loss of hearing.

The committee will be composed of Dr. Stacy R. Guild, associate professor of otology, Johns Hopkins Hospital, Baltimore; Dr. Gordon D. Hoople, professor emeritus of otolaryngology, State University of New York College of Medicine, Syracuse; Dr. James A. Moore, surgeon in charge of otolaryngology, New York Hospital, New York City; Dr. C. Stewart Nash, chief of staff, Department of Otolaryngology, Rochester General Hospital, Rochester; and Dr. Joseph C. Serio, chief, Ear, Nose and Throat Department, Emergency Hospital, Buffalo.

Hill-Burton Grants—The Department of Health, Education, and Welfare reports that as of November 30, 1958, the status of all Hill-Burton grants for the State of New York is as follows:

Projects approved during November: Construction work at the following hospitals—St. Mary's Hospital, Amsterdam; Lutheran Medical Center, Brooklyn; Cornwall Hospital, Cornwall; Cortland Memorial Hospital, Cortland; Flushing Hospital, Flushing; Little Falls Hospital, Little Falls; Long Beach Memorial Hospital, Long Beach; St. Luke's Hospital, Newburgh; Bethesda Hospital, North Hornell; Nyack Hospital, Nyack; and St. Vincent's Hospital, Staten Island.

Completed and in operation, 102 projects at a total cost of $125,552,595, including Federal contribution of $32,409,236.

Under construction, 34 projects at a total cost of $83,274,623, including Federal contribution of $12,719,353 and designed to supply 1,759 additional beds.

Approved, but not yet under construction (including above), 19 projects at a total cost of $39,354,617, including $7,522,408 Federal contribution and designed to supply 1,259 additional beds.

American Medical Education—Contributors to the American Medical Education Foundation for the month of November, 1958, were: *Bayside:* Dr. Abraham Halberstein; *Belfast:* Dr. Dorothy Grey; *Binghamton:* Drs. Edward Cox, Howard P. Griffin, James F. Johnson, and Alfred Loewenstein; *Brooklyn:* Drs. Charles H. Birnberg, David Paris, and A. S. Werner; *Buffalo:* Dr. Clara A. March; *Elmhurst:* Dr. James R. Lisa; *Great Neck:* Dr. Leonard J. Bloome; *Kenmore:* Dr. Joseph W. Hewett; *Long Island City:* Dr. Wilmer H. Randel, Jr.; *New York City:* Drs. Alice I. Bernheim, Edward A. Horowitz, Victor R. Syracuse, and F. D. Zeman; *Rensselaer:* Dr. Lothar Wirth; *Rome:* Walter I. Akana.

$200,000 Gift—A gift in the amount of $200,000 has been given Elmira College in memory of the late Dr. Myrtle Picker Kolker, a former college and alumnae trustee.

The gift was given by Dr. Kolker's parents and husband who asked that it be used to start a fund for construction of a new building on the campus. The structure will be known as the Myrtle Picker Kolker Science Building.

Postgraduate Course in Hypnosis—A postgraduate refresher course in hypnosis and its clinical applications, open to physicians and dentists, will be presented at Tufts University School of Dental Medicine February 19 through 25. The course will consist of lectures, demonstrations and discussions.

For further information and application write: Division of Graduate and Postgraduate Studies, Tufts University School of Dental Medicine, 136 Harrison Avenue, Boston, Massachusetts.

Caribbean Cruise—The Alumni Association of New York University College of Medicine is sponsoring a fifteen-day medical seminar cruise to the Caribbean. The cruise, aboard the *M.S. Italia*, will leave New York City in the evening of February 21 directly after the school's Alumni Day reunion and will visit San Juan, St. Thomas, Cap Haitien, Ciudad Trujillo, and Nassau.

Faculty members, including Drs. S. Bernard Wortis, John H. Mulholland, Robert S. Hotchkiss, Claude E. Heaton, William Goldring, Clarence E. de la Chapelle, and Saul Krugman, will conduct a series of professional seminars. The seminar constitutes thirty hours of Category I credit for members of the American Academy of General Practice.

For further details communicate with Dr. William N. Hubbard, Jr., Associate Dean of the New York University College of Medicine, 550 First Avenue, New York 16, New York.

Conferences at Montefiore Hospital—The following conferences are scheduled at Montefiore Hospital for the months of February and March.

Monday, February 2, 9, 16, and 23, and March 2, 9, 16, 23, and 30: 8:00 A.M., surgical conference; 9:00 A.M., pathology conference, neoplastic, 1:30 P.M., attending rounds, neoplastic; 3:00 P.M., clinical medicine conference.

Tuesday, February 3, 10, 17, and 24, and March 3, 10, 17, 24, and 31: 12:30 P.M., psychosomatic medical conference; 12:30 P.M., electrocardiography conference; 4:00 P.M., cardiovascular surgical conference.

Wednesday, February 4, 11, 18, and 25, and March 4, 11, 18, and 25: 8:30 A.M., alternating rounds, neoplastic; 1:30 P.M., grand rounds, neoplastic; 3:00 P.M., clinical medicine pathologic conference.

Thursday, February 5, 12, 19, and 26, and March 5, 12, 19, and 26: 8:00 A.M., radiology, pathology conference; 9:00 A.M., alternating rounds, neoplastic; 1:30 P.M., attending rounds, neoplastic; 1:30 P.M., diagnostic radiology conference; 3:30 P.M., gastroenterology conference; 3:30 P.M., rehabilitation conference.

Friday, February 6, 13, 20, and 27, and March 6, 13, 20, and 27: 9:30 A.M., neurology-neurosurgery staff conference; 1:30 P.M., attending rounds, neoplastic; 3:00 P.M., neoplastic seminar; 3:00 P.M., dermatology conference.

Women Doctors Receive Awards—Three women doctors have received awards for distinguished service to children at the tenth anniversary Tiara Ball of the Spence-Chapin Adoption Service.

Dr. Mary Allen Engle, pediatric cardiologist on the staff of New York Hospital-Cornell Medical Center; Dr. Barbara Maria Korsch, specialist in pediatric psychiatry and psychology, also on the New York Hospital-Cornell Medical Center; and Dr. Jane C. Wright, specialist in cancer research, on the staff of New York University-Bellevue Medical Center, each received a check for $500.

Personalities

Speaker

Dr. Marie Pichel Warner, December 17, 1958, on the subject "Health Aspects of Sex and Marriage" before the Free Nurses Institute, Inc., Westchester Chapter, Scarsdale.

Awarded

Dr. Robert F. Loeb, New York City, a distinguished achievement award for "significant contributions to human health and welfare."

Elected

Dr. Frank D. Carroll, New York City, as a trustee of the National Medical Foundation For Eye Care.

Appointed

Dr. John W. Boland, Manchester, England, as director of the Department of Radiotherapy, Mount Sinai Hospital, New York City, January 1...Dr. Victor Kugajevsky, Tarrytown, as a member of the prison hospital staff at Sing Sing Prison, Ossining... Dr. Samuel A. Thompson, New York City, as chief of the section of thoracic surgery at New York Medical College, Flower and Fifth Avenue Hospitals, New York City...Dr. John J. Untereker, Tenafly, New Jersey, as director of the medical service at the rehabilitation center of the Institute for the Crippled and Disabled, New York City.

NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

AEC Awards—The Atomic Energy Commission has granted $35,500 to make a three-year study of changes in the concentration of trace metals in the tissue of rats following total body irradiation. The research will be performed by Dr. Kenneth B. Olson, associate professor of medicine and oncology and head, Sub-department of Oncology, and by George E. Heggen and Carl F. Edwards, research associates, of the Saratoga Springs Commission Research Laboratories. Spectrographic work necessary to the study will be performed at the Commission Laboratories.

Grant—Armour Laboratories, Kankakee, Illinois, granted $3,000 for research in adrenal cortical physiology. The grant will be administered by the College's Subdepartment of Endocrinology and Metabolism and will finance study for one year.

Albert Einstein College of Medicine

Grants—Grants received by the College during December were: Department of Biochemistry from the National Institutes of Health, $8,050 for "Hormonal Regulation of Lipogenesis," $9,648 for "Role of Thyroid Gland in Growth of Lymphoid Tissue," and from the Damon Runyon Memorial Fund for "Protein Synthesis by Normal and Malignant Lymphoid Cells," $6,200; Department of Medicine from the National Institutes of Health, $30,015 for "The Biosynthesis of Hemoglobin and Nucleic Acids in Immature Erythrocytes," and from National Multiple Sclerosis $12,600 for "Biochemical and Morphologic Changes in Developing Brain Induced by the Passive Transfer of Antibody"; from the National Institutes of Health to the Department of Obstetrics and Gynecology, $10,000 for "Maternal and Fetal Aspects of Placental Circulation"; to the Department of Pathology from the National Institutes of Health, $26,432 for "Tumor Host Interrelations: Electron Microscopic Study" and $17,997 from "Experimental Early Endocarditis"; to the Department of Pharmacology for "Study of Mammalian Nonmedullated Fibers," and the Department of Psychiatry, $27,880 for "Mannerisms in Blind and Schizophrenic Children."

Visiting Lecturers—Visiting lecturers at the College were: November, Dr. Frank Beach, Department of Psychology, Yale University, on November 24, 1958, and during December, 1958, Dr. Daniel Lehrman, Department of Psychology, Rutgers University; Dr. Heinrich Waelsch, New York State Psychiatric Institute and Columbia University; Dr. Heinz F. Eichenwald, associate professor of pediatrics, Cornell Medical School; Dr. Igor Tamm, associate professor, Rockefeller Institute; Dr. Anthony F. C. Wallace, Psychiatric Institute of Easton, Pennsylvania; Dr. Samuel Levine, professor and chairman, Department of Pediatrics, Cornell University and New York Hospital; Dr. M. M. Schechter, St. Vincent's Hospital; Dr. Paul Dell, Hospital of St. Anne, Paris, France; Dr. Hattie Alexander, professor of pediatrics, College of Physicians and Surgeons, Columbia University; Dr. Margaret H. D. Smith, associate professor of pediatrics, Bellevue Medical Center, New York University; Dr. Emil Smith, University of Utah College of Medicine; Dr. Joseph Dancis, Department of Pediatrics, New York College of Medicine, and Dr. Neal E. Miller, Department of Psychology, Yale University.

State University of New York Downstate Medical Center

Special Lectures—Dr. Simon Kramer, associate professor of radiation therapy, Jefferson Medical College, Philadelphia, delivered a special lecture on "The Use of Radioisotopes and Radiotherapy in the Management of Thyroid Carcinoma," December 10, 1958. The annual Research Society lecture was delivered on December 15, 1958, by Dr. Karl Meyer, professor of biochemistry, Columbia University. He spoke on "The Chemistry and Biology of Mucopolysaccharides of Connective Tissue."

Faculty Notes—Dr. Thomas P. Magill, professor and chairman, Department of Microbiology, attended the Diamond Jubilee Celebration of the Haffkine Institute in Bombay from January 10 through January 13 and participated in meetings of the Indian Science Congress in Delhi, January 21 to 28. Following his trip to India Dr. Magill began a six-month sabbatical leave in London, where he will work on a textbook of infection and allergy.

Postgraduate Review Course in Gross Anatomy—A twenty-week board preparatory course in functional surgical anatomy will be offered by the Department of Surgery to graduates of accredited medical schools beginning February 4. Tutorial sessions for a group of 30 students will be held once a week from 7 P.M. to 9:30 P.M. on Friday. The fee for the course is $50. Applications may be obtained from the Office of Admissions.

State University of New York Upstate Medical Center

Contributing Authors—Dr. Charles V. Willie, a sociologist and instructor of preventive medicine, and Dr. Herbert Notkin, clinical associate professor of preventive medicine, have contributed to the book "Patients, Physicians and Illness," edited by Professor E. Gartly Jaco, Department of Neurology and Psychiatry, University of Texas Medical Branch.

This is the first source book on behavioral science and medicine ever published in this country.

Speaker—Dr. James F. Danielli, a physiologist specializing in cytochemistry and professor of zoology, King's College, London, England, will deliver a lecture on Tuesday, March 17, at 8:30 P.M. on "Designing of Drugs for the Chemotherapy of Cancer."

Tour—About 30 members of the senior class visited Lederle Laboratories, Pearl River, on December 30, 1958. The tour included luncheon and a panel discussion.

The Bladder's "Hapless Fate Bemoan"

The urinary bladder has a life of unparalleled hardship. In the male it is encumbered by the prostate; in the female it is buffeted by the fetal head. Like many another mass-produced article, it is poorly finished—and substandard bladders with such obvious flaws as diverticula and ectopia vesicae are still foisted on a long-suffering public.

The unfortunate organ is wantonly assaulted by the gynecologist, the general surgeon, the urologist, the proctologist, the obstetrician, and the abortionist.

Germs, tumors, and stones flourish within it, and its seclusion is rudely disturbed by its bits of wire, knitting needles, and sundry other objects introduced by owners who are perverse, inquisitive, or just plain careless.

Its double function, to hold water and yet to pass water, makes a paradox which often confuses the young and inexperienced bladder—but even veteran bladders may fail in their duty through no fault of their own. To be incontinent, that is a misfortune which the bladder accepts with sardonic stoicism, only sorrowing at the misery which its defection may bring upon a kindly owner, upon a master who has treated it well. But retention: that is the culminating, and the cruelest, blow. Long and bitter experience has taught the bladder that this dread event is a herald of doom. It cries aloud in its agony and fear, and it will not be comforted. Neither faith nor potions will avail it now. The surgeon, and only the surgeon, can put an end to its torture.

Here, perhaps, is a dictum of our craft: "An obstructed tube is the only absolute indication for surgery." It matters not whether the tube is urethra or gullet, ureter or bowel, blood vessel, windpipe, or bile duct. We have no choice in this surgical variant of Hobson's Law—*Lancet* **1**:*1334, 1958.*

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Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

The Auxiliary as a Community Organization

THE Woman's Auxiliary to the Medical Society of the State of New York through its county society auxiliaries made an enviable record during 1958 through the community service program. This program embraces different facets of the State program.

The Auxiliary in Cattaraugus received a Community Service Award at the New York State Fair for having inaugurated and continued assistance in running a school for retarded children.

A Voluntary Service program in mental health was maintained by the Auxiliary in Oneida County. Here, two groups are doing particularly active jobs at Utica State and Marcy State Hospitals.

A group of 35 mental patients from Utica State Hospital, the Choraleers, under the direction of Mrs. N. Michael Levine, entertain at public meetings. They are under medication but are transported by bus with the supervision of two of the hospital personnel and are the only group in the State to go "out" and entertain. Under the chairmanship of Mrs. Milton Dorfman and Mrs. David Ellison, Auxiliary members living in Rome make weekly visits to patients at Marcy State Hospital.

Richmond County has had as a public relations project a "Senior Citizens Hobby Show." This project has been running for two years and has been put on in May for groups of sixty-five years of age or over, as well as for individuals of the senior age group who wish to participate. The Auxiliary sets up the show in a suitably located and amply spaced room and presents certificates to all exhibitors. Everything is shown from hot pads to self-made, man-sized boats. Local merchants are asked to mention the show in their newspaper advertisements and invitations are written to other community organizations and also to prominent individuals. Mimeographed programs are passed out mentioning all participants and cookies and punch are served.

In the counties promoting the Health Poster Contest, the familiarization of students, parents, and general public of the doctor's family being interested in the public's health has taken hold and is still doing a real service.

Auxiliary members of seven counties give their time each year to the State Fair booth set up by the Medical Society of the State of New York. Each year a larger number of people view the movies, a greater amount of health literature is distributed, and the public is conscious that this is a service of the Auxiliary to the Medical Society of the State of New York.

There are, of course, many other fields in which the Auxiliary carries on its aims to support the continuing efforts of the members of the Medical Society of the State of New York. These aims will be added to each year and the Auxiliary to the Medical Society of the State of New York will not only be considered a State organization but a vital necessity to community organization.

MRS. MARVIN BROWN, *Chairman*
Public Relations

Cleveland, New York

Aseptic Meningitis Often Diagnosed as Polio

Research has revealed that many so-called cases of nonparalytic polio are actually aseptic meningitis. In one study of 305 patients, approximately 33 per cent were diagnosed originally as nonparalytic polio and 8 per cent as aseptic meningitis. In final diagnosis, however, close to 60 per cent proved to have aseptic meningitis and under 3 per cent nonparalytic polio.

Aseptic meningitis mimics polio even in its seasonal pattern. Like polio, its season begins in June and reaches its peak in August.

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9. Radiology—Clinical Interpretation for the Newborn
9. Radiology—Clinical Interpretation for the General Practitioner
10. Office Treatment of Trauma.
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SUMMARY OF COUNCIL MINUTES

There follows a summary of the minutes of the November 13, 1958, Council meeting, as adopted December 11, 1958.

THE Council met from 9:10 A.M. until 12:55 P.M. on Thursday, November 13, 1958, in the offices of the Society, 750 Third Avenue, New York City; Dr. Leo E. Gibson, president, presided.

The minutes of the October 9, 1958, meeting were approved.

Executive Committee

Communications.—Dr. Anderton stated: "Mr. President, the main correspondence of the Society is reported from the meeting of the Executive Committee yesterday.

"1. Some letters from Dr. Norbert Fethke, president of the Medical Society of the County of Montgomery, and Dr. Mal Rumph, president of the Association of American Physicians and Surgeons, Inc., requesting endorsement of the annual essay contest sponsored by the Association.

"The Executive Committee recommends that the Council instruct the secretary to inform Dr. Fethke and Dr. Rumph that this Society has no objection to the contest but prefers to allow each county society to decide the question of endorsement for itself."

It *was so voted.*

"2. A letter of November 10, 1958, from Dr. George E. Pittinos, secretary of the Medical Society of the County of Richmond, reporting a resolution adopted by his comitia minora on November 3. It requests of the medical societies of the counties of Kings, Queens, Bronx, and New York, the Medical Society of the State of New York, and the American Medical Association that 'immediate action be taken to plan and execute a nation-wide campaign to combat an imminent threat of socialized medicine in the closed-panel plans.'

"The Executive Committee recommends that the Council instruct the secretary to write to the American Medical Association asking what they are doing about such plans."

It *was so voted.*

Dues Remissions.—At the recommendation of the Executive Committee the Council remitted 1958 annual State dues of seven members because of illness and of one member because of military service. The Council also voted to request remission of 1958 American Medical Association dues of four members.

Secretary's Report

Dr. Anderton reported that Dr. A. H. Aaron had resigned as a delegate to the American Medical Association and that Dr. Thomas M. d'Angelo became a delegate. He stated that Dr. Andrew A. Eggston would attend the Minneapolis meeting as alternate. He listed the meetings he had attended and details about the annual conference of county medical society secretaries. He mentioned the district branch meetings and complimented Dr. Gerald D. Dorman on his diplomacy in workmen's compensation law minimum fee schedule discussions.

It *was voted* to accept the report.

Treasurer's Report

The treasurer's report was approved, including several proposed additional appropriations for the 1958 budget.

Reports of Committees

American Medical Education Foundation.—Dr. Dattelbaum stated that our check of approximately $20,000 would be presented to the A.M.E.F. by President Gibson at the Minneapolis meeting of the House of Delegates of the American Medical Association, December 2.

Advisory Committee to the Columbia University Study of Nonprofit Medical Care Insurance Plans in New York State.—Dr. John C. McClintock, chairman, stated: "Dr. Ray E. Trussell, who is directing this study, has sent a comprehensive questionnaire to hospitals. They are holding a 'Conference of Hospital and Blue Cross Executives' December 4 and 5 in West Point, and one member of each advisory committee has been invited."

It *was voted* that the State Medical Society pay the expenses of one member of the committee to

[Continued on page 510]

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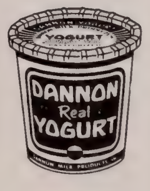
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[Continued from page 508]

attend this meeting.

The report as a whole *was adopted.*

Constitution and Bylaws.—Dr. Ezra A. Wolff, chairman, stated: "There are two items I have to report. One is on amendments submitted by the New York County Society, and our counsel and committee find nothing objectionable."

It *was voted* to approve.

"The second item concerns a constitutional revision by the Medical Society of the County of Queens. In substance there is nothing that contravenes the constitution of the State Society, and we move approval of this revision, with comments and suggestions to be forwarded to the county society."

Approval *was voted.*

Convention.—Dr. Samuel Z. Freedman, chairman, reported: "Since the October Council meeting, it has been determined that the Georgian Room at the Buffalo Hotel Statler should be used for industrial exhibits. Previously it had been expected that this space would be used for scientific meetings and exhibits. Because of this change the hotel will charge us additional rental of $450, but we will receive an added $2,855 in booth rentals. Therefore, we ask the Council to request the Board of Trustees to change the 1959 annual meeting budget as follows: booth rentals, increase $2,855; other expenses, sundry $450."

It *was so voted.*

Dr. Alfred P. Ingegno supplemented the Convention Committee report as follows: "I would like to make a recommendation of the Subcommittee on Scientific Program. At its meeting last month in Buffalo, we recommended that the honorarium for the annual A. Walter Suiter Lecture be increased from $50 to $100. The $50 was originally allocated for this purpose by the Council in 1941. The A. Walter Suiter Fund has increased over the years by several thousand dollars, and in the face of inflation our committee felt that $100 would not be too much to give to the outstanding speakers we invite to give this lecture."

The recommendation *was approved.*

Economics.—Dr. John C. McClintock, chairman, reported: "Last spring you were advised that the Health Insurance Council was working on simplified forms for reporting claims, and you were told that they would request permission to send to the doctors in the State of New York a pamphlet of explanation. Your Committee on Economics met with this group yesterday, and they proposed that the following letter be printed on Medical Society letterhead for distribution with the booklet entitled 'Simplified Claim Forms.'

> Dear Doctor:
>
> The enclosed booklet describes the development by the insurance business of simplified claim forms for accident and health insurance. The report was prepared by the Health Insurance Council.
>
> Your Society is distributing copies to members because of the importance of the subject. The problem of paper work has long been a major concern of both physicians and the insurance business.
>
> The Health Insurance Council, representing insurance companies, worked closely with the American Medical Association in the preparation of the simplified claim forms. These forms have been approved by the A.M.A. Council on Medical Service on the recommendation of its Committee on Prepayment Medical and Hospital Service. They are being adopted by a steadily growing number of insurance companies throughout the country.
>
> We commend the booklet to your attention. We suggest further that you pass it along to your secretary for use as a guide in completing claim forms. These forms will be made available to you either by the claimant or the insuring company.
>
> Sincerely,

"This to be signed by the secretary.

"The Health Insurance Council will print the letter and will furnish the envelopes, the brochures, and postage for this distribution."

It *was voted* to provide letterheads.

Dr. McClintock discussed the new Medicare fee schedule at length. He quoted from five letters, two telegrams, and an article in *Medical Economics* of October 27, 1958. He moved to rescind Council action to publish Medicare fees and instead to distribute the new manual without dollar values for the procedures. An amendment offered by Dr. Alfred P. Ingegno was passed, to the effect that this publication should include a statement that the fees charged should be in accord with local custom for the particular economic status of the individual receiving the service. The motion was passed as amended.

Veterans Administration, Liaison Subcommittee with.—Dr. McClintock reported progress.

Dr. Herbert H. Bauckus, president of Veterans Medical Service Plan of New York, Inc., stated: "We are endeavoring to have a meeting in December of the board of directors of the Veterans Medical Care Plan, officials of the Medical Society, and others as the new director of clinics of the Veterans Administration has recently requested to take up continuation of the contract.

"We have a fee schedule, and in it there is stated, if the fee the doctor charges is regularly lower than that in the schedule, he should make that lower charge. We have been praised because of many doctors charging less than is allowed in the fee schedule.

"Dr. O'Kane, who for some years has been the coordinator in the New York City area, has been ill. In order to keep the position, we have appointed a

[Continued on page 512]

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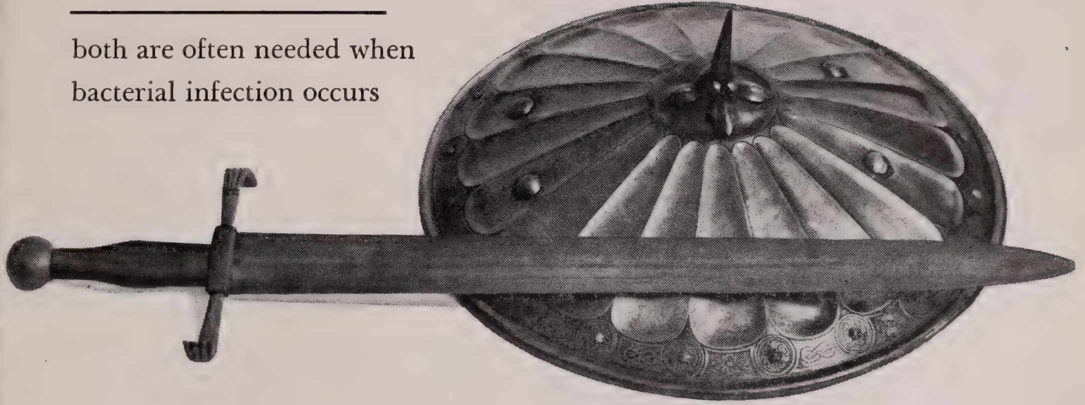
---

both are often needed when bacterial infection occurs



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[Continued from page 510]

temporary coordinator. One of the reasons for doing so is that there has been a desire on the part of the Veterans Administration to remove the coordinators from our plan, and it has been your wish and ours that they continue.

"I may also say that we will discuss the question of reimbursement by the Veterans Administration of $1,875 that we paid to Dr. O'Kane for services, which the Government did not reimburse us for because he was absent from duty.

Industrial Health.—Dr. Peter J. Di Natale, chairman, presented his report, which described the director's work.

Dr. Di Natale added: "At the meeting of the committee yesterday it was disclosed there is need for increased activities in industrial health. We realize that the director has been busy with the affairs of Workmen's Compensation, but we feel more attention must be paid toward industrial health matters.

"The Industrial Health Committee, through the director, has furnished to Dr. Joseph A. Lane and his ad hoc committee material to help in his study about union health matters.

"The coming meeting of the American Medical Association Congress of Industrial Health was discussed. They have a meeting in February that our chairman is planning to attend.

"We discussed a possible pilot study on industrial health matters, as mandated by the House four or five years ago.

"We were informed by the director that approximately 32 counties have committees on industrial health.

"We also discussed the possible awarding of the 1959 plaque like the one that was awarded last year. We felt that if no outstanding institution or individual should merit it, the award would be skipped. But we may ask the Council to recommend to the Trustees the possibility of the expenditure of $50 to $55."

The report *was adopted*.

Labor Union and Industrial Health Centers.—Dr. Joseph A. Lane, chairman, presented the following report: "Since the last report to the Council, there has been no regular meeting of the committee, but correspondence and personal conversations have taken place, and it is the opinion of the committee that the approved 'Guides for Evaluation of Management and Union Health Centers,' as amended, be distributed to the presidents and secretaries of the component county medical societies.

"As reported in October, the committee had decided not to make an effort to meet with management and labor until information is obtained as a result of the symposium to be conducted on November 12 and 19 by the Coordinating Council of the First District Branch.

"Resolution 58-53 will be considered at the next regular meeting of the committee.

"A communication has also been received from the director of the Bureau of Industrial Health and Workmen's Compensation concerning recommendations from the Industrial Health Committee to initiate legislation concerning free choice of physicians in Union Health Centers. This information also goes along with that concerning resolution 58-53 and will be considered at the same time."

Dr. Lane supplemented his report by stating: "Yesterday I attended a meeting put on by the Coordinating Council of the First District Branch. There will be a second session next Wednesday that I expect to attend. We are arranging for a meeting of the Ad Hoc Committee before the next Council meeting."

It *was voted* to adopt the report.

Legislation.—Dr. James M. Blake, chairman, presented the following report: "Your chairman and Executive Officer have met during the past month with the area chairmen of county medical societies in different sections of the State. The schedule of these meetings is as follows: October 16, Geneva; October 24, New York City; October 30, Cortland; October 30, Ogdensburg; December 4, Buffalo.

"These meetings have been reasonably well attended, although some county societies have not been represented. The discussions have been free and seemed worth while. We have been able to exchange ideas as to medical legislation, and these discussions have given us an impression as to the attitude of local physicians to medical legislation as well as to specific items that have been presented from the House of Delegates or other sources.

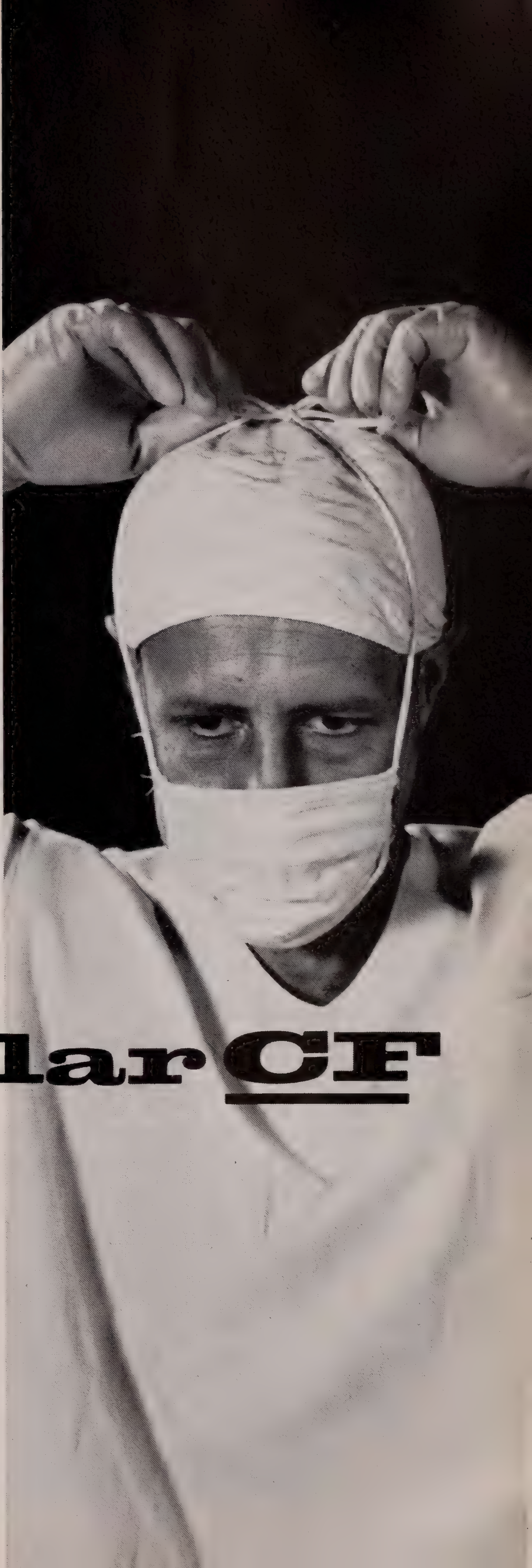
"Your chairman has been in contact with Dr. Hilleboe, Commissioner of Health; Dr. Allen, Commissioner of Education; Dr. Hoch, Department of Mental Hygiene; and Mr. Houston, Department of Social Welfare, offering the services of the Committee on Legislation to review or discuss matters of medical legislation pertaining to their respective departments.

"Dr. Hilleboe and Dr. Allen have responded, and tentative arrangements have been made to discuss with them pertinent proposed legislation."

Dr. Blake supplemented his report: "I have one or two items I would like to add. One is in relation to the minutes of the last meeting. Dr. Calihan, of Rochester, had submitted his resignation, but in talking to him subsequently he has agreed to continue as a member of the Committee on Legislation.

"The subcommittee to study the question of legislation concerning pathology has been appointed.

[Continued on page 514]



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*L. O. Randall and J. Selitto, *J. Am. Pharm. Assn. (Sc. Ed.)*, 47:313, 1958.

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[Continued from page 512]

Dr. Clemmer suggested the following people who will serve: Dr. H. P. Smith, Dr. Herbert Derman, Dr. Angelo Sala, and Dr. Jacob Taub. All are active pathologists. We will ask them to give us information pertaining to the licensure of laboratories and whether legislation this year might be in order.

"The other question that has caused a considerable amount of discussion has been the liability of physicians in approving patients for automobile licensure. We have asked the Malpractice Insurance and Defense Board to investigate and also to get legal information for us on it, and it may be desirable to institute legislation similar to that pertaining to the blood alcohol test last year, but Dr. Lane will speak to that momentarily."

Dr. Lane stated: "At the meeting of the Malpractice Insurance and Defense Board this matter was referred to us. Mr. Bell was there, and I think there were six items involved. As far as the Malpractice Insurance and Defense Board is concerned, there is a question of coverage for the doctor under the group plan, and it was the definite opinion of the Malpractice Insurance and Defense Board and especially Mr. Arnold that the doctor would be covered. Also that, if there was a third party action against a doctor who might have O.K.'d a person for driving that got involved in an accident, he would also be protected.

"As regards the legal liability, Mr. Bell had some reservations and said he would give us a written report at a later date.

"One item that they felt was extremely bad was the certificate that the doctor was required to sign which stated something to the effect that he had examined a patient and that he felt this man was competent to drive without endangering the safety of himself or anyone else.

"It was felt that one thing that should be done was to recommend to the Legislation Committee that an effort be made to change the form to state in substance merely that the patient had been examined and, as of that particular moment, there was no indication that he was not fit to drive—but eliminate the part referring to the safety of others."

Dr. Blake stated: "I understand there is some intent of including in this year's application blank a question similar to this; so it might be desirable to contact the Motor Vehicle Bureau in relation to the wording of that question."

"Finally, I would like to refer to several items that it might perhaps be desirable to include in the minutes. You may be familiar with these, but they are Governor-Elect Rockefeller's statements which he has already made public in reference to the health program as of January first. The speech was given in Saratoga on the 15th of October. I have the major items, which I think should be in the record—quoting Mr. Rockefeller:

> Here are some of the problems and the actions I will take to meet them if I am elected:
>
> . . . I will urge consideration of a program of major medical insurance for all wage earners in the State, to protect them against the big bills that occur when serious disease or disability strikes. . . .
>
> Basic health and medical insurance plans should be improved in numerous respects. I will work to encourage such improvements as coverage of doctor's and nursing care outside the hospital, as well as in the hospitals, greater coverage of diagnostic services with a view toward prevention and early treatment of illness, continuation of these insurance benefits for people who have retired, continuation of protection during unemployment . . . (and) coverage of mental illness.
>
> I will see that a vigorous fight against (heart disease and cancer) . . . is carried forward. The State should move as far into research in chronic disease as our medical resources will allow. Our early detection services in each community should be expanded through the local medical profession and medical training. . . .
>
> I will see that rehabilitation services are expanded. I will see that rehabilitation plays a major role in workmen's compensation. The bottlenecks will be removed and programs gotten under way to save human talent and rebuild lives.
>
> Alcoholism and narcotics addiction have emerged as major health problems . . . I will face realistically these two problems . . .
>
> I will work to make medical facilities available to more of our people. I will urge programs for care outside of institutions where appropriate. I will encourage the development of more high quality nursing homes providing long-term care at the lowest possible cost.
>
> I will encourage more comprehensive local health services and take measures to increase the supply of public health specialists. Our public and private universities can train them if the State will help with recruitment and broader scholarship programs.
>
> About mental illness, one of our major health problems, I will have something to say at another time.

"I think we have probably a good opportunity this year to take an active part as a medical society in the legislative affairs of the State. As Dr. Fineberg has pointed out, the department heads are very cooperative, and I hope everyone will take advantage of any opportunity to urge that we as a Society can perhaps work a little more closely than we have even in the past few years."

The report as a whole *was adopted.*

Federal Legislation Subcommittee.—Dr. John F. Rogers, chairman, stated: "The big news in this report is the result of the recent election with its impact on four important committees of the Congress, handling medical and health legislation in the next two years. Congress has lost two physicians and picked up one.

"The 86th Congress will see the return of Drs. Walter Judd of Minnesota, Thomas Morgan and

[Continued on page 516]

"Doctor, I get so mad at everyone when I diet."

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*T.M. Reg. U.S. Pat. Off. †T.M. Reg. U.S. Pat. Off. for dextro-amphetamine sulfate, S.K.F.

[Continued from page 514]

Ivor Fenton of Pennsylvania, one newcomer, Dr. Thomas Alford of Arkansas. Defeated were Drs. William Neal of West Virginia and A. L. Miller of Nebraska, the former having been active on the health subcommittee of the House Interstate and Foreign Committee. Dr. Morgan takes over the chairmanship of the House Foreign Affairs Committee, on which Dr. Judd serves. Dr. Morgan would become the first physician to head that important committee in its one hundred thirty-six years.

"A committee of major importance to physicians is the House Ways and Means Committee under the chairman, Wilbur Mills (D., Ark.). It has 15 Democrats to 10 Republicans, but probably will now have 17 or more Democrats to 8 or fewer Republicans. This committee will be considering legislation that would impose, on a compulsory basis, hospitalization and medical care benefits for retired social security recipients and their dependents, also amendments to the public assistance law, evolving programs for the indigent. The Keogh legislation for self-employed to establish annuities with deferred taxes also is considered by this committee.

"The House Interstate and Foreign Commerce Committee, under Oren Harris (D., Ark.), which considered Hill-Burton Federal aid to medical schools, expanded medical research programs, and food and drug legislation, had a former ratio of 18 Democrats to 15 Republicans and will now be composed of 21 Democrats to 12 Republicans."

It *was voted* to adopt the report.

Malpractice Insurance and Defense Board.—Dr. Joseph A. Lane, a member of the Board, reported: "At the meeting of the Malpractice Insurance and Defense Board last night the problem of contacting the presidents of the metropolitan and adjacent county societies was discussed. Let me read a couple of letters.

> Dear Doctor Anderton:
>
> This will acknowledge receipt of your letter of October 15, 1958, advising of the recommendation of the Council that the Board write to each president of the five New York City county societies, asking his assistance in bringing about increased participation in the Group Plan.
>
> The enclosed letter has been prepared in compliance with the Council's recommendation. It was the opinion of the Board, however, that a direct communication from the Council would be more effective than one coming from the Board. It is therefore being presented in draft form with the request that the Council consider writing to the presidents of the five metropolitan and three suburban counties along the lines outlined therein.
>
> Sincerely yours,
> JOHN F. KELLEY, M.D., *Chairman*

"It was also the recommendation of the Board that, if this letter was accepted, it would be signed by both the president of the State Society and the chairman of the Board. This is a draft of a recommended letter to the presidents of the metropolitan and suburban county societies:

> At the last meeting of the House of Delegates, the Council of the Society was directed to take action designed to bring about a higher percentage of participation in the Society's Group Plan of professional liability insurance by members of county medical societies in the New York City area.
>
> The Malpractice Insurance and Defense Board and the office of the Indemnity Representative have prepared and distributed material designed to acquaint individual members with the advantages of being insured under the Society program. The Council believes that these efforts can be effectively complemented if the president of each county society will take a special interest in this matter and, by means that seem most appropriate to him, urge the members of his county society to support the Group Plan by personal participation.
>
> While its strength has been considerably weakened during the past few years in the counties in and near New York City, the Group Plan still has more subscribers than any other program operating in the State. Moreover, the rate of decline has been halted during the past two years, and there is reason to believe that the trend from now on will be in the direction of increased participation.
>
> In presenting this matter to your members, we believe the following points deserve emphasis:
>
> 1. The Group Plan master policy has been revised to provide broader protection than ever before.

("You heard a comment about that this morning, in which third party actions against the doctor would be protected.)

> 2. The revised classification system will result in a more equitable distribution of premium costs among the different specialties and types of practice.
> 3. Group Plan rates are no higher than necessary to provide the *quality* of protection demanded by Society members. They are approved by the Society upon the recommendation of the Society's actuary following his annual audit of our loss experience.
> 4. The cooperative efforts of our insurance carrier, our legal counsel, and the county malpractice committees result in the strongest possible defense of malpractice actions.
> 5. The Group Plan is the only insurance program that guarantees that an insured member will be defended by the Society's legal counsel.
>
> These are some of the factors that make the Group Plan one of the valuable privileges of Society membership.
>
> Your efforts in bringing about increased participation will be appreciated by the Council and in the best interests of the members of your county society.

It *was voted* that the report be accepted.

Moving.—Dr. Gerald D. Dorman, chairman, stated: "I move that the Moving Committee be discharged."

It *was voted* that the Moving Committee be discharged with thanks and appreciation.

[Continued on page 518]

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[Continued from page 516]

1958 Management Survey.—Dr. Renato J. Azzari, chairman, requested the Council to go into executive session.

It *was so voted.*

It *was voted* that the members of the Board of Trustees be invited to stay.

Dr. Anderton presented the following report of the executive session: "Mr. President, this is a report of the executive session from 12:05 until 12:30 P.M.

"The Council and a number of the members of the Board of Trustees met. Dr. Azzari, chairman of the Special Committee on the 1958 Management Survey, reported.

"His committee presented the names of three candidates for the position of executive director and recommended that Dr. Herbert T. Wagner of Bronxville be selected.

"The executive session voted to recommend to the Board of Trustees that Dr. Wagner be employed with a contract of three years at a salary of $20,000 a year."

The report of the executive session *was accepted.*

Office Administration and Policies.—Dr. John J. Masterson, chairman, reported: "The Office Administration and Policies Committee met yesterday. Various personnel matters were approved.

"At a previous meeting there had been approved the conducting of a survey by an independent electrical engineer to determine, on a dollar basis, approximately what the annual electricity consumption at our new headquarters would be. The purpose was to compare the figure proposed by the landlord. This survey indicated that a fair annual billing for electricity would be approximately $7,500. The lease modification received from the landlord requested that we pay $3,365.04. The committee, therefore, recommends that the amount to be paid to the landlord be approved and that, after Mr. Frederic Carver approves the final wording of the lease modification, it be recommended to the Board of Trustees for approval and for signature by the chairman of the Board.

"A lease modification covering rental of basement storage space was received yesterday from the landlord via Mr. Carver. Since this lease has not been reviewed from the legal point of view, the committee recommends that it be referred to Mr. Martin for his advice.

"The committee has been discussing the possibility of purchasing a duplicating machine. In the discussion it was brought out that we have a manual addressograph machine which is in daily use. It is twenty years old and might break down any time. We have been informed by the Addressograph-Multigraph Company that replacement parts are no longer available, nor can we purchase a similar machine. Should a breakdown occur, it would be necessary to expend $7,800 plus taxes, or a total of $8,517. Furthermore, it would take four to six months for delivery of the new equipment.

"The committee felt that it was important that we not delay placing an order for this machine. It is, therefore, recommended that the Council ask the Board of Trustees to appropriate $8,517 for this purchase.

"The matter of the duplicating machine was tabled.

"The committee approved the use of the Council room for the employes Christmas party.

"The purchase of a lobby bulletin board to indicate the locations of the various meetings was voted. It was estimated that this would cost approximately $130.

"It was voted that hereafter all new employes be given the usual physical examinations which the Society offers to the staff once a year. It was understood that at the time of employment the new employe would sign a statement which in effect would permit the Society to receive a report from the examining physician. It was also decided that hereafter those employes receiving the annual physical examination at the Society's expense sign a statement to the effect that the Society may receive the report from the examining physician. It was understood that, if the employe does not sign such a statement, the Society would not pay for the physical examination."

After discussion, it *was voted* to refer this last suggestion back to the committee for further study.

The report as amended *was approved.*

Public Health and Education.—Dr. Norman S. Moore, chairman, stated that he had attended two meetings and arranged 22 postgraduate lectures in 12 counties since the October meeting of the Council. He presented the following report:

At a meeting of the *Subcommittee on Diabetes* on October 9 it was recommended that

1. a committee be appointed by Dr. Gibbs, the chairman, to meet with Drs. Hilleboe and Reynolds relative to a joint diabetes program with the State Health Department;

2. these members of the subcommittee meet prior to the appointment with the State Health Department to formulate a definite plan for presentation at that meeting;

3. the plan includes (*a*) an educational campaign in diabetes (professional and lay) by the State Society, the Health Department, and the American Diabetes Association in conjunction with county medical societies and Diabetes Association affiliates; (*b*) a recommendation that the Health Department supplement the county societies and

[Continued on page 520]

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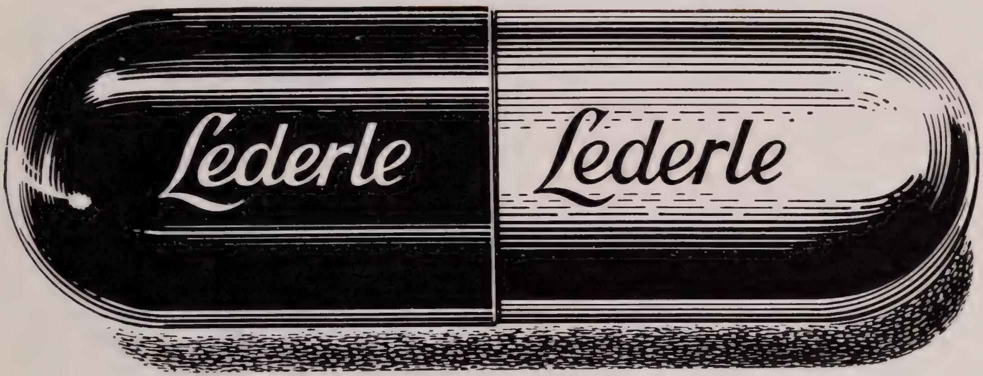

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[Continued from page 518]

Diabetes Association affiliates in the detection programs and in the follow-up.

4. It was agreed that again this year a letter be sent to county medical societies concerning annual Diabetes Week, November 16–22, emphasizing the excellent material prepared by the A.D.A. to assist communities in staging detection drives.

5. It was also agreed to request Dr. Redway to include in the NEW YORK STATE JOURNAL OF MEDICINE an editorial acquainting doctors of the State with the fact that the artificially sweetened ice cream now authorized by law is not sufficiently different to warrant its indiscriminate use in reduction and diabetic diets.

The *Subcommittee on Cancer,* under its new chairman, Dr. John G. Masterson, met on October 24. He was of the opinion that the most important thing to be considered was the lack of coordination between upstate New York and the metropolitan area, and that if the subcommittee could be the means of stimulating a uniform set of policies throughout the State it would be a major contribution to cancer control.

It was pointed out that the New York State chapter of the American Cancer Society covers only 54 of the 62 counties of the State, that the New York City Cancer Committee is responsible for the five metropolitan counties, and that Nassau, Suffolk, and Westchester Counties have their own cancer committees.

Each member of the committee was requested to submit to the chairman specific suggestions for a comprehensive program and its implementation. He will condense the proposals for presentation at a meeting on December 5, and a subsequent meeting. with the other organizations concerned, will be scheduled for January. Cytology was chosen as the principal theme for the immediate program, which will involve a training program for physicians.

Your chairman announces with regret the death of the chairman of the Subcommittee on Maternal and Child Welfare, Dr. Charles A. Gordon, on October 29. He was a most arduous and dynamic exponent of good medicine and a very active subcommittee chairman. You are all familiar with his pioneer work in cutting down maternal mortality in this State. One might say he was directly responsible for its reduction, having spearheaded the joint efforts of the State Health Department and the State Medical Society. It should be noted that from 1925 to 1926 he was chairman of the Committee on Public Health and Medical Education (its title at that time). It was really Dr. Gordon who initiated the postgraduate education program of the State Society, for during that year he succeeded in establishing six-session courses in maternal health in 26 counties and the same type of course in pediatrics in 30 counties, besides meetings on diseases of the chest, hypertension, and nephritis.

Dr. Gordon's subcommittee on Maternal and Child Welfare has considered the resolution from Dutchess County Medical Society which was referred to them by the Council at its September meeting. This concerns a so-called Prenaphos Protection Program proposed by the Chicago Pharmacal Company. They have unanimously voted to support the resolution and to congratulate the county society for its action.

Dr. Edward Hughes of Syracuse has agreed to act as chairman of the subcommittee for the remainder of Dr. Gordon's term.

The president requested approval for the appointment of Dr. Hughes as chairman of the Maternal and Child Health Subcommittee.

Approval *was voted.*

It *was voted* to accept the report as a whole.

At the request of Dr. Moore, Dr. Henry I. Fineberg stated: "Mr. President and gentlemen, this was supposed to come under New Business, but with your permission I would like to present a motion that our president write the new Governor-Elect, Mr. Rockefeller, congratulating him upon his election and informing him that the Medical Society of the State of New York, with a membership of over 24,500, stands ready to be of assistance to him in any matters concerned with medicine or the health and welfare of the people of our great State."

Approval *was voted.*

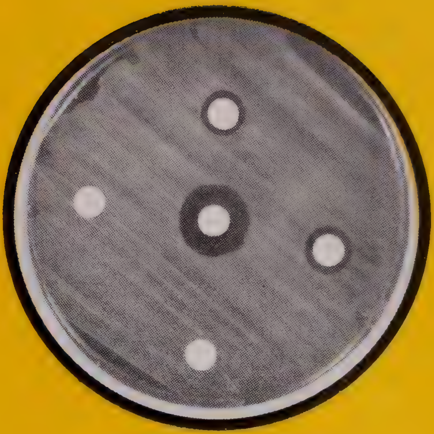
Dr. Fineberg continued: "Mr. President, with every change of Governor, there is a change in the cabinet. However, we do feel that there are a number of positions, especially those concerned with medicine and public health, that should be definitely nonpolitical in character. There are certain men that should be retained in office because of their ability, because of their accomplishments, and also because it is important that in some departments there be a continuity of service. I would, therefore, move that we recommend to the Governor that Dr. Herman E. Hilleboe be retained as Commissioner of Health and that Dr. Paul H. Hoch be kept on as Commissioner of Mental Hygiene."

It *was voted* to approve the recommendation.

In connection with the above action, Dr. Anderton stated: "Yesterday after an informal discussion in the Executive Committee, I discovered that Dr. Ralph Todd, formerly a Councillor of the State Medical Society, who lives at Tarrytown, is Mr. Rockefeller's family physician. I took the liberty of telephoning Dr. Todd to confirm that. I move, sir, that this Council empower Dr. Todd to call upon the governor-elect as a representative of the

[Continued on page 522]

on the problem of antibiotic-resistant bacteria



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REFERENCES: 1. Flippin, H. F.: Virginia M. Month. 82:435, 1955. 2. Caswell, H. T., et al.: Surg. Gyn. Obst. 106:1, 1958. 3. Nesbitt, R. E. L., Jr., and Young, J. E.: Obst. Gyn., N. Y. 10:89. 1957.

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[Continued from page 520]

State Medical Society and to urge him personally to reappoint Commissioners Hilleboe and Hoch."

Approval *was voted.*

Dr. Moore stated: "In the continuity of this report, I recommend that the letter which was originally designed to be addressed to Governor Harriman now be sent to Mr. Rockefeller one week after it is made known that he has reappointed Dr. Hilleboe or at least some time afterwards. It won't be appropriate until he has reappointed him."

Approval *was voted.*

The report as a whole *was approved.*

Public Relations.—Dr. John F. Rogers, chairman, presented the following: "Since the last meeting of the Council, your committee and the Public and Professional Relations Bureau devoted much time to the Annual Conference of County Medical Society Public Relations Chairmen, a meeting of the committee, and attendance at district branch meetings.

"1. On Saturday, October 25, the Annual Conference of County Medical Society Public Relations Chairmen was held at the Hotel Roosevelt, New York City. Some 55 individuals, including public relations chairmen, executive secretaries, State Medical Society officials, and guests attended. Included on the program was a discussion of medicine, union health centers, and PR problems by Dr. Joseph A. Lane of Rochester, chairman of our Ad Hoc Committee on Labor Unions and Industrial Health, and Mr. Leo Perlis, New York City, director of Community Service Activities, AFL-CIO, as well as an analysis of the State Medical Society's legislation program by Dr. James M. Blake of Schenectady, chairman of the Council Committee on Legislation, and Assemblyman John J. Ryan of Brooklyn and Senator George R. Metcalf of Auburn. Also on the program was a discussion of problems caused by physicians who do not cover their practices by Dr. Kenneth T. Rowe, Hornell, member of your Council Committee on Public Relations, and an explanation of how the Woman's Auxiliary promotes the American Medical Education Foundation by Mrs. Henry I. Fineberg of Queens, chairman of the Woman's Auxiliary committee on this matter.

"2. As a result of discussions of the various topics on the program it was the consensus at this conference that each year one stated meeting of a county medical society should be given over exclusively to public relations topics.

"3. On the basis of comments received since the conference, over which your chairman presided, the members of my committee came to the conclusion that the conference was considered by those who attended the best yet held in this State. Your chairman wishes to have incorporated in this report the fact that the staff of the Public and Professional Relations Bureau deserves this printed acclaim for their part in making the annual meeting such an interesting and informative session. It was one of the most inviting, balanced, entertaining, and ultraprofessional programs in the history of the Bureau. A reception and luncheon followed the conference.

"4. On the day preceding the conference, your chairman presided over a meeting of the Public Relations Committee. Most of the members of the committee were present as well as the staff of the Bureau. Ten items were discussed, and some of them will now be called to your attention for action or information.

"5. Much time was given to discussion of the formation of medical assistants organizations. Since a request had been received from a county medical society regarding policy concerning a State organization of medical assistants associations, the committee discussed this matter. The committee voted to recommend to the Council that the Bureau be empowered to assist in the formation of a State-wide organization of medical assistants. In this connection, your chairman should like to point out that 23 states now have medical assistants organizations."

It *was voted* that the Bureau be empowered to assist in bringing about this State-wide organization in New York State.

"6. At the November, 1957, meeting of the Council, a suggestion by the Public Relations Committee that a recommendation be made to each county medical society to assume an advisory position with regard to the formation and organization of medical assistants groups in their districts was approved. At the recent meeting of the committee the members felt that we should go beyond the original idea of merely advising county medical societies in regard to medical assistants organizations at the local level. The committee therefore recommends that the Bureau be permitted to actively encourage county medical societies to sponsor local medical assistants organizations in this State."

It *was voted* to approve the recommendation.

"7. The committee also discussed the content of courses to be given to medical assistants. As you know, courses have been given for several years, and the time has come to try to add to their content. After much discussion, the committee came to the conclusion that the following topics should be included in future courses: malpractice, medical ethics, and how to assist a doctor in examinations. The committee also suggested that the form of the lectures to be given covering these subjects should be approved by the Council Committee on Malpractice Insurance and the Committee on Ethics and any other group connected with the subject matter.

[Continued on page 525]

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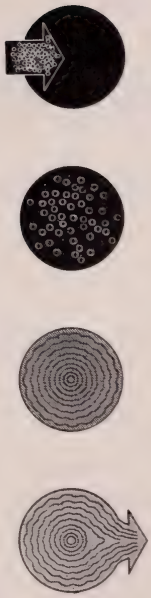

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SUMMARY OF COUNCIL MINUTES

[Continued from page 522]

"8. In connection with these courses your chairman is happy to report that, in accordance with the authorization given by the Council, 26 county medical societies have been awarded citations of merit for conducting medical assistants courses. The counties included the following: Albany, Bronx, Broome, Chautauqua, Chemung, Columbia, Dutchess, Fulton, Herkimer, Jefferson, Kings, Madison, Monroe, Montgomery, Nassau, New York, Oneida, Onondaga, Queens, Richmond, Rockland, Schenectady, Suffolk, Sullivan, Ulster, and Westchester.

"Your attention is called to the fact that many of these societies have conducted two courses and some have sponsored three. As a result the total of courses held to date in this State number 45.

"9. Each year the Bureau is confronted with the task of finding doctors who have been practicing fifty years. Recently the director of the Bureau was advised that the American Medical Association not only has facilities, mechanically, to do this work but would be very happy to undertake the job. The committee therefore voted to ask the Council for approval to write to the American Medical Association and request help in regard to this problem of selecting fifty-year doctors.

"10. The attention of the Council is called to the fact that a revision of the Bureau's publication "You and the Medical Society of the State of New York" is now under way. Copies will be made available for use in the recently authorized membership drive.

"11. Another Bureau publication "How the State Medical Society Serves You" which interprets activities of the Society, is also in the process of being revised.

"12. Bearing in mind the fact that reports indicate that the 1959 session of the State Legislature will be faced with an all-out attempt by chiropractors to obtain licensure, the committee has taken steps to prepare for any chiropractic campaign that may be directed to be undertaken by the Council. For example, the committee authorized the Bureau to find physicians who would be willing to undertake assignments whenever we are requested to furnish a speaker for radio and television programs and public meetings.

"13. On the subject of exhibits, your chairman is happy to report that the exhibit entitled "Organs of the Human Body," which was displayed at the Hall of Springs in Saratoga from Memorial Day to Columbus Day under the cosponsorship of your Society and the AMA, attracted 110,000 visitors. This information was sent to the Bureau by the medical director of the Saratoga Spa authority. Your chairman also would like to point out that a great deal of interest in this exhibit has been shown

[Continued on page 526]

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[Continued from page 525]

by the Board of Education of New York City. At the time this report is being written negotiations are underway to see whether the exhibit can be used by New York City school system as part of its educational program.

"14. Publicity was given to postgraduate lectures by means of releases sent to local papers in the following counties: Albany, Broome, Chemung, Fulton, Jefferson, Nassau, Rensselaer, Suffolk, and Sullivan.

"15. Many requests were received during the past month for assistance from magazine writers and producers of radio and television programs. Mr. Schuyler assisted the producers and writers who were preparing articles for probable publication in such publications as *Look Magazine, Medical Economics, Medical News,* and *McCall's.*

"16. Assistance also was requested by county medical societies in regard to celebrating "Physicians and Surgeons Day" and "Family Doctor Week." Among the counties helped in this matter were Broome and Chautauqua.

"17. The field staff and the director attended district branch meetings for the purpose of assisting the secretary in taking the attendance and in making arrangements for publicity. Mr. Walsh was present at the meetings of the Third and Ninth District Branches while Mr. Tracey attended the Fourth District Branch. Mr. Miebach was present at all three meetings.

"18. The regular October issue of the *Newsletter,* which was delayed because of the special issue dedicated to Medicare, was published on October 15. This issue featured a statement by Dr. Ray E. Trussell concerning the Columbia University study of nonprofit medical care plans and an article on the proposed new veterans administration fee schedule.

"19. During the past several weeks the Bureau has assisted the Auxiliary in the preparation of the postconference issue of the *Distaff* and the Fall Conference of County Presidents and Presidents-Elect. Material also was prepared and distributed for the chairman of the Health Poster Contest Committee, the AMEF Committee, and the Safety Committee. Mr. Walsh also attended and spoke at the Fall Conference at Kingston and at the First District meeting held on Staten Island.

"20. Members of the staff attended several important meetings. Mr. Meibach attended the Annual Conference of County Medical Society Secretaries held in Syracuse, a meeting of the advisory committee to the Public Relations Department of the AMA held in New York City, and planned to attend the Symposium on Voluntary Health Insurance cosponsored by the First District Branch and the New York State School of Industrial Labor Relations of Cornell University. Mr. Walsh was present at the second annual convention of the American Association of Medical Assistants held at the Palmer House in Chicago, October 31 to November 3. He reported that the 480 delegates in attendance representing 23 state organizations of medical assistants were most enthusiastic about their work and that the program was very practical, containing many projects which might be experimented with in this State.

"21. Work was continued in preparing a kit of sample talks for members of county society speaker bureaus. A letter was sent to county society public relations chairmen and executive secretaries of the seven metropolitan county societies asking their cooperation in obtaining speakers to participate in a new set-up of speakers who will discuss problems confronting medicine, particularly chiropractic licensure.

"22. Following the announcement at the last meeting of the Council that Dr. Willis M. Weeden, medical director of the Workmen's Compensation Board of the New York State Department of Labor, had been given a special citation for meritorious service in the field of the employment of the physically handicapped, the Bureau was requested to assist in publicizing this matter and in making arrangements for the presentation of the award to Dr. Weeden. The Bureau worked with the public relations director of the Workmen's Compensation Board in publicizing the event and with Dr. Gerald D. Dorman, chairman of the Council Committee on Workmen's Compensation, in making arrangements for him to present the citation on behalf of the State Society, the Governor's Committee, and the President's Committee. The presentation was made by Dr. Dorman at a luncheon in the Statler Hilton Hotel in New York City, where a representative supervised the taking of a picture of the event, which was featured in the November *Newsletter.*"

It *was voted* to adopt the report as a whole.

Publication.—Dr. Alfred P. Ingegno, chairman, reported: "The Publication Committee met yesterday. The committee has had under discussion for the past two meetings the possibility of preparing a four-page color brochure showing views of the office of the State Society. It is proposed that this be in an issue of the JOURNAL early next year. In addition, the Public and Professional Relations Bureau would mail this brochure to new members and would use it for other public relations purposes. The total cost would not exceed $3,000, and it was voted to ask the Council to request the Board of Trustees to appropriate $3,000 for this purpose, with the understanding that one third of the printing cost would be charged to the Public and Professional Relations Bureau's pamphlets and bulletins account and two thirds to the JOURNAL printing account."

[Continued on page 528]

running noses
and open stuffed noses orally

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- in sinusitis
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- in allergic reactions of the upper respiratory tract

safer and more effective than topical medication

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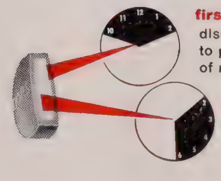
Relief with Triaminic is prompt and prolonged because of this special timed-release action . . . beneficial effect starts in minutes, lasts for hours.



first —the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then —the inner core disintegrates to give 3 to 4 more hours of relief

Each TRIAMINIC *Tablet provides:*

Phenylpropanolamine HCl . . .	50 mg.
Pheniramine maleate	25 mg.
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One-half of this formula is in the outer layer, the other half is in the core.

Dosage: One tablet in the morning, mid-afternoon and in the evening, if needed.

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Also available: For the occasional patient who requires only half dosage: timed-release TRIAMINIC JUVELETS. Each Juvelet is equivalent to ½ of a Triaminic Tablet.

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[Continued from page 526]

Approval *was voted.*

Dr. Ingegno continued: "The committee received a request from Lederle Laboratories asking that we cooperate in publicizing the United Nations and its humane agencies. The request asked that we devote one page in the JOURNAL for this purpose. There would be no advertising connected with this.

Approval *was voted.*

"After discussion, it *was voted* not to accept an advertisement from Doubleday for a certain book.

"It was voted to renew our paper contract with Linde-Lathrop Paper Company for paper for the JOURNAL for the year 1959. The Council is requested to ask the Board of Trustees to approve and to have the chairman of the Board sign the contract."

After discussion, approval *was voted.*

Dr. Ingegno continued: "After discussion, the committee voted to increase the advertising rates in the JOURNAL by 15 per cent, effective January 1, 1959, for new advertisers. Present advertising contracts would continue at the present rate until expiration."

After discussion, approval *was voted.*

Approval of the report as a whole *was voted.*

Rural Medical Service.—Dr. Edward C. Hughes, chairman, reported: "Mr. President, this is a progress report. Plans are being laid to draw together the leaders of lay and farm organizations. It is planned, in the next couple of weeks, that will be accomplished, and to this group the plan will be outlined. From what we learn so far, I think it will be accepted with favor."

Staphylococcal Infections.—In the absence of the chairman, Dr. James Greenough, Dr. Moore made the following progress report: "Last Sunday I saw Dr. Greenough about this committee and took it up immediately Monday morning with Dr. Larimore and Dr. Hilleboe. This is so close to being completed that it seems fruitless to delay any more for editing. I learned yesterday afternoon the first three chapters had gone to the printer. So it has been finally edited and completed by Dr. Tompkins, Dr. Greenough, and Dr. Hawn, and further revisions have been made by Dr. Tompkins."

Woman's Auxiliary, Advisory Committee to.—Dr. Thurman B. Givan, chairman, stated: "As you know, the Auxiliary is taking an active interest in the promotion of district branch meetings. During the last month, Mrs. Maurice G. Sheldon, the State Auxiliary president, attended and spoke at the Third, Seventh, Eighth, and Ninth District Branch meetings. The ladies of the First District Branch also held a meeting in Richmond County. The State president and president-elect also attended the National Conference of State Auxiliary Presidents in Chicago.

"On October 14 your chairman and Dr. Henry I. Fineberg, our president-elect, attended and spoke at the annual Fall Conference of County Auxiliary Presidents and Presidents-Elect, and I think Dr. Fineberg will join me in a word of praise for the program the Auxiliary planned during that three-day conference. I also have a copy of the 1959 'Ladder' containing the Auxiliary program for the coming year, should any member desire to read it. You can obtain a copy of it in the office.

"Mrs. Sheldon has also requested me to submit some proposed changes to the State Auxiliary's constitution and bylaws for your approval. These will go through the normal channels. You have a copy that was distributed, and I hope you will keep it until it is presented to the Council."

The report *was accepted.*

Workmen's Compensation.—Dr. Gerald D. Dorman, chairman, presented the following reports:

"A meeting of the Council Committee on Workmen's Compensation was held in Amsterdam, on October 30, 1958, at 10 A.M. Members present included Drs. Gerald D. Dorman, Chairman, Stanley E. Alderson, Herbert M. Bergamini, Joseph P. Henry, William E. Pelow, Joseph A. Wintermantel, Anthony A. Mira, director, Leo E. Gibson, ex officio, W. P. Anderton, ex officio. Excused were Drs. Arthur E. Corwith, Harold W. Grosselfinger, and Charles D. Squires.

"*Revision of the minimal medical fee schedule of the Workmen's Compensation Board:* Dr. Dorman, chairman of the committee, indicated that the crux of the negotiations is the fee to general practitioners for subsequent office visits. Dr. Dorman felt that if this item could be reduced from the requested $4.00 to a lesser amount, there would be a good possibility that the rest of the fee schedule *as proposed by Miss Parisi* would be acceptable to the insurance carriers and self-insurers. Dr. Dorman pointed out that the offers made by the insurance carriers through their representatives were ridiculously low.

"Many county medical societies throughout the State have demonstrated discontent in the long delay that has taken place in the promulgation of a new fee schedule. Several have protested directly to Miss Parisi and others through the State Medical Society. Several county medical societies have decided to implement the resolution passed by the House of Delegates in May, 1958, whereby physicians would charge "usual" fees for services rendered workmen's compensation claimants. Several other counties indicated that the new schedule should be made retroactive to November 1, 1958. After lengthy and thorough discussion, the committee

[Continued on page 530]

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[Continued from page 528]

voted unanimously to memorialize Miss Angela R. Parisi, by resolution, through its chairman, that the new fee schedule be promulgated by November 1 and that it be made retroactive to November 1, no matter what date it is actually released.

"The following resolution was made by Dr. Bergamini, seconded by Dr. Pelow, and unanimously passed:

> WHEREAS, this committee has received communications from a majority of the county medical societies and many individuals recommending the enactment of the fee schedule and deploring the long delay in this; therefore be it
>
> RESOLVED, that the Workmen's Compensation Committee recommends the promulgation of the fee schedule as recommended by the Honorable Angela R. Parisi as of the draft date of May 8, 1958; and be it further
>
> RESOLVED, that this committee feels there has been too much delay in putting this into effect and recommends that it be promulgated without delay and be retroactive to November 1, 1958.

"The following resolution, moved by Dr. Pelow and seconded by Dr. Bergamini, was passed as follows:

> The Committee recommends that a biennial review and evaluation of the fee schedule be made by all interested parties for possible revision of the schedule.

"*Legislative program on Workmen's Compensation matters:*

"(*a*) Abolition of the Medical Practice Committee: Although legislation to effect the abolition of this committee is politically inexpedient at this time, it was decided that this was passed by the House of Delegates and must be implemented. It is to be referred to the Legislation Committee for action through the Council.

"It was moved that the Bureau of Industrial Health and Workmen's Compensation make every effort to obtain figures or data from any source deemed possible to determine the number of cases percentage-wise that are presented for arbitration to the Medical Practice Committee and compare them with figures for the number of arbitrations presented to county medical societies in the upstate areas. The Bureau is to report to the House of Delegates when this material is obtained.

"(*b*) Proposed bill sponsored by the Commerce and Industry Association to provide rehabilitation services under the Workmen's Compensation Law: "This bill, previously introduced in the Legislature in 1957 and 1958, basically permits the licensing of medical bureaus to provide rehabilitative treatment and care for injured employes. It is intended to stress the importance of rehabilitation as an entity in itself in the rendition of medical care and states that these bureaus can be operated under licensure by the Workmen's Compensation Board when operated by authorized physicians.

"In addition, this bill includes provisions for the establishment of a panel of consultants to the chairman of the Workmen's Compensation Board to determine diagnosis, causal relationship, degree of disability, or proper course of medical care. The nominations to this panel are to be made by the State and the county medical societies. Heretofore the 'expert' panels utilized by the chairman of the Board have not been designated by the county or State Medical Society and have been appointed at the pleasure of the chairman.

"The committee recommends that the Council of the State Medical Society refer this bill to the Legislation Committee of the State Medical Society for study and action noting that the Committee on Workmen's Compensation has approved the bill in principle."

In the course of discussion on the floor, Dr. Dorman accepted a suggestion that, in the preceding paragraph, the words, "has approved the bill in principle," be changed to "has approved the principles included in this bill."

"3. *Consideration of a case involving alleged bill padding:* The director of the bureau brought to the attention of the committee a complaint from a self-insured employer concerning alleged bill padding and overtreatment by a physician in the care of claimants employed by the company. Based upon the evidence presented to the committee, the director of the bureau was instructed to address a letter to the president of the county medical society concerned, suggesting that a special committee be formed to investigate this matter and that this committee exclude from its membership physicians who might be prejudiced in any action that might be taken. It was suggested by the Workmen's Compensation Committee that the contents of the letter be cleared through the counsel of the State Medical Society and that, after this clearance has been obtained, the affected county medical society be asked to report any action in this matter as promptly as possible prior to February 1, 1959.

"4. *The qualifications of physicians for compensation board ratings:* Several members of the committee pointed up the fact that there is no uniform standard procedure nor uniform standards of qualifications for the granting of compensation ratings to physicians asking authorization to treat claimants under the Workmen's Compensation Law. Many of the methods used and standards employed are obsolete and poorly defined and vary from county to county. It was recommended that each member of the Council Committee on Workmen's Compensa-

[Continued on page 532]

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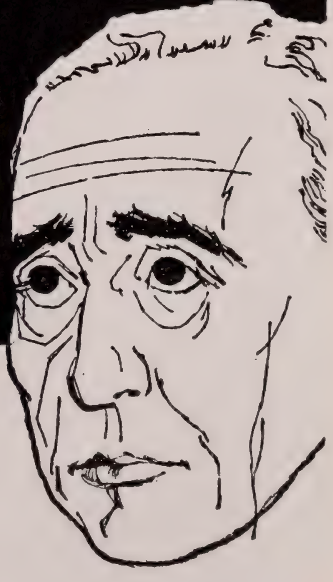

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tion communicate to the director of the bureau the standards that are currently employed in the area in the State the member represents, together with any suggested changes. The bureau will then compile these recommendations and present them to the committee for further study.

"5. It is noted that the Joint Legislative Committee on Industrial and Labor Relations is scheduled to conduct public hearings at the Sheraton Astor Hotel in New York City on December 2, 3, 4, 5, 1958. Unfortunately these dates conflict with the meeting of the American Medical Association in Minneapolis. It is suggested that the representative of the Legislation Committee of the Council who will be present at the Joint Committee meetings also speak on the proposed legislation above."

It *was voted* to approve this portion of the report including the recommendations for referral of items 2(*a*) and 2(*b*) to the Committee on Legislation.

"Since the last Council meeting, your director has attended the following meetings or sessions: Annual meeting of the Academy of General Practice, Rochester, October 20, 21, 1958; Participated in Assistants Course given at the Sullivan County Medical Society, October 22, Liberty; Secretaries Conference in Syracuse, October 23, 1958; Public Relations Conference in New York City, October 25, 1958; Council Committee on Workmen's Compensation in Amsterdam, October 20, 1958; Fourth District Branch meeting in Amsterdam, on October 30, 1958."

Supplementary Report: On October 10, Dr. Gibson and Dr. Dorman met with Miss Angela Parisi and the compensation carriers, self-insured, and representatives of Commerce and Industry Association and the New York Compensation Insurance Rating Board to discuss Miss Parisi's fee schedule. The carriers particularly objected to the fee of $4.00 for subsequent visits but also made proposals for generally lower fees. They admitted in theory that physicians deserved an increase. A final meeting was set for October 31 in Albany.

In the interim, eight counties had passed resolutions indicating that they would charge private fees as of November 1, and others objected to the delay in the promulgation of the new fee schedule. Dr. Kenneth Gang of White Plains sent in suggestions for the neurosurgical society. All groups insisted on no reduction of proposed fees. At the October 31 meeting, Dr. Gibson and Dr. Dorman again attended, with Dr. Roach of Albany listening in for the Radiological Society. The position of the Medical Society was stated and much time was taken up with statistics showing the various costs of increases. An increase of 25 cents to doctors on follow-up increases costs to employers $1,800,000 a year. The carriers claim the proposed fees were over Blue Shield fees in some cases, which is a fee schedule set by doctors. Dr. Dorman pointed out that Blue Shield is service fees for low income persons and not private rates for compensation and doctors often charge over Blue Shield schedule for nonservice cases. Actually the Welfare Department pays as much as the proposed rates in some areas. The new Medicare schedule was also produced to show what the Federal government considers a fair rate.

After five hours, Miss Parisi closed the meeting and said she would promulgate a fee schedule as soon as possible. The follow-up visits may be at the rate of $3.50 apiece. It cannot legally be made retroactive and when she has published it, the New York Compensation Insurance Rating Board will need about three weeks or more to figure out actuarially the new premiums which must be charged. Amended rates must be filed and these in turn must be submitted to and approved by the New York State Commissioner of Insurance. This may take until January 1, 1959.

The carriers were warned that many doctors will meanwhile be charging private fees, and their heated retort was that all bills will then be thrown into arbitration and it will be a long time before any payments are made.

It was also suggested that a permanent "Conference Committee" of four be set up to discuss future revisions of the fee schedule, over treatment of patients, undue charges by physicians, and other items of mutual interest. This committee would consist of four persons, one from the State Medical Society, one from the compensation carriers, one from the self-insured group, and one from the Workmen's Compensation Board. This committee would be advisory only.

The supplementary report *was accepted.*

The report as a whole *was accepted.*

Dr. Gibson commented: "Dr. Di Natale stole my thunder when he talked about the meeting in Albany. I was present at that meeting with Dr. Dorman, and certainly he did a very grand job. The medical profession was well defended, and in some instances it needed to be, with these what Dr. Anderton has called 'skilled adversaries of the insurance companies and the employers.' I would like personally to thank you, Dr. Dorman, for your efforts."

Dr. Dorman responded: "Thank you for the backing you gave me." (*Applause*)

New Business

Spence-Chapin Awards Project.—Dr. Frederick A. Wurzbach, Jr., stated: "In August the Society received a letter from *Time Magazine* concerning the

[Continued on page 534]

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Dihydrocodeinone Bitartrate	10 mg. (1/6 gr.)
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Ephedrine Hydrochloride	25 mg. (3/8 gr.)
Calcium Iodide, anhydrous	910 mg. (14 grs.)

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[Continued from page 532]

Spence-Chapin Awards project. The Society was one of many contacted in the lower part of the State in regard to the Spence-Chapin Awards project to honor three outstanding young women doctors in the New York Greater Metropolitan area who have given distinguished service to children. Each winner will receive a $500 cash award donated for this project, and, in addition, will have a preadoption nursery crib at Spence-Chapin named in her honor for one year.

"This was forwarded to Dr. McCarthy, Secretary of the Coordinating Council, and as yet I have received no nominations from any county society.

"I believe that when a lay organization of this kind goes to many organizations as regards medical personnel, it is not proper for the State Society to recommend. Under these considerations I give the matter as information to the Society to ascertain whether they wish to make it a policy."

After discussion, Dr. Wolff moved the secretary be instructed to answer the communication by saying we are not in a position to make recommendations of this nature.

Dr. Lane proffered an amendment "to qualify it by stating that is was because of the fact that the involved county societies made no recommendations."

There being no discussion, the amendment was put to a vote and *was carried.*

Then the motion as amended *was carried.*

Dr. Randall's Letter.—Dr. Samuel Z. Freedman stated: "I have read this long letter from Dr. Henry T. Randall. There is not much in it that is new to me, and I still believe that the objection, the original objection, to the composition of the committee is valid in that it would be loaded against the practicing physician. I think we should get in touch with Dr. Randall to see if we could work out some way where there could be equal representation between the practicing physicians and those that fall into the other two categories. That would be my recommendation."

It *was voted* to refer this letter to the Committee on Hospital and Professional Relations for their opinion and report.

New Pamphlets

What is the proper way to take care of a cold? What can I do to help prevent falls in my home? What steps should I take if my child contracts strep throat? The New York State Health Department has several publications which deal with these and numerous other "wintertime" problems.

Among the pamphlets available are:

The Common Cold deals with the causes of the common cold, and explains that while the cold has to run its course, the sufferer can receive some relief. It also emphasizes the importance of calling the family physician when there are certain "danger signs."

Falls Cause Most Home Accidents stresses the importance of eliminating obstructions, providing good lighting, and offers other suggestions to eliminate the hazards which cause falls.

Protect Your Child from Head Lice explains how to prevent the spread of head lice, and the proper way to get rid of head lice.

Other important pamphlets are *Whooping Cough, Triple Vaccine* (for vaccination against whooping cough, diphtheria, and lockjaw), *Strep Throat,* and *Points on Polio,* which emphasizes the importance of receiving the full series of three antipolio injections.

Copies are available without cost to residents of New York State from the Office of Public Health Education, State Health Department, 84 Holland Avenue, Albany 8, New York.

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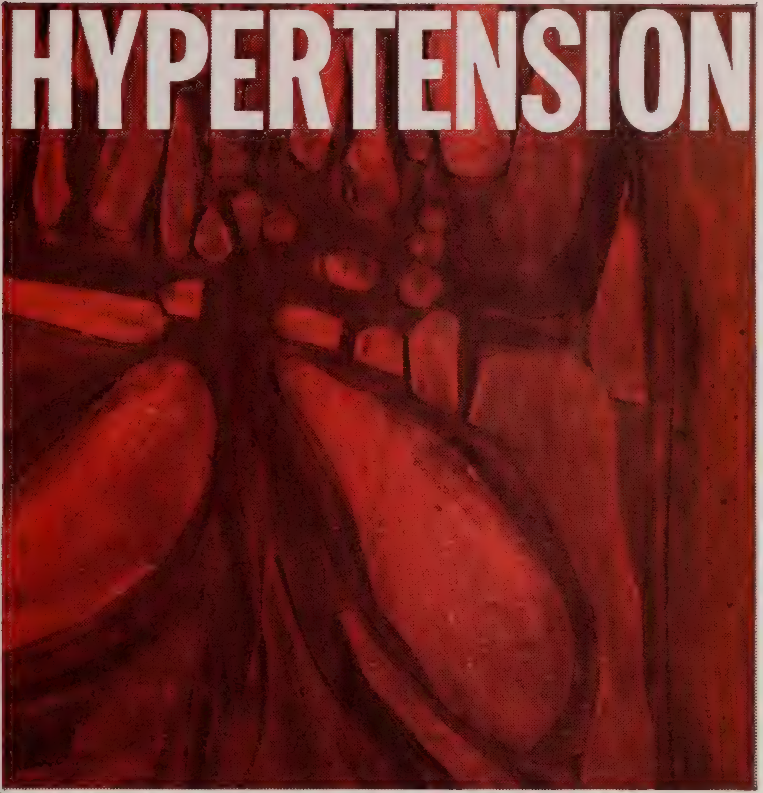

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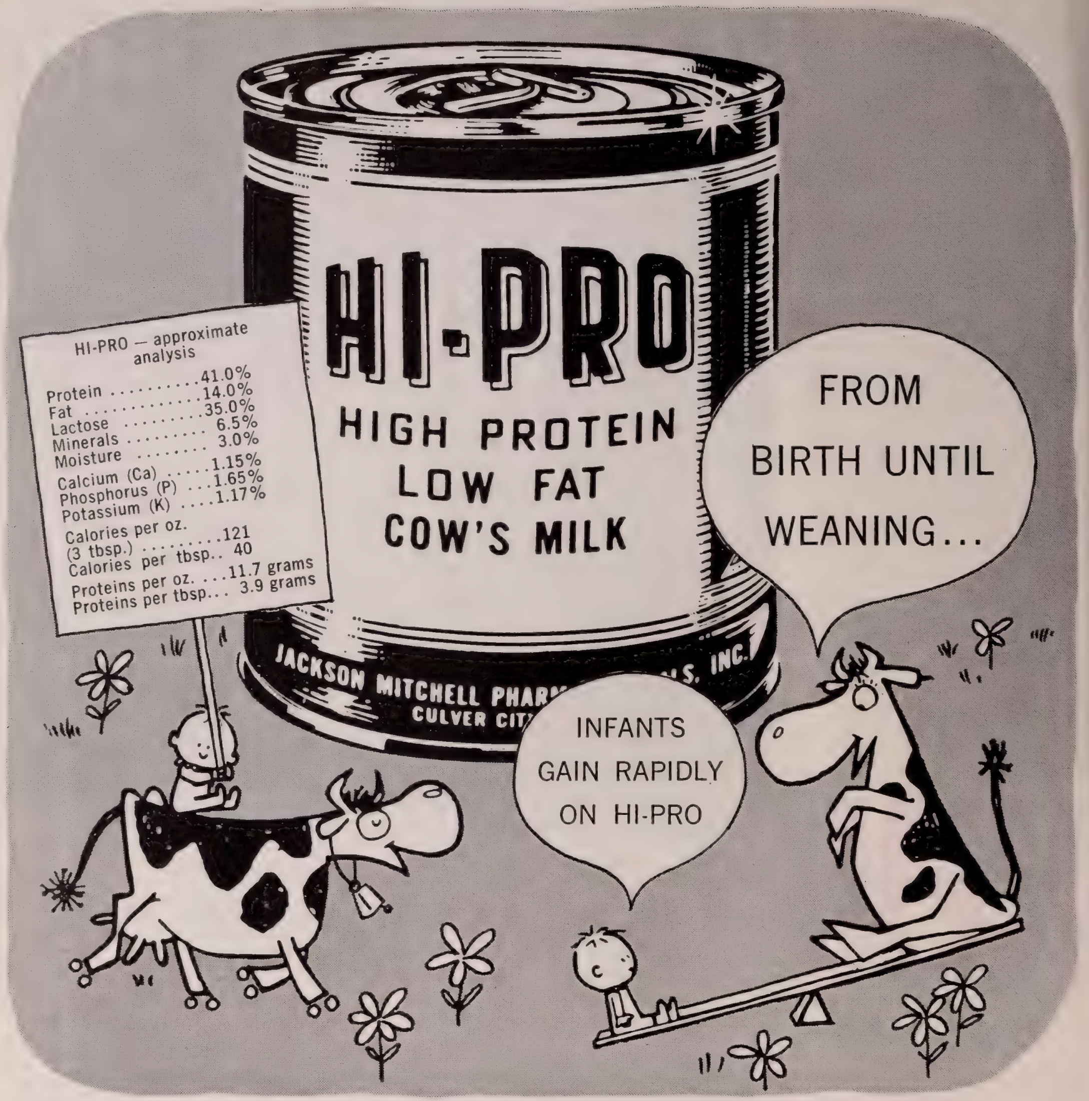
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Calcium (Ca) 1.15%
Phosphorus (P) 1.65%
Potassium (K) 1.17%
Calories per oz. (3 tbsp.) 121
Calories per tbsp.. 40
Proteins per oz. ... 11.7 grams
Proteins per tbsp... 3.9 grams
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1. Nulsen, R. O.: Ohio State M. J. 53:665, 1957. 2. Personal communications, 1956-57.

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Bentyl (dicyclomine) Hydrochloride	10 mg.
Decapryn (doxylamine) Succinate	10 mg.
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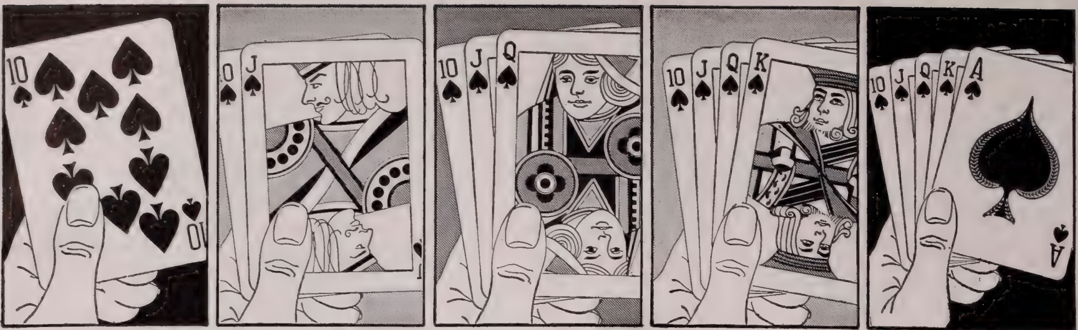

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Homatropine Methylbromide	1.5 mg.	
Pyrilamine Maleate		12.5 mg.
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Officers—County Medical Societies—1959

TOTAL MEMBERSHIP AS OF FEBRUARY 1, 1959—24,779

County	*President*	*Secretary*	*Treasurer*
Albany	James H. Flynn ... Albany	G. Rehmi Denton ... Albany	Thomas S. Walsh ... Albany
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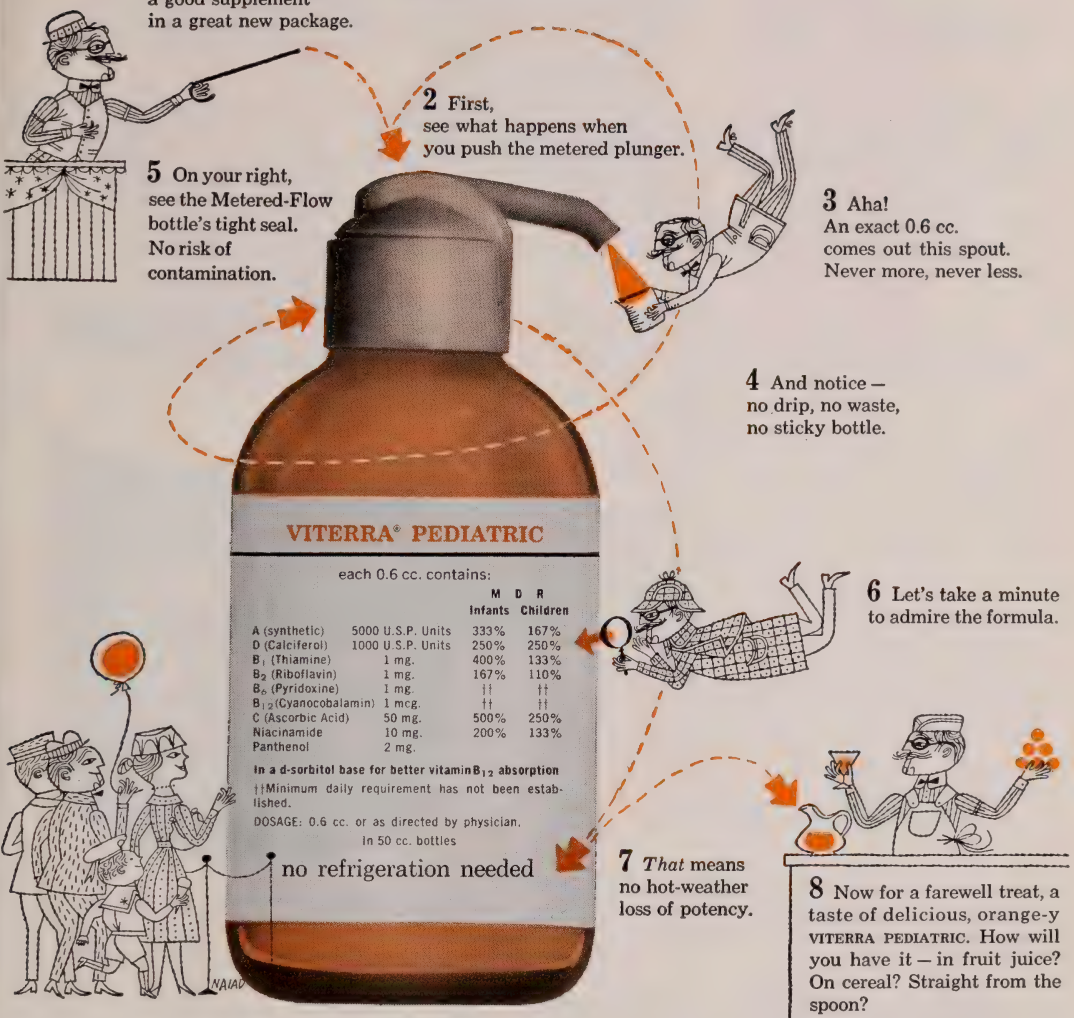

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B_1 (Thiamine)	1 mg.	400%	133%
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B_6 (Pyridoxine)	1 mg.	††	††
B_{12} (Cyanocobalamin)	1 mcg.	††	††
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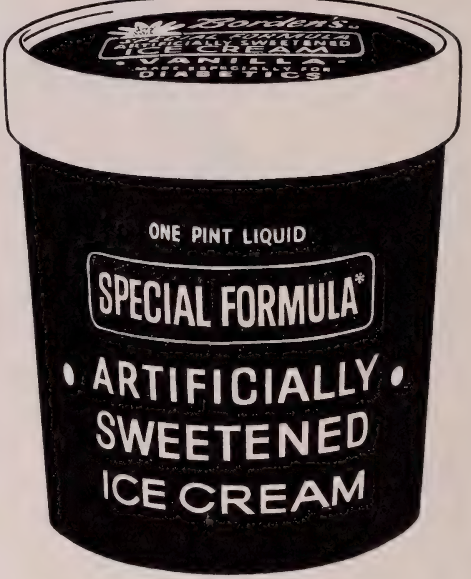
	Total Calories per avoir. oz. 51.5
Protein 4.3%	from carbohydrates 19.1
Carbohydrates.16.8%	from non-lactose carbohydrates .12.7
	Total Calories per fluid oz. 31.3
Milk fat 10.2%	from carbohydrates 11.6
	from non-lactose carbohydrates . 7.7

Ingredients: Condensed Milk, Sorbitol, Cream, Stabilizer. Contains 0.1% Calcium Cyclamate, a non-nutritive artificial sweetener which should be used only by persons who must restrict their intake of ordinary sweets.

Contains no added sugar. Only 125 calories per ¼ pint serving.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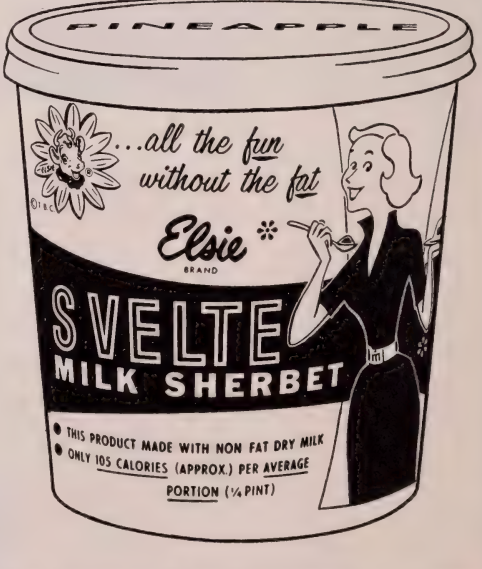
Minerals 0.305%	(1.05 Gr.)
Moisture 69.78%	(240.05 Gr.)

No added salt: Sodium content 18.5 mg. per 100 grams of product (16 mg. per ¼ pint or ½ cup). This product made with non-fat dry milk. Only 105 calories (approx.) per average portion (¼ pint).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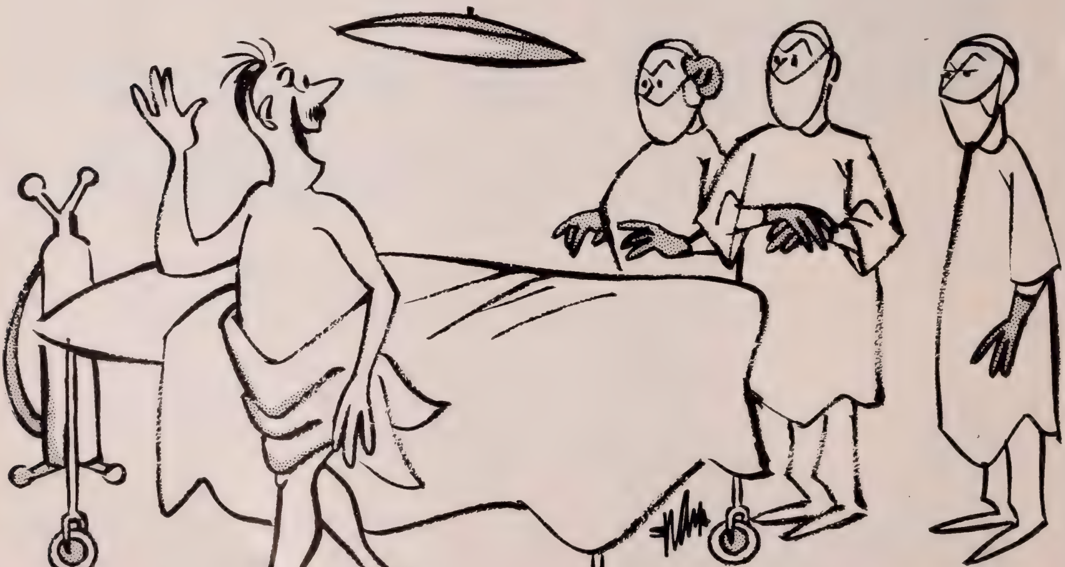

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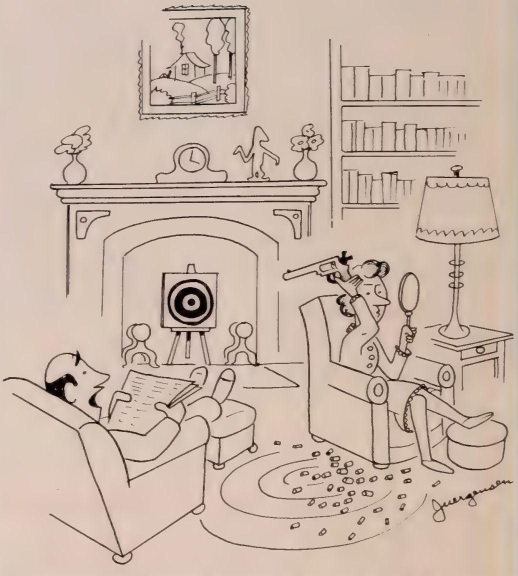

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[1] Alexander, L.: Chemotherapy of depression—Use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride. J.A.M.A. 166:1019, March 1, 1958.

[2] Current personal communications; in the files of Wallace Laboratories.

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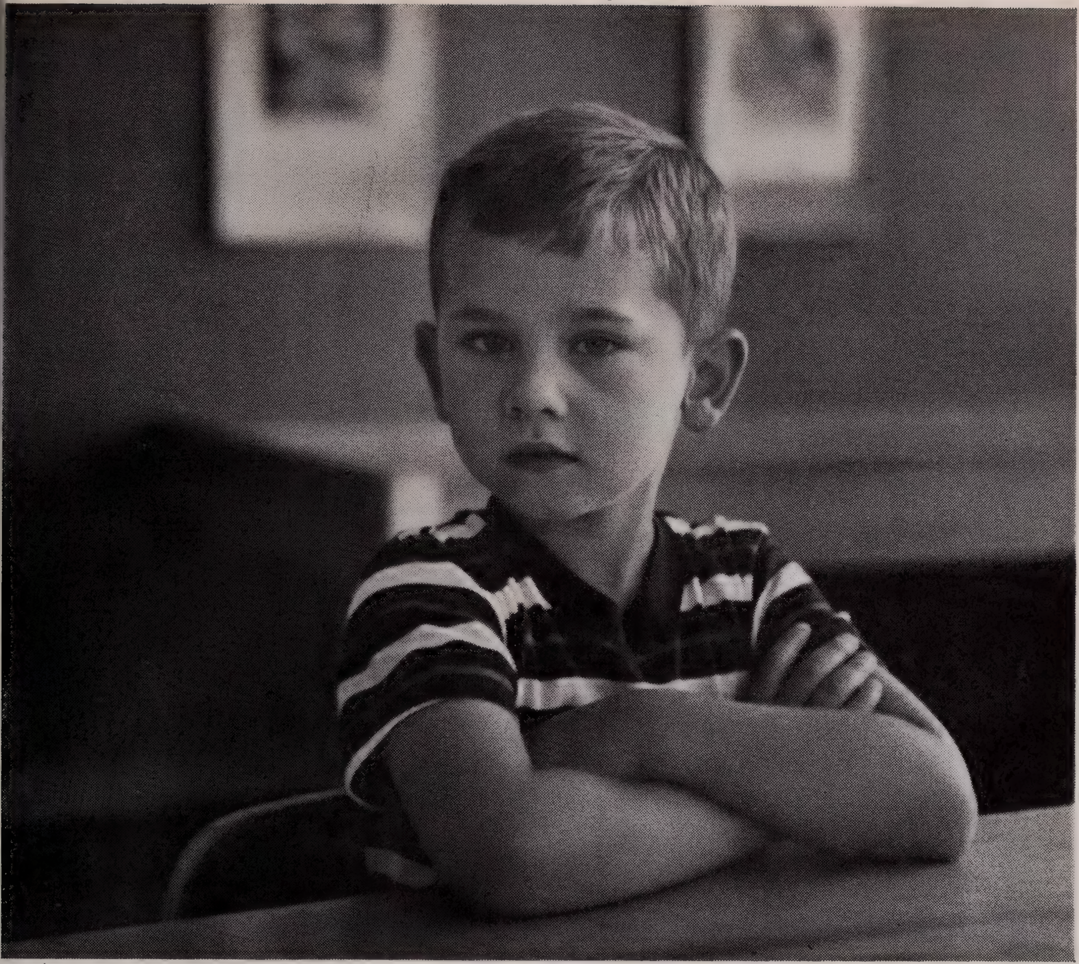

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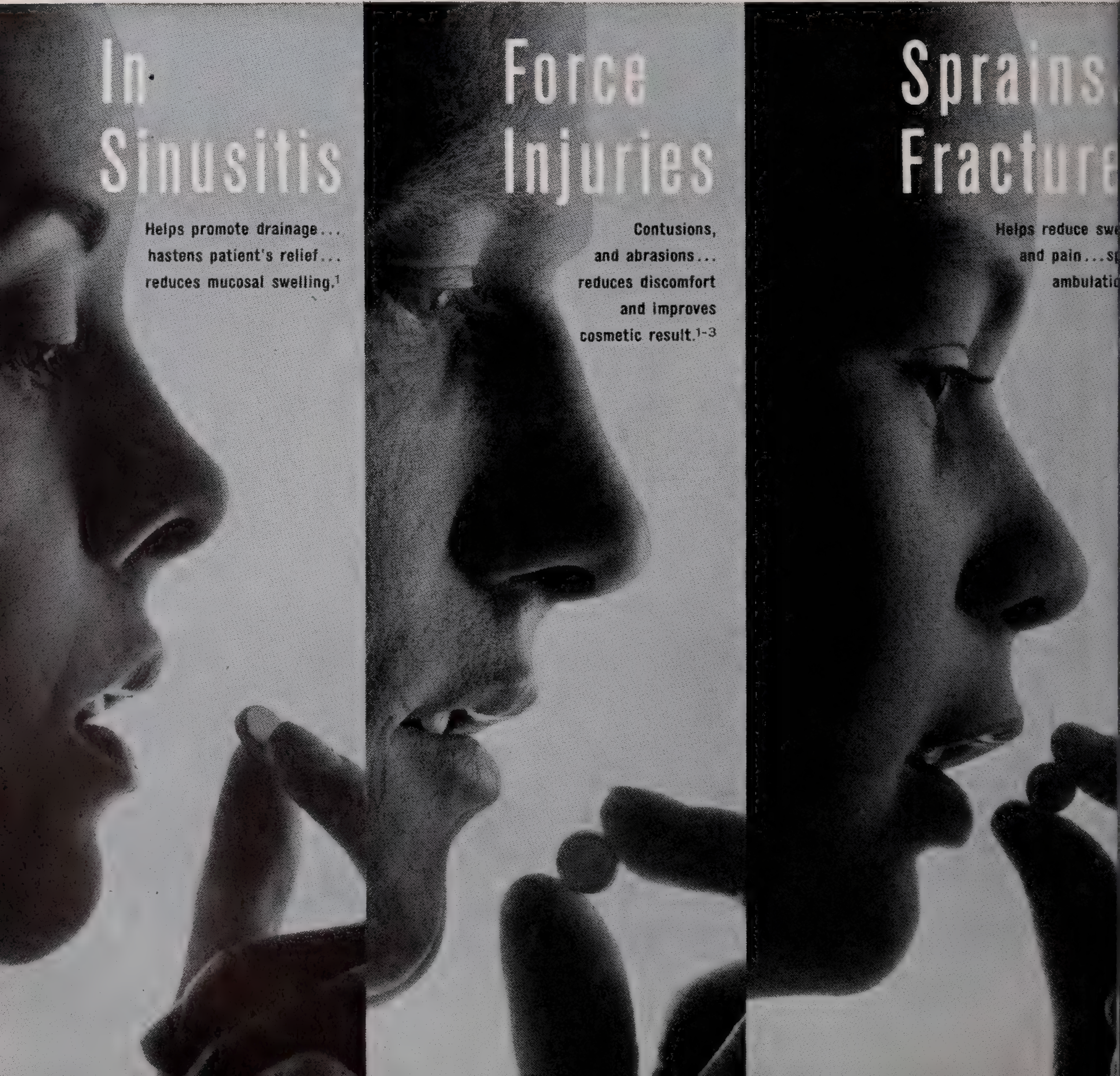
erences: 1. Innerfield, I.; Shub, H., and Boyd, L. J.: New England J. Med. 258:1069 (May 24) 1958. 2. Miller, J. M.; Godfrey, G. C.; Ginsberg, M. J., and strat, C. J.: J.A.M.A. 166:478 (Feb. 1) 1958. 3. Davidson, E.; Prigot, A., and Maynard, A. de L.: Harlem Hosp. Bull. II:1 (June) 1958. ***Reg. U. S. Pat. Off**



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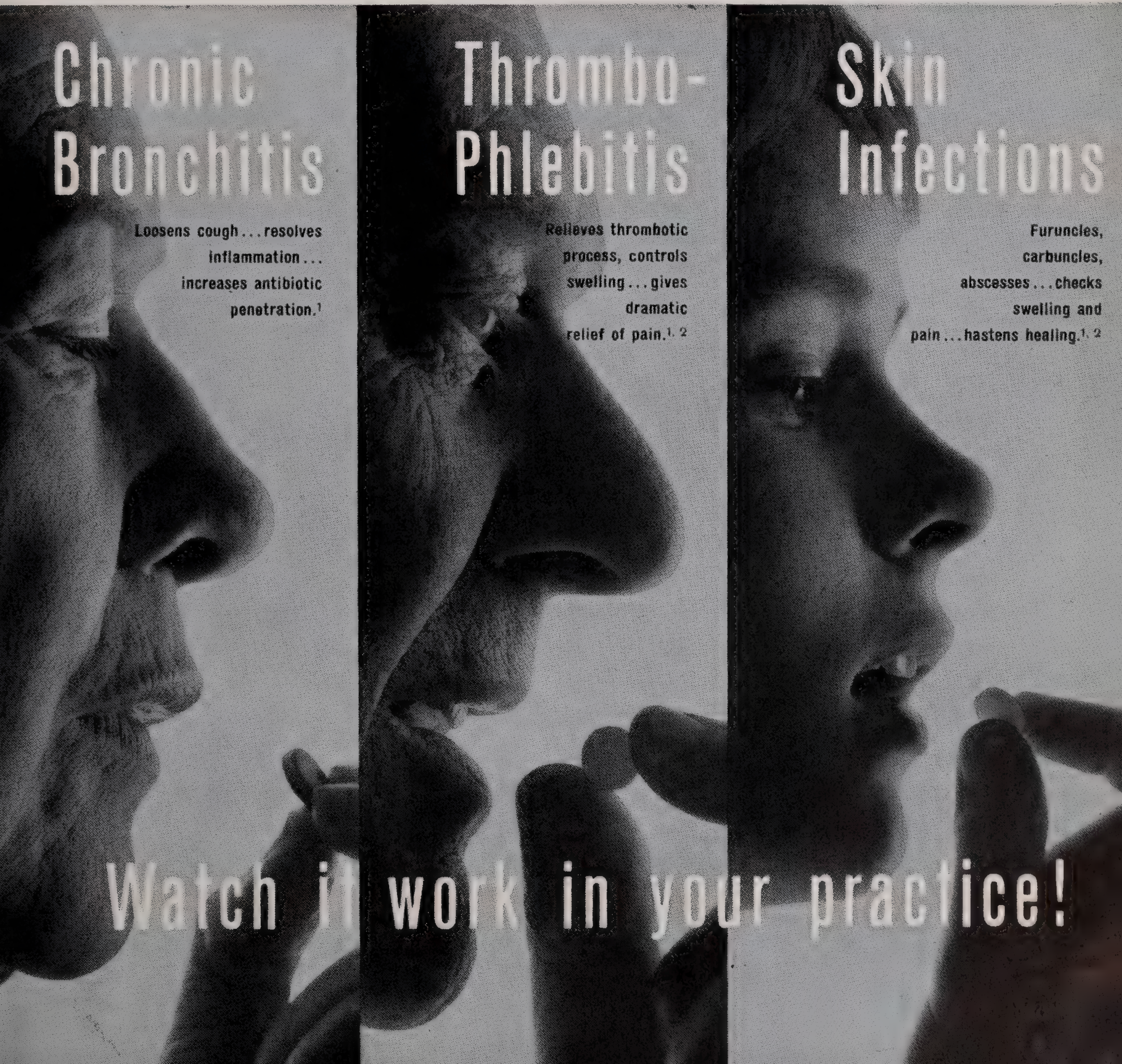
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[1] Banyai, A. L.: Management of Cough in Daily Practice. J.A.M.A., 148:501, Feb. 16, 1952.

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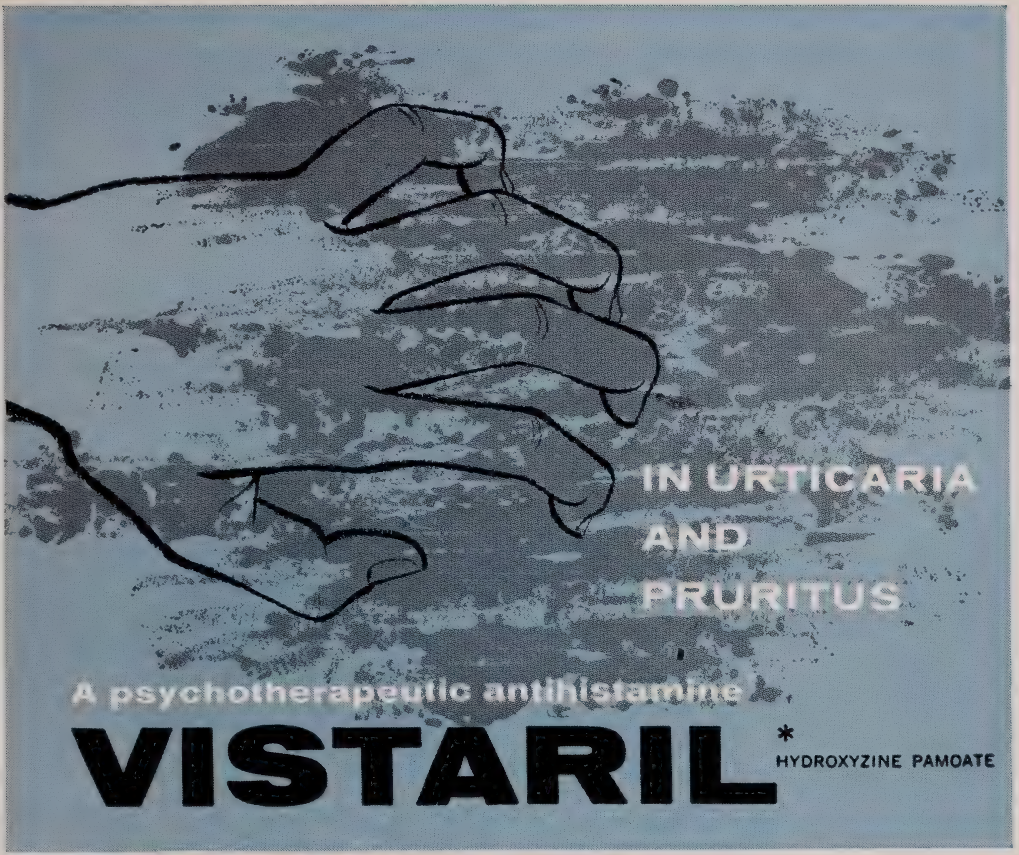
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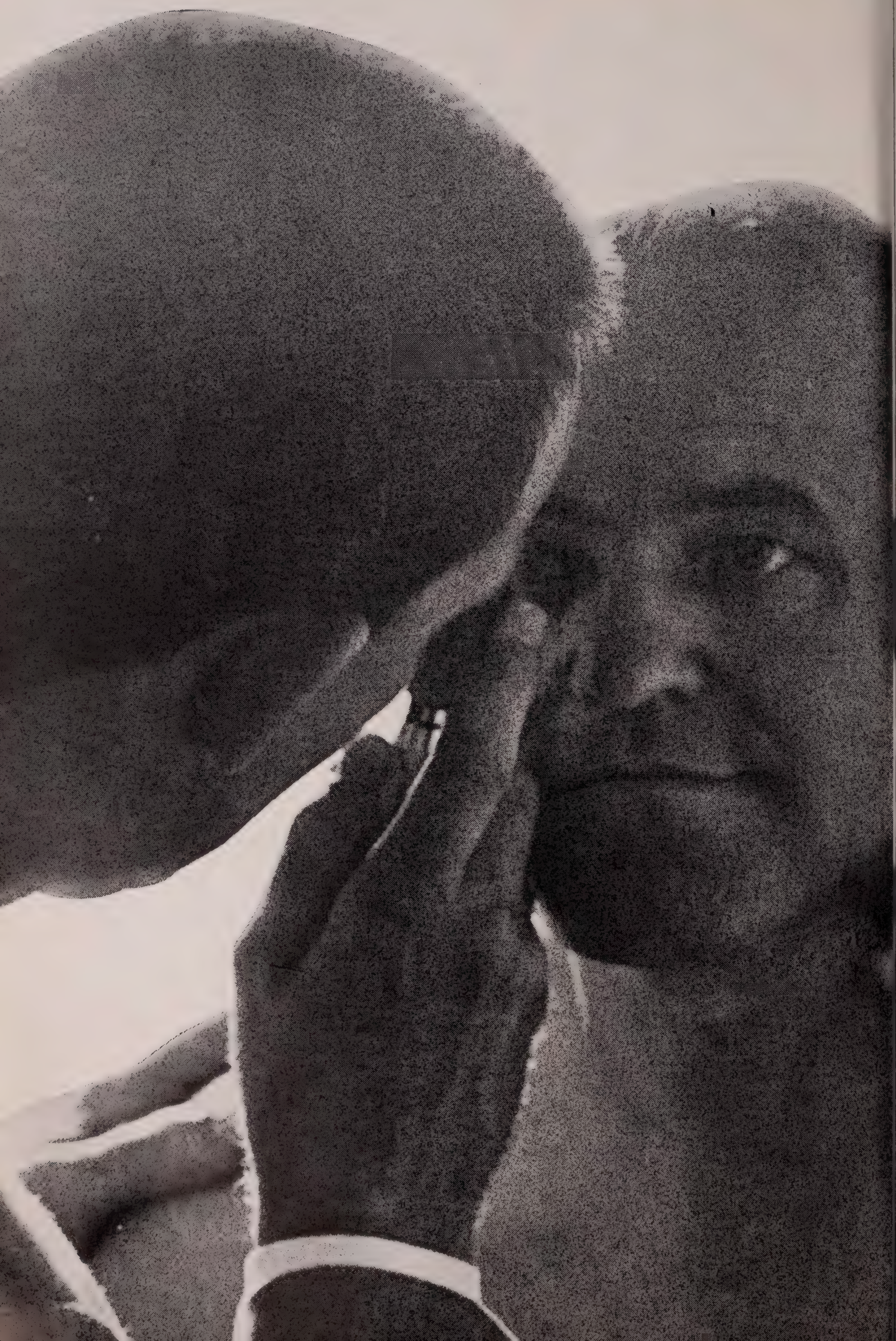

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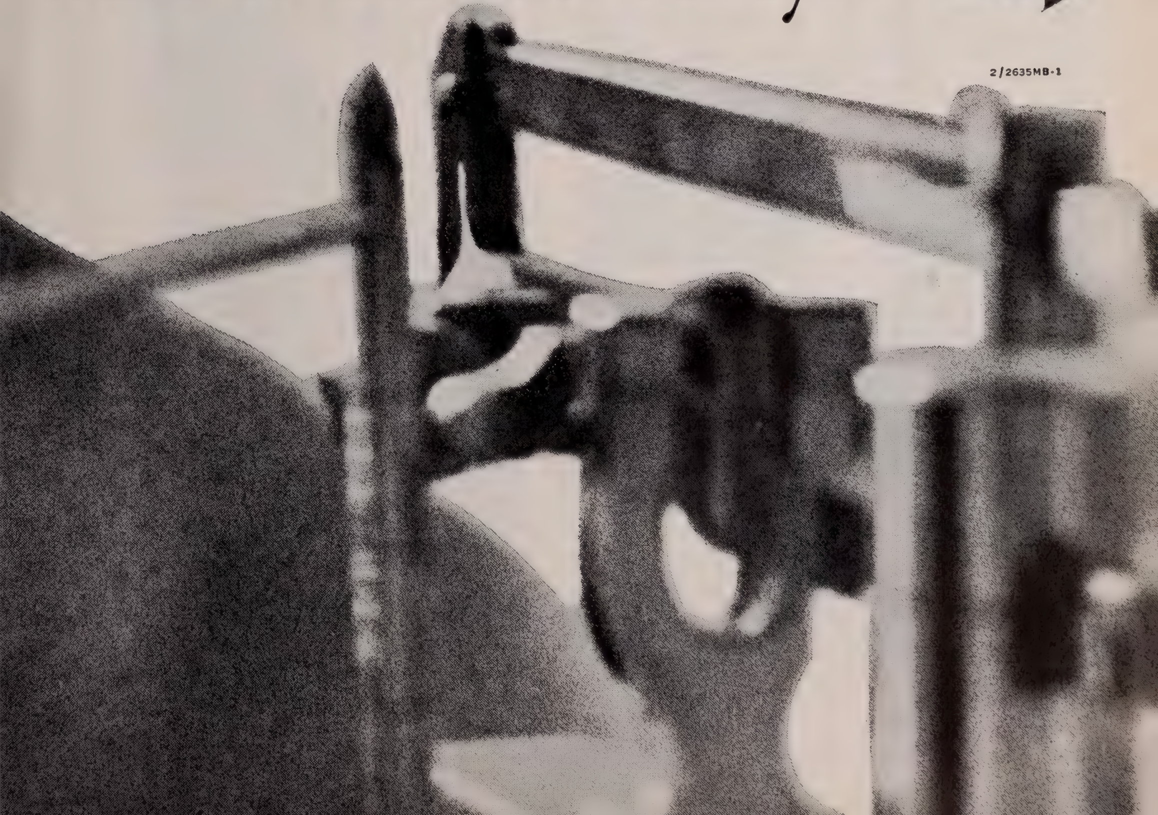

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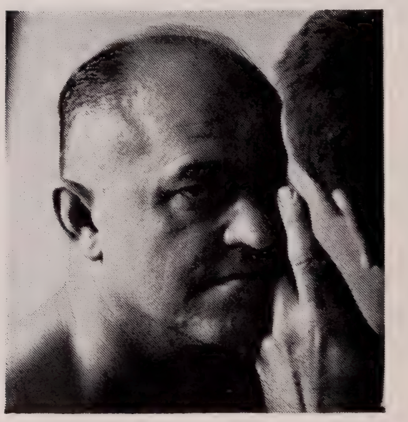
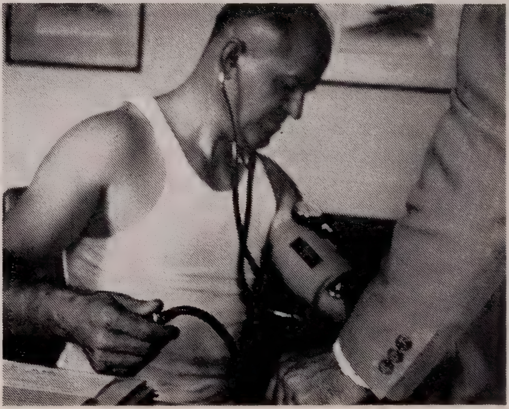


Hospitalized briefly for observation and treatment, he was placed on a 4-Gm. sodium diet, plus chlorothiazide and mecamylamine regulated according to b.p. reading, which he was taught to take himself.



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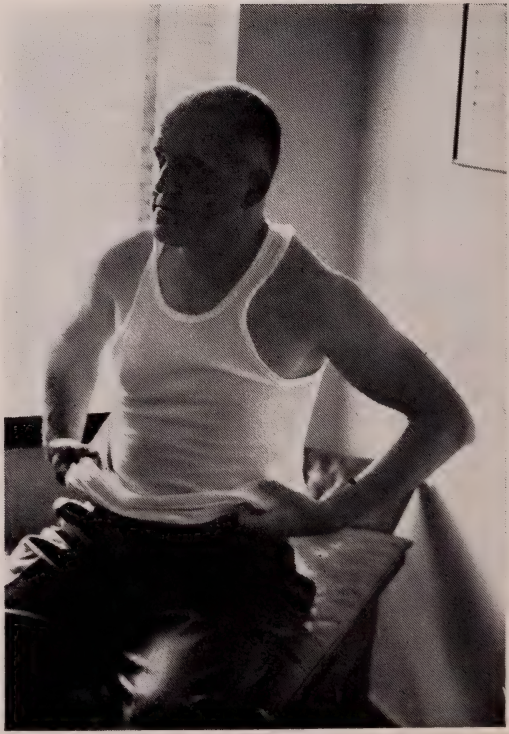

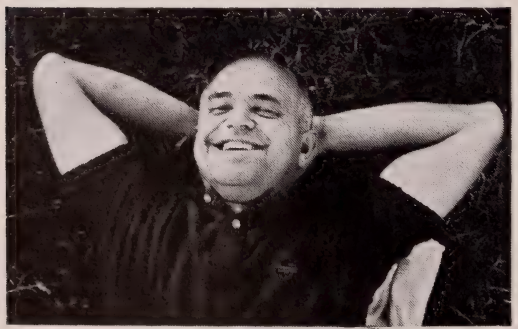

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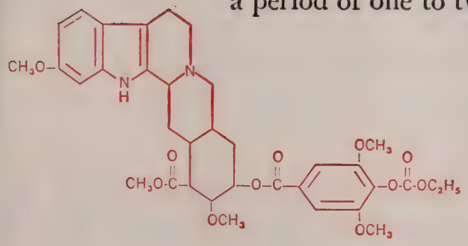

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Dosage: *In New Patients:* Average initial dose, 1 to 2 tablets (1 to 2 mg.) daily. Some patients may require and will tolerate 3 or more tablets daily. Maintenance dose will range from ½ to 3 tablets (0.5 mg. to 3 mg.) daily. When necessary for adequate control of blood pressure, more potent agents may be used adjunctively with Singoserp in doses below those required when they are used alone. *In Patients Taking Other Antihypertensive Medication:* Add 1 to 2 Singoserp tablets (1 to 2 mg.) daily. Dosage of other agents should be revised downward to a level affording maximal control of blood pressure and minimal side effects.

Supplied: Singoserp *Tablets,* 1 mg. (white, scored); bottles of 100.

References: 1. Herrmann, G. R., Vogelpohl, E. B., Hejtmancik, M. R., and Wright, J. C.: To be published. 2. Wolffe, J. B.: Mod. Med. *26*:253 (Feb. 1) 1958. 3. Bartels, C. C.: To be published.

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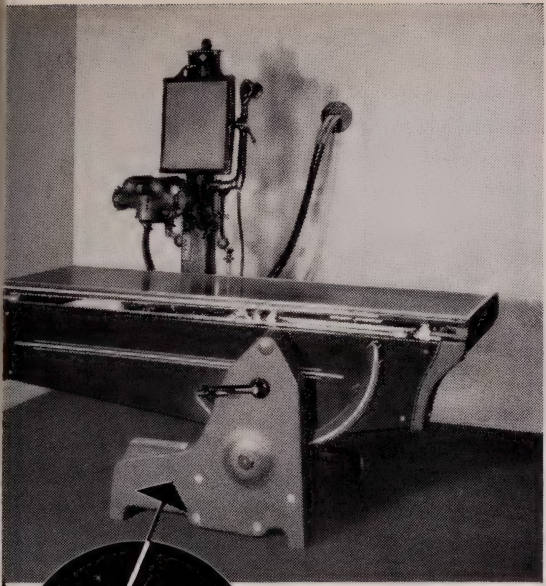

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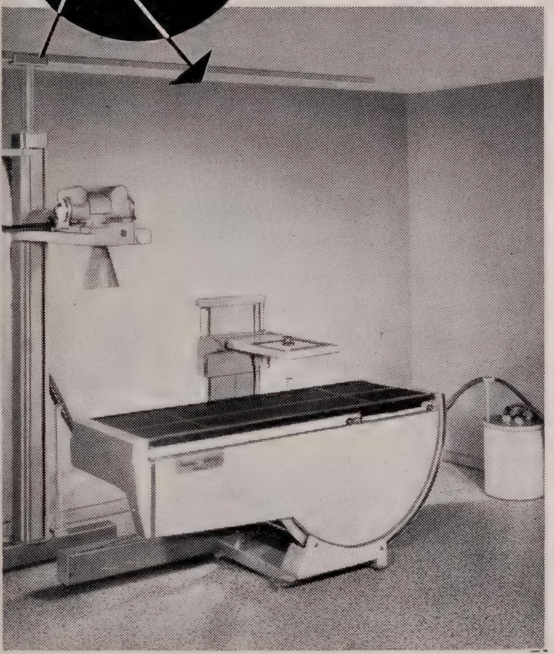

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*Ethan Allen Brown, N.E. J. Med., 223:843.

F. K. Albrecht, Mod. Mgmnt. Clin. Med., P674, Williams & Wilkins.

F. W. Wittich, J. Am. Ger. Soc., 3:239, 1955

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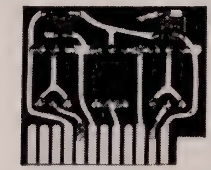

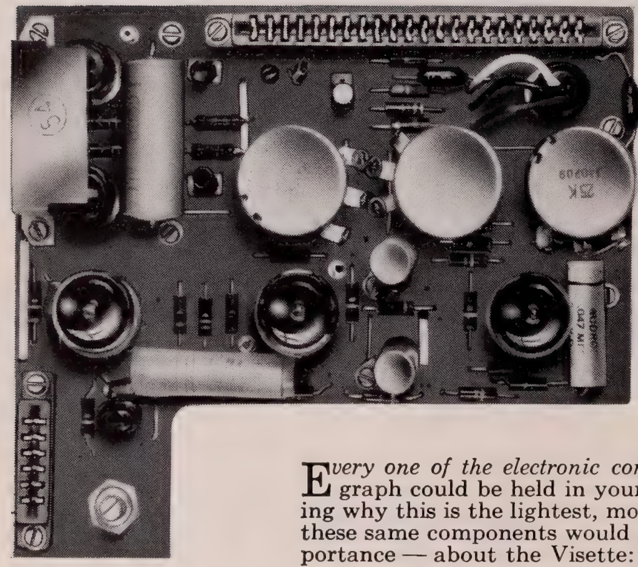

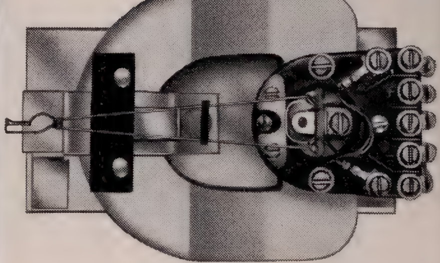

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1. Pace, W. G.: Mil. Med. 118:34, 1956.

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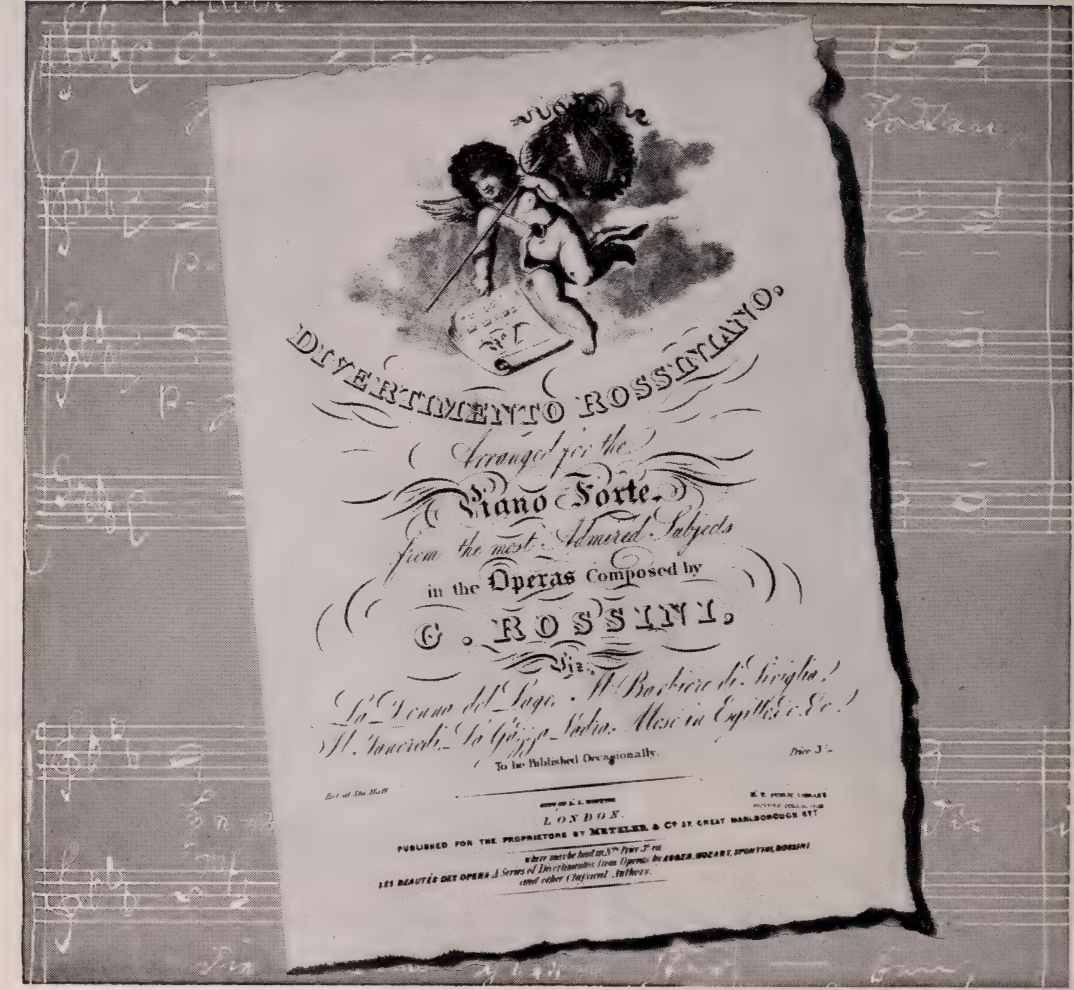

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"...of 311 patients, incidence of side effects
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1. Lawler, E. G. and Limperis, N.M.: Clin. Med. (Dec.) 1958. 2. Medical Science, 3:376-377 (Mar. 25) 1958. 3. Cavallito, C. J. and Jewell, R.: J. Am. Pharm. A. (Scient. Ed.) 47:165-168, 1958. 4. Antibiotic Med. & Clin. Therapy 5:578-581 (Sept.) 1958.

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1. Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958.

*patent pending, T.M.

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a logical alliance of two antihypertensives
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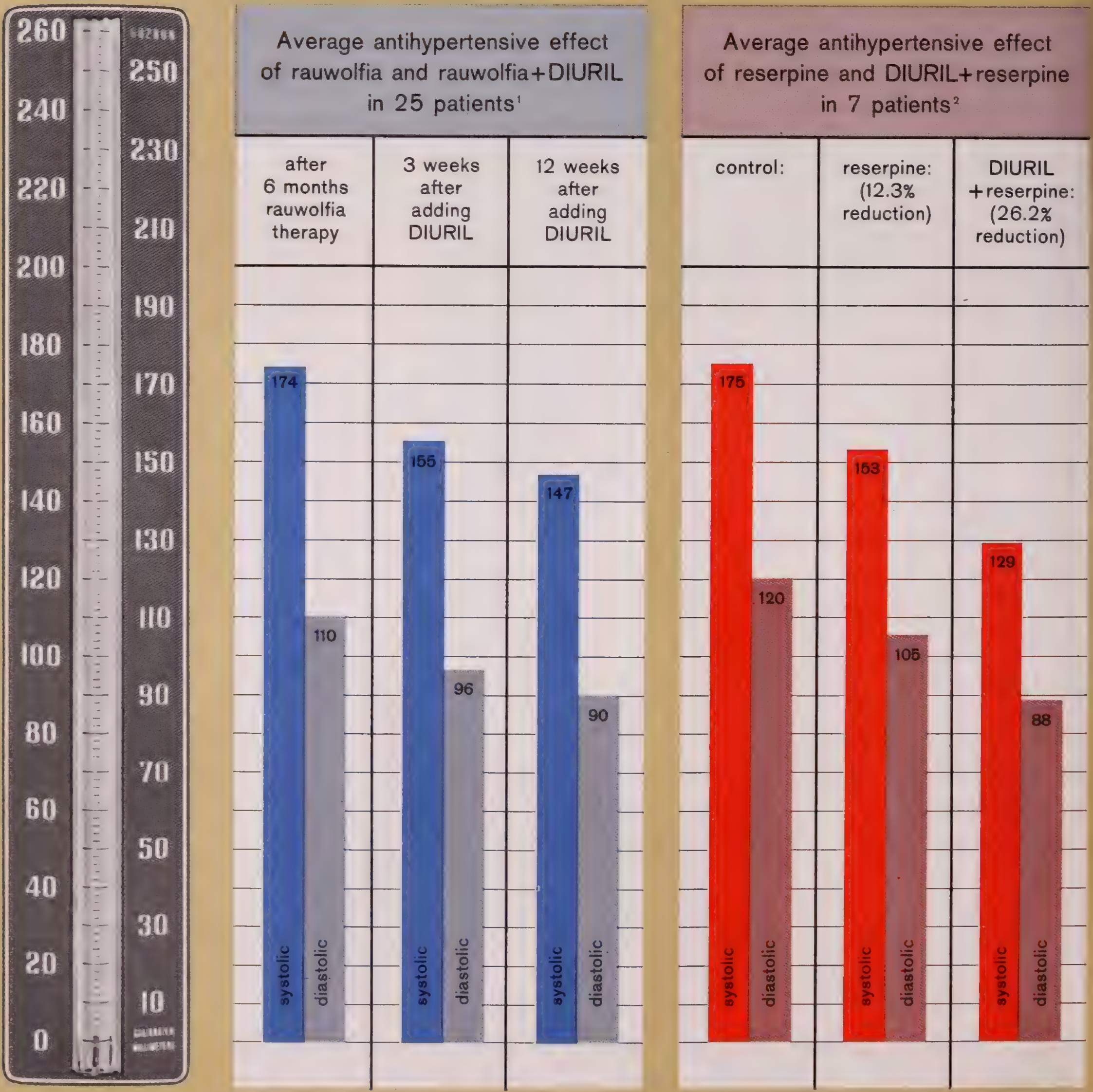
DIUPRES produces an effect greater than either DIURIL or reserpine alone. It is effective in many patients who respond inadequately or not at all to either DIURIL or reserpine.



Average antihypertensive effect of rauwolfia and rauwolfia+DIURIL in 25 patients[1]

Average antihypertensive effect of reserpine and DIURIL+reserpine in 7 patients[2]

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DIURIL® WITH RESERPINE

effective therapy for most patients

DIUPRES by itself usually provides effective therapy for a majority of patients with mild or moderate hypertension, and even for many patients with severe hypertension. Many patients now treated with other agents which frequently cause distressing side effects can be adequately managed with well tolerated DIUPRES.

provides basic therapy

Should other drugs need to be added to DIUPRES, they can be given in much lower than usual dosage so that their side effects are often strikingly reduced.

rapid onset of effect

The antihypertensive action of DIUPRES is rapidly evident. (Considerable time may elapse before the antihypertensive effect of reserpine alone is observed.)

fewer and less severe side effects

DIUPRES may be expected to cause fewer and less severe side effects than are encountered with other antihypertensive therapy. (Since DIURIL and reserpine potentiate each other, the required dosage of each is usually less when given together as DIUPRES than when given alone. Such reduction in dosage makes side effects less likely to occur.)

often obviates weight gain

DIUPRES minimizes the problem of weight gain seen with reserpine (reserpine alone has been reported to produce weight gain in 50 per cent of patients).[1,4]

virtually eliminates fluid retention

DIUPRES is not likely to cause either clinical or subclinical retention of sodium and water. (Hypotensive drugs, particularly rauwolfia[5] and hydralazine,[6] may cause fluid retention. Even when such retention is subclinical, their antihypertensive effectiveness is diminished.[6])

diet more palatable

With DIUPRES, there is less need for rigid restriction of dietary salt, which patients find so burdensome.

> "*It may well be that the drug* [DIURIL] *produces the benefits of a markedly restricted low sodium diet but without its hardships.*"[3]

subjective and objective improvement

DIUPRES allays anxiety and tension, thus reducing the emotional component of hypertension. Organic changes of hypertension may be arrested and reversed. Headache, dizziness, palpitations and tachycardia are usually promptly relieved by DIUPRES. When the *anginal syndrome* accompanies hypertension, the administration of DIUPRES may also cause diminution or even disappearance of this syndrome concurrent with control of the hypertension.

convenient, controlled dosage

Instead of two separate prescriptions, you write one prescription . . . the patient takes one tablet, rather than two different tablets . . . and the dosage schedule is easier for the patient to remember and follow.

> "*patients have fewer lapses and make fewer mistakes in dosage, the simpler the regimen can be made. Therefore I do not hesitate to use more than one medicament combined in one tablet, provided this gives approximately the correct dosage of each.*"[6]

economical

DIUPRES will cost the patient less than if he were given two separate prescriptions for its components.

Indications:

DIUPRES is indicated in hypertension of all degrees of severity. It can be used in the following ways:

- as total therapy
- as primary therapy, adding other drugs if necessary
- as replacement or adjunctive therapy in patients now treated with other agents

Precautions:

The precautions normally observed with DIURIL or reserpine apply to DIUPRES. Additional information on DIUPRES is available to physicians on request.

Recommended dosage range:

DIUPRES-500—one tablet one to three times a day.
DIUPRES-250—one tablet one to four times a day.

If necessary, other agents may be added. If the patient is receiving ganglion blocking agents or hydralazine, their dosage should be cut by 50 per cent when DIUPRES is added.

℞
Diupres-500

DIUPRES-500

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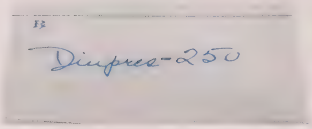

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†Henington, V. M.; Kennedy, B., and Loria, P. R.: South. M. J. *51*:577, 1958.

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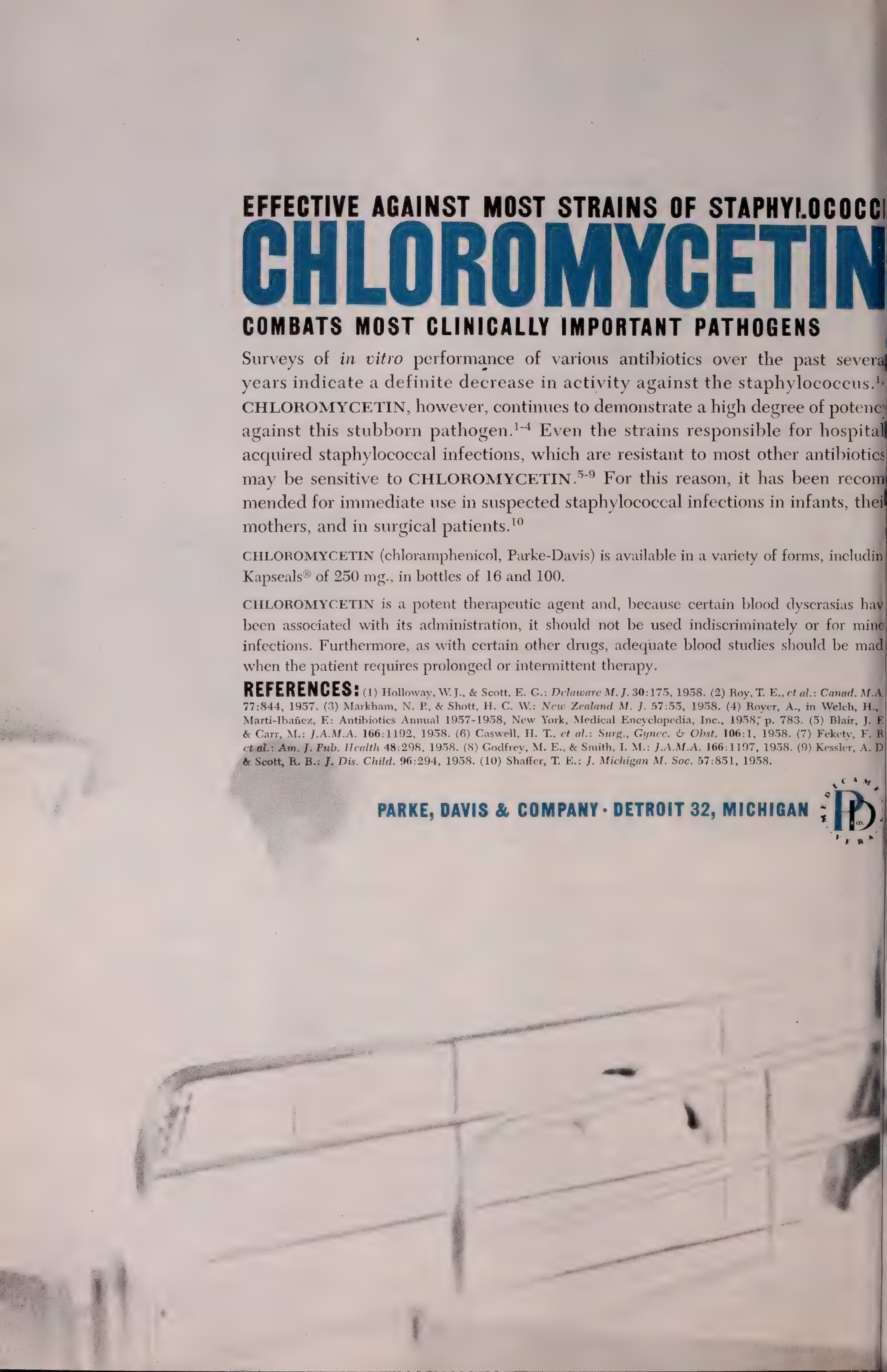

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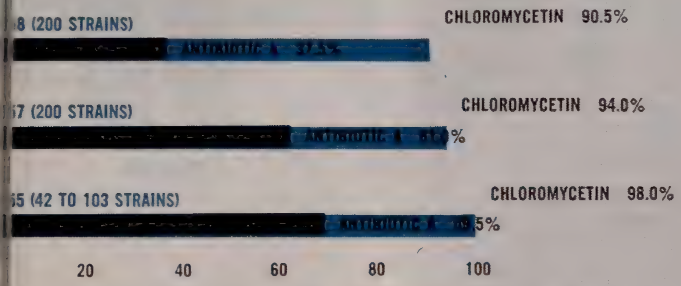

*Adapted from Holloway and Scott.[1] In this study CHLOROMYCETIN and Antibiotic A were used in identical strengths of 5 mcg.

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Supplied: Bottles of 50 scored tablets.

1. Alexander, L.: Chemotherapy of depression—Use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride. J.A.M.A. 166:1019, March 1, 1958.
2. Current personal communications; in the files of Wallace Laboratories.

Literature and samples on request

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1. J. D. Young, Jr., W. S. Kiser and O. C. Beyer, *Antibiotic Med. & Clin. Therapy, 6*: (Suppl.), 1959 (in press). **2.** H. P. Ironson and C. Patel, *Antibiotic Med. & Clin. Therapy 6*: (Suppl.), 1959 (in press). **3.** T. D. Michael, *Antibiotic Med. & Clin. Therapy, 6*: (Suppl.), 1959 (in press). **4.** W. A. Leff, *Antibiotic Med. & Clin. Therapy, 6*: (Suppl.), 1959 (in press). **5.** B. A. Koechlin, W. Kern and R. Engelberg, *Antibiotic Med. & Clin. Therapy, 6*: (Suppl.), 1959 (in press). **6.** R. J. Schnitzer and W. F. DeLorenzo, *Antibiotic Med. & Clin. Therapy, 6*: (Suppl.), 1959 (in press). **7.** R. J. Schnitzer, W. F. DeLorenzo, E. Grunberg and R. Russomanno, *Proc. Soc. Exper. Biol. & Med. 99*:421, 1958. **8.** B. H. Leming, Jr., Clyde Flanigan, Jr. and B. R. Jennings, *Antibiotic Med. & Clin. Therapy, 6*: (Suppl.), 1959 (in press). **9.** J. C. Elia, *Antibiotic Med. & Clin. Therapy, 6*: (Suppl.), 1959 (in press). **10.** W. F. DeLorenzo and R. Russomanno, *Antibiotic Med. & Clin. Therapy, 6*: (Suppl.), 1959 (in press). **11.** J. F. Glenn, J. R. Johnson and J. H. Semans, *Antibiotic Med. & Clin. Therapy, 6*: (Suppl.), 1959 (in press). **12.** B. Fust and E. Boehni, *Antibiotic Med. & Clin. Therapy 6*: (Suppl.), 1959 (in press). **13.** W. F. DeLorenzo and A. M. Schumacher, *Antibiotic Med. & Clin. Therapy, 6*: (Suppl.), 1959 (in press). **14.** S. Ross, J. R. Puig and E. A. Zaremba, *Antibiotics Annual* 1958-59 (in press). **15.** E. H. Townsend and A. Borgstedt, *Antibiotics Annual* 1958-59 (in press). **16.** W. P. Boger, *Antibiotics Annual* 1958-59 (in press). **17.** O. Brandman, C. Oyer, R. Engelberg and L. O. Randall, *J. M. Soc. New Jersey* (in press).

Dosage: MADRIBON, MADRIQID – Consult literature available on request.

Caution: The usual precautions in sulfonamide therapy should be observed, including maintenance of adequate fluid intake. If toxic reactions or blood dyscrasias occur, use of the drug should be discontinued. As is true of all sulfonamides, Madribon is probably contraindicated in premature infants.

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EDITORIALS

The Withdrawal and Testing of Blood to Determine Its Alcoholic Content; the Recent Amendment of the Vehicle and Traffic Law

Section 71–A of the Vehicle and Traffic Law was, prior to its recent amendment, the subject of many inquiries by physicians to counsel of the Medical Society of the State of New York.

Concerned with the possible legal consequences which might flow from action pursuant to the statutory provisions, some physicians refused to perform the test, although they were most desirous of cooperating with the State in combating the menace created by the drunken driver.

Communications passed between counsel for the Society and the State Police at Albany. Statute 71–A was amended at the last session of the State Legislature by an act referred to as the Schultz Act.

Section 71–A provides any person who operates a motor vehicle or motorcycle in New York State:

> shall be deemed to have given his consent to a chemical test of his breath, blood, urine, or saliva for the purpose of determining the alcoholic content of his blood provided that such test is administered at the direction of a police officer having reasonable grounds to believe such person to have been driving in an intoxicated condition and in accordance with the rules and regulations established by the police force of which he is a member.

The statute further provides:

> If such person having been placed under arrest and having thereafter been requested to submit to such chemical test *refuses to submit to* such chemical test *the test shall not be given* but the commissioner shall revoke his license.

The revocation of the license may take place after a hearing has been accorded to the licensee.

Absent negligence in the withdrawal of blood: No problem was posed by the statute where the driver either (1) expressly consented or (2) raised no objection to the withdrawal of blood, for in such instance the original implied consent created by the statute continued, and there was no affirmative refusal by the driver which overcame the statutory implied consent.

However, physicians questioned whether the implied consent imposed by the statute would bar a suit by the driver for assault by withdrawing blood from him when he was unconscious or so intoxicated that he was incapable of intelligently exercising his right to refuse the test as granted to him by the statute.

Some prosecuting officers were of the opinion (shared by others) that it was proper for the physician to withdraw blood under such circumstances, since until there was an affirmative refusal by the driver the original implied consent continued.

While counsel for the Society recognized the force of this opinion, in the absence of a decision upholding this position he could not completely assure physicians it would prevail in a court.

The Supreme Court of the United States was called on (Breithaupt case 352 U.S. Reports) to decide whether, in a criminal prosecution against a driver, the results of the test of blood withdrawn from the driver while he was unconscious were admissible at the trial. The driver contended that under the circumstances the withdrawal constituted an unreasonable search and seizure and violated his constitutional rights; hence, the evidence of the analysis of the blood sample should not have been received in evidence against him. The majority of the court did *not* uphold his views. It pointed out that the extraction of blood for testing purposes is an experience which, every day, many undergo without hardship or ill effects, and the purpose for taking the sample, under the various State laws, was for the protection of the public.

Three Justices dissented. They regarded the taking of the sample as an assault committed on the unconscious driver and spoke of the sample-taking as a violation of the sanctity of the driver's person.

Thus, while the Supreme Court held that the drivers' constitutional rights were *not* violated and the evidence of the analysis was admissible against the driver, it did not expressly hold that the withdrawal of blood would not subject the physician to civil liability for assault. Nor could the Court expressly so hold, since the issue before it was the admissibility of the analysis in the criminal proceeding against the driver. However, one could and should reasonably come to the conclusion, from the prevailing majority opinion, that withdrawing a sample of blood from an unconscious driver would *not* subject the physician to liability for assault.

The views of counsel to the Society were communicated to the appropriate State agency and to its counsel.

The Vehicle and Traffic Law was amended at the last session of the Legislature by the Schultz Act. The Schultz Act precludes the driver from suing a physician for any act done or omitted in the course of withdrawing blood at the request of a police officer pursuant to the pertinent sections. The act done by the physician might be claimed to be an assault or negligence in withdrawing the blood or omitting to do that which should have been done in the course of withdrawing the blood, but whatever the claim, the statute is clear that the *physician shall not be sued by the driver* or held liable for any act done or omitted in the course of withdrawing blood at the request of the police officer, pursuant to the section.

The driver who may claim assault or malpractice in the withdrawing of blood under the Schultz Act *can only sue the State or the appropriate political subdivision. The State can sue the physician if he is guilty of "gross negligence or bad faith,"* and the damages to be recovered by the State from the physician are limited only to those damages which were awarded to the driver against the State.

It should be pointed out that the indemnity representative of the Medical Society of the State of New York advises that the malpractice insurance of the Group Plan covers a physician who takes blood pursuant to the request of a police officer acting under the Motor Vehicle Law.

If possible, it would be wise, to have a formal typewritten consent to the withdrawing of blood by the physician, executed by the driver and witnesses. This would be the best evidence that the driver consented. However, the statute does *not* require *written consent.* Express consent can be testified to by witnesses or consent can be implied from the circumstances testified to by witnesses. Under the statute:

> *No person except a physician acting* at the request of a police officer shall be entitled to withdraw blood for the purpose of determining the alcoholic content therein.

But this limitation

> shall not apply to the taking of a urine, saliva, or breath specimen

The Schultz Act, referred to previously, is limited to physicians.

The *New York Law Journal* (June 30, 1958) carried this notice concerning the Schultz Act:

> BUREAU OF MOTOR VEHICLES
> Liability for Injuries Caused
> While Withdrawing Blood for
> Determination of Alcoholic Content
>
> Physicians who extract blood for chemical tests of persons arrested for driving while intoxicated will be protected, beginning July 1, from liability or legal action instituted by the driver under an amendment to subdivision 3, section 71-A, of the Vehicle and Traffic Law (chap. 666, Laws 1958).

Under section 71–A of the Vehicle and Traffic Law, when a police officer has reasonable grounds for believing a person has been driving while intoxicated, and the person has been arrested on such a charge, he may request such person to submit to a chemical test. If the test to be used is a blood test, the police officer requests a physician to extract the blood. Under the amendment to subdivision 3, the physician no longer is liable for any act done or omitted in the actual withdrawal of the blood for the test, except in cases involving gross negligence or bad faith on the part of the physician.

Any such suit, after July 1, can be brought only against the State or appropriate political subdivision, which, in turn, has the right to bring action against the physician in cases of gross negligence or bad faith.

Since the law relating to chemical tests for alcoholic content of blood has been in effect, some physicians have been hesitant in extracting blood for the test for fear of civil damage suits being brought against them by the accused drivers.—H. S.

A New Approach

The exploitation of the medical profession for commercial purposes long has been fought by local, state, and national societies with, until recently, discouraging results. *New York Medicine*[1] has pointed out editorially a new attempt by such commercial interests to evade the new regulations which will come into force January 1, 1959. Because the case is so well stated in this editorial we reproduce it in full for the information of our membership.

MD Pitchmen on the Way?

Three times in the past month young physicians—usually just starting in practice—have called the Society and said they have been approached by advertising agencies to "go on television." What they are being asked to do is to make filmed commercials for patented, secret, over-the-counter proprietary remedies.

Thus the deluge starts, and one can predict that sometime after the first of the year, the "men-in-the-white-coat" TV commercials may have real doctors plugging the kind of remedies that hit the TV audience.

Background of the new trend is that on January 1, 1959, the use of professional actors as TV "doctors" is to be banned in the interests of honest, accurate advertising. The A.M.A., the Federal Trade Commission, the TV networks, and the ethical pharmaceutical industry all have joined forces to adopt this new ruling. But every regulation has an "out."

The way out, of course, is to have a legitimate physician make the statement. This, apparently, is what the Madison Avenue advertising boys are setting up.

What the young doctors have been told at the Society is that the decision is their own choice, to wit:

1. Does any physician—especially in private practice as they have been—wish to make his reputation in medicine as a substitute for professional actors and as a pitchman for patent medicines?

2. Is it not better for the long-range point of view to use his M.D. degree in the practice of medicine and not in the field of advertising? Did he go through four years of premedic, four years of medical school, plus an internship and sometimes a residency, to wind up as a ghostly image on the TV screen?

3. What happens to the doctor's professional reputation as a physician when he takes the step and then finds himself out on the street on Madison Avenue (figuratively) after his advertising contract expires and he attempts to regain his lost reputation as a practicing physician?

Officially, the answer to the question, "How far can a doctor go?" rests with rulings by the Board of Censors, which would have to act—and would act—upon the formal request of a physician to appear as spokesman on a TV commercial.

In New York County, the right of a physician to be quoted in the press or to appear on radio or on television in the interest of conveying accurate medical information to the public is recognized. Primarily this appearance should discuss scientific or clinical work the physician himself has presented to his peers in a reputable medical journal, or to a medical meeting or in a medical exhibiton at such medical convention.

---

[1] New York Med.: Oct. 5, 1958, p. 697.

No ruling has been made in the matter that is now arising, where doctors may be asked to be front men for medical TV commercials. But certainly the unofficial questions posed to the physicians, who have inquired about the matter, would have to be answered. Buried in the complex problem also is the matter of good taste. Is it in good taste, and to the best interests of the medical profession, and to the health and welfare of the public for an M.D. to plug Hadacol or what have you? We think the answer is no.

We are in agreement with *New York Medicine* that "the answer is no." Certainly in the course of time, test cases will arise and be adjudicated by the proper agencies of the medical societies. In the meantime, we feel that physicians will exercise good judgment and good taste in making their decisions if approached.

Editorial Comment

Multiple Birth Roster. The New York City Department of Health has established a "Multiple Birth Roster." The roster is intended to be a source of information for research workers in the fields of genetics, child development, etc. The Department will cooperate with researchers to supply them with some data which may be helpful to them to initiate genetic studies.

All multiple births involving at least two live infants are included in the roster. All the identifying, demographic, and pregnancy information available on the birth certificate of each infant is punched on a tabulating card. A photostatic copy of the complete record of birth is also in the register, so that details not available on the punched card may be conveniently abstracted. The roster will be kept up-to-date in three respects: adoption of a child, deaths during the first year of life, and data fed back to the roster by the individual researcher. The roster was initiated as of January 1, 1958, and will be continued indefinitely. At a later date an evaluation will be made to determine whether its usage by researchers warrants its continuation.

Researchers requesting information from the roster will be expected to adhere to such requirements as the Department may deem necessary.

All requests will be reviewed as to the qualifications of the investigator and the value of the proposed study. Investigators may be asked to allocate clerical staff to assist in selecting the data requested. Facts elicited by home interviews and/or abstract of records are to be made available by the researcher to other researchers to avoid duplications of efforts.

Formal requests should be submitted to Dr. Harold Jacobziner, Assistant Commissioner for Maternal and Child Health Services, New York City Department of Health, 125 Worth Street, New York 13, New York.

Teach me to live, that I may dread
The grave as little as my bed.—Bishop Thomas Ken

PRESIDENT'S PAGE

LEO E. GIBSON, M.D.

On July 21, 1958, the headquarters offices of the Medical Society of the State of New York began to function at 750 Third Avenue, New York 17, New York, having moved during the week-end from 386 Fourth Avenue. Our Society occupies the eighteenth floor in a new building which extends from 46th to 47th Streets.

At the instigation of the Council, the Board of Trustees authorized the chairman, Dr. J. Stanley Kenney, to sign a lease for fifteen years. Although at an increased rental, all departments are now together except the Albany office. Physicians' Home, Blood Banks Association, and the North East District Clearing House are also with us. Our departments include administration, Public and Professional Relations Bureau, Committee on Public Health and Education, *Medical Directory of New York State*, membership, Bureau of Industrial Health and Workmen's Compensation, Medicare, Bureau of Medical Care Insurance, NEW YORK STATE JOURNAL OF MEDICINE, accounting, and office manager. There is also a mail room for addressing machines and other mechanical equipment as well as a room for Council, Trustees, and committee meetings.

Our officers and 69 employes are delighted with the new, airconditioned situation in the "Grand Central Area," a great improvement over our previous quarters. We have a new place, a new look, and new, improved equipment. We believe efficiency will be enhanced.

Within the memory of many present members the Society's headquarters have been located in the building of the New York Academy of Medicine at Fifth Avenue and 103rd Street, from 1926 to 1940; then at 292 Madison Avenue between 40th and 41st Streets, from 1940 to 1952. While this location was convenient, being in midtown, the Society and its activities began to expand rapidly and it became necessary to take more space on another floor of the building.

Again the Society moved, this time downtown to 386 Fourth Avenue at the corner of 27th Street, from 1952 where we stayed to 1958. Not long after this move the Council room was found to be too small and the Council moved its monthly meetings to the Manhattan Club. The editorial and advertising staffs of the NEW YORK STATE JOURNAL OF MEDICINE were transferred to another floor of the same building and were joined there by Physicians' Home.

In the past many members have thought of our Society as inhabiting a nebulous area from which came our JOURNAL and our *Directory*. Let us hope that this misconception can now be corrected. It is therefore with pleasure that I invite you to visit your new headquarters and learn at first hand how your organization functions. I believe you will like the new offices and will feel a justifiable pride in them.

Leo E. Gibson

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Napp, Goldfarb and Massell[3] conducted a controlled study in which 207 postpartum patients received Vallestril, 213 patients were given diethylstilbestrol and 193 patients did not receive hormone therapy. "The stilbestrol treated group showed a significantly greater incidence both of interim bleeding and of hypermenorrhea than did the control or the Vallestril treated groups."

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(1) Leslie, A., and Simmons, D. H.: Am. J. M. Sc. *234*:321, 1957. (2) Settel, E.: Am. Pract. & Digest Treat. *8*:1249, 1957.

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SCIENTIFIC ARTICLES

Determination of Venous Pressure in the Operating Room

CHARLES C. WYCOFF, M.D., NEW YORK CITY

(*From the Department of Anesthesiology of the College of Physicians and Surgeons, Columbia University, and the Anesthesiology Service of the Presbyterian Hospital*)

VENOUS pressure determination can be used as a tool for investigation and diagnosis in the operating room. Many anesthetic agents depress the myocardium and cause a rise in central venous pressure. There is also a marked elevation of venous pressure following acute heart failure. A fall of venous pressure occurs following hemorrhage and also following hypotension due to vascular dilation. These phenomena can be evaluated by the continuous determination of the venous pressure.

The appearance of the surgical patient in shock may resemble the appearance of the patient in acute heart failure.[1] In both conditions there is slowing of the capillary refill time and cyanosis of the skin due to peripheral stasis. There may also be tachycardia and hypotension. The distended neck veins of right-sided heart failure can be confused with fullness of the external jugular vessels with normal pressure. A useful aid in establishing the difference between the states of shock and heart failure is the level of the venous pressure. In shock, the venous pressure is normal or low whereas in right side or acute heart failure the venous pressure is markedly elevated.

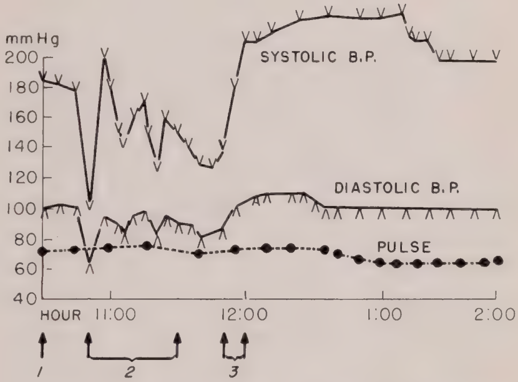

FIG. 1. A sixty-nine-year-old male with hypertension, enlarged heart, and atrial fibrillation with slow apical beat. (1) Induction and intubation. (2) Methoxamine, 40 mg., in 10 mg. doses, intravenously. (3) Lanatoside C, 1.6 mg., intravenously.

It is important to establish the diagnosis of heart failure promptly. Failure to make the diagnosis may lead to incorrect and dangerous therapy. The hypotension of acute failure can be mistaken for hypotension from peripheral vascular dilation. Vasopressors are frequently administered to correct the hypotension of peripheral vascular dilation. The same vasopressors administered to the patient in acute heart failure impose a further strain on the heart by increasing the peripheral resistance.

An example of late diagnosis of heart failure is seen in Figure 1. This is the anesthetic record of a sixty-nine-year-old male

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Presented at the 152nd Annual Meeting of the Medical Society of the State of New York, New York City, Section on Anesthesiology, May 16, 1958.

who was to have a Judet cup arthroplasty of the hip. He had hypertension of 220/110, an enlarged heart, and atrial fibrillation at an apical rate of 62. He was not digitalized. In the operating room anesthesia was induced with 250 mg. of a $2^1/_2$ per cent solution of thiopental sodium and intubation accomplished with 40 mg. of succinylcholine chloride after transtracheal topical anesthesia with 2 cc. of 10 per cent cocaine. Anesthesia was maintained with a mixture of 6 L. of nitrous oxide and 6 L. of oxygen per minute. The blood pressure was satisfactory for ten minutes until the patient was turned to the lateral position. The resulting hypotension was corrected temporarily by 10 mg. of methoxamine hydrochloride (Vasoxyl) administered intravenously. Repeated bouts of relative hypotension occurred and were not overcome by two subsequent intravenous injections of 10 mg. of methoxamine. The patient developed peripheral circulatory stasis as judged by a slow capillary refill time and cyanosis of the skin. The diagnosis of acute heart failure was made and 1.6 mg. of lanatoside C (Cedilanid) were administered intravenously over a period of ten minutes. The blood pressure returned to normal within ten minutes. Also the peripheral stasis cleared. The correct diagnosis of heart failure was not made until one hour after it occurred. Determination of the venous pressure at the onset of the hypotension probably would have established the true diagnosis.

Hypovolemic shock occurs much more frequently than congestive failure during anesthesia and operation and the two have many similarities. When the signs of acute heart failure are incorrectly attributed to shock due to hypovolemia, excess amounts of blood may be administered during the attempt to correct the hypotension and peripheral stasis. The determination of the venous pressure is a real aid in making the correct diagnosis. Hypovolemia does not produce an elevated venous pressure.

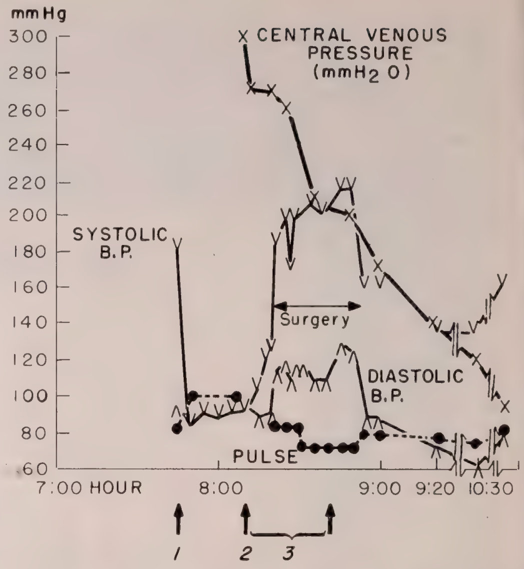

FIG. 2. A sixty-six-year-old female with shortness of breath on exertion and ankle edema. (1) Induction of anesthesia. (2) Venous pressure measurement. (3) Digitalization with intravenous administration of 1.6 mg. of descetyl-lanatoside C (Cedilanid D).

Figure 2 is the anesthetic record of a sixty-six-year-old female who was to have a hip-pinning. She gave a history of resting halfway up a flight of stairs and panting at the top of the flight. She also had ankle edema which was present at night but gone in the morning. Physical examination revealed only hypertension of 160/90. She was not digitalized. In the operating room, she was given 100 per cent oxygen to breathe for five minutes. Anesthesia was begun with 120 mg. of a 2 per cent solution of thiamylal sodium (Surital), relaxation was accomplished with 40 mg. of succinylcholine chloride, and topical anesthesia was produced by spraying the vocal cords and trachea with 2 cc. of 10 per cent cocaine. Following intubation, the blood pressure fell markedly. The hypotension did not respond to the intravenous administration of 30 mg. of mephentermine sulfate (Wyamine) and 16 mg. of methoxamine over a period of ten minutes. The anesthesiologist at first interpreted the slow capillary refill time, cyanosis, and hypotension as hypovolemic shock secondary to the vasodilation

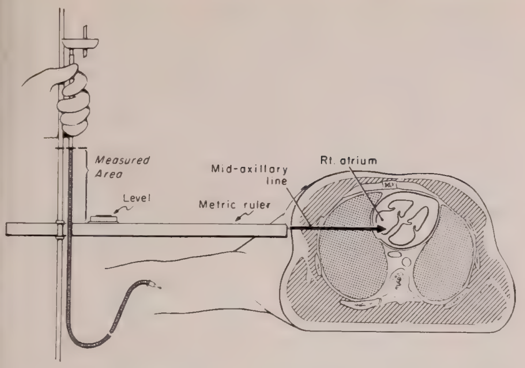

FIG. 3. Determination of venous pressure with intravenous tubing.

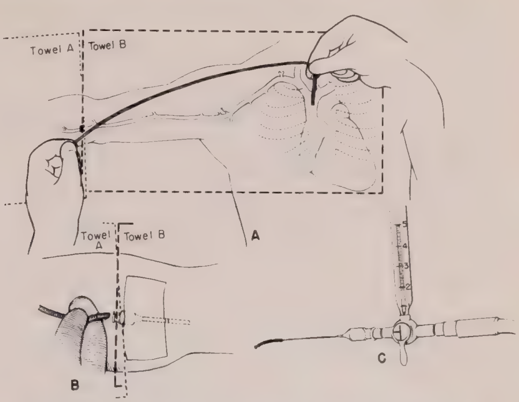

FIG. 4. Determination of venous pressure with catheter in thoracic cavity. (A) Measuring length of catheter to be introduced. (B) Introducing catheter through needle. (C) Reading venous pressure in manometer (leveled to right atrium).

produced by the induction of anesthesia. However, the central venous pressure was measured at 300 mm. of water and the neck veins were distended. A diagnosis of heart failure was then made. Digitalization by the intravenous administration of 1.6 mg. of desacetyl-lanatoside C (Cedilanid D) over a period of thirty minutes corrected the hypotension and reduced the venous pressure.

The normal peripheral venous pressure ranges from 60 to 100 mm. of water. The central venous pressure is 20 to 30 mm. of water pressure lower. A pressure above these levels indicates a pathologic process or an inaccurate determination. The elevation of venous pressure which occurs with disease is due to an obstruction to the flow of blood to or through the right heart. The obstruction converts the kinetic energy of the moving blood into potential energy in the dilated veins. The pressure which dilates the veins is measured as the venous pressure. The several causes of venous pressure elevation are:[2] (1) right-sided heart failure, (2) constrictive pericarditis, (3) pericardial effusion with tamponade, (4) thrombosis of the vena cava, (5) mediastinal tumors, (6) bronchial asthma with obstructive emphysema, (7) local venous obstruction, and (8) straining during respiration.

This list made by Friedberg has been extended by the addition of the last item. Straining during respiration also includes positive pressure respiration and increased intra-abdominal pressure. The first six causes of venous pressure elevation are pathologic processes. The last two are physiologic situations which can be controlled. The alert observer can correct the elevation of venous pressure due to respiratory straining. Peripheral venous obstruction can be prevented by correct positioning of the arm or by the insertion of a venous catheter into the thoracic cavity.

The elevation of venous pressure in acute heart failure is due to a relative imbalance in contraction of the two ventricles. The left heart pushes the blood out more vigorously than the right heart. In essence, there is an obstruction to advance of the blood through the right heart because it does not contract as forcefully as it normally does.

The simplest way to determine the venous pressure is to measure the height of the column of water in the intravenous tubing when it is disconnected from the bottle of solution (Fig. 3). Rapid fall of the solution and easy fluctuations with respiration indicate there is no obstruction in the vein. An 18-gauge needle is satisfactory for the test. The base line for reference of measure-

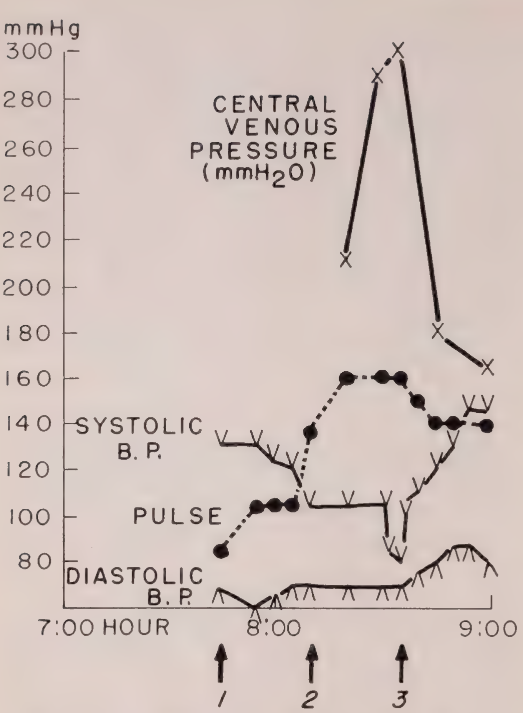

Fig. 5. An eighty-four-year-old male with hypertension, shortness of breath on exertion, enlarged heart and liver, elevated venous pressure, digitalized. (1) Spinal anesthesia. (2) Irregularity of pulse (atrial fibrillation by electrocardiogram), distended neck veins, and peripheral stasis. (3) Desacetyl-lanatoside C, 0.4 mg.

ment is the midaxillary line at the fourth intercostal space. This is the approximate position of the right atrium in the supine patient.

A more time-consuming but more accurate technic of measurement is the introduction of a plastic catheter through a 14-gauge needle* which has been placed in the lumen of a basilic vein (Fig. 4).[3] This method prevents the possibility of peripheral obstruction due to poor position of the arm.

Another example of the use of venous pressure determination in the diagnosis of heart failure can be seen in Figure 5. This eighty-four-year-old male was to have an abdominal perineal resection for a malignant condition of the rectum. He had shortness of breath on exertion, both his heart and liver were enlarged, he had a hypertension of 180/100, and his venous pressure before operation was 144 mm. water. He was given 0.1 Gm. of digitalis folia daily. Continuous spinal anesthesia was induced with an initial injection of 40 mg. of lidocaine hydrochloride (Xylocaine) following the intramuscular injection of 30 mg. of mephentermine sulfate. The anesthetic level rose to the fourth thoracic dermatome. The blood pressure was sustained for fifteen minutes after the onset of anesthesia. Within ten minutes of the beginning of anesthesia the peripheral pulse became irregular owing to dropped beats. In another ten minutes a further irregularity of the pulse developed. The blood pressure fell and did not respond to 30 mg. of mephentermine sulfate administered intramuscularly nor to 44 mg. of the same drug given intravenously. There was peripheral stasis and the neck veins were markedly distended. Superior vena caval pressure was markedly elevated. The diagnosis of acute heart failure was made and treatment begun with 0.4 mg. of desacetyl-lanatoside C intravenously. Within five minutes the venous pressure fell significantly; the pulse became slower, the blood pressure rose, and the color of the blood became pinker.

The cardiac effect of an anesthetic agent can be followed by observing the alteration of venous pressure. As the myocardium is depressed by an agent, the venous pressure rises. Ether anesthesia produces myocardial depression. This depression is not evident in light anesthesia because of the production of epinephrine and norepinephrine.[4] Several patients were anesthetized to a deep plane of ether anesthesia to assess the phenomenon.

Figure 6 is the anesthetic record of a ninety-year-old female who was to have a hip-pinning during general anesthesia. Prior to operation she had shortness of breath on exertion, an enlarged heart, blood pressure of 170/80, crepitant rales in her chest, and ankle edema of one plus. She was given Digoxin 0.25 mg. twice a day until satisfactorily digitalized. In the

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* Becton Dickinson Company, Rutherford, New Jersey.

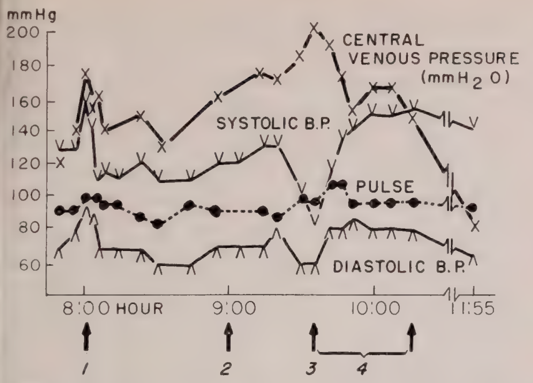

FIG. 6. A ninety-year-old female with recent heart failure, treated. (1) Intubation with 250 mg. thiopental sodium and tracheal topical of 2 cc. of 10 per cent cocaine. Anesthesia maintained with 5 L. nitrous oxide and 5 L. oxygen per minute. (2) Ether started. (3) Deep ether. (4) Hyperventilation with 15 L. flow of oxygen.

operating room she was given 100 per cent oxygen for five minutes. During this time a venous pressure catheter was introduced into the thoracic cavity and the venous pressure determined. It was 120 mm. of water. The patient was made somnolent with 125 mg. of a $2^1/_2$ per cent solution of thiopental sodium and transtracheal topical anesthesia produced by the injection of 2 cc. of 10 per cent cocaine. Intubation was accomplished with an additional 250 mg. of thiopental sodium. Both the blood pressure and the venous pressure rose during the intubation. Anesthesia was maintained for an hour with a mixture of 5 L. of nitrous oxide and 5 L. of oxygen. Ether was slowly introduced in the anesthetic system for fifteen minutes. Then a closed ether-oxygen-carbon dioxide absorption technic was used for twenty-five minutes until deep ether anesthesia was produced. During this time the venous pressure rose appreciably and the blood pressure fell precipitously. Hyperventilation with a 15 L. flow of oxygen lightened the anesthesia and caused the blood pressure and venous pressure to return to normal.

Summary

1. The venous pressure can be determined easily and accurately in the operating room.
2. The determination of the venous pressure aids in the diagnosis of acute heart failure.
3. The cardiac effect of an anesthetic agent can be followed by observing the alteration of venous pressure.

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Discussion

Benton D. King, M.D., *Buffalo.*—The information to be derived from the determination of venous pressure during anesthesia has usually been lost by default. Unfortunately few data have been accumulated utilizing this technic during anesthesia. Actually, monitoring central venous pressure could be a tool as useful as the electrocardiogram during anesthesia. I use the term "central venous pressure" advisedly. The only practical way to measure this variable in a reliable fashion is to pass a catheter centrally at least as far as the subclavian vein. As mentioned by Dr. Wycoff, this prevents the possibility of peripheral obstruction due to poor position. In addition, however, it obviates such problems as obstruction from venospasm, collapse of the vein more centrally, interference from members of the surgical team, and dislodgement of the needle at a crucial moment. In addition there may be variable pressure gradients between a peripheral vein and the right atrium. Central pressure therefore provides a more stable reference point. Whatever method is used, the recording manometer must be at a proper and constant level to obtain valid figures. Dr. Wycoff has selected the midaxillary line (right atrium) as his reference point. This reference point must be maintained regardless of change of patient position. Obviously this requirement may make the determination of venous pressure technically difficult in the surgical patient. Also hydrostatic effects produced by marked changes in posture must be taken into account.

Venous pressure determinations may be used as an aid in assessing depletion of blood volume, circulatory problems from positioning, effects of anesthetic agents on the circulation, respiratory obstruction, and acute heart failure.

Dr. Wycoff emphasized the importance of the elevation of venous pressure in acute heart failure as an aid in differential diagnosis. I hope that he can extend the scope of his study so that eventually there will be data on the relative frequency of incipient and acute heart failure during anesthesia. It is surprising that we do not knowingly face the problem of acute cardiac failure during anesthesia more frequently. Part of the problem may be that of recognition.

I would like to comment on the observation by Dr. Wycoff that deep ether anesthesia may produce marked rises in central venous pressure. This change he interprets, I believe, as a sign of cardiac failure. There is a dearth of good information on the influence of anesthetic agents as such on central and peripheral venous pressures.

In one study rather marked venous pressure increases were noted in a man during cyclopropane anesthesia. Increases to over 22 cm. H_2O have been observed with this agent. Whether this is interpreted as cardiac failure or merely some other expression of cardiovascular realignment (such as opening of arteriovenous shunts) becomes most important. On the other hand, barbiturates often tend to lower central venous pressure, so that subsequent rises may be even more important than those seen with some other anesthetic agents. This merely reiterates the need for more control data so that we can better assess the changes in venous pressure which may occur during anesthesia.

Finally, it should be emphasized that to obtain the full measure of information from venous pressure determinations, monitoring should be commenced before anesthesia is begun. In this way the influence of anesthetic agent, blood loss, or the onset of cardiac failure can be more readily assessed.

Reserve the Dates . . .

153rd Annual Convention

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Cancer of the Paranasal Sinuses

GEORGE A. SISSON, M.D., AND NORMAN E. JOHNSON, M.D., SYRACUSE, NEW YORK

(*From the State University of New York College of Medicine*)

THE purpose of this paper is to analyze present-day methods of managing carcinoma of the sinuses.

Why is Cancer of the Sinuses Repeatedly Mismanaged?

A paramount reason is the difficulty of diagnosis. In reviewing 40 cases we find the presenting symptom frequently misleading. Too often the patient has been seen by the dentist, the internist, the neurologist, and even the psychiatrist for a bizarre chain of symptoms usually related to pain somewhere about the face. In the complete work-up negative x-ray findings of the sinuses give false security. Equivocal x-rays are hard to discern and are valueless unless followed by an exploratory antrotomy. Early erosions of the posterior wall of the antrum are difficult to interpret even if laminographs have been taken.

X-rays showing definite bony erosions frequently mean the case is so far advanced that definitive treatment is impossible. There is even more confusion if the presenting symptom, usually a modification of pain (parasthesia, anesthesia, hyperesthesia, or hypoesthesia), abates for a time. Frequently there is disagreement on the exact generic classification of the tumor. In the largest medical centers it is possible to obtain as many as three different histopathologic diagnoses from three experienced pathologists. In this situation the surgeon must interpret the pathologists' reports in the light of the clinical symptoms and findings, and this is where compromises are made detrimental to the patient. It is easy to shy from an exenteration of an orbit if just one pathologist believes cancer is not present. Clinical experience with the disease is all-important in the final decision. The clinician needs not only wisdom but also a sensitive intuition to determine whether or not an exenteration of the orbit should be done. The problem of removing the eye to gain better or complete control over the disease is a clinical stumbling block. No clinician wants to remove a seeing eye if the clinical consequences are totally hopeless; and at the time of surgery it is not always possible to determine the chances of a cure even if the orbit is exenterated. The surgeon must have more than the patient's permission to remove the eye. He also must have a complete understanding of the patient's personality; a surgical five-year "cure" may never psychologically adjust to the eye and jaw removal. If removal is followed by early recurrence and the patient knows it, the surgeon must be prepared for the terminal care of an extremely unhappy person. Leaving the eye and jaw might make the patient's last days more tolerable. However, the propitious time for surgery often is lost while delaying this decision. Unfortunately, we have experienced both of these grim situations.

How Can We Improve Our Methods for Earlier Diagnosis?

Most otolaryngologists listen routinely to minor complaints related to the pain pathways of the face. If a patient is consistent in relating bizarre complaints to one or the other side the otolaryngologist should be alerted to the possibility of malignancy in or around the paranasal sinuses. Diagnoses of early malignancy can be made clinically by thorough anterior

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Presented at the 152nd Annual Meeting of the Medical Society of the State of New York, New York City, Section on Otolaryngology, May 15, 1958.

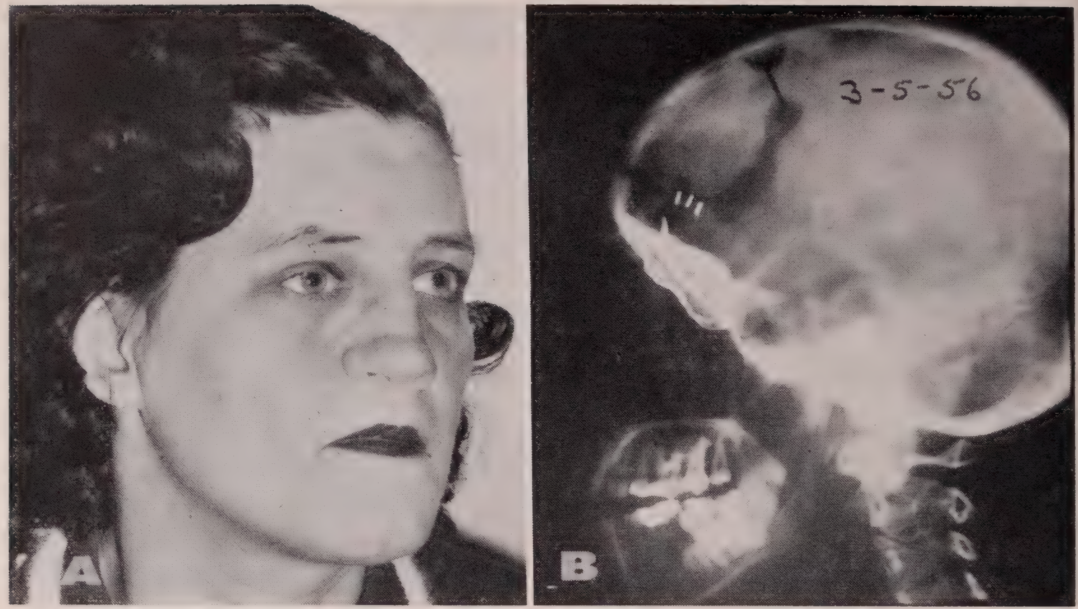

FIG. 1A. A thirty-two-year-old female with extensive chondrosarcoma involving the right antrum, ethmoids, sphenoids, orbit, and base of skull. Treated by removal of all gross tumor and extensive intracavitary radiation. FIG. 1B. Same patient as Figure 1A one year later. Developed frontal lobe brain adscess which was explored and excised successfully by Dr. Stanley Batkin. Above x-ray shows defect in cribiform plate repaired by tantalum mesh. Patient is alive and without recurrence.

and posterior rhinoscopy followed by confirmation biopsy. Usually, however, more difficult and subtler technics must be employed. In order of importance may we suggest antral washings with Papanicolaou stains; sinus x-rays with Caldwell, Waters basal, and lateral views; and, occasionally, radiopaque study with water-soluble contrast media. If symptoms persist and, particularly, if there is a past history of sinus trouble *we advocate taking a look.* We cannot agree with those who believe an exploration of an antrum is a radical or extreme procedure. It can be reassuring if negative and lifesaving if an early diagnosis is made.

The thoracic surgeon, the neurosurgeon, and the abdominal surgeon explore their particular areas when signs and symptoms justify a look. Perhaps the conservatism of the last decade with its hesitancy to perform surgeries on the respiratory mucous membranes still prevails somewhat and serves to deter exploration even when indicated. Malignant diseases of the sinuses may be the result of a peculiar metaplasia associated with repair of epithelium destroyed by episodes of chronic sinusitis.[1]

These cases deserve an exploratory antrotomy if only to rule out malignancy. Surely if a marked hyperplasia of mucous membrane is encountered, one is justified in removing it. We know from Eggston's[2] vast experience at the Manhattan Eye, Ear and Throat Hospital that repeated infections cause the columnar epithelium to lose its tilia. The mucosal surface often becomes ulcerated, and metaplasia often takes place from columnar to stratified squamous and finally to epithelial carcinoma. We agree with Eggston that these cases of hypertrophic papillary sinusitis are premalignant phases and a well-performed Caldwell-Luc operation at the appropriate time might very well interrupt this pathologic transition and prevent cancer. Mucous cysts, which intermittently expand and produce symptoms, should be removed because they represent activity and a focus of chronic irritation.

As already stated, x-rays are not always helpful in making an early diagnosis. A full set of the four basic views are not always taken or they are taken improperly. This is a good place to suggest that mini x-rays of the sinuses could have great value in otolaryngology if they were as universally accepted as mini chest films. A patient may have had proved sinusitus for years but more often than not x-rays were never taken. Comparative x-rays are important, and an otolaryngologist should regard sinus x-rays as the internist regards chest x-rays.

Does the Pathologic Diagnosis Alter the Method of Treatment?

In general it does not. The exceptions are the lymphomas, particularly the lymphosarcomas. In these cases we subscribed to radiation preceding surgery.[3] However, most of our cases were epidermoid in origin. It is of interest that two of our cases were chondrosarcomas (Figs. 1A and 1B). Adenocarcinoma did not respond to x-ray treatment. An aged man who flatly refused surgery has gone six years with slowly expanding full-blown disease. Our patient with neuroblastoma refused surgery at first and showed a marked regression of tumor after radiation. However, visible tumor was present at the time of radical surgery. Management and prognosis of the primary lesion depends on the extent rather than the site of the origin, the latter being of only academic importance. The frontals were not involved in any case. When the spheoid was involved the ethmoids were equally involved, so we were never certain of the primary site.

When Do We Advocate Radical Surgery as the First or Prime Method of Treatment?

Radical surgery, either as a total maxillectomy or combined with an exenteration of the orbit, is advocated when the lesion is believed to be surgically encompassed as a local lesion. Theoretically, we think of the lesion as a sphere. When our preoperative diagnosis leads us to believe the sphere is less than 2 or 2.5 cm. this first requirement is usually satisfied. A second requirement is to have a surgically favorable location. We want evidence that normal structures around the lesion might be resected. The most favorable sites are the medial and anterior walls of the antrum. When the posterior naso-antral wall or the angle of the roof and the floor of the antrum are involved we advocate surgery, though we cannot always be positive until surgery that our excision has completely encompassed the lesion. If disease remains, we insert radium postoperatively immediately. In some selected very early cases we advocate only a subtotal resection of the maxilla.

TABLE I.—PSYCHOLOGICAL CLASSIFICATION OF RESULTS

Adjustment	Number of Patients
Well adjusted, without disease	9
Poorly adjusted, without disease	1
Well adjusted, life extended 1 to 3 years	13
Poorly adjusted, life extended 1 to 3 years (possibly should have done nothing)	6
Satisfactory adjustment, life extended under 1 year (all advanced cases)	11

The problem case is the young or middle-aged patient whose pterygoids or ethmoids might be involved. We advocate the maximum surgical attempt when the pterygoids are involved if we feel that the patient can adapt psychologically to disfigurement and interruption of function. Usually this means exenteration of the orbit. However, if the floor of the orbit is intact. we often do just a maxillectomy. Removal of the orbital floor then depends on how close disease is to the floor. We do not always remove the orbital contents when we suspect the pterygoids of being involved, but when the posterior naso-orbital wall or the ethmoids are suspected we do.

Our theme is to do nothing if we feel reasonably certain we cannot help. We sometimes do fail in cases that we feel are

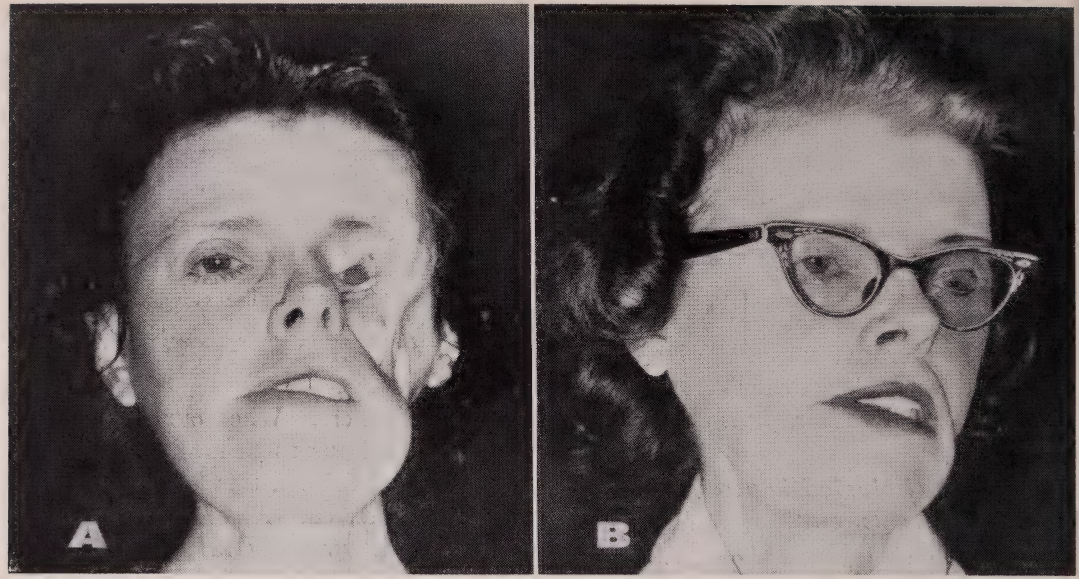

FIG. 2A. Postoperative picture of thirty-four-year-old female with epidermoid carcinoma, grade III, treated by combination therapy including external radiation, intracavitary radium and radical surgery. Surgery consisted of bilateral neck dissections and left radical maxillectomy with exenteration of the orbit. Nodes were positive on both sides. Patient is six years postoperative without recurrent disease. FIG. 2B. Same patient as Figure 2A fitted with dental prosthesis and facial piece by Dr. Jack Rose. Patient is working (baby sitting) and considered fully rehabilitated after maximum therapy.

not hopeless and deserve the all-out try, even though our requirements for operating are not satisfied (Table I). We subscribe to the all-out try only if we are certain preoperatively that the patient will not become recriminatory, self-pitying, and punitive if surgery fails. Obviously such a reaction makes it more difficult for the patient and his family during the last days, and it is certainly depressing to the surgeon who has offered all he has. In general, it might cause others to feel that all head and neck surgery is mutilating and negate its use where it could be beneficial. May we repeat that here is where wisdom, experience, and sensitive intuition direct the surgeon in the selection of cases that should be subjected to maximum surgery. In the case of one woman whom we believed to be emotionally unstable we inserted radium, followed with external radiation, and finally performed radical neck surgery. Her morbidity was short. When distant metastases developed within a few months after control of the primary we felt that the proper method of treatment had been initiated. Her remaining days were comfortable. She never knew that extensive surgery might have been done with its concordant anxiety. Even with liver, lung, and skin metastases we controlled the primary and first line of metastasis, the neck.

Several cases believed too extensive for surgery initially were given heavy courses of x-ray and became operable in that the tumor masses grew smaller. The residual diseases were removed successfully by radical surgery. One of these cases developed bilateral neck nodes, and a bilateral neck dissection was performed. This patient is now living, six years since onset, and is free of disease (Figs. 2A and 2B).

Local recurrences on the posterior or lateral walls of the operative cavity are treated by x-rays using the cone to concentrate on the specific area of recurrence. While this is effective, so is intracavitary radium when inserted into the postsurgical defect months after surgery. Great pain follows the late use of these modalities.

TABLE II.—OPERATIVE PROCEDURES

Surgery	Number of Patients
Subtotal	8
Total	14

TABLE III.—TREATMENT OF 40 CASES

Treatment	Number of Patients
Radical surgery alone	7
Radical surgery with radiation	15
Radiation alone	16
Nothing done	2

When x-rays are used preoperatively or radium is used immediately postoperatively, pain is not so great.

What Are the Methods of Irradiation Used in Our Cases?

Radiation is used alone and in all possible combinations with surgery. Both high and super voltage x-rays are used. We agree with Schall[4] that intracavitary radiation can be used with good results. Irradiation is being used both preoperatively and postoperatively. We favor its use postoperatively when we can make the choice.

Although some investigators feel that intracavitary radium has its limitations because of its variations in lethal cancercidal effect, we feel that if the disease remaining is confined to a location accessible to easy radium insertion radium should be the choice over external radiation. In other instances we subscribe to external radiation.

What Surgeries Do We Offer These Patients?

We performed subtotal resections of the maxillary and ethmoid sinuses on eight of our patients. Twelve maximum surgeries were performed; these included total resections of the maxilla in continuity with the orbit. On one patient we performed a bilateral maxillectomy in combination with removal of the nasal septum and the ethmoids. It was possible to preserve two molars in order to attach the large obturator. Without the obturator the patient could never rehabilitate himself.

TABLE IV.—DIED WITH NO LOCAL RECURRENCE

Case	Causes of Death
M.K.	Brain abscess (1 year later)
D.A.	Metastasis to femur with fractured hip and pneumonia (1 year later)
K.N.	Metastasis to liver (3 years later)
O.K.	Metastasis to stomach (2 years later)

What Have We Accomplished?

We personally managed 31 of the 40 cases we have reviewed. We operated on 22 patients (Table II), and radical surgery was used alone in seven of these (Table III). A combination of modalities was used in the remaining 15 cases. On one patient we performed a bilateral neck dissection together with maximum surgery on the left paranasal sinuses and orbit. It is now over five years since the disease was first treated. Sixteen patients were treated by radiation alone. Most of these were very advanced cases or patients who refused surgery. There are no survivors in this group. Five patients have been without evidence of disease three to five years and four less than two years. Altogether, we have ten patients out of the 22 who had radical surgery who are alive and without disease at this time. Four patients died of other effects within the first three years but had showed no recurrence of local disease in the operated area (Table IV). It is our impression that radical surgery combined with radiation offers the best chance of control or cure of this often discouraging disease.

Summary

A critical analysis of present-day methods for treating carcinoma of the paranasal sinuses has been presented. A plea is made for a high index of suspicion of neoplasm of the sinuses in light of common signs and symptoms about the head. A stronger plea is made for exploratory surgery in suspicious cases.

The individuality of the clinical aspects of each case must be conscientiously weighed. We believe the patient will be

afforded the greatest opportunity for cure with the combined efforts of the radiologist and the surgeon. The radiologist should be present during surgery to clinically appreciate the problem at hand and thus be able to use his modality, postoperatively, to the maximum.

The surgeon must understand as completely as possible the psychologic architecture of the patient who must consider radical surgery. We must consider pain as a factor and select methods that will relieve pain. We must use the modality which offers the most reasonable outlook in rehabilitating the individual. The patient who has achieved added years of life but who is in constant pain, unable to speak intelligibly, and unable to swallow, is a failure. If this situation can be anticipated conservative methods should be used. The patient may live fewer weeks but will be happier in his last days. In reviewing the literature and our own cases, we are convinced that only a few cases of sinus carcinoma can be cured. However, life can be prolonged in most all these cases. The decision as to which cases to prolong and which not is difficult to make and is a tremendous responsibility. The decision as to what modality of treatment to use is even more difficult to make and should be reached only after careful consideration of the many factors discussed above.

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Discussion

John S. Lewis, M.D., *New York City.*—The authors have presented a paper which displays both a philosophic and objective approach to the problem of paranasal sinus cancer. The methods of diagnosis and treatment discussed are used rather widely and successfully. The over-all cure rate of about 30 per cent conforms closely to the total experience at Memorial Center and other cancer hospitals. The impact of this dissertation lies with its emphasis on the diagnostic responsibilities of the busy otolaryngologist in sifting out the sinus cancer from a very large volume of chronic sinus cases. Bizarre facial neuralgias merit competent sinus x-rays. The cloudy antrum merits an irrigation, which, if sanguinous, should be submitted for cytology studies. Nasal polyps should be sent to the pathologist, especially if epistaxis is a symptom. Minor exploratory procedures, such as a Caldwell-Luc procedure, have as much value, as pointed out, as the laparotomy by the general surgeon for an obscure abdominal mass.

The authors have been affected by the emotional or psychologic aspect of disfigurement by the loss of an orbit in radical sinus surgery for cancer. If a tumor is suspected before operation, permission for the sacrifice of an eye must be obtained, for the margin of lifesaving surgery may well hinge on the additional safe margin afforded. X-rays are not always helpful in deciding if orbital exenteration will be necessary, and I would estimate that 40 per cent of paranasal sinus cancers are not diagnosable as such on routine x-ray films.

Postoperative irradiation was successfully utilized by the authors in 15 of the 22 operated cases. Intracavitary radium was favored over high voltage x-ray. In view of the frequency of local recurrence following radical surgery, the planning of the mode of postoperative irradiation at the time of surgery is an excellent idea. Low voltage x-ray has many advantages in treating a large operative defect of this type. When cancer is advanced, radical surgery will palliate by easing the control of infection and bleeding, and will allow for the accurate placing of the radiation ports.

Optimism must be foremost in the minds of those who treat sinus cancer. By denying the patient the benefit of a maximum attempt to cure, one must surely condemn some who might otherwise have been saved. Disfigurement by the loss of an eye is minimal when compared to the facial configuration of inadequately treated antral cancer. Surgery with or without postoperative radiation as described by the authors offers the patient almost twice the chance of cure as that by radiation alone.

Liothyronine in the Management of Obesity

CHARLES RESSLER, M.D., NEW YORK CITY

(From the Endocrine Clinic, Second (Cornell) Medical Division, Bellevue Hospital Center)

A CLINICAL re-evaluation of the role of thyroid in the management of obesity has long been overdue. When thyroid substance first became available, it was widely prescribed for weight control but eventually its use in obesity fell into scientific disrepute. This does not mean that the metabolic approach to obesity should be completely discarded. Thyroid is still used in general practice throughout the country and is included in most programs for weight reduction. The synthesis of liothyronine (3,5,3′ L-triiodothyronine) and renewed interest in the hypometabolic state turned our attention to the current need for re-evaluation of thyroid therapy for obesity.[1]

Results obtained in most weight-reducing programs are transitory and disappointing. Our own experience in an endocrine clinic demonstrated that the fundamentals of a low-calorie intake were easily taught but that it was difficult for the patient to remain on such a diet permanently. With careful attention to the emotional state,[2] and with the use of anorexiant drugs[3] a weight loss of many pounds often can be produced. This loss, though, is usually of brief duration, and the patient often returns for treatment heavier than ever. Our concept of the use of thyroid was that of a medication given over an extended period of time. We felt that with the regulation, or stimulation, of metabolism the average weight of obese individuals might slowly stabilize at a lower level. The present study of liothyronine* was designed to test this concept.

Liothyronine is an orally active and extremely potent hormone of thyroid-like activity. Among its distinctive properties are rapid onset of action and quick return of the patient to pretreatment status when the drug is withdrawn. These features provide for safe, accurate control of dosage, and effect. For purposes of clinical investigation liothyronine is the drug of choice.

Method

During the course of this study of liothyronine all obese patients referred for weight reduction to the endocrine clinic of the Second Medical Division of Bellevue Hospital were processed in the usual manner. Patients were interviewed and records made of their pertinent history. They received physical examinations, and laboratory tests were secured, including urinalysis, complete blood count, serology, and tests of serum cholesterol, basal metabolism, and twenty-four-hour radioactive iodine (I-^{131}) uptake.

Patients were also examined for clinical evidence of heart disease or evidence of myocardial damage as demonstrated by electrocardiograms. Fifteen consecutive patients who had no evidence of disease or damage were placed on liothyronine therapy starting with 25 micrograms twice daily. Dosage was then increased to 25 micrograms three times daily (75 micrograms daily) within three weeks. The next 15 consecutive patients, including those with evidence of disease or damage, were placed on placebo therapy. The study was single-blind; patients all thought they were receiving active medication.

When patients were first selected for study, the elements of a well-balanced, 1,100-calorie diet were explained to them, and from then on no special stress was

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* Liothyronine (Cytomel) was supplied by the Smith, Kline and French Laboratories, Philadelphia, Pennsylvania.

TABLE I.—RESULTS OF LIOTHYRONINE THERAPY IN 13 WOMEN

Case	Age	Blood Pressure	Pulse	Basal Metabolic Rate (Per Cent)	I^{131} (Per Cent)	Cholesterol (Mg.)	Duration of Treatment (Months)	Weight (Pounds) Original	Weight (Pounds) Final	Pounds Lost	Side-Effects
1	53	120/80	72	+1	20	335	8	140	$132\frac{1}{2}$	$7\frac{1}{2}$	Lighter on feet, less chest congestion
2	67	120/80	64	−9	27	240	12	$165\frac{1}{4}$	$144\frac{3}{4}$	$20\frac{1}{2}$	Felt better in every way, lighter on feet
3	67	168/90	74	−2	23	210	7	$188\frac{1}{4}$	$192\frac{1}{4}$	4*	Felt better generally; less tired, lighter on feet
4	54	120/80	72	+7	39	220	8	197	191	6	None
5	18	130/80	80	−2	23	240	$9\frac{1}{2}$	$168\frac{3}{4}$	154	$14\frac{3}{4}$	More active and alert, appeared "brighter"
6	58	130/80	70	+20	21	230	$8\frac{1}{2}$	184	$180\frac{1}{4}$	$3\frac{3}{4}$	None
7	41	120/90	64	+3	24	185	3	$208\frac{1}{2}$	$201\frac{1}{2}$	7	Nervousness, insomnia
8	52	130/80	76	+4	33	260	$12\frac{1}{2}$	$181\frac{1}{4}$	$168\frac{1}{4}$	13	Slept poorly
9	56	118/80	72	−10	28	215	13	171	162	9	Less tired, could do more work
10	48	140/90	96	−2	..	180	5	$159\frac{3}{4}$	146	$13\frac{3}{4}$	More energy, nervous
11	58	170/100	72	+7	37	180	6	217	$208\frac{3}{4}$	$8\frac{1}{4}$	None
12	65	140/80	68	−5	20	240	$4\frac{1}{2}$	$217\frac{1}{4}$	$203\frac{3}{4}$	$13\frac{1}{2}$	Felt better, lighter on feet, returned to work
13	51	150/85	70	+3	33	200	4	$214\frac{1}{2}$	204	$10\frac{1}{2}$	None

* Pounds gained.

TABLE II.—RESULTS OF PLACEBO ADMINISTRATION IN 13 PATIENTS (12 WOMEN, 1 MAN)

Case	Age	Blood Pressure	Pulse	Basal Metabolic Rate (Per Cent)	I^{131} (Per Cent)	Cholesterol (Mg.)	Duration of Treatment (Months)	Weight (Pounds) Original	Weight (Pounds) Final	Pounds Lost	Pounds Gained	Side-Effects
1	56	160/100	84	40	21	255	7	$177\frac{1}{4}$	190		$12\frac{3}{4}$	Dizziness, insomnia
2	65	160/80	78	−4	34	150	7	190	194		4	"Gas"
3	58	140/80	80	+10	...	210	$6\frac{1}{2}$	183	$184\frac{1}{4}$		$1\frac{1}{4}$	More energy, less appetite
4	49	140/80	108	...	25	190	$1\frac{1}{2}$	$187\frac{1}{2}$	$187\frac{1}{2}$	...	...	None
5	46	180/90	84	+5	34	200	7	$177\frac{3}{4}$	$185\frac{1}{2}$		$7\frac{3}{4}$	None
6	63	190/108	72	+15	20	230	$2\frac{1}{2}$	205	205	...	...	None
7	62	120/70	72	−4	29	350	6	$138\frac{1}{2}$	$138\frac{1}{2}$	...	...	Felt better generally; less nervous, less tired
8	52	140/80	96	−27	10	300	8	172	$168\frac{1}{2}$	$3\frac{1}{2}$		Nervous, "cold"
9	52	150/90	88	−6	...	230	$5\frac{1}{2}$	$178\frac{1}{2}$	$187\frac{1}{2}$		9	None
10	67	100/60	60	+12	5	...	7	206	$210\frac{3}{4}$		$4\frac{3}{4}$	None
11*	41	130/80	72	+5	25	350	9	257	$257\frac{1}{2}$		$\frac{1}{2}$	None
12	49	160/100	84	+8	21	...	3	$232\frac{1}{2}$	240		$7\frac{1}{2}$	None
13	62	150/85	76	−6	32	185	5	$164\frac{3}{4}$	$152\frac{3}{3}$	12		Nausea, vomiting, poor appetite

* Male.

TABLE III.—COMPARISON OF RESULTS OF LIOTHYRONINE AND PLACEBO THERAPIES IN 26 PATIENTS*

Initial Findings and Results	Therapies	
	Liothyronine	Placebo
Average initial I^{131} uptake	27.3 per cent	23.7 per cent
Average initial basal metabolic rate	+1.1 per cent	+4.3 per cent
Average initial cholesterol	225.7 mg.	240.7 mg.
Average duration of treatment (months)	7.8	5.8
Average weight (pounds)		
Initial	$185^{1}/_{2}$	$189^{9}/_{10}$
Final	176	$192^{4}/_{5}$
Weight change		
Total	Lost $123^{1}/_{2}$ pounds	Gained $35^{1}/_{2}$ pounds
Average	Lost $9^{1}/_{2}$ pounds	Gained $2^{7}/_{10}$ pounds
Side-Effects		
Favorable	7 patients	2 patients
Unfavorable	2 patients	4 patients

* 13 patients receiving liothyronine, 13 placebo; average age fifty-three and fifty-five and one-half years respectively.

TABLE IV.—WEIGHT, PULSE, AND BLOOD PRESSURE IN CASE 1 (LIOTHYRONINE) DURING THERAPY

Date	Weight (Pounds)	Pulse	Blood Pressure
Oct. 24	140	72	120/80
Nov. 7	143	72	120/80
Nov. 28	142	70	140/80
Dec. 12	$140^{1}/_{2}$	72	120/80
Jan. 22	143	72	150/80
Feb. 6	$140^{3}/_{4}$	84	130/80
Feb. 20	139	72	120/80
Mar. 6	140	80	150/90
Mar. 20	139	68	120/70
Apr. 8	137	80	110/70
Apr. 17	137	76	140/80
May 1	$134^{1}/_{2}$	72	130/70
May 15	$134^{1}/_{4}$	72	130/74
May 29	$135^{1}/_{4}$	72	130/80
June 26	$132^{1}/_{2}$	74	148/80

placed on diet. Patients were seen at two-week intervals, and subjective symptoms and reactions were noted. Careful records were made of body weight, pulse, and blood pressure. From time to time re-examinations were performed, and in almost all instances before termination of the study tests were made of serum cholesterol and basal metabolism.

The study lasted for more than one year, and 26 patients completed the course of therapy, 13 patients on liothyronine and 13 on the placebo.

Results

At first, no changes were noted in response to liothyronine and placebo therapies, but as the patients continued to return to the clinic at regular intervals, striking differences between the two groups became apparent. With one exception, each patient on liothyronine lost weight. A total of 123 $^{1}/_{2}$ pounds were lost by 13 such patients, an average weight loss of $9^{1}/_{2}$ pounds per patient.

Of the control group (13 patients who received placebo therapy), 8 gained weight, 3 remained the same, and only 2 lost weight. The total change was a gain of $35^{1}/_{2}$ pounds, an average gain of $2^{7}/_{10}$ pounds per patient.

The difference between therapies is statistically significant and indicates that significant weight loss can be obtained with liothyronine therapy.

Tables I and II summarize the results in the two groups of patients. These tables not only provide the final results of the study, but also list data which could prove variable under treatment. The individual cases reported below fail to reveal any important deviations, and computations based on the averages for all patients confirm this impression.

Blood pressure levels remained essentially unchanged throughout. There was a moderate rise in the average pulse rate for the group on liothyronine from 73 to 79.2 beats per minute and a slight drop in the controls from 81 to 75 at the end. The average basal metabolic rate also rose slightly from minus 1 to plus 4 per cent on liothyronine. On placebo, however, the average BMR rose even more. I^{131} uptake levels were not rechecked because they could provide no reliable guide once the thyroid gland was under the influence of thyroid medication. Cholesterol determinations, however, were done repeatedly and did not show any definite variation, so that from the objective point of view no marked increase in metabolism was demonstrated.

An analysis of the difference in clinical responses between the two groups is given in Table III. The total weight change for patients on the active drug was a loss of $123^{1}/_{2}$ pounds, while the total weight change for those on the placebo was a gain of $35^{1}/_{2}$ pounds. Further indication of the significant weight loss obtained with liothyronine is found in the average weight loss of $9^{1}/_{2}$ pounds per patient as compared with the average weight gain of $2^{7}/_{10}$ pounds for each patient on the placebo.

Summaries of representative cases follow.

TABLE V.—WEIGHT, PULSE, AND BLOOD PRESSURE IN CASE 2 (LIOTHYRONINE) DURING THERAPY

Date	Weight (Pounds)	Pulse	Blood Pressure
Feb. 15	$165^{1}/_{4}$	64	120/80
Feb. 29	$161^{1}/_{2}$	66	94/60
Mar. 14	$163^{3}/_{4}$	80	120/70
Apr. 4	165	72	100/70
Apr. 13	$158^{1}/_{4}$	72	130/80
May 16	$157^{1}/_{2}$	80	...
June 20	159	72	100/70
Sept. 12	$150^{1}/_{2}$	72	100/70
Sept. 26	$153^{1}/_{2}$	70	120/80
Nov. 7	$152^{3}/_{4}$	84	120/80
Nov. 28	147	72	100/70
Dec. 12	$148^{1}/_{2}$	72	110/72
Dec. 26	$148^{1}/_{2}$	84	110/70
Jan. 22	$144^{1}/_{2}$	76	110/70
Feb. 6	$144^{1}/_{2}$	84	100/70
Feb. 20	$144^{3}/_{4}$	84	124/60

Case Reports

CASE 1 (*liothyronine*).—This fifty-three-year-old housewife attended the endocrine clinic for treatment of menopause syndrome and obesity. Her numerous somatic complaints had been treated with testosterone with fair success. In 1956, a left mixed parotic tumor had been removed. In addition, she had been treated at the arthritis clinic for osteoarthritis and had been told to reduce.

Physical examination showed that she was a moderately obese female, weighing 140 pounds with a height of 57.5 inches. Her blood pressure was 120/80, pulse 72, urine and complete blood count negative, basal metabolic rate plus 1 per cent, I^{131} uptake 21 per cent, and serum cholesterol 335 mg. per 100 ml. Her electrocardiogram was normal.

She was put on liothyronine therapy. After an initial lag period the weight dropped irregularly until a loss of $7^{1}/_{2}$ pounds occurred in eight months. In the midst of treatment, the basal metabolic rate was again determined to be plus 1 per cent, and several blood cholesterol values were 290, 310, and 315 mg. per 100 ml. The patient voluntarily stated that she felt lighter on her feet, felt better in general, and was relieved of a "congested feeling" in her chest (Table I). The clinical picture during therapy is detailed in Table IV.

CASE 2 (*liothyronine*).—This sixty-seven-year-old housewife was referred to the endocrine clinic in 1954 with a diagnosis of moderate osteoporosis, osteoarthritis, and obesity. There was x-ray confirmation of the osteoporosis with evidence of compression of the body of the first lumbar vertebra. She was treated with testosterone by injection, and calcium and multivitamins by mouth. Under this therapy the pains in her back promptly disappeared. She continued to have many other complaints, including constipation, fatigue, and a sense of cold. She often appeared depressed. These symptoms were ascribed to psychogenic factors. Several attempts to reduce ended in failure.

Physical examination showed that she was a moderately obese female, weighing $165^{1}/_{4}$ pounds with a height of $58^{3}/_{4}$ inches. Her blood pressure was 120/80 and pulse 64. Her facies were sad, her skin pale and somewhat dry, and she had a scant growth of hair on her scalp. Her urine and complete blood count were negative, basal metabolic rate minus 9 per cent, I^{131} uptake 27 per cent, and serum cholesterol 240 mg. per 100 ml. Her electrocardiogram was normal.

After starting on a dose of 25 micrograms of liothyronine twice daily there was no marked trend in weight, but in twelve months of treatment there was an irregular drift downward for a total loss of $20^{1}/_{2}$ pounds. Almost at once, however, the patient appeared more animated and her face less puffy. On various visits she said that she felt better in general except for rheumatic pains. She had more energy, walked better, was able to do more housework, and finally claimed that her hair was growing better. There was a moderate rise in her pulse rate to a maximum 84. Repeated basal metabolic rate determinations failed to show any significant change and varied from minus 9 per cent to plus 14 per cent, and at the close of treatment was again

TABLE VI.—WEIGHT, PULSE, AND BLOOD PRESSURE IN CASE 1 (PLACEBO) DURING THERAPY

Date	Weight (Pounds)	Pulse	Blood Pressure
Nov. 28	$177^{1}/_{4}$	84	160/100
Dec. 12	179	84	140/82
Dec. 26	$178^{1}/_{4}$	84	140/90
Jan. 9	$178^{1}/_{4}$	84	140/85
Jan. 22	$179^{3}/_{4}$	84	140/80
Feb. 6	$179^{3}/_{4}$	84	160/90
Feb. 20	$181^{1}/_{2}$	84	170/100
Mar. 6	183	84	140/80
Mar. 20	$182^{1}/_{2}$	96	140/85
Apr. 3	$182^{1}/_{2}$	84	130/70
Apr. 17	$183^{3}/_{4}$	88	135/80
May 1	185	88	175/80
May 15	186	88	140/90
May 29	187	90	150/90
June 12	$187^{1}/_{2}$	88	160/80
June 26	190	84	160/90

TABLE VII.—WEIGHT, PULSE, AND BLOOD PRESSURE IN CASE 2 (PLACEBO) DURING THERAPY

Date	Weight (Pounds)	Pulse	Blood Pressure
Nov. 21	190	78	160/80
Dec. 5	189	72	120/80
Dec. 19	$190^{3}/_{4}$	80	120/80
Jan. 2	$194^{1}/_{2}$	76	140/80
Jan. 16	$192^{3}/_{4}$	84	120/80
Jan. 30	$194^{1}/_{2}$	80	140/80
Feb. 27	$193^{1}/_{2}$	72	140/80
Mar. 13	193	72	...
Mar. 27	$196^{1}/_{2}$	72	150/84
Apr. 17	195	72	140/80
May 1	$195^{1}/_{4}$	84	145/90
May 15	195	72	130/90
May 29	$194^{3}/_{4}$	72	130/70
June 12	194	72	130/70

minus 9 per cent with a blood cholesterol of 245 mg. per 100 ml. (Table I). The clinical picture during therapy is detailed in Table V.

CASE 1 (*placebo*).—This fifty-six-year-old housewife had been treated at the medical clinic for obesity and hypertension. Her numerous attempts at reducing had failed, and she was referred to the endocrine clinic for this purpose.

Physical examination showed that she was an obese female, weighing $177^{1}/_{4}$ pounds with a height of $57^{1}/_{2}$ inches. Her blood pressure was 160/100, pulse 84, urine and complete blood count negative, basal metabolic rate plus 40 per cent, I^{131} uptake 21 per cent, and serum cholesterol 255 mg. per 100 ml. The electrocardiogram suggested left ventricular hypertrophy.

Soon after starting on her placebo tablet, the patient reported unpleasant side-effects, such as dizziness and insomnia. No organic basis was discovered to explain these complaints, and no explanation was found for the high basal metabolic rate which was unsupported by the I^{131} uptake, blood cholesterol, or clinical picture (Table II). In subsequent record it was listed as minus 29 per cent. At first, the weight remained stationary, but in the course of seven months of treatment she gained a total of $12^{3}/_{4}$ pounds. The clinical picture during therapy is detailed in Table VI.

CASE 2 (*placebo*).—This sixty-five-year-old widow suffered from obesity and osteoarthritis with pains at the knees. She also complained of occasional swelling and pain in the right leg and wore elastic stockings. Symptoms were aggravated during the recent fatal illness of her husband. She was referred to the endocrine clinic for weight reduction.

Physical examination showed that she was an obese female with moderate thickening at both knees and varicose veins of the lower legs. Her weight was 190 pounds and height 58 inches. Her blood pressure was 160/90, pulse 78, urine and complete blood count negative, basal metabolic rate minus 4 per cent, and serum cholesterol 150 mg. per 100 ml. The electrocardiogram suggested the possibility of an old posterior wall infarction.

The patient was given the placebo tablet three times daily before meals, and after three months she complained of "gas" due to the medication. She continued on the treatment, however, for a period of seven months. At the termination the basal metabolic rate was minus 11 per cent. There was a slight weight gain of 4 pounds (Table II). The clinical picture during therapy is detailed in Table VII.

Comment

The 4 cases cited in detail are representative of the group as a whole and illustrate several unique features of this investigation. The use of liothyronine in the metabolic insufficiency syndrome recently has been described by Morton,[4] and of 5 obese patients included in his series, all lost weight. With the exception of patients with cardiac disease, for whom thyroid therapy is contraindicated, we treated obese patients without regard to their metabolic status. Our results, therefore, are applicable not only to the management of hypometabolic patients but to the management of obese patients in general.

It should be noted that during the course of the study our patients were not given other drugs, such as appetite depressants. Liothyronine as an adjunct to anorexigenic therapy in the management of obesity has been reported by Weidenhamer.[5] With the addition of the thyroid material to a regimen of dextro-amphetamine and diet, it was found that the patient regained the momentum of steady weight reduction when this had lagged. We feel that liothyronine is not a reducing drug in the ordinary sense of the term and that its concomitant use with other drugs multiplies the variables and would tend to complicate any appraisal of its value in a weight-reduction program.

Another important consideration in this study is that weight losses were observed throughout long-term therapy with liothyronine. A marked loss in weight in a few weeks of therapy with liothyronine was reported in obese patients by Brugel and Riehm.[6] Examination of their methods reveals, however, that they used dehydrating mercurial injections every ten to fourteen days along with a low-calorie diet. After weight reached a plateau, liothyronine was added to this regimen. It may be that the weight loss in the patients was due to a marked diuresis by summation of effect of liothyronine and mercurials. Our study was conducted over a period of months rather than weeks to secure a truer estimate of weight-reducing effect.

Finally, our study was controlled by the use of an equal number of patients on an identical placebo tablet. The advantages of this technic in validating results is obvious, but we were unable to find any previous report of a similar controlled study of liothyronine in the treatment of obesity. Bansi, Fretwurst, and Meier[7] hospitalized a number of obese patients, and in one series of 30 on a measured 813-calorie diet, found that the addition of liothyronine caused a loss of weight twice that obtained by diet alone. On doses of 100 to 200 micrograms daily, the metabolism rose appreciably. In two other series various combination of drugs were prescribed, but in all their efforts medications were continued for a maximum of only twenty days, and no controls were employed.

The double-blind procedure was not followed in our series because it seemed inadvisable with so potent a drug, and as a matter of fact one patient almost immediately complained of pain in the anterior portion of the chest. Despite the absence of electrocardiographic changes, medication was promptly stopped. On the other hand, in the control group a final diagnosis of hypothyroidism was made in Case 8 (placebo) (Table II) but we were able to continue with the placebo for the requisite length of time.

The mechanism of action of liothyronine is complex and in effecting the weight losses listed may be open to several interpretations. We felt that the moderate rise in average basal metabolic rate and pulse rate coupled with beneficial subjective responses indicated a slight rise in metabolism. Perhaps this stimulation was at the level of tissue metabolism. At any rate, mood changes alone may have been helpful in permitting the patients to continue on a limited food intake. Flach, Celian, and Rawson[8] administered liothyronine to 24 psychiatric patients, and without exception diminished emotional responsiveness was relieved. In the majority of cases depression of mood was alleviated.

In our cases, incidental beneficial effects were more frequently noted with liothyronine than with placebo therapy. Often, patients receiving liothyronine would comment "I feel better in general," "I can do more work," or "I feel stronger on my feet." Only rarely would a patient on placebo therapy volunteer a similar statement.

At the end of the study the greatest

difference between the two therapies was in the amount of weight reduction. Liothyronine was significantly superior to placebo (Table III).

Summary

A clinical evaluation of liothyronine therapy for obesity was conducted at an endocrine clinic in Bellevue Hospital in a controlled study comparing liothyronine with a placebo over an extended period of time. All patients were placed on a well-balanced, 1,100-calorie diet. Thirteen patients received 50 to 75 micrograms of liothyronine daily; another 13 patients received an identical dosage of placebo. All patients thought they were receiving active medication.

Patients who received the active drug lost a total of $123^1/_2$ pounds, an average weight loss of $9^1/_2$ pounds. Patients who received the placebo gained a total of $35^1/_2$ pounds, an average weight gain of $2^7/_{10}$ pounds.

This statistically significant difference emphasizes the appreciable weight loss obtained with the use of liothyronine. This was accomplished without troublesome side-effects and without objective evidence of more than slight elevation of the metabolism. Liothyronine was found to be a useful drug in effecting a slow stabilization of weight at a lower level in obese patients.

625 Park Avenue, New York 21

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Carcinoma of the Prostate: Metastases, Therapy and Survival

A statistical analysis of 500 cases of carcinoma of the prostate revealed that the lesion had metastasized in 340 (68 per cent) when the patient was first seen. Most of these malignant transfers were to the skeleton: in this series 325 patients (65 per cent) showed 506 sites of bony metastases, whereas 96 (19.2 per cent) were to the soft tissues. The authors, Dr. Lowrain E. McCrea and Dr. Lester Karafin, Philadelphia, analyze the case material for age, symptoms, race, phosphatase levels, treatment, and survival.

The longest average period of survival (thirty-four months) occurred after a combination of prostatectomy, orchidectomy, and administration of estrogens. The shortest followed the use of estrogens alone. There were 40 patients (8 per cent) who survived five years or longer regardless of the type of treatment. One of these lived nineteen years during which he was given intense roentgen therapy to the lumbar spine, pelvis, and pituitary before the advent of the endocrine therapy era. Ultimately he was given stilbestrol.

The authors feel that the estrogen of choice for routine use is Vallestril (Searle), particularly when tolerance and/or side-effects are compared with other estrogenic preparations in similar doses.—*Journal of the International College of Surgeons, June, 1958*

Trends in the Drug Treatment of Nonhospitalized Tuberculosis Patients

JOHN P. RUPPE, M.D., AND EDWARD X. MIKOL, M.D., ALBANY, NEW YORK

(*From the New York State Department of Health*)

THIS is a report on the characteristics of nonhospitalized tuberculosis patients who have been receiving antituberculous drug treatment under the supervision of State and county tuberculosis hospitals and a number of local health departments in New York State, exclusive of New York City. The period covered is from January 1, 1955, through December 31, 1957. The analysis is based on quarterly reports which these agencies submit to the Division of Tuberculosis Control of the New York State Department of Health. At the beginning of the period there were seven State tuberculosis hospitals, 18 county tuberculosis hospitals, and eight local health departments reporting. At the end of the period there were six State hospitals, 13 county hospitals, and eight local health departments reporting.

The purpose of the reports has been to provide some information on the number and certain characteristics of this group of tuberculosis patients. Two sets of information items have been collected: one pertaining to the hospitalization status of the patients and the other classifying the patients on whom such drug treatment was discontinued during the three-month period of the report. The specific items in each of these categories are shown in Tables I and II, respectively.

Because information was being collected from many different agencies and in order to make the report as simple as possible, there was no attempt made to collect information about certain other characteristics of the tuberculosis patients, such as the extent of disease, the clinical status, the sputum status, the identity of the drugs

TABLE I.—PREVIOUS HOSPITALIZATION STATUS OF NONHOSPITALIZED PATIENTS RECEIVING DRUG TREATMENT FOR TUBERCULOSIS

Hospitalization Status	January 1, 1955		December 31, 1957	
	Total	Per Cent	Total	Per Cent
Previously hospitalized for tuberculosis	1,352	89.6	2,109	89.9
Discharged with consent and advice	1,119	74.1	1,775	75.7
Discharged with consent, against advice	137	9.1	183	7.8
Discharged without consent, against advice	96	6.4	151	6.4
Never hospitalized for tuberculosis	158	10.4	236	10.1
Awaiting hospitalization	2	0.1	3	0.1
Patient refused hospitalization	29	1.9	60	2.6
Hospitalization not recommended	127	8.4	173	7.4
TOTAL	1,510	100	2,345	100

TABLE II.—REASON FOR DISCONTINUATION OF TREATMENT

Reason for Discontinuation of Treatment	1955		1957	
	Number	Per Cent	Number	Per Cent
Completed drug treatment	812	52.8	907	51.6
Admitted or readmitted to tuberculosis hospital	150	9.8	198	11.1
Transferred to another clinic	83	5.4	154	8.8
Failed or refused to return	243	15.8	300	17.1
Developed toxicity	57	3.7	49	2.8
Moved out of area	54	3.5	77	4.4
Died, any cause	31	2.0	33	1.9
Unknown	108	7.0	40	2.3
TOTAL	1,538	100	1,755	100

used, the duration of treatment, the frequency of relapses, and others.

Hospitalization Status

Table I shows that the total number of patients increased from 1,510 at the beginning of the period (January, 1955) to 2,345 at the end of the period (December 31, 1957). A review of the report for each quarter shows that in all categories of those previously hospitalized and those never hospitalized for tuberculosis there was a steady increase in numbers.

Of major interest is the fact that at both the beginning and the end of the period almost 90 per cent of the patients had previous hospitalization for tuberculosis. Moreover, approximately three fourths of the total number had been discharged from the hospital with medical consent and advice.

Also of interest is the fact that although the number of patients who refused hospitalization increased from 29 at the beginning of the period to 60 at the end, this group represents only a very small proportion of the total, namely, 1.9 per cent at the beginning and 2.6 per cent at the end.

One of the most important questions in tuberculosis control in recent years has been that of "hospital versus home treatment." Therefore, of considerable interest is the group of patients for whom hospitalization was not recommended. Although the number increased from 127 to 173 during the period, this group has represented only 8.4 per cent and 7.4 per cent of the total, respectively. This seems to indicate that for the large majority of patients for whom drug treatment was indicated the clinicians in the hospitals and health departments of the State preferred an initial period of hospitalization.

Reason for Discontinuation of Treatment

It seemed of importance to determine whether treatment was discontinued because of completion of the course of treatment or for other reasons. Table II shows the numbers of patients in various categories on whom treatment was discontinued during 1955 and during 1957.

The group of greatest significance is that of patients who completed the drug treatment. During the year 1955, 812 or 52.8 per cent of the total were in this group, in 1956, the number was 793 or 49.8 per cent of the total; during 1957 the number was 907 or 51.6 per cent of the total. Although there has thus been an increase in number in this group, the proportions which they represent of the total has remained quite constant.

A second important group includes those who failed or refused to return to the clinic for continuation of treatment. During 1955 there were 243 patients in this group or 15.8 per cent of the total, and during 1957 the number had increased to 300 or 17.1 per cent of the total. These numbers and proportions seem to be unduly high, although there was considerable variation in the size of this group among the various reporting agencies. Certainly careful analyses of such patients locally by the hospitals or clinics are indicated in order that the factors responsible for failure or refusal to return to clinic could be determined and methods developed to improve this phase. The same applies to the "unknown" group in whom treatment was discontinued with the reason not being known to the agency involved. During 1955 there were 108 such patients, and during 1957 the number had decreased to 40.

Another important group consists of patients in whom drug treatment had to be discontinued because of the development of toxicity or drug intolerance. It is of considerable interest that the number in this group has been relatively low—57 during 1955 and 49 during 1957. Information is not available as to how many of these patients had had previous hospitalization for tuberculosis, but since when toxicity occurs it usually does so during the first few months of treatment, it is likely that many of the patients in this group had not been previously hospitalized.

Comment

The patients who are the subject of this report are admittedly a selected group, since only the patients who received antituberculosis drug treatment under the supervision of the specified agencies are included. There are, of course, other nonhospitalized tuberculosis patients who are receiving drug treatment, some under the supervision of the Veterans Administration and others under the exclusive supervision of private physicians. No information is available about these latter groups. In the group analyzed, in general the findings are favorable.

Summary

The following points have been reviewed:

1. An analysis was made of certain characteristics of nonhospitalized tuberculosis patients who received antituberculosis drug treatment under the supervision of State and county tuberculosis hospitals and a number of local health departments in upstate New York between January 1, 1955, and December 31, 1957.
2. The number of such patients increased from 1,510 at the beginning of the period to 2,345 at the end of the period.
3. Almost 90 per cent of the patients had had previous hospitalization for tuberculosis.
4. Approximately three fourths of the total had been discharged from the hospital with medical consent and advice.
5. The number of patients who had refused hospitalization represented only a very small proportion of the total, approximately 2 per cent.
6. In only approximately 8 per cent of the total, hospitalization had not been recommended.
7. In approximately one half of the patients in whom drug treatment was discontinued, the reason was completion of the course of treatment.
8. In an excessively high proportion, treatment was discontinued because the patients failed or refused to return to the clinic for continuation of treatment—17.1 per cent during 1957.
9. Treatment had to be discontinued because of the development of toxicity in only approximately 3 per cent of the patients.

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Reversal of Intractable Cardiac Edema with Prednisone

DAVID A. NEWMAN, M.D., PALM BEACH, FLORIDA

THIS paper was originally intended to be a clinical report on a method of reversing intractable cardiac edema with the aid of prednisone (Meticorten).* Eight successful cases form the basis of this report. Since this project was first begun about three years ago a number of new and very potent diuretics have appeared on the scene, to the point where it seemed that prednisone had been superseded and would now have only academic or historic interest. There is good reason, however, to believe that the usefulness of prednisone in resistant cases of intractable failure is not duplicated by any other presently available agent.

Refractory or intractable cardiac edema may be defined as that stage in the progression of congestive heart failure when the edema is no longer responsive to any form of treatment, including the use of all available diuretics—mercurials, chlorothiazide, and more recently the combination of mercurials and chlorothiazide. The number of cases of refractory cardiac edema has been steadily increasing. It may be trite but true that with the increase in longevity more people live long enough to become cardiac patients; and with the improved management of congestive heart failure many more of them survive beyond the former span of their disease, long enough to become refractory.

Refractoriness may develop as a result of many associated conditions other than those related directly to the heart failure. Such conditions as anemia, occult thyrotoxicosis, low grade infections, silent pulmonary emboli, or inadequate digitalization are but a few of the many conditions that must be ruled out before the edema is called refractory.[1,2] Other conditions that may initiate the refractory state are nutritional hypoproteinemia; thiamin avitaminosis; poorly-controlled salt restriction; pleural effusions; pericardial constriction; active cardiac inflammatory processes whether rheumatic or subacute bacterial; myxedema; bronchopulmonary infection or neoplasia; prostatism; hepatic cirrhosis; ascites; metabolic disorders; excessive physical exertion; miscellaneous stresses of daily living; the use of antidiuretic sedatives and narcotics; the use of salt-retaining drugs such as steroids, estrogens, and androgens; some Rauwolfia derivatives; Butazolidin; some acetanilid derivatives; and quinine. This formidable list is undoubtedly still incomplete.

Assuming that all the preceding extraneous factors have been either eliminated or corrected by specific means, one has to rule out electrolyte imbalance as a primary cause of the refractory state.[3] The emphasis on this has probably been very much exaggerated; in the majority of instances, perhaps as high as 90 per cent of the cases, the electrolyte patterns are quite normal. Minor deviations, however, such as mild hyponatremia in the order of 135 or even 130 mEq. of Na per L., may obtain without playing much of a role in the origin of the refractory state.[4] On the other hand, a true hypochloremic alkalosis, which is usually associated with lowered serum potassium levels, and which is usually of iatrogenic orgin, can be a potent cause of refractoriness and must be corrected. Generally, this by itself is not too difficult to correct. In fact, it is more difficult to reverse intractable failure in a case with normal serum chlorides than in one with a low chloride level.

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* The prednisone used in this study was furnished in part as Meticorten by Dr. J. Black, Director of Clinical Research, Schering Corp., Bloomfield, New Jersey.

Everyone treating cardiac patients is familiar with the use of ammonium chloride prophylactically in an intermittent manner to "prime" the mercurials. It should be pointed out that when the serum chlorides are low it is not necessary to give ammonium chloride intermittently, ostensibly to prevent compensatory renal ammonia production, as had been thought heretofore. It can be given continuously with good effect; the chlorides will not spill out so long as the serum chlorides are below normal.[5]

Methods

Several useful methods that attempt to achieve a reversal of the refractory state have been described recently. One method aims to produce a controlled hyperchloremia with a chloride acidosis not only in patients with lowered serum chlorides but also in those with normal serum chloride levels. The object is to increase the chloride load presented to the tubules for reabsorption. This procedure is, of course, hazardous in the presence of hepatic or renal insufficiency. In this method ammonium chloride is given together with Diamox in a specific and sequential manner in such a way as to potentiate each other's acidifying effect to achieve a metabolic acidosis. When the serum chloride level reaches 119 to 129 mEq. per L. the use of mercurials is resumed. They then become effective again in causing diuresis. It is pointed out that the mercurials are most effective when given not less than forty-eight hours after the Diamox is discontinued. The authors of this method, Rubin and Braveman,[6,7] describe several treatment schedules and report a successful breakthrough of the refractory state thereby in 25 cases; in some of these the procedure was repeated several times.

The following is one of the schedules outlined:

1. Diamox 250 to 500 mg. per day for five days.
2. Ammonium chloride 8 to 10 Gm. per day (in aqueous solution) started on the fourth day and continued for four to five days (days four to eight inclusive). Discontinue Diamox on day six.
3. Mercuhydrin 1 to 2 cc. daily on days eight and nine.
4. Mercuhydrin and ammonium chloride together on days eleven, twelve, and thirteen.

The use of aminophylline to augment the effect of mercurials is probably familiar to most physicians. Vogl and Esserman[8] described a specific method of using aminophylline in doses larger than those used ordinarily to achieve a breakthrough of the refractory state. The objective is to increase the electrolyte load presented to the kidney tubules by increasing the glomerular filtration rate. As outlined in their method, aminophylline is given intravenously in two daily doses of 1 to 1.5 Gm. each for several days in succession. This is then followed by mercurials. An effective diuresis and re-established responsiveness was achieved by them in many resistant cases. Normal electrolyte levels are stipulated as a prerequisite.

Other methods have been described: the use of osmotic agents to potentiate the mercurials, such as loading with urea orally or with mannitol intravenously; the use of concentrated 5 per cent salt solution combined with water restriction; the controlled deprivation of water in those cases where retention of water is in excess of the retained salt; the use of alcohol as an antagonist to vasopressin (ADH); and finally and most recently, the combined use of chlorothiazide and mercurials.[9]

Mechanism of Intractible Failure

There comes a time, however, when all these measures fail. Attempts to force mercurials in the face of failing responsiveness only aggravate the situation and may induce azotemia and severe dilutional hyponatremia.[3] The patient has now reached an accelerated phase of his disease due to the severe myocardial deterioration. The normal homeostatic mechanisms are exhausted and no longer function properly.[10] The neurohypophysis and the aldosterone-producing adrenals play a major part in this failure.

Ordinarily, under normal conditions they balance each other to maintain constancy of the osmotic pressure of the extracellular fluid (ECF). Their failure to do so results in intractability of the edema. Water is paradoxically retained in excess of sodium owing possibly to excessive vasopressin secretion, even in the face of lowered osmotic pressure of the ECF. On the other hand, the output of aldosterone does not diminish as it normally should, despite an increase in ECF volume.[10,11]

Changes in cellular viability and permeability have taken place due primarily to the weakened heart, failing circulation, and cellular hypoxia. The body cells are sick, their membrane permeability is changed adversely, they lose potassium, their intracellular osmotic pressure falls and they lose water, and sodium enters the cells from the ECF space to replace the lost potassium. Continued secretion of aldosterone, causing urinary loss of potassium, contributes to this process.

With salt moving into the cells and water moving out of them and into the ECF space, the result is a water-logged salt-depleted ECF space which is no longer responsive to saluretic measures. These profound changes in biochemical architecture of the body tissues form the basis of this type of grave intractable failure, even when there is no overt deviation of serum electrolyte levels (concentrations). Obviously, in this type of derangement, where external salt loss is not the major factor in the resultant "low salt syndrome," the administration of concentrated salt solution will not reverse the process. In fact it may make matters worse by expanding still further the ECF volume.

Steroids

It is at this point that my experience with the use of steroids in edema states began. An accidental observation about four years ago had to do with the successful use of cortisone to reverse a severe postoperative "low salt syndrome," where prior to its use huge amounts of 5 per cent salt solution intravenously were of no avail. It seemed that cortisone effected a salutary change in cellular membrane permeability that allowed a shift of electrolytes to take place in reverse, back from the "body sodium stores" and from the intracellular fluid space out into the ECF compartment.[12,13]

Five similar cases, similarly reversed, were reported two years later by Graber and associates.[12] They also explained the effect caused by cortisone as a change in cellular permeability permitting sodium to pass from within the cells and from within the body stores out into the ECF space and plasma. That cortisone and ACTH could do this had been demonstrated experimentally by Levitt and Bader several years earlier.[14] They did a metabolic study on 6 patients to whom they gave 150 mg. of cortisone or 100 units of ACTH per day for eight to nine days, while keeping them on an almost 100 per cent salt-free diet so that no exogenous salt retention could take place. They were able to demonstrate an intercompartmental shift of sodium and chloride from the intra- to the extracellular fluid space. They postulated that this took place as a result of a change in cellular membrane permeability; others have since confirmed this.[15,16]

About this time, in 1954, (I surmise premised on the same idea) Schemm and Camara reported the successful use of ACTH to reverse hopeless and refractory cardiac edema in 17 out of 21 cases.[17,18] This was completely contrary to the then-held views concerning the dangerous salt and water-retaining effects of corticotrophin. It was considered by many to be radical, hazardous, illogical, and even unbelievable. However, the authors explained their results by assuming that ACTH promoted the secretion of an unknown adrenal steroid which "inhibited endogenous adrenal production of a DOCA-like material." Aldosterone had not yet been described as such, although it had already been identified as a "DOCA-like material" found in the urine of edematous patients.[19,20] The explanation they offered was the same as that given for the effect of cortisone on the edema of nephrosis.[21]

In January, 1955, I attempted to duplicate Schemm's method in precise detail on a seventy-two-year-old patient in hopeless and intractable cardiac edema due to arteriosclerotic heart disease and aortic regurgitation. After an initially good diuretic response the patient developed progressive azotemia and filled up again with fluid. I considered the attempt a failure and did not try ACTH again.

When prednisone (Meticorten) first became available and was reported to be relatively free of the salt- and water-retaining properties of the earlier steroids[22–24] it seemed ideally suited for the therapeutic trial I had in mind. The early reports indicated that it was not only free of salt- and water-retaining and potassium-depleting effects, but also that it actually promoted diuresis in some cases of rheumatoid arthritis and rheumatic fever. In the face of many warnings in the literature against the use of steroids in heart failure I undertook my therapeutic trial with a great deal of trepidation. Although prednisone had been used in many noncardiac conditions that in some instances had coincidental edema of various origins, it had not been used specifically for cardiac edema as such. My rationale was based on the idea that if Meticorten (like cortisone in Levitt and Bader's experimental study) would effect an intercompartmental redistribution of electrolytes (with a back shift of sodium from the body's electrolyte pool of "exchangeable sodium" out into the extracellular fluid compartment) then it would make them (the electrolytes) available or accessible to the reabsorption blocking action of the mercurials in the kidney tubules. Mercurial fastness would thus be reversed.[13,14]

Results

I have had 10 patients with intractable cardiac edema whose condition I considered desperate enough to warrant the use of drastic measures. They were all private patients, treated mainly as outpatients and not hospitalized except for acute phases of their illness, these phases usually not of long enough duration for us to carry out detailed metabolic studies or measure electrolyte level variations. I can submit, therefore, only the following clinical data and clinical observations and impressions. These 10 patients ranged in age from sixty to eighty-five. There were 7 males and 3 females. All had arteriosclerotic heart disease; 6 had severe hypertension and 5 of these had had one or more myocardial infarctions; 2 had aortic regurgitation; 1 had pericardial calcification and constriction; 1 had diabetic glomerulosclerosis and the nephrotic syndrome; 3 had associated bronchopulmonary disease and 1 of these had a known quiescent duodenal ulcer.

All of them but 2 were in relatively normal electrolyte balance; the serum sodium levels were in the lower ranges of normal, between 130 and 138 mEq. of Na per L. The 2 that were not had a moderate hyponatremia of about 128 mEq. of Na per L. All of them had been under treatment for congestive heart failure for two or more years; all had exhausted the standard therapeutic measures and had become unresponsive to mercurials, to chlorothiazide, and to all other forms of therapy including induced hyperchloremic acidosis, aminophylline, and so forth. Their condition was grave and seemed hopeless.

The general contraindications to steroids were considered in each case as regarded the hypertension, the diabetes in the patient with the nephrotic syndrome, and the known duodenal ulcer in the 1 patient mentioned. These were considered warranted calculated risks and were guarded against accordingly with appropriate countermeasures.

The prednisone was started in doses of 2.5 mg. a day. It was increased cautiously to from 15 to 20 mg. a day for four to five days and was then gradually decreased over a varying time interval, depending on each patient's response to the mercurial that was given after the priming with prednisone. The maintenance dose, after satisfactory responsiveness was re-established, varied from 2.5 to as high as 10 mg. a day. The average was 5 mg. a day. Only in 2 patients did tne initial dosage reach a daily maximum of 35 mg. Others have reported since then that the smaller doses are more effective;[25–27] that when the larger doses are used, "sodium-retaining effects come into play to dominate the sodium excretory effects of the smaller doses."[22] There appears to be a critical dose level that varies with each patient's responsiveness at which a given amount of prednisone will have either a predominantly sodium-retaining or sodium-excreting and diuretic effect. One has to find that dose level empirically for each patient.

No other change in standard therapy for congestive failure was instituted. Water and fluids were neither restricted nor forced, except in the 2 patients with hyponatremia where moderate restriction to from 1 to $1^1/_2$ L. per day was recommended. Salt restriction was urged to a maximum of 1 Gm. per day although the extent to which this was observed is not certain. Eight ounces of orange juice daily were recommended and potassium supplements were added in the patients that had a reduced serum potassium level. Ammonium chloride was given before, during, and one day after the mercurials.

The response in the 8 successful cases was gratifying. In 4 there was a moderate weight gain at first, amounting to 3 to 4 pounds during the first four or five days; then on about the fifth day there was a moderate diuresis amounting to 2 to 3 pounds over and above the weight gained. This was on prednisone alone. Then, when a mercurial was given after the priming with prednisone as described was completed a brisk diuresis took place resulting in a weight loss varying from 8 to 18 pounds. More recently the same effect was obtained with chlorothiazide. With the onset of diuresis the dosage of prednisone was gradually reduced to a maintenance level. Cardiac compensation improved with the diuresis. The 2 patients with hyponatremia showed an increase in their serum sodium levels. The diuresis was characterized by a greater output of water than of chloride. The chloride output in the urine, measured by the crude Fantus test, was low during the first four to five days, averaging 1 to 2 Gm. per L. With the onset of diuresis the chloride content increased from 5 to 8 Gm. per L.

The most gratifying feature in all of the 8 successful cases was the subsequent return of responsiveness to diuretics, not only to mercurials (in much smaller dosage than heretofore) but also to Diamox, chlorothiazide, and even to Neohydrin orally. These were given subsequently as needed. Responsiveness to them was maintained as long as prednisone was continued in small maintenance doses, except in those who developed intercurrent complicating disease. In several cases it was possible to maintain a satisfactory urine output for long periods with as little as 3 tablets of Neohydrin a day supplemented with 2 tablets of Diamox a week; more recently, good maintenance was achieved with 1/2 to 1 Gm. of chlorothiazide daily supplemented with an occasional injection of 1/2 to 1 cc. of Mercuhydrin—all this as long as small maintenance doses of prednisone were continued. Diamox seemed to be unusually effective in the cases with bronchopulmonary disease and in the 1 case with constrictive pericarditis.

Of the 10 cases the first one treated with ACTH as described was a failure. Another one died from a cerebrovascular accident on the fourth day of prednisone therapy prior to any demonstrable diuresis. In 8 cases a good remission was achieved. Of the 8, 5 have now been maintained in fairly good compensation for a period ranging from nine to twenty-eight months. Three patients have died in the interim. One, a male aged seventy-six, who had pericardial constriction and previous myocardial infarction, had a two-year period of excellent compensation after the reversal of his failure on just 2 tablets of Diamox a week, 2 tablets of Neohydrin a day on and off, and 2.5 to 5 mg. of prednisone a day. Two months ago he died suddenly from a pulmonary embolus (?) after he had discontinued his program in favor of chlorothiazide alone without prednisone. Two other patients died, one nine months and one fourteen months after the initially successful reversal of their intractable failure; the former at age seventy-four from an acute myocardial infarction, and the latter from bronchopneumonia at age sixty-nine. The intervening periods of maintenance lasting nine and fourteen months respectively had been very satisfactory as regards relative comfort to the patient and general ease of management of the heart failure.

Comment

The remission achieved with prednisone is, of course, only a remission. The inevitable progression of the basic cardiac disease is not arrested. A grace period, however, may be obtained, varying from months to perhaps several years, during which time standard treatment can be used again for maintenance of adequate compensation.

I should like to emphasize that prednisone was not given routinely to patients in ordinary congestive failure merely as an adjunct to other treatment. The accepted contraindications to the use of steroids were observed in all but the desperate cases; when the use of prednisone was undertaken it was done as a warranted calculated risk guarded with appropriate countermeasures as stated previously. Thus, for example in the case of the diabetic patient, the hyperglycemic effects of prednisone were covered with increased doses of insulin; in the case of the patient with the duodenal ulcer in whom bleeding later developed, bleeding was successfully arrested and the blood loss was replaced with red cell transfusions.

I was particularly impressed by the effectiveness of prednisone in the 3 cases with bronchopulmonary disease: asthma, bronchiectasis, and emphysema. Perhaps the indications for prednisone in cases of congestive failure associated with respiratory disease might be liberalized. It is possible that the improved respiratory ventilation contributes to the salutary effect. Barach, reporting on the use of prednisone in much larger doses in cases of pulmonary fibrosis and emphysema, reported a coincident diuresis in 3 of the cases that also had heart failure.[28] Others also have reported the particular effectiveness of steroids in cases of high output failure[29] with cor pulmonale. Certainly not all the intractable cases respond, and it is still uncertain why some do and others do not. It would be very convenient if there were some easy test to determine which cases will respond and which will not.[30]

As to the mechanism of prednisone action, many explanations have been proposed: that prednisone inhibits production of ADH (vasopressin) by the neurohypophysis thus decreasing tubular reabsorption of free water;[11,15] that it suppresses aldosterone production or antagonizes its effect;[17,18] or that it has a "general body effect" improving the body's ability to handle salt and water in edema states.[31] My feeling is that prednisone promotes a redistribution of electrolytes and water between the various fluid compartments in such a way as to bring about a backshift of salt into the ECF space making it once again presentable to the kidney tubules for reabsorption. Here saluretic drugs can once again effect diuresis by blocking its reabsorption. Several recent publications tend to support this view. Whatever the actual mechanism is shown to be, I believe that there is sufficient rationale and clinical confirmation of its effectiveness for the use of prednisone to be indicated in selected cases of intractable heart failure.

Chlorothiazide (Diuril)

Chlorothiazide is the most exciting diuretic that has come out since the mercurials first came into use as such thirty years ago. It is a sulfonamide derivative, a "sulfamyl," and is the most potent oral diuretic available today. It does for the cardiac patient in congestive failure what Orinase, another sulfonamide derivative, does for the mild diabetic patient: It cuts down the need for mercurial injections to a minimum and sometimes altogether. It is 80 per cent as potent orally as mercurials are in equivalent dosage by injection.[32] Occasionally, when other measures fail, chlorothiazide in combination with a mercurial will produce diuresis and mobilization of edema fluid.[2] Its onset of action starts in two hours and lasts about twelve hours.

Its principal action is very similar to that of the mercurials. It causes renal tubular inhibition of sodium and chloride absorption, although the precise site and mechanism of its action are still obscure. It differs from Diamox in that it does not act as an inhibitor of carbonic anhydrase in vivo and it does not cause excessive bicarbonate excretion; therefore it does not induce metabolic acidosis but rather tends to elevate plasma bicarbonate levels and cause a mild to moderate hypokalemic hypochloremic alkalosis; also, it does not lose its effectiveness on daily administration. It does cause an increased potassium diuresis roughly equal to about half that of sodium. As a diuretic its effectiveness may be increased by supplementing it occasionally with a mercurial or Diamox, but it is not potentiated by ammonium chloride.

The toxicity of chlorothiazide is relatively low, except that continued use of it may result in excessive loss of potassium and may require the addition of potassium supplements. It causes an increase in serum uric acid levels without symptoms. The contraindications to chlorothiazide are the same as are those to the mercurials. The same precautions are indicated as regards its thrombogenic tendencies: avoidance of excessive sudden diuresis and persistent use in the face of waning reponsiveness.

When the edema becomes refractory because of far-advanced myocardial failure, whether with or without dilutional hyponatremia, it will not respond to chlorothiazide any more than it will to the mercurials. Under those circumstances prednisone is useful once again to help re-establish responsiveness.

Case Reports

CASE 4.—Female, age seventy-five, longstanding severe hypertension of 210/120, bronchial asthma, and emphysema for many years; suspected hypothyroidism (?). Acute myocardial infarction in 1951. Good recovery but followed with paroxysms of left ventricular failure and pulmonary edema; bouts of recurrent acute coronary insufficiency; known silent duodenal ulcer. Hepatomegaly of 4 to 6 cm. below the right costal margin but no peripheral edema. Increasing severity of left ventricular failure and progression of right ventricular failure; right pleural effusion; progressively decreasing responsiveness to mercurials; whereas originally she could be maintained in satisfactory fluid balance with 1/2 to 1 cc. of Mercuhydrin every week or two, now 2 cc. doses at more frequent intervals are no longer effective in securing a diuresis. Serum electrolytes entirely within normal limits. Unable to tolerate either ammonium or potassium orally because of the duodenal ulcer and severe gastric symptoms from them. Aminophylline given very slowly caused peripheral vasomotor collapse and could not be used again.

Despite the duodenal ulcer she was started on 5 mg. of prednisone per day; this was increased to 25 mg. per day by the fifth day. The asthma improved quickly. The responsiveness to Mercuhydrin returned so that once again 1 cc. of Mercuhydrin intramuscularly elicited a good diuresis without side-effects. Thereafter the dosage of prednisone was reduced gradually to a maintenance level of 2.5 to 5 mg. per day. She has been maintained in adequate compensation on 750 mg. of chlorothiazide (Diuril) per day plus 3/4 to 1 cc. of Mercuhydrin once every seven to fourteen days. She did have two episodes of mild bleeding from her gastrointestinal tract which were adequately covered with two units of red blood cells. Her blood pressure has been maintained at a lower level of 170/90 (formerly 210/120). She has now been on this program for $2^{1}/_{2}$ years and has remained ambulatory.

Case 6.—Male, age seventy-six, normotensive; cardiomegaly and myofibrosis secondary to two previous myocardial infarcts; advanced pericardial constriction and calcification; marked hepatomegaly, ascites, right pleural effusion, peripheral edema 2+ to 3+. Hypersensitivity to digitalis which in ordinary daily maintenance doses of .25 mg. of Digoxin causes paroxysmal atrial tachycardia with irregular block. Intolerance of oral potassium or ammonium chloride because of severe gastrointestinal symptoms. Mercurials effective at first, but gradually less and less so and when given accentuate the tendency to arrhythmia; on one occasion this was associated with transient cerebral ischemia and semisyncope. Diamox was no longer effective. The serum electrolyte levels were within fairly normal limits, with a minimal reduction of serum sodium to 135 to 136 mEq. per L. and of serum potassium to 4.2 to 4.6 mEq. per L.

The pleural effusion was aspirated on two occasions amounting to 800 and 500 cc. of clear fluid. When signs of effusion reappeared while responsiveness to diuretics was failing, prednisone (Meticorten) was started with 2.5 mg. and was cautiously increased to 17.5 mg. per day on the fifth day. His tolerance to Digoxin improved at once and his arrhythmia reverted to a normal sinus bradycardia of 64. He gained 2 pounds of weight during the first four days. On the fifth day he was given 3/4 cc. of Mercuhydrin. A brisk diuresis followed and continued for a week during which time he lost 14 pounds of weight, from 156 to 142 pounds. The prednisone dosage was gradually reduced to 5 mg. per day. He became fully compensated. This condition was maintained thereafter by a regime consisting of Neohydrin orally 1 tablet twice to three times daily, Diamox 250 mg. every four to five days or whenever there was a weight gain of $1^{1}/_{2}$ to 2 pounds, Digoxin .25 mg. once daily five days a week, and 2.5 mg. of prednisone twice to once a day. Diamox was most remarkably effective causing a diuresis of 2,500 to 3,000 cc. each time. No injectable mercurials were necessary for two years.

When chlorothiazide became available it was substituted for the Neohydrin and Diamox without the prenisone because of the patient's objection to it. After two weeks there was again evidence of fluid retention and a gain in weight. A mercurial (Thiomerin 3/4 cc.) was given and a good diuresis was obtained. Several days later he complained of pain in one leg. There were no objective abnormal signs. About a week later he died suddenly, presumably from a pulmonary embolus.

Summary

As more cardiac patients in congestive failure live long enough to reach the intractable stage, this problem confronts us more often. The neurohypophysis and the aldosterone-producing adrenals play a major role in this failure of the homeostatic adjustment mechanisms; this failure results in the intractability of the edema, even without overt deviation of ECF electrolyte levels. Ten cases of cardiac edema with normal serum electrolyte levels became unresponsive to the usual diúretic measures including mercurials and attempts at induced hyperchloremia and acidosis. The refractoriness was reversed in 8 by the use of prednisone in a specific manner and dosage. Attempted explanation of the mechanism of this reversal is made on the basis of the promotion of transcellular and transcompartmental shifts of electrolytes from an electrolyte pool.

175 Bradley Place

Addendum

Since this paper was submitted for publication, 5 more patients in intractable failure were successfully reversed with the aid of Meticorten.

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Female Suburethral Diverticulum

MAXWELL SCHRAM, M. D., F.A.C.S., AND LOUIS M. SILVERSTEIN, M.D., F.I.C.S., BROOKLYN, NEW YORK

(From the Gynecological Service of the Brooklyn Women's Hospital)

CONDITIONS related to gynecologic proximity in females may be easily overlooked. These are the more glaring medical oversights, since most of these conditions can be suspected, diagnosed, and confirmed from external examination. In this paper we will consider suburethral diverticulum in the female.

As in many other fields, emphasis by constant teaching, both postgraduate and resident, and persistent publication to the point of near saturation will lead to an awareness of these conditions and illnesses, which in turn stimulate efforts to find the proper appraisal, management, and curative measures. This is what we hope to do in the category of female suburethral diverticulum.

When present, a suburethral diverticulum in the female is frequently missed, ignored, or passed off by the examiner. This may account for the meager articles and reviews that one finds in the literature. Wharton and Te Linde[1] in large amounts of material available to them reviewed only 66 cases. Thirteen cases were studied by Gray and Pingleton.[2] Merricks, *et al.*[3] observed 18 cases in females ranging from eighteen to sixty years of age. We are adding 3 cases from our gynecologic service which we dealt with in the past two years.

By definition, a diverticulum is a pouch or pocket leading off from a main cavity or tube. A suburethral diverticulum fits this description easily; not so easy is the demonstration of its communication to the urethra. Despite willing aid from our urologic colleagues, confirmation of the diverticulum by means of cystoscopy, endoscopy, or radiographic visualization is in most cases not attainable. This primarily is because the urethral opening or openings of the diverticulum may be small or exceedingly hard to find and at times situated where they are impossible to visualize urologically.

Incidence

Female suburethral diverticulum cannot be said to be a common ailment. Understandably, if this condition were diagnosed more frequently, the reported incidence of the disease would increase. Wharton and Te Linde mention the fact that whenever an article appears on the subject, more cases are diagnosed as a direct result. They found that the greatest incidence was between the ages of forty to fifty.

Etiology

Suburethral diverticulum in the female results from a congenital anomaly or from an acquired disease. When infection appears, the diverticulum enlarges and symptoms develop. In former days, gonorrhea was implicated. Pressure on the urethra during childbirth followed by infection is considered to be a mechanism of formation.

Symptomatology

The most common complaint is dyspareunia, often of long duration. The number of times physicians are consulted about this leading symptom without being able to prescribe active relief should give rise to suspicion that the diagnosis is being missed. Dysuria, frequent urination, and dribbling after urination are other symptoms consistent with suburethral diverticulum. One symptom we have regularly found is foul smelling urine, complained of by the patient herself. The examiner as he approaches a vulva prior to examination will concur. The pockets and pouches contain old urinary deposits which readily can become infected.

Diagnosis

The previously-described symptoms, all referred to their local source, plus the following examiner's findings will in most cases lead to the disease entity with which we are concerned to a remarkably high degree. On physical examination two findings stand out: (1) demonstration of a suburethral mass, and (2) evidence of purulent urine by milking the urethra forwards toward the urethral meatus from the bladder neck. The size of the mass varies, depending on the duration and severity of the patient's symptoms. In our cases, the mass varied from 2.5 by 2.5 cm. to 2.5 by 5 cm., involving the outer third of the anterior vaginal wall. A diverticulum usually has a communication with the posterior wall of the urethra. This was so in 2 of the 3 cases reported here. In the third, after the sac was opened, a probe was passed along the neck of a periurethral duct to the right lateral aspect of the external meatus. Differential diagnosis must include anterior vaginal cyst, relaxed anterior vaginal wall, cystocele, urethrocele, and urethrocystocele.

Treatment

The treatment of suburethral diverticulum in the female is surgical and requires meticulous technic in excising the sac and making an accurate closure in layers. It is suggested that fine absorbable catgut chromic sutures be used (numbers 00 to 0000) throughout. Postoperatively, an indwelling catheter inserted for five days is sufficient and the customary antibiotics and sulfa drugs are administered. The results of our cases have been gratifying.

Case Reports

Case 1.—A twenty-two-year-old woman was admitted with a history of an incision and drainage for a suburethral abcess, the cause of which was undetermined, two months prior to admission. The chief complaint was dysuria and dyspareunia of two months duration. Her past history was noncontributory except for the incision and drainage. She began menstruating at the age of fifteen. Her periods occurred every three or four months and lasted six days. She was married for five years and had had one miscarriage at three-and-one-half months with no dilatation and curettage and a full-term, spontaneous delivery of a $6^1/_2$ pound baby with no complications. The examination gave negative findings except for the presence of a small suburethral diverticulum. At operation a longitudinal incision was made on the anterior vaginal wall 1/2 inch below the urethral orifice. The vaginal mucosa was lifted up by dull and sharp dissection, and the diverticulum was freed from the surrounding tissues. The sac was opened and excised, and the defect was closed with two layers of interrupted chromic number 00 sutures. The vaginal mucosa was trimmed off and the mucosa was approximated. A Foley catheter was inserted for four days and penicillin and Gantrisin were given. The patient made an uneventful recovery.

Case 2.—A thirty-four-year-old woman was admitted with a history of urgency, frequency, dysuria, and dyspareunia of six years duration. The patient was married for eight years and had her first child seven years ago and twins six years ago, all by low forceps. A suburethral mass from which pus and urine could be expressed was found. At operation a suburethral diverticulum mass 2.5 cm. in diameter was removed. There was a round opening in the posterior wall of the diverticulum communicating with the urethra. A metal probe was passed from the urethral meatus to the diverticulum. A midline incision was made through the vaginal mucosa and the wall of the diverticulum. The opening into the urethra was easily seen. After excision of the sac the urethral defect was closed with two rows of chromic number 00 interrupted sutures. The excess vaginal wall was excised and the edges approximated. A Foley catheter was inserted in the bladder and left there for five days. Penicillin and Gantrisin were given, and the patient was discharged on the tenth day, the postoperative period having been uneventful.

Case 3.—A twenty-six-year-old woman was

admitted complaining of foul-smelling urine, dysuria, frequent urination, and dyspareunia of two years duration. She had three children, seven years, fourteen months, and two months old. On cystoscopy there were no positive findings. At operation a suburethral diverticulum was found that apparently originated in a periurethral gland close to the external urethral meatus. The communication with the urethra was in this area. The same surgical technic was used as in the cases previously described, with the same good results.

Comment

Suburethral diverticulum as a clinical entity should be given its place among the afflictions of women. It is readily diagnosed from the history of dyspareunia, dysuria, at times severe, frequent urination, and foul-smelling urine. Objectively, a urethral diverticulum in the female can easily be palpated and diagnosed and treated surgically with universally good results.

Summary

1. Three cases of suburethral diverticulum in the female have been presented.
2. Common complaints of this disease are dyspareunia, dysuria, and foul-smelling urine.
3. Surgical repair with meticulous attention to excision of the sac, layer-to-layer closure with fine suture material, and good postoperative care lead to good results in a condition which is frequently ignored.

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Polio Differs with the Sexes

Does the incidence and course of polio differ with the sexes? The disease appears to afflict males more often than females, particularly in the under twenty and the over thirty-five age groups.

However, the risk of polio is greater for women during the childbearing years. In pregnant women, it strikes most frequently in the second trimester, where more than half the cases occur. It is more severe when it occurs in the third trimester, with about three quarters of its victims contracting the paralytic form.

There is evidence that polio tends to occur in the first trimester in women carrying a male fetus and in the third trimester if the fetus is female. Infants of mothers who have had polio early in pregnancy are not as well developed as other babies and weigh less at birth.

The disease is usually less severe among women, although among children up to fifteen years of age, quadriplegia occurs more frequently in girls than in boys. In young adults (persons sixteen to thirty-nine years of age), men account for about 54 per cent of quadriplegia cases, while cases in which paralysis develops in only one leg occur mostly among women (72.7 per cent).

—*Patterns of Disease*

Bronchogenic Carcinoma Heralded by Hemoptysis and Ignored Because of Negative Chest X-Ray Results

LOUIS SCHNEIDER, M.D., F.A.C.P., MOUNT VERNON, NEW YORK

(*From the Washington Heights Chest Clinic, Bureau of Tuberculosis, New York City Department of Health*)

THE five-year cure rate for bronchial carcinoma is pitifully small. This poor result, in part due to the biologic behavior of the tumor,[1] perhaps is not less due to late diagnosis. It had been hoped that by finding this type of cancer during its preclinical phase the prognosis would be greatly improved. It has been claimed by some that a patient with a small, circumscribed, asymptomatic carcinoma of the bronchus which has recently been detected in a fortuitous chest film has a 75 per cent chance of surviving if operated on promptly.[2] Unfortunately, such a small bronchial neoplasm picked up on a chest x-ray survey is not chronologically synonymous with a similar-sized active tuberculous lesion so discovered. The latter is usually incipient and early, while the former, although operable, at this stage is often nonresectable. Be that as it may, it is clear that in the x-ray survey case-finding of malignant bronchial neoplasm lies the greatest hope for the patient's survival from this disease at this time. As will be shown, however, symptomatic bronchial cancer does not necessarily mean it is a late cancer with a gloomy prognosis.

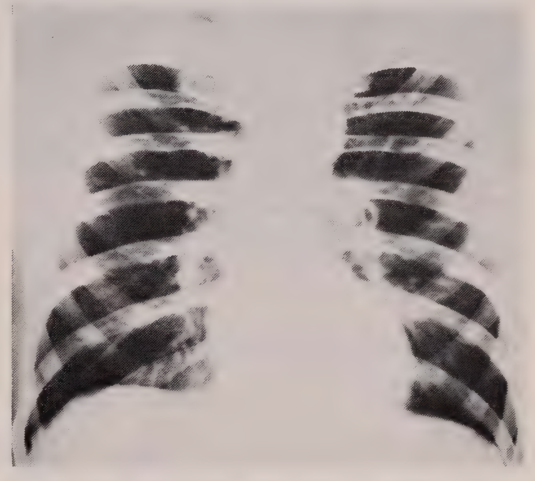

FIG. 1. *Case 1.*—Chest x-ray taken February 13, 1957, giving negative result.

Chest radiographic signs of carcinoma of the bronchus may be present for years before the patient appears for treatment of this condition. The x-ray manifestations may progress very slowly or remain very little changed, producing no appreciable symptoms referable to the lower respiratory tract for some time before the correct diagnosis is established. Rigler[3] has drawn our attention to these interesting serial x-ray changes in order to alert us to early treatment of bronchial cancer. While we have thus become familiar with slow serial x-ray signs of malignant tumor of the bronchus, it is not equally appreciated that these neoplasms can presumably grow quite slowly intrabronchially for some period of time before something happens to make them cast an abnormal chest film shadow. Well before the chest x-ray shows a lesion, the patient will have seen a physician because of the most disturbing lower respiratory tract symptom, bloody expectoration, or hemoptysis. The diagnosis of bronchial carcinoma may then be put off for months or even more than a year because this patient's chest x-ray is negative.

Below are briefly described 5 instances in this observer's experience of the aforementioned mode of onset of cancer of the bronchus, characterized by the featured symptom of hemoptysis, a normal chest x-ray, and then, months later, an abnormal chest

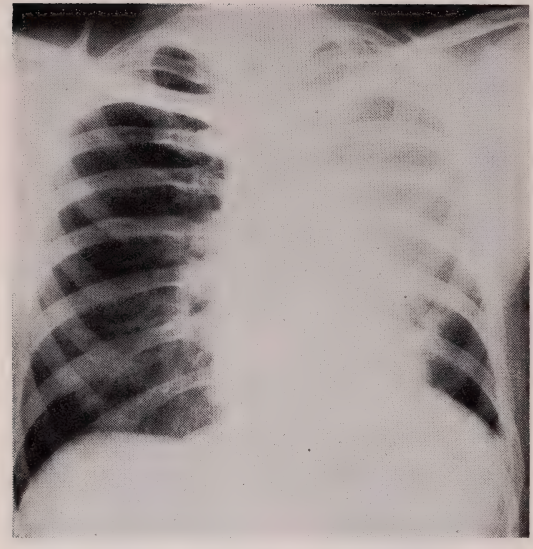

FIG. 2. *Case 1.*—Chest x-ray taken November 21, 1957, nine months after negative result, showing left upper lobe atelectasis.

film and the disclosure of advanced neoplastic disease.

Case Reports

CASE 1.—Early in February, 1957, this fifty-one-year-old, Negro mailman began to have bloody expectoration, discomfort in the left side of the chest, and a sensation of wheezy breathing in the anterior part of the chest on the left side. He was referred to a diagnostic group clinic where after study, including a chest x-ray which gave a negative result (Fig. 1), he was referred back to his physician with a diagnosis of possible fibromyositis.

He continued to work for about eight months after the initial examination, when he began to have an intermittent fever and cough. He also experienced the previously-described wheeze and bloody sputum. At this time a provisional diagnosis of left upper lobe pneumonia was made. He did not respond to antibiotic treatment so that he was hospitalized on November 20, 1957. At this time, physical signs and chest x-ray (Fig. 2) were typical of atelectasis of the left upper lobe, perhaps with superimposed infection, the picture undoubtedly due to left upper lobe bronchial neoplasm. A left pneumonectomy was done after bronchoscopic confirmation of the diagnosis. The lung specimen showed a large pedunculated mass arising from the upper lobe bronchus, measuring 3 by 2.5 by 1.5 cm. and extending into the lower lobe bronchus and main bronchus (Fig. 3). This proved to be an epidermoid carcinoma of the bronchus with adjacent lymph node metastasis. This patient is well and back at work as of this writing.*

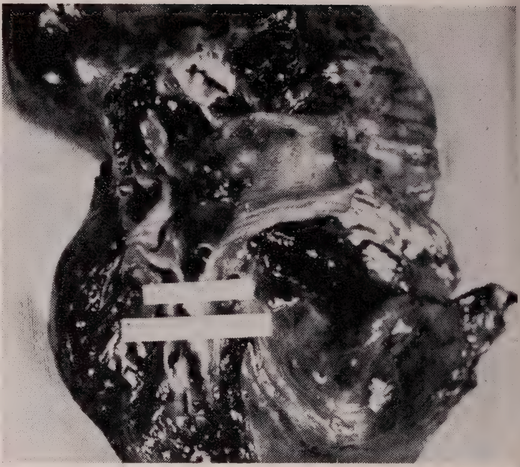

FIG. 3. *Case 1.*—Left side of the lung showing a pedunculated tumor of the left upper lobe bronchus.

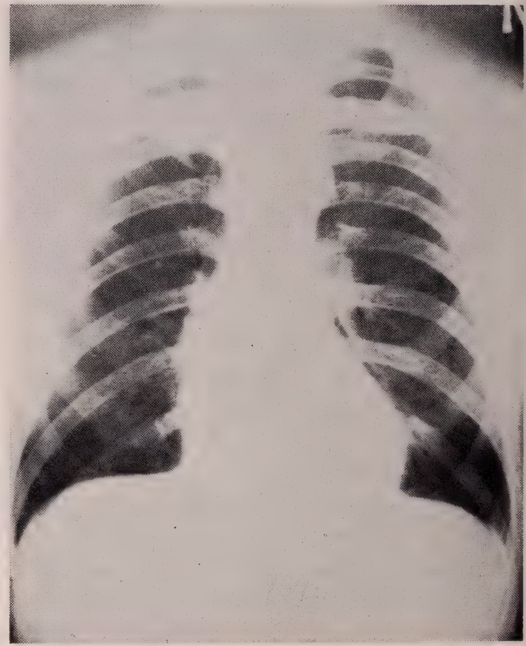

FIG. 4. *Case 2.*—Chest x-ray taken May 4, 1948, giving negative result.

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* This patient died after the article was submitted. At autopsy, cerebral metastases were found, and no intrathoracic carcinoma was seen.

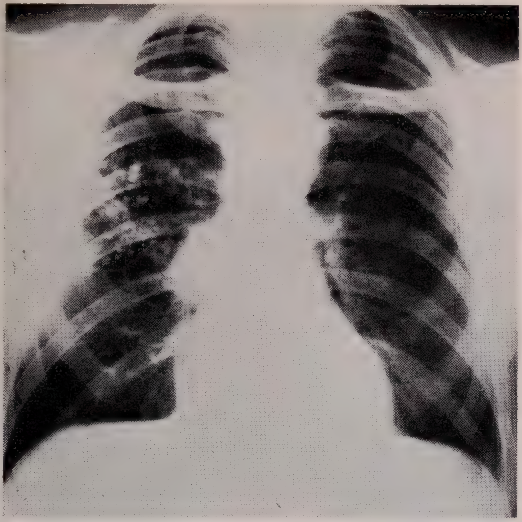

FIG. 5. *Case 2.*—Chest x-ray taken August 19, 1949, more than one year after negative result, showing tumor in the right hilar area and retained iodized oil.

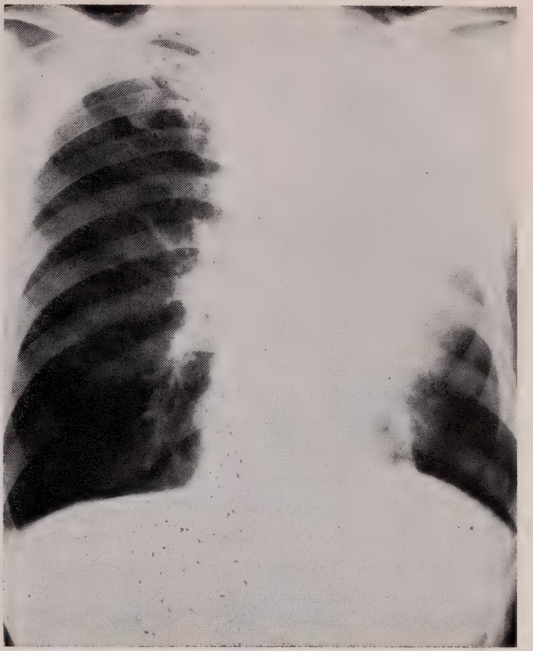

FIG. 7. *Case 3.*—Chest x-ray taken November 13, 1951, six months after negative result, showing massive left upper lobe involvement.

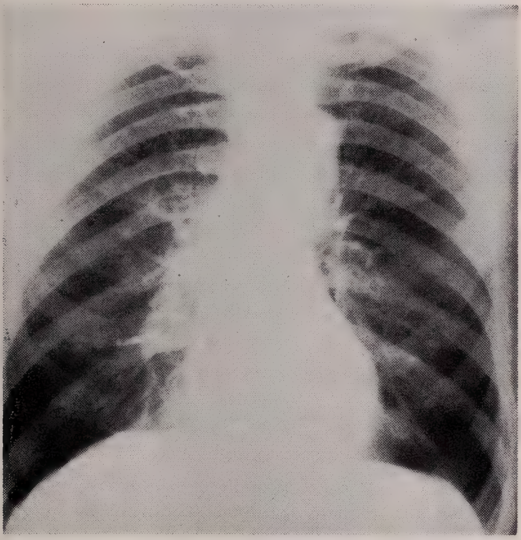

FIG. 6. *Case 3.*—Chest x-ray taken May 11, 1951, giving negative result except for emphysematous changes.

CASE 2.—At the age of fifty this white male had three or four small hemoptyses over a six-week period. He was hospitalized for this reason on April 29, 1948. There was no cough, but he complained of soreness under the sternum. Physical examination of the chest and a chest film (Fig. 4) gave negative results. Moderate hypertension was noted as well as numerous angiomata on the body. The blood count revealed a slight anemia, and the sputum was negative for tubercle bacilli. Nothing else of note was found. It was concluded that this patient's bleeding was undoubtedly benign, in which hypertension probably was a factor. More than a year later, on July 14, 1949, he was seen again because he spat up a small amount of blood three days previously and 1/4 ounce of blood that morning. Following bronchography, another brisk hemoptysis occurred two weeks later. Chest x-ray fourteen months after the negative film (Fig. 5) now showed a small circumscribed lesion in the right root zone. A right pneumonectomy was done seventeen months after the negative film. In this case, a squamous cell bronchogenic carcinoma was found in the main stem bronchus of the right lower lobe.

CASE 3.—This fifty-four year-old white newspaper worker was first examined on May 11, 1951, because of a cough productive of bloody sputum for one month and increasing shortness of breath. His appetite had been good and there had been no weight loss. Examination of the chest revealed distant breath sounds and a few crepitant left basal rales. Fluoroscopy was suggestive of some

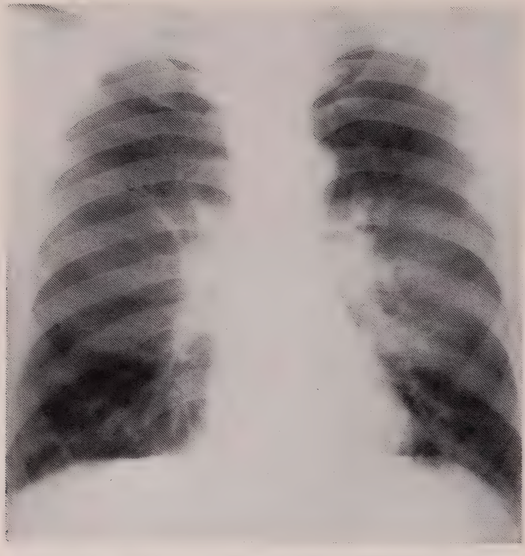

FIG. 8. *Case 4.*—Chest x-ray taken March 9, 1953, giving negative result.

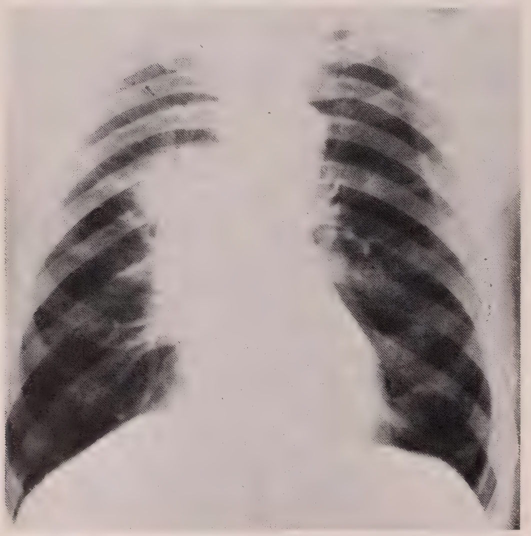

FIG. 9. *Case 4.*—Chest x-ray taken January 5, 1954, ten months after negative result, showing a tumor of the right side of the lung which proved to be inoperable.

bilateral obstructive emphysema. A chest x-ray taken at that time was negative for localized bronchopulmonary disease (Fig. 6). Six months later, the patient was seen again because of a congestive feeling in the chest for two-and-a-half weeks. This time he appeared chronically ill. Cyanosis and clubbing of the fingers were noted. There were physical signs of dullness, diminished breathing, and a few rales over the left upper lobe. A chest x-ray now showed a dense lesion occupying the left upper lobe area (Fig. 7). At operation a few weeks later, a squamous cell tumor was found involving the left main bronchus to 1 cm. distal from the carina. Mediastinal nodes appeared to be free. A left pneumonectomy was done. When the patient returned to the hospital three months later because of recurrent blood spitting, bronchoscopy showed a tumor in the stump of the left bronchus. There was now also evidence of metastases to several dorsal vertebrae. Despite radiotherapy, the patient died the following month.

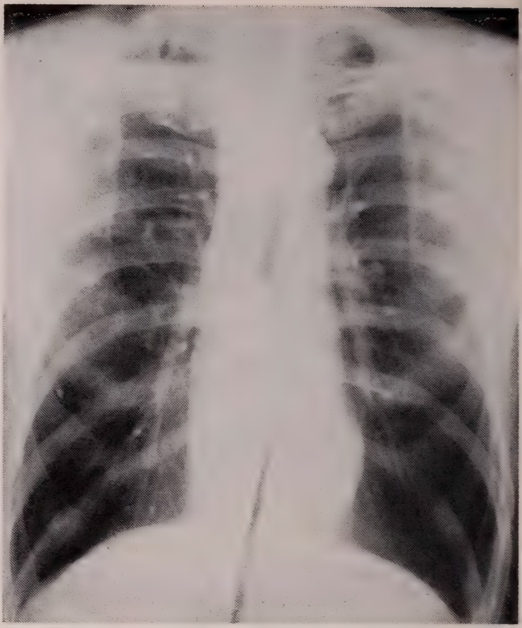

FIG. 10. *Case 5.*—Chest x-ray taken August 13, 1952, giving negative result.

CASE 4.—A sixty-eight-year-old white, retired bartender was first seen early in March, 1953, because he had been coughing up large amounts of bloody sputum for the previous five days. A chest x-ray at that time gave negative results (Fig. 8). The blood spitting soon stopped. Ten months later, on January 5, 1954, he was seen again because of severe soreness in the anterior part of the chest on the right side of two weeks duration accompanied by cough productive of a small amount of mucoid, nonbloody sputum. His appetite had been deteriorating, but there had been no weight loss since the earlier examination. No striking signs were found on this

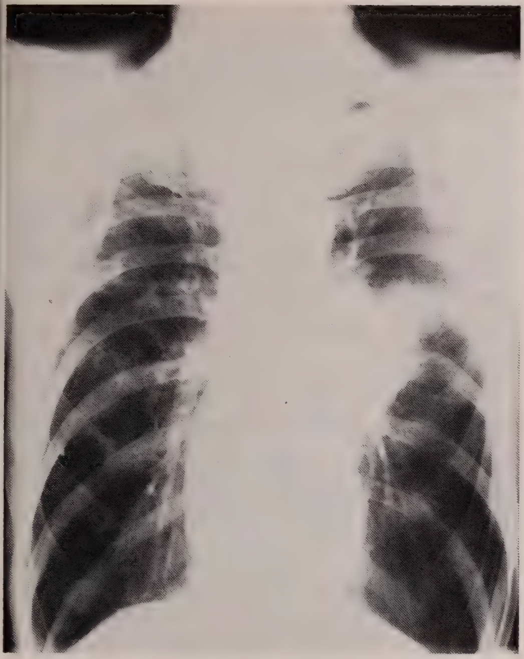

FIG. 11. *Case 5.*—Chest x-ray taken January 14, 1955, more than two years after negative result, showing left upper lobe carcinoma.

examination except for some clubbing of the fingers. A chest x-ray now showed a large mass extending into the right side of the lung from the right hilar area (Fig. 9). Exploratory thoracotomy done eleven months after the initial negative chest film showed inoperable carcinoma of the right side of the lung. It was fixed to the pericardium with a tumor probably invading the right auricle. He received radoitherapy treatment but died at home three months postoperatively.

CASE 5.—A seventy-three-year-old white, retired gardener was seen on August 13, 1952, because of expectoration of bloody sputum for about a week and the spitting up of frank blood the day he went to his physician. Except for a long-standing "cigaret cough," there had been no other symptoms of note. Examination and chest x-ray (Fig. 10) of this spare, tall, elderly male essentially gave negative results. On January 14, 1955, he was again seen because there had been recurrence of blood spitting during the previous three months. Chest x-ray this time showed a dense process in the left midlung field (Fig. 11), and at bronchoscopy, an ulcerated lesion was seen at the orifice of the left upper lobe bronchus. The left upper lobe bronchus was compressed in an anteroposterior direction. Biopsy of the lesion revealed squamous cell carcinoma. No operation was performed, and the patient did not receive radiotherapy. He died of his disease eight months after bronchoscopic examination.

Comment

These 5 cases of bronchogenic carcinoma were heralded by hemoptysis. This personal experience with bronchial neoplasms first seen clinically when apparently confined to within the bronchus itself is not unique.[4,5] It is clear that a negative roentgenogram of the chest does not exclude the possibility of a serious disease, such as cancer of the bronchus, when a male patient over forty sees his physician because of hemoptysis. Thus, to detect bronchial neoplasm in its early resectable stage, one must not only pay attention to minimal changes in the x-ray of the chest, but it is also necessary to be aware that ominous symptoms of this disease may precede any radiographic parenchymal abnormalities.[6] If we are alert to the latter clinicoroentgen picture, more cases in the early intrabronchial stage of bronchial cancer will reach the chest surgeon for successful treatment than have been reported in the recent literature.[7,8]

From long and painstaking radiographic studies,[3] it has been postulated that in a great many cases the bronchial cancerous lesion arises as an isolated tumor in the periphery of the lung and remains that way for a long period of time before it invades the major bronchi. If this is true, from this writer's observation long, intraluminal growth of bronchial malignancy also significantly takes place well before x-ray clues to its presence, such as atelectasis, localized emphysema, infiltration, or tumor formation with or without necrosis, show up.

Hemoptysis is a frightening symptom which usually gets the patient to a physician with little delay. When this occurs, the examiner has an opportunity to make a fairly rapid determination of the underlying cause of the pulmonary bleeding with little resistance on the patient's part. If a completely negative roentgenogram of the chest is obtained, the investigation is not considered complete without bronchoscopy, especially if the individual is a male over forty and an extrarespiratory cause of the bleeding, such as blood dyscrasia, is not found. Ordering bronchoscopy should no longer disturb the physician for it is now hardly a physical hazard to the patient. Unless the hemoptysis is marked or the very poor physical condition of the patient precludes it, bronchoscopy is most informative at the time of bleeding. This procedure should not be put off because the pulmonary bleeding has stopped and a second chest film taken soon after the first is again negative. The latter may occur while a bronchial carcinoma is growing apace. More than half of the cases of malignancy of the bronchus referred to the surgeon have a chief symptom of hemoptysis.[7] Expectoration of blood does not necessarily make the prognosis bad.[9] Bronchoscopy may be of little diagnostic help in the asymptomatic tumor of the bronchus or in the individual with this lesion who has nondescript lower respiratory symptoms.

However, when hemoptysis is due to bronchial carcinoma, the disease should be detected bronchoscopically in a large percentage of the cases.[10]

Summary

1. Hemoptysis may signify the presence of early bronchogenic carcinoma in a patient whose chest x-ray at the time of pulmonary bleeding gives a negative result.

2. If the radiograph is uninformative and if no source of blood spitting outside the lower respiratory tract is discernible, bronchoscopy must be done to locate the source and cause of the hemoptysis in patients over forty.

3. A malignant bronchial neoplasm may have a long period of intraluminal growth before roentgen signs of the disease are manifest. Waiting for the latter to appear can spoil the chances of surgical cure.

20 Fletcher Avenue

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ROBERT TURELL, M.D., *Editor*

Endocrine Functions of the Hypothalamus

DOROTHY T. KRIEGER, M.D., NEW YORK CITY

(From the Department of Medicine, Mount Sinai Hospital)

IT HAS been known for many years that the hypothalamus is concerned with forms of emotional expression, for instance, the occurrence of sham rage in decorticate animals (those whose hypothalami are intact) and the absence of these phenomena in animals whose hypothalami have been removed.[1] There have been numerous clinical observations on the occurrence of precocious puberty in males with hypothalamic lesions.[2,3] There also have been reports of Fröhlich's syndrome (adiposogenital dystrophy) occurring secondary to hypothalamic disease.[4] Other clinical symptoms associated with hypothalamic disease have been diabetes insipidus, somnolence, psychic disturbances, and thermodysregulation.[5] The above are cited as instances of conditions usually considered to be associated with alterations in endocrine function in which disease of the hypothalamus is believed to play a causative role.

Until recently, the nature of the hypothalamic relationship to the endocrine system was quite vague. As the connections of the hypothalamus with the old limbic brain system (the hippocampus, piriform lobe, gyrus cinguli, and amygdala)[6] and the pituitary became more delineated, it became more apparent that here was an "organ" ideally situated for integrating bodily responses to both the internal and external environment. Although much work and clarification is necessary, recent experiments have given some beginning awareness of the physiologic basis of hypothalamic-endocrine interrelationships. However, most of these results still have to be translated from the experimental animal to the human.

In the case of hypothalamic-posterior pituitary relationships, there has been great clarification in recent years. It is now generally accepted that the vasopressor and oxytocic hormones are not produced in the posterior pituitary.[7] Instead they originate by a neurosecretory process in the cells of the supra-optic and paraventricular nuclei in the anterior hypothalamus and arrive at the posterior pituitary by way of migration along the nerve fibers of the supra-opticohypophyseal tract. The posterior pituitary is therefore a storage site for these hormones and not the site of their elaboration. By means of staining technics with chrome alum hematoxylin, Scharrer and Scharrer[8] have shown the presence of granules in the above-mentioned hypothalamic nuclei. The substance stained is a carrier for the posterior pituitary hormones—not the hormones themselves. The content of stainable substance parallels the hormone content of these areas as determined by bioassay under varying conditions of hydration and dehydration. The above findings explain in part the absence of diabetes insipidus following low pituitary stalk section, since in this case a considerable number of secretory neurons remain completely uninjured and are able to secrete antidiuretic hormone.

When it comes to the question of hypothalamic control of anterior pituitary function, the findings are much less clear. Unlike the posterior pituitary, no significant neural connections have been demonstrated between the hypothalamus and anterior pituitary. Hypotheses related to direct hypothalamic-anterior pituitary control revolve about the vascular relationships between the two. It is now known that the anterior pituitary receives a dual blood supply, one directly from branches of the anterior cerebral artery, and another by means of a hypophyseal portal system formed by branches of the superior hypophyseal arteries.[9,10] After breaking up into an arterial plexus over the pars tuberalis and median eminence, these branches form into larger vessels which break up into sinusoids over the pituitary stalk and anterior lobe to supply the anterior lobe. Hypothalamic nerve fibers end in close relation to the capillary loops of the median eminence. Some authors[11] claim that this portal system is the main link between the hypothalamus and pituitary and carries neurosecretory products from the former which activate the latter. It is stated that when these vascular pathways are severed, none of the adrenal responses to stress occur. It also has been reported that plasma from these portal vessels in contrast to carotid artery plasma can cause a depletion of adrenal ascorbic acid, that is, an ACTH-like effect, in intact animals.[12] Others[13] dispute this view, on the one hand saying that whatever neurosecretory substance is present in the hypothalamus may affect the anterior pituitary via the systemic circulation, and on the other hand also demonstrating that in some species at least, stalk section causes devascularization of the anterior pituitary lobe, which would account for the lack of response to stress in such preparations.[14,15] One other way the hypothalamus may influence the anterior pituitary is via the sympathetic nervous system. Proponents of this theory point out that the hypothalamus is one of the main loci of the sympathetic nervous system. Stimulation of the hypothalamus causes the appearance of large amounts of epinephrine in the circulation. Epinephrine has been implicated by Long[16] as one of the chief factors causing anterior pituitary activation for the release of ACTH.

Although from the above it is clear that the exact pathway of hypothalamic-anterior pituitary activation is still unsettled, the fact of the existence of some degree of hypothalamic-anterior pituitary control has been well demonstrated for almost all of the target glands. These experiments consist mainly of observations of the effect of stimulation or ablation of various parts of the hypothalamus, transection of the pituitary stalk, or transplantation of the pituitary on various parameters of endocrine function.

In the case of the gonads, it has been shown that in the rabbit electrical stimulation of the median eminence, but not of the pituitary, causes ovulation.[17] Placement of acetylcholine on either the median eminence or pituitary produces ovulation, and atropinization of the pituitary blocks luteinizing hormone release after electrical stimulation of the cervix. In the human, lesions of the median eminence or mamillary body have been associated with precocious puberty,[18–20] and gonadal atrophy has been observed in a patient with destruction of the tuberoinfundibular nucleus of the hypothalamus.[21] Anterior hypothalamic lesions have produced persistent estrus and genital hypertrophy in the rat. It has been postulated that in these latter instances the explanation may be either that with damage of one portion of the hypothalamus another hypothalamic center is released, causing increased output of gonadotrophic hormone from the adenohypophysis[3] or that the hypothalamic lesion may alter the flow of autonomic impulses to the spinal segments concerned with gonadal function.[21] This results in a change in gonadal sensitivity, so that the gonads over-respond to a normal amount of circulating gonadotropin. The role of the hypothalamus in the cases of amenorrhea secondary to psychogenic disease still remains to be explored.

In the case of the thyroid there are no reports of hypothalamic lesions and altered thyroid function in the human. However, many reports emphasize the association of Grave's disease and emotional stress.[22,23] Experiments with rats and dogs have shown that anterior hypothalamic and median eminence lesions cause depression of thyroid function.[24,25] Hypothalamic stimulation brings about histologic signs of increased thyroid activity and increased I^{131} output, especially in adrenalectomized animals.[26,27] However, hypophysectomized rabbits with pituitary grafts in the anterior chamber of the eye released thyroidal I^{131} at the same rate as the controls, and this clearance was inhibited by thyroxine and cortisone as in normal animals.[28] This would seem to indicate that although there is hypothalamic control of thyrotropin secretion, this may not be mediated exclusively via the portal vessels.

Clinical evidence of hypothalamic disease with adrenal manifestations is meager. Most of this evidence has been presented by Heinbecker,[29,30] who collected 5 cases of hypothalamic disease, mostly that of the paraventricular nucleus, associated with Cushing's syndrome. These cases were studied prior to the advent of chemical methods for the determination of 17-hydroxycorticoids, so that the diagnosis was made on clinical grounds alone.

Most of the experimental work on hypothalamic-anterior pituitary relationships has been done with reference to adrenal activity, measured essentially as glucocorticoid activity. A rather voluminous and often contradictory literature has accumulated, but the following points seem relatively well agreed on. Median eminence lesions cause no change in adrenal size,[31,32] abolish the compensatory hypertrophy occurring after unilateral adrenalectomy,[32] depress the serum ACTH[33] and basal serum corticoid level,[34] and abolish the rise in serum corticoids after stress.[33,35] Pituitary stalk section may cause a decrease in adrenal size and abolish the response to so-called "neural stresses," that is, immobilization but not to "systemic stresses," such as cold or epinephrine.[36,37] Pituitary grafts lead to a decrease in adrenal size but not as great as that in hypophysectomized animals.[38,39] Animals bearing pituitary grafts show some decrease in adrenal size [40] but may still show evidence of adrenal responsiveness to certain types of stress, mostly "systemic" ones.[38] Stimulation of the infundibular region of the hypothalamus in monkeys[41] produced a marked rise in plasma 17-hydroxycorticoids, whereas in humans[42] stimulation of the brain close to the anterior hypothalamus caused increase in blood and urinary steroids. Stimulation in areas more anterior, inferior, or lateral to this area resulted in a reduction of blood and urinary 17-ketosteriods and 17-hydroxycorticoids. From these observations it may be concluded that the area of the hypothalamus known as the median eminence is responsible for mediating the effects of low cortisone levels and stress in producing a rise in blood ACTH and corticoids and that the substance responsible for this may reach the pituitary either via the hypothyseal portal circulation or the systemic circulation.

The nature of this responsible substance is most intriguing and fascinating at present. Questions arise as to whether there is one hypothalamic substance that can cause an increase in all the tropic hormones, or if there are specific hypothalamic "releasers" for each one of the tropic hormones. Practically all of the work in this field has been done in relation to an ACTH-releasing substance.

It was long suggested that the releasing substance was epinephrine, which is secreted in large amounts during stress, and which in animals produces signs associated with increased adrenal cortical activity.[16] However, the latent period to produce these changes is greater than that for ACTH. In addition, increased levels of blood 17-hydroxycorticoids never have been demonstrated in man after the use of epinephrine. It was next suggested by Sayers[43] that the level of blood corticoids was the mediating agent responsible for ACTH secretion, since low corticoid levels seem to call forth the production of greater amounts of ACTH. It never has been shown, however, that corticoids are rapidly utilized or inactivated by stress, while it has been reported that ACTH is still secreted by adrenalectomized animals exposed to stress.[44] Histamine, which is present in high concentrations in the median eminence, has been proposed as a mediator,[45] although this seems to have been disproved by further experimental work.[46,47]

Recently antidiuretic hormone (ADH) has been proposed as the hypothalamic mediator. It has been shown that administration of vasopressin produces a drop in ascorbic acid and cholesterol in intact but not hypophysectomized animals, together with an increase in adrenal size.[48,49] Administration of Pitressin or purified arginine vasopressin or lysine vasopressin to humans causes an increase in blood 17-hydroxycorticoids.[50,51] It also has been shown that ADH and ACTH are secreted in response to the same stimuli.[52] Lesions in rats, causing diabetes insipidus, also block ACTH release[53] although this does not occur in dogs.[34] Incubation of anterior pituitary cultures with ADH causes ACTH production in the media.[54] A serious objection to this, however, is seen in Fortier's work,[55] where anterior pituitary cultures incubated with posterior pituitaries that had been depleted of neurosecretory material (presumably ADH) had the same potency in causing ACTH release as normal posterior pituitary. In addition, purified vasopressin does not cause ACTH release when incubated with anterior pituitary cultures, and Pitressin hydrolyzed to remove pressor activity and histamine-like activity still has ACTH-releasing activity.[56] It may appear that it is not ADH itself but something associated physically or chemically with it that is responsible for ACTH release.

Another suggested releasing substance is serotonin, which is present in the hypothalamus in higher concentrations than in any other part of the brain.[57] Very little experimental work has been done in this connection. Patients with carcinoid syndrome thus far studied have shown no evidence of enhanced adrenal secretion.

Most recently investigators have been preparing and purifying hypothalamic extracts in an attempt to isolate the "releasing substance." Hypothalamic tissue incubated with anterior pituitary tissue cultures brings about ACTH production.[58] Norepinephrine incubated with hypothalamic tissue or cerebral cortex and anterior pituitary has a similar effect.[59] The substance isolated from the hypothalamus chemically has been shown to be a peptide, not vasopressin, oxytocin, histamine, acetylcholine, adrenaline, noradrenalin, or 5-hydroxytryptamine (serotonin).[60] It is also present in cerebral cortical tissue, but it requires more vigorous hydrolysis to release it from this source. This substance chemically seems to be identical with a recently-isolated substance P which also causes ACTH release and which is found in rather widespread areas in the body.[61]

In view of these latter findings it may be found eventually that the hypothalamus does not have exclusive control over the functions of the anterior pituitary. The preceding experimental and clinical data, however, lend strong support to the idea of a neuroendocrine integrating system which functions in everyday homeostasis as well as being exaggerated in certain disease states.

60 East 96th Street

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(Number fifty-four in a series of Recent Advances in Medicine and Surgery)

Surgical Treatment of the "Normally Functioning Gallbladder"

Where the history and physical findings are positive, does a roentgen diagnosis of "normally functioning gallbladder" automatically rule out surgical treatment? Not necessarily, say the authors, Dr. William H. Pennington and Dr. Wallace E. Herrell, of the Lexington Clinic, Lexington, Kentucky, and support their thesis with a review of 312 cases, among which they found 10 patients whose operative and pathologic diagnoses confirmed a clinical impression of cholecystic disease although the radiology report was negative. In 2 of these 10 cases cholecystography had been performed twice, and in another, three times.

In presenting this paper the authors set down two objectives. They wish to show that (1) even repeated cholecystograms may be normal despite presence of cholecystic disease, and (2) many patients suffering from this disease may be denied the benefits of surgery if the roentgenographic diagnosis alone is relied upon. The tendency to rely on the roentgen findings alone, say the authors, is understandable since these are correct in such a high percentage of instances. Their objectives are not to belittle radiology but to place all diagnostic procedures back in proper perspective. The writers suggest that when reporting findings on a cholecystography, the roentgenologist should indicate that the gallbladder either does or does not concentrate the dye or radiopaque material administered to outline it instead of stating that the gallbladder is normally functioning or nonfunctioning.—*West Virginia Medical Journal, July, 1958*

CLINICOPATHOLOGIC CONFERENCE

ST. JOSEPH'S HOSPITAL

ELMIRA, NEW YORK

Conducted by ROBERT H. HUDDLE, M.D., F.A.C.S. SEPTEMBER 11, 1957

Discussed by LAWRENCE K. PICKETT, SYRACUSE, NEW YORK

Case History

A two-year-old white female child was admitted to the hospital because of an abdominal mass. For several weeks prior to admission, the mother noted that the child's abdomen was increasing in size and that it was firm to touch. There had been a recent minimal weight loss. The child experienced a few episodes of vomiting and diarrhea before admission. Occasionally she complained to her mother of some vague abdominal discomfort. She had been in another hospital for two days before being transferred here.

She was a full-term seven-pound baby at birth. Delivery was normal and the neonatal period uneventful. Her appetite had always been good, and she received supplemental vitamins. The child exhibited normal development, had no previous illnesses or operations, and had been started on the routine immunizations. The family history was noncontributory. There was one younger sibling alive and well.

Examination revealed a thin, pale, white female child who did not appear acutely ill or uncomfortable. There were no palpable lymph nodes and no skin rash. The head, neck, heart, and lungs were all essentially normal. The abdomen was visibly enlarged. On palpation a very large, firm, smooth, nonmovable, nontender mass was readily noted. The mass filled the entire upper and right side of the abdomen so that its lower margin extended just below the umbilicus. The size and position of the mass precluded the possibility of palpating for liver, kidneys, or spleen. The bowel sounds were normal and no rigidity was noted. The remainder of the examination was unremarkable.

On admission her temperature was 98.6 F., pulse 112, respirations 24, and weight 26 pounds. Urinalysis revealed a slight trace of albumin and on microscopic examination many amorphous urates were noted. Red blood count was 3,000,000; white blood count was 8,500 with 52 polymorphonuclears, 5 stabs, 39 lymphocytes, 3 monocytes and 1 eosinophil, and hemoglobin was 8.2 Gm. or 52 per cent. Sedimentation rate was 18. X-rays of the long bones and skull were negative. Upper gastrointestinal series revealed a normal-appearing stomach and duodenum. A tumor mass was visible, and it depressed the colon. The chest x-ray was negative except for elevation of both diaphragms. The kidney, ureter and bladder, and intravenous pyelogram films again revealed a large tumor mass, but both renal collecting systems were well visualized, and the kidneys appeared normal in size. The ureters and bladder were normal.

Pediatric and surgical consultations were obtained, and after receiving 500 cc. of blood the child was taken to surgery for exploratory laparotomy seven days after admission.

Dr. Lawrence K. Pickett: We are presented with this two-year-old child who had been previously well except for vague complaints of abdominal discomfort, nausea, and diarrhea. Such complaints are certainly not remarkable in a pediatric practice.

On physical examination a large, smooth, firm, nonmovable, nontender mass was palpated in the abdomen. The remainder of the examination gave essentially negative results.

The blood count revealed a rather significant anemia for a child of this age. It is also of great interest to me that the white count should be normal along with a relatively normal differential. This rules out several possibilities which I shall discuss later.

When confronted with an abdominal mass in a child, I believe various x-rays are of great diagnostic importance. In this instance the chest film revealed a slight elevation of the diaphragm but otherwise an essentially normal chest with no evidence of metastasis. Since the most probable sources of an abdominal mass would be related to the kidneys, I should like to review the intravenous urogram next.

The collecting systems of each kidney appear normal, and there is no distortion or displacement of the renal shadows. The ureters and bladder do not reveal any abnormalities.

The upper gastrointestinal series shows the stomach to be pushed to the left. The remainder of the series gives us much more information. The mass is apparently preventing the normal filling of the small bowel in some regions. The duodenum is perhaps a little elevated and displaced laterally. The duodenal loop is somewhat enlarged. At this point a lateral film of the abdomen and of the intravenous urogram would be very helpful. These views tell us much more about the duodenum and the origin of the mass.

I believe I can summarize the findings by stating that we are dealing with a large intraperitoneal mass which has displaced the stomach and small bowel. The retroperitoneal structures are not particularly displaced, and there is minimal symptomatology associated with the mass.

With this much information at hand further knowledge of this tumor will best be obtained at surgery. We are then left with a discussion of what one might expect to find at surgery.

Since most abdominal tumor masses in children are associated with kidneys, I should first like to consider congenital hydronephrosis. This is an asymptomatic condition in most children. Remembering that the kidneys are functioning four to five months before birth, it can be readily understood that hydronephrosis can develop in utero and remain asymptomatic during life until infection or trauma take place. Hydronephrosis which is gradually progressive after birth may be associated with chronic abdominal pain. Children usually localize all abdominal pain about the umbilicus; hence, renal pain such as Dietl's crisis may be localized in the abdomen. Dietl's crisis was originally described in conjunction with a ptosis of the kidney with angulation of the ureteropelvic junction and intermittent hydronephrosis. It has been more recently applied to any hydronephrosis with intermittent pain. I would exclude hydronephrosis as the diagnosis on the basis of a normal-appearing intravenous urogram. We didn't see any evidence of a double-collecting system on either side, nor do I believe there is a third kidney present which could be hydronephrotic.

At this point, I should like to consider the various retroperitoneal tumors. Undoubtedly the most common of these tumors is the Wilms tumor. This renal tumor is probably an embryonal rest, which for some unknown reason suddenly undergoes malignant changes and begins to grow rapidly. These tumors are probably present at birth and are relatively benign at that time.

The Wilms tumor usually becomes evident during its rapid growth or following trauma. Recently I saw a little girl who was struck in the abdomen during a fracas with her brother, and she had considerable abdominal pain for about two weeks. Three weeks later we palpated a large mass and at surgery discovered that the tumor had ruptured and mushroomed up in the middle of the abdomen. The original tumor was too small to palpate.

Since Wilms tumor is intrarenal, the calyceal pattern is frequently distorted on the pyelogram. It may not be displaced, but it is distorted as a result of the growth of the neoplasm. A normal calyceal pattern was noted in this case and, hence, I will eliminate Wilms tumor.

There is a so-called extrarenal Wilms tumor which may have been sequestrated from the kidney at some time during development. It has been described in the literature but is certainly very rare. This tumor may be intraperitoneal or invested by peritoneum and usually presents as an immovable, round, firm, glistening mass. I cannot absolutely exclude the extrarenal Wilms tumor, but I do not feel such is the case in this child. The other tumor which is related to the renal system is the neuroblastoma. This tumor may arise from the adrenal glands or anywhere along the sympathetic chain from the neck to the aortic bifurcation. It may cause displacement but rarely distortion of the calyceal pattern. The tumor frequently crosses the midline, whereas Wilms tumor rarely crosses the midline. The neuroblastoma is usually irregular and frequently has hemorrhage into its substance. This may give rise to a low-grade fever, a leukocytosis, and anemia. Our patient does present some of these findings. However, because of the lack of displacement of the calyceal pattern on the intravenous pyelogram and because of the intra-abdominal appearance of this large, smooth tumor, I believe we can rule out retroperitoneal neuroblastoma. This does not rule out neuroblastoma arising from the liver.

Another retroperitoneal tumor which may present abdominally is the teratoma. Most of these are benign as compared to the ovarian teratomas, which are usually malignant. The teratomas of the sacrococcygeal region are also usually benign. Again, I believe the intravenous pyelogram helps to rule out the retroperitoneal teratoma.

In considering intra-abdominal tumors, I should like to mention the liver first. Most liver tumors extend downward displacing the duodenum downward; however, here we find the duodenum pushed slightly upward. A tumor growing from the anterior surface of the duodenum and the stomach would present some filling defect of these organs which we do not see at all in the upper gastrointestinal series. The choledochal cyst, which arises from the liver on the basis of obstruction of the biliary tree, is frequently associated with intermittent jaundice. This tumor usually displaces the duodenum downwards because it arises in the normal position of the common duct and, hence, I believe we can exclude this tumor.

Primary liver tumors are rare in children and are usually fatal. The cholangioma or the bile duct tumors are probably more common than hepatomas. Hepatomas similar to those arising on the basis of cirrhosis or with a background of cirrhosis are relatively uncommon, and I have not seen many reported. Primary liver tumors would present other x-ray findings indicating that the whole right upper quadrant of the abdomen was filled by a mass. I would therefore exclude the liver as a likely source of this tumor mass.

An intra-abdominal mass associated with the intestinal tract could represent a duplication of the gut. The mechanism of the formation of duplication is somewhat contested. Initially the gut is in a solid cord stage and filled with rapidly proliferaing cells. Presumably, these cells vacuolate, and the vacuoles coalesce, forming a new lumen. It is during this stage of development that duplication may result. By definition a duplication is adjacent to and in continuity with some part of the intestinal tract. This mass is compatible with a duplication of the stomach. However, the normal-appearing radiograph of the stomach would obviate this. If it is a duplication in continuity with any portion of the bowel, it should be manifested by intestinal obstruction due to angulation of the bowel. This child presents no evidence of intestinal obstruction.

Another significant finding in intestinal duplication is the presence of acid contents. An acid content adjacent to the lumen of the bowel gives an irritative phenomona which causes a microscopic loss of blood. In this child there was noted a rather significant anemia. I stress this point because of another type of intra-abdominal tumor, the mesenteric cyst arising from the lymphatics, in which the contents are alkaline. This tumor is not usually associated with anemia. The microscopic blood loss could be detected, of course, by repeated stool studies while the child is on a meat-free diet.

Hence, in the differential diagnosis of the patient's tumor, I believe we must strongly consider an omental cyst, the mesenteric cyst, and intestinal duplication. Frequently the omental cyst and the mesenteric cyst are present without symptoms for the most part. Occasionally there will be intermittent abdominal pain. Hemorrhage may occur in either cyst and hence, the palpable mass may come and go on the basis of the hemorrhage. However, there is usually an elevation of the white blood count in the presence of hemorrhage of this nature, and I would expect the child to become weak and perhaps even go into shock. This picture is not described in the protocol. For these reasons I believe an intestinal duplication, rather than the mesenteric or omental cyst, more likely explains the anemia.

I once operated on a six-week-old infant who had an abdominal mass which actually presented as two flank masses and a midline mass. We thought this child had a posterior urethral obstruction with an enlarged bladder and two hypertropic kidneys. At surgery we found an intestinal duplication of considerable size with acid contents and some gastric mucosa. I have seen other intestinal duplications which were much smaller.

My first diagnosis in this case would be intestinal duplication, and my second choice would be mesenteric cyst. I suppose one should mention the ovarian tumors, such as the teratomas, follicular cysts, and torsion of the ovary. Two years ago I operated on a newborn and found a rather large ovarian cyst. On reviewing the literature at that time, I only found 15 reported ovarian tumors of significant size in newborns or infants. Since these tumors are so rare and since the tumor in this patient is in the upper abdomen, I shall rule out ovarian tumors.

Dr. Robert Huddle: Does anyone have a question which he would like to direct to Dr. Pickett?

Dr. M. F. Butler: Would you consider neuroblastoma?

Dr. Pickett: The neuroblastoma arising in the adrenal almost uniformly moves the kidney. Both kidneys and ureters are in normal position on the intravenous pyelogram. However, neuroblastoma of the liver is a possibility. It could arise from the left lobe and extend down over the stomach, displacing it posteriorly.

Dr. Huddle: Would the fact that this was described by the examiner as a solid tumor make you feel any differently regarding the diagnosis of mesenteric cyst?

Dr. Pickett: No, since the mesenteric cyst, when filled with fluid, may feel quite firm.

Dr. Andrew A. Blash: Do you think a pancreatic cyst is possible in this case?

Dr. Pickett: It could very well be a pancreatic cyst. I have mentioned only tumors that are common in this age group, and the pancreatic cyst is a relative rarity in childhood. A lateral film would tell us a bit more as to the position of this mass, particularly in regard to the duodenal loop.

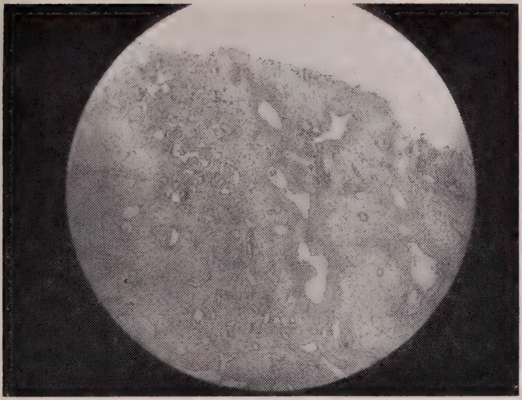

FIG. 1. Low power microscopic.

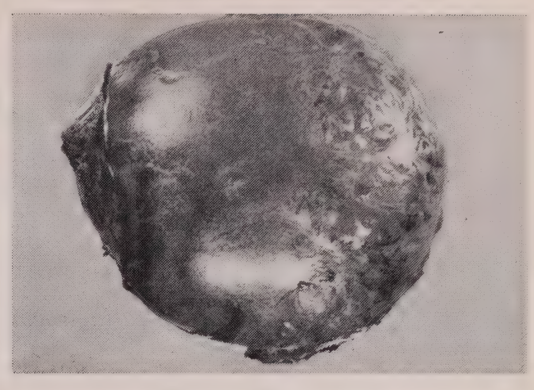

FIG. 2. Hamartoma.

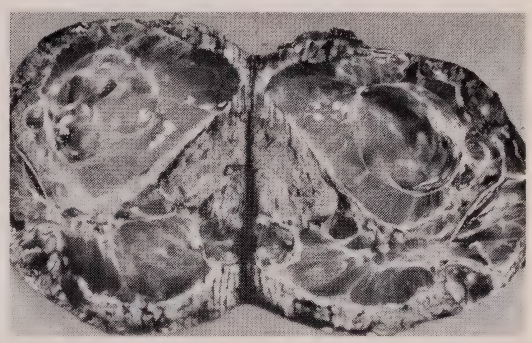

FIG. 3. Cross-section of gross specimen.

DR. HUDDLE: I shall now ask the operating surgeon to describe the findings at surgery.

DR. GERALD T. CONNELLY: The tumor was a smooth, ovoid, nonadherent mass arising from the undersurface of the left lobe of the liver. It was contiguous with the anterior surface of the left lobe and was densely attached to most of the undersurface of the left lobe. It shelled out fairly easily, although there was considerable bleeding which I controlled with mattress sutures and Gelfoam. There were a few papillary excrescences on the anterior surface, but essentially it was a smooth, firm mass. The liver was otherwise normal.

Diagnosis

Clinical.—*Neuroblastoma.*
Dr. Pickett.—*Intestinal duplication.*
Anatomic.—*Hamartoma of the liver.*

Pathologic Report

DR. JAMES A. MITCHELL: The tumor measures 15 by 15 by 8 cm. At the lower right there was a small piece of liver tissue still attached to the capsule. The excrescences mentioned by Dr. Connelly were noted. The specimen weighed approximately 1,600 Gm. It was larger than the child's liver and on section was grayish in color.

Microscopically there was considerable normal liver tissue noted along with numerous small ducts which resembled biliary ducts. In the tumor itself there is much fibrous stroma and tissue resembling liver structures. Another section revealed dense fibroblastic tissue and numerous small glandular-like structures. This is a rather rare benign tumor, a hamartoma of the liver (Figs. 1 to 3).

Hamartomas are congenital and teratoid in nature, but they differ from the teratoma in that there is abnormal mixing of normal components of an organ, while in the teratoma we see tissue foreign to the organ involved.

The tongues of dying men enforce attention like deep harmony.—WILLIAM SHAKESPEARE

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ELIZABETH CRAWFORD, M.D.
LESTER C. MARK, M.D.
VALENTINO D. B. MAZZIA, M.D.
GEORGE WALLACE, M.D.

Cardiovascular Collapse Following Endotracheal Intubation

CARDIOVASCULAR collapse during surgical anesthesia may occur from various causes. This Anesthesia Study Committee has undertaken the task of gathering case reports of such incidents and commenting on the management of these disturbances.

In the preceding series of Clinical Anesthesia Conferences attention was focused on various causes of arterial hypotension that may occur during surgical anesthesia. In some instances similar causative factors may produce so great a reaction that acute cardiovascular collapse may occur instead of a significant arterial hypotension. The case presented here, for instance, illustrates a sudden cardiac arrest that was managed successfully in a patient who had a hyperactive carotid sinus reflex.

Case Report

A seventy-three-year-old white male was admitted with a chief complaint of frequent attacks of syncope consisting of a brief aura, lasting from one to two seconds, followed by loss of consciousness lasting from a few seconds to a minute or more. On several occasions the patient injured himself, and on one occasion he required enucleation of the right eye after injury. The patient stated that he was able to forestall attacks by a quick shaking movement of the head. These attacks had increased in frequency. Treatment consisted of aminophylline and atropine three times a day, and for a time he wore a Thomas collar, with no improvement resulting.

Physical examination revealed that blood pressure on the right arm was 120/70, and on the left 130/72. Positive findings consisted of osteoarthritis of the cervical spine, shoulder girdle, and upper extremity. During the physical examination moderate pressure exerted on the left carotid artery resulted in a typical attack.

The electrocardiogram revealed the normal

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sinus rhythm rate to be 67 per minute, left axis deviation P-R interval 0.19 seconds, and QRS interval 0.12 seconds. Left bundle branch block was present. X-rays confirmed the impression of osteoarthritis of the neck. The roentgen chest plate was negative.

On the day prior to surgery the following tests were performed under electrocardiographic control: (1) Right carotid pressure with the patient in the supine position, resulting in a period of asystole of 3.4 seconds with sinus escape and a slight fall in blood pressure. There was prompt return to normal on release of pressure. (2) Left carotid pressure, resulting in complete heart block with ventricular arrest and slowing of the auricular rate from 85 to 45 with a fall in blood pressure. The period of asystole lasted one second beyond release of pressure with return to a normal electrocardiogram in two minutes. (3) Twenty-five minutes after administration of 0.65 mg. of atropine intravenously, left carotid sinus pressure, resulting in a drop in blood pressure of 20 mm. Hg, a fall in pulse rate from 81 to 54 per minute, and a 2:1 heart block. There was a return to a normal electrocardiogram in four minutes. (4) Right carotid pressure twenty-five minutes after administration of 0.65 mg. of atropine intravenously, resulting in decreased heart rate from 79 to 33 per minute with a blood pressure drop of approximately 20 mm. Hg and a return to normal in three minutes. It was concluded that both carotid sinuses were sensitive, the left very markedly and much greater than the right. Atropine decreased somewhat the high sensitivity.

A diagnosis of bilateral hypersensitive carotid sinus, the left greater than the right, was made. The patient was brought to the operating room for intracranial section of the glossopharyngeal nerve on the left. Premedication at 7:30 A.M. consisted of atropine 0.4 mg. subcutaneously. At 8:15 A.M. anesthesia was begun, using nitrous oxide and oxygen to introduce diethyl ether. The induction was smooth and rapid and mucus was estimated at 3 plus, requiring suctioning twice during induction. No muscle relaxant was administered. The vocal cords were visualized after turning the head slightly to the left, and a number 9 Magill endotracheal tube with cuff was inserted with ease. The patient was breathing at this time. As the number 3 Macintosh laryngoscope blade was removed, the patient's color was noted to be ashen. Then, respiration ceased and cyanosis began to develop.

At 8:25 A.M. no pulse or blood pressure were obtained. Cardiac arrest was diagnosed. The left chest was entered, and the heart found to be dilated. Manual cardiac contractions were immediately instituted while the patient was ventilated vigorously with 100 per cent oxygen. After approximately three minutes of massage, at 8:40 A.M., a spontaneous heart beat developed. Atropine 0.5 mg. was given intravenously. The patient's color was good. Epinephrine, 0.5 cc. of 1:1,000 solution in 5 cc. saline, was administered intravenously with improvement in muscle tone of heart resulting.

At 8:45 the heart was again flabby and was "massaged" for two minutes until a spontaneous beat was re-established. Epinephrine, 0.5 cc. of 1:1,000 solution in 5 cc. saline, again was given intravenously. The patient's blood pressure now was 100/60 with spontaneous heart beat and respiratory drive.

At 9:25 the pulse became very feeble. Systolic blood pressure fell to 40 mm. Hg. Calcium chloride 10 cc. of a 10 per cent solution was given intravenously. His blood pressure rose to 55, and the pulse at the radial artery was 25 per minute.

At 9:40 the patient was too much awake to permit closure of the chest. Small amounts of diethyl ether were administered. At 9:45 epinephrine, 0.25 cc. of 1:1,000 solution in 2.5 cc. saline, was given intravenously. His blood pressure was 100/60. At 9:50 the chest was closed with an intrapleural catheter for suction and maintenance of negative intrapleural pressure. At 10:00 his blood pressure was 80/40. Epinephrine, 0.25 cc. of 1:1,000 solution in 2.5 cc. saline, was given intravenously. At 10:30 his blood pressure was 65/30. The electrocardiogram showed complete heart block. Penicillin, 400,000 units, was given. Neosynephrin, 10 mg. in 500 cc. of 5 per cent dextrose in distilled water, was begun by intravenous drip.

At 10:45 the systolic blood pressure was 90. The patient was awake, extubated, and returned to the recovery room. By 6:00 P.M. the patient had his preoperative electrocardiographic configuration, cardiac rate, and rhythm with a blood pressure of 110/60. At no time during resuscitation did the endotracheal tube require adjustment. The patient made a complete recovery, and subsequently two attempts to denervate the carotid sinus under local anesthesia were made without success but without cardiac arrest.

Comment

The resuscitative measures used in this case were successful, and the operating room team involved is to be congratulated. The patient's pathologic condition is particularly interesting and deserves some discussion, especially in regard to management of such a patient before anesthesia and at the time cardiac arrest is diagnosed.

When a patient has a hyperactive carotid sinus reflex, it is possible that other areas of cholinergic secretory activity may be hyperactive also. In this patient it was found that not only the left carotid sinus was hyperactive to pressure stimuli but also the right carotid sinus. It is conceivable that other pressoreceptor areas, such as the cardioaortic sinus and pressoreceptor areas at certain areas of arterial bifurcations, could be hypersensitive also. It is further possible that in such a patient there may be an imbalance of the acetylcholine-cholinesterase mechanism generally, with either excessive secretion of acetylcholine at cholinergic nerve endings or insufficient quantities of cholinesterase.

When cardiac arrest occurred immediately after passage of an endotracheal tube, it is possible that one of the carotid sinuses was stimulated by a pressure stimulus as the tube passed alongside it in the larynx in close proximity to the carotid sinus area. Or, the carotid sinus could have been stimulated indirectly by insertion of the laryngoscope with movement of the head for visualization of the glottis.

Another possibility is that this patient had an active vagovagal reflex which could be initiated by stimulating the vagal nerve endings in the laryngeal and tracheal mucosa by contact of the endotracheal tube.[1,2] Reflexes from laryngeal or tracheal stimulation can be either vagal or sympathetic in nature.[2] In the majority of cases, sympathetic reflexes predominate and are characterized by transitory sinus tachycardia, and less frequently, ventricular premature contractions or ventricular tachycardia may develop. In about 5 per cent of cases, a vagal-type reflex may be observed producing a true "vagovagal reflex." In the latter, the usual response is a temporary sinus bradycardia, but in certain individuals, as in this patient, the reflex may be so severe as to produce cardiac arrest.[3,4]

Despite the favorable outcome in this case, several recommendations may be made which might have avoided this type of cardiovascular collapse necessitating thoracotomy with cardiac "massage" and intracardiac injections of various drugs. First, patients of this type require a greater than routine dose of atropine for preanesthetic medication. The 0.4 mg. of atropine given to this patient was insufficient to prevent 3 plus mucous secretions during induction of anesthesia. Prior studies in this very patient had shown that 0.65 mg. of atropine intravenously was able to diminish the intensity of the carotid sinus reflex but that it still persisted even after this dose. Certain clinics advise giving such patients a dose of 2 to 5 mg. of atropine for preanesthetic medication.[5]

Another worth-while recommendation in patients such as the one under consideration, as well as in those prone to Stokes-Adams syncope, in those with auriculoventricular block of any degree, or in patients with severe heart disease, is the application of a cardiac monitor pacemaker device. Electrodes of such an external pacemaker may be applied to the sides of the chest externally and can be activated by an automatic circuit, so that as soon as cardiac asystole occurs the heart may be stimulated, with resumption of cardiac function resulting.[6,7] This has been known to prevent thoracotomy in a number of cases. On the other hand, one should be cautioned not to depend exclusively on this external pacemaker device. If it does not produce effective cardiac contractions within ten seconds, immediate thoracotomy should be done and the heart compressed manually intermittently at a rate of 50 to 70 per minute.

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(Number fifty-nine of a series of Clinical Anesthesia Conferences)

Leg Blood Movement May Help Prevent Clots

Keeping a patient "walking" during surgery may prevent the formation of death-dealing blood clots, two Canadian surgeons have suggested. When movement in leg muscles is reduced—as during surgery—the blood pools in the legs and conditions are set for the formation of blood clots. By keeping the patient "walking" through the electrical stimulation of the leg calf muscles, this pooling is reduced. The stimulation causes the muscles to contract as they do in walking and to act as a pump, forcing the blood back to the heart.

When clots form, parts of them may break off and move through the vessels, eventually blocking the artery between the heart and lungs. This condition, known as pulmonary embolism, frequently causes death. Pulmonary embolism is now the commonest single cause of death following major surgical procedures, Drs. John and Angus D. McLachlin said in the October *Archives of Surgery*, published by the American Medical Association. They believe that blood pooling (venous stasis) in the legs is the prime factor in pulmonary embolism, although it has not been definitely proved. Prevention of pooling would lessen the possibility of clot formation.

The doctors have used skin electrodes similar to those used in the study of the heart's electrical activity. The electrodes are placed on the legs and the closed electrical circuit produces regular contractions of the calf muscles during the operation and until the patient is conscious enough to move about. The authors are members of the Department of Surgery at the University of Western Ontario Faculty of Medicine, London, Ontario.

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Incidents Involving Household Products

The following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Clorox	2 years	Male

This incident was reported from Yorktown Heights, New York. An older sibling had made ink eradicator from chlorine bleach, using about 1/2 ounce of Clorox to 2 ounces of water. The patient obtained the preparation and drank about 1/2 ounce of the prepared solution. Vomiting was immediately induced by the family physician, and according to his report there were no aftereffects and the child made a complete recovery. This is one of a multiple of incidents reported to the Poison Control Center resulting from home chemistry experimentation by children.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Clorox	17 years	Female

The patient asked her mother for some bleach to remove a spot from a skirt. She put a little of the product in a 4-ounce glass and mixed it with water. She used most of the contents to clean her skirt. Afterwards she added water to the same glass and drank the contents of the glass. She did not realize that there was still some bleach in it. The patient vomited and became cyanotic. An emergency ambulance was called, and a policeman arrived and tried to induce vomiting with olive oil, milk, etc. This is another illustration of the illogical, widely-existing belief that these substances somehow act as emetics in emergencies.

The patient was taken to the emergency room of Kings County Hospital where her stomach was lavaged. The patient remained in the hospital for six days where she was appropriately treated.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Isopropyl Alcohol	10 months	Male

A history about the mode of occurrence was obtained from the father, who states that his wife was rubbing the infant with this preparation because the infant had a fever due to a cold. After use, she placed the bottle on the living room table. The infant picked it up and drank some of its contents. The mother became alarmed and immediately called the husband. The family physician was called and advised immediate hospitalization. The symptoms on admission were burning in the mouth and throat, dyspnea, and stupor. The child's stomach was lavaged in the emergency room and he was immediately admitted for in-patient care. The child remained at the hospital for eight days. A diagnosis of pneumonia was made. It is conjectured whether the pneumonia was a result of the ingestion of the isopropyl alcohol or was merely an aftermath of the infection existing prior to the accident. In the hospital the child was treated with antibiotics and supportive therapy. The outcome was favorable.

We have repeatedly noticed in the circumstances involving ingestion of therapeutic agents that the medications after being used are left close at hand to young children. This practice is deplorable, and it would be well for physicians to alert parents to remove all medications from the immediate vicinity of the child after their use.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Lighter Fluid	8 years	Male

Two patients of a psychiatric hospital were victims of poisoning involving lighter fluid. It was not possible to obtain an accurate history from the hospital nurses as to how these children obtained the lighter fluid. According to the hospital both children were "primary behavior problems" and both were involved in ingesting lighter fluid previously. Both victims were taken to the emergency room for care. Since they were asymptomatic, no medication or treatment was given, and both patients were returned to the psychiatric hospital. Since the hospital nurses were very guarded and refused to give any information as to how the lighter fluid was obtained by the children, it makes one wonder whether the lighter fluid was not used by the nurses to light cigarets and inadvertently left where it could be picked up by these children.

A visit to any hospital discloses easy access to medications by children. It would appear that in a psychiatric institution where many "behavior problems" are treated and where the children are less cautious, constant vigilance would be applied. It also may be pertinent to emphasize that many incidents have been reported to the Poison Control Center involving ingestion of hazardous materials used in occupational therapy and of play materials on children's wards. Greater caution is indicated in the use and storage of such materials.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Sodium Oxalate	2 years	Male

At a hospital center where this child was hospitalized after a severe traumatic head injury sustained in a fall, he wandered into the dressing room, removed a bottle containing sodium oxalate, and drank some of the bottle's contents. Vomiting was induced a half-hour after ingestion. Fifteen minutes later a gastric lavage was performed with calcium gluconate. Additional treatment consisted of normal saline and calcium gluconate. Since the amount of oxalate ingested was 1/2 cc. of a 1.34 per cent solution and although the child was asymptomatic, it is regrettable that greater judgment was not exercised in regard to treatment. Also, greater caution should have been taken in keeping children out of the treatment area.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Oil of Wintergreen	$4^1/_2$ years	Male

The child was suffering from a cold for several days. The mother was awakened by the child's coughing, and while not fully awake, she went to the bathroom medicine cabinet to obtain the cough syrup. Instead of the cough syrup she took the oil of wintergreen bottle and administered some of its contents to the child.

The child immediately complained of a burning sensation in the mouth and throat. The mother suddenly awakened and read the label on the bottle; realizing her mistake, she administered some milk to the patient. Vomiting followed and he was rushed to the hospital. On admission the patient still had burning of the mouth and throat, nausea, and vomiting. In the emergency room his stomach was lavaged. The patient was observed for several hours and discharged.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Oil of Wintergreen	17 years	Female

The public health nurse who visited the home following the patient's discharge from the hospital obtained the following information as to the mode of occurrence: The mother related that her daughter had had a bad cold and cough. She went to the medicine cabinet to obtain elixir terpin hydrate with codeine. She apparently took the wrong bottle out of the cabinet and administered a teaspoonful of oil of wintergreen to the girl. As the patient was swallowing, the mother realized her mistake. The patient was rushed to the hospital where her stomach was lavaged. Prior to the lavage the patient was also given syrup of ipecac but no vomiting ensued. The stomach was lavaged within fifteen minutes following ingestion with 1,000 cc. of isotonic solution of sodium chloride and 1,000 cc. of sodium bicarbonate plus charcoal and water. The patient's condition following lavage was good and no signs of salicylism were noted.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Oil of Wintergreen	2 years	Female

The foster parents used this preparation to rub arms and shoulders. After its use the foster mother put the bottle on top of the dresser and dressed the child. The patient climbed out of her chair, obtained the bottle from the dresser, and ingested some of its contents. The foster mother found the child on the floor with an uncapped bottle in its hands. She then presumed that the child drank some of its contents and immediately took the child to a hospital for emergency care. The stomach was lavaged in the emergency room, and the foster parents were advised to observe the child and to return if any unusual symptoms developed. Happily, the child made a complete recovery.

It is not to be construed that this incident occurred because the child was in the care of a foster mother. Poisonings occur with equal frequency in one's own home.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Oil of Wintergreen	6 years	Male

The public health nurse who visited the home following the patient's discharge from the hospital reported that the house next to this family was empty. The former tenants had moved out and left many bottles of medicine on a table and in the medicine cabinet in the bathroom. One of the doors had been left open, and the children went in and out of the empty house. The mother claimed that another boy gave this child the medication to drink. The mother noticed that the label on the bottle stated "Oil of Wintergreen." The exact amount ingested is unknown.

The patient complained of burning in the mouth and throat, vomiting, and abdominal pains. He also had some dizziness and convulsions. He was taken to the hospital where he was treated with oxygen, Achromycin, penicillin, glucose in water, and sodium lactate.

The blood chemistry was as follows: salicylates 44.6 mg. per cent, carbon dioxide combining power 36 mEq. per L. and 28.1 mEq. per L., blood sugar level normal, and prolonged prothrombin time. Leukocytosis was observed. After four days of hospitalization the child recovered completely.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Oil of Wintergreen	2 years	Male

The parents state that this child took only a very small amount of oil of wintergreen, which was stored in a bottle that had contained another medication on a bathroom table. The child complained of burning of the mouth and throat, nausea, and vomiting. The mother administered orange juice fifteen minutes after ingestion. The child continued to vomit throughout the twelve-hour period.

The stomach was lavaged in the emergency room within a half-hour following admission, and the patient was admitted to the inpatient service.

The laboratory findings on admission were as follows: carbon dioxide combining power 48 volumes per cent, serum sodium 146 mEq. per L., potassium 6.6 mEq. per L., and chlorine 110 mEq. per L. On the day following admission the following findings were noted: sodium 148, potassium 4.9, and chlorine 110 mEq. per L.

Shortly following admission the patient began twitching. Sodium lactate, glucose, and sodium gluconate, were administered intravenously but without any perceptible effect. The patient was also given caffeine sodium benzoate and oxygen. Fewer and generalized convulsions developed. Respirations became slower and shallower, and the patient became comatose.

Artificial respiration was started and oxygen given, and Coramine was administered intracardiacally. In spite of the heroic therapy the patient expired five hours after admission to the hospital, or about seventeen hours after ingestion.

The autopsy, done by the medical examiner, revealed that the brain contained 86 mg. of methyl salicylate per 100 gr. of tissue. The case was signed out as generalized visceral congestion with bronchial pneumonia and accidental oil of wintergreen poisoning.

In spite of the fact that above histories clearly indicate the parents' awareness of the possible harmful effects of oil of wintergreen after ingestion, none of them had taken any intelligent precautionary measures in the prevention of such incidents. The hazards existing in most medicine cabinets, particularly the placing of bottles of similar size, shape, and color side by side and the failure to read the label carefully prior to administration are highlighted by these cases.

If physicians in their office practice and during their visits into homes accentuated these possible dangers, the incidence of such poisonings would be materially reduced.

These cases clearly indicate the variation in susceptibility and outcome with the same injurious agent and similar doses. They also illustrate the hazards in minimizing any one case when encountered in private practice or in the emergency room.

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Ammonia	2 years	Female

The father related that while he was sitting at the kitchen table studying for an examination, the baby was playing at the kitchen sink with some "empty" bottles. The father paid no particular attention to the child's activity. Several minutes later he heard a scream, looked around, but did not see the child. The wife, who was in the bathroom, called him because the child was gasping for air and vomiting blood. After finding an open bottle of ammonia, the parents realized that the child had swallowed some of the contents.

Vinegar and olive oil were immediately administered as an antidote and the family physician was called. The family physician advised taking the child to a hospital where the child remained for ten days.

On admission the patient had the following symptoms: burning of the mouth and throat, vomiting, and dyspnea. The stomach was immediately lavaged in the emergency room and the patient admitted to the inpatient service where fluids were administered intravenously. For four days the patient was fed via a Levin tube. After ten days the patient was discharged with instructions to return for follow-up and x-rays.

INCIDENT 12

Toxic Agent	*Age*	*Sex*
Singer Machine Oil	21 months	Male

The baby opened the drawer of a sewing machine where he found a small tube of Singer machine oil and ingested some of its contents. Though the patient was asymptomatic the mother called the Poison Control Center for information and guidance but did not consult a treatment agency.

This child is making a habit of swallowing strange items. In March, 1957, he ingested a cigaret butt. In November, 1957, he ingested some furniture polish. Thus far he has been lucky and has made uneventful recoveries.

INCIDENT 13

Toxic Agent	*Age*	*Sex*
Magic Gun Blue	$2^1/_2$ years	Male

The child opened the desk drawer in the dining room and obtained a bottle from it. The mother later detected the odor of "garlic" on the child's breath and presumed that he had swallowed the contents of the bottle. The only presenting symptom was vomiting. The child was taken to a private physician who examined him but found no serious ill effects.

This form of gun blue contains tellurium which continues to be given off from the breath for days, probably as a volatile tellurium compound. Gun blues are frequently white and corrosive and contain a variety of potentially harmful chemicals.

INCIDENT 14

Toxic Agent	*Age*	*Sex*
Pride Furniture Polish	20 Months	Male

The mother was polishing furniture and placed a cupful of the polish on top of the piano. While her back was turned, the child climbed up, obtained the cup, and drank one half of its contents. Ordinarily, most of the ingestions involving furniture polish result from the placement of the product at a low level (on the floor or under the sink).

The family physician was called and advised hospitalization. On admission the patient was dyspneic and lethargic. A diagnosis of bronchial pneumonia was made.

The stomach was lavaged with water one-and-one-half hours following ingestion. The patient was also treated with Combiotic, Achromycin, and by croupette with Alevaire. After six days the patient was discharged in apparently good condition.

INCIDENT 15

Toxic Agent	*Age*	*Sex*
Graphicator	$2^1/_2$ years	Female

The father of the child purchased a tube of powdered graphite and placed it in a box on top of the bedroom dresser. The child thought it was a pencil and attempted to write with it. Since it did not write, she bit the top off, thereby spilling an extremely fine powdery substance over herself and a small portion on her tongue.

No symptoms were noted following ingestion. The mother called the Poison Control Center which assured her of the harmless nature of the product. Similar incidents with this material have been reported in a surprising number of cases. Apparently, the extreme hazards associated with very finely powdered metal are not encountered with this inert substance.

INCIDENT 16

Toxic Agent	*Age*	*Sex*
Hilife Furniture Polish	14 months	Male

The mother was polishing furniture and put the bottle containing the polish on the dining room table. The child climbed up on a chair and took a mouthful of the bottle's contents. The child became stuporous and was taken to a hospital.

Prior to admission to the hospital emergency room a neighbor gave the child black coffee, and vomiting was induced. The patient was admitted to the inpatient service and developed dyspnea and cyanosis. A diagnosis of pneumonitis was made. After seven days of hospitalization and antibiotic and supportive therapy, the patient made an uneventful recovery.

INCIDENT 17

Toxic Agent	*Age*	*Sex*
Potassium Permanganate	10 months	Male

The infant was placed in the crib by a neighbor and was thought to be asleep. A seven-year-old sister gave the pills to the infant "to make his cold better." The infant apparently ingested some of the contents and began to cry. On hearing the infant cry the neighbor came down and took the child to the hospital. (The mother of the infant is hospitalized at the Kings County Hospital for pregnancy complicated by epilepsy.)

On admission the infant's stomach was lavaged with saline. The only symptom was burning of the mouth and throat. The blood hemoglobin was 11 Gm., and white cell count 14,800 per cc. The urine was negative, and the physical examination gave normal findings. The patient was treated with bed rest, fluids, and supportive therapy. After eight days of hospitalization he was discharged as recovered.

INCIDENT 18

Toxic Agent	*Age*	*Sex*
Antispasmodic, Analgesic Medication	3 years	Male

The mother relates that this poisoning was a result of an overdosage of the medication which was prescribed for the child's cough in a hospital pediatric clinic. She claims that she gave the medication as instructed, one teaspoonful three times daily. The medication consisted of: antipyrine 0.1 Gm., sodium bromide 0.29 Gm., tincture of belladonna 0.2 cc., syrup of Tolu 2 cc., and water 4 cc.

The medication was administered to the child for about one week before any symptoms were noted. It is believed that the patient ingested a total dose of 75 cc. of the medication. The symptoms noted were stupor, dilation of pupils, and an ataxic gait.

The child was taken to a family physician who advised hospitalization. At the hospital the child was still stuporous, drowsy, had a tendency to fall, and was anorexic. He also had abdominal pains. The blood serum bromide on admission was 320 mg. per cent, and on subsequent examinations it dropped to 250, 200, and 125 mg. per cent.

The patient was treated with sodium chloride and intravenously with fluids. After fifteen days of hospitalization the patient was discharged as improved. Symptoms were undoubtedly due to the cumulative effect of an overdosage of sodium bromide.

(Number twenty-five in a series on Briefs on Accidental Chemical Poisonings)

CANCER ALERTS

A series of radio talks for the practitioner
presented over Station WNYC-FM under the sponsorship of the

New York Academy of Medicine
with the cooperation of the
New York City Cancer Committee

Cancer in Mid-Century

LEONA BAUMGARTNER, M.D., NEW YORK CITY

A BRIEF backward glance together with a summary of present-day knowledge would help orient us to the total picture of the public health phase of the cancer problem.

Some of you may recall the dramatic events surrounding the diagnosis and treatment of a president of the United States some fifty years ago. I refer to President McKinley who, after the diagnosis of cancer of the jaw had been made, was operated on under the greatest secrecy on a boat drifting in the East River. The physicians in attendance were sworn to secrecy, no information was given to the press, and no bulletins were issued. Contrast this attitude to that towards the recent fatal illnesses from cancer of several outstanding figures in our government, in which diagnoses were freely mentioned in the press and on the radio and bulletins on the conditions of the distinguished patients were issued several times a day.

This change in attitude on the part of the medical profession and the acceptance of the facts by the lay public graphically reflect the progress made in one important element of the total cancer problem—information and education.

At the turn of the century, cancer occupied eighth place in the leading causes of death. In 1950 cancer had moved up to occupy second place, next to heart disease.

In 1900 2,291 deaths from cancer were reported in New York City, with a crude rate of 66 per 100,000; in 1958, 16,560 deaths from cancer were reported, a crude rate of 207 per 100,000.

Cancer is both a personal and a public health problem. It may be expected to take a toll of over a quarter of a million of American lives this year. Despite continued progress in cancer research and medical care, it is possible that with our aging population the problem will grow in magnitude in future years. Over the past half century in the United States, the cancer death rate has more than doubled, from 64 deaths for each 100,000 general population in 1900 to 135 in 1950.

Cancer has come to the forefront as a cause of death for several reasons. Among these, of course, are better diagnosis and more accurate reporting of the causes of death. Another and more important reason is that the communicable diseases of a generation ago have been largely brought under control. With the decline of these infections, which formerly took a heavy toll of persons in early life, the majority of Americans now survive until the middle and late years of life, and it is in these years that cancer is most likely to occur.

In 1900, 2.8 per cent of the population of New York City was over sixty-five years of age. By 1950 this proportion of our senior citizens had risen to 7.7 per cent. Looking at it in another way, at the turn of the century 15 per cent of the City's population was over forty-five years of age; by 1950 this proportion had more than doubled, to 32 per cent.

The disconcerting rise in cancer mortality represents a challenge to the entire medical profession but particularly to the family doctor because in most cases he is the one who sees the patient at the time when early symptoms or no symptoms are present and at a time when the prognosis is most favorable. Although there are many factors which contribute to earlier diagnosis and effective treatment, the most important one is generally recognized to be the awareness and interest of the family physician.

One question frequently asked is, "Is there a real increase in cancer?" It can be shown that the marked rise in the death rate probably does not reflect the true cancer situation. The proportion of the population surviving to old age has been growing steadily. Persons saved from premature death from infectious disease may now live to the age at which cancer takes its great toll. The great improvements in the diagnosis of cancer in the last fifty years also have added to a false impression of the trend of cancer mortality.

Has any real progress been made in the cancer field in the past fifty years? It is true that the basic cause or causes of cancer have not yet been found; nevertheless, in the areas of detection, diagnosis, and treatment enormous advances have been made. Therefore it becomes the responsibility of the practitioner to be familiar with these technics so that his patients may benefit by them.

The average general practitioner may see approximately two or three new cases of cancer annually. Because of this, there arises the need for keeping physicians alerted to cancer and abreast of the latest developments in the diagnosis of the disease. The county medical societies, Academy of Medicine, and New York City Cancer Committee all cooperate with the Department of Health in bringing up-to-date information on the clinical aspects of cancer diagnosis and treatment to the profession.

Since diagnosis starts in the doctor's office, it is necessary to encourage the public to seek medical attention through a widespread educational program which outlines the nature and significance of initial symptoms of the disease and stresses the importance of immediate physical examination. Public health education as to the nature and significance of cancer is a prerequisite of cancer control. The American Cancer Society and its local affiliates in this area assist the Department of Health in bringing basic information on cancer to the public.

Physicians practicing in New York City have available a most comprehensive array of medical services to aid them in their efforts at cancer control. Skilled specialists and consultants are available not only in their private offices but also in large medical centers, university hospitals, and other leading institutions where the most modern methods of diagnosis and treatment of cancer can be found.

Diagnostic clinics, together with the Diagnostic Service Center operated by the Health Department, constitute another resource in New York City for our attack on cancer. A number of cancer detection centers, some of which are subsidized by the New York City Cancer Committee, also aid in screening the public for cancer. Last, and again through the cooperation of the New York City Cancer Committee, an exfoliative cytology service for medically indigent patients has been organized in Manhattan and the Bronx so that doctors can make Papanicolaou smears in their own offices and have expert cytologists examine the slides.

While we await the discovery of the basic causes of cancer, the most important aspect of increasing the cure rate is the early detection, control, and treatment. This can be best illustrated by mentioning a few examples in connection with the various sites of cancer.

1. One out of five cancer deaths is due to breast cancer. Many of these deaths can be prevented through a community-wide educational program which instructs women in breast self-examination and encourages them to carry out such an examination procedure at monthly intervals.

2. Cancer of the lung is today on the increase. Periodic chest x-rays of persons over forty should be encouraged for the earliest detection of intrathoracic changes.

3. Repeated examinations of cellular material from cervix and uterus constitute an effective screen for cancer of the cervix. In this connection, the pilot project of the Department of Health in self-obtained vaginal secretions may be mentioned.

4. Encourage periodic physical examinations by the family doctor stressing the so-called accessible sites of cancer—the skin, oral cavity, breast, rectum, uterus, and prostate.

Advances in fundamental knowledge, improvements in diagnostic and therapeutic technics, and increase in hospitals, clinics, and other facilities for diagnosis and treatment bring maximum advantage only to the individual who assumes personal responsibility. Persons of "cancer-bearing age" should not fail to take the precaution of regular, thorough medical examinations.

Control of cancer is a significant public health problem which requires mass action. Public health agencies are interested in bringing together all of the groups, agencies, and professional disciplines vitally concerned with the cancer problem. It is only in this way that we will be able to make substantial headway in controlling the disease.

125 Worth Street, New York 13

(Number eighteen in a series of Cancer Alerts)

Number of Blind Reduced

Remarkable progress has been made in reducing the number of new cases of blindness among children, according to the statisticians of the Metropolitan Life Insurance Company.

Not only has blindness due to infectious diseases decreased sharply among school-age children, but loss of sight due to the administering of oxygen in high concentration to premature infants has become rare.

Persons in the United States who are either totally blind or with impairment of vision sufficiently great to prevent normal activities number 345,000, which is at the rate of 2 per 1,000 of the population. New cases are estimated at 30,000 yearly, or 17 per 100,000 population.

Slightly more than half of these blind are sixty-five years of age or over, approximately 30 per cent are between ages forty and sixty-four, 12 per cent between twenty and thirty-nine, and 7 per cent under age twenty.

CASE REPORT

Liposarcomatosis with Multiple Lesions of the Central Nervous System

ALBERT W. COOK, M.D., BROOKLYN, NEW YORK

(*From the Department of Neurosurgery, State University of New York Downstate Medical Center, and the Department of Surgery of the Long Island College Hospital, Brooklyn, New York*)

LIPOSARCOMATOUS tumors may arise wherever adipose tissue is located. They have been encountered in the intermuscular and fascial planes of the extremities,[1] in the retroperitoneal spaces,[2] mesentery,[3] mediastinum,[4] bone,[5] kidney,[6] breast,[7] and in the spermatic cord.[8] In spite of the innumerable potential points of origin of such neoplasms, they occur infrequently. Moreland and McNamara[9] after examination of 16,000 patients with neoplastic processes were able to verify the diagnosis of liposarcoma in only 9 instances. Helwig in discussing a presentation by Ackerman and Wheeler[10] stated that he had not encountered one instance of liposarcoma in 10,000 postmortem examinations. Stout,[11] in 1944, collected 134 cases from the medical literature and added 42 of his own.

Metastatic foci from such neoplasms have been found in many different areas and, naturally, only with an incidence consistent with that of the primary tumors. Implication of the spinal epidural space either primarily or secondarily, however, is most unusual. Ehni and Love[12] made no mention of such a process after a review of intraspinal lipomatous tumors at the Mayo Clinic. Foote,[13] after a review of 50 cases of liposarcoma at the Memorial Hospital, New York City, also did not find liposarcoma in the spinal epidural space. In 1888 Turner[14] did report an instance of a lipomatous, apparently malignant tumor in the spinal canal but its exact histologic characteristics were not well defined. Intracranial tumors of this character have been recorded by Berger[15] and Feuder.[16] Since the first and only recorded instance of intraspinal liposarcoma was observed by Caldwell and Zinninger[17] in 1925, a brief abstract of the clinicopathologic features present in this patient is added here.

The presenting complaint was that of pain in the left sacroiliac region, followed shortly thereafter by "numbness" in the coccygeal area. Subsequently, urinary retention and fecal incontinence supervened. There then ensued radicular pain in the left lower extremity. Physical examination disclosed the following pertinent features: absence of Achilles reflex bilaterally and hypalgesia over the saddle area. At operation a massive tumor was identified anterior to the lumbar thecal sac in the lumbar area, compressing the cauda equina and invading the vertebral column. The findings were subsequently verified at autopsy confined to the operative site.

In our own experience there have been 3 instances of intraspinal tumors in association with evidence of liposarcoma elsewhere. In one the data were incomplete; in another liposarcoma was identified in the thigh (Fig. 1), but although clinically an intraspinal lesion was present, the histologic nature of the tumor in this area was never verified. In the third patient the neurologic findings resembled in many respects those found in the patient of Caldwell and Zinninger. The data in this instance are more complete and illustrate many additional features which are unique in character.

Case Report

H. W., a white male aged forty-three, was admitted to the Long Island College Hospital complaining of pain in the lower part of the

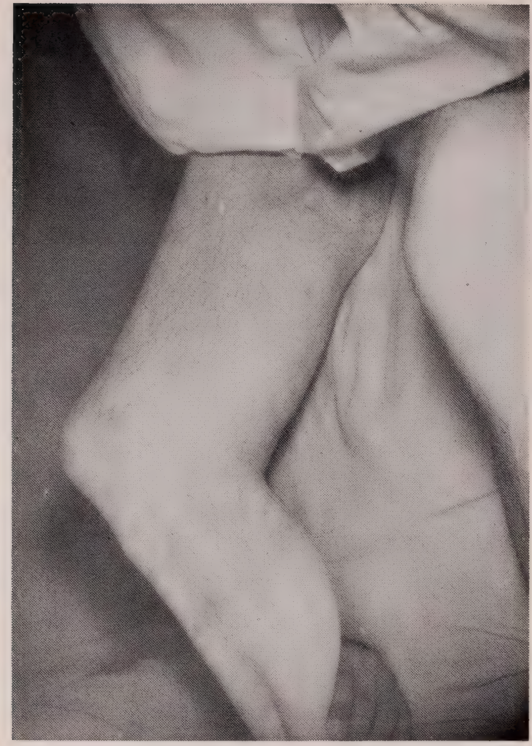

FIG. 1. Liposarcoma of thigh.

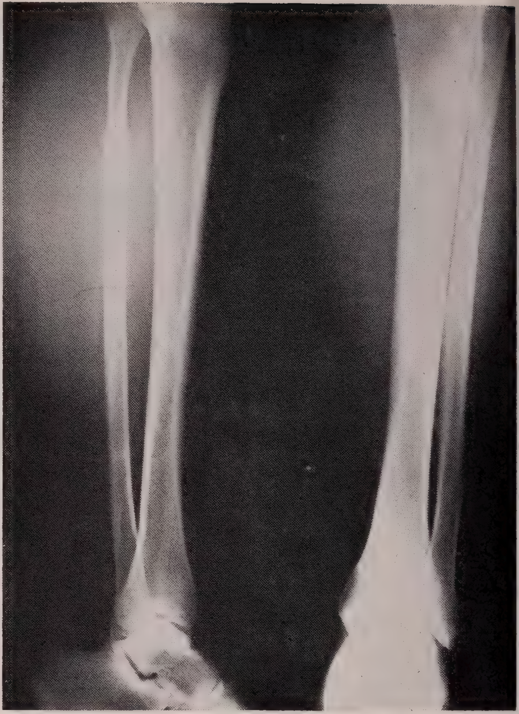

FIG. 2. Roentgenogram indicating soft tissue mass in leg verified as liposarcoma.

back. For the eleven months before entry the left calf had become progressively larger. Only on occasion had there been any pain referable to this swelling, and that only when walking. After a short period of rest the discomfort would disappear and normal activity was again possible. Radiation of pain into the left foot had never occurred and there was no history of local injury. Ten weeks prior to admission numbness was noticed over the right buttock and this had remained. Transient "pins and needles" sensation had also been present over the dorsal aspect of the left small toe. For approximately the same period of time pain over the lower part of the vertebral column appeared nightly. The assumption of the sitting position or walking alleviated it. There had been urinary urgency but incontinence of either urine or feces had not occurred. There was no history specifically related to a loss of sexual power other than that for the previous two months sexual intercourse had been impossible because of pain.

Examination showed the patient to be well nourished but pale. Enlarged lymph nodes in the neck, axillae, or groins were not found. The liver and spleen were not palpable. In the left leg there was a globoid mass (Fig. 2) which seemed to rest under the gastrocnemius and soleus muscles, because the tendon of Achilles rose over the dome of the swelling and was deviated medially. The tumor occupied roughly the middle one third of the leg and appeared to be sharply demarcated, resilient, and freely movable. It was of such a size that the skin was stretched taut over it. The maximum circumference of the left calf was 18 cm. greater than that of the right. Walking on the toes and heels alternately demonstrated weakness of flexion and extension of the left foot. The musculature of the right buttock and right hamstring group of muscles was atrophic and weak. There was a sensory defect over the perianal region bilaterally (Fig. 3). Deep pressure was appreciated but touch and temperature discrimination were abolished. Both quadriceps and hamstring muscle reflexes were active and equal bilaterally. The triceps surae muscle reflex was obtained bilaterally but was diminished. Babinski sign was not present on either side and an alteration of the superficial abdominal and cremasteric reflexes was not demonstrable. Rectal examination was negative.

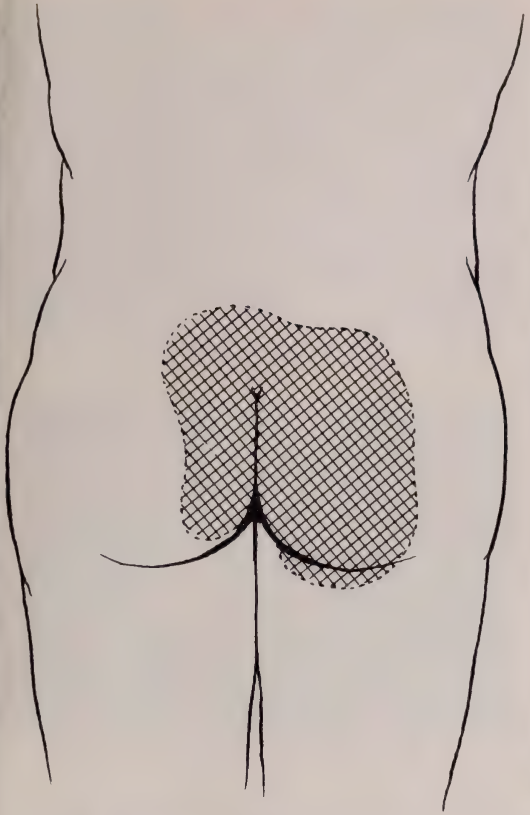

FIG. 3. Diagram of sensory loss over buttock.

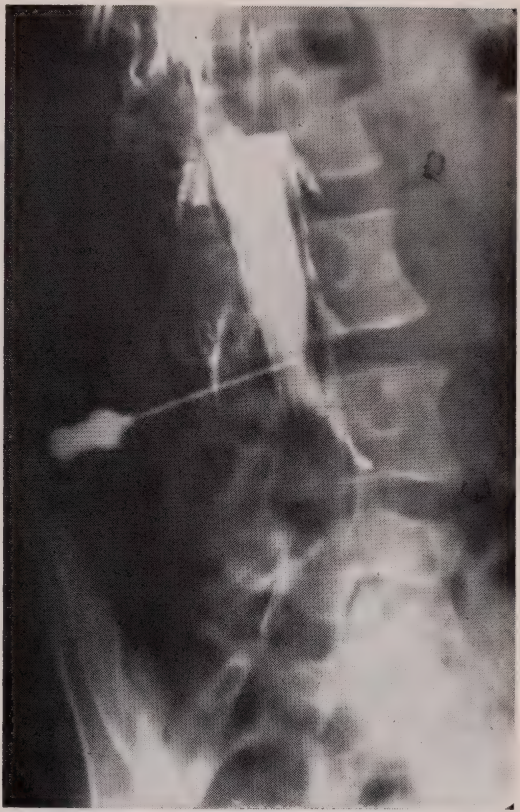

FIG. 4. Myelogram performed with pantopaque demonstrating block in lower lumbar area from verified epidural liposarcoma.

Examination of the blood revealed a normal erythrocyte and leukocyte count and hemoglobin content. The blood sugar, urea, and serologic condition were not abnormal. Urinalysis gave normal results. Roentgenographic examination of the thorax and lumbar portion of the vertebral column showed only bilaterally bronchitic changes in the former and evidence of hypertrophic osteoarthritis at the third and fourth lumbar vertebrae in the latter.

Four days after admission a lumbar puncture at the third lumbar interspace disclosed slightly xanthochromic cerebrospinal fluid with a protein content of 128 mg. per 100 cc. and no cells. At the time of removal of the spinal fluid 12 cc. of pantopaque were instilled into the subarachnoid space and subsequent fluoroscopic examination and roentgenograms of the regions demonstrated a block to the flow of pantopaque at the level of the fourth lumbar vertebra (Fig. 4).

Subsequently the globoid tumor mass in the left leg was exposed surgically and found to lie beneath thin and atrophied gastrocnemius and soleus muscles. It was moderately firm and well encapsulated, except on its cephalad extremity where loose attachments to the surrounding tissue had to be divided. There was no apparent connection of the mass with neural elements and it was thought it was removed completely. It measured 14.5 cm. in length, 10 cm. in width, and 7.8 cm. in depth. The postoperative period was uncomplicated, and three weeks later a laminectomy of the third, fourth, and fifth lumbar vertebrae was performed. A small sausage-shaped tumor was exposed resting on the dural sac at the level of the fourth lumbar vertebra (Fig. 5). The configuration of the mass resembled very closely that of the larger mass removed from the leg, and it was also well encapsulated and was readily removed from the surface of the posterior dural sac. It measured 3.4 by 1.6 by 1.5 cm. Within the limits of operative exposure there did not appear to be any associated lesions laterally or anteriorly and it was considered that this mass represented a

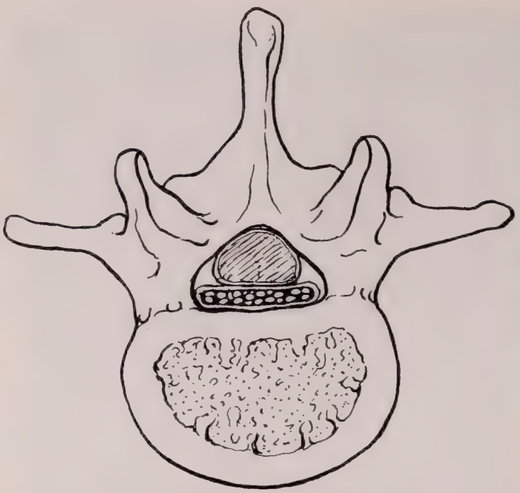

FIG. 5. Diagrammatic representation of intraspinal lesion.

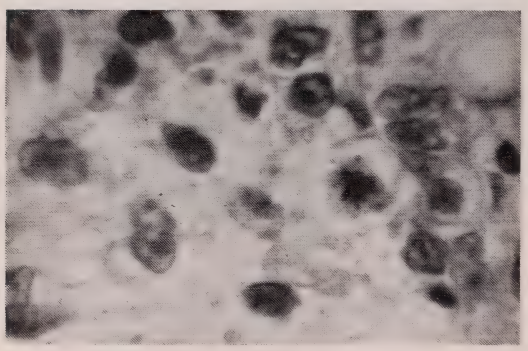

FIG. 6. Tumor mass, calf, hematoxylin and eosin. × 600.

solitary discrete metastasis.

HISTOLOGIC EXAMINATION.—Figure 6, mass in left calf: A thick fibrous capsule encompassed the tumor, the center of which was necrotic. The hematoxylin and eosin preparations disclosed spindle and fusiform cells as well as large numbers of cells with polygonal nuclei. The cell cytoplasm was pale and poorly defined but in some areas it was finely granular. Scattered throughout these areas were other cells where cytoplasm contained large vacuoles and whole nuclei rested at the periphery of the cell. These nuclei were small, hyperchromatic, and contained an occasional mitotic figure. There was only sparse capillary formation in the connective tissue stroma. Sections of tissue stained with Sudan III showed the presence of fat within the tumor cells. Impregnation of tissue with mucicarmine stain, however, did not reveal any mucinous substance (Fig. 7). Epidural mass: Histologically this tumor resembled that removed from the leg with the exception that mitoses were more numerous (Figs. 8 and 9).

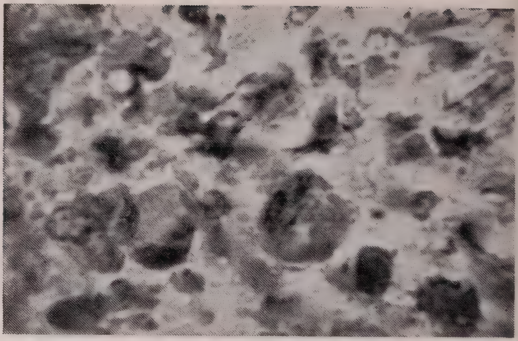

FIG. 7. Tumor mass, calf, Sudan III. × 600.

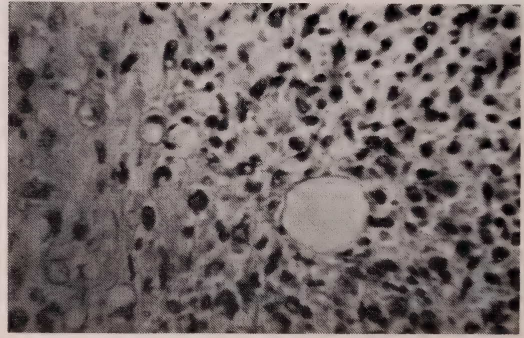

FIG. 8. Epidural mass, hematoxylin and eosin. × 200.

Postoperatively pain over the low back and in the perineal region persisted particularly at night, and three weeks later there was the complaint of a "bearing down sensation" in the rectum. Digital examination of the rectum disclosed a lobulated resilient mass along the anterior sacral wall extending caudally to the sacrococcygeal junction and cephalad to about the midsacral area. The rectal mucous membrane over the mass was intact. In an effort to relieve the persistent pain in this area 1 per cent novocaine in amounts of 10 cc. on one occasion and 35 cc. at another time was injected into the sacral canal through the sacral hiatus. This afforded temporary relief; however, because of persistent pain radiation therapy was begun and at first directed at the anterior-posterior sacral areas (Table I). After ten days of therapy the pain was considerably less and at the time of discharge, approximately two months after admission, had completely disappeared. The presacral tumor

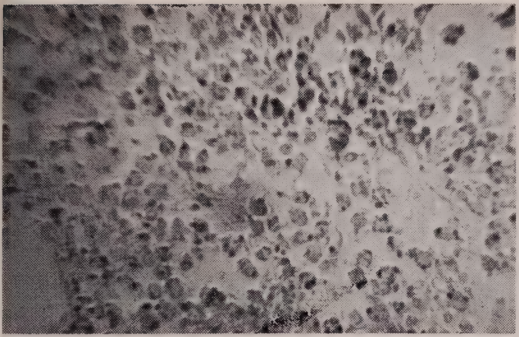

FIG. 9. Epidural mass, Sudan III. × 200.

also showed signs of regression and there was no further tenesmus. The hypalgesia over the buttocks had remained the same. Radiation therapy was continued in the sacral region as outlined.

An examination two months after discharge found the patient without complaints and he had returned to work. There were no urinary or bowel symptoms. His sexual relations were normal and the sharp shooting pain in his back and lower extremities had disappeared; when walking, muscle paresis was not evident. The quadriceps muscle and the triceps surae muscle reflexes were difficult to elicit and an irregular area of hypalgesia persisted over the right buttock. Sensation was now normal over the left buttock, but the right gluteal mass and left thigh still exhibited atrophy. Rectal examination demonstrated normal sphincteric tone and the only evidence of the previous presacral pathologic process was some thickening in this area without definite tumor formation. The rectal mucosa was intact.

Approximately two months later pain returned, localized in the midthoracic area posteriorly. There were no abnormal neurologic signs and roentgenograms of this region did not disclose any bony abnormalities. Radiation therapy to this area was begun. In the course of the next week, although midthoracic pain was relieved, weakness and pain in the lateral aspect of the right thigh appeared and progressed so that in the ensuing two or three weeks he was unable to walk for any extended period. Examination at this time revealed marked paresis of the right lower extremity without sensory loss. A presacral mass was not found on digital examination. These findings persisted but improved when, eight months after discharge from the hospital, diplopia and numbness over the anterior right mandible were experienced. Hypalgesia over the right mandible was demonstrable and there was a right lateral rectus palsy. Tenderness persisted over the upper middorsal region. There were no sensory alterations over the extremities or trunk other than the persistent irregular area of hypalgesia over the right buttock. The right lower extremity was markedly paretic. One month later, however, a sensory level to pinprick at about the seventh thoracic dermatome could be delineated. There was also marked paraparesis with a feeling of tightness around the upper abdomen and both thighs.

In the course of the next month the previously-noted neurologic findings progressed and x-ray

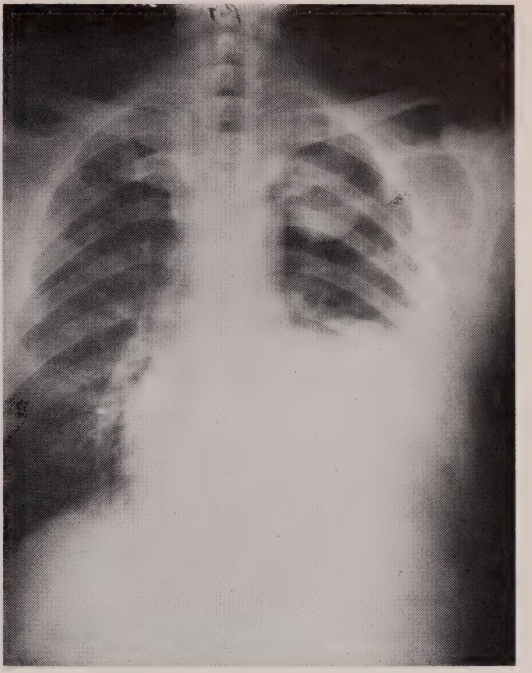

FIG. 10. Pulmonary metastases: liposarcoma.

TABLE I

Region	Roentgen Units*
Sacral	5,400
Lumbar	2,000
Mid-dorsal	5,100
Right petrous	1,800
Left petrous	1,800
Anterior mediastinum	1,200

* Total number of roentgen units given through single and multiple ports over entire period of illness are included here.

of the thorax revealed a mass in the left upper lung field with left pleural effusion. The patient was now bedridden and was readmitted to the hospital on July 24, 1951, slightly more than one year after the original admission. At this time in addition to signs of thoracic spinal cord compression and pulmonary changes on the left (Fig. 10) a large mass was palpable in the right lower abdominal quadrant. The abdomen was distended. Gradually respiratory difficulties ensued and were accompanied by tachycardia and cyanosis. Death came on August 19, 1951. Permission for autopsy was not obtained.

Comment

The pathologic and biologic aspects of liposarcomatous tumors are vividly illustrated by the course of this patient's disease. Under the term liposarcoma, several types of tumors have been reported in the past: (1) lipomyxasarcoma; (2) fibroliposarcoma; (3) lipoma with sarcomatous change; and (4) other sarcomas with extensive fatty degeneration. This has caused confusion in evaluating the incidence, site of origin, malignant properties, and proper mode of therapy in such situations. Ewing[18] from a study of myoliposarcoma concluded that there were two types, (1) myxoliposarcoma and (2) granule cell or adult liposarcoma. Stout,[11] however, felt such a classification inadequate and subdivided his cases into (1) as well-differentiated myxoid type resembling the usual type of embryonal fat; (2) a poorly-differentiated myxoid type with bizarre lipoblasts; (3) a round-cell or adenoid type containing the characteristic lipoblasts with a centrally-placed nucleus and large vacuoles filled with lipoid; and (4) a mixed group containing features of the other groups.

The characteristics of the neoplasm under consideration here are those of this latter category, although many features place it in the poorly-differentiated group; the lipoblasts were bizarre, the nuclei were hyperchromatic and showed mitoses. From the histologic nature of the tumor, metastases would be expected. Heretofore, the only true metastases from liposarcomatous tumors were considered to be the lungs, pleurae, liver, bone marrow, and central nervous system. Those in other sites, although multiple, have been considered by some as separate tumors.

Murray and Stout[11] recorded an instance of a first tumor appearing in the anticubital fossa and then two-and-a-half years later another appearing in the upper arm. In another case of Stout's[7] there were entirely separate liposarcomatous tumors in the thigh, popliteal space, and pelvic retroperitoneal space. Be that as it may, the distribution of spread in the case history of the patient presented indicates diffuse implication of many organ systems with multiple central nervous system findings, and is reminiscent of spread of other such tumors as melanocarcinoma. It seems unique that the disease progressed in spite of therapy to other affected sites. Data such as these lend little support to previous experiences of the over-all beneficent effect of radiation on such neoplasms.

Summary and Conclusions

Mention is made of the relative rarity of malignant lipomatous tumors and the unique occurrence of such neoplasms within the spinal canal as well as intracranially. A detailed account of the clinical course of a patient with multiple lesions of this character is presented. An enduring beneficent effect of radiation in this instance was not apparent.

200 Hicks Street

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SUBCOMMITTEE ON MATERNAL AND CHILD WELFARE

Council Committee on Public Health and Education
Medical Society of the State of New York

Risk Associated with Induction and Stimulation of Labor

CHARLES A. GORDON, M.D., BROOKLYN, *Chairman**

IN UPSTATE New York in 1956, 40 deaths were associated with pregnancy; 35 of these deaths were coded to puerperal causes for calculation of the maternal mortality rate. The rate in this area was 3.4 per 10,000 live and stillbirths. The principal cause of death was hemorrhage and shock.

Assignment of maternal death to a single cause is filled with difficulties. The medical certificate states but the fact of death. In the case reports we should find a detailed record of the attendant circumstances. However, even after review of the sequence of events between the first cause and the last, the immediate cause may be beyond our understanding, the components of death are so often complex.

Each case report reflects an experience. No better teaching method than guided discussion of this experience has yet been discovered. Continuous review of maternal deaths by obstetricians is perhaps their most conspicuous achievement.

In the 1956 list administration of an oxytocic for induction or stimulation of labor was reported in 6 cases.

CASE 1.—Labor was induced in a young primipara by rupture of the membranes and use of an oxytocic. The cervix was about 3 cm. dilated. A half hour later about 100 cc. of brownish blood were seen in the bed, and the patient's blood pressure was found to be 60/20. Within the next half hour, she was delivered spontaneously of a stillborn fetus, after episiotomy. Profuse bleeding followed. The uterus was explored; no cervical laceration or rupture was found.

The uterus relaxed from time to time, and hemorrhage was considerable. During the next seven hours, 3,000 cc. of blood were transfused with 1,500 cc. of plasma and 1,000 cc. of fluid; calcium gluconate, vitamin K, and hydrocortisone were also given.

Death was sudden with cyanosis and air hunger. It was attributed to amniotic embolism and afibrinogenemia. No autopsy was performed.

CASE 2.—A multipara at term had slight bleeding. On vaginal examination the cervix was found half effaced and about 3 cm. dilated; the placental edge was felt about 2 inches within the internal os. A pitocin infusion (5m. in 500 cc. of diluent) was begun and the membranes were ruptured. Bleeding increased, and the fetal heart tones became weak. Cesarean section was then performed under gas-oxygen-ether sequence. The fetus was born in poor condition.

While the anesthesiologist was resuscitating the baby, the patient became cyanotic; pulse and blood pressure were unobtainable. Anesthesia was discontinued, blood was pumped, vasopressor drugs were administered, and the operation was quickly concluded. Death occurred on the operating table. The infant survived.

At autopsy the significant findings were evidence of placenta previa and signs of aspiration of vomitus.

CASE 3.—A woman who had been bleeding off and on throughout her fourth pregnancy was admitted to the hospital after she had had a few contractions. Large clots were passed from time to time. Hemorrhage increased. Two doses of pitocin, each 5 minims, were administered intramuscularly within a half hour. Hemorrhage increased; cesarean section was then performed in shock under local anesthesia. The fetus was stillborn. Autopsy was performed.

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* Dr. Gordon died on October 30, 1958. New chairman of the Subcommittee on Maternal and Child Welfare is Edward C. Hughes, M.D., Syracuse. Other members of the Subcommittee are: Frank A. Disney, M.D., Rochester; Eugene R. Duggan, M.D., Rochester; William J. Orr, M.D., Buffalo; Clyde L. Randall, M.D., Buffalo; Frederick H. Wilke, M.D., New York City; Harold Jacobziner, M.D., New York City; Anne M. Drislane, M.D., Albany.

Case 4.—A multipara at term made no progress after several hours of labor. The membranes were ruptured artificially, and pitocin infusion was begun. Shortly afterward the patient had "a weak spell," so pitocin was stopped, and delivery effected by low forceps. Profuse hemorrhage followed spontaneous extrusion of the placenta. She was then given ergotrate, and massage of the uterus was continued. A cervical laceration was found on vaginal inspection. The uterus and vagina were then packed, the patient was typed, and blood was crossmatched. Supravaginal hysterectomy was performed three hours post partum. The lower segment of the uterus was found ruptured. Death in shock occurred.

Case 5.—A multipara who had previously had five uncomplicated deliveries was given intranasal pituitrin. After a few hours of strong contractions this was discontinued. Spontaneous delivery was followed by profuse hemorrhage. She bled considerably through a vaginal pack. Transfusion of 500 cc. of blood was completed, but the patient died in shock.

Case 6.—In a multipara at term, not in labor, the cervix was found almost 3 cm. dilated, with the vertex out of the pelvis. Infusion of pitocin (3 m. in 500 cc. of diluent) was quickly followed by good uterine contractions and a gush of about 300 cc. of blood. Upon vaginal examination the placenta was felt, so the membranes were ruptured promptly. Spontaneous delivery was followed by profuse hemorrhage. The uterus and vagina were then packed to no avail. Hysterectomy was then performed. Death ten days later was due to renal failure.

Comment

Pitocin, whether used for induction or stimulation of labor, is valuable, yet its use is not without danger. Intended to induce labor, it may not. Or given to shorten labor, it may actually prolong it, bringing about a chain of events not anticipated by the physician. It may add to the hazard of hemorrhage before and after delivery. It may rupture the uterus or cause fetal death.

If complications should follow its use for the elective induction of labor, the physician must be able to defend his induction.

In the hospital where the obstetrics service is organized, the director will, no doubt, guide the practice of the staff; the facilities of the hospital will be adequate. Elsewhere, the use of pitocin should be restricted to the multipara at term, with vertex presentation at −1 or lower. Her obstetric history should include no reason to expect dystocia or placenta previa. The cervix should be more than half effaced and not less than 3 cm. dilated. The pitocin solution should run slowly, *and the obstetrician must remain with the patient throughout the entire period of its administration.*

A Study of Tobacco Carcinogenesis: Filtered Cigarets

A study to determine possible differences in biologic effects between tars of filtered and unfiltered cigarets revealed no statistically significant variants in carcinogenic activity in experimental mice. The authors, Ernest L. Wynder, M.D., and Jona Mann, A.B., are careful to point out that these findings do not rule out filtration as a principle, but merely indicate that at the present time filtered cigarets are not selectively removing the carcinogenic components of tobacco smoke.

The authors comment that it is possible to produce filter tips that will allow the cigaret a satisfactory pressure drop and satisfactory flavor, at the same time removing about 40 per cent of the tar. In a regular-size cigaret, this could reduce tar exposure of the smoker from the present yield of 30 mg. of tar in its smoke to 18 mg. Assuming the same number of cigarets were smoked, this would materially reduce the cancer risk.—*American Practitioner and Digest of Treatment, July, 1958*

SELECTED REPRINTS

EDITOR'S NOTE: *Occasionally the editors of the* JOURNAL *find articles or editorials in other medical publications which seem to us so noteworthy that reprinting them for the information of the readers of the* NEW YORK STATE JOURNAL OF MEDICINE *seems to be indicated as a function of good medical journalism. These reprints will appear from time to time in this department.*

*Inaugural Address**

NORTON S. BROWN, M.D., NEW YORK CITY

(President, Medical Society of the County of New York)

Fellow Members and Honored Guests:

It is a solemn occasion to stand before you as the duty officer of a medical society such as ours. I deeply respect the honor. As we well know, the Medical Society of the County of New York is larger than forty-two state medical associations in membership. Geographically, we may represent only the small island of Manhattan, but in the way we think and in the acts and deeds we may accomplish, we go far beyond our mere geographical orbit. Situated in the heart of a numerical vastness of cultural diversity and economic pressures, we face unusual and pressing problems. The edge of urgency which we always bear upon our backs is somewhat blunted in less turgid areas. In New York we face the complexities of an immense and growing population confined in a relatively tiny area, and with a doctor-patient ratio nearly four times as great as the national average.

How has our Society met this challenge? To refresh your minds and to remind you of things already accomplished in recent years, I would recall some important milestones.

Physicians Are Pioneers

First, I would mention that our physician members have been pioneers in providing medical services for a wide variety of medical care plans. If this is a free enterprise nation, and if the private practitioner of medicine is "the last angry man" in this free enterprise economy, then our members typify the point, for they have become the participating physicians with Blue Shield, the Group Health Insurance, and the Health Insurance Plan of Greater New York. They have also staffed the health clinics of labor unions, and so on; and they are all still members in good standing in our medical society. We have not yet, and I hope we never will, use our privilege of membership as an economic weapon.

We do not all agree, nor should we, on the merits of any one type of voluntary prepaid medical care. The requirements and inclinations of our staggering population differ so that it would be foolhardy to advance any one plan as a universal panacea.

Yet, our medical society does not stand aside and let the "devil take the hindmost," for we exercise unceasing vigilance toward securing fair play both for the doctor and the patient in a realm where business stresses and economic consideration play an important role, for matters of medical care cannot all be sustained on the basis of sympathy and altruism. Much remains to be accomplished along these lines, but I am confident your officers and your committees are well aware of their responsibilities and that the future developments and decisions will be wise, just, and equitable.

Advances in Public Relations

Second, I would speak of our advances in our relations with the public in an area other than that of the role of the patient, on an individual basis.

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* Reprinted by permission from *New York Medicine,* **14**: 22 (Nov. 20) 1958.

Our Doctors' Emergency Service, founded in 1952 and with its famous number—Trafalgar 9–1000—has been spectacularly effective in bringing prompt medical care to people in distress, and it has benefited the patient and the attending physician alike. This truly is a public service in the highest ideals of the profession of medicine.

In this area of public service, which is really the essence of what is called public relations, the appearance of physicians to provide medical information to the press, radio, and television has been simplified and rationalized. Under the present "working ground rules," a physician may represent his profession or professional organization in a manner heretofore frowned upon.

Indeed, we are working actively with the great newspapers of our city to provide better and more authentic advice on medical problems for the public. Only within the last week we have taken the first steps to create a press department to work even more closely with the respective media for the dissemination of medical information to the public. I predict great advances in this field which should redound to the credit of our Society and to the honor of the medical profession in our community and across the nation.

Efforts have been made to assist our members in their problems with patients where experienced social service personnel is needed. We have also tried to create a physicians' placement service. I am sorry to say our membership made little use of these facilities. Perhaps we were ahead of our times, and so for the present this phase of our work is in abeyance until the demand warrants its revival.

Lower Malpractice Insurance

In the field of malpractice insurance a reduction in premium rates has been announced for the coming year. This is a wondrous and pleasing paradox that costs have been brought down in the face of rising expenses in every other direction. For this, I believe we can thank the Malpractice Advisory Committee of our Society and our continued close work with the New York City Bar Association. A continuing liaison committee has been established and we hope for further benefits for physicians in the future.

In our relationship with our own Society employes, we have shown an equally enlightened attitude, for we have established a pension system along approved actuarial lines which does much to remove one source of embarrassment to the largest and most influential local medical society in the nation.

At the present time, a drive is under way to provide a low-cost term life insurance policy for our members. I urge all of you, especially the younger group, to "climb aboard." This plan, carefully worked out by Dr. Beverly C. Smith and his Committee on Retirement Planning, is not likely to be available again. Closing dates for the enrollment period are near at hand.

Certainly, our own magazine, *New York Medicine*, in its editorials, is far in advance in its field. We speak out swiftly, forcefully, and with perceptive awareness on key topics in medicine today. We are quoted across the nation in both the public and professional press.

Our improving rapport with labor has been an important factor in the administration of our immediate past presidents, Dr. Samuel Z. Freedman and Dr. Philip D. Allen. Although there are thorny problems to be solved in this area, our Society has demonstrated its willingness to cooperate, negotiate, and, if need be, lead in labor's desire for the best possible medical care for its worker members. Whatever may have happened elsewhere, there has surely been a minimum of name-calling and table-pounding by our Society in these matters.

A Look to the Future

Rather than further catalog the promising activities of your Society and the committees which make it operate, I would now look to the future. What are the trouble spots? What do we plan to do about them?

There has been so much discussion of the costs of medical care, I am certain that we will all agree an economic syndrome exists in medicine. There are many signs and symptoms indicating serious malfunctions in every facet of the problem. Hospital costs are rising steadily. There is no indication that a ceiling will ever be reached. Hospital administration apparently is following Parkinson's Law. (This is a biting and humorous item having nothing to do with Parkinsonism, proving that staff accumulation in any situation shows a steady 5 to 6 per cent annual increase, whether there is or is not need for it. It is based upon the need for increasing the importance of the boss man and his underlings by providing successive under-underlings.)

Medical schools are making desperate noises about finances. In many areas there is an undercurrent of thought to the effect that the government will soon have to step in and subsidize medical education. Various national research and health activities are already established. These grants at present are for physical plants in being. The next step would be to subsidize operational costs for the medical schools.

Great Britain is an older country than ours. She experienced industrialization, population overcrowding, and many other problems before we had to face them. We should pay close attention to the pattern of their National Health Program, if only because patterns have been established with which events may force us to experiment.

It might be well for us to speculate about other possible solutions which might be generated by our profession to meet problems of medical care.

Slow Medical Thinking

The nature of medical service has, of necessity, changed with the evolution of our civilization. The enormous strides of medicine and related sciences are literally miraculous and well known to all of us who are privileged to practice in this modern wonderland. There is some reason to believe that our habits of medical thinking have not kept up with our advances in the science of medicine.

In the matter of hospital costs, have we given thought to the nature and function of a hospital? One might argue that modern concept of a hospital is too much ritualized by tradition. Are hospitals too expensive today because we are attempting to maintain a concept of function that was proper fifty or more years ago, and is today not the most efficient answer to present requirements?

This problem, and the matter of medical education, are mentioned only for illustration. The subjects are too vast to discuss in this hall tonight.

The point I wish to emphasize is the question of doctors and their thinking in these problems. The most important consideration is that "medicine" no longer defines a special pill provided by a doctor and administered to a patient. A third party has entered every phase of medical practice. In some directions, this is the manufacturer of pharmaceuticals. He has much to say, nowadays, about the cost of drugs, scientific research in the biological sciences, and is entering into postgraduate medical education of many doctors.

Health Insurance a Third Party

In other directions, the third party is health insurance. This takes many forms—voluntary, union, group practice, indemnity plans for catastrophic illness, etc. It is probably significant, as a yardstick of our thinking, that most of these developments have arisen with lay or employer groups and have been forced upon organized medicine by the eager response of the public. Increasing numbers of patients are delivering themselves to a variety of third party agencies for partial or complete protection against the costs of illness. The figures are zooming upward at an astonishing rate. More people now possess some form of health insurance than own life insurance. There is actuarial assurance that within a short time, 80 per cent or more of our entire population will have some form of insurance protection against the cost of illness.

In many areas of the country this progress, if you will admit the term, has been made in the face of bitter opposition by organized medicine through its component societies and national organizations. Is our thinking that of 1908 in these matters, rather than 1958?

Punitive actions have been taken against individual doctors. The law has been invoked many times involving the questions of corporate practice of medicine, free choice of physician, and the legality of group health plans.

I have recently been reviewing a remarkably able study, by Horace R. Hansen, Esq., reprinted from the *Minnesota Law Review*, vol. 42, No. 4, March 1958, sent to our Society by the Law Department of the A.M.A. Mr. Hansen is a member of the Minnesota Bar and the author of this twenty-year legal review of group health plans. In his introduction, footnote number 1 reads as follows. I quote:

> A. A sharp distinction exists between the art and economics of medicine. The art and practice of the science is and should always remain in the hands of the trained and licensed practitioners. On the other hand, those who pay the cost should be free to make arrangements with doctors, on a mutually agreeable basis, for prepaying the cost. Lay groups have been highly successful in administering such plans for many years. Operating on a nonprofit basis, such plans have provided high quality medical care to many people on a budgeted basis they can afford.

Mr. Hansen has reviewed the laws with respect to:

1. Enabling legislature in the respective state.
2. The common law rule against corporate practice.
3. The applicability of the insurance laws.
4. Organized medicine and the antitrust laws.
5. The free choice of doctors principle.
6. Judicial views of medical ethics.

Mr. Hansen's conclusions on page 547 are of importance to all of us. I quote:

> B. In reviewing the past twenty years we find changes in medical economics occurring at an ever faster rate, and find the courts keeping pace with the changes. There is a restless search for better methods to distribute more medical care to more people. The cost grows greater as new discoveries make medicine more complicated, requiring a high degree of coordination between specialties, equipment, and technicians. Experimentation in methods of organizing medical services efficiently along with a prepayment mechanism have succeeded because the latter provides the financial means for achieving the former. Group health plans, using such methods, have proved their worth and are spreading. Labor, health, and welfare funds are giving these plans greater impetus.
>
> As this activity grows there are bound to be increasing conflicts with the traditional mode of medical practice. These conflicts will result in litigation, and the law reviewed in this article will be basic to the issues. As group health plans find themselves involved in these lawsuits to test anew their right to survival, they will find comfort in the fact that in the past twenty years they have prevailed without exception.
>
> The apparent legal barriers to these plans, which so recently seemed formidable, have been effectively removed. If a group health plan follows in its operations the lessons in this law, it should meet no insurmountable barrier.
>
> The common law prohibition against corporate practice of medicine does not apply to a nonprofit plan. The insurance statutes do not apply if the plan provides medical services instead of cash indemnities. The "Blue Shield" statutes, if permissive in nature, are no bar to incorporating the plan under the general nonprofit corporation code; if they are mandatory in nature, they may be attacked on constitutional grounds, or avoided by use of an unincorporated structure with adequate safeguards.
>
> Attacks by organized medicine can be fully met with a strong body of antitrust laws, headed by a decision of our highest court which is undergirded by England's highest court. No sharper rebukes appear in any antitrust decisions than in those cases where organized medicine is taken to task for using ethics as an economic weapon.
>
> All in all, group health plans now have sufficient legal approval to encourage their widespread growth. The same can be said for any other method or experiment which is truly nonprofit, operates by a service motive, and strives for more distribution of good medical care. The courts traditionally have shown great concern for the public health, and by their decisions have indicated great impatience with any interest standing in the way of its betterment.

The consideration of the third party brings us inevitably to the matter of "free choice." This phrase has been used as a straw man, tackling dummy, and offensive weapon for many years by medical spokesmen. Only recently have I come across any effort to define the semantic basis for this slogan.

Dr. Elmer Hess, past president of the American Medical Association, has written as follows in the *Pennsylvania Medical Journal* of April, 1958. I quote:

> To my mind, free choice of medical adviser means that if you pay your own bills, you may call any physician, cultist, or quack whom you desire to administer to you or your family, if he is willing to serve you. If you pay the insurance premiums yourself, either for full coverage or on the indemnity plan, you may likewise have any medical advice, from one extreme to the other that *you* desire, unless it specifically states in your policy that you are limited to an M.D. or an osteopath, etc. Only when the patient pays his own way has he ever had free choice.
>
> When the government, in any capacity, or a hospital furnishes services to a patient, he has never had free choice. He has been obliged to take as his medical attendant the physician on duty at the time or the physician employed to do charitable work for the patient in the home or clinic. This has always precluded for the patient, with or principally without funds, the physician of his choice. All medical service is paid for by someone. If the physician gives his services free to the patient who has consulted him, the physician indirectly pays for the service which he renders. If the patient asks for service from the city, county, or other agency, he gets the physician employed for that purpose with no chance or personal freedom of choice. If a kind employer furnishes medical service of any kind for an employe, he is very apt to tell the employe that if he goes to the employer's physician the bill will be paid. This holds true, more or less, throughout industry; where the patient is cared for by the plant physician and referred to a second physician, the choice is not by the patient. This is particularly true if the employer assumes the responsibility for the bills one way or another.
>
> Certainly, there is no free choice of physician when a patient without funds or without his own insurance asks for care in a clinic or hospital, whether or not this is connected with a teaching institution. The universal rule, as far as I have

> been able to observe, is that the person who pays the bills has the right to make the choice as to who shall care for the recipient of his bounty. It has always been this way; it always will be this way. The person who pays the bills has the right to call any medical attendant he wants. If the recipient is not satisfied with the services granted, he must find some way to raise the money to pay for services more to his liking. Unfortunately, in many instances the patient cannot afford to do this unless he calls upon the physician he wants to render the services free and is able to induce him to do so. In some instances, organizations which pay the bills furnish poor-quality medical service and no physician is compelled to work for them. But if a physician does agree to do this work, there is nothing the beneficiary can do but accept the poor-quality work or demand better medical service in the event that he is a premium-paying insuree.
>
> Let us not make any mistake about this proposition of free choice. Let's define it in the only way it can be defined: He who pays the bills may choose whomsoever he desires for his medical adviser, but he who asks someone else to pay his bills is obliged to accept the choice of the giver of the gift. There can be no other definition of the expression of "free choice."

A broad framework for leadership in medical economic matters has already developed within our own Society. There will shortly be published in *New York Medicine* individual essays from our Committee to Study Hospital-Physician Relations. Dr. George Himler has provided a detailed summary of the problem associated with payment of licensed physicians in training by medical service insurance fees. He has presented arguments both pro and con together with suggestions as to the basic issues, and for further specific information to be obtained in order to develop a mutually satisfactory and workable solution. Exploration of this subject will be of great interest and will consume much of the committee's time this year and probably longer. Dr. Rees Jensen has given much thought to the matters of anesthesiology, radiology, physical medicine and the position of these specialties within the hospital framework. Dr. James E. McCormack has expressed himself concerning relationships between medical teachers and practitioners. I would like to quote his final paragraph:

> It behooves all physicians to give some thought to the experience behind the statement that "a house divided against itself shall fall." It would be appropriate that more people in academic medicine join and actively participate in the activities of their county medical society. At the same time, those physicians who look upon every activity of the teaching center as an economic threat should realize that this attitude has already created in the minds of the lay public an impression that medicine is a mercenary profession. The average income of practitioners is just as well known as the average income of medical school teachers, especially so-called full-time or salaried teachers. Sometimes the howls about economic competition are not only undignified but ridiculous. A little more respect and a willingness to develop a charitable attitude on both sides would do much to improve the public relations of the medical profession.

Dr. Joseph Pisani has written a summary of the teaching hospital which will be of great interest to all of us who have the future health of medicine at heart. Dr. Henry T. Randall has detailed and summarized the thinking of the committee with respect to the full-time practice of medicine.

Finally, Dr. C. Joseph Delaney, the chairman of the Committee, has written an excellent review of the work and attitude of this committee. I would like to quote at length from his report, but we should not prolong this address too far. Indeed, if I quoted him there would be little left of this address.

I consider myself indeed fortunate that it is my privilege to be your president at this time. Your officers and committee members are eager and willing to explore the horizons which lie ahead. In the past, our own profession by standing pat, repeating "nyet" to the mounting pressures for large responsibilities, has delegated much of the experimentation and progress in medical economics to agencies outside of our profession. There are indications that this situation is changing.

To go forward, we must sustain your interest. There are many challenges facing us which are of the greatest concern to medicine and in which we must play an influential role, if not the assumption of leadership.

We have spoken tonight largely on the broad problems of medical economics. I have briefly suggested the possibility of a new look at hospitals in terms of their structure and function. There remain the infinite problems of the rendering of medical service, the increasing power and influence of labor unions in the fields of health services, the crucial role of the medicinal industries, the importance of technology in the practice of medicine, and finally, the questions concerning our aging population, and the proper and healthy use of leisure time which industry is making available through improved technics.

Opposition at Grass Roots

We must remember that invention and discovery favor the prepared mind. Progress by organized medicine has been slow. In many areas we have had a bad name and are synonymous with obstructionists. It is to our shame that I must report that the most serious rift and opposition occurs at the grass roots or our county medical societies across the nation. It is my belief that this is because we have been bemused by slogans and think they solve our problems instead of using our diagnostic objectivity as physicians. It has been my intention to clarify some of the implications in our commonly-used and self-deceptive slogans, and to stimulate serious self-evaluation in this most critical and changing world. If we have succeeded and can enlist your enlightened cooperation, it may well be that a new era in the development of medicine will occur. The change-over from "medicine" as a private concession operated by doctors, for doctors, into a "public utility," by doctors for society at large, is a mammoth and complicated social change. Our profession should establish its leadership—I believe that in time this will happen.

The Effect of Iproniazid Ointment on Trophic Ulcers Associated with Raynaud's Phenomenon

Application of iproniazid ointment to trophic ulcers complicating Raynaud's phenomenon resulted in total relief of pain in 19 and complete healing of ulcers in 18 out of 23 patients treated during a five-year period. Eight of these had recurrences of pain and ulcers when treatment was temporarily discontinued for three weeks to six months. The pharmacologic basis for this treatment result is not known. In general, therapy of this troublesome complication is not satisfactory. Vasodilators and blocking agents are of questionable value. The ulcers may improve after sympathectomy but tend to recur. Drs. Arthur L. Scherbel, George H. Curtis, and John W. Harrison, of the Cleveland Clinic, say they have not found glyceryl trinitrate helpful.—*Cleveland Clinic Quarterly, April, 1958*

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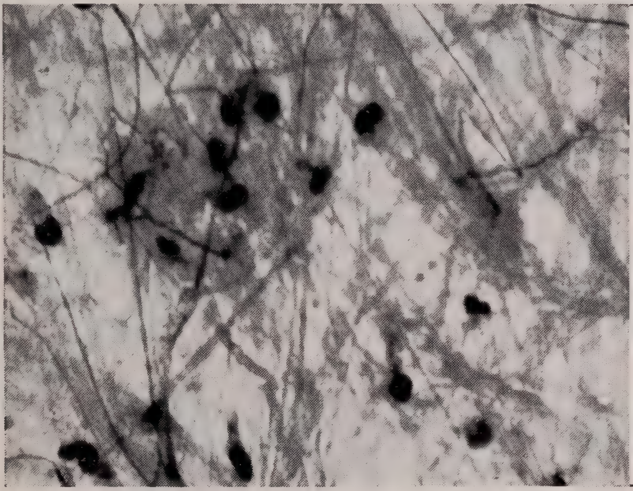

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NECROLOGY

Morris Auslander, M.D., of New York City, died on January 5 at his home at the age of seventy-two. Dr. Auslander graduated in 1908 from New York University and Bellevue Hospital Medical College.

Arthur Isidor Blau, M.D., of New York City, died in Memorial Hospital on January 7 at the age of sixty-eight. Dr. Blau graduated in 1913 from New York University and Bellevue Hospital Medical College. As a senior public health officer with the New York City Department of Health he was deputy director of the Civil Defense Medical Emergency Division which coordinates activities of the Departments of Health and Hospitals. He had served as health officer in Harlem, the Red Hook-Gowanus district of Brooklyn, and Jamaica, Queens, and also as health officer for the Borough of Queens. In 1947 to 1948 he directed the Bureau of Health Education. Dr. Blau was a member of the American Public Health Association, the New York County Medical Society, and the Medical Society of the State of New York.

William W. Bostwick, M.D., of White Plains, died in his home on January 12 at the age of eighty-five. Dr. Bostwick graduated in 1894 from Bellevue Hospital Medical College. He had formerly been an attending physician at Sailors Snug Harbor, Staten Island, and was chief of staff at the former Lutheran Hospital in New York City. He retired from practice fifteen years ago. Dr. Bostwick was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Kenneth E. Crounse, M.D., of Delray Beach, Florida, formerly of Albany, died on December 23, 1958, at the age of sixty-two. Dr. Crounse graduated in 1924 from Albany Medical College. He was formerly a consultant to the Moses Ludington Memorial Hospital, Ticonderoga. Dr. Crounse was a member of the American Academy of Allergy, the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Russell Story Fowler, M.D., of Brooklyn, died at his home on January 5 at the age of eighty-four. Dr. Fowler graduated in 1895 from Columbia University College of Physicians and Surgeons. He was emeritus director of surgery at Wyckoff Heights Hospital and a consultant in surgery at Methodist and Maimonides Hospitals. A founder of the American College of Surgeons, he had served several times as one of its governors and was the organizer of the Kings County and Long Island Medical Advisory Boards. Dr. Fowler with his father developed "Fowler's position" for surgery and collaborated on a book as well as authored others. Dr. Fowler was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the New York Academy of Medicine, the Brooklyn Surgical Society of which he was a senior fellow and a past president, the Kings County Medical Society of which he was a past president, the Medical Society of the State of New York, and the American Medical Association.

Attilio Laguardia, M.D., of New York City, died on January 5 at University Hospital at the age of fifty-five. Dr. Laguardia graduated in 1927 from Columbia University College of Physicians and Surgeons. He was an attending in psychiatry at Hillside Hospital and for a number of years had served on the staff of Rockland State Hospital. Dr. Laguardia was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry), a Member of the American Psychiatric Association, and a member of the American Association on Mental Deficiency, the New York County Medical Society, and the Medical Society of the State of New York.

Abraham H. Marel, M.D., of Brooklyn, died on December 22, 1958, at the age of seventy-two. Dr. Marel received his medical degree in 1913 from the University of Vienna. He was a physician emeritus at Beth-El Hospital and a consulting physician at Jewish Chronic Diseases Hospital where he had formerly served as president of the medical board. Dr. Marel was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Pasquale James Mercurio, M.D., of Brooklyn, died on January 10 at his home at the age of forty-six. Dr. Mercurio graduated in 1937 from Boston University School of Medicine. He was an Asso-

[Continued on page 688]

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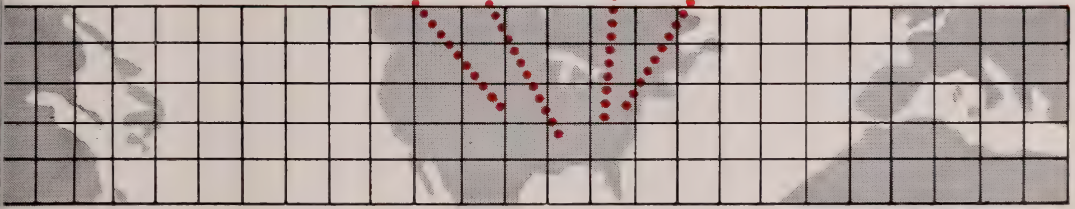

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References: 1. Smigel, J. O., et al.: J. Am. Ger. Soc., in press. 2. Freedman, A. M.: Pediat. Clin. North America **5**:573 (Aug.) 1958. 3. Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957. 4. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. 5. Coirault, M., et al.: Presse méd. **64**:2239 (Dec. 26) 1956. 6. Bayart, J.: Presented at the International Congress of Pediatrics, Copenhagen, Denmark, July 22-27, 1956.

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[Continued from page 686]

ciate of the American Psychiatric Association and a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Muller, M.D., of New York City, died at St. Luke's Hospital on January 12 at the age of sixty-three. Dr. Muller received his medical degree in 1921 from the University of Prague. He was an attending in physiatry at St. Luke's and St. Luke's Hospital Outpatient Department, and the House of St. Giles for the Cripple, director of physical medicine at St. Barnabas, an assistant attending physician at Presbyterian Hospital, and director of physical therapy at Columbus Hospital. Dr. Muller was a Diplomate of the American Board of Physical Medicine and Rehabilitation and a member of the American Rheumatism Association, the New York Rheumatism Association, the New York County Medical Society, and the Medical Society of the State of New York.

Anthony Laurence O'Connor, M.D., of Syosset, died on December 22, 1958, at the age of forty. Dr. O'Connor graduated from the University College of Dublin and interned at Grasslands and Manhattan Eye, Ear, and Throat Hospitals. He was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Philip M. Shipper, M.D., of the Bronx, died on December 24, 1958, at the age of forty-eight. Dr. Shipper graduated in 1933 from the Indiana University School of Medicine. He was a member of the New York Allergy Society, the Bronx County Medical Society, and the Medical Society of the State of New York.

Holland Newton Stevenson, M.D., of Pelham, formerly of New Rochelle, retired, died on January 12 at his home at the age of seventy-two. Dr. Stevenson graduated in 1912 from Johns Hopkins University School of Medicine. He was a consultant in otolaryngology at New Rochelle Hospital. Dr. Stevenson was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the American Association of Pathologists and Bacteriologists, the American Association for Cancer Research, the American Laryngological, Rhinological, and Otological Society, the New York Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edward Ward, M.D., of Flushing, died on January 5 at the age of sixty. Dr. Ward graduated in 1923 from Jefferson Medical College of Philadelphia. He was a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edwin Garvin Zabriskie, M.D., of New York City, died on January 13 at the age of eighty-four. Dr. Zabriskie graduated in 1897 from Long Island College Hospital Medical School. He was a consultant in neurology at White Plains, Lawrence (Bronxville), Mount Vernon, St. John's Riverside, St. Joseph's (Far Rockaway), Manhattan Eye, Ear, and Throat, and St. Clare's Hospitals. In 1947 he was awarded the Alumni Medallion of the Long Island College of Medicine for his distinguished service to American medicine in the preceding fifty years. From 1925 to 1948 he was professor of clinical neurology at the College of Physicians and Surgeons of Columbia University, a former adjunct professor of neurology at the New York Post-Graduate Medical School, and a founder of the American Board of Psychiatry and Neurology. Dr. Zabriskie was a Diplomate of the American Board of Psychiatry and Neurology, a Fellow of the American Psychiatric Association, and a member of the American Neurological Association of which he had been president, the New York Academy of Medicine, the New York Neurological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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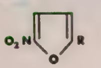

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MEDICAL NEWS

New York Doctors Speak in New Jersey—Dr. Norman Jolliffe, director of the Bureau of Nutrition, Department of Health, New York City, and Dr. Charles Enselberg, professor of cardiology, Polyclinic Medical School and Hospital, New York City, were guest speakers at the seventh annual scientific session of the New Jersey Chapter of the American Academy of General Practice, January 10.

Dr. Jolliffe, discussed "Fats, Cholesterol and Atherosclerosis" and Dr. Enselberg spoke on "Cardiac Emergencies."

Beth Abraham Home Expands—Dr. H. J. Behrend, director of physical medicine and rehabilitation at the Beth Abraham Home, Bronx, reports the opening of a new seven-story building with an additional capacity of 211 beds which brings the total capacity to 531 beds. The entire ground floor is occupied by the Department of Physical Medicine and Rehabilitation which is equipped with the most advanced modalities for the treatment of the chronically ill. It includes a hydrotherapy room, an electrotherapy room, a gymnasium, and an occupational therapy department. There are also facilities for speech therapy.

The new building includes a private pavilion consisting of 15 single and double rooms to which any physician can refer a patient requiring long-term care under his supervision.

Beth Abraham Home is now medically affiliated with Montefiore Hospital.

Courses in Ophthalmology—The Institute of Ophthalmology of the Americas, New York Eye and Ear Infirmary, will offer the following courses this spring.

Ocular Surgery, May 18 through 29: This course will include: cataracts; glaucoma; keratectomies and keratoplasties; pterygium; lacrimal sac; retinal detachment; muscles, including ptosis, enucleation and evisceration; and orbitotomy. Registration is limited and preference will be given ophthalmologists taking the entire course. If places are available, doctors may register for individual parts.

Histopathology of the Eye, May 18 through 23: Limited registration.

Review course covering practical aspects in perimetry, May 18, 20, 22: Limited registration.

For further information write to: Mrs. Tamar Weber, Registrar, Institute of Ophthalmology of the Americas, New York Eye and Ear Infirmary, 218 Second Avenue, New York 3, New York.

New Award Established—The American College of Gastroenterology has announced the establishment of an award contest for the best unpublished paper on research in gastroenterology or an allied field. This award is to be known as the Henry G. Rudner, Sr. Award, honoring Dr. Henry G. Rudner, Sr., of Memphis, Tennessee, chairman of the research committee of the American College of Gastroenterology and former chairman of the board of governors of the organization.

The contest will be open to all those possessing the degree of doctor of medicine from a recognized medical school or university. All papers submitted must represent original work in gastroenterology, or an allied field, and must not have been previously published except for abstracts or short preliminary reports. It must not have been previously presented on the program of any scientific meeting.

For additional information write to: The Research Committee, American College of Gastroenterology, 33 West 60th Street, New York 23, New York.

Requests for Research Grants Invited—The Research Committee of the National Society for the Prevention of Blindness invites requests for research grants in 1959. Funds are available for projects that may contribute to basic understanding of eye function and pathology, or that may improve methods of diagnosis, treatment, or prevention of blinding eye disease. Grants will be made this spring for requests received prior to May 1.

Inquiries should be addressed to: Research Committee, National Society for the Prevention of Blindness, 1790 Broadway, New York 19, New York.

Henry Joachim Lectures—The twenty-first in the series of Dr. Henry Joachim Lectures on the application of fundamental sciences in medicine was presented at the Jewish Chronic Disease Hospital, Brooklyn, on February 10.

Dr. Herbert Conway, professor of clinical surgery, Cornell University; Dr. Joseph G. Benton, professor and chairman, Department of Rehabilitation Medicine, State University Downstate Medical Center; and Dr. Andor A. Weiss, chief, Paraplegia Section, Physical Medicine and Rehabilitation, Veterans

[Continued on page 692]

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[Continued from page 690]

Administration Hospital, Bronx; spoke on the topic "Prevention and Treatment of Decubitus Ulcers, Medical and Surgical Aspects."

American Board of Obstetrics and Gynecology—The next scheduled examinations (Part II), oral and clinical for all candidates for the American Board of Obstetrics and Gynecology will be conducted at the Edgewater Beach Hotel, Chicago, by the entire board May 8 through 19. Formal notice of the exact time of each candidate's examination will be sent to him in advance of the examination dates.

Candidates who participated in the Part I examinations will be notified of their eligibility for the Part II examinations as soon as possible.

The deadline for the receipt of new and reopened applications for the 1960 examinations is August 1, 1959. Candidates are urged to submit their applications as soon as possible before that time. For information write to: Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

Awards in Fields of Obstetrics and Gynecology—The Division of Obstetrics and Gynecology of the International College of Surgeons has announced its second annual competition for two awards for the best manuscripts on a phase of obstetrics and gynecology. The first award will be $500 and the second $300.

The contest is limited to interns, residents, or graduate students in obstetrics and gynecology, or to those engaged in the practice or teaching of the speciality. Contestants must hold a degree of medicine from an accredited college of medicine. Fellows of the International College of Surgeons are not eligible.

Manuscripts of not more than 5,000 words must be submitted on or before June 1 to: Dr. Harvey A. Gollin, secretary, Prize Committee, 55 East Washington Street, Chicago 2, Illinois.

Fellowships in Ophthalmology—Six fellowships for residents in ophthalmology to be awarded July 1, have been announced by the Guild of Prescription Opticians of America, Inc., through its president, E. S. Hirsch, Miami, Florida. Applications for these fellowships must be received by May 15.

Each fellowship is for a total of $1,800, payable in monthly stipends over the period of a three-year residency. The grants are limited to residencies at approved institutions where full three-year residencies are offered, but residencies which begin anytime during the calendar year are eligible. Application forms and covering information can be had by writing to: Fellowships, Guild of Prescription Opticians of America, Inc., 110 East 23rd Street, New York 10, New York.

Personalities

Elected

Dr. Saul S. Samuels, New York City, as founding president of the International College of Angiology.

Appointed

Dr. Harold Safian, New York City, as associate medical director of United Medical Service.

Honored

Dr. James T. Grace, Jr., chief, Gastrointestinal Surgery, Roswell Park Memorial Institute, Buffalo, as one of the nation's Ten Outstanding Young Men of 1958 by the United States Junior Chamber of Commerce.

Awarded

Dr. Samuel Rosen, New York City, the first Dr. S. G. Joshi Medal, by the Indian Association of Otolaryngologists, for his pioneering work in the surgical relief of otosclerotic deafness.

Retired

Dr. Peter Marshall Murray, as a member of the State University Board of Trustees, January 5.

Speakers

Dr. Emil A. Gutheil, New York City, before the Association for the Advancement of Psychotherapy, January 23, on the subject "Problems of Therapy in Obsessive-Compulsive Neurosis" . . .Dr. Aaron B. Lerner, professor of dermatology at Yale University School of Medicine, the eighth annual Sigmund Pollitzer Lecture, January 20, at New York University, on the topic "The Pituitary, the Pineal, and Pigmentation". . . .Dr. Alfred A. Messer, New York City, before the staff of the State Psychiatric Institute, Rio Piedras, Puerto Rico, December 29 . . . Dr. John C. Saunders, Rockland State Hospital, Orangeburg, February 6, on "The Phenomenon of Chelation and its Relation to Mental Disorders" . . . Dr. Melitta Schmideberg, New York City, on "The Child Murderer" before the 125th annual meeting of the American Association for the Advancement of Science, December 27. . . Dr. Margaret Shetland, January 13, at a convocation of the Public Health Nursing Department of the State University Upstate Medical Center, on "Overseas Nursing is Sharing". . . .Dr. Jerome A. Tobis, professor and director, Department of Physical Medicine and Rehabilitation, New York Medical College, at a meeting on "Our Aging Population—The Challenge and the Outlook" on January 29, sponsored by the Women's Executive Committee of the United Hospital Fund of New York.

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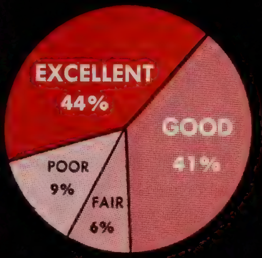

2929 patients

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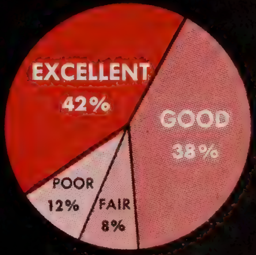

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References: 1. Cooperative Study, Department of Medical Research, Winthrop Laboratories • 2. Lichtman, A. L.: Kentucky Acad. Gen. Pract. J. 4:28, Oct., 1958 • 3. Baker, A. B.: Modern Med. 26:140, April 15, 1958.

***tran-qui-lax-ant** [< L. *tranquillus*, quiet; L. *laxare*, to loosen, as the muscles]

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MEDICAL MEETINGS

Squibb Centennial Lecture

Dr. Roy Hertz of the National Cancer Institute will visit Albany Medical College February 19 through 21 to give one of a series of lectures that E.R. Squibb & Sons is sponsoring to commemorate the 100th anniversary of its founding.

At noon on February 20, Dr. Hertz will give the Squibb Centennial Lecture, entitled "Endocrine and Therapeutic Studies on Choriocarcinoma and Other Hormone-Producing Tumors." The lecture will be held in Huyck Auditorium at the Medical College. Physicians are invited to attend Dr. Hertz's lecture.

24th Annual Fracture Day

The New York and Brooklyn Regional Committee on Trauma of the American College of Surgeons will hold its 24th annual "Fracture Day" on Saturday, February 21, starting at 9:00 A.M. The meeting will be held in the Einhorn Auditorium at the Lenox Hill Hospital, 111 East 76th Street, New York City.

Dr. Sawnie R. Gaston, New York City, is chairman of the regional committee, Dr. Preston Wade, New York City, chairman of the national committee, and Dr. Carleton M. Cornell, New York City, chairman of the "Fracture Day" program. Dr. George Strenger, New York City, will discuss "The Fate of Retained Metallic Bodies Resulting from War Wounds." Dr. Eugene Clifton, New York City, will speak on "Enzymatic Treatment of Infections Involving Bone and Joints." Dr. Harrison McLaughlin, New York City, will be moderator of a symposium on "Fracture Dislocations of the Hip," and the following physicians will participate: Dr. Carter R. Rowe, Boston; Dr. George O. Eaton, Baltimore, and Dr. Philip D. Wilson, Jr., New York City.

"The National Ski Patrol—Its Organization, Training, and Activity" will be discussed by Dr. L. Allen Erskine, Palmerton, Pennsylvania. Dr. Michael P. Mandarino, Philadelphia, will speak on "Polyurethane Polymer (Ostamer) Experimental and Clinical Results of Its Use." Dr. Lester Blum, also of New York City, will discuss "Arterial Trauma in Civilian Practice," and Dr. Preston A. Wade will speak on "Fractures in Children."

For further information contact: Dr. Lester Blum, Secretary, 101 East 93rd Street, New York 28, New York.

Rural Health Conference

Mental health, aging, nutrition, dental health, costs of medical care, and health insurance—and their effect on rural residents—will be highlighted at the 14th national conference on rural health, March 5 through 7, in Wichita, Kansas. The theme of the conference, which is sponsored by the American Medical Association's Council on Rural Health, is "Horizons in Rural Health." The conference will be held in the Broadview Hotel.

American College of Obstetricians and Gynecologists

The American College of Obstetricians and Gynecologists will hold its annual meeting in Atlantic City, April 6 through 8, with general sessions to be held in Convention Hall.

Plans for the meeting include breakfast and clinical conferences, panels, motion picture programs, and scientific exhibits.

Physicians from New York State who will participate are: *Brooklyn:* Drs. Martin Bernstein, Jeanette Rubricius, F. A. Silverstone, and Edward Solomons; *Buffalo:* Dr. Francis A. Fote; *New York City:* Drs. Mary Jane Gray and Carl T. Javert; *Syracuse:* Dr. Edward C. Hughes.

For further information write to Mr. Donald F. Richardson, executive secretary, The American College of Obstetricians and Gynecologists, P.O. Box 749, Chicago 90, Illinois.

American College of Surgeons Sectional Meeting

The American College of Surgeons will hold a sectional meeting at the Queen Elizabeth Hotel, Montreal, Canada, April 6 through 9.

The program will include separate sessions in anesthesia, general surgery, gynecology and obstetrics, ophthalmic surgery, orthopedic surgery, otolaryngology and urology. Extensive programs and hospital demonstrations are scheduled for nurses as well as early morning hospital clinics for general surgeons and surgical specialists. A reception and dinner will be held for visiting surgeons and their wives.

For further information write to: Dr. Harry S. Morton, Chairman, 40 East Erie Street, Chicago 11, Illinois.

[Continued on page 696]

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[Continued from page 694

Symposium on Germfree Research

A national symposium on the technology of germfree research will be held Wednesday and Thursday, April 8 and 9, at Lobund Institute, University of Notre Dame, South Bend, Indiana. In addition to Lobund Institute sponsoring institutions are: Office of Naval Research; Institute of Laboratory Animal Resources; and the Public Health Service's National Institutes of Health.

Further information is available from Professor Philip C. Trexler, Lobund Institute, University of Notre Dame, South Bend, Indiana.

Alumni Association of the New York Eye and Ear Infirmary

The annual spring meeting of the Alumni Association of the New York Eye and Ear Infirmary will be held April 20 through 23 at the Infirmary, 218 Second Avenue, New York 3, New York.

Symposia will be offered on the ear, nose, and throat as follows: allergy and immunology in otolaryngology; diagnosis and treatment of laryngeal conditions; hearing rehabilitation; and rhinoplasty.

A closed circuit television demonstration on head and neck surgery will also be shown. In addition a combined eye, ear, nose and throat symposium on headache is planned.

Symposia on the eye will be offered on the following subjects: Complications of ocular surgery at the operating table and their management; management of postoperative complications; practical application of new therapeutic measures in ophthalmology; and ophthalmic plastic surgery.

Courses will be given in the following subjects: recent advances in biomicroscopy; contact lens fitting; external eye diseases; indirect ophthalmoscopy; pterygium surgery; tonography; vertical eye muscles; recent advances in ophthalmic research; ocular pathology; macula function: orthoptics; electrophysiology of the eye; and corneal transplants.

Additional information may be obtained by writing to Dr. John R. Finlay, secretary, Alumni Association, 218 Second Avenue, New York 3, New York.

Symposium on Venereal Diseases

The tenth annual symposium on "Recent Advances in the Study of Venereal Diseases" will be held April 27 and 28, at Johns Hopkins University, Baltimore, Maryland. The sessions are open to all physicians and workers in allied fields who are interested in the venereal diseases.

This symposium, sponsored jointly by the American Venereal Disease Association and the Public Health Service, will precede a venereal disease seminar for public health personnel of 14 eastern states, beginning April 29.

Anyone wishing to present a scientific paper on a subject related to venereal diseases should mail preliminary abstracts by February 15 to: Dr. William J. Brown, Chairman of the program committee, Communicable Disease Center, Public Health Service, 50 Seventh Street, N.E., Atlanta 23, Georgia.

The committee will meet in mid-February to select papers to be presented. Authors of accepted papers will be notified before March 15.

American Psychiatric Association Divisional Meeting

The 1959 divisional meeting of the New York State district branches of the American Psychiatric Association will be held in New York City, November 13 through 15. For those wishing to submit papers the following topics are suggested: Combined pyschotherapy and pharmacotherapy; Brain damage and childhood psychopathology; Sociologic aspects of psychiatry; activity therapies for hospitalized patients; and problems of adolescence. Two hundred word abstracts should be submitted to Dr. Max Fink, chairman, Program Committee, P.O. Box 38, Glen Oaks, New York, prior to May 1.

For further information concerning this meeting write to: Dr. J. P. Cattell, chairman, Committee on Information and Publicity, 880 Fifth Avenue, New York 21, New York.

Association of the National European and Mediterranean Societies of Gastroenterology

The sixth meeting of the Association of the National European and Mediterranean Societies of Gastroenterology, organized by the Association of Dutch Gastroenterologists, will be held in Leiden, the Netherlands, April 20 through 24, 1960.

The main themes of the conference will be: pathology of the small intestine, and hepatitis, cirrhosis hepatitis, and their possible connection. Original reports on these subjects or any other gastroenterologic subject, either clinical or in the field of the basic sciences, are invited for submission and will be accepted for panel discussion or publication if approved by the scientific program committee. Titles for papers together with a summary of not more than 200 words should be sent not later than August 1, 1959, to Dr. B. K. Boom, Congress Office, Department of Gastroenterology, University Hospital, Leiden, the Netherlands.

For further information and registration apply to the Congress Office of the Sixth Meeting of the Association of the National European and Mediterranean Societies of Gastroenterology, Department of Gastroenterology, University Hospital, Leiden, the Netherlands.

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1. Editorial: New England J. Med. 258:48, 1958.
2. Vinnicombe, J.: Antibiotic Med. & Clin. Ther. 5:474, 1958.
3. Sheth, U. K., et al.: Ibid., p. 604, 1958.

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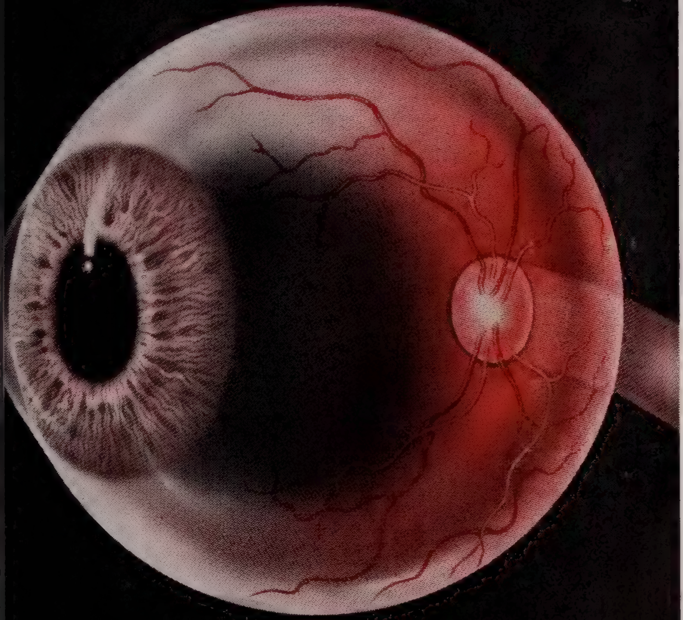

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Reinhardt, D. J.:
Delaware State Med. J. **30**:1, January 1958.

RESULTS

"We have presented a group of 48 patients previously treated with a variety of antihypertensive agents." "Upon the addition of chlorothiazide to their regimens, there was realized an additional blood pressure lowering effect of 23 mm. systolic and 11 mm. diastolic."

Bunn, W. H., Jr.:
Ohio State Med. J. **54**:1168, September 1958.

MINIMAL SIDE EFFECTS

"There is an extremely wide range between therapeutic and toxic dosage, and no significant side effects and no sensitivity to the drug as yet have been observed."

Herrmann, G. R., Hejtmancik, M. R., Graham, R. N. and Marburger, R. C.:
Texas State J. Med. **54**:639, September 1958.

dosage: one 250 mg. tablet DIURIL b.i.d. to one 500 mg. tablet DIURIL t.i.d.

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MONTH IN WASHINGTON

Since the release last summer of the much-discussed Bayne-Jones report on medical education and research, the administration has been reviewing the situation and the possible need for Congressional action on Federal aid to the country's medical schools.

Just how strong is its case is likely to be determined in the session of the 86th Congress now underway. In the closing phases of the 85th Congress, a health subcommittee of the House took up the subject amid a feeling at that time that proponents had failed to achieve a sense of urgency.

Another year has rolled around, and the climate may be different. The Bayne-Jones report revived the medical school aid issue. Not since the six-year-old report from the Magnuson Commission has a medical report been quoted so extensively. The Bayne-Jones report calls for a doubling of medical research spending by 1970 and the immediate start on at least 14 new medical schools.

Secretary Flemming of Health, Education, and Welfare let it be known soon after taking office last summer that he was not going to allow the report to be "put on the shelf to gather dust."

In an address to the American College of Surgeons, Surgeon General Leroy Burney sketched briefly a plan for another consultants' group not unlike the Bayne-Jones committee. It is now looking into the question of need for more physicians in the next decade. No date has been set for the final report. At its first meeting in December, the committee authorized two staff studies to get underway: on construction costs of newer schools and on the financing of present-day medical school operations.

Chairman of the group is Frank Bane, former executive secretary of the Council of State Governments and active in public affairs for more than thirty years. Other members include Dr. Edward L. Turner, American Medical Association's council on medical education and hospitals; Dr. Ward Darley, Association of American Medical Colleges; Dr. Julian Price, A.M.A. trustee; Dr. Edwin L. Crosby, American Hospital Association; Dr. Vernon Lippard, Yale medical school dean; John McK. Mitchell, Pennsylvania medical school dean; Dr. Isador S. Ravdin, Pennsylvania medical affairs vice-president; Dr. Clayton G. Loosli, Southern California medical school dean; Dr. Charles E. Smith, University of California public health school dean; Morris Thompson, president, Kirksville College of Osteopathy and Surgery; Harold Hillenbrand, D.D.S., American Dental Association; Miss Marion Sheahan, National League for Nursing; Dr. Harold L. Enarson, Western Interstate Commission for Higher Education; Emory Morris, D.D.S., president, Kellogg Foundation; Douglas E. H. Williams, Dunbar Community Association; Fred C. Cole, Ph.D., Tulane; Robert C. Anderson, Ph.D., director, Southern Regional Education Board; Alvin C. Eurich, Ph.D., vice-president, Fund for the Advancement of Education; John G. Searle, president, G. D. Searle & Co.; and the Very Rev. Robert J. Slavin, president, Providence College.

Its final report will probably have a strong influence on the course of legislation.

Notes

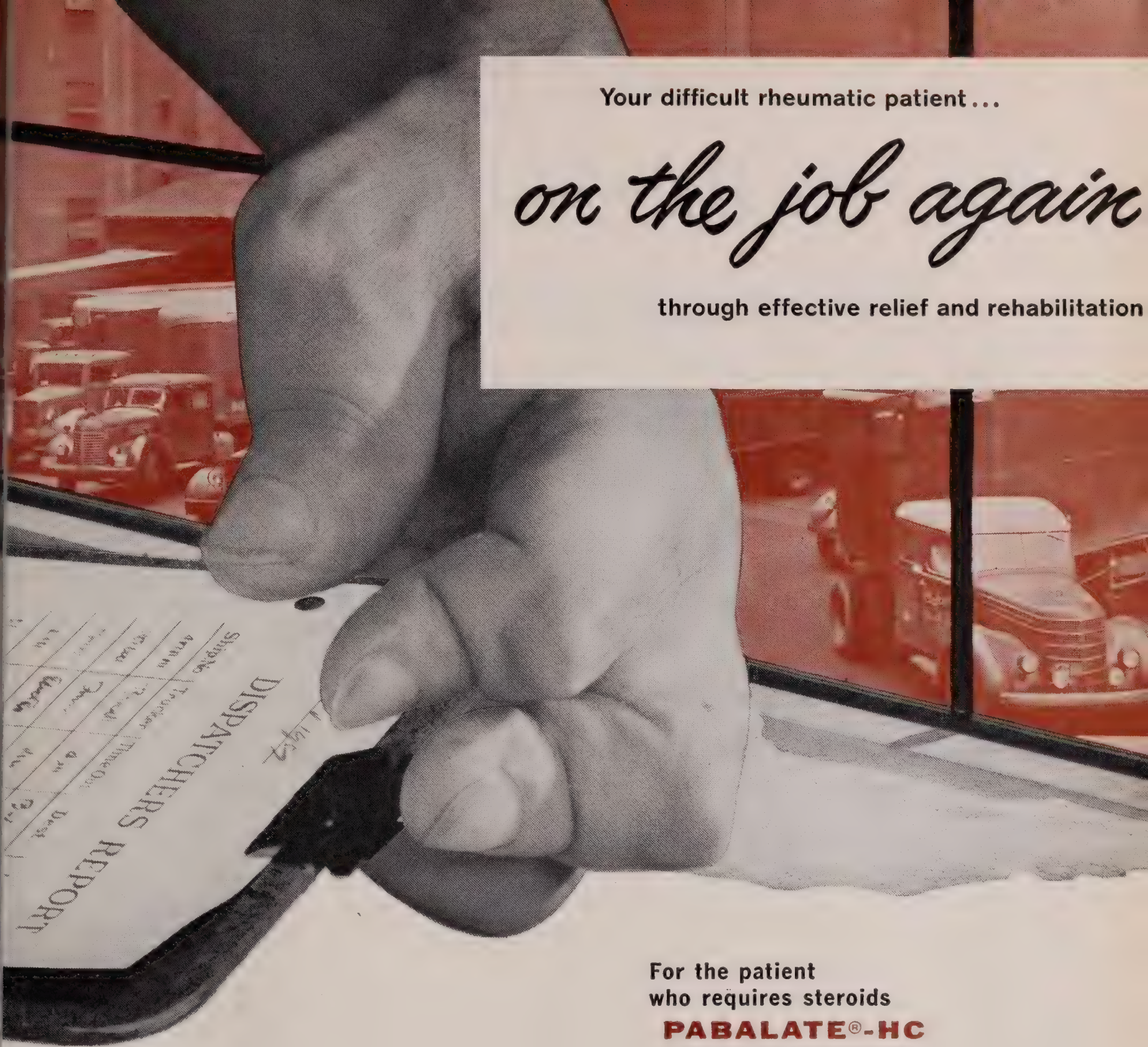
The Office for Dependents Medical Care has decided that this year's contracts for Medicare between the Defense Department and state medical societies and other groups will be negotiated by mail. ODMC felt that the whole field had been pretty thoroughly gone over last year and furthermore that administrative costs are no longer an issue. States will be supplied copies of proposed department changes in contracts forty-five to sixty days prior to expiration dates, according to Brig. Gen. Floyd L. Wergeland, head of Medicare.

The National Air Pollution Conference held in Washington is beginning to produce results. HEW and the auto industry have worked out an agreement on research into devices for controlling auto exhausts. Exhaust experiments are underway at the Robert A. Taft Sanitary Engineering Center on animals, plants, and bacteria.

Federal workers contributory health insurance proposal has taken a new lease on life. The AFL-CIO Government Employees Council which speaks for half a million civilian employees is suggesting the following: (1) the U.S. would pay for two thirds of basic insurance up to a maximum contribution of 14 dollars a month; the worker would pay the balance and could also broaden coverage for himself and family by paying for the extra cost; (2) there would be a choice of basic insurance such as commercial Blue Cross, Blue Shield, and employee union plans; (3) the government would pay the full cost of major medical insurance but the worker would have to have basic coverage; catastrophic coverage would meet 75 per cent of costs.

Congress has failed in past years to enact legislation. Among the reasons has been failure of the various interested groups to get together on a single bill.

Prepared by the Washington Office of the American Medical Association, Washington, D.C.



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Exactly how does new Halodrin* restore the "premenopausal prime" in postmenopausal women?

Webster defines "prime" as the period of greatest health, strength, and beauty. In a woman, these are the childbearing years between puberty and menopause—the years when her hormone production is highest.

The inevitable reduction in this hormone production as she enters the menopause often results in physical discomfort in the form of hot flushes, nervousness, insomnia, or a multiplicity of other symptoms with which you are familiar. Superimposed on this physical picture is the psychic trauma brought on by this unavoidable evidence of aging. The thing that brings her to a physician is simply that she "feels bad."

You can't make her 35 again—but the odds are good that you can make her **feel** like it! The secret is a combination of reassurance and hormones. The exact form and amount of the former defy objective analysis, but the latter can now be provided with scientific precision. Reduced to essentials, here is the explanation of exactly how hormones—in the form of Upjohn's new Halodrin—restore the "premenopausal prime."

The normal premenopausal woman **excretes** estrogens in the urine in the form of estradiol, estrone, and estriol, in an approximate 28-day average ratio of 39:15:46. Starting with this urinary excretion of estrogens, it is possible to calculate backwards and estimate the amount of estradiol that must have been secreted endogenously in order to produce these urinary levels. This is possible because the proportion of estrogens which appears in the urine following parenteral administration has been established in castrated women.

On this basis, the average endogenous output of estrogens is about 160 micrograms per day during a menstrual cycle, and 80 micrograms per day in postmenopausal women (see chart opposite). Therefore, the restoration of the "premenopausal prime" in the postmenopausal woman requires the replacement of approximately the equivalent of the 80 micrograms of estradiol per day that she no longer secretes endogenously.

Oral ethinyl estradiol is about 2 to 2½ times as potent as **parenteral** estradiol. Therefore, **the replacement of 80 micrograms of endogenous estradiol production per day is accomplished by the oral administration of 32 to 40 micrograms of ethinyl estradiol per day.**

Each Halodrin tablet contains 20 micrograms of ethinyl estradiol, which means that the recommended dosage of 2 tablets per day provides 40 micrograms of ethinyl estradiol. This offsets the loss of 80 micrograms of endogenous estradiol production in the menopausal woman; i.e., restores the "premenopausal prime."

Each Halodrin tablet also contains 1 mg. of Upjohn-developed Halotestin* (fluoxymesterone) —the most potent oral androgen known. The primary purpose is to "buffer" the ethinyl estradiol just enough to prevent breakthrough bleeding, which is obviously undesirable in the menopause. It also exerts other beneficial hormonal effects, one of which, in common with ethinyl estradiol, is a powerful anabolic action so desirable in patients of advanced years.

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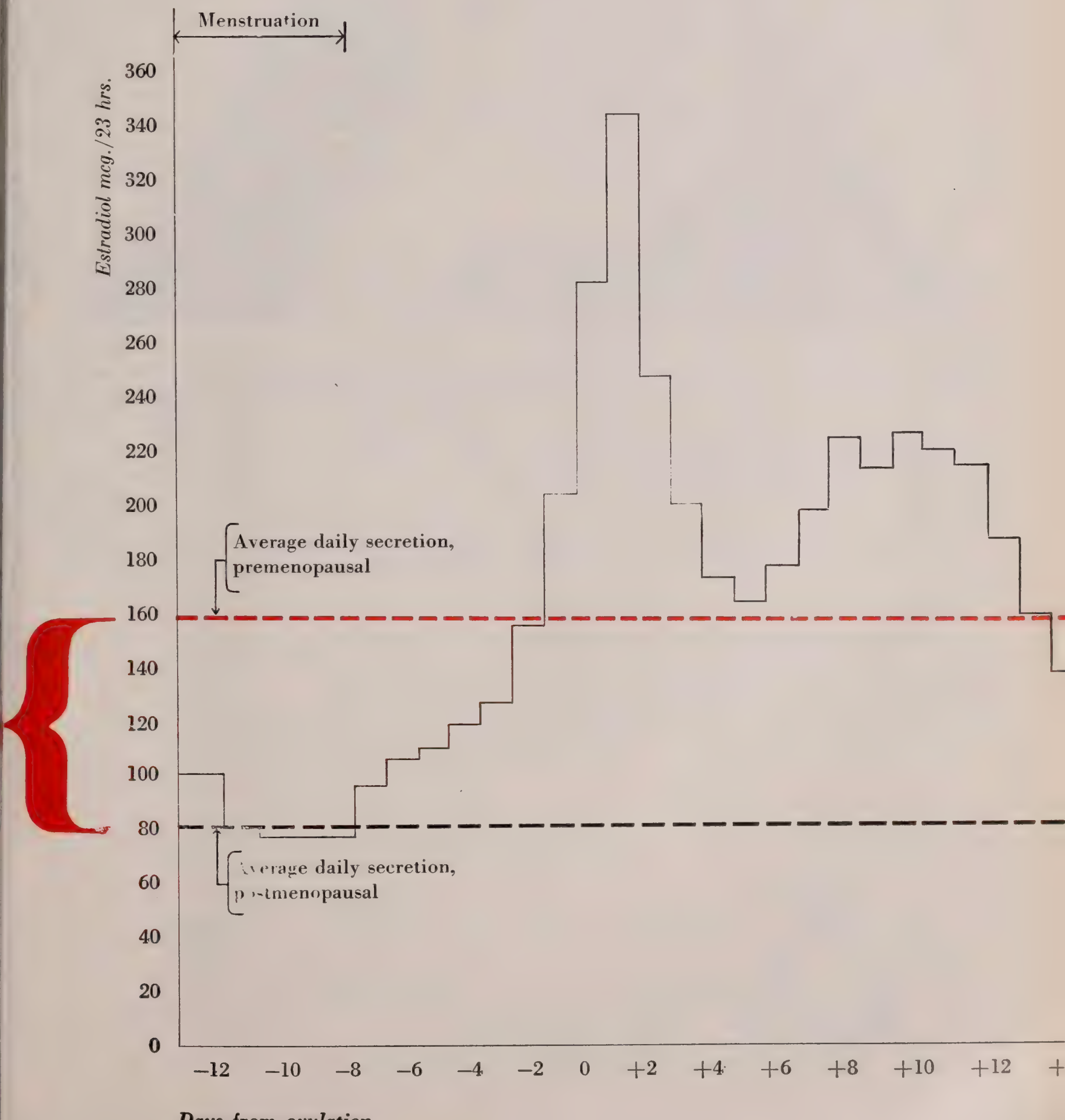
Endogenous estrogen secretion (mcg./24 hours)
(calculated from average 24-hour urinary excretion
of estradiol, estrone, and estriol)



LETTER TO THE EDITOR

Statute of Limitations

To the Editor:

A movement to diminish the legal protection of physicians in New York State has been initiated by the committee on medical jurisprudence of the Association of the Bar of the City of New York.

The chairman of this committee introduced a resolution at the last annual meeting of the Association recommending that the Association support legislative amendment of Section 50, subdivision 1, of the Civil Practice Act. This section contains what is commonly known as the "statute of limitations," a branch of the law which places limits on the time within which legal actions may be commenced.

Under present law, suits based on professional malpractice of physicians and surgeons must be begun within two years of the alleged negligent occurrence. The resolution introduced at the annual meeting of the Bar Association recommended the following amendment to the present New York statues:

> . . . A cause of action for malpractice is not deemed to have accrued until the discovery of the plaintiff or the person under whom he claims of the facts constituting the malpractice, but in no event may such action be commenced more than four years after the commission of the malpractice.

The present protection afforded New York physicians may be better understood when it is contrasted with what is available in sister states. The statutory time limits in Arkansas, California, Maryland, and Florida do not begin until the patient *learns* of the tortious act. The New York statute runs whether or not the patient has knowledge of the act.

At first glance, the present New York rule may appear to be unjust, but it has the virtue of harmonizing with similar limits on comparable acts of nonprofessional negligence. Physicians in California and Florida can never be secure from suit. After many years of satisfactory physician-patient relationship, a lately disgruntled patient may comb over the past to detect some previously undisclosed trifle of professional negligence. The California rule puts the burden on the physician to inform the patient of *anything* which may eventually be the flimsy basis of an action for malpractice. In no other branch of the law of negligence does such a comparable duty exist. Why single out the physician for such statutory discrimination?

The amendment recommended by the committee of the Bar Association would, in practice, double the present period of liability. Malpractice actions would inescapably increase in number. Inevitably, malpractice insurance rates would rise.

I wish to alert members and officers of the Medical Society of the State of New York to this unfavorable movement by members of a brother profession. No doctor needs to be told that the malpractice burden will burgeon fast enough. No stimulation is needed from lawyers and the legislature.

Aaron Hardy Ulm, M.D., L.L.B.

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My love she is a kitten,
And my heart's a ball of string.—
Henry Sambrooke Leigh

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References: 1. Finkelstein, Murray: Journal of Pharmacology and Experimental Therapeutics, in press. 2. Winkelstein, Asher: Paper in preparation.

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REFRACTORY CASES RESPOND

BOOKS RECEIVED

(The following books were received during the month of November, 1958)

Readings in Medical Care. Edited by the Committee on Medical Care Teaching of the Association of Teachers of Preventive Medicine. Octavo of 708 pages. Chapel Hill, The University of North Carolina Press, 1958. Cloth, $6.50.

The Practice of Sanitation. By Edward Scott Hopkins and Wilmer Henry Schulze. 3rd edition. Octavo of 487 pages, illustrated. Baltimore, Williams & Wilkins Co., 1958. Cloth, $8.00.

Epilepsy. By Manfred Sakel, M.D. Duodecimo of 204 pages. New York, Philosophical Library, 1958. Cloth, $5.00.

The Doctor Business. By Richard Carter. Octavo of 283 pages. Garden City, New York, Doubleday & Co., 1958. Cloth, $4.00.

Difficult Diagnosis. By H. J. Roberts, M.D. Octavo of 913 pages, illustrated. Philadelphia, W. B. Saunders Co., 1958. Cloth, $19.

Men, Molds and History. By Felix Marti-Ibanez, M.D. Octavo of 115 pages. New York, MD Publications. 1958. Cloth, $3.00.

The Birth of Normal Babies. By Lyon P. Strean, M.Sc. Octavo of 194 pages. New York, Twayn Publishers, 1958. Cloth, $3.95.

Talent and Society. By David C. McClelland, Alfred L. Baldwin, Urie Bronfenbrenner, and Fred L. Strodtbeck. Octavo of 275 pages. New York, D. Van Nostrand Co., 1958. Cloth, $3.75.

Therapeutic Uses of Adhesive Tape. 2d edition. By Johnson & Johnson, New Brunswick, N. J. Octavo 130 pages, illustrated, 1958. Cloth.

Simple Methods of Contraception. By Winfield Best and Frederick S. Jaffe. Octavo of 64 pages, illustrated. New York, Planned Parenthood Federation of America, 1958. Cloth.

Punched Cards. 2nd edition. By Robert S. Casey, James W. Perry, Madeline M. Berry, and Allen Kent. Octavo of 697 pages, illustrated. New York, Reinhold Publishing Corp., 1958. Cloth, $15.

Pediatric Methods and Standards. 3rd edition. By Fred H. Harvie, M.D. Duodecimo of 324 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Paper, $4.50.

Essentials of Therapeutic Nutrition. By Solomon Garb, M.D. Duodecimo of 147 pages. New York, Springer Publishing Co., 1958. Paper, $2.00.

The Chemical Prevention of Cardiac Necroses. By Hans Selye, M.D. Octavo of 235 pages, illustrated. New York, The Ronald Press Co., 1958. Cloth, $7.50.

Treatment of Internal Medicine. By Harold Thomas Hyman, M.D. Quarto of 609 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1958. Cloth, $12.50.

Hormone Production in Endocrine Tumours. By G. E. W. Wolstenholme, and Maeve O'Connor. Ciba Foundation Colloquia on Endocrinology. Volume XII. Duodecimo of 351 pages, illustrated. Boston, Little Brown & Co., 1958. Cloth, $9.00.

Clinical Obstetrics and Gynecology. Volume 1, No. 3. Special Diagnostic Aids by C. Paul Hodgkinson, M.D., and Abnormal Uterine Bleeding by John I. Brewer, M.D. Octavo of 852 pages, illustrated. September, 1958. Quarterly book series. New York, Paul B. Hoeber. Cloth, $18 per year.

Anatomy for Surgeons. Volume 3. The Back and Limbs. By W. Henry Hollinshead, Ph.D. Quarto of 901 pages, illustrated. New York, Paul B. Hoeber. Cloth, $23.50.

Atlas of Technics in Surgery. By John L. Madden, M.D. Quarto of 648 pages, illustrated. New York, Appleton-Century-Crofts, 1958. Cloth, no price available.

Polysaccharides in Biology. Transactions of the Third Conference, May 29, 30 and 31, 1957. By Georg F. Springer, M.D. Octavo of 249 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1958. Cloth, $4.75.

Cyclopropane Anesthesia. 2nd edition. By Benjamin Howard Robbins, M.D. Octavo of 293 pages, illustrated. Baltimore, Williams & Wilkins Co. Cloth, $9.00.

Leukemia. By William Dameshek, M.D., and Frederick Gunz, M.D. Octavo of 420 pages, illus-

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trated. New York, Grune & Stratton, 1958. Cloth, $15.75.

Handbook of Cardiology for Nurses. 3rd edition. By Walter Modell, M.D., and Doris R. Schwartz, R.N. Duodecimo of 328 pages. New York, Springer Publishing Co., 1958. Cloth, $4.50.

Emotional Problems of Childhood. By Samuel Liebman, M.D. Octavo of 175 pages. Philadelphia, J. B. Lippincott Co., 1958. Cloth, $5.00.

The Medical Clinics of North America. November, 1958. Common Pain Problems. Octavo of 284 pages, illustrated. Philadelphia, W. B. Saunders Co., 1958. Cloth, $18 per year.

Practical Leads to Puzzling Diagnosis. By Walter C. Alvarez, M.D. Octavo of 490 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1958. Cloth.

Etiology and Treatment of Leukemia. Proceedings of the First Louisiana Cancer Conference. By Walter J. Burdette, M.D. Octavo of 167 pages, illustrated. St. Louis, The C. V. Mosby Co., 1958. Cloth, $4.00.

The Esophagus. By Edward B. Benedict, M.D., and George L. Nardi, M.D. Octavo of 390 pages, illustrated. Boston, Little, Brown & Co., 1958. Cloth, $15.

BOOKS REVIEWED

General Pathology. 2nd ed. By Howard Florey, Prof. of Pathology. Octavo of 932 pages, illustrated. Philadelphia, W. B. Saunders Co., 1958. Cloth, $16.

Florey, who is Professor of Pathology at Oxford University, has included several revisions in this edition of *General Pathology*, originally published in 1954 as *Lectures on General Pathology*. The material has been rearranged in an improved sequence; new chapters have been added on tumors, atherosclerosis, and thrombosis. Other subjects include inflammation and other reactions to injury, degenerative changes, healing, as well as several chapters on immune responses.

Although the text is primarily oriented toward the medical student, its emphasis on experimental methods, through which all advances in the medical sciences depend, especially recommend it to the graduate pathologist. Indeed, most specialists in the medical sciences will find much of the book informative and stimulating. Each chapter is appended with a selected but usually extensive list of references.—PHILIP G. CABAUD

Vertigo and Dizziness. By Bernard J. Alpers, M.D. Duodecimo of 120 pages. New York, Grune & Stratton, Inc., 1958. Cloth, $5.00.

The common symptoms of vertigo and dizziness are discussed from the anatomic and physiologic point of view. The author frankly states that there is still a great deal which is unknown about these disorders. The scientific facts are presented in a simple and interesting manner and the end results is a definite contribution to our knowledge of these conditions. It is an exhaustive study and comes well documented with an extensive bibliography. At times it tends to be repetitive, and some of the diagrams are difficult to understand because of the exceedingly small print. However, it is a worthwhile book in spite of these minor faults.—ALEXANDER LEVINE

Proceedings of the Sixth International Congress of the International Society of Hematology. By Publications Committee, A. Richardson Jones, M.D., Chairman. Octavo of 930 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $25.

This volume is the compilation of papers offered at the Sixth International Congress of Hematology, held in Boston in 1956. It brings up-to-date the advances in all phases of hematology up to that time. —MAURICE MORRISON

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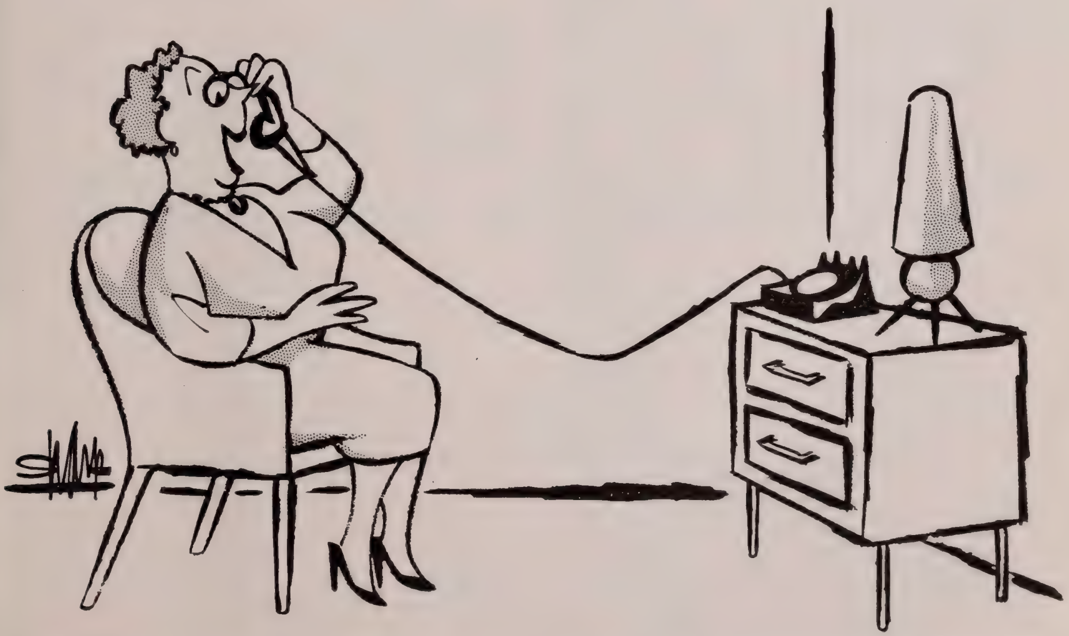

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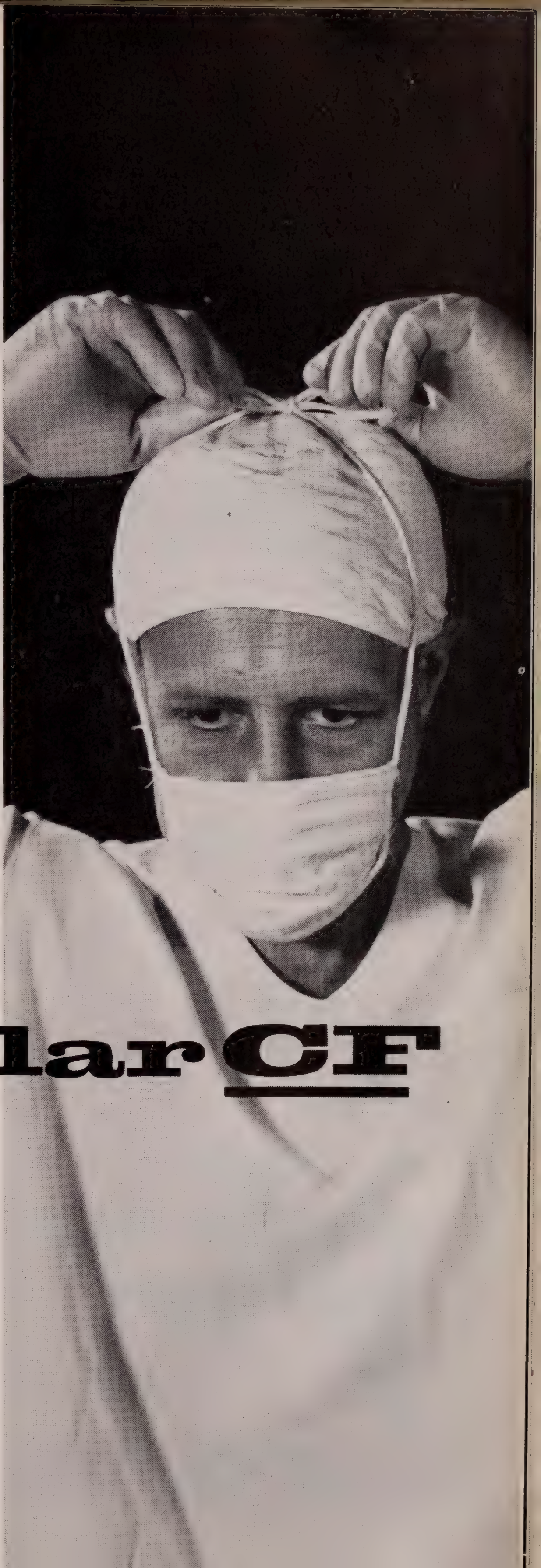

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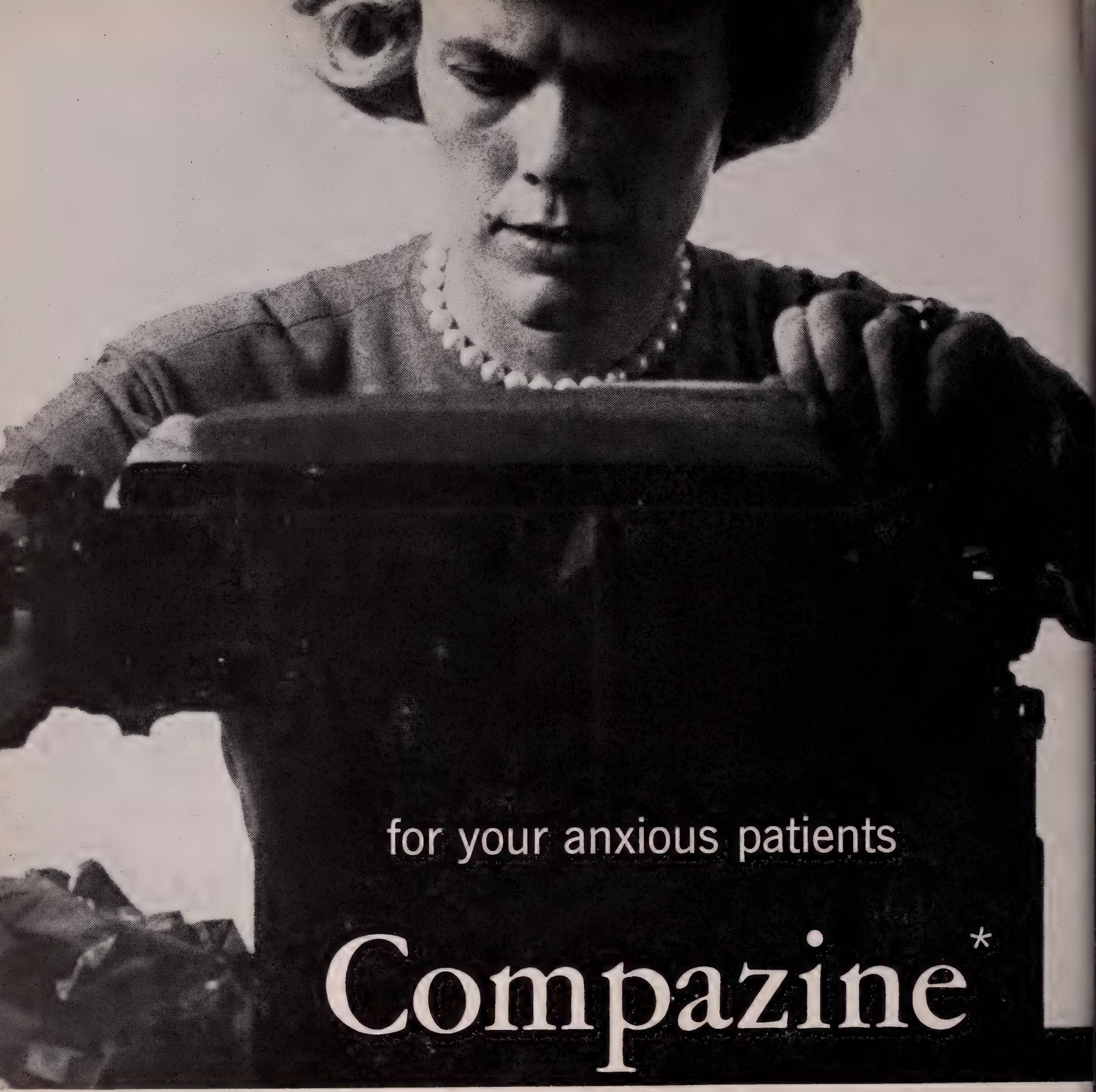

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The "Proof In Practice" study validates, in *day-to-day private practice,* the effectiveness of Unitensen products (cryptenamine) as reported in clinical trials in hospitals and institutions. It proves that Unitensen affords well tolerated, dependable office management for the majority of hypertensive patients. Unitensen effectively lowers blood pressure . . . improves renal and cerebral blood flow . . . exerts no adverse effects on circulation . . . and is free of serious side effects. The results of the Study are shown n Table 1.

Table 1.

No. of Patients	Results	Percent
6,822	Excellent	31.1%
11,201	Good	51.1%
2,802	Fair	12.8%
1,088	Unsatisfactory	5.0%
622	Side effects	3.0%

Basic Hypertensive Therapy

Although many of the patients in the Study also received diuretics and/or tranquilizers during the course of treatment, it was noted that the vasodilating effect of Unitensen was required to obtain optimum blood pressure control. Unitensen, a true hypotensive agent is potentiated by diuretics. A combination of the two is frequently recommended for lower dosage of each drug, minimizing the side effects of either.[1,2,3,4]

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Clinical supplies available upon request.

Bibliography:

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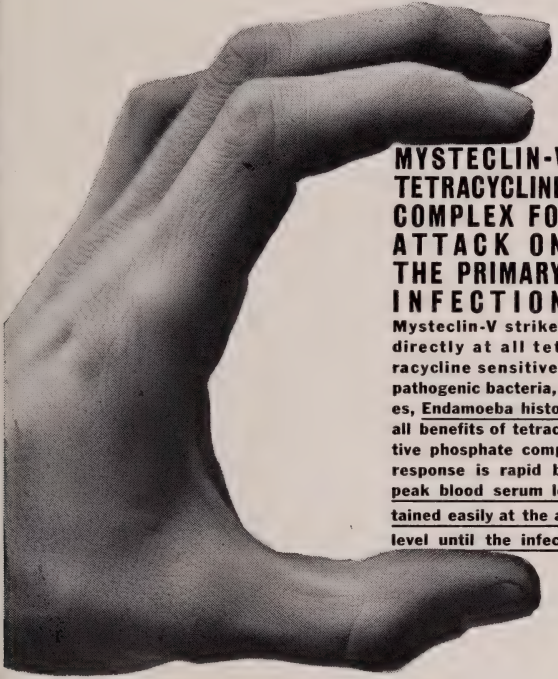

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References: 1. Cronk, G. A.; Naumann, D. E., and Casson, K.: Antibiotics Annual 1957-1958, New York, Medical Encyclopedia Inc. 1958, p. 397 • 2. Newcomer, V. D.; Wright, E. T., and Sternberg, T. H.. Antibiotics Annual 1954-1955, New York, Medical Encyclopedia Inc., 1955, p. 686.

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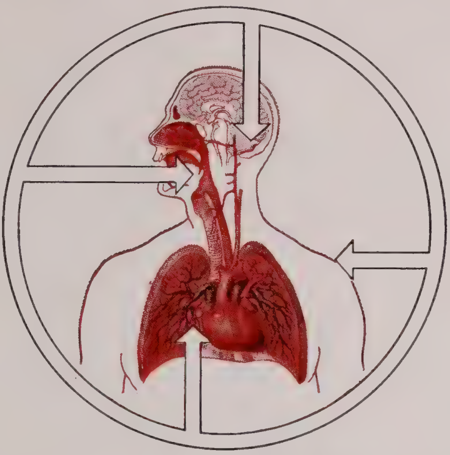

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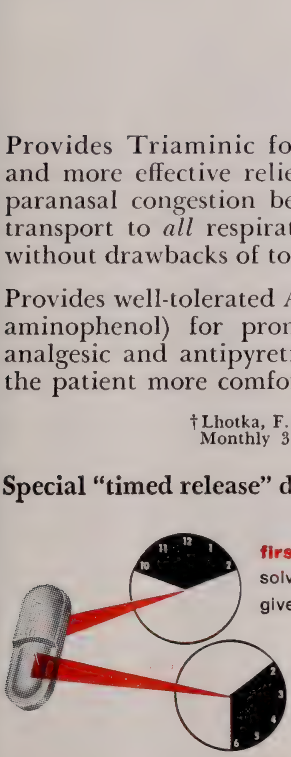

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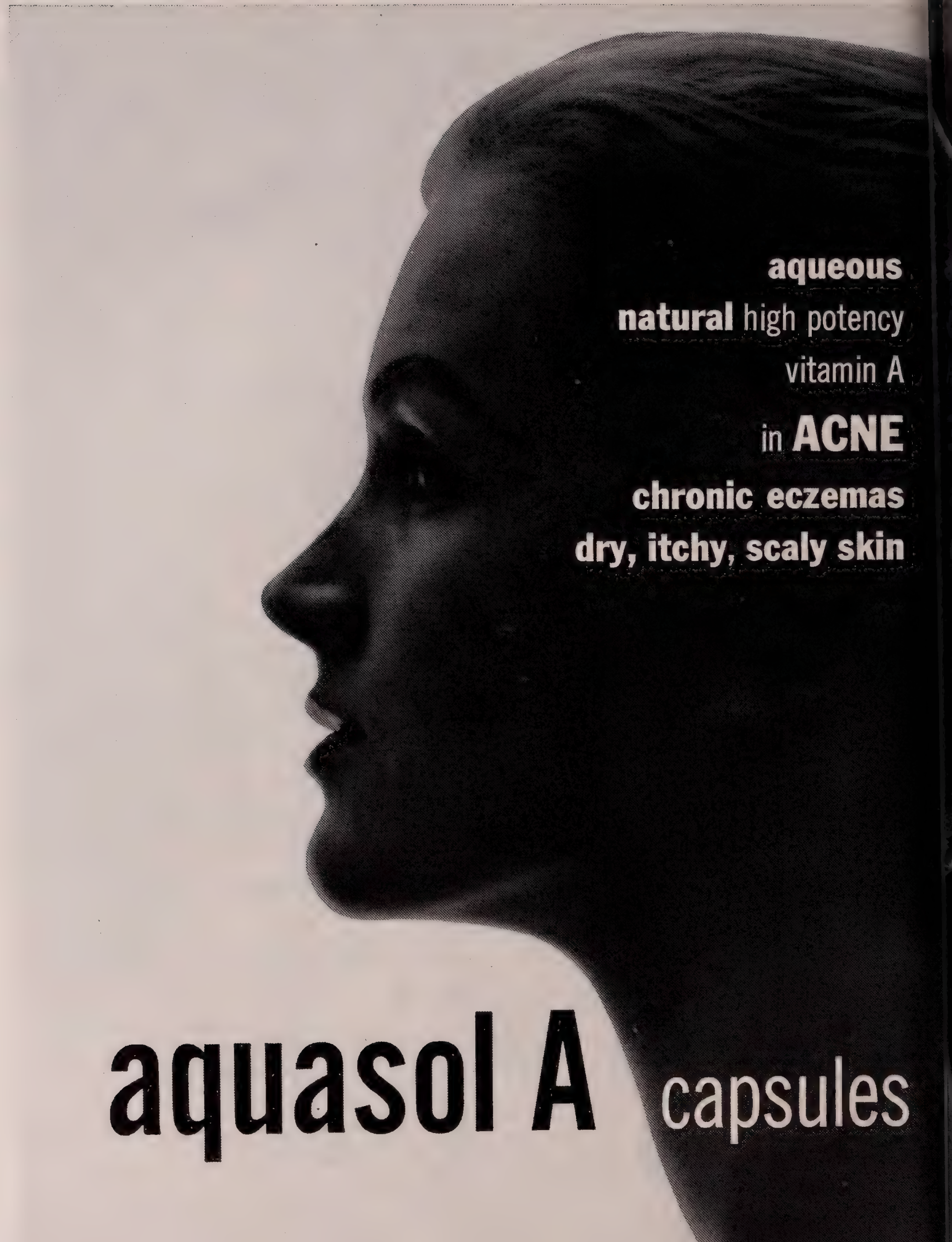
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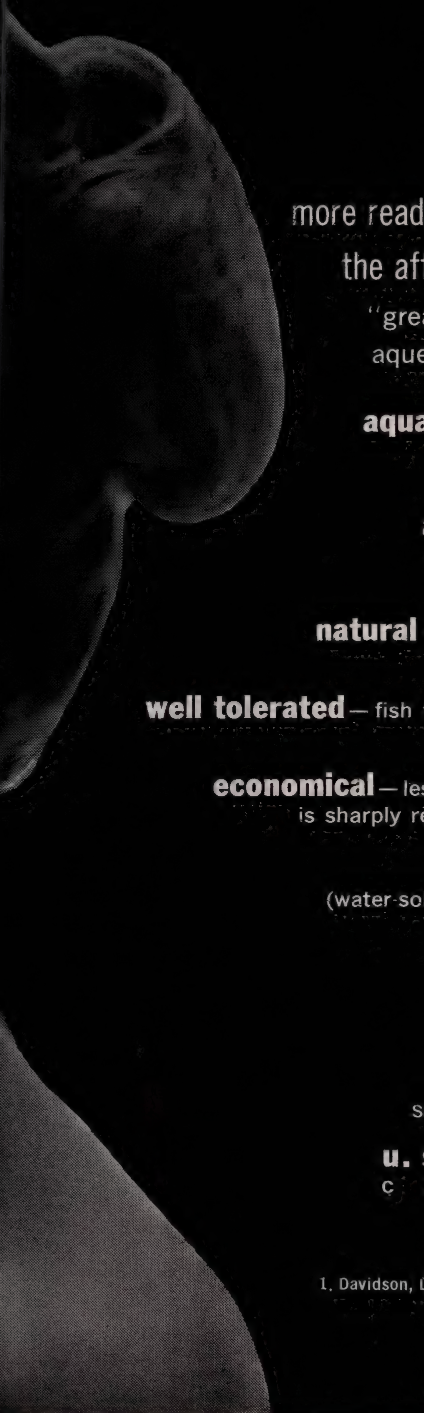

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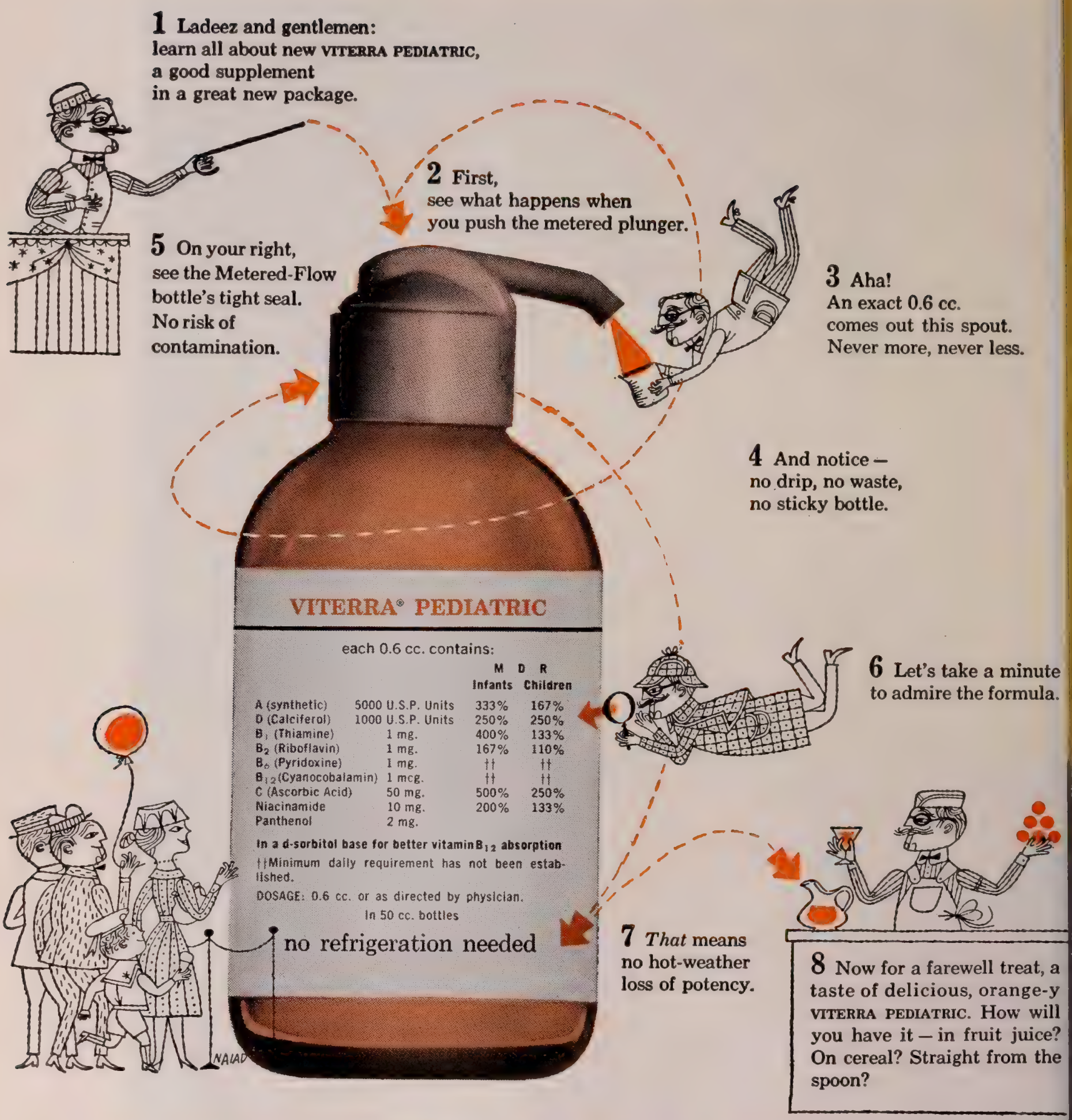

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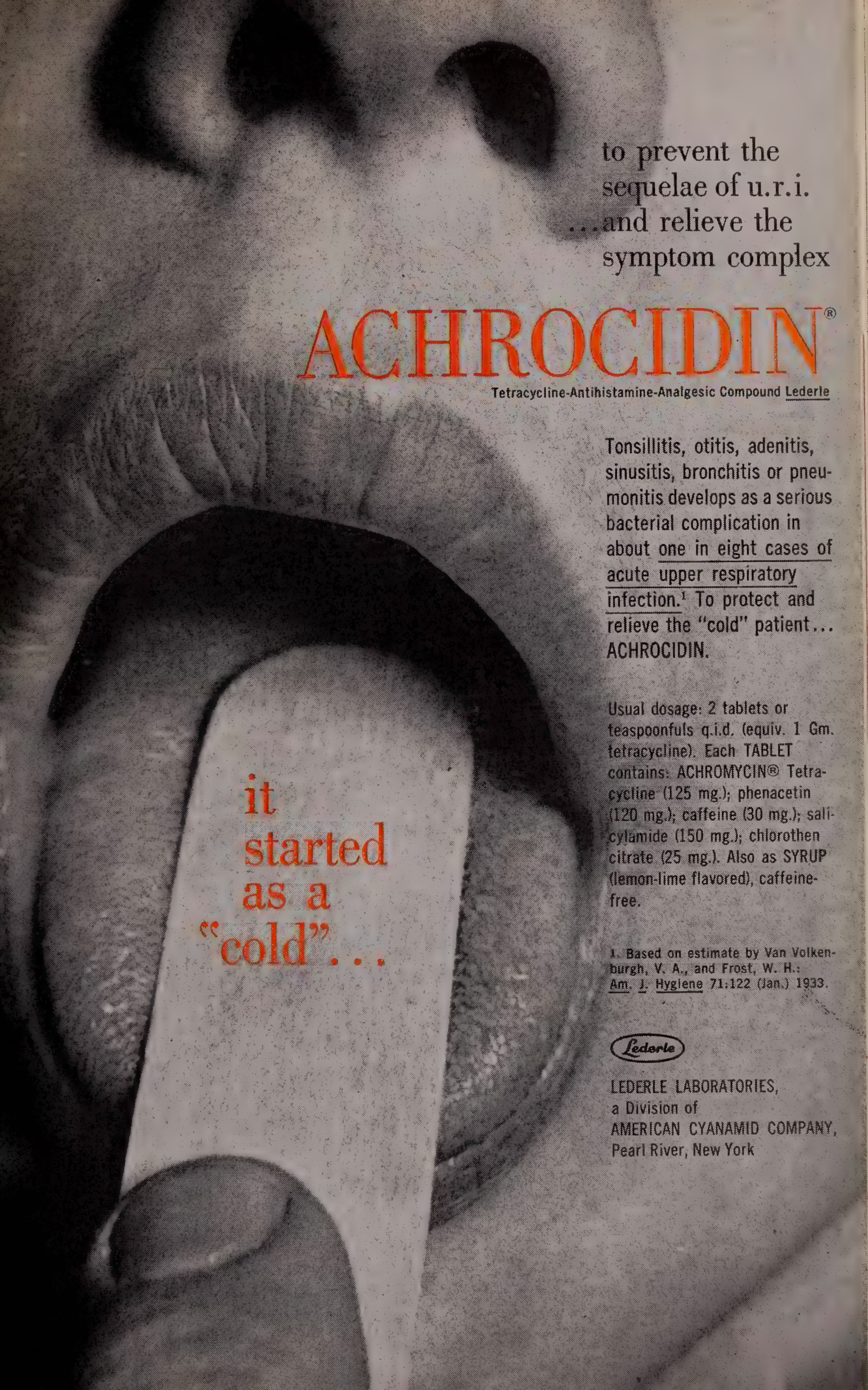
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Tetracycline-Antihistamine-Analgesic Compound Lederle

Tonsillitis, otitis, adenitis, sinusitis, bronchitis or pneumonitis develops as a serious bacterial complication in about one in eight cases of acute upper respiratory infection.[1] To protect and relieve the "cold" patient... ACHROCIDIN.

Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline (125 mg.); phenacetin (120 mg.); caffeine (30 mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP (lemon-lime flavored), caffeine-free.

[1] Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933.

Lederle

LEDERLE LABORATORIES,
a Division of
AMERICAN CYANAMID COMPANY,
Pearl River, New York

MEDICAL SOCIETY OF THE STATE OF NEW YORK

153rd

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HOTEL STATLER-HILTON, BUFFALO, N. Y.

the means *(second to none)* to end nausea and vomiting

Trilafon®
perphenazine

INJECTION • SUPPOSITORIES • REPETABS • TABLETS

- *leads* all phenothiazines in effective antinauseant action
- *frees* patients from daytime drowsiness
- *avoids* hypotension
- *proved* and *published* effectiveness in practically all types of nausea or emesis

FOR RAPID CONTROL OF SEVERE VOMITING

TRILAFON INJECTION
5 mg. ampul of 1 cc.

Relief usually in 10 minutes[1]...nausea and vomiting controlled in up to 97% of patients[2]... virtually no injection pain.

ALSO NEW TRILAFON SUPPOSITORIES
4 mg. and 8 mg.

AND FOR ORAL THERAPY

TRILAFON REPETABS®
8 mg.—4 mg. in outer layer for *prompt effect,*
4 mg. in inner core for *prolonged action*

TRILAFON TABLETS
2 mg. and 4 mg.

(1) Ernst, E. M., and Snyder, A. M.: Pennsylvania M. J. *61*:355, 1958.

(2) Preisig, R., and Landman, M. E.: Am. Pract. & Digest Treat. *9*:740, 1958.

Schering

SCHERING CORPORATION • BLOOMFIELD, NEW JERSEY

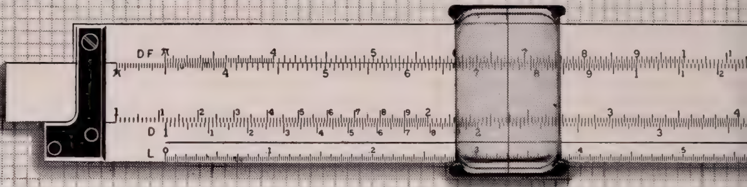
TR-J-429

PRONOUNCED TAY-O

℞ **Tao*** *designed for superior control of common Gram-positi infections*

(triacetyloleandomycin)

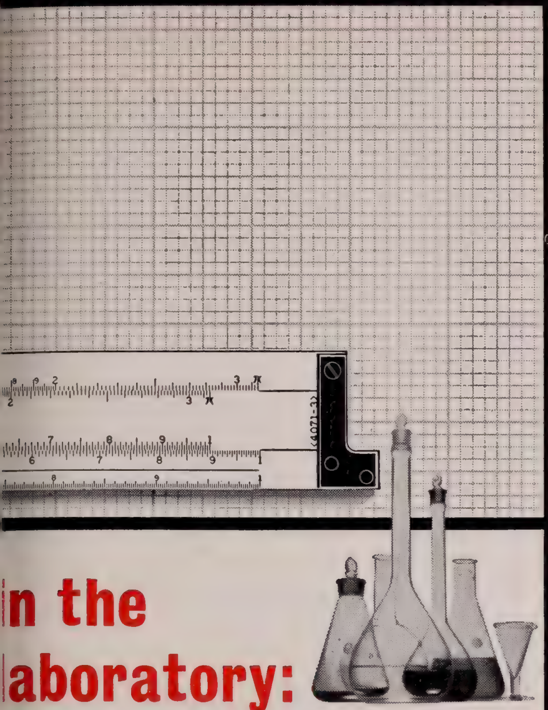
Capsules / Oral Suspension



in the patient:

95% effective in published cases[1-8]

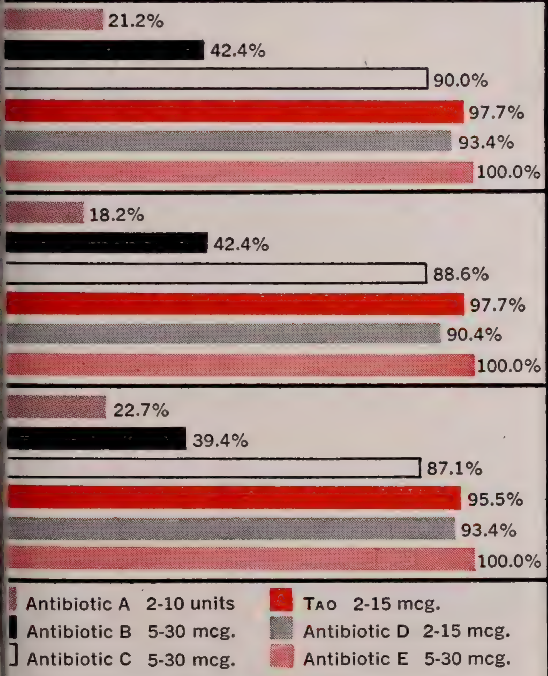
Conditions treated	No. of Patients	Cured	Improved	Failure
ALL INFECTIONS	**558**	**448**	**80**	**30**
Respiratory infections	**258**	**208**	**31**	**19**
Pharyngitis and/or tonsillitis	65	58	5	2
Pneumonia	90	66	17	7
Infectious asthma	44	38	—	6
Otitis media	31	29	2	—
Other respiratory (bronchitis, bronchiolitis, bronchiectasis, pneumonitis, laryngotracheitis, strep throat)	28	17	7	4
Skin and soft tissue infections	**230**	**191**	**38**	**1**
Infected wounds, incisions and lacerations	41	33	8	—
Abscesses	51	43	8	—
Furunculosis	58	51	6	1
Acne, pustular	43	28	15	—
Pyoderma	19	19	—	—
Other skin and soft tissue (infected burns, cellulitis, impetigo, ulcers, others)	18	17	1	—
Genitourinary infections	**28**	**19**	**3**	**6**
Acute pyelitis and cystitis	10	8	2	—
Urethritis with gonorrhea or cystitis	8	8	—	—
Pyelonephritis	4	1	—	3
Salpingitis	5	1	1	3
Pelvic inflammation with endometriosis	1	1	—	—
Miscellaneous (adenitis, enteritis, enterocolitis, subacute bacterial endocarditis, fever, hematoma, staphylococcus carriers, osteomyelitis, tenosynovitis, septic arthritis, acute bursitis, periarthritis)	**42**	**30**	**8**	**4**



n the aboratory:

ver 90% effective gainst resistant staph

OMPARATIVE TESTS BY THREE METHODS
DISC, TUBE DILUTION, CYLINDER PLATE)
N 130 STAPHYLOCOCCI[9]



ercentage of organisms inhibited by the range of
oncentrations listed for each antibiotic.

Other Tao advantages:

Rapidly absorbed—stable in gastric acid,[7] TAO needs no retarding protective coating

Low in toxicity—freedom from side effects in 96% of patients treated; cessation of therapy is rarely required

Highly palatable—"practically tasteless"[7] active ingredient in a pleasant cherry-flavored medium.

Dosage and Administration: Dosage varies according to the severity of the infection. **For adults,** the average dose is 250 mg. q.i.d.; to 500 mg. q.i.d. in more severe infections. **For children** 8 months to 8 years, a daily dose of approximately 30 mg./Kg. body weight in divided doses has been found effective. Since TAO is therapeutically stable in gastric acid, it may be administered without regard to meals.

Supplied: TAO Capsules—250 mg. and 125 mg., bottles of 60. TAO for Oral Suspension—1.5 Gm., 125 mg. per teaspoonful (5 cc.) when reconstituted; unusually palatable cherry flavor; 2 oz. bottle.

References: 1. Koch, R., and Asay, L. D.: J. Pediat., in press. 2. Leming, B. H., Jr., et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 3. Mellman, et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 4. Olansky, S., and McCormick, G. E., Jr.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 5. Shubin, H., et al.: Antibiotics Annual 1957-1958, New York, N. Y., Medical Encyclopedia, Inc., 1958, p. 679. 6. Isenberg, H., and Karelitz, S.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 7. Wennersten, J. R.: Antibiotic Med. & Clin. Therapy 5:527 (Aug.) 1958. 8. Kaplan, M. A., and Goldin, M.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 9. Truant, J. P.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958.

TAO dosage forms—for specific clinical situations

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For children—flavorful, easy to administer.

Supplied: When reconstituted, 100 mg. per cc. Special calibrated droppers—5 drops (approx. 25 mg.) and 10 drops (approx. 50 mg.). 10 cc. bottle.

TAO-AC (TAO analgesic, antihistaminic compound)

To eradicate pain and physical discomfort in respiratory disorders.

Supplied: In bottles of 36 capsules.

TAOMID* (TAO with triple sulfas)

For dual control of Gram-positive and Gram-negative infections.

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Intramuscular or Intravenous

For direct action—in clinical emergencies.

Supplied: In 10 cc. vials.

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Whenever the diet is faulty, the appetite poor, or the loss of food is excessive

through vomiting or diarrhea—

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MEAT EXTRACT

stimulates the appetite,
increases the flow of digestive juices,
provides: supplementary amounts of vitamins, minerals and soluble proteins,
extra-dietary vitamin B_{12},
protective quantities of potassium, in a palatable and readily assimilated form.

Supplied in bottles of 2 or 6 fluidounces.

DOSAGE *is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy.*

VALENTINE Company, Inc.
RICHMOND 21, VIRGINIA

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In Kraurosis and Leukoplakia Vulvae, Postmenopausal and Senile Vaginitis, Pruritis Vulvae et Ani . . .

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ACID MANTLE®·HYDROCORTISONE·ESTRONE·PYRILAMINE MALEATE·SYNTHETIC VITAMIN A

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Stops itching instantly and completely.
Corrects thickening of skin—eliminates scaling.
Restores skin to normal softness and pliability.
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THE MOST TRUSTED NAME IN DERMATOLOGICALS

Supply: With ½% hydrocortisone in ½ oz. and 1 oz. tubes
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that has already
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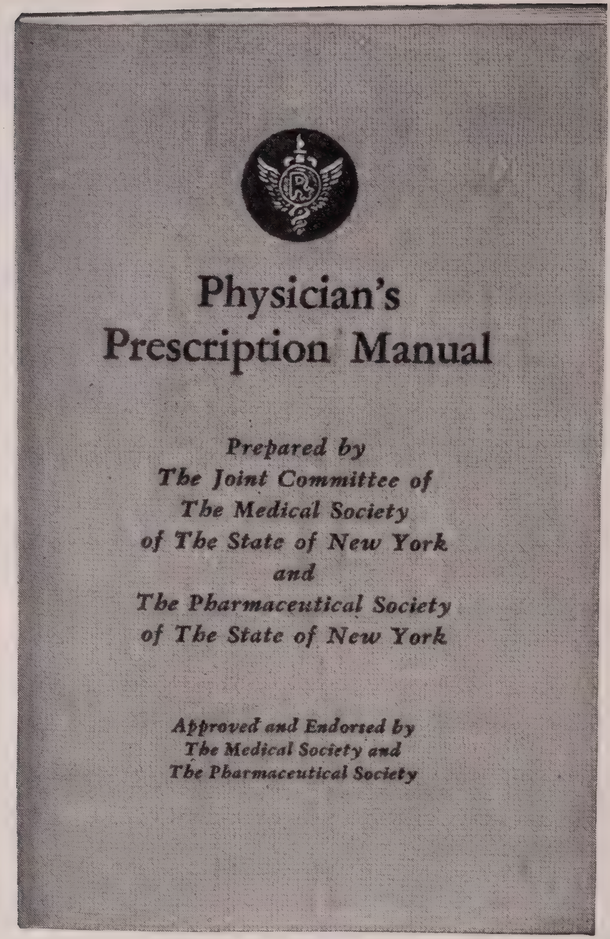
between Medicine
and Pharmacy**



Physician's
Prescription Manual

*Prepared by
The Joint Committee of
The Medical Society
of The State of New York
and
The Pharmaceutical Society
of The State of New York*

*Approved and Endorsed by
The Medical Society and
The Pharmaceutical Society*

The Manual is a handy pocket-sized compendium (actual size—4 in. x 6½ in.) of popular drugs and *NYPM formulas designed to simplify your prescription-writing problems. If you have mislaid your copy, send for another.

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***New York Physician's Prescription Manual**

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DESITIN®
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and so is still irritated by

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MILTOWN® + CONJUGATED ESTROGENS (equine)

1 *Fast relief* of irritability, anxiety, tension, insomnia. Miltown acts in 30 minutes.

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Each tablet contains 400 mg. Miltown and 0.4 mg. conjugated estrogens (equine); bottles of 60.

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Each tablet contains 200 mg. Miltown and 0.4 mg. conjugated estrogens (equine); bottles of 60.

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Literature and samples on request

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CMP 85

relieves the discomfort of colds

'TABLOID'

'EMPIRIN' COMPOUND®

with CODEINE PHOSPHATE

shortens the "miserable" period by:

- Reducing fever
- Controlling cough
- Relieving headache
- Relieving muscular aches and pains

prompt symptomatic relief of colds with ***minimum addiction liability***

Available in four strengths

gr. 1/8	gr. 1/4	gr. 1/2	gr. 1
No. 1	**No. 2**	**No. 3**	**No. 4**

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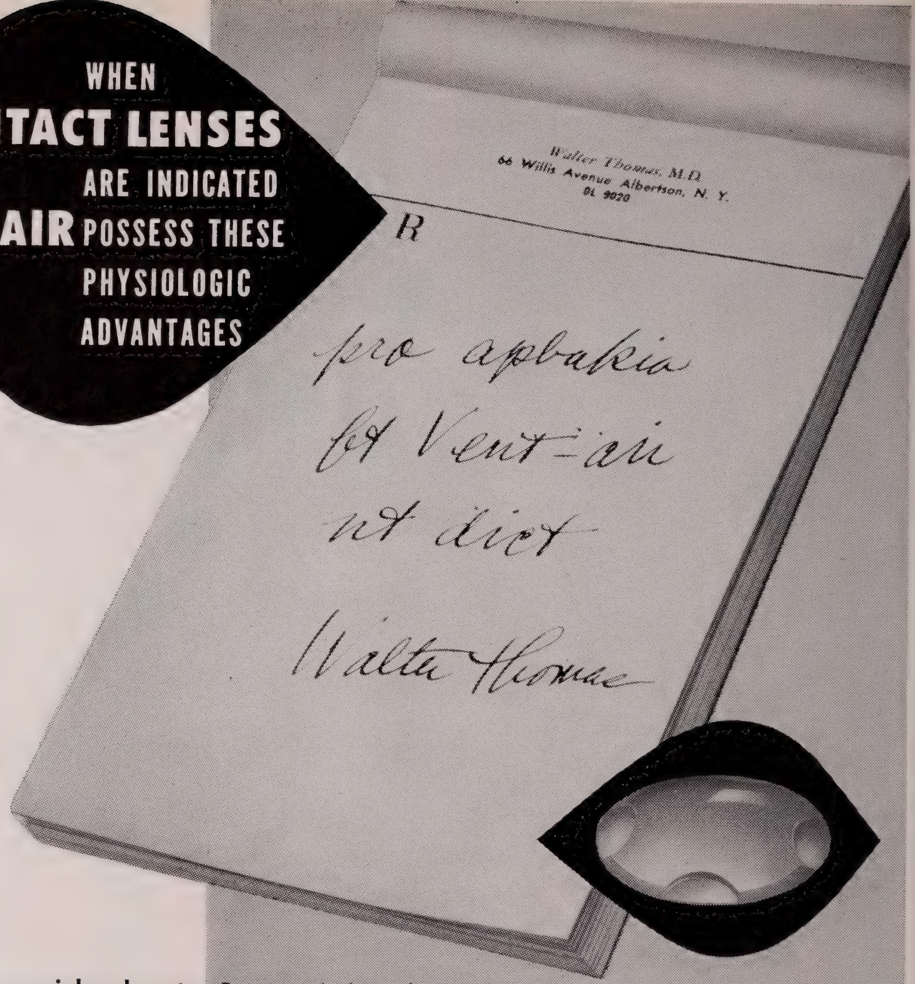

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Four peripheral vents	Permit topical circulation of lachrymal and glandular secretions without excessive motility
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Even with a cold

New long acting[1,2,3]

Rynatan®

Keeps heads crystal clear

10-12 hours with a single **oral** dose with remarkable lack of side effects[1,2]

Entirely new long acting oral nasal decongestant
chemically and physically different—utilizing the DURABOND* principle[2,3]

Longest relief of any medication
comfort all day or all night with a single oral dose[1]

Remarkable lack of side effects
"...of 311 patients, incidence of side effects was only 2.2 per cent. Evidence of sedation was (only) 1.2 per cent."[4]

Stops excessive post-nasal drip
and resulting night cough, irritation, secondary infection

1. Lawler, E. G. and Limperis, N.M.: Clin. Med. (Dec.) 1958. 2. Medical Science, 3:376-377 (Mar. 25) 1958. 3. Cavallito, C. J. and Jewell, R.: J. Am. Pharm. A. (Scient. Ed.) 47:165-168, 1958. 4. Antibiotic Med. & Clin. Therapy 5:578-581 (Sept.) 1958.

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A new principle in medicine that controls absorption rather than dissolution or release, independently of gastrointestinal motility or specific pH. Maintains constant rather than sporadic blood levels, hence no over-release or under-release. This gives smooth therapeutic results, rare incidence of side effects. Works even in liquid form for children (Rynatan Suspension).

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Prophenpyridamine tannate	37.5 mg.	12.5 mg.
Pyrilamine tannate	37.5 mg.	12.5 mg.

Dose: q. 12 h.: Tabules 1-2. Suspension: Children under 6 yrs. ⅓-1 tsp.; over six 2-3 tsp.

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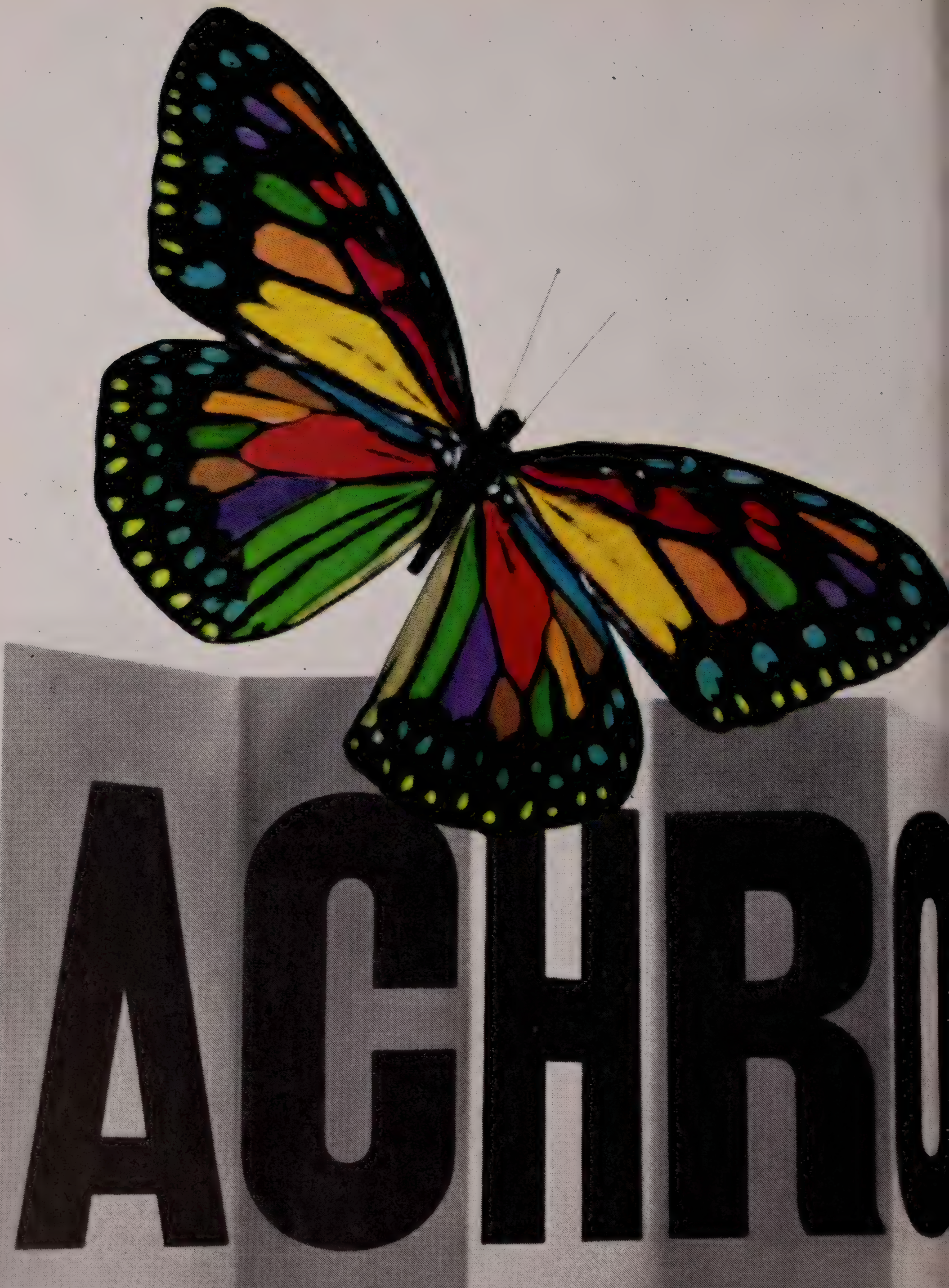

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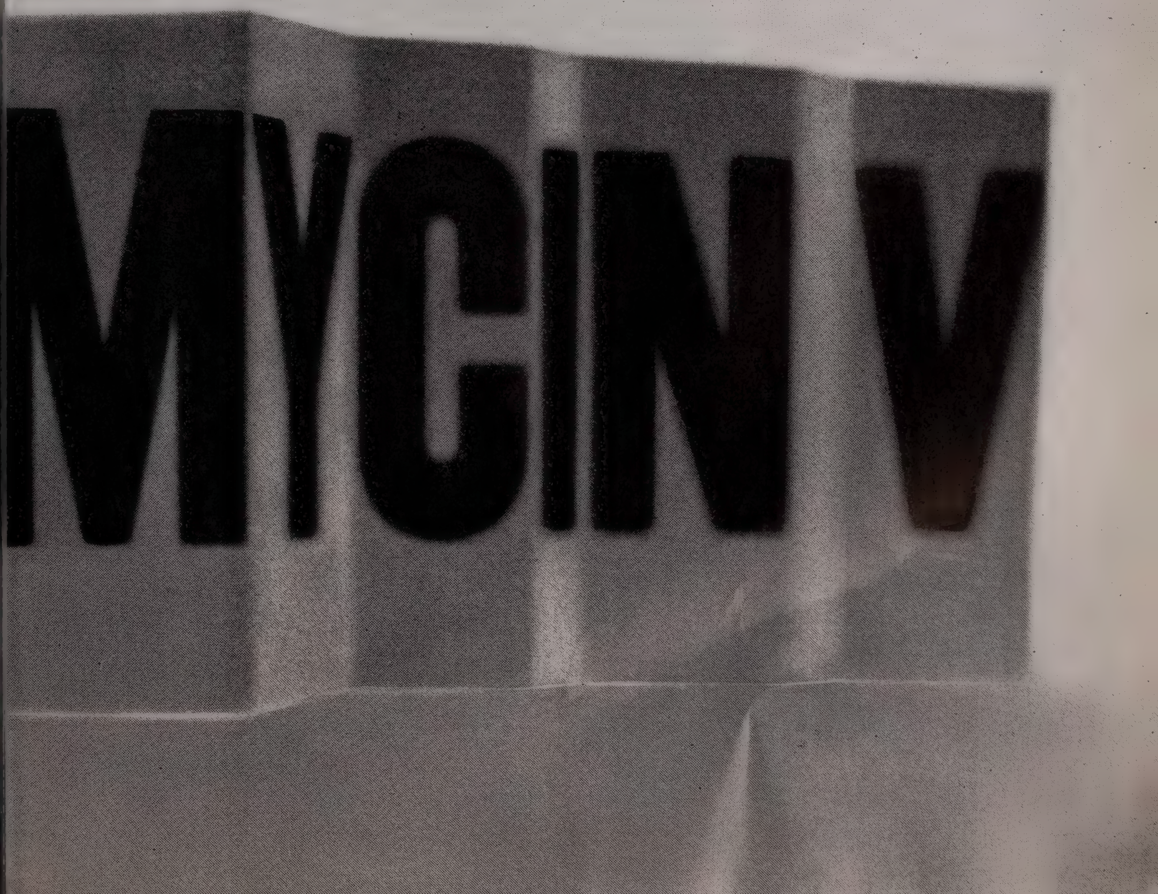

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wine...

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Whether wine be considered as digestive aid, food, gentle sedative or tonic medicine, it is indisputedly a boon to the aged, the debilitated and the convalescent.

Appetite Stimulant... Used as an aperitif, wine, through its content of alcohol, its esters, aroma and flavor, excites the olfactory sense and the gustatory papillae—in a word, is a stimulus to appetite.

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Gentle Sedative... Described as the safest of all sedatives, wine can often dispel the anxieties, fears, emotional pressures and insomnia of old age and prolonged illness.

℞

These and other therapeutic uses of wine are discussed in "Uses of Wine in Medical Practice." For your free copy write—Wine Advisory Board, 717 Market Street, San Francisco 3, California.

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ANNOUNCING

the first "wide range" antihypertensive

MILD MODERATE SEVERE

DIUPRES*

DIURIL® WITH RESERPINE

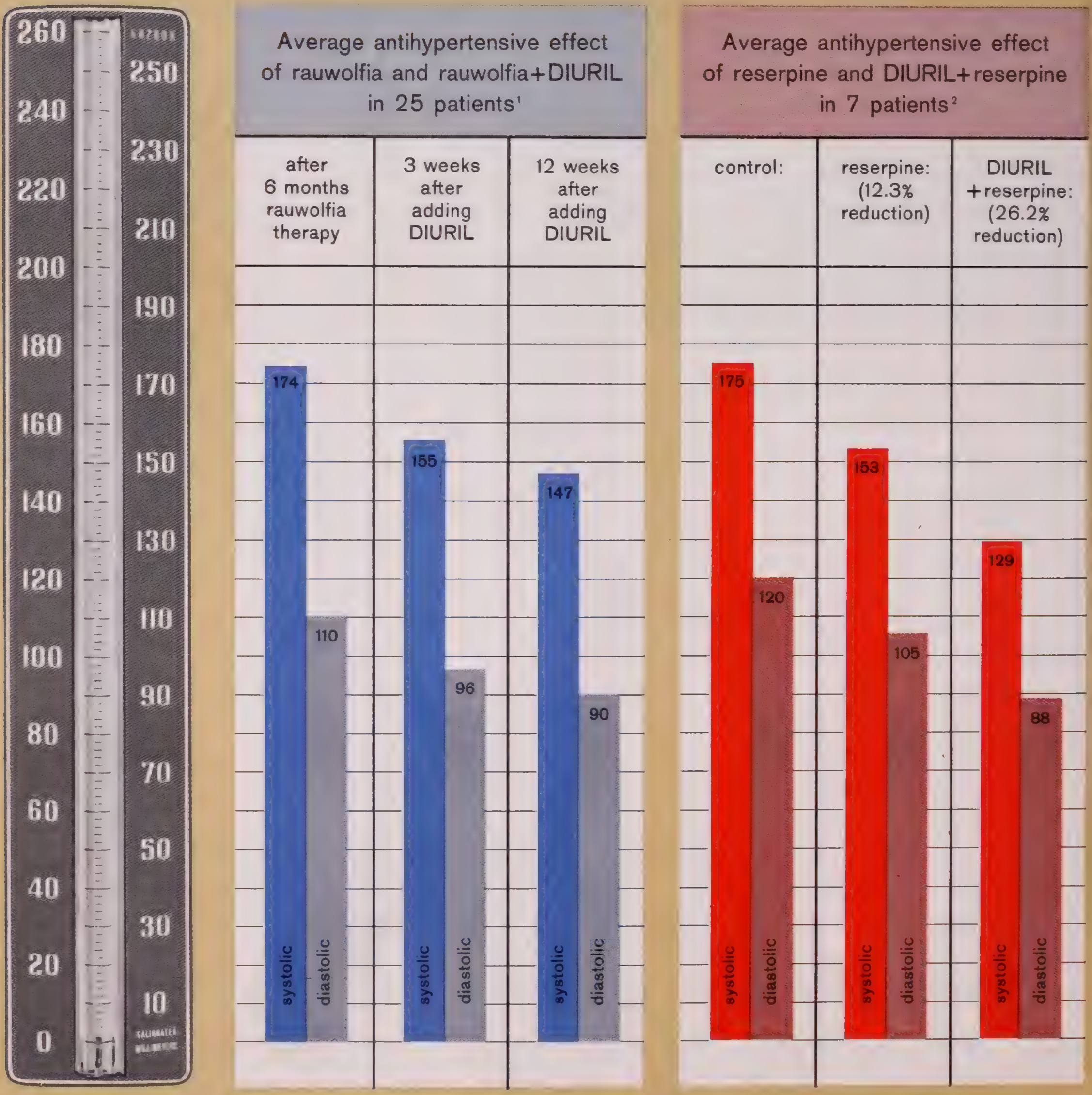
more hypertensives can be better controlled with **DIUPRES** than with any other agent . . . with greater simplicity and convenience

a logical alliance of two antihypertensives
you know and trust provides

increased effectiveness, decreased side effects

potentiated effect

DIUPRES produces an effect greater than either DIURIL or reserpine alone. It is effective in many patients who respond inadequately or not at all to either DIURIL or reserpine.



DIUPRES

DIURIL® WITH RESERPINE

effective therapy for most patients

DIUPRES by itself usually provides effective therapy for a majority of patients with mild or moderate hypertension, and even for many patients with severe hypertension. Many patients now treated with other agents which frequently cause distressing side effects can be adequately managed with well tolerated DIUPRES.

provides basic therapy

Should other drugs need to be added to DIUPRES, they can be given in much lower than usual dosage so that their side effects are often strikingly reduced.

rapid onset of effect

The antihypertensive action of DIUPRES is rapidly evident. (Considerable time may elapse before the antihypertensive effect of reserpine alone is observed.)

fewer and less severe side effects

DIUPRES may be expected to cause fewer and less severe side effects than are encountered with other antihypertensive therapy. (Since DIURIL and reserpine potentiate each other, the required dosage of each is usually less when given together as DIUPRES than when given alone. Such reduction in dosage makes side effects less likely to occur.)

often obviates weight gain

DIUPRES minimizes the problem of weight gain seen with reserpine (reserpine alone has been reported to produce weight gain in 50 per cent of patients).[1,4]

virtually eliminates fluid retention

DIUPRES is not likely to cause either clinical or subclinical retention of sodium and water. (Hypotensive drugs, particularly rauwolfia[5] and hydralazine,[6] may cause fluid retention. Even when such retention is subclinical, their antihypertensive effectiveness is diminished.[6])

diet more palatable

With DIUPRES, there is less need for rigid restriction of dietary salt, which patients find so burdensome.

> "*It may well be that the drug* [DIURIL] *produces the benefits of a markedly restricted low sodium diet but without its hardships.*"[3]

subjective and objective improvement

DIUPRES allays anxiety and tension, thus reducing the emotional component of hypertension. Organic changes of hypertension may be arrested and reversed. Headache, dizziness, palpitations and tachycardia are usually promptly relieved by DIUPRES. When the *anginal syndrome* accompanies hypertension, the administration of DIUPRES may also cause diminution or even disappearance of this syndrome concurrent with control of the hypertension.

convenient, controlled dosage

Instead of two separate prescriptions, you write one prescription . . . the patient takes one tablet, rather than two different tablets . . . and the dosage schedule is easier for the patient to remember and follow.

> "*patients have fewer lapses and make fewer mistakes in dosage, the simpler the regimen can be made. Therefore I do not hesitate to use more than one medicament combined in one tablet, provided this gives approximately the correct dosage of each.*"[6]

economical

DIUPRES will cost the patient less than if he were given two separate prescriptions for its components.

Indications:

DIUPRES is indicated in hypertension of all degrees of severity. It can be used in the following ways:

- as total therapy
- as primary therapy, adding other drugs if necessary
- as replacement or adjunctive therapy in patients now treated with other agents

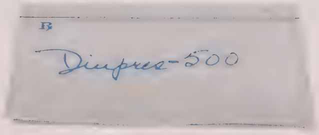
Precautions:

The precautions normally observed with DIURIL or reserpine apply to DIUPRES. Additional information on DIUPRES is available to physicians on request.

Recommended dosage range:

DIUPRES-500 – one tablet one to three times a day.
DIUPRES-250 – one tablet one to four times a day.

If necessary, other agents may be added. If the patient is receiving ganglion blocking agents or hydralazine, their dosage should be cut by 50 per cent when DIUPRES is added.



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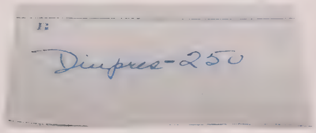

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1. Rochelle, J. B., III, Bullock, A. C., and Ford, R. V.: Potentiation of antihypertensive therapy by use of chlorothiazide, *J.A.M.A.* 168:410, Sept. 27, 1958. 2. Freis, E. D., Wanko, A., Wilson, I. M., and Parrish, A. E.: Treatment of essential hypertension with chlorothiazide (Diuril), *J.A.M.A.* 166:137, Jan. 11, 1958. 3. Freis, E. D.: Treatment of hypertension. (Presented at the Annual Meeting of Southern Medical Association, Nov. 13, 1957.) 4. Moyer, J. H., Dennis, E., and Ford, R.: Drug therapy (Rauwolfia) of hypertension, *A.M.A. Arch. Int. Med.* 96:530, Oct. 1955. 5. Perera, G. A.: Edema and congestive failure related to administration of rauwolfia serpentina, *J.A.M.A.* 159:439, Oct. 1, 1955. 6. Wilkins, R. W.: Precautions in use of antihypertensive drugs, including chlorothiazide, *J.A.M.A.* 167:801, June 14, 1958.

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References: 1. M. Fishbein, *Postgrad. Med.*, *12*:380, 1952. **2.** D. Savage, *Lancet*, *1*:420, 1956. **3.** B. T. Fein, *J. Allergy*, *29*:209, 1958. **4.** A. Kerr, Jr. and V. J. Derbes, *Ann. Int. Med.*, *39*:1240, 1953. **5.** J. Rosenberg and A. G. Davidson, *New York J. Med.*, *54*:2488, 1954. **6.** W. S. McCann, R. A. Bruce, F. W. Lovejoy, Jr., P. N. G. Yu, R. Pearson, E. B. Emerson, G. Engel and J. J. Kelly, *Arch. Int. Med.*, *84*:845, 1949. **7.** N. Ralph, *Am. J. M. Sc.* *227*:297, 1954. **8.** New and Nonofficial Drugs 1958, Philadelphia, J. B. Lippincott Co., 1958, p. 309. **9.** H. A. Bickerman, E. German, B. M. Cohen and S. E. Itkin, *Am. J. M. Sc.* *234*:191, 1957.

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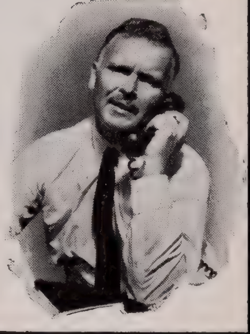

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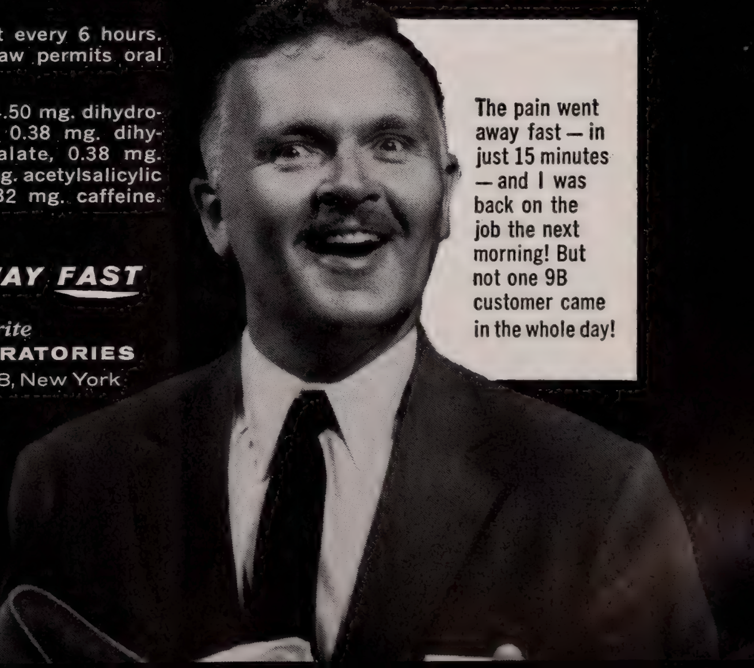

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References: **1.** Spies, T. D., et al.: J.A.M.A. 159:645, 1955. **2.** Spies, T. D., et al.: Postgrad. Med. 17:1, 1955. **3.** Gelli, G., and Della Santa, L.: Minerva Pediat. 7:1456, 1955. **4.** Guerra, F.: Fed. Proc. 12:326, 1953. **5.** Busse, E. A.: Clin. Med. 2:1105, 1955. **6.** Sticker, R. B.: Panel Discussion, Ohio State M. J. 52:1037, 1956.

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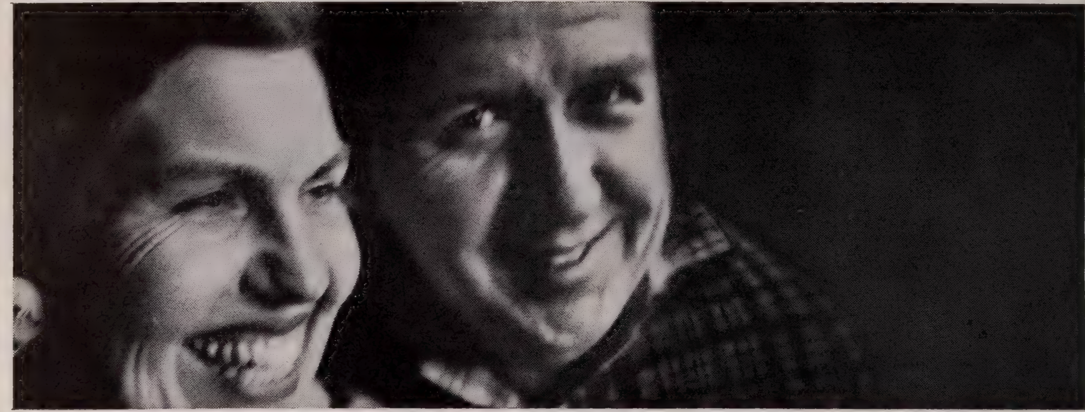

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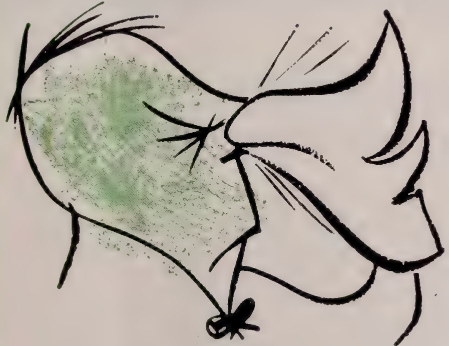

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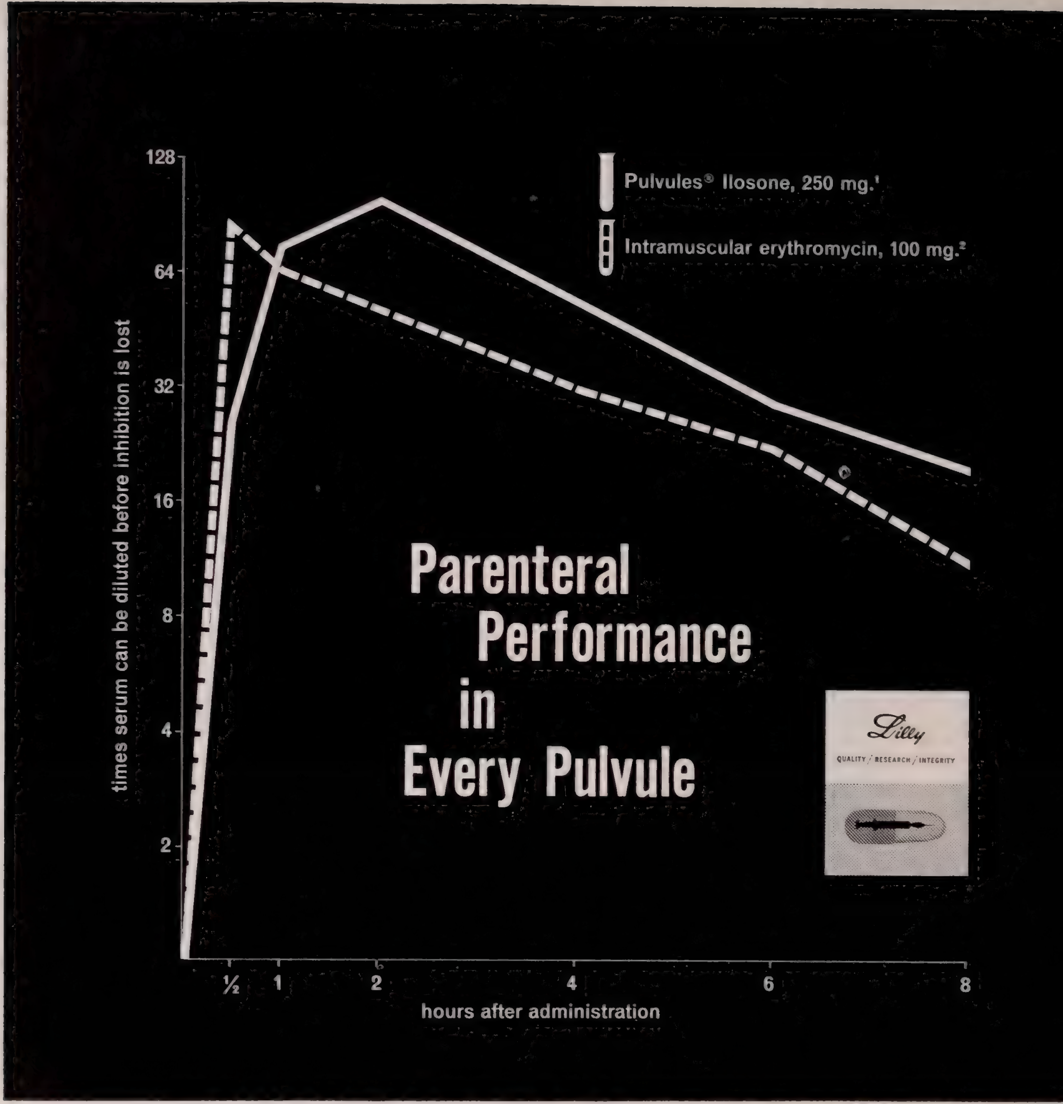

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1. Antibiotic Med. & Clin. Therapy, 5:609, 1958.
2. Data from Antibiotics Annual, p. 269, 1954-1955.

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EDITORIALS

Health Maintenance Examinations

For many years, organized medicine has sought to encourage periodic health maintenance examinations. Yet even today far too few people have been persuaded of the value of such examinations, and far too few physicians make such examinations an important part of their practice.

To point up the value of periodic health maintenance examinations and to emphasize the physician's role as a health counselor, the JOURNAL presents in this issue a symposium on this important subject. This symposium is one portion of a broader program sponsored jointly by the Medical Society's Subcommittee on Aging and the Bureau of Chronic Diseases and Geriatrics of the State Department of Health.

We heartily endorse greater physician interest in health maintenance and congratulate those responsible for developing an action program within the Society.—F. W. R.

The Present Status of BCG Vaccination

Although vaccination with BCG has been used in man since the early 1920's, considerable controversy still exists regarding the role of this procedure in a tuberculosis control program. Discussion has centered around the efficacy of the vaccine and its relation to other aspects of the control of this communicable disease. On the one hand there is a group who asserts that there is no proof that the vaccine is efficacious, that it may be dangerous, and that the widespread use of BCG may actually do harm by destroying the validity of the tuberculin test as a diagnostic and screening procedure. On the other hand there are some who believe that mass BCG vaccination is both safe and practicable and could be a major factor in the eventual eradication of tuberculosis. As in many such controversies, it is likely that the truth lies somewhere between these two extremes. The necessity for clarification of this subject is heightened by several recent statements in the public press which have added to the confusion.

It is generally accepted that the immunity conferred by BCG vaccination is by no means complete, and the duration of relative protection is not known and is not permanent. Moreover, the relationship between the degree of sensitivity to tuberculin produced by vaccination and the degree of immunity conferred is not known, although a positive tuberculin test is usually considered as evidence of a "take."

Of the many recent studies regarding efficacy, only two or three need to be quoted. One is that conducted by the British Medical Research Council.[1] In a carefully controlled experiment, 27,000 tuberculin-negative children were divided at random into two groups—one received BCG vaccine intradermally and the other was not vaccinated and served as a control. After almost three years, the tuberculosis morbidity in the control group was five times as great as in the vaccinated group. Moreover, six cases of miliary and meningeal tuberculosis developed in the control group compared to no such cases in the vaccinated group.

Another carefully conducted study is that of Aronson and his coworkers among American Indians.[2,3] Tuberculin-negative school and preschool Indian children were divided by alternation into two groups. One group of 1,551 received intradermal BCG, and the other group of 1,457 received intradermal saline and served as controls.

Twenty years later over 99 per cent of both groups were followed up, and it was found that the ratio of deaths from tuberculosis of vaccinated to controls was 1:5.2, whereas the ratio of deaths from other causes was approximately 1:1.

Palmer, Shaw, and Comstock[4] have recently reported the results of similarly conducted trials in Puerto Rico and in Muscogee County, Georgia. In Puerto Rico the tuberculosis case rate was 43 per 100,000 per year among controls, and 30 among vaccinees. The difference was considered to be statistically significant. In the Muscogee County trial, the corresponding rates were 22 among the controls and 14 among the vaccinees, but this difference was not considered to be statistically significant. The authors estimate that if all the nonreactors to tuberculin had been vaccinated (instead of only half) the total number of cases would have been reduced by only 8 or 9 per cent.

A striking finding in both the British studies and those of Palmer and others is that the risk of developing tuberculosis was much greater for those who were tuberculin reactors than for those who were nonreactors. In other words, the cases developing later in life are largely from the pool of those whose tuberculin reactions were positive, and far fewer cases develop among those whose reactions initially were negative. It has been estimated that the tuberculin conversion rate, i.e., the rate at which new infections appear in this country, is probably less than 1 per thousand per year. Since BCG cannot help those who are already infected, *nor* those who will never become infected, it seems obvious that vaccination on a mass basis would not be particularly helpful in the control of tuberculosis in a country where the annual infection rate is low, as in the United States.

Moreover, the widespread use of BCG vaccination would make it impossible to use the tuberculin test as an index of infection in population groups or for the diagnosis of clinical infection or disease in the individual. While these remarks apply to the United States and other similar West European countries, the picture is quite different in East Asia. Wallgren[5] visited India where WHO and UNICEF have conducted large scale vaccination programs. He feels that in India all newborns should be vaccinated, but that vaccination alone will not solve India's tuberculosis problem; every available method should be used on all fronts.

The vaccine appears to be as safe, or perhaps safer, than other similar biologic products. However, some lots of the vaccine have produced local complications, such as local lymph node abscesses, and there have been several documented cases of disseminated disease due to BCG. In view of the millions of vaccinations that have been done, the risk of serious reactions is extremely small and may, for practical purposes, be disregarded.

The Advisory Committee on BCG to the Surgeon General of the U.S. Public Health Service issued a statement[6] that probably best summarizes the status of BCG in this country today. Certain of the committee's conclusions might well be quoted in full as they represent the thoughts of those best qualified to express opinions:

> The Committee is convinced that large-scale BCG vaccination programs, including routine vaccination of the newborn, are not indicated in this country. It is believed, however, that the advantages of vaccination outweigh the disadvantages for tuberculin-negative persons who are exposed to a definite risk of infection, especially if they cannot be retested frequently with tuberculin. Under certain local circumstances, the following individuals and groups are examples of suitable subjects for BCG vaccination:
>
> 1. Physicians, nurses, medical and nursing students, laboratory workers, and hospital employes. (It was noted, however, that if a hospital has established an adequate tuberculosis control program, very little exposure to tuberculosis will occur in that institution.)
> 2. Persons unavoidably exposed to continued contact with infectious cases of tuberculosis in the home.

3. Patients, inmates, and employes of institutions such as mental hospitals and prisons, in which case-finding programs indicate that exposure to tuberculosis is likely to be high.

—Henry H. Schultz, M.D., Director, Bureau of Tuberculosis Case Finding, Division of Tuberculosis Control, State Department of Health.

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5. Wallgren, A. J.: *ibid.* **76**: 715 (1957).
6. Report of Ad Hoc Advisory Committee on BCG to the Surgeon General of the United States Public Health Service: *ibid.* **76**: 726 (1957).

Of This and That

Recent studies by economists and many articles in numerous publications, have pointed to the insidious effects of the still slow but increasing inflation that has been operating here in spite of efforts by those who are concerned to hold it in check. Apparently, not enough people recognize the seriousness of the threat to our national economy. Unless they do, such inflation may well get out of hand. It might be well for physicians to do a little postgraduate study of the "gloomy science" of economics and brush up also on the effect of runaway inflation since World War I.

Polls taken by *Medical Economics*[1] in 1956 and 1958 to ascertain how physicians feel about Social Security for self-employed physicians indicate that in 1958 "slightly more than 56 per cent" of the polled doctors say they are for it. In 1956, "nearly 60 per cent of the respondents did *not* favor compulsory coverage for the profession." The difference in attitude in 1958 seems significant. To date the American Medical Association is opposed to it, but the Medical Society of the State of New York some years ago switched from long-standing opposition to acceptance, as did the American Bar Association.

There seems to be a possibility that the Jenkins-Keogh plan for tax deferment for the self-employed may be enacted by the Congress in 1959. This bill has been favored by the A.M.A., many state societies, and individuals as an alternative to Social Security. If you as a physician want this bill passed, get out and work for it—now. Tell your representatives in both House and Senate what you want. How are they to know if you don't tell them?

What seems to be a sensible suggestion appeared in the *A.M.A. News.*[2] In part, the report said: Willard F. Libby, Ph.D., has urged that new transistor radios contain a cheap radiation meter which will be able to measure fallout after a nuclear attack.

In a speech prepared for delivery at the fifth annual symposium sponsored by the A.M.A. Council on Foods and Nutrition, the commissioner of the Atomic Energy Commission said cancer-causing strontium-90 presents the "most serious world-wide hazard from fallout."

However, he stated that the most acute fallout danger is "local fallout" and that it is possible to have ample warning against this.

"It therefore is necessary," he said, "that sufficient radiation meters be available to warn against this."

Dr. Libby foresaw that transistor radios would be the "best equipment" in a good nationwide warning system. Dr. Libby said during the immediate postattack phase of a nuclear war, the "heavy medical load" would consist of people suffering from radiation burns.

---

[1] Medical Economics: **35**: 90 (Oct.) 1958.

[2] A.M.A. News: **1**: 3 (Oct. 20) 1958.

Following the first weeks of the attack, he said, concentration of strontium-90 in the soil would constitute a major health problem and "it is not too early to start thinking about it."

He asserted that "by careful planning" farmland contaminated by strontium-90 could be utilized.

Blue Shield and the American Pattern of Medical Practice

Medicine's never-ending battle to preserve its professional freedom and scientific integrity is now being waged in a new arena. Ten years ago the issue was clearly whether or not medical men could develop a viable prepayment program by their own voluntary efforts, aided by labor, management, and the people through local community enterprise. The alternative was the threat of Federal compulsory health insurance, governmentally operated and controlled.

The result of our profession's initiative—and of the people's tremendous response—is the vast Blue Shield-Blue Cross complex, supplemented by a tremendous expansion of the insurance industry's effort in this field.

Both the medically-sponsored nonprofit plans and the commercial insurance programs are based upon the prevailing American pattern of free choice of physician, fee-for-service, and the private relationship of patient and doctor.

Organized labor, meanwhile, has relaxed its agitation for government intervention but is showing a new interest in providing direct-service medical care for its members, in competition with the traditional pattern. Thus today in several major industries we find labor engaged in or thinking about programs for medical service in which free choice would be supplanted by a closed panel of physicians, fee-for-service would be replaced by salaries or capitation payments, and the direct personal responsibility of the physician would be subordinated to collective controls that ignore the profession's accepted channels of professional supervision.

This contest also involves the question of professional or lay control of the methods and amounts of payment for medical care and the question of professional or lay appraisals of the quality of care. The issue in this struggle is nothing less than medicine's control over its own destiny and the ultimate ability of medicine to provide effective and professionally acceptable service to its patients.

In the outcome of this struggle, Blue Shield offers the American doctor his best and only hope of safeguarding the conditions of good professional service. Only through Blue Shield can the American doctor control the economy of medicine and determine the conditions of practice.

But we doctors cannot look to Blue Shield to save us. Blue Shield is only an instrument.

We can *use* it to safeguard and to serve the common welfare of our patients and our profession, if we will.

Physicians and Ancient Cars

The Illinois State Medical Society is preparing an exhibit centered around an *Illinois Medical Journal* article which told of the role of physicians in the development of the automobile in the United States at the turn of the century.*

---

* See Selected Reprint, NEW YORK STATE J. MED. **58**: 1352 (Apr. 15) 1958.

To help illustrate this exhibit, the Society will appreciate the loan of old photographs showing physicians at the wheels of cars of 1900 to 1910 vintage. Scenes showing difficulties on the road or poor highway conditions are especially desired. Enlargements will be made of these photographs and the originals returned undamaged.

Photographs should be accompanied by a memorandum giving the name and town of the physician, whether living or deceased, and the make and year of the automobile. They should be sent to Mr. John A. Mirt, Illinois State Medical Society, 185 North Wabash Avenue, Chicago 1, Illinois.

It is certainly true that physicians were among the first to appreciate the potentialities of the "horseless carriage." Even the mechanical difficulties encountered in the early models did not deter them from adopting the automobile in large numbers.

In the 1900's photography developed rapidly following the introduction by George Eastman in 1889 of the first transparent flexible film support in the form of ribbons of cellulose nitrate; many still remember the slogan, "You push the button, we do the rest." Amateur photography on roll or cut film together with the box and folding camera was on its way.

We feel sure that among the albums and loose prints and negatives of the period 1900 to 1910 there should be many snapshots of doctors at the wheel of their cars taken by admiring members of their families and long since relegated to the attic.

Should any of our readers have such old prints or negatives we urge them to cooperate in sending them to Mr. John A. Mirt as requested above.

Editorial Comment

Medical Education and Training, U.S.S.R. *Health News*,[1] reporting the symposium on International Health at Rochester, June 9 through 12, 1958, prints the paper of Victor Thdanov, M.D., Vice-Minister of Health, U.S.S.R., who says in part:

> Medical training, which has always figured prominently in health protection in our country, became an acute problem at the beginning of the thirties. At that time the development of our national economy called for a considerable improvement in medical services and training of medical personnel both through higher and secondary education. The reform brought about in 1930 shaped medical education in its present form. Medical faculties attached to universities were reorganized.
>
> They became medical institutes (first level medical schools) and were supervised by the Organs of Health Protection. At present we have 76 medical institutes located in different regions of the country. There were also set up in the curriculum, five subdivisions: medicoprophylactic (training of general practitioners), pediatric, sanitary, stomatology, and pharmaceutics. In the secondary medical schools (there are 644 now) are trained feldshers (assistant doctors), midwives, and nurses. The number of medical personnel is determined by the Ministry of Health of the USSR. There are 11 institutes for postgraduate studies to improve the knowledge and specializations of doctors.
>
> The fact that medical education was transferred to the Organs of Health Protection favorably affected the training of medical personnel. In 1913 the country had 23,100 physicians; in 1932 their number increased to 76,000; in 1940 to 140,700. The current figure is 340,000. The annual increase is 15,000 to 16,000, and the number of physicians per 10,000 population now is 17, i.e., one per 625 persons. All in all, 2.7 million people are engaged in health protection in our country. The problem of medical personnel can be considered as solved in the U.S.S.R.

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[1] Health News: 35: 10 (Sept.) 1958.

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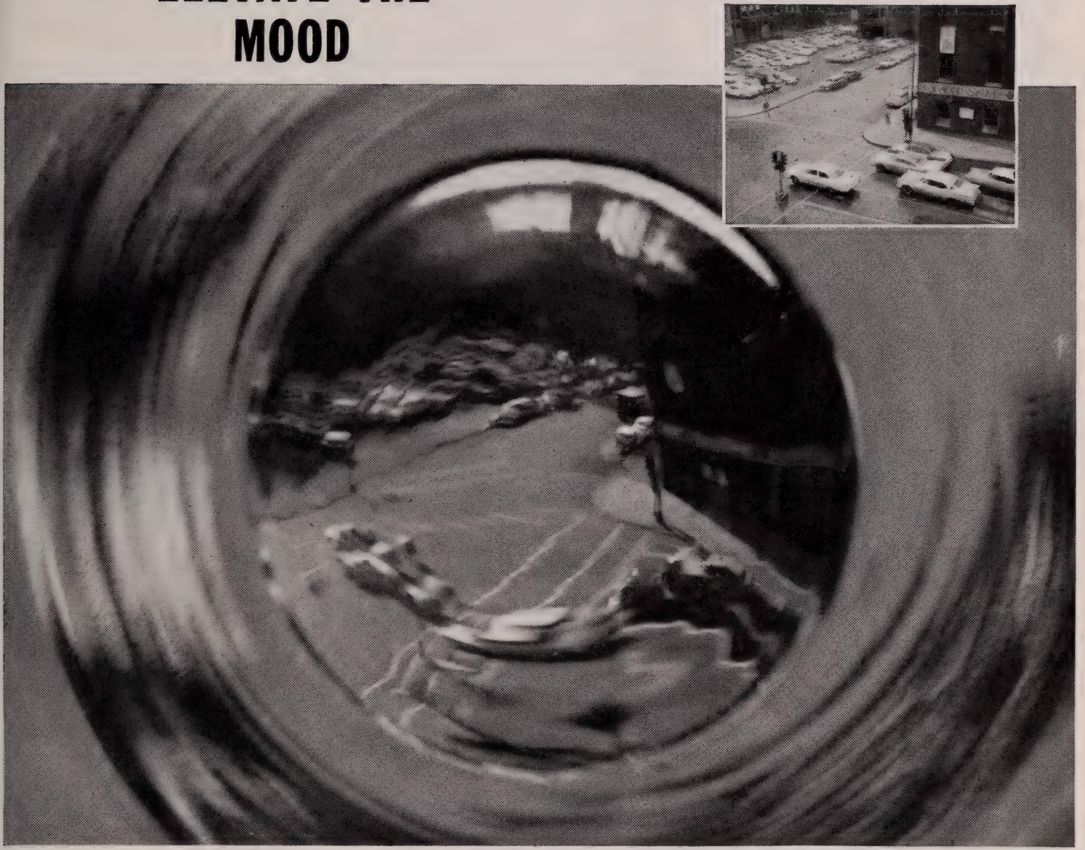

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*Pratt, R. T. C., and McKenzie, W.: Anxiety States Following Vestibular Disorders, Lancet *2*:347 (Aug. 16) 1958.

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(1) Rubin, A., and Babbott, D.: J.A.M.A. *168*:498, (Oct. 4) 1958. (2) Kinsey, A. C.; Pomeroy, W. B., and Martin, C. E.: Sexual Behavior in the Human Male, Philadelphia, W. B. Saunders Company, 1948.

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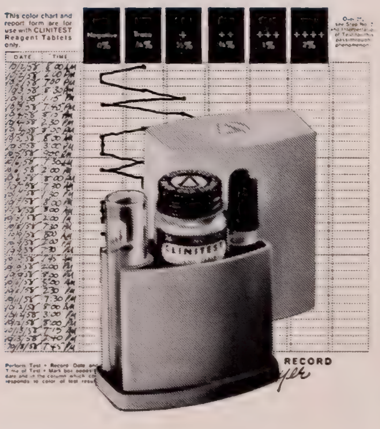

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HEALTH MAINTENANCE AND DISEASE PREVENTION IN OLD AGE

Subcommittee on Aging

Council Committee on Public Health and Education

Medical Society of the State of New York

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FRANK W. REYNOLDS, M.D., ALBANY, *Adviser*

Introduction

JOSEPH J. WITT, M.D., UTICA, NEW YORK

THE national community has awakened to the fact that the aging of our American population has brought with it a need for consideration of conditions and problems that were not of general importance a few decades ago. Many of us remember when the occasional grandparent was accepted as a member of his son's family and cared for as such in his declining years. In more recent years newly-married couples have started their homes in small apartments and later moved to small houses with enough room for themselves and their children, but usually no room for an aged parent. The number of aged parents has increased and their tendency to live well beyond the working years has produced a need for special housing, recreation, and other socioeconomic aid. Various official and voluntary agencies, such as legislative bodies, welfare agencies, and community planning groups have already done much to meet the socioeconomic and emotional or spiritual needs of these people. Much more effort is needed in this direction.

At the same time, the physician has seen an increasing amount of his time devoted to the sixty-five-year and older group. While the aged, like the young, are basically healthy, the aged have more illness and more prolonged illness than do the younger age groups in our society. This has required an expansion of health services, including nursing home and chronic disease hospital service. Meeting the cost of this expanded service has become a problem.

The physician has observed an increasingly significant relationship between the health of his aging patients and their socioeconomic status. This has resulted in the need for the physician to concern himself with the total problem of the older patient. No longer can he limit his efforts to the diagnosis and treatment of disease in these people. He must take whatever steps are feasible to prevent disease, to detect it early, and to postpone or minimize disability that results from disease.

In this connection, there is great need for practicing physicians to encourage their patients to have periodic health-maintenance examinations. There is also a need to improve the quality of these examinations and to stress the physician's role as a counselor.

The Subcommittee on Aging of the Council Committee on Public Health and Education of the Medical Society of the State of New York, in collaboration with the Bureau of Chronic Diseases and Geriatrics of the New York State Department of Health, is presently concerned with the subject of health-maintenance examinations and health counseling. County medical societies have been encouraged to develop programs on this subject; a booklet "Day After Tomorrow" for lay use has been prepared and is available from the State Department of Health; and preretirement health counseling programs are being encouraged in industry, among civil service employes, and within other groups.

To emphasize further the importance of health-maintenance examinations and health counseling, the present issue of the JOURNAL contains the following series of papers on this subject. The members of the Subcommittee on Aging hope this symposium will be of interest to all physicians throughout the State.

Periodic Health-Maintenance Examinations

I. Business Executives

JOHN W. RUNYAN, JR., M.D., ALBANY, NEW YORK

(*From the Department of Medicine, Albany Medical College and the Albany Hospital*)

IN AN effort to conserve the health of valuable management personnel, many corporations throughout the country have provided periodic health examinations for their executives at various medical centers.[1–3] Although details have varied, in general these health examinations have been thorough and have included laboratory procedures and consultations with specialists in appropriate fields. Three years ago a large local business concern approached the Albany Medical Center to see whether or not health examinations could be provided for its management personnel. In the preceding several months five of their key executives had died. Since the necessary personnel and facilities to carry out detailed examinations were available at the Albany Medical Center, it was felt that such examinations could be provided as a community service.

For various reasons the system that was adopted for conducting these examinations was on an outpatient basis. Before the day of the examination, the participant receives a medical history check list that he is requested to fill out at his leisure. This check list is reviewed in detail by a qualified internist and forms the basis for a complete medical history. This is followed by the physical examination and sigmoidoscopy. The preparation for the sigmoidoscopy with one or two Fleet enemas has proved to be satisfactory and an acceptable procedure and is carried out by the examinee before he comes to the clinic. Routine laboratory tests and procedures are performed at the time of the initial visit and include: urinalysis including microscopic examination of the centrifuged sediment, stool examination for occult blood, complete blood count, Wassermann test, nonprotein nitrogen test, blood sugar determination, gastric acidity test, electrocardiogram, anterior-posterior and lateral x-ray films of the chest, and microscopic examination of a cervical smear for cancer in the female examinee.

Based on the internist's judgment other diagnostic tests and procedures are performed. Those procedures that require hospitalization are considered to be in the province of the examinee's personal physician and the examinee is referred back to him. The otolaryngologist examines the ears, nose, and throat of each participant. Services of consultants in other specialized fields are requested on an individual basis. An effort is made to complete the entire examination in a single visit. In the uncomplicated case this can be accomplished and about 50 per cent do not require additional tests, procedures, or consultations. Because of the executives' many business activities the scheduling of additional tests and consultations often cause some undue delays in the completion of the examination. This disadvantage results from having the examination on an outpatient basis.

During the early phases of the health program for executives, the internist reviewed the findings of the examination with the participant in a leisurely fashion and general recommendations were made. No therapy was given, however, and the examinee was referred back to his family or personal physician together with a complete report. Experiences in other clinics suggested that this was a valuable part of the examination for the participant. The clinic's advisory committee* pointed out that in some instances this review could be interpreted as compromising the personal physician's role and, therefore, the procedure was eliminated. At present, after all studies have been completed, the patient is advised to contact his physician for final discussion of the results. The results of the patient's examination are sent to the personal physician who originally referred the patient and include the history, physical examination, all laboratory tests, opinions of consultants, final diagnosis, and recommendations. Under no circumstances does the employer receive a written or oral report or any information found as a result of the examination of the employe.

TABLE I.—INITIAL EXAMINATIONS PERFORMED ON BUSINESS EXECUTIVES AND MANAGEMENT PERSONNEL

Description	Number	Years
Examinees		
Male	192	
Female	15	
TOTAL	207	
Diagnoses		
One or more	191	
Therapy advised	169	
Total	424	
Age mean		50.1
Age range		27 to 73

Examination Program

From July, 1955, to October, 1958, a total of 207 initial examinations were performed on executives and management personnel from nine business concerns and one educational institution. Second and third examinations have been performed on a lesser number. The mean age was 50.1 years and the examinees were predominantly married men. A diagnosis of disease or defects was made in 191 individuals or 95 per cent of those examined with a total of 424 diseases or defects being found (Table I). Some form of treatment was advised for 169 or 39 per cent of the diseases or conditions encountered.

There is a listing in Table II of individual and groups of diseases found with an indication of whether active therapy was recommended to the family or personal physician.

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* A committee of physicians in private practice who review the policies of the clinic conducting the examinations.

TABLE II.—Diagnoses Made in Examining 207 Business Executives and Management Personnel

Conditions	Per Cent	Number of Patients	Therapy Advised
Skin and mucous membrane			
Dermatitis		7	2
Dermatophytosis		13	2
Leukoplakia		14	8
Cysts		4	3
Plantar warts		2	0
Folliculitis		2	2
Hyperkeratosis		2	1
Miscellaneous		17	9
Total	14.4	61	27
Bone and Joint			
Arthritis			
Osteo		9	2
Traumatic		2	1
Marie-Strumpel		1	1
Intervertebral disk, rupture of		3	0
Low back strain		3	0
Bursitis		3	1
Dupuytren's contracture		2	1
Miscellaneous		6	3
Total	6.8	29	9
Eye, ear, nose, and throat			
Rhinitis		11	4
Sinusitis		4	0
Laryngitis		4	3
Vocal cord polyps		3	2
Nasal polyps		2	2
Deafness		6	0
Otitis		3	2
Meniere's disease and vertigo		3	1
Parotid gland enlargement		1	0
Cataracts		3	1
Iritis		1	0
Macular degeneration		1	0
Total	9.9	42	15
Cardiovascular			
Hypertensive cardiovascular disease		8	4
Coronary artery disease		20	6
Rheumatic heart disease		2	2
Rhythm disturbance		4	2
Hypertension		9	4
Total	10.1	43	18
Pulmonary			
Emphysema, fibrosis, and bronchitis		9	7
Asthma		2	1
Bronchiectasis			
Tuberculosis, inactive		3	1
Mediastinal tumor		1	1
Total	3.5	15	10
Gastrointestinal			
Polyps, rectal		25	25
Hemorrhoids		40	1
Diverticulosis		6	1
Peptic ulcer		8	2
Gallbladder disorder		3	1
Psychophysiologic disorder		16	9
Gastritis		1	1
Hiatus hernia		8	2
Pilonidal cyst		2	0
Fistula-in-ano		1	1
Carcinoma of sigmoid		1	1
Carcinoma of sigmoid, question of		1	1
Dumping syndrome		1	1
Total	24.3	113	46
Endocrine-Metabolic			
Obesity		17	10
Diabetes mellitus		6	4
Gout		2	1
Goiter		1	1
Hypothyroidism		1	1
Premenstrual tension		1	1
Total	6.8	28	18
Genitourinary			
Testes, atrophic		5	0
Carcinoma of cervix (treated)		1	1
Testicular mass		1	1
Absent testicle		2	0
Benign prostate hypertrophy		13	1
Renal disease		6	4
Prostatitis		1	1
Ovarian cyst		1	1
Total	7.0	30	9
Neuropsychiatric			
Tension and anxiety states		16	1
Depression		1	1
Personality disorder		2	2
Migraine headaches		1	0
Organic brain syndrome		2	1
Cerebral vascular disease		5	2
Seizure disorder		2	1
Neuropathy and nerve injury		3	1
Total	7.6	32	9
Miscellaneous			
Hernia			
Inguinal		15	0
Femoral		1	0
Allergic state		2	1
Lymphopathy		1	1
Tumor (giant cell)		1	1
Thalassemia minor		1	0
Varicose veins		13	1

TABLE II.—(*Continued*)

Conditions	Per Cent	Number of Patients	Therapy Advised
Paget's disease		1	0
Peripheral arterial insufficiency		6	4
TOTAL	9.7	41	8

The findings in this group of executives does not vary materially from the reports from other centers. Defects in the gastrointestinal tract were most commonly encountered and diseases of the cardiovascular-renal system and carcinoma were the most serious conditions found.

Since maintaining the health of the executive is the major function of these periodic health examinations, a consideration of the degree of compliance with the advice given is important. It is understood that in the management of a given medical situation opinions will vary. In this program, compliance is dependent entirely on the individual and his personal physician. In other programs where treatment is initiated by the examiners, compliance or partial compliance may be as high as 70 to 90 per cent.[1,2]

This program has not been in operation for a sufficiently long period of time for adequate follow-up, but it has been observed that the interest exhibited by the participant's personal physician in the report received from the clinic has varied considerably. This variance in response of the family or personal physician reflects in some measure his attitude toward preventive health check-ups in general. The National Opinion Research Center found that 80 per cent of doctors endorse the principle of a general physical check-up in the asymptomatic individual but seldom did the physician make any point of recommending a check-up.[4] It was learned in their interviews with the public that even though 80 per cent of adults endorse periodic check-ups only 30 per cent claim that they get such check-ups. In this group of executives, who intellectually and economically are above average, only 60 out of 207 or 29 per cent indicated that they had had periodic examinations in the past. It was noted that the degree of thoroughness of these examinations varied considerably.

How extensive a work-up should be carried out in the asymptomatic individual remains a matter of opinion. A reasonable balance has to be maintained between the possibilities of missing early or obscure diseases by a too-limited approach or producing undue discomfort and anxiety through the excessive use of the many diagnostic procedures available in large medical centers. That many diagnostic procedures are not without danger is a well-known fact.[5] The streamlined approach with completion of the entire examination in a single session that is possible in the asymptomatic, uncomplicated individual has distinct advantages for the busy executive. Except for roentgen-ray examination of the gastrointestinal tract, the procedures that are done in a leisurely fashion over a several-day period in the hospitalized examinee can be performed on an outpatient in a single session. However, little opportunity to establish a real doctor-patient relationship is possible in this limited time. It was noted that these examinees as a whole were not reticent in discussing their problems and frustrations and it was apparent that many had not previously had the opportunity for such a discussion. As judged by such experiences, a valuable aspect of the examination for the participant may not be possible in the streamlined session.

Summary

The importance of maintaining the health of the executive is being recognized increasingly as good business practice by corporations and business concerns, both large and small. One approach to this problem is detailed periodic health examinations, utilizing the facilities of the large medical center. In the examination of 207 individuals at the Albany Medical Center significant defects or diseases were found in

95 per cent and in 39 per cent of these treatment was advised. Few of the participants had had periodic examinations previously. These examinations are carried out on an outpatient basis with the examinee being referred back to his personal physician for treatment. The position of the personal physician remains of paramount importance since treatment of the defects and diseases found in the examination is dependent on him.

I wish to express my appreciation to Mrs. William H. Kinch for statistical assistance, to Mrs. Felix M. Paquette for clerical assistance, and to Dr. Joseph T. Doyle for his suggestions in preparing this paper.

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Periodic Health-Maintenance Examinations

II. Physicians

RALPH F. JACOX, M.D., ROCHESTER, NEW YORK

(*From the University of Rochester School of Medicine and Dentistry*)

IN 1954, a group of physicians, within the framework of a county medical society of nearly 200 members, concluded that they needed preventive medical evaluation and care. Many of these men had observed a shift in emphasis in practice from treatment to prevention. A number had had personal experience with executive examinations for industrial groups wherein not only the notion of early detection of disease is stressed but also preventive medical advice is frequently necessary. When these physicians began a self-inventory of their own health needs they discovered that they had, if any, the least well-planned and executed program of any group within their community. They felt, justifiably, that their own professional skills were important for the welfare of their community and that protection of these skills was a matter which demanded a better health-care program. Thus they set about to disprove a proposition that it might be the healers who were most in need of healing.

My experience with this group of men, and more recently with another smaller group from another county medical society, is the subject of this report. I will attempt to analyze some of the impressions and observations which developed during this experiment of dealing with physicians as patients seeking preventive medical evaluation.

One must first inquire why physicians, of all people, should be reluctant to seek a systematic health evaluation. I have discussed this problem with colleagues and with the group of physicians who were examined in the program to be described. It is a fair statement to say that reluctance for such examinations is caused by several factors.

FINANCIAL CONSIDERATIONS.—Financial considerations may constitute the greatest obstacle for a physician, especially if he desires a physical checkup. He dislikes the idea of usurping a colleague's time when he knows that he will not be asked to pay a fee. Often the physician is so busy in his practice that he fails to plan the time or take the trouble to schedule an examination. He has not learned to make a professional appointment for himself.

ATTITUDE OF "IT CAN'T HAPPEN TO ME."—A physician is in a unique position, by reason of his education, to deny effectively the possibility of disease within himself when he is asymptomatic. This, without doubt, is an attitude which sustains him in the face of frequent tragedy in his practice. Such an attitude, however, does not promote accessibility of such individuals for preventive medical evaluation. Also, the physician has a deserved security in his ability to evaluate symptoms. In the absence of any personal complaints, he concludes that he must be in good health. He can easily rationalize many minor symptoms that he experiences by recalling the many times he has heard similar complaints expressed by his own patients in whom he was unable to find significant disease.

FEAR.—One should be surprised that the physician fears medical practices for himself. His fears are more complex than the fear of knowing about pathologic changes within his body. His chief concern is that of being considered neurotic. The physician fears that a competing colleague will learn that he has coronary insufficiency. There is an apprehension that his own problems will be dealt with lightly. Several have recounted experiences wherein they have made plans with a colleague to have a physical checkup. The history obtained by the friend and colleague consisted of a few pleasantries after it became known that the patient had no specific complaints. The physical examination was brief, inadequate, and incomplete. Any physician should reasonably be discouraged by such an experience.

Organization of Health Examination

This program of physician examinations was organized in the hope of circumventing many of the factors which make health examinations unattractive to physicians. A measure of objectivity was accomplished by using an examiner who did not reside in the same medical community and who was not well acquainted with his physician-patients. One of my qualifications as an examiner was that most of my physician-patients were unknown to me. A professional fee for my services was paid indirectly by a third party, the county medical society. The examination plan, designed to be objective and complete was as follows.

1. Thorough history. I deliberately assumed that my physician-patients knew no more medicine than do most people. As a result, a complete past history and systems review often brought out significant data either forgotten or misinterpreted by the patient. On numerous occasions the statement was made "There is nothing wrong with me; I just came in for the examination." The time spent in a directed interview, if it did not reveal any pertinent medical data, gave important information about the patient. It set the background for the evaluation of my patient-physicians as individuals, each with different stresses and motivations. This information was invaluable when the summation was made at the conclusion of the examination.

2. Complete physical examination. Many of these physicians (and I doubt they are exceptional) had never had a comprehensive physical examination. Most of them expressed surprise and even anguish during the rectal examination. The neurologic examination occasionally revealed unequal lower tendon reflexes. Only at this point would the patient recall some past episode of sciatic pain indicative of discogenic disease. A careful fundoscopic examination offered the only clue in a known diabetic who considered his self-control program adequate. The retinopathy observed indicated that such was not the case.

3. Electrocardiogram and Master's 2-step test.

4. Tubeless gastric analysis followed by tube analysis if achlorhydria suspected. In established achlorhydria, an upper gastrointestinal roentgen-ray examination should be done once each year.

5. Urine analysis, complete blood count, and stool examination for occult blood.

6. X-ray film of chest.

7. Protein fractionation studies for evalu-

ation of alpha globulin concentration. This determination is a nonspecific evaluation for infection or malignant condition.

8. Fasting blood sugar and urea.

9. Any other procedures indicated on completion of preceding procedures.

Evaluation of Health Examination Experience

Within this setting nearly 200 examinations in the two groups of physicians have been made during the past four years. It is difficult to detail by a statistical analysis the results of such a study. Such an analysis would probably lack scientific meaning and at best would be dull. Permit me, therefore, by examples, to convey several impressions of the worth of such a program.

Case 1.—A busy physician was first examined in 1954. He was tired, overworked, and was obviously burning the candle at both ends. He had no specific symptoms. There was a family history of hypertension. Physical examination disclosed a significant hypertension. There were no retinal or cardiac signs of any vascular changes. The relation of his overwork to his medical problem was discussed with him. He was urged to reduce his stressful professional obligations. Examination the following year revealed a decrease in blood pressure. He looked better, was less fatigued, and was apparently happier. The following year he again presented himself for examination with a tired and drawn appearance. The blood pressure was again elevated. There was no apparent change in his cardiovascular status. He admitted that the irrevocable stress of practice had caught up with him. Again an effort was made to have this physician control his practice and reduce his social obligations. The fourth annual examination showed improvement of both his appearance and recorded blood pressure.

The problems described in this patient were commonly encountered in the study. Many of these physicians were symptomatic and physically stressed by reason of overextension of their reserves. Many had irregular hours of sleep, years of work unrelieved by more than a few days of vacation; and many recognized in themselves symptoms of tension, headache, and heartburn when their burdens became too great.

In these situations, attempts were made to get the physician to recognize objectively the cause of his disability and to point out how such sustained stresses provoke hypertension and other diseases. It is not a simple task to deal with this problem with physicians. The business executive, in this setting, may be more easily relieved of his stresses by the relative ease with which environmental adjustments can be accomplished. Such proposals were perhaps considered unrealistic and academic by my physician-patients. Attempts at persuasive recommendations for them to readjust their practices were not often successful. However, I submit that these attempts, when successful, constitute the most rewarding preventive medicine.

Several physician-patients described precordial symptoms and indeed these symptoms appeared to be their chief motive for submitting to the examination. While a number of abnormal exercise electrocardiograms were recorded, such abnormal tracings did not necessarily correlate with anginal symptoms. In many instances a careful analysis of the history appeared to exclude a cardiac origin of their complaints. In these patients, confident reassurance reduced their anxiety and was a valuable contribution to them.

Case 2.—A relatively young physician stated that he had had sudden onset of severe pain in the right leg six months before he appeared for his health examination. This pain persisted for several weeks during which time the patient did not seek medical opinion. The patient considered that his symptoms were caused by vascular insufficiency. He had noted, with the acute onset, no color change in the foot, no edema or aggravation of symptoms with exercise. In the past month he had had no leg pain. He stated that he was otherwise in good health. He denied any cardiac or pulmonary symptoms. Physical examination revealed an absence of the right pedal arterial pulsations. No other abnormality was observed. An electrocardiogram revealed evidence of an old posterior myocardial infarction.

In this situation, the nature of the patient's disease was frankly discussed with him. He was advised that the sequence of events was undoubtedly related to a silent myocardial infarction followed by an arterial embolus to the right foot. The patient did not welcome this information, but recommendations were made to him to avoid physical overexertion. This information, unexpected and distasteful to the patient, permitted him to readjust his living pattern.

In several patients gastric achlorhydria was discovered. These physicians have had yearly roentgen-ray examinations of the upper intestine since they learned this fact. They will continue to do this, knowing that this procedure constitutes an imperfect but the most effective measure at present for early diagnosis of carcinoma of the stomach. A number of patients were found to have active duodenal ulcerations. Some had neglected their symptoms and only with this examination were they convinced of the need to undertake medical management of their lesions.

Obesity was a problem in many of the physicians. The prevention of cardiovascular and metabolic disease by dietary regulation was stressed. In some instances notable improvement resulted. In other instances only temporary if any success was obtained. Despite the professional knowledge of my patients, these physicians behaved as do most individuals when weight reduction is advised.

Case 3.—A physician had been examined in this program on two successive years. He was considered to be in good health apart from some cardiovascular changes compatible with his age. His past history revealed that ten years ago he had had an acute episode of unexplained intestinal bleeding. A roentgen-ray examination of the intestinal tract was negative. After this occurrence he had no further intestinal symptoms. A rectal examination and a stool analysis for occult blood at each of the two annual health examinations had been negative. Several months before he was seen for his third annual examination he passed a small amount of fresh blood on his stool. He did not have any bowel symptoms then or after a retrospective analysis. After one week he decided to have a barium enema examination, "To prove that I have bleeding hemorrhoids." An annular carcinoma of the rectosigmoid junction was found and successfully resected.

One can fairly state that sigmoidoscopy should be a routine procedure in any routine physical examination, particularly for patients over forty years of age. This patient's lesion might have been detected two years earlier had such a procedure been done.

One can also speculate that the habit of a health examination was well established in this individual. Because of this, he did not deny his rectal bleeding and speedily sought an explanation of his symptom. Indeed, the over-all value of this experiment may reside in making physicians aware of health for themselves. With such an attitude they will be more alert to seek early medical evaluation.

Conclusion

One cannot be deluded that a comprehensive health examination is a magic formula to detect early pathologic lesions. Our present tools cannot always detect the coronary occlusion which may develop tomorrow or next month. The beginning carcinoma will continue to escape our diagnostic acumen, especially if it arises in a small bronchus, in the cardia of the stomach, or somewhere in the kidney or pancreas.

One must acknowledge too that our imperfect medical knowledge does not permit us to treat intelligently the patient with vascular sclerosis or the patient with an abnormal electrocardiogram.

This four-year experiment represents a pioneering attempt of a group of physicians to keep themselves in as good health as they recommend for their patients. If there has been a notable achievement beyond the detection of remediable lesions it has been the creation of an attitude in these physicians of acceptance of the need for a personal health vigilance. An examination in this setting also provides the physician with a needed *patient* relationship. His conscious or unconscious anxieties can be ventilated. He can obtain needed reassurance.

Periodic Health-Maintenance Examinations

III. Industrial Employes

ROBERT E. SANDRONI, M.D., SCHENECTADY, NEW YORK

(*From the General Electric Company*)

SINCE the death in 1714 of Bernardo Ramazzini, father of Industrial Medicine, the passage of time has witnessed an increasing interest on the part of physicians regarding the patient in relation to his industrial environment. Ramazzini urged that all physicians ask their patients "of what trade are you?" and at the same time acquaint themselves with the conditions surrounding specific occupations.

Basically there is little difference between examination of an industrial employe by the private physician or by the industrial physician. In the former the physician is acquainted with the home environment, and in the latter he is better equipped to weigh factors in the work place which may have an influence on the patient's physical or mental health. In both instances the physician must be thorough in procuring the anamnesis and meticulous in the technics of his physical examination.

The industrial employe is examined primarily to establish his state of health so that he may pursue his occupation at the highest level of productivity, with the least hazard to himself and his coworkers.

What then are the occasions for such examinations? These will differ to some extent depending on the particular nature of the industry, and the size of the medical department, but in general they fall into the following broad categories: (1) Pre-employment or preplacement. (2) Re-examination on return from illness. (3) At regular intervals depending on the hazard of the occupation to the employe. (4) At regular intervals when a disability of the employe might endanger the lives of others (bus drivers, crane operators, and so forth). (5) When supervision recognizes a decline in the employe's ability to do his job, or increased incidence of absenteeism, or accidents. (6) Periodically as part of a general program of preventive medicine. This may be in the form of executive examinations. (7) On the occasion of retirement or when the individual may leave the employ of the company for some other reason.

It is assumed that any employe seen in an industrial medical department will have the necessary examinations for proper management in the case of a compensable injury or disease.

Success of the program of examinations depends, as mentioned previously, on thoroughness on the part of the physician, keen interest in preventive medicine, detailed knowledge of the occupation of the patient, and insight regarding the various problems of interpersonal relationship that may exist. The confidence of the patient in the medical department and its physicians is paramount. Open avenues of communication must exist between the industrial physician and his colleagues in the community, and with personnel managers within the plant. In the latter instance, discretion must be exercised regarding discussion of details of patients' disabilities.

The opportunities for the practical application of principles of preventive medicine are legion in the situations noted. These may arise in the area of early detection and prevention of disease by physical examination and laboratory procedures, or by the recognition of emotional and more serious mental disturbance through detailed, confidential, personal interview. Specific therapy is then instituted by the patient's private physician, since treatment of non-industrially-related illness is not generally considered to be a part of the mission of the industrial physician. Maintenance of complete records, and periodic analyses of them, should result in important contributions by industrial physicians to general medical knowledge.

During the course of these examinations, the physician must be alert to the possibility of industrial origin of signs and symptoms. Once suspicion is aroused, the industrial hygiene and safety personnel are called on to identify the causative agent and establish corrective measures.

Examination Procedures

Beyond the complete history and physical examination, the ancillary diagnostic tests performed will depend on the hazards involved in the particular industry, and the facilities available. In general these include a chest x-ray film, a complete urinalysis, an audiogram, and a vision test. In a heavy industry such as our own General Electric Plant at Schenectady, for example, x-ray films of the lumbosacral spine are taken of factory employes. Our own and other series have revealed previously unsuspected abnormalities which are felt to predispose to future disability should heavy labor be conducted.

I would emphasize that the examination of the industrial employe prior to employment is not conducted with a view toward preventing the patient with an abnormality from securing work, but rather to place him in a position commensurate with his physical capabilities.

Re-examination of the employe on return from illness has proved valuable. The industrial physician through his familiarity with the patient's occupation can assist the private physician in determining when the employe is able to return, and permit proper recommendations for a different type of work should this be necessary. In this regard the many and sometimes very ingenious methods for measurements of disability or limitations have not been completely successful, and our aim now is to attempt to evaluate and emphasize remaining abilities. This occasion also may alert the physician to conditions in a particular work area requiring further investigation, and serves also to maintain an up-to-date personal health record. There is no routine procedure set forth for this type of examination. Much depends on the completeness of the medical information accompanying the patient on his return. Laboratory procedures are done at the discretion of the examining doctor.

Specific tests for employes exposed to possible industrial hazards will depend on the nature of the industry. These might include for example urinary lead determinations, tests of liver function, or chest x-ray films at routine intervals where pneumoconioses are a problem. They range from simple observations of change in blood pressure to complex chemical determinations.

The recognition of a decreased level of performance or frequent absenteeism as reported by the supervisor often are the sources of referral for examination. This is an important case-finding medium, and is perhaps the area that taxes the skills of the industrial physician more than any other. The source of difficulty may be alcoholism, dissatisfaction with the work, or unsatisfactory adjustment to fellow workers or supervisors. Apparent or obscure medical conditions must be sought.

Considerable attention has been given to the periodic examination of employes, principally those in supervisory or executive capacities. Usually this type of program involves somewhat greater use of laboratory and x-ray facilities.

Our periodic examination program at the General Electric Company in Schenectady is, in its present form, approximately three years old. As you may know our plant here is for the development and manufacture of heavy electric equipment. The participants in the program represent a wide variety of occupations, including shop foremen, various levels of management, research personnel, sales personnel, and so on. We also examine individuals from certain other General Electric facilities throughout the country and from our Atomic Power and Research laboratories in Schenectady. The total number of eligible individuals is approximately 5,500 and an average of 2,000 examinations are performed during the year.

The program has been offered as a strictly voluntary service, and the results are transmitted to the employe by letter or in greater detail when necessary, to his physician. No other reports are rendered. Employes who are eligible and between the ages of fifty-five and sixty-five are examined annually. Those between forty and fifty-five are examined every two years, and below age forty every five years. A small group of individuals at the higher managerial levels are examined annually regardless of age. The examination is performed entirely in the company clinic, by full-time industrial physicians who are not in private practice. The history is taken by the doctor, and the physical examination is completed by him.

The following ancillary laboratory procedures are included routinely: the hemoglobin, white blood count, nonfasting blood sugar, chest photoroentgenogram, 12-lead electrocardiogram, audiometry, complete urinalysis, and vision test using the sight screener. The blood sugar is performed about one and one-half hours after the patient's usual meal. Additional procedures are available to the examining physician, such as blood cholesterol and uric acid determination and x-rays films of the abdomen, bones, or additional chest views. Further studies deemed necessary are not performed in the clinic but referral is then made to the patient's physician. No treatment is rendered, although considerable time is devoted to health counseling.

The average duration of the examination is about two hours, but this is a variable figure since as much time as is necessary is allotted for the history and physical examination. The patient is not routinely recalled for a second interview, but will be seen again if the doctor feels there is a particular need for further discussion. In situations where treatment is absolutely imperative, an immediate appointment is made with the physician and the case discussed with him. Close observation is then maintained until the period of treatment is completed.

TABLE I.—RESULTS OF EXAMINATIONS OF 3,543 INDUSTRIAL EMPLOYES

Conditions	Number of Patients
No significant past history or positive physical findings	2,280
Significant past history (such as major surgery) or positive physical findings	1,263
Referral to personal physicians for medical or surgical treatment (likely to develop symptoms or more serious disease if left untreated)	407*
Moderate obesity	877
Gross obesity	159†
Definitely abnormal electrocardiograms	312
Unequivocal evidence of myocardial infarction	46
Diabetes	39
Inguinal hernia	224
Rectal polyps (on digital examination)	38
Definite thyroid nodules	14
Hypertensive cardiovascular disease	55**
Blood pressure above 140 systolic (right arm, sitting, single reading)	200
Diastolic blood pressure above 90 mm. Hg	100
Rheumatic heart disease	26
Systolic murmurs at apex	39††
Diastolic murmers at apex	4††
Well-documented history of genitourinary tract calculus	54
History of angina	33
Prostatic hypertrophy	95
Prostatic cancer (known)	1

* The figure of 407 does not include patients with conditions already under treatment, although many of the 407 were aware of their defects.

† Above 20 per cent of the maximum figure in standard height-weight tables.

** Manifested by definitely elevated blood pressure and cardiomegaly. Most of these were already undergoing treatment.

†† We have not yet had the opportunity to review these individual charts to determine specific diagnosis in each instance, and at this time cannot state how many actual patients this represents.

The doctors performing these physical examinations have a particular interest in this work, but also have a variety of other duties. The need for performing proctosigmoidoscopy, at least in those over age forty, has been recognized and is now available.

Comment

With regard to specific results, the program was initiated prior to the development

TABLE II.—REPORT OF HISTORIES OR PHYSICAL FINDINGS

Age (years)	Number of Patients with No Significant History or Physical Findings	Number of Patients with Significant History or Physical Findings
18 to 29	124	27
30 to 39	814	245
40 to 49	809	433
50 to 59	404	373
60 to 69	121	179
70	8	6
	2,280	1,263

TABLE III.—OBESITY; MYOCARDIAL INFARCTION

Age (years)	More than 20 Per Cent Overweight	Myocardial Infarction
18 to 29	5	0
30 to 39	45	0
40 to 49	58	19
50 to 59	36	28
60 to 69	15	13
70	0	0
	159	60*

* The incidence of obesity in the group with myocardial infarction has not been determined.

TABLE IV.—PERTINENT DIAGNOSIS

Category	History	From Physical and Laboratory Findings: Symptomatic	From Physical and Laboratory Findings: Asymptomatic
Gastrointestinal	156	42	245
Cardiovascular	30	57	158
Genitourinary and gynecologic	86	15	4
Musculoskeletal	43	35	18
Dermatologic	13	6	8
Eye, ear, nose, throat	8	18	12
Metabolic or endocrinologic	38	22	199
Hematologic	5	5	5
Pulmonary	23	7	9
Neuropsychiatric and neurologic	16	19	6

of a system for classifying findings and was not initiated primarily for purposes of clinical research.

Briefly, during the period June, 1956, to June, 1958, 3,543 individual patients were examined. The total number of actual examinations performed during this period was 3,543 (Tables I, II, III, and IV).

Our laboratory functions have not been analyzed in detail. Two cases of chronic leukemia, otherwise unsuspected, have been detected with the blood count and smear. A number of borderline anemias were noted, but follow-up on these is not now available. The x-rays of the chest have shown 3 or 4 cases of suspected sarcoid, but no active tuberculosis or pulmonary carcinoma. One patient did develop a lung cancer one year later.

Of interest were two neurogenic tumors detected on palpation of the neck, and a patient with coarctation of the aorta, who has since had successful surgery. One patient had an unusual intra-abdominal hernia and another a large renal cyst, presenting as abdominal masses. All of these patients were unaware of their abnormalities at the time of the physical examination. Opinions differ as to the relative importance of the physical and history versus the many possible laboratory procedures. We tend to feel that these individuals are not necessarily always asymptomatic and that the careful history is still the most important clinical tool.

The examination of the industrial employe thus takes him from the physical examination on first engagement through any illness or injury, possibly including a periodic or hazard survey, finally to his departure from the company through retirement or other reasons. The information derived is imparted to the patient or to his physician. Considerable effort is directed toward making the statistical information obtained practical for comparison with the experiences of others. When considering the patient as an industrial employe it should not be forgotten that hazards also exist in the offices away from the factory floor.

These remarks have been made in the light of our own experience in a major modern industrial clinic; however, whether the examination of the industrial employe is executed within the plant or by a doctor without industrial affiliation, attention to the doctrines of Ramazzini will contribute to greater diagnostic and therapeutic success and more practical rehabilitation.

JOSEPH T. DOYLE

The Early Diagnosis of Heart Disease

JOSEPH T. DOYLE, M.D., ALBANY, NEW YORK

(*From the Department of Medicine and the Cardiovascular Health Center, Albany Medical College*)

THE four major types of heart disease are coronary or ischemic heart disease (IHD), hypertensive heart disease (HHD), rheumatic heart disease (RHD), and congenital heart disease (CHD). Since the possibility of early diagnosis and the ensuing benefit to the patient vary with the type of heart disease, each will be considered separately. Certain features are summarized in Table I. A much smaller miscellaneous group of heart diseases are of exceptional importance since the causes are frequently extracardiac and a complete cure is often possible if the diagnostic possibility is considered. Peripheral and cerebrovascular disease will not be discussed.

Major Forms of Heart Disease

Ischemic (coronary) heart disease is a manifestation of atherosclerosis, which affects other important vascular territories including the brain, the aorta, and the major aortic branches. The pathogenesis of atherosclerosis remains obscure despite intensive study. The lesion is almost universally present in American males and in postmenopausal females, but remains silent until the occurrence of thrombotic occlusion. Thrombogenesis is itself an even more obscure process. The resultant signs and symptoms of ischemia are determined by the location, the extent, and the speed of vascular occlusion and the adequacy of the collateral circulation. Rapid, massive occlusion of a major vessel, whether in the heart, the brain, or elsewhere, if not promptly fatal results in infarction and irreversible tissue damage.

Atherosclerosis of the coronary arteries can, therefore, be inferred only from the ischemic complications of thrombotic occlusion. The recognizable syndromes of myocardial ischemia are acute myocardial infarction, angina pectoris, and acute coronary insufficiency. The typical syndrome is, of course, easily recognizable, while the atypical case may defy diagnosis. The early symptoms of myocardial ischemia may be elicited by painstaking history. Physical and roentgenologic examinations are unrewarding in the uncomplicated case. Serial electrocardiograms are usually diagnostic of acute myocardial infarction, but in the healed stages of infarction may be quite nonspecific. Provocative tests may clarify equivocal complaints. An acute work load imposed by stress such as the Master 2-step test or exercise on a motor-driven treadmill may induce electrocardiographic evidence of acute coronary insufficiency

TABLE I.—FEATURES OF MAJOR FORMS OF HEART DISEASE

Type of Heart Disease	Etiology	Value of Diagnostic Aids: History	Physical Examination	Electrocardiogram	X-Ray	Special Examinations	Effectiveness of Therapy: Prevention	Palliation	Cure
Ischemic	?	+++	+	+++	+	++	0	+	0
Hypertensive	?	+	+++	++	+	+	0	+	±
Rheumatic	+	++	+++	++	++	++	++++	+	+
Congenital	?	+	+++	++	+++	++++	0	+	+++

KEY: ? = Unknown. 0 = None. ± = Equivocal. + = Somewhat. ++ = Fairly. +++ = Very. ++++ = Most important or effective.

without necessarily inducing an attack of angina pectoris. The impaired prognosis of individuals who evince an abnormal electrocardiographic response to exercise is well attested. Specialized laboratory tests such as the measurement of blood lipids by various technics, stimulation of the lipoprotein-lipase system, and measurement of thrombophilic tendencies have thus far failed to discriminate candidates for IHD from noncandidates.

Since the pathogenesis of IHD is unknown, no specific prophylactic or therapeutic measures are available. Empiric measures such as weight reduction, lowering of blood lipids, chronic anticoagulant therapy, and efforts to reduce the stress and strain of living are palliative and may perhaps prolong useful existence.

Hypertensive heart disease is a complication of hypertensive disease. The pathogenesis of primary or essential hypertension is unknown although a renal lesion seems invariably to be either a cause or a consequence. The prehypertensive state is unrecognizable, although a family history of hypertension is known to enhance the likelihood of hypertension in the children. The definition of the limits of arterial normotension or of the lower limits of arterial hypertension are not precise. There are numerous sources of error in the accurate recording of the arterial blood pressure by indirect methods. Simple hypertension is symptomless. The diagnosis of the hypertensive state is justified only by the finding of consistently and substantially elevated levels of arterial blood pressure. Every new hypertensive patient, particularly under the age of forty years, requires careful study to exclude curable lesions such as coarctation of the aorta and pheochromocytoma and treatable lesions such as pyelonephritis or unilateral kidney disease. There is no evidence that the visceral complications of hypertensive disease are prevented or ameliorated by pharmacologic or surgical measures aimed to lower the blood pressure, while there is considerable evidence that such measures exact a significant toll of morbidity and mortality.

It is the physician's responsibility, once having established the existence of the hypertensive state, periodically to reexamine the patient for evidence of visceral damage without displaying or inducing anxiety, an almost impossible prescription nowadays. The history should be taken to reveal any symptoms of left ventricular failure. The appearance of the retinal arteries is important. Electrocardiographic and roentgenographic evidence of progressive hypertrophy or dilatation of the left ventricle indicate encroachment on myocardial reserve. The renal status may be evaluated by urinalysis, simple function tests, and the blood urea nitrogen level. Whether hypertensive disease with visceral complications is benefited by aggressive hypotensive therapy is difficult to evaluate. There is little question that lowering the arterial pressure head benefits the decompensated left ventricle. The otherwise rapidly fatal course of accelerated (malignant) hypertension can be favorably influenced by antipressor therapy.

Rheumatic heart disease, in contrast with the other types of heart disease considered here, is of known pathogenesis. It is now generally agreed that acute rheumatic fever is an atypical tissue reaction to Group A hemolytic streptococcal infection. It is, therefore, possible to prevent the initial or the recurrent attack of acute rheumatic fever by eradicating streptococcal infection with penicillin. The diagnosis of an attack of acute rheumatic fever eventuates in the diagnosis either of valvular or of potential rheumatic heart disease. The Jones criteria constitute the universally-accepted diagnostic standards of acute rheumatic fever. There are several inferential but no specific laboratory indices of rheumatic activity. The early diagnosis of rheumatic heart disease is of especial importance inasmuch as consistent chronic penicillin prophylaxis will avert future attacks. Intensive penicillin therapy is essential to control bacteremia associated with dental and urologic manipulations. The functional status of patients with valvular lesions should be periodically assessed by history and physical examination aided by electrocardiographic and radiologic assessment of chamber enlargement. Catheterization of the right and left heart in selected cases allows the accurate assessment of mitral and aortic valve obstruction and is of considerable help in identifying significant degrees of regurgitation through these orifices. The surgical relief of mitral stenosis has been brilliantly effective in properly selected cases. Mitral insufficiency is not yet amenable to surgical control. The surgical treatment of aortic valve disease is still unsatisfactory. It is very probable that satisfactory valvular prostheses will become available in the not too remote future.

Congenital heart disease is of unknown pathogenesis. Maternal infection during the critical phases of cardiac development may be one cause of phylogenetic arrest. This association has suggested the prophylactic exposure of prepubescent girls to German measles. Mechanical rather than myocardial factors are initially responsible for the disability imposed by CHD. It has consequently been possible to effect surgical cures of an increasing number of congenital cardiac lesions as circulatory bypass technics have been developed and improved.

It is no longer sufficient for the physician to identify heart disease as congenital: a precise diagnosis is essential because of the ever-increasing likelihood of surgical cure. Furthermore, the diagnosis should be made before the onset of irreversible structural damage to the myocardium and to the pulmonary vasculature. Cyanotic forms of CHD are immediately manifest. The acyanotic forms must be diligently sought at postnatal and at interval well-baby examinations. The school physician has a particularly favorable opportunity to spot unrecognized cases of CHD. The pediatrician as well as the generalist must always keep in mind that CHD may easily be confused with acquired valvular disease. The history is of relatively little importance in the diagnosis of CHD.

Although there is a voluminous literature on the value of cardiac auscultation, practically speaking there are few precise diagnoses of CHD that can be made with the stethoscope alone. The best interests of the patient are served by immediate referral for evaluation to a medical center once the presumptive diagnosis of CHD is made. Careful fluoroscopy will often provide the skilled radiologist with a good clue as to the nature of the lesion. More specific localization of a congenital defect may require the injection of radiopaque contrast media into the arterial or venous systems, a hazardous undertaking in cyanotic subjects. Last, cardiac catheterization is usually necessary for localizing intracardiac shunts and quantitating the degree of obstruction to ventricular outflow. This procedure often requires prolonged fluoroscopy.

Miscellaneous Forms of Heart Disease

The only satisfactory treatment of *syphilitic aortitis* is its prevention by early and adequate treatment of syphilis with penicillin. In older individuals *thyrotoxicosis* may present itself as atrial fibrillation and heart failure; control of the metabolic disorder cures the disease. *Myxedema*, an easily-missed diagnosis unless it is thought of, is often accompanied by heart failure which is curable with replacement therapy. Unless the hemoglobin is routinely measured, *anemia* as a primary or contributing cause of heart failure may be easily missed. *Pulmonary embolism* is often the coup de grâce to a patient otherwise convalescing uneventfully. The avoidance of prolonged immobilization and anticoagulant coverage of all suspected candidates, with or without underlying heart disease, are effective prophylactic measures.

Conclusion

The physician can usually, by painstaking inquiry and by careful physical examination, establish the existence of primary or secondary heart disease. Large benefits to the patient accrue from the early diagnosis of congenital heart disease, rheumatic heart disease, or from one of the miscellaneous secondary forms of heart disease. On the other hand, ischemic heart disease and hypertensive heart disease by their natures do not lend themselves to early diagnosis, while the therapeutic benefits are presently equivocal.

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The Early Detection of Malignant Conditions of the Gastrointestinal Tract

HARRY L. SEGAL, M.D., ROCHESTER, NEW YORK

(*From the Departments of Medicine of the Genesee, Strong Memorial, and Rochester Municipal Hospitals and the University of Rochester School of Medicine and Dentistry*)

A MALIGNANT condition is one of the most serious threats to a prolonged geriatric survival. This is attested by the increasing cancer mortality rate which more than doubled between 1900 and 1950 (64 deaths per 100,000 in 1900 versus 139.8 deaths per 100,000 in 1950)[1] with cancer of the gastrointestinal tract accounting for about two thirds of these deaths. Nearly one half of the increase has been ascribed to a change in proportion of elderly people in the population.

It is the purpose of this paper to discuss the various means which might lead to earlier detection of malignancy of the gastrointestinal tract with the hope of decreasing this high mortality rate.

Esophagus

The deaths from carcinoma of the esophagus in the United States in 1955 were 2.6 per 100,000, an incidence comparable to that of 1930.[2] The occurrence of carcinoma of the esophagus is most frequent in men during the fourth and fifth decades with the ratio of male to female being five to one. Most of the malignant lesions are squamous cells in origin with the less common adenocarcinoma tending to occur in the lower and upper esophageal segments, the gland-bearing regions.

Unfortunately the onset of carcinoma of the esophagus is insidious and early diagnosis can be made only if the lesion is suspected in any individual over forty years of age who manifests any symptom associated with disease of the esophagus. The earlier symptoms relating to esophageal disease include persistent sore throat, intermittent retrosternal tightness, difficulty in swallowing, and distress or eructation immediately after ingestion of food. Every person in the fifth decade or over who complains of any of the above symptoms should be investigated thoroughly.

LABORATORY AIDS.—*Roentgen-Ray Examination.*—Roentgen-ray examination is the most important diagnostic tool in the majority of instances.

Esophagoscopy.—Esophagoscopy is considered by many[3] as a must in all cases with symptoms suggesting esophageal disease regardless of roentgen-ray findings. This examination not only may detect an early lesion undetected by the roentgen-ray examination but also will provide the opportunity for biopsy.

Cytology.—Studies have demonstrated the usefulness of exfoliative cytology in the diagnosis of malignancy of the esophagus. Proved carcinomas have been reported with correct preoperative cytologic diagnoses despite negative esophagoscopy and biopsy.[4,5] Because there is a definite hazard of perforation with esophagoscopy, esophageal cytology might be employed in the presence of a definitive lesion discovered by roentgen-ray examination before subjecting the individual to esophagoscopy. It seems reasonable to assume that the combination of exfoliative cytology and the Eder-Hufford or Schindler flexible esophagoscopy should improve the early detection of esophageal malignancy without any real hazard to the patient.

Cinefluorography.—In addition to the diagnostic technics discussed, cinefluorography offers an opportunity to study the mechanism of swallowing and the entrance of the bolus into the stomach with a little more finesse than does the ordinary fluorographic examination.[6] It also provides a permanent record for further study.

Regardless of the diagnostic approach, any hope for an increase in the early diagnosis and cure-rate of cancer of the esophagus will depend more on the recognition by both physicians and laity of the importance of thorough examination of any individual past forty years of age who complains of mild symptoms directly or indirectly pointing to the esophagus.

Stomach

Although the incidence of carcinoma of the stomach is decreasing (33.8 per 100,000 in 1930 to 20.3 per 100,000 in 1950),[7] it is still one of the most common causes of cancer deaths. Any improvement in the outcome of its treatment depends on two factors—early diagnosis and early surgery. Perhaps the recent decrease in death rate already points to its earlier diagnosis as well as to better management of gastric ulcers and gastric polyps and a more careful study and follow-up of achlorhydric and achylic individuals. Unfortunately no matter how early gastric cancer is diagnosed by modern technics fully appreciated and correctly applied, metastases will have already occurred in one third of the cases by the time a diagnosis is made.[8,9] This makes it more urgent not only to apply present-day diagnostic knowledge to detect early gastric cancer in the other two-thirds but also to seek new technics to improve the outlook in both groups.

Although the more hopeful approach rests with the diagnosis of gastric cancer in its asymptomatic phase, proper diagnostic procedures in individuals after the onset of symptoms can also lead to improvement in the over-all cure rate. In Marshall's series[10] of 1,708 gastric carcinoma patients delay in diagnosis of the gastric cancer was due to procrastination on the part of both the patient and the family physician. Procrastination before visiting a physician on the part of the patient accounted for delay in diagnosis in 37.5 per cent of this group while the failure of the physician to obtain immediate roentgen-ray examinations and laboratory studies was responsible in 50.4 per cent for the possible deferment of an earlier diagnosis.

Laboratory Aids.—*Roentgen-Ray Examination.*—The only feasible method generally applicable and reasonably accurate as a means of detecting carcinoma of the stomach is the roentgen-ray examination. Its accuracy is in the order of 85 to 95 per cent.[11] Yet it is impractical to subject persons in the gastric cancer-susceptible decades (fifth decade and above) to annual routine roentgen-ray examinations of the stomach. Moreover a single routine examination is usually insufficient to detect gastric carcinoma either in the asymptomatic or the symptomatic individual. Fortunately, there are certain criteria which help to select individuals who justifiably can be subjected to repeated routine gastric roentgen-ray examinations. These criteria are based primarily on the increased incidence of gastric cancer in the middle and older-age groups, in patients with achlorhydria or achylia, and in individuals with a family history of gastric carcinoma. Gastric cancer occurs most frequently after the age of forty and doubles in incidence with each succeeding decade.[12] Its frequency is respectively three and ten times greater in achlorhydric and achylic individuals than in acid secretors of comparable age groups[13] and four to five times greater in individuals with a family history of gastric cancer.[14,15]

The ten-year follow-up study reported by Hitchcock, Sullivan, and Wangensteen[16] of over 1,700 patients at the Wangensteen Clinic found achlorhydric by intubation to subcutaneously-administered histamine has shown the importance of selecting achlorhydric individuals for repeated routine gastrointestinal roentgen-ray studies. The incidence of gastric carcinoma in this achlorhydric group who were examined more than 7,000 times during this period was 3.8 times higher than expected. The importance of frequently-repeated or serial roentgen-ray examination is also emphasized in a review of clinical, roentgen-ray, and pathologic findings in 39 cases of gastric cancer selected because of a positive roentgenogram in individuals in whom the first roentgen-ray examination was negative.[17]

Gastric Analysis.—It is readily apparent that routine intubation gastric analysis is impractical for screening achlorhydric patients in the gastric cancer age group for further investigative studies. However, the tubeless gastric analysis technic developed by Segal, Miller, and Plumb[18] now makes it possible to screen achlorhydric individuals by the mere appraisal of color change in the urine. The rationale of tubeless gastric analysis with the azure A resin compound* is based on the displacement of the azure A dye from this compound by the hydrogen ions present in gastric juice containing free gastric hydrochloric acid. The released dye is absorbed in the small intestine and excreted in the urine. The amount of dye present in the total two-hour urine excretion after the oral ingestion of this compound determines the state of gastric acidity (See Table I).

Although caffeine sodium benzoate is the gastric stimulant of choice for mass screening, individual tests can readily be performed with stronger gastric stimulants such as Histalog or histamine to detect achlorhydria.

Because of the confusion in the use of the term achlorhydria, it seems pertinent to define achlorhydria as used by the author in connection with the tubeless gastric analysis technic.

Achlorhydria as determined by the present tubeless gastric analysis[18] designates the absence of free hydrochloric acid from the gastric secretion after a dose of a specific gastric stimulant. In this sense achlorhydria as determined by tubeless gastric analysis associated with caffeine as the gastric stimulant means the absence of free gastric hydrochloric acid after stimulation of the gastric acid cells by a specific dose of caffeine base. Similarly, achlorhydria associated with histamine or Histalog as the gastric stimulant signifies the absence of free gastric hydrochloric acid after stimulation of the parietal cells by a stated dose of histamine base or Histalog. The specification of dose is necessary since Kay,[19] Card, Marks, and Sircus,[20] and Schneiderbaur[21] have shown that with the exception of patients with pernicious anemia or with severe gastric atrophy, individuals achlorhydric to 0.01 mg. of histamine base per Kg. of body weight secrete hydrochloric acid (hydrogen ions) if the dose of the histamine base is large enough (0.04 mg. per Kg.). The side-effects with these large doses were prevented by an adequate dose of an antihistamine (50 to 100 mg. of mepyramine maleate).

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* Marketed by E. R. Squibb and Sons as Diagnex Blue.

From this it is readily apparent that many individuals achlorhydric to 250 mg. of the caffeine base administered orally will secrete free hydrochloric acid or at least some hydrogen ions after gastric stimulation with clinical doses of Histalog (50 mg.) or histamine (0.01 mg. per Kg.). True achlorhydria thus should be restricted to the absence of hydrochloric acid from gastric secretion with 0.04 mg. per Kg. of histamine base as the gastric stimulant. Keeping this definition in mind there will be only an occasional inconsistency between the intubation and the tubeless technic of detecting achlorhydria provided the same stimulus is used under proper and comparable conditions.

Uropepsin.—Although achylia gastrica literally signifies the absence of hydrochloric acid, proteolytic enzyme, and intrinsic factor in the gastric juice, achylia is usually defined as the absence of hydrochloric acid and pepsinogen in the gastric juice. In fact the presence of true achlorhydria discovered by the proper intubation technic is usually considered presumptive evidence of achylia without determining the proteolytic activity of the gastric juice. Presumptive evidence of achylia by the tubeless technic requires both the absence of free gastric hydrochloric acid after gastric stimulation with Histalog or histamine and of uropepsin activity in repeated overnight urine samples.

TABLE I.—TUBELESS GASTRIC ANALYSIS WITH DIAGNEX BLUE

Instructions to the Patient

1. Do not eat breakfast until the test is completed. (Water may be taken as desired.)
2. Discard the first urine on arising.
3. Drink a glass of water with the two tablets. (Each tablet contains 250 mg. of caffeine sodium benzoate.*)
4. Swallow the blue granules mixed in 1/2 glass of water one hour after taking the tablets.
5. Urinate two hours after taking the granules and save the entire quantity.

Examination of the Urine

1. Note the volume of the urine collection. If the amount of urine is less than 300 ml., dilute with water to 300 ml. A urine volume considerably greater than 300 ml. must be taken into account only if the intensity of the color denotes no free acid (see example below).
2. Pour 10 ml. aliquots of urine into each of two test tubes and note color.† If the color does not signify free gastric acid, add one drop of a solution containing 195 ml. $CuSO_4 \cdot 5H_2O$ in 100 ml. of 18 per cent HCl (6M) to each aliquot. (If crystallized copper sulfate is unavailable, one drop of a solution made by mixing 40 ml. of water and 10 ml. of Benedict's solution with 50 ml. of concentrated hydrochloric acid may be used.)
3. Place the test tubes in a boiling water bath for ten minutes.† Cool at room temperature for two hours.† To one urine aliquot add a pinch of ascorbic acid (300 mg.) and mix. This reduces the dye to a colorless form which allows this sample to be used as the control urine.
4. Compare the color of both aliquots of urine with the standards. (A paper comparator block with plastic color standards is provided with Diagnex Blue by E. R. Squibb and Sons.)

Standard for Interpretation**

Status of Gastric Acid Secretion	Mg. Azure A in Urine Collection
Free acid present	0.6 or >
Free acid absent	0.3 or <
Borderline secretion	0.3 to 0.6

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* A more powerful gastric stimulant such as Histalog or histamine can be substituted for the caffeine if the test is done under supervision.

† No further procedure is necessary if the intensity of color denotes free acid. This will be easily recognized with a little experience.

** If the color is less than the 0.6 mg. standard and the volume of the total undiluted urine collection is greater than 300 ml., calculate the amount of azure A as follows:

$$\frac{\text{(vol. of urine)} \times \text{(mg. of azure A)}}{300 \text{ ml.}} = \text{total mg. azure A excreted}$$

EXAMPLE: If the total volume of the urine collection is 600 ml. and the color of the aliquot equals the 0.3 mg. per 300 ml. standard, calculate as follows:

$$\frac{600 \times 0.3}{300} = 0.6 \text{ mg. azure A}$$

Gastroscopy.—In experienced hands gastroscopy is of value in equivocal lesions, in some cases of gastric ulcer, and in patients with symptoms suggesting gastric carcinoma or unexplained upper gastrointestinal bleeding with negative gastrointestinal series. Gastroscopy should be considered as supplementary to the roentgen-ray examination.

Cytology.—Since Papanicolaou's initial report of his experience in exfoliative gastric cytology,[22] many publications have appeared describing various methods of obtaining exfoliated gastric cells as aids in the diagnosis of gastric cancer and lymphoma. Among the technics proposed have been the abrasive balloon,[23] the Ayre brush,[24] Nieburgs' nylon brush,[25] and lavage with chymotrypsin[26] or normal saline.[27,28] Lavage with chymotrypsin as advocated by Rubin, *et al.*,[29] or with normal saline or Ringer's solution as advocated by Graham, *et al.*,[30] and more recently by Ross, *et al.*,[31] seem to offer the best over-all results, (80 to 90 per cent). Unfortunately none of these methods is universally available because of the lack of trained personnel. Greater demand for this type of examination may stimulate a training program to provide adequate personnel.

MANAGEMENT OF PATIENTS WITH ABNORMAL ROENTGENOGRAM FINDINGS.—The proper management of patients with roentgen-ray evidence of a gastric polyp, gastric ulcer, abnormal rugal pattern, and/or equivocal lesions in the stomach is paramount for future improvement in the over-all cure rate of gastric malignancy. The issue is not merely whether such a roentgenographically-demonstrable lesion is a precursor of malignant condition but whether the abnormality at the time of its detection represents a benign or malignant lesion.

Gastric Polyp.—Since about 85 per cent of patients with gastric polyps are achlorhydric[32] it seems reasonable to suspect that structural mucosal changes provide the proper soil for the development of a polyp. Although 7 to 14 per cent of gastric polyps are malignant when discovered,[32,33] and although benign polyps are at times associated with gastric carcinoma elsewhere in the stomach, the majority of gastric polyps are not or do not necessarily become malignant. However, a single polyp even though benign is probably best removed especially in an achylic individual. The decision to remove only the polyp or to resect part of the stomach may require a frozen section at the time of surgery. Polyposis or recurrence of polyps should be an indication for resection.

Gastric Ulcer.—Although a benign gastric ulcer need not be a direct precursor of gastric carcinoma, a chronic or recurrent gastric ulcer may be an additional irritant factor contributing to the development of gastric carcinoma in the susceptible individual. The clinical problem is again not whether a demonstrable gastric ulcer is a precursor of gastric carcinoma but whether the ulcer is benign or malignant at the time of its detection.

Successful therapy of a gastric ulcer depends on proper diagnosis. Intensive medical therapy of four to six weeks is permissible in the treatment of a patient with a gastric ulcer niche provided the patient remains under constant observation not only during this short period but also during a follow-up of at least one year after the apparent healing of the ulcer. Any immediate recurrence of symptoms or niche demands immediate surgery. The fact that approximately 3 per cent of lesions which apparently seem to disappear after four to six weeks of medical therapy may still be malignant[34] emphasizes the necessity for close observation of any patient with a gastric ulcer that has been healed medically.

The absence of free hydrochloric acid as shown by tubeless gastric analysis in a patient with a gastric ulcer niche does not necessarily indicate carcinoma. A gastric juice with a pH between 3.5 and 4.0 may have sufficient proteolytic enzyme activity due to the presence of cathepsin.[35] The achlorhydria of a benign gastric ulcer is usually temporary and may be a reflection of the gastritis associated with the gastric ulcer. In such circumstances tubeless gastric analysis performed with caffeine as the gastric stimulant should be repeated with stronger stimulants such as Histalog or histamine, and blood or urinary pepsin activity should be checked if facilities are available. The absence of uropepsin activity in repeated overnight urines may be indirect evidence of a malignant gastric ulcer niche. Likewise the persistence of achlorhydria after the apparent disappearance of the ulcer niche indicated by tubeless gastric analysis technic with Histalog as the gastric stimulant is strong evidence of a malignant condition. Both tubeless gastric analysis and roentgen-ray examination should be repeated at specific intervals even though symptoms and niche have vanished. The disappearance of free gastric acid previously present in a patient with a gastric ulcer likewise should suggest the possibility of a malignant condition regardless of the apparent healing of the niche as shown by roentgen-ray examination.

Abnormal Rugal Pattern.—Not infrequently the gastrointestinal series instead of providing a definitive diagnosis adds confusion to the clinical picture. This is especially so when the roentgenogram reveals an abnormal gastric rugal pattern. Such a pattern may result from normal giant rugae, spasm of the muscular mucosa, gastritis, true hyperplasia, edema associated with hypoproteinemia, or with an allergic reaction or an infiltrating lesion due to carcinoma or lymphoma. The history, repeated gastrointestinal series and gastric secretory studies, gastroscopy, cytologic studies, and examination of the stool for occult blood may help to resolve this problem. In some patients only exploration may provide the final answer.

SUGGESTIVE SCHEME IN THE EARLY DETECTION OF GASTRIC MALIGNANCY BY TUBELESS GASTRIC ANALYSIS.—All individuals forty years of age or over regardless of the presence or absence of gastrointestinal symptoms should have a routine tubeless gastric analysis. If achlorhydria to caffeine stimulation is present, the test should be repeated with Histalog as the gastric stimulant. If the patient is still achlorhydric to Histalog, a few overnight urine collections should be tested for uropepsin activity. The combination of achlorhydria to Histalog stimulation and no uropepsin activity in repeated examinations is presumptive diagnosis of achylia.

All caffeine-achlorhydric patients, whose condition is discovered by tubeless gastric analysis, who secrete acid after Histalog stimulation should have an annual tubeless gastric analysis with Histalog as the gastric stimulant. All such patients fifty years of age or older should be subjected to a gastrointestinal series about every twelve to eighteen months. The occurrence of gastrointestinal symptoms not due to obvious conditions such as gallbladder disease, functional derangements, and so forth should make an immediate gastrointestinal roentgen-ray examination mandatory. If the gastrointestinal series is negative or equivocal, cytologic examination, if available, should be instituted. If poor appetite, weight loss, occult blood in the stool, and so forth are present, exploration is indicated in spite of all negative findings.

All symptomless pernicious anemia patients as well as individuals who secrete no free acid after Histalog stimulation and have no uropepsin activity in repeated overnight urine collections should have a gastrointestinal series every nine to twelve months. Any such individual who develops gastrointestinal symptoms not explained satisfactorily by appropriate examinations including a gastrointestinal series should be subjected to cytologic examination and gastroscopy if feasible. If gastrointestinal symptoms should persist in such an individual, exploration is indicated regardless of all negative findings.

Small Intestinal Tract

Fortunately both benign and malignant tumors of the small intestinal tract are of uncommon occurrence. According to Ewing[36] only 3 per cent of all malignant tumors of the gastrointestinal tract occur in the small intestine. The most common sites are the second portion of the duodenum and the lower end of the ileum in that order.

DUODENUM.—The gastrointestinal roentgen-ray examination is at present the only practical technic to detect lesions in the duodenum. This emphasizes the importance of performing a routine gastrointestinal series in individuals with gastrointestinal symptoms or persistent occult blood in the stool. The changes shown by roentgen-ray examination of the duodenal bulb are usually associated with duodenal ulcer and only occasionally with a pancreatic rest or prolapse of the gastric mucosa. Invasive lesions of the gallbladder or pancreas rarely may be the cause of changes in the duodenal bulb. Abnormalities of the rest of the duodenum depending on the location may be due to various conditions such as diverticula, posterior bulbar ulcer, carcinoma of the duodenum or ampulla, or invasion usually associated with carcinoma of the pancreas or gallbladder.

There are no pathognomonic symptoms of cancer of the duodenum. This emphasizes the importance of proper examination of any individual with gastrointestinal symptoms as previously stated.

The diagnosis and differentiation of carcinoma of the duodenum, biliary tract, and pancreas can be enhanced by proper application of the exfoliative cytology technic. A method of duodenal intubation evolved by Raskin, *et al.*[37] makes this technic reliable and well tolerated. Duodenal content and pancreatic secretion are aspirated and examined for malignant cells after stimulation of the pancreas with secretin. Pancreatic secretory studies can be done simultaneously as an aid in the diagnosis of carcinoma of the pancreas. These investigators[37] recovered malignant cells in 28 of 43 cases of pancreatic, biliary, gallbladder, and duodenal carcinoma examined by the cytology technic. Unfortunately this method requires trained personnel which at present are not universally available.

THE REMAINING SMALL INTESTINAL TRACT.—The roentgen-ray examination to detect lesions of the small intestinal tract beyond the duodenum is not usually helpful unless the lesion is complicated by obstruction. However, careful roentgen-ray evaluation may be an aid in the diagnosis of a tumor of the small intestinal tract often enough to encourage its use. Mild or massive bleeding may be the only symptom of a benign or malignant tumor of the small intestinal tract.[38] If diagnostic procedures fail to locate the source of the gastrointestinal bleeding in the stomach, duodenum, or colon, the Miller-Abbott type of intubation during the episode of hemorrhage may establish the site of bleeding. Exploration may be the only means of demonstrating a lesion in the small intestinal tract.

Large Intestine

The large intestine may be divided into two sections, a proximal part beginning with the cecum and ending with the sigmoid and the distal part consisting of sigmoid, rectosigmoid, and rectum. The pertinence of this division rests upon comparable distribution of solitary polyps and carcinoma in these areas. Approximately 30 per cent of both occur in the upper division and 70 per cent in the lower segment.[39] Most of the lesions occurring in the sigmoid-rectal area can be visualized readily by sigmoidoscopic examination in contrast to the failure of the barium enema to denote small lesions in this region. On the other hand the barium enema is the only practical means of detecting early carcinoma and solitary polyps in the area above the sigmoid.

The incidence of carcinoma of the colon increases after forty years of age. Because of this, a sigmoidoscopic examination should be incorporated into the routine physical examination of individuals over forty and should be done before the barium enema in any patient with symptoms suggesting disease of the large bowel, regardless of age.

There is no need to describe the symptoms secondary to disturbances of the large intestinal tract except to emphasize that anemia may be the only early symptom of carcinoma of the colon especially when the lesion is located in the cecum or ascending colon.

The early discovery of one or more polyps in the colon will allow the early institution of proper surgical therapy. A polyp of the colon should be removed at the time of its detection no matter whether it is benign or malignant.

Summary

In this report we have discussed the means of early detection of malignant conditions of the gastrointestinal tract.

The gastrointestinal series is considered the most important technic in the diagnosis of early malignancy of the stomach. The sigmoidoscopic examination is more valuable than the barium enema in the detection of lesions of the rectum and lower sigmoid.

The indications for esophagoscopy, gastroscopy, cytology, and tubeless gastric analysis technics in the early detection of malignant conditions of the various parts of the gastrointestinal tract have been evaluated.

The relevance of age and family history and the importance of achlorhydria or achylia have been emphasized as aids in selecting asymptomatic patients forty years of age or over for roentgen-ray and other investigative procedures to detect early gastric malignant conditions.

The place of both the sigmoidoscopic examination as part of the routine annual examination in patients forty years of age or over and of the examination of the colon by barium enema in all individuals with undiagnosed hypochromic anemia has been discussed.

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Ten Years of Progress in Early Cancer Detection

VINCENT H. HANDY, M.D., AND PAUL R. GERHARDT, M.D., ALBANY, NEW YORK

(*From the New York State Department of Health*)

Any progress that has been made in cancer control will benefit the geriatric patient since cancer, while it can occur at any age, is essentially a disease affecting people in the older-age groups. For example, the median age for cancer cases in Upstate New York in 1957 was 64.6 years of age. With this in mind, certain indices have been studied which indicate that a definite improvement has taken place in the statewide attack against cancer in the last decade.

One of the first thoughts that goes through a physician's mind on seeing a new case of malignant condition is: Is this an early cancer? One objective in cancer control is to reduce the interval of delay prior to diagnosing and treating a malignant condition. When speaking of delay, one is referring to the interval from the onset of symptoms to operation or treatment. Delay can be caused by a patient's reluctance to see his physician, what is termed patient delay, or can be caused by the physician temporizing in making the diagnosis, known as physician delay. If cases of cancer are diagnosed and treated earlier today than they were ten years ago it indicates that both public education and professional education have paid dividends; with less delay, patients now have an increased chance for cure.

Each physician has his own idea as to what he means by "early" in describing cancer, and while this concept of "early" is an inaccurate clinical estimate, at present it is the best estimate available to us. If the physician is thinking in a clinical sense, "early" refers to the beginning of signs and symptoms; if one's mind is more conditioned to the laboratory, "early" will mean preinvasive; if one thinks in anatomic terms, "early" will mean small or localized. If one's ideas turn to therapy, "early" will mean accessible to treatment; or in reference to prognosis, "early" would imply a high probability of cure. To those more interested in biology than pathology, "early" will mean that the process is beginning its life course. Most physicians would define an early cancer as a small localized growth which has spread little beyond its original confines.

TABLE I.—COMMON SITES OF MALIGNANT CONDITIONS, WITH PER CENT REPORTED IN EARLY STAGE OF DISEASE,* 1947 AND 1957, NEW YORK STATE, EXCLUSIVE OF NEW YORK CITY

Sex and Site	Per Cent Reported in Early Stage of Disease* 1947	1957	Relative Change in Per Cent
Male			
Skin	73.9	78.4	+ 6
Lung and bronchus	11.3	9.9	− 12
Prostate	24.0	28.5	+ 19
Large intestine (excluding rectum and rectosigmoid)	11.6	15.0	+ 29
Stomach	4.3	8.7	+102
Bladder	34.0	38.5	+ 13
Rectum	18.4	24.5	+ 33
Pancreas	5.1	8.0	+ 57
Larynx	22.3	30.0	+ 35
All other sites	21.8	22.2	+ 2
All sites	26.8	33.1	+ 24
Female			
Breast	25.9	25.6	− 1
Skin	74.9	80.0	+ 7
Large intestine (excluding rectum and rectosigmoid)	10.5	18.0	+ 71
Cervix uteri	32.2	50.8	+ 58
Corpus uteri	42.0	50.7	+ 21
Ovary	13.1	15.0	+ 15
Stomach	6.6	10.4	+ 58
Rectum	20.7	21.8	+ 5
Bladder	31.9	42.6	+ 34
All other sites	20.8	21.2	+ 2
All sites	28.2	35.4	+ 26

* Based on cases reporting stage.

Early Diagnosis

New York State, exclusive of New York City, is now in its nineteenth year of cancer reporting, having started in January, 1940. From its inception, cancer-morbidity reporting in New York State has had the

TABLE II.—Age-Standardized Cancer Mortality Rates,* All Sites Combined, and the Ten Leading Sites for Each Sex, New York State, Exclusive of New York City, 1945 to 1947 and 1956

	Male			Female		
Site	Rate 1945–1947	1956	Relative Change in Per Cent	Rate 1945–1947	1956	Relative Change in Per Cent
Esophagus	4.95	4.58	− 7			
Stomach and duodenum	24.52	17.50	− 29	14.88	10.46	−30
Intestines	18.64	18.69	+ 0.3	22.93	20.32	−11
Rectum and rectosigmoid	12.47	11.34	− 9	8.84	7.89	−11
Liver and biliary passages	5.83	5.40	− 7	8.13	7.18	−12
Pancreas	6.77	9.64	+ 42	4.88	5.85	+20
Lung and bronchus	19.56	39.66	+103	4.55	5.27	+16
Prostate	18.59	18.60	+ 0.1			
Bladder	8.68	8.74	+ 1			
Leukemia	5.88	8.37	+ 42	4.57	5.43	+19
Breast				35.62	33.71	− 5
Uterus				26.71	16.54	−38
Ovary and fallopian tubes				9.49	10.37	+ 9
All sites	163.54	183.44	+ 12	166.95	151.46	− 9

* Rates per 100,000 population adjusted to the 1950 census population for New York State, exclusive of New York City.

active support of the medical profession. The New York State experience with cancer reporting indicates that the method is practicable when the medical profession is informed about and is sympathetic with the aims of reporting and of the cancer program in general.

Some indication of progress in early cancer detection is shown in reviewing the percentage of cancer cases that are early at the time of diagnosis. As the physician records a malignant condition on the cancer case report card, he checks the state of disease for that particular patient, indicating whether in his opinion the case is early local, advanced local, has regional nodes involved, has distant metastases, or is recurrent.

One would expect that if educational efforts have been worth while, more patients are presenting themselves to their physicians at a time when their malignant condition would be classified as early local. The over-all trend in the last ten years has definitely been upward indicating improvement in this important index, although the amount of progress made varies with the individual site of cancer involved (see Table I). In 1947, 26.8 per cent of the cases in men were early; in 1957 this had risen to 33.1 per cent, a 24 per cent improvement in ten years. In women, 28.2 per cent of the cases were early in 1947; in 1957 this had increased to 35.4 per cent, a 26 per cent improvement in ten years.

In men, considerable improvement has taken place in those sites where the percentage of early cases reported in 1947 was small. In fact, all of the leading sites, except one, have shown some favorable change over the ten-year span. Most improvement has been shown in cancers of the stomach, pancreas, larynx, and rectum. It is interesting to note that there has actually been a decrease in the percentage of early lung and bronchus cancer in spite of the marked interest in case-finding for lesions of this site.

In women, all of the leading sites have shown some improvement, except breast cancer which has shown a very slight decrease. As far as breast cancer is concerned, more must be done to detect cases early, and it is for this reason that the medical profession should encourage breast self-examination for all women. With women themselves alerted and instructed as to what they can do to help detect breast abnormalities, and motivated to carry out this health habit regularly, the next decade should show a favorable change in the figures for early breast cancer. Considerable improvement has been made in the past ten years in diagnosing cancer of the following sites earlier in women:

large intestine, cervix, and stomach.

While there is still plenty of room for improvement in some sites among both males and females, the over-all figures indicate that the trend is in the right direction, and that in the last ten years much progress has been made.

Mortality

The main objective in the eventual control of any disease is a reduction of the death rate from that particular disease. Recent progress in the control of cancer can be gauged by any decrease in death rate that may have taken place over the last ten years. Table II shows the changes that have occurred in the ten leading sites of cancer for men and women.

There has been a 12 per cent increase in the death rate for men, comparing the annual average mortality rate of 1945 to 1947 with 1956; a great deal of this can be accounted for by the marked increase in the death rate from cancer of the lung and bronchus. In just the short span of ten years, the death rate from cancer of the lung and bronchus in men has increased over 100 per cent.

In women, however, the picture is much more encouraging. The death rate in women has decreased 9 per cent in the ten-year interval between 1945 to 1947 and 1956. A 38 per cent decrease in the death rate from cancer of the uterus is chiefly responsible for this over-all decline. Table I has indicated that much improvement has been made in ten years in diagnosing cancers of the cervix and corpus uteri while they are still early. No doubt the increasing use of cytology plays an important part in enabling more cases to be diagnosed early, consequently resulting in a reduction in the death rate from uterine cancer.

In both men and women there has been a decline in the death rate from cancers of the stomach, rectum, liver, and biliary passages. While there are some encouraging aspects in the review of death rates, particularly the progress being made to control uterine cancer, there is still much that must be done. Efforts must be concentrated on checking the alarming increase in mortality from lung cancer among men.

TABLE III.—Per Cent of New Cases* Pathologically Confirmed, Common Sites of Malignant Conditions Reported, by Sex, New York State, Exclusive of New York City, 1947 and 1957

Sex and Site	Per Cent Pathologically Confirmed 1947	Per Cent Pathologically Confirmed 1957	Per Cent Change
Male			
Skin	86.0	96.0	+12
Lung and bronchus	42.6	61.5	+44
Prostate	57.2	66.5	+16
Large intestine (excluding rectum and rectosigmoid)	54.2	68.2	+26
Stomach	37.0	56.3	+52
Bladder	75.9	82.8	+ 9
Rectum	70.2	80.4	+15
Pancreas	35.6	52.0	+46
Larynx	71.6	85.0	+19
All other sites	66.0	69.8	+ 6
Total	62.7	72.5	+16
Female			
Breast	80.9	81.4	+ 1
Skin	84.5	97.5	+15
Large intestine (excluding rectum and rectosigmoid)	54.0	67.8	+26
Cervix uteri	88.9	92.2	+ 4
Corpus uteri	89.7	95.4	+ 6
Ovary	79.0	73.7	− 7
Stomach	32.6	42.7	+31
Rectum	63.2	77.2	+22
Bladder	72.7	79.1	+ 9
All other sites	59.0	62.9	+ 7
Total	70.6	76.3	+ 8
Total both sexes	66.8	74.4	+11

* Included are cases reported only by death certificate.

Pathologic Confirmation

Ideally, each case of malignant condition should have the benefit of pathologic confirmation. While this is not 100 per cent realistically achievable today, good medical practice demands that a diagnosis of malignant condition be confirmed by pathologic examination wherever possible. In the last ten years, considerable progress has been made in this regard among the medical profession. New York State is fortunate in having 174 approved laboratories where a pathologic diagnosis is available to practicing physicians for patients with suspected malignant condition.

There has been a gradually-increased use of pathologic services to confirm diagnosis, and this increase, according to malignant site, is shown in Table III. Most improvement has been made in those sites where there was the greatest room for improvement. It is indeed commendable that over 95 per cent of the skin cancer cases receive the benefit of a pathologist's examination, but it is unfortunate that there has been a decrease in such confirmation for cases of cancer of the ovary. However, the over-all figures are encouraging and indicate that in men 72.5 per cent of the cancer cases are now being confirmed pathologically as compared with 62.7 per cent ten years ago, an improvement of 16 per cent. In women, 76.3 per cent of the cases are now being confirmed by the laboratory as compared with 70.6 per cent in 1947, an 8 per cent improvement.

Summary

In reviewing changes that have occurred in cancer control during the last ten years, certain factors indicate that definite progress is being made. There has been a steady and marked improvement in the percentage of cancer cases that are diagnosed while at an early stage of disease. There is evidence of a reduction in the death rate from cancer among women, shown most markedly by the 38 per cent decrease in the death rate from uterine cancer during the last ten years. And last, there is a gratifying increase in pathologic confirmation of cases of malignant condition.

However, one must not lose sight of the areas still to be conquered. If 34 per cent of present-day cancers are diagnosed while still early, it means that 66 per cent are in groups classified as other than early, and therefore would not have the maximal opportunity for cure. While the decreasing death rate from cancer in women is encouraging, the marked increase in the death rate from lung cancer among men is a sobering fact. Much progress has been made in the last ten years, bringing us still closer to our eventual goal of complete control of cancer.

Early Detection of Abnormalities of the Genitourinary Tract

ARCHIE L. DEAN, JR., M.D., AND JOHN K. LATTIMER, M.D., NEW YORK CITY

(*From Squier Urological Clinic, Columbia-Presbyterian Medical Center*)

THE early detection of abnormalities of the genitourinary tract depends on two major factors: the physician and the resources available to the physician. Present-day urology is an exact science with a wealth of precise diagnostic aids. Nonetheless an inquisitive physician who takes a searching history and does a careful physical examination is fulfilling the basic requirements for the early detection of abnormalities of the genitourinary tract.[1] Proper selection of specific laboratory studies can be accomplished only through accurate history-taking and careful physical examination. This report is an attempt to summarize pertinent points regarding the urologic history, physical examination, and radiologic and laboratory examinations which may be of value for early diagnosis of genitourinary abnormalities. Emphasis will be placed on studies which are available to general practitioners who are practically always the first to examine patients with genitourinary tract disease. Hess, *et al.*,[2] have recently pointed out the fact that the general medical man usually is well equipped to make an accurate presumptive diagnosis, and that his history and physical findings can prevent much unneeded, expensive repetition in the hospital.

History and Physical Findings

Urologic History—Certain points in the urologic history-taking are worthy of emphasis. Four symptoms will be discussed which cover, fairly well, the presenting complaints of a great many patients with urologic abnormalities, and these four symptoms will be considered in some detail.

The first is pain. Pain in relation to urologic abnormalities may vary in position, intensity, and duration, and a tremendous amount of diagnostic help may be obtained by a careful consideration of its location, the type of pain, and radiation.

Renal pain usually occurs in the lumbar area and if the patient states that he has back pain it is important to note exactly where this back pain occurs. Renal pain is usually not in the midline and does not radiate upward to the tip of the scapula nor to the thoracic cage. Renal pain may be steady and aching in nature if due to incomplete obstruction or to stretching of the renal capsule by a neoplasm. If the obstruction is complete this pain may cease as renal function ceases and the renal pelvis becomes no further distended. This is important to recognize. Ureteral colic typically radiates downward and anteriorly, toward the genitalia, and is intermittent. However, when complete obstruction occurs, the pain may stop, leaving no symptoms to point to the completely obstructed ureter. It is important to notice whether or not the pain is related to the position of the patient. For instance, since the kidneys in thin young women may be unusually movable, it is not uncommon for the patients to have renal pain after they have been standing for a long period of time, and for it to cease when they lie flat or in Trendelenberg position. This may give a clue to renal ptosis as the cause of the pain. In children, renal pain frequently may be present as abdominal pain or periumbilical pain. Therefore, in a child with obscure abdominal pain it is important to investigate the genitourinary system in detail. We have had 2 patients recently with lumbar pain on one side, who demonstrated normal kidneys on this side and distinct urinary tract pathologic condition in the kidney of the opposite side. The mechanism of this phenomenon is obscure but is nonetheless worthy of mention and shows how easily one may be fooled by the presence of lumbar pain as a presenting symptom.

Hematuria is the second symptom, which usually portends a serious genitourinary abnormality. In the history of a patient with hematuria it is of value to determine whether the hematuria is present only at the onset of urination (initial), whether it is present only at the end of the urinary output (terminal), or whether it is present from the beginning to the end of urination (total). Patients with initial hematuria usually will be found to have a lesion of the urethra distal to the external sphincter. Patients with terminal hematuria usually have a lesion of the prostatic urethra and patients with total hematuria usually have an abnormality present in the bladder or in the upper urinary tract. If the hematuria is painless this suggests that inflammation or stone are not present and that neoplasm is a likely possibility. Hematuria of unknown origin, whether gross or microscopic, deserves complete urologic evaluation. Microscopic hematuria is just as significant as gross hematuria.

The third urologic symptom is urinary incontinence. Much can be learned from the patient with urinary incontinence if one inquires into the exact type of incontinence. The young woman with urgency incontinence, associated with dysuria, will usually be found to have a bladder or urethral inflammation as the underlying cause. On the other hand stress incontinence, which is incontinence only with coughing, sneezing, or laughing, is most frequently due to relaxation of the pelvic floor which supports the urinary bladder and urethra. Such a patient may be benefited by some form of suspension of the urethra. It is important to investigate these patients completely to be sure that a chronic bladder inflammatory condition is not overlooked which might continue to plague the patient after a bladder suspension operation has been done. Some patients, especially younger patients, may give a history of continuous wetness, urinary incontinence, but with normal voidings between times. The classical picture is that of a little child, usually female, with an ectopic ureteral orifice located somewhere in the vagina or in the urethra distal to the sphincter in such a way that the drainage from this ectopic orifice continually drips into the vagina, and yet with a bladder which accumulates the urine from the other kidney and empties at intervals in the normal manner. A diagnosis of an ectopic ureteral orifice can be made by an astute physician when he obtains a history of this type of incontinence from the child's mother. It usually can be obtained only after it is apparent that the child at about three years of age still has not gained a normal sphincter control, but occasionally an alert mother will realize that her child leaks constantly and will bring the baby in to the doctor at a very early age.

The incontinence which may be seen in prostatic hyperplasia in an older man is usually overflow incontinence with a bladder obstructed by the enlarged prostate gland. In these patients there is urinary incontinence of small amounts, at frequent intervals, usually associated with a rather constant desire to void. These patients will be found to have an enlarged bladder on abdominal palpation. At times the prostate gland is of small size and the obstruction is due to a bladder-neck "bar" formation or bladder-neck contracture which may not be diagnosed by rectal examination of the prostate gland itself. These men likewise may complain of enuresis. Urgency incontinence is an early symptom of the same abnormality due to the fact that the effective bladder capacity is cut down because of the large residue of urine. A careful history as to the type of urinary incontinence will frequently lead to an early detection of the basic underlying pathologic condition.

It is being recognized more and more that severe genitourinary disease may exist in very young children with little in the way of physical findings or symptoms. The character of the voiding urinary stream may be the fourth symptom. It is of great importance especially in little boys and may be overlooked in the history. Careful questioning of many of our children with bladder-neck pathologic conditions, dilated bladders, and massive hydronephrosis revealed that the mother noticed that the child would void intermittently in small spurts with a weak stream or a dribble without much apparent straining or that he would void in a fairly good stream but that he had to interrupt the stream two or three times before the bladder was completely emptied. The mothers should be carefully questioned regarding this factor because it may well be the only symptom of a lethal underlying genitourinary abnormality.

Physical Examination.—Careful palpation of the abdomen is mandatory for any patient suspected of having a genitourinary abnormality. Melicow and Uson[3] in an as yet unpublished study of our cases have shown that over 50 per cent of "surgical" abdominal masses in children were of urologic origin. In children it is frequently the mother who first notices the presence of an abdominal mass. The usual story is that the mother finds a swelling of the abdomen while bathing the infant or small child. Every routine examination of a well baby should include very careful palpation of the abdomen, for it is only by early diagnosis that patients with Wilms tumor can be salvaged.

Similarly, in adults, the first knowledge of a carcinoma of the kidney is often obtained through careful abdominal palpation. We recently treated a patient who had undergone yearly physical examinations and laboratory tests at a world-famous cancer-detection center. Shortly after having been examined at this cancer detection clinic, he developed hematuria. Examination of the abdomen at this time revealed a large abdominal mass due to a carcinoma of the right kidney. Abdominal palpation frequently reveals a dilated bladder. We see this not only in men with prostatic obstruction but also in infants with congenital bladder-neck obstruction. The prognosis for the infants is vastly improved if their pathologic condition is demonstrated early, before infection, pyuria, and high fevers have developed.

It is important that the testes of young men be carefully palpated at routine examinations. This examination is likely to be overlooked. The incidence of testis tumor is highest in the eighteen- to thirty-five-year age group[4] and the presence of a testis tumor is rarely accompanied by pain. The enlargement of a testis tumor may not be noticed by the patient himself for some time. An examiner who finds a "silent" testis tumor on routine physical examination may well bring about its cure, provided it is treated promptly. The testis which is the site of a tumor is usually larger and heavier than the normal testis. It is usually quite firm and is not tender on palpation, in contradistinction to epididymitis, which is always tender. Since the tumor remains confined within the tunica albuginea as it enlarges, the general shape of the testis is not greatly altered. Any induration or enlargement of the testis should be considered malignant until proved otherwise by surgery.

Every routine examination in the male should include an examination of the urethral meatus. Although the patient's family may not notice any change in the characteristics in their son's voiding, even moderate stenosis of the urethral meatus may produce severe dilatation of the bladder and upper urinary tract.

Great emphasis has been placed, in recent years, on the careful examination of the rectum and prostate in men, and Kimbrough's statistics[5] from the army demonstrated the advantages of careful prostatic examination at regular intervals, as is required of all army men over the age of forty-five. The incidence of potentially-curable, operable carcinoma of the prostate of men in the army is 54 per cent whereas the incidence of operable carcinoma of the prostate in civilian life is between 5 and 30 per cent.

Prostatitis is a frequent cause of obscure low-back and abdominal pain in young men who otherwise appear healthy, and it is only through a rectal examination of the prostate that the diagnosis may be made. Such prostate glands are soft, the median furrow frequently is not present owing to congestion, and these glands are characteristically tender.

Laboratory Procedures

LABORATORY TESTS.—Certain laboratory examinations aid in early diagnosis. A careful urologist, for the most part, will examine the urine sediment personally under the microscope. A voided urinalysis in the female is worthless and it is necessary to obtain a catheterized urinalysis in the female for exact microscopic study. A clean voided specimen in the male is perfectly valuable, however.

The blood urea nitrogen is a valuable screening test of renal function. Many an older male with anemia and loss of appetite has been found to have bladder-neck obstruction, the first clue being an elevation in his blood-urea nitrogen. The same may be true in certain children with congenital urologic deformities not recognized on initial physical examination.

Another specific blood test which may be of value in the early diagnosis of genitourinary abnormalities is the serum acid phosphatase. Elevation of the serum acid phosphatase signifies carcinoma of the prostate gland which has spread beyond the confines of the capsule of the prostate. Not all metastatic malignancies of the prostate gland will produce elevation of the serum acid phosphatase, but approximately two thirds of such malignant conditions will cause an elevation of this enzyme in the circulating blood stream and when it is present it signifies incurable carcinoma of the prostate. In any patient with obscure back pain or pelvic bone pain, an elevation of the serum acid phosphatase may be diagnostic. The so-called occult carcinoma of the prostate which is not recognizable by rectal examination may be first diagnosed by an elevation of the acid phosphatase enzyme. It should be remembered that operable prostatic carcinoma confined within the prostatic capsule will not produce an elevation in the serum acid phosphatase. An occasional false-positive elevation will result from manipulation of the prostate or cystoscopic instrumentation.

Radiologic Examinations.—A plain roentgen-ray film of the abdomen may furnish the earliest clue to serious urologic abnormalities. Dr. John Robinson, in this institution, successfully removed a Wilms tumor recently in a six-day-old infant. This tumor was diagnosed by a plain film of the abdomen, a routine x-ray film taken on all newborn children at the referring hospital.

The excretory urogram has been perfected to such an extent that it is most innocuous. Side-effects are rare and not serious and the films which are obtained are highly diagnostic. A tremendous amount of genito-urinary disease is being uncovered by more frequent use of the excretory urogram as a survey in patients who are admitted to the hospital with otherwise obscure symptoms and lack of diagnostic physical findings. Of great value in this connection is the fact that the excretory urogram is a physiologic laboratory test which does not cause infection of the urinary tract. The postvoiding film is a valuable method for determining the presence of residual urine. This x-ray film is taken immediately after the patient has voided, after the intravenous pyelographic examination, and gives an accurate visual estimation of the amount of residual urine in the patient's bladder without the discomfort and risks attendant on catheterization.

In certain female patients with lumbar pain an upright film taken during the examination will reveal mobility of the kidneys. This mobility is considered pathologic if it is associated with hydronephrosis. The value of the excretory urogram in patients with renal colic cannot be overestimated, and since about 15 per cent of renal calculi are radiolucent and will not be visualized on the plain film the value of the excretory urogram is at once apparent.

A delayed film in patients with renal colic also may be of great diagnostic value. We recently treated a physician with obscure right lumbar and right lower-quadrant abdominal pain which was intermittent in nature but not colicky. The pain seemed most likely to be caused by a ureteral calculus. However, the patient had auricular fibrillation on examination which had been noted for thirteen years. There was definite likelihood of a renal infarct being the cause of his pain. Urinalysis revealed many red blood cells. Excretory urogram revealed diminished renal function on the right side in the routine study but no calculus was noted. A delayed film taken three hours after the injection of the contrast medium revealed the diagnosis. A tiny calcific density was noted at the ureterovesical junction with considerable ureteral dilatation above the stone at this time.

Other Procedures

The more elaborate urologic diagnostic procedures deserve mention in any article of this type. These naturally are usually done by the specialist trained in the performance of these technics. Cystoscopic examination in the female is almost painless, and in the male, if cystoscopy is done gently with local anesthesia, the cystoscopic examination should be done without significant pain. All urologists today work hard to dispel the fears which patients may have acquired about the hazards and pain associated with a cystoscopic examination. Prompt cystoscopic examination during an attack of gross, painless hematuria may well furnish the only early clue as to the cause of bleeding from a silent renal tumor and in this connection prompt cystoscopic examination may be of great value. On the other hand patients with symptoms of dysuria and frequency are not usually examined cystoscopically at once but are best treated by antibiotics or urinary antiseptic drugs until the symptoms abate somewhat before cystoscopic examination is performed.

The presacral pneumogram is performed by the insufflation of a measured amount of carbon dioxide or oxygen into the retroperitoneal space. It is a safe method for outlining the upper poles of the kidneys and the adrenal areas and is of value in the diagnosis of obscure renal and adrenal lesions.

The cystogram[6] is a method of opacifying the inside of the bladder and may be of value in the diagnosis of bladder-neck obstruction, filling defects of the bladder such as bladder tumor, and obscure types of hydronephrosis of infants and children. It is performed by instilling radio-opaque fluid into the bladder until the bladder is filled following which x-ray films are made. If ureteral reflux is present, evidence of severe urinary tract disease is thus uncovered. This simple examination can be done on infants and young children in the outpatient department and requires no anesthesia.

The aortogram[7,8] is a method of opacifying the renal arterial system. It consists of the rapid injection of a concentrated iodide solution into the aorta just above the origin of the renal arteries. It furnishes diagnostic evidence regarding the blood supply of the kidneys and differential diagnosis may be made between renal neoplasms and benign cysts of the kidney. With increased interest in renal vascular anomalies, such as renal artery aneurysm and renal artery stenosis, the aortogram is gaining new popularity.

Another specialized x-ray technic which may be of value in the early detection of genitourinary abnormalities is the nephrotomogram.[9] This consists of the rapid intravenous injection of a concentrated solution of iodide which will opacify the kidneys and may differentiate between renal cysts and renal tumor. These cysts are revealed as a radiolucent area within or attached to the kidney, whereas renal neoplasms are opacified.

The last four specialized diagnostic technics are described in order to complete the diagnostic armamentarium available to the urologist. However, in most instances a reasonably accurate urologic diagnosis can be made before these highly-specialized technics are required.

Summary

Urology is becoming an even more exact science, with precise methods of diagnosis and equally precise methods of therapy. The early recognition of genitourinary pathologic conditions depends on an inquisitive physician's obtaining a thorough urologic history and performing an accurate physical examination. Several points which may be of value in this connection have been mentioned to aid physicians in the early recognition of genitourinary abnormalities.

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Early Psychologic Reactions Associated with Organic Brain Disease in the Aged

MARC H. HOLLENDER, M.D., SYRACUSE, NEW YORK

(From the Department of Psychiatry, State University of New York Upstate Medical Center, and Syracuse Psychiatric Hospital)

In discussing so-called senile changes, our attention is immediately engaged by evidence of intellectual decline and the reactions this evokes. For the most part, however, these manifestations are not limited to the aged. They are noted as well in younger persons who have sustained brain damage.[1] Moreover, the demarcation of early and late symptoms is not always a sharp one. Certainly, though, the classical triad of disorientation for person, place, and time; memory loss, especially for recent events; and impairment of judgment, like the triad of intention tremor, scanning speech, and nystagmus in multiple sclerosis, occurs only in advanced cases. One or another symptom of the triad may be, and usually is, evident but in a subtle rather than a gross form. An effort will be made to highlight the less glaring clues which suggest the insidious onset of brain dysfunction.

Not uncommonly attention is first directed to intellectual decline after the interposition of events which, to all intents and purposes, act like a provocative test. In this group are surgical procedures, the prescription of barbiturates, and radical changes in living arrangement. In some instances, these produce an effect somewhat like quinine in a suspected case of myasthenia gravis. It is as though a break were to occur in a layer of thin ice. In other instances, persistent mental changes are ascribed to, but do not actually begin with, an illness or an operation much as idiopathic epilepsy is frequently attributed to a fall from a high chair.

In the second portion of this article personality changes resulting from the loss of the integrating and controlling forces of the ego will be discussed. It is assumed that the clinical picture is determined both by the pathologic condition of the brain and the pre-existing emotional makeup of the patient.

Although most attention has been paid to intellectual decline and personality changes, clinical observation would suggest that primary alterations occur in affect or feeling tone. This aspect of the problem is more difficult to define, but at times it is striking.

Transitory psychotic states due to brain disease do occur and should be differentiated from more persistent phenomena.

Since the approach, in this article, is psychologic rather than pathophysiologic, no attempt will be made to separate senile dementia, arteriosclerotic dementia, small strokes (of Alvarez), brain tumors, pernicious anemia, or other central nervous system diseases. Obviously, neurologic studies must be used for this purpose. They would take us into a field which is beyond the scope of this article.

Evidence of Intellectual Decline and Reactions To It

Intellectual decline, like the loss of other important functions, mobilizes the person to make adaptive efforts. These vary from a gradual regearing to cope with new limitations to a sudden sweeping restriction of activities in an effort to avoid confrontation by an inability to complete a task. In this section I shall consider the menta activities which are affected and the re-

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Much of the clinical data which served as the basis for this article was gathered during an eight-year period when the author served as psychiatrist at Drexel Home in Chicago.

actions which these changes evoke.

Memory loss, which is characteristically more profound for recent than past events, calls forth a variety of responses. Some persons will rely heavily on a notebook containing such information as the owner's date and place of birth, home address, physician, and so forth. Others will attempt to refer questions to relatives. Still others will cover up by using jokes and quick-fire quips. For example, an elderly man who had always been noted for his ready wit, would come forth now and again with humorous quips. Retrospectively it was apparent that this was his response to questions involving memory which he could not handle. He attempted to bridge the gaps and to divert attention from his defect. It is likely that he was hiding his memory impairment from himself as well as from the examiner.

Patients attempt to rationalize their memory impairment by brushing aside questions with the comment that the information requested does not seem consequential or is of no interest. One woman when unable to find the answers to questions would say, "The trip to your office was so long that I have to have time to get my bearings." Relatives may employ similar tactics. For example, the daughter of a sixty-five-year-old woman maintained that her mother's forgetfulness was simply a means of attention-getting.

The need to be explicit about details to the point of parading the ability to recall minutiae may be designed (consciously or unconsciously) to convey the impression to oneself as well as to the examiner that memory function is intact. It suggests that a struggle is being waged, perhaps in response to an insidious and subtle change.

Early in the process, patients may be acutely aware of their defect. They commonly react with anxiety, irritability, and impatience in spite of their defensive or compensatory actions. Anxiety in this context may be regarded as a signal of danger to the mind* much as pain is a signal of danger to the body.[3] After the process has persisted for a year or two, and usually after it has become more profound, the anxiety, irritability, and impatience diminish or subside. Even the recognition of the defect then seems to be lost. This may be due to an adaptation to the memory loss. As a result of regearing it becomes a part of a way of life or it is handled by the psychologic mechanism of denial. In other instances progressive brain damage results in an impairment of the observing ego's capacity to recognize the nature of the situation.

It has been suggested that memory impairment in the aged may be due to emotional rather than physical causes. According to this view, turning to the past is used to escape the painfulness of the present. Since recent memory is usually more seriously affected, this conclusion appears logical. Nevertheless, we may question it because in those patients with appreciable memory loss there are invariably other symptoms of organic brain changes.[4] It is altogether likely, however, that memory loss may predispose to the use of the psychologic mechanism of amnesia.[5]

The following explanation was suggested by Basowitz[6] for the greater impairment of recent than remote memory: "It is generally assumed that memory loss for recent events in the aged is due to an impairment in memory capacity per se. While this is probably true to an extent, such a defect is also a likely consequence of the impairment of certain abilities which are required for efficient learning and memory storage in the first place. For example, difficulties in attention and concentration, greater tendency towards fatigue, and lessened adequacy of the sensory apparatus through which information from and about the world is gained, so characteristic of senescence, must play some role in producing a decline in learning and memory. It is one thing to refer to memory loss as though a faculty has undergone damage in its own right, and still another to recognize it as due to an undermining of functions necessary for the successful operation of the memory process."

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* Anxiety was viewed by Freud[2] in two ways. His first theory was that undischarged sexual impulses (libido) were converted into anxiety. His later theory, which was added to but did not displace the first, was that anxiety was a signal of an unacceptable impulse which was threatening to erupt and hence jeopardize the person's relationship with significant people in his life. The suggestion made here is that there is still another source of anxiety. (Irritability and impatience are expressions of frustration as well as of anxiety.)

Intellectual tasks which require conceptual or abstract thinking may be affected. This refers to the ability to grasp the essence of a situation, to group items in categories, and to think in a logical manner. For example, when an eighty-five-year-old man, a former professional baseball player, was asked why he had given up pitching, he said: "I'm too old. As a matter of fact, I couldn't throw a ball ten feet anymore." The question was somewhat ambiguous, but clearly the most appropriate answer would have related to why he had retired from baseball fifty years earlier. He failed to reason this out or, to put it another way, he failed in a task requiring abstract thinking. This disturbance in abstract thinking specifically involved a distortion in time perspective. There was a kaleidoscoping of present and past in that a present circumstance was used to explain a past event.

An early clue to intellectual decline is found in what I refer to as the "wheel-grinding" phenomenon. The person goes through such a great effort to understand the task presented by a question and to reach an answer to it that, figuratively speaking, it is almost possible to hear the wheels grinding. The time taken to reach an answer may also be longer than would have been anticipated. This becomes a striking sign when the questions asked are of a type which formerly would have been handled relatively effortlessly. Similarly, an expression of glee after successfully answering a simple question is a clue to an alteration in cognition.

Impairment in intellectual function may not be readily apparent in the performance of simple tasks which have been an everyday part of the person's life. It becomes glaring only in performing tasks which are not routine and hence require a new combination of thought processes. This leads to the well-recognized phenomenon of reverting to or staying with the trusted and true and avoiding new situations. When an elderly seamstress showed evidence of intellectual decline, she became incapable of working a sewing machine but she retained the ability to sew by hand.

An older person may become psychologically depressed and complain that he is unable to function adequately in his profession or business. The question then arises: Is his difficulty due to the state of depression or is it due to intellectual decline which makes it impossible for him to handle his job and results secondarily in a depression?

This question arose in the case of a sixty-four-year-old engineer who had become depressed and suicidal. The history suggested that intellectual decline preceded depression. A psychologic examination revealed the following information: "Rather clear evidence is provided by the intelligence test administered (Wechsler Adult Intelligence Scale). At once Mr. C. produces the record of a person of superior intelligence and one who is experiencing inroads on his abilities. The verbal portion of the test, depending on stable and over-learned material, is easily handled. The performance portion is distinctly inferior to this high level, and inferior in important respects to the level of his age-peers. The subscales involving the poorest performance are sensitive to cerebral limitations and damage Hence, the decline in intellectual functioning seems not primarily the result of depression although the decline might be enhanced by a depressive reaction."

Perseveration, or the repetition of the same word or thought over and over again is a phenomenon that has long been associated with organic brain changes. This may also appear in the form of persevering in an effort to find an answer to a question which has been asked minutes before. In more severe forms of illness an answer to a previous question may be offered out of context in terms of the question under consideration.

Circumstantiality, or a rambling, discursive response which follows a circuitous route but finally returns to the main issue, is also commonly noted in patients with organic brain changes.* It is as though there is little ability to differentiate the insignificant from the significant. For example, when asked where he was born, the person goes beyond the name of the city and adds the street address and other details.

It is difficult to ascertain whether the change in eating pattern which has been noted is related to an impairment of intellectual function, a depressive reaction, or a disturbance in the ability to initiate activity. At any rate, a son or daughter of an aged person may report that a parent, who lives alone, fails to eat regular or adequate meals. The parent maintains that he eats well but a check on the food in the refrigerator reveals that very little is consumed. Yet, if food is prepared and placed before him he will eat it without coaxing. In these instances nutritional factors may be added to the pre-existing brain disorder and perhaps aggravate it.

In the early stages of the process, defects in judgment do occur but are not glaring. They are least apt to be noted in routine tasks which depend largely on old patterns of learning. They are most apt to be noted in situations which call for new learning.

Rarely is a disturbance in orientation for person, place, or time noted at the onset of the disorder. Disorientation, when it does occur, usually is transitory in nature. For example, an eighty-six-year-old man would awaken in the middle of the night and think that it was time for him to water the horses. This had been his job more than fifty years before. He would get up, partially dress himself, fill a pail full of water, and start down the stairs. About halfway down he would come to, return to his apartment, empty the pail of water, and go back to sleep.

It is well accepted that the ego constricts during sleep. Freud[7] commented on this phenomenon in his study of dreams. Many people experience a momentary feeling of lack of complete orientation on arising, especially in a strange place. The transition from the sleeping ego state to the waking one, however, is a rapid one. It may be postulated that in the person with organic brain damage, the elasticity of ego function is impaired. An overly-simplified analogy might be made to a worn-out rubber band that has lost its snap. The supine position of the sleeper may alter the circulation, which is of marginal adequacy, so that more time and perhaps activity are required to overcome anoxia and thus relieve the state of confusion. This explanation helps us understand why the nocturnal behavior occurred but it does not cast light on its specific content, such as why the man repetitively started out to water horses. It might be postulated that this is a regression to a much earlier time when he was healthy and happy.

The following account of the philosopher Immanuel Kant's experience in his later years is an illustration of disorientation on arising in the morning[8]: "Among other phantasmata more shocking and indescribable, his dreams constantly represented to him the forms of murderers advancing to his bedside; and so agitated was he by the awful trains of phantoms that swept past him nightly, that in the first confusion of awakening he generally mistook his servant, who was hurrying to his assistance, for a murderer. In the daytime we often conversed upon these shadowy illusions; and Kant, with his usual spirit of stoical contempt for nervous weakness of every sort, laughed at them; and, to fortify his own resolution to contend against them, he wrote down in his memorandum book, 'There must not take place any more of these nightly flights of fancy.' "

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* Neither perseveration nor circumstantiality are pathognomonic of organic brain changes. Both occur in other processes.

There are aged persons who do not become disoriented even for brief periods but experience mild clouding or confusion. They function as though they have neither a sharp image of themselves nor a clear picture of the situation. Their responses, therefore, lack assuredness and definiteness.

Lucid periods lasting for minutes, hours, or days are common, especially in the early phase of the illness. For this reason, information supplied by a person who lives with or spends much time with the patient is of considerable value.

Personality Changes

Personality changes in the aged suffering from organic brain disease can be explained, at least in part, by an impairment of the integrating and controlling mechanisms of the ego. It is as though the flood gates are lowered and what was there now pours over. The clinical picture is shaped by the threatened release of latent impulses, the mobilization of conflicts, and the defensive reactions called forth to cope with them. Many people remain as they always were but, so to speak, become more so. Others display the other side of their personality. In this way organic brain disease produces a reaction analogous to that of delirium or alcoholic intoxication. The alteration in cerebral function with its effect on the integrating and controlling mechanisms of the ego is primary. The specific nature of the disorder, however, is largely determined by the emotional makeup of the person. As a consequence, the clinical picture is extremely varied.

Paranoid reactions are common. The aged person may accuse others of persecuting him. This may be accompanied by a general suspiciousness and grandiose trends. The grandiosity may take the form of inflating the value of accomplishments which ordinarily would not be especially noteworthy. This in itself is suggestive of decline in cerebral function.

In the following example the impulses which were mobilized were projected onto others. Mr. G. warned young women to be careful of strangers and to guard their purses from thieves who might be careening about on the streets. He also stated that men were waiting for the opportunity to get girls into trouble. These notions were first expressed at the time that signs of changes in intellectual functioning were noted.

Explosive outbursts are occasionally encountered. These breakthroughs are reminiscent of the behavior of an otherwise mild-mannered person when inebriated. The aged person in his more lucid periods, like the drinker when he is sober, becomes remorseful and apologetic.

Sexual disturbances usually are not expressed openly until the process is advanced. They then take the form of masturbation in public, fondling of children, and delusions with a sexual content.

The following instance is one in which sexual behavior occurred early and was episodic. Commitment to a state hospital of a seventy-four-year-old man was precipitated by an incident in which he played with his granddaughter's genitals. It was noted at the time that he was confused, depressed, cried easily, and spoke in a rambling manner. The diagnosis was psychosis with cerebral arteriosclerosis. When seen by the writer eighteen months later, the following note was made: "Mr. E. reminded me of a steady, unimaginative clerk with a sense of humor which covered his sadness. He was circumstantial, but he did not perseverate. There was some suggestion, in his failure to comprehend questions, that his thinking was concrete. His memory, however, was reasonably good and his sensorium was clear. While his affect was appropriate, a staged or thin quality was evident at times." In speaking of the cause of his hospitalization he referred only to an impulse which overcame him. He was dmitted to a home for the aged where he ade an adequate social adjustment.

The following case is one in which elusions were first expressed approximately ne year after the onset of organic brain hanges had been noted. Mr. H. screamed at his roommate was taking women to ed with him and that someone must get d of them. He also maintained that he ad been asked to pass out urinals. A ear before he had been much concerned bout memory loss and manifested con-derable overt tension. The tension was o longer evident. Although he went rough the right motions, there was an mptiness to his verbal productions. He ore two socks of the same color but of ifferent patterns. In a way, this seemed typify his mental functioning. After omplaining that he had been asked to rry urinals, he stated that he had never ad any disease. The juxtaposition of rine and disease was a recurrent theme. e was certain that his roommate had a isease, specifically syphilis.

In connection with the ultimate develop-ent of delusions, the patient's reaction pproximately one year earlier is significant. t that time he stated that his memory was not so hot." He immediately added, "I now what I am doing," and then chuckled. uite clearly memory impairment and losing his mind" (loss of controlling and tegrating function) were equated in his inking. In essence he said, "I may not be ble to remember things but I still know hat I am doing." He crystallized this in is very next statement: "I don't think I m nuts yet, but I am a little hazy."

It is likely that mental deterioration and erhaps the urinary problem of his roommate ere related to the breakthrough of a onflict about urination and masturbation. is of interest that there was a childhood istory of enuresis.

Impairment of cerebral function will obilize an intense reaction in those who epend on intellectual performance to main-in a feeling of adequacy. For example, a sixty-four-year-old industrialist became depressed when he could no longer carry his former responsibilities. He then referred to himself as a bum and found life intolerable. Significantly, his mother had always placed tremendous demands on him for achievement. For this as well as other reasons, he regarded himself as a man only as long as he could carry out complicated intellectual tasks.

An older woman who had declined intellectually reacted to a problem about rejection. She maintained that one member of the staff of a home for the aged was attempting to kiss her. She also wandered away from the home looking for her son. After stating that her sons and daughters did not visit her often enough, she commented that people at the home did not like her. She went on: "I think that they are angry at me, but I know they aren't. I expect them to do more than just say hello." It seemed that she assumed that the residents in the home felt toward her as her family did; in other words, treated her without enough feeling and interest. They were not providing her with the response she sought. Both the notion that a worker was kissing her and the random wandering in search of her son seemed to be responses to her need for greater closeness in human relationships.

It is important to bear in mind that the most striking feature in some instances of impaired cerebral function may be the personality changes. During a detailed interview or on psychologic testing the intellectual defect may also become evident.

Changes in Affect

In addition to alterations in mentation, changes in the feeling tone or affect of older persons are often noted. These are difficult to assess and to measure, and comparatively little has been written about them. In some instances, blunting or flattening of affect may be an early manifestation. The patient's responses have an empty or a staged quality to them. They may even be robot-like. This may be due to a primary involvement of those areas of the brain concerned with affect. It could also occur secondarily to profound intellectual deficit.

The following case notes might serve as examples of the primary alterations in affect to which I have reference. Two older persons lived together in a warm and responsive relationship for many years. At a time when mild intellectual defects became apparent, they drifted apart until finally it seemed as though two strangers were sharing an apartment. In another instance, a man lost his wife after forty-eight years of marriage. When seen two weeks later he spoke of his wife's death without much show of emotion. He had had a cerebral vascular accident two years before and he suffered from mild disturbances in mentation. An investigation of the situation seemed to indicate that a primary involvement of affectivity rather than a response to intellectual decline or to emotional problems accounted for his lack of display of feelings.

Transitory Psychotic States

It is well known that psychotic episodes lasting only for a few hours or days may occur during a period of cardiac decompensation, following a cerebral vascular accident or as a sequela of a surgical operation. To all intents and purposes these are delirious reactions. The process becomes irreversible only if there is much pre-existing brain damage.

Among the less-common causes of a transitory psychotic state is dehydration. An eighty-eight-year-old man, while dehydrated, thought he was living on the plains of Russia as he had when he was a child. He tore up bed sheets which he used as rags to bind his feet. After the dehydration had been treated and he returned to his usual state of mind, it was learned that as a boy he had had no shoes and that he wrapped rags on his feet before going out into the snow.

It is of some interest to note that in this instance an alteration in brain function resulted in the emergence of an old ego state.[9] This was also true in the man who would start out to water the horses. It is not uncommon to encounter an aged person who persistently relives a period of life of forty or fifty years before, but this is usually encountered during an advanced stage of the disease.

The following reaction occurred in response to a sudden cerebral vascular phenomenon in a person whose sensorium was already clouded. This seventy-three-year-old woman stated that she was fearful and that she was afraid that she would confuse me. She maintained that the two sides of her face appeared to be different when she looked into a mirror. This notion was related to an experience with a hairdresser who had changed her hair-do. She was certain that everything would be all right if a curl were pulled out. There was no history of previous concern about her hair.

It seemed apparent that diplopia, or perhaps some other change in vision, was responsible for her statement that the two sides of her face were different. The change in her body, probably in her eyes, was experienced as something frightening and confusing. Her reaction to it, because of her clouded sensorium, was infused with the type of thinking we usually ascribe to a primitive person; namely, a hairdresser had done something to her hair (head) and she would be all right if a curl were pulled out. The patient died a few days later.

Pre-existing organic brain damage was responsible for an unusual way of relating the symptoms of a further alteration in the patient's physical state.

Summary

The focus in this article has been on the early psychologic phenomena which are assumed to be related to brain disease in the aged. These have been divided into (1 evidence of intellectual decline and reaction to it and (2) personality changes resulting from the loss of integrating and controlling forces. A few comments have also been made on changes in affect and transitory psychotic states.

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Early Detection of Diabetes Mellitus

FRANK W. REYNOLDS, M.D., M.P.H., ALBANY, NEW YORK

(From the Bureau of Chronic Diseases and Geriatrics, New York State Department of Health)

In doing periodic health maintenance examinations, physicians are faced with the decision as to which laboratory procedures they should include routinely for apparently normal adults. It is obvious that this choice should be highly individualized. One would not choose the same tests for the young male executive as for the sixty-year-old retired female. Nevertheless, there are a few tests that have a sufficiently high yield to justify routine use in all adult health maintenance examinations.

It is highly desirable for physicians to seek to detect, as early as possible, any disease that is: (1) highly prevalent within the community, (2) a significant cause of death or disability, (3) diagnosable without unduly expensive tests, and (4) susceptible of amelioration under competent medical guidance.

Such a disease is diabetes mellitus. Diabetes is prevalent in approximately 2 per cent of the adult population.[1] It is a common cause of disability and death from its many complications.[2,3] It can readily be diagnosed by routine examinations of the blood and urine. There is, moreover, evidence that if well controlled, the complications of diabetes can be ameliorated or postponed.[4,5]

In children, diabetes mellitus is basically a symptomatic disease, and the classic symptoms of polyuria, polydypsia, polyphagia, and weight loss bring the juvenile diabetic patient promptly to medical attention. In adults, however, diabetes may exist for years without producing symptoms sufficient to cause the patient to seek medical advice, and the disease can be diagnosed readily during this latent period by simple and inexpensive laboratory tests.

Undetected Reservoirs of Diabetes

It has been stated that diabetes will be found especially among the relatives of known diabetic patients, among the obese, and among those over the age of forty years.[6] The prevalence increases in step-wise fashion with each decade of life. It is good medical practice routinely to test all the relatives of known diabetic persons, just as one routinely tests the relatives of patients with tuberculo-

TABLE I.—COMPARISON BETWEEN BLOOD-SUGAR AND URINE-SUGAR TESTS AS SCREENING TESTS FOR DIABETES MELLITUS[7]

Tests	Sensitivity (Per Cent)	Specificity (Per Cent)
Blood*	63.2	98.9
Urine†	53.1	90.4

* Blood tests made with Clinitron, using the Wilkerson-Heftmann method, taking blood one hour after a meal and using 160 mg. per cent as the screening level.

† Urine tests, using the St. Louis Dreypak, taking specimens one hour after a meal and using 1 plus as the screening level.

sis. It is, moreover, especially important to seek diabetes among pregnant women because of the frequency of complications of pregnancy among diabetic mothers. The mothers of babies with a birth weight in excess of 10 pounds will be found, in many cases, to be diabetic or at least prediabetic.[7]

Urinalyses Versus Blood Sugar Examinations

It is well established that diabetes can be detected either by examination of the blood for glucose content or of the urine for the presence of glucose. It is also well established that examination of the blood is more efficient in detecting diabetes mellitus than are urinalyses for glucose, being both more sensitive and more specific (Table I).[7,8]

It cannot be denied that urinalyses for sugar can be carried out more easily than can blood sugar determinations, especially since there now are available simple glucose-oxidase tests such as Clinistix or Tes-Tape. Nevertheless, because of their greater sensitivity and specificity, blood-sugar determinations constitute the procedure of choice for the detection of diabetes mellitus whether in the physician's office or in the mass diabetes detection drives and programs.

For the physician's office there are available convenient kits with which capillary blood-sugar determinations can be made easily and inexpensively. For use in mass-detection programs, capillary blood sugar determinations can be carried out readily utilizing the Wilkerson-Heftmann method[9] and the Clinitron, a semiautomatic testing device capable of handling up to 120 tests per hour.

Summary

Diabetes mellitus is a disease of high prevalence that is serious in nature, readily diagnosed by simple laboratory tests, and susceptible of amelioration by appropriate medical management.

The reservoir of undetected diabetes is largely among the relatives of known diabetic patients, the obese, and those of advanced years; but diabetes should be looked for among all adults, especially pregnant women.

Diabetes can be detected either by blood tests for glucose content or by urinalyses for the presence of glucose. Of the two methods, the blood sugar determination is the procedure of choice, since it is both more sensitive and more specific.

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Early Detection of Glaucoma

FRANKLIN M. FOOTE, M.D., NEW YORK CITY

(*From the National Society for the Prevention of Blindness*)

FORTUNATELY a change is taking place in the medical concept of that group of conditions causing one seventh of all blindness, glaucoma. At one time the diagnosis was made only after clear-cut loss in the field of vision and obvious cupping of the optic nerve head. Today the ophthalmologist's hope is that the condition will be recognized when these changes are minimal and even questionable. Kronfeld and McGarry[1] have shown that if the diagnosis is made early 51 per cent of patients with open-angle and 81 per cent with narrow-angle glaucoma will, under proper treatment, have no further loss of vision; while if the diagnosis is not made until the condition is advanced, the chances are small of keeping even the little remaining sight.

Sight already lost in glaucoma cannot be restored; the sensitive cells of the retina and optic nerve which are injured from the pressure appear to be irreversibly destroyed.

In the United States there are nearly 50,000 persons blind from glaucoma, and probably several times that number are blind in one eye.

Secondary glaucoma occurs from some known cause such as inflammation or injury.

Primary glaucoma, in which the cause of the increased pressure is unknown, is of two fairly common types: open angle and narrow or closed angle. These terms refer to the angle at which the iris joins the corneoscleral trabecular network producing either a normally deep or a shallow anterior chamber. If the angle is narrow, it is easy for it to become closed with the iris pressing against the trabecular network, thus interfering with the drainage of the aqueous, the fluid that is constantly being produced by the ciliary body and which nourishes the cornea and lens.

Narrow- or closed-angle glaucoma was formerly called acute congestive glaucoma. As the name suggests, the condition usually occurs as an acute episode with pain about the eye, sometimes severe nausea, vomiting, edema of the cornea which may cause an effect of rainbow colors or halos about lights, poor visual acuity, dilated pupil, and hyperemia of ocular blood vessels. The pressure may go very high during such an attack. If the pain is not obviously localized about the eye the physician may mistake the episode for sinusitis. When fever, nausea, and vomiting have predominated as presenting complaints, some patients with narrow-angle glaucoma have had performed what were later found to be unnecessary exploratory laparotomies. The observation of a slightly red eye with a steamy cornea and a large pupil which reacts sluggishly to light may aid in establishing the true diagnosis.

Open-angle (chronic simple) glaucoma is more common and far more difficult to suspect in the early stages. Pressure apparently builds up slowly over a long period of time and there is no pain nor ocular sign that would make one think of an eye disease until later. Patients often feel unhappy with their glasses, trying out several pairs over a period of two years. They may notice a mild headache after watching television or the movies or being in a darkened room. Since many presbyopic persons without glaucoma have similar difficulties, these symptoms are far from pathognomonic. If there are frequent changes of glasses in middle age without visible lens or metabolic changes, one should not be satisfied until the possibility of glaucoma has been explored.

Central visual acuity in glaucoma generally is not lost until late. However, loss of distance or near acuity is indicative of a number of serious eye conditions, and it is recommended that family physicians as well as industrial medical consultants make these tests periodically.

Ophthalmoscopy is useful in revealing cupping of the optic nerve after some damage has been done as well as indicating the presence of various retinopathies. If the physician makes a fundus inspection a part of each physical examination, he will be better able to detect early changes because of his familiarity with the appearance of the patient's fundus.

Tests of visual fields are most helpful in diagnosing glaucoma and other eye diseases. Harrington and Flocks[2] have devised a fairly rapid test which can be done by a properly-trained office assistant or a technician and has been found to be of value in industrial surveys. Ten patterns of dots, crosses, and lines are used which can be seen only when illuminated by a self-contained ultraviolet light which flashes for one-fourth second for each pattern. This device has been used for thousands of persons and there is a close correlation with field defects found by perimetry and tangent screen tests.[3]

Tonometry

Without question, the best single test to detect early glaucoma is use of a standardized tonometer to measure intraocular pressure. This is a test which should be done periodically on all persons over forty.

The first community-wide glaucoma detection project was carried out among 10,000 employees in Philadelphia.[4] Oculists were able to test 20 persons per hour when qualified assistants kept records and did the visual acuity tests. In doing tonometry, an anesthetic is first placed in the eye and the tonometer applied to the cornea in a few seconds. This is a technic which many ophthalmologists feel family and industrial physicians should learn because it can be done in a short time and will detect glaucoma which is found in one in fifty persons over age forty. In this research, persons with readings of 25 mm. of mercury or higher on the Schiøtz tonometer were referred for ophthalmologic study. The findings by age groups in Philadelphia were[5]:

Ages (Years)	Prevalence (Per Cent)
35 to 44	1.2
45 to 54	2.2
55 to 64	3.6

Other studies in Oregon,[6] Cleveland,[7] and Memphis[8] have confirmed the prevalence of early unrecognized glaucoma. In southern California similar surveys have been carried out in eleven communities, with the per cent of glaucoma found averaging 3.7 and varying from 2 to 6 depending on the age distribution of persons tested.[9]

In New York State surveys have been made in Binghamton, where 1,470 persons were tested and 31 found with readings suspicious of glaucoma; in Rochester, where 562 persons were tested and 21 referred; in Port Chester and in Wellsville where local projects are continuing; and at the recent state fair in Syracuse where 284 were tested and 15 found with elevated intraocular pressures needing further study.

The Brookline, Massachusetts, local health department started glaucoma screening last April with tests being offered two Mondays each month from 4:00 to 8:00 P.M. Up to October 22, 1958, a total of 1,547 persons had been tested and, although follow-up and diagnostic studies were incomplete, at least 24 cases of glaucoma were found. Of these, 18 or three-fourths were not previously known.[10]

There is an erroneous but widespread belief that in most instances one may find increased intraocular pressure by testing with the two index fingers placed on each eye. Such a test is perhaps better than nothing, but is just about as accurate as kicking the tires on your car to learn whether or not the pressure is correct. Mueller[11] in 1930 showed that five physicians made an average error of 33 per cent in 1,000 such determinations. A recent study[12] was made with 21 examiners, including several professors or assistant professors of ophthalmology, at the Illinois Eye and Ear Infirmary, Chicago. Among 141 patients with intraocular pressure elevated to 28 mm. or above, these examiners guessed right only 47 per cent of the time. One patient with a tension of 50 was estimated to have a tension of only 18.

Levatin[13] in Oakland, California, tested 2,027 persons over forty-five and found chronic simple glaucoma in 18. The relatively low incidence, slightly under 1 per cent, was attributed to using a high criterion of referral, 30 mm. A most interesting finding was that the tonometer discovered 12 of the 15 new cases not previously diagnosed, and 10 of these were not revealed by any other test. The Harrington-Flocks device found only 4 of the new cases.

If there is a family history of glaucoma it is particularly important that the physician investigate its possibility in any person in middle age or later. Posner and Schlossman[14] have reported that 14 per cent of persons with glaucoma had a relative with the condition.

Conclusion

With our aging population, it will help the fight against blindness if the internist, the family physician, and the industrial physician keep in mind the frequency of such sight-destroying diseases as glaucoma. The only hope today of reducing its effect as a common cause of blindness is through early detection, because the best one can do now is to arrest its further progress after it has been diagnosed: Lost sight cannot be restored.

In rural towns and villages where patients may see an oculist only rarely, the general practitioner would serve his patients well if he would learn the technic of tonometry. And it behooves all physicians to have a high threshold of suspicion for glaucoma and to urge individuals with suspicious signs to obtain a thorough ophthalmologic examination.

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Examination of the Musculoskeletal System

NORMAN EGEL, M.D., ROCHESTER, NEW YORK

The curable defects of the musculoskeletal system occur principally in children. Thus periodic examination whose objective is maintenance of health through early detection and treatment of disease will find its most rewarding yield among the musculoskeletal defects of children. Among them will be found, too, the disabilities which promote chronic illness and whose remedy at the present time lies not so much in dramatic treatment ventures as it does in rehabilitation measures.

Some of the published data on periodic health appraisals of adults show a rather low over-all percentage of musculoskeletal diagnoses. Franco[1] in 1950 established musculoskeletal diagnoses in some 10 per cent of 184 major medical conditions found on periodic health examinations. These were listed as: arthritis, chronic-infectious, 1; arthritis, chronic-hypertrophic, 1; arthritis, chronic-traumatic, 1; bursitis, 1; gout, 7; Paget's disease, 1; and ruptured disk, 3. Again in 1956 this same observer[2] reported only one diagnosis of musculoskeletal disease, rheumatoid arthritis, among 212 asymptomatic disease diagnoses in 132 persons. Among 174 symptomatic disease diagnoses in 117 cases, there were 17 diagnoses of musculoskeletal conditions. Among these gout numbered 11; herniated disk, 2; arthritis, rheumatoid and degenerative, 3; and Paget's disease, 1. Bolt[3] on periodic health examinations reported an 11.6 per cent incidence of bone and joint diagnoses among 500 businessmen. The defects reported were listed under the diagnoses of periarthritis, bursitis, and arthritis. Baker[4] in reporting 7,000 disease diagnoses among 7,147 persons examined listed no musculoskeletal diagnoses among the more significant alterable diseases. Elson[5] found musculoskeletal defects at a low level of occurrence among examinees averaging fifty years of age of whom 97 per cent were men. The data reported on adults have failed to stress any specific aspects of musculoskeletal disease in relation to periodic health inventories.

One of the most cogent arguments in favor of the periodic health inventory would be the opportunity presented to distinguish degenerative arthritis from rheumatoid and gouty arthritis. The relatively high reported incidence of gout indicates that it occurs more frequently than supposed and suggests that in its atypical form it is sometimes mistaken for rheumatoid or degenerative arthritis. The acceptance of sound diagnostic criteria for the varying types of arthritis will undoubtedly alter the frequency of the diagnosis as causes other than arthritis are found for conditions and complaints heretofore loosely categorized as such. It is certain, for example, that senile osteoporosis, myeloma, and metastatic disease will be recognized more frequently as the cause of back disability. It is certain, too, that failing to meet the criteria by which the diagnosis of arthritis can be clinically justified, the diagnoses of synovitis, tendonitis, bursitis, and even of joint pain of unknown cause may be made with increasing frequency and clinical soundness. This spares the individual from whatever unfavorable reaction the connotation of arthritis may hold for him.

The musculoskeletal disabilities occurring during growth pursue a recognized course and call for recognized treatment and management. Those identified in the adult during periodic examination will for the most part be problems of management rather than treatment. Here counseling will play a major role.

Since it is in children that musculoskeletal defects provide the greatest promise of cure and also the greatest challenge to remedial effort, taking the health inventory as it relates to musculoskeletal disability should appropriately begin at birth and concentrate its effort during the years of skeletal growth. Many of these defects will be grossly apparent, as, for example, clubfeet. Others will be less evident but readily capable of detection, as for example, Perthes' disease. Still others may require skilled appraisal and study before the true nature of the defect is established, as in, for example, tuberculosis of the spine. There is an urgency to detect and establish early the nature of these defects in children. Many of them deteriorate so rapidly that successful management is often seriously compromised by delayed diagnosis as, for example, slipped epiphysis. As a general rule the threatening defects of childhood pursue a fairly regular pattern of incidence based on age and sex which permits their rough categorization.

At Birth

Clubfoot, torticollis, spina bifida with meningomyelocele, and miscellaneous malformations will be immediately apparent at birth on inspection. A test of active movement in the four extremities will give one an estimate of muscle power. Arm weakness with a tendency for the arm to lie in internal rotation with the elbow flexed and the forearm pronated suggests a brachial paralysis.

Six Months to the Twenty-Fourth Month

During the interval from the sixth to the twenty-fourth month the child will have demonstrated its facility for turning, sitting, standing, and walking.

CEREBRAL PALSY.—The manner in which purposeful active movement is carried out in walking or manipulation of objects will suggest the spasticity or retarded development of the cerebral-palsied child. Delay in sitting, beyond the eighth to ninth month, and in standing and walking, beyond the sixteenth to eighteenth month, should excite suspicion of cerebral palsy. The spasticity elicited on examination, together with hypertonic reflexes, will usually settle the diagnosis. The diagnosis may remain only suspect initially and require later re-examination or specialized examination to establish it.

CONGENITAL DYSPLASIA OF THE HIP.—A disposition for the child to lie face up with one leg externally rotated more than the other and to persist in this suggests a congenital dysplasia of the hip of the least-rotated leg. On attempting to frog-leg the child it will be found that the knee on the suspected side will not drop down to the same level as it does on the opposite side. This indicates a restriction of abduction. The appearance and motion of the limb will otherwise be normal. X-ray pictures of the pelvis will show an increased slope to the acetabular roof with shallowing of the acetabular fossa and a reduction in the size of the capital epiphysis.

CONGENITAL DISLOCATION OF THE HIP.—A limp or waddling gait with leg shortening and an extra skin fold in the thigh should immediately excite suspicion of a congenital dislocation of the hip. One may palpate the abnormal position of the trochanter or determine the unstable relationship at the level of the hip by passively drawing down and pushing upward on the extended leg. A suspicion may be readily confirmed by x-ray pictures of the pelvis.

TIBIAL TORTION.—Toeing-in with one or both feet is frequently due to an internal tortional defect of the tibia and not to any defect in the feet themselves as is commonly suspected by the parents. The confirmation of this diagnosis lies in positioning the legs with the knees extended and the patellae facing up. Thus, with the feet in normal position to the ankles, the toes will be seen to turn inward.

METATARSUS ADDUCTUS.—Less commonly, intoeing is due to adduction or drawing inward of the forefoot which is more conspicuous with the patient standing and walking than when he is sitting with the feet relaxed and dependent.

Flat Feet.—The question of pronated and flat feet will be a matter of constant inquiry and report by the parent. It seems fair to say that the criteria for recognition of foot conditions requiring treatment are not agreed on by any means. More disability is imputed to pronated feet and to flat feet in children than in fact exists or threatens.

Second Through Fourth Years

Inventory.—Inventory during the second through fourth years will call attention to the continuance of any of the previously-described defects which have not been wholly remedied.

Hemivertebra.—A scoliosis due to a hemivertebra may become apparent usually in the lower dorsal segment. Confirmation is obtained by x-ray picture.

Fourth to Eighth Year

Legg-Calvé-Perthes' Disease.—This disease is an osteochondritis of the hip, decidedly more frequent in boys, which in its early stages manifests itself as a painless limp. Later pain becomes apparent in relation to fatigue and activity. Pain due to hip-joint involvement from any cause may be felt in the thigh or knee as commonly as in the hip itself. On examination there will be evident a voluntary guarding on passive hip movement with limitation especially in internal rotation. Pain on passive movement may not be impressive. The impression is confirmed by x-ray pictures of the pelvis to include both hips.

Idiopathic Scoliosis.—Beginning deformity may manifest itself late in this period. If so, it will demand careful supervision during the next four or five years. Mild degrees of scoliosis are easily overlooked so that special attention should be given the child's posture. Scoliosis may be attended by an elevation of one shoulder, a prominence of one hip, but rarely pain. The rotation defect which accompanies the curve may be appraised by having the child bend forward at the hips. While this movement may reduce the curvature of the spine, the prominence of the posterior chest due to the rotational component will be clearly defined.

Juvenile Osteochondritis.—Juvenile osteochondritis, on the other hand, may symptomatically reveal itself by ache in the back made worse by exertional stress. Physical examination will disclose no distinguishing findings. In this as in scoliosis, x-ray pictures will establish the diagnosis.

Slipped Femoral Epiphysis.—Limp with or without pain, especially in fat boys, is usually due to slipping of the capital femoral epiphysis. The predisposition for slipping arises from causes unknown but is probably related to the growth mechanism. Neither repetitive nor violent stress is required to bring about gradual dislodgement of the head. Again it should be stressed that lower thigh or knee pain not locally explained should lead one to suspect hip disease. The clinical findings in slipped epiphysis will reveal a restriction in the normal range of passive internal rotation and abduction of the hip usually accompanied by some degree of pain. The precise diagnosis will be established on x-ray films which should include both hips.

Osgood-Schlatter Disease.—A valid cause for knee disability exists in this age category as an epiphysitis of the tibial tubercle. Almost invariably it will be found in the twelve- to thirteen-year-old boy who will complain of pain and sensitivity over one or both tibial tubercles. Pain is aggravated by kneeling and extensor stress as occurs in mounting and descending stairs. Clinically the tubercle is tender and overlain by swelling. Active knee extension against resistance causes pain referred to the sensitive tubercle. There are no signs of reaction in the knee joint such as fluid, synovial tenderness, or pain on passive motion. This is a self-limiting disability that carries no threat of permanent handicap. It is mentioned because of its frequency and to exclude it as a threatening disease.

Muscular Dystrophy.—A child with a waddling gait due to manifest weakness of the back and hip musculature suggests muscular dystrophy. The patient often displays a characteristic manner of getting up from a reclining position which he accomplishes by rolling over on his abdomen, trying to get up on all fours, and raising himself upright by climbing up on his knees. There will be no fibrillations and no reflex changes indicative of neurologic disorder. Confirmation of this diagnosis may require a specialized examination.

Clawfoot.—Clawing of the foot and toes is the manifestation of a muscle imbalance usually the result of neurologic insult, such as poliomyelitis or spina bifida.

Muscle Atrophy.—At any age periodic examination may reveal muscle weakness localized to one or more extremities and possibly the trunk which will suggest the likelihood of past unrecognized poliomyelitis.

Summary

The years of skeletal growth and development will yield many potential threats to health. Prompt detection and proper management can give normal function in many cases. In those wherein the disability is beyond the hope of cure, rehabilitation technics reduce the handicap and assist the individual to develop his maximum competence.

In the adult, periodic examination will yield a large finding of arthritis and symptomatic musculoskeletal disability such as bursitis and low-back pain. Gout is a frequent finding. These conditions of the adult are usually problems of management rather than of treatment.

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Albuminuria (Proteinuria) in Renal Diseases

I. The Significance of Persisting Albuminuria (Proteinuria): Proteinuria Patterns and Their Clinical Application*

S. EDWARD KING, M.D., M.P.H., F.A.C.P., NEW YORK CITY

(*From the Kidney Disease Clinic and Program, New York City Department of Health, and the Renal Research Laboratory*)

IT APPEARS that in recent years the characteristics of chronic Bright's disease have presented considerable alteration.[1] These changes are not due merely to improved diagnostic methods, earlier detection of renal diseases, and the recognition and delineation of new syndromes and diseases. The clinical courses of some of the more clearly-defined renal disorders, particularly those due to bacterial infection, have been materially altered.[2–4] Changes in the frequency and severity of these individual renal diseases have modified their relative incidences and importance. The common trend appears to be toward obscure, unrecognized onset and latent, insidious but often progressive course. Increased alertness becomes necessary to assure early detection of renal diseases on the basis of relatively few signs, among which albuminuria is by far the most constant andr eliable.

Endemic and sporadic spread of streptococcal infections including the nephritogenic strains is common with little relationship between clinical signs and throat cultures.[5] Classic hemorrhagic and exudative types of glomerulonephritis following scarlet fever and manifest streptococcal infection are rare. Subclinical forms of glomerulonephritis with only microscopic hematuria and slight albuminuria are common.

Probably both the primary streptococcal infection and the complicating glomerulitis often escape recognition. There is little proof that apparent mild cases of acute nephritis heal more readily and completely than clinically evident forms. The smoldering renal antigen-antibody reaction may continue unchecked. Acute exacerbations are infrequent and usually cannot account for progressive renal damage in most instances of chronic glomerulonephritis.[6]

Mild glomerulitis may occur in other nonstreptococcal infections.[7] It[6] is frequently difficult to distinguish between nonspecific glomerulitis, focal glomerulonephritis, and poststreptococcal diffuse glomerulonephritis; often the distinction may be academic. Cases with minimal or subsiding hematuria are often mistakenly considered orthostatic albuminuria. Edema, hypertension, oliguria, gross hematuria, azotemia, and electrolytic imbalance are infrequent during the major life span of most ambulatory patients with glomerulonephritis and severe acute exacerbations are uncommon.[6] Until the terminal (hospital) stage, these patients present relatively few symptoms and reveal only albuminuria with variable and at times insignificant numbers of red and epithelial cells and casts.

Most patients suffering from chronic nephritis are first discovered accidentally, often at a relatively advanced stage of the disease. In a survey at one hospital over a period of five years, approximately 1,000 young male patients from the metropolitan area were found to have relatively advanced renal disease or even insufficiency, first detected when they were called for induction into military service.[8,9] Rarely was any history of renal disease available, although some had been told that they had orthostatic albuminuria. The onset of even the severe form of glomerular injury involving the

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basement membrane (membranous glomerulonephritis) is rarely recognized and the disease manifested by persisting albuminuria is usually recognized only when followed by the nephrosis syndrome.[10-12]

Chronic pyelonephritis has increased in incidence and relative severity although it usually pursues an insidious, often asymptomatic course.[3] Ineffectual use of antibiotics, needless diagnostic bladder catheterizations, and failure to detect or relieve urinary tract stasis, particularly in children and during pregnancy and in the old, have contributed to this materially increased incidence and severity of urinary tract infections.[4] Pain, dysuria, and fever are rarely present; pyuria and bacilluria are unreliable signs. The disease usually is missed in the early stages and is diagnosed as chronic nephritis when it is advanced. Emergence of new patterns of bacterial flora, including highly resistant organisms, render management difficult. Severe or accelerated hypertension may at times dominate the picture.[13]

These are some of the clinical problems usually presented first to the practitioner. The practicing physician cannot devote his time to laboratory procedures or microscopy, but he knows the errors inherent in routine urine analyses. He requires a reliable, easily performed test for active renal disease, such as glycosuria in diabetes.

Albuminuria presents accurate evidence of renal injury and is a common denominator in all kidney diseases. It is questionable that albumin is ever consistently absent in concentrated urine specimens during any renal disorder. Unfortunately, this simple, reliable, diagnostic procedure usually is performed haphazardly on casual dilute urine specimens, leading to frequent error. Negative reactions for albuminuria cannot be accepted as valid in dilute urine specimens. Physicians must demand reasonable standards of accuracy in urine laboratory examinations; often this may prove to be one of the most valuable results of a routine examination. Doctors supervising examinations for life insurance, for employment in industry, and for induction into military service must assure the accuracy of routine and microscopic urine examinations, their sensible interpretation, and provision for adequate follow-up study and guidance or supervision of patients with renal disease. Too often it is found that patients with serious renal disease have not been informed of the presence of this disorder.

Public health services should include periodic screening of the population for urinary albumin in a manner similar to but less taxing than chest x-ray films for pulmonary tuberculosis and postprandial blood glucose and glycosuria in diabetes mellitus. There is no particular age or group predilection for renal disease with the possible exceptions of pregnancy and the high familial incidence of congenital urinary tract anomalies. The earlier any form of renal disease is detected, the better are the opportunities for treatment.

The general practitioner remains the crux of any campaign for the control of chronic renal disease. He can best perform this public health function only if he is fully conversant with basic facts and has overcome common misconceptions concerning albuminuria and renal disease. In particular, he should question critically current concepts concerning "orthostatic, physiologic, normal, asymptomatic, and benign albuminuria." The writer also has erred in this respect.[8] It appears that as a group most practitioners have developed a more critical attitude toward these casual descriptive slogans and rationalizations for unexplained albuminuria than many specialists. This attitude probably represents cumulative experiences with the prolonged follow-up of individual cases possible in general practice, particularly in smaller communities. The unhappy course of even one patient perhaps sanguinely dismissed as inconsequential or benign is not easily forgotten. The specialist often lacks this opportunity for individual long-term follow-up. Rarely can he see his own prognostic errors.

General Considerations and Common Misconceptions Concerning Albuminuria

Some common misconceptions concerning albuminuria and renal diseases may merit brief consideration. These include relationships between the intensity (rate of excretion), the diurnal distribution (excretion patterns), and persistency (chronicity) of albuminuria or proteinuria and the causative renal disorder. The only justification for discussion of some of these items is that they often appear to be forgotten.

The urinary proteins in renal disease represent serum albumin and globulins escaping both glomerular filter and tubular reabsorption. Contamination of the urine by blood, pus, or other secretions from any point in the urinary tract may, of course, give similar positive reactions. Usually such postrenal conditions are readily detectable. Since it usually increases when the patient is standing, albuminuria of this type may be considered orthostatic. However, there is no predictable pattern which may vary over short periods.[11] The discussion hereafter will be limited to renal albuminuria.

Pure albuminuria probably does not exist. Electrophoretic and chemical examinations of urine from patients with renal disorders including orthostatic albuminuria have always revealed albumin and globulins in varying proportions. Although the term proteinuria is more precise, albuminuria is still in common use and either term is appropriate. Excluding the postrenal variety, proteinuria indicates renal injury and thus is never truly physiologic. Transient proteinuria may be induced in normal persons by renal hemodynamic changes following severe physical activity, cold, and excitement[9] and experimentally by infusion of norepinephrine and epinephrine.[14] Mild exercise, lordosis, and tilt are ineffective in this respect in normal persons.[15] Similarly, proteinuria of relatively short duration may occur in poisonings, fever, extreme dehydration, and shock. Persisting proteinuria, however, implies a fixed pathologic condition.

The organic nature of orthostatic proteinuria is suggested by its persistency over a period of years[9,16] as well as its frequent progression to the continuous form.[17] Persisting continuous proteinuria is unequivocal evidence of significant overt organic renal disease. Proteinuria occurring only in the recumbent position is very rare, although it has been described as occurring with abdominal tumors.

The erect posture and activity are regularly followed by adjustments in the renal circulation with reduction in renal blood flow and to a lesser degree in the rate of glomerular filtration.[18,19] It is believed that these normal renal postural hemodynamic alterations, superimposed on mild glomerular lesions ordinarily insufficient to permit appreciable urine protein loss, produce proteinuria on orthostasis.[19] This explains why this form of proteinuria appears in healing glomerulonephritis,[20] early pyelonephritis, and renal vascular disease.

Minimal and early renal lesions and renal vein compression, being difficult to demonstrate, are traditionally discounted. Under some conditions, as in healing glomerulonephritis, the disorder may indeed prove benign. In early stages of more serious disorders, the opposite is the case.[17] Frequently, the diagnosis of orthostatic albuminuria is incorrectly made in patients with continuous proteinuria of mild proportions.[9]

With the exception of the nephrosis syndrome, the concentration of albumin or protein in the urine in most chronic renal disorders is quite low. Rarely is the total twenty-four-hour output above 500 mg. Since polyuria due to liberal fluid intake or renal impairment is the rule in such instances, concentrations of urine protein above 50 mg. per cent are unusual in most patients with Bright's disease. At times proteinuria may be reduced to a trace and escape detection. Patients with advanced renal disease have been known to delude unsuspecting examiners by induced water diuresis, particularly when few specimens were examined. The only safeguard is to exclude negative findings in dilute urines of low specific gravity. A positive albumin reaction, however, may always be accepted as valid; even a trace in a dilute specimen suggests larger quantities in more concentrated urines.

The intensity of protein excretion varies considerably in different renal diseases without reference to their severity.[16,21] In renal vascular and interstitial diseases, as in pyelonephritis, proteinuria may be minimal, even with extensive renal destruction. In unilateral renal disease proteinuria may be diluted by the contralateral, often polyuric kidney. In the individual patient, however, the rate (quantity in unit time, such as mg. per minute or Gm. per twenty-four hours) usually measures the trend of glomerular injury.

Urine protein pattern alterations are of considerable value in the study of the course of individual patients with renal disease, even when other indices such as urinary sediment and renal functional alterations prove inconclusive.

Traces of protein should never be disregarded and when persistent have the same significance as larger amounts.

Methodology

Laboratory Procedures.—Methods for urine albumin (protein) determinations are described in standard texts. The heat and acetic and nitric acid ring tests are the most reliable. The various modifications of the sulfosalicylic acid and Exton's reagent are rapid and equally reliable when properly performed. Accuracy requires such simple provisions as assuring proper proportions of urine and reagent, using clean glassware, and clearing cloudy urines by centrifuging or filtration. Strong reflected light or direct light against a dark background help in detection of traces. The sulfosalicylic acid reagent can accurately detect protein concentrations of from between 5 to 10 mg. per cent. Careless laboratory technics, testing very dilute specimens with disregard for urine specific gravity, or evasion via "qns," are the frequent causes of error.

A few words may be appropriate concerning the application of the bromphenol blue reaction for rapid colorimetric detection of protein in urine and other fluids.[22] These are commercially available as tablets consisting of a salicylate buffer with bromphenol blue and as paper strips impregnated with a citrate buffer and tetrabromphenol blue. In an acid medium (pH 3) the indicator changes from light yellow to blue. These tests can be performed very rapidly and require no reagents or test tubes. Apparently the color reaction is not affected by slight initial urine turbidity. These tests are less sensitive than sulfosalicylic acid and fail to detect protein in concentrations below 20 mg. per cent. Strongly alkaline urines may affect the color development. It is doubtful whether there is justification for substitution of less sensitive methods in laboratories. Determination of the urinary specific gravity becomes doubly important when these tests are used since appreciable quantities of protein may be missed in dilute urines.

The Proteinuria Pattern Test: Technic and Interpretations.—Differentiation between orthostatic and constant proteinuria at times may be difficult and requires a systematic method of collecting and testing urine specimens. Dilute, casual ill-timed urine specimens and twenty-four-hour collections will not serve the purpose.

A simple method of determining proteinuria patterns requiring consecutive urine collections during recumbency and after standing has been reported previously.[8,23,24] The procedure may be used for hospitalized or ambulatory patients. In the hospital several consecutive recumbent specimens collected at night are incorporated into the pattern. Ambulatory patients reporting to clinic or office bring urine samples collected on retiring and arising, which are considered purely confirmatory. In both hospital and ambulatory tests the first urine voided after arising or on arrival is collected, followed by a series of recumbent and orthostatic specimens. The first recumbent voiding includes any bladder residual and "dead space" (renal pelvis and ureter) urine secreted before recumbency. Recumbent collections are continued until at least two specimens of adequate specific gravity are obtained.

Occasionally, difficulty may be experienced in emptying the bladder before reclining or in obtaining specimens during recumbency, especially in older people. Unless bladder retention is extreme or proteinuria during orthostasis intense, the effect of admixture of such residual bladder and "dead space" urine secreted beforehand may be negated by assuring a large recumbent specimen over a longer period. Usually urine flow during wakeful recumbency is greater than during orthostasis. If unable to void otherwise, the patient arises to urinate and the procedure is repeated thus assuring two only slightly admixed recumbent specimens. Extreme diuresis, emotional or due to excessive fluid intake, is another occasional problem. With sufficient time and patience, adequate pattern samples usually can be obtained even in these circumstances.

The following two positive proteinuria patterns are possible:

1. Constant. All acceptable urines are positive for protein.
2. Orthostatic. Some or all orthostatic specimens are positive but all recumbent urines are negative.

Irregular patterns (some recumbent specimens positive, others negative) are due either to collection errors or to postrenal contamination. The sediment of the positive recumbent specimens should be studied carefully microscopically.

The Renal Survey.—The period of approximately four hours usually necessary to collect satisfactory urine pattern specimens can be used for additional tests, including microscopy and evaluation of renal function.

The following general procedure is employed in this laboratory to conduct a rapid but comprehensive survey of patients with suspected renal disease. The test period is preceded by a twelve-hour restriction of fluid, salt, and protein with omission of tea, coffee, or other diuretics. Specimens collected on retiring and immediately on arising are brought in and the procedure as previously outlined is followed with a technician in close attendance to assure accuracy of collections.

All urines are centrifuged before testing with sulfosalicylic acid reagent and checked with the heat and acetic acid test. Orthostatic specimens are collected while the patient is sitting or standing in the course of interview and physical examination. If all satisfactory urine specimens are negative, additional specimens are collected following erect lordosis and light exercise. Two of the recumbent and two of the orthostatic urine samples are timed and volume measured for Addis counts, creatinine, or urea clearances and determination of protein excretion rates. The sediment of the morning voiding is carefully examined on arrival since cellular elements are particularly concentrated in this specimen. Sediments of one recumbent and one orthostatic specimen also are examined immediately after voiding. The presence of blood in sediments is checked routinely by the benzidine reagent or by orthotoluidine.

Blood specimens are collected for serum creatinine and urea nitrogen, cholesterol, and serum proteins and other constituents as indicated. A half-hour intravenous or intramuscular P. S. P. test is performed. The maximum specific gravity of urine specimens collected after twelve hours prior to dehydration is a good estimate of urinary concentrating capacity. Urine cultures also may be collected during this period. With trained personnel a comprehensive renal survey and evaluation of renal function can be conducted in four to five hours on an ambulatory basis, often eliminating need for hospitalization.

Validation of Proteinuria Patterns

The proteinuria pattern concept is based on the following considerations. Persisting orthostatic proteinuria presumably results from the impact of normal postural renal hemodynamic alterations on fixed glomerular lesions insufficient to produce proteinuria during recumbency, or from extrinsic pressure on the renal circulation occurring during standing. In either instance proteinuria is regularly present in at least some specimens on standing, disappearing on recumbency. The orthostatic pattern persists until some change occurs in the causative renal or perirenal disorder.

Proteinuria with renal vasoconstriction caused by neurogenic or endocrine factors following unusual emotional or physical stress is transient, rather than consistently repetitive from day to day. In borderline instances proteinuria, although absent on sitting or quiet standing, is regularly induced by lordosis, prolonged standing tilt, or mild exercise—conditions with more marked hemodynamic renal alterations than simple standing. These conditions, however, are ineffective in normal persons.[15]

The reliability of the pattern concepts and the accuracy of the serial urine protein excretion test have been validated in a study of daily consecutive patterns on nearly 300 patients with various forms of proteinuria. Also, the validity of the concept that the constant pattern (continuous albuminuria) is evidence of more serious renal disease has been proved. The detailed statistical data substantiating these results are included in another report.

The reliability of the test has been proved for traces as well as for larger quantities of albumin. Considering all traces as positive, the same pattern was present in 175 out of 184 patients. With traces excluded, the pattern was duplicated in 73 out of 74 cases. Statistically, the coefficient of correlation (r) ranged from 0.9 to 0.97, both of which are highly significant.

The validity of the pattern concept as an estimate of the severity of renal disease was studied by means of other parameters of renal injury and function, including quantitative urine sediment counts of red cells, white cells, and casts; creatinine clearance; P. S. P. excretion; maximal urinary specific gravity; and systolic and diastolic blood pressures. Mean values for all of these individual parameters were significantly different in the two groups ($P < .001$). Relatively few abnormalities of urinary sediment, renal functions, and blood pressures were observed at any one time in patients with orthostatic proteinuria. This, of course, conforms with the clinical definition of this disorder. Over longer periods of observation, however, minor abnormalities of sediment may develop.[17,25] Correlations between proteinuria pattern and these parameters are applicable to changes occurring in the individual over periods of time. With regression of acute renal disease, the constant pattern may be replaced by the orthostatic pattern with minor sediment abnormalities while if healing is complete, both albuminuria and sediment abnormalities disappear. When healing is incomplete, the orthostatic pattern may persist indefinitely. The orthostatic pattern not infrequently progresses into the constant and at such times corresponding abnormalities in sediment and function may appear.[17,24]

Summary

Persisting albuminuria (proteinuria) either continuous or orthostatic, is an invariable and often the only consistent sign of chronic renal disease.

The early detection of chronic renal disease usually without symptoms or signs except proteinuria is largely dependent on the clinical acumen of the general practitioner. Examiners for insurance, industry, and military service should assume responsibility for reporting patients with proteinuria either to their family physician or to appropriate agencies. The simplicity of urine examinations for protein and their accuracy, when properly performed, lend

themselves to large-scale surveys for renal disease.

Patients demonstrating persisting proteinuria should be studied carefully for renal disease. A simple, accurate method of study of suspected renal disease by means of proteinuria patterns is reviewed. It is a sensitive screening test, furnishes an initial estimate of the probable extent of renal injury, and serves as a point of reference for further periodic observation.

30 East 40th Street, New York 16

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Saturday, March 7, 1959 **Hotel Utica, Utica**

Albuminuria (Proteinuria) in Renal Diseases

*II. Preliminary Observations on the Clinical Course of Patients with Orthostatic Albuminuria**

S. EDWARD KING, M.D., M.P.H., F.A.C.P., NEW YORK CITY

(*From the Kidney Disease Clinic and Program, New York City Department of Health*)

UNCRITICAL cataloguing of disease on the basis of a common finding, clinical or laboratory, often renders a disservice to medical progress. Facile descriptive terms lead to complacency and unjustified generalizations. It has taken many years to differentiate among the various disorders at first grouped together as essential hypertension. The same situation obtains in the renal diseases vaguely described as orthostatic proteinuria or albuminuria. Many diseases and physiologic disturbances of the kidney are manifest by postural or orthostatic-type proteinuria which cannot be considered a specific disease. It is not always possible to recognize the underlying renal disorder, particularly at the onset. Under such conditions, the descriptive term orthostatic proteinuria may be retained with the proviso that an etiologic or pathologic diagnosis will be sought and substituted.

This is a report of preliminary observations on a medium-term (average six years) follow-up study of a group of patients with this common manifestation. Clinically manifest renal or urologic diseases were excluded at the outset from this study in conformity with the usual clinical definition. It seemed necessary to restrict the clinical disorders under study to posturally-limited albuminuria (proteinuria) with negative urinary sediment and other findings in apparently normal young persons. Reference to the literature clearly emphasized that lack of clear initial definition with inadequate study had frustrated any serious follow-up studies.[1–5] Definition of orthostatic-type albuminuria (proteinuria) was based on examination of adequately concentrated serial urines and resulting pattern.[6,7]

It is shown here that the great majority of patients with pure orthostatic-type proteinuria (initially screened for renal disease) revealed persisting (chronic) proteinuria. Furthermore, increased diurnal proteinuria with progression of the pattern to the continuous type and associated urine sediment abnormalities frequently were present after five- or six-year intervals. Finally, a considerable number of miscellaneous renal diseases previously not present, or at least not evident, were demonstrable on this follow-up survey. These findings are interpreted as indicating that pure orthostatic-type albuminuria (proteinuria) is not an insignificant benign disorder of youth as is usually taught but rather initial evidence of latent, often progressive organic renal disease.

Method of Study and Materials

The present survey involved a follow-up study of young males examined between 1950 and 1954 at several Army hospitals in this area because of proteinuria. Many other patients with proteinuria probably were not recognized and were routinely accepted for military service. Approximately 25 per cent of patients with proved orthostatic-type proteinuria escape detection when reliance is placed on a single urine specimen.[8] The probabilities of missing cases with proteinuria when single, casual, perhaps dilute specimens are examined are much greater. Several times the number of patients hospitalized for this study probably escaped detection. An incidence of persisting proteinuria of from 3 to 5 per cent in the young adult population is a conservative estimate.[9] Initial standards for hospital referral, such as several positive tests for urine protein, excluded transient nonrepetitive forms of proteinuria from this survey.

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* A cooperative project with the United States Public Health Service.

Previous studies of hospitalized patients included serial urine pattern tests, sediment microscopic examinations and Addis counts, and the usual clinical tests of renal function. Cases of suspected organic renal disease were studied repeatedly under similar conditions at intervals of from four to six months. Routine urography was performed whenever possible, often in instances where no clear indication except proteinuria was present.

The initial urinary protein excretion pattern on each patient served as a point of reference for the present survey to ascertain persistency, progression or regression of proteinuria, and, by implication, corresponding alterations in renal injury. The reliability of the individual pattern and its consistent duplication over short periods has been proved statistically.[8] That constant-type proteinuria is associated with signs of more serious renal disease than the orthostatic type also has been validated[8] using the urine sediment and clinical tests of renal functions as parameters of renal injury. The customary definition of orthostatic proteinuria, or absence of manifest renal disease, also was validated. However, projection of this continued relationship for orthostatic-type proteinuria will be proved here to be fallacious.

Progression in the urine protein excretion pattern from orthostatic to constant has been accepted here as presumptive evidence of increased renal injury, particularly when associated with newly-developed abnormalities in urinary sediment, renal function, blood pressure, or other clinical signs of renal disease. Some alterations at times may be due to more intensive study but usually they indicate progression of underlying, previously occult, renal disease. In any case, they would be of clinical importance since the patients included in this survey were asymptomatic throughout, presenting classical orthostatic proteinuria with so little else found on preinduction hospital study that induction into the military services was justifiable.

The present report is based on observations on the first 250 patients with orthostatic and transient proteinuria seen after intervals of between five to eight or more years (average of six years). This is a relatively short interval to anticipate extremely rapid evolution in the forms of renal disease included by initial definition in this series. Nearly all patients had continued in good health during military service and very few had revealed any symptoms or overt signs of renal disease in the interim except for continued proteinuria. Practically all of them completed the prescribed period of military service. A group of 50 patients rejected for military service because of continuous proteinuria usually with frank evidence of some form of renal and urinary tract disease also were recalled. Many of these patients had not been informed of the cause for rejection or had displayed no particular interest or concern. It appears that valuable time and opportunity for early preventive medical care had been lost, particularly in the obstructive uropathies and renal infections.

Respondents proved very cooperative, giving freely of their time, involving at least one four-hour period of clinic study, often with subsequent hospitalizations or ambulatory urologic study. The appreciative and cooperative attitude of these patients from all walks of life, their understanding of the purpose of this survey, and their ready compliance has been truly remarkable. Previous hospital records obtained with the patients' signed authorization provided considerable documented retrospective clinical data.

Patients were instructed to limit fluids and exclude tea or coffee for twelve hours beforehand, collecting urines on retiring and immediately on arising. Serial urine specimens were collected at the clinic under close supervision to assure several concentrated recumbent and orthostatic (sitting) specimens. Urines obtained after one-half hour of recumbency were not considered true recumbent specimens. Orthostatic specimens were collected during the interview and physical examination. When urines of low specific gravity were voided, collections were continued until a series of satisfactory specimens and patterns were obtained. When this was not possible, repetition of the test on a subsequent occasion usually proved satisfactory. Combined with the night specimens collected by the patient, satisfactory consistent serial urine patterns usually were obtained within four hours by this modification of the serial protein excretion test.[6] When all satisfactory urine specimens were protein-free under these relatively basal conditions of recumbency and sitting, mild provocative procedures were added, including standing, lordosis, and mild exercise. These conditions are ineffective in producing proteinuria in normal subjects.[10]

Centrifuged urine specimens were examined for protein with 20 per cent sulfosalicylic acid, turbidity being estimated by indirect light. Small amounts of protein, in the order of 5 mg. per cent were recognized consistently. Results were checked with heat and acetic acid. Microscopic examination of morning and arrival specimens and short-period Addis counts on timed freshly-voided urines were performed. The specific gravity of urines collected after twelve hours of dehydration was used to estimate maximum renal concentrating capacity. The benzidine or orthotoluidine reactions served as confirmatory checks for blood in the centrifuged sediment. Serum and urine creatinines were determined by a micromodification of the Folin method[11] and protein quantitatively by the biuret method of Foster, Rick, and Wolfson.[12]

TABLE I.—URINARY PROTEIN PATTERNS ALTERATIONS IN 300 CASES. AVERAGE INTERVAL SIX YEARS

Original Pattern		Present Pattern		
Type	Cases	Orthostatic	Constant	Negative
Orthostatic	191	105	60	26
Constant	49	8	40	1
Transient* (negative)	60	27	9	24

* Termed transient because of a negative pattern originally, after previously recognized proteinuria.

Results

PERSISTENCY OF PROTEINURIA.—Persisting proteinuria was demonstrated in 245 out of 300 patients with both orthostatic and constant patterns of protein excretion, on follow-up examination. Proteinuria was almost invariable in patients with an originally constant pattern (48 of 49) (Table I). The one exception was a patient with temporary gross hematuria.

In the orthostatic group, proteinuria persisted in 165 out of 191 patients or 86 per cent. Urinary protein was found in 36 of 60 patients with transient proteinuria (originally negative pattern on control study). Although usually manifest on quiet sitting, proteinuria could be induced in some of these only on prolonged standing, lordosis, or mild exercise. As previously mentioned, these procedures are not followed by proteinuria in normal subjects.[10] The incidence of persisting proteinuria in this transitory group probably is higher than indicated. Such cases are considered mild forms of orthostatic proteinuria. This also is suggested by the findings of renal disorders on follow-up in some of these cases.

It is unnecessary to state that these provocative conditions were not required in patients presenting constant or orthostatic patterns.

PATTERN ALTERATIONS.—Constant proteinuria remained unchanged in 40 out of 49 cases. Exceptions appeared to be instances studied initially during an acute process, which subsequently subsided but did not heal, the constant pattern being replaced by the orthostatic. Ten additional patients with this form of proteinuria had died of renal insufficiency during the interim.

The orthostatic pattern was unaltered in 105 instances of the total of 191 of these patients. In 60 instances (32 per cent of the total), continuous (constant) protein excretion pattern developed.

CLINICAL SIGNS OF RENAL DISORDERS PRESENT IN PATIENTS WITH ORTHOSTATIC PROTEINURIA.—*Active Glomerulitis.*—Significant but occasionally mild hematuria with casts was noted in 25 patients originally considered to have pure orthostatic proteinuria. In 8 of these the orthostatic proteinuria had followed documented acute glomerulonephritis, which after apparent subsidence had been followed by pattern progression to the constant type together with microscopic hematuria and casts. In other cases, manifest renal disease had developed during the interval, including lipoid nephrosis, periarteritis, diabetic nephropathy, and hypertension. In others the cause remained obscure. Hematuria was defined as a minimum of 4 RBC per hpf or Addis counts over 2M per twenty-four hours.

Pyelonephritis.—The diagnosis of pyelonephritis suggested by persisting proteinuria with irregular pyuria, bacilluria, and casts was made in 20 patients. This diagnosis probably was more often missed than incorrectly made. Cases considered lower urinary tract infections with and without congenital anomalies probably also belong in this group.

Congenital Anomalies of the Urinary Tract.—In 18 patients originally diagnosed orthostatic or transient proteinuria, significant, usually unilateral congenital anomalies were discovered by urography. These ranged from ureteral kinks and bifid ureter to hydronephrosis and atrophic kidney. In many instances there was nothing in the history or examination to anticipate these findings. Since urography was possible in only a fraction of patients with orthostatic patterns, it is probable that more such anomalies were present.

Miscellaneous Disorders of the Urinary Tract.—Unexplained recurrent hematuria without casts with negative urographic findings was observed in 3 cases. Residual renal injury following old trauma, renal calculus, and lower urinary tract disorders of persistent nature (probably pyelonephritis) made a total of 10 cases of miscellaneous nature. A history of enuresis was obtained in 6 other patients.

Healed Glomerulonephritis with Defect.—In 24 patients, residual orthostatic-type proteinuria could be traced to documented glomerulonephritis or nephrosis in childhood which had occurred as far back as twenty years. Proteinuria could be induced in some of these only by exercise; in others, orthostatic proteinuria was present persistently, often with a few casts. In 3 cases with a documented history of glomerulonephritis, the urinary sediment was normal, but moderate elevation in blood pressure had developed. In view of associated microscopic hematuria in some instances, uncertainty is introduced as to whether all these cases, particularly if recent, can be accepted unqualifiedly as healed with defect.

In summary, active renal diseases—glomerulitis, chronic pyelonephritis, renal disease with congenital anomalies, and miscellaneous organic urinary tract disorders—were observed in 32 per cent of patients previously presenting pure (benign) orthostatic proteinuria. This incidence is a conservative approximation since in many instances as detailed a study as desirable, including urography, was not possible. In another 10 per cent persisting orthostatic-type proteinuria could be traced directly to an antecedent glomerulonephritis.

Clinical Types of Orthostatic Proteinuria

Various renal pathogenic processes, some manifest, others suspected or unknown, produce the borderline degree of renal injury manifested by postural or orthostatic-type proteinuria. Several other clinical types that may be called essential orthostatic proteinuria will be enumerated although precise definition or etiology is not possible.

In a significant number of patients with orthostatic proteinuria, symptoms and signs of emotional and neurovascular lability are conspicuous. Sweating, pallor, and easy syncope on standing or after venipuncture associated with marked alterations in pulse and blood pressure are present. Similar response may occur in normal individuals under exceptional stress. These features persisted in this group apparently as a constitutional abnormality. Proteinuria occurs after such abnormal postural systemic hemodynamic alterations. Renal vasoconstriction mediated by reflex or humerally through mobilization of the adrenal medullary catecholamines has been suggested as a cause.[13]

Intermittent postural renal vascular obstruction due to congenital defects of kidney position or circulation may be an explanation for recurrent proteinuria in some instances. This impression is confirmed by results of ureteral catheterizations in over 20 such patients after other causes of orthostatic proteinuria had been excluded. Interpretations of protein in catheterized specimens is difficult and probably explains divergent opinions.[14,15] These and other observations suggesting intermittent renal vascular obstruction in some instances will be reported in subsequent communications.

The Course of Continuous or Constant-Type Proteinuria

The clinical course of patients with chronic renal disease with manifest continuous proteinuria requires little elaboration. Individual progression is determined by the nature and severity of the renal lesions and the complex tissue reactions to infection and injury. The specific disease entity may be obscure and its cause and pathogenesis undetermined. The diagnosis of chronic nephritis used by default in such cases is nonspecific and a number of renal diseases may become apparent later clinically by renal biopsy or at postmortem examination. In the advanced stage, even the pathologist can make only a shrewd estimate concerning the initial disease. Percutaneous renal biopsy has been of value in calling attention to the diverse renal diseases catalogued as chronic nephritis which include the collagen nephritides (lupus, periarteritis), renal arteriolosclerosis, diabetic nephropathy, pyelonephritis, and urinary tract disorders—obstructive, infective, metabolic, and congenital. Pyelography often revealed previously unsuspected pathologic changes in patients who were considered to have chronic glomerulonephritis. Retrospective data and observed progression of cases with orthostatic-type proteinuria into the constant variety suggest that many cases of obscure asymptomatic chronic nephritis are derived from diseases initially diagnosed orthostatic "benign" albuminuria.

Discussion

Many diverse renal disorders masquerade as classic benign orthostatic proteinuria (albuminuria). Careful individual appraisal, accurate early diagnosis, and periodic follow-up are essential for proper treatment, particularly in congenital anomalies with urinary tract stasis favoring secondary infection.

Chronic pyelonephritis is perhaps the most common and the most sinister disorder that may escape detection while being considered orthostatic proteinuria. Generally, the disease is missed early and considered chronic nephritis (glomerulonephritis) in the advanced stage. Usually the time of onset and the origin are obscure. Frank urinary tract obstructions are usually absent in young patients but mild urinary stasis with congenital anomalies are frequent. The disease may be unilateral or bilateral. Pyuria and bacilluria are variable and unreliable diagnostic criteria.

There has been an actual as well as a relative increase in the frequency of chronic urinary tract infections which cannot be explained by improved methods of diagnosis. This has been associated with a changing bacterial flora of urinary tract infections due to organisms such as Proteus, Aerobacter, and Pseudomonas and may well represent selective survival of strains resistant to the common antibiotics resulting from indiscriminate and ineffective use of the antibiotics. Another possible cause of increased urinary tract infection may be unnecessary diagnostic bladder catheterizations through which resistant organisms are introduced into the urinary tract.[16] The pathogenesis of pyelonephritis is still obscure. Urologists recognize stasis in the urinary tract either due to obstruction or congenital anomalies as important factors in infection. Chronic infections once established are difficult to control.

The mechanism of pyelovenous and pyelolymphatic reflux, well known to urologists, has been proposed as a cause of orthostatic proteinuria.[17] Increased pressure in the renal lymphatic system has been considered responsible for reverse flux or passage of lymph into the renal calyces. Lymphuria and chyluria do occur in isolated instances as seen in several cases in this original series. There is no convincing evidence at present that this mechanism is an important cause of orthostatic proteinuria.

In view of the diverse renal disorders with orthostatic-type proteinuria, percutaneous renal biopsy must be approached with caution. Frequently, the underlying renal disorder is unilateral, often on the left. Percutaneous renal biopsy as usually performed on the more accessible right kidney would yield misleading results. A wholesome respect for this procedure is recommended since untoward reactions including trauma requiring subsequent nephrectomy and several unreported deaths have occurred in adjacent clinics. This procedure has not been employed in this study. Adequate clinical radiologic and urologic survey will often reveal the type of disease present without resort to a relatively hazardous procedure, the results of which may prove uninformative or even misleading.

Results of percutaneous renal biopsy on patients described as having asymptomatic persistent proteinuria have been reported.[18] It is difficult to venture opinion as to the type of cases described in the preliminary report. The impression is gathered that these cases correspond to those previously reported as obscure continuous proteinuria.[7] The biopsy results would confirm the opinion then ventured that such cases represent latent or mild glomerulonephritis or chronic pyelonephritis.

The renal circulation is subject to marked variations and anomalies. Intermittent vascular compression by adjacent structures could induce proteinuria. Observations to be reported later suggest that recurrent renal vascular obstruction may be a factor in producing postural proteinuria.

Conflicting observations in the literature concerning unilateral or bilateral derivation of proteinuria[14,15] stem both from faulty clinical definition of the disease under study combined with the naive belief that this disorder is a single clinical entity and from failure to consider microscopic hematuria following catheterization as causing proteinuria. Orthostatic albuminuria or proteinuria may be bilateral or unilateral, depending on the particular disease or syndrome under study.

Little progress has been made over the years in the etiology and study of the course of orthostatic albuminuria. During periods of increased military activity these disorders have engendered great interest because of their frequency. However, opportunity for adequate study is rarely available under such conditions. Under World War II conditions it would have been wasteful of manpower to exclude the large number of individuals presenting orthostatic albuminuria or proteinuria because of the possibility of development of renal disease which would not be manifest for many years. However, wartime expediency should not be projected into normal clinical practice.

Although clinicians occasionally have questioned the benign nature of orthostatic proteinuria,[1,19] textbook finality has guided medical practice to consider this finding as indicating a uniformly benign insignificant condition. So firmly has the benign concept become entrenched that proteinuria, the accepted evidence of renal disease,[20] and even mild hematuria and casts that are occasionally reported[21] have been disregarded as unimportant in patients with orthostatic albuminuria. Renal disease is frequently missed in these cases because of tradition and practical obstacles to a complete study.

The possibility that knowledge or suspicion of renal disease may have been a selective factor in motivating patients to cooperate in this study, thus biasing the results, must, of course, be considered. All patients in this group knew that they had been studied for albuminuria with the implication of renal disease. The implied clearance of acceptance into military service generally assuaged initial fears. Many respondents, having been faced with the problem of disqualification for insurance or employment because of albuminuria (proteinuria), reported specifically for positive confirmation of the benign nature of their disorder.

An accurate estimation of the incidence of urinary tract anomalies in this group would have been difficult, even with far greater resources than were available. There are no control incidence studies in normal subjects. Nor is there any uniformity among radiologists and urologists as to what lesions constitute significant urinary tract anomalies. Until control studies on the incidence of clearly-defined urinary tract anomalies in normal subjects are available, no statistically valid comparisons are possible. It is difficult to avoid the clinical impression, however, that urinary tract anomalies are frequently responsible for orthostatic-type proteinuria.

Persistence of proteinuria in nearly all instances of orthostatic proteinuria observed here indicates that the underlying renal diseases are not evanescent. The reliability of urine protein patterns and their correlation with the degree of renal injury has been reported.[8,22] Progression of patterns from orthostatic to constant may be accepted as evidence of increased renal injury. This occurrence in a considerable percentage of cases over a modest period of observation also indicates that these underlying renal disorders are not trivial. These alterations were more pronounced in cases followed over the longest interval. Also concurrent evidence of renal injury indicated by abnormal sediment, impaired renal function, and development of hypertension indicate the clinical importance of the orthostatic proteinuria-type pattern as an early sign of renal disease, rather than a benign, self-limited disorder.

The serial urine protein (albumin) pattern test properly modified to requirements presents a simple method of follow-up study of patients with albuminuria. Recourse to twenty-four-hour urine specimens to determine the presence or absence of albuminuria must be deplored. By definition, orthostatic albuminuria is limited to some, rarely all, nonrecumbent specimens and may be missed in dilute or casual specimens. Dilution or admixture of albumin excreted in the orthostatic specimens in the total twenty-four-hour collection almost invariably assures negative findings.

The question of military utilization and insurance coverage of patients with orthostatic albuminuria (proteinuria) is clearly evident. Unless extremely detailed individual studies are possible, a considerable risk is involved in accepting such individuals for long periods of time. From the public health point of view greater attention should be directed to detecting albuminuria of any type. Greater awareness of the importance of any type of persisting proteinuria should be taught.

It is hoped that this survey may have clarified rather than confused this problem. Much accumulated data are confusing and contradictory because of basic misconceptions. Much that has been taught must be unlearned. Orthostatic albuminuria is not a specific disease but persisting albuminuria (proteinuria) of any type is a consistent sign of renal disease.

Conclusions

Observations on 250 patients with orthostatic-type proteinuria (albuminuria) after interval periods averaging six years discredit the common belief that this condition represents a specific benign disorder of youth which disappears in later life and is without clinical significance.

Albuminuria (proteinuria) persisted in approximately 90 per cent of patients studied and progressed from the orthostatic to the constant (continuous) proteinuria pattern in over 30 per cent. This is considered evidence of corresponding increase in the underlying disease processes. In about one third of patients with simple orthostatic albuminuria, laboratory and clinical evidences of a variety of renal diseases were found on follow-up. These included chronic glomerulonephritis and ill-defined glomerulitis, chronic pyelonephritis, congenital renal anomalies, urologic disorders, and the renal components of various systemic disorders including diabetes, hypertension, and the collagen diseases. These findings tend to refute the concept that orthostatic albuminuria is a single disease with a specific (benign) course.

It is not implied that all patients with orthostatic proteinuria invariably suffer from devastating renal disease. On the contrary, overt renal disease usually discovered beforehand is excluded from this clinical definition, leaving a residue of early or chronic latent renal disorders. These observations clearly indicate that latency does not guarantee regression. On the contrary, it appears that over a long period of time these common miscellaneous latent renal disorders may constitute an important source of chronic renal disease in later life.

Early recognition of the specific disease manifested by orthostatic-type albuminuria may suggest therapeutic approach and investigative studies not feasible in advanced renal disease. These latent conditions with an apparently innocent form of albuminuria present a clinical and public health challenge in early diagnosis and control of many forms of chronic renal disease.

30 East 40th Street, New York 16

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Health Counseling for Individuals and Groups

FRANK W. REYNOLDS, M.D., M.P.H., ALBANY, NEW YORK

(*From the Bureau of Chronic Diseases and Geriatrics, New York State Department of Health*)

PHYSICIANS occasionally are asked to address lay audiences on the general subject of health maintenance. They also should include, although they sometimes overlook, the subject of individual health counseling as an integral and important part of periodic health examinations. The purpose of the present paper is to outline what general subjects should be covered during such general counseling sessions.

None can doubt that the most effective individual health counseling is based on the results of a complete examination that has included a medical history, a physical examination, and laboratory tests selected to meet the individual requirements of the person being examined. Nevertheless, for group counseling and for counseling of those individuals whose examination results are entirely negative the following outline may be useful.

Good Health Habits

PERIODIC EXAMINATIONS.—The human body is a much more complicated and delicate mechanism than any machine ever devised by man, and one that requires comparable preventive maintenance if it is to function at peak efficiency. Yet, far more people take their automobiles to the garage for check-ups than visit their physician and dentist periodically. Many people punish their bodies by excesses of food, drink, and exertion; by not getting sufficient rest; by faulty diet habits; or by the use of drugs prescribed by someone other than a physician. That the human body lasts so long and functions so efficiently despite these abuses is a tribute to its durability rather than to proper care.

Most persons give lip-service to the old saying about the ounce of prevention, but rare is the person who actually has regular periodic health examinations. This unfortunate situation is created because many people believe they must be sick to seek medical attention; do not appreciate the value of a physical check-up and have an "it-can't-happen-to-me" attitude; many physicians are preoccupied with curative medical practice and have little time left for examining and counseling apparently healthy persons; and physical examinations take time and entail the expenditure of money.

PROPER NUTRITION.—Basically, the nutritional requirements of older persons are the same as those of younger adults. However, it is more difficult for the older person to maintain proper nutrition because the loss of teeth interferes with chewing and the older person tends to select softer foods; the secretion of digestive enzymes declines with advancing age and food does not digest as readily; food dislikes are cumulative and the range of food choices tends to be progressively restricted; and with income limitations older people find it necessary to purchase less expensive foods or omit meat and thus they have an inadequate intake of protein.

For good health, our daily diet should include a variety of nutrients—proteins, fats, carbohydrates, vitamins, and minerals. Most foods provide more than one nutrient but none furnishes all of the necessary nutrients in proper proportion to maintain good health. To maintain good health, every adult's daily diet should include the following as minimal requirements: Milk Group, 2 cups, including that used in cooking and on cereal (cheese or ice cream can replace part of the milk); Meat Group, two or more servings (fish, eggs, nuts, dry beans, or peas can be substituted); Vegetable and Fruit Group, four or more servings, including one dark green or deep yellow vegetable and one citrus fruit; and Bread and Cereal Group, four or more servings.

Milk Group.—Milk is an important source of protein and riboflavin. In addition, it is a leading source of calcium, essential for bones and teeth and required for proper functioning of muscles and nerves.

Meat Group.—Meat is a prime source of protein, important as a tissue builder. Besides protein, meat is a source of iron, several vitamins, and variable amounts of fat.

Vegetable and Fruit Group.—Vegetables and fruits are valuable because of the vitamins and minerals they contain and the roughage they provide. Dark green and deep yellow vegetables are important sources of vitamin A, and citrus fruits are rich sources of vitamin C.

Bread and Cereal Group.—Breads and cereals are sources of food energy, as well as sources of protein, iron, vitamins and minerals.

It is good health practice to divide the daily total food intake into three meals. The meal most frequently neglected is breakfast, and good nutrition requires a good hearty breakfast, eaten in leisurely fashion. Frequently, older people prefer several smaller meals to the conventional three.

A PERSON'S WEIGHT.—It is difficult to establish the most desirable weight for any individual. Nevertheless, there are certain standards for generalization. To avoid height-weight standard charts, one may use these simple rules: For men allow 110 pounds for 5 feet in height and add 5.5 pounds for each additional inch. For women allow 100 pounds for 5 feet in height and add 5.0 pounds for each additional inch.

When a person's weight is more than 10 per cent on either side of the norm, he should visit a physician for advice. A practical suggestion to help maintain weight within the normal range is to buy bathroom scales and weigh yourself every week at the same time of day and under the same conditions. Record the weight accurately each time, and keep the information for reference over a period of years.

Overeating and Obesity.—Obesity results from the intake of more calories than are required for day-to-day functions and physical activity. Obese individuals are more susceptible to diseases such as high blood pressure and heart trouble and have a shorter life expectancy than those who maintain their weight within normal limits.

To control obesity, restriction of caloric intake is essential, but the basic requirements in terms of protein, carbohydrates, fats, vitamins, and minerals must be maintained. The lower the caloric intake, the greater the need for careful selection of foods to provide a sufficient amount of essential nutrients. For this reason, dieting should be under the supervision of a physician.

Actually, the term dieting is misleading. Few overweight persons can diet their way to normalcy and maintain their weight at its new low level. Newspapers and magazines are replete with special reducing diets, which, if followed, will result in a temporary loss of weight. Unfortunately, the improvement is seldom long-lasting. People who tend to be overweight need to learn new eating practices. Moderation should be the watchword.

Undereating and Malnutrition.—Older persons are apt to suffer from protein deficiency. An inadequate amount of protein may result in fatigue, tissue wastage, anemia, swelling of the legs, and loss of calcium from the bones.

Experience has shown that many older persons do not have a sufficient intake of many vitamins. A good multiple-vitamin preparation is a sensible precaution for these persons.

Most minerals are available in ample quantities from food, but both calcium and iron are frequently insufficient. Major food sources of calcium are milk, cheese, ice cream, green vegetables, and legumes. Food sources of iron include liver, certain greens, meat, cereals, and bread. Supplemental calcium and iron may be desirable, but should be taken only on prescription from a physician.

Health Foods and Fads.—If one faithfully follows the basic rules of good nutrition there is no need for special (and expensive) health foods. Certain of these foods may be required under special circumstances, but they are best eaten only when recommended by a physician. Food fads are harmful since they seldom take into account the total requirements for good nutrition, and may result in acute vitamin deficiencies, or even general malnutrition. Wheat germ and black strap molasses may have a place, but this place is not necessarily in the daily menu of those preparing for a healthy retirement. There is no magic in any particular food no matter how exotic.

THE REST-ACTIVITY RATIO.—All persons require rest as well as exercise to stay healthy. The problem is to adjust the amount and kind of rest and the amount and kind of exercise to individual needs.

Exercise.—How much exercise does one need? There is no single answer to this question. The amount will depend on many factors. One important consideration is the amount of exercise involved in daily work. It would be ridiculous for a man performing heavy manual work to seek additional exercise such as competitive sports, although he may want to engage in sports for recreational reasons. The sedentary worker, on the other hand, may need more exercise than his work provides to remain physically fit.

Another important consideration is the presence or absence of physical handicaps that may prohibit certain kinds of physical exertion.

Age in itself is an important factor in determining the amount of physical activity. In later years, the body recovers from fatigue at a slower rate, and more rest is required. Somewhere past the age of forty it is wise to cut down or even eliminate participation in the more strenuous sports and develop an interest in activities that are less exhausting and which can be continued in later life.

A word of caution for the over-enthusiastic sportsman: If exercise results in fatigue or stiffness that persists for more than twenty-four hours, you have overdone things, and should cut down. Remember that health and physical fitness are not necessarily the same thing. There is no valid evidence that physical fitness will prolong your life, keep you from getting sick, or help you get well quicker if you do get sick.

Probably the most common mistake made in connection with exercise is to try to make up for lack of activity during the week by exercising excessively on weekends or during vacations. This is a bad health practice. Another common error is to limit participation to some form of exercise that can only be done during one season of the year.

Insofar as sports and other forms of exercises are concerned, the key word for persons past the age of forty is moderation.

There are two types of exercise that should be continued throughout life: postural exercises and deep breathing. Postural exercises contribute to personal appearance. One of the best of these exercises is to stand with your heels against a wall and flatten out the spine against the wall by drawing in the abdomen and chin. Deep breathing is particularly desirable in later life because of the tendency for older people to breathe with such shallow respirations that an oxygen deficit develops. This makes for shortness of breath.

Rest.—As we grow older there is an increasing need for rest. Young persons derive their rest mainly from sleep. But with age, difficulty in getting a good night's sleep often develops. How much sleep does one need? Again there is no single answer. Many people require eight hours, others do well with less, and a few require more.

Rest deficits occur frequently in older persons. These can be compensated for by naps or rest periods during the day. One important source of chronic fatigue is tenseness and inability to relax. Fortunately, relaxation is an ability that can and should be developed by persons as they advance in age. Excessive fatigue should be considered an abnormal symptom to be reported to a physician.

THE IMPORTANCE OF LITTLE THINGS.—Physicians who are concerned with the health of older people are well aware of the fact that it is the little things about which their patients complain most. Decreased visual and auditory acuity, inability to chew food properly because teeth have been lost, impaired bowel function because of inactivity, and painful feet constitute the most frequent causes of discomfort and disability among the aged.

Vision.—With advancing age there is a tendency for people to become far-sighted. Uncompensated far-sightedness discourages reading and close work. For the older person, loss of interest in these activities invites limitations that may be the first step toward social isolation.

Two eye diseases common in old age are cataracts and glaucoma. Both of these can be effectively treated by an ophthalmologist. Neither should be neglected. Good vision is necessary for the activities of daily living and maintenance of social relations.

Hearing.—Hearing loss also is common among older persons. It should be a matter of concern, because the inability to hear discourages conversation and encourages withdrawal from social contacts. Fortunately, the use of hearing aids is becoming increasingly acceptable. For the more reluctant there are aids that can hardly be noticed.

Teeth.—With advancing years, there is an increasing tendency for teeth to be lost. After the age of sixty-five, the average person has only about 8 of his original 32 teeth. This problem has a bearing on general health, because of inability to chew food which fosters undesirable diet patterns, and on personal appearance, a factor the older person should try to preserve. It involves effort to preserve teeth and substitute full dentures when this becomes necessary. But these efforts will pay high dividends in future good health.

The most frequent cause of loss of teeth after the age of forty is from the pyorrhea group of conditions that are characterized by loosening of the teeth and inflammation of the gum tissues about the teeth, often with pus formation. It is easier to prevent pyorrhea than it is to cure the condition. Prevention requires periodic visits to the dentist, removal of tartar, and proper toothbrush care at home. Remaining teeth should be carefully balanced to avoid side thrust which leads to further loss of teeth. This can be achieved by replacement of missing teeth or, in some cases, by careful grinding of remaining teeth.

The dental problem of the toothless aged consists primarily in the fitting and maintenance of comfortable, well-functioning full plates. The main problem is coping with shrinkage of the gums which quickly leads to unbalanced, inefficient dentures. When dentures are loose, there may be local irritation of the jaws, and unless steps are taken to correct this, serious complications may develop. Periodic relining may be required and eventually new dentures may be needed to keep pace with tissue changes.

Bowel Habits.—Advertising of a variety of laxative products has developed a widespread, unwarranted, and sometimes harmful dependency by many on artificial catharsis. The frequency of bowel evacuation is an individual matter. For some persons, three movements each day is normal; for others, a movement every second day is entirely adequate.

It is true that intestinal contraction is less vigorous in older people. For some persons, laxatives may be required. Most often the variety that produces more bulk in the stools should be used. The indiscriminate and habitual use of cathartics, however, is to be condemned. With exercise, an adequate fluid intake, a proper diet, and regular bowel habits, the vast majority of people can avoid the laxative habit. Constipation sufficiently severe as to produce discomfort should be investigated by a physician.

Foot Care.—It is doubtful that there is any complaint more common among older people than tired, aching feet. This is the result of decades of use and abuse. To guard against foot troubles in later life, one should wear comfortable, well-fitted, sensible shoes; take adequate care of corns, calluses, and bunions; wear arch supports when these are necessary, and exercise the intrinsic muscles of the feet (for example, toe movement such as trying to pick up a marble with the feet).

TOBACCO AND ALCOHOL.—There are a few conditions that require complete abstinence from tobacco because of its action in constricting the blood vessels. There is also a well-established causal relationship between smoking (particularly cigaretes) and the incidence of lung cancer.

The use of tobacco is a habit that is difficult but not impossible to break. Rarely will a physician advise the continuance of smoking except in instances where breaking the habit will result in greater mental anguish than physical gain. The person approaching retirement should weigh the value of smoking and consider the expense of the habit in relation to his income status.

The use of alcohol may be similarly considered. There are certain conditions (cirrhosis, peptic ulcer, ulcerative colitis) where alcohol is forbidden for medical reasons. Moreover, no one will deny the fact that habitual excessive use of alcohol can seriously affect health.

There are, however, medically speaking, certain beneficial effects of alcohol, especially for older persons. It is occasionally recommended to increase blood flow. In some persons there is a beneficial effect in small amounts on gastric digestion, and frequently a person who has difficulty relaxing before going to sleep will find a drink useful at bedtime.

As in the case with tobacco, the use of alcohol may be an expensive luxury for those living on a retirement income. In any event, the key to the use of alcohol is moderation.

MENTAL HEALTH.—True happiness during the later years of life can come only if a person has a philosophy that makes it possible for him to face life and adjustments to old age with composure. Such a philosophy develops out of a lifetime of experience.

Everyone has problems and responsibilities; everyone has decisions to make; everyone encounters new experiences and new ideas. We live in a world of people and must make suitable adjustments in our personal relationships with other people who also have emotions, abilities, and shortcomings.

Mental health is more than the absence of mental illness; it also involves things we refer to in many different ways—peace of mind, happiness, contentment, loving others and being loved in return, a sense of achievement, status, and many others that all add up to about the same thing. In general, there are two basic approaches to the problem of aging: the "grow old gracefully" and the "stay youthful" approaches.

Which of these two approaches is best will depend greatly on individual attitudes and personality traits. The grow old gracefully approach is the more popular notion of what old age should be. Nevertheless, we also admire the person who remains youthful by remaining useful. Physiologically, the stay youthful approach has certain advantages in terms of physical and mental health.

Older people should continue to contribute to the life of their community. They should continue to live in the most independent status possible for as long as practicable. They should continue their interests in family and community activities, maintain their social relationships with people their own age and those who are younger, and persist in being useful. One effective way of preparing for later years is to take an active interest in community activities for the aged. For example, working in day-care centers and helping with friendly visitors programs is good insurance that when we too advance in age we will not lack for useful activities.

Another practical suggestion is that education is never finished and older people can and should continue to learn new things. In adult education programs many subjects are taught. Courses are now available in almost any subject from art to zoology.

Sound mental health, like physical health, is helped or hampered by life-long habits. The kind of person you will be in retirement depends very much on the attitudes, interests, and habits that are developed by you throughout life. Fortunately, even deep-rooted undesirable emotional patterns can be changed.

Disease Common Among Older People

There are no diseases that are peculiar only to old age, and there are few diseases from which older people are exempt. We do not suffer from old age, but rather from the disease conditions that so frequently are associated with advanced years. It is dangerous to pass off valid complaints as being due to old age.

It is important to realize that with advancing years, the human body loses some of its capacity to react to disease. On the other hand, one may see acute appendicitis or advanced pulmonary tuberculosis in an older person who does not appear to be acutely ill and who may have only mild discomfort from these conditions. In general, older people have a comparatively high threshold to pain, a real blessing when one considers the multitude of aches and pains to which they are subject.

Most of the ills of older people are chronic in nature and insidious in onset. Usually they can be diagnosed by a physician before they become manifest to the patient. This is another reason why periodic health examinations are important. Certain of these diseases are of sufficient importance to older persons to justify brief comment.

Heart Disease.—This is by far the most common disability of the upper age groups, and the most frequent cause of death. Most often cardiac disabilities are due to atherosclerosis of the coronary arteries, the blood vessels that nurture the heart muscle. Another important cause of heart disease is high blood pressure.

The presence of heart disease often calls for weight reduction and some limitation of physical activity, but these and other forms of treatment should be prescribed by the physician.

There is some evidence from animal experiments, but as yet no conclusive proof, that excesses of fat in the diet may lead to the development of atherosclerosis, the basic cause of coronary artery disease. More recently, it has been suggested that animal fats are more likely to cause atherosclerosis than are vegetable and marine fats. Whether or not the amount or kind of fat in the diet is related to coronary artery disease, fats provide more calories than any other food and should be restricted for this reason, if for no other.

Cancer.—Cancer is a disease which can strike at any age, but is predominantly a disease of the older-age groups. Multiple cancers are seen more frequently as the individual gets older. The following points are given in the belief that a familiarity with them will help the reader to protect himself from this disease.

Everyone should know the seven danger signals of cancer. These danger signals are the usual signs or expressions of the

TABLE I.—FATAL HOME ACCIDENTS IN UPSTATE NEW YORK. FIVE-YEAR AVERAGE, 1950 TO 1954

Accidents	Age Groups						
	Under 1 Year	1 to 4 Years	5 to 14 Years	15 to 24 Years	25 to 44 Years	45 to 64 Years	65 Years and Over
Falls	3.4	13.8	3.4	1.8	20.8	111.4	817.6
Fires	8.8	37.8	25.4	9.6	47.2	43.6	62.0
Poisoning from gases and vapors	0.2	0.4	1.8	4.0	11.2	19.8	21.6
All other	94.0	50.2	21.8	9.0	44.4	50.4	52.4
Total	106.4	102.2	52.4	24.4	123.6	225.2	953.6

disease and their occurrence should be promptly reported to a physician: (1) unusual bleeding or discharge; (2) a lump or thickening in the breast or elsewhere; (3) a sore that does not heal; (4) persistent change in bowel or bladder habits; (5) persistent hoarseness or cough; (6) persistent indigestion or difficulty in swallowing; and (7) change in a wart or mole.

Women should be familiar with the technic of breast self-examination* and should practice this important health habit every month. Breast cancer is by far the most common site of cancer in women, and it is important that abnormalities in the breast be detected and corrected early. Experience has shown that women, by regular examination of their breasts, can detect lumps and other abnormalities early and thus facilitate prompt and adequate treatment by their physicians. Men, because of the importance of lung cancer, should have regular chest x-ray films taken as part of their periodic health check-up.

It is important to realize that for a serious disease like cancer the proved methods of treatment are the only ones that can bring about a cure. These are surgery, roentgen ray, or radium. All individuals should be aware that there are unorthodox or quack treatments publicized widely, that these can offer no real hope of cure of the cancer, they delay chances of cure by postponing effective treatment, and often lead to financial exhaustion of the patient.

Everyone should know that the American Cancer Society has county units operating throughout the State. Representatives of county cancer society units usually serve in cancer information centers or friendly Little Red Doors, and these workers will be glad to offer help and information regarding cancer to anyone in the community.

Cerebral Vascular Accidents.—The arteries that bring blood to the brain are subject to several disease processes that collectively are called cerebral vascular accidents or strokes. Most frequently the result of a stroke is paralysis of one side of the body, or hemiplegia.

Hemiplegia on the right side of the body ordinarily is more serious than is left-sided hemiplegia. One reason is that most people are right-handed; another is that right hemiplegia is sometimes accompanied by a condition known as aphasia in which the patient either does not comprehend verbal or written speech or he is unable to communicate his own thoughts.

The important things for the layman to know about strokes are that most victims survive the acute episode and, with proper management, the vast majority (70 per cent) of patients will be able to walk again, and nearly a third of them will be able to resume remunerative employment.

Home Accidents.—It is not generally appreciated that among people over sixty-five, home accidents are among the five most important causes of death and disability. By far the most frequent home accidents (85 per cent of the total) are falls of various kinds (Table I).

To avoid accidents in the home, the following precautions are advised: When climbing to do such things as replacing light bulbs or a closet shelf, take time to get a firm support. Keep step stools in good repair. Stairs should be kept in good repair and clear of objects at all times. There should always be a hand rail and stairs should be well lighted. Good lighting in every room will prevent many an injury, and older people should make a habit of lighting up ahead of themselves. Highly polished floors are slippery. Small rugs should not be placed at the head or at the foot of a stairway. Elsewhere they should be anchored to the floor. Slipping in bathtubs can be avoided by installing hand rails and rubber mats. Long, trailing electric cords are dangerous tripping and fire hazards. Clothing should be kept in good repair, especially skirt hems and the heels of shoes. Burns and other injuries associated with fires are the second most frequent kind of home accident, and injuries from poisonous vapors and gases rank third.

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* See New York State Department of Health Publication, "A Monthly Check Pays Dividends."

To a very great extent home accidents are preventable. All people should make safety inspections of their homes to find and correct conditions that are known to to be dangerous.

Brittle Bones.—With aging there is a tendency for calcium to be lost from the bones. If the loss of calcium is excessive the bones become brittle and easily fractured. This condition is known as osteoporosis.

It is because the bones are brittle that breaks (especially in the hip joint) are so common among older people. Loss of calcium from the jawbones is one of the factors involved in the loss of teeth in old age. Osteoporosis of the spinal vertebra may cause the older person to become stooped or even shorter in stature.

Inactivity is a major factor in the development of osteoporosis. Hence, older people should keep active within their own limitations. Your physician may prescribe medications to maintain strong bones and can give individualized advice about the amount of activity that is desirable for you.

Health Considerations in Choosing a Retirement Home

The question of where to live in retirement is one that involves many considerations, only one of which is health.

Most people will continue to live in the community where they spent their most productive years. They may decide to move into smaller and less expensive quarters, or they may elect to live in their old home. For older people, the following factors enter into the decision of where to live: Stair climbing should be avoided if possible; maintenance should be minimal; safety hazards should be eliminated; labor-saving devices should be utilized whenever possible; and accessibility of shopping centers, the church of one's choice, and other facilities of interest to older people should be considered.

Some people may choose to move to a new location after they retire. Health considerations seldom are the deciding factor in making such a move. Some patients with severe allergic diseases such as asthma and hay fever and some who are plagued with rheumatic diseases may find a change of climate beneficial. Before leaving a community where one is known, investigate the proposed new home community in respect to its attitude toward newcomers, the opportunities for community activities, part-time employment, and proximity to old friends and relatives. The availability of health and medical facilities, especially those for the chronically ill, should also be considered.

Not infrequently a problem arises about the residence of older persons: Should they live alone, with relatives, with non-relatives, or in a home for older people? There is, of course, no single answer to this problem since so many factors are involved.

The majority of older people live in their own homes, and only a small number are in homes for older people. A recent survey indicates that 69 per cent of people over the age of sixty-five live in their own household, either alone or with a relative or with a friend; 25 per cent live with others, either relatives or nonrelatives; and only 6 per cent live in homes for the aged, rooming houses, or other institutions.

Some people have a prejudice against living in a home for older persons. This is unfortunate because a well-run old folks' home may be the best solution for the difficult problem of where to live. A good home of this sort should offer pleasant surroundings, have a sympathetic staff, afford privacy as well as opportunities for social contacts with other occupants, permit the older person to have the use of cherished objects such as pieces of furniture, and be conveniently available so that friends and relatives can visit often.

Financing Health Needs in Later Life

It is unfortunate that older people have more episodes of illness and are sick for longer periods of time than are younger people, especially since the added expense for medical care comes at a time in life when financial resources have been significantly reduced.

The person preparing for retirement should make every effort to continue after retirement whatever prepayment hospitalization insurance he has been carrying. This at least gives protection against hospitalization costs for short-term illness. The more difficult problem of financing long-term care outside of a general hospital has not yet been solved.

Community Health Resources

Communities vary greatly in the services that are available for adults. More and more, however, the need for these services is being recognized and met. These services fall into four main groups: (1) those designed to help people remain active; (2) those for people who are ill; (3) those for people requiring financial help; and (4) those for people in need of counseling and information.

Services to Help People Remain Active.—Most states have state employment services with offices in middle-sized and larger communities. These agencies are making increased efforts to find employment for older workers and some have special counselors for this purpose.

Most states have state divisions of vocational rehabilitation with regional or local branch offices equipped to help people with certain handicaps to obtain training for new occupations. Similar services are sometimes available from privately-supported agencies.

Sheltered workshops, available in some communities, employ handicapped persons under medical supervision.

Many school systems offer a variety of interesting adult education programs such as "Do-It-Yourself" classes or courses on topics of current interest. Consult the high school principal, the public library, or write your State education department.

Golden Age Clubs, also known as Senior Citizens Clubs, are being developed under various auspices to help older persons make friends and participate in hobbies, community projects, and the like.

Leisure time activities for older persons may be sponsored by church groups, community centers or settlement houses, fraternal orders, service clubs, labor organizations, or public recreation departments.

Service for People Who Are Ill.—The local health department, through its public health nurses, provides home nursing care and patient education. In some communities physiotherapy and nutritional services also are available.

In urban communities home nursing care often is also available from the Visiting Nurse Association.

Institutional care is given in general hospitals, chronic disease hospitals, and nursing homes.

Voluntary health associations, although mostly concerned with public education and research, sometimes have direct services for patients. Most communities have affiliates of the National Tuberculosis Association, the American Heart Association, the American Cancer Society, and the Arthritis and Rheumatism Foundation.

Some communities have a homemaker's service which may be operated by the welfare department or by a voluntary agency.

Sick room supplies are available from many different sources: service clubs, fraternal groups, Visiting Nurse Associations, and others.

Friendly visitors services have been organized in some communities to bring happiness and aid to shut-ins.

Services for Persons Requiring Financial Help.—Many people are unaware of the benefits to which they may be entitled under the Old Age and Survivors Insurance or Disability Insurance programs. Information can be obtained from the nearest Social Security Administration office, maintained by the United States Department of Health, Education, and Welfare.

Public assistance is available to eligible persons through the local welfare department under a number of different program categories: old age assistance, aid to the blind, aid to the disabled, aid to dependent children, and general assistance or home relief. In many states public assistance includes necessary medical expenses. Help in meeting large hospital bills may also be available to persons who do not qualify for other public assistance programs.

Private social welfare agencies and community service organizations may provide financial assistance under certain circumstances.

Reduced rates or free care are available in many kinds of health facilities without reduction in the quality of the care given. It is well known today that anyone can get into financial difficulties through no fault of his own. Ability to pay should be freely discussed with intake or admissions offices of health or welfare facilities.

Services for Those in Need of Counseling or Information.—Counseling services on general planning for the future, planning for medical care, and personal or family problems may be available from a nonsectarian family service agency, or from the Catholic charities, or Jewish social service. Veterans may obtain counseling through the Veterans Administration or the American Red Cross. Such services may be available also from public health nurses, the clergy, and from physicians.

Selection of a private physician is the responsibility of the patient, but local medical societies can suggest a list of qualified doctors.

In selecting the appropriate community facility it is well to know that large communities have information about all available services which may be obtained from the health and welfare council (which may be listed in the telephone book as Council of Social Agencies, Council of Community Services, or Community Welfare Council). Where there is no such organization, information about community resources may be obtained from the Community Chest or from the local health department or welfare department. Local medical societies, physicians, and clergymen also may know of local facilities. It also may be useful to check the telephone listings under United States Government or the appropriate state, city, or county.

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Traumatic Rupture of the Thoracic Aorta

ADRIAN LAMBERT, M.D., NEW YORK CITY

(From the Department of Thoracic Surgery, Knickerbocker Hospital)

COMPLETE traumatic division of the thoracic aorta as encountered in severe chest-wall injuries usually results in immediate death from hemorrhage.

Strassmann,[1] reporting on 72 cases of traumatic aortic rupture from approximately 7,000 autopsies performed between 1936 and 1942 at the Chief Medical Examiner's office in New York, notes that 59 individuals died in the first hour after such an injury, only one surviving eighteen hours after injury. In this series 71 per cent of such injuries occurred after automobile accidents, the most frequent site of rupture being at the isthmus immediately below the origin of the subclavian artery.

Halpern,[2] in discussing aortic tears following steering-wheel injuries, notes that usually all the coats of the aorta are involved and that rapidly fatal intrathoracic hemorrhage results. Lacerations vary in shape but are mostly transverse. "In some instances aortic adventitia and reflections of surrounding pleura remain intact so that the hemorrhage dissects the posterior mediastinum up into the neck and down as far as the diaphragm before the mass finally ruptures and bleeds into the pleural cavity."

The following is a case report of a fifty-year-old man who survived complete transection of his thoracic aorta for fourteen and one-half hours. During this time the aortic injury was suspected, but its severity was not appreciated. The associated injuries and the general clinical picture that he presented after his injury focussed attention on his respiratory tract and the paradox in his breathing rather than on the vascular component of his injury.

The duration of his survival enabled the surgeon to overcome the respiratory paradox by internal fixation of the sternum, during which time x-rays taken at intervals showed changes characteristic of the blood vessel rupture that eventuated in his death.[3]

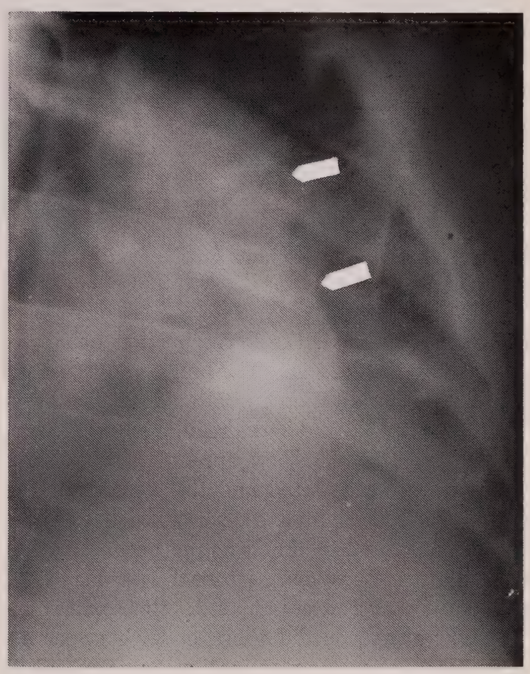

FIG. 1. Posteroanterior chest plate showing double fracture of sternum.

Case Report

This was the first admission of a fifty-year-old, white male who was brought by ambulance to the accident room at Knickerbocker Hospital. The patient was unconscious on admission, having suffered multiple chest and head injuries about one-half hour before admission, when the car which he was driving had a head-on collision.

On physical examination the patient was found to have a laceration of the chin and a swelling of his manubrium with moderate amount of paradoxic motion on inspiration, indicating fracture of the sternum and ribs. His pupils were equal and reacted to light. His clavicles were intact and the manubrioclavicular joints were not disrupted, so that the upper portion of the

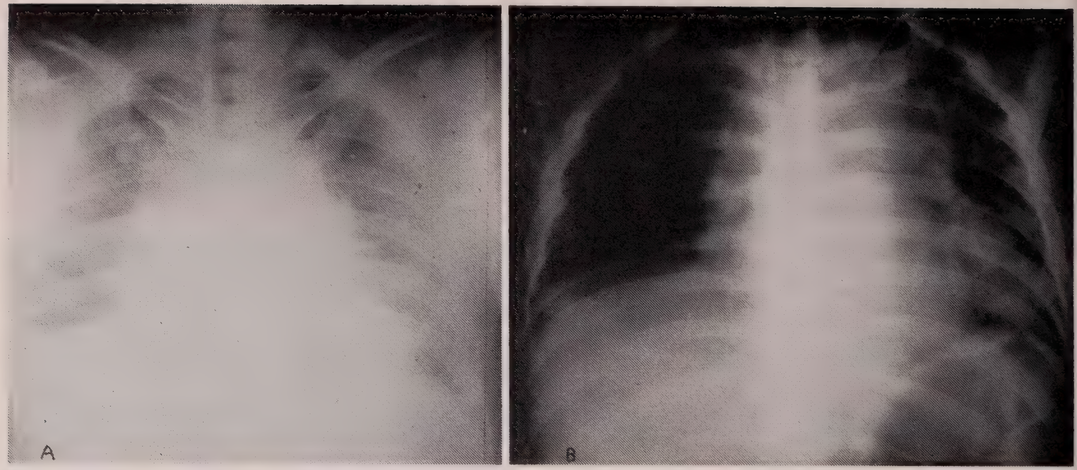

Fig. 2. X-ray films of chest showing widened mediastinum secondary to massive hemorrhage from rupture of aortic arch. Preservation of aortic outline is noted on film of increased density (*B*).

sternum was fixed, the lower portion being depressed on inspiration. The lungs were resonant with clear auscultation on both sides. The heart was not enlarged and had a regular sinus rhythm, maintaining a blood pressure of 130/90. No murmurs were detected and the sounds were of fair quality. Abdominal examination revealed some tenderness in the left upper quadrant but no definite mass or peritoneal spasm. Both femoral arteries were palpated; their pulses appeared normal, as did those in both upper extremities. Rectal examination gave negative findings.

Laboratory Findings: A diagnosis of fractured sternum and ribs with cerebral concussion and laceration of the chin was made. X-rays taken of the skull revealed no fracture. X-rays of the chest revealed a separation between the manubrium and gladiolus and a fracture of the lower third of the sternum with marked depression of the middle third of the bone (Fig. 1). The intact first rib and fracture of second rib with separation at the manubriosternal junction resulted in anterior displacement of the lower end of the upper sternal fragment. There was no evidence on x-ray of any fracture of the ribs but on physical examination it was obvious that they were broken on both sides of the sternum. X-ray of the chest revealed a marked widening of the mediastinal shadow, which extended from the hilar area on the left side to beyond the cardiac shadow in a smooth arc down to the diaphragm (Fig. 2). X-rays of the lumbar spine showed no fracture.

The electrocardiogram taken soon after admission showed that the heart activity was within normal limits, with a rate of 106, P-R interval 0.16, and QRS complex 0.08.

Urinalysis gave negative findings for sugar, urobilin, and microscopic analysis. There was a trace of acetone present. The blood count revealed the hemoglobin to be 14.5 Gm., white cell 7,600, and blood group 0.

Course: In view of the paradoxic breathing and the frail chest, with rib fractures and fractures of the sternum, it was felt best to stabilize his sternum. Since his circulatory condition remained stable, the patient was brought to the operating room for internal fixation of his sternum. Under general anesthesia a midline incision was made from the space of Burns down to the xiphoid. Both fracture lines were visualized, the depressed middle fragment being plated with two four-screw Lane plates to the stable manubrium above and the separated lower third of bone below. This was done with difficulty because of the anterior displacement of the lower end of the manubrium, which was held at a 45-degree angle by its attachment to the first rib and clavicle on either side. Once this was overcome and the plate screwed in place, breathing immediately became more stabilized, the paradox in respiration reverting to normal type of breathing. The wound was closed with interrupted sutures, and the patient was returned to his room.

During the entire operation the blood pressure and pulse remained stable and continued elevated for six hours. At this time the patient suddenly started gasping, his blood pressure dropping to 70

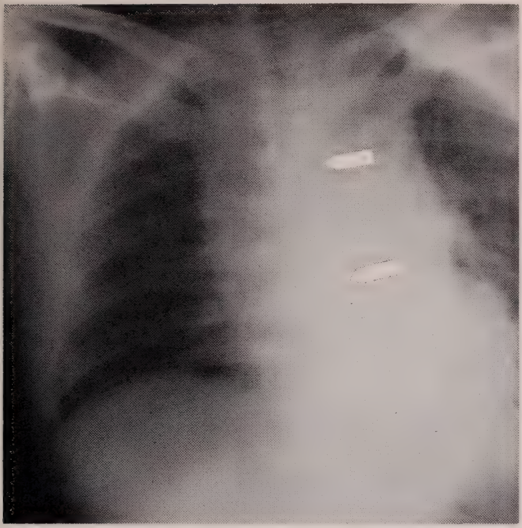

FIG. 3. Film of chest x-ray taken postoperatively showing the two-Lane-plate fixation of sternum.

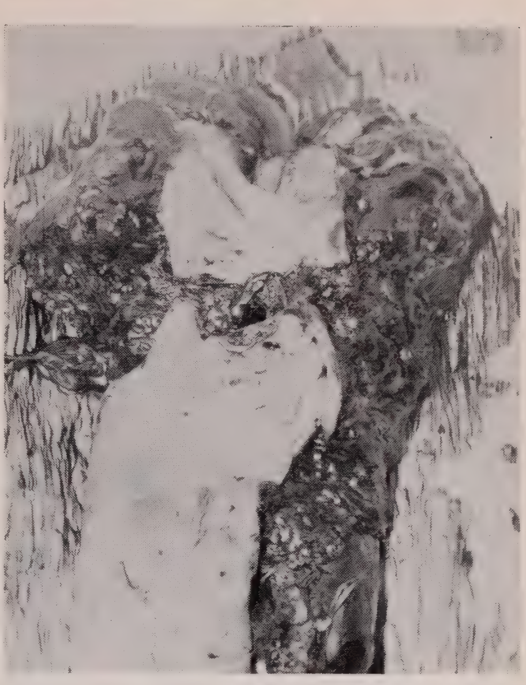

FIG. 4. Autopsy specimen revealing complete $1^1/_2$-cm. transverse separation of the aorta at a point just distal to the subclavian artery. The surrounding hemorrhage that ruptured into the pleural space fourteen and one-half hours after the accident is noted.

systolic. There was no shift of the mediastinum, and breath sounds could be heard bilaterally. Thoracentesis was performed on the left side but no blood was obtained. Despite administration of Levophed and other stimulants, the patient expired, approximately fourteen and a half hours after the accident, eight hours after the operation.

An x-ray taken postoperatively, three hours before the patient's death, shows the two-Lane-plate fixation of sternum. The widened mediastinum is still apparent, but at the time this picture was taken the hemorrhage had not ruptured into the pleural space, the patient's condition apparently being satisfactorily stabilized (Fig. 3).

AUTOPSY: The autopsy performed the next morning revealed a massive amount of blood in the left pleural cavity, with a large amount of old clotted blood in the mediastinum. The pericardium contained a small amount of fluid, and the heart was contracted and small. In tracing the course of the aorta upward, a separation was noted at the arch just distal to the subclavian artery that measured $1^1/_2$ cm. in width (Fig. 4). The surrounding tissues were composed of areolar tissue associated with a massive blood clot that had so contained the passage of blood that, in spite of the complete separation of proximal and distal aorta, it enabled the abdominal aorta to receive its full quotient of blood until just preceding death. The left common carotid artery was torn in one small area, which apparently had sealed itself so as not to be responsible for the main hemorrhage, which occurred at the site of dehiscence. The sternum, which had been fractured in two places, was well fixed by the Lane plates. There were fractures of the second to eighth ribs on both sides of the chest, just lateral to the costochondral junctions (Fig. 5).

Comment

In analyzing the mechanism involved in traumatic rupture of the aorta, Rindfleisch[4] called attention to the relative fixation of the aorta at the points where the great vessels originate, as opposed to the relative mobility of the aorta distal to these points. Haas,[5] discussing arterial injuries in aircraft accidents, noted that when one part of the body is decelerated at a rate different from that of another, the connections between the two parts are placed under stress proportional to the difference in the rate of deceleration. If rapid deceleration is subjected to a

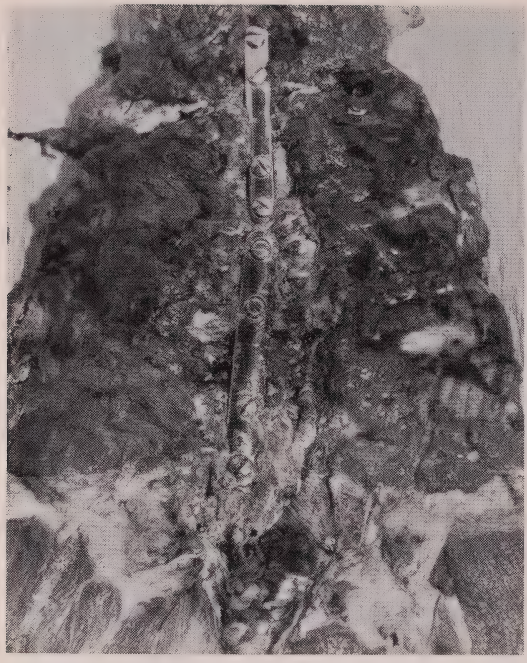

Fig. 5. Autopsy specimen showing anterior surface of sternum well-secured by two four-screw Lane plates, and bilateral rib fractures, including the second to the eighth ribs, at the costochondral junctions on either side.

person in his horizontal axis, tear of the aorta will occur at its fixed position. If a vertical force is involved, the aorta will burst at its weaker portions, that is, at the isthmus and/or immediately above the aortic valves, secondary to increased intravascular pressure.

The present case occurred as the result of a steering-wheel injury, which produced a typical horizontal-force type of tear at the junction of fixed and mobile thoracic aorta. That such an injury is not related to previous disease of the aorta is attested to by the fact that more than one half of patients in Strassmann's series[1] were under fifty years of age and showed no gross pathologic change in the aorta except for trauma. In the present instance no associated disease was noted in the aortic wall.

Chest-wall injury with or without fracture of ribs or sternum need not be present for severe injury to occur to intrathoracic contents. When sternal fracture is a factor, it is suggested that a type of fixation similar to that used in the present case be employed to advantage. Fixation of the sternum by double four-screw Lane plate resulted in marked respiratory improvement in spite of the multiple rib fractures on either side. The intact first rib and clavicle at the costomanubrial and claviculosternal junctions so fixed the uppermost fragment of the sternum that plating of the two lower fragments resulted in complete stabilization of the sternum, with corresponding improvement in respiration and disappearance of the paradox.

Attention is directed to the prolonged survival that occurred in this patient in spite of the complete transection of the thoracic aorta. In spite of the seriousness of these patients' injuries, intrathoracic exploration of the aorta should be carried out if an aortic tear is suspected. It is possible that this patient could have been salvaged by prompt suturing of the aortic dehiscence.

Summary

1. A steering-wheel injury with complete transection of the thoracic aorta is reported in a fifty-year-old man who survived fourteen and one-half hours after injury.

2. The mechanism of aortic tear and the handling of these injuries are discussed.

3. Internal fixation of the comminuted fracture of the sternum resulted in reversal of the respiratory paradox and restoration of normal breathing.

768 Park Avenue, New York 21

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Endometriosis of a Hernia Sac

IRVING H. DREISHPOON, M.D., POUGHKEEPSIE, NEW YORK, AND EMANUEL KLEMPNER,
M.D., NEW YORK CITY

(From the Department of Obstetrics and Gynecology, Mount Sinai Hospital, New York City)

ECTOPIC endometrial tissue in distant parts of the body is a well-documented occurrence. However, the presence of endometrium in a hernia sac has rarely been reported. Recently, 2 cases of proved endometriosis in hernial sacs were found by one of the authors. One was found in a femoral hernia, the other in an inguinal hernia. The possible difficulties in arriving at a correct diagnosis is shown in the latter case.

The reported incidence of inguinal endometriosis in several large series is low. Holmes[1] in a report of 164 cases of endometrial lesions outside the uterine cavity reported 1 case in the inguinal canal. Scott and Te Linde[2] in a series of over 800 cases reported 4 cases of inguinal endometriosis. None of these cases was associated with hernia. Cullen[3] in 1896 and Bluhm[4] in 1898 described endometriosis of the inguinal region. Cullen[5] in 1917 described a case of a small inguinal hernia with incarcerated omentum and an unassociated adenomyoma of the round ligament on the same side. Polster[6] in 1926 reported 34 cases which he collected from the literature, of adenomyoma of the round ligaments. To this he added 2 cases of his own in which ectopic endometrium was attached to the round ligament outside the external inguinal ring. In the inguinal hernia which he described, no serosal implants containing endometrial elements were found.

Sampson[7] in 1925 presented 3 cases of endometriosis of the inguinal region, two of which were found close to or connected to the extraperitoneal portion of the round ligament. In his third case the endometrial tissue occupied the region of a femoral hernia and was densely adherent to the anterior surface of the femoral vein. The hernial sac was filled with old blood. However, histologic evidence of endometriosis in the sac was lacking. In each of his reported cases the nodule in the groin reacted to menstruation, as was indicated by its tenderness at the time of the menses and also by the presence of blood pigments in the tissues. There was evidence of pelvic endometriosis in the first 2 cases, although in the third case there was none. Sampson[8] in 1926 again described another case of inguinal endometriosis, involving the wall of a right irreducible hernia. The neck of the hernial sac had been occluded by the reaction of the endometrial tissue.

Christopher[9] in 1927 described an interesting case of a woman in whom a supracervical hysterectomy was performed for painful menses. No mention was made of the pelvic findings at the time of operation. Following this she developed a painful swelling in the right groin at the external inguinal ring. Periodically pain and swelling were intensified in this area. Operation disclosed a small inguinal hernia to which was attached an endometrioma 5 by 4 by 4 cm. Harbitz[10] in 1934 reported 8 cases of inguinal endometriosis. In one, the endometrioma was associated with an inguinal hernia. The endometrioma, however, was found outside the hernial sac. Neel[11] in 1937 presented 3 cases of inguinal endometriosis. The second case involved an endometrioma in association with bilateral inguinal hernias. However, there was no connection between the endometrioma and the hernia.

Dickinson[12] in 1939 reported an interesting case of a round ligament endometrioma which simulated a right inguinal hernia. The inguinal mass was easily reducible and transmitted an impulse on coughing. Operation disclosed extensive pelvic endometriosis with endometrial cysts involving both round ligaments. Total hysterectomy and bilateral salpingo-oophorectomy were done with a complete dissection of the right round ligament through the internal ring. Follow-up examination revealed no reoccurrence of any mass. Donovan[13] in 1941 described a case of incarcerated omentum in a left inguinal hernia in which endometrial tissue was found. There was no evidence of pelvic endometriosis.

Lyall[14] in 1945 reported 2 cases of inguinal endometriosis. The patient in one case had a past history suggestive of an inguinal hernia. However, no hernia was found at operation. He felt, as Sampson had,[7,8] that this inguinal mass resulted from ectopic tissue carried from the pelvis to the groin by way of the hernial sac, eventually having its connection to the peritoneum obliterated by the scarring resulting from menstruation. Hellens[15] in 1951 described a case of a right-sided, hard, tender inguinal nodule located near the pubic bone, which became painful and swollen during menstrual periods. The nodule was fixed, and a preoperative diagnosis of irreducible inguinal hernia was made. Operation disclosed no attachment to the peritoneum and a diagnosis of endometriosis was established. The nodule was excised, but there was reoccurrence six months later in the same area.

The authors wish to add the following 2 cases to the literature.

Case Reports

CASE 1.—The patient was a thirty-eight-year-old, white, para 2, gravida 2, who was separated from her husband. She was admitted to the hospital with the chief complaint of a protruding mass in the left groin four months prior to admission. The mass was movable and nontender. There was no swelling or pain prior to or with the onset of menstruation. Menarche began at the age of fourteen, with periods occurring every twenty-eight days and lasting four days, of average flow and with no pain. Six months preceding her admission she had a normal four-day period which lasted for two additional weeks with a heavy flow. Menses following this have occurred regularly and were of four days duration and moderately profuse. She had been married for thirteen years and conceived on two occasions without any difficulty. Her past history was entirely negative. Physical examination revealed a mass in the region of the left femoral ring. The mass was approximately 2 to 3 cm. in diameter, round, of soft consistency, nontender, and reducible. Pelvic examination revealed a 1-cm., raised, warty lesion of the vulva. The outlet was parous and well supported. The vagina appeared normal. The uterus was anterior, mobile, and normal in size and shape. The adnexa were normal with no masses felt. Rectovaginal examination gave negative findings. Laboratory findings revealed a normal blood count and normal urinalysis findings. Papanicolaou smear of the cervix revealed no carcinoma cells.

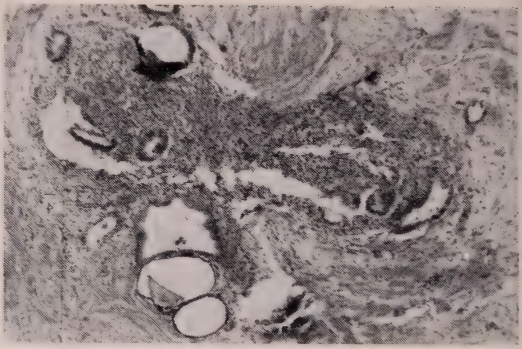

FIG. 1. Ectopic endometrial tissue with several endometrial glands surrounded by moderate amount of stroma which was found in the wall of a femoral sac. × 80.

Course.—On the third day after admission a dilatation and curettage, repair of the left femoral hernia, and excision of a vulval papilloma were performed. The contents of the hernia included some omentum and slight bloody fluid. The surrounding tissue appeared normal and was dissected away without difficulty. She was discharged ten days later after an uneventful postoperative course.

The pathologic findings were reported as follows:

1. Fragments of endometrium in proliferative phase.
2. Papilloma of vulva.
3. Vascularized, fibrous sac wall, showing typical areas of endometriosis (Fig. 1).

CASE 2.—The patient was a forty-five-year old, white, married para 1, gravida 1, schoolteacher who was admitted to the hospital complaining of the presence of a small nodule in her right groin, first noticed one year prior to her admission. This nodule was only slightly tender at times and immovable. She stated that the nodule did not vary in size nor did she experience any pain before or during her menses. Her menses were established at the age of thirteen, occurring every twenty-eight days and lasting for three to five days without pain. No difficulty in conceiving had occurred. Her past history was negative. Physical examination revealed a 3-cm. nodule at the lateral aspect of the right pubic spine. The nodule was fixed and nontender to palpation. No masses were presented in the groin on straining or coughing. Pelvic examination revealed a parous introitus with a well-supported outlet. The vulva and vagina were normal. The cervix was clean, and the uterus anterior, mobile, and normal in size and shape. Both adnexa were normal. Rectovaginal examination revealed no abnormalities. Laboratory findings included a normal blood count and normal urinalysis findings. Preoperative diagnosis was neoplasm arising from the right pubic bone, and accordingly, the patient was admitted to the orthopedic service.

Course.—The day following admission, the operation, under general anesthesia, disclosed the nodule to be attached to the right round ligament and, in effect to the distal end of an inguinal hernia protruding through the internal ring. With these findings a general surgeon and gynecologist were consulted in order to continue the procedure. The hernia sac was firmly adherent to the surrounding tissues and was separated with great difficulty. The area surrounding the hernia sac was involved with what appeared to be ectopic endometrial tissue. The hernia was obviously incarcerated, and the neck of the sac almost obliterated by the same process. The sac was opened and found to contain a small amount of omentum and some bloody fluid. The sac was removed, and the neck of the hernia closed. The herniorrhaphy was then completed without any difficulty. The patient was discharged eight days later after a benign postoperative course. Follow-up examinations for one year following the operation revealed no recurrence in the groin.

The pathologic report stated that the specimen consisted of an oval, fibrofatty mass measuring 5 by 1 by 2 cm. Cut section revealed slight hemorrhagic gray and yellow tissue. Microscopic section revealed fibrofatty tissue in which present numerous endometrial glandular elements and stroma were present (Fig. 2).

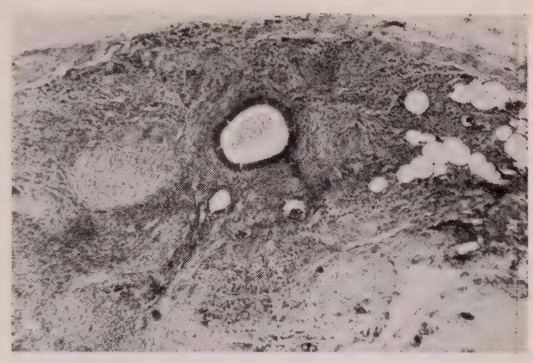

FIG. 2. Ectopic endometrium with endometrial gland surrounded by some stromal tissue found in an inguinal hernia sac. × 80.

Comment

These 2 cases of endometriosis present in a hernial sac were deemed worthy of reporting because of the paucity of reported similar cases and, more important, the perplexing problem of clinical preoperative diagnosis that these can present. The incidence of its occurrence may be greater than we were led to believe by the literature.

As was seen in the first of the 2 cases, the finding of ectopic endometrial tissue in the wall of a femoral hernia was an accident, since there was no clinical evidence of pelvic endometriosis, nor was there any gross evidence of endometriosis at the site of the hernia. In addition, the patient denied any cyclic exacerbations or remissions in her asymptomatic hernia.

In the second case, however, there was undeniable evidence of endometriosis in the groin surrounding the hernia, making the procedure a difficult one, although clinically there were no signs of pelvic endometriosis. This case is a departure from those usually reported since this patient also denied having any cyclic variation in her asymptomatic inguinal hernia, which was mistakenly diagnosed as a neoplasm probably arising from the pubic bone. The diagnosis of inguinal or femoral endometriosis can be extremely difficult preoperatively. The addition of a hernia in these locations can make the diagnosis more difficult. With a history of cyclic exacerbations of symptoms, such as pain, tenderness, and swelling at the time of the menses, the diagnosis becomes simple. The diagnosis becomes even more certain if clinical signs of endometriosis are present in the pelvis. At operation for a suspected endometrioma of the inguinal or femoral region care must be taken not to overlook the presence of an associated and intimately adherent hernia.

The histogenesis of endometriosis is a subject which has been written about prolifically, with many different theories being propounded. From the wealth of material being collected, one can assume that several modes of origin can be at play in any one case and that the responsible avenue of transportation may vary from case to case.

Sampson's original proposals[7] for four different explanations for inguinal endometriosis are classic and should be cited.

1. *The Congenital Theory.*—Endometriosis arises in developmentally misplaced portions of the müllerian or wolffian systems.

2. *The Serosal Theory.*—Endometriosis arises because of metaplasia of the mesothelial lining of the processus vaginalis peritonei or the endothelial lining of the dilated blood vessels.

3. *The Implantation Theory.*—Endometriosis arises from exfoliation through the tubes and implantation on the round ligament about the internal inguinal ring.

4. *The Metastatic Theory.*—Endometriosis arises by utilization of lymph vessels or veins during menstruation.

Javert[16] recently phrased his composite theory of endometriosis, which in essence enhances the latter two theories of Sampson. Sampson felt that endometriosis of a hernia sac could best be explained by direct implantation to the peritoneum of the sac after regurgitation from the tubes. Although this appears to be the most reasonable explanation for hernial sac endometriosis, we found it untenable in our cases because of the clinical lack of evidence of pelvic endometriosis in both cases. Therefore, Javert's theory of lymphatic metastasis to adjacent organs appears more feasible in our cases.

Summary

1. A review of the literature concerning inguinal endometriosis and endometriosis of a hernia sac has been presented.

2. The incidence of this condition may be greater than is generally believed.

3. Two cases of endometriosis of a hernia sac have been added, one of a femoral hernia, the other of an inguinal hernia.

4. The difficulties in diagnosis are discussed.

5. An explanation for the histogenesis of this occurrence is given.

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Fortune is like glass,—the brighter the glitter, the more easily broken.—PUBLILIUS SYRUS

RECENT ADVANCES IN MEDICINE AND SURGERY

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ROBERT TURELL, M.D., *Editor*

Foot Problems

J. PAUL HARVEY, JR., M.D., NEW YORK CITY

(*From the Hospital for Special Surgery*)

THE FOOT is a very important part of our anatomy. The sensory perception in the foot tells us where we are and often where we should go. The bones and ligaments in the foot provide a platform to maintain balance, a spring to take up the shock in weight-bearing, and even an instrument, as in sports. The muscles provide stability by holding the legs straight upright on the bony platform and provide motion by moving the bones which, acting as levers, move our weight usually in the desired direction.

The normal foot has five toes and a large pad immediately behind the toes, the metatarsal pad or ball of the foot. Behind this there is an arch, the longitudinal or main arch on the tibial side of the foot. On the fibular side the surface is weight-bearing and forms a continuous area from the ball back to the heel. The heel pad and the pad under the metatarsal area are normally slightly thickened and, in people who spend a great deal of time bearing weight, somewhat calloused.

In a normal walking gait pattern the heel strikes the ground first, then the remainder of the foot. The weight is then shifted forward on the foot to the metatarsal pad, the heel is lifted up and, using the great toe, the body is thrust forward. The foot is picked up, swung forward, slightly dorsiflexed, and then the heel strikes the ground and again the cycle is repeated.

When a person is standing the weight is borne on the heel and the distal end of the first to fifth metatarsals. The weight is divided equally on six points, the first metatarsal being supported on two sesamoids, both touching the floor.[1] One half of the total weight borne by the foot is carried by the heel and one half by the six points of contact in the metatarsal area, divided equally between each point of contact. The multiple joints in the foot allow the normal foot to accommodate for irregularities by turning a moderate amount in the necessary direction while the body remains upright. The bones and ligaments are so arranged that the foot maintains its shape with no muscular effort when the subject stands still.

The normal heel surface is perfectly perpendicular to the floor and the tendo achillis should be a straight line from calf to insertion and the calcaneus should continue in a straight line with this tendon.

The normal baby's foot should be freely movable. The longitudinal arch is often hidden by a large pad of fat so that one should not be alarmed by the absence of an arch in a baby.[2] Of course, no callosities are present until weight-bearing becomes a regular activity. In utero the foot is in adduction, and the leg is in internal rotation. Therefore, initially, this appearance will predominate, but gradually a change will take place toward slight external rotation, and by the age of four or five the arch should be slightly elevated.

The baby who does not bear weight does not need any shoe. However, when weight-bearing begins, a good shoe with firm sole is needed to help keep the foot in a correct pattern until bones and ligaments are fully formed and tightened. A slight heel and a pad under the longitudinal arch are useful. Good support of feet is necessary, at least until all growth ceases.

When the child first walks, gait is uncertain. Normally, the child will often fall. There is a tendency to flatten the arch and have the heel turn out (valgus). This occurs because the ligaments are weak and do not hold the foot in a normal position. By the fourth or fifth year, however, the foot should have and maintain an adult appearance. The barefoot baby shows a flattened valgus foot, but there is little cause for concern. However, if this pronated appearance still persists at age five with eversion of leg and valgus heel, definitive corrective measures, such as wedges and pads, should be inserted in the shoes.

In a normal adult, standing in a relaxed position, the longitudinal arch may be moderately low. The heel may relax and go into slight valgus, thus allowing slight angulation in the appearance of the tendo achillis and posterior aspect of the calcaneus. The forefoot may spread somewhat, and the toes often do not touch the ground.

Under normal tension the heel is straight, the toes are firmly touching the ground, and the longitudinal arch is present but not marked. With extreme muscle tension we can keep the toes on the floor but elevate the arch markedly, and we can even lift the whole first metatarsal up sufficiently to remove it from weight bearing. The heel can be pulled into a varus deformity, and the forefoot is slightly decreased in width. This appearance is noted when running with the foot usually held in equinus.

The normal foot does a great deal of work and undergoes a great deal of trauma constantly. A firm shoe with plenty of room for the toes, the greatest length on the medial side, and a straight inner border fits the foot best.[3] A lacer is preferable since the shoe is held onto the foot by resting across the dorsum of the foot, rather than by cramping across the top of the toes, as with a pump. A low heel, as in men's shoes, is to be desired, although by custom, style, and appearance the moderate heel of women's shoes is perfectly acceptable and, in the author's opinion, does improve the appearance of most female legs. But, aside from dress occasions, women are well advised to wear a lace-type shoe with moderate or low heel. Certainly for prolonged walking or standing low shoes with laces are necessary.

Pathologic Conditions

Our discussion of pathologic conditions will be based on anatomic regions. The toes are first. Two important and frequently-found conditions are often confused: claw toe and hammer toe. Claw toe or cock-up toe consists of hyperextension of the toe at the metatarsophalangeal joint with subluxation or luxation of phalanx above the metatarsal head. The toe is elevated above the dorsum of the foot, and usually the toe pad does not touch the floor. There are callosities over the dorsum of the toe where the skin rubs against the shoe. This deformity may be idiopathic or due to muscular imbalance secondary to polio or a spinal cord lesion localized in the low back or generalized, such as cerebral palsy. At this institution, after determining the etiology and providing necessary therapy, we usually remove the proximal phalanx and allow the toe to fall back in line with the metatarsal head. If all the toes are involved, one can transplant the extensor tendon of the toe posteriorly into the distal end of the first metatarsal, thus allowing the toe to drop down and elevating the head of the metatarsal from the depressed position.[4]

Some patients complain of hyperextension of the fifth toe, which usually rides up and overlaps the fourth toe. This is a congenital variation with familial history readily obtainable. The toe catches on socks and interferes with shoe fitting. Removal of the proximal phalanx and excision of a diamond-shaped piece of skin on the volar surface of the toe and the sole of the foot, with suture of distal point on the toe to proximal point on the sole of the foot and closure of the wound transversally succeed in replacing and maintaining the toe in a correct position.[5]

Not to be confused with the claw toe is the hammer toe. Here the distal or proximal interphalangeal joint is acutely flexed, the distal phalanx pointing directly downwards. The tip of the toe points directly into the ground and is constantly irritated. Each step causes pain. There is usually a callous over the tip of the toe. This disability is corrected by excising the joint surfaces and fusing the bones at the proper angle.

Occasionally a patient will complain of pain extending down the adjacent sides of two toes. The pain may be generally placed in the metatarsal area but can be localized to the area between the second and third or third and fourth toes. The pain is felt mostly when weight-bearing occurs. On examination, there may be some decreased sensation on adjacent sides of the two toes involved. There may be acute pain in the area involved when the metatarsal heads are squeezed together, or there may be pain when pressure is applied to the web space between the toes pushing in the direction of the metatarsal head. If these findings are present, the most likely diagnosis will be neuroma of digital nerves or Morton's neuroma. This lies inferiorly just beneath the metatarsal heads and is compressed by these heads when they are compressed, or when a force is applied pushing soft tissues of web space against the heads. Surgical excision is necessary to remove the difficulty.

Ingrown toenails, particularly along the great edges of the great toe nail, are a common complaint. Persistent infection and excess granulation tissue make these uncomfortable and unpleasant. Frequent attempts to cure these by partial excision of the nail or a simple removal of the nail usually are unsuccessful. In cases of chronic infection at the site of persistent ingrown toe nail, Thompson[6] advocates excision of the nail, the underlying tissue, and the entire bed of the nail; also, a small portion of distal phalanx. The distal edge of the wound is then sutured to the proximal edge, slightly shortening the toe but removing completely all persistent problems. This operation is known colloquially at the Hospital for Special Surgery as the "Terminal Symes."

Bunions, exostoses of the distal end of the first metatarsal; bunionettes, exostoses of the distal end of the fifth metatarsal; and hallux valgus, turning of the great toe to the fibular side of the foot, are commonly seen in conjunction with one another and constitute a definite disability. In young people a bunion caused by a splay foot and adduction deformity of the first metatarsal are present. The great toe may be on the fibular aspect of the first metatarsophalangeal joint overlapping the second toe and causing further adduction deformity of the first metatarsal bone.[7] There are a variety of ways to treat this, all involving surgery and all necessitating a period of a month or more of sharply limited weight-bearing. Some surgeons advocate osteotomy of the first metatarsal at the proximal end; others advocate the use of extensor digitorum longus tendon to the fifth toe. The tendon is cut proximally, left attached distally, then wrapped around the distal ends of the metatarsals, thus pulling them together and making the foot narrower. The adductor muscle to the great toe is released from the phalanx, and this permits the great toe to realign itself more normally.[8]

In middle-aged or older people, particularly women, we see the patient with severe exostoses formation with usually a painful bursa overlying this area. The bursa is tender and is the source of the exquisite pain commonly observed with bunions. The first metatarsophalangeal joint in this older group always has a moderate to severe osteoarthritis present, and we find some pain associated with motion of the great toe and occasionally a hallux rigidus with complete immobility of the metatarsophalangeal joint. If these bunions have been neglected, infection may have occurred—initially, the bursae; in old cases, even osteomyelitis. Conservative therapy with the use of shoes with extra wide toe box or vamp, laces to take pressure off the toes, and a moderate heel and arch support will help immeasurably for a long period. However, where severe osteoarthritis exists in the first metatarsophalangeal joint, where a large exostosis has formed and, of course, where circulation in the foot is still in good condition, surgical treatment offers the best results. A wide variety of surgical procedures have been tried, but in our hands the Keller procedure gives the best results. This consists of excision of the proximal half of the proximal phalanx of the great toe, thus permitting free motion and usually stopping the pain from the osteoarthritis, and excision of the exostosis. The incision is made directly laterally over the swelling, thus going through the bursa, effectively destroying it. If it is large and obvious, it can be excised. Excellent results are obtained after a period of convalescence, usually for six weeks.[6,9]

A less frequently seen disability of the great toe is "hallux rigidus." As the heel is elevated in the "push off" phase of ambulation, the great toe remaining on the ground is extended or dorsiflexed at the metatarsophalangeal joint in relation to the plane of the sole of the foot. Cases with hallux valgus have stiffness of this metatarsophalangeal joint usually secondary to a severe osteoarthritis and without the severe valgus deformity or exostosis. There is pain and inability to walk normally and "push off" is lacking. When examined, there is pain on any motion of this joint. Conservative therapy consists of the use of a steel strip inserted between layers of the sole of the shoe to impart rigidity to the sole and to prevent motion at the metatarsophalangeal joint. This measure, plus a possible injection of 50 mg. of hydrocortisone into the joint, may allow subsidence of symptoms for a prolonged period, but eventually resection of the proximal half of the phalanx may be necessary to reduce the pain and disability. Care must be taken to try to eliminate the initial cause of difficulty by the use of proper shoes and change of occupation (if the patient does a great deal of walking, for instance, particularly on hard, nonyielding surfaces). This latter precaution is necessary in the treatment of all cases of foot disability.[10]

The metatarsal region lies proximal to the toes. This consists of the ball of the foot. Because one half of the weight borne by the foot is borne here, one expects the skin to be heavy, thick, and usually calloused to some degree, depending upon usage. As pointed out above, the weight should be borne equally by the bony prominences touching the floor. These consist of the six areas including the sesamoids under the first metatarsal heads. One often hears of a metatarsal arch. Actually, the distal ends of the metatarsal bones are all in the same plane behind these heads of the metatarsal bones. The shafts curve upwards and extend posteriorly in different planes and this forms a bow or arch transversely, but the weight-bearing end does not have any arch!

Occasionally, because of the thinning of a local portion of the fat pad on the sole of the foot, some arthritic involvement of metatarsophalangeal joints, and the painful callous formation on the ball of the foot, we try to remove pressure on the distal ends of the metatarsal bones by placing a pad behind this area. The weight is thus carried partially by the shafts and relieves the painful distal end of the bones. Of course, care should be taken in placing this metatarsal pad to get it behind the heads and under the shafts.[11] For a more effective removal of weight from all metatarsal heads, one can place a metatarsal bar on the shoe. This is a strip of leather behind the ball of the foot across the sole in an area corresponding to midshaft area of the metatarsals. The weight is thus not applied directly to the metatarsal heads, and relief of pain is obtained. Metatarsal bars wear out rapidly since a small area bears a great deal of weight. They must be replaced often to be effective.

Now we shall consider the tarsal region. This is the midportion of the foot, consisting of the longitudinal arch medially and a weight-bearing portion laterally. The person with weak foot muscles and ligaments has a flat foot. The longitudinal arch is low, perhaps touching the ground throughout its entire area. The foot is everted, turned outward, and the head of the astragalus is prominent on the medial aspect of the foot. The heel itself is everted, the vertical axis of the calcaneus not being in line with the axis of the leg. There is usually pain in the sole of the foot. The forefoot also is turned outward and pronated, that is, twisted so that the tibial aspect is prominent and calloused because of increased weight-bearing. This type of flat foot can best be treated by elevating the inner aspect of the heel with a wedge, thus realigning the calcaneus correctly. Pads under the longitudinal arch hold this up and relieve the strain on the ligaments and the muscles. Finally, a wedge may be necessary under the outer aspect of the sole. When one elevates the medial aspect of the heel, the forefoot may tend to slip outward, and a wedge on the outer aspect of the heel helps hold the forefoot inward and helps to keep the longitudinal arch elevated.

Wedges are inserted in the leather portion of the heel and between layers of the sole. The medial heel wedge is inserted under the whole medial half of the heel, and the outer sole wedge is inserted from the area of weight-bearing posteriorly forward about one third of the length to the tip of the shoe. Thus the wedge is in an area of posterior aspect of the fifth metatarsal. The pads used inside the shoe are felt or rubber and are pasted into the shoe and covered with leather. The pads placed under the longitudinal arch are known as scaphoid pads; those placed under the metatarsal shafts are known as metatarsal pads. Occasionally, if the first metatarsal is shortened or does not bear proper amount of weight, a pad can be placed anterior to the scaphoid pad. This is called a Morton's extension and helps to keep the arch elevated and supports the medial side of the foot, if severe pronation exists.

Arch supports are also available made of molded leather and cork. They can be moved from shoe to shoe, but it is impossible to make one support fit many different shoes. It is usually better to make one set of supports fit one pair of shoes.

If a foot shows particularly marked weakness as, for instance, in the patient with the Ehlers-Danlos syndrome, if the ligaments are very lax and the bony structure is unable to maintain even poor position, the use of steel arch supports may provide firm fixation, particularly the Whitman-type plates with a steel flange on lateral aspect over the calcaneocuboid joint and a flange running up over the astragalonavicular joint under and alongside the longitudinal arch to hold the foot firmly and keep it lined up with the leg. These supports are reserved for very severe flat feet in children or, rarely, in adults. Certainly steel arch supports are not used as frequently as in times past.

Most patients with flat feet complain of moderate but persistent pain over a period of several years. However, one can see an acute onset of foot strain in a person who does a great deal of weight-bearing on hard surfaces. These patients may not show the marked anatomic changes of the commonly seen "flat foot," but the acute pain and disability are quite marked. Rest and often adhesive strapping are needed at first in these cases.

Occasionally we see an acutely painful, flattened, everted foot with spasm and tightness of the peroneal muscles. Careful examination and x-ray may show anomalous fusion of some of the tarsal bones, although not in every such case. Manipulation under anesthesia and casting in corrected position may be sufficient treatment, but most of the cases, particularly all with real bony union, come to arthrodesis of the three posterior tarsal foot joints. Certainly, these cases, known as "peroneal spastic flat foot," need specialized management.[12]

Another intermittent finding among patients is a foot with a very prominent longitudinal arch, a cavus foot. This is an abnormal finding and may be associated with claw toes. It may not cause any disability except in extreme cases, but shoes are often hard to fit, and callosities develop over bony prominences. One must look for congenital anomalies, particularly of the spine and nervous systems, hereditary diseases such as Charcot-Marie-Tooth, or even polio with muscle imbalance. However, most of these cases are simply idiopathic. Again, these cases need specialized care in diagnosis and treatment of the problem, if severe, or of the underlying disease, if present.

Anatomically, the posterior aspect of the foot is the heel. One half of the weight borne by the entire foot is borne on this section. Locally, one can have pain occur in the anterior portion of the weight-bearing area. This pain is most commonly caused by a spur—that is, a small overgrowth of bone from ridge on the inferior surface of calcaneus where plantar fascia attaches to the calcaneus. This can only be seen in a true lateral x-ray of the foot. The spur can be seen pointing forward and slightly plantarward toward the toes. Treatment consists of a pad in the heel of the shoe, with an empty space skived out just in the area of the spur to remove any pressure from this spot. When this is done correctly, the pain will disappear. Injection of 50 mg. of hydrocortisone into the painful area when first seen may relieve the symptoms of inflammation and irritation of soft tissue, but the pad is necessary for permanent relief.

The foot as a whole has many bony prominences, and the sole being a weight-bearing portion, these prominences on the sole are subject to pressure and friction. In modern society stiff leather shoes are customary; thus, bony prominences on the dorsum and lateral as well as medial aspect of the foot may be further subjected to pressure and friction. On the sole, where broad areas such as the heel and ball of the foot are present, large callouses form particularly in response to prolonged weight-bearing on hard surfaces. Frequently, on the dorsum, where small bony points are prominent, as interphalangeal joints of toes, we can get "corn" or localized callouses in response to pressure and friction. Between the toes we get soft corns, a macerated callous,[13] usually where the skin is under pressure from underlying phalangeal prominence.

Occasionally, around metatarsal heads, over exostoses, as on the lateral aspect of the first or fifth metatarsal head or about the heel at the site of the attachment of tendo achillis, bony prominences exist, and small but tender, painful bursae form in response to pressure. They are often difficult to diagnose and localize accurately. Correct and well-fitting shoes or complete rest from any pressure whatsoever will help a great deal. An injection of 50 mg. of hydrocortisone into the tender spot will often cause the lesion to subside. Another source of painful callous formation usually on the sole of the foot is the verruca plantaris, a plantar wart. Paring off the keratinized layer, identifying the warty tissue with small capillaries, and then frequent application of salicylic acid or electrodesiccation removes most of these difficulties.

The foot may also be the site of the onset of various types of arthritis. A pain in the area of the first metatarsal, not well localized but sharp and persistent, particularly on weight-bearing, may turn out to be gout. There may be tenderness and erythema over the first metatarsal joint or there may be only a vague pain on pressure over the metatarsal cuneiform joint. Any patient with a vague foot pain and no obvious clear-cut diagnosis should have a blood uric acid level. Rheumatoid arthritis also readily affects the toes and feet and may cause pain, osteoporosis, and severe joint malformation and destruction. Osteoarthritis may develop in the joints of the foot, particularly in the first metatarsophalangeal joint, as we have mentioned, with hallux valgus or hallux rigidus. This degeneration is particularly true following injuries. Fracture of the calcaneus usually causes destruction of the subtalar joint and eventual fusion of this joint is a frequent outcome. One must be careful to make a specific diagnosis when the patient complains of arthritic pains in the foot.

Once degenerative or rheumatoid arthritis has occurred in a foot, shoe fitting becomes a problem. Currently, there is a great vogue for shoes made of stiff rubber and leather, molded directly to the patient's foot. The molding of a surface to fit a malformed sole is excellent. Slight corrections can be added as deemed necessary, but one criticism of many custom-made, molded shoes at the present time is that the sole is too stiff. It is perfectly natural and necessary in most cases that the toes dorsiflex and hyperextend when walking and that the sole of the shoe bend and the upper portion crease across the metatarsophalangeal joint. If the shoes do not bend, we find that the patient cannot get the spring in the step that is provided by lifting the heel and pushing off with hyperextended toes. Rubber soles are popular and a new rubber sole consisting of waves of rubber has been marketed. Whether these offer the required stiffness after some wear remains to be seen.[14] We still strongly advise well-fitted, lace-type leather shoes with leather soles, firm, but allowing normal foot motion, and rubber heels which cushion the shock when the heel drops onto the walking surface, thereby preventing skidding.

Severe foot deformities, such as equinocavovarsus, "club foot," or the calcaneovalgus, the prominent heel with dorsum of foot touching the tibia, are obvious when seen in newborn or untreated adults and are not within the scope of this paper. Less well recognized, particularly in the baby, is the metatarsus varus or metatarsus adductus (the same deformity to a less severe degree). The forefoot is turned medially, while the heel turns out in valgus. The first metatarsal in severe metatarsus varus may articulate more to the medial aspect of the first cuneiform rather than anteriorly. These problems can be found in the newborn. The untreated child is called "pigeon-toed," although we must be careful to separate the patient who has rotation of the tibiae, thus turning a normal foot inward, from the patient with normal legs but medial turning of the forefoot. All of these conditions need specialized orthopedic care and management with supervised exercises for moderate cases, holding casts and wedging casts in the severe cases, and even operative procedures on soft tissue and bone in the very severe and the recurrent cases. Early recognition and referral for correct treatment offers the best chance for success.[15]

Finally, we have the patient who complains of burning or aching in the soles or throughout the foot. The physician should be sure to check circulation, since often the first place one finds the onset of arteriosclerosis and ischemia is in the foot. Also, one must check for neurologic problems, since the combined system disease will cause pain and paresthesias in the foot. A herniated disk or other intraspinal lesion may cause paresthesias, pain, or anesthesia about the foot. Foot pain is significant.

One must often look elsewhere to find the cause.

X-rays of the foot must be read carefully. Small lesions may be significant. Punched-out areas about the heads of metatarsals or phalanges may turn out to be gout. Periosteal elevation along a metatarsal can be a march fracture. Many small accessory bones are found about the foot. Therefore, one must identify properly all bones and not diagnose a fracture when an accessory bone is present.

Conclusions

The foot is an important part of our anatomy, used continuously and abused almost as much. The foot and its problems are so commonplace that many physicians feel it beneath their dignity to treat them. As a result, there has arisen a group of people who tend only to the problems of the foot. Although well understanding the local problems, these people are limited in their scope and are subject constantly to the easy error of overstepping their limitations. The foot is a part of the body. It has a host of problems unique to itself, but it also reflects disease elsewhere in the body. The foot should not be overlooked at any time in examining the patient.

Proper diagnosis and treatment of foot problems necessitates thoughtfulness and acuity. Many problems demand specialized orthopedic care. But many problems can be handled by all physicians, and foot disabilities may be a significant sign of trouble elsewhere. The physician should not allow the understanding of foot problems, the treatment of foot problems, or the significance of the foot in the over-all picture of the patient's well-being disappear from his fund of knowledge.

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CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D.
and WILLIAM B. OBER, M.D.

MAY 28, 1958

Discussed by ELMER S. GAIS, M.D.

Case History

DR. THOMAS SILVERBERG.—A thirty-two-year-old Negro male was brought to the Emergency Room of Knickerbocker Hospital on March 16, 1958, because of adbominal pain and jaundice for two days.

Until five months before this admission his health had been excellent. In October, 1957, during the epidemic, he had apparently been ill with Asian flu. Since then he had noticed mild dyspnea on exertion and occasional sharp stabbing pains in the left lower chest. The patient said that these symptoms had not been associated with fever or cough, and he had noted no orthopnea or edema. The attacks of pain became more severe and prolonged. They were always localized to the left lower anterior chest and occurred without relation to movement or respiration. There was also slight worsening of his respiratory distress, and he began to experience a sense of fatigue and nondescript malaise. During the month before hospitalization he lost about ten pounds despite a fairly good appetite.

Two days before admission he developed intense and constant abdominal pain which seemed to grow steadily more severe. The pain was most concentrated over the epigastrium, periumbilical region, and left upper quadrant of the abdomen. It radiated around toward both flanks but not into the lower abdomen or chest. The patient described it as steady and aching rather than crampy. With the onset of pain the patient became completely anoretic, had fever without chills, and began to vomit clear yellow-green fluid rather frequently. On the following day both he and his wife noticed that his sclerae were icteric, and he observed that his urine looked darker than usual. He noted no change in stool color and no constipation or diarrhea.

The patient denied excessive drinking and had never noticed intolerance to any particular foods. He had received no intravenous injections, had been taking no medications, and gave no history of exposure to chemical toxins. For many years he had noticed slight bleeding from the gums on tooth brushing and thought that he had always tended to bruise rather easily. On the day of admission he had one brief epistaxis.

In 1946, after returning from army service in the Pacific area, he had had a series of attacks of malarial fever. This had been treated at a Veteran's Administration Hospital without subsequent recurrence. Later in the same year he contracted poliomyelitis and recovered with only a slight residual weakness of the left arm and leg. No other significant history was obtained, and the review of systems contributed no further positive information.

On examination, the patient was a husky and well-nourished young Negro who was obviously jaundiced and seriously ill. The temperature was 101.2 F., the pulse 116 and regular, the blood pressure 124/74. There was crusted blood in the nostrils, and the pharynx appeared dry and injected. The gums were unremarkable, and there were no mucosal ulcerations or petechiae. The sclerae were icteric; the conjunctivae were clear; the pupils were round, regular, and equal, reactive to light and accommodation; the fundi were normal. The neck veins were slightly engorged, but the hepatojugular reflux was negative. The thyroid was not enlarged, and no masses were felt in the neck.

There was dullness to percussion over both lung bases. Breath sounds were audible over all lung fields but diminished, as were vocal resonance and tactile fremitus at both bases. No rales or rubs were heard. The cardiac apex beat was maximal at the fifth intercostal space in the mid-clavicular line. The rhythm was regular. The pulmonic second sound was louder than the aortic second sound. There were no thrills, murmurs, rubs, or gallop.

The upper part of the abdomen was visibly distended and firm, and tender to palpation. A firm, smooth, rather tender mass was felt in the epigastrium, extending down to the level of the umbilicus and to both the right and left of the midline. The mass was ill-defined and seemed to pulsate but did not move with respiration. The liver edge and spleen could not be felt or percussed. There was no rigidity or rebound, and no shifting dullness could be percussed. Tenderness over the left costovertebral angle was noted. Rectal examination was unrevealing. The genitalia were normal. There was no edema or cyanosis of the extremities. All peripheral pulses were strong. There was no peripheral lymphadenopathy. Neurologic examination was normal.

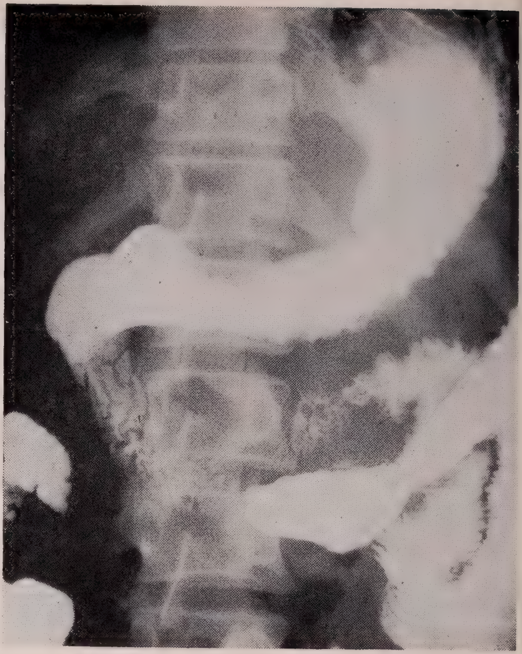

Fig. 1. Upper gastrointestinal series showing widening of space between stomach and transverse colon, downward displacement of the ligament of Treitz, and edema of the duodenal mucosa.

The urine on admission had a specific gravity of 1.018, was acid, showed a trace of albumen, no sugar or acetone, 2 to 4 white blood cells, gave a 3 plus reaction for bile, and was positive for urobilinogen at a dilution of 1:5. Two days later there was only a faint trace of bile, and urobilinogen was present at 1:10. The next day bile and urobilinogen were present in the undiluted specimen only.

The hemoglobin on admission was 9.3 Gm., falling to 8.0 Gm. two days later and to 7.6 Gm. two days after that. The red cell count concurrently was 3.43 million, then 2.52, then 2.22. The white cell count on admission was 27,350 with 89 per cent neutrophils, 7 per cent lymphocytes, 3 per cent monocytes, and 1 per cent eosinophils. The white cell count ranged from 24,000 to 32,900 throughout his hospital stay, and the percentage of neutrophils never fell below 80 per cent. The sedimentation rate was 141 mm. per hour. The serology was negative. The platelets on admission were

245,000. The prothrombin time was seventeen seconds (control thirteen seconds). The bleeding time was one minute forty-eight seconds and the clotting time was three minutes one second with normal retraction. Reticulocytes were 1.8 per cent. Sickle cell preparation, lupus erythematosus preparation, and Coombs' test were all negative. Stool guaiac was negative on admission and 1 plus three days later.

On admission the serum bilirubin was 3.75 mg., falling to 0.85 mg. four days later. The total protein on admission was 5.7 Gm. with 4.1 Gm. albumen and 1.6 Gm. globulin. Four days later it was 6 Gm. with 3.3 Gm. albumen and 2.7 Gm. globulin. The cholesterol was 123 mg. with 74 mg. esterified; four days later it was 106 mg. with 70 mg. esterified. The alkaline phosphatase was 8.4 Bodansky units; four days later it was 4.6 units. The cephalin flocculation was 2 plus. The serum amylase was 73 units (normal 80 to 180 units).

On admission the serum sodium was 136 mEq. per L., the potassium 4.6 mEq., the chlorides 91 mEq., and the carbon dioxide 21 mM. These values remained substantially unchanged. Blood culture on five occasions was negative. An electrocardiogram showed sinus tachycardia but no abnormality. Serum electrophoresis showed a moderate decrease in albumen and a marked decrease in beta globulin.

Radiologic examination was reported by Dr. Joseph M. Moynahan. A plain film of the abdomen showed generalized paralytic ileus. There was no free air and no abnormal calcification. Barium enema revealed an intrinsically normal colon. The space between the distal transverse colon and posterior curvature of the gas-filled stomach was increased, raising the question of a mass in this region. Upper gastrointestinal series (Fig. 1) revealed no displacement of the stomach and duodenum. The mucosal pattern of the second portion of the duodenum was coarse, suggesting edema, but there was no evidence of destruction of the mucosa. The duodenal loop was not widened. The ligament of Treitz was displaced inferiorly, presumably by an extrinsic mass.

The patient's temperature remained elevated at levels between 101 and 103 F. throughout the first week of his course. This fever was unaffected by aspirin, intravenous fluids, or full therapeutic doses of neomycin. By the third hospital day icterus had apparently cleared completely. At that time he had virtually stopped vomiting, was able to drink and retain clear fluids, and said that his abdominal pain had decreased considerably. However, he still felt a distressing, achy pain across the epigastrium and in the left flank.

During the first week he received 5 pints of whole blood to correct his anemia, and on the eighth hospital day he underwent surgical exploration of the abdomen. After surgery he continued to complain of epigastric pain. His abdomen remained distended and slightly tender, but was soft to palpation. For four days after surgery his temperature ranged from 100 to 103 F. On the next day it spiked to 105, and the patient seemed to be growing confused. He remained markedly febrile for another day, then suddenly went into shock and expired.

Discussion

Dr. Elmer S. Gais: In my opinion, the function of the discussor is not merely to classify the presented case into a neat, logical category, to be confirmed or denied by the ultimate anatomic study, but much more constructively, to try to develop the pattern of the disease, to show how the deviations in function fit that pattern or not, and from all this to pose the questions that need solution. In this manner a dynamic, functional approach is the goal. The prosector with his static material can read backwards and place us in our proper perspective.

With this in mind, I shall not offer a prolonged exercise in classification by differential diagnosis. This can be obtained from any standard text. I shall begin by stating that the disease pattern fitting most closely is that of acute necrotizing or hemorrhagic pancreatitis. The features that lead us to that conclusion are many and will be developed as we proceed.

Let us neglect the past history and the five months preceding illness for the time being until we discuss etiology, and concentrate on the final episode. In this the abdominal pain, its location and radiation, seem fairly characteristic. The development of jaundice, anorexia, and vomiting two days before admission is of considerable interest. Jaundice is found in about one fourth of such cases. Note that the vomitus was bile-stained, that the stool color did not change, that urobilinuria was found even at the height of the bilirubinemia and bilirubinuria and that the clinical icterus and chemical indices of bile pigment retention subsided in three days, along with some improvement in his clinical state. Note also that the slightly elevated alkaline phosphatase decreased to a normal value in that period of time. Certainly this is not the picture of hepatitis, either viral or toxipathic, or of intrahepatic or extrahepatic biliary stasis of more than a temporary nature. It resembles a remittent obstructive process; either spasm of the sphincter of Oddi, edema of the papilla of Vater or of the duodenal mucosa, or a ball valve calculus, associated with enough parenchymatous hepatic disease to explain the positive cephalin flocculation and blood protein findings. The lowered serum cholesterol corresponds to the lowered beta-globulin fraction of the lipoproteins in which a major portion of cholesterol is carried. The cholesterol esterification is somewhat decreased, another suggestive indication of hepatic failure.

Now these lipid findings are very unusual in acute pancreatitis, although reported. Hyperlipemia, even occasionally with lactescence, is the usual finding. In fact, hyperlipemia is a fairly constant evidence of recurrent acute pancreatitis in the alcoholic and is, for example, constant in experimental pancreatitis produced by pancreatic duct ligation and staphylococcal toxin injected into the duct. The lipemia is predominantly in the triglyceride fraction, the neutral fats, with lactescence appearing at a serum level of about 600 mg. per cent. It is assumed that this is due to fat-splitting by the escaped pancreatic lipase, and that the hypercholesterolemia is secondary. Experimentally, this concept receives support from the fact that triglyceride or phosphatide infusion leads to secondary serum cholesterol elevation. Incidentally, this observation is of great interest in relation to any theory of atheroma production from hyperlipemia.

Many other possibilities for the production of hyperlipemia, hypercholesterolemia, and hyperphosphatidemia can be envisaged, such as depression of the plasma lipoprotein, lipase clearing factor, its heparin component, or a depression of the albumen fatty acid acceptor, such as is postulated in nephrosis; similarly, a surface tension reducing factor like retained cholates leading to a so-called trapping effect on lipoproteins and resultant over-synthesis of cholesterol by the liver. Islet destruction and diabetes mellitus might lead to a transport hyperlipemia and ketonemia.

In our case, however, hypocholesterinemia and low beta-lipoproteins are found. The most logical explanation that occurs to me is that this may be similar to the hypocholesterinemia in lipotropic factor deficiency. One may assume that in our case a deficiency of these factors existed owing to the absence of pancreatic proteases in the gut. Thus, amino acid supply and methyl donors, or other lipotropes, were deficient. Hence, there was a deficient synthesis of phospholipids by the liver. It has been shown that phosphatides act as intermediaries in the esterification of triglycerides and cholesterol. In decreased supply fatty livers occur. Also, oxidation of fatty acids is decreased in the liver by choline lack, and thus they may accumulate in situ. Of course, carbohydrate oxidation also may be affected and the prime source of energy for oxidation and synthesis impaired. Under such circumstances it would be quite logical to believe that synthesis of the protein moiety of the lipoproteins would be decreased. In this fashion the picture we see in this case could appear—hypocholesterinemia and decreased beta-lipoproteinemia. One may venture a guess that this is the genesis of the fatty liver found in acute pancreatitis if survival is long enough. Focal necrosis, fat necrosis, and other parenchymal changes are frequently found in the liver accompanying acute pancreatitis. In our case these postulates would require more clinical evidence of liver injury than we are given. I would caution you, however, that jaundice is not a criterion of liver failure, merely of retained bile pigments. In truth, as Best has written, the pancreas is the "guardian of the liver."

Of great interest is the fact that the serum findings of hypocholesterinemia, hypophosphatidemia, and hypoglycoproteinemia are found in experimental ethionine intoxication. Ethionine is the ethyl analog of methionine and can be conceived to act by its interference with methyl donation. It produces extreme hemorrhagic pancreatitis with destruction of the acinar tissue, fatty liver, destruction of the chief cells of the stomach, and renal tubular damage. The ethyl radical suggests an intriguing similarity to the effects of alcohol intoxication of these organs, but there is no proof of this.

We should also consider the massive amino acid requirements of the pancreas for its exocrine and endocrine secretions. Protein deficiency from whatever cause may lead to pancreatic disease, as attested by kwashiorkor, hereditary pancreatitis, and other syndromes.

Let us discuss the clinical findings in more detail. The febrile reaction, the polymorphonuclear leukocytosis, the tender, guarded abdomen, and the epigastric mass, which probably represents either an omental mass with fat necrosis or a pseudocyst from pancreatic dissolution, are usual findings. The epistaxis and the anemia are probably reflections of the antithrombic effects of trypsin and hemorrhages from vascular necrosis within the pancreas, possibly into the lesser omental sac or into the pleural cavity. I would suggest that the pleural effusion may well represent fat necrosis in the pleura itself. Lipase and trypsin may be disseminated through the lymphatics which pass upwards from the abdominal cavity through diaphragmatic stomata into the collecting system in the mediastinum and pleura.

The x-ray findings are almost classical, showing the elevated left diaphragm, probable segmental atelectasis with Fleischner lines, pleural effusion, retrogastric displacement probably from a pseudocyst with subdiaphragmatic effusion, the displacement of the duodenojejunal junction and, particularly, the local jejunal distention representing the so-called "sentinal loop" of jejunal ileus. I think the swelling of the duodenal mucosa is quite apparent. This is important from the etiologic standpoint.

The fact that serum amylase is not elevated is not too disturbing. It may have been transiently elevated and missed, then declined as more acinar tissue was destroyed or the released enzymes drained into a pseudocyst. Serum lipase determination, which usually is elevated longer, might have been informative. Trypsin cannot be determined easily because of antitrypsin factors in the blood, but perhaps its effect on thrombin might have been titrated.

The electrolyte disturbances are what we would expect with vomiting of gastric and duodenal contents. Whether he was dehydrated or whether oliguria supervened is not stated. Certainly renal failure could have been expected. The serum calcium is not reported. Clinical tetany did not occur. If a low serum calcium was present, indicating precipitation at areas of fat necrosis, it would have been of ominous prognostic importance.

I have mentioned the remarkable clearing of his icterus which suggests the release of obstruction to the outflow of bile. Did a ball valve calculus drop back or pass? Did the edema of the duodenum or papilla regress and spasm decrease, or did the common duct perforate into the peritoneum or lesser sac? The latter possibility is rendered less likely by the fact that his clinical status improved rather than worsened with the clearing of jaundice. It suggests the more likely functional nature of the obstruction to biliary outflow. His terminal catastrophic episode may have been perforation or hemorrhage into the lesser omental sac, but this we can hardly say.

Now, I would like to reason backwards to the onset of his illness five months before admission. He is said to have had a "flu-like" illness, after which he developed some dyspnea and, most important, recurrent bouts of left lower anterior chest pain, malaise, and weight loss. In retrospect this is quite suggestive of recurrent relapsing pancreatitis. The most usual cause of this is considered to be biliary tract disease, with or without calculi, and a common channel with the main pancreatic duct. The next most frequent cause is alcoholism, with or without biliary or pancreatic duct calculi. Such a possibility exists here. There is no history of methyl alcohol or "torpedo juice" ingestion in which acute pancreatitis is very frequent. Alcohol, a large meal, vomiting, hypersecretion of gastric juice causing hypersecretion of pancreatic juice through secretin, pancreozymin and vagal stimulation, edema of the duodenum, obstruction to outflow possibly by metaplasia of the pancreatic duct epithelium as well, all enter into the suggestive picture of the mechanism of acute pancreatitis. All these mechanisms postulate some obstructive factor against which the hypersecreting pancreas must work, producing the escape of enzymes into tissue, activation, and tissue destruction. But vascular factors such as the Schwartzman phenomenon, periarteritis or arteritis, even lupus erythematosus, may be factors in some cases. Spasm of the outflow tract produced by morphine, cholinergic drugs, or the lodgement of an ascaris are among other obstructive possibilities.

We are given none of the aforementioned possibilities except alcohol, but we do have an infectious history. To my mind, we must seriously consider whether the original illness was caused by one of the viruses that can produce pancreatitis. Mononucleosis and mumps come to mind. Particularly interesting is the experimental production of necrotizing pancreatitis by the Coxsackie virus. Did he have pleurodynia and a mild pancreatitis diagnosed as "flu" in October? Did he thereafter insult his damaged pancreas by alcohol and produce recurrent bouts until the final severe episode? It is as if, similar to the course of experimental dietary hepatic necrosis, a factor or factors essential to cellular integrity had become exhausted. In the liver this results in an explosive hepatic necrosis.

Perhaps the time is ripe for us to abandon the concepts of the pathogenesis of acute pancreatitis based on obstruction and attempt to integrate our thinking at the biochemical and functional level. Perhaps such an actual or conditional depletion of an essential factor or factors might explain the acute episodes of pancreatitis. Recall the experimental ethionine necrosis. Perhaps this mechanism is triggered by a toxipathic material such as alcohol, or by competitive utilization of essential amino acid or purine substrates by a viral particle. Time and experiment will tell.

Dr. Marcel Tuchman: One of the paradoxic aspects of pancreatic disease is the coexistence of both a hemorrhagic tendency and a tendency to multiple vascular thromboses, seen in both inflammatory and neoplastic disease. While the causative mechanism is obscure, current opinion ascribes both to the effects of exocrine enzymes liberated into the blood stream. Dr. Gais has mentioned the antithrombic effects of trypsin. Another phenomenon is fibrinogenopenia. This may be due to the fibrinolytic action of trypsin, or, alternatively, may be the result of diffuse intravascular deposition of small fibrin thrombi depleting the blood level.

In support of Dr. Gais's biochemical concept of the nature of pancreatitis, there is a recent report of a familial variety of acute pancreatitis in which the urinary lysine was

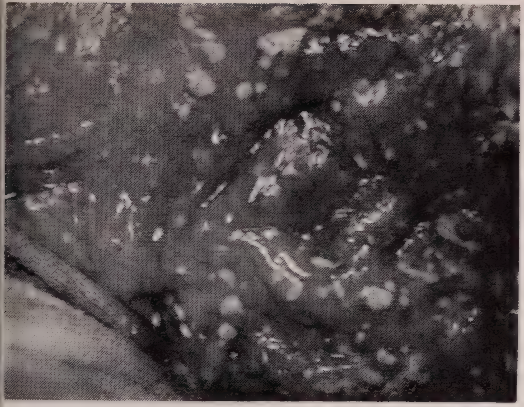

FIG. 2. Close-up photograph of the greater omentum at laparotomy showing the chalky flecks of fat necrosis.

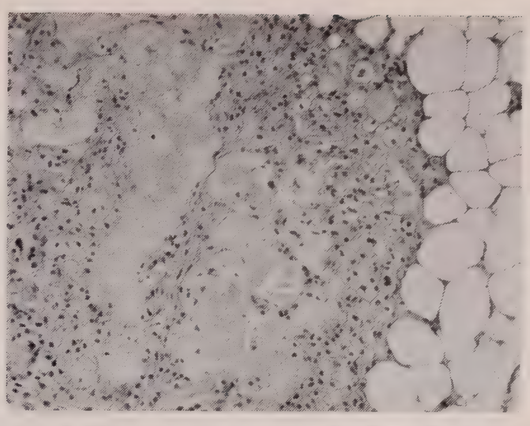

FIG. 3. Biopsy of omentum showing typical fat necrosis due to digestion by pancreatic enzymes.

abnormally elevated. It also was found to be elevated in members of the family who had not developed pancreatitis. This unusual instance falls into the group of "inborn errors of metabolism." The relationship between excessive urinary excretion of lysine and the pathogenesis of pancreatitis remains to be elucidated. Whether it is a cause or an effect remains a matter for investigation.

Diagnoses

Clinical.—*? Retroperitoneal sarcoma; ? retroperitoneal abscess, secondary to ruptured viscus or granulomatous disease.*

Dr. Gais.—*Acute necrotizing or hemorrhagic pancreatitis.*

Anatomic.—*Acute pancreatic necrosis, massive, with fat necrosis of omentum, retroperitoneal fat, mesentery, and serosal surfaces; subphrenic abscess, left, with diaphragmitis and fibrinous pleuritis; left pleural effusion, 3,000 cc.; atelectasis, left lower lobe.*

Pathologic Report

DR. WILLIAM B. OBER: It was a pleasure to listen to Dr. Gais perform a physiologic autopsy through the intact skin. The anatomic observations substantially confirm his diagnoses. I first saw this patient in the operating room when I was summoned to see the unusual extent of the fat necrosis (Figs. 2 and 3). At laparotomy there were discrete chalky flecks all over the greater omentum and even on the anterior parietal peritoneum. A drain was inserted near the body of the pancreas; the abdomen was closed, and the inevitable outcome awaited. At autopsy the extent of the pancreatic necrosis and fat necrosis was greater than I have ever seen it before. When the gastrocolic ligament was divided, the contour of the swollen pancreas was still outlined by the posterior peritoneal reflection, but the entire pancreas was a mass of chalky necrotic material which resembled over-ripe Roquefort cheese more closely than the traditionally caseous material in a pulmonary cavitation. The area of necrosis extended from the porta hepatis and right upper perirenal fat pad transversely across the entire upper abdomen posteriorly surrounding the spleen, the upper left renal fat pad, and filling the entire upper retroperitoneum. Foci of fat necrosis were seen extensively on the mesentery of the small bowel and to a lesser extent on its serosa. Fat necrosis was present on the surface of the spleen. Between the spleen, the left lobe of the liver, and the stomach there was a walled-off area containing necrotic debris, fibrin, and some fluid which represented a left subphrenic abscess; the inferior surface of the left hemidiaphragm was covered with a thick coat of fibrin. Presumably the inflammatory reaction had penetrated through the lymphatics of the diaphragm, for there was an extensive diaphragmatic pleuritis and visceral fibrinous pleuritis over the left lower lobe with 3,000 cc. of pleural fluid and atelectasis of the underlying lung. There was no cholelithiasis, and the biliary tree was patent. No significant fatty changes were seen in the liver.

In general, pathologists prefer the term "acute pancreatic necrosis" to pancreatitis with a descriptive modifier. The disease process is one of necrosis and enzymatic self-digestion of the pancreas, quite different from what is usually connoted by an inflammatory process. Pathogenesis has been a matter of debate for decades. The classical theory of Opie[1] states that a gallstone impacted at the ampulla of Vater may promote reflux of bile into the pancreatic ducts, the bile acting as an irritant to produce necrosis of pancreatic tissue with liberation of the exocrine enzymes and digestion of the organ and necrosis of the nearby fat. This theory implies a common channel between the common bile duct and the duct of Wirsung at the ampulla of Vater. Opie dissected 100 cadavers and found that in 89 the common bile duct anastomosed with the pancreatic duct before entering the duodenum. However, subsequent prosectors do not place the figure so high; various observers have found a common channel in from 3.5 to 75 per cent of cases. My own guess is that there is a common channel in about one quarter to one third of all subjects. Opie's theory is insufficient to account for pancreatic necrosis in cases where there is no common channel and in which there is no cholelithiasis. Another point which has raised questions is that during cholangiography bile as well as other irritants have been refluxed into the pancreatic duct without initiating pancreatitis. However, there is no doubt that the incidence of calculous disease of the biliary tract is tremendously higher in patients with pancreatic necrosis than in the population at large. Whether the pancreatitis is secondary to the calculous disease, whether they are coincidentally present, or whether they are both reflections of an underlying metabolic disorder remains moot. In my experience Opie's mechanism accounts for less than 10 per cent of the cases of acute pancreatic necrosis.

I cannot say that I am overly enthusiastic about pathogenetic theories which relate pancreatitis to bacterial or viral infection. To be sure, true pancreatitis is seen in mumps, Coxsackie virus, typhoid fever, and scarlet fever, as well as in other infections. However, in no way do the minor lesions found in these entities suggest anything like the changes seen in acute pancreatic necrosis.

Other theories invoke the mechanism of increased intraductal pressure with ultimate rupture of canaliculi and release of enzymes. Some experimental support is found for this when Mecholyl is administered after ligation of the pancreatic duct in dogs. Without Mecholyl, ligation produces merely gradual atrophy of acinar tissue and ectasia of the ductal system. With Mecholyl, acute pancreatic necrosis ensues rapidly, appearing much as we recognize the disease in man. A recent case report by McDermott, *et al.*[2] of acute pancreatitis developing in an eighteen-year-old college student who restricted his diet to starvation in order to meet a weight requirement for a wrestling match, then ingested a 2,244-calorie meal, led to the interpretation that during starvation and dehydration the pancreatic secretions became inspissated, acting as an obstruction when the pancreas was stimulated by the overindulgence in food. There are numerous cases of pancreatitis developing after an eating spree with or without the benefit of alcohol. It is wholly possible that many of the kings and barons of Plantaganet England who "died of a surfeit" following gastronomic excesses were the victims of such a mechanism. It is likewise possible that the association of pancreatitis with chronic alcoholism may depend on a period of relative starvation with dehydration, inspissation of the exocrine secretion of the gland by ethyl alcohol.

However, as Dr. Gais has implied, it is equally tempting to ratiocinate that in alcoholism there is an excess of ethyl radicals which may competitively antagonize methyl groups in a chain of biochemical events analogous to the ethionine-methionine antagonism. Parenthetically, administration of ethionine is the only technic I know of which can produce pancreatic necrosis in an intact animal. The issue is not clear-cut. Pancreatitis with necrosis is a common concomitant of methyl alcohol intoxication, possibly as a result of a direct toxic effect on acinar cells, possibly as a result of depressing the bicarbonate ion so low as to interfere with the action of carbonic anhydrase.

If, however, we construe pancreatic necrosis as the end point in a sequence of metabolic and nutritional deficits, there are certain points which merit consideration. First, both the pancreas and the liver are embryogenetically similar in that they take origin as outgrowths from the archenteron (midgut), each developing as a specialized complex lobular digestive gland communicating with the intestinal tract through a ductal system. Second, it has been possible to produce experimentally by control of specific nutritional factors a variety of hepatic lesions, some of which can be classified as acute hepatic necrosis. These bear a surprisingly striking resemblance to such deficiency states in a man as kwashiorkor. In all of these experimental hepatic necroses it has been possible to study liver function during the prodromal phase, and it is readily apparent that functional impairment of the liver can be detected long before any morphologic changes are detectable. The functions of the liver may be jeopardized for some time before its structure is compromised. It is tempting to apply this by analogy to the pancreas. Therefore, when we study cases of pancreatitis, it would be wise to explore the patient's history for the presence of a prodromal period of nonspecific malaise or indigestion or idiosyncratic dietary regimen of recent date. In the present case there was such a prodrome, apparently related to a viral infection of the respiratory tract. However, one isolated anamnestic datum does not prove the point. Nevertheless, I cannot help thinking that a 10-pound weight loss in a thirty-two-year-old man indicates some defect in his nutritional status, which anteceded his terminal illness.

If we are to accept Best's dictum that the pancreas is the guardian of the liver as a guide, we are entitled to ask, "Quid custodiet custodem ipsum?"—what protects the pancreas? What are the homeostatic mechanisms around which the integrity of pancreatic structure and function revolve? What nutrients, what metabolites are vital to the organ? Dr. Gais has mentioned a number of good possibilities: lipid metabolism, especially involving cholesterol and triglycerides; lipotropic factors and lipoproteins; amino acids; methyl donors; ethyl antagonism of methylation. In an area where theory outruns fact, one can only guess and experiment. My own personal predilections would lead me to investigate the amino acid composition and linkage of pancreatic enzymes, particularly with reference to transamination and transmethylation at a polypeptide level. However, there is no guarantee that the factors we have mentioned are the primary ones in equation.

I would call your attention to the fact that pancreatitis with fat necrosis can be produced by trauma, either by penetrating wounds, surgical injury, or by blunt trauma. Liberation of pancreatic enzymes even from a normal gland can produce the same clinical and pathologic picture. We are led inevitably to agree with Richman[3] who states, "Supporters of each idea have attempted to prove that within their own concepts are the only causes of pancreatitis and that a unitary concept of etiology is possible. Each of the possible causative factors is undoubtedly capable of causing the disease, and each hypothesis may be true without implying that the others are not. A reasoned consideration of all the causative factors would indicate that the pancreas is capable of responding to stress of many different types with a unitary reaction of varying degree."

Dr. Michael S. Bruno: I congratulate Dr. Gais for his lucid discussion of a case that to the physicians in charge, at the time of admission particularly, was anything but clear-cut and obvious. He presented, as we have heard, with a two-day history of abdominal pain and jaundice, and had as the most dominant physical finding, an upper abdominal mass. According to recent reviews[3,4] only 10 to 13 per cent of patients with acute pancreatic necrosis develop a mass during the course of illness and, when present, it is almost always a late complication of the disease.

In the light of some very recent experience, I would like to suggest that still another diagnostic procedure might well have been done, soon after the patient's admission. It might have established the diagnosis beyond question. I speak of a diagnostic peritoneal puncture. This can be an extremely valuable aid not only in the diagnosis of acute pancreatic necrosis but also in a host of other intra-abdominal catastrophies as well. It is a simple and most safe procedure that can be done at the bedside using local anesthesia. A plastic catheter is readily threaded into the peritoneal cavity through a number 15 needle. The peritoneal fluid which is removed can, by its very appearance, be most helpful in suggesting the correct diagnosis. Determination of peritoneal fluid amylase will, of course, be diagnostic and give consistently much higher values than that of blood amylase. In addition, the peritoneal fluid amylase remains elevated for a much longer period of time. Most important, in a case such as ours where there had been such complete destruction of the pancreas resulting in the formation of a large retroperitoneal abscess or pseudocyst, serum amylase values are paradoxically often low because of an outpouring of this enzyme into the peritoneum rather than into the blood stream. In other words, in cases such as ours, we may well be looking for elevated pancreatic enzyme titers in the wrong compartment. Let us therefore not forget a peritoneal puncture in the next such case!

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153rd Annual Convention

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BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Attempted Suicides in Adolescents

The following incidents were recently reported to the New York City Poison Control Center.

Incident 1

Toxic Agent	Age	Sex
Digitoxin	15 years	Female

The mother, who according to the nurse's report appeared dull, related that the patient obtained from the bathroom medicine cabinet a bottle of medication labeled Bufferin in order to relieve her "cramps" (dysmenorrhea). The Bufferin bottle, however, contained the mother's heart remedy, digitoxin. The patient ingested a total of 30 to 40 pills.

Since the two pills which patient took initially did not relieve her pains, she consumed three additional ones. She continued this procedure for several hours, every half hour. The patient's symptoms were nausea, vomiting, dyspnea, stupor, and convulsions.

A physician was called, and believing that the medication was Bufferin he prescribed milk over the telephone. The patient became worse in spite of this treatment and was taken to Bellevue Hospital.

During her hospital stay the patient developed the Wenckebach phenomenon. This is a condition in which the delay in conduction increases progressively until an impulse is blocked and a "dropped beat" occurs. The patient also developed a first degree atrioventricular block. The nausea and vomiting lasted for eight hours, and the heart block disappeared within thirty-six hours.

Her blood urea nitrogen was 16 mg. per cent. Potassium was given intravenously for which a cutdown was necessary. The patient was lavaged in the emergency room with sodium bicarbonate and was admitted to the inpatient psychiatric service.

The poison control officer at Bellevue Hospital, Dr. Barbara Parker, who reported this case, speculates that a good theoretic therapy for this type of intoxication would be Versenate in order to immobilize the calcium. This, however, involves the danger of producing tetany.

This patient remained in the hospital for four days and was discharged as recovered.

INCIDENT 2

Toxic Agent	Age	Sex
Aspirin and Antihistamine	18 years	Female

According to the mother, about three or four weeks prior to this incident the patient was in an automobile accident and sustained a concussion. She was hospitalized for about six days at that time. Since this injury the patient had several attacks of tenseness and nervousness, almost to the point of hysteria, followed by a "blackout." The mother also states that on the day of the accident the patient was very upset due to an attack of hay fever. She was under treatment for hay fever at Queens General Hospital with aspirin and tripelennamine. During the afternoon, the hay fever attack and the headaches became so severe that the patient took another four tablets of aspirin and three or four tablets of tripelennamine in order to obtain relief.

About an hour later the mother observed that the patient was acting irrationally and that she became hysterical. When questioned, the patient admitted taking the medication. Her mother was away from home when she did this. She was immediately rushed to the emergency room of a nearby hospital where her stomach immediately was lavaged. The patient was sent home.

Three hours later the patient still was not fully recovered, and a family physician was called.

He gave her "an injection." The patient subsequently had convulsions. An ambulance was called and she was taken to another hospital. On arrival at the hospital, however, she appeared fully recovered and was discharged without any treatment in about one hour.

The mother denies that the child may have taken the medication with a suicidal intent and insists that the medication was taken to relieve discomfort and symptoms associated with hay fever.

INCIDENT 3

Toxic Agent	Age	Sex
Aspirin and an Unknown Drug	18 years	Female

The patient swallowed thirty 5-grain aspirin tablets with a suicidal intent at 9:00 P.M. Seven hours after ingestion she became dizzy and nauseated, with persistent vomiting. A hospital ambulance was called, and the patient was taken to the hospital. Her stomach was lavaged in the emergency room, and she was transferred to the inpatient service of the psychiatric division.

Symptoms on admission were nausea, vomiting, and dyspnea. The patient was treated with chloral hydrate, and after nine days of hospitalization she was sent home as recovered.

It may be of interest to relate that this child was under the care of a child care association, with one foster parent since infancy, until four months ago. At that time she was removed from the former foster home and put into a girls' group sponsored by the same philanthropic federation which directs the child care agency. The episode occurred on Mothers' Day and one wonders whether nostalgia was not an influencing factor in this incident.

INCIDENT 4

Toxic Agent	Age	Sex
Nonbarbiturate Sedative Tablets	23 years	Female

This incident was reported from New Jersey. The hospital requested information about management in this case. The patient ingested a total of forty 20-grain tablets of the sedative tablet. On admission to the hospital the patient vomited and was in coma. Her stomach was lavaged with saline, and she was admitted to the hospital for further observation and treatment.

The laboratory findings were as follows: Blood analysis revealed plasma acetone to be 0, blood urea nitrogen 25 mg. per cent, fasting blood sugar 214 mg. per cent, white cell count 20,000, and hematocrit 35. There was essentially negative sediment in the urine except for albumin casts. She had oliguria for two days. The spinal fluid finding was negative.

The pertinent clinical findings on admission were coma and no demonstrable reflexes. Artificial respiration was applied, and the patient was given stimulants, intubation, antibiotics, Wyamine, oxygen, fluids intravenously, and Levophed. Also, she was intubated and put in continuous positioning.

The patient remained in the hospital for thirteen days. On discharge there was no evidence of permanent brain damage. The psychiatric diagnosis was gross stress reaction from which the patient recovered. The final diagnosis was gross stress reaction from ingestion of sleeping pills from which the patient recovered; bronchopneumonia, and laryngitis (residual, probably due to intubation).

It is not known whether these tablets were taken with suicidal intent but one would speculate that this was the case.

INCIDENT 5

Toxic Agent	Age	Sex
Aspirin	17 years	Female

The patient was depressed about having given birth to a baby out of wedlock and also because her father ordered her to leave home. She took ten 5-grain tablets of aspirin and developed abdominal pains, nausea, and vomiting. She also became dyspneic and was taken to the hospital emergency room where her stomach was lavaged with water. She was then admitted in the inpatient service. She was kept under psychiatric observation for four weeks and then sent to another psychiatric hospital where patients with special problems are treated.

At the time of this report the patient is still in this psychiatric hospital for observation and treatment.

INCIDENT 6

Toxic Agent	Age	Sex
Sedative Tablets	17 years	Female

The patient has been working in a hospital after school. She was considerably worried about and brooded over the oncoming final examinations. She feared that she would fail because of insufficient time to prepare her school work. She ingested 40 sedative tablets (an extensively advertised, over-the-counter proprietary containing methapyrilene and scopolamine).

She experienced some abdominal pains and became nauseated a half hour following ingestion. Her stomach was lavaged in the emergency room with saline and she was admitted to the hospital for inpatient care, where she remained for one week. After appropriate therapy she made a complete recovery.

INCIDENT 7

Toxic Agent	Age	Sex
Analgesic (Anti-dysmenorrhea) Tablets	16 years	Female

The patient's husband and friends were dancing. She noticed her husband dancing continuously with another lady friend and became jealous. She left the room and ingested 18 antidysmenorrhea tablets in a suicidal attempt. She was found approximately forty-five minutes after ingestion. Her husband's attention was attracted to her because of the peculiar sound she was making when breathing. Presenting symptoms were nausea, dyspnea, and stupor. She was rushed to the hospital where her stomach was lavaged several hours after ingestion. She was also given vitamin K and supportive therapy. After three days of hospitalization she recovered completely.

INCIDENT 8

Toxic Agent	Age	Sex
Rodenticide	16 years	Female

The patient left school to work in an office. Her parents objected to this. In order to spite her parents she ingested rodenticide with a suicidal intent. One hour after ingestion the patient became ill. As soon as she related the episode to her parents she was taken to a hospital emergency room. The following symptoms were noted on admission: nausea, dyspnea, abdominal pains, cyanosis, stupor, convulsions, and coma. Prior to her admission to the hospital the parents also administered milk and raw egg. Her stomach was lavaged in the hospital emergency room with sodium bicarbonate and she was admitted to the inpatient service. She remained on the critical list for three days.

In the hospital the patient was treated with fluids intravenously and sedation, and after four days in the hospital she recovered.

Incident 9

Toxic Agent	Age	Sex
Mange Medicine	19 years	Male

According to the public health nurse who visited the home, the patient returned home on the day of the accident at 6:30 P.M. feeling very depressed and stated that he no longer wanted to live and decided to swallow poison and end his life. He mixed various substances in a Vaseline jar and drank one half of the contents. The mixture was as follows: hair lotion, nose drops, foot lotion, rubbing alcohol, and mange medicine.

Immediately afterwards, he related to his wife what he had done and she notified the police. They summoned an ambulance. On admission to the hospital the patient had abdominal pains, nausea, and generalized sickness. His stomach was immediately lavaged and the "universal antidote" used. The gastric content was negative for aspirin or barbiturate. After lavage the patient made an uneventful recovery and was sent home several hours later.

Incident 10

Toxic Agent	Age	Sex
Sleeping Pills	13 years	Male

According to the mother the child was depressed because the father had not visited the home lately. The child had not been able to sleep. The doctor had prescribed the sedatives, which the mother kept in a locked suitcase. He broke open the lock while the mother was out of the room and ingested seven or eight 25-mg. sleeping tablets. He was rushed to Bellevue Hospital where vomiting and stupor were noted. On admission to the hospital his stomach was lavaged and he was treated with supportive therapy. He remained in the hospital for four days and was then referred to a training school for boys.

This is only one of many cases involving suicidal attempts by children living in broken homes, a particularly vulnerable group. These children constitute a high risk group, and the attempted suicide is merely a reflection of a basic underlying emotional disturbance. Physicians in contact with such children must make every effort to help them resolve their problems and aid them to become better equipped to cope with their environment and everyday problems. Physicians must utilize every contact with such patients and provide as many preventive psychiatric measures as possible.

(Number twenty-six in a series of Briefs on Accidental Chemical Poisonings)

Charms strike the sight, but merit wins the soul.—Alexander Pope

NUTRITION EXCERPTS

Prepared with the cooperation of the Faculty of the Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.B., M.S., *Editor*

Some Practical Aspects of Iron Metabolism

JEFFREY H. FRYER, M.B., B.S., ITHACA, NEW YORK

NEWER knowledge of the metabolism of iron, much of it derived from studies with isotopes, permits some conclusions which may be of considerable practical importance in preventing, detecting, and treating states of iron deficiency and iron excess in clinical practice. It is the purpose of this excerpt to touch on some of these findings but not to attempt a review of the extensive literature in this area or to discuss in any detail the current knowledge of iron metabolism.

Factors influencing iron absorption from the gastrointestinal tract may be of both extrinsic and intrinsic origin. The extrinsic factors which have been demonstrated appear to produce their effects mainly by influencing valency or by producing complexes of varying solubility. Absorption is thought to occur in the reduced or ferrous form. Therefore, the presence of reducing agents, such as ascorbic acid or 1-cysteine, promotes the better absorption of administered ferric iron, but this will not occur when the ferrous form is used. The latter is to be preferred for therapeutic purposes. The presence of food in the upper intestinal tract appears to reduce absorption by about a half, presumably by reducing ionization and promoting the formation of less soluble complexes, such as those known to occur with phytates and phosphates. More marked impairment of absorption occurs in steatorrhea of any cause. Contrary to earlier views, iron can be absorbed quite normally when there is complete achlorhydria, and the latter, which has been reported to occur in as many as 80 per cent of cases of iron-deficiency anemia, is apparently a result rather than a cause of the disease.[1]

The intrinsic mechanism which ultimately controls the passage of iron through the gastrointestinal mucosa has not yet been discovered but is of critical importance in regulating total body stores. In contrast to the homeostatic mechanisms controlling such elements as the common electrolytes or nitrogen, which act largely if not entirely by controlling excretion over a wide range, iron balance can be maintained only by regulating effective intake, in other words, net absorption, because under normal circumstances iron loss occurs only in relatively small amounts and much of it by routes not susceptible to fine regulation, such as in desquamated tissue and the menses. Certain facts are known which indicate that the degree of erythropoietic activity and the state of total body iron stores are important in regulating absorption, but the mechanism by which these functions are manifested at the mucosal barrier itself is unknown. Levels of hemoglobin or plasma iron, or the oxygen tension in the blood, do not appear to be involved directly. The fact that in the mucosal cells iron is complexed with the protein apoferritin to form ferritin suggested that the degree of "saturation" of the protein moiety might control absorption, and this "mucosal block" theory was supported by the observation that following the oral administration of an iron salt absorption is depressed. However, under several other conditions of relative iron excess, such as in untreated pernicious anemia, absorption apparently continues in relatively normal amounts[2] and ferritin has been shown to be formed; thus, this theory, as such, now has to be discarded.

The combination of extrinsic factors affecting the availability of iron in a form suitable for absorption and of the intrinsic factors acting to control absorption itself results in a range of absorption from 2 to about 20 per cent of administered iron. In normal subjects the average absorption is generally considered to be between 5 and 10 per cent of naturally occurring iron, while iron deficient subjects may absorb up to 20 per cent. Much lower percentages of iron salts given therapeutically may be absorbed and there is a marked diminution of return when the dose of iron is increased, so that the net amount absorbed may be very little affected. Increased iron absorption has been reported in association with pyridoxine deficiency in the experimental animal while copper deficiency produces the opposite effect, but the significance of these observations is unknown.

Much is known about the transport of iron in the blood stream and its storage forms, a subject which is beyond the scope of this annotation. Findings relating to iron-deficiency states, however, are of immediate clinical interest. Contrary to the long-held view, it is now felt that the hemoglobin level may be a very inadequate index of the state of total iron stores.[3] It has been shown, for instance, that the iron-containing enzymes, cytochrome C and catalase, may be reduced in the liver and kidneys of the rat by feeding it an iron-deficient diet.[4] Whether such changes have functional significance is, of course, open to question. However, many hemotologists now believe that quite marked iron deficiency may exist without anemia and that such a subanemic state may be symptomatic, producing fatigue and other subjective manifestations normally associated with fully developed iron deficiency anemia. This concept suggests that many people, particularly premenopausal women whose state of iron balance is often precarious, may be suffering from a deficiency disease which is readily treated once diagnosed. The final proof of this hypothesis must be awaited, but it is certainly worthy of consideration.

The question therefore arises: If the hemoglobin level is an inadequate index of the status of iron stores, what other investigation can be used to detect subanemic iron deficiency? Unfortunately, no simple test is available. Procedures based on determinations of plasma iron level, the incorporation or disappearance rates of radioiron, or the iron-binding capacity of serum have not proved reliable indices. It seems probable that the examination of a specimen of bone marrow, stained for hemosiderin, gives the most satisfactory results, although this technic clearly demands experience.[5] The physician in general office practice may have to use the empirical approach of a therapeutic trial when subanemic iron deficiency is suspected on clinical grounds. Unfortunately, it is also possible that in the presence of a normal hemoglobin level and basal erythropoietic activity iron absorption from the gastrontestinal tract may be sufficient only to aintain balance, even when therapeutic on salts are being given. Under such ircumstances, total iron stores could only e replenished by a parenteral route.[6]

In the light of present knowledge of the ariability in iron absorption, due to some of he factors which have been touched on, the ssessment of the normal iron intake of an ndividual is of less significance than was nce thought. However, assuming a mean bsorption of 5 to 10 per cent from food ources, and a daily iron loss of 0.5 to 1 mg. n adult males and postmenopausal females, he daily requirements for this group are in ange of 12 to 15 mg. of food iron. Mentruation involves an estimated loss equal o 0.5 to 1 mg. of iron daily; thus, if absorpion occurs at the same rate of 10 per cent, he premenopausal female may require an dditional intake of 5 to 10 mg. of iron.[7] t is in this group that depletion of iron stores night well occur, and subanemic deficiency hould be borne in mind when the clinical icture of anemia is present but hemoglobin levels prove to be within the normal ange. The added demands of growth after uberty or pregnancy of course increase the ossibility of deficiency.

The other side of the problem of iron alance occurs when the metal is present n excess in the body. Here, again, a basic nowledge of metabolism is essential to an nderstanding of the factors which may be nvolved. Of prime importance is the bsence of an adequate physiologic mechanism to excrete excess iron once it has een absorbed or has otherwise passed the astrointestinal barrier.

Within the limits of normal iron intake rom food sources, absorption is probably dequately regulated to prevent the accumulation of excessive quantities of storage iron in the form of ferritin and hemosiderin. Prolonged oral iron therapy or a really excessive intake from "natural" sources, such as occurs in the Bantu natives of South Africa (whose food is heavily contaminated from iron cooking utensils), may lead to a relatively excessive net iron absorption. When iron is administered parenterally, either as a saccharated salt or in transfused blood, the controlling mucosal barrier is bypassed, and either circumstance may lead to the accumulation of more than normal amounts of hemosiderin in reticuloendothelial cells. This condition of hemosiderosis is generally relatively benign in contrast to idiopathic hemochromatosis and probably rarely progresses to present a comparable clinical picture. The latter is possibly due to an inborn error of metabolism and results in the continued excessive absorption of iron and its deposition in storage forms in parenchymal tissues.[8] The sequelae of hepatic cirrhosis, diabetes, "bronzing," and other endocrine lesions are well known. Benefit in this condition can be achieved from repeated venesection, which is essentially the only way to reduce total body iron by artificial means in the absence of effective chemical methods of complexing and excreting it. Such methods are being actively sought. However, the majority of the tissue reactions to parenchymally deposited iron are probably irreversible.

Summary

Current concepts of iron metabolism, which have been very briefly touched on, support the existence of symptomatic iron deficiency without anemia, and patients with such states will be recognized only if the diagnosis is considered. Some cases may be resistant to oral therapy because of limited net absorption regardless of oral intake. Parenteral therapy may then be indicated. Conversely, excess iron in the body cannot be readily excreted, and, for this reason, the parenteral route should be used only when deficiency has been reasonably demonstrated. In most but not all cases of hemosiderosis, the excess storage iron is relatively nontoxic and the control of absorption is maintained. Primary or idiopathic hemochromatosis, however, is probably due to a metabolic aberration, and excessive iron absorption leads to deposition of storage iron in parenchymal sites and chronic tissue change.

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(Number two in a new series on Nutrition Excerpts)

Infected Animals Can Cause Rabbit Fever

If you skin or clean wild animals, you may be in danger of acquiring rabbit fever. According to a health column in the October *Today's Health*, published by the American Medical Association, rabbit fever (tularemia) is one of 83 diseases of animals transmittable to man. The disease is common in rabbits, field mice, oppossums, squirrels, coyotes, skunks, and other small wild animals. It is fatal to the animals.

If an animal seems unusually tame or runs sluggishly when flushed, he may have tularemia, and hunters should be wary of killing and taking the animal home. Hunters, housewives, and vendors who skin and clean infected animals can acquire th disease through an abrasion or even apparentl unbroken skin. Symptoms in humans includ headache, chills, fever, general weakness, backach joint pains, and prostration.

Antibiotics can cure the disease, but the colum listed certain precautionary procedures which in clude:

Wearing rubber gloves when skinning animal washing blood from the skin with plenty c soap and water followed by the use of a disin fectant, and calling your doctor and going to bed i you think you have tularemia.

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GEORGE WALLACE, M.D.

Cardiovascular Collapse in Electrolytes Imbalance

AN ETIOLOGIC factor for abnormal cardiac rhythm during anesthesia and surgery, the importance of which is becoming more and more recognized, is the influence of the chemical composition of the blood. Such disturbances may result from an increase in blood pH, reduced oxygen tension, high carbon dioxide tension, hypokalemia, hyperkalemia, and hypocalcemia. The following case report illustrates such a derangement in a patient with intestinal obstruction.

Case Report

A twenty-nine-year-old male was admitted to the hospital because of vomiting and abdominal distention of one week's duration. He had had an appendectomy a year ago. Severe dehydration and some carpopedal spasm were evident. For the latter condition, 2 Gm. of calcium gluconate were given intravenously. The patient's temperature was 99 F., pulse rate 84 per minute, and respirations 22 per minute. His blood chlorides were 96 mEq. per L., and carbon dioxide combining power 62 volumes per cent. His red cell count was 6,080,000, and hemoglobin 17.8 Gm. The diagnosis was small bowel obstruction due to adhesions.

The patient was given 1,000 cc. of 5 per cent dextrose in normal saline with vitamins added. A second liter was started, and the patient taken to surgery.

His preoperative blood pressure was 150/90, and pulse 96. A direct-writer electrocardiogram attached to the patient showed lowered T waves and depressed S-T segments. Induction of anesthesia consisted of cyclopropane and oxygen. The vocal cords were exposed and sprayed with 1 per cent Pontocaine. An oropharyngeal airway was inserted, and the mask reapplied. After induction with cyclopropane the electrocardiogram showed numerous ab-

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Discussed at a conference held at the Columbia-Presbyterian Medical Center, New York City, December 1, 1958. Clinical Anesthesia Conferences are held on the first Monday of every month.

normal ventricular complexes, which were interpreted by a cardiologist as runs of ventricular fibrillation and flutter, nodal rhythm, and sinus tachycardia with an intraventricular conduction defect. The patient was noted to be cyanotic. An endotracheal tube was inserted immediately, and 100 per cent oxygen was administered. His blood pressure and pulse could not be obtained. A few seconds later respirations ceased. The surgeon listened to the chest and thought he heard a heart beat. The electrocardiogram indicated that the heart was still beating but the configurations were totally abnormal. The patient remained cyanotic in spite of artificial respiration with oxygen.

The surgeon made an incision through the diaphragm and started cardiac massage. This was about ten minutes after onset of cardiovascular collapse. The patient became pink immediately. Procaine, 10 cc. of a one per cent solution, was given intravenously. The heart remained soft and dilated. Twenty mEq. of potassium and 0.5 mg. ouabain were given intravenously. The heart contracted and started to beat regularly. The blood pressure returned to 105/55, the pulse was rapid, and respirations were 50 per minute. The adhesions obstructing the small bowel were cut and the bowel was decompressed. While the abdomen was being closed, the patient had a tonic convulsion. The patient received only oxygen, but he never regained consciousness. In the recovery room, convulsions became more frequent, his temperature gradually rose to 107 F., and he expired twelve hours postoperatively.

Comment

There are two fundamental criticisms in this case: (1) lack of preparation for the patient's electrolytes and fluid imbalance before operation and (2) delay in treating cardiac arrest.

Had the patient's electrolytes and fluids been restored prior to surgery, the outcome might have been different. The patient's dry tongue, dry and cracked lips, and carpopedal spasm and the low T waves and depressed S-T segment in his electrocardiogram were indications of severe imbalance. When plasma potassium falls below 3 mEq. per L., changes in the electrocardiogram occur. Potassium depletion is not a frequent occurrence in patients requiring surgery but it is a possibility which must be borne in mind, especially when there has been considerable loss of fluid from the stomach or small intestine.[1] The appearance of an arrhythmia not previously present may indicate that a cardiac emergency exists. Its diagnosis as to cause and immediate treatment becomes essential.

It was well to monitor this patient with an electrocardiogram. But there was undue delay in treating cardiovascular collapse when it occurred. The appearance of ventricular fibrillation associated with the disappearance of pulse and blood pressure should have called for immediate action. If no pulsation can be detected in a carotid artery or some other large accessible artery, one should disregard the presence of heart activity on the electrocardiogram. The latter may continue to show activity even after cardiac arrest. Immediately, a skin incision should be made. This may be along the fifth left intercostal space preparatory to thoracotomy. When an abdominal operation is contemplated, as in this case, the skin incision may be the intended abdominal incision. If there is no bleeding, the heart should be exposed immediately to observe whether it is in ventricular fibrillation or cardiac asystole. Manual cardiac contractions should be started then, and the necessary pharmacologic drugs or electric defibrillation instituted as soon as possible.

Reference

1. Hoffman, W. S.: J.A.M.A. **144:** 1157 (Dec. 2) 1950.

(*Number sixty of a series of Clinical Anesthesia Conferences*)

CANCER ALERTS

A series of radio talks for the practitioner
presented over Station WNYC-FM under the sponsorship of the

New York Academy of Medicine
with the cooperation of the
New York City Cancer Committee

Differential Diagnosis of Intrascrotal Swellings

THOMAS J. KIRWIN, M.D., NEW YORK CITY

Correct diagnosis of any swelling within the scrotum depends on thorough physical examination and intelligent interpretation of the findings. Begin by palpating the side of the scrotum where the swelling is located, remembering that the tunica vaginalis lies close to the testicle. Then, palpate the opposite side and compare the two.

Next, palpate the three sections of the epididymis, head, body, and tail, then the vas deferens, both sides at the same time. The spermatic cord which supports the testicle within the scrotum consists of the vas deferens together with the vessels, lymphatics, and nerves supplying the male glands, all being enclosed within the tunica vaginalis. A normal spermatic cord feels like a hard window cord, and with it one can feel several other thin cords and stringy fibers of the cremaster muscle.

After thorough palpation, make the translucency test, which is done as follows: Make the intrascotal swelling tense by grasping the neck of the scrotum between thumb and two fingers while the other hand holds a flashlight to the distal side of the swelling. Do this in the dark if possible. In uncomplicated hydrocele, transillumination will make the whole tumor glow with a pinkish light. The hand grasping the scrotal neck must keep fluid from collecting at the back or bottom of the sac by squeezing it up above the testicle where translucency can be demonstrated. This test will fail if the scrotal walls are very thick or calcareous. If it is impossible to get above the swelling, the lesion is probably a hernia and not a cancerous growth.

A vaginal hydrocele lies in front of and, to a variable degree, above the body of the testicle. Since a secondary hydrocele may be covering serious disease underneath, in case of doubt, aspirate the fluid and do a Papanicolaou test on it. The uncovered testicle can now be palpated freely but always with great care and gentleness. Malignant growths seldom produce hydrocele, but take no chances of distributing cancer cells, should any be present.

A secondary hydrocele almost always accompanies acute or subacute orchiepididymitis and syphilis of the testicle and about one third of the cases of testicular tuberculosis.

A cyst of the epididymis is a tense, translucent swelling which feels lobulated on palpation.

A spermatocele is also translucent, with an outline like that of an epididymal cyst but not as lobulated or tense, and its contained fluid is less clear. It usually lies above the testicle, and when it is pushed downward and the fluid is aspirated, spermatozoa will usually be found in it.

Epididymoorchitis is not seen as often as epididymitis alone because the epididymis serves as a trap for infectious organisms before they can reach the testicle. In this condition the entire gland is enlarged and tender and the vas thickened. A history of an attack of mumps, especially in an adolescent or young adult, often explains this swelling.

Tuberculosis anywhere in the genitourinary tract is always secondary to primary lesions in the lungs or elsewhere. A tuberculous epididymis will show a craggy outline when transillumined, with the vas greatly thickened. A tuberculous swelling is not tender on palpation, but the normal free movement of the testicle within the scrotum will be limited or nearly impossible.

Syphilis makes the testicle intensely hard, quite painless, and freely movable in all directions, distinguishing it from tuberculosis. It causes painless enlargement of the body of the testicle. Tuberculosis first attacks the epididymis. The Wassermann test will rule out syphilis, so that the swelling should not be palpated without performing it.

Most dreaded of all scrotal swellings is that caused by malignant disease. Like tuberculosis and syphilis, the swelling it causes is opaque to transillumination, but all opaque swellings by no means are malignant. A calcified cyst, lipoma, or sebaceous cyst will give a similar appearance when transillumined or even after the fluid has been aspirated and the interior of the swelling exposed to full light.

An old clotted hematocele due to trauma, an atypical tuberculous lesion, or, rarely, a leutic gumma may be so deceptive in appearance as to lead the examiner astray, but the tests already mentioned will usually set him on the right track.

Diagnosis of cancer of the testicle is reached largely by exclusion, but until it can be proved to be benign, any scrotal swelling should be regarded as potentially malignant. Hematocele sometimes causes confusion, but palpation will rule it out if there is no history of recent trauma.

If the tunica vaginalis can be palpated on the surface of an intrascrotal swelling, the condition is not hematocele. Neither is it hematocele if the epididymis can be palpated, because in tuberculosis the epididymis is invariably embedded within the swelling.

If the suspicion of malignancy remains after palpation and transillumination and after the aspirated fluid has been subjected to the Papanicolaou test, it is advisable to make use of the Aschheim-Zondek test as well, for a positive Aschheim-Zondek is very valuable. A negative result must, however, be disregarded, since certain malignant tumors found in the scrotum do not give off prolan A, the presence of which the positive Aschheim-Zondek reaction reveals.

When all the tests have been performed but the suspicion of malignancy still remains, the last resort will be biopsy. This is to be avoided if possible, because any kind of surgical incision might disseminate cancer cells, should any be present.

Chorionepithelioma, most malignant of all testicular tumors, is especially hard to recognize, and its existence is often quite unsuspected until metastases appear, perhaps in widely separated parts of the body. Even at autopsy the original growth may be overlooked and the metastatic cancer regarded as the primary lesion.

Since the only hope of checking cancer of the testicle is early and complete surgical removal, the importance of investigating all intrascrotal swellings is evident. A complete history, combined with thorough, careful physical examination with transillumination of all scrotal swellings should never be omitted. In this way many lives could be saved which are now being needlessly sacrificed.

1 East 63rd Street

(Number nineteen in a series of Cancer Alerts)

SPECIAL ARTICLE

Cardiovascular Work Evaluation Unit on a Regional Plan

RICHARD L. POLLOCK, ITHACA, NEW YORK

(*Chairman, Subcommittee on Work Evaluation Units,* Rehabilitation Committee, New York State Heart Assembly*)

Foreword

The Work Evaluation Unit in Onondaga County was the result of planning by the Heart Association of Onondaga County. I was asked, because of my interest in the field of rehabilitation, in the fall of 1956 to put together such a unit. Within a few weeks we had made plans for the constitution of such a team and the kinds of patients who we felt could and should be evaluated and had obtained approval of the local Heart Association to go ahead.

Our next step was to present this plan to the Onondaga County Medical Society's executive council for approval. It was carefully pointed out to the Society at that time that our aim was to assist patients with cardiovascular disease to find jobs or to maintain jobs. At no time were we to function as a consultative group or as a clinic rendering medical care. We have, in the two years of operation, firmly adhered to this policy. Patients are referred by their private or industrial physicians (in the latter case with approval of the private physician) and by organizations such as the Department of Public Welfare and the Division of Vocational Rehabilitation.

Patients so referred are seen on two occasions. The first occasion includes a careful social and vocational work-up and examinations by a clinical psychologist and a cardiologist. At this time pertinent laboratory work is obtained. The patient then returns to the unit on the following week and, following a discussion by the unit team, their opinion is presented to the patient and then forwarded to the referring physician or agency. We follow patients at one-year intervals and restrict ourselves to questions which would be concerned primarily with social and vocational rehabilitation rather than medical care.

We have felt thus far that physicians who have used our services have not abused them in the sense of referring patients for consultation purposes only, and we have in every instance felt that we have been of service to the physician and his patient and have incidentally returned a significant proportion of unemployed cardiac patients to work and have assisted others in maintaining their useful occupations.

Our experience thus far seems to indicate that cardiac or cardiovascular work evaluation units can be extremely helpful in the rehabilitation of that small percentage of cardiac patients who by virtue of one or more factors are the difficult or complex patients. We do not believe that it can ever replace the conscientious and careful private physician but we do believe that it can help such a physician with problem cases.—LEO JIVOFF, M.D., *Syracuse.*

THE Rehabilitation Committee of the New York State Heart Assembly developed a plan for a regional Work Evaluation Unit, the first in the country, which was approved by the Assembly. A Work Evaluation Unit was organized in Syracuse, Onondaga County, and after a year's successful operation it was expanded to a regional unit serving 15 neighboring counties.

During its first year of operation the unit in Syracuse received requests for cardiac evaluation from individuals and agencies outside their area. A cooperative plan using an already established unit seemed desirable. Because of the time required to develop a cardiac work evaluation team, the lack of knowledge of potential case load in these neighboring counties, and the need for experience with this type of evaluation for the cardiac patients, the regional work evaluation plan was devised. The plan is outlined as follows:

Function

The plan is to evaluate occupational potentialities of patients through a medical, social, psychologic, occupational, and economic study and to make appropriate recommendations. (The unit performs cardiac diagnostic studies only in relation to the patient's work potential.)

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* Additional members of the subcommittee include the following: Miss Margaret Barry and Miss Eleanor V. Green, New York City; Hermann J. Bennett, M.D., and R. T. Lapidus, M.D., Poughkeepsie; Mr. John Cummings, Albany; James L. Davis, M.D., Newark; Robert M. Kohn, M.D., Buffalo; Mr. Van Hart, Ithaca; Leo Jivoff, M.D., and Ian MacLachlan, M.D., Syracuse.

Management and Administration

1. The heart association in whose area the unit is located appoints an administering committee, which acts as the board of directors of the Work Evaluation Unit.

2. The unit is operated and administered by this committee.

(*a*). The medical director of the unit is responsible for the administering committee for all professional aspects of the unit.

(*b*). The executive director of the Heart Association will be responsible to the administering committee for the business management and administration of the unit.

Location

The Work Evaluation Unit will be located in a hospital or other suitable quarters determined by the administering committee of the local heart chapter.

(*a*). The responsibility for the operation and administration of this program rests with the administering committee and not with the facility in which it is located.

(*b*). The unit shall utilize the space, equipment, laboratory facilities, etc. of the hospital or facility as agreed on by the administering committee. (The Heart Association agrees to pay all predetermined fees.)

Medical Director and Staff for the Unit

1. Compensation.—The medical director and members of the staff shall be paid fees as determined by the administering committee.

2. Composition of the Unit Team.—In addition to the medical director, the unit staff should normally consist of (*a*) cardiologist to be appointed by the administering committee in consultation with the medical director, (*b*) social case worker, (*c*) clinical psychologist, (*d*) vocational counselor, (*e*) medical secretary, and (*f*) technical assistance as determined by the medical director.

The composition of the staff and presence of technical assistance at any session is to be determined by the medical director.

Criteria for Admission to Unit

1. Clients to be evaluated by the unit should meet the following requirements:

(*a*). Live or work in the home county of the unit or be referred by cooperating heart chapters.

(*b*). Have cardiovascular disease in the referring physicians' opinion.

(*c*). Have a problem in obtaining or retaining employment primarily due to cardiovascular disease.

(*d*). Have reasonable prospect of employability following evaluation.

(*e*). Agree in writing that appropriate reports of the unit's findings may be sent to referring agencies and referring physicians.

2. No client will be accepted for evaluation if he has an open case pending under the New York State Workmen's Compensation Law.

3. The medical director shall have full responsibility for selection of patients for evaluation using the criteria outlined above. These criteria should be open to reasonable interpretation by the medical director in view of the unit's humanitarian objectives.

Procedure for Referrals to the Unit

1. Patients will be accepted for evaluation by the unit on written application, accompanied by a physician's medical recommendation, from individuals and agencies listed below:

(*a*). Private physicians.

(*b*). Industry or industrial physicians.

(*c*). State employment service.

(*d*). State Division of Vocational Rehabilitation.

(*e*). Employment services of voluntary agencies that deal with handicapped individuals.

(*f*). County welfare department.

(*g*). Clinics or hospitals.

(*h*). Sheltered workshops.

(*i*). Labor unions.

(*j*). Other appropriate physicians or agencies.

2. Where the patient is under the care of a private physician, admission to the unit will only be upon consultation with that physician. With the patient's consent, the patient's personal physician will receive the medical report of the unit's evaluation and recommendations. When the referral is made by an agency other than a heart chapter with written consent of the patient, the referring agency will also be apprised of the unit's evaluation and recommendation.

3. The cardiovascular Work Evaluation Unit of the Heart Association will accept patients under a regional plan from counties whose heart chapters wish to cooperate in making this service

available to their residents, provided the following conditions are met:

(*a*). No resident of the county in which the unit is located is thereby deprived of this service.

(*b*). Counties participating in the regional plan will pay according to contracts.

(*c*). The regional plan of operation is carried on with the continued cooperation and approval of the New York State Heart Assembly and/or its appropriate committees. This assumes that a mechanism will be established to give necessary certification.

Payment for Evaluation by Referring Agency

1. The county heart chapter in the regional plan will grant to the Heart Association administering the unit an agreed-upon sum, which will help defray expenses of the unit.
2. Patients who are able and wish to pay for this evaluation may do so by further contribution to their local heart association.

Reserve the Dates . . .

153rd Annual Convention

Medical Society of the State of New York

May 9 to 15, 1959

Hotel Statler Hilton **Buffalo**

NECROLOGY

Charles Randolph Barton, M.D., of Forest Hills, died on October 10, 1958, at the age of fifty-seven. Dr. Barton graduated in 1924 from Harvard Medical School.

Albert M. Beckary, M.D., of Indian Lake died on January 21 at the age of eighty-two. Dr. Beckary graduated in 1905 from Cornell University Medical College. He was a member of the Warren County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Vagharshag Boghosian, M.D., of Astoria, died on January 25 at the age of sixty-two. Dr. Boghosian received his medical degree in 1920 from the University of Beirut. He was dermatologist and syphilologist-in-charge at Goldwater Memorial Hospital, an assistant in dermatology and syphilology at Bellevue Hospital, a physician for the New York City Department of Health's Bureau of Preventable Diseases, an associate professor of dermatology at New York University Medical School, and had served for twenty years as an honorary police surgeon. Dr. Boghosian was a member of the American Academy of Dermatology and Syphilology, the Long Island Dermatological Society, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Samuel Bondi, M.D., of New York City, died on January 21 at the age of eighty-one. Dr. Bondi received his medical degree in 1903 from the University of Vienna. He was a senior assistant attending physician in metabolism at the Beth Israel Hospital Outpatient Department. Dr. Bondi was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Samuel Montgomery Buch, M.D., of the Bronx, died on January 24 at the age of seventy-six. Dr. Buch graduated in 1905 from New York University and Bellevue Hospital Medical College. He was a consultant in obstetrics and gynecology at Jewish Memorial Hospital. In 1956 he was honored by the Medical Society of the State of New York for the completion of fifty years of practice. Dr. Buch was a Fellow of the American College of Obstetrics and Gynecology, an Associate of the International College of Surgeons, a charter member and former president of the Bronx Gynecological and Obstetrical Society, and a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alfred Caro, M.D., of Elmhurst, died on December 27, 1958, at the age of seventy-four. Dr. Caro received his medical degree in 1910 from the University of Berlin. He was a member of the Queens County Medical Society and the Medical Society of the State of New York.

John Joseph Davis, M.D., retired, of Brooklyn, died on December 10, 1958, at the age of eighty-five. Dr. Davis graduated in 1894 from Queen's University Faculty of Medicine, Kingston, Ontario. Dr. Davis was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Joseph De Ferrari, M.D., of Brooklyn, died on January 10 at the age of sixty. Dr. De Ferrari graduated in 1925 from New York University and Bellevue Hospital Medical College. He was a member of the Kings County Medical Society, and the Medical Society of the State of New York.

John Deruha, M.D., of New York City, died on January 17 at the age of sixty-five. Dr. Deruha received his medical degree in 1920 from the University of Budapest.

S. A. de Yoanna, M.D., of Brooklyn, died on September 12, 1958, at the age of seventy. Dr. de Yoanna graduated in 1912 from the Medico-Chirurgical College of Philadelphia. He was a Commander in the United States Navy.

Wilson F. Dodd, M.D., of New York City, died on October 30, 1958, at the age of sixty-five. Dr. Dodd graduated in 1920 from Cornell University Medical College. He was a Fellow of the American College of Surgeons and a member of the New York

County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

M. Milton Eckert, M.D., of the Bronx, died on January 11 at the age of seventy-one. Dr. Eckert graduated in 1911 from Long Island College Hospital Medical School. He was a member of the Association of Military Surgeons of the United States, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Bruno S. Engelman, M.D., of Buffalo, died on January 10 at the age of sixty-three. Dr. Engelman received his medical degree in 1920 from the University of Berlin. He was an assistant attending physician in general practice at the Millard Fillmore Hospital. Dr. Engelman was a member of the Buffalo Academy of Medicine, the American Academy of General Practice, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hugo Hauer, M.D., of New York City, died on August 18, 1958, at the age of eighty-four. Dr. Hauer received his medical degree in 1903 from the University of Berlin.

Hamilton Joseph Hammill, M.D., of the Bronx, died on January 21 at the age of fifty-four. Dr. Hammill graduated in 1931 from Georgetown University School of Medicine. He was an attending in surgery at Union Hospital. Dr. Hammill was a member of the American Society of Anesthesiologists, the Bronx Surgical Society, the Bronx County Medical Society, and the Medical Society of the State of New York.

Joseph C. Healy, M.D., of Lockport, died on December 15, 1958, at the age of fifty-nine. Dr. Healy graduated in 1924 from St. Louis University School of Medicine. He was an attending in surgery at Lockport Memorial Hospital. Dr. Healy was a member of the Lockport Academy of Medicine, the Niagara County Medical Society, and the Medical Society of the State of New York.

Arthur Lawrence Holland, M.D., of New York City, died on January 20 at the age of eighty-five. Dr. Holland graduated in 1897 from New York University Medical College. He was a consulting physician at Elizabeth A. Horton Memorial Hospital, Middletown, and a consultant in gastroenterology at New York and Mount Vernon Hospitals. Dr. Holland was an Honorary Fellow of the American College of Gastroenterology, a Fellow of the American College of Physicians, and a member of the New York Academy of Medicine, the New York Gastroenterological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gordon Rogers King, M.D., of the Bronx, died on January 21 at the age of fifty-two. Dr. King graduated in 1937 from Howard University College of Medicine. He was an assistant attending physician at Morrisania Hospital. Dr. King was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Knight, M.D., of Seneca Falls, died on January 12 at the age of seventy-nine. Dr. Knight graduated in 1902 from Columbia University College of Physicians and Surgeons. In 1958 he retired as health officer of the Town of Seneca Falls and outlying districts, a post which he had held for thirty years. Dr. Knight was a member of the Seneca County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

G. Howard Leader, M.D., of Penn Yan, died on January 4 at the age of seventy. Dr. Leader graduated in 1906 from Kentucky University Medical Department. He was a member of the Yates County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Elise Strang L'Esperance, M.D., of Pelham Manor, died on January 21 at the age of eighty. Dr. L'Esperance graduated in 1899 from the Woman's Medical College of the New York Infirmary for Women and Children. She was a consulting director of the Cancer Prevention Clinic at the New York Infirmary for Women and Children. In 1910 she became associated with Dr. James Ewing as an assistant in the Department of Pathology at the Cornell Medical College and in 1910 was made an instructor. She also became director of the laboratories at the New York Infirmary for Women and Children. In 1920 she became an assistant professor in the Department of Pathology and in 1942 of the Department of Preventive Medicine and a full clinical professor of preventive medicine in 1950.

She was the first woman to receive the Clement Cleveland Medal of the New York City Cancer Committee for her work in cancer control and in 1951 she received the Lasker Award for Medical

Research. With her sister she established the Strang Tumor Clinic at the New York Infirmary and became its director in 1937. The same year they founded the Strang Cancer Prevention Clinic and three years later the Cancer Prevention Clinic of Memorial Hospital, now the Kate Depew Strang Cancer Prevention Clinic. Dr. L'Esperance was a member of the American Association of Pathologists and Bacteriologists, the American Association for Cancer Research, the American Medical Women's Association, the American Association of Immunologists, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Morris Sheldon Lord, M.D., retired, Schenectady, died on December 30, 1958, at the age of ninety-one. Dr. Lord graduated in 1890 from Syracuse University College of Medicine. At one time he was a physician in the Schenectady school system and also assisted at the Schenectady Day Nursery. Dr. Lord was a member of the Schenectady County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry Joseph MacLiesh, M.D., of Brooklyn, died on August 3, 1958, at the age of fifty-eight. Dr. MacLiesh received his medical degree from the University of Vienna in 1925. He was an assistant in obstetrics at Unity Hospital. Dr. MacLiesh was a member of the Kings County Medical Society and the Medical Society of the State of New York.

Irvin Miller, M.D., of New Rochelle, died on January 27 at the age of forty-four. Dr. Miller graduated in 1939 from the University of Maryland School of Medicine and College of Physicians and Surgeons. He was an associate in obstetrics and gynecology at New Rochelle Hospital. Dr. Miller was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons and the American College of Obstetrics and Gynecology, and a member of the Westchester County Medical Society and the Medical Society of the State of New York.

Joseph Samuel Miller, M.D., of Scarsdale, died on January 17 at the age of forty-nine. Dr. Miller graduated in 1932 from the University of Illinois College of Medicine. He was clinical director of St. Christopher's School, Dobbs Ferry, and a former psychiatric consultant with the Educational Alliance of New York. Dr. Miller was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry), a Member of the American Psychiatric Association, and a member of the William Alanson White Psychoanalytic Society, the Westchester County Medical Society, and the Medical Society of the State of New York.

Rafael R. Muniz, M.D., of New York City, died on December 1, 1958, at the age of fifty-five. Dr. Muniz graduated in 1932 from the Medical College of Virginia. He was an assistant in pediatrics at University Hospital. Dr. Muniz was a member of New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James Newman Palmer, M.D., of New York City, died on December 2, 1958, at the age of forty-seven. Dr. Palmer graduated in 1937 from McGill University Faculty of Medicine. He was a Member of the American Psychiatric Association, the Mohawk Valley Neuropsychiatric Society, the New York Psychoanalytic Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

N. Vern Peterson, M.D., of Rye, retired, died on January 15 at the age of sixty-seven. Dr. Peterson graduated in 1922 from George Washington University School of Medicine. He was director emeritus of the Eye, Ear, Nose, and Throat Department at United Hospital, Port Chester. Dr. Peterson was a Diplomate of the American Board of Otolaryngology and a member of the American Academy of Ophthalmology and Otolaryngology, the American Laryngological, Rhinological and Otological Society, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harold Fenwick Schilback, M.D., of New Milford, Connecticut, formerly of Brooklyn, died on January 15 at the age of fifty-nine. Dr. Schilback graduated in 1932 from Long Island College of Medicine. He was a Diplomate of the American Board of Otolaryngology and a member of the Brooklyn Ophthalmological Society.

Gustav Strack, M.D., of Brooklyn, died on November 22, 1958, at the age of eighty-three. Dr. Strack graduated in 1903 from New York University and Bellevue Hospital Medical College. He was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Richard Henry Thornbury, M.D., of North

Collins, died on January 7 at the age of sixty. Dr. Thornbury graduated in 1924 from the University of Michigan Medical School. He was an attending physician at Tri-County Memorial Hospital, Gowanda, and Our Lady of Victory Hospital, Lackawanna. Dr. Thornbury was a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Manuel Uribe Troncoso, M.D., of New York City, died on January 21 at the age of ninety-one. Dr. Troncoso received his medical degree from the Universidad Nacional Facultad de Medicine, in Mexico City, in 1890. He invented the gonioscope, an instrument for examining the eye, was the recipient of the Research Medal of the American Medical Association Section on Ophthalmology, and was the author of several treatises. He was professor of ophthalmology at the Post-Graduate Medical School and Hospital from 1916 to 1932 and had worked in the Eye Institute of the College of Physicians and Surgeons at Columbia University in the research department and later became an assistant clinical professor of ophthalmology. He founded the Spanish-American Medical Society of New York in 1916. Dr. Troncoso was a Diplomate of the American Board of Otolaryngology, a member of the American Academy of Ophthalmology and Otolaryngology, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

MEDICAL MEETINGS

American College of Allergists

The fifteenth congress and graduate instructional course in allergy of the American College of Allergists will be held in the Mark Hopkins Hotel, San Francisco, March 15 through 20.

American Society of Facial Plastic Surgery

The American Society of Facial Plastic Surgery will hold its spring meeting on Wednesday, March 18 at the Hotel Elysee, 60 East 54th Street, New York City.

The schedule for the meeting is as follows: Business meeting, 5:30 P.M.; cocktails, 6:30 P.M.; dinner, 7:00 P.M.; and scientific session, 8:00 P.M.

The program will include "Surgical Correction of Protruding Deformed Ears" by Dr. Oscar J. Becker, "Management of Inferior Crus in Otoplasty" by Dr. Sidney S. Feuerstein, and "The Problem of Implants in Rhinoplasty," by Dr. Samuel M. Bloom.

For reservations contact: Dr. Samuel M. Bloom, Secretary, 123 East 83rd Street, New York 28, New York.

International Academy of Proctology

The eleventh annual convention of the International Academy of Proctology will be held April 5 through 9 at the Plaza Hotel, New York City. The international, national, and local program committees are planning a seminar on practical technics for office and hospital. There will be special emphasis on anal and rectal panel presentations and on newer treatment methods.

For further information concerning this convention write to: Alfred J. Cantor, M.D., Executive Secretary, International Academy of Proctology, 147–41 Sanford Avenue, Flushing 55, New York.

American Academy of General Practice

The annual scientific assembly of the American Academy of General Practice will be held in San Francisco, April 6 through 9, in the Civic Auditorium. Attendance at the assembly will entitle members to fifteen hours credit, category I.

Information concerning the assembly may be had by writing to: American Academy of General Practice, 215 Volker Boulevard, Kansas City 12, Missouri.

American College of Surgeons

The American College of Surgeons will hold its first Canadian four-day sectional meeting for surgeons and nurses in Montreal, April 6 through 9. Headquarters will be the Queen Elizabeth Hotel. Sessions will be held at leading Montreal hospitals.

New York physicians participating are: *Brooklyn:* Drs. Stanley C. Hall and Louis M. Hellman; *New York City:* Drs. Thomas L. Ball, Frank Glenn, Harrison L. McLaughlin, A. G. DeVoe, Ira S. Jones, John Hughes Dunnington, Milton Friedman, Franz Altmann, Richard J. Bellucci, Donald Markle, Perry Hudson, Andrew F. de Roetth, Jr., Graham Clark, Donald M. Shafer, Willet F. Whitmore, Jr., Henry Clay Frick, II, A. Charles Posner, Charles M. Steer, R. Townley Paton, William Cavanaugh, Equinn W. Munnell, Morris A. Goldberger, Albert Altchek, William P. Given, and Landrum G. Shettles; *Nyack:* Dr. John C. Cardona; and *Rochester:* Dr. Henry B. Crawford.

American Goiter Association

The American Goiter Association will hold its annual meeting in the Drake Hotel, Chicago, April 30 through May 2. The program for the three-day meeting will consist of papers and discussion dealing with the thyroid gland, its physiology, pharmacology, pathology, and therapy.

American College of Cardiology

The American College of Cardiology will hold its eighth annual convention at the Benjamin Franklin Hotel in Philadelphia, May 25 through 29.

Dr. John S. LaDue, New York City, is national chairman of the program committee; Dr. Seymour Fiske, New York City, is national chairman; and Dr. Gabriel F. Greco, Ozone Park, is a member of the publication committee.

The program will cover recent trends in medical and surgical progress in cardiology. Scientific sessions will be devoted to phonocardiography, ballistocardiography, metabolism, and therapy. Fireside conferences will allow audience participation in the solution of clinical and research problems.

Further information may be obtained by writing to: Dr. P. Reichert, American College of Cardiology, Empire State Building, New York 1, New York.

Society of Nuclear Medicine

The sixth annual meeting of the Society of Nuclear Medicine will be held at the Palmer House, Chicago, June 18 through 20. Those who wish to participate in the scientific program should submit titles and abstracts of not more than 250 words to Dr. Donald W. Petit, Program Chairman, University of Southern California, School of Medicine, 1200 North State Street, Los Angeles 33, California.

Members and guests who wish to prepare a scientific exhibit should prepare a report of approximately 500 words explaining the purpose of the scientific exhibit as well as a brief description of the exhibit layout. Exact dimensions and other pertinent details should be forwarded to Dr. Murray E. Volk, Chairman, Committee on Scientific Exhibits, 5412 North Clark, Chicago, Illinois. All reports and papers should be submitted not later than March 1.

For further information write to: Samuel N. Turiel, Administrator, The Society of Nuclear Medicine, 750 North Michigan Avenue, Chicago 11, Illinois.

Congress on Occupational Health

The thirteenth International Congress on Occupational Health will be held in New York City at the Waldorf-Astoria Hotel, July 25 through 29, 1960. The scientific program committee invites submission of papers for presentation at the Congress. The following aspects of occupational health will be discussed: Administrative practices; medical practices; surgical practices; education and training; social and legal aspects; environmental hygiene; influence of environmental factors in health; work physiology and psychology; specific industries; and general aspects.

The official languages of the Congress will be English, French, German, and Spanish. However, papers may be read in the language desired by the author.

Every one can master a grief but he that has it.—SHAKESPEARE

MEDICAL NEWS

Pediatric Refresher Course—Refresher courses in pediatrics are being offered at the University of Buffalo School of Medicine under the sponsorship of the Medical Society of the State of New York and the Bureau of Maternal and Child Health, New York State Department of Health. The courses, designed especially to meet the needs of general practitioners, will be held May 18 through 22, and June 1 through 5.

The courses will be a review of principles and recent developments in diagnosis and treatment of pediatric disorders and in care of the well child. Teaching will be done by the faculty of the University of Buffalo School of Medicine under the supervision of Dr. Mitchell I. Rubin, chairman of the Department of Pediatrics.

Application for enrollment in either of these two courses must be made prior to May 1. Request to enroll may be made to the offices of county or city departments of health, to State district health officers, or directly to the Bureau of Maternal and Child Health, New York State Department of Health, 84 Holland Avenue, Albany 8, New York.

Course in Pediatric Oncology—The Pediatric Department of the Memorial Center for Cancer and Allied Diseases will hold its annual three-day course in pediatric oncology for pediatricians, general practitioners, and health officers, April 29 through May 1.

Current developments and established methods in diagnosis, differential diagnosis, and management of benign and malignant tumors, Hodgkin's disease, leukemia and reticuloendotheliosis in childhood are included. There will be ward rounds, seminars, demonstrations, and examinations of children in pediatric, surgical, chemotherapy, and radiotherapy clinics.

The faculty will consist of 20 members of the attending staffs of Memorial Hospital and Sloan-Kettering Institute for Cancer Research. The class will be limited to 15 physicians.

For information address: Director, Pediatric Service, Memorial Center for Cancer and Allied Diseases, 444 East 68th Street, New York 21, New York.

Payment for City-Charge Patients Increased—Mayor Robert F. Wagner and Budget Commissioner Abraham Beame have announced that starting July 1, 1959, the rate of payment for the care of City-charge patients in the voluntary hospitals would be increased to twenty dollars per day. The City now pays the voluntary hospitals a flat rate of sixteen dollars per day.

Conference on Hair Growth—A conference on "Hair Growth and Hair Regeneration," sponsored by the New York Academy of Sciences Section of Biological and Medical Sciences, was held on January 31. Dr. Irwin I. Lubowe, New York City, was chairman of the conference. He presented a paper entitled "Clinical Aspects of Alopecia Areata."

Course in Radiation Procedures—A one-week intensive course in the use of specialized radiation technics in the treatment of malignant disease will begin on Monday, September 14, at the Queens Hospital Center.

Clinical, operative, and laboratory sessions will be held and will include: rotational and arc cobalt teletherapy; interstitial therapy with various radioisotopes; recent technics in the field of isotopes; beta-ray applicators; operative radium technics; and modern technics in radium mold fabrication.

Chairmen of the course are Dr. Leonard B. Goldman, director, and Dr. Gerald Shapiro, senior physicist, Radiation Medicine Department, at the Center.

For information contact: Dr. Philip J. Kahan, Supervising Medical Superintendent, Queens Hospital Center, 82-68 164th Street, Jamaica 32, New York.

Youth Conference on Atom—The first national Youth Conference on the Atom will take place in Atlantic City, New Jersey, on April 30 and May 1. The purpose of the conference is to present to the nation's most able high school science students and teachers an authoritative picture of the peaceful atom in all its various applications, and probably more important, to help advance interest in the study of science among the nation's youth.

Dr. John Laughlin, chief of the division of physics at Sloan-Kettering Institute for Cancer Research, will speak on the role of the atom in medicine.

Cleft Palate Rehabilitation Center Opened—A Cleft Palate Rehabilitation Center has been established in Suffolk County at Patchogue, Long Island. The Center has met the criteria established by the Medical Rehabilitation Bureau of the New York State Department of Health and has been approved by the State so that cleft palate cases may be accepted under the Physically Handicapped Children's Act of New York.

Nassau Academy of Medicine Dedicated—The Nassau Academy of Medicine was formally dedicated on December 7, 1958. The exercises were opened by Dr. John M. Galbraith, president-elect of the Academy. Dr. Abraham W. Freireich, president of the Nassau County Medical Society, acted as master of ceremonies. Dr. Henry Fineberg, president-elect of the Medical Society of the State of New York, acting officially for the president, Dr. Leo E. Gibson who was unable to attend, extended greetings from the officers and board of the State Society.

Also present at the ceremony was Dr. Louis H. Bauer, past-president of the Nassau County Medical Society, the State Society, and also of the American Medical Association. Dr. Bauer delivered an address calling upon doctors to maintain their vigilance against the loss of personal freedom and the creation of a lay-controlled system of medical care.

The cornerstone of the new building contains a lead box. Among the material enclosed in the box is a copy of the November issues of the *Journal of the American Medical Association*, *Nassau Medical News*, and the NEW YORK STATE JOURNAL OF MEDICINE.

Telecast of Grand Rounds—The eighth in the series of Upjohn grand rounds closed-circuit telecasts will take place from the Washington University School of Medicine, St. Louis, on March 18. The subject of chest disease will be taken up. Cases will be presented for discussion of neoplasm, pulmonary embolism, infectious processes, chronic pulmonary disease, and chest emergencies. In New York City the grand rounds may be viewed at the Hunter College Auditorium, 69th Street, near Park Avenue. The program is approved for credit, category II of the American Academy of General Practice.

Staff Promotions at Mount Sinai Hospital—Dr. Samuel Klein has been appointed attending surgeon at Mount Sinai Hospital. Among the other promotions and appointments announced in December, 1958, were the following: Dr. Eugene W. Friedman, associate attending surgeon for head and neck surgery; Dr. Gabriel P. Seley, associate attending surgeon for thoracic surgery; Dr. Martin C. Rosenthal, associate attending hematologist; Dr. Harry Talbot, assistant attending otolaryngologist; Dr. Stanley Edelman, Dr. Lawrence Essenson, Dr. Bernard E. Herman and Dr. Bernard P. Robinson, assistant attending surgeons; Dr. Melvin B. Victor, assistant attending surgeon for head and neck surgery; and Dr. Lloyd Silverman, senior assistant psychologist.

Dr. Gratz Visits Panama—Dr. Charles Murray Gratz, New York City, recently completed a tour of Panama and Haiti. Dr. Gratz discussed the most recent technics in orthopedic surgery with Panamanian medical authorities. Dr. Harry Eno, Samaritan Hospital, Canal Zone, helped supervise Dr. Gratz's trip through that area.

Unique Hospital—A unique hospital is located in the heart of New York City. The 1,000-bed hospital operates on only one weekend each month. It is the 635th United States Air Force Hospital (Reserve), 346 Broadway, New York.

The hospital is an organization made up of United States Air Force Reserve officers and airmen who train from 8:00 A.M. to 4:30 P.M. on the first Saturday and Sunday of each month and on one annual fifteen-day tour of active duty at a major Air Force hospital. The training sessions bring assigned personnel together for lectures, training films, and practical exercises to sharpen their medical, dental, or nursing skills and adapt them to a military hospital routine. These men and women, many of whom are outstanding physicians and dentists, will utilize their skills to run a 1,000-bed Air Force hospital if the unit is called to active duty in a national emergency.

A few position vacancies on the staff exist. Among them are general medical officers, internists, general surgeons, psychiatrists and psychologists; and general nurse, anesthetist nurse, and psychiatric nurse.

Commanding officer of the hospital is Col. Wilbur A. Smith, who is an associate medical director of the Equitable Life Assurance Society of the United States.

Research Grants for Hospital Administration—Grants totaling $76,047 for research in hospital administration and service have been announced by the Public Health Service of the Department of Health, Education, and Welfare. Among them are the following:

Cornell University, Ithaca—$19,895 for the first year of a three-year study of hospital-community relations.

United Hospital Fund of New York, New York City—$13,750 to complete an existing project on research and education in management and operations improvement.

Grants of this type, aimed at finding ways to improve the care of patients in hospitals and other health facilities, are made in connection with the Hospital and Medical Facilities Survey and Construction (Hill-Burton) Program.

New Booklet—A new booklet entitled *Your Future* has been released for general distribution by the New York State Department of Mental Hygiene. The booklet stresses the importance of preparing in advance for the years ahead when employment comes to an end, families have been raised and many activities formerly enjoyed must be forsaken because of failing health.

Single copies may be obtained without charge from the Office of Mental Health Education and Information, Department of Mental Hygiene, 217 Lark Street, Albany.

Sloan Foundation Gives Grant—New York University-Bellevue Medical Center has been made the recipient of a $150,000 gift from the Alfred P. Sloan Foundation, Inc., for the establishment of a radioisotope laboratory in Mr. Sloan's name.

The new laboratory will be an integral part of the research program of the Center's Institute for Cardiovascular Disease and will participate in the many cooperative research projects relating to diseases of the heart and blood vessels, including those of both a congenital and an acquired nature.

Tuberculosis Association Gives Grants—Five research grants totaling $35,520 have been awarded by the New York Tuberculosis and Health Association. Recipients of the grants, announced by Dr. J. Burns Amberson, general director of the Association, are:

Dr. Alvan L. Barach, clinical professor of medicine at the College of Physicians and Surgeons of Columbia University, a grant of $5,879 for the support of an investigation of the usefulness for diagnosing tuberculosis of a method he devised for obtaining bronchial secretions.

Dr. Aaron Himmelstein, assistant clinical professor of surgery at the College of Physicians and Surgeons of Columbia University, a grant of $4,761 to be used to investigate abnormally high blood pressure in the lungs.

Dr. Julia M. Jones, visiting physician in the Chest Service of Bellevue Hospital, a grant of $5,862 to support the study of the contagiousness of tuberculosis from patients who are receiving drug therapy.

Dr. John K. Lattimer, professor of urology at the College of Physicians and Surgeons of Columbia University, a grant of $7,518 to support research into the problems of genitourinary tuberculosis.

American Academy of Allergy—Seven doctors from the New York area served on the faculty of a postgraduate course which preceded the fifteenth annual meeting of the American Academy of Allergy in Chicago in February. They were: Dr. Carl E. Arbesman, Buffalo; Dr. Earl B. Brown, New York City; Dr. Arnold P. Friedman, New York City; Dr. Jerome Glaser, Rochester; Dr. Mary H. Loveless, New York City; Dr. William B. Sherman, New York City; and Dr. Harold G. Wolff, New York City.

Dr. Lytt I. Gardner, Syracuse, spoke on "Emerging Patterns of Organic Metabolism in Allergy" at the meeting following the course.

Grant for Study of Cardiovascular Rehabilitation—A grant of approximately $200,000 from the National Heart Institute of the United States Public Health Service to New York University-Bellevue Medical Center for a five-year study of cardiovascular rehabilitation has been announced by Dr. George E. Armstrong, director of the Center.

The project, which is concerned with preventive measures that will make possible the early recognition and delaying of coronary heart disease, is under the direction of Dr. Howard A. Rusk, professor and chairman of the Department of Physical Medicine and Rehabilitation, and Dr. Menard M. Gertler, cardiologist, associate professor, and director of research within the Department.

Doctors Speak on Antibiotics—The use of antibiotics in preventive medicine was discussed at a postgraduate teaching day at Albany Medical College on January 22.

Guest lecturer was Dr. Louis M. Rousselot, professor of clinical surgery at New York University College of Medicine. Other speakers included Dr. Samuel R. Powers, Jr., Dr. John J. A. Lyons and Dr. DuMont F. Elmendorf, Jr., of the Albany Medical College faculty.

Doctors to be Honored at Ball—The regents of the Long Island College Hospital are sponsoring a centennial ball to be held at the Hotel St. George, Brooklyn, on March 7. A highlight of the ball will be the attendance of ten centennial guests of honor. They are: Dr. Albert F. R. Andresen, Dr. Gaetano De Yoanna, Dr. Tasker Howard, Dr. William Averill Jewett, Dr. Ralph I. Lloyd, Dr. Harvey B. Matthews, Dr. Robert L. Moorhead, Dr. J. Sturdivant Read, Dr. Frederick Schroeder, and Dr. Thurston Scott Welton.

Research Grants Given to Downstate Medical Center—Five research grants totaling $71,649 were awarded by the National Institutes of Health of the United States Public Health Service to the State University of New York Downstate Medical Center, Brooklyn, during December, 1958.

A grant of $33,325 went to Dr. Bernard Schwartz for research on the metabolism of the lens. Dr. Seymour Van Wiemokely was granted $15,822 for the study of the use of hypnosis in the cure of cross-eyes.

Dr. Merel H. Harmel received $11,413 for research on the effects of muscular exercise in resuscitation. A grant of $8,841 went to Dr. Arthur W. Grace for the study of the physiology of blood vessels in living human skin and the remaining grant of $2,248 was given to Dr. Donald W. Kirschenbaum for research on a synthesis of thyroid hormone (thyroxine) from a polymeric compound containing iodine.

Personalities

Awarded

Drs. Bernard, Anthony, and Joseph Pisani, a plaque as an alumni achievement award from Fordham College for having achieved distinction in their profession.

Elected

Dr. Marcus D. Kogel, dean of the Albert Einstein College of Medicine, as a member of the board of directors of the New York Tuberculosis and Health Association . . . Dr. Arthur Purdy Stout, professor emeritus of surgery at Columbia University's College of Physicians and Surgeons, as president of the New York City Cancer Committee.

Appointed

Dr. David Abrahamsen, as visiting professor on the graduate faculty of political and social science at the New School for Social Research . . . Dr. Robert Boggs, New York City, as director of the basic research program of The National Fund for Medical Education . . . Dr. Ray K. Brown, Voorheesville, as associate director of the State Health Department's Division of Laboratories and Research . . . Dr. Paul C. Bunn, DeWitt, as a member of the board of visitors of Roswell Park Memorial Institute . . . Dr. Ruth Fox, New York City, as medical director of the National Council on Alcoholism . . . Dr. Matthew D. Levin, Lake Mahopac, as a member of the board of visitors of the Wassaic State School.

Speakers

Dr. Richard Bellucci, New York City, before the Ear, Nose and Throat Section of the New Jersey State Academy of Medicine . . . Dr. Cornelius Beukenkamp, Jr., at the sixteenth annual conference of the American Group Psychotherapy Association, January 23 . . . Dr. Charles D. Enselberg, director, Department of Cardiology, New York Polyclinic Medical School and Hospital, January 19, before the staff of the Forest Hills General Hospital, on "Cardiogenic Shock" . . . Dr. Ruth Fox, New York City, at the annual conference of the American Group Psychotherapy Association, January 24 . . . Dr. Lawrence Hinkle, Jr., New York City, at a conference of the New York Heart Association, January 27, at the Waldorf-Astoria Hotel . . . Dr. Lawrence K. Pickett, clinical assistant professor of surgery, State University College of Medicine, on "Elective Pediatric Surgery" at the monthly meeting of the Medical Society of Jefferson County, January 20 . . . Dr. Willard C. Rappleye, president of the Josiah Macy Jr. Foundation, January 21, on the topic "Medicine in New Dimensions" in the fifth in a series of laity lectures organized by the New York Academy of Medicine . . . Dr. Alan Austin Scheer, New York City, before the Ear, Nose and Throat Section of the New Jersey State Academy of Medicine, and also before the International College of Surgeons, Miami, Florida . . . Dr. Robert Turell, New York City, at the January 20 meeting of the Section of Surgery, New York Academy of Medicine, on "Problems in Anal Fissure, Anal and Anorectal Fistula and Anal Cancer" and on February 22 at the annual meeting of the California Medical Association on his film "The Thiersch Wiring for Massive Rectal Prolapse" . . . Dr. Irving S. Wright, professor of medicine, Cornell University School of Medicine, February 20, on "Recent Advances in the Use of Anticoagulants" at a cardiovascular seminar presented by the Northeast Florida Heart Association, Jacksonville, Florida.

Socrates said, "Bad men live that they may eat and drink, whereas good men eat and drink that they may live."—PLUTARCH

SUMMARY OF COUNCIL MINUTES

There follows a summary of the minutes of the December 11, 1958, Council meeting, as adopted January 8, 1959.

A MEETING of the Council of the Medical Society of the State of New York was held from 9:15 A.M. until 12:50 P.M. on December 11, 1958, at the Society's headquarters, 750 Third Avenue, New York City; Dr. Leo E. Gibson, president, presiding.

President Gibson stated: "Gentlemen, I would like to present to you Dr. Herbert T. Wagner, the gentleman who has assumed the duties of executive director. Dr. Wagner!" (*applause*)

Dr. Wagner replied: "I am delighted to be here with you. The welcome has been cordial from everyone I have met. I want to tell you that, as a part of the staff, I and the rest of us are ready to attend to the business as you, and the Board, and the membership need. Work with me. Come with problems and advice at any time, and I hope we will have a very happy, long association together." (*applause*)

The minutes of the November 13, 1958, meeting *were approved.*

Executive Committee

Communications.—Dr. Anderton stated:

"1. A letter of December 1, 1958, from the Manhattan Club, requesting a contribution to their employes' Christmas fund. The Executive Committee recommends that the Council request the Board of Trustees to appropriate $50 because we met there six months this year."

Approval *was voted.*

"2. Letter of November 14, 1958, from Dr. Norbert Fethke to Dr. Gibson expressing disappointment in the November action of the Council regarding the essay contest of the Association of American Physicians and Surgeons. The Executive Committee approved Dr. Gibson's reply and recommends that the Council reaffirm the stand taken in November."

Approval *was voted.*

"3. A letter of November 14 from Dr. George Himler, chairman of the Medical Advisory Committee to the Bureau of Disability Determinations, requesting the permission of the Council to stamp the words, 'Distributed with the approval of the Medical Society of the State of New York,' on the front page of their pamphlet, which is called 'Disability and Social Security: Evaluation of Disability,' when copies are distributed to hospital record rooms and to doctors who request them.

"The Executive Committee recommends that the Council grant this request."

It *was so voted.*

"4. A letter of December 7, 1958, from Dr. Ralph T. B. Todd describing his conference with Governor-Elect Rockefeller.

> Will you be so kind as to inform the Council of the Medical Society of the State of New York that, on Thanksgiving morning, I met with Governor-Elect Nelson Rockefeller and presented to him the "hopes" of the Council that he would continue the services of Dr. Herman E. Hilleboe as Commissioner of Health and of Dr. Paul H. Hoch as Commissioner of Mental Hygiene.
>
> As you know he had appointed Dr. Hilleboe the previous day. He stated that he was gratified and pleased to have the opinion and help of the Council concerning the possible appointment of the Commissioner of Mental Hygiene; he had not yet fully made up his mind and would thus have to devote further study and consideration to the subject, and in deciding he would bear in mind the opinion of the Council.
>
> As you know it has just been announced that he has reappointed Dr. Hoch.
>
> It is my private opinion that the conference held with Mr. Rockefeller on Thanksgiving did help him in this decision.

"5. Dr. Norman S. Moore requested that the Executive Committee consider the question of recognizing auto rental as an authorized mode of travel. He presented two vouchers which include claims for reimbursement of auto rental expense.

"The Executive Committee recommends that the Council institute a study of the general question of authorizing auto rental and, in the meantime, request the Board of Trustees to grant payment of the two vouchers."

Approval *was voted.*

Dues Remissions.—The Council *voted* to remit 1958 annual State dues of five members because of illness, 12 members because of military service, and one member because of financial hardship. The Council also *voted* to request remission of 1958 American Medical Association dues of six members.

Secretary's Report

Dr. Anderton presented the following: "It is a pleasure to report that the Board of Trustees, on November 13, 1958, approved all your requests with one exception. The Board referred back to the Publication Committee for report December 11, 1958, the proposal that a brochure be prepared with pictures, which would also appear in the JOURNAL, describing our new headquarters.

"On November 12, 1958, Dr. James W. Babcock commenced work at the New York City office of U.S. Veterans Administration as coordinator for Veterans Medical Service Plan of New York, Inc., replacing Dr. George O'Kane, who was disabled in an accident."

Dr. Anderton recounted his activities during the preceding month and reported that Dr. Herbert T. Wagner commenced his duties as executive director on December 1, 1958.

The Treasurer's report *was approved.*

Reports of Committees

Public Health and Education.—Dr. Norman S. Moore, chairman, stated he had attended four meetings and had arranged six postgraduate lectures and teaching days in five counties since his last report to the Council.

He reported: "The meeting on postgraduate medical education was held in the Public Health Council Room of the State Department of Health in Albany. The following doctors were present: Frank M. Woolsey, Jr., Associate Dean, Albany Medical College; Ernest Witebsky, Acting Dean, University of Buffalo School of Medicine; Marvin Bloom, Director of Research and Development, University of Buffalo School of Medicine; Linn J. Boyd, Director, Division of Graduate Studies, New York Medical College; Clarence De La Chappelle, Associate Dean, New York University Post-Graduate Medical School; Harvey Solomon, representing Robert A. Moore, Dean, State University of New York Downstate Medical Center; Milton Elkin, Chairman of Subcommittee on Postgraduate Education, Albert Einstein College of Medicine; Ralph C. Parker, Jr., representing Donald G. Anderson, Dean of the University of Rochester School of Medicine and Dentistry (Dr. Parker is also director of professional affairs of the Rochester Regional Hospital Council, Inc.).

"Also: Herman E. Hilleboe, Commissioner of Health; Granville W. Larimore, Deputy Commissioner of Health; Franklyn B. Amos, Director, Office of Professional Training, State Health Department; Ralph M. Vincent, Regional Health Director, Albany Region; Archibald S. Dean, Regional Health Director, Buffalo Region; Joseph P. Garen, Regional Health Director, Rochester Region; John T. Gentry, Regional Health Director, Syracuse Region; William R. Donovan, Regional Health Director, White Plains Region; Norman S. Moore, Chairman, Public Health and Education Committee, Medical Society of the State of New York; W. P. Anderton, Secretary, Medical Society of the State of New York; J. G. Fred Hiss, Chairman, Subcommittee on Heart Disease; Walter C. Allen, Editor, New York State *General Practice News;* Frederick K. Heath, Director, Professional Relations, Merck, Sharp and Dohme.

"The meeting began with a brief history of the functions of the Committee on Public Health and (Medical) Education from the turn of the century. It was soon established by the group that there was a great need in the field of postgraduate medical education, not all of which was being satisfied under present formulas. In addition to the 33,000 physicians in the State, there is a large number of ancillary professional personnel who need and should be given opportunity to avail themselves of postgraduate education.

"Under the present main formula postgraduate education has been centralized as far as the Medical Society of the State of New York and the State Department of Health have been concerned. During the time of this association, which dates back to at least the mid-twenties, there has been a rapid regional development of medical school influence upstate. It would appear that the medical schools of the State, with their departments of postgraduate education, might join the former two agencies and thereby bring about more adequate coverage of the needs. Attention was called to the possibility of wholesale pharmaceutical houses joining as another partner in the reorganization of the educational effort. In other words, the group agreed that the foremost objective was to keep the doctor up to date in order that he might practice good medicine. The group further agreed that the time had come to question the centralization of medical postgraduate educational procedures.

"This led to the discussion of the advantages of decentralization or regionalization of activities, which would bring the source of new medical developments closer to the consumer, and because of this closer relationship the consumer's needs would be more discernible and more readily met.

"In order to make this plan successful, however, decentralization would have to be carried out by a small central committee with a hard core of responsibility for the program. It would be impossible in a short meeting to define the exact pattern of decentralization, but all agreed that it should be on a medical school-regional basis because the latter conformed fairly closely to the regional public health areas with their regional health directors and, in some instances, regional hospital councils.

"It was brought out that a flexible pattern would be necessary to be successful. One medical school in New York City, namely, New York University College of Medicine, was described as having a pretty well-organized regional program already, which involved at least three states in a radius of 100 miles of New York City.

"How best to proceed for an upstate demonstration was not made clear. However, possible patterns were discussed, and one was described by Dr. Hiss of Syracuse, who is already using a workshop plan, and by Dr. Woolsey of Albany, who is already managing a regional plan from the Albany Medical School. It would seem that it is now the responsibility of the Committee on Public Health and Education, following the action of the House of Delegates in 1958 to enlarge its membership on a regional basis, to carry the lead in organizing a central body which would operate a decentralized program.

"It is strongly suggested by your chairman that thought be given to the organization of a 'scientific and educational trust' which would incorporate funds from interested foundations, pharmaceutical houses, the State Department of Health, county medical societies, and perhaps the State Medical Society. If it is the desire of the Council, your chairman will explore further a design for a pilot project, delineating objectives clearly, estimating costs, and outlining alternate ways of accomplishing the educational features desired."

After discussion, it *was voted* that the Council authorize the president to appoint a committee including Dr. Moore and one or two others, preferably in the field of education, with Mr. Martin, to look into the possibility of establishing an educational and scientific trust and report at the next meeting.

It *was voted* to accept this portion of the report.

Cancer Subcommittee.—Dr. Moore continued: "At the meeting of the Cancer Subcommittee on December 5 there was a unanimous recommendation for a cytologic screening survey of all adult female patients admitted to hospitals in New York State the first week of April, 1959. They propose that the hospitals equipped will do their own tests and that those not equipped will send the vaginal smears to the nearest qualified laboratory. For the indigent, the tests will be done at cost, and private patients will probably be charged the laboratory rate which is suggested by most hospitals, $3.00.

"The yields to date, the committee says, are four cervical cancers per 1,000 white patients screened by the method and nine cervical cancers per 1,000 patients screened in Negroes. The Subcommittee on Cancer will do all implementation if you approve.

"1. County medical societies and the district cancer societies will be apprised of the project and their approval invited.

"2. A letter will be written by the committee to the hospitals of the State inquiring as to their willingness to cooperate in such a program.

"3. Publicity will be arranged in the NEW YORK STATE JOURNAL OF MEDICINE, in the *Newsletter* of the State Medical Society, and in publications of the Hospital Association.

"4. The Woman's Auxiliary will be asked to assist in promotion of the program.

"The Subcommittee on Cancer requests: (1) Council approval of the survey; (2) that the secretary make known the Council's approval to the county society secretaries; and (3) that the Council authorize the president to sign a letter of information which will be compiled by the chairman of the subcommittee, Dr. John G. Masterson, to be sent to all county societies.

"I reviewed this with Dr. Masterson yesterday, and he has it worked out well. He thinks that it is time that the Medical Society took a definite forward, aggressive step in cancer detection, and this is a good way to do it."

In discussion, it was brought out that emphasis should be properly placed on the fact that the patients will give individual permission for the tests.

Approval *was voted.*

Diabetes Subcommittee.—Dr. Moore stated: "At a meeting of the Subcommittee on Diabetes yesterday, I can report that peace has been made between the State Health Department and the State Diabetes Association and the Medical Society regarding differences which for years have prevented the three getting together in a joint intelligent approach to the diabetic survey problem."

It *was voted* to adopt the report as a whole.

Legislation.—Dr. James M. Blake, chairman, reported as follows: "The regional meetings with county legislation chairmen have been continued, with sessions at Schenectady on November 18, Kingston on December 2, and Buffalo on December 4.

"There have been several references during these regional meetings to the possibility of having a meeting of all of the County Medical Society Legislation committee chairmen after the first of the year when the Legislature is in session. Meetings of this type were held in years gone by, and some who participated in them seem to feel that they are quite desirable and are anxious to have a session again this coming year. I am not familiar with how beneficial these meetings were in the past but, based upon the requests I have had, would suggest that consideration be given to one during 1959.

"If this meets with your approval, I would be very glad to proceed with the arrangements. It has been suggested that the Society assume the financial responsibility for the details of the meeting and provide lunch for those attending but have each county society assume the individual expense for its county chairman or his delegate.

"I have received a call from Dr. John Roach, president of the New York State Radiological Society, advising that their organization is planning to introduce legislation pertaining to the practice or radiology. I have, however, made arrangements to meet Dr. Roach before the Council meeting and can give you a report at that time.

"Your chairman has contacted Governor-Elect Nelson A. Rockefeller, offering the services of the Legislation Committee of the Medical Society of the State of New York relative to medical legislation."

Dr. Blake stated: "Just a couple of referrals in addition to my report. I mentioned the discussion that came up on several occasions about having a meeting similar to what had been held in the past after the Legislature is in session in January. This has been a pro and con discussion in various subcommittee groups, and I would like to suggest, if it meets with your approval, that we arrange to have a meeting of our Legislation Committee in January or February and invite the chairmen of local county committees to come if they desire."

After discussion, approval *was voted*, it being understood the county society chairmen pay their own expenses.

Dr. Blake continued: "I referred also in my report to a communication from Dr. John Roach, president of the New York State Radiological Society. I have met him and have established a liaison with the State Radiological Society.

"The Subcommittee for the Study of Licensure of Laboratories has had its first meeting and has sent a detailed report, which I will submit for the record. In brief it refers to the fact that they have met with a committee of the technologists of the state association and apparently have in part reached an agreement. They have approached it from four different possibilities:

"1. The possibility of legislation requiring laboratories to be under supervision of a licensed physician who would assume the responsibility for technicians.

"2. The possibility of revision of the sanitary code for the approval of laboratories, all laboratories, by the Department of Health, similar to the approved laboratories at present.

"3. That they establish a court case for decision regarding the Medical Practice Act; and

"4. The avoiding of the usage of laboratories that are not under physician direction, as previously attempted in some communities.

"This committee at the moment desires legislation that would amend Subdivision 4 of Section 6501 of the Education Law, which would restrict clinical pathological laboratories to be under the direction of a licensed physician. They are, however, having further meetings on this following contact with our legislation advisers."

The complete report was also considered.

"The committee plans to meet again after further consultation with the legal advisers of the Medical Society of the State of New York. The committee also hopes to continue close cooperation with the Empire State Association of Medical Technologists and the societies representing the pathologists of New York State."

Dr. Blake continued: "Dr. Smith has met our legislation advisers on one occasion and is planning another shortly. Our program will become more active after January 1, based upon the various bills that we will introduce and that may be introduced from some other source."

It *was voted* to adopt the report as a whole.

Hospital and Professional Relations.—Dr. Raymond S. McKeeby, chairman, stated: "Most of our committee work has been carried on by communication, by telephone, and by mail. However, we have scheduled a meeting for January 7. Also we are negotiating with the Hospital Association for a suitable date late in January or early in February for a meeting with them.

"You are aware that resolution 58–51, in regard to fees for cardiographic interpretation, was referred to this committee. The proper distribution of the resolution has been made, and also we will bring it up at the meeting with the Hospital Association.

"Beekman-Downtown Hospital, 170 William Street, is now offering an expanded health review service to firms located in the downtown area of New York who do not employ a physician for this purpose. It consists of pre-employment and periodic health examinations for both employe groups and executives. They state that the examination will consist of complete history, physical examination, urinalysis, serologic report, white blood count, hemoglobin, and chest x-ray. The charge is $20 per individual. This fee also covers any additional examination found necessary by the examining physician to determine employability, and the statement goes on to detail an executive group examination; the charge for this service is $65 per individual.

"This information has been sent by a member of he Society, and in his opinion such activity on he part of this hospital is highly questionable, nd I would appreciate your opinion regarding the ractice. This letter was referred to me. I would sk your permission to visit this hospital and see xactly what is going on and be able to report to ou later so that we can form an opinion."

After discussion, this portion of the report *was dopted.*

Dr. McKeeby continued: "Another problem acing the committee is a communication from Dr. Moore, in which at a meeting of the Subcommittee n Mental Hygiene last spring one of its suggestions f the subcommittee to the Committee on Public Health and Education was to press for psychiatric units in general hospitals.

"Dr. Moore is probably the person to open the discussion as the chairman of the committee. He writes, 'There is a feeling, as you know, that the diagnosis of mental disease should be the affair of general hospitals and should be supported by Blue Cross.'

"Also a letter was referred to this committee which was addressed to Dr. Gibson. It was from Dr. Henry T. Randall, a rather scholarly, well-thought-out letter. He reviewed, first, some of his experiences with full-time medical men associated with teaching institutions and some of their experiences with certain phases of medicine. He wants representation of the professors and full-time teaching men on our joint committee with the Hospital Association. He feels that such men would be able to offer a certain type of opinion located between that of the Medical Society of the State of New York and the Hospital Association. He feels also that they should be a part of that joint committee.

"We will make that topic a part of the agenda of the Hospital Association meeting in January."

After discussion, it *was voted* to accept the report.

Office Administration and Policies.—Dr. Anderton presented the following report for Dr. John J. Masterson, chairman: "The committee approved purchase of additional chairs for the lounge at a cost not to exceed $80 and purchase of a bookcase for not more than $10.

"Because of the poor appearance of some of our mimeograph work, it was voted to purchase an offset printing machine at a cost not to exceed $3,700. The Council is requested to ask the Board of Trustees for an appropriation of this amount."

Approval *was voted.*

The report continued: "It was also voted to request approval to charge the budget for moving expense for these three items, the total amounting to $3,780."

It *was so voted.*

"A listing of building employes, postmen, and others, with suggested cash Christmas gifts was reviewed. The amount totaled $357, an increase of $125 over last year. A budgetary increase of $125 is requested to cover the addition."

Approval *was voted,* with reference to the Board of Trustees.

"There was referred back to the committee from the Council the matter of employes' physical examinations. It was voted that a pre-employment physical examination, including chest x-ray, be required with the understanding that the report be sent directly to Dr. Wagner. It was also voted to recommend to the Council that the custom of offering physical examinations to the staff be continued, but with the added understanding that employes sign a statement that the report be sent to the State Society's office."

After discussion, Dr. Anderton, in the name of the committee, accepted change of the last sentence, substituting "to Dr. Wagner" for "to the State Society's office."

It *was then voted* to approve this portion of the report.

Dr. Anderton continued: "Dr. Wagner reported that he had a conference with department heads. This included preparation of a table of organization, position and job descriptions for each individual within each department, a schedule of job specifications, and, after completion of this work, a schedule of personnel qualifications needed to fill each job.

"The closing of the office at noon, on December 24 and December 31 was approved."

It *was voted* to approve the report as a whole.

Supplemental Lease.—Dr. Mott, chairman of the Board of Trustees, stated: "The Council has approved the renting of additional space in the basement of this building for storage. A supplemental lease has been approved by our counsel and by our legal consultant in real estate matters. I, therefore, move that the chairman of the Board of Trustees be authorized to sign this lease for the Society."

Approval *was voted.*

Publication.—Dr. Alfred P. Ingegno, chairman, reported: "Mr. Chairman and gentlemen, the committee met yesterday and discussed publishing an announcement and factual material concerning the essay contest sponsored by the Association of American Physicians and Surgeons on the subject of the 'Advantages of Private Medical Care' or 'The Advantages of the American Free Enterprise System.' It was voted to do so provided the Council approved."

After discussion, it *was voted* to disapprove publication of the material with respect to this essay contest.

Dr. Ingegno continued: "Further information was received by the committee on a proposal that certain pharmaceutical companies underwrite the cost of publishing in our JOURNAL the pharmaceutical aspects of new preparations. The intent is to reduce the time lag between the date when original research is done on new pharmaceutical products and the date the practicing physician can read about them in the medical journals. It was voted to give the matter further study before making definite recommendations.

"Preparation of a brochure showing views of the Society's offices was deferred, as the matter had been referred back to the committee by the Board of Trustees. If this is to be carried any further, a report will be made at a later date."

Approval *was voted* of the report as amended.

Constitution and Bylaws.—Dr. Ezra A. Wolff, chairman, stated: "I have to report concerning proposed amendment to the bylaws of the Ninth District Branch. I move this Council approve it."

It *was so voted.*

Economics.—Dr. John C. McClintock, chairman, presented the report of Mr. George P. Farrell's activities during the preceding month.

Dr. McClintock stated: "The Subcommittee on Medical Expense Insurance met on October 9, 1958, in the Council Chamber of the State Society to consider and act on the resolutions referred to it. Pages 16 to 20 contain the report of this meeting."

"In August there was an editorial in the STATE JOURNAL having to do with doctors being paid for filling out insurance forms.

"It is recommended that the NEW YORK STATE JOURNAL OF MEDICINE print the following at an early date. (*See January 15, 1959, issue, page 226.*)

It *was voted* to adopt this portion of the report.

Dr. McClintock continued: "Your Committee on Economics suggests that the following foreword be printed in the manual of procedures of the Medicare program:

> Curtailment of the allowable services in civilian installations under the Medicare program became effective October 1, 1958. These restrictions were necessary because Congress sharply limited the funds to support this program. Further changes are anticipated next year, and whether Medicare continues or is further limited will depend upon the cooperation of all concerned, including physicians, in effecting maximum economies.
>
> Elective surgery is no longer authorized from civilian physicians in civilian installations. Even if the dependent has a permit from the Service Commander, this does not authorize surgical procedures that are not truly emergency in character. They will not be paid for from Government funds under Medicare when obtained from civilian sources. Until Congress authorizes a change in the program the following procedure is, therefore, to be followed in submitting claims.
>
> For procedures now authorized (see special *Newsletter* October 1) the procedure and code number as listed in this manual will be inserted in Item No. 22 and 23 of the claim form. Physicians are requested to enter as their claim in Item No. 24 that fee they would normally charge for the services rendered to persons of like standards of living in their locality.
>
> In the event of any change in the Medicare program, you will be promptly notified.

This portion of the report *was adopted.*

"The committee suggests that a letter be sent to the county societies and to physicians who inquire, the gist of which can be the following:

> Thank you very much for your inquiry of (date).
>
> At the present time no part of the schedule of allowances for Medicare in the State of New York is being printed for the following reasons:
>
> 1. The status of Medicare is uncertain. The 85th Congress failed to appropriate sufficient funds to operate the plan as in the past, necessitating drastic curtailment of the civilian part of the program.
> 2. Because of these restrictions, no elective procedure is authorized in a civilian institution by a civilian physician.
> 3. Economies must be achieved by all parties involved, and since Medicare operates with tax money (your money) the New York State Division of Medicare, with the approval of the Council of the State Society, is not printing the fee schedule.
>
> The master copy of the schedule of allowances is at the headquarters office at the above address and is available for inspection by any fully licensed physician eligible to give such care as is now authorized under Medicare.
>
> If you determine from the new manual of procedures that a service is authorized, please enter as your charge in Item No. 24 that fee you would send to a patient with like standards of living in your community."

Dr. McClintock moved adoption of this part of his report, but Dr. Wagner was requested to read telegrams he had received, from the president of the Medical Society of the County of Oneida, the president of the Onondaga County Medical Society, the president of the Medical Society of the County of Erie, and the secretary of the Medical Society of the County of Niagara, all urging that the Medicare schedule be published with fees.

After discussion, it *was voted* to table the motion to adopt the foregoing letter.

It *was voted* that the Council amend its action with regard to publication of the Medicare schedule of allowances to include the publication and distribution to each county medical society secretary of one copy of the full fee schedule.

Dr. McClintock stated: "Bear in mind, gentlemen, we are obligated to send the new manual of procedures to about 34,000 physicians in this State, including all of the fully licensed osteopaths."

It *was voted* to take the foregoing letter from the table.

Dr. McClintock moved to amend the letter in the wording that was questioned, "The master copy of the schedule of allowances is at the headquarters office at the above address and is in the possession of each secretary of a county medical society."

This was seconded by Dr. Wurzbach and *carried*.

Dr. McClintock stated: "The portion of the report under which I hoped this discussion would arise I think now is not necessary. It was suggested yesterday that we draft a letter to be sent to each county medical society explaining the reasons why the schedule of allowances was not being printed. There (*indicating torn pieces of paper*) is the draft of a letter which by your action is obsolete, and the new letter will have to be drafted, explaining why we are sending a copy to each county medical society, what they are to do with it, and so on. I move you, sir, the adoption of the report as a whole as amended."

It *was voted* to adopt the report as a whole as amended.

Dr. McClintock stated: "I think we should go back and formulate a reply to the telegrams which have come in to you and to the executive director. I would suggest that the president be requested to inform each county society president that one copy of the full schedule of allowances for Medicare will be sent to each county medical society secretary with full instructions."

It *was so voted*.

Subcommittee on Medical Expense Insurance.—The minutes of the October 9, 1958, meeting were submitted: "Dr. Ackerman introduced Dr. Charles A. Mangi of Queens to present to the subcommittee the action taken by his society on resolution 58–11, presented to the House of Delegates by the Medical Societies of the Counties of Oneida, Herkimer, and Madison.

"This resolution urges that the State Society urge New York State Blue Shield Plans to formulate and effectuate a plan similar to the Wisconsin Physicians Service, a plan without a fixed schedule of allowances.

"Dr. Mangi stated his society was in favor of such a plan, whereby doctors would charge their usual fees, and, if out of line, fees would be presented to a central committee for adjudication.

"Dr. Ackerman pointed out that such a plan was not feasible for New York State because of the variation in doctors' fees throughout the State and the fact that the Wisconsin plan's enrollment was 40,000 as compared to the millions in New York State. It was further pointed out that it was doubtful if the State of New York Insurance Department would permit the New York State plans to sell this type of contract.

"Dr. Mangi was excused, and, following discussion, motion was unanimously carried that the subcommittee disapprove adoption of the features of the Wisconsin plan, disapprove urging New York State plans to formulate such a plan, and recommend to the Council that this resolution be referred to the special committee considering medical care insurance in the State, and to notify the special committee of this subcommittee's recommendation regarding the resolution."

After discussion, Dr. McClintock stated: "In moving adoption of this portion of the report I would say that we transmit the resolution in question, with the subcommittee's recommendations, to the special committee studying the problem, for their recommendations."

The motion *was adopted*.

The minutes stated that resolution 58–8 was considered by the subcommittee. This dealt with medical services in Blue Cross contracts. The committee agreed with the principle of this resolution.

The minutes stated further: "It was agreed that Blue Shield Plans should formulate plans for diagnostic services, such as x-ray, to prevent overutilization of hospitalization. Dr. Needham suggested that we continue to oppose the inclusion of these services in Blue Cross contracts.

"Motion was unanimously carried that Blue Shield coverage be so arranged that it encompass these medical services, x-ray, anesthesiology, pathology, and physiotherapy, both in and out of the hospital. If this action is adopted and approved by the Council, the committee requests Blue Shield and Blue Cross plans in the State be so informed."

After discussion, approval *was adopted*.

"The subcommittee considered resolution 58–17, regarding hospital and medical care of acutely ill infants under ninety days of age. The subcommittee recommended that newborn infants should be covered from birth in Blue Cross and Blue Shield coverage. If this action is adopted and approved by the Council, the committee requests Blue Shield and Blue Cross plans of the State be so informed."

Approval *was voted*.

"Resolution 58–23 was considered by the subcommittee. This resolution asks that the State Society go on record that an amendment to Article 250 of the Insurance Law making all reimbursements for paramedical services permissive on the part of IX–C corporations rather than compulsory.

"After discussion in the subcommittee, the motion was carried that the resolution as submitted to the House of Delegates be modified to read, 'Resolved, that the Medical Society of the State of New York go on record declaring that an amendment to Article 250 of the Insurance Law of the State of New York making all reimbursement for paramedical services permissive on the part of the IX–C corporations rather than compulsory' and that this recommendation be made to the Council with the suggestion that the resolution as amended be referred to the Legislation Committee for implementation."

After discussion in the Council, *it was voted* to amend the resolution by inserting the words "be presented" between "Insurance Law of the State of New York" and "making all reimbursements."

After further discussion, it *was voted* to refer this part of the report back to the Medical Expense Insurance Subcommittee for reconsideration and rewording.

"Resolution 58–37 was considered by the committee and, on motion unanimously carried, was approved with the suggested minor revision—that the county societies invite representatives from the State Society and other interested groups to their respective counties for consultation regarding the development of their medical care programs.

"Resolution 57–48 was considered by the subcommittee. This resolution was first considered at a meeting of the subcommittee in January, 1958. A member of the subcommittee at that time explained that this resolution was presented apparently because of a misunderstanding in legal terminology regarding the inclusion of dentists and podiatrists in Blue Shield plans and that it had been satisfactorily clarified.

"Dr. Ackerman stated that, following the House of Delegates meeting, Dr. Frank A. Graniero, president of the Medical Society of the County of Oneida, had written him for confirmation of action taken on this resolution at the February 22 and 23, 1958, joint meeting of the subcommittee, Blue Shield plan trustees, and managing directors. Dr. Ackerman read Dr. Graniero's letter with specific reference to his statement that they had been advised that at this meeting the managing directors readily stated that the setting of fees for physicians by nonmedical groups was unthinkable and would never be allowed to occur in Blue Shield contracts in this State.

"Dr. Ackerman referred to the Standards for Approval of New York State Medical Care Plans, which carry a provision that the boards of directors must include a majority of physicians, and he therefore felt that the doctors are setting fees in these approved plans. He further stated that it was one of the functions of this committee to receive any complaints where such practices are not being carried out.

"On motion unanimously carried, the committee recommends to the Council that a letter be sent to the Medical Society of the County of Oneida embodying the following points: That the Standards for Approval of New York State Plans, as approved by the Medical Society of the State of New York, require control by physicians on the boards of directors and under such control the physicians do establish fees and further recommend that, if there are any complaints relating to 'rating committees other than medical groups' setting such fees, such complaints should be referred to the Subcommittee on Medical Expense Insurance."

Approval *was voted.*

Dr. McClintock stated: "I would like to call your attention to the volume of work that has appeared before this Council from the Economics Committee and its subcommittees in the past several months. It is increasing, and I would like to suggest that, in your discussions with your county societies, that implementation, when and if it becomes possible, under the modification of our bylaws to establish a commission, or call it what you will, to handle matters of this type will be very helpful. The responsibility is enormous, and as you know it rests on only three people. Three is hardly enough to cover the work that has been coming before you from the Economics Committee and its subcommittees.

"I move the adoption of the report as a whole as modified."

The report as a whole as amended *was adopted.*

Workmen's Compensation.—Dr. Gerald D. Dorman, chairman, stated: "The Compensation Fee Schedule was promulgated two days ago by the chairman of the Workmen's Compensation Board, Miss Angela Parisi. It has been sent to the printer. It will require about four weeks there. Then it will be in the hands of the Compensation Rating Board, who have to figure out the new rates that must be charged to employers. The effective date of the new fee schedule will be the first of March, 1959; but the fee schedule has been set.

"The fees for general visits are $5.00 for the first visit and $3.50 for the second visit. The State, Society had recommended $4.00 for the second visit, and they had also been backed up in that by the general practitioners group, but the final decision was that it would be $3.50, not with any concurrence by the Medical Society. However, when the hearing was held in Albany and Miss Parisi heard our side of it and the side of the compensation carriers, when she was told that it would cost the employers $1,800,000 for each additional 25 cents on revisits, which make up 71 per cent of the cost of compensation, she decided to set that revisit fee at $3.50.

"I would only report further that your director has been busy at hearings, arbitrations throughout

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*Trademark for glucosamine-potentiated tetracycline

[Continued from page 900]

the State, and the usual work of the Compensation Committee."

After discussion, approval *was voted.*

Dr. Dorman stated: "I have a letter that came to Dr. Anderton from Dr. Frank LaGattuta, secretary of the Bronx County Medical Society that I would like to read though it is to be noted that the situation has changed since this was written on December 1, 1958:

> It has come to our attention that various local medical societies have been approving a resolution which would enable their members to charge regular fees for all compensation cases beginning November 1, 1958, because of the delay in instituting a new fee schedule.
>
> This problem was discussed by our comitia minora Tuesday evening, and it was the feeling of that body that it would undoubtedly promote far more beneficial results if a meeting could be arranged with the person who will become the new chairman of the Workmen's Compensation Board next month.
>
> Our comitia believes that if a group of State Society representatives were to explain the reasons for restlessness on the part of physicians and the sequence of events over approximately the last six months, we would better be able to enlist the cooperation of the new chairman rather than by passing resolutions which would only complicate his position upon assuming office.
>
> We would appreciate it if this proposal could be put on the agenda for the next meeting of the Council.

"I believe this situation is pretty well taken care of; I just brought it up for information."

President Gibson stated: "On page 51 of the minutes, the last paragraph of Dr. Dorman's report of last month, it was also suggested that a permanent conference committee be set up to discuss future revisions of the fee schedule, overtreatment of patients, undue charges by physicians, and other items of mutual interest. This committee would consist of four persons, one from the State Medical Society, one from the compensation carriers, one from the self-insured group, and one from the Workmen's Compensation Board. This committee would be advisory only.

"I now have a letter from Miss Parisi requesting the appointment of such a member from the Medical Society of the State of New York to this advisory committee. I would request permission to appoint Dr. Gerald D. Dorman to represent the State Society on this committee."

Permission *was voted.*

Woman's Auxiliary, Advisory to.—Dr. Thurman B. Givan, chairman, reported: "I have two minor things to bring up. One is that the ladies have asked me about when we will get the constitution and bylaws through. Dr. Wolff, I guess, now has that in his hands.

"Another is that the ladies have been active throughout the counties in furnishing information to the community through their committees on Blue Shield plans. Also I show you the new *Distaff*, the fall conference issue (*holding it up*), which is very well done. On the back page the seven Blue Shield Plans throughout the State recognize that and give the ladies credit."

Ethics.—Dr. Harold R. Brown, chairman, stated: "I have a letter from Dr. Wagner in which he says he received a request for some information from the president of the medical board of a Staten Island hospital. There are in fact three requests, one referred to Ethics. The question concerned substitute work in obstetrics, and he said:

> I have reviewed the material on pages 15 and 16 of our booklet, *Principles of Professional Conduct*, and I am in doubt as to whether or not this materially really answers the question raised.
>
> In the instance of the absence of an attending obstetrician, a colleague may step in and conduct a delivery. The absence of the intended attending physician may be temporary, in which case the situation may be termed emergent. In other instances, he may be absent on vacation and the substitution is planned.
>
> Apparently, in many instances the fee for the service will have been established between the intended attending and the patient. In fact, the entire fee may have been paid to this physician prior to the time of delivery.
>
> The board concerned specifically does not wish to impinge upon good ethics, but they ask if, in the above situations, it is ethical for the substitute physician who does the work of delivery to be paid a fee. Often the patient may not even recognize the substitute or she has no sense of dependency on him and does not respond to his billing. This is further complicated if the fee has already been paid to the originally intended physician.
>
> The resultant question therefore is, "Is it ethical for the intended attending to prorate the fee and to send a check to the substitute?"

"My answer, in the letter I am sending, is that there is an Article IV, Section 5, in our *Principles of Professional Conduct* which seems to cover this situation. It says, in such a case: 'When a doctor of medicine attends a woman who is in labor because the one who was engaged to attend her is absent, the doctor of medicine summoned in the emergency should relinquish the patient to the first engaged on his arrival. The one in attendance is entitled to compensation for the professional services he may have rendered.' So I think the situation is covered adequately in that section.

"If there is any disagreement as to the application of these sections to a given case, the facts should be presented to the proper committee of the county society for settlement. As a matter of fact, I wonder whether the State Society Committee on Ethics should deal in questions from lay people where the county society has not been consulted previously. Up until this point we have largely

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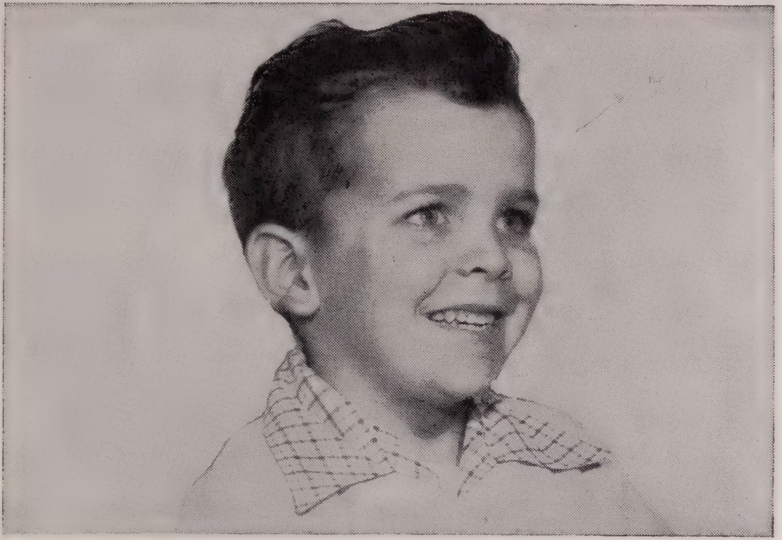

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not considered matters unless they were channeled through the county societies and have not considered matters directly from lay people. I would like information on that, and I move that reply be approved."

Approval *was voted.*

Public Relations.—In the absence of the chairman, Dr. John F. Rogers, Dr. John C. McClintock presented the report. The end of annual district branch meetings was noted. Publicity about combatting staphylococcal infections was reported. "Medical Legislation—A Perennial Problem," a tape recording, was announced, from the recent conference of county medical society public relations committee chairmen.

The report states: "Representatives of the bureau attended regional meetings of the Legislation Committee. Mr. Miebach attended two meetings in Minneapolis, the Medical Society Executives Association and the Clinical Session of the American Medical Association.

"Your chairman, the director, and Mr. Tracey attended the symposium on voluntary health insurance which was cosponsored by the First District Branch and the New York State School of Industrial Labor Relations of Cornell University at the Hotel Commodore, New York City, on November 12 and 19. Your chairman reports that this meeting brought together representatives of labor, management, and the medical profession and was very worth while. He hopes that similar symposiums, perhaps on a smaller scale, may be developed, possibly by our Society Committee on Labor Union and Industrial Health Clinics.

"Postgraduate lectures presented in the following counties were given publicity by means of news releases in Albany, Cayuga, Jefferson, Putnam, Rensselaer, Steuben, and Suffolk counties. In addition to distributing releases concerning the appointment of our new executive director, Dr. Herbert T. Wagner, announcements were sent to interested parties, and the December *Newsletter* featured a front page story.

"The Bureau continued to assist the Woman's Auxiliary. There was planned a letter by the chairman of the Advisory Committee, Dr. Givan, outlining ways in which the county auxiliaries can better assist the county medical societies, and there was prepared a letter for the State president to send to members of the county auxiliaries. Help also was given to the chairmen of the health poster contest committee, the press and publicity committee, and the program and membership committees.

"At the request of the chairman of the Committee to Combat Cults, Dr. Blake, a compaign is being conducted by the bureau to obtain the services of physicians who are interested in publicly discussin the State Medical Society's stand against th licensing of chiropractors. The bureau has receive the names of 40 physicians who are interested Many have indicated willingness to discuss th chiropractic issue. These names were obtained a a result of an appeal entitled 'Calling All Doctor Interested in Public Speaking' which appeared in the November *Newsletter* and a letter sent to th public relations chairmen of the seven metropolitan county medical societies. In order to train physicians interested in discussing chiropractic in public, a training program of two sessions is being prepared. In addition a special kit of material which these doctors can use will be available soon for distribution.

"Following the November meeting of the Council the bureau took steps to implement its action empowering the bureau to assist in the formation of a State-wide organization of medical assistants associations.

"Newspaper men and free lance writers continue to contact the bureau for assistance in preparing articles and stories. Among the publications assisted were the *American Weekly* and *Medical Economics.*

"Carrying out a recommendation of the committee made at its recent meeting, the bureau has contacted the New York Telephone Company for the purpose of getting better publicity for emergency call services in telephone books. Telephone books usually contain a special section in the front of the book devoted to instructions for making emergency calls. For example, 'In an emergency dial the operator, tell her this is an emergency call, give her your telephone number, and say, "I want to report a fire."' The staff is exploring the possibility of having a caption such as, 'I need a doctor,' inserted in this section.

"Arrangements have been completed with the producer of 'Hi Mom,' a New York City television program, telecast Mondays through Fridays, from 9 to 10 A.M., on Station WRCA–TV, Channel 4 of the National Broadcasting Company, for a weekly series of ten-minute interviews with local physicians on medical and health subjects of interest to mothers, children of preschool age, and expectant mothers. The bureau is responsible for securing the speakers. They are scheduled to begin this month. We plan to have members of all five local county medical societies in the metropolitan area appear on the program with a different physician and subject each week. Mr. Schuyler, who has worked on the program, reports that it has an estimated average viewing audience of about one and three quarter million persons per week.

"The time has come again to sit down with

[Continued on page 906]

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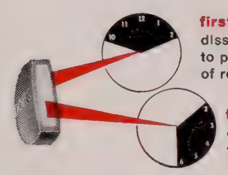

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[Continued from page 904]

representatives of the press, radio, television, and the legal profession to renew and review the 'Guide for Cooperation for Doctors, Hospitals, and Reporters' and 'The Standards of Practice for Doctors and Lawyers.' The bureau is setting dates for these meetings."

It *was voted* to adopt the report.

Cooperation with Media of Information.—Dr. John C. McClintock, chairman of the subcommittee, stated: "It is customary for the 'Guide for Cooperation for Doctors, Hospitals, and Reporters' to be annually reviewed and renewed. Through this meeting and an exchange of ideas the present relations are based on a State level. I am sure with many of the counties they have been improved. It is planned to hold that meeting following the Council meeting, January 8, 1959.

"The lawyers' meeting is coming up either in February or in March to review the existing 'Standards of Practice for Doctors and Lawyers.'

"With your permission, therefore, it is requested by the subcommittee to hold these meetings in this Council room."

Approval *was voted.*

It *was voted* to adopt the report as a whole.

Staphylococcal Infections.—Dr. James Greenough, chairman, stated: "You have before you a copy of the first edition of the Staphylococcal Manual, which appeared the first of December. There are 1,500 copies printed offset, an inexpensive method of printing. There will be a few errors in it, and undoubtedly there will be a number of suggestions for corrections, additions, or deletions. I hope that any of you who have suggestions will send them to me, and I will see that they are acted upon.

"A decision has to be made in probably the next week whether we will run more copies of this preliminary manual or whether we should have a long-range plan which we will have at some time to combine this with the guide for the control of infections in hospitals and produce it in a permanent edition. At present there are nowhere near enough copies to go around. It is planned to distribute them to the Hospital Association, to the Medical Society, and to hospitals throughout the State, and to the county medical societies. There have already been a number of requests for copies, and I think it quite possible that we will run off another four or five thousand before we have a permanent edition.

"It is the desire of the Joint Committee that the people in New York State, the doctors and hospitals, should receive this without cost. That is why you were requested for the appropriation which was made several months ago, for our quarter of the total cost. The permanent edition or final edition will probably be provided free to some institutions in New York and doctors, but also will be available in quantity or any other way, not only for New York State but elsewhere. The Health Department has a publication organization, nonprofit, which is able to publish this and get it paid for when it goes outside of the State.

"I hope you will look this over, and, if you have any suggestions in regard to it, please send them in."

Rural Medical Service.—Dr. Edward C. Hughes, chairman, stated: "A meeting is to be held January 15 with the heads of various departments of the Agricultural Extension Service, Farm Bureau, and Home Demonstration groups to set up a program."

Ad Hoc Committee on Labor Union and Industrial Health Centers.—Dr. Joseph A. Lane, chairman, reported: "A meeting of this committee was held yesterday afternoon. Two particular matters came up. The first was a letter dated October 7, 1958, from Dr. Mira, director of the Bureau of Industrial Health and Workmen's Compensation, concerning matters pertaining primarily to union health centers. There were two main items in this letter: (1) Establish greater coordination with the local county medical society through an advisory committee to which would be sent representatives of the local county medical society.

"In other words, the intent was to ask these union health centers to cooperate with the local county medical societies. After discussion, Dr. McClintock moved that the medical care plans established in any community should cooperate with the local county medical society and that every county medical society in the State, when called upon to cooperate with one of these plans, exert its influence to achieve the best possible medical care for all of the people under the plan. The motion was passed."

After discussion, this part of the report *was approved.*

Dr. Lane continued: "The second point was: (2) That all union health centers under the supervision of the State Welfare Department subscribe to the principle of free choice of physician to be made available to the beneficiaries of the union health center.

"After discussion, it was moved that all health centers under the State Welfare Department should provide the best quality of medical care, with the advice of the county medical society in cooperation with its advisory committee. This was passed."

It *was voted* to adopt this portion of the report.

"The second major item of business concerned the symposium conducted by the Coordinating

[Continued on page 908]

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[Continued from page 906]

Council of the First District Branch on November 12 and 19, at which the attitude of labor, management, and medicine on voluntary health insurance was presented.

"It was the impression of those who were present that labor had speakers who presented what they felt were the types of medical care that should be provided for employees. Three of the speakers were rather radical in their demands, but the other one seemed to have a more reasonable approach. The representatives of management did not have such a well-defined policy as labor and did not make as definite an impression. Mr. Miebach stated that the meeting on November 19, which neither Dr. Rogers nor I could attend, did not add much to the matter presented the previous week.

"In the committee meeting yesterday there was considerable discussion concerning this symposium, and it was definitely the impression that an effort should be made to have interviews with representatives of management and labor as soon as possible so that a report may be made to the Council within the next three or four months. It was felt that the meetings with representatives of management and labor should be separate, although it is possible that a joint meeting would be considered later, depending upon the attitudes in the preliminary meetings. It is realized that the symposium may have been the first step in laying the ground work for a better understanding between all parties. It is also the hope of the ad hoc committee that a definite recommendation for improvement of relations between the three interested groups can be made at a later date."

After discussion, it *was voted* to adopt the report as a whole.

Special Committee to Study the 1958 Management Survey Report.—Dr. Renato J. Azzari, chairman, stated: "Mr. President, the committee has not had a meeting since last month. I felt we should give the new executive director an opportunity to familiarize himself and perhaps study the survey report so that we might have the benefit of his opinions."

Advisory Committee to the Columbia University Study of Nonprofit Medical Insurance Plans in New York State.—Dr. John C. McClintock, chairman, reported: "Dr. Trussell held a meeting in West Point last Thursday and Friday, at which Dr. Ackerman was an observer. He submits the following report: 'Drew no conclusions. There was no voting. Much time was spent discussing information for arriving at Blue Cross and hospital rates. The opinion was general that hospital costs will go higher, and the factors involved were the need to raise hospital wages to a standard level, the increase in costs of technical services, the continuing spiral of inflation. The problem of hospital utilization was not developed. There was unanimity of opinion that education is needed to inform the public as to the facts in the problem of hospital costs.' "

Report of Delegation to the American Medical Association.—Dr. Thurman B. Givan, chairman of the delegation, reported: "The delegation of the Medical Society of the State of New York to the house of delegates of the American Medical Association attended its interim meeting in Minneapolis, Minnesota, December 2, 3, and 4, 1958.

"The delegation consisted of Drs. d'Angelo, Anderton, Azzari, Di Natale, Dorman, Flood, Galbraith, Gibson, Givan, Greenough, Kenney, John J. Masterson, Moore, Murray, Rawls, Wertz, and Wolff. Two alternates, Drs. Eggston and John F. Kelley, also attended.

"Breakfast meetings of the delegation, enhanced by the presence of Dr. Louis H. Bauer, were held in Room 843 of the Hotel Leamington, December 2, 3, and 4.

"Business of the house and candidates for certain offices were discussed. At reference committees your delegation was represented as follows: Reports of Officers, Dr. Eggston; Medical Military Affairs, Dr. Dorman; Miscellaneous Business, Dr. Kenney; Sections and Section Work, Dr. Di Natale; Amendments to the Constitution and By-laws, Dr. Moore; Reports of Board of Trustees and Secretary, Dr. Galbraith; Hygiene, Public Health, and Industrial Health, Dr. Flood; Legislation and Public Relations, Dr. Gibson; Medical Education and Hospitals, Dr. Murray; Rules and Order of Business, Dr. Wolff; Insurance and Medical Service, Dr. Givan.

"These gentlemen reported to the delegation.

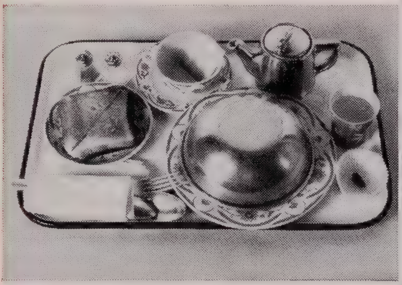
"At the December 3 meeting, Dr. Gerald D. Dorman resigned as chairman of the delegation and Dr. Thurman B. Givan was elected chairman and Dr. Renato J. Azzari, cochairman, both unanimously.

"Important resolutions were discussed at our meetings, as were supportive plans for Dr. Dorman as candidate for American Medical Association trustee and Dr. Kenney as candidate for vice-president. On December 3, Dr. Anderton was instructed to send to each member of the American Medical Association house of delegates two letters regarding these two candidates. These instructions were cancelled the following morning.

"That was because of certain things that came about in discussion with other state delegations. I might say that, following discussions with various members of your delegation who had again talked to other delegations from various states, it was thought by a great number of your delegates that it would be unwise to support two candidates from this

[Continued on page 910]

CORN FLAKES



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[Continued from page 908]

State at one time. I am saying this more or less for information, and, whether you wish to take action or wish to ask me to get in touch with the delegation, it is up to you to help me decide since we are responsible to the House of Delegates who elected us as members of the house of delegates of the American Medical Association.

"A letter from Dr. J. F. Montague, 104 East 55th Street, New York City, regarding fluoridation of public water supplies was referred by the delegation to the Council because it advocated a change of policy.

"Our hospitality room was eminently successful. Drs. Moore and Greenough made excellent arrangements and provided delicious viands. Your delegation recommends that similar hospitality be extended to our fellow delegates and friends at the American Medical Association meeting in Atlantic City next June.

"Several important matters were considered by the house of delegates, such as those dealing with medical care of the aged—I think almost all of the delegation have received a preliminary report from Dr. Blasingame in this regard, but many of you have not—also on medical care plans, medical education, Medicare, and paramedical personnel. Many of the things I might say that were discussed here this morning were taken up by these various committees of the American Medical Association. For instance, the idea of free choice of physician, I might mention, was discussed in our insurance and medical care plans committee at length. The definition of 'free choice of physician' was postponed to the Atlantic City meeting next June.

"A summary of action of the house of delegates will be published in the December 15, 1958, *American Medical Association News.*"

Dr. Anderton explained that Dr. Montague's letter about fluoridation was discussed by the Executive Committee and referred by them to the Committee on Public Health and Education.

President Gibson asked for suggestions as to what letters Dr. Givan should write in support of candidates from this Society.

This question *was tabled* until the January meeting.

New Business

Date of February Meeting.—

It *was voted* to hold the February, 1959, meeting on Lincoln's Birthday, the second Thursday of the month.

Statement on Behalf of the Board of Trustees.—At the request of Dr. Mott, chairman of the Board of Trustees, the Council *voted* to go into executive session.

Following the executive session, Secretary Anderton made a report which, on motion of Dr. McClintock, seconded by Dr. Moore, was ordered to be deleted from the record.

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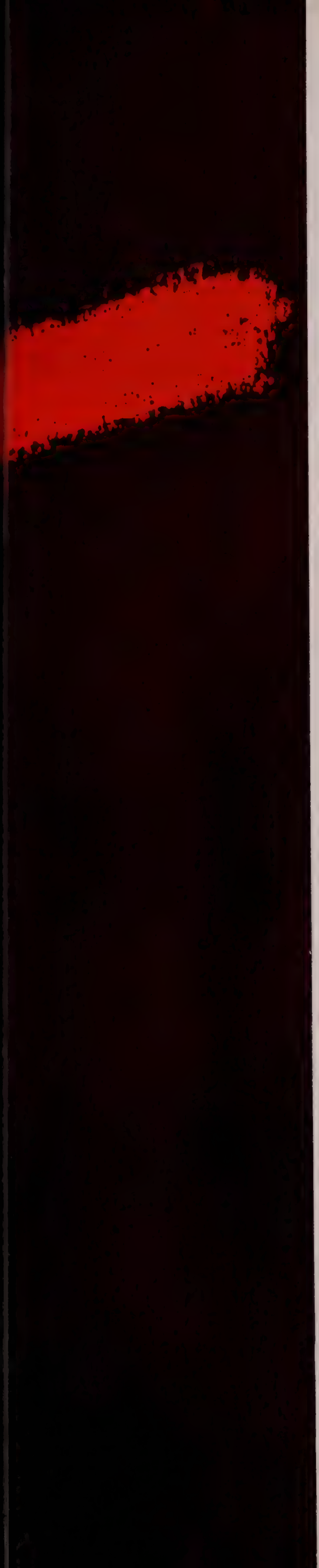

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1. Editorial, New England J. Med. 258:48, 1958.
2. Vinnicombe, J.: Antibiotic Med & Clin. Ther. 5:474, 1958.
3. Sheth, U. K., et al.: Ibid., p. 604, 1958

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FILM REVIEWS

The following films have been selected by the Subcommittee on Film Review of the Medical Society of the State of New York. These films are available on request from the Medical Film Library of the New York State Department of Health, 84 Holland Avenue, Albany 8, New York. Films will be sent on request to any qualified individuals or organizations. Return postage is paid by the user. Catalogs of films available for both professional and lay use are available on request.

The subcommittee believes that films are essentially audio-visual aids, and best effects are obtained by preceding or following a film with a discussion or question and answer period presided over by a professional person familiar with the topic presented.

The Diagnosis of Poliomyelitis. Classification: Medicine; Pathology; Public Health. Black and white, sound, 20 minutes. Produced for the Poliomyelitis Foundation, 1951.

This picture follows a physician from the moment he is called in to treat a young boy with "grippe-like" symptoms to the time he arrives at his diagnosis of poliomyelitis. It reviews, by means of clinical examples, the outstanding symptoms of spinal and bulbar poliomyelitis that should be looked for during the physical examination and presents examples of the conditions with which polio is most frequently confused. In addition, the film gives graphic information on the pathology of poliomyelitis and on the significance of findings in the cerebral spinal fluid.

It is basically correct and emphasizes several unusual features of diagnosis.

Audience: Medical students, residents, nurses, general practitioners.

Principles of Respiratory Mechanics—Part 1. Classification: Physiology; Medicine. Color, sound, 20 minutes. Produced by the National Foundation for Infantile Paralysis with the help of the Department of Physiology, Harvard School of Public Health, Boston, Massachusetts; Respiratory Center for Poliomyelitis, Hondo, California; Poliomyelitis Respiratory Center, University of Michigan, Ann Arbor, Michigan; and Southwestern Poliomyelities Respiratory Center, Houston, Texas, 1955.

This film illustrates the mechanical behavior of the lungs in normal and pathologic states using animated drawings, mechanical models, and both normal subjects and patients with respiratory conditions. The film deals with such basic concepts as elastic and resistive properties of the lungs and pressure volume relationships. It is excellently produced and arranged and is repetitive enough so that elementary medical students can receive a visual concept of principles that are difficult to explain by much less than working models, graphs, and clinical cases.

Audience: Medical students, physicians, nurses.

Fractures of the Femur About the Hip. Classification: Orthopedics; Anatomy. Color, sound, 20 minutes, 40 seconds. Produced for the Veterans Administration by Churchill-Wexler Film Productions, 801 North Seward Street, Los Angeles 38, California, 1954.

This is a teaching film. There is no intention that this be a "how-tó-do-it" film though elements of certain technics are inevitably shown. It is intended to give the student an understanding of certain accepted methods of treatment, that is, maintenance of reduction by internal fixation or by traction, rather than to teach him any given technic for accomplishing the result. Most important, however, is the intention to give the student an understanding of the problems and principles underlying the methods of treating fractures about the hip.

The anatomy of the region about the hip is shown with special emphasis on the blood supply to the head and neck of the femur. Treatment is detailed for fractures of the femoral neck and for intercondylar fractures. The relative merits of maintenance of reduction by nailing or by traction are discussed.

Audience: Medical students, orthopedic residents, orthopedic surgeons.

Erythrocytic States of Plasmodium Vivax. Classification: Medicine; Clinical Pathology. Black and white, sound, 4 minutes, produced in 1954.

Designed to depict, for medical, public health, and parasitology students, sanitarians, and laboratory technicians, the appearance and behavior of living malaria parasites within infected red blood cells, this motion picture, by means of the phase

[Continued on page 916]

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1. Alexander, L.: Chemotherapy of depression—Use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride. J.A.M.A. 166:1019, March 1, 1958.
2. Current personal communications; in the files of Wallace Laboratories.

Literature and samples on request

WALLACE LABORATORIES, *New Brunswick, N. J.*

[Continued from page 914]

contrast microscope, shows: (1) ring stages, (2) young and mature trophozoites, and (3) schizonts of Plasmodium vivax.

Audience: Medical students, residents.

Nephrosis in Children. Classification: Pediatrics; Medicine. Color, sound, 18 minutes. Produced for the National Nephrosis Foundation, Inc., in June, 1954, under the medical supervision of Robert E. Cooke, M.D., associate professor of pediatrics and physiology, Yale University School of Medicine and Grace New Haven Community Hospital.

This film illustrates the early stages of nephrosis and continues to demonstrate later developments in the disease. The clinical and biochemical features of the disease are admirable and simply presented. Emphasis is placed on recovery and hope for children with this malady despite the lack of knowledge of its etiology or specific measures for its treatment. The film is slightly superficial in its handling of the subject and of course must be supplemented with additional material. It is doubtful if any but the largest of clinics could assemble so much clinical material for a presentation of this sort and this enhances its teaching value.

Audience: Medical students, medical and pediatric interns and residents, practitioners.

The Psychological Aspects of Cancer. Classification: Oncology; Medicine; Surgery; Psychiatry. Black and white, sound, 30 minutes, kinescope. Produced in 1954 for the American Cancer Society by a group of physicians from the Memorial Cancer Center, New York City. This is a kinescopic recording of a television program.

This film attempts to depict the emotional impact of the diagnosis of cancer on a patient. The emotional sequence of events is divided into the anticipatory or preoperative phase, the operative phase, and the postoperative or reparative phase. The physician and surgeon must bear the responsibility for handling the emotional sequence of events which occur with cancer patients. Special problems present themselves and the amputee's problems will be different from those patients who have disfiguring facial surgery, mastectomy, or colostomy. The film suffers from inferior photography but otherwise presents this important subject well.

Audience: Physicians, medical students, nurses.

Foxgloves in Medicine. Classification: Pharmacology; Medicine; Cardiology. Color, 16 mm., sound, 26 minutes. Produced by the Wellcome Foundation, 1952.

This film is an excellent historical review of the evolution of digitalis as a therapeutic agent. The pharmacognosy of digitalis lanta and purpurea is given, and also the complete production story of digoxin, from the time the leaves are harvested through the isolation of the purified glycoside.

The normal physiology of the heart, the relation between heart action and electrocardiograms, and the therapeutic effect of digoxin are shown by means of well-conceived and descriptive animated drawings. The pharmacologic action of digoxin is demonstrated in isolated mammalian and frog hearts and its efficiency in the treatment of congestive heart failure is clinically illustrated in human subjects.

Audience: Medical students, cardiologists, internists.

The Autonomic Nervous System. Classification: Neurology; Anatomy; Pharmacology; Medicine; Surgery. Color, sound, 39 minutes. Produced by Duke University School of Medicine and distributed by the National Foundation of Infantile Paralysis, 1953.

Starting with animated diagrams the film portrays sympathetic as well as parasympathetic nervous systems. Indication of the effects of some enzymes and drugs is included. This is followed by a demonstration of the autonomic nervous system on a cadaver. At times this demonstration is tedious and not clear. The film is accurate and will serve as an excellent introduction or a review of a difficult subject. It is not a sufficient presentation in itself.

Audience: Medical students, residents, surgeons.

Plague Control (Navy Code No. MN–4049). Classification: Bacteriology; Public Health. Color, sound, approximately 24 minutes. Produced in the U.S. by the U.S. Navy, in collaboration with Pathescope Company of America, Inc., 1944–1945.

An arresting film on the clinical manifestations, epidemiology, distribution, technics for control of epidemic plague, and therapy. Presented in verbally well-organized but visually uneven form. The problems presented are slanted to a military audience facing potential contact with native populations in endemic areas, but the principles taught will find application wherever plague is a potential or active public health problem.

Audience: Medical students; public health workers, including sanitarians and engineers; medical practitioners (in event of an epidemic); students of medical entomology and advanced bacteriology.

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LETTER TO THE EDITOR

The Cliché Specialist Takes the Stand

To the Editor:

I thought you might like the enclosed for your column.

While fictional, Doctor Smith is by no means imaginary. I've run into him at a number of medical meetings and read a great deal of what he's published.

(With apologies to Frank Sullivan and *The New Yorker*)

(*Scene: A courtroom. Attorney Hays is questioning Doctor Smith. who has just taken the stand.*)

Doctor Smith, I understand you're a specialist in medical clichés?

That's right, Mr. Hays.

How did you come to qualify in such an unusual field?

Constant monitoring, Mr. Hays. Combing the litera—combing the world literature. With a staff of highly trained experts, I might add.

You must certainly have learned a lot.

I don't claim to know all the answers. But I've gained a deepening awareness of the implications.

Implications, Doctor Smith?

Of the role of the psyche. The psychosocial factor—the thing the busy practitioner is apt to overlook. It's a sine qua non if you're going to maximize patient recovery.

Sounds awfully complicated.

Needn't be, Mr. Hays. Not if you have a battery.

Did I understand you to say battery, Doctor Smith?

Battery of tests. Multiphasic screening. Complete clinical evaluation—

Is clinical evaluation ever anything but complete, Doctor Smith?

There is no case recorded in the literature.

Thank you. Now will you please explain the purpose of the clinical evaluation?

It weighs the possibilities, Mr. Hays. It's a head-to-toe check-up. A meeting of minds bringing the best to bear—

What do you get then?

Results, Mr. Hays, results.

What kind of results?

Why, indeterminate, of course.

Er—isn't that a trifle disappointing?

Not at all, not at all. We must remember that clinical medicine is an art, not a science. Conquest.

Is there something on your mind, Doctor Smith?

The full weight of scientific medicine is being brought to bear on the conquest of disease.

How does it do that?

It explores the avenues, verifies the validity, and ascertains the statistical significance. Surely you've heard, Mr. Hays—teams of topflight scientists using the multidisciplinary approach. Nation-wide survey featuring an inclusive, yet easy to answer questionnaire. Bringing the total resources of government, private and—

I see the subject lies close to your heart, doctor.

It should, Mr. Hays. There's no standing still. Either we march ahead or inevitably fall behind in the parade of progress. That's the present thinking.

Then the day of the solo practitioner—

Is drawing to an end. The subject matter is too complex for the individual to encompass. A man must stick to what he knows. Otherwise.

Otherwise, Dr. Smith?

Otherwise he'll express unguarded opinions.

Just how do you get around expressing opinions—unguarded, of course?

You establish the consensus.

What's that?

The results neither confirm nor exclude the hypothesis.

I can't see where that's any use.

Tut, tut! Let's not throw out the baby with the bath, Mr. Hays!

Yes, but where does it leave you?

Why, sir, with the pragmatic approach. Testing the patient with the full therapeutic spectrum. Then following developments closely. Watchful waiting. Constant laboratory check. Iatrogenic.

What's up now, Doctor Smith?

We must be careful not to implant the seeds of iatrogenic disease.

How?

By avoiding dogmatism. The physician must not set himself up as an authoritarian figure. But he owes an obligation to the patient not to hedge. He weighs the evidence. He is always reassuring, yet makes no attempt at concealment—

[Continued on page 920]

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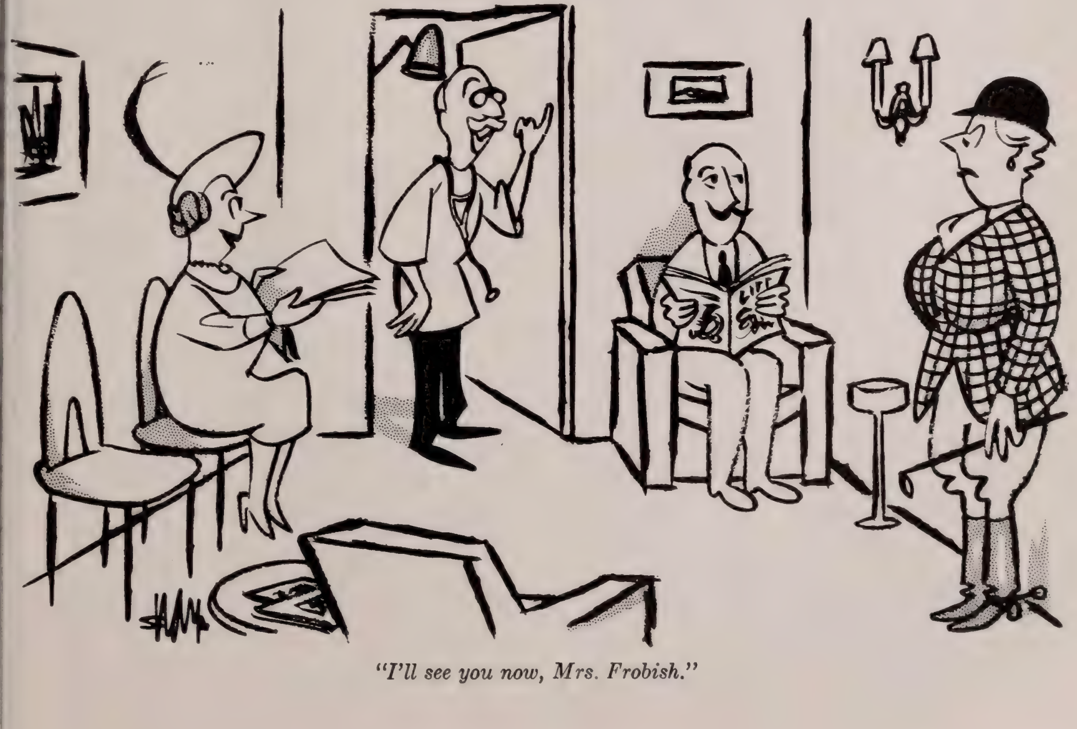

"I'll see you now, Mrs. Frobish."

[Continued from page 918]

Why does he do all that?

To achieve optimal results. But we're not getting to my favorites, Mr. Hays.

Then please carry on, doctor.

Response.

Well?

The response is dramatic, equivocal, significant, unpredictable, questionable, convincing, striking, conclusive, gratifying—

Phew!

They're not all that hard, Mr. Hays. Take prognosis.

Yes?

The prognosis is guarded.

Always?

Always. Do you think you're catching on, Mr. Hays?

Well, I'm a little bewildered.

Chin up. It merits study. I've only been able to cover the high spots in the allotted time. Do you mind if I see what you've learned, Mr. Hays—evaluate the preparation, so to speak?

I—I suppose I could try. . .

Ready, then, here goes! I give you—research!

Well, er, let's see, doctor—intensive research?

Good start.

Give me a minute . . . . . concentrated research?

Uh-huh.

Here's one for you—*total* research!

You're hottening up, attorney!

How's this for a blockbuster—*depth* research!

Professional, Mr. Hays, positively professional! *All-out* research, *crash* research—!

Hold on, sir, hold on! I fear for my laurels!

(*Doctor Smith jumps from the stand, grasps the attorney's hand and shakes it vigorously. Smiling broadly, they turn expectantly toward the photographers.*)

Russell V. Fuldner, M.D.

178 Sherman Avenue
New Haven 11, Connecticut

Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

Physicians' Home

THE Physicians' Home has begun its fortieth year for raising and distributing funds to elderly physicians, their wives or widows, who through financial hardship would be otherwise unable to live within their own communities without public welfare help. As the years pass, the span of life increases and more and more elderly colleagues and their families live on to the period when they can no longer support themselves through their professional activities, and many who had hoped to support themselves at this time through their savings find their yearly incomes hopelessly inadequate for even their minimum needs. Thus, each year the plea for an increase in donations has had to be made.

Through the years, the auxiliaries to the county medical societies have been active in fund-raising activities for the Physicians' Home. Auxiliaries have raised money through luncheons, flower sales, bridges, and fashion shows. Aside from the monetary contributions by the auxiliaries, some county auxiliaries, especially that of the Orange County Medical Society, have visited the doctors and widows in their community who are beneficiaries of the Home.

During the 1957 to 1958 year, $100 was contributed by the Woman's Auxiliary to the Medical Society of the State of New York and amounts ranging from $1.00 to $350 were contributed by the county auxiliaries. This year, the Auxiliary will continue its whole-hearted support of the Physicians' Home and will strive to increase its donations as well.

Mrs. Leonard Bases, *Chairman*
Physicians' Home

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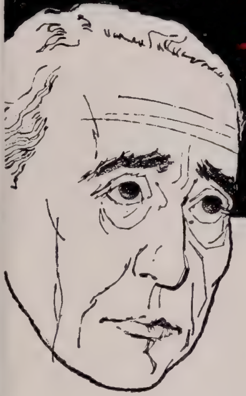

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'Deaner' must not be confused with tranquilizing or sedative drugs which may aggravate depression. On the contrary, 'Deaner' is often used to counteract drug-induced depression.

'Deaner' is valuable as an emotional normalizer in many situations other than depression, such as behavior problems with agitation. Nor should 'Deaner' be considered an ordinary stimulant. Its gentle action differs from that of other stimulants in that it leads to increased useful energy and alertness without the undesirable side effects of the amphetamine-like drugs.

Literature and bibliography available upon request.

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Deaner leads to better ability to concentrate, increased daytime energy, sounder sleep (with less sleep needed), and a more affable mood.

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Deaner is valuable in the treatment of children, especially those whose performance is impaired by behavior problems, whose attention span is too short, and who are emotionally unstable, unpredictable, and unadaptable.

Dosage: Initially, 1 tablet (25 mg.) in the morning. Maintenance dose, 1 to 3 tablets; for children, ½ to 3 tablets. Three to four weeks of therapy may be required for maximum benefit.

Riker Northridge, California

NEWS FROM THE MEDICAL SCHOOLS

Albert Einstein College of Medicine

Grants—Grants received during the month of January were: Department of Medicine and Department of Obstetrics and Gynecology from United Cerebral Palsy, $9,501 and $30,970 for "Investigation of Certain Factors Effecting Myelination in Vitro" and "The Effects of Maternal Stress Upon Fetal Oxygen Supply and Anaerobic Metabolism in Man and the Experimental Animal"; from the National Institutes of Health to the Departments of Obstetrics and Gynecology, Pharmacology, and Surgery, $23,023, $18,630, $22,398, and $20,004, for "Influence of Fetal and Placental Steroid and Gonadotrophic Hormones on Fetal Testis Androgen Synthesis and in Genital Tract Differentiation and Development," "Studies on Renal Physiology," "Behavioral Effects of Drugs in Macaca Mulatta," and "Pathologic Physiology of the Scarred Ureter in Dogs"; from the Damon Runyon Memorial Fund to the Department of Pathology, $10,200 for "Biochemical Cytology of Ascites Form of Rat Hepatoma"; from the Muscular Dystrophy Association of America to the Department of Rehabilitation Medicine, $15,000 for "Patients' Service Program," and from the Tobacco Industry Research Committee to the Department of Surgery, $17,500 for "Effects of Cigaret Smoke and Extracts on Tissue Cultures."

Visiting Lecturers—During the month of January the following were guest lecturers: Dr. Daniel Steinberg, National Institutes of Health; Dr. Jules Hirsh, Rockefeller Institute; Dr. Paul Gallop, biophysicist, Long Island Jewish Hospital; Drs. George Baehr and Stanley Lee, Mount Sinai Hospital; Dr. Gabriel Goodman, Columbia University College of Physicians and Surgeons; Dr. Halstead Holman, Rockefeller Institute, and Dr. Bernard Davis, Department of Microbiology, Harvard University.

State University of New York Downstate Medical Center

Appointed—Dr. Henry C. Stoll, formerly associate chief cancer research pathologist, Roswell Park Memorial Institute, Buffalo, and associate in pathology, University of Buffalo School of Medicine, as clinical assistant professor of pathology; Dr. Morton Seldowitz, Brooklyn, to the post of clinical professor of pediatrics.

Grant—A gift of $3,000 marked for research in cancer has been presented to the Downstate Medical Center by the Sidney Gelb Chapter for Cancer Research.

The Sidney Gelb Chapter for Cancer Research, with a membership of 50 women from Brooklyn and Long Island, was established last October in memory of Sidney Gelb, a resident of Jamaica Estates, Long Island. Mr. Gelb, who died of cancer in August, was a patient of Dr. Clarence Dennis, professor of surgery at the Downstate Medical Center, during his illness.

In addition to their fund-raising projects, members of the Sidney Gelb Chapter are assisting as volunteers in the Downstate Medical Center's tumor clinic at Kings County Hospital and in other cancer projects of the department of surgery.

Research Society—The Research Society of the Downstate Medical Center held its 123rd monthly meeting on January 14. A paper on the viscosity of blood under a wide range of normal and diseased conditions was presented by Dr. Herbert Lichtman, associate professor of medicine.

Dr. Robert S. Speirs, assistant professor of anatomy, presented a theory of antibody formation based on observations of changes of certain cells from one type to another at a time which coincides with the first appearance of the antibody.

A discussion of their extension of the work in which some anemias have been shown to be due to a hereditary blood defect which makes the subject susceptible to certain drugs or other substances was presented by Drs. Sinih Fikrig and R. Janet Watson, teaching assistant and associate professor of pediatrics, respectively.

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Fundamental Principles of Wound Treatment	Dr. Frank Glenn
Metabolic Response to Injury	Dr. James A. Nicholas
Bone Metabolism in Fracture Healing	Dr. Melvin Horwith
Injuries to Abdomen	Dr. Samuel W. Moore
X-Rays in Fracture Treatment	Dr. Nathaniel Finby
Treatment of Shock	Dr. John M. Beal
Anaesthesia in Trauma	Dr. Joseph F. Artusio
Injuries to the Chest	Dr. Cranston W. Holman
Indications for and Technique of Tracheostomy	Dr. James A. Moore
Open Fractures	Dr. Robert L. Patterson
Back Injuries	Dr. Peter C. Rizzo
Head Injuries	Dr. Bronson S. Ray
Pathological Anatomy of Intra-Cranial Injuries	Dr. Milton Helpern
Injuries to Spinal Cord	Dr. Herbert Parsons
Fractures of Spine	Dr. Philip D. Wilson, Sr.
Antibiotics in Trauma	Dr. Peter Dineen
Fractures of Pelvis	Dr. John W. Draper and Dr. Paul W. Braunstein
Trauma to Genitourinary System	Dr. Victor F. Marshall
Auto-Crash Injury Research	Dr. Paul W. Braunstein
Pathological Fractures	Dr. Robert L. Patterson
Treatment of Multiple Injuries	Dr. Preston A. Wade
Injuries to Ligaments and Cartilages of Knee	Dr. Frederick Lee Liebolt
Fractures of Knee	Dr. Frederick Lee Liebolt
Injuries to Blood Vessels	Dr. Jere W. Lord, Jr.
Fractures of Elbow	Dr. T. Campbell Thompson
Fractures of Humerus	Dr. William Cooper
Fractures of Shoulder	Dr. Philip D. Wilson, Jr.
Peripheral Nerve Injuries	Dr. Howard S. Dunbar
Dislocations of Hip	Dr. T. Campbell Thompson
Intracapsular Fractures of Hip	Dr. Preston A. Wade
Intertrochanteric Fractures of Hip	Dr. Carleton M. Cornell
Fractures of Femoral Shaft	Dr. Preston A. Wade
Fractures in Children	Dr. Preston A. Wade
Treatment of Burns	Dr. Herbert Conway
Facial Wounds and Fractures	Dr. Herbert Conway
Eye Injuries	Dr. John M. McLean
Amputations	Dr. T. Campbell Thompson
Fractures of Forearm	Dr. Paul W. Braunstein
Fractures of Carpal Bones	Dr. Irvin Balensweig
Colles' Fractures	Dr. Rolla D. Campbell, Jr.
Fractures of Hand	Dr. L. Ramsay Straub
Fractures and Dislocations of Foot and Tarsus	Dr. Philip D. Wilson, Sr.
Fractures of Ankle	Dr. Robert L. Patterson
Fractures of Tibia and Fibula	Dr. Rolla D. Campbell, Jr.
Cross-leg Flaps for Injuries to Leg	Dr. Herbert Conway
Operative Treatment of Fractures	Dr. Preston A. Wade
Fractures of the Mandible	Dr. Stanley J. Behrman
Injuries to Hand	Dr. L. Ramsay Straub
Joint Motion and Physical Therapy	Dr. Howard D. Balensweig
Management of Mass Casualties	Dr. Paul W. Braunstein
Treatment of Non-Union	Dr. Preston A. Wade

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BOOKS RECEIVED

(The following books were received during the month of December, 1958)

The Broadened Program for Construction of Hospitals and Related Facilities. New York State Joint Hospital Survey and Planning Commission. Albany. Quarto of 85 pages, illustrated. Paper.

Lipidoses. Diseases of the Intracellular Lipid Metabolism. Third revised and enlarged edition. By Siegfried J. Thannhauser, M.D. Octavo of 600 pages, illustrated. York, Grune & Stratton, 1958. Cloth, $19.75.

Ego Psychology and the Problem of Adaptation. By Heinz Hartmann, M.D. Monograph series No. 1. Duodecimo of 121 pages. New York, International Universities Press, 1958. Cloth, $3.00.

Cardiac Arrest and Resuscitation. By Hugh E. Stephenson, Jr., M.D. Octavo of 378 pages, illustrated. St. Louis, C. V. Mosby Co., 1958. Cloth, $12.

Problems of Addiction and Habitation. By Paul H. Hoch, M.D., and Joseph Zubin, Ph.D. Duodecimo of 250 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $6.50.

Nutrition and Atherosclerosis. By Louis N. Katz, M.D., Jeremiah Stamler, M.D., and Ruth Pick, M.D. Octavo of 146 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $5.00.

Streptomycin and Dihydrostreptomycin. By Louis Weinstein, M.D., and N. Joel Ehrenkranz, M.D. Octavo of 116 pages, illustrated. New York, Medical Encyclopedia. Cloth, $4.00.

Chloromycetin (Chloramphenicol). By Theodore E. Woodward, M.D., and Charles L. Wisseman, Jr., M.D. Octavo of 159 pages, illustrated. New York, Medical Encyclopedia. Cloth, $4.00.

Clinical Obstetrics and Gynecology. Volume 1, No. 4, December. Operative Obstetrics, by J. Robert Willson, M.D., and Genital Cancer, by Daniel G. Morton, M.D. Octavo 282 pages, illustrated. New York, Paul B. Hoeber, 1958. A quarterly book series. Cloth, $18 per year.

Diseases of the Nervous System. Ninth edition. By Sir Francis Walshe, M.D. Octavo of 373 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $8.00.

Centaur. Essays on the History of Medical Ideas. By Felix Martí-Ibánez, M.D. Octavo of 714 pages. New York, MD Publications, 1958. Cloth, $6.00.

Personality Change and Development. By Molly Harrower, Ph.D. Octavo of 383 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $10.

Penicillin. By Harold L. Hirsh, M.D., and Lawrence E. Putnam, M.D. Octavo of 148 pages. New York, Medical Encyclopedia, 1958. Cloth, $4.00.

Modern Chemotherapy of Tuberculosis. By Roger S. Mitchell, M.D., and J. Carroll Bell, M.D. Octavo of 109 pages, illustrated. New York, 1958. Cloth, $4.00.

Poliomyelitis. Papers and discussions presented at the Fourth International Poliomyelitis Conference. By International Poliomyelitis Congress. Octavo of 684 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1958. Cloth, $7.50.

Applied Medical Library Practice. By Thomas E. Keys. Octavo of 495 pages. Springfield, Ill., Charles C Thomas, 1958. Cloth, $10.75.

Tumors of the Lungs and Mediastinum. By B. M. Fried, M.D. Octavo of 467 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $13.50.

Surface and Radiological Anatomy. Fourth edition. By W. J. Hamilton, M.D., and G. Simon, M.D. Octavo of 355 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $9.50.

Communicable Diseases. Volume 4. Medical Department, United States Army. Preventive Medicine in World War II. By Ebbe Curtis Hoff, M.D. Octavo of 544 pages, illustrated. Washington, D.C., Office of the Surgeon General, Department of the Army, 1958. Cloth, $5.50.

Clinical Epidemiology. By John R. Paul, M.D. Duodecimo of 291 pages, illustrated. Chicago, The University of Chicago Press, 1958. Cloth, $5.00.

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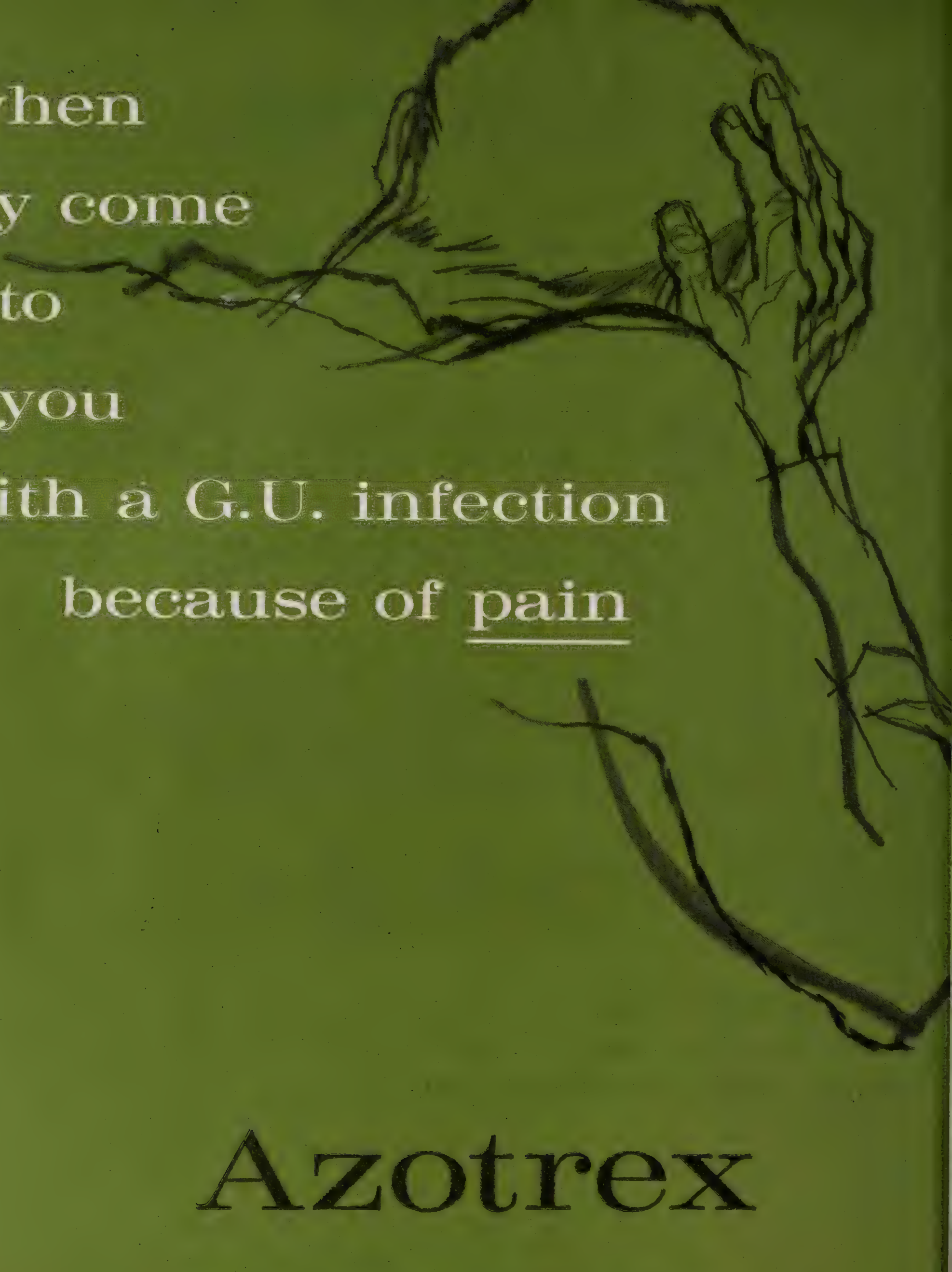

when
they come
to
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with a G.U. infection
because of pain

Azotrex

Symptoms of urgency, frequency, painful urination, incomplete emptying of the bladder, and backache usually first cause the patient to seek help from his physician. AZOTREX Capsules provide both the rapid symptomatic relief desired by the patient, and the vigorous antibacterial measures required for control of the underlying infection.

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Specific urinary analgesic action of *phenylazo-diamino-pyridine HCl*—long noted as the standard G.U. tract analgesic—offers dramatic relief of painful symptoms. Visual confirmation of prompt action is the change in the color of urine the patient sees shortly after taking his first capsules of AZOTREX.

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With regard to *B. proteus, Pseudomonas* and *Aerobacter aerogenes* results are unpredictable and sensitivity determinations are necessary to determine beforehand the effectiveness of any sulfonamide or antibiotic. Well-tolerated, with a wide margin of clinical safety, AZOTREX offers unsurpassed antibacterial treatment of urinary tract infections due to sulfonamide-sensitive and tetracycline-sensitive organisms.

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TETREX (tetracycline phosphate complex equivalent to tetracycline HCl activity)	125 mg.
Sulfamethiazole	250 mg.
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minimum adult dose:

One capsule q.i.d.

supplied:

Bottles of 24 and 100 Capsules.

Bristol
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SYRACUSE, NEW YORK

References: 1. Buckwalter, F. H. and Cronk, G. A.: Antibiotic Med. & Clin. Ther. 5:46-51 (Jan.) 1958. 2. Osol, A., and Farrar, G. E., Jr., eds.: The Dispensatory of the United States of America. 25th Edition, Philadelphia, J. B. Lippincott Co., 1955, p. 1881. 3. Council on Pharmacy and Chemistry. J.A.M.A. *161*:971 (July 7) 1956.

BOOKS REVIEWED

Rehabilitation of the Cardiovascular Patient. By P. D. White, M.D., H. W. Rusk, M.D., P. R. Lee, M.D., and B. Williams, M.D. Duodecimo of 176 pages, illustrated. New York, McGraw-Hill Book Co., 1958. Cloth, $7.00.

One of the most important problems facing the practicing physician today in the management of his cardiovascular patients is rehabilitation. In this book, the authors use the term "rehabilitation" in its broad context to designate all those services which the individual with a cardiovascular disability needs in order to attain, within the limits of his cardiac reserve, the happiness that comes with a full life and a gainful occupation in a job that is both interesting and challenging.

This is a small volume for a tremendous subject, but it is packed full of many forgotten truths. In the very first chapter, the authors speak of the inestimable value in rehabilitation of faith of the patient in his doctor and in his drugs and methods, faith in prayer to whomever it may be addressed and, finally, faith in oneself. They emphasize the importance of the general practitioner in rehabilitation when they say, "The cumulative experience of many practicing physicians and the growing basic knowledge about many of the cardiovascular diseases have led to the development of a useful body of information regarding rehabilitation." It is he who knows well the patient and the patient's family, his surroundings, his mental attitude toward his illness, and the fears that have developed within him as a result of his illness.

The authors point out the staggering economic cost of cardiovascular disability—over three billion dollars a year, exclusive of unemployment benefits, sickness and disability benefits, hospitalization benefits, and medical and public assistance payments. They state that there are approximately 1,800,000 people in the U. S. who have residuals of cardiovascular disease, and that a dynamic program can radically change the heretofore hopeless attitude which has existed for many years regarding the patient with hemiplegia. They thereupon outline five basic procedures to follow in any program of rehabilitation of the cardiovascular patient. For the patient with rheumatic heart disease, for the patient with hypertension or hypertensive disease, for the patient with congenital heart disease, and for the patient with coronary artery disease one will have to include certain additional goals for a complete rehabilitation program. The authors have done this magnificently in the last four chapters.

Finally, one of the authors, Paul D. White, in summarizing the philosophy of adequate cardiac rehabilitation, has this to say: "Work has a beneficial effect on body, mind and soul in any occupation in which it is possible for the cardiac patient to engage. Idleness breeds unhappiness and is actually bad for the health. It is a rare patient indeed, who is fit for nothing."

This book fills an important need in the practice of medicine and should be read by all practitioners who undertake the management of patients with cardiovascular disorders.—Burton L. Zohman

Human Infertility. By C. L. Buxton, M.D., and Anna L. Southam, M.D. Octavo of 229 pages, illustrated. New York, Paul B. Hoeber, Inc., 1958. Cloth, $7.50.

This book is based on the present knowledge of infertility and its management derived from a concentrated study of over 2,000 infertile patients. The problem of infertility is never faced by an individual alone. Emphasis is placed on the study of the male and female partners as a unit. Technics of investigation and treatments are thoroughly covered. The chapters on the psychologic and social aspects of infertility are important since their significance is frequently overlooked by the examining physician.

This book is heartily recommended for medical students, residents, and physicians interested in developing an understanding and proficiency in the management of these cases.—John M. Tortora

Son or Daughter by Choice. By August J. von Borosini, Sc.D. Duodecimo of 120 pages, illustrated. Netherlands, E. F. Steinmetz, 1958. Cloth.

Called by the author a guide to sex predetermination, this curious little volume has been translated into German and Dutch and made ready for Spanish and Italian translation. Much advice is given but it is based on very little.—Charles A. Gordon

The Physical Chemistry of Electrolytic Solutions. 3rd ed. By Herbert S. Harned, Prof. of Chemistry, and Benton B. Owen, Prof. of Chemistry. Octavo

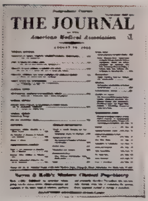
[Continued on page 934]

Question:

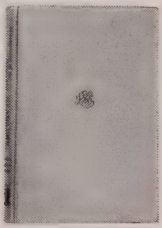
Why do so many physicians prefer Cafergot and Cafergot P-B for migraine and other recurrent throbbing headaches?

Answers:

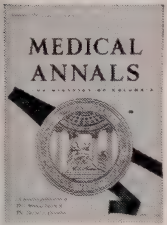
By leading clinicians, quoted from their published investigations.



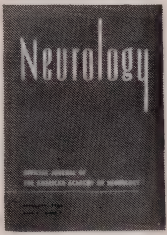
"The highest percentage (83%) of patients with symptomatic relief is obtained by early and adequate administration of ergotamine and caffeine (Cafergot), alone or combined with antispasmodics and/or sedatives (Cafergot P-B)." *(Friedman, A. P.: J.A.M.A. 163: 1111, March 30, 1957.)*



"For those patients in whom nausea and vomiting occur so early in the attack that oral medication cannot be used, rectal administration is sometimes a simple and effective solution. Cafergot suppositories ... and Cafergot P-B suppositories ... are useful additions to the armamentarium." *(MacNeal, P. S., et al.: Management of the Patient with Headache, 1957.)*



"The tablets [Cafergot P-B] were especially useful when the headaches were accompanied by nervous tension and gastrointestinal upset. . . . Cafergot P-B Tablets constitute an important addition to the treatment of vascular headache." *(Blumenthal, L. S., and Fuchs, M.: Med. Annals District of Columbia 26:175, April 1957.)*



"Symptomatic treatment is essentially one of pharmacotherapy, and the best results have been obtained with the use of ergotamine derivatives, notably a compound of ergotamine and caffeine (Cafergot)." *(Friedman, A. P., von Storch, T. J. C., Merritt, H. H.: Neurology 4:773, Oct. 1954.)*

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References: 1. Smith, I. M., and Lenyo, L.: Am. Practitioner 9:78, 1958. 2. Waisbren, B. A., and Crowley, W.: A.M.A. Arch. Int. M. 95:653, 1955.

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[Continued from page 928]

of 803 pages, illustrated. New York, Reinhold Pub. Corp., 1958. Cloth, $20.

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Science and Psychoanalysis. Volume 1. Integrative Studies. By Jules H. Masserman, M.D. Duodecimo of 201 pages. New York, Grune & Stratton, Inc. 1958. Cloth, $5.75.

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The book will find a limited audience but it serves an important function in so far as it chronicles th work of those who are vitally interested in huma behavior and motivation and who refuse to be boun by barriers erected by any one group.—Joseph I Abrahamson

Spezielle Chirurgische Therapie. By Max Sae gesser, Prof. Dr. Octavo of 1,476 pages, illustrated Bern, Hans Huber, 1957. Cloth, Fr./Dm 128.

The entire domain of surgical treatment is discussed in this book. In his presentation of th various therapeutic measures, the author leads th reader through the description of the general anatomic and physiologic principles which must guid every rational surgical procedure; then the gros appearance of the various pathologic conditions, th recognition of which is so important for decidin the course of operation, are presented in such vivid manner, that one actually visualizes them Instructive x-rays, some of which are further elucidated by sketches, contribute to the full understanding of the pathologic conditions for which surgica corrective measures are described. Adequate consideration is given to the problems of preoperativ preparation of patients. Technics of the variou surgical procedures are described in a concise an systematic but never in a superficial manner. Th latest advances in American surgical technic including heart surgery and surgery of the large bloo vessels are adequately covered. There are als chapters on hypothermy and blood preservation. A complete discussion of urologic surgical measure and some of the borderline cases of dental surger are included in the text. The author enumerate the instruments, suture material, and drains whic are used for the various surgical procedures an gives detailed prescriptions for transfusions an oral medications. He does not neglect to conside properly the minor surgical interventions which ca be performed in the office. The after-treatment the sequels, and complications of operations form a integrated part of the discussion.

The text is illustrated mostly by well-execute pen and ink drawings which can be understood at a glance. The page arrangement testifies to the production skill of the publisher, in that all illustration are correlated with the reading matter on the sam or opposite page.

Even for an experienced specialist this book ca clarify steps which should be taken in certain situations. For the novice and for the student, thi book is a gold mine of authoritative advice whic appears to speak directly to the reader in such an absorbing manner that one reads through it withou hardly realizing that one has come to the end o 1,462 pages of text discussing all phases of surger as it is practiced today.

[Continued on page 940]

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*Agriculture Handbook No. 62, U. S. Department of Agriculture, 1957 (Sept.) p. 33.

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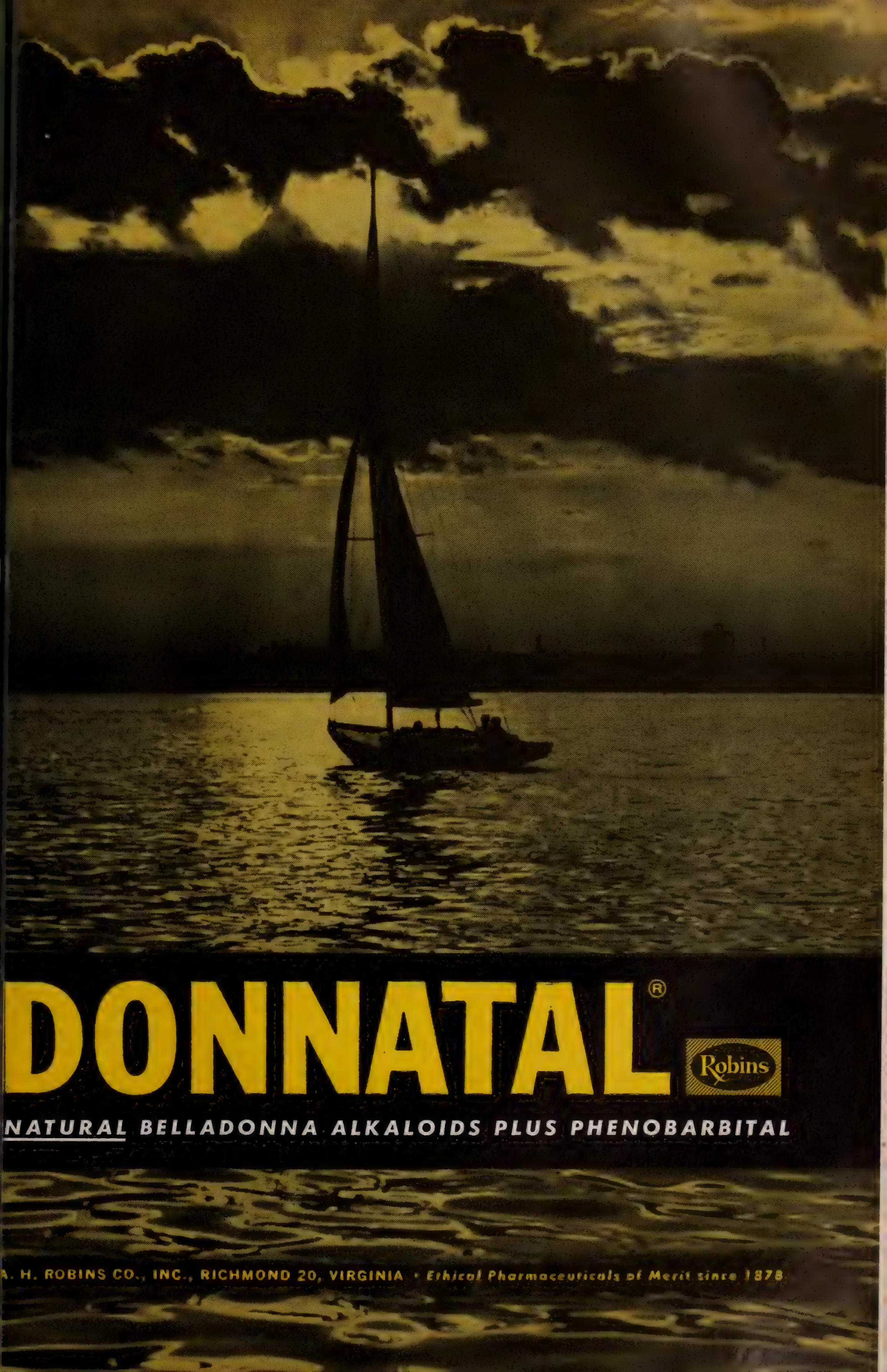

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[Continued from page 934]

It is evident that this work is based on the extensive personal experience of the author and it is written in the best tradition of Central European medicine. I feel certain that everyone who reads this book will want to have it in his library. It is hoped that a translation will be available in the near future for those who are not able to fully utilize this work in its original language.—E. SINGER

Gastro-Intestinal Obstruction. By Meyer O. Cantor, M.D., and Roland P. Reynolds, M.D. Contributors: Clifford D. Benson, M.D., Robert E. L. Berry, M.D., and William A. Hudson, M.D. Quarto of 565 pages, illustrated. Baltimore, Williams & Wilkins Company, 1957. Cloth, $18.

This monograph on gastrointestinal obstruction is a welcome, comprehensive reference source on the subject. Realizing that in intestinal obstruction essential team work between the general practitioner, radiologist, and surgeon is required, full details concerning all aspects of diagnosis and treatment at all levels of the intestinal tract are set forth with lucidity and commendable brevity.

Dr. Cantor, the elaborator of the long, single lumen intestinal tube bearing his name, has contributed an excellent chapter on gastrointestinal intubation which should be obligatory reading for every surgical housestaff man. Not only are the steps and technics required for successful intubation carefully described, but the uses and abuses of the long tube are enumerated.

In the opinion of the reviewer, this book would be a worth-while addition to the library of any physician dealing with intestinal obstruction.—EDWARD HIRSCH

Action of Radiation on Tissues. An Introduction to Radiotherapy. By A. Lacassagne and G. Gricouroff. Duodecimo of 199 pages, illustrated. New York, Grune & Stratton, Inc., 1958. Cloth, $6.25.

This is a revised second edition of the same book, originally published in 1941. The theory of the biologic action of radiation is discussed. Succeeding chapters evaluate briefly the effect of radiation on the various body systems, the effects of total body radiation, and the action on pathologic tissue.

This is a very satisfactory introductory summary for the radiobiologist and the radiotherapist. Each chapter has an extensive bibliography which, on cursory review, favors the European literature.—E. MENDELSON

Mental Health In Industry. By A. A. McLean, M.D., and G. C. Taylor, M.D. Octavo of 262 pages. New York, McGraw-Hill Book Co., 1958. Cloth, $6.50.

The authors are well qualified to write this timely volume which springs from many years as psychiatric consultants to large industry and the teaching of this specialty of medicine in medical colleges. They offer this volume as a guide to management in the formulation of policies and procedures which affect the mental health of employees. Emphasis is placed on the positive and preventive approach. It is well documented with case examples and comments on various types and degrees of emotional problems and how they might be best solved as seen through the eyes of the social psychiatrist.

Recognition is given to Anderson who published the first book, "Psychiatry in Industry," some thirty years ago. The need for the present book is realized since there has been no other book in this field until two years ago. Nevertheless, a growing number of psychiatrists throughout the intervening years have been working in industry on all levels of employment. Cornell University's School of Industrial and Labor Relations has pioneered in this field and it is from this fountainhead of integrating experience that the present volume is mainly derived.

The text is enhanced by a foreword by Menninger. There are four parts to the book which are effectively delineated. Part I reveals the role of the psychiatrist in industry and points out how the meaning of work and social stresses affect the employees' health and efficiency. Part II emphasizes "people at work" in which personality traits and new relations are capitalized. Problems of the executive are seen in helpful relationship to "the man in the middle." Part III emphasizes the importance of early recognition and management of the emotionally disturbed employee. The role of alcohol, accidents, compensation, and safety programs are discussed. Experience-born practical points of consideration are singled out with emphasis upon the medical department's role. Part IV reveals how interviewing technics and psychologic testing can be helpful.

The volume closes with a wide range of visual aids, both motion pictures and film strips, which dramatize various concepts presented in the book. It is pointed out that the films can be borrowed or rented from local or state 16mm film libraries. There is also a nationwide list given in "A Directory of 3,300 16mm Film Libraries" available for 70 cents from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. This lucidly written volume is a boon to all those concerned with the understanding and amelioration of mental health development and problems in industry and business organizations.—FREDERICK L. PATRY

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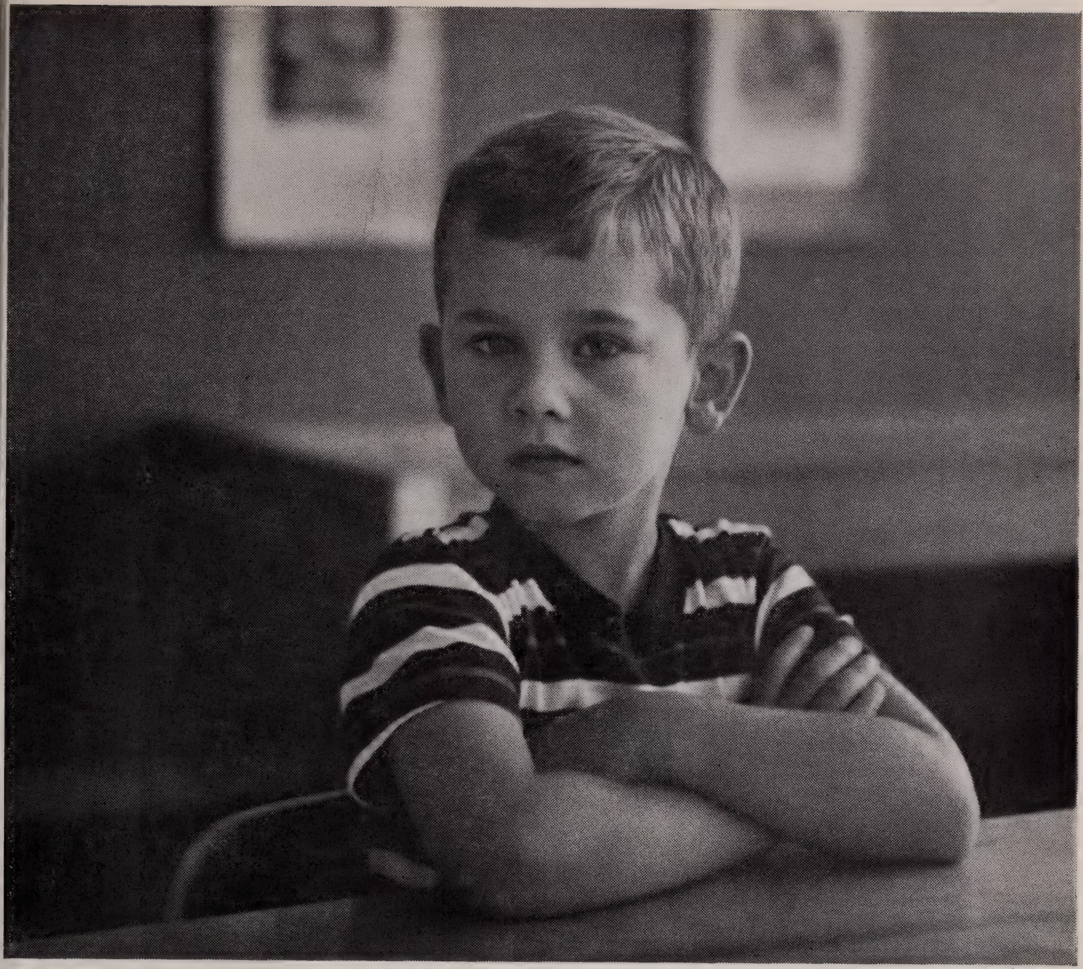

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1. Lawler, E. G. and Limperis, N.M.: Clin. Med. (Dec.) 1958. 2. Medical Science, 3:376-377 (Ma 1958. 3. Cavallito, C. J. and Jewell, R.: J. Am. Pharm. A. (Scient. Ed.) 47:165-168, 1958. 4. Antib Med. & Clin. Therapy 5:578-581 (Sept.) 1958.

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References: 1. Graham, W.: Canad. M. A. J. **79**:634 (Oct. 15) 1958. **2.** Robins, H. M.; Lockie, L. M.; Norcross, B.; Latona, S., and Riordan, D. J.: Am. Pract. Digest Treat. **8**:1758, 1957. **3.** Kuzell, W. C.; Schaffarzick, R. W.; Naugler, W. E., and Champlin, B. M.: New England J. Med. **256**:388, 1957.

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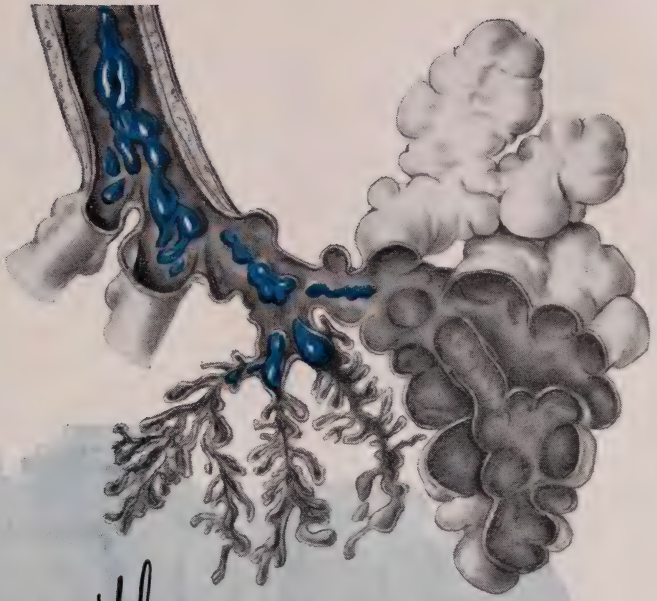

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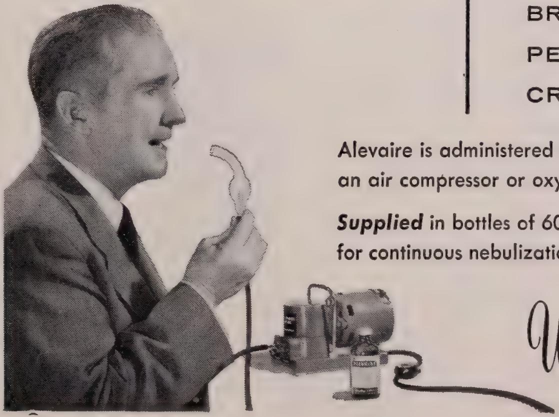

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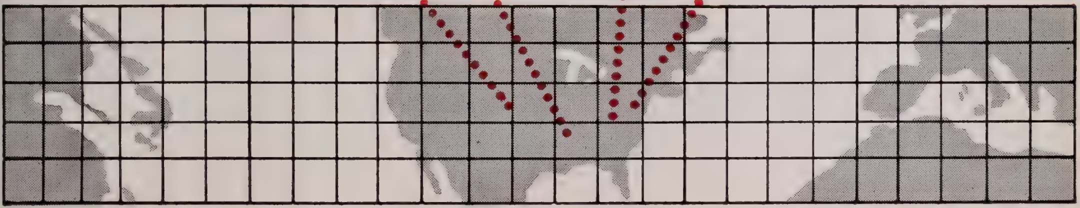

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References: 1. Smigel, J. O., et al.: J. Am. Ger. Soc., in press. 2. Freedman, A. M.: Pediat. Clin. North America 5:573 (Aug.) 1958. 3. Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957. 4. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. 5. Coirault, M., et al.: Presse méd. **64**:2239 (Dec. 26) 1956. 6. Bayart, J.: Presented at the International Congress of Pediatrics, Copenhagen, Denmark, July 22-27, 1956.

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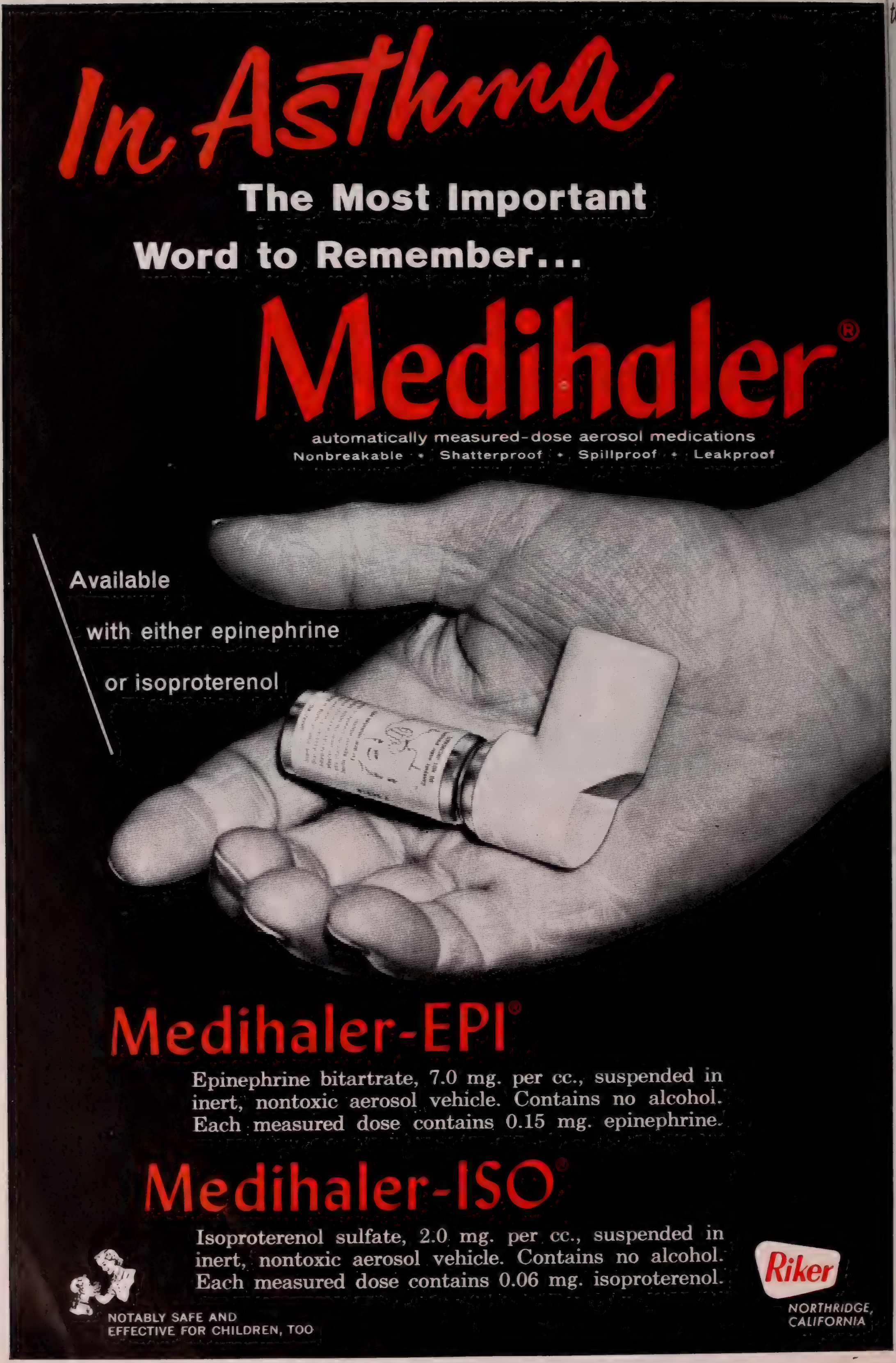

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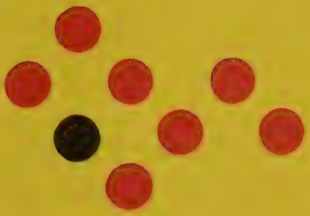

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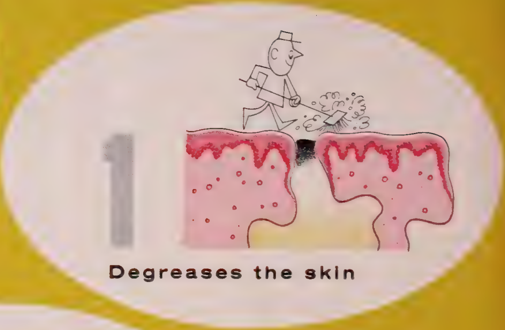

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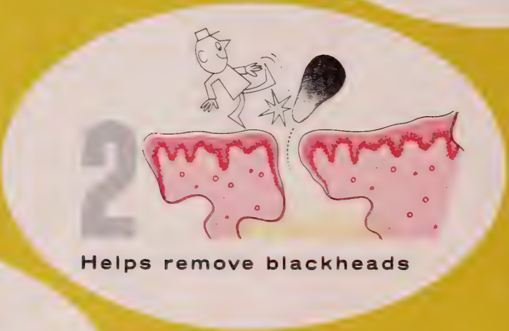

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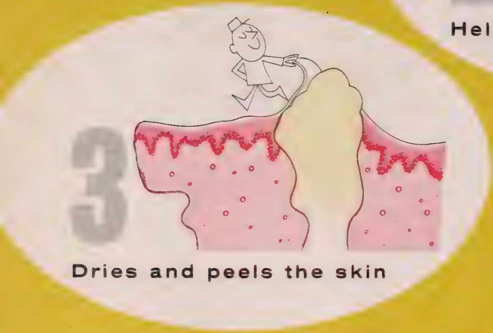

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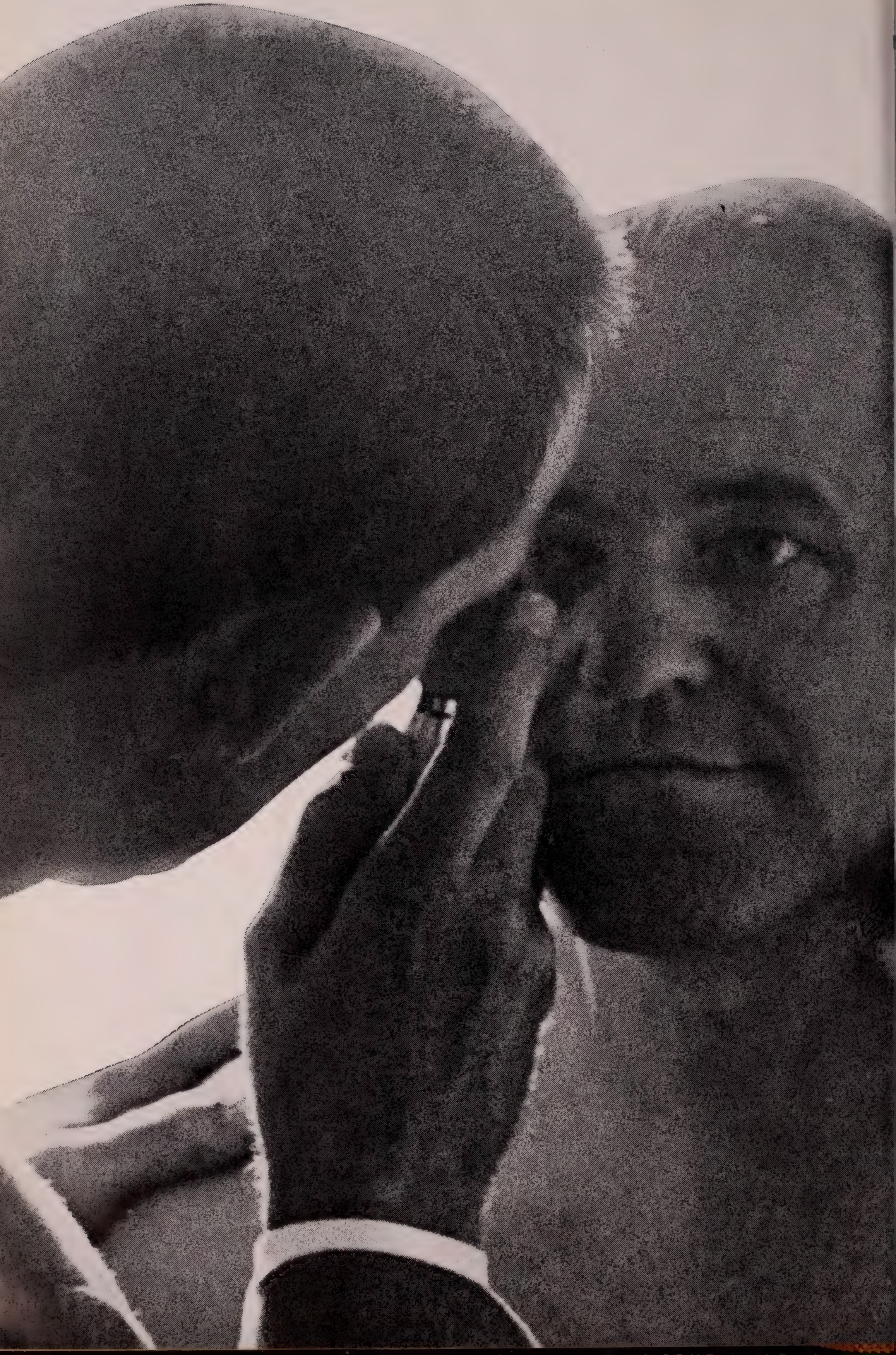

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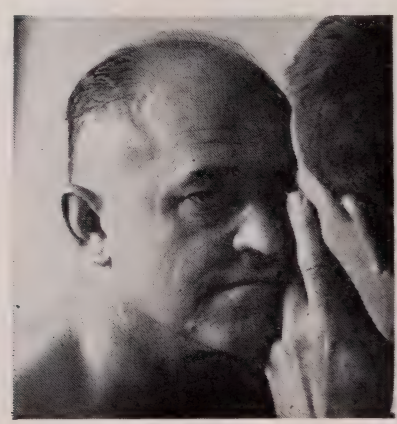
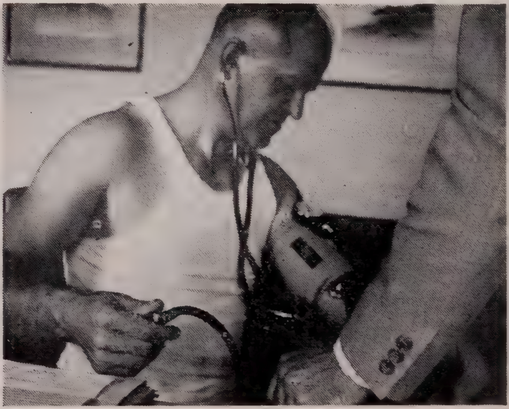
Developed after three years of basic research, proved during one of the most extensive clinical trials in pharmaceutical history, here is what **Singoserp** *can do:*

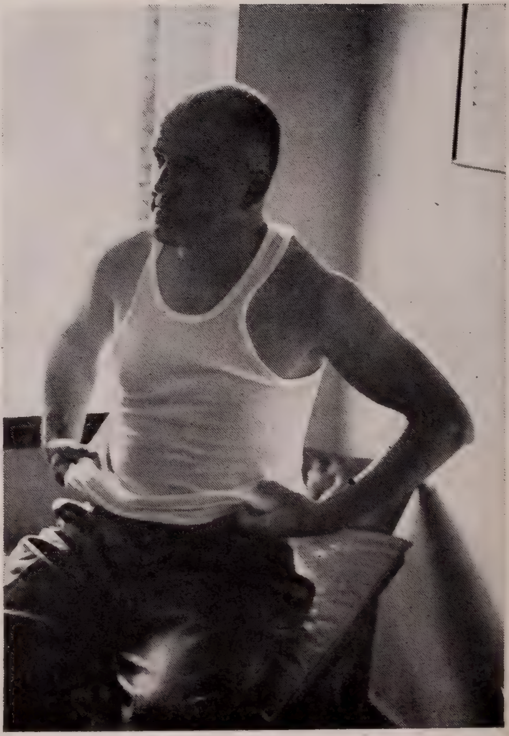
Patient P. K. was first seen with a blood pressure of 220/138 mm. Hg; he complained of headache, palpitation, nervous tension and hyperhidrosis.

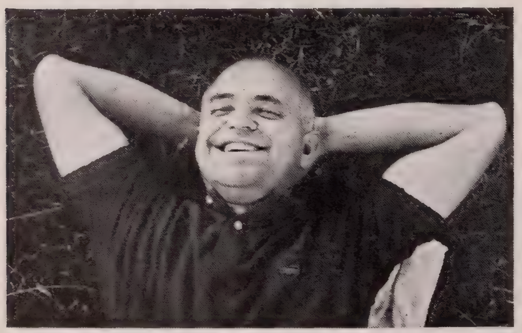


Hospitalized briefly for observation and treatment, he was placed on a 4-Gm. sodium diet, plus chlorothiazide and mecamylamine regulated according to b.p. reading, which he was taught to take himself.



One month later his blood pressure was 140/104; he complained of dryness of mouth, chest pain, constipation and nocturia (twice a night). He was then started on Singoserp (0.5 mg. daily) with instructions to reduce the other medications to the extent possible, as evidenced by his b.p. readings. ▶





After five months on Singoserp the patient's blood pressure ranged between 120/84 and 140/100. No mecamylamine was required; only 1/3 the original dose of chlorothiazide was required. One month later, chlorothiazide was stopped and the patient was maintained on Singoserp alone, 1 mg. b.i.d. Favorable blood pressure response continues and patient feels well. Since taking Singoserp patient reports *no* chest pain, *no* mouth dryness, *no* other side effects.

SingoserpT.M.

(syrosingopine CIBA)

Solves the Side Effects Problem in Most Hypertensive Patients

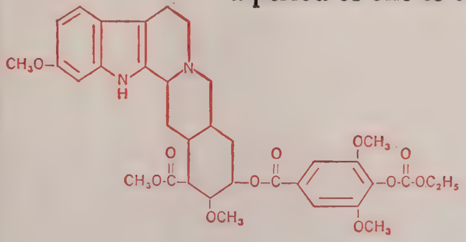
1. For new hypertensive patients Singoserp is the ideal antihypertensive drug for new patients because it lowers blood pressure without creating the side effects problem posed by conventional rauwolfia agents.

2. For hypertensive patients already undergoing drug treatment Singoserp, added to any antihypertensive regimen, makes it possible to maintain blood pressure levels achieved with more potent agents, while reducing their dosage requirements—or even eliminating them altogether in some cases.

Infrequent side effects—"The chief advantage of [Singoserp] over other Rauwolfia derivatives seems... to be the relative infrequency with which it produces disturbing side effects."[1]

Less sedation—"It [Singoserp] is approximately equipotent to reserpine as a hypotensive agent but is definitely less sedative or tranquilizing."[2]

Depression relieved—"In those patients who had been depressed, [Singoserp] was substituted for other Rauwolfia preparations and within a period of one to two weeks this depression was relieved."[3]



Created in the laboratory by altering the reserpine molecule so as to preserve its antihypertensive property and virtually eliminate its undesirable side actions.

Dosage: *In New Patients:* Average initial dose, 1 to 2 tablets (1 to 2 mg.) daily. Some patients may require and will tolerate 3 or more tablets daily. Maintenance dose will range from ½ to 3 tablets (0.5 mg. to 3 mg.) daily. When necessary for adequate control of blood pressure, more potent agents may be used adjunctively with Singoserp in doses below those required when they are used alone. *In Patients Taking Other Antihypertensive Medication:* Add 1 to 2 Singoserp tablets (1 to 2 mg.) daily. Dosage of other agents should be revised downward to a level affording maximal control of blood pressure and minimal side effects.

Supplied: Singoserp *Tablets,* 1 mg. (white, scored); bottles of 100.

References: 1. Herrmann, G. R., Vogelpohl, E. B., Hejtmancik, M. R., and Wright, J. C.: To be published. 2. Wolffe, J. B.: Mod. Med. *26*:253 (Feb. 1) 1958. 3. Bartels, C. C.: To be published.

2/2636MK-2

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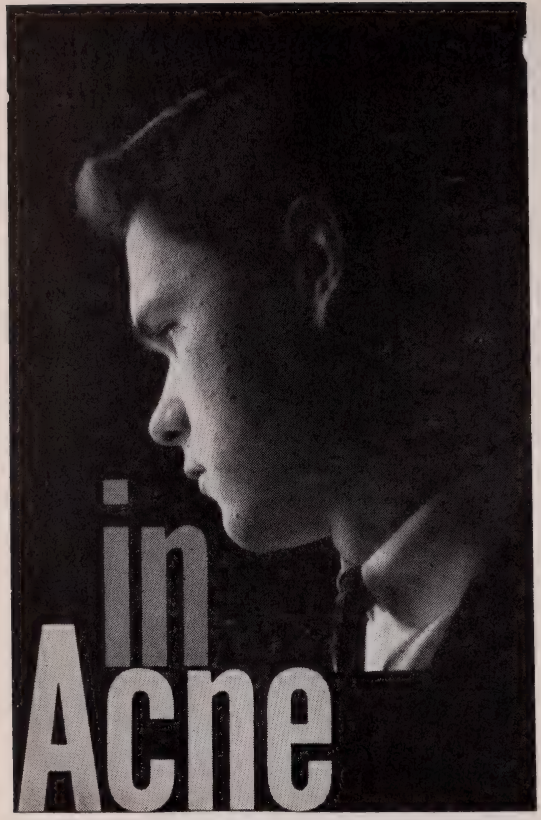

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pHisoHex washing added to standard treatment in acne produced results that "...far excelled...results with the many measures usually advocated."[1]

pHisoHex maintains normal skin pH, cleans and degerms better than soap. In acne, it removes oil and virtually all skin bacteria *without scrubbing.*

For best results—four to six washings a day with pHisoHex will keep the acne area "surgically" clean.

1. Hodges, F. T.: *GP* 14:86, Nov., 1956.

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nonalkaline
antibacterial
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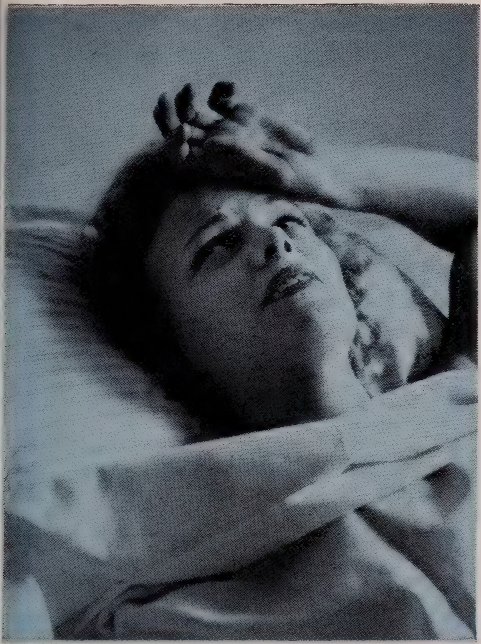

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Psychotherapeutic potency
makes possible the maintenance of an adequate degree of narcosis with reduced doses of narcotics.

relieves tension and controls emesis in both postoperative and postpartum patients.

Recommended Oral Dose: up to 400 mg. daily in divided doses
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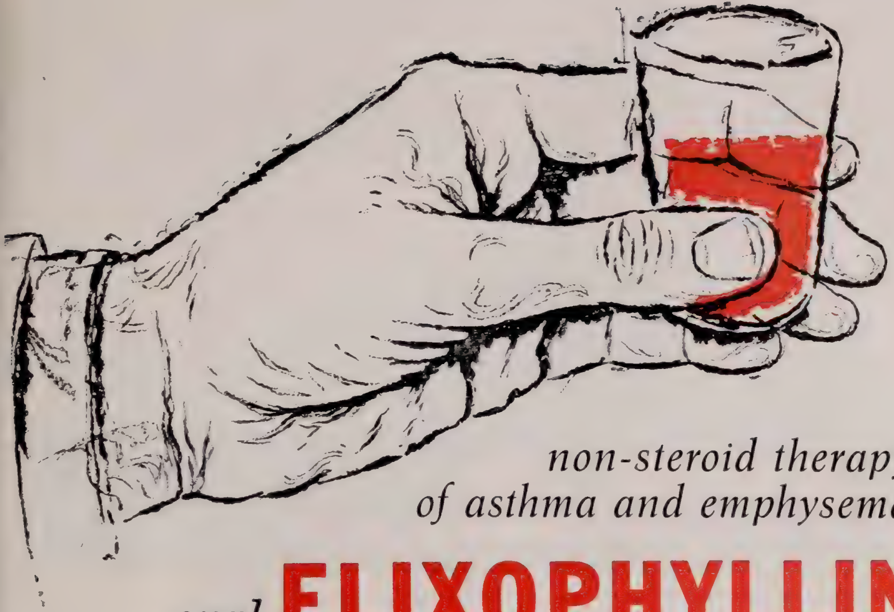
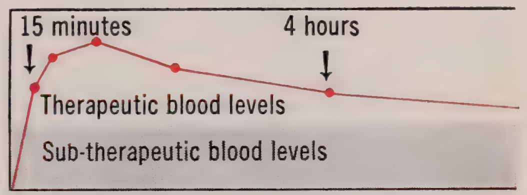


non-steroid therapy
of asthma and emphysema

oral **ELIXOPHYLLIN**

- Just as with I.V. aminophylline,* high theophylline blood levels *reached in minutes* – from a single dose.*
- After absorption, theophylline is slowly eliminated. Therapeutic blood levels *endure for hours.**
- This predictability of blood levels permits quite constant *therapeutic blood levels night and day,* providing relief of wheezing, dyspnea, cough, and protection against acute attacks for most patients.*

DOSAGE: *First two days:*
45 cc. *(three tbsp.)* on arising;
45 cc. *(three tbsp.)* on retiring;
45 cc. *(three tbsp.)* once midway between above doses *(about 3 P.M.)*



After two days of therapy the size of doses should be slightly decreased.
Each tablespoonful contains: theophylline 80 mg., alcohol 3 cc.
Prescription only – bottles of 16 fl. oz.

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**Reprints of these studies on request.*

New **Neo-Synephrine®**

Compound

Cold Tablets

for "Syndromatic" Control of the Common Cold and Allergic Rhinitis

Neo-Synephrine now has three complementary compounds added to its own dependable, decongestive action for more complete control of the common cold syndrome.

The "syndromatic" action of Neo-Synephrine Compound Cold Tablets brings new and greater effectiveness to the treatment of the common cold syndrome.

protection... through the full range of common cold symptoms

Each tablet contains:

for **NASAL STUFFINESS, TIGHTNESS, RHINORRHEA**

NEO-SYNEPHRINE HCl 5 mg........... First choice in decongestants for its mild but durable action and excellent tolerance.

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THENFADIL® HCl 7.5 mg.............. Effective antihistaminic to relieve rhinorrhea and enhance mucosal resistance to allergic complications.

for **LASSITUDE, MALAISE, MENTAL DEPRESSION**

CAFFEINE 15 mg.

DOSE: ***Adults:*** 2 tablets three times daily.
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Bottles of 20 and 100 tablets.

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(Aqueous subcutaneous epinephrine suspension 1:200)

Sus-Phrine acts quickly and its action is sustained

for
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- anaphylactic shock
- drug and allergic reactions
- urticaria
- angioneurotic edema

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". . . we have had considerable experience with, and have been favorably impressed by, the action of an aqueous suspension of epinephrine, Sus-Phrine 1:200 (Brewer). This material has a decided advantage over epinephrine suspended in oil."

Levin, Samuel J.: Management of the Acute Asthmatic Attack in Childhood. Ped. Clin. of N. A. *1*:975, (November) 1954.

"Its action is about as prompt as the solution, manifested in 1 to 5 minutes, and as prolonged as the oil suspension, lasting 8 to 12 hours."

Naterman, H. L.: Epinephrine Base Suspended in Water with Thioglycollate. J. Allergy *24*:60, (Jan.-Feb.) 1953.

"Greatest individual acceptance of the new injection has been by children. The dosage is small enough to be handled easily (0.30 to 0.40 cc. in adults; 0.15 to 0.20 cc. in children)."

Unger, A. H., and Unger, L.: Prolonged Epinephrine Action. A Report on Use of an Epinephrine Suspension. Ann. Allergy *10*:128, (Mar.-Apr.) 1952.

"Sus-Phrine is a valuable therapeutic adjunct in the treatment of bronchial asthma, urticaria and angioneurotic edema . . ."

Jenkins, C. M.: A Clinical Study of "Sus-Phrine", an Aqueous Epinephrine Suspension for Sustained Action. J. Nat. M. A. *45*:120. (Mar.) 1953.

Chronic asthmatics can be quickly taught to self administer Sus-Phrine subcutaneously in acute attacks, eliminating need for emergency calls.

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— Rein, C. R., and Fleischmajer, R.: Personal Communication.

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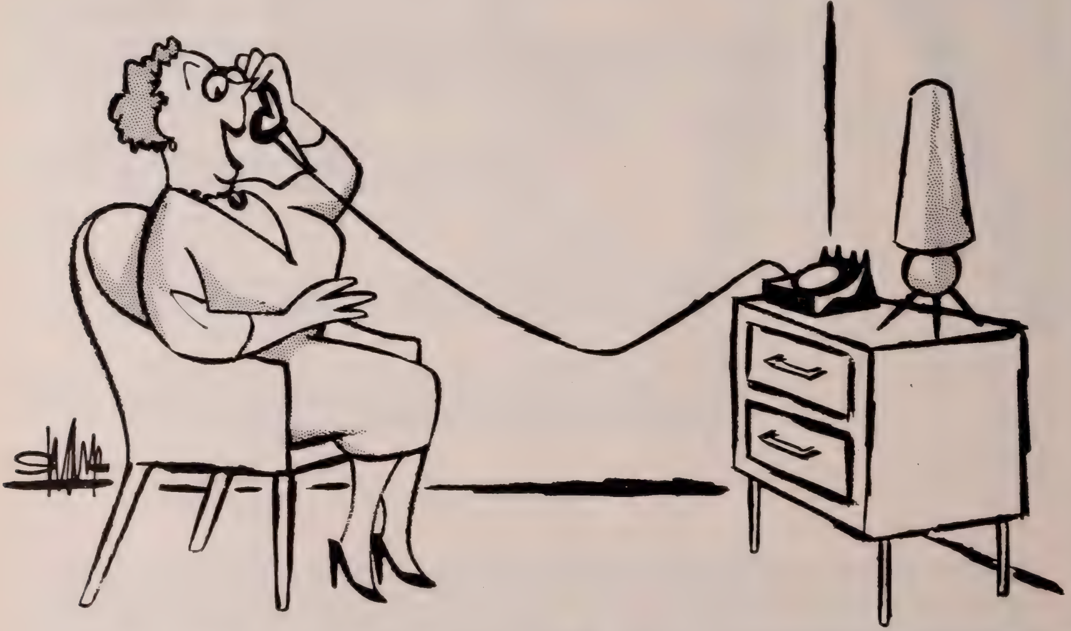
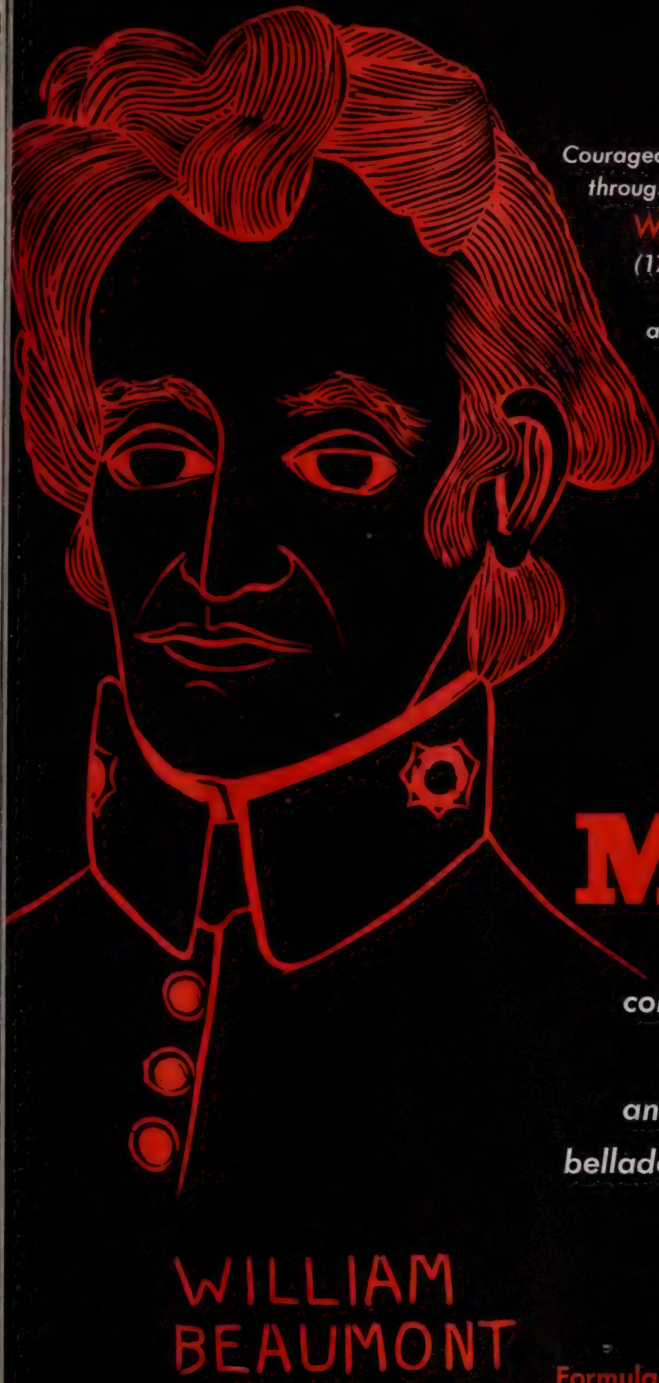


"Couldn't you give me an earlier appointment, Doctor? I'd like to have my ailment treated in its primary stage."



Courageous and persistent observer through a fistulous stomach, ***William Beaumont*** *(1785-1853) clarified the precise action and nature of gastric juice and the phenomena of gastric digestion.*

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®Miltown + *anticholinergic*

controls gastric hypersecretion, provides relief of pain, spasm, anxiety and tension without belladonna or barbiturates.

Side effects are minimal.

Formula: Each scored tablet contains:
meprobamate 400 mg., tridihexethyl chloride 25 mg.
(formerly supplied as the iodide).

Dosage: 1 tablet t.i.d. with meals and 2 tablets at bedtime.

Indications: duodenal and gastric ulcer • colitis
spastic and irritable colon • gastric hypermotility • gastritis
esophageal spasm • intestinal colic • functional
diarrhea • G. I. symptoms of anxiety states.

Literature and samples on request.

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IN THREATENED AND HABITUAL ABORTION:

"...high-potency progestational agents [such as NORLUTIN] frequently have the power, when administered in adequate dosage, to arrest and suspend myometrial contractions incident to spontaneous abortion."* This is the conclusion of a group of investigators who studied patients with threatened (and in some cases habitual) abortion. The study group was compared with a control group which was treated with bed rest and mild sedation only. In this control group, the salvage rate was 15.5 per cent. In the group receiving NORLUTIN, 19 of 45 pregnancies were continued—a salvage rate of 42.2 per cent.

PREGNANCY SALVAGE WITH NORLUTIN

	Control Group (Treated with bed rest and mild sedation)	Study Group (Treated with NORLUTIN)
Total number of pregnancies	297	45
Number of pregnancies salvaged	46	19
Percentage of pregnancies salvaged	15.5	42.2%

Adapted from Hodgkinson *et al.**

indications for NORLUTIN: Conditions involving deficiency of progesterone, such as primary and secondary amenorrhea, menstrual irregularity, functional uterine bleeding, endocrine infertility, habitual abortion, threatened abortion, premenstrual tension, and dysmenorrhea.

packaging: 5-mg. scored tablets, bottles of 30.

*Hodgkinson, C. P., Igna, E. J., & Bukeavich, A. P.: *Ann. New York Acad. Sc.* 71:753, 1958.

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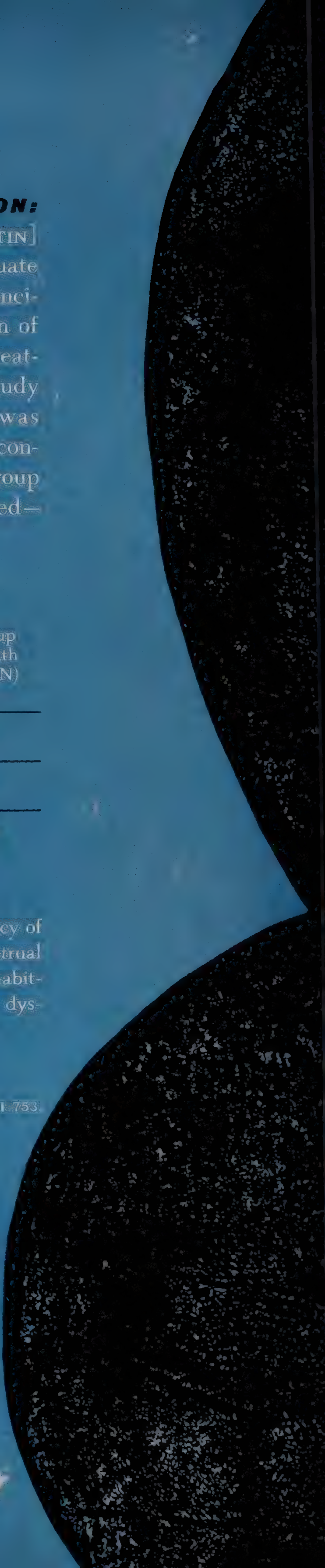

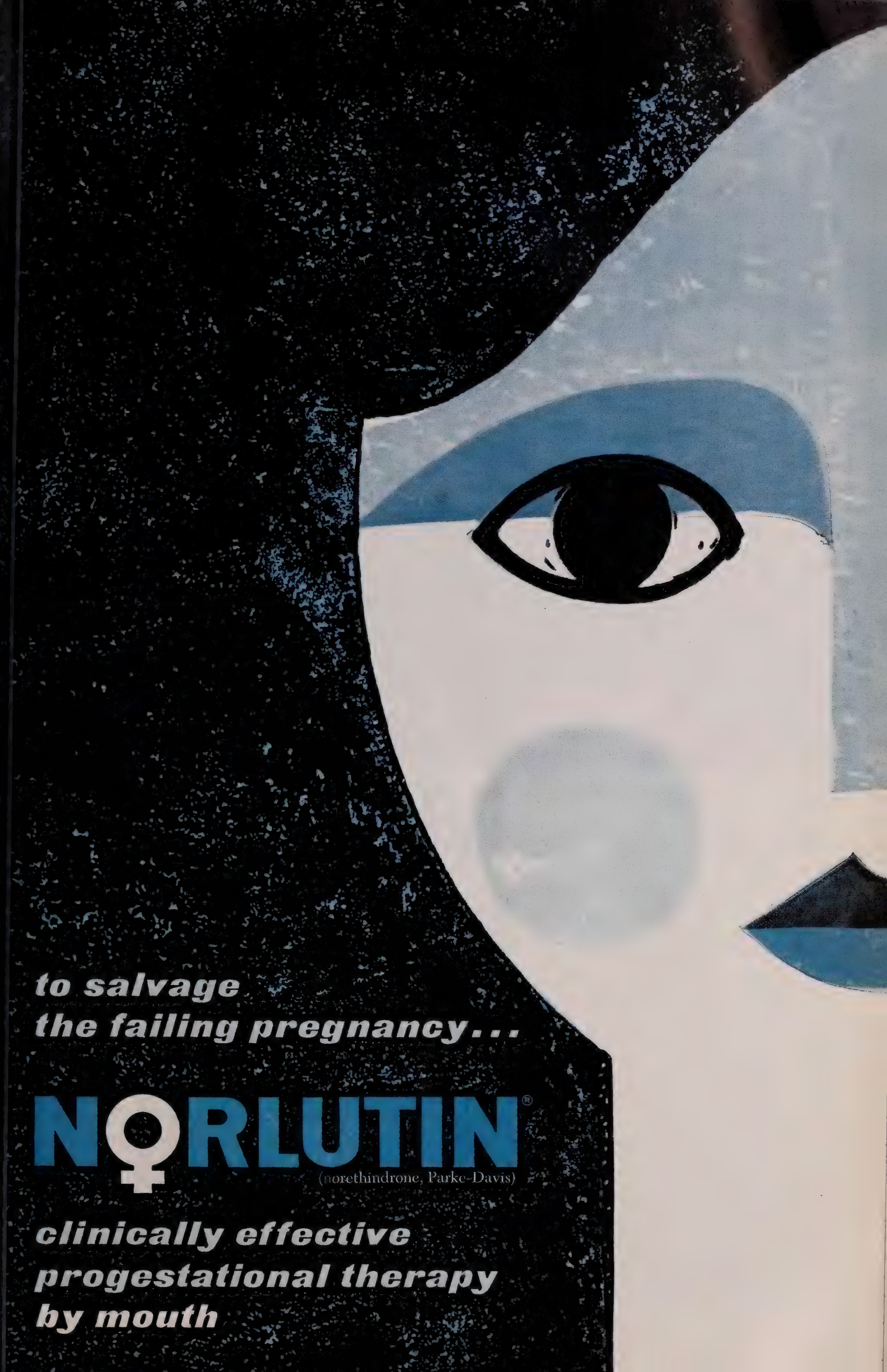
to salvage
the failing pregnancy...
NORLUTIN®
(norethindrone, Parke-Davis)
clinically effective
progestational therapy
by mouth

now...when treating uppe

Madribon

Disease	No. of Patients	Response Good or Excellent
Otitis media	72	65
Bronchitis	11	10
Obstructive laryngotracheitis	3	3
Tonsillitis	21	18
Cervical adenitis	13	13
Purulent rhinitis or sinusitis	19	16
Total	139	125

From a study by E. H. Townsend and A. Borgstedt[1]

safe "No side reactions to sulfadimethoxine [Madribon] w
observed in the entire series of 167 patients."[1] **effective** "Rema
able improvement, characterized by subjective relief and dis
pearance of inflammatory symptoms, occurred in 107 out of
111 patients under study."[2] **economical** "In addition to the clin
efficiency attributable to sulfadimethoxine . . . the economy
volved in medication with a fast-acting chemotherapeutic ag
warrants its early use. . . ."[3]

espiratory infections

e fastest growing antibacterial bibliography:

. H. Townsend and A. Borgstedt, *Antibiotics Annual -1959,* in press. **2.** J. C. Elia, *Antibiotic Med. & Clin. rapy,* 6:(Suppl. 1), 1959. **3.** B. H. Leming, Jr., C. nigan, Jr. and B. R. Jennings, *Antibiotic Med. & Clin. rapy,* 6:(Suppl. 1), 1959. **4.** H. P. Ironson and C. Patel, *ibiotic Med. & Clin. Therapy,* 6:(Suppl. 1), 1959. . Ross, J. R. Puig and E. A. Zaremba, *Antibiotics An- 1958-1959,* in press. **6.** J. D. Young, Jr., W. S. Kiser O. C. Beyer, *Antibiotic Med. & Clin. Therapy,* 6: ppl. 1), 1959. **7.** T. D. Michael, *Antibiotic Med. & Clin. rapy,* 6:(Suppl. 1), 1959. **8.** W. A. Leff, *Antibiotic d. & Clin. Therapy,* 6:(Suppl. 1), 1959. **9.** B. A. Koechlin, Kern and R. Engelberg, *Antibiotic Med. & Clin. Ther-* , 6:(Suppl. 1), 1959. **10.** R. J. Schnitzer and W. F. DeLorenzo, *Antibiotic Med. & Clin. Therapy,* 6:(Suppl. 1). 1959. **11.** R. J. Schnitzer, W. F. DeLorenzo, E. Grunberg and R. Russomanno, *Proc. Soc. Exper. Biol. & Med.,* 99:421, 1958. **12.** W. F. DeLorenzo and R. Russomanno, *Antibiotic Med. & Clin. Therapy,* 6:(Suppl. 1), 1959. **13.** B. Fust and E. Boehni, *Antibiotic Med. & Clin. Therapy,* 6: (Suppl. 1), 1959. **14.** W. F. DeLorenzo and A. M. Schumacher, *Antibiotic Med. & Clin. Therapy,* 6:(Suppl. 1), 1959. **15.** W. P. Boger, *Antibiotics Annual 1958-1959,* in press. **16.** O. Brandman, C. Oyer and R. Engelberg, *J. M. Soc. New Jersey,* 56:24, Jan. 1959. **17.** J. F. Glenn, J. R. Johnson and J. H. Semans, *Antibiotic Med. & Clin. Therapy,* 6:(Suppl. 1), 1959.

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EDEMA OF
ANY DEGREE
RESPONDS
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An unparalleled record of safety and efficacy.

DIURIL has proved to be highly effective in overcoming edema associated with a wide variety of fluid retention states including: hypothyroidism, menopausal syndrome, allergy, peripheral phlebitis, arthritis, migraine headache, ascites or peripheral edema due to malignant tumor, and obesity. In the last case, Landes and Peters[1] achieved excellent to good results in nine obese patients in whom overweight was associated with moderate or severe fluid retention.

1. Landes, R. P. and Peters, M.: Postgrad. Med. 23:648, June 1958.

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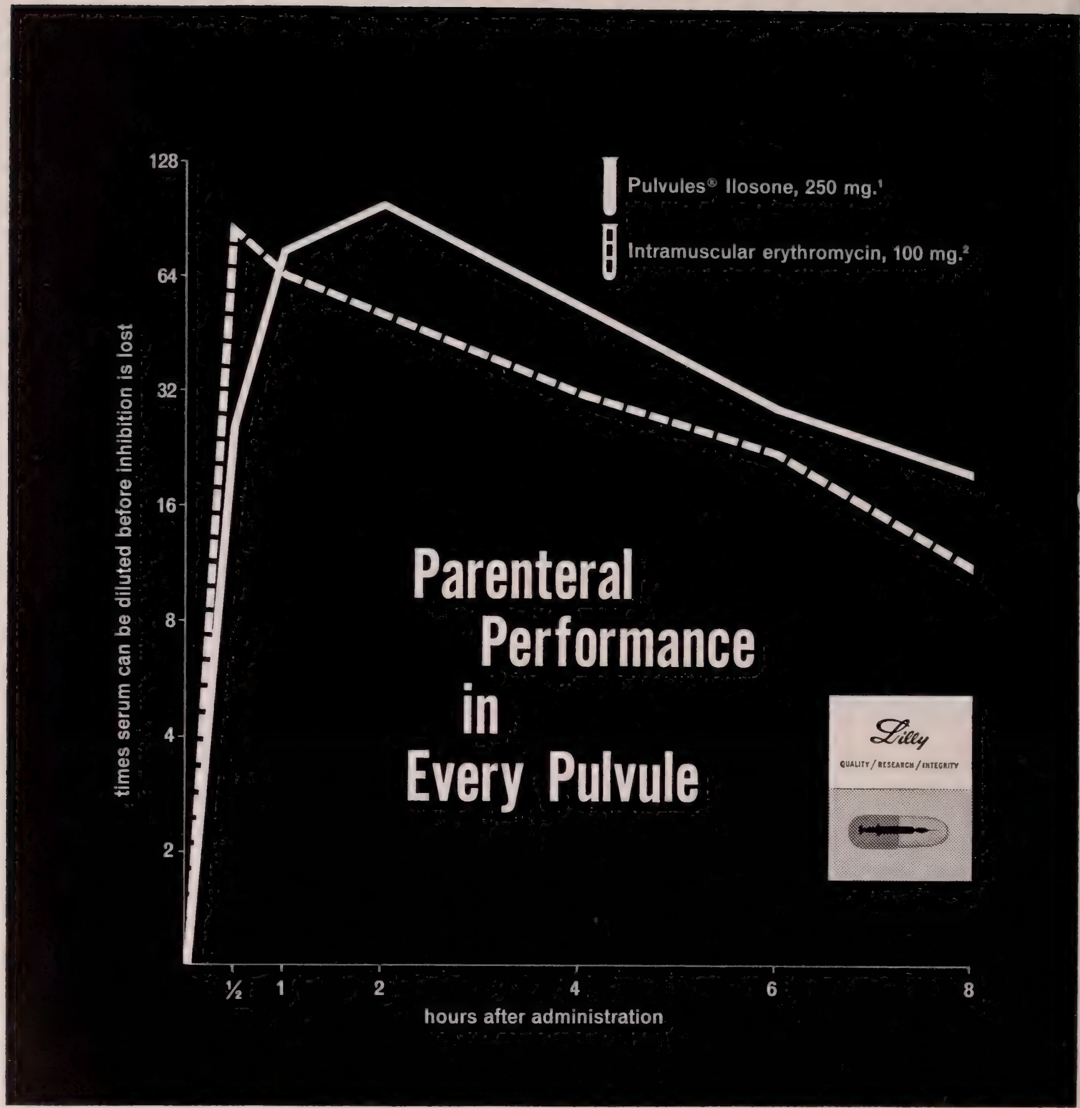

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1. Antibiotic Med. & Clin. Therapy, *5*:609, 1958.
2. Data from Antibiotics Annual, p. 269, 1954-1955.

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EDITORIALS

An Old Irish Blessing

May the blessing of light be on you, light without and light within. May the blessed sunshine shine on you and warm your heart till it glows like a great peat fire, so the stranger may come and warm himself at it, and also a friend.

And may the light shine out of the two eyes of you like a candle set in two windows of a house, bidding the wanderer to come in out of the storm.

And may the blessing of the rain be on you—the soft sweet rain. May it fall upon your spirit so that all the little flowers may spring up, and shed their sweetness on the air.

The Doctor and His Practice

"Would God the giftie gie us, to see oursels as ithers see us." With due reverence for the immortal Scot we call attention to two articles that appear in this issue. These were presented at a symposium given before the Erie County Medical Society through the courtesy of the Wm. S. Merrell Company of Cincinnati, Ohio.

The one by an office management consultant tells some plain truths about our workshops and how they could be improved from the patient's point of view. The other, by a practicing lawyer, gives some valuable advice concerning the awesome spectre of the malpractice suit.

We appreciate the honesty and sincerity of these presentations. There is good meat here which we can all accept.

Golden Anniversary of a Revolution

Marguerite, go wash your feet;
The Board of Health's across the
street.

Half a century ago in the City of New York this was a popular children's ditty. The ditty was popular because to thousands of children and their mothers it was the sound of health, a sound that had been heard rarely in the City's slums and all too seldom in its mansions until a certain historic day.

To the City's government and Department of Health, and to the medical profession and a number of private citizens and organizations, the little rhyme was a symbol of the success of their revolution in the field of public health.

Their revolt was against statistics—death for 1,500 babies each summer week in the early 1900's, death for one baby out of six before his first birthday—and their concept and course of action were themselves revolutionary.

On August 19 in the year 1908, the Department of Health established the Division of Child Hygiene, the world's first government service devoted exclusively to the health of children and dedicated to the then radical idea that babies could be kept well, not merely cured when ill. Shortly thereafter the services of the Division were expanded to include mothers.

The inauguration of these services generated a movement that swept rapidly across the United States and beyond. Soon, each state in the union had a similar unit. The Federal government established its Children's Bureau and many nations have followed suit in recent years. Within a few years after its organization, the Division of Child Hygiene became the Bureau of Child Hygiene. Some thirty years later the word "Health" was substituted.

In the five decades of its operation, the maternal and child health service of the pioneering Department of Health has given direct service to more than three million infants and youngsters through its well-baby clinics and child health stations.

Since 1908 the City's infant mortality rate has been reduced 77 per cent, and the rate of maternal mortality has fallen more than 86 per cent to an all-time low in 1958. The department is responsible in great measure for these great achievements. For that matter, its history records a host of brilliant accomplishments in this field.

The Medical Society of the State of New York salutes the Department of Health of the City of New York and its distinguished Commissioner, Dr. Leona Baumgartner, whose own splendid achievements are legion, on the occasion of the Golden Anniversary of the Maternal and Child Health Service.

Medicine's Share in Philanthropy

The American Association of Fund-Raising Counsel, Inc., an association of 27 firms which specialize in counseling on the management of fund campaigns for philanthropic organizations, has released some interesting figures for the year 1958.

The Association estimates that a new record was set in 1958 with total contributions at $7.1 billion compared with $6.7 billion in 1957. Eighty-two gifts and bequests, each of a million dollars or more and totaling over half a billion dollars, were made in 1958.

A breakdown on these larger bequests showed that health and welfare received the greater proportion of the total: $296,263,781 went to health and welfare causes, $159,802,121 went to education, $16,275,000 went to religious causes, and $72,500,000 went to the fine arts.

These figures should be encouraging to us. While they indicate humanitarianism as a prime mover among donors, there must be an added reason. Does it not indicate great confidence in the two professions—medical and social welfare? Both have a record of dedication; both have solid accomplishments to show. Both have no intent to rest on their laurels but are moving forward in ways to justify this confidence.

It is good to know that health and welfare are so close to the hearts of the people and that they are willing to back this up with cash.

Editorial Comment

Medical Independence. Speaking before the students at the 86th annual commencement of Stevens Institute of Technology, Rear Admiral H. G. Rickover is reported to have said, in part:

> Service ceases to be professional if it has in any way been dictated by the client or employer. The role of the professional man in society is to lend his special knowledge, his well-trained intellect, and his dispassionate

> habit of visualizing problems in terms of fundamental principles to whatever task is entrusted to him.
>
> Professional independence is not a special privilege but rather an inner necessity for the true professional man, and a safeguard for his employers and the general public. Without it he negates everything that makes him a professional person and becomes at best a routine technician or hired hand, at worst, a hack.[1]

These words are significant to the doctor of medicine in view of the increasing extent of third party interest in the practice of medicine in recent years. An alert and dedicated profession can, if it will, avert the danger, in the opinion of Dr. Louis H. Bauer, chairman of the board of United Medical Service, who writes:

> It is my opinion that the private practice of medicine, whether carried on by individuals or groups, is in grave danger of destruction.
>
> Its salvation will depend on the medical profession becoming aroused from its apathy and taking an active interest in the socioeconomic side of medicine.
>
> Medicine must also clean its own house. Granted that only a small proportion of the profession are "fee gougers" and think more of the almighty dollar than they do of rendering service to the patient, those few are doing incalculable harm to the vast majority of doctors.
>
> Medicine is a profession, not a trade. It is humanitarian and not monetary in its concept. Services must be available twenty-four hours a day for seven days a week, and not just from 9 to 5 on five days a week.[2]

American Medical Education Foundation. A recent report emanating from the meeting of the state chairmen of the American Medical Education Foundation January 24–25, 1959, shows encouraging increases in receipts of funds for the assistance of this country's medical schools during 1958. The over-all result: a total dollar increase of 148,000. This represents increases over a year ago by 35 states.

Noteworthy among those states which increased 1957 totals are Delaware, Maryland, Massachusetts, New York, Ohio, Texas, and the District of Columbia. The increases by these states averaged $5,998. According to the report the increases demonstrate a growing awareness by doctors of the plight of their schools. This concern is reflected in the larger gifts by previous contributing sources and many new gifts. "More and more societies are designating AMEF as the recipients of proceeds from special events," said AMEF executive secretary, John W. Hedback.

It is with some satisfaction that we note a substantial rise in the contributions from New York State, but considering the large number of physicians resident here in proportion to those in other states, the total seems far below what it should be. It is to be hoped that 1959 will produce a large increase in AMEF receipts in general and from New York State in particular. The need is urgent.

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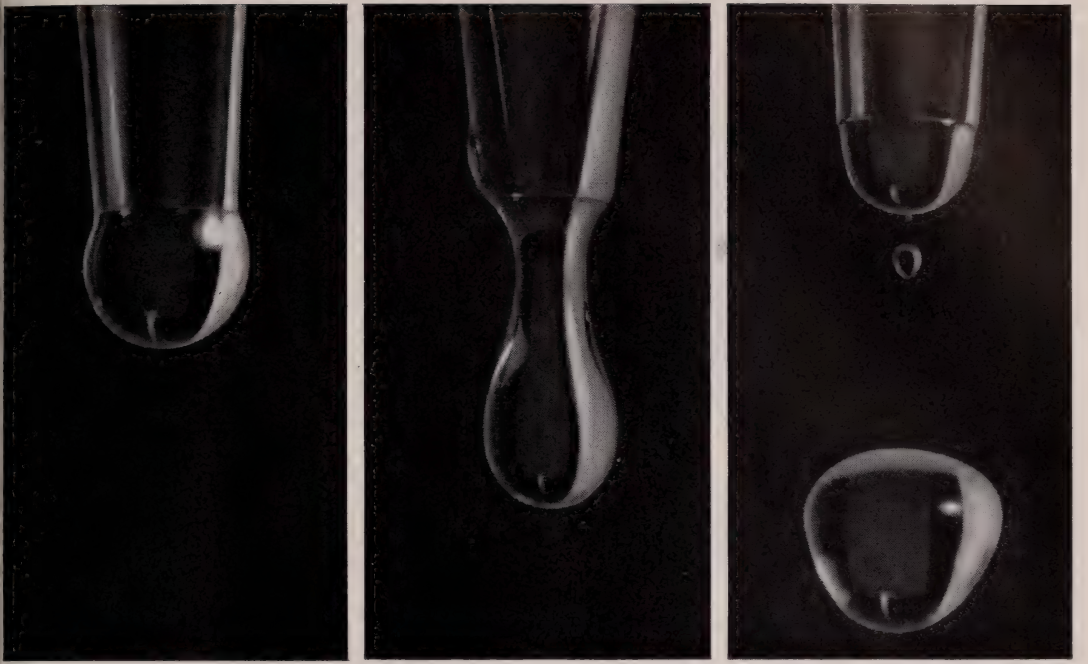
[1] Blue Shield News Letter, October; 1958.

[2] U.M.S. Bulletin, November, 1958, p. 2.

You should never wear your best trousers when you go out to fight for freedom and truth.—HENRIK IBSEN



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(1) Leslie, A., and Simmons, D. H.: Am. J. M. Sc. *234*:321, 1957. (2) Settel, E.: Am. Pract. & Digest Treat. *8*:1249, 1957.

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SCIENTIFIC ARTICLES

Anesthetic Management of Congenital Atresia of the Esophagus and Tracheoesophageal Fistula

A Review of Seven Years Experience and 72 Cases

RITA GOLDMAN JACOBS, M.D., AND E. M. PAPPER, M.D., NEW YORK CITY

(From the Department of Anesthesiology, Presbyterian Hospital, and the Department of Anesthesiology, College of Physicians and Surgeons, Columbia University)

THE first case of simple atresia of the esophagus was recorded in 1670 by Durston.[1,2] This congenital defect was always fatal until 1939, when Leven[3] and Ladd,[4] working independently, performed the first successful multiple-stage surgical corrections. Then in 1941 Haight[5] achieved the surgical triumph of primary anastomosis of the esophagus with closure of the fistula, an operation now accepted as standard therapy. Although such infants are extremely poor operative risks and the surgery itself is difficult, the mortality rate for the procedure in clinics all over the world continues to decrease. The Babies Hospital at the Columbia-Presbyterian Medical Center records a mortality rate of 43 per cent between 1950 and 1956 for the correction of this defect as compared with that of 76 per cent between 1944 and 1949. The statistics at the Sloane Hospital for Women of the same medical center shows that 1 in every 3,300 viable newborns has a tracheoesophageal fistula. Prompt and skillful attention can save many children. In fact, all 8 of the viable infants with tracheoesophageal fistula born at Sloane Hospital reached surgery at the Babies Hospital and are included in this series.

The dramatic advances in anesthesiology during the last two to three decades have contributed significantly to the encouraging surgical results. The literature mentions the conduct of anesthesia in these cases only from the viewpoint of the surgeon. The present paper presents the problems of the anesthesiologist as encountered in 72 operations for tracheoesophageal fistula at the Presbyterian Hospital in the seven years between 1950 and 1956. Some of these patients were discussed in an earlier series by Humphreys, *et al.*[6]

The types of anatomic deformity in esophageal atresia, according to the widely used classification of Vogt[7] (Fig. 1)[8] are:

Type 1. Complete absence of the esophagus.

Type 2. Atresia of the esophagus with an upper and lower esophageal segment, each ending in a blind pouch.

Type 3. Atresia of the esophagus with a tracheoesophageal fistula.

- *a.* The fistula between the upper esophageal segment and the trachea.
- *b.* The fistula between the lower

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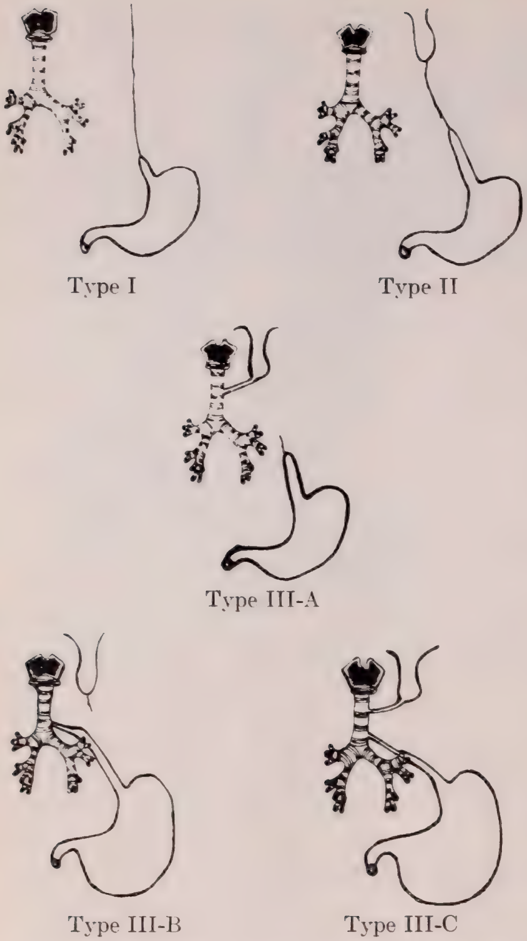

FIG. 1. Schematic representation of Vogt's classification of esophageal atresia. (Reproduced by permission from the Arch. Pediat., vol. 74, 1957.[8])

esophageal segment and the trachea.

c. A fistula between each esophageal segment and the trachea.

To this classification we may add the less common variety of tracheoesophageal fistula *not accompanied* by stenosis or atresia of the esophagus.

Results

Type 3*b*, by far the most common form, occurred in 85 per cent of the cases in this series. Of the remaining 15 per cent, half were Type 2 (atresia of the esophagus without a fistula). All but 2 of the survivors were of the Type 3*b*. Of the other 2, 1 was a case of tracheoesophageal fistula without atresia but with a mucosal diaphragm obstructing the esophagus, and the other a case of atresia without fistula. All 3 cases of Type 3*c* were undiagnosed at surgery and therefore repair was incomplete. All of these patients died. One of the early survivors, who died at later surgery, had atresia without a fistula. The initial surgery consisted of gastrostomy only because of the infant's marked prematurity and the extensive mobilization required for anastomosis.

Of the 72 infants in this series, 50 were male and 22 were female. There were only 2 Negro infants in the entire series. This is too small a number on which to base any statistically significant conclusions concerning racial or sexual incidence.

Problems

These deformities present several problems to the anesthesiologist. The patients have excessive salivary secretions which cannot be swallowed because of the closed upper pouch so that the secretions overflow into the tracheobronchial tree. If the diagnosis has not been made before the infant's first feeding, the choking, coughing, and cyanosis attending the feeding will make the condition obvious. At the same time, aspiration of milk into the lung will almost certainly occur, resulting in lobar pneumonia (usually in the right upper lobe) and atelectasis. These findings were present in most patients on admission, demonstrating the importance of making the diagnosis early enough to avoid that first oral feeding. For this reason, at the Sloane Hospital for Women an orogastric catheter is used to empty the stomach and measure the gastric contents of each newborn before he leaves the delivery room. This procedure, in itself beneficial to the normal infant, makes possible the immediate diagnosis of atresia of the esophagus.[9] X-ray of the chest and abdomen with a catheter in the upper blind pouch will confirm the diagnosis. Radio-opaque substances, even in small volumes, should be avoided because they invariably contribute to the aspiration pneumonia and offer no important additional information.[10] The diagnosis of fistula between the lower segment and the trachea is indicated by the presence of air in the gastrointestinal tract.

Preoperative preparation of these patients must include careful and persistent aspiration of secretions, antibiotics if pneumonia is present, and parenteral fluids if dehydration exists. Caution must be exercised to avoid overhydration, which is easily produced in the newborn.

Special considerations of anesthetic management fall into three main categories:

1. The problems of an open chest.
2. The problems of the newborn.
3. The problems of physiologic disturbances due to prematurity, pulmonary infection, malnutrition, dehydration, or other congenital defects.

THE OPEN CHEST.—Expansion of the dependent left lung is impaired by the lateral position and by the pressure of towels or a small sand bag beneath the left rib cage. The right side of the chest is opened and the right lung collapsed by surgical pneumothorax or packing, depending on whether the surgical approach is transpleural or retropleural. Respiration may be depressed, depending on depth and technic of anesthesia. Respirations, therefore, must be assisted or controlled. An endotracheal tube is used to insure a patent airway, establish a good fit, facilitate the removal of secretions and blood in the tracheobronchial tree, and reduce the dead space so that an adequate ventilatory volume can be achieved more easily. The presence of the endotracheal tube does not necessarily insure an uneventful anesthetic course, but the indications for intubation are clear enough to make it mandatory.

THE NEWBORN.—The problems of anesthesia in the newborn arise from the small size of the patient and call for the presence of three or four adults "sharing" this tiny body and performing their required surgical and anesthetic tasks efficiently. All anesthetic equipment must be scaled to the dimensions of the newborn. There must be appropriate infant-sized masks, bags, oral airways, laryngoscope blades, endotracheal tubes, and suction catheters for passage through the endotracheal tubes. The oral airways, endotracheal tubes, and suction catheters should be sterilized by heat. The remainder of the apparatus, such as infant-sized circle-absorption systems, to-and-fro canisters, and nonrebreathing valves, should contain minimal dead space and offer negligible resistance. The equipment must not only be well-designed but kept clean and in good working order.

TABLE I.—INCIDENCE COMPLICATIONS DURING ENDOTRACHEAL ANESTHESIA

Complications	Number of Patients
Tube plugged with secretions or blood	6
Tube dislodged from trachea	5
Tube too small for suction catheter or ventilation	1
TOTAL	12

Excessive secretions in the respiratory tract containing small amounts of blood frequently occur after the onset of the operation. Since the trachea is but a few millimeters in diameter and the lumen of the endotracheal tube necessarily smaller, airway obstruction from inspissated mucus or blood may become a major problem (Table I). The short distance between the glottis and carina in the newborn creates another hazard: slight movement of either the patient's head or the anesthetic apparatus can dislodge even a well-anchored endotracheal tube.

Method of Intubation.—Since minimal or no anesthesia is required to insert an endotracheal tube in the newborn and since it is essential to establish an airway and accomplish a tracheobronchial toilet as promptly as possible, it was common practice at the time of this series to intubate these

TABLE II.—Effect of Prematurity on Mortality Rate

Infant Status (Weight)	Number of Infants	Number of Deaths	Death Rate (Per Cent)
Premature (less than 2,500 Gm.)	33	18	55
Mature (2,500 Gm. or more)	39	13	33
Total	72	31	43

TABLE III.—Effect of Other Congenital Anomalies on Mortality Rate of Infants Treated for Tracheoesophageal Fistula

Anomalies	Number of Infants	Number of Deaths	Death Rate (Per Cent)
Anomalies in addition to tracheoesophageal fistula	22	17	77
Tracheoesophageal fistula	50	14	28
Total	72	31	43

patients while they were awake. The high incidence of tubes plugged with inspissated blood and mucus has led to a change in point of view regarding technic of intubation. The frequency of plugged tubes is inversely related to the size of the tube. For that and other obvious reasons it appeared wise to insert the largest tube possible by whatever technic was safe for the infant. Until 1957 the number 14 (French scale) was the largest tube inserted, and numbers 10 and 12 were frequently used.

During 1957 and 1958, intubation was accomplished after administration of a paralyzing dose of succinylcholine, enabling the easy insertion of numbers 14 through 18 French tubes. It is obvious that a struggling, crying infant's larynx will not admit the same tube as that of a limp infant with open larynx.

Succinylcholine was usually administered via the intravenous catheter which is in place prior to onset of anesthesia. A dose of 10 mg. produces apnea, and the larynx is easily visualized for prompt, atraumatic intubation. In unusually alert or active infants the relaxant is preceded by 10 to 20 mg. of thiopental sodium. Should a vein not be available at the time for intubation, 20 to 30 mg. of succinylcholine can be administered intramuscularly. This represents a dose range of 4 to 5 mg. per pound of body weight. The intramuscular route produces relaxation in two to three minutes. Apnea may last fifteen to thirty minutes. The infant is hyperventilated with 100 per cent oxygen from the time of the intramuscular injection until the relaxation reaches its peak, at which time intubation is performed.[11] Succinylcholine should not be given at the very end of the operation since the baby must be as alert and vigorous as possible at the close of anesthesia.

Physiologic Disturbances.—*Prematurity.*—The incidence of prematurity (birth weight of less than 2,500 Gm.) is greater than average among tracheoesophageal fistula patients. Forty-six per cent of the patients of this series were premature. The problems noted in managing the newborn are more difficult in the premature infant. In fact, the smaller the infants, the higher the mortality rate (Table II).

Three of the 4 infants who weighed less than 1,500 Gm. died after the initial operation. The fourth was an infant weighing 1,320 Gm. who had an atresia without a fistula. Because of his small size and because the mobilization required for direct anastomosis was very extensive, a gastrostomy under procaine infiltration and nitrous oxide insufflation was performed. After six and one-half months of clyses, gastrostomy feedings, and frequent cyanotic episodes because of aspiration of mucus and saliva, the corrective anastomosis was attempted. The operation was very difficult and required six hours and fifteen minutes. There was much blood lost which was replaced as accurately as possible. The child died immediately after the operation, presumably of trauma in a poor-risk infant.

Of the 10 infants between 1,500 and 2,000 Gm., only 4 survived, a mortality rate of 60 per cent, whereas 10 of the 19 infants between 2,000 and 2,500 Gm. survived the operation, a mortality rate of 47 per cent. The over-all morality rate of the premature infants was 55 per cent, contributing 58 per cent, or 18, of all the deaths in our series.

On the other hand, the remaining 54 per cent of our patients, weighing 2,500 Gm. or more, contributed only 42 per cent, or 13, of the 31 deaths. The death rate of the mature group was 33 per cent. The mortality rate of the entire series was 43 per cent.

Congenital Anomalies.—The incidence of congenital anomalies not related to the trachea or esophagus is also higher than average in these patients. Thirty-one per cent of the patients in this series had other serious anomalies, which significantly decreased the infants' ability to withstand the trauma of surgery and anesthesia. The only cardiac arrest in the series occurred during the induction of anesthesia in an infant with an intraventricular septal defect and urologic deformities. Although the induction was not satisfactory, a more normal child might have tolerated it.

Table III illustrates the fact that significant congenital deformities contribute even more seriously than does prematurity to the final outcome of surgery. Seventy-seven per cent of the infants with other anomalies died, whereas only 28 per cent of those infants who had tracheoesophageal fistula as their only defect died. Finally, Table IV shows that of our infants who weighed 2,500 Gm. or more and who had no other serious anomalies, 84 per cent survived.

Dehydration and Pneumonia.—Dehydration and pneumonia further lower the infant's resistance to surgical and anesthetic intervention. Early diagnosis of tracheoesophageal fistula would help lower the incidence of these conditions. Once they occur, however, these problems must be treated preoperatively so that the patient will be prepared as effectively as possible. Edema is a common complication both before and after surgery so that sodium salts should be given with caution and all fluids with care. A "cut down" must be performed before surgery begins so that the anesthesiologist can continue the required fluid and electrolyte therapy as well as replace blood and administer drugs as indicated.

TABLE IV.—COMBINED EFFECT OF PREMATURITY AND OTHER CONGENITAL ANOMALIES ON MORTALITY RATE

Infant Status	Number of Infants	Number of Deaths	Death Rate (Per Cent)
Premature and other anomalies	41	26	63
Mature without other anomalies	31	5	16
TOTAL	72	31	43

Technic

In 1953, Zindler and Deming[12] reported on the anesthetic management of esophageal atresia for 49 patients during a four-and one-third-year period. The same general principles of management were followed in their study: light planes of anesthesia, assisted or controlled ventilation via an endotracheal tube, frequent tracheobronchial toilet pre- and postoperatively as well as during the operation, and the use of equipment specially designed for the small patient. There was uniformity of technic used in each patient in their series. It consisted of the insertion of a lubricated endotracheal tube with the patient awake, followed by induction with cyclopropane, supplemented during the remainder of the operation with ether vapor. The non-rebreathing Leigh valve was used. The use of pressures in excess of 30 cm. of water was avoided, and 50 per cent helium was used for expansion of atelectatic areas. At the termination of anesthesia a mixture of carbon dioxide and oxygen with or without helium was often used to produce hyperpnea in order to hasten the elimination of anesthetic agents and to improve the ventilation of the lungs.

In contrast with this regime, many dif-

TABLE V.—INCIDENCE OF COMPLICATIONS AFTER ENDOTRACHEAL INTUBATION

Complication	Number of Patients
Laryngeal edema (with or without stridor)*	6
Tracheostomy	1
Convulsions after operation†	1
TOTAL	8

* One of these patients was intubated for preexisting pneumonia four hours before operation.

† Possibly related to the hypoxic period while tube was plugged. Patient made an uneventful recovery.

TABLE VI.—CAUSES OF DEATH POSTOPERATIVELY

Cause	Number of Deaths
Leakage or disruption of anastomosis	12
Postoperative pulmonary complications	8
Preoperative pulmonary disease or congenital anomaly of great severity	6
Type 3c undiagnosed at operation	3
Cardiac arrest during induction of anesthesia without true recovery postoperatively	1
Generalized infection	1
TOTAL	31

ferent anesthetic agents and technics were used in our series of patients. Since 1957, muscle relaxants were used for intubation but not for maintenance. Technics varied from semiopen to fully closed systems. Neither the agents used nor the technics of administration made a difference in the outcome. The factors which were important were the experience of the anesthesiologist and the surgeon and the condition of the patient. Several of the practices of Zindler and Deming[12] were deliberately avoided in this Babies Hospital series. For example, a lubricant jelly was not used on the equipment because it is a foreign body which can crust and harbor local bacteria, thereby behaving as a physical and chemical irritant. The tubes were "lubricated" with sterile saline or water. The use of pressures in excess of 30 cm. of water have been effective in expanding atelectatic areas and have not proved harmful, so that helium was unnecessary. Pneumonic patches cannot be ventilated, nor was an attempt made to do so. The use of carbon dioxide to produce hyperpnea was not employed since it adds to the cerebral depression and respiratory acidosis, which should be minimized. Oxygen alone is used until the patient breathes, coughs, and responds to stimuli well enough to be transferred to an Isolette. If narcotics and muscle relaxants are avoided and light planes of inhalation agents used, prolonged periods of cerebral and respiratory depression are unusual.

Postoperatively, a few millimeters of edema in the subglottic region, whether due to trauma or infection, can cause airway obstruction requiring tracheostomy. Every patient was placed in an Isolette with an oxygen-enriched humid atmosphere as prophylaxis against laryngeal edema. Table V lists the incidence of postoperative complications caused by endotracheal tubes.

The one tracheostomy was peformed in a patient who was admitted in respiratory distress and who was treated with endotracheal intubation to help clear the excessive secretions and to establish an airway for oxygen therapy. The tube was not sterile and the total time of its presence in the trachea was about eleven hours. Since that incident in May of 1950, there have been no further cases of edema severe enough to require tracheostomy. Skillful introduction of sterile endotracheal tubes has eliminated this complication.

To minimize the hazards of anoxia and aspiration in the immediate postoperative period it is essential that the patient be awake and breathing and coughing well at the end of the operation. For this purpose, as well as to minimize the depressant effects of the anesthetic agents, light planes of anesthesia or analgesia without the use of long-acting muscle relaxants are recommended.

Causes of Death

Table VI shows the causes of mortality. The case of cardiac arrest during induction of anesthesia represents the only instance in which anesthesia was the primary cause of death. In 1 of the 12 instances of disruption of the anastomosis the infant had a gastrostomy on the second postoperative day. During the gastrostomy, which was performed during local infiltration and ethylene by face mask, a bout of cyanosis was treated with positive pressure oxygen. After the gastrostomy there was cyanosis and excessive tracheal secretions. The next morning the child died of hemopneumothorax and fibrinopurulent pleurisy. The question arose whether or not undue pressure against the anastomosis was exerted in the absence of a perfect airway or whether the original bout of cyanosis reflected a defective anastomosis site. Two thirds of the patients who died during their initial admission died by the third postoperative day. The rest died within the first month.

The anesthesiologist entrusted with the care of these patients must be experienced in anesthetizing newborn infants. He must be able to maintain adequate gas exchange despite an open chest, a small tidal volume, and excessive secretions. He must be equipped to replace blood and electrolytes in a patient unable to tolerate even small errors. Should the endotracheal tube be dislodged, he must be able to reinsert it gently and quickly despite the awkward position.

Summary

1. Seventy-two patients with esophageal atresia with or without tracheoesophageal fistula were operated on at the Babies Hospital between 1950 and 1956. Of these, 41 lived, a survival rate of 57 per cent.

2. Infants born with this anomaly are often premature (46 per cent in this series) and frequently have concomitant serious anomalies other than esophageal atresia (31 per cent in this series). The high incidence of prematurity and other congenital anomalies increases the mortality rate. Of the 31 infants who were full term and had no other serious anomalies, 84 per cent survived.

3. The special considerations of anesthetic management fall into three main categories:

a. The problems of an open chest, which are best solved by assisted or controlled respirations via an endotracheal tube.

b. The problems of the newborn, which can be relieved by the availability of equipment designed for the very small patient and utilized by an anesthesiologist who is experienced in their use.

c. The problems of physiologic disturbances, due to prematurity, pulmonary infection, malnutrition, dehydration, or other congenital defects, which must be treated by meticulous pre- and postoperative tracheobronchial toilet, careful supervision of electrolyte and fluid therapy, and skillful administration of light inhalation anesthesia.

4. Early diagnosis is essential. Without it, patients reach the operating room with pulmonary and electrolyte problems which increase the hazard of surgery. The practice of passing a catheter into the stomach in the delivery room is an invaluable aid to prompt diagnosis.

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Discussion

Richard N. Terry, M.D., *Buffalo, New York.*—Dr. Jacobs has perused the problems of anesthesia for tracheoesophageal fistula in a most illuminating manner from an enviably large series of patients. The results presented should encourage all of us who have met and are to meet again often in the small hours, the tiny, gasping, wet-lunged, infant with this formidable anomaly.

Our impressions of the management of this anesthetic problem at the Children's Hospital in Buffalo is based on a series approximately one-half the size of Dr. Jacobs', and is almost as encouraging.

Despite prematurity, pneumonia, and multiple congenital abnormalities, 40 per cent of our patients with these fistulas during the past seven years have recovered. There have been no table deaths for this period either, even for a $2^1/_2$-pound premature infant.

Anesthetic management for the fistula involves a major problem, perhaps unique in the field of anesthesia. Positive pressure ventilation—and who would attempt this procedure without controlled respiration via an endotracheal tube—can inflate the stomach via the fistula in an irretrievable fashion, fixing the diaphragm so high as to render adequate ventilation impossible. Or, should the stomach empty into the bronchi, being the only way in which regurgitation can take place, ventilation again becomes impossible. The anesthetist here finds himself in an impossible situation, and what is worse, in one of his own making.

When one of our surgeons suggested doing the inevitable gastrostomy first, before the definitive surgery, we were delighted, since once constant suction is applied to the gastrostomy, one's hand is free to apply sufficient pressure to the bag, to inflate the wet pneumonic lungs, free of the fear that that little "extra" effort is going to irretrievably inflate the stomach. Further, the hazard of inadvertent flooding of the tracheobronchial tree via the fistula is gone. Nine children thus treated by this surgeon are now leading normal lives.

Reserve the Dates . . .

153rd Annual Convention

Medical Society of the State of New York

May 9 to 15, 1959

Hotel Statler Hilton **Buffalo**

The Role of the Medical Society in Industrial Health

ANTHONY A. MIRA, M.D., NEW YORK CITY

(*Director of Bureau of Industrial Health and Workmen's Compensation, Medical Society of the State of New York*)

In an effort to determine the nature of the role of the medical society in the field of industrial health, the writings of interested parties have been reviewed. It is evident that organized medicine is losing many friends in its attempt to maintain its well-deserved autonomy. The medical profession must be on guard against those who would reduce the profession to a trade without giving it the benefit of trade union protection. The handwriting has been on the wall (and in many books and periodicals as well) for a long while, but now it is much more legible.

The medical society should and can point the way, particularly in industrial medicine, but it must have a willing, able, and large audience within its ranks. The stakes are high for the practicing physician. It should not be necessary to entice him into activity in his medical society with "door prizes," penalties for nonattendance, or magicians.

Definitions

1. *Industrial health* is concerned with maintaining the well-being of individuals at work. The primary objective of industrial or occupational health is the prevention of illness or injury at work. The secondary, although important, consideration is the curative aspect of maintaining good health.

2. *Occupational medicine* is that branch of medicine which deals with the maintenance of good health of the employe in relation to his work environment.

3. *Occupational health programs* recognize the need to provide a safe work environment and promote better health among the employes. This may require complete cooperation between physicians, nurses, industrial hygienists, safety engineers, dentists, technicians, and private and official community agencies that offer health, welfare, safety, and employment services.

4. *Employe medical care programs* include extensive care of individuals with nonoccupational illnesses or disabilities and must not be confused with occupational health programs. The basic objective of medical care programs is to reduce the cost of personal medical care for the employe.

Employe medical care programs may be financed by unions, employes, or management, either solely or jointly, and may include services to dependents of employes and retired employes. The services may be rendered by personal physicians, physicians in management or union health centers, or by other physicians on referral. The service may be limited in scope or completely comprehensive. These services are usually supplemented with hospital care which is available through prepaid insurance, union welfare, or company allotment.

Industrial Physician

The responsibilities of the industrial physician are many:

> His first job is to be responsible for planning, directing and coordinating medical and surgical services for the organization or unit for which he is responsible.
>
> He will be responsible not only to the employes but to his employers. He must inte-

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> grate the medical program with all other company activities. He has to recommend plant medical facilities and equipment and advise on the budget for company medical activities. He must establish scientific standards of physical capacities for work. He must study physical demands analyses so as to place properly his workers. The medical director must be responsible for the selection of the employes in his unit. He must be training individuals. . .He has to initiate policies, prepare directives, and supervise all medical department personnel.
>
> He has to collaborate with the personnel department in the development and administration of their activities and provide medical advice and assistance to other departments. He must recommend measures for control of all 'environmental' hazards. He has to develop and maintain a program of health maintenance and education for all employes.
>
> The maintenance and centralization of medically acceptable records and statistics will be of importance to both the company and the individual employe. The medical director must maintain the confidential nature of these records.
>
> Like everything else in medicine, it necessitates constant education and the ability to foresee new methods and to adopt the scientific attitude to industrial problems.
>
> Today the industrial physician is not only a doctor, but an administrator, an educator, and psychiatrist, and often a priest.
>
> The medical director is a health counselor for all employes. He has to cooperate with all community health agencies, and above all he must cooperate in an ethical fashion with the employe's personal physician and allied professional organizations.
>
> The industrial physician has a tremendous community responsibility. First of all, it is a necessity that he be part of organized medicine. Through this, he can often keep his proper relationship with his fellow physicians and keep up his education in scientific medicine. On the other hand, this gives organized medicine an opportunity to share in the medical director's problems, to help him and to work with him.[1]

> Every physician, surrounded as he is by an exploding industrial culture, might realize that he is a part of occupational health and may make contributions regardless of his professional work or specialty.
>
> Every physician, knowing that he is part o occupational health, might enhance the valu of his services to industrial workers by a enlarged knowledge of industry itself, in it peculiar requirements as to medical services t its workers.
>
> The half-visible, half-submerged need fo 5,000 more skilled physicians in industria medicine in the United States alone speedil might be met by that many taking thei stand alongside the 9,000 already serving directly in plants, . . .and . . .participating i the country's fantastically ramifying industry.
>
> Occupational health might overcome it appalling shortcomings in the investigation within its immediate and obvious needs.
>
> A myriad of untouched materials, chemicals, machines, and processes beckon for the investigator's exploration. Already the lag is near to fifty years. . . .[2]

These statements give the job requirements for the industrial physician and the challenges facing him in his duties and his attitudes. The need is there. The practicing physician should meet this need voluntarily and with interest, before labor, industry, or government, acting alone or together, continue to seek other means of filling the gap.

Industrial Medicine Is Preventive Medicine

Over ten years ago an industrialist made it clearly known that ordinary medical care in the treatment of industrial injuries and diseases was not sufficient. Curative medical practice with little or no attention to preventive medical service did not solve the problem. It was also pointedly stated at that time that if workmen's compensation costs are part of production, nonoccupational accidents and illnesses may also be considered part of production costs. Many industrialists have accepted the responsibility of paying for ill health, and unions have included medical care through insurance and other means in their collective bargaining agreements.[3]

Another layman, also an industrialist, sees a direct relationship between a worker's efficiency and health, the latter not only a reflection of the worker himself but of the health of his family and his community.[4]

Another states that "preventive medicine is the backbone of industrial health" and is of the opinion that the industrial physician is and should be concerned with the "whole health" of the individual, just like the "old time country doctor."[5]

Union leaders are even more vocal and expressive in the need for medical care both on and off the job. One maintains that "Health and economic security are inseparable" and advocates that disease and injury be prevented as well as treated.[6] The many union health centers and the expanding health insurance benefits included in collective bargaining agreements are evidences of the new trend.

In reporting the recommendations made at the President's Conference on Occupational Safety, Secretary of Labor James P. Mitchell aptly states that "the whole man comes to work and not merely an eight-hour-a-day employe" and that there is urgent need for increased attention to the preventive medical, and other aspects, of accident control.[7]

It can be seen that the impetus for greater interest by physicians in industrial health is present and comes from all sides—labor, management, and government. The practicing physician must show a greater sense of responsibility in occupational medicine, a responsibility which is beyond purely curative treatment. The medical society can show the way and should be available at all times to help him, work with him, and share his problems once his interest is aroused.

Occupational medicine is now a specialty recognized through qualification by the American Board of Preventive Medicine as a subspecialty. The advances in industrial methods through mass production, automation, nuclear power, and new materials such as plastics bring on new hazards that are medically challenging. The well-being of the breadwinner of the family is important to the physician from the point of view of pure economics. A healthy worker on the job is not a public charge or dependent on the limited resources obtainable from family, friends, charity, or compensation indemnity payments.[8]

It has been predicted that within ten years only 10 per cent of all payments to physicians will be on a fee-for-service basis. Major unions are demanding full medical expense coverage for their members and families with the employers financing the cost. They are prepared to establish health centers if suitable coverage cannot be had from the present insurance plans. In fact, in the New York City area alone, nearly 1,500,000 persons, members and their dependents, can receive either diagnostic or curative care from union health centers. Medical advisors to leaders of the AFL-CIO as well as the leaders themselves have repeatedly stated that health plans should be completely prepaid without "hidden costs," comprehensive in scope, and on a group practice basis with control of the quality of medical service.[9]

On the other hand, it has been pointed out that there is pressure to have industrial health personnel treat nonoccupational conditions and that some industrial physicians favor the idea of an industry-sponsored, full medical care center.[10]

Industrial Medicine Is Not Curative Medicine

The council on Industrial Health of the American Medical Association prepared a statement defining the scope, objectives, and functions of occupational health programs which was adopted by the House of Delegates in June, 1957. In it the plane of cleavage between the functions of the industrial physician and the physician in the community is delineated.

> The most important aim of the American Medical Association Council on Industrial

TABLE I.—Chronologic Review of Significant Events in Industrial Health and Organized Medical Care

Industrial Health	Medical Care Plans
1776: Massachusetts prohibits use of lead still heads and worms after Franklin traced lead colic to their use.	
	1787: Free African Society, Philadelphia, one of first mutual aid associations to give cash disability benefits.
1837: Essay on "The Influence of Trades, Professions and Occupations in the United States in the Production of Disease" written for the Medical Society of the State of New York by Benjamin W. McCready.	
1852: Massachusetts passes the first safety law applying to steam machines.	
	1857: Establishment of New York City Police Pension Fund for disability and death benefits.
1860: One of the first papers on industrial toxicology, "Mercurialism in the Hatters' Trade" by J. Addison Freeman.	
	1868: First major industrial medical care prepayment program organized by Southern Pacific Railroad; financed by employer and employes.
1877: Massachusetts the first state to pass law requiring factory safeguards.	1877: First national union sick benefit program established by granite centers unions.
	1882: Establishment of first major employe sponsored mutual benefit association, Northern Pacific Railway Beneficial Association. Developed program of complete medical care and other benefits financed by employer-employe payments. Medical service by group practice at hospital and by arrangements with physicians.
1886: Massachusetts the first state to place an accident-reporting law on its statute books.	
	1887: Homestake Mining Company of Lead, South Dakota, establishes company-financed medical department with full-time staff providing complete medical service to employes and their families.
	1891: Consolidated Gas Company of New York employes form benefit program. In 1906 hires own doctors. In 1916 opens dispensaries and also arranges for home care. In 1922 dental care included. Employer contributions started in 1902.
1898: United State Supreme Court rules that the health of the laborer as a producer is considered to be as much a public benefit as the health of the consumer and that protection of labor becomes a public responsibility.	
1902: First official industrial hygiene survey in the United States made for the Department of Labor.	
1905: First instruction in industrial hygiene given at Massachusetts Institute of Technology. In 1906 at University of Pennsylvania.	
1909: New York first state to pass law specifying that compressed air workers must have preemployment physical examinations by physicians paid by employer.	
	1913: First union-sponsored service type medical care plan started by ILGWU.
1915: First symposium on industrial health held at annual meeting of American Medical Association.	

TABLE I—(*Continued*)

Industrial Health		Medical Care Plans	
1918:	Harvard offers degree in industrial hygiene.	1918:	War Labor Board established during World War I recognizes the right of workers to organize trade unions and bargain collectively.
1926:	American College of Surgeons adopts minimum standards for medical service in industry.	1926:	First collective bargaining agreement with health and welfare clause between Public Service Corporation of Newburgh, New York, and Amalgamated Association of Street and Electric Railway Employes (life insurance and sick benefits).
1937:	American Medical Association creates Council on Industrial Health.		
		1943:	First medical benefits provided under collective bargaining agreement between ILGWU and Philadelphia Waist and Dress Joint Board.
		1942–1945:	With wage increases blocked, "fringe issues" become important and allowable in collective bargaining by War Labor Board. Internal Revenue allows deduction for these from gross income. Great stimulus to growth of union health and welfare plans.
		1947:	First medical services to United Mine Workers Welfare and Retirement Fund provided to paraplegic miners.
		1948:	National Labor Relations Board rules that pension, health, and welfare plans are "wages" and therefore within scope of collective bargaining.

Health is to see that the best possible care is given the patient, both in preventive medicine and in treatment and for the president of the company as well as for the janitor. Secondly, the Council dedicates itself to the training of specialists and the education of all physicians in occupational medicine. Our third goal is education of both labor and management in which the job of occupational medicine is—what they can and cannot expect of the industrial physician.[11]

History

In an attempt to shed more light on the line of demarcation between occupational health programs and medical care programs, the occurrence of significant events, in chronologic order as compiled by the United States Public Health Service, will be reviewed (Table I).[12,13] This history will never solve any riddles but it might give better insight to the development of medical *service* in industry as contrasted with medical *care* for workers and their dependents.

It is interesting to note that medical care plans were started as far back as 1787 as benevolent associations or mutual aid societies by the workers in a trade. The disabled worker was given small amounts of money to tide him over periods of no income and money was also provided to help bury the worker when he died. Some of these societies evolved into unions as we know them today and developed medical care programs with or without employer contributions. The greatest stimulus to growth of union health and welfare plans came during and after World War II when wage increases were blocked and "fringe issues" assumed importance at the bargaining table.

Industrial health programs had a very nebulous start. Occupational health matters were of interest to certain individuals in public health departments or to the lawmakers of a state who would impose industrial safety regulations by law. After a period of isolated endeavors, certain tendencies, characterisic of the present situation, emerged (Table I).

The Role of the Medical Society

The Medical Society of the State of New York has for many years been aware of the growing importance of occupational health.

In April, 1957, it established the Bureau of Industrial Health and combined it with the then twenty-three-year-old Bureau of Workmen's Compensation. This was the first time that a medical society in the United States so recognized the growing influence of industrial health and occupational medicine.

One of the duties assigned to this combined bureau was to help establish industrial health committees in all the component county medical societies. It was felt that an active industrial health committee comprised of physicians who are engaged or interested in occupational medicine can set up standards for adequate, economical, and ethical medical services, either inplant or by some outside arrangement. This committee could maintain a roster of physicians who would be interested in serving in such departments or by such arrangement.

The county society, through its committee, could offer advice to management on the advantages of such industrial health services. It could offer a roster of speakers to present these advantages at meetings of organized industrial and community groups, such as the Chamber of Commerce and Rotary clubs.

The committee could present to the society membership at large some of the problems of providing preventive medical services to industry. By this interest, the county society will have more direct contact with industry. This is very important since the trend in the economics of medical practice is pointed in the direction of having industry pay the bill for medical care, be it preventive or the treatment of occupational and nonoccupational injuries and illnesses.

The medical society could be the medium through which instruction in occupational medicine may be arranged. Courses and lectures could be sponsored for interested physicians on such topics as the application of preventive medicine in industry, occupational diseases, and industrial hygiene.

The medical society should maintain contact and cooperate with public and private agencies interested in industrial health services. It cannot stand aloof in the face of rapidly changing social demands. It must be alert to the aims and activities of all interested parties.

There is a growing belief that one of the rights of a citizen is the right to health as well as the right to the other necessities of life, food, clothing, and housing.[14]

The physician, through his medical society, will have to justify his leadership in health matters.[15] In March, 1958, the *New York Times* reported that "a pact, under which the merged labor federation and the American Social Hygiene Association will work jointly to 'strengthen and foster the health and welfare of American families' was made public." The news item continues to say that this pact is one of a "network of formal alliances intended to make organized labor a more effective participating force in the activities of voluntary, social, health, recreation, and community agencies." It was stated that 75,000 unionists are now serving as members of the boards of charitable agencies.

"Like it or not, organized labor will be exerting more influence in the health and welfare fields than ever before," says the American Medical Association. "Rather than wait till a union health plan is announced. . .medical societies should volunteer their guidance and counsel now to local AFL-CIO community relations committees. . . ."[16]

Government, through official occupational health agencies, has made major contributions in keeping the worker healthy. One of the founders of modern industrial hygiene in the United States sees increasing need for the services of these official agencies, particularly by small plants which cannot afford their own industrial health programs since these plants employ the bulk of the nation's labor force.[17]

With shifts in population from farms to urban areas and plants moving from crowded, high-tax city areas to the suburbs and beyond, the physician in the smaller county should be ready to accept the challenge of industry.

Recent Accomplishments of the Medical Society of the State of New York

The Medical Society of the State of New York has in the past year, through an active committee on Industrial Health, stimulated and guided its Bureau through some useful channels.

It has sponsored a course in occupational medicine on a one-afternoon-a-week basis in metropolitan New York.

It has obtained a complete roster of physicians engaged in the full- or part-time practice of occupational medicine.

It has established a fair standard for the remuneration of physicians engaged in such practice.

It has cosponsored a survey with the Commerce and Industry Association of New York, Inc., in an effort to determine the extent of available medical facilities in member industries employing less than 1,000 workers.

It has surveyed the union health centers in the New York City area in an effort to determine the number of eligible members and dependents for which medical services are available.

It has made the services of leaders in occupational medicine available by means of a speakers bureau.

It has offered advice to state agencies, industry, employers, and insurance carriers on matters pertaining to industrial health.

It has established an award to be granted at specified intervals, probably annually, to institutions, industrial organizations, or individuals for distinguished service in the advancement of the principles of ocupational health.

It has established a resource within its structure to keep a watchful eye on legislation and trends in medical care that would abrogate the rights of both the worker and the physician and to have an observation post for infringements of the Principles of Professional Conduct by physicians.

It has established the means by which surveillance in workmen's compensation matters can be continued.

It has expanded a unit within its administration that is truly a service organization for its physician membership.

Summary and Conclusions

These are superfluous in a paper of this nature. It might be better to quote a letter from a smaller county medical society:

> Your nice letter of January 17 giving reasons for our establishment of a Committee on Industrial Health somehow left us uninspired. There must be a difference between the industrial health needs of large cities as compared with small places like this. After due deliberation the Comitia Minora of the Medical Society of the County of . . . unanimously decided that there is no need locally for an Industrial Health Committee.

Arrive at your own conclusions!

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The Use of Radioactive Iodine in the Diagnosis of Diseases of the Thyroid

DONALD H. BAXTER, M.D., ALBANY, NEW YORK

(*From the Radioisotope Laboratory, Albany Medical Center*)

During the past ten years the use of radioactive iodine (RAI) in the diagnosis of thyroid disease has grown tremendously. It is no longer an experimental tool used only in the large medical centers but, with the establishment of many relatively small laboratories, it is a practical clinical laboratory procedure available to almost every practitioner.

As with nearly every laboratory determination, the result must be related to and integrated with the clinical picture by the physician. Therefore, it seems wise that he have an adequate understanding of the underlying physiology and pathologic physiology which the various RAI tests are designed to elucidate, the types of tests generally available, and the various pitfalls that may be encountered when interpreting the results.

Iodine and Thyroid Physiology

The physiology of the thyroid gland and iodine is an extremely complex subject, many of the facets of which are not yet clarified, although the use of radioactive iodine as a tracer has resulted in a much better understanding of the subject in recent years. The following brief remarks concerning the physiologic background of thyroid and iodine metabolism may be regarded as a guide to the clinical interpretation of the results of radioactive iodine testing and is not a comprehensive review of the subject. Many areas of disagreement exist in this field, but for the purposes of the present discussion these may be disregarded.

It is also necessary to remember that physiologically and biochemically radioactive iodine, the most commonly used form of which is I^{131}, behaves in exactly the same fashion as stable iodine, I^{127}. Radiation from the radioactive element can be detected in extremely small quantities and it can be followed through the various metabolic pathways.

In the normal individual who has an adequate source of supply of iodine, 150 to 200 micrograms of iodine enter the body supply daily, principally by ingestion of food and water, and an equivalent amount is excreted daily, being lost principally in the urine but also in the sweat and stools.

Only that portion of the iodine taken into the body that is in the form of iodide or can be converted by the body to iodide is available for active physiologic use. Ingested iodine is absorbed into the blood stream in the form of iodide and in this form is, in a sense, competed for by the thyroid gland and the kidney. That portion of the iodide removed from the plasma pool by the kidney is excreted in the urine. The iodide removed from the plasma by the thyroid gland is almost immediately, under enzymatic control, converted into organically-bound iodine.

Certain other body functions involve removal of iodide from the plasma, notably the secretion of the gastric glands, the sweat glands, the salivary glands, and the mammary gland. The iodide which is in the salivary and gastric secretions is not ordinarily lost to the body pool of iodine and may be disregarded. Only small quantities are lost through the sweat glands. The secretion of iodide by the mammary gland is not particularly relevant to the present discussion, but must not be forgotten, since radioactive iodine should not be used for either diagnostic or therapeutic purposes in a nursing mother.

The iodide which has been trapped by the thyroid gland and converted to protein-bound iodine is stored in the gland for varying periods and secreted by the gland at varying rates depending on the physiologic and metabolic activity of the total individual.

The interrelation of the thyroid and the pituitary gland should be mentioned at this point. Presumably the production of thyroid hormone is largely under control of thyroid-stimulating hormone (TSH) produced by the pituitary which stimulates the thyroid tissue to secretory activity. On the other hand, an increase in circulating thyroid hormone depresses the pituitary production of TSH. In simple terms, under normal physiologic circumstances a relative balance exists between the two glands.

The iodine contained within the thyroid gland bound to protein is processed in a rather complex chemical manner under the control of enzymes to a final form which is secreted into the blood stream at varying rates depending on many factors. In a broad sense one may think of the thyroid hormone as mediating the level of metabolic activity of the individual as a whole.

The circulating thyroid hormone that is utilized by the end organs is metabolized, the iodine is converted to the iodide state and is returned to the body pool for re-use. Some of the radioactive iodine tests measure iodine activity during the iodide phase of metabolism, others measure iodine during the organic or protein-bound phase. In discussing the various tests further reference pertinent to the particular examination in relation to iodine and thyroid physiology will be made.

The Common RAI Diagnostic Tests

RAI UPTAKE.—These tests, as do all of the radioactive iodine tests, depend for satisfactory results on a reasonably normal level of iodide in the general body pool. The effects of variations from the normal in the body iodine content will be discussed later.

The uptake tests are essentially a measure of the avidity of the thyroid gland for iodide. It is generally assumed that the uptake of ingested radioactive iodine will be complete at the end of twenty-four hours and, therefore, that measurement of the activity in the thyroid gland at this time will reflect the result most accurately. This is not always the case. In some instances of hyperthyroidism the rapidity of the turnover of iodine within the gland results in a considerable secretion of I^{131}-containing thyroid hormone within the twenty-four-hour period. In some instances, therefore, it is possible that four-, six-, or eight-hour uptake tests might be more valid and in many laboratories measurements are made at such intervals. In most instances a combination of the twenty-four-hour uptake test with tests subsequently to be described will evaluate this hyperactivity.

The thyroid uptake tests are carried out by administering a carefully measured amount of radioactive iodine by mouth. The total quantity varies in different laboratories, ranging from 5 to 50 microcuries, but averaging approximately 25 microcuries. Twenty-four hours later the radioactivity in the thyroid gland is measured. No restrictions are placed on the patient's diet or activities.

The result of the twenty-four-hour and other uptake tests is expressed as a percentage of the administered dose. The results will vary somewhat from laboratory to laboratory but, in general, the normal range is between 10 and 50 per cent. A considerable overlap of normal and abnormal values occurs at both extremes, although most hyperthyroid patients will have values of 70 per cent and over, and many myxedematous patients will have uptakes of less than 10 per cent. Values for four-, six-, and eight-hour uptake tests are correspondingly smaller, but must be determined empirically for each laboratory.

Urinary Excretion Tests.—The measurement of the radioactivity excreted in the urine over a twenty-four-hour period was one of the earliest methods of measuring I^{131} utilization by the body. From a purely laboratory point of view this is an easy determination, but errors in collection of the specimens and the inconvenience to the patient of collection over a twenty-four-hour period are obvious. Urinary excretion studies may be carried out concurrently with thyroid uptake studies and are done with the same dosage ranges. The urinary excretion of I^{131} is generally in inverse proportion to the thyroid avidity for iodine and will range from 30 to 80 per cent of the administered dose.

Salivary I^{131} Excretion.—A number of workers in the field have utilized the I^{131} content of the saliva at twenty-four hours after administering a tracer dose. Actually salivary iodide content is only a very indirect expression of the rate of thyroid function, being a direct reflection of the plasma inorganic iodide level. The same information can be obtained more directly and more accurately by other means.

Conversion Ratio.—The conversion ratio is the ratio of proteinbound I^{131} in the plasma to the total plasma I^{131}, expressed as a percentage and measured at the end of twenty-four hours.

It is important to note that the time chosen for measurement in this test is very significant. Obviously, immediately after the administration of the tracer dose all of the plasma I^{131} will be in the iodide form, whereas if one waits sufficiently long after the administration of the tracer dose, all of the I^{131} contained in the plasma will be in the protein-bound form.

The test is carried out by drawing a sample of venous blood at the end of twenty-four hours following the administration of the oral tracer dose. The total I^{131} content of the plasma obtained from this specimen is determined. The specimen is then passed through an ion-exchange resin column which will remove the I^{131} in the iodide form and then the resulting specimen is again counted for determination of the PBI^{131}.

The result is expressed as a per cent and for hyperthyroid individuals will be over 50 per cent, whereas normal or hypothyroid individuals will fall below this range. This test is particularly valuable in differentiating between individuals who show a high twenty-four-hour uptake due to an iodine want as contrasted with those who have a hyperactive thyroid gland. It is of no value in the detection of myxedema.

PBI^{131} Determination.—This test is a measure of the protein-bound I^{131} present in the blood. Time is less critical than in the determination of the conversion ratio, and it may be carried out for from forty-eight to ninety-six hours without significantly affecting the results. It is usually done at the end of seventy-two hours.

Venous blood is drawn at the chosen time, and the I^{131} content of the plasma is measured. If the result is less than 0.27 per cent of the administered dose per liter, no further determination is necessary and the result is within the normal range. If, however, the concentration is greater than 0.27 per cent, then the inorganic I^{131} must be removed using the ion-exchange resin column and the protein-bound I^{131} alone determined. If the concentration of the remaining PBI^{131} is greater than 0.27 per cent, the value is in the hyperthyroid range. If it falls below this level, the result is normal. This test again is a measure of the organic phase of iodine metabolism and is useful in the diagnosis of hyperthyroidism, particularly in those patients whose twenty-four-hour uptake values fall within a doubtful range. It too is of little value in separating the normal from the myxedematous individual.

TSH Test.—This study is a means of determining the response of the thyroid gland to the exogenous thyroid-stimulating hormone. It is a somewhat more complex and time-consuming examination and there are fairly specific indications for its use.

It should not be utilized routinely but probably only after discussion of the problem with the laboratory director.

The test is ordinarily carried out by administering a tracer dose of radioactive iodine to the fasting patient and determining the uptake by the thyroid gland at the end of three hours. Thereafter 10 units of TSH are administered intramuscularly. The patient returns in twenty-four hours and the three-hour uptake procedure is repeated, the residual activity of I^{131} in the thyroid gland from the previous dose having first been counted.

This determination is of particular value in the study of patients suspected of myxedema who have low I^{131} uptakes. Provided that sources of exogenous iodine resulting in a low uptake can be excluded, patients with primary hypothyroidism and those with pituitary hypothyroidism will both show low I^{131} uptakes in the initial test. However, the patient with thyroid myxedema will show no response to the TSH, whereas the patient with pituitary myxedema will show a sharp increase as the result of the stimulation of the thyroid gland. This test is also of some value in documenting the presence of thyrotoxicosis factitia. A euthyroid individual receiving thyroid extract will show a suppression of normal I^{131} uptake in the control test but a sharp increase in the uptake following the administration of TSH. On the other hand a truly hyperthyroid individual, even though he receives exogenous thyroid material, will show no suppression with the control test.

THYROIDAL-IODIDE CLEARANCE. This is another method of studying the iodide phase of thyroid metabolism. In general this is a method of measuring the rate at which the thyroid gland removes iodine from the plasma.

The test is carried out by administering the tracer dose of RAI intravenously, continuously measuring the thyroid content of I^{131} over a period of thirty minutes, and also measuring the amount of I^{131} in the urine in a specimen obtained at the end of thirty minutes. The result is expressed in milliliters of plasma cleared by the thyroid gland per minute. The mathematical calculations involved in reaching the results are based on some assumptions which may not be entirely valid. Nevertheless the results may be regarded as reasonably acceptable.

The disadvantages involved in the performance of this test, which include the intravenous administration of the test dose and the necessity of continuous counting for a period of a half an hour with laboratory worker supervision required during this time, make the test rather undesirable for routine use. It has, however, certain specific indications and may also be used when the necessity for arriving at an evaluation of thyroid function in a very short interval of time exists.

SUPPRESSION TEST.—There are various methods of carrying out suppression tests. They are based on the knowledge that the iodine uptake in patients with hyperthyroidism is not apparently reduced by the administration of exogenous thyroid substance.

The test is most commonly carried out by doing a routine twenty-four-hour uptake and thereafter placing the patient on triiodothyronine in doses of 50 to 100 micrograms a day for seven days. The twenty-four-hour uptake test is again carried out with the patient continuing on the same dosage of thyroid substitute. The patient with hyperthyroidism will show essentially the same RAI uptake in the second test as in the control, whereas the individual with a normal thyroid will show a quite marked suppression of the uptake of iodine.

This determination still has some value in certain specific instances, but has largely been replaced by simpler methods that have already been described.

DIFFERENTIAL UPTAKE OR SPOT SCANNING.—Differential uptake studies involve counting over specific symmetrical areas of the neck in relation to the thyroid gland and/or counting over specific areas within the gland such as palpable nodules. This method indicates the differences in activity which may or may not be present in the normal gland and in palpable nodules or in areas suspected of abnormal tissue. It can be carried out with the equipment ordinarily present in any laboratory doing RAI uptake studies and when carefully and accurately done will give reliable information as to the different activities in varying portions of the gland. It usually requires a larger dose of tracer material in order that the count rate will be at a satisfactory level with the greater collimation required even though the short distances involved improve the counting rate.

Scintiscanning.—This method is a refinement of the differential uptake already described. It involves considerably more complex equipment requiring a mechanically-driven scintillation probe which moves back and forth automatically over the area of the thyroid gland and a means of recording either mechanically or photographically the radioactivity count. It results in a picture of the radioactivity present in the thyroid gland and is usually carried out twenty-four hours after the administration of a tracer dose. It has been used as a means of estimating thyroid gland size, but is of considerably more practical importance in delineating "hot" and "cold" nodules.

The last two tests are also very useful in the study of functioning thyroid carcinoma.

Possible Sources of Invalid Results

The following discussion is by no means exhaustive but may serve as a guide to the physician interpreting radioactive iodine studies of the thyroid function both in considering the advisability of other laboratory aids in diagnosis and in considering results which do not appear to coincide with the clinical facts.

Iodine.—Exogenous iodine taken into the body in any form will result in a low I^{131} uptake. The sources are many and varied. Lugol's solution, cough syrups and cough lozenges, many vitamins containing mineral supplements, saturated solutions of potassium iodide, tincture of iodine applied to the skin, sun tan oils, and lotions must all be considered. The radiopaque organic iodides used in diagnostic radiology must not be forgotten. Many patients are taking supplemental iodine in some form, usually proprietary, without the advice or knowledge of their physicians.

The radioiodine uptake of a hyperthyroid gland may not be suppressed in the presence of these substances.

Antithyroid Drugs.— The antithyroid drugs such as thiouracil, propylthiouracil, Tapazole, and Itrumil prevent the organification of iodide in the thyroid gland and, therefore, result in abnormally low uptakes while the patient is receiving the drug.

With discontinuation of the drug a rebound phenomenon occurs with high uptakes, which may be present for varying and relatively unpredictable periods of time. Itrumil falls into a somewhat different category. It is an iodinated thiouracil compound and acts both as an antithyroid drug preventing organification of iodine and as a source of exogenous iodine. It, therefore, will result in a low uptake during its administration, and the rebound phenomenon will not be present, but rather the RAI uptake will remain at relatively low levels for long periods following its discontinuation.

Thyroid Substitutes.—The administration of exogenous thyroid substances such as thyroid extract, 1-thyroxin, and triiodothyronine will result in a depression of the iodine uptake of the thyroid gland mediated through the pituitary. This invariably occurs in the normal thyroid gland, but usually the ability of the thyroid to take up iodine in the hyperthyroid state is not impaired.

After discontinuing these drugs the period required before a valid RAI uptake can be obtained depends on many factors. Thyroid extract is metabolized slowly. At least eight weeks and preferably twelve weeks should elapse before undertaking the test, depending to a certain extent on the previous period of therapy and the dosage of the drug. Tri-iodothyronine is metabolized much more rapidly. A period of one to two weeks is probably quite sufficient. L-thyroxin is intermediate in the period involved.

STEROIDS.—ACTH, cortisone and cortisone derivatives, progesterone, and other steroid compounds may affect the uptake of radioactive iodine as a result of depressing action on the pituitary. The results are unpredictable.

OTHER DRUGS.—There are many other drugs which do affect the thyroid iodide uptake; for example, paraminosalicylic acid after prolonged use will result in a depression of the I^{131} uptake for periods of from one to four weeks.

IODINE DEFICIENCY.—Patients who have an insufficient supply of iodine in their daily diet will exhibit elevated I^{131} uptakes, since the gland will be starved for iodine. This type of elevation of the uptake can be easily evaluated by means of the conversion ratio and seventy-two-hour PBI^{131}. Prior to the use of these last two tests, the suppression test was frequently used in evaluating this possibility.

COLLOID GOITER.—Large colloid goiters will have abnormally high iodine uptakes simply as a reflection of the total volume of tissue present within the range of the radioactivity counter. Normal results will be present with the conversion ratio and PBI^{131} in these cases also.

RENAL INSUFFICIENCY.—The patient with a diminished renal function will retain abnormal amounts of iodide in the plasma over the twenty-four-hour period. This will be reflected in the counting over the thyroid area and result in a figure apparently higher than the actual activity of the thyroid gland in this individual.

PREVIOUS TREATMENT OF HYPERTHYROIDISM WITH RAI.—The RAI uptake values in patients who have previously had hyperthyroidism and have been treated with radioactive iodine must be interpreted with some caution. Values are frequently found which are not in agreement with the total clinical picture.

PREVIOUS THYROID SURGERY.—Patients who have been treated surgically for hyperthyroidism in the past may also have RAI uptakes which do not appear to coincide with the clinical picture, and these too should be interpreted with some caution.

Results in Specific Thyroid Diseases

TOXIC DIFFUSE GOITER.—Patients with Graves' disease or a toxic diffuse goiter will ordinarily have RAI uptakes well above the 50 per cent value, frequently about 70 to 80 per cent. The PBI conversion ratio and PBI^{131} will be correspondingly elevated. Scintiscanning of such a gland will show a diffuse increase in activity in all areas.

MYXEDEMA.—Patients with hypothyroidism will have low I^{131} uptakes, low conversion ratios and low PBI^{131} values. The usefulness of the TSH determination in the differentiation between primary and pituitary myxedema has already been discussed.

TOXIC NODULAR GOITER.—The twenty-four-hour uptake is less useful in the evaluation of toxic nodular goiter than in the toxic diffuse form. The values will frequently be within normal limits. The conversion ratio and PBI^{131} are more helpful, often showing values in the abnormal range. Differential scanning and scintiscanning are quite helpful in demonstrating the overactive nodule.

NONTOXIC NODULAR GOITER.—Routine RAI studies of the nontoxic nodular goiter are of little value with the exception of helping to exclude a masked hyperthyroidism. However, evaluation of the activity, particularly in the apparently solitary nodule, by means of differential uptake or scintiscanning may be of considerable help in determining the form of therapy which might be used. Solitary "hot" nodules are nearly always benign whereas "cold" nodules show a relatively high incidence of malignancy.

THYROIDITIS.—Patients with inflammatory thyroid disease will ordinarily show a moderately- to markedly-decreased iodine uptake. This may be particularly helpful in the acute and subacute forms in which the patient may present clinical signs of hyperthyroidism.

HASHIMOTO'S AND RIEDEL'S STRUMA.—The thyroid RAI uptake will also be low in these conditions. Scintiscanning will differentiate areas of low uptake from normal uptake, but will not serve to differentiate from neoplastic disease.

THYROID CANCER.—Less than 10 per cent of thyroid neoplasms are found to be of the functioning variety. As has already been indicated, the "cold" nodule is highly suspected of neoplastic disease. When a known functioning thyroid cancer is present or when masses in the neck in the extrathyroidal zones are present, spot scanning and scintiscanning will prove very helpful. Unsuspected distant metastatic disease can sometimes be discovered.

Comment and Summary

A brief review of thyroid physiology and the use of radioactive iodine in diagnosis of diseases of the thyroid has been presented.

Chemical determination of protein-bound iodine and butanol-extractable iodine are important laboratory aids. A discussion of these tests is beyond the scope of this paper.

In our opinion, the basal metabolic rate remains a useful laboratory procedure in many instances. Fundamentally, the basal metabolic rate measures the rate of oxygen consumption by the body at a resting state which is quite a different function from the determination of the avidity of the thyroid gland for iodine. Hypermetabolism due to causes other than hyperthyroidism cannot be documented successfully in any other way. Furthermore, the basal metabolic rate may prove useful in the laboratory follow-up of patients with hyperthyroidism treated with antithyroid drugs and previously treated with radioactive iodine. The basal metabolic rate is subject to as many, if not more, sources of error than RAI determinations and should be carried out with great care both in the preparation of the patient and the actual procedure.

The use of tracer radioactive iodine studies in the diagnosis of thyroid disease is well established. It is a simple and useful tool in the diagnosis of hyperthyroidism and in the study of thyroid nodules and thyroid cancer.

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Young and Middle-Aged Adults in Long-Term Care Facilities

I. JAY BRIGHTMAN, M.D., F.A.C.P., ALBANY, NEW YORK

(From the New York State Interdepartmental Health Resources Board)

CHRONIC illness and long-term disability as community health problems are most often associated in the minds of both professional and lay persons with the problems of the aging. Hence, studies of long-term care facilities for chronically ill and disabled persons are usually directed at considerations of the needs of geriatric patients. The essential logic of this approach is indicated by the findings that the mean age of patients in nursing homes and in the infirmaries of public homes is rarely below seventy years and frequently is above eighty years.

It is well recognized that chronic illness and disability have their onsets among young and middle-aged adults as well as in children in a substantial proportion of instances. The Commission on Chronic Illness reported that 27 per cent of chronic illness and disability occurs in persons under forty-five years of age.[1] Many of these younger persons have good potentialities for rehabilitation either toward a vocational goal or at least toward increased self-sufficiency or independence of living. To meet the needs of this group there are continuously, albeit sometimes too slowly, expanding programs by public and private agencies in the field of medical and vocational rehabilitation. However, a certain proportion of younger chronically ill or disabled persons may, after achieving their maximum rehabilitation potential, have such impairment of function as to be confined to their areas of residence, if not to their beds, and to require varying degrees of continuous medical, nursing, or related care. It may not be possible to provide this care in the patients' own homes if their parents are ill or deceased or the demands for nursing or attendant care are too great for average homes to handle, even with the assistance of available community resources. In such instances, placement of the patients in long-term care facilities becomes necessary.

The question arises as to the type of long-term care facility that might best serve the needs of these disabled young and middle-aged adults. The matter is a serious challenge to individuals and agencies concerned with public health and welfare and with medical care. It is of particular concern to parents who are providing care to their disabled children at home but who wonder about the future when they will no longer be capable of doing so.

As a preliminary to answering this question, it seemed important to determine the type of placements of these persons now being made. It will be the purpose of this report to present the findings of a survey of long-term care facilities in New York State designed to: (a) determine the number and the characteristics of the young and middle-aged persons placed in these facilities; and (b) to establish a base on which additional studies and future planning may be developed.

Method

The long-term care facilities covered in this study included the proprietary nursing and convalescent homes and the public home infirmaries in New York State. Both groups of facilities come under the supervision of the New York State Department of Social Welfare.

In addition, the City of New York Department of Hospitals is responsible for the

TABLE I.—NUMBERS AND PROPORTIONS OF PATIENTS UNDER FIFTY-FIVE YEARS OF AGE IN LONG-TERM CARE FACILITIES, NEW YORK STATE, 1957 TO 1958

	Nursing and Convalescent Homes		Public Home Infirmaries	
	Upstate	New York City	Upstate	New York City
Total facilities available	696	120	34	5
Total census	11,649	7,462	4,461*	1,760
Average census	17	62	139*	352
Facilities with patients under 55 years of age	202	98	34	5
Per cent of total facilities	29.2	81.7	100.0	100.0
Census of patients under 55 years of age	297	279	303	200
Average number per home	1.5	2.9	8.9	40
Total census of facilities with patients under 55 years	4,816	6,992	4,461	1,760
Average census	24	71	139	352
Per cent—patients under 55 years of all patients in these facilities	6.2	4.0	6.8	11.5

* Applies to 32 facilities only; total census not available for two facilities.

inspection and licensing of nursing homes. (The term "convalescent home" is not used in New York City.)

The data for the nursing and convalescent homes in Upstate New York (New York State exclusive of New York City) were obtained from the reports of the most recent supervisory visits available in the files of the State Department of Social Welfare. Special inquiries were made by the State Department of Social Welfare for the Upstate infirmaries, and by the City of New York Department of Hospitals for all facilities in New York City.

The study was limited to persons under fifty-five years of age because it was desired that a more sharply differentiated picture of this younger group of patients as compared with elderly patients who make up the majority of residents in these facilities would be obtained. It was considered that this maximum age level would eliminate the problem of early senility which may be present in persons between fifty-five and sixty-four years of age. However, it must be recognized that there may be some patients in this latter group who may have more in common with the persons under fifty-five years of age regarding medical, social, and recreational needs than with the greater number of persons in the facilities over sixty-five years.

Findings

The survey covered a total of 816 nursing and convalescent homes and 39 public infirmaries. (Since the term "convalescent homes" was used to classify only 15 facilities, all in Upstate New York, the entire group of nursing and convalescent homes will henceforth be referred to as "nursing homes" for the purpose of brevity.) Of the nursing homes, 696 were in Upstate New York and 120 were in New York City. Of the public home infirmaries, 34 were in Upstate New York and 5 were in New York City.

Because there were significant differences in the findings among these facilities, both by types and by geographic location, the data for the four groups of facilities will be presented separately in the Tables that follow.

NUMBERS AND PROPORTIONS OF PATIENTS UNDER FIFTY-FIVE YEARS OF AGE (TABLE I).—Although there is a considerable range of size within each of the four groups of facilities, there are considerable differences among the averages for each group. The infirmaries are much larger than the nursing homes, and the New York City facilities in both categories are larger than those in Upstate New York. Thus, for the days on which the information was obtained, the Upstate nursing homes had an average census of 17 patients, while the New York

TABLE II.—AGE DISTRIBUTION OF PATIENTS UNDER FIFTY-FIVE YEARS OF AGE IN LONG-TERM CARE FACILITIES, NEW YORK STATE, 1957 TO 1958

	Nursing and Convalescent Homes		Public Home Infirmaries	
	Upstate	New York City	Upstate	New York City
Patients under 55 years				
45 to 54 years	187	214	179	114
35 to 44 years	82	56	76	45
25 to 34 years	23	7	26	27
24 years and less	5	2	22	14
TOTAL	297	279	303	200
Per cent of total patients in facilities having them				
45 to 54 years	3.9	3.1	4.0	6.5
35 to 44 years	1.7	0.8	1.7	2.6
25 to 34 years	0.5	0.1	0.6	1.5
24 years and less	0.1	*	0.5	0.8

* Less than 0.05 per cent.

TABLE III.—SEX DISTRIBUTION OF PATIENTS UNDER FIFTY-FIVE YEARS OF AGE IN LONG-TERM CARE FACILITIES, NEW YORK STATE, 1957 TO 1958

	Nursing and Convalescent Homes		Public Home Infirmaries	
	Upstate	New York City	Upstate	New York City
Number				
Males	114	133	138	98
Females	183	146	165	102
Per cent distribution				
Males	38.4	47.7	45.5	49.
Females	61.6	52.3	54.5	51.

City nursing homes had an average census of 62 patients. In contrast, the Upstate infirmaries had an average census of 139 while that of the New York City infirmaries was 352. (The census of the nursing homes was about 85 per cent of the capacity while that of the infirmaries was about 97 per cent.)

While all of the infirmaries and 82 per cent of the New York City nursing homes had patients under fifty-five years of age, this was true of only about 29 per cent of the Upstate nursing homes. The total number of younger patients found in the four groups of facilities amounted to 1,079.

The average number of patients per home was relatively small in both groups of nursing homes and in the Upstate infirmaries. For the Upstate nursing homes the average was 1.5 patients, for New York City nursing homes 2.9 patients, and for the Upstate infirmaries 8.9 patients. On the other hand, larger concentrations were found in the bigger New York City infirmaries, with an average of 40 patients per home.

The patients under fifty-five years of age constituted about 4 per cent of the total patients in the New York City nursing homes in which they were located. For the Upstate nursing homes, the figure was 6.2 per cent. As indicated above, all of the infirmaries had patients under fifty-five years of age and these constituted about 7 per cent of the total patients in the Upstate infirmaries and 11.5 per cent in the New York City facilities.

One interesting observation among the nursing homes (not included in the Table) was that the facilities not having patients under fifty-five years of age tended to be smaller than those which did. Thus, the average census for the 22 New York City facilities without patients under fifty-five years of age was 21, compared with an average census of 71 for the facilities that did have this younger group of patients. For the 494 Upstate nursing homes without younger patients, the figures were 14 and 24 respectively.

AGE DISTRIBUTION (TABLE II).—The total percentage of patients under fifty-five years of age was noted before in Table I. In Table II is presented the age distribution by ten-year groupings. In each category of facilities there is a sharp diminution in the percentage distribution with decreasing age. However, the findings among the lower age groups in terms of absolute numbers seemed important. There was a total of 259 persons in the thirty-five to forty-four-year group and 126 persons in the group thirty-four years old and less who were dispersed in generally small numbers among the various facilities.

SEX DISTRIBUTION (TABLE III).—In the Upstate nursing homes, there was a definite

TABLE IV.—CLINICAL STATUS OF PATIENTS UNDER FIFTY-FIVE YEARS OF AGE IN LONG-TERM CARE FACILITIES, NEW YORK STATE, 1957 TO 1958

	Nursing and Convalescent Homes		Public Home Infirmaries	
	Upstate (Per Cent)	New York City (Per Cent)	Upstate (Per Cent)	New York City (Per Cent)
Clinical Condition				
Good	39.7	35.5	36.3	14.5
Fair	36.0	52.3	48.2	83.0
Poor	4.4	12.2	13.9	2.5
Unknown	19.9	. . .	1.6	. . .
TOTAL	100.0	100.0	100.0	100.0
Mobility		Percentage Distribution		
Bedfast	44.4	26.2	31.8	6.5
Semi-ambulant	5.4	39.1	38.6	71.5
Ambulant	49.2	34.4	28.7	21.5
Unknown	1.0	0.3	0.9	0.5
TOTAL	100.0	100.0	100.0	100.0

TABLE V.—PAYING STATUS OF PATIENTS UNDER FIFTY-FIVE YEARS OF AGE IN LONG-TERM CARE FACILITIES, NEW YORK STATE, 1957 TO 1958

	Nursing and Convalescent Homes		Public Home Infirmaries	
	Up-state	New York City	Up-state	New York City
Public assistance	195	243	. . .	187
Other	102	36	. . .	13
TOTAL	297	279	. . .	200
Per cent distribution				
Public assistance	65.7	87.1	. . .	93.5
Other	34.3	12.9	. . .	6.5
TOTAL	100.0	100.0	. . .	100.0

predominance of females over males. On the other hand, in the other three categories, there were no sharp differences in sex distributions among the patients under fifty-five years of age.

CLINICAL STATUS OF PATIENTS (TABLE IV).—The clinical status of these patients was estimated by the reported clinical condition and by their level of mobility. The determination as to whether the clinical condition of the patients was good, fair, or poor was based most often on the observations of the nursing supervisors of the homes and infirmaries and also on the impressions of the supervisors of the State Department of Social Welfare when the data were based on supervisory visits. While no specific criteria for these terms were established, it was assumed that the category of "good" relates to a person who, while seriously disabled, does not have a progressive disease and feels well despite his limitations; the category "poor" applies to persons whose prognosis is definitely unfavorable owing to the nature of the disease and the stage which the patient has reached; and the category "fair" relates to a person who feels fairly well in the presence of a slowly progressive disorder.

Reference to Table IV indicates that the term "poor" was applied to only a small proportion of the patients, less than 14 per cent in each instance.

The large number of unknowns among the patients in the Upstate nursing homes is difficult to evaluate. Even if the "unknowns" and "poors" were combined together, the figure would be less than 25 per cent. Thus, 75 per cent or more of the patients in each of the groups were considered "good" or "fair."

Regarding mobility, the Upstate nursing homes and infirmaries appeared to have a greater proportion of bedfast persons than did the New York City facilities. The number of bedfast persons in the New York City infirmaries was unusually low, namely 6.5 per cent. However, even for the Upstate nursing homes where the percentage of bedfast persons was the highest, there was still almost 55 per cent of the patients who were either semiambulant or ambulant. The comparable figures in the other groups were significantly higher.

PAYING STATUS OF PATIENTS (TABLE V).—Information was also obtained as to whether the patients had their bills paid through the public welfare agency or through other channels. As expected, the majority of patients in each group were public as-

TABLE VI.—DIAGNOSTIC CATEGORIES OF PATIENTS UNDER FIFTY-FIVE YEARS OF AGE IN LONG-TERM CARE FACILITIES, NEW YORK STATE, 1957 TO 1958

Diagnostic Categories	Nursing and Convalescent Homes Upstate	Nursing and Convalescent Homes New York City	Public Home Infirmaries Upstate	Public Home Infirmaries New York City
Arthritis	22	12	15	20
Muscular dystrophy	4	0	8	7
Parkinson's disease	20	23	16	19
Multiple sclerosis	46	38	59	33
General arteriosclerosis	2	8	5	12
Cardiovascular disease	21	28	10	5
Cerebrovascular accident	45	60	42	28
Cancer	13	2	2	1
Amputations	6	3	6	2
Poliomyelitis	7	3	7	3
Cerebral palsy	8	6	15	7
Other orthopedic conditions	9	11	5	4
Neurologic conditions including paraplegia	34	14	12	18
Diabetes	10	9	7	6
Mental retardation	8	1	2	0
Blindness or other visual conditions	5	7	7	2
Mental illness, including alcoholism	8	2	12	1
Epilepsy	0	8	8	3
Other or unknown conditions	29	44	65	29
TOTAL	297	279	303	200

sistance recipients and had their bills paid through the welfare departments. The proportion was smallest in the Upstate nursing homes where just about two thirds of the patients were on public assistance. Seven eighths of the persons in the New York City homes were on public assistance, as were about 94 per cent of the New York City infirmary patients. The data were not obtained for the Upstate infirmaries because previous experience indicated that the vast majority of the patients there were welfare recipients.

DIAGNOSTIC CATEGORIES OF PATIENTS UNDER FIFTY-FIVE YEARS OF AGE (TABLES VI AND VII).—In Table VI is presented a list of the diagnostic categories found among these younger patients in the four groups of facilities. In Table VII, a comparison of the more common diagnostic categories found among these younger patients is made with those categories as found among all patients in nursing homes. For the latter, two studies were used: (a) a study of all patients found in Upstate nursing homes in 1955,[2] and (b) a study of patients in nursing homes in 13 states conducted as a joint project of the Commission on Chronic Illness and the Public Health Service.[3] In each of these reports, more than 90 per cent of the patients were sixty-five years of age and over and more than 70

TABLE VII.—DISTRIBUTION OF DIAGNOSTIC CATEGORIES OF PATIENTS UNDER FIFTY-FIVE YEARS OF AGE COMPARED WITH PATIENTS OF ALL AGES IN LONG-TERM CARE FACILITIES, NEW YORK STATE, 1957 TO 1958

Diagnostic Categories	Patients Under 55 years of Age: Nursing and Convalescent Homes Upstate (Per Cent)	Patients Under 55 years of Age: Nursing and Convalescent Homes New York City (Per Cent)	Patients Under 55 years of Age: Public Home Infirmaries Upstate (Per Cent)	Patients Under 55 years of Age: Public Home Infirmaries New York City (Per Cent)	All Patients in Facilities: Upstate New York Nursing Homes	All Patients in Facilities: 13 State Study of Nursing Homes
Multiple sclerosis	15.5	13.6	19.5	16.5	...	1.0
Cerebrovascular disorders	15.2	21.5	13.9	14.0	14.2	15.2
Cardiovascular disease	7.8	12.9	9.2	8.5	31.7	25.1
Arthritis and rheumatism	7.4	4.3	4.9	10.0	5.6	6.3
Parkinson's disease	6.7	8.2	5.3	9.5	...	...
Miscellaneous neuromuscular disorders including poliomyelitis, cerebral palsy, paraplegia, amputations, and muscular dystrophy	22.8	13.3	14.8	20.5	...	3.9
Senility	...	...	...	...	14.4	17.0
Fracture of hip	...	...	...	...	5.9	6.4
All others	24.6	26.2	32.4	21.0	28.2	25.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

per cent were seventy-five years of age and over. Only diagnostic categories accounting for more than 5 per cent of the cases in one or more facility groups were included in this tabulation. The neuromuscular disorders, such as poliomyelitis, cerebral palsy, paraplegia, amputations, and muscular dystrophy, were grouped together because the individual disorders did not include a sufficient number of patients.

As would be expected, there were considerable differences among the types of clinical disorders that were most prevalent among the patients under fifty-five years of age as compared with the two total groups of persons in nursing homes. The clinical categories most commonly encountered in the younger patients were the combined group of neuromuscular disorders, multiple sclerosis, cerebrovascular accidents, cardiovascular disease, arthritis and rheumatism, and Parkinson's disease. Of these, only cerebrovascular accidents and arthritis and rheumatism were seen in the same order of frequency among the total groups. Multiple sclerosis, Parkinson's disease, and the neuromuscular disorders were encountered to a negligible extent while cardiovascular disease among the younger patients was significantly less than among the total of patients.

Comments

This review of the prevalence of young and middle-age adults in long-term care facilities in New York State revealed a total of 1,079 persons under fifty-five years of age found among the nursing homes and infirmaries of New York City and the Upstate area. While the majority of these younger adults were between forty-five and fifty-four years of age, there were 259 between thirty-five and forty-four years of age and of these 126 were less than thirty-five years old. According to the information available, a high proportion of these persons were in fair to good clinic condition and were either ambulant or semiambulant.

The New York City infirmaries are of larger size than those in Upstate New York and had an average census of 40 patients under fifty-five years of age. Also, it is known that a few of the Upstate infirmaries similarly have fairly large concentrations of these younger patients. However in the majority of the Upstate infirmaries and in almost all of the nursing homes the patients under fifty-five years of age were few in number in any individual facility and made up only a small percentage of the total number of patients. Thus, these younger adult and middle-age patients were found in facilities where the average age was most often over seventy years and very often over eighty years.

A previous study of the Upstate nursing homes revealed a paucity of social, recreational, and rehabilitative activities.[2] These deficiencies would appear to work a particular hardship on younger patients in older-age environments.

Since this study was limited to persons currently placed in long-term care facilities, no information was obtained about the number of "hidden" cases of young disabled persons residing in their own homes under conditions which are extremely difficult for themselves and for their parents or guardians, and for whom recommendations to a residential facility would be made if there existed a suitable facility within the financial means of the patient or his family.

The question arises as to whether some form of grouping of young and middle-age disabled persons requiring long-term care facilities should be arranged so that they could be in an environment which would be more stimulating to them because of the presence of many persons with whom they would have much in common, and would also allow for the inauguration of social, recreational, and rehabilitative programs adapted to their needs. Such programs are possible in the larger infirmaries which now have a fair number of younger patients, and some effective programs are now in operation. They are not possible when younger patients are dispersed in small numbers among the smaller facilities.

One might consider regionalization of services, particularly in the Upstate area where there would most often not be sufficient cases in one county to warrant a specialized facility. However, this might involve moving the patient a considerable distance from his home, a very undesirable thing to do from the viewpoint of cutting down on the visiting of friends and relatives.

Further study should be done, including evaluations by teams of physiatrists, social workers, and vocational rehabilitation counselors, to determine quite specifically the extent to which these young and middle-age persons could profit by a different type of environment from the ones in which they are now located.

This study was done with the cooperation of the Committee on Rehabilitation of the New York State Interdepartmental Health Resources Board. Special appreciation must be extended to the New York State Department of Social Welfare and to the New York City Department of Hospitals for their active and generous participation in the procurement of the data.

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New Mumps Complication

A new and potentially serious complication of mumps in adults has been reported by two University of Minnesota physicians. It is thrombopenic purpura, skin hemorrhages resulting from a disturbance in the clotting mechanism of the blood. The disturbance occurs because of a shortage of a certain type of blood cell.

Dr. Charles P. Kolars and Dr. Wesley W. Spink, Minneapolis, said the condition "must be added as a complication" of mumps because of the potential danger of the blood cell shortage becoming chronic.

The other possible complications of mumps in adult life are inflammation of the testis, the ovary, the brain and spinal cord membranes, and the pancreas. These "can be painful and serious," the doctors said in the December 27 *Journal of the American Medical Association.*

Thrombopenic purpura is occasionally observed in patients with other infectious diseases but the two doctors could find no reports in the medical literature of it occurring in mumps. The fact that they saw three cases in adults "over a relatively brief period" suggests that it may occur more frequently in mumps than is realized.

The cause of the complication is not known. It may result, they said, from invasion of the tissues by virus or from some type of acquired hypersensitivity. Treatment with cortisone and prednisone, which have been found to control the other complications of mumps, controlled the bleeding tendency in the three patients and also corrected the blood cell deficiency in one.

The doctors suggested that mumps should be considered as a possible causative factor when patients present cases of thrombopenic purpura for which there appears to be no specific cause.

Observations of a Controlled Surgical Series Treated with Promethazine Before Induction

ALFRED H. SMITH, M.D., JAMAICA, NEW YORK

(From the Department of Anesthesiology, Jamaica Hospital)

Although methods for induction of anesthesia and for sedation and analgesia in the surgical patient have been vastly improved in recent years, the ideal has not yet been attained. Anesthesiologists still encounter patients who have come to operation so deeply sedated by conventional medication that breathing is too shallow for satisfactory use of a general anesthetic. The ill effects of all narcotics in common use are too well known to need review, and postoperative vomiting is a problem with which we all have had to contend.

Increased interest in the multiple properties of certain of the phenothiazine derivatives induced us to conduct a survey of the sedative and antiemetic effects of chlorpromazine hydrochloride in the surgical patient. However, we were not favorably impressed, in agreement with others[1] who consider this agent unsuited to routine surgical use. We therefore discontinued the study. Without notifying the recovery room staff or the nurses on the surgical wards, we substituted promethazine (cautiously at first, in doses of only 25 mg.) for chlorpromazine in the preanesthetic regimen. The sedation (later described as "quiescence" by Sadove[2]) produced by such small doses was not significant, but when we increased the dose to 50 mg. and added meperidine hydrochloride if indicated, we soon began to receive reports of improvement in the pre- and postoperative condition of patients. We were told that on arrival in the operating room they appeared quiet and indifferent, yet comprehended and cooperated with instructions as desired. Evidences of depression typical of sedation with conventional agents were conspicuously absent, and induction was easier for both patient and anesthetist. According to the recovery room staff, emergence seemed smoother, and it was their impression that there was less nausea and vomiting. With such reports in mind, we reviewed our clinical material and, in January, 1956, organized a controlled study of promethazine in the preparatory regimen for operation.

Throughout the first eight months of the trial (up to August, 1956) we used promethazine, either alone or in conjunction with meperidine, in the preanesthetic regimen for upward of 3,000 private and ward patients. Our results paralleled the observations of others.[2–8] A small segment of this series (204 patients—52 controls and 152 treated with promethazine—who were operated on in a period of about ten days in January, 1956) will be described here in detail. The results were representative of those obtained in the entire series.

The physical status of the patient was evaluated according to the method defined by the American Society of Anesthetists.[9] The condition was considered as Class 1 if there was no organic pathologic condition with the exception of the indication for operation; Class 2 if there was moderate but definite systemic disturbance, with mild or moderate loss of function or elevation of temperature; Class 3 if severe systemic disturbance was present, with severe complications or serious loss of functional capacity; and Class 4 if the systemic disorder was extremely severe, with threat of death. In emergency operations the physical status was designated as Class 5 if there was no or moderate organic disease

TABLE I.—OPERATIONS PERFORMED IN CONTROL SERIES

Patients in Series		Operations Performed		Physical Status	
Ages (Years)	Number	Procedures	Number of Patients	Class (See Text)	Patients (Per Cent)
7/12 to $1\frac{7}{12}$	2	Cesarean section (2–toxemic; 1–repeat)	4	1	50
7 to 12	6	Gynecologic procedures	10	2	14
15 to 17	5	Cholecystectomy	1	3	30
20 to 59	31	Appendectomy	11	Emergency	
60 to 69	5	Major procedures on colon	6	6	4*
74 to 78	3	Herniorrhaphy	6	Moribund on arrival in operating room	2†
		Hemorrhoidectomy	2		
		Thyroidectomy	1		
		Tonsillectomy	1		
		Orthopedic procedures	5		
		Local procedures	5		
TOTAL	52	TOTAL	52		

* A twenty-year-old woman in whom toxemia of pregnancy necessitated cesarean section, and a seventy-eight-year-old man who required herniorrhaphy.

† A seventy-eight-year-old man suffering from intestinal carcinoma.

TABLE II.—ANESTHESIA, DURATION OF OPERATION, RECOVERY ROOM TIME, AND EMERGENCE IN TOTAL SERIES OF 204 PATIENTS

	Number of Patients	Anesthesia	Per Cent	Duration of Operation	Per Cent	Recovery Room Time	Per Cent	Emergence	Per Cent	Vomiting	Per Cent
Controls	52	General	83	5 to 55 minutes	52	0	2	Smooth	69	Multiple	25
		Spinal	17	1 to $1\frac{1}{2}$ hours	40	15 to 50 minutes	34	Restless or excited	31		
				2 to $2\frac{1}{2}$ hours	6	1 to $1\frac{1}{2}$ hours	40				
				3 hours	2	2 to $2\frac{1}{2}$ hours	12				
						3 to $3\frac{1}{2}$ hours	10				
						Died	2				
Promethazine-treated	152	General	81	15 to 55 minutes	40	0	11.0	Smooth	94.0	Nausea only	9
		Spinal	19	1 to $1\frac{1}{2}$ hours	43	5 to 50 minutes	31.0	Restless (no excitement)	5.0	Vomiting (controlled by injection of promethazine)	14
				2 to $2\frac{3}{4}$ hours	10	1 to $1\frac{1}{2}$ hours	37.0	Tremors	0.5		
				3 to $3\frac{3}{4}$ hours	6	2 hours	18.0	Oxygen required	0.5		
				4 hours	1	3 hours	1.0				
						15 hours	0.5				
						Died	1.5				

(as in Class 1); and Class 6 if there were serious complications or a severe systemic disturbance (as in Class 3 or 4).

The patient was considered ready to leave the recovery room, after operation, when the blood pressure and pulse rate had stabilized and questions asked in a normal tone elicited a rational response. After administration of a spinal anesthetic the patient was not released from the recovery room until he was able to move the lower extremities.

Controls

Of the 52 patients in the control group, the youngest was seven months and the oldest seventy-eight years old. Their age groups, physical status, and the operations performed are listed in Table I.

Secobarbital or pentobarbital sodium was administered to most patients in standard dosages two hours before the preoperative analgesic. Two received no other pre-anesthetic medication, and 1 received 0.4 mg. atropine. A combination of 50 to 100 mg. meperidine and 0.4 to 0.6 mg. scopolamine was administered to 40, one-half to one-and-one-half hours before operation. Two received 0.4 to 0.6 mg. scopolamine only, one-half hour before operation; and 7 received 10 mg. morphine sulfate, and scopolamine or atropine, 0.4 mg., one-half to one and one-half hours before induction. One patient was ex-

TABLE III.—POSTOPERATIVE ANALGESIA REQUIRED IN FIRST TWENTY-FOUR HOURS AFTER OPERATION

	Postoperative Narcotics (Intramuscular)				No Postoperative Medication			No Postoperative Analgesia			
	Dose (mg.)	Time after Emergence (hours)	Number of Patients	Per Cent	Dose	Number of Patients	Per Cent	Dose (mg.)	Time after Emergence (hours)	Number of Patients	Per Cent
Controls	Meperidine, 100, or morphine, 20	1	4		None†	12	23	Promethazine, 50	1	28	
	Same dose	2	19					Promethazine, 50	2	1	
	Same dose	3	7					Promethazine, 50	3	3	
	Same dose	4 to 5	4					Promethazine, 75	5	2	
	Same dose	6 to 8	4					Promethazine, 50	12	1	
	Same dose	9 and 12	2							35	23
			40*	77							
Promethazine-treated	Promethazine, 50, and meperidine, 50	1	9		None††	43	28				
	Morphine, 10	1 to 8	6								
	Meperidine, 50 to 100	1 to 2	24								
	Meperidine, 50 to 75	3	9								
	Meperidine, 50 to 100	4 to 5	6								
	Meperidine, 25 to 100	6 to 8	15								
	Meperidine, 50 to 100	10 to 12	5								
			74**	49							

* Dosages in control series repeated every three hours after first dose as required.

† All minor local operations.

** Second doses administered within first twenty-four hours after operation. Two to four hours after first dose, 50 mg. meperidine given to 4 patients.

†† Minor local, some gastrointestinal, gynecologic, and orthopedic operations.

tremely excited on admission to the operating room.

General anesthesia was used for 83 per cent; and for 17 per cent, spinal anesthesia. The operations lasted fifteen to fifty-five minutes in 52 per cent, one to one and one-half hours in 40 per cent (these included the 4 cesarean sections), two to two and one-half hours in 6 per cent (including the thyroidectomy and procedures on the colon), and three hours in 2 per cent (Table II). Muscle relaxants are generally used during operation in this institution.

RECOVERY.—Four per cent of the patients awakened in the operating room. Thirty-four per cent spent fifteen to fifty minutes in the recovery room; 40 per cent, one to one and one-half hours; 12 per cent, two to two and one-half hours; and 10 per cent, three to three and one-half hours (including the patient who had had a thyroidectomy) (Table II). It is usual for patients who have received pentobarbital in the preanesthetic dose to remain in the recovery room for several hours.

EMERGENCE.—Emergence was smooth in 69 per cent; 31 per cent were restless or excited. Postoperative nausea and multiple emesis occurred in 25 per cent (1 patient who had had an orthopedic operation vomited frequently throughout the first five hours) (Table II). One who had had a resection of the sigmoid vomited severely in the recovery room, went into shock, and required administration of oxygen, blood, ephedrine, and dimenhydrinate.

POSTOPERATIVE ANALGESIA.—The requirement of analgesics in the first twenty-four hours after operation is summarized in Table III. After the initial postoperative dose, additional doses were administered every three hours as required. One patient experienced a severe postspinal headache, and another had hiccups in the early postoperative period.

MORTALITY.—The seventy-eight-year-old cancerous patient who was moribund on admission to the operating room died on the day of operation (mortality, 2 per cent).

Promethazine Series

The group in the promethazine series totaled 152 patients, of whom the youngest

TABLE IV.—Operations Performed in Promethazine-Treated Series

Ages of Patients (years)	Number of Patients	Type of Operation	Number of Patients	Physical Status Class	Physical Status Per Cent of Patients
7 to 9	4	Cesarean section (cephalopelvic disproportion		1	54
14 to 19	5	3; cervical dystocia 1; persistent brow 1;		2	35
20 to 39	38	repeat sections 2)	7	3	8
40 to 59	59	Gynecologic (mainly hysterectomy and sal-			
60 to 74	36	pingo-oophorectomy)	32	Emergency	
75 to 93	10	Gastric resection	6	5	2
		Cholecystectomy	12	6	1
		Appendectomy (ruptured appendix 2)	3		
		Major procedures on colon	11		
		Herniorrhaphy	18		
		Hemorrhoidectomy	14		
		Thyroidectomy	3		
		Tonsillectomy	1		
		Mitral valvulotomy	1		
		Bilateral sympathectomy	1		
		Breast, chest wall, and lung	10		
		Orthopedic procedure	14		
		Local procedures (hydrocelectomy, excision of tumors, abscess drainage, extraction of all teeth)	19		

was seven and the oldest ninety-three years old. Their age groups, physical status, and the operations performed are summarized in Table IV.

Preanesthetic Medication.—One-half to two hours before call to the operating room, 86 per cent received 50 mg. promethazine, 50 to 75 mg. meperidine, and scopolamine or atropine, 0.4 mg., intramuscularly. Some received all three agents in one injection; others, the meperidine and scopolamine or atropine one and one-half hours before, and the promethazine one-half hour before induction. (The latter is the usual procedure for the average adult patient.) Fourteen per cent received 50 mg. promethazine intramuscularly, and an injection of 0.4 mg. scopolamine or atropine (for older patients), but no meperidine, one to one and one-half hours prior to anesthetization.

Eighty-one per cent were operated on under general anesthesia, 19 per cent under spinal. Forty per cent of the operations lasted fifteen to fifty-five minutes (minor local procedures, dilatation and curettage, and 2 of the cesarean sections). Forty-three per cent lasted one to one and one-half hours; 10 per cent, two to two and three-quarters hours; 6 per cent, three to three and three-quarters hours; and in 1 per cent the operation lasted four hours (Table II).

Recovery.—Eleven per cent awoke in the operating room. Thirty-one per cent spent five to fifty minutes in the recovery room; 37 per cent, one to one and one-half hours, 18 per cent were detained for two hours, and 1 per cent for three hours. One and one-half per cent died soon after termination of the operation. In 1 case (0.5 per cent), to be discussed in detail, the patient was too heavily anesthetized and slept for fifteen hours (Table II).

Emergence was smooth in 94 per cent. One of these, admitted for cesarean section, had received, in error, a second dose of scopolamine before induction and consequently came to operation in an excited state; she emerged quietly, however. Five per cent were somewhat restless but none showed frank excitation. In 1 patient (0.5 per cent) there were tremors of the hands and feet but no restlessness; and for 1 (0.5 per cent), the heavily anesthetized patient, oxygen was required (Table II).

Postoperative Medication.—If sedation or antiemetics appear necessary in the recovery room, it has been our practice to administer the same amount of promethazine as the dose given before induction. This has met with much approval from the recovery room staff. Twenty-eight per cent of these patients required no medication in the first twenty-four hours after operation. Twenty-three per cent were adequately sedated with one injection of 50 to 75 mg. promethazine. Forty-nine per cent required either 50 mg. promethazine with 50 mg. meperidine, or one injection of 25 to 100 mg. meperidine. Six patients received one injection of 10 mg. morphine sulfate. Four patients (slightly less than 3 per cent) received a second dose of 50 mg. meperidine two to four hours after the first injection. The dosage of postoperative medication and time of administration after emergence are summarized in Table III. The majority of the patients who required postoperative analgesics were maintained on a smaller dosage than is usually necessary in the first twenty-four hours. Thus they were able to recover more quickly from the depressive effects of the anesthesia. This observation also has been reported by others.[10]

One patient coughed during emergence. Another, a sixty-four-year-old, extremely emaciated male suffering from gastric carcinoma, experienced laryngospasm during induction but recovered smoothly from the anesthetic. The Levin tube was left in place in 3 patients after gastric resection; all tolerated the tube well. Nine per cent retched but did not vomit. Fourteen per cent experienced nausea and vomiting during recovery. A postoperative injection of promethazine, as previously mentioned, controlled symptoms.

Mortality.—Four deaths (about 3 per cent) occurred within a month of operation; none could be attributed to the medication. Two aged patients (about 1.5 per cent), who had been operated on for advanced intestinal carcinoma, died in the recovery room: 1 of pharyngeal obstruction from uncontrollable esophageal bleeding, the other of cardiac failure. The third fatality occurred in the ninety-three-year-old man admitted for nailing and plating of a fractured hip, and in whom coronary insufficiency was a severe complication. He reacted well to the operation but expired of congestive failure on the third day. The fourth, also known to have cardiac disease, died of congestive failure in about one month (Table II).

Comment

Preanesthetic medication in which promethazine is substituted for barbiturates more nearly approaches the ideal than any other medication we have so far been able to devise. The patients on arrival in the operating room are calmer, more relaxed, and more cooperative than those managed under a more conventional regimen. A recent patient expressed the situation concisely, "This is my fourth visit to the operating room. During each of the other trips I felt much worse. This time, although I know everything that's going on around me, I'm not at all nervous or afraid."

During emergence about 10 to 15 per cent of patients pass through a period of excitation before regaining full consciousness.[10] However, promethazine-treated patients are usually quiet and easily manageable in the recovery room.

Especially for sedation of older persons, promethazine is an excellent choice. It must be remembered, however, that a smaller dose may suffice for the aged patient than that required for the young, vigorous adult. We have used the compound before cesarean section in many more cases than those described here. Whereas formerly we had administered nothing but atropine before operation, we now use an intramuscular injection of 50 mg. promethazine only, with satisfactory sedation and drying effect. Most cesarean sections are performed at this institution under spinal anesthesia, but regardless of the anesthetic used, no untoward reaction has been seen in either mother or fetus that could have been caused by the medication. We have found rectal suppositories of 25 mg. promethazine particularly desirable for sedation of children.

Since it is now believed that the compound potentiates anesthetics of all types, it is most important to regulate carefully the dose used after preoperative preparation with promethazine. The case of the patient who slept for fifteen hours postoperatively is an apt illustration. This fifty-four-year-old man was admitted for extraction of all his teeth and additional oral surgery, which lasted two hours and fifty minutes. He received 50 mg. promethazine, 50 mg. meperidine, and 0.4 mg. scopolamine intramuscularly one and one-half hours prior to induction; and was anesthetized with 5.1 cc. tribromoethanol (50 mg. per kilo, in water), and maintained under nitrous oxide and oxygen for one hour. On termination of the procedure his breathing was shallow and oxygen was administered for the first three hours in the recovery room. He was roused with difficulty in the eighth postoperative hour and was persuaded to cough in the ninth hour. The patient did not awaken completely until the fifteenth hour, when he complained of headache and weakness. Six hours later all depression had subsided, and he was discharged in good condition on the morning of the second postoperative day. In this case the anesthesia was probably excessive. Use of promethazine in combination with tribromoethanol requires further study.

Summary

Promethazine was substituted for barbiturates in the preanesthetic medication for upward of 3,000 patients over a period of about eight months. The results obtained in a small segment of the series, 152 patients, have been compared with those for 52 controls who were substantially comparable as to age, physical status, and severity of operation.

Promethazine-treated patients come to operation in a calm, relaxed state, yet comprehend and are able to cooperate with instructions as desired, and show none of the depression commonly seen after the standard preanesthetic measures. In the postoperative period they are usually quiet and manageable. There is less nausea and vomiting than is the usual experience with other methods, the recovery room stay is not prolonged if the dosage of anesthetics is carefully regulated with consideration of the potentiating properties of the compound, and postoperative analgesia is not required in as large or frequent doses as are generally necessary under the conventional regimen.

Promethazine is especially applicable in sedation of aged patients and prior to cesarean section. Rectal suppositories containing 25 mg. promethazine are desirable for preanesthetic sedation of children.

Addendum

Since this series was completed, 2,000 additional surgical patients have received promethazine in the preanesthetic medication. Thus, to the present time, more than 5,000 patients have been treated by this method at this institution. The results have been consistent with those described herein.

Gratitude is due Dr. Bernard Hollander, Dr. Milton Kaufman, and Dr. Lawrence Steinberg of the Anesthesiology Department, Jamaica Hospital, Jamaica, New York, for their assistance in carrying out this study.

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Nalorphine in the Prevention of Narcotic Deaths

HERBERT BERGER, M.D., F.A.C.P., STATEN ISLAND, NEW YORK

(Consultant to United States Public Health Service, New York State Department of Mental Hygiene, and New York City Department of Correction and Member of Advisory Committee to New York State Interdepartmental Health Resources Board)

DEATH due to overdosage of narcotics is not unusual. Mason,[1] at whose suggestion this review has been prepared, has personal knowledge of 40 such fatalities in the past five years. Many of these patients might have been salvaged had nalorphine (N-allylnormorphine), or Nalline, in 5- to 10-mg. doses been administered intravenously immediately. Although these 40 instances of death secondary to respiratory depression following self-administration of heroin by addicts are significant, they are far from the total number of patients afflicted with narcotic poisoning, since these figures encompass only a small segment (the juvenile-addicted population) of the whole community. In addition to their use in adult addicts, there probably is a greater number of indications for the use of morphine antagonists in iatrogenic narcotic overdosage. The most recent of these instances to come to my attention is an infant who was given 8 mg. (1/8 grain) of morphine sulphate to help in the reduction of an incarcerated congenital inguinal hernia. The child succumbed after the administration of oxygen, artificial respiration, and analeptics, another victim of morphine-induced respiratory depression. Nalorphine had not been administered.

Other instances of morphine overdosage occur in emergency services in which the ambulance intern and the admitting physician both administer the drug to accident victims. This situation may be compounded further by an additional dose given by the ward physician. The Armed Forces obviated this possibility by marking the forehead of every casualty with an "M," with lipstick or skin pencil, whenever morphine was administered. Perhaps this or a similar procedure might be incorporated into our hospital procedures.

Overdosage of narcotics in nonaddicts has been reported in a variety of conditions which include practically every normal indication for their use. One of the more common sources of this tragedy is the administration of these materials to patients with incipient or impending pulmonary failure, as in bronchial asthma, bronchiectasis, and/or emphysema. Respiratory failure may supervene very suddenly in such patients. If they are to be saved at all, nalorphine must be administered at once for the time it takes to seek the drug in the nearest pharmacy or in a hospital store room may mean disaster.

Other situations which can lead to such overdosage have been reported: preoperative preparation of surgical patients; the treatment of burns, fractures, and shock; and states which are indications for large doses of morphine—hysteria, the anginal syndrome, acute coronary artery occlusion, left ventricular failure, and biliary and renal colic. In any of these critical conditions the failure to alleviate the great distress of the patient often causes the family to demand that the doctor "do something." The physician under such circumstances may throw discretion to the winds and inject repeated doses of narcotics. When the pain has been relieved, the cumulation of all these doses may suddenly become apparent as the patient becomes bradypneic, cyanosed, and stuporous. Respiratory depression in newborn infants is another iatrogenic source of difficulty when morphine has been administered to the mother shortly before delivery. Even in emergencies it pays to determine the past history of the patient's experiences with morphine because some individuals react profoundly to minimal doses.

Overdosage of heroin or other narcotics in addicts stems from a variety of causes. In the forefront is the inaccurate dosage which the user injects into himself. Our archaic laws and regulations force him to buy these drugs not on prescription from his physician or a reputable pharmacy, but from peddlers. Each of the criminals who import, distribute, and finally "push" the narcotic "cuts" it, that is, dilutes it with inert material, such as sugar, lactose, flour, or any white powder. It is then sold in unmeasured "decks" or "caps," which are paper packages and capsules respectively. These contain varying amounts of an unknown dilution of heroin.

In this part of the country the addict receives heroin which is about 3 per cent pure. This figure is a very poor approximation. Thus, although his "fix" usually contains less heroin than he desires, it may contain more and be his undoing.

In other situations the addict may give a large dose of heroin to a neophyte, usually in the hope that the latter will become addicted and be a further source of funds. Even a relatively small dose to one without tolerance to the drug, particularly if administered intravenously, can produce an acute episode of respiratory depression.[2]

In some instances the addict is deliberately murdered by peddlers against whom he has "squealed" or if he is suspected of being a "stool pigeon" (an informer for the police) by being given pure heroin (some thirty times his usual dose). If he is an informer, the addict is supplied with drugs by the authorities for his own use and is supposed to turn over to them materials he has bought. A discussion of this reprehensible practice has no place in this review except to point out the measures which the police are euchred into using by existing statutes. These rather unreliable addict informers may try some of the "stuff" themselves instead of turning it over to the authorities because they prize it so highly. This type of homicide is not unusual and constitutes, for all practical purposes, a perfect crime. As far as I know, the perpetrator of these murders is rarely, if ever, apprehended. A known addict is found dead of heroin intoxication. His case is closed without further investigation.

The very nature of addiction often precipitates addicts into disaster. They seem incapable of stockpiling drugs. If through some windfall they can purchase a large amount of narcotics all of this material will be used on the same day even if it is several times the usual amount injected.

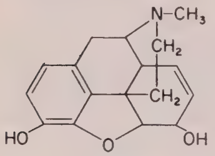
So inaccurate is dosage that the addict doesn't measure his habit in milligrams or grains but in dollars. He has a twenty-dollar-a-day habit, or in some instances even a hundred-dollar-a-day, or more, one.

With all of these factors in operation, singly or in various combinations, there is small wonder at the number of overdosages of narcotics among addicts despite their obvious experience with the drug of their choice. These deaths are the responsibility of our legislators since they are largely preventable by the use of a more humane and modern method of managing drug addiction.

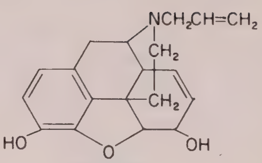
In the past, physicians had very poor weapons with which to combat narcotic poisoning. Stimulants, like picrotoxin, amphetamine, strychnine, oxygen, and artifiical respiration, were the backbone of treatment. More recently, the artificial kidney has proved useful in the treatment of many types of poisoning.[3] Although the method is efficacious, it frequently is unavailable, costly, complicated, and time-consuming. Since the introduction of nalorphine, which acts as a direct antagonist to narcotics, we have come into the possession of a more potent arrow in our quiver of remedies. This drug is not new, but the repeated occurence of death from narcotic poisoning, no matter what the cause, suggests that either it is not available or its salutory properties are not widely appreciated.

History of Nalorphine

In nalorphine (chemically, N-allylnormorphine) morphine's methyl group has been replaced by an allyl group.



Morphine



Nalorphine

It has been known for forty years that the demethylization of morphine reduces its potency.[4] Von Braun, *et al.*[5] demonstrated that the substitution of an allyl group alters the pharmacologic action. These observations and some personal communications with a colleague named Piazza induced Pohl[6] to study N-allylnorcodeine. He discovered that this material stimulates respiration by counteracting the depressive effect of morphine. Unfortunately, this very significant discovery was ignored for twenty-five years until the synthesis, in 1941, of N-allylnormorphine, which proved to be even more efficacious as an antidote to morphine-induced respiratory depression.[7–9]

Further studies on animals revealed that nalorphine is an efficient narcotic antagonist even when administered three hours after the injection of a dose usually fatal for a particular species.[10–13] These highly salutary results inevitably led to a trial of the material on man. Nalorphine was first administered to nonnarcotized subjects. It became apparent that it, like morphine, diminishes the respiratory rate and causes a decrease in the respiratory minute volume.[14,15] Although it has induced sleep, it is not a useful sedative in itself because of its disturbing psychic effects—day dreams, vertigo, nausea and, even acute panic.[16,17]

Respiratory depression was as effectively combated in narcotized individuals as in animals.[14,15,18–22] The usefulness of the drug in the treatment of circulatory collapse and coma was more variable and not as rapid or specific. In all practicability, however, the overnarcotized patient succumbs primarily to respiratory depression so that the highly satisfactory dissipation of this aspect of morphinism makes the drug a valuable addition to our armamentarium. This does not mean that the drug is valueless for the treatment of narcosis itself; Salomon, *et al.*[15] reported that 2 patients who had received meperidine (Demerol) intravenously during a hip nailing had no respiratory depression but failed to awaken at the expected time. Both of these patients were given 15 mg. of N-allylnormorphine intravenously and they immediately became alert and responsive.

The drug was found useful in combating the respiratory depression in infants of mothers who had received morphine sulphate prior to delivery. Nalorphine administered four to forty minutes before the baby was born prevented the appearance of these dangerous neonatal signs.[14] An additional area of usefulness is the restoration of normal blood pressure in hypo- and hypertension caused by preoperative medication with morphine.[23]

The diagnostic value of the drug in the recognition of narcotic addiction, an often difficult decision, of both legal and medical importance, to make, was first recognized at the Addiction Research Center at the United States Public Health Service Narcotic Hospital in Lexington.[24,25] Here, addicts under the influence of various narcotics were given N-allylnormorphine and immediately withdrawal symptoms, sweating, pain, agitation, cramps, vomiting, diarrhea, etc., were precipitated. This not only helped to immediately identify an addict but was useful in the treatment of coma induced by narcotics. The material, however, is not addicting in itself.[26]

Its first use in the treatment of acute heroin intoxication was reported by Strober[2] in 1954. When the drug is used in this manner, the withdrawal symptoms produced may be so intense after the administration of 10 mg. of it to an individual addicted to 120 mg. of morphine per day that the symptoms may have to be counteracted by morphine administered intravenously.[27]

The drug might seem useful in the treatment of nonnarcotized asthmatic patients, but this has not materialized since the drug produces sleep and a decrease in both respiratory rate and minute ventilation.[15] In the alleviation of sedation from barbiturates it is not specific. If it works at all in improving the respiratory depression, it does so only in larger doses than are necessary for benefiting similar patients under the influence of narcotics.[13]

Mode of Action

Several explanations have been advanced for nalorphine's ability to reverse the respiratory depression induced by various narcotics. Chemical antagonism is difficult to accept since the drug is equally efficacious in the treatment of overnarcotized subjects who have received drugs of vastly different structural formulas, like meperidine and morphine.

The allylization of a drug makes it an antagonist to its precursor only if the original drug is a potent analgesic. For example, L-Dromoran is potent and it is antagonized by its allyl derivative. D-Dromoran is inert, as is its allyl derivative.[27]

The specific antagonism between nalorphine and the narcotics is difficult to comprehend for both of these drugs are respiratory depressants. One might expect that they would augment each other and produce further respiratory embarrassment.

THE THEORY OF MOLECULAR COMPETITION.—Frazer[27] proposed that nalorphine and morphine compete for a cellular receptor and that when given in conjunction the former has the capacity of displacing the latter from such a site. Nalorphine is a lesser depressant of respiration than the narcotic so that when it occupies the receptor the patient seems better. The mild nalorphine effect replaces the strong morphine effect. This receptor in the neuron may be a cellular enzyme system.[28]

Isbell[29] and others [16,30–32] observed that in those instances in which N-allylnormorphine is given after a dose of morphine which does not cause marked depression, its pharmacologic effects act synergistically with those of the morphine. This theory explains this often repeated phenomenon by the hypothesis that a small dose of morphine is incapable of occupying all of the cell receptors. Nalorphine occupies the rest instead of displacing the morphine and the effect becomes additive.[30] Wikler and Carter's confirmation of this observation[32] is particularly significant since they demonstrated that the effects of morphine sulphate on the spinal reflexes of dogs could be antagonized by nalorphine only when large doses of the former were used.

RELEASE OF MECHANISMS RESPONSIBLE FOR PHYSICAL DEPENDENCE.—Wikler and Carter[32] and Lasagna[33] independently suggested another explanation for nalorphine's action. They suggest that nalorphine acts by releasing the mechanisms responsible for physical dependence. The following evidence has been adduced in support of this theory:

1. The relationship of the dose of morphine and the efficiency of nalorphine in relieving symptoms described previously is similar to the relationship between the degree of physical dependence and the dose of narcotics.

2. The production of withdrawal symptoms by nalorphine in an addicted person is more than a substitution phenomenon since nalorphine by itself never produces such effects. This cannot be adequately explained by molecular or receptor competition.

3. In fact, the objective symptoms produced often are opposite in action to the usual effects of morphine, such as restlessness, dilatation of pupils, increased blood pressure, and tachypnea. These may be more pronounced under nalorphine than in natural withdrawal symptoms without a morphine antagonist.

4. Nalorphine's effects on the analgesic effects of morphine on rats increase as the animals develop tolerance to morphine.[34] This also has been observed in man.[33]

This theory demands that two assumptions be accepted:

1. Physical dependence can develop rapidly in some subjects. There is reason to believe that this does occur.[25,35]

2. Physical dependence and tolerance are separate entities. Orahovats, *et al.*[34] support this contention by Wikler and Carter.[32]

Synergistic Theory.—A third theory suggests that morphine acts in a dual fashion in the central nervous system for both depression and excitation exist simultaneously.[36] Now, if N-allylnormorphine antagonizes only the depressant effect, the patient will become stimulated.[37] Every practitioner has observed the so-called "cat reaction," particularly in female patients who become wildly excited after a dose of morphine. Here, the stimulant effect predominates over the sedative.

Lasagna[33] emphasizes that a discussion of the mechanism of action of nalorphine in antagonizing morphine and other drugs is at the moment more an intellectual exercise than anything else, for ultimate mechanisms of action of most drugs, perhaps all, are currently almost impossible to detect because of the primitive status of our knowledge of cellular pharmacology. He maintains that it is difficult for any single hypothesis of nalorphine action to explain all the available evidence and urges the acquisition of data which may shed light on this paradoxic antagonism of depressant drugs by another depressant drug.

Method of Use

In instances of life-threatening overdosage of narcotics 5 to 10 mg. of nalorphine should be given intravenously. This should be repeated in two ten-minute intervals. If respiratory depression persists, this probably is not an instance of narcotic-induced respiratory depression. Up to 45 mg. have been administered. If the respiratory depression is aggravated, administration should not be repeated for the effect of nalorphine in a nonnarcotized subject lasts for about three hours.

In operations the drug is valuable in removing morphine effects on respiration at the conclusion of the procedure and in promoting rapid regaining of consciousness in anesthetized subjects whenever this is desirable.

In obstetrics it can successfully reverse the respiratory depression of infants narcotized by the prior administration of morphine to mothers. Perhaps morphine now may be more widely used in obstetric analgesia. Nalorphine may be given intravenously to the mother before cutting the cord, or to the infant. Its widespread use with morphine in obstetrics needs to be defined.

In nonnarcotic respiratory depression nalorphine is useful only if administered in larger quantities; 40 mg. is an average dose. Whether it is superior to analeptics has not yet been decided but there is an increasing tendency to treat barbiturate intoxication only with supportive measures.[38]

Its use in the rapid diagnosis of any variety of narcotic addiction has been alluded to. The usual dose is 5 mg. given intravenously. Withdrawal symptoms appear in ten to fifteen minutes at the latest. These may be violent enough to demand morphine administered intravenously in order to control them. Morphine should always be on hand. If the patient is not taking narcotics, the nalorphine effects will appear. These are pupillary constriction, slurring speech, ptosis of lids, and reduced respiratory rate. It is now safe to conclude that the patient had not been under the influence of narcotics, with the possible exception of meperidine.

Possibly nalorphine has some value when used with morphine in producing analgesia without depression and addiction. This area of usefulness needs further study. Such mixtures may be particularly useful when narcotics must be used over long periods of time, as in severely burned patients.

Summary and Conclusion

Nalorphine possesses the capacity of reversing the respiratory depression induced by all natural or synthetic narcotics. In this regard the effect is obtainable in seconds and even reverses Cheyne-Stokes respiration. The drug acts more slowly in combating circulatory depression. Blood pressure alteration, either up or down, brought on by the administration of narcotics can be corrected after fifteen minutes.

The narcotized person receiving nalorphine can be aroused more readily but he quickly drops off to sleep again. Thus, it is less effective in treating sedative action of narcotics.

When morphine causes smooth muscle spasm, as in the aggravation of lead or biliary colic and pancreatitis, this unpleasant effect can be immediately reversed by nalorphine.[39]

The drug successfully reverses respiratory depression in the newborn when the mother receives morphine during labor. This effect may permit the use of narcotics for obstetric analgesia as more data are accumulated.

It permits the rapid diagnosis of narcotic addiction by inducing immediate withdrawal symptoms. The wastage of life among the addicts who are victims of unscrupulous criminal peddlers and purveyors would be entirely preventable by the enactment of suitable legislation which would permit physicians and hospitals to care for these sick and unfortunate patients.[40–46]

No physician should administer morphine or other narcotics to any patient unless he has on hand the effective antidote to narcotic-induced respiratory depression, nalorphine (Nalline). It should be in the bag of every physician, in every ambulance and emergency room, and in every operating and delivery room to combat acute narcotic intoxication instantly. Only such preparedness can reduce the deaths from this largely preventable condition.

7440 Amboy Road

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Some Current Problems in Blood Procurement as Seen at Bellevue Hospital

GEORGE MIXTER, JR., M.D., F.A.C.S., NEW YORK CITY

(*From the Fourth Surgical Division, New York Post-Graduate Medical School, Bellevue Hospital*)

A RECENT monograph[1] published by the New York Academy of Medicine draws attention to community aspects of blood procurement, processing, and distribution in New York City. While much useful information is available in this survey, it is quite evident that certain specific problems are beyond the scope of such a study.

The blood bank at Bellevue Hospital, which has been in continuous operation for over twenty years, recently had occasion to investigate some of its own problems in procurement, reserves, and distribution of whole blood; the present report is derived from a portion of that study. The author believes that this analysis of whole blood traffic in one of New York's major municipal hospitals may be of interest to the general medical public, supplementing in some detail certain aspects of the broader community problem discussed in the above-cited monograph. Initially, our problem was to discover the actual extent (and, if possible, the cause) of an apparent decline in voluntary contribution of whole blood, and a corresponding increase in purchase of whole blood from other sources.

Figure 1 presents graphically the sources of blood procurement in units per month in our bank for 1957 and the first two months of 1958, omitting those units purchased by patients at their own expense from other agencies. The decline in voluntary donation and rise in units purchased at City expense will be noted, as well as the general decline in procurement.

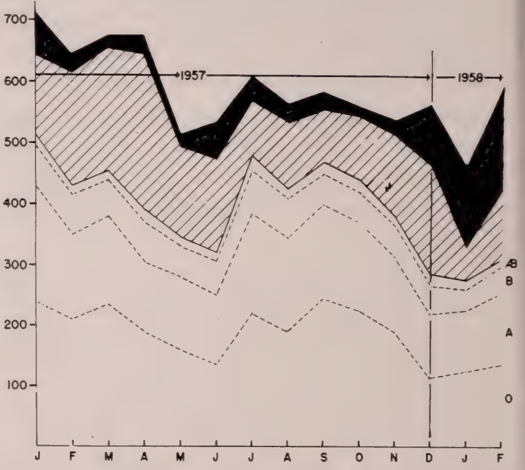

FIG. 1. Sources of bank blood, 1957 to 1958: white = donation; barred = Red Cross; black = purchased.

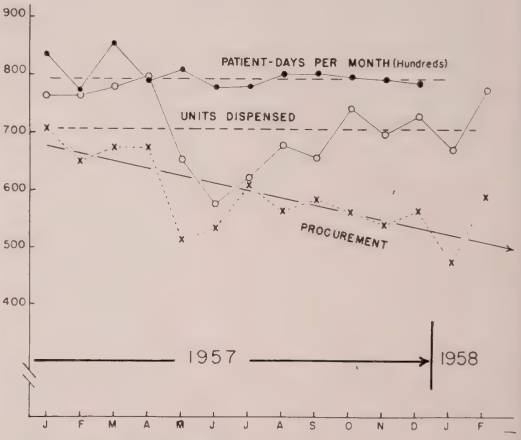

FIG. 2. Comparison of procurement level with monthly patient load and actual number of units of blood dispensed by bank.

The data for Figure 2 were next obtained in order to compare the procurement level with the monthly patient load and actual number of units dispensed by the bank. This latter figure, both here and elsewhere in this report, refers to the number of units issued by the bank, whether used by patients or returned to the bank unused. Although we were not able to obtain accurate data on

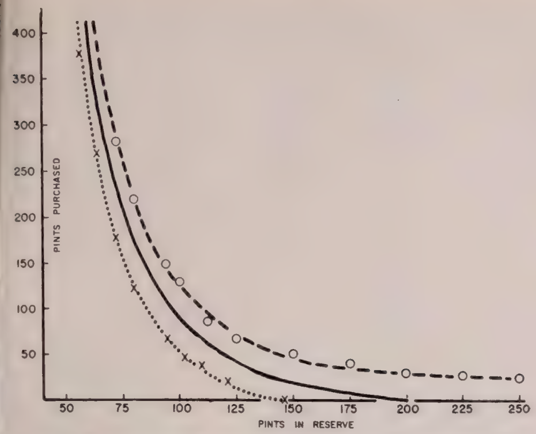

FIG. 3. Annual purchases of blood necessitated by inadequate reserves. Predictions based on 1957 data: dotted curve assumes ideal distribution of blood types in reserve; dashed curve based on typical distribution; solid line shows likely needs in actual operation.

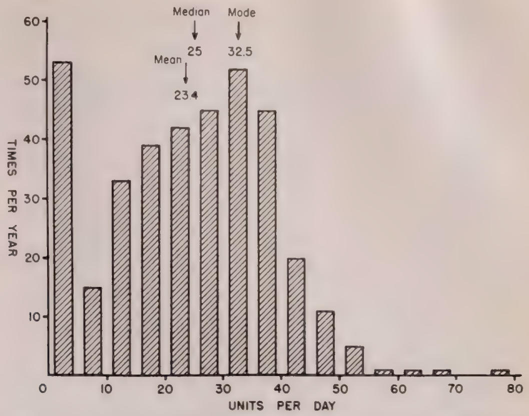

FIG. 4. Units of blood issued per day by Bellevue blood bank, 1957.

the subject, available information indicated that almost 20 per cent of whole blood issued by the bank was being returned unused. It appeared from the data of Figure 2 that the decline in units of blood donated by friends and relatives of patients was not associated with a decline in patient load. The cause for this decline lies outside the proper scope of this paper; but it is worth noting that the procurement rate is in direct proportion to the effort and enthusiasm of the individual resident physicians and interns.

It was next determined that, with few exceptions, there were two reasons why our Hospital was obliged to purchase outside blood: (1) the inability of certain indigent and homeless patients to obtain donors to replace transfusions given during elective surgery, and (2) failure of our bank to maintain adequate reserves of certain types sufficient to cover sudden demands.

Table I summarizes, as a frequency distribution chart, the first step in this analysis. It shows the number of times in the year 1957 that a given amount of a given type of blood was issued by the bank. If during the year 1957 we had always had in stock 37 pints of O-plus, 13 of O-minus, 37 of A-plus, 9 of A-minus, and so forth (the total being 146 units), we should never have been forced to go to outside sources as a result of inadequate stocks. From this table one can calculate how many times a year blood would have to be brought in from outside as a function of maintaining a given level of reserves, assuming that the distribution of such reserves were ideal in relation to the demands among the various blood types. Figure 3 shows, in the dotted line, the result of such computation. But the type distribution in the bank is not the same as this ideal distribution. Recalculation of this curve on the basis of type distribution as seen among our recipients for 1957 yields the right hand (or dashed) line. In recent weeks we have been keeping a twice-daily record of reserves of each type on hand; from these data it appears that the actual situation is well represented by the central solid line.

Referring to this solid line, it will be seen that, as the reserve mounts beyond 120 units, the curve flattens out: in other words, further increase in the reserve forestalls fewer and fewer occasions when outside purchase is necessary. In dealing with a perishable item such as citrated blood, a point is soon reached at which excessive amounts reach expiration date without being used and efficiency drops. It appears that the maintenance of a reserve of 120 units in our bank would permit both economic and efficient management.

TABLE I.—NUMBER OF UNITS OF BLOOD DISPENSED DAILY IN 1957: FREQUENCY BY TYPES

Number of Units	O		A		B		AB	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
0 to 1	57	277	74	260	156	345	280	359
2 to 3	20	61	36	74	98	15	67	5
4 to 5	33	18	48	26	53	2	12	0
6 to 7	41	7	50	3	29	1	4	1
8 to 9	39	0	44	2	12	1	1	
10 to 11	37	1	28		8	1	1	
12 to 13	32	1	25		5			
14 to 15	31		21		3			
16 to 17	24		17		0			
18 to 19	14		7		0			
20 to 21	12		6		1			
22 to 23	10		2					
24 to 25	7		2					
26 to 27	1		2					
28 to 29	3		1					
30 to 31	1		1					
32 to 33	1		0					
34 to 35	1		0					
36 to 37	1		1					

TABLE II.—UNITS OF BLOOD ON RESERVE MARCH 10 TO APRIL 6, 1958

Type	O		A		B		AB		
RH	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Total
Average	33	8.7	28.4	5.6	18.6	2.6	4.0	.48	101.4
Maximum	61	12	49	9	29	5	7	1	146
Minimum	12	5	11	0	5	0	1	0	61

How does this relate to our needs, in terms of numbers of units dispensed daily? The basic data used in Table I are rearranged to give Figure 4. An average of 23.4 units was dispensed per day, the maximum daily amount being 77 units. Sundays and holidays account for the very large number of days when only 0 to 4 units were issued; during the week it was most common to issue from 30 to 34 units per day. In other words, the arbitrarily chosen ideal bank reserve is about five times the average daily load.

How closely is this ideal reserve level currently being followed? Table II summarizes our experience in the first month (March to April, 1958) during which such data have been collected. It will be seen that total reserves have fluctuated from 61 to 146, with an average of 101.4 units; considerably below the ideal level. It will also be obvious that the reserves of certain specific groups, particularly Group A, dropped on occasion to prohibitively low levels. That is to say, this paucity of reserves on numerous occasions necessitated postponement of elective major surgery during the period in question. In addition, purchases of blood from outside sources during this period has continued to rise beyond the levels seen in Figure 1.

Table III summarizes the dispensing of blood by the bank during this same period. It must be remembered that a large proportion of blood requested by the surgeons and issued by the bank for patient use is not actually required, and that such blood is later returned to the bank for reissue. It has not been determined how much was so returned during this period, but, as noted before, this usually amounts to about 20 per cent of the blood released for use. Nonetheless, the figures quoted are the important ones for the purposes of this inquiry, since they represent the actual demand of the hospital for whole blood. Comparison with Table II will show that the maximal daily demand for any type

TABLE III.—UNITS OF BLOOD ISSUED DAILY, MARCH 10 TO APRIL 6, 1958

Type	O		A		B		AB		
Rh	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Total
Average per day	11	1.35	8	1.4	4.1	0.45	0.6	0.04	26.9
Maximum per day	27	8	20	8	20	5	5	1	55
Total for month	309	38	222	37	114	13	16	1	750
Number of days when demand exceeded reserve	2	1	1	2	1	2	1	1	11

TABLE IV.—SOURCES OF UNITS OF BLOOD COLLECTED MARCH 10 TO APRIL 6, 1958

Type	O		A		B		AB		
Rh	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Total
Voluntary	148	19	112	21	37	2	9	3	351
Drawn from Professionals	4	2	4	2	2	1	1	0	16
Subtotal	152	21	116	23	39	3	10	3	367
Red Cross	75	8	52	8	23	5	2	1	174
Purchase	32	0	12	1	16	0	0	0	61
Total	259	29	180	32	78	8	12	4	602

never exceeded the maximum reserve, and yet the actual demand not infrequently exceeded the coexisting supply. Day-to-day comparison of supply and demand revealed that this occurred in fact 11 times during the period studied, as summarized in the fourth or bottom line of Table III. It will be noted that reserves of every blood group were deficient on at least one occasion.

It must be understood, of course, that the required bloods were, in fact, obtained and issued; the point is that this could not be accomplished out of reserves on hand. This is merely an index of inconvenience, for there are no numerical data available to indicate the delays and inconveniences—indeed, the struggles—the blood bank has experienced in keeping up with the needs of the patients.

Comment

Is this situation peculiar to Bellevue? Apparently not, for a survey of city-wide figures for the year 1956 and 1957 shows that, of all municipal hospital units in the area, ours is foremost in maintaining the ratio of voluntary donations to units dispensed.[2] Table IV presents a detailed breakdown of the sources of whole blood obtained by our bank during the period March to April, 1958. It will be noted that the total is far less than the number of pints of blood issued (Table III), since many—perhaps 150 to 200—of the issued units were returned to the bank for reissuance, as explained previously. By percentage, Bellevue obtained 58.3 per cent of its blood from voluntary donors (about 6 per cent of this amount was rejected because of positive serology), 28.9 per cent from the Red Cross, 2.6 per cent from paid volunteer donors, and 10.2 per cent by direct purchase from other agencies. Of all the whole blood collected in Greater New York in 1956 only 18.7 per cent was collected by hospitals, 35.7 per cent being drawn by the American Red Cross and 45.6 per cent by professional blood banks. Thus, although our bank is not currently able to supply the entire demand of its patient population out of volunteer donations, it is equally evident that, with help from the Red Cross and paid donors on the professional staff, we can and do supply over 90 per cent of it without recourse to professional blood banks. If, as was shown earlier, our hospital were able to maintain approximately 25 per cent higher reserve levels in the bank, we could be practically free of the necessity of purchasing processed blood.

Summary

The sources and amounts of human blood available for transfusion in Bellevue Hospital during 1957 are presented.

These data are related to the reserves on hand in the Bellevue blood bank in terms of daily demand and supply.

An ideal reserve level is postulated on the basis of these data.

Bellevue is able to obtain from the Red Cross and voluntary donors approximately 90 per cent of the blood required.

By increasing by 25 per cent the reserve on hand through voluntary donations this large city hospital could be virtually independent of professional blood banks.

The author wishes to express his thanks and appreciation to Miss Mary Manganero and her staff for their stalwart aid in the collection of the data here presented.

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153rd Annual Convention

Medical Society of the State of New York

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Experiences with Corticosteroids in Ophthalmology[*]

DAN M. GORDON, M.D., NEW YORK CITY

(*From the New York Hospital–Cornell University Medical College and the L. Margolyes League*)

THE intelligent use of adrenocortical steroid therapy demands a knowledge of the rationale for its employment. If the ophthalmologist understands that he is treating the symptoms and not the underlying disease when he employs adrenocortical steroid therapy, he will more intelligently understand its use. Adrenocortical steroid therapy is indicated in practically every ocular situation in which one of the following five conditions is present: inflammation, edema, allergy, granulation tissue, and infection. When infection is present it is mandatory that if adrenocortical steroid therapy is employed, antimicrobial therapy is utilized concomitantly. These broad indications would make it appear that adrenocortical steroid therapy is a panacea for all ophthalmologic conditions. Unfortunately, this is not true. When there is no specific therapy available for a situation and when that condition falls into one of the five categories, the use of steroid therapy must be considered seriously. For example, one would not expect to cure a case of acute glaucoma with corticosteroid therapy, nor is it of any value in the reduction of intraocular pressure. Nevertheless, it is a fact that each attack of acute glaucoma is accompanied by the formation of peripheral anterior synechiae in the angle of the anterior chamber. It is also known that corticosteroid therapy prevents the formation of synechiae and is one of the prime therapies, if not the prime therapy, in the treatment of uveitis. Therefore, it would seem logical that if one wanted to prevent the formation of peripheral anterior synechiae, each patient suffering an attack of acute glaucoma would be treated with intensive systemic and topical corticosteroid therapy during the acute phase. Similarly, those who are operated on for strabismus, which is at times followed by a retention granuloma, should be given topical steroid therapy postoperatively to prevent or mitigate these granulomata.

The preparations available today for systemic therapy are corticotrophin (ACTH), and the natural and synthetic corticosteroids: cortisone, hydrocortisone, prednisone, prednisolone, methylprednisolone, and triamcinolone. With the exception of ACTH, all of these also function when applied topically, either as an eyedrop or as an ointment, and when injected subconjunctivally. Many other steroids are now under preliminary investigation, and conceivably some of these will see the light of day in the near future. One of these, dexamethasone, gives promise of being the most efficient anti-inflammatory agent which I have used to date. At the present time the trend in the development of new systemic steroids is to eliminate undesirable side-effects. Therefore, we no longer can generalize about certain aspects of corticosteroid therapy, but must refer to experiences with specific compounds. The tendency today in the use of topical steroid therapy is to employ soluble steroids rather than the suspensions which have been previously available.

ACTH is employed either intramuscularly or intravenously. Intramuscularly the dose is 80 to 160 units per day, preferably in the gel or zinc form. The more severe the inflammation, the higher is the initial dose. The method of choice when employing the intravenous drip is to use 20 to 25 units of the ACTH in 1,000 cc. of saline or 5 per

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[*] Presented in part before the Eastern New York Eye and Ear Association, Albany, New York, in March, 1958.

TABLE I.—Initial Doses of Systemic Adrenocortical Steroids

Steroids	Initial Doses (mg.)
Cortisone	200 to 300
Hydrocortisone	160 to 200
Prednisone	30 to 40
Prednisolone	30 to 40
6-Methylprednisolone	24 to 32
Triamcinolone	24 to 32
Dexamethasone	3.0 to 4.5

cent glucose in saline, and to permit the drip to run over a twelve- to sixteen-hour period. This is accomplished by regulating the drip to run approximately 20 drops per minute. It would appear that the efficiency of the ACTH intravenous drip is dependent more on the length of time which it is permitted to run than on the dosage employed. The error is frequently made of using a five- to eight-hour drip rather than one lasting up to sixteen hours per day. Cortisone and hydrocortisone have been rapidly replaced by the newer synthetic steroids prednisone and prednisolone, and more recently by methylprednisolone and triamcinolone. The newest steroid, dexamethasone, has an mg. per mg. clinical potency approximately 10 to 12 times that of prednisone. Therefore, the initial does is 3.0 to 4.5 mg. per day in the average case, depending on the severity or the intraocular inflammation. It is emphasized that oral corticosteroids are more efficient when given in four divided daily doses.

Table I lists the oral corticosteroids and their usual initial doses in moderately severe cases. In very severe situations the initial dose may be materially increased, and in milder situations lowered slightly.

Acute Intraocular Inflammations

It is advisable initially to use fairly high levels of steroid therapy systemically in acute situations until the patient has made an excellent response. At this point therapy should be tapered off gradually by decrements of approximately 10 per cent every day or two. If there is no evidence of relapse, the dose can be reduced further until it is discontinued. If a relapse occurs while the drug is being tapered off, a higher dosage should be employed immediately. It is wiser to give an additional week or two of low dosage systemically than to discontinue therapy too abruptly. The actual fact is that one does not know at what level to start in an acute case. One must think in terms of milligrams of disease versus milligrams of therapy, and attempt to use more drug than the amount of disease it is to combat. No harm is done by starting too high, and this is much safer than starting too low. For example, if one is faced with a severe intraocular inflammation, such as an uveitis or optic neuritis, and does not know precisely at what level to start, he could use 60 or even 80 mg. of prednisone or an equivalent amount of one of the other compounds initially. After several days, if there was beneficial response, he could rapidly drop the dosage down and keep dropping it down until a point was reached at which he either discontinued the drug or the patient had a relapse. In the latter event, he would have to increase abruptly the amount of drug above that taken at the time of the relapse. Once the disease was under control, he could start tapering off slowly again. This method of trial and error is essential for good management.

Another fundamental rule is that a short course of systemic therapy, such as a week or two, may be discontinued fairly abruptly over a period of one to seven days. However, if the patient has been on systemic therapy for many weeks, it is well to take at least several weeks before discontinuing the medication. At a high level of dosage which has been given for some weeks sudden discontinuance may produce a rebound of the disease, whereas slow tapering off gives the best results.

Chronic Intraocular Inflammations

The use of hormonal steroid therapy in the treatment of chronic inflammatory eye diseases such as chronic uveitis provides one of the bright pages in recent ophthalmologic history. Unfortunately, few ophthalmologists employ this therapy for chronic inflammatory intraocular disease, even though failure to do so often means eventual blindness for the patient.

One must employ high doses initially in an attempt to "hit the disease on the head" as rapidly as possible. Once a good response has been made, the dosage is tapered off gradually. The treatment of chronic intraocular inflammations must often be continued for months to years. Many of these patients can be treated with relative impunity at a fairly high dosage level. It is a fact that the average severe eye condition tends to occur in individuals who are otherwise healthy, and therefore are not prone to important side-effects from therapy. This is not true in general medical practice where the whole patient is sick. It is a good practice to reduce the dose gradually while keeping the patient under continuing observation.

If symptoms return the amount is increased. If not, it is reduced slowly until the symptoms recur. At this point the dosage is increased until symptoms are again abolished. By this method of trial and error, the minimum maintenance dosage is ascertained.

Long-term experience with a large number of patients has demonstrated that they can be maintained safely on hormonal-steroid therapy for many years. The additional safety provided by the newer compounds simplifies long-term therapy. When an occasional patient displays some evidences of side-effects, it becomes necessary to harmonize the dosage of the steroid with the safety of the patient, even though some ocular symptoms do recur. Occasionally a patient will do better on one of these compounds than on the other. For example, one has a patient with chronic uveitis who has some undesirable elevation of blood pressure on 20 mg. of prednisone a day, but when the level is dropped to 15 mg. a day the blood pressure returns to normal. At this point the patient has a low-grade anterior chamber flare with some cells. Given such a situation, since 15 mg. is a safe dosage level for the patient's general health, this is the amount which he should receive, despite the recurrence of some ocular pathologic conditions. An attempt should be made to employ simultaneous intense topical therapy or subconjunctival injections of steroids to reinforce the systemic therapy. On occasion this will have the same effect as the larger dose of systemic therapy, and will result in complete mitigation of symptoms.

When a patient's safety appears to be jeopardized by that dose necessary to control his eye disease, it is advisable to first try one of the newer preparations before attempting inadequate doses of the drug in use at that moment.

Subconjunctival injection of steroids frequently will be of value in the treatment of intraocular inflammations. The procedure is to inject approximately $^1/_2$ cc. of the strongest available concentration under the conjunctiva and tenon's capsule high up under the upper lid. Such an injection will be effective from three to fourteen days. By employing $^1/_2$ cc. of Cyclaine in the same syringe discomfort is eliminated. Any undue local edema is controlled by hot compresses. The guide for the frequency of injection is the response of the disease. If the injections help, they should be used, and when the patient seems again to be slipping, the injections should be repeated. The presence of white crystals under the conjunctiva does not mean that an active steroid is still present. When the patient does respond to subconjunctival injections, the result may be dramatic, although some do fail. Subconjunctival injections can often be used as a means of decreasing or eliminating systemic therapy. The author has found subconjunctival injections especially effective in the treatment of chorioretinitis juxtapapillaris.

Choice of Drugs

The wide choice of steroids now available poses a question of which one to employ. The physician is best guided by his own experiences or by the patient's previous history with corticosteroid therapy. If there is no such previous history, it is probably best to use one of the newer steroids as they tend to produce fewer side-effects than the older ones. Certainly these cause less water retention than cortisone or hydrocortisone. There seems to be little difference between prednisone and prednisolone systemically. If one of these two fails to work in a given case, it should not be expected that the other one would be more effective. However, this does not mean that either methylprednisolone, ACTH, triamcinolone or dexamethasone should not be attempted in a case in which either prednisone or prednisolone has failed previously. It is a fundamental rule that if a patient is refractory to any one of the available compounds, one or more of the others should be attempted.

Failure is caused more frequently by insufficient dosage given for too short a period than for any other reason. When a patient does not respond to a given compound, the dosage should be increased by 30 to 50 per cent for an additional two to three days before the drug is considered unsatisfactory. Then if the patient has not responded, a change to one of the alternate compounds is indicated. Corticotrophin is easily employed as an ambulatory procedure, given by a member of the patient's family, if necessary. Hospitalization is required only if it is to be given intravenously. In a chronic disease under long-term therapy, it is wise occasionally to alternate two-week courses of ACTH with the oral steroids.

Topical Steroids

Most of the steroids are available for topical use in combinations with antimicrobial agents. Straight steroid preparations are utilized when infection does not seem to be present. In the presence of infection, the antibiotic combinations are indicated. When treating a conjunctivitis which exhibits markedly-injected palpebral or bulbar conjunctivas with or without discharge, it is assumed that infection is present, and a steroid-antibacterial combination is indicated. When the conjunctiva is milky or pale and wet and edematous, it is presumed that allergy is involved, and antimicrobials are not required.

Physicians in general tend to employ medications three or four times daily. While this is usually a safe routine, it can become a dangerous trap. In treating a patient with topical steroid therapy, the aim is to saturate the external globe or the iris with the steroids. To that end, when one is treating a severe or acutely inflamed eye, it is advisable to employ topical steroids every half hour to every hour until a satisfactory response is made. After this point, one gradually lengthens the intervals between applications.

Indications and Contraindications

The indications for the use of hormonal-steroid therapy are symptomatic, as stated before. The only ophthalmologic contraindications at present are dendritic ulcer (herpes simplex), certain exanthemata (such as chickenpox), and fungous infections if keratitis ensues. One should be very wary in treating an acute keratitis of dubious origin until herpes simplex injection can be ruled in or out. Corneal anesthesia or hypesthesia is characteristic in herpes simplex keratitis. In doubtful cases this test, done with a wisp of cotton, may be helpful. Both eyes should be tested to make certain that corneal anesthesia is not the patient's normal state. The indications as stated are inflammation, edema, allergy, granulation tissue, and infection. Stipulation should be made that antimicrobials must be employed when infection is treated with steroid therapy.

The question is raised frequently of

employing systemic steroid therapy in tuberculosis of the eye. I feel that intraocular tuberculous infection is encountered rarely. Such a clinical diagnosis is always open to question. However, if the oculist feels that he is dealing with tuberculosis, the simultaneous employment of antituberculous agents, such as isoniazid or streptomycin with para-amino-salicylic acid, should be made.

It is important to know the anatomic indications for specific types of hormonal steroid therapy. These so-called "route indications" are important to intelligent and successful management. In gross inflammations or involvements of the globe, where the condition can be seen with the naked eye, the use of topical steroid therapy usually will suffice. Here we are dealing with the involvement of the lids, the conjunctivas, the episcleral tissues, and the cornea. In a high percentage of cases of iritis (anterior uveitis) topical steroid therapy will be beneficial. When both eyes are involved, it is wise to employ concomitant systemic therapy.

Topical therapy has no value in treatment of inflammation of the choroid, retina, or optic nerve.

In all diseases invoglvin the inner eye behind the iris and in those cases of iritis which have not responded satisfactorily after several days of intensive topical steroid therapy, systemic therapy is mandatory. This author likes to employ systemic therapy in every case of iritis. The intensity and duration of the disease are markedly shortened by the systemic therapy.

In posterior uveitis and optic neuritis at least two weeks or more of systemic therapy are needed, as a rule. ACTH is superior to most steroids in the treatment of optic neuritis and retrobulbar neuritis. Most cases of neuritis will respond dramatically within seventy-two hours of initiating ACTH, either by the intravenous route or 120 to 160 units daily in the intramuscular preparations.

Uveitis

If acute uveitis is anterior (iritis or iridocyclitis) it will often respond to intensive topical administration of steroids. That means that the eyedrops should be used every half hour to every hour initially, and the ointment should be used at night. About 25 to 40 per cent of the patients will not respond to topical therapy alone, but will do well on systemic therapy. For this reason, I employ systemic corticosteroid therapy with an initial dosage level approximating 24 mg. to 32 mg. daily in four divided doses of methylprednisolone or triamcinolone, or 3.0 to 4.5 mg. of dexamethasone. In acute cases seen early, four to five days of such systemic therapy usually suffice. I often inject ACTH 80 to 120 units of the gel or zinc during the daily visits. Usually by the second to third day most of the signs and symptoms of the disease are gone. If several days of systemic therapy have not completely eliminated all of the signs and symptoms of the acute uveitis, the systemic therapy is continued following the plan outlined for treating acute diseases. The topical therapy is continued for two weeks after all of the signs and symptoms of the disease have disappeared. With this regimen it is not necessary to use cycloplegic drugs unless iris adhesions are present or forming. Recurrent attacks of anterior uveitis are treated in exactly the same manner as acute attacks.

Acute choroiditis will not respond to topical steroid therapy. In this case it is necessary to begin immediately with systemic therapy, using either ACTH in doses of 80 to 120 or even 160 units per day, or 5 to 10 tablets daily of one of the steroids, in four divided doses. Once the choroiditis has responded to the therapy, the dose can slowly be tapered down and eventually eliminated. Recurrent choroiditis is treated in the same manner as acute choroiditis. When the lesion involves the macular area, one should immediately "throw the book at the patient." In such cases I immediately give the patient a subconjunctival injection of $12^1/_2$ mg. of cortisone or its equivalent in one of the other steroids, plus an intramuscular injection of 160 units of ACTH in gel or zinc. He is then placed on large doses of either ACTH or one of the oral steroids. By large doses of steroids we mean approximately 80 mg. of prednisone, 6.0 mg. of dexamethasone, or 60 mg. of 6-methylprednisolone or triamcinolone. Once the disease has responded to the therapy, the dosage can be dropped slowly. Choroiditis is treated until the lesion has become hard with sharp borders, pigmented or unpigmented. One should never stop treatment while the lesion still looks a little fluffy or soft. Treatment should be continued after the lesion looks hard, solid, and completely healed.

It is a grave mistake to withhold treatment until one completes an etiologic survey, especially when the macula is involved. I am certain that there must be many causes for the various uveitides. However, I am just as certain that our present approach to the etiology of these diseases is wrong because it is usually so unproductive. What is needed in ophthalmology is some completely new approach to the search for the causes of intraocular inflammations. Unfortunately, even when we do think we have found the cause, we rarely have specific therapy available. Nevertheless, this should not rule out a proper etiologic survey when it is indicated. My point is that I do not believe that we really know how to make an etiologic survey today.

Chronic uveitis usually involves the posterior pole and often has, as part of its picture, a chronic choroiditis which may be located near the ora. In steroid therapy of chronic uveitis one starts with high initial doses in an attempt to get the disease under control rapidly. Once this is accomplished, the doses are gradually or rapidly tapered off. As long as the disease is kept under control, an attempt is made to determine the minimum dosage with which it can be suppressed. This means that the medication is reduced by decrements of 10 units of ACTH every several weeks, or by approximately one tablet of the oral steroid. Once there is any evidence of relapse, the dosage is increased again to approximately 10 per cent above the point at which it was reduced originally. Then the patient is continued at this level for several weeks, and again an attempt is made to decrease the amount used. By this process of trial and error one can estimate the minimal maintenance dosage. At times one will find that he can reduce to the point of elimination. However, in the treatment of chronic uveitis this is rarely accomplished before many months to years. The author has a number of patients who have been treated for years, and occasionally one will exhibit a "burning out" of the disease. It is this group of chronic uveitides which is so difficult to handle, and which will lead to blindness unless therapy is carried on at adequate dosage levels. These truly try the soul of the ophthalmologist, but are the most rewarding to both him and the patient when handled properly. When treating chronic uveitis, one is apt to run into the undesirable side-effects, such as water retention, gastrointestinal symptomatology, and so forth, which do accompany steroid therapy when it is carried on for a long period. Fortunately, most of these side-effects can be reduced or eliminated with one or the other of the newest steroids.

Water retention is easily controlled by the use of oral diuretics or injected mercurial diuretics. If necessary, one can use the help of the patient's general practitioner or internist. Actually, with greater experience in the use of adrenocortical steroid therapy plus the advent of the newer preparations, important side-effects are becoming fewer, and our knowledge of how to control them is becoming greater. The various carbonic anhydrase inhibitors are excellent diuretics, and are invaluable if secondary glaucoma is present. Chlorthiazide is a useful oral diuretic.

Summary

The intelligent application of hormonal-steroid therapy will result in a high percentage of excellent results in the treatment of ophthalmic diseases. Most failures with adrenocortical steroid therapy are due to too little therapy given over too short a period of time. It is important to give enough, often enough, and long enough of one's time to achieve the desired result. Topical steroids have their chief role in the therapy of diseases of the external eye and the iris. All other intraocular inflammations demand systemic therapy in adequate dosage levels to achieve success. It is important to tailor the dose schedule to the patient, rather than to attempt to treat all patients on the same regimen. With added experience in the management of corticosteroid therapy, plus the advent of the newer steroids, the severe intraocular inflammations are becoming more amenable, while the side-effects due to the therapy are decreasing in incidence and severity.

New Blood Test Aids Diagnosis of Rheumatoid Arthritis

A relatively new blood test for rheumatoid arthritis has been shown to be about 85 per cent accurate by two new studies. The test involves adding particles of specially treated bentonite, an aluminum salt, to blood serum. If the patient has rheumatoid arthritis, the bentonite particles clump in a particular manner.

It is similar to other blood tests for arthritis, which use sheep blood or latex as the clumping material. However, the bentonite test is simpler and speedier than the other tests, according to Drs. Kurt J. Bloch and Joseph J. Bunim of the National Institute of Arthritis and Metabolic Diseases, Bethesda, Maryland.

Their study appeared in the January 24 *Journal of the American Medical Association.*

The study confirms earlier suggestions that the bentonite test might be useful in the specific diagnosis of rheumatoid arthritis, which has been termed the "nation's number one crippler." A virulent form of arthritis, the disease is an inflammation of the joints. Because of its similarity to other forms of arthritis, rheumatoid arthritis is difficult to diagnose in the early stages when treatment is most effective.

The blood tests offer a means of early diagnosis. At present only a few laboratories perform them because of their complexity. However, the researchers believe the bentonite test is a step toward an accurate, simple, inexpensive, and dependable laboratory aid that could be used in many laboratories.

Functions in Medical Practice of the Mental Hygiene Clinic of the Westchester Division, Inc.

Outpatient Department of New York Hospital—Westchester Division

W. K. McKNIGHT, M.D., CURTIS T. PROUT, M.D., AND JAMES H. WALL, M.D., WHITE PLAINS, NEW YORK

(*From the Mental Hygiene Clinic, Westchester Division, Inc., and New York Hospital—Westchester Division*)

THE Mental Hygiene Clinic of the Westchester Division, Inc., which is the outpatient department of the New York Hospital—Westchester Division, was established through the generosity of Mr. John D. Rockefeller, Jr., in December, 1956.

For nearly two centuries the New York Hospital has served Westchester County and the Greater New York area in the active treatment and restoration of patients with psychiatric disorders, and for nearly seventy years a major part of this work has been carried on in Westchester County at the Westchester Division of the New York Hospital.

Prior to World War I, physicians of the staff took an active role in community psychiatry and in the schools of White Plains since there were no psychiatrists in private practice in this community in those days. From 1924 to 1932 the medical staff of the Westchester Division operated the psychiatric outpatient department of the New York Hospital under the direction of Dr. George Henry. During the depression years, World War II, and immediately afterwards, the staff was called on to do a great deal of psychiatric consultation and treatment among families who could not afford or could not find other psychiatric outpatient help. This was the case with many service men and veterans and their families.

With the growth of White Plains from a 6,000 population in 1894, when the hospital moved to Westchester, to 50,000, and the County growth from 147,000 to over 750,000, the need for an organized outpatient service was obvious. Plans included the addition of several senior psychiatrists, expansion of the Department of Psychology, and the establishment of a Department of Social Service, all of which personnel were working together before the opening of the Clinic on January 1, 1957.[1] The training programs[2,3] were revised and the resident staff was increased to the size of the entire medical staff over ten years ago.

The Mental Hygiene Clinic of the Westchester Division serves residents of Westchester County who have limited financial resources. As a further development in the Hospital program, the objectives of the Clinic are to alleviate mental ills; to train qualified physicians and other psychiatric workers to become specialists in the treatment of psychiatric disorders; and to add to the body of psychiatric knowledge through research, education, and preventive mental hygiene within the community. As a new all-purpose community clinic, working relationships with, and cooperation from, existing agencies have been most gratifying.

From the beginning, emphasis has been placed on providing intensive psychotherapeutic treatment for persons handicapped by emotional illness in their family, social, and vocational living, but who do not require

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Presented at the Annual Meeting for Physicians in the Community by the New York Hospital—Westchester Division, White Plains, New York, November 10, 1958.

hospital care. To this end, much thought and careful planning have gone into the establishment of the new Clinic. It was anticipated that there would be many pressures resulting from needs within the community requiring preventive as well as curative efforts.

With an experienced staff representing the various technics in clinical psychiatry[4–6] the Clinic was organized to study and treat children, adolescents, and adults. The physician-in-charge, four psychiatric social workers, one clinical psychologist, an administrative secretary, a receptionist, and a stenographer now comprise the full-time members of the Clinic staff who are assisted by the other members of the Hospital professional staff serving on a part-time basis in the Clinic.

The training function of the Clinic is part of the teaching program of the Hospital. Planned in detail and based on close supervision by members of the senior staff, it provides both academic and clinical instruction and experience for resident physicians, graduate psychiatric social workers, and interns in clinical psychology.

The large number of applications for treatment or other Clinic services has included a surprising number of patients who are in most urgent need because of seriously disabling or handicapping symptoms of emotional illness. This need has largely served as the criterion in selecting patients for treatment, even though prognosis has seemed limited in many cases. It has been a primary objective of the Clinic to provide plans of treatment that are family-centered since experience has indicated the importance of considering the patient as a member of the family unit[7] in which the illness reflects disturbed interpersonal relationships as well as personality defects or immaturity. Accordingly, the participation of significant relatives in the treatment effort has been urged and promoted not only for children and adolescents in treatment but for adults as well.

This plan has utilized the carefully-integrated treatment technics which derive from the experience and training of the psychiatrist, the psychiatric social worker, the clinical psychologist, and the training consultants—all members of the clinical team.

The philosophy of treatment has been that of dynamically-oriented psychotherapy, including play therapy for children. Therapeutic influence begins at the time of the initial application which is usually at the time of the patient's first phone contact with the Clinic. Since referrals may also be made by someone on behalf of the patient, the application for an adult is usually not considered complete until the patient himself calls. At this time arrangements are made with the prospective patient to have reports of previous studies or treatment sent to the Clinic before the intake interview is scheduled.

This interview is then arranged in accordance with the degree of urgency and available time.

The intake interview is devoted to a careful appraisal of the nature of the problem. The illness and the motivations of the patient and his relatives are evaluated, and an estimate is made of the potential for response to and utilization of treatment effort. This is an important step in formulating preliminary treatment plans that may most nearly meet the patient's needs. It serves, also, to minimize the uneconomic use of time and services. Experience in many clinics is demonstrating the importance of carefully-planned intake procedures as a means of helping patients to achieve an attitude of initial responsibility in their participation in treatment efforts. The intake interview is concluded by a discussion with the patient and his relatives of the recommendations of the staff and treatment is begun as soon as a vacancy becomes available. If the patient is not accepted for further study or treatment an appropriate referral elsewhere is made.

The following cases are illustrative of these procedures.

Case Reports

Case 1.—A twenty-five-year-old married woman was referred by a social service department of a general hospital where she had complained of being very depressed and tearful. The patient was pregnant and her obstetrician had recommended outpatient psychiatric care as he considered her to be not certifiable. The patient readily completed her application and, during the preliminary interview, described her depressive feelings and frequent crying spells which she said often overcame her for no apparent reason. These symptoms, she said, had begun with the onset of her current pregnancy when she came to have "a horrible premonition" that either she or the baby would die during the course of the delivery. To this obsessively recurrent thought she had been reacting with increased anxiety, depression, and tearfulness. A previous similar pattern of emotional reaction had occurred at age seventeen when, following a broken romance, she had taken an overdose of sedative medication and had been hospitalized for a period of several months. She indicated further that she had had long standing emotional conflicts in her relationship with her parents and that for several years prior to her marriage she had tended to be rebellious against her family and social traditions and had lived with her husband for three years before the marriage. She came to realize that her husband was also emotionally unstable, a man who was unable to hold a job consistently, who was frequently abusive to her, and who drank excessively. Prior to the marriage he had had a brief but violent emotional illness which had required hospitalization, and in recent years their relationship had become increasingly difficult. She was quite agreeable to the suggestion that he be invited to participate in her treatment at the Clinic, but it soon became apparent that he was resistant to this plan. Because of the urgency of her need, her treatment was started and further unsuccessful efforts were made to enlist her husband's interest and help She was, however, able to undergo her delivery in a much-improved condition and without either physical or emotional complications. Subsequently, her husband created more difficulties in the home so that the patient again became depressed and made another suicidal attempt. The lack of an interested and responsible attitude on the part of the husband, together with the acting out of his own emotional conflicts by means of psychopathic symptoms formed a serious obstacle to the patient's improvement and recovery.

Case 2.—An application was received by a mother for her twenty-year-old daughter who had lost all the hair on her body at about age seventeen. Following this she had had an episode of giant hives for which comprehensive medical studies could find no obvious cause. Psychiatric study and treatment was advised and in the preliminary interview it was obvious that the patient had relatively little overt anxiety about her physical status and that she seemed surprisingly untroubled emotionally. She realized that the recurrent attacks of hives were related to her relationships with her family and other people and she stated almost flippantly that there was nothing wrong with her that "a good psychiatrist couldn't cure." Further investigation at this time elicited definite evidence of underlying resentment and conflict in the relationship between the girl and her mother in which two components stood out in strong relief: The patient's unwitting desire to punish her mother and the mother's need to assuage her guilt for engendering hate in the patient directed toward herself. The prognosis was guarded since the patient was allowing herself to be forced into treatment by her mother, but she was accepted for further evaluation and trial of treatment.

An important aspect of Clinic procedure is a close working relationship with referring agencies or individuals and others concerned with the patient's progress. This includes physicians, teachers, school guidance personnel and officials, probation officers, Department of Welfare workers, employers and industrialists, employment and vocational rehabilitation agencies, shelter workshops, ministers, and others. Emphasis has been placed on telephone contacts with physicians and requests for summaries of previous clinic studies and treatment effort, while conferences in the Clinic have been held with teachers, guidance directors, and representatives of other agencies for similar purposes. When their time schedules have permitted, various physicians have visited the Clinic in order to familiarize themselves with the nature of the work and clinical services available.

Case 3.—Collaborative work with the referring

TABLE I.—SELECTED STATISTICAL DATA

	1957			1958			Total to Date (Oct. 31, 1958)			
	Children	Adolescents	Adults	Children	Adolescents	Adults	Children	Adolescents	Adults	Total
Applications received	73	71	222	129	40	59	202	111	281	594
Number of patients	24	29	90	36	28	87	60	57	177	294
Relatives or copatients in casework treatment			127			147			274	274
Patient and copatient interviews		3670			4374			8044		8044
Broken appointments		34			60			94		94
Patients referred by physicians		33			41			74		74
Patients referred by self, relatives, or friends		49			45			94		94
Patients discharged as improved or recovered	5	6	10	6	7	14	11	13	24	48
Patients in treatment at present							37	28	88	153
Patients on waiting list for intake or beginning treatment							7	2	29	38
Patient consultations only	3	2	34	17	13	21	20	15	55	90
Families having two or more members in treatment		7			11			18		18
Conferences with other agencies or persons in community		24			32			56		56
School visits; number of conferences and conferences at Clinic with school personnel re: specific patients		8			26			34		34

physician may be illustrated by the case of a five-year-old girl, referred by her pediatrician for what he considered a series of emotional outbursts characterized by peculiar trance-like reactions occurring after bedtime. At these times the child would scream for a prolonged period and seem to be unable to recognize her parents. A report of the preliminary interview was given to the pediatrician together with suggestions relative to the use of medications for symptomatic management as the patient began treatment in the Clinic. Further conferences with the pediatrician contributed to the more effective management of the problem. The patient began to improve through play therapy together with social case work treatment for the mother.

CASE 4.—A thirty-one-year-old single girl was referred by an internist for complaints of recurrent gastrointestinal disturbance with diarrhea related to emotional tension. It was possible to aid him in his contacts with her and his use of medications for her in conjunction with psychiatric treatment so that the untimely crises which had led her to make excessive demands on his time and ability were prevented.

Comments

Patients presenting a problem of severe mental deficiency or addiction to alcohol or drugs are not accepted since experience has shown that outpatient care alone is not sufficient for adequate clinical management or improvement in such conditions.

The frequency of psychotherapeutic interviews varies in accordance with the patient's need, but is usually on a once-a-week basis during the more intensive period of treatment. Following the initial evaluation conference, staff progress conferences are held whenever any member of the treatment team indicates a need for progress review or procedural determination. Psychologic or vocational testing, home or school visits, and conferences with referring agencies and others are also provided as needed.

While it is often necessary for patients or their relatives to take time from their work to come long distances with various transportation problems, in good weather and bad, and to arrange for baby-sitting services, the low incidence of broken appointments has been a reliable indication of the real interest which has motivated most of the patients to seek and utilize help. We have observed, also, that this figure is a measure of the skill and dedicated purpose of the staff members, all of whom have earned a sense of gratification measured by the percentage of patients who have improved or recovered.

A brief summary of some of the more significant statistics reflecting the experience of the Clinic during its first twenty-two months of operation is given in Table I.

In considering the patient's eligibility for treatment in the Clinic from the standpoint of his financial resources, a graduated fee scale is utilized reflecting the patient's standard of living, the number of persons in the family, and his appropriate expenses. Thus it is possible for the Clinic to provide free care if necessary when the cost of private care is beyond his resources, or treatment for a fee that is realistic in relation to the maintenance of the patient's standard of living and his other obligations. In this community living expenses are relatively high so that the patient population in the Clinic represents a broad cross-section of individuals in various types of work, including semiprofessional and professional activities.

Special Problems

The number of families in whom two or more members have either applied for or have been found to be in need of intensive psychotherapy is impressive. A detailed analysis of the significant factors involved in this situation is beyond the scope of this study but will be reported at a later date. Suffice it to say here that many implications both clinical[8] and social[9] in this problem are receiving increased attention by workers in the various related fields. The following case report is illustrative of this type of problem.

Case 5.—A nine-year-old girl, following a virus infection about fifteen months prior to application to the outpatient department, had developed a school phobia, periods of grave anxiety, with attacks of panic and episodes of violent crying in some of which she had insisted that she did not wish to live. The family consisted of the father and mother and an older brother who was seventeen at the time of application and in his last year of high school. It was learned that the patient over a five-year period had reacted with anxiety to the illnesses of members of her family, particularly a favorite uncle, her father, an elderly maternal uncle, and a maternal grandmother. In response to these episodes, and the anxiety exhibited following them, the child had been permitted to sleep in the bedroom with her father and mother and she had become increasingly possessive and manipulative. She demanded that her mother spend all her time with her and would not let the parents go to bed at the same time. Often in the morning she would contrive to replace her mother in bed with the father, and the mother would go to the patient's bed. One other point of interest is that she had many dolls but concentrated particularly on one rag doll named "Only." This had become worn beyond recognition but she compulsively carried some part of it on her person at all times.

The parents and the patient were very cooperative. The parents discussed freely their own faulty attitudes and gradually corrected them, and the girl gradually lost her anxieties, phobic reactions, and compulsive clinging. She gradually gave up "Only" and was able to increase her relationship with other children in the neighborhood. The family was able to move into larger quarters where the girl could occupy a room of her own. This was followed, temporarily, by bizarre, nightmarish dreams which gradually subsided. By fall, with the cooperation of the teacher from the new school, she was able to resume attendance at school, with rapid disappearance of an initial mild anxiety. She did exceedingly well in her school work, developed friends of her own, and gradually began spending time away from the home, voluntarily.

In the meantime, the older brother had graduated from high school, and at the time that the girl returned to school, he entered college. Soon after admission he lost confidence in himself, developed phobias, and called his family and demanded that they come and get him, which they did. The mother developed marked guilt feelings which required considerable attention before they were relieved. The brother was accepted for treatment at the Clinic where he talked of his great fear of competition finally culminating in the anxiety and feelings of inertia leading to his leaving college. He stated that he felt that his difficulties had begun back in his senior year when he felt a great dislike for his whole class, especially the girls, and had felt that there were no people who shared his interest in classical music and antiques, particularly old guns. He was not pressed to return to college but was permitted to take a job. After a short time he indicated that he had obtained sufficient confidence to wish to discontinue therapy. The parents report that he is making a good adjustment to this situation.

Conclusions

In recent years many pressures have been brought to bear on community psychiatric clinics,[10] including requests for consultation services to other agencies, contributions to educational programs, staff participation in civic and religious planning, and for leadership in mental health activities.[11] It becomes necessary, therefore, for such a clinic to evaluate carefully the ways in which it can most advantangeously contribute its services and skills.[12,13] Accordingly, the emphasis to date in this Clinic has been on providing diagnostic and treatment services in addition to training opportunities. At the same time considerable efforts have been made to respond to other community needs in developing a clinical service of maximum usefulness.

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Practical Application of Heparin for Long-Term Anticoagulant Therapy

MILTON SCHLACHMAN, M.D., F.A.C.P., FOREST HILLS, NEW YORK, AND MEHMET CAVUSOGLU, M.D., ELMHURST, NEW YORK

(*From the Department of Medicine, Elmhurst General Hospital*)

THE superiority of heparin as an anticoagulant over that of the coumarin derivatives has been demonstrated repeatedly in both in vivo and in vitro experiments, and its safety in use as compared to the oral anticoagulants is beyond dispute.[1–7] Nevertheless, in spite of these obvious advantages heparin has not received widespread use as the anticoagulant of choice in conditions requiring prolonged or long-term anticoagulant therapy because of the disadvantage of repeated intravenous injections.

It is true that with increased experience in the use of oral anticoagulants the incidence of bleeding has decreased markedly, and reports of fatal hemorrhage are rare, not because they do not still occur, but because it is no longer of medical interest to report them. Also, the ready effectiveness of emulsion of vitamin K_1 oxide in combating hypoprothrombinemia has somewhat quieted the qualms of many in the use of these anticoagulants.[8]

The intermittent intravenous injection method of the Scandinavian workers still has the disadvantage of repeated intravenous injections,[1,2,5–7] and the erratic action and pain of the depository heparin has not popularized this method.[9] The introduction of a concentrated aqueous heparin led Stats and Neuhof[10] to the use of this as a deep intramuscular injection, and they demonstrated a good anticoagulant effect for an eight- to twelve-hour period after a single injection. However, the intramuscular injections are extremely painful, and it has been the experience of one of us (M.S.) that patients refuse futher injections after several weeks of therapy by this route. Besides, painful hematomas occur occasionally.

The undisputed superiority of heparin as both an effective and a safe anticoagulant makes one wish for a simple method of administering this drug for long-term anticoagulant therapy.

Artz and Amspacher,[11] in 1952, demonstrated that a subcutaneous injection of a concentrated aqueous solution of heparin produced good anticoagulation for an eight- to twelve-hour period, and these findings were confirmed by Engelberg[12] in a number of clinical studies. Engelberg repeatedly demonstrated prolonged anticoagulation with subcutaneous injections the extent and duration depending on the dose of heparin given. He stated that a twenty-four-hour anticoagulation was possible with a single subcutaneous injection if the dose were large enough.[12]

It is the purpose of this study to determine how much and how long an anticoagulant effect may be attained with a single subcutaneous injection of a 200 mg. dose of a concentrated aqueous solution of heparin (Liquaemin* 200 mg. per cc.) and to determine if 150 mg. every twelve hours will give a twenty-four-hour anticoagulant effect to ascertain if long-term anticoagulant therapy is practical.

Method and Materials

Since we were not interested in anticoagulant therapy as such in this series of clinical experiments but mainly in the effectiveness of a single dose of heparin

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* Kindly supplied by R. C. Merrill, M.D., medical director of Organon, Inc., Orange, New Jersey.

TABLE I.—Report of 34 Cases Receiving Heparin Dose 200 mg.

Diagnosis	Age	Sex	Coagulations Times Period-Hours 0	2	4	6	8	12	Complications
			Clotting Time in Minutes						
Hepatitis	20	M	8	20	20	15	15	..	None
Phlebitis	24	M	13	35	90	100	90	15	None
Arteriosclerotic Heart Disease	70	M	7	55	75	70	60	..	Edema at site
Lung Abscess	27	M	8	65	95	100	80	..	None
Pneumonia	32	M	8	80	105	95	75	..	None
Pulmonary Malignancy	70	M	7	18	60	30	15	..	None
Rheumatic Heart Disease	53	M	10	25	45	75	25	12	None
Arteriosclerotic Heart Disease	70	M	9	20	30	60	20	8	None
Pneumonia	59	M	9	30	40	50	15	10	None
Pyelitis	70	M	7	20	30	20	10	..	None
Arteriosclerotic Heart Disease	70	M	8	66	80	72	60	30	None
Cholecystitis	62	M	5	40	60	110	50	30	None
Cirrhosis of Liver	56	M	10	45	90	60	25	20	None
Hepatitis	20	M	8	20	20	25	25	..	None
Phlebitis	24	M	13	35	90	100	90	25	None
Hypertensive Cardiovascular Disease	51	M	8	40	80	70	35	18	None
Alcoholism	45	F	12	50	45	30	20	15	None
Asthma	58	F	9	45	75	60	40	20	None
Hypertensive Cardiovascular Disease	65	M	8	30	35	30	30	20	None
Hypertensive Cardiovascular Disease	74	M	7	60	100	110	75	30	None
Diabetes	68	F	10	45	85	60	55	15	None
Blenorrhagia	26	M	12	75	110	40	15	..	None
Malignancy	67	F	9	65	80	85	40	10	None
Cystitis	51	F	12	40	85	110	75	28	None
Diabetes	78	F	10	35	95	70	45	15	None
Heart Block	82	F	15	30	75	90	45	25	None
Hypertensive Cardiovascular Disease	79	F	12	35	90	55	35	15	None
Hypertension	36	F	11	50	75	40	25	10	None
Pyelitis	32	F	15	35	80	60	40	18	None
Arteriosclerotic Heart Disease	79	M	10	30	40	65	90	25	None
Pneumonia	79	M	8	40	55	70	120	15	None
Arteriosclerotic Heart Disease	58	M	9	45	60	80	110	17	None
Arteriosclerotic Heart Disease	74	F	15	26	55	70	35	15	None
Hypertension	78	F	12	35	70	80	30	18	None

and an injection given every twelve hours, the patients were not chosen for treatment but for their willingness to be subjected to repeated venipunctures. The clotting time was determined by the McCleery and Yarborough modification[13] of the Lee-White method.[14] This consists of collecting 5 cc. of blood by means of an absolutely dry syringe and needle through an atraumatic venous puncture. One and one-half cc. of blood are placed into each of three test tubes measuring 75 × 10 mm. and the last 0.5 cc., which is the first to be withdrawn from the vein and therefore contains most of the tissue juices, is discarded. The blood is permitted to flow down the sides of the tube to prevent the trapping of air bubbles. The test tubes are tilted gently to the horizontal level ever so often, and when the blood no longer flows in all three tubes, this is considered the end-point.

The average control clotting time in our series of studies was from nine to ten minutes. Heparinized blood will separate into a top plasma layer which clots readily and a bottom red-cell layer. It is the clotting in this bottom layer which is read as the end-point with heparinized blood. This necessitates the breakup of the top clotted plasma layer by flicking the tube with the finger in order to permit the flow of the red-cell mass to determine its clotting point. A good therapeutic response to heparin was obtained when the clotting time was above twenty-five minutes.

Experiment A.—One cc. of a solution of sodium heparin containing 200 mg. was injected subcutaneously in the area of the posterior iliac crest as suggested by Engelberg.[12] The injection was made with a

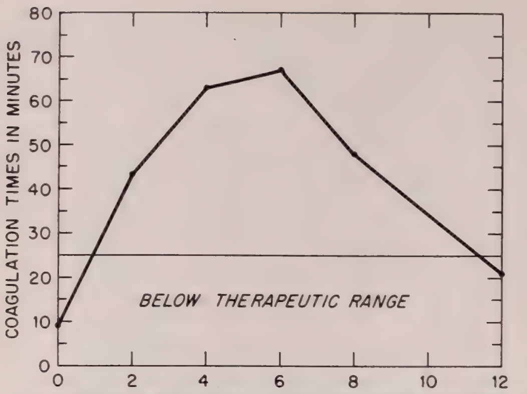

Fig. 1. Composite graph of results in Table I.

number 27 gauge, $^3/_4$-inch-length needle, and all injections were performed by one of us (M.C.) who did all the clotting times. The clotting times were done every two hours for a twelve-hour period but were omitted at the ten-hour period.

Experiment B.—Three-quarters of 1 cc. (150 mg.) was injected as described above every twelve hours for a three-day period. Clotting times were performed every twenty-four hours, namely, before the morning dose. In several instances this regime was maintained for a two-week period.

Results

Control Clotting Times.—The control clotting times fell within a seven- to fifteen-minute range with the average being nine minutes. This is less than those obtained by Engelberg[12] and by McCleery and Yarborough.[13] This may be owing to the fact that we interpreted the end-point differently, not waiting for a solid mass as the completion of coagulation.

Anticoagulant Effect.—*Experiment A.*—In all, 34 cases were studied (Table I) and a therapeutic anticoagulant effect obtained within two hours in all but 5 of the cases. All cases with the exception of 2, both of them cases of viral hepatitis, demonstrated a satisfactory anticoagulation at the end of the four-hour period. The greatest prolongation of the coagulation occurred at the four- to six-hour period, reaching as high as one hundred and ten minutes. The anticoagulation began to taper off at the eight-hour period, although in 27 of the cases therapeutic anticoagulation persisted. Coagulation times were done at the twelve-hour period in 27 cases and in only 7 was satisfactory anticoagulation maintained. Figure 1 demonstrates a composite graph of the results obtained in Table I.

Experiment B.—Eighteen cases were given 150 mg. of heparin every twelve hours for three days. The clotting times were done at the end of each twenty-four hour period. In every case satisfactory anticoagulation was maintained throughout this three-day

TABLE II.—Report of 17 Cases Receiving Heparin Dose 150 mg. Every Twelve Hours

			Coagulation Times Period-Hours					
Diagnosis	Age	Sex	0	24	48	72	96	Complications
			Clotting Times in Minutes					
Myocardial Infarction	79	M	7	40	65	70	..	None
Pulmonary Embolus	80	M	5	35	75	55	..	None
Bronchiectasis	65	M	10	30	90	70	..	None
Alcoholism	73	M	8	35	120	90	..	Ecchymosis
Pulmonary Embolus	79	M	7	50	70	50	..	None
Asthma	67	M	5	50	65	75	..	None
Thrombosis	65	M	9	50	55	71	..	None
Pulmonary Embolus	59	M	10	65	..	..	..	Deceased
Arteriosclerotic Heart Disease	74	M	12	60	45	115	..	None
Arteriosclerotic Heart Disease	63	M	10	45	70	95	..	None
Arteriosclerotic Heart Disease	57	M	13	50	50	60	..	None
Arteriosclerotic Heart Disease	78	M	11	45	75	55	..	None
Arteriosclerotic Heart Disease	67	M	12	45	70	55	..	None
Arteriosclerotic Heart Disease	70	M	10	35	60	65	..	None
Arteriosclerotic Heart Disease	63	M	11	45	65	70	65	None
Arteriosclerotic Heart Disease	73	M	12	80	90	120	..	None
Arteriosclerotic Heart Disease	70	M	10	60	120	85	..	None

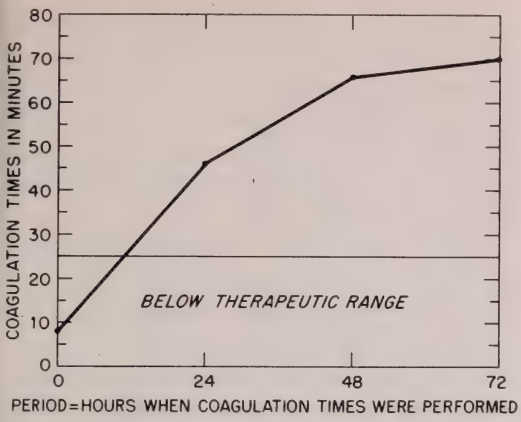

FIG. 2. Composite graph of results in Table II.

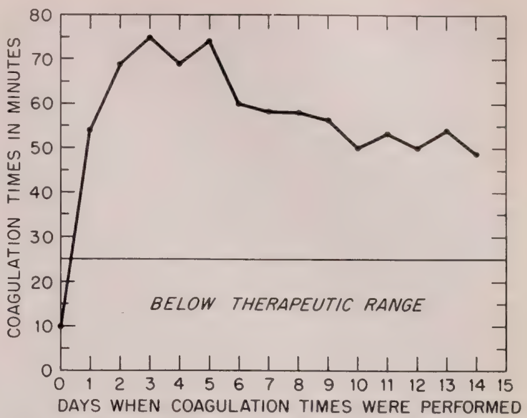

FIG. 3. Composite graph of results in Table III.

period as indicated by the results of the clotting times at twenty-four, forty-eight and seventy-two hours. In each instance the clotting times were well above the therapeutic level, and it can be assumed that a constant anticoagulation was maintained during this entire seventy-two hour period. In several cases the injections were given into the anterior surface of the thigh about four inches above the upper border of the patella. The anticoagulation obtained was similar to that which resulted when the injections were given over the posterior iliac bone. The anterior surface of the thigh was chosen with the idea of self-administration of heparin, if a constant anticoagulation could be obtained by this method.

In one instance, not included in Table II, the coagulation time rose to four hours at the end of the first twenty-four-hour period. The patient inadvertently received the second day doses of heparin, and the four-hour coagulation time was maintained for an additional twenty-four hours. The heparin was stopped at this period, and the following day (after a seventy-two-hour period) the clotting time was forty minutes. This patient experienced a small hemoptysis and a large ecchymosis at the site of the injections.

The 17 cases included in Table II showed no complications in spite of prolongation of the clotting time up to one hundred and twenty minutes. One patient had a slight ecchymosis at the site of the injection. One patient died after the first twenty-four hours, not as a result of the anticoagulant effect but of his pulmonary embolus. Figure 2 demonstrates the constant anticoagulation maintained for a seventy-two hour period with 150 mg. of heparin given every twelve hours. This indicates a rapid rise in the clotting time after twenty-four hours and a slight rise between the forty-eight and seventy-two hour period.

Table III illustrates the results in 3 cases maintained on heparin every twelve hours for a two-week period. A constant, adequate

TABLE III.—REPORT OF 3 CASES RECEIVING HEPARIN DOSE 150 MG. EVERY TWELVE HOURS

			Coagulation Times Period-Days															
Diagnosis	Age	Sex	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Complications
			Clotting Times in Minutes															
Arteriosclerotic Heart Disease	84	M	10	40	60	70	65	70	65	60	60	50	50	45	50	40	40	None
Myocardial Infarction	47	M	9	60	55	70	65	70	50	45	50	55	40	45	45	50	50	None
Rheumatic Heart Disease	60	F	11	60	90	85	70	75	60	65	55	50	45	50	40	50	40	None

anticoagulation was accomplished in each case during the entire fourteen-day period. At no time did the clotting times fall below the therapeutic level. There was no discomfort to the patient and no complications were encountered. Figure 3 is a composite graph of the results obtained in Table III. This demonstrates a fall in the coagulation time from a seventy-three-minute composite peak on the sixth day to fifty-seven minutes. The anticoagulation is maintained on an even keel between forty-seven and fifty-seven minutes for the remaining of the fourteen-day period.

Comment

The merits of safety and the anticoagulant superiority of heparin over the oral anticoagulants and the wide therapeutic and physiologic range of heparin will not be discussed, since this subject has been reviewed recently by Engelberg.[12]

The results of these experiments indicate a repeatable, predictable therapeutic effect with a single subcutaneous injection of 200 mg. of an aqueous solution of heparin for at least an eight-hour period. Engelberg demonstrated an adequate anticoagulation for twenty-four hours in half of the patients studied after a single injection,[12] a result we were not able to confirm. The coagulation time began to fall after eight hours, so that at the twelve-hour period the majority of the patients in our series were below the therapeutic level.

A subcutaneous injection every twelve hours maintained a constant therapeutic level of anticoagulation over a twenty-four-hour period. This probably resulted from an overlapping of the anticoagulative effect, for at no twenty-four hour period, which was twelve hours after the preceding dose, was there a fall in the coagulation time below an effective level as was experienced in experiment A, when a single injection of 200 mg. was given. This constant effect was maintained in spite of the smaller dose of 150 mg. Although the number of experiments is limited, it would seem from the results obtained that a 150-mg. dose of heparin every twelve hours is adequate for proper twenty-four hour anticoagulation. There is no doubt but that on occasions this dose may be either inadequate or too great, but this can be determined within a twenty-four to forty-eight hour period.

Bauer[2] states that a constant anticoagulant effect is not necessary or even desirable, since the peaks of anticoagulant action will sweep away any sludge formation. However, we feel that constant anticoagulation may prevent this sludge formation. Certainly a constant therapeutic level is more desirable than peaks and valleys, when no effective therapeutic action may be procured.

The attainment of a therapeutic anticoagulative effect within two hours after a subcutaneous injection in experiment A, and even sooner as demonstrated by Engelberg,[12] eliminates the need for a preliminary intravenous injection.

The safety of heparin administered by this method needs re-emphasizing, for coagulation times of two hours produced no untoward reactions, not even ecchymoses at the site of the injections. We agree with Engelberg that there is no need for performing repeated coagulation times in order to ascertain the safety of the dose.[12] An occasional coagulation time may be done to establish the presence of therapeutic anticoagulation. This is certainly an added advantage over the determination of repeated prothrombin times, which is necessary with the oral anticoagulants.

The effectiveness of the subcutaneous injection every twelve hours eliminates the necessity of the use of intermittent intravenous injections, as practiced by the Scandinavians, which has all the disadvantages of intravenous heparin; namely, the loss of anticoagulant effect within four hours, discomfort, frequent injections, and the possibility of anaphylactic reactions which has been reported after an intravenous injection of heparin.[15,16] Intramuscular aqueous heparin loses its anticoagulant effect more readily than the subcutaneous and is considerably more painful. Depository heparin is extremely painful whether given as a deep subcutaneous or intramuscular injection, and its anticoagulant action is more erratic than the aqueous subcutaneous injection. Besides, many patients, as much as 50 per cent in one series, showed systemic reactions, such as in temperature.[11]

Therapeutic anticoagulation with subcutaneous heparin can be maintained for an indefinite period in the hospitalized patient because of the painlessness, simplicity, and safety of this method of heparin administration. It is not impractical, since an outpatient or office procedure for administration is possible by some member of the family. Subcutaneous injections of many substances—insulin, mercurial diuretics, vitamins, to mention a few—are being administered by lay people today. The parallel and constant effect obtained by injections into the anterior surface of the thigh as compared to the posterior iliac area makes self-administration even more practical.

Summary

The extent and duration of anticoagulation of a single subcutaneous injection of 1 cc. of a concentrated aqueous solution of heparin (200 mg. per cc.) was studied in 34 patients. Therapeutic anticoagulant effect was obtained within two hours in all but 5 cases and within four hours in all but 1 case. The anticoagulation began to taper off at the end of eight hours but was within therapeutic range in 27 cases. Only 7 cases showed satisfactory anticoagulant effect at the end of the twelve-hour period.

Eighteen cases were given 150 mg. of heparin subcutaneously every twelve hours for a three-day period. Satisfactory anticoagulation was maintained throughout the entire three-day period as indicated by the clotting times done at twenty-four, forty-eight, and seventy-two hours. It can be assumed that a constant therapeutic anticoagulation was attained.

Three patients were maintained on heparin given subcutaneously in doses of 150 mg. every twleve hours for a two-week period. Clotting times checked daily during these two weeks indicated that anticoagulation was never below the therapeutic range.

One patient developed a slight hemoptysis when the coagulation time reached four hours, and another patient exhibited ecchymoses at the site of injection. This comparative lack of untoward reactions makes it unnecessary to do repeated coagulation times to determine the safety of the dose given. Coagulation times should be done occasionally to determine the therapeutic effectiveness of the drug and once established need not be repeated.

The simplicity, painlessness, and safety of this method of administration makes long-term anticoagulation therapy practical. This procedure may be carried out by lay people and even be self-administered under the care and supervision of the physician.

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Neither the sun nor death can be looked at with a steady eye.—Duc De La Rochefoucauld

A Comparison of the Effects of Paraldehyde and Chlorpromazine in Delirium Tremens

ARNOLD J. FRIEDHOFF, M.D., AND ARTHUR ZITRIN, M.D., NEW YORK CITY

(From the Department of Psychiatry and Neurology, New York University College of Medicine, and the Psychiatric Division, Bellevue Hospital Center)

Reports of rapid remission of delirium tremens with chlorpromazine therapy have appeared in the literature.[1-3] These studies indicate that the condition of delirium tremens sometimes clears after one dose and frequently within three days.

Some of these reports do not describe the specific symptomatology or the severity of the delirium. In our experience patients with delirium tremens usually take longer to recover fully, regardless of the therapy. On the basis of this clinical experience, it was felt that a systematic comparison of chlorpromazine and paraldehyde in the treatment of patients with delirium tremens would be of value.

Selection of Patients

All male patients admitted to the Psychiatric Division of Bellevue Hospital during a four-month period, in whom a preliminary diagnosis of delirium tremens was made, were referred for inclusion in the study. After further screening by a second psychiatrist, they were accepted if a definitive diagnosis was made.

This resulted in a total of 38 patients included in the study. Seven patients were ultimately dropped because further observation revealed that the diagnosis was incorrect or because the procedure for the study was violated. This left a group of 15 patients receiving chlorpromazine and a group of 16 receiving paraldehyde.

Only those patients having tremors, sensorial disturbances, either visual or auditory hallucinations, and marked apprehension were accepted for this study. In addition, all patients in both groups were found to have elevated temperature, increased respiration, and moist skin. Most of the patients were difficult to manage on admission because of their reactions to frightening hallucinations and delusions.

The mean age of the group treated with chlorpromazine was 39.4 years with a range of twenty-five to fifty-seven years, as compared with a mean age of 40.5 years ranging from twenty-four to fifty-six years for the paraldehyde group.

With respect to severity, alternate selection of patients for either the chlorpromazine or paraldehyde group resulted in a fair distribution of cases on the basis of temperature elevation, behavioral disturbance, and severity of other symptoms. Six patients in the chlorpromazine group had a history of previous episodes of delirium tremens, whereas only 3 patients in the paraldehyde group gave a history of similar illness. However, patients with prior episodes recovered as rapidly as patients with no prior episodes so that this factor did not appear to influence the final results.

Method

After the diagnosis of delirium tremens was made, alternate patients were assigned to receive either chlorpromazine or paraldehyde. These patients were treated on the medical wards of the Psychiatric Division by the medical staff. The doses of both chlorpromazine and paraldehyde were increased until definite sedative effects which permitted the patients to rest quietly in bed were obtained. Patients with marked fear or apprehension were given medication intramuscularly until the oral route could

TABLE I.—COMPARISON OF CHLORPROMAZINE AND PARALDEHYDE THERAPIES

Cases, Doses, and Results	Therapy Chlorpromazine	 Paraldehyde
Total number of patients	15	16
Mean age (years)	39.4 (25–57)	40.5 (24–56)
Mean total dose	1,823 mg.	80.5 cc.
Mean daily dose	252 mg. (100–725 mg.)	30 cc. (8–65 cc.)
Mean number of days for return to normal temperature	8 (4–13)	5 (3–10)
Psychiatric clearing (number of days)		
Mean	8* (6–14)	6* (3–12)
Mode	7	5

* $P < .05$ (t Test).

TABLE II.—NUMBER OF PATIENTS RECOVERING ON EACH DAY AFTER INITIATION OF TREATMENT

Day	Number of Patients Chlorpromazine Therapy	 Paraldehyde Therapy
1	0	0
2	0	0
3	0	1
4	0	2
5	0	5
6	1	3
7	6	0
8	2	2
9	2	1
10	1	1
11	1	0
12	0	1
13	0	0
14	2	0
TOTAL	15	16

be used. All patients in both the chlorpromazine and paraldehyde groups received 2 cc. of Berocca-C and 100 mg. of thiamine chloride by the hypodermic method daily. In addition, fluids intravenously and dietary substances were given at the discretion of the medical staff. When necessary, antibiotics also were administered.

Patients were rated as to improvement by the psychiatric staff, who had no part in the treatment. Blood pressure, pulse, temperature, and mental status were evaluated daily. Because of the obvious odor of the patients receiving paraldehyde, no attempt was made to do a double-blind study. Patients were considered to be cleared on the day when they had no further hallucinations or delusions, no apparent impairment of memory or orientation, and no marked apprehension. They were then observed for forty-eight hours.

Results

The 16 patients who received chlorpromazine recovered in an average of eight days, the mode being seven days, while the 16 patients treated with paraldehyde recovered in an average time of six days, their mode being five days (Table I).

All of the patients had elevated temperatures, varying from 100 to 106.4 F. during the course of their illness. The chlorpromazine group returned to normal temperature level in a mean time of eight days, while the paraldehyde group returned to normal in a mean time of five days.

Consideration was given to the possibility that the amount of medication administered might have had some relationship to the course of the delirium. The daily doses of chlorpromazine ranged between 100 and 725 mg. with a mean daily dose of 252 mg., while paraldehyde dosage ranged between 8 and 65 cc. with a mean daily dose of 30 cc. However, correlation of the average daily doses for each patient with the time taken for recovery yielded a correlation coefficient close to zero. Similarly, no correlation existed between the amount of medication given on the first day of treatment and the course of illness. The recovery time for each patient is shown in Table II. Fifty per cent of the patients receiving paraldehyde recovered by the fifth day of treatment, while none of the patients receiving chlorpromazine recovered by the fifth day. Only 1 patient recovered by the third day, and this patient was in the paraldehyde group.

The difference in recovery rates between the paraldehyde group and the chlorpromazine group is significant at the 5 per cent level of probability. However, because of the relatively small number of patients studied, unknown selection factors possibly could account for better results in the paraldehyde group. More important is the fact that most patients recovered in five to eight days when treated with either drug. Therefore, this study does not substantiate claims that chlorpromazine treatment of delirium tremens shortens recovery time and hospital stay more effectively than paraldehyde therapy.

Toxicity

No serious side-effects were found in either the chlorpromazine or the paraldehyde group. Systolic blood pressures tended to drop 20 to 30 mm. on the second or third day of hospitalization in both groups. However, in no instance did blood pressure approach dangerous levels, and in all instances it fluctuated around the base-line level of the patient after the first two or three days of treatment.

Initially, there was some concern about giving large doses of chlorpromazine to alcoholic patients predisposed to liver disease. However, none of the patients in this study developed any evidence of jaundice.

Comment

Difficulties frequently have occurred in comparing reports of psychiatric treatments because of differences in diagnostic criteria used by various investigators. However, delirium tremens can readily be differentiated from the other alcoholic disorders.

The term "delirium tremens" was first used by Sutton[4] in 1813 in a classical description of the disease. This disorder rarely occurs in patients who do not have a long history of chronic alcoholism. The delirium usually begins with restlessness, irritability, disturbed sleep, and food aversion. Hallucinations of a visual nature occur and are usually terrifying to the patients. Auditory hallucinations are less frequent. Tactile and olfactory hallucinations may also be present. The patient usually is extremely restless and fearful. Consciousness is clouded, and people and objects may be misidentified. On physical examination the patient's face is flushed. He demonstrates a coarse tremor of the extremities and a tremor of the tongue. The skin is moist, pulse rapid and thready, and temperature elevated.

Other alcoholic disorders occasionally are confused with delirium tremens. This may account for some differences in results reported for chlorpromazine treatment of delirium tremens.

At Bellevue Hospital approximately 20,000 psychiatric patients are admitted each year. The average annual admission of cases diagnosed as delirium tremens for the past ten years was 314, ranging from 83 to 529 admissions. This small number is in contrast to the large percentage of all other types of alcoholic disorders. Occasionally, acute intoxication (simple drunkenness) may be confused with delirium tremens. More often, perhaps, the gross tremors seen in many chronic alcoholics may lead to this diagnosis although the other criteria for delirium tremens are absent. Both of these conditions, of course, respond to simple "sobering up." Occasionally, alcoholic hallucinosis is mistaken for delirium tremens. This condition, however, is characterized mainly by auditory hallucinations in a clear sensorium.

Present evidence indicates that both chlorpromazine and paraldehyde are nonspecific therapies in the management of delirium tremens. Chlorpromazine, even in large doses, has the disadvantage of slower onset of action than paraldehyde. This can be a serious handicap in treating a hyperactive, unmanageable patient. Although chlorpromazine-treated patients can be more readily aroused for feeding and care than paraldehyde-treated patients, this lesser sedative effect may account for the longer recovery period found in our study with chlorpromazine-treated patients. In addition, chlorpromazine has a potentiating effect on alcohol and this may be a danger in early stages of treatment.[5] It occasionally can lead to a fatality when barbiturates have been taken with alcohol. However, the less irritating effect of chlorpromazine administered by the hypodermic method must be weighed against the not infrequent inflammatory effects of parenteral paraldehyde.

Both drugs have a wide margin of safety. The minimal central depressant effects of paraldehyde, however, are an added safety factor. Experienced chronic alcoholics invariably prefer paraldehyde to any other drug. In our experience, severe habituation to paraldehyde can occur and must be considered in prolonged use of this drug.

Summary

1. A group of 15 patients with severe delirium tremens was treated with chlorpromazine. At the same time, an alternate group of 16 patients with delirium tremens was treated with paraldehyde.

2. The patients who received chlorpromazine recovered in an average time of eight days. Patients who received paraldehyde recovered in an average of six days.

3. No serious side reactions occurred with either compound.

4. Both chlorpromazine and paraldehyde proved useful in the management of delirium tremens. The relative merits of each drug are discussed.

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Nose Surgery in Childhood Should Be Kept to Minimum

Nose surgery before a child is fourteen should be kept to an absolute minimum, according to two Eastern otolaryngologists. Surgery to correct nasal deviations should be delayed whenever possible until the nose has reached its full growth between the ages of fourteen and seventeen, the doctors said in the December *Archives of Otolaryngology*, published by the American Medical Association.

Surgery in the early years may interfere with the nose's growth and result in further deviation. It should be performed only in situations where the deviation interferes with the passage of air.

The doctors also reported a new operation for repairing the bone that divides the nose into two chambers. It is better, they said, to make several small vertical incisions near any buckled area of cartilage than to make one long incision. This is recommended so that only a minimum of cartilage will be removed and that only a minimum of interference with the nutrition of the remaining cartilage will occur.

The authors are Dr. Joseph G. Gilbert, Roslyn Heights, New York, and Dr. Samuel Segal, Jr., Springfield, Massachusetts.

Plastic Versus Glass Containers for Blood Banking

JOHN G. GIBSON, II, M.D., BOSTON, MASSACHUSETTS

(*From the Department of Medicine, Harvard Medical School and the Blood Bank, Peter Bent Brigham Hospital*)

THE plastic bag used by the author in his experiments is the type that has the donor tube, with an attached phlebotomy needle as an integral part. The outlet ports are protected by sterile closures.

In 32 in vivo experiments, using a Cr^{51} method, the postinfusion survival of red cells collected in ACD in bags after storage at 4 ± 1 C. for twenty-one days averaged 84 per cent with a range of 66 to 93 per cent. The average survival at twenty-one days of blood collected in three bags twenty-two months old was 77 per cent.

A comparison of bottles and plastic bags is presented in terms of factors affecting the safe usage of whole blood and its clinically useful separated components—plasma, red cells, and platelets.

Collection

Bottles have three potential sources for the accidental introduction of microorganisms: the phlebotomy needle, the puncture of the rubber stopper, and (in gravity bottles) the vent. Danger of contamination of the bag with the integral donor tube during collection is reduced to the minimum, existing only when the skin is pierced for venipuncture.

Collection in bags requires five to seven minutes, about the same as with gravity bottles. Collection in vacuum bottles is somewhat faster. Graduations blown into bottles are accurate. Collection of the proper quantity of blood in bags is provided for by accurate spring scales or automatic devices. The degree of turbulence and frothing encountered during collection in bags is far less than in bottles. Bottles accumulate silica particles on storage which promote sludging of red cells. This does not occur in bags. Numbered segments of the donor tube of the bag, prepared by dielectric or mechanical sealing, provide pilot tubes which, since they remain with the bag during storage, assure positive identification.

Storage

Refrigerators are potentially contaminated areas. Certain psychrophilic bacteria (Pseudomonas) are among the most hazardous microorganisms because of their virulent endotoxins. The stopper surface of bottles is a contaminated area. In contrast, the outlet ports of bags remain sterile throughout storage.

Plasma hemoglobin levels are consistently lower throughout storage in blood collected in bags than in bottles.

Sampling of bottles during storage for cross matching or any other purpose is expressly forbidden by the National Institutes of Health's minimum requirements. Samples of bag blood may be obtained from isolated segments of the donor tube at any time during storage with no risk of contamination of residual blood.

Since bottle bloods may not be cultured, rates of contamination can never be known. Cultures of 7,000 consecutive bloods collected in bags at the Peter Bent Brigham Hospital and 2,000 at Harrisburg General Hospital showed contamination rates of 0.6 and 0.3 per cents respectively.

Presented at the Seventh Annual Meeting of the Blood Banks Association, New York City, Technical and Scientific Session, May 16, 1958.

Processing

Aspiration of plasma by suction from bottled blood involves four points of potential contamination: vent, piercing of stopper with aspirating needle, piercing of stopper of plasma bottle, and piercing for suction. In contrast, removal of plasma from bag blood requires only insertion of coupler of transfer pack into outlet port of bag, and both are protected by sterile closures up to the time of connection. Plasma is squeezed off from collection to transfer bag by application of external pressure.

No data are available on contamination rates of residual cells. Cultures of 31 consecutive residual cells in bags gave negative results in a Barnes Hospital study.

A higher yield of plasma is obtained from bag than bottle blood since aspiration of plasma from bottles sets up eddy currents which break the cell-plasma interphase and prevent complete withdrawal. External pressure applied to the bag preserves the cell-plasma interphase and 95 per cent of plasma may be recovered. The same procedure permits of disposing of the "buffy coat."

Residual red cells of bottles must be discarded if not used within twenty-four hours after separation. Since residual red cells of bag blood may be cultured (via a segment of the integral donor tube) they may be used until the full dating period of twenty-one days.

Administration of residual cells in bottles requires venting, a procedure which is not necessary with bags.

Administration

The stoppers of bottles are contaminated and require preparation with antiseptics. Both the outlet port of the bag and coupler of the plastic recipient set are protected until the time of assembly age for transfusion

Rapid infusion of bottle blood requires introduction of air under pressure, involving a proved danger of air embolism. Rapid infusion of bag blood is affected by application of external pressure (up to 300 mm. of mercury) completely eliminating the danger of air embolism.

Reaction rates with bottle blood have not been well documented but may run as high as 2 per cent. Evidence was presented that the reported reaction rate in over 50,000 tranfusions, administered in four general hospitals over a two-year period, was 0.5 per cent, or an expectancy of one reaction in 200 transfusions.

The plastic bag makes possible the development of blood component therapy. Since separation of whole blood into its components can be effected with the minimal risk of bacterial contamination, the physician is enabled to prescribe the component indicated in a particular case. Thus, the use of separated red cells in chronic anemia provides adequate replacement of a depleted red cell mass without danger of circulatory overloading. Sensitization to plasma and white cell antigens is minimized.

Plasma from separated cells affords the development of a plasma bank, the plasma being stored six months at room temperature to inactivate the virus of homologous serum jaundice, or plasma may be freshly frozen for preservation of labile clotting components.

Platelets may be administered as whole blood, platelet-bearing plasma, or platelet concentrates, the latter two being prepared with the minimum risk of contamination. The use of platelet concentrates permits administration of platelets from multiple blood sources to a patient.

The logistic advantages of plastic bags over bottles, their light weight and small volume offering economies in storage and transportation, are obvious.

The wheel that squeaks the loudest is the one that gets the grease.—JOSH BILLINGS

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Anesthesia for Anorectal and Colonic Surgery

JOHN ADRIANI, M.D., NEW ORLEANS, LOUISIANA

(From the Department of Anesthesiology, Charity Hospital)

The choice of anesthesia for anorectal surgery is determined by (1) the operating conditions necessary to successfully perform the contemplated procedure and (2) the general status of the patient. The majority of anorectal procedures are elective. Poor surgical risks are encountered less frequently than in other divisions of surgery because patients who have complicating medical diseases may be advised to wait until their physical status has improved.

Assuming the status of the patient to be satisfactory, the usual factors to be considered from an operative standpoint are:

1. The extreme degree of relaxation required. There are few procedures in anorectal surgery which can be performed without complete relaxation of the sphincters and pelvic diaphragm. Therefore, this is one of the most important considerations in selecting anesthesia.

2. The position of the patient. It makes considerable difference in selecting anesthesia if the patient is placed in the prone instead of the supine or lithotomy position. There is no more effective way of inviting disaster than to attempt to perform an operation in the prone position using general anesthesia without an endotracheal catheter, irrespective of the drug used. Intubation may not be necessary if the lithotomy or supine position is employed but it is mandatory if use of the prone position is contemplated. Likewise, the position to be employed is of importance when spinal anesthesia is desired because it will determine whether or not a hypobaric (lighter than spinal fluid) or hyperbaric (heavier than spinal fluid) solution is to be used.

3. The use of electrothermia and endoscopic instruments may be a source of ignition and would preclude the use of flammable anesthetics. One would then be forced to rely on regional anesthesia or nonflammable drugs.

In no division of surgery is regional anesthesia as adequate and as adaptable as it is for anorectal surgery. The term regional anesthesia is broad and all inclusive and embodies spinal, peridural, caudal, various nerve blocks, infiltration, and topical technics. There are a number of reasons why regional anesthesia is superior

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to general anesthesia for anorectal surgery. Relaxation, which is so necessary, is obtained with ease with most regional technics. Comparable relaxation can only be obtained by use of deep general anesthesia or when muscle relaxants are used as adjuncts. The area to be anesthetized is comparatively limited. The systemic disturbances characteristic of more extensive blocks are avoided. The prone position may be used safely with regional anesthesia. Troublesome reflexes initiated by stimulating the anorectal region during general anesthesia are no problem when regional anesthesia is used. One need not contend with nausea, vomiting, prolonged somnolence, and other objectionable features of general anesthesia. Electrothermia and endoscopic instruments may be used without fear or fire hazard.

General Anesthesia

There are situations in which general anesthesia is indicated, such as for psychically unsuited patients, for infants and children, or when a patient rejects regional anesthesia because he does not wish to be "stuck with needles" or is "afraid of a spinal." Under such circumstances one of three choices is available—ether, cyclopropane, or the triple combination of nitrous oxide, an ultra short-acting barbiturate, and a muscle relaxant. Nitrous oxide, ethylene, ethyl ether, and trichlorethylene are, as a rule, of limited usefulness and unsatisfactory if used alone. They may be used for momentary procedures, such as incising a simple abscess and other such procedures in which analgesia suffices and relaxation is not required. A newer halogenated hydrocarbon, fluothane, which possesses many of the pharmacologic properties of chloroform is used to fortify nitrous oxide. At the moment this drug is not used as a sole agent. It may be that as experience is gained the combination may prove useful for anorectal surgery.

Ether.—Although in no sense ideal, ether is the safest of the inhalation anesthetics and provides the necessary operating conditions. The long, often unpleasant induction period, the slow recovery, and the postanesthetic nausea, vomiting, and prolonged somnolence need no description to anyone who has been performing operations for any length of time. The open-drop technic is usually employed for administration of ether to infants and children because most apparatus designed for use for adults is not satisfactory for children. The dead space in the mask, tubing, and other parts of the apparatus leads to excessive rebreathing, and hyperpnea, hypocarbia, inadequate anesthesia, and other technical difficulties result. These objections are overcome by the open-drop technic. The ether in such cases is preceded by vinyl ether, which is administered by the open-drop method also. Ethyl chloride is used by some anesthetists but it is a myocardial depressant which may precipitate cardiac standstill. Its use should be discouraged. Apparatus is now being improved so that closed system, or "machine," anesthesia may be used for children also. Where such apparatus is available, any of the inhalation anesthetics may be used for infants and children.

An intravenous barbiturate may be used prior to inhalation anesthesia to facilitate the induction in both children and adults. Many anesthetists use one of them as a preliminary to ether. Ether is the only one of the important general anesthetics which causes an increase in minute volume respiratory exchange. Consequently, hypoventilation is not a problem, even when the prone position is used, provided the airway is clear. However, it is unwise to administer even ether without an endotracheal catheter if the prone position is used.

Cyclopropane.—Cyclopropane is a pleasant, rapid-acting hydrocarbon of considerable potency. Muscle relaxation is obtained without difficulty in most instances. At times, relaxation is inadequate and one must resort to the use of deep anesthesia or a muscle relaxant to obtain satisfactory operating conditions. The latter course is preferable because deep cyclopropane anesthesia causes cardiac disturbances. The margin of safety with cyclopropane is wide, a 10 to 20 per cent inhaled concentration being necessary for anesthesia and 40 per cent necessary to produce respiratory failure. Recovery from cyclopropane occurs quickly. Postoperative nausea and vomiting occur but they are not as troublesome as that which follows ether. Since cyclopropane is flammable, it cannot be used when electrothermia is employed.

An objection to cyclopropane is the increased cardiac irritability which causes arrhythmias. The admixture of ether minimizes these effects. Epinephrine administered simultaneously with cyclopropane causes serious disturbances in cardiac rhythm. These irregularities are of ventricular origin and more serious than the spontaneous irregularities seen with the deep anesthesia. Ventricular tachycardia and even ventricular fibrillation are likely possibilities with this combination. In addition, cyclopropane may be objectionable because it often causes diminished ventilation. This would be a factor when the prone position is used. Occasionally, laryngeal and bronchial spasm occur during cyclopropane anesthesia. Stimuli from the anorectal regions during operations may enhance this effect. However, endotracheal intubation obviates this difficulty. Cyclopropane is usually preceded by an intravenous barbiturate. In the hands of one familiar with the drug and its peculiarities, cyclopropane is a most desirable choice when general anesthesia is indicated for anorectal surgery.

THIOPENTAL-NITROUS OXIDE AND A MUSCLE RELAXANT.—Intravenous anesthesia has popular appeal because of its alleged simplicity of administration. An intravenous anesthetic which is truly anesthetic unfortunately does not exist. The barbiturates are almost exclusively used for this purpose. None of the barbiturates, including the ultra short-acting barbiturates, is analgesic or anesthetic. The ultra short-acting barbiturates merely produce basal narcosis (deep hypnosis with amnesia). Attempts by uninitiated or uninformed individuals to abolish deep reflexes and painful stimuli by using these drugs alone are often followed by depression, characterized by shallow respiration, hypotension, and prolonged somnolence in the postoperative period. The barbiturates, irrespective of the type, cannot be used alone for surgical anesthesia.

Four ultra short-acting barbiturates available in surgery for basal narcosis are hexobarbital (evipal), thiopental (pentothal), thiamylal (Surital), and methitural (Neraval). Hexobarbital is a nitrogen-substituted barbiturate. The other three are sulfur-containing barbiturates (thiobarbiturates). Methitural is a more recent addition to the collection of intravenously administered drugs. None of these is employed as the sole agent for anesthesia unless the procedure is of a superficial nature and of brief duration. Instead, it is customary to use these drugs to fortify nitrous oxide, which possesses a considerable degree of analgesia but is relatively impotent as a surgical anesthetic when used alone. The nitrous oxide is nonirritating, pleasant to inhale, and nonflammable. The barbiturate and nitrous oxide complement each other. The amount of each drug is reduced over that which would be used if each were used alone. Neither drug, however, is capable of causing satisfactory muscle relaxation. A third drug, therefore, is necessary to obtain this—a muscle relaxant. The currently popular muscle relaxants are tubocurarine (the alkaloid found in curare), decamethonium, and succinylcholine. The latter appears to be the most widely used and is the most popular. Its action is evanescent and short-lived; therefore, it must be administered by an intravenous drip.

The triple combination of the ultra short-acting barbiturate, nitrous oxide, and a muscle relaxant is widely used. Postoperative nausea and vomiting are not common. Relaxation is adequate. The chief objections are: (1) diminished ventilation, which necessitates the use of manually assisted or even artificial respiration throughout the procedure through an endotracheal catheter, (2) prolonged somnolence in the more resistant patients who require larger amounts of the barbiturate to obtain adequate anesthesia, and (3) the spasmogenic activity of the barbiturate, particularly in regard to the larynx and bronchi. Attempts to find an intravenous anesthetic which obviates the objection just mentioned have led to studies of nonbarbiturate groups of drugs. The sterols have been investigated. Among these one offers some promise—hydroxydione (Viadril). It is used sparingly in place of thiopental.

Reflexes.—An objectionable feature of thiobarbiturates and to a lesser extent of the other short-acting barbiturates is laryngo- and bronchospasmogenic activity. Ordinarily, unless large doses are used, the cough reflex in the trachea or the bronchial tree is seldom abolished by nonvolatile drugs. The thiobarbiturates actually enhance this reflex activity. Manipulations in the anorectal region initiate reflexes mediated along the autonomic pathways, which activate the larynx and cause stridor and spasm. In addition, circulatory changes, such as a decrease in blood pressure, and exaggerated breathing occur. Severe laryngeal and bronchial spasm may occur either during induction or maintenance or on emergence when the thiobarbiturates are used. Endotracheal intubation prevents or corrects the laryngeal spasm. The bronchial spasm persists, however, even when muscle relaxants are used because the latter do not influence smooth muscle. They decrease the activity of the vocal cords because these are composed of striated muscle. Cyclopropane behaves similarly in this regard but to a far less degree. Bronchial spasm is uncommon. Reflex laryngeal spasm occurs least often when using ether. However, these reflexes may be observed during anorectal surgery when general anesthesia of any type is used. One cannot foretell when they may occur. If they are disturbing and persist, one must resort to endotracheal intubation to overcome the difficulties.

Regional Anesthesia

There are five possible choices in the group of regional anesthetic technics that one may make for anorectal surgery. They are local infiltration and pudendal, transsacral, caudal, and spinal blocks. Of these, the last two are the most adaptable. Direct infiltration into the tissues is objectionable because the site of injection cannot be made surgically clean. Besides, distortion of landmarks occurs from distention of the tissues by the solutions. Pudendal block is not satisfactory because anesthesia is incomplete owing to overlapping between the pudendal and other nerves in the perineal area. Transsacral block is satisfactory but the same distribution of anesthesia is obtained with more certainty and with greater ease by the use of caudal or low spinal block. It is employed when the use of either of these is not feasible.

The choice between spinal and caudal block is largely one of personal preference. Caudal block is a "blind" procedure. The incidence of failures is greater with this than with spinal block. Complications, such as drug reactions, intravascular injections, subarachnoid injections, hematomas, and infection and soreness at the site of puncture are not infrequent. Occasionally, patients state that they would not have the block a second time because of pain experienced by introduction of the needle into the canal or because of discomfort felt in the sacrum and the legs while the solution was being injected. Besides, the induction of caudal anesthesia is more time-consuming than induction of spinal anesthesia. Complete anesthesia may not be established for fifteen or twenty minutes after injection. Preliminary preparations and the various steps necessary in performing the block usually consume ten minutes or more. In the event of failure, a second attempt is not only annoying and inconvenient but may be hazardous from the standpoint of systemic reactions which might result from the injection of excessive quantities of a local anesthetic drug. Spinal block, on the other hand, is less time-consuming, simpler to induce, more precise, and provides the same extent of anesthesia as caudal block. The incidence of failures is lower and there is less waiting. In the event of failure a second block may be attempted without undue hazard. The possibility of spinal headache and fear of neurologic complications are the usual objections and a justification for preference given to the caudal block.

Drugs Used for Regional Block

Blocks of long duration are highly desirable and sought after for anorectal surgery because the quantities of narcotics and analgesic used for pain relief postoperatively may then be reduced to a minimum. The search for a suitable, nontoxic, long-lasting local anesthetic continues. Unfortunately, no drug is available which interrupts conduction for long periods of time without causing neurolysis and irritation of perineural tissues. The available drugs used for blocking which are reversible and are not locally toxic are short-acting, relatively speaking. The longest-acting of the group of local anesthetics is dibucaine (Nupercaine). The well-established currently used drugs for regional anesthesia are procaine (novocain), piperocaine (metycaine), tetracaine (pontocaine), and dibucaine (Nupercaine).

PROCAINE.—Procaine is the best known and safest of the local anesthetics. It is almost universally the agent of choice for local and regional anesthesia. It is rapidly detoxified and eliminated. Reactions are mild when they occur and local damage to tissues is uncommon. The conventional concentrations and volumes for average adults are as follows: 2 per cent, not more than 50 cc. in one hour (1 Gm.); 1 per cent, not more than 100 cc. in one hour (1 Gm.); 0.5 per cent, not more than 200 cc. in one hour (1 Gm.). As a general rule, not more than 1 Gm. should be used at any one sitting in an adult of good physical status. Procaine possesses no topical action and cannot be used to anesthetize mucous membranes. The duration of action of procaine in nerve blocks varies from thirty to forty-five minutes. When the drug is used for spinal anesthesia, the duration is somewhat longer. The doses of procaine for spinal anesthesia are described subsequently in the discussion on saddle block.

The duration of action of a drug is influenced by the site of injection, blood supply in the area injected, concentration, and ability to detoxify the drug. In the scalp, where the blood supply is excellent, duration is almost half of that in the back, where it is less abundant.

TETRACAINE.—Tetracaine (pontocaine) is more potent and more toxic than procaine. It is second in importance to procaine for surgical anesthesia. One mg. of tetracaine is equivalent to 10 mg. of procaine in regard to anesthetic potency and toxicity. The duration of action of tetracaine is almost twice that of procaine. It is possible, if epinephrine 1:100,000 is added to solutions of tetracaine, to obtain a block lasting from two to four hours. Large nerve trunks are blocked by 0.15 per cent solution, smaller trunks by 0.1 per cent, and nerve endings by infiltration with a 0.05 to 0.075 per cent solution. Tetracaine is used extensively for spinal anesthesia. Symptoms of toxicity following the use of tetracaine are more frequent and serious than those of procaine. Reactions are characterized by snycope and circulatory collapse. As a rule, few if any prodromal symptoms precede and forewarn of impending catastrophe. The use of tetracaine for other than spinal block should be reserved for those experienced in the technics of regional anesthesia. The use of tetracaine for spinal anesthesia is described under the heading of saddle block.

PIPEROCAINE.—Piperocaine (metycaine) is closely allied to cocaine chemically and being an ester of benzoic acid is similar to procaine in most respects. However, it is somewhat more potent and longer lasting than procaine. One and one-half per cent solutions are suitable for blocking large and medium size nerve trunks. A 1 per cent solution should be used for smaller nerve trunks and for infiltration. Piperocaine is suitable for spinal anesthesia also.

Dibucaine.—Dibucaine (Nupercaine) is approximately 15 times more potent and toxic than procaine. It is the longest lasting of the currently used drugs. Nerve block may be performed with a 0.075 per cent solution, and infiltration with a 0.05 per cent solution. The drug is seldom used for nerve blocking, however. Sloughs and severe systemic manifestations of toxicity have been reported following its injection. The drug, although not recommended for infiltration and nerve blocking, is suitable for spinal anesthesia of long duration. The technic and dosage for spinal anesthesia are described under saddle block.

A number of recently introduced drugs offer promise of being clinically useful and merit some discussion.

Lidocaine. — Lidocaine (Xylocaine), which has a toxicity and potency twice that of procaine, has been adopted and used extensively for infiltration and nerve blocking. The duration of action is approximately one hour if used without epinephrine. The duration thus does not differ remarkably from that of procaine. On a weight-for-weight basis, the quantity needed is half that of procaine. Lidocaine differs from procaine in several respects. The power of penetration and diffusion through tissues is remarkable and is without question greater than that of any of the other local anesthetics in current use. If perchance the needle is not exactly on the nerve but close to it, an effective block results because of this diffusion. Most operators report a notable reduction in the incidence of failures in nerve blocking when they adopt the drug. It is unnecessary to add hyaluronidase to lidocaine to promote spreading. The latent period, that is, the interval between the moment of injection and establishment of the block, is briefer with lidocaine than with accepted drugs. Anesthesia appears promptly after injection. Blockade of motor fibers is established simultaneously with or shortly after that of sensory fibers. The lag is greater with other drugs. The block, as a rule, "wears off" abruptly.

Patients complain of momentary burning when lidocaine is first injected. Intracutaneous wheals disappear within a few moments after they are raised because of rapid diffusion. Systemic reactions are frequent but far less serious and alarming than those seen with other drugs if the amounts used are small. One must be extremely careful and limit the amount of drug used at one sitting to 0.5 Gm. The ability to diffuse into a wide area favors rapid absorption. As is the case when an excess of procaine is absorbed, excitement and convulsions are the usual manifestations if large doses are used. Barbiturates antagonize this stimulation. Reactions from smaller doses are characterized by drowsiness followed by sleep and amnesia instead of excitement. Usually, there is no fall in blood pressure accompanying the reaction. The reaction usually passes off without treatment. Barbiturates should be used only to combat excitement, apprehension, and convulsions, never for drowsiness.

Hexylcaine.—Hexylcaine (Cyclaine) is another recently introduced drug which is longer lasting than procaine. The duration of action compares favorably with that of tetracaine. Blocks lasting as long as three hours have been reported (without epinephrine). Its toxicity is comparable to that of procaine. It also possesses topical activity which is less than that of cocaine. The drug is stable. Solutions can be sterilized by boiling. The usual strength employed for infiltration is 1 per cent for nerve blocks. Anesthesia is comparatively rapid in onset but not as profound as that obtained with lidocaine. When procaine and hexylcaine are used for caudal block, motor effects in the extremities are not as obvious as they are with lidocaine.

PIRIDOCAINE.—Piridocaine (lucaine) is another recent addition to the long list of local anesthetics. The toxicity of piridocaine approximates that of procaine; its duration of action is somewhat shorter. Anesthesia is not profound, that is, the motor effects are minimal and sensory fibers are most affected. In rectal surgery this, obviously, is a handicap, since little can be done if the sphincters are not relaxed. The drug is of interest because its action is primarily on the sensory fibers and not on the motor. Its use for anorectal surgery would be limited to cases in which the procedure is brief and no relaxation is desired.

CHLOROPROCAINE.—Chloroprocaine (Nesacaine) has some advantages over procaine. It is less toxic and equally as potent as procaine. A 3 per cent solution is used for caudal block and a 2 per cent solution for block of large nerve trunks.

HYALURONIDASE WITH LOCAL ANESTHETIC SOLUTIONS.—The enzyme hyaluronidase added to solutions of local anesthetics acts as a spreading factor and promotes diffusion of the drug over a wider area than normal. Absorption, however, proceeds at a more rapid rate, and duration of action is shortened. Some operators add epinephrine to the solution to retard the absorption and still obtain the spreading factor. There appears to be a difference of opinion as to the effectiveness of this combination. The author feels that there is little to be gained by the addition of the enzyme. Some drugs diffuse through tissues more rapidly than others. Lidocaine appears to diffuse through tissues at a more rapid rate than procaine. As a matter of fact, it diffuses so rapidly that an intradermal wheal raised with lidocaine disappears almost as quickly as it is raised. A wheal raised using 1 per cent procaine persists for five to ten minutes before gradually fading. Hyaluronidase is unnecessary when lidocaine is used for local anesthesia. It is one of the reasons why the author prefers lidocaine to procaine.

Long-Lasting Local Anesthetics

Long-lasting anesthesia is obtained by using neurolytic agents or solutions of local anesthetics, which slowly release the drug into nerve tissue after perineural deposition. In the former category are ethyl alcohol, saturated aqueous phenol, and aqueous suspensions of bases of local anesthetics. In the second category are oily solutions of local anesthetics and water-insoluble anesthetics dissolved in viscous solvents, such as glycols, polyethylene glycols, methyl cellulose, pyrrolidone, and so on.

OILY SOLUTIONS OF LOCAL ANESTHETICS.—The popularity of solutions of local anesthetics in oil appears to wax and wane. Their use is based on the principle that the drug is released slowly into a nerve if deposited in its proximity. Local anesthetics are alkaline organic substances which form salts with acids. The salts are soluble in water but poorly soluble in oil; the bases are relatively insoluble in water but soluble in oil. It has been assumed that a partition occurs between the water of the tissues and the oil. The relatively greater solubility of the base in oil favors retention of the drugs by the oil. A gradual release of the drug is alleged to occur, and a prolonged block is supposed to result. Ample evidence exists, however, that the drug is absorbed in a relatively short time and the oil remains behind. Procaine, dibucaine, piperocaine, and maxicaine (intracaine) are the most common drugs used. Peanut, corn, or almond oil is the usual vehicle employed.

Histologic studies reveal that considerable local tissue reaction results from the injection of oily solutions. The oil alone, the basic form of the drug, and the combination of oil and drug deposited into the tissues cause necrosis. The prolonged effect is more often due to neurolysis than to slow release of the drug. Benzyl alcohol is combined with the local anesthetic drug in some preparations. Benzyl alcohol produces a prolonged block if used alone in oil by causing destruction of nerve fibers. Its addition to these solutions enhances the neurolytic effect. Phenol also is added to certain of these solutions. It likewise causes nerve destruction.

Many preparations have been made containing water-insoluble local anesthetics, such as benzocaine, propaesin, and Butesin, because they are more soluble in oil and are supposedly released and absorbed slowly. These drugs also cause local tissue reactions because they may not be completely absorbed and remain behind after the oil is absorbed and act as a foreign body.

Numerous reports are available concerning the direct injection of oily solutions into the sphincters and perianal areas. The writer is acquainted with a number of operators who have been enthusiastic about the use of these preparations but who later abandoned them because untoward reactions developed. The workers did not report these reactions. Local abscesses are not unheard of complications.

The intracaudal injection of local anesthetics in oil has been also reported. The users are enthusiastic but the series on which they report are small. The experience is too limited to warrant widespread acceptance of the method. The oils, irrespective of the type, cause similar types of response.

Efocaine.—A proprietary preparation popularized for anorectal surgery bearing the name of Efocaine has been the subject of recent discussion and the cause of some grief. Efocaine is a solution of 4 per cent propylaminobenzoate (Butesin), 1 per cent procaine base, and 1 per cent procaine hydrochloride in a mixture of 78 per cent propylene glycol and 2 per cent polyethylene glycol. Butesin is insoluble in water but soluble in the glycol mixture. The procaine base and procaine hydrochloride are added to shorten the induction period. The latent period of Butesin apparently is considerably longer than that of procaine. Supposedly, water is abstracted from the tissues by the glycols, which are dehydrating agents, and the Butesin is precipitated about the nerve, causing a prolonged block. This solution has been advocated and used for nerve blocking and for direct injection into the rectal sphincter to relieve postoperative pain.

Histologic studies reveal severe irritation to neural and perineural tissues after the injection of this substance. Like alcohol, phenol, and other caustic agents, the solution exerts its action by causing neurolysis and not by interrupting conduction as do the short-acting reversible drugs, such as procaine. The histologic picture is the same as that caused by alcohol. Sloughs, deep abscesses, and other untoward reactions have resulted from its use. Rectal incontinence has occurred after injection into the sphincter from necrosis of the muscle fibers. The histologic changes observed after injecting the solvent without the Butesin and procaine are identical to those caused by the solution. The preparation may migrate along a nerve trunk. If used paravertebrally, the drug may pass into the spinal canal. Transverse myelitis has resulted from passage of the drug into the subarachnoid space. The preparation is not recommended for anorectal surgery.

Phenol.—Saturated aqueous phenol has been used for prolonged blockade as an alternate choice in situations in which alcohol cannot be used. The destruction of nerve tissue is similar to that produced by alcohol. Alcohol and phenol have limited, if any, use for pain relief in anorectal surgery.

Eucupine.—Eucupine, which is chemically allied to quinine, was at one time used by some proctologists for prolonged anesthesia for both operation and postoperative relief. Quinine causes a prolonged blockade by its neurolytic action. It is irritating to tissues and, therefore, is seldom used. Certain derivatives of quinine are less irritating but nonetheless act in the same manner basically. Quinine is methyl cupreine; eucupine is the isoamyl derivative of dihydrocupreine. Eucupine, mixed with 1 per cent procaine in isotonic saline, injected perineurally causes anesthesia of several days duration. Eucupine has been abandoned for injection but is used for topical anesthesia in the form of an ointment or suppository.

Bromsalizol.—Bromsalizol is an aromatic alcohol chemically allied to benzyl alcohol. Like benzyl alcohol it causes prolonged action by destroying sensory nerve fibers. It has the same disadvantages and objectionable features as other neurolytic agents. A 4 per cent solution in peanut oil is available for injection. A 20 per cent solution in propylene glycol has been recommended to obtain greater efficiency but is little used.

Ammonium Sulfate.—Ammonium sulfate has been used in therapeutic nerve blocking because it is alleged that it exerts a selective action upon the C fibers of a sensory nerve. The C fibers carry slowly transmitted impulses which are responsible for dull, burning, aching pain. Other salts of ammonia may also be used because the ammonium ion is responsible for the effect. Ammonium salts do not block conduction when injected alone. If they are combined with procaine the pain relief experienced after therapeutic blocks for intractable pain is longer than that obtained when procaine is used alone. Laboratory evidence that the ion exerts a selective action upon the C fibers is lacking. The neurolysis, characteristic of other long-lasting preparations, does not occur unless concentrations over 10 per cent are used. Solutions containing ammonium sulfate, benzyl alcohol, and procaine (Dolamin) are available for nerve blocking. These were popular several years ago but are little used now. Most workers use 1 per cent procaine or an equivalent quantity of another desired drug combined with 5 per cent ammonium sulfate.

Procaine Base.—When procaine base is injected perineurally, the reaction noted is similar to that caused by alcohol and other caustic agents. Procaine base is prepared by adding the neutralizing equivalent of sodium hydroxide to procaine hydrochloride. Solutions of procaine hydrochloride in viscous solvents, such as methylcellulose, are available. The sodium hydroxide is dispensed in a separate ampule and mixed with the procaine hydrochloride at the time of use. A suspension of fine crystals results.

Surface Anesthesia

Surface anesthesia of the rectal mucosa is obtained by using local anesthetics incorporated in water-soluble or petrolatum bases. Numerous drugs are available which produce anesthesia when applied to mucous membranes. Some are more effective than others; not one is ideal or wholly satisfactory. The results are disappointing because of the brevity of the action and the fact that the discomfort arises from nerve endings located deeper than the submucosal layers which the drug does not reach. A topically applied drug behaves in most respects like an injected one. As with the injected drugs, there is a latent period, which varies with each drug, before anesthesia is established. They are absorbed from the mucous surfaces and pass into the blood stream. The absorption from a mucous surface may be rapid so that blood levels comparable to a slow intravenous injection may result. This is particularly true when aqueous solutions are sprayed on a mucous surface. Absorption from ointments in water-soluble bases is slower than from aqueous solutions. Absorption from petrolatum bases is much slower than that from water-soluble bases but anesthesia is less intense because the amount of a drug absorbed is insufficient.

For a number of years benzocaine was used for surface anesthesia. Benzocaine is the ethyl ester of para-aminobenzoic acid, the parent acid comprising procaine. It is a relatively insoluble substance with a low systemic toxicity. The drug gradually fell into disuse because its anesthetic action was brief and not profound. This was probably owing to the fact that 5 per cent ointments were used. Investigations have shown that 10 per cent in alcohol and other solvents is more effective. However, these solutions are irritating. Recently, a preparation containing 20 per cent benzocaine in an isoquinoline base has been dispensed under the proprietary name of Americaine. This preparation takes full advantage of the topical anesthetic effect of benzocaine.

The latent period with benzocaine is quite short, less than a minute. Anesthesia is profound but the duration of action is variable, usually ten to fifteen minutes.

Ointments and creams containing more toxic and longer-lasting drugs are available. Tetracaine (pontocaine) 2 per cent, piperocaine (metycaine) 5 per cent, dibucaine (Nupercainal) 1 per cent, hexylcaine (Cyclaine) 5 per cent, lidocaine (Xylocaine) 5 per cent, pramoxine (Tronothane), and surfacaine and diclonine (Dyclone) 1 per cent are some of the more common preparations available. The duration of action of these varies with each preparation, the longest action being obtained from dibucaine. Certain antihistamines possess varying degrees of local anesthetic activity. Pyribenzamine has been advocated for topical use. Sporadic reports of excellent results by enthusiastic users are sprinkled throughout more numerous less favorable reports.

Objection is frequently voiced by allergists and dermatologists to the repeated application of drugs to the mucous surfaces. Allergic manifestations may follow repeated topical use of many drugs. This response is not necessarily a characteristic of local anesthetics only. It is possible for an individual to become sensitized and highly allergic to a preparation after one or two applications so that a minute amount applied at a later date might produce an intense anaphylactic reaction which might even be fatal.

Most reactions encountered are mild, however. The usual manifestations of sensitization from contact are cutaneous lesions, such as eczema and urticaria.

"Caine" Versus "Noncaine" Drugs

Recently, attention has been called to the so-called "caine" type of drugs. The inference is made that these drugs are more toxic systemically and more prone to sensitization than "noncaine" drugs. The suffix "caine" is used to designate compounds with local anesthetic activity which are used exclusively for local anesthesia. Pyribenzamine, for example, which possesses some local anesthetic activity, has a chemical configuration which is common to many local anesthetics but is not designated with the suffix "caine" since it was introduced as an antihistamine. However, there is no specific chemical configuration that can be assigned to local anesthetics which sets them apart as a "caine" or "noncaine" drug. The property causing sensitization is a general one for many type drugs and not a specific one for local anesthetics, whether their name ends with the suffix "caine" or another designation.

Caudal Block

Caudal block is a block of the lumbosacral and coccygeal plexuses obtained by depositing a solution of a local anesthetic drug in the sacral portion of the epidural space. The nerves come into contact with the drug as they pass from the dural sac. The dural sac terminates at the level of the second sacral foramen in most individuals. The capacity of the epidural space in the caudal canal normally is approximately 8 to 10 cc. Considerably more than this volume of a local anesthetic solution is injected into the caudal canal in performing a caudal block because the excess passes outward along the peripheral nerves as they leave the intervertebral foramina.

TECHNIC.—To perform a caudal block, the patient is placed in the prone position with a pillow under the hips in order to elevate the sacrum. A gauze sponge is placed in the intergluteal cleft to prevent the skin sterilizer from passing onto the external genitalia. The skin over the dorsum of the sacrum is cleansed and sterilized. The site is draped with towels or an "eye" sheet so that the sacrum is left uncovered. The operator, if he is right-handed, stands on the patient's left side. This position is preferred because it facilitates performing the block. The coccyx is palpated at the base of the vertebral column in the gluteal cleft with the right index finger. The sacrococcygeal joint is felt by drawing the finger cephalad over the coccyx. The depression felt at the sacrococcygeal joint corresponds to the sacral hiatus. The sacral cornua are the inferior articular processes of the fifth sacral vertebrae. The cornua mark the lateral boundaries of the sacral hiatus and their position is noted on the skin with a marking pencil. The second sacral foramen is next located by palpating the posterior superior iliac spines and indicating a point 1 cm. caudad and 1 cm. medial to the spine. This point overlies the foramen.

To perform the block an intradermal wheal, by use of a 25-gauge, 2.5-cm. needle attached to a 5-cc. syringe containing 1 per cent procaine, is raised at a point midway between the cornua. This wheal overlies the sacral hiatus. One and one-half cc. of the anesthetic solution are injected into the subcutaneous tissues, the sacral coccygeal membrane, and the periosteum overlying the area between the cornua. Next, the caudal needle is placed on the surface of the sacrum, and the distance between the second sacral foramen and the cornu is measured and indicated on the shaft of the needle with a marker.* The skin over the hiatus is stretched with the thumb and the index fingers of the left hand. The caudal needle is grasped (with a stylet in place) with the thumb and index finger of the right hand and introduced through the wheal to an angle of 45 degrees with the surface of the sacrum. The needle is then advanced to the sacrococcygeal membrane, which is encountered approximately 0.5 to 1 cm. from the skin surfaces. The angle of the needle is then shifted to approximately 20 degrees with the surface of the sacrum. The sacrococcygeal membrane is then pierced, and the needle is introduced into the sacral canal as far as the marker. The stylet is withdrawn and a 10-cc. syringe containing 5 cc. of 2 per cent procaine is attached, and aspiration is attempted. The needle is rotated to an angle of 180 degrees, and aspiration attempted once again. If no blood or spinal fluid is obtained, 5 cc. of a 2 per cent solution of procaine is slowly introduced into the canal. The solution should pass freely when slight pressure is made on the plunger if the needle is in the canal. The hand is placed on the dorsum of the sacrum during the injection to detect tumefaction, which indicates that the needle is subcutaneous rather than in the canal. The syringe is then removed from the needle and the stylet is replaced. If signs of spinal anesthesia do not develop after five minutes, the remainder of the solution is injected. A total of 25 cc. of a 2 per cent solution of procaine, 20 cc. of 0.1 per cent tetracaine, and 20 cc. of 1 per cent hexylcaine, or 15 cc. of 1 per cent lidocaine may be used. Epinephrine 1:100,000 added to the solution of the local anesthetic drug prolongs the block 60 per cent or longer. Aspiration should be attempted several times during the injection. On completion of the injection the needle is withdrawn from the canal but not from the subcutaneous tissue. It is then directed towards each cornua, first on one side and then the other, and 0.5 cc. of solution injected at each cornu. This maneuver blocks the fifth sacral nerves which emerge beneath the cornu and supply the mucocutaneous margin. Anesthesia appears gradually within ten to fifteen minutes. Anesthesia is distributed over the anus, structures over the sacrum, vagina, labia majora and minora, and the undersurface of the penis, scrotum, and bladder (except for the dome) and lower

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* A section of rubber 3 or 4 mm. square and 1 or 2 mm. thick cut from a piece of gum rubber tubing is satisfactory.

uterine segments. The muscles of the pelvic floor are relaxed.

Recently, Rovenstine and his coworkers* have dispensed with the conventional manner of entering the canal with a long, stiff needle and have found that a shorter hyponeedle, if introduced through the sacrococcygeal membrane, will suffice for an adequate block. This innovation will have to stand the test of time and more experience before the conventional method can be discarded.

Continuous Caudal Block.—Continuous caudal block has been advocated for the relief of postoperative pain in anorectal surgery. A catheter of the type ordinarily used for continuous spinal anesthesia is introduced to a caudal needle and left in position. Repeated injections of procaine or other local anesthetic are made at intervals of one to one and one-half hours, as required. The technic and the amount of drugs used are the same as those advocated for caudal block by the single-injection technic. There is one objection to the use of continuous caudal anesthesia, in addition to the inconvenience of having the catheter in situ and repeating the injection, and that is the possibility of neurologic damage to the sacral nerves caused by the successive application of a local anesthetic drug.

Causes of Failures.—The usual causes of failure in caudal block are:

1. Inability to introduce the needle into the sacral canal. This may be due to absence of reliable landmarks, impermeability of the sacrococcygeal membrane, or distortions of the sacrum due to disease.

2. The local anesthetic drug is too dilute. It is advisable to use 2 per cent procaine or solutions of equivalent strength because penetration of the drug is retarded by the thickness of the sheaths covering the nerves in this area.

3. The solution passes rapidly from the lower foramina and the volume used does not fill the canal. This is unusual.

4. Bleeding within the canal due to trauma of the veins interferes with distribution of the drug. Bleeding is also associated with rapid absorption and systemic reactions. If blood is aspirated on the first attempt and is not aspirated after the needle is relocated, one may proceed with the block with caution. If blood continues to be aspirated, the block should be abandoned.

5. The injection is made into the subcutaneous tissues on the posterior aspect of the sacrum because the needle is improperly placed. In thin subjects this is readily detected by tumefaction when the solution is injected. In obese individuals it is not. Four or 5 cc. of air may be injected and crepitation felt in obese subjects.

6. The injection may be made into the pelvis because the needle is inserted at the tip of the coccyx instead of at the sacrococcygeal joint.

Saddle Block

Saddle block anesthesia is a form of spinal anesthesia which principally affects the sacrospinal segments. In true saddle block, distribution of anesthesia is confined to the perineal area. The block is used for urologic, gynecologic, rectal, and other forms of surgery involving areas of the body supplied by the sacral nerves. By modification of the saddle block technic the lower lumbar nerves also may be blocked so that anesthesia may extend to the thighs and to the area above the pubis.

Selection of the drug used is based on the duration of anesthesia desired. Procaine (50 mg.) may be used if the contemplated operation is of one hour's duration or less, tetracaine (5 mg.) if one and one-half to two hours anesthesia is sought, and dibucaine if two to three hours anesthesia is desired. The drug is dissolved in 1 cc. of a 10 per cent glucose solution and drawn into a small syringe and held in readiness while the lumbar puncture is performed. Commercially prepared solutions of "heavy dibucaine," "heavy tetracaine," or procaine are simpler and less troublesome to use.

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* Scientific exhibit, American Medical Association, June, 1957.

Technic.—The patient is placed in the upright sitting position. After the skin over the back has been prepared for lumbar puncture, an interdermal wheal is raised at the fourth interspace and the interspinous ligament is infiltrated with a 1 per cent procaine or similar solution. If the fourth interspace is inaccessible, the third may be used. A 22-gauge spinal needle is then introduced and the puncture is performed. The solution is then injected as rapidly as gentle pressure on the plunger permits. The needle is held firmly with the left hand while the injection is being made. On completion of the injection, the needle is promptly withdrawn and the patient is allowed to remain in the upright sitting position for sixty seconds if a true saddle distribution of anesthesia is desired. The glucose, by virtue of its weight, causes the solution to be hyperbaric or heavier than spinal fluid so that it gravitates downward into the tip of the dural sac. The patient is then placed in the supine position, and the head is elevated by supporting it on a pillow. The position of the table is horizontal. If more diffuse anesthesia is desired, the patient is allowed to remain in the upright position for thirty seconds. Hypalgesia and paresis will then extend into the legs and thighs. This distribution of anesthesia is desirable when the lithotomy, Sims', or the prone position is to be used. When an extent of anesthesia midway between the umbilicus and the pubis is desired, the patient is promptly restored to the recumbent position on completion of the injection. This extent of anesthesia is not necessary for anorectal surgery.

Blood pressure and pulse should be closely observed and all other precautions ordinarily observed for spinal anesthesia must also be followed for saddle block. If hypotension develops, 25 mg. of ephedrine or an equivalent dose of another vasopressor drug of choice (methoxamine, phenylephrine, desoxyephedrine) should be promptly administered intravenously followed by an equal amount intramuscularly. Under no circumstances should saddle block be performed in situations in which an apparatus for administering artificial respiration is not available. The hazards, complications, and dangers pertaining to more extensive spinal anesthesia are also applicable to saddle block. Addition of 0.25 mg. of epinephrine (0.25 cc. 1:1,000) prolongs the duration of the block anywhere from 50 to 100 per cent.

Hypobaric Technic.—Some surgeons use the Buie and other modifications of the head-down prone position for anorectal procedures. Under these circumstances it is simpler and time-saving to use hypobaric (lighter than spinal fluid) solutions instead of hyperbaric. The patient can then be immediately placed in the prone position and preparations for operation begun. The technic differs somewhat from that just described. The drug used must be potent so that when dissolved in distilled water the resulting solution is lighter than spinal fluid. Tetracaine or dibucaine is satisfactory. Tetracaine, 5 mg. dissolved in 2 cc. of distilled water, or dibucaine, 2.5 mg. of an isobaric solution, is added to 2 cc. of distilled water. The patient is placed in the lateral recumbent position with the table tilted at a 5- to 10-degree angle. The lumbar puncture is performed at the third or fourth interspace, and the solution is injected as rapidly as general pressure on the plunger permits. The patient is then promptly placed in the prone position, and the table tilted so that the occiput is below the level of the hips or approximately at an angle of a 10-degree, head-down tilt. The pelvis may be drawn over the "break" in the table and the table may be "broken" and other preparations made while anesthesia develops. When longer-lasting drugs are used, the block requires five to ten minutes to be fully established. Procaine is not satisfactory for this technic because the dose necessary to make a hypobaric solution results in a large volume of solution.

The patient may be placed in the prone position and subarachnoid puncture performed by the lumbosacral approach if one desires. The second sacral foramina are located 1 cm. caudad and medial to the posterior superior iliac supine. A wheal is raised. A 12-cm. needle is introduced at an angle of 45 degrees to the skin and directed toward the fifth lumbar spine into the subarachnoid space. The remainder of the procedure is executed as previously described.

Transsacral Block

Transsacral block is a paravertebral block. The local anesthetic solution is placed in the posterior sacral foramina. The sacral nerves are anesthetized as they emerge from the sacral canal. The block accomplishes the same purpose as caudal block. It is employed in cases in which caudal block is not feasible or spinal anesthesia is not desired. The patient is placed in the prone position with a pillow beneath the hips to elevate the sacrum. The posterior superior iliac spinous processes and the cornua of the sacrum are identified on each side. A point 1 cm. medial and 1 cm. caudad to the spine is located. This is connected by a line with a point marked off the sacral cornu. The line is divided into three equal parts. An intracutaneous wheal is raised at each point of division. The second, third, and fourth sacral foramina lie approximately beneath these wheals. The first lies beneath the cephalad extremity of the line. The first sacral foramina need not be blocked. An 8-cm. needle is introduced through the wheal over the second sacral foramen perpendicular to the skin and advanced 1 cm. into the foramen. It is advisable to place depth directors on the shaft of the needle to avoid entering the pelvis. Five cc. of 2 per cent procaine or, if another drug is desired, a volume of comparable strength are injected at this site on each side. The procedure is then repeated for the third sacral foramina. The needle is advanced 1 cm. after contact with the bone is lost, and 4 cc. of the solution are injected at this site. The procedure is then repeated for the fourth sacral foramen. The needle is advanced 0.5 cm. into the foramen and 3 cc. of the solution injected at this site. The fifth sacral nerves are anesthetized by introducing a needle in the midline between the sacral cornua after raising a wheal and advancing a 5-cm. needle laterally and injecting 2 cc. of 2 per cent procaine, first on one side and then the other. The needles may pass into the sacroiliac joint if directed too far laterally when blocking the second sacral nerves. If the needle is not advanced into the foramen, the drug will be distributed over the posterior aspect of the sacrum and no anesthesia results. It must be borne in mind that the sacrum varies in thickness and size in different individuals. Occasionally, the needle may pass directly into the foramen without contacting bone. Always begin by blocking the second sacral nerve first and then proceed to the others. Transsacral block is used in conjunction with caudal block by some workers. This is not necessary, however, as satisfactory anesthesia is obtained with either block alone and one block is superfluous when both are performed simultaneously.

Anesthesia for Colonic Surgery

Anesthesia for colonic surgery is managed in the same manner as that for other abdominal procedures. Cyclopropane combined with ether or a muscle relaxant serves admirably in most cases. Should cyclopropane not be desired, nitrous oxide followed by ether may be used. The combination of thiopental, nitrous oxide, and a muscle relaxant is extensively used by many anesthesiologists. Irrespective of the drug selected, the intratracheal technic should be employed. Colonic operations are long, comparatively speaking. An airway is assured by use of the catheter at all times. Besides, troublesome traction reflexes initiate respiratory problems, such as laryngeal spasm or irregular breathing. These are overcome by the intratracheal catheter. Respirations must be artificially maintained when the relaxants are used. This makes endotracheal anesthesia mandatory.

When there is no objection to its use, no form of anesthesia is more suitable for colonic operations than spinal anesthesia. The constriction of the bowel and the relaxation of the abdominal musculature cannot be duplicated by any other method of anesthesia. Anesthesia of sufficient duration may be obtained by adding epinephrine to the solution of spinal anesthetic drug. Tetracaine (pontocaine) with epinephrine yields anesthesia lasting from three to four hours, dibucaine (Nupercaine) five to six hours. When longer periods of anesthesia are required, procaine by the continuous spinal technic can be used. The sensory level of spinal anesthesia for any intra-abdominal manipulation should be to the xiphoid; otherwise, the patient complains of discomfort during intra-abdominal manipulation, even when the operation is in the pelvis. Fifteen mg. of tetracaine (or 10 mg. of dibucaine) combined with 0.5 mg. of epinephrine in 5 per cent dextrose are the usual doses required for the single injection technic.

Preparation of the Patient

In anorectal and colonic surgery, as in all other types of surgery, the preparation of the patient is important. The patient should be hospitalized, preferably the evening prior to operation. The usual preoperative examinations, with special attention to the cardiovascular and respiratory systems, should be performed. The urine examination is necessary to rule out or confirm the presence of diabetes or renal disease. Hemoglobin determinations are necessary because the oxygen-carrying power of the blood is of special interest to the anesthetist. A barbiturate of the short-acting type, such as pentobarbital (Nembutal) or a similar hypnotic, is administered to assure bedtime sedation and allay apprehension. Food should be withheld after the evening meal.

On the day of operation, preoperative medication is important to allay apprehension and to obtain psychic sedation. The narcotics, in spite of recent departures to the newer tranquilizing drugs by some, still remain the standard for psychic sedation. Morphine is still the most serviceable of the narcotics. Dihydromorphinone (Dilaudid), methadone, and meperidine (Demerol) are satisfactory as analgesics but possess less hypnotic activity than does morphine and, therefore, are not as effective for sedation. They may be used when morphine is not desired. The optimum effects are attained when the narcotic is administered subcutaneously one and one-half hours prior to the anticipated time for the induction of anesthesia. In urgent situations the desired effects may be obtained within five to ten minutes by administering the drug slowly intravenously. It is customary to combine the narcotics with a belladonna alkaloid (atropine, hyoscyamine, or scopolamine). These anticholinergic substances are used to minimize the salivary and mucous secretions. Scopolamine and hyoscyamine (bellafoline) are more effective than atropine. Scopolamine depresses the cerebrum and enhances the psychic effects of morphine. The sedation is accompanied by amnesia and an air of indifference toward the operation which facilitates matters and obviates psychic trauma. The average adult dose is $^1/_6$ to $^1/_4$ grain (10 to 15 mg.) morphine with $^1/_{100}$ grain (0.4 mg.) belladonna alkaloid. For patients beyond the fourth decade of life the morphine is reduced to $^1/_8$ to $^1/_6$ grain (8 to 10 mg.). Patients in the sixth and seventh decades tolerate much less—$^1/_{12}$ to $^1/_8$ grain (5 to 8 mg.). Those who are older require still less—$^1/_{16}$ to $^1/_{12}$ grain (3.5 to 5 mg.). The belladonna alkaloid is reduced proportionately in the ratio of 1 part to 25 parts of morphine. Infants and children may be premedicated using ultra short-acting barbiturates rectally in doses of 1 Gm. per 50 pounds of body weight one-half hour prior to the induction of anesthesia.

Chloropromazine (Thorazine), promazine (Sparine), and related phenothiazine derivatives are used to enhance the effect of narcotics for premedication. On occasion they have led to alarmingly severe and difficult-to-reverse hypotension when used for premedication. They should not be used preoperatively. The least innocuous of these is Phenergan hydrochloride. If one feels he must use one of these derivatives, the least difficulty is experienced with this one. The author prefers to use none of these derivatives.

Preanesthetic sedation usually is omitted if the patient is to be ambulatory immediately after operation. Ambulation after the administration of narcotics or hypnotics is undesirable because ataxia, drowsiness, nausea, and vomiting result. Barbiturates are recommended prior to regional anesthesia to allay apprehension and to minimize or avoid convulsions due to local anesthetic drug but do so only in basal narcotic doses. Secobarbital or pentobarbital $1^1/_2$ grains (100 mg.) orally or intramuscularly one and one-half hours prior to operation allays but does not completely prevent excitement and convulsions. All effort should be made to perform the operation under circumstances which permit the use of premedication. Irrespective of the stoical appearance of some individuals, one invariably regrets failing to prescribe preoperative sedation for patients undergoing operations with regional anesthesia. Many a successful regional anesthetic procedure has been classed as unsatisfactory because the patient was apprehensive.

Anesthesia in Infants and Children

The problem of anesthesia in the adult is easily solved by the use of regional anesthesia; the solution is not so simple in infants and children. Either they are psychically unsuited for regional anesthesia or technical considerations make blocking difficult or hazardous. Usually, both considerations force the operator to select general anesthesia. It was mentioned in the discussion on ether that open drop ether has been the accepted method of anesthesia for surgery of all types for infants and children. It no longer is necessary to adhere to this dictum because apparatus which permits use of closed-system anesthesia is becoming increasingly available. Thus, cyclopropane, ether, or the combination of the two may be used and are suitable for most procedures for either anorectal or abdominal surgery. Ether is the more satisfactory because laryngeal spasm, respiratory depression, and inadequate relaxation are less troublesome with it than with cyclopropane. When a fire hazard is present, as when a cautery or endoscopic instrument is used, obviously neither of these may be used. Pentothal-nitrous oxide, if venipuncture is feasible, may be used. If venipuncture is not feasible, secobarbital 1 mg. per pound of body weight intramuscularly supplemented with nitrous oxide and succinylcholine may be used. For short procedures, trichloroethylene or fluothane may be used with nitrous oxide to fortify the gas.

Endotracheal intubation in infants and children adds to the risk of anesthesia because of the possible tracheitis which develops. The tracheitis is more serious in the infant because of the smallness of the trachea. One may forego the use of the endotracheal tube if the lithotomy or supine position is used, but if the lateral or prone position is required it is unwise to do without it. Analgesia with nitrous oxide or trichlorethylene is inadequate for anorectal procedures. The reflex activity caused by stimulating the rectum and anal regions can be obtunded only by deep anesthesia. Some operators use light anesthesia, such as nitrous oxide and a barbiturate, and inject a local anesthetic into the sphincters for relaxation.

In any event, when general anesthesia is used an anticholinergic drug, such as scopolamine, levohyoscyamine, or atropine, is necessary to inhibit the formation of secretions. The writer prefers to omit narcotics but uses secobarbital 1 mg. per pound of body weight (or rectal Pentothal 1 Gm. per 50 pounds body weight) combined with the anticholinergic drug. Either atropine, levohyoscyamine (bellafoline), or scopolamine is used in the following dosage:

0 to 20 pounds..........	0.125 mg.
20 to 40 pounds..........	0.25 mg.
40 to 70 pounds..........	0.375 mg.
70 pounds and over to 100 pounds...........	0.5 mg.

1532 TULANE AVENUE, NEW ORLEANS 12

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(Number fifty-six of a series on Recent Advances in Medicine and Surgery)

Remote Control Typewriter for Paraplegics

A remote control typewriter operated with a beam from a small head lamp has been developed for the use of paralyzed persons. It is described in the January 31 issue of the *Journal of the American Medical Association* by Dr. Alan Ziskind of the Boston City Hospital and the Boston University School of Medicine, and Richard L. Ziskind, Boston.

Working on the principle that neck and head muscles have the greatest residual muscular control, the typewriter was designed to be operated by these muscles. A photoelectric cell panel board containing specific target areas representing each typewriter key is coupled to a standard electric typewriter. When a parallel-beam light from a small head lamp strikes the desired target area, the letter is printed. For practical purposes a 15-degree motion of the head is sufficient to work any area of the panel board. The light beam is small enough so that it cannot focus on two target areas simultaneously.

To avoid unintentionally sweeping over many letters in the process of selecting one, a small microswitch is interposed in the circuit. While learning to operate the typewriter, the individual must close this switch to complete the circuit and type the letter. Since only a small movement is necessary to operate the switch, it may be controlled by an elbow, finger, or any area of the body where minimal motor function exists. After the person becomes experienced at using the machine, he can forego the use of the switch.

Most patients can learn to type about 30 words a minute. The authors believe that the machine is useful in helping paralyzed patients in their rehabilitation, especially since the written work is often the chief method of communication of these patients.

CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and* WILLIAM B. OBER, M.D.

JULY 30, 1958

Discussed by PERRY BERG, M.D., NEW YORK CITY

Case History

DR. HENRY H. MURPHY: A fifty-three-year-old Negro male was admitted to Knickerbocker Hospital after six episodes of bloody diarrhea during the twelve hours prior to admission.

Seven years before this admission he had had a similar attack of many bloody bowel movements and as a result had been hospitalized. His hemorrhage on that occasion was sufficiently severe to require seven blood transfusions, after which it subsided, apparently spontaneously. The patient could not recall any pain occurring before or during his hospitalization. He was sigmoidoscoped, had a barium enema, but was not informed of the findings, if any, of these examinations, and he was discharged after several weeks feeling perfectly well.

The patient's sole chronic complaint was of a tendency toward easy bleeding on brushing his teeth and shaving and frequent nose bleeds. He felt that this tendency had been present throughout his life and he had never been particularly troubled by it and was never told or otherwise made aware of any anemia.

Two years previously, the patient had pneumonia from which he recovered without incident. He was found at that time to have hypertension, but he remained free of symptoms related to this disease. He occasionally did have crampy lower abdominal pains unrelated to food. He attributed these to gas and thought no more of them until twelve hours previous to admission. He then had an attack of lower abdominal pain which differed from those to which he had grown accustomed in that it was followed by six loose bloody bowel movements. The last of these consisted almost entirely of blood clots and left him feeling somewhat weak. He then sought medical attention and was admitted to the hospital.

On admission, the patient denied antecedent diarrhea, tarry stools, hematemesis, nausea, vomiting, or epigastric distress. He admitted to moderately heavy alcohol intake but his daily consumption of 5 to 6 ounces had never interfered with his job as a janitor, and he apparently always ate well. His past and family history were negative and a systemic review gave negative findings except as previously noted.

Physical examination disclosed a well-nourished, well-developed Negro male who appeared pale but in no particular distress. His temperature was 98.6 F., pulse 100, respirations 20, blood pressure 190/100. The conjunctivas were pale, and the retinal arterioles somewhat thin and tortuous. No other abnormalities were observed of the head, eyes, ears, and nose. The tongue was coated and well-papillated, but the buccal membranes were pale. The neck was supple, without venous distention or adenopathy. The trachea was in the midline, and the thyroid was not enlarged. The chest was symmetric, expanded well, and the lung fields were clear to percussion and auscultation. The point of maximum cardiac impulse was in the fifth intercostal space, 1 cm. beyond the midclavicular line. The heart sounds were of good quality, and A_2 was louder than P_2. A presystolic gallop rhythm and a soft, grade II, blowing systolic murmur could be heard at the apex. There were no rubs or thrills. The abdomen was soft and nontender. The liver edge could be easily palpated 3 fingerbreadths below the costal margin but no other organs or masses could be felt. There was a left, direct inguinal hernia. Rectal examination revealed good sphincter tone and a prostate gland uniformly enlarged three to four times the normal size. No masses or nodules were apparent. The genitalia were without abnormality. The extremities showed no cyanosis or clubbing. Pedal pulses were palpable bilaterally, and slight pretibial edema was present. Neurologic examination gave normal findings throughout, and there was no lymph node enlargement.

Admission laboratory study revealed a hemoglobin of 5.9 Gm. per 100 ml., red blood count 2.96 million, white blood count 5,400, with 64 per cent polymorphonuclear leukocytes, 34 per cent lymphocytes, and 2 per cent monocytes. The hematocrit was 19. Examination of the peripheral blood smear revealed marked hypochromia and anisocytosis. Slight poikilocytosis also was present, and a moderate number of red blood cells showed polychromatophilia. The prothrombin time was 12.5 seconds, with a control of 14. A sickle-cell preparation was negative. Urinalysis showed a specific gravity of 1.014, a trace of albumin, 9 to 19 white blood cells, and no sugar or acetone.

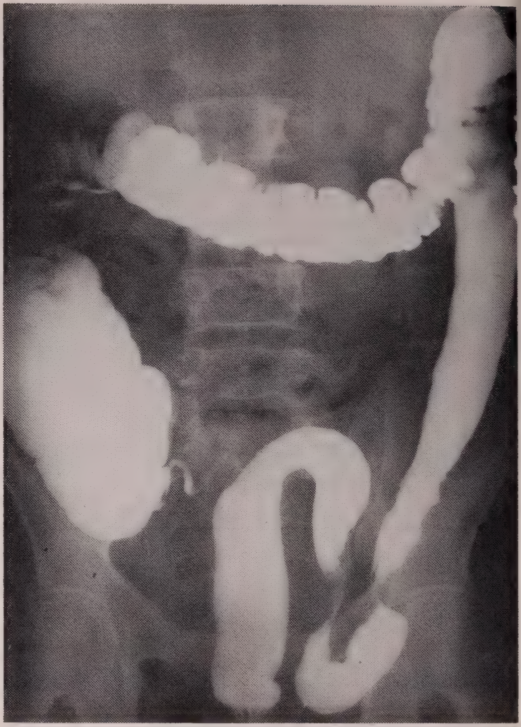

FIG. 1. Barium-enema film showing a well-filled colon. The mucosa of the descending colon and sigmoid is apparently smooth. A hernia is seen on the left.

The patient was transfused with 1,500 cc. of whole blood shortly after admission, and on the following day further blood studies were obtained. Replacement had raised his hemoglobin to 7.8 Gm., with a red blood count of 3.32 million and a hematocrit of 27.5. The white blood count and differential were essentially unchanged. The fasting blood sugar was 112 mg. per 100 cc., nonprotein nitrogen 37.5 mg. per 100 cc., and creatinine 1.55 mg. per 100 cc. The total protein was 5.2 Gm., with 3.7 Gm. of albumin and 1.5 Gm. of globulin. The steel was strongly positive for blood. An emergency barium enema revealed no apparent evidence of delay or obstruction to the retrograde passage of barium from the rectum to the cecum and into the appendix. The cecum was in its usual position in the right lower quadrant and was regular in outline. No definite intrinsic abnormality was apparent in the colon. There was evidence of a left inguinal hernia (Fig. 1). A chest x-ray re-

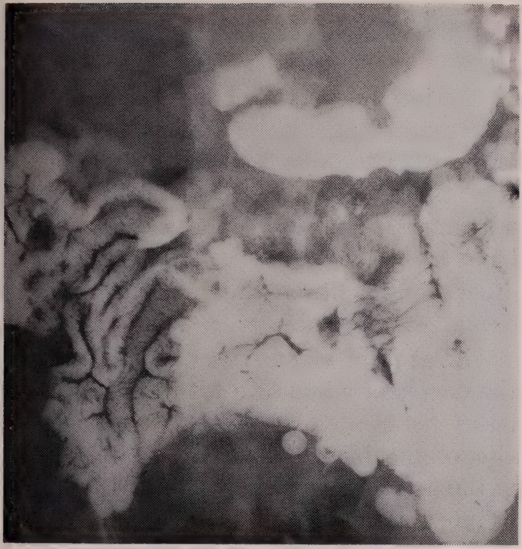

FIG. 2. Upper gastrointestinal series showing a normal mucosal pattern in the small bowel. The stomach and duodenal bulb are normal. Extrinsic pressure from below represents a filled urinary bladder.

vealed no evidence of intrapulmonic disease. The heart was described as at the upper limits of normal in size with a moderately prominent aortic knob.

The patient was comfortable until two days after admission. He then had three bright red stools and was found to have a blood pressure of 80/60. A fourth transfusion of 500 cc. of whole blood was given, with return of his blood pressure to its previous level.

For the next few days the patient again was comfortable and without complaint. His bleeding time was 1 minute and 30 seconds and clotting time 3 minutes 7 seconds. Mazzini and VDRL tests both gave negative results. The hemoglobin stabilized at approximately 9 Gm. A gastrointestinal series showed a normal esophagus. On one film there was an outpouching at the distal end of the esophagus, thought to be either a small hiatus hernia or a large phrenic ampulla. The stomach was median in position, free and mobile, showing normal tone and peristalsis. The gastric emptying was normal and the stomach outline regular, its walls flexible, and the mucosal folds appeared normal. The duodenal bulb filled well, was regular, and no evidence of ulceration was noted. The remainder of the duodenum was not unusual. Serial films of the abdomen were made at half-hour intervals. The stomach was completely empty after three hours, and the head of the barium column was in the cecum at approximately the same time. The small intestine showed a normal mucosal pattern throughout, and its caliber was not unusual. There was some hypertonicity of the loops of the distal jejunum and ileum. No intrinsic or extrinsic intestinal abnormalities were identified (Fig. 2).

On the sixth day after admission, the patient again had an episode of painless rectal bleeding although this was less than on previous occasions. He was given a fifth unit of blood, which raised his hemoglobin to 10 Gm. He did not bleed again and was asymptomatic. Sigmoidoscopy was carried out and was unrevealing. An operation was performed on the thirteenth hospital day.

Discussion

DR. PERRY BERG: The problem to be discussed today revolves around the determination of the site and cause of heavy and persistent intestinal bleeding in a middle-aged man.

We find that seven years prior to the present admission he was hospitalized elsewhere for a similar episode. He required enough blood replacement to indicate that bleeding had been massive. The bleeding stopped spontaneously; sigmoidoscopy and a barium enema were done and presumably gave negative findings although we do not have direct reports.

It may be interesting at this point to consider the entity of gastrointestinal bleeding undiagnosed at the first work-up. Bocke and Engstedt,[1] reviewing a series of 1,252 inpatients with gastrointestinal bleeding, found that a diagnosis could not be made with the usual methods (x-ray and endoscopy) in 15 per cent (191 patients). In a four- to fourteen-year follow-up, by readmission record, questionnaire, or autopsy, 50 per cent (95) remained undiagnosed. Eighty-six of the 95 never bled again. However, as we see in today's case, a four-year follow-up may not be conclusive so that it is not unusual for someone with bleeding from the gastrointestinal tract to escape diagnosis on the first work-up.

It would seem reasonable to assume from the seven-year hiatus between episodes that we are dealing with a benign disease, either inflammatory or neoplastic.

Pursuing the history further, we are told that the patient had a history of bleeding from his nose, gums, and shaving cuts. Gastrointestinal bleeding from blood dyscrasia certainly occurs; 4 per cent of the 1,252 patients alluded to previously bled from this cause. However in the present case there was not the bleeding into the joints, skin, muscle, and mucous membranes or from tooth extraction that we associate with a severe hematologic abnormality. Furthermore, it had been present for a long time, a piece of information that makes the consideration of acquired thrombocytopenia, hypoprothrombinemia, and fibrinolysinemia unnecessary. We do know that the gums and nose most frequently bleed from local causes. The hematologic work-up, white blood count, and differential smear, and bleeding, clotting, and prothrombin times were all normal.

We can conclude, then, that although the information at our disposal does not rule out a mild variant of one of the congenital abnormalities of hemostasis, notably, deficiency of plasma thromboplastin component or antihemophilic globulin,[2] it makes massive hemorrhage from this cause unlikely. If an abnormality of this type is intensifying bleeding from a primary cause, we must still find the primary cause. For completeness, prothombin consumption and thromboplastin generation tests should be done.

The hypertension discovered two years previously can be dismissed. It has been stated that hypertensive individuals bleed more strenuously from peptic ulcers,[3] but the statement is based on unquantitated observation. Rare cases of gastrointestinal "apoplexy" have been reported but are diagnoses of exclusion.[4]

The intermittent abdominal cramps suggest, by their location in the lower abdomen, origin from the distal portions of the intestinal tract. Then, twelve hours before admission, an attack of cramps was followed by bloody bowel movements. We presume that other abnormal constituents, such as pus or mucus, were absent.

The color of blood passed by rectum and the degree of admixture with the stool may be of some importance in determining the site of the bleeding. Unfortunately, both of these are influenced greatly by the degree of intestinal motility. Hilsman[5] and Schiff, *et al.*,[6] introducing bank blood at various levels of the gastrointestinal tract, found that blood introduced intragastrically could be passed in unchanged form within three to seventeen hours. Conversely, blood introduced into the cecum could be black and tarry if intestinal transit were delayed by atropine. Distal to the ascending colon, however, blood was never black despite delayed passage.

In our patient, who never had melena, even when bleeding became more or less desultory, and who once passed frank clots, we may conclude, although hesitantly, that the bleeding was from the colon. The passage of bright red blood suggests this. The presence of a nonobstructing lesion, even in the distal colon, may produce enough hypermotility to cause the passage of liquid stools that mix with blood.

The only feature of the physical examination that is disturbing is the palpable liver. Although the location of the upper border of the liver is not described, the organ is probably enlarged. However, in the absence of any stigmata of cirrhosis and in face of several normal liver function tests, I would eliminate varices or the hemostatic abnormalities of liver disease as a cause of bleeding.

The cardiac abnormalities and the mild edema can be ascribed to the hypertension and anemia.

The laboratory findings give us little

further help. The degree of anemia would indicate massive blood loss if there were not some suggestions, such as the hypochromia, normal white count, and normal nonprotein nitrogen, that there may have been some chronic blood loss. The abnormal red cell shapes and polychromatophilia indicate regeneration of red cells in response to bleeding. The sickle-cell preparation was negative. Unless sodium metabisulfite was the reducing agent, one of the sickle-cell variants cannot be ruled out, but this type of gastrointestinal bleeding is rare in a sickler. The urinary findings probably represent lower urinary tract infection. His ability to clear absorbed nitrogen from the blood indicates good kidney function.

The remainder of the course was one of repeated hemorrhage and, finally, surgery. Sigmoidoscopy and a complete radiologic gastrointestinal survey were done but provided no definite information. When x-rays and sigmoidoscopy do not provide a diagnosis, the determination of the exact cause of gastrointestinal bleeding becomes nearly impossible. Brick and Jeghers[3] have compiled most of the uncommon causes of gastrointestinal hemorrhage. We can eliminate some on the grounds that they are usually terminal events, rupture of aneurysms into the intestinal tract comprising most of this group. Subserosal neoplasms of the small bowel or granulomas that erode the mucosa do not regress to afford seven asymptomatic years. Cancer also can be eliminated on this basis. Angiomas and telangiectases as well as the mysterious entities that show only generalized petechial bleeding cannot be ruled out, but, again, a seven-year-interval between hemorrhages is unlikely. Luckily, we are spared considering endometriosis.

At this point, with a diagnosis of benign disease of the colon, probably inflammatory, we would have to examine the x-rays ourselves for any further information we can glean from them. The films of the esophagus, stomach, and duodenum can be dismissed as normal. Similarly, the small bowel appears normal. The small bowel films show a suggestion of a pelvic mass with a smooth round upper border displacing the bowel. With a large prostate this probably is the bladder and was not seen on the barium enema three days earlier. Examination of the barium enema films raises several questions. There appears to be loss of haustral markings in the descending colon and proximal sigmoid although some segmentation can be suspected in the distal sigmoid. There is no irregularity of the mucosa to suggest ulceration. Some of the filling defects in the descending colon probably represent feces. Unfortunately, there is no adequate postevacuation film. Examination of the colon as it fills from above on the serial films of the upper gastrointestinal series reveals haustrations in the descending colon. However, probably because of the distended bladder, the distal sigmoid is never clearly visualized. There is a suggestion of several smooth, round barium pockets.

There are three lesions to be considered in our differential diagnosis. The first of them is a polyp of the colon. In the absence of evacuation and air contrast films of the large bowel, a polyp may be missed. However, polyps rarely bleed massively. A seven-year interval between hemorrhages would also be unlikely but not impossible.

Diverticulitis of the colon has more positive features. Diverticula may be inflamed, bleed, and subside, giving rise to no further symptoms for years. An inflamed, spastic area may be pushed into a semblance of normality by barium under pressure. Bleeding from diverticula occasionally may be massive. Finally, on the small bowel series, taken four days after the barium enema and providing a delayed evacuation film, the distal sigmoid never fills well and, indeed, shows several areas resembling diverticula. Bleeding diverticula of the colon cannot really be ruled out.

Before going into my diagnosis of choice, I must say a few words about loss of haustrations in the descending colon and sigmoid. Reliance on this as a sign of fibrosis of the colon is hazardous. Bockus[7] sets up rigid criteria for evaluating the significance of loss of haustrations. The loss of haustrations must persist on all films, including post-evacuation films and those showing the colon filling from above. Furthermore, it is not considered of pathologic significance unless associated with narrowing of the colonic lumen and shortening of its length. Even when all these criteria are fulfilled, hesitation is advised because the underlying abnormality may be a functional change in the muscularis. If fibrosis is present, Bockus feels that mucosal abnormality should invariably be demonstrable as well. Weintraub[8] notes that in his experience haustrations are usually absent under normal conditions in the descending colon and distally.

In spite of our inability to satisfy these criteria, I would regard localized inflammation of the colon, of nonspecific origin, as the most likely diagnosis. The proximal sigmoid, smooth on barium enema, is never filled from above. The onset with bleeding is typical of nonspecific ulcerative colitis. Engel,[9] reviewing his own cases and the literature, found bleeding to precede diarrhea in most cases and to be the first detectable deviation in bowel habits. Remissions, with complete restoration of bowel function, are well-known in ulcerative colitis and an interval of seven years with only mild cramps is possible. The barium enema usually gives normal findings, as did this patient's at the time of the first work-up. A wide variety of hepatic lesions, most commonly fatty infiltration, accompany ulcerative colitis although they are more frequent in the emaciated, malnourished patient with frequent attacks. Massive hemorrhage is a rare but accepted complication of ulcerative colitis.

The patient was somewhat old, even seven years ago, for ulcerative colitis, although onset at any age is known. Much more difficult to explain is the absence of involvement proctoscopically, but regional types of ulcerative colitis are described. Typically, they are characterized by collagenous thickening in the submucosa. The submucosa is edematous, but the mucosa usually is not extensively ulcerated. The rectum and rectosigmoid appear normal at endoscopy in 90 per cent of the cases with regional or segmental involvement. In a study of 201 cases Newman, *et al.*[10] found frank hemorrhage in 17 patients, 7 of whom required transfusions, 1 of whom died of blood loss. Carcinoma was not seen as a complication in this group in contrast with its increased incidence in the widespread forms of ulcerative colitis.

My final diagnosis, then, is an inflammatory disease of the distal descending colon and proximal sigmoid, most likely due to nonspecific regional colitis but possibly due to diverticulitis.

Dr. Thomas N. Silverberg: Do you feel that the patient was suffering from chronic blood loss on which was superimposed the acute blood loss attendant on his presenting complaint?

Dr. Berg: Yes. The equanimity with which he tolerated a hemoglobin level of 6 Gm. would indicate that he was accustomed to anemia.

Dr. Benjamin E. Krentz: How can we rule out peptic ulcer in this patient?

Dr. Berg: We observed both massive and slight bleeding without melena. Although hypermotility of the bowel can facilitate the passage of red blood in the stool, such hypermotility is unlikely when bleeding is mild. During part of this man's course, he passed small amounts of red blood. I feel that the source of bleeding was below the ligament of Treitz.

Dr. Gilbert Klickstein: Can we exclude a Meckel's diverticulum as the source of bleeding?

Dr. Berg: Meckel's diverticulum is, of course, a diverticulum, and could be indicated here. However, the patient is quite old for initial hemorrhage from this congenital malformation, and I think the site of bleeding is lower in the gastrointestinal tract.

Dr. Michael S. Bruno: This case emphasizes the point that laparotomy fre-

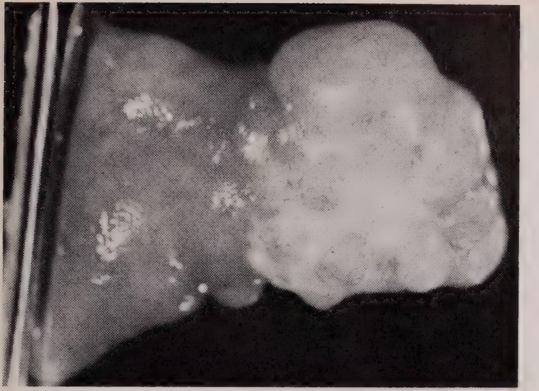

FIG. 3. Gross photograph of the resected Meckel's diverticulum. The serosal surface shows superficial scarring.

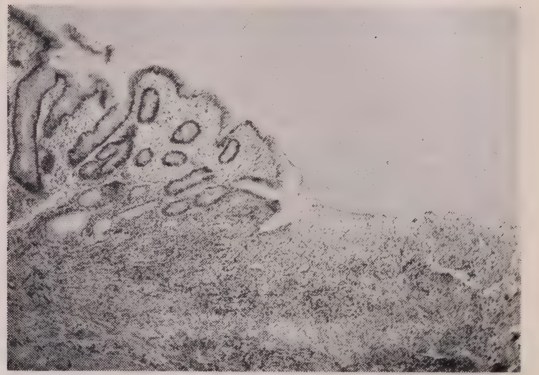

FIG. 4. A zone of peptic ulceration adjacent to ileal mucosa within the diverticulum. Gastric mucosa with parietal cells was found nearby.

quently is necessary to localize the source of gastrointestinal bleeding.

Diagnoses

Clinical.—*Meckel's diverticulum.*

Dr. Berg.—(1)*Segmental colitis, nonspecific, descending colon, sigmoid.* (2) *Diverticulitis, descending colon, sigmoid (?).*

Anatomic.—*Meckel's diverticulum.*

Pathologic Report

DR. WILLIAM B. OBER: Dr. Allen made the correct diagnosis before operating on this patient. Before discussing the pathologic findings, I should like to ask him to comment.

DR. PHILIP D. ALLEN: Dr. Berg has given us an excellent review and analysis of the causes of gastrointestinal hemorrhage. That my preoperative diagnosis varied from his points up the importance of one's past experiences in evaluating such problems. My diagnosis was made in part because of some years' experience on the pediatric service of Bellevue Hospital. This patient bled, was thoroughly studied without receiving a definitive diagnosis, and then was well. I have seen this pattern on several occasions in infants and children. With Meckel's diverticulum, bleeding may be massive and then subside spontaneously. The diagnosis can hardly ever be demonstrated on radiologic examination and is often made by exclusion. In many cases I have only been able to confirm this diagnosis at laparotomy. I have never before seen Meckel's diverticulum give rise to hemorrhage in a patient of this age, but the pattern of bleeding was so distinctive that I considered it the most likely possibility.

DR. OBER: At laparotomy, a 4.5-by-2.2 cm. diverticulum was found approximately 80 cm. proximal to the ileocecal valve arising from the antemesenteric border of the ileum. Its serosa was slightly bossellated with areas of superficial scarring and some infiltration of fat, indicating remote episodes of inflammation (Fig. 3). The mucosa showed a few small focal areas of ulceration but none of these showed evidence of active bleeding at the time of surgery. Microscopically, peptic ulceration of ileal mucosa was seen in areas where typical ileal mucosa was adjacent to mucosa of the gastric type with parietal cells (Fig. 4). No aberrant pancreatic tissue was found.

Meckel's diverticulum is named for Johann Friedrich Meckel (1717–1774), a German anatomist. It is found in about 2 per cent of all individuals and represents the vestigial remnant of the vitelline (omphalomesenteric) duct. The malformation occurs when the vitelline duct fails to obliterate as a fibrous cord in the 7-mm. stage of the embryo. Clinically, 80 per cent of the cases in which Meckel's diverticulum becomes symptomatic occur in children, and 95 per cent of the cases occur in the first two decades of life. The diverticulum may ulcerate, perforate, intussuscept, or give rise to hemorrhage as in this case.

I have always compared the unenviable position of the physician who attempts to localize the source of gastrointestinal bleeding by the color of the stools, whether they be red or black, to the ambivalent position of Julien Sorel, the hero of Stendahl's novel, *Le Rouge et Le Noir*, who vacillated between the choice of a career in the army (red) or the church (black). The decision is difficult for there are few reliable guides and each case must be evaluated on its merits.

Dr. Michael S. Bruno: I had the privilege of personally following this patient from the inception of his hospitalization. Our initial working impression included the variety of lesions already discussed by Dr. Berg. However, at the conclusion of our studies, which we considered to be complete, we appeared no closer to a satisfactory explanation. At that point, a reappraisal of the case was necessary. Two completely negative surveys for two isolated episodes of massive gastrointestinal hemorrhage occurring seven years apart with a symptom-free interval in an otherwise healthy fifty-three-year-old man suggested the correct diagnosis. However, the very rarity of its occurrence in a patient of this age almost convinced us that it could not be so. I think it safe to say that if this patient were on a pediatric service, the preoperative diagnosis would have been unanimous. Very significantly, Dr. Allen who has had a great deal of experience in pediatric surgery made the correct diagnosis of Meckel's diverticulum and would not seriously consider any alternative. Surgical exploration, which is essential in a case like this, subsequently proved him to be entirely correct.

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Antibiotics and Wound Strength

One answer to the question of whether or not antibiotics may impede wound healing has been provided in a controlled animal experiment. The author, Dr. Robert J. Ryan, St. Francis Hospital, Trenton, New Jersey, believes that the results substantiate his clinical impression that wounds of patients getting antibiotics prophylactically in "clean" cases had a higher incidence of skin and fascial dehiscence. In 30 rats, laparotomy wounds in 10 untreated controls proved stronger after the same interval, than 10 treated prophylactically with penicillin and 10 with tetracycline. The author suggests that these antibiotics, which interfere with protein synthesis in bacteria, may also impair fibroplasia in the host.—*Journal of the Medical Society of New Jersey, July, 1958*

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NEW YORK ALLERGY SOCIETY

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SCIENTIFIC SESSION

LEONI N. CLAMAN, M.D., *President, Chairman*

Diagnosis of Occupational Allergy of the Respiratory System

ELY PERLMAN, M.D., Chief of Allergy, Long Island Jewish Hospital

Diagnosis of Occupational Allergy of the Skin

ARTHUR W. GLICK, M.D., Assistant Attending Physician in Dermatology, Mount Sinai Hospital

DR. LEONI CLAMAN: I shall greet you with pleasure but very briefly this evening because in our trial of this new format of our meetings, of cocktails and dinner before the program, I think we've gotten a bit enthusiastic. I'm very glad to see you here, and I know you'll enjoy the program. I will take the opportunity of introducing our first speaker, Dr. Ely Perlman, Chief of Allergy, Long Island Jewish Hospital, who is going to talk to us on the "Diagnosis of Occupational Allergy of the Respiratory System."

Diagnosis of Occupational Allergy of the Respiratory System

DR. ELY PERLMAN: I have to apologize to you at the outset for being here and speaking to you on this subject of upper respiratory occupational allergies. It is like bringing coals to Newcastle, and I only have two or three excuses. The first excuse is that the chairman of the program committee asked a lot of people and nobody else volunteered to speak. My second excuse is that I have treated very few patients who are claimants in compensation cases. My third excuse is that I have seen, perhaps under the most fortunate circumstances, a fair number of patients, as a consultant for the State Insurance Fund. I feel it is an advantage in the sense that it is not a private insurance company, and that I was instructed only to find out whether or not the patient, the claimant, had an occupational allergy.

Some of us here, I think, have had much more experience than I with compensation or occupational allergies, but a few of us haven't and will perhaps be interested in the mechanics.

I think all of us act in the best tradition of humanitarian medicine. When we get a patient who is a poor working person, or one who cannot work at all because of asthma, and discover that this patient works in an occupation where there's some chance of an occupational exposure, our inclination is to lean toward considering this as an occupational allergy. I say this is in the highest traditions of medicine, but one cannot escape the bias that is present in the diagnosis. On the other hand some of us work for private insurance companies, and while I'm sure that most of the insurance companies have instructed us to find out whether or not the patient is, in reality, allergic to his occupational exposure, we still might have a bias because we are working for the company.

All of us have some kind of bias. If we didn't have the kind of bias just described, some of us might be so zealous about allergy we would be more likely to make a diagnosis of allergy. I don't believe it is possible to remove bias of one kind or another completely, but if we are aware of this to begin with we can at least try to approach each problem with a little more objectivity. We might then be able to reach some more accurate conclusions in each case. This is no criticism, because even in the pure physical sciences there can be definite bias.

Occupational allergy is a subject of great interest, I think, to most allergists. It is a new field since it does not fall into the usual set patterns with which most of us are so thoroughly familiar in our everyday practice. There are always new substances, new to us as practicing allergists, because there is a huge number of new substances constantly being incorporated into or being used to fabricate new products. Therefore, each case is different, challenging, and new.

We can learn a great deal from each case. This information is not only useful in the individual case, but also for ourselves, and also it can be applied to other patients where there is no question of occupational compensation, but where the history of occupational exposure gives a better idea of what can be contributing to the patient's trouble. We are in a somewhat different position from the dermatologist who is going to follow me, largely because of the fact that the incidence of respiratory allergies, so far as I can find, is, if anything, only slightly higher in various occupations than it is in the general population, even including those occupations where we have heard there is a "high" incidence of occupational difficulty, such as among bakers and furriers.

There have been extensive studies among bakers which report an incidence, if anything, only slightly higher than in the general population. In occupational contact allergies I think the incidence is higher because nonatopic individuals can be sensitized to many contact allergens if you try hard enough or long enough. I think it might be more difficult to make a nonatopic individual develop asthma or rhinitis from other inhalant allergens.

It is probably for this reason, so far as I could find anywhere in the literature, that there is no organized kind of information available for respiratory allergies such as there is for the dermatologist in cases of contact allergy. We are all familiar with the books and texts on this subject. Each industry is listed, the high incidence of dermatitis and the offending substance or substances are generally well known, and suitable testing concentrations are suggested. I can find no such organized information available in the literature on respiratory allergies. In 1942 the Department of Labor published a list of "Occupational Hazards and Diagnostic Signs," and listed 100 occupations where there was some predilection to respiratory allergies. In 1943 a book appeared by C. O. Sappington, *Essentials of Industrial Health*, which listed the occupations where workers were exposed to organic dusts and listed them in the order of prevalence.

That was in 1943. I know of no such accumulation of information published since.

To refresh our memories, the list starts with bakers. Furriers are next, then come barbers, beauticians, hat makers, textile workers, leather workers, upholsterers, veterinarians, pharmacists, grocers, farmers, florists, carpenters, printers, refrigeration repairmen, and laboratory technicians. This comprises the major industries wherein people are prone to respiratory allergies.

We are now confronted with a patient. We must decide whether this patient has his rhinitis, conjunctivitis, or asthma from his occupation. It is immediately apparent that the occupation can be either the sole cause of this person's trouble or causing only a part of his trouble or unrelated. He may be allergic to many other things and have, in addition, an occupational allergy. Then too there may be nonspecific irritants in his occupation, and they may be etiologically unrelated as allergens. When the occupation is the sole cause of the respiratory difficulty, I don't think there is much difficulty—the kind of symptoms they have, when they have them, when they feel better, and other such obvious factors which reveal themselves early in the history make it fairly clear. We then try to confirm our impression that it is related to his occupation by "appropriate" skin tests or exposure tests.

Patients who develop respiratory allergies in certain occupations where the allergens are strange and unusual types of inhalants, do not usually develop them soon after they have started that occupation. It takes time, weeks to years. However, the more difficult problem is the one where the patient is a known allergic patient. He may have hay fever or asthma, and he starts work in an occupation where there is no doubt he is being exposed to potentially trouble-making allergens. It is also apparent that the history will occasionally become confused because some patients have subclinical asthma, from their home environment and from their occupational exposure, but when they come from home to work the two exposures acting together add up and cause overt asthma. In this type of situation the history is not clean and decisive. Such patients may not have symptoms while at work but start having trouble at home and may not clear entirely on weekends while at home. It is very confusing and we are forced, therefore, by means of tests, to try to confirm our impression of what proportion of their trouble comes from their home environment and what proportion comes from their occupation.

I know nothing about compensation law, but so far as I can judge, a patient's difficulty is compensable if it comes not only solely from his occupation but if the occupation contributes to it or even if the occupation aggravates it nonspecifically. I know this is certainly true in many states in this country, but very often we are asked to judge what proportion of the difficulty is due to his occupation and what proportion is due to his home environment. We often cannot answer such questions as to our own private patients, and certainly will find it difficult to give a specific, sharp percentage answer in our occupational patients. But in the law we're very often asked to make such a decision, and I suppose we have to try to estimate it to the best of our ability.

Since nonspecific irritations are compensable, they must also be evaluated and are equally difficult to estimate. Some of them are not too difficult—solvents such as isoamyl alcohol, butyl alcohol, formaldehyde, ammonia, and others are obviously irritating. If you obtain a sample of what the patient is exposed to and you smell it and you cough, you know it's an irritant. Other workers in the plant will usually have the same trouble but not necessarily with the same intensity. This is not a problem, but the problem that arises in this group of patients is not whether or not they are aggravated during their occupation as much as whether or not this occupational, nonspecific irritation has caused the patients to *continue* to have their asthma or respiratory difficulty for months and even years *after* they have ceased their exposure to this irritant. I do not know how to answer this. Again it depends on your zealousness and sometimes on the individual case. There may be some things that can help you to decide. It is, of course, always possible that the asthma may be totally unrelated.

Now, how can that be difficult to determine? I suppose we're all aware of the fact that even our home exposures or exposures that we might have intermittently when visiting friends might be confused with occupational exposure because of the lag from the time of exposure to the development of symptoms, or the removal from the exposure and the length of time it takes to clear up.

Now I'm pretty sure that most of you are familiar with Herxheimer's experiment in England where he exposed a group of asthmatic patients to pollen and found that the majority of them in a very short time developed the symptoms of asthma. These patients were then removed from the pollen and recovered in a very short time, some with the help of a little adrenalin. However, there was a fair number of patients who took quite a long time to develop their asthma. These patients often required two or three days to recover from their asthma, in spite of adrenalin and other symptomatic medications.

It is possible, therefore, for a patient to be at home playing with his dog in the evening and go to work the next day and become worse while at work. This kind of situation can be difficult to evaluate. I do not believe that this constitutes the majority of the cases. Again we are compelled to make a decision, and these are some of the things you must keep in mind in deciding.

There are many kinds of wheezing and many kinds of asthma. Some patients have allergic asthma, some infectious, some mixed.

Some patients can have more symptoms because they are upset at work or there may be a cold draft or there may be some irritants. This type of case is generally not difficult to determine.

Then there is the allergic type of asthma which is related to occupation and that which is unrelated. There are psychogenic factors which can be related to occupation but very often are not. There is the physical type of allergy, which is encountered among engineers, mechanics for refrigerating and air conditioning, or those who work in meatpacking plants where they are in and out of refrigerators.

There is a reflex wheezing from the nose, from obstruction, and from cardiac causes. I know we are aware of these but it helps in making an accurate diagnosis if we keep them in mind.

The history is the first thing you take when confronted with a patient. The onset of trouble, the existence of previous allergies, whether it is seasonal, the type of industry, and the entire environment are obviously all important and should be pursued in detail. The type of industry is important. You should ask the patient how many other people are having difficulty, how many people are sneezing, how many people are having irritation, whether the place is well or properly ventilated. Most of the people in an industry over the years often learn to know as much about their conditions as the allergist does, if not more. I am sure our next speaker can attest to that. The furriers know about allergic rashes and about "hardening" and the fact that continual exposure will change their sensitivity. Sometimes if you ask and probe in detail you can often obtain a great deal of useful information.

As for the physical examination of the patient I am sure we can all diagnose asthma and rule out any other factors. However, the physical examination does not help us determine the existence of a causal relationship. Unfortunately this may also be true of our skin tests. This is where the difficulty arises. Let us assume we have decided by sputum or nasal smear and repeated visits that this is not allergic asthma but is infectious. Even then the question arises whether or not the patient's occupational exposure to nonspecific irritants is contributing. If it is, then in the eyes of compensation law, it is compensable.

Suppose we find that the patient does have eosinophilic sputum and all the other signs of an inhalant allergy. Then we have to try to confirm this by skin tests. The skin tests are notoriously poor. I do not think they are nearly so useful as the patch tests are for the dermatologists, but since I am trying to generalize, I feel that the skin tests are of little or no value except perhaps in a few of the industries. For example, in the case of bakers, first the flour was incriminated, then it was the "mites," the agar, and the "cracker" cans, and all the other things in them. In the furriers, it can be the dye, the dander of the hair, handling rough wool, exposure to formaldehyde sometimes used in curing the hides, and so on. When you have a patient in an occupation of this kind, it is entirely possible that he is allergic to his wife's perfume, and you are testing him for 100 different substances to which he can possibly be exposed. Some of the industries have huge numbers of substances all of which are potentially allergenic. It is important to know what you can test for. I doubt very much whether you can do a scratch test or a skin test for formaldehyde, unless, of course, the patient is extremely sensitive to it, and then there is the hazard of performing the test.

I'm sure you've all heard of the laboratory technicians who get asthma from a bottle of picric acid opened on the other side of the room. I never heard of a person like that being tested. Nobody in his right mind would test them for picric acid unless he started at 1:20,000,000 dilution. Every patient becomes a research problem either because of a high degree of sensitivity or the nature of the allergy.

How do you test a patient who is a refrigerating engineer? He cleans the pipes in the winter time, musty pipes which used to have mold spores. Potassium dichromate is a good allergen now being used to prevent mold growth. The compressed air is used to blow off the dichromate dust. You can patch test a patient with contact allergy to chromium, but I do not know of any intradermal test for a respiratory allergy to chromium. We are therefore left with a group of substances that you cannot readily use in intracutaneous testing. There are some substances that you can only test by actual clinical exposure.

Let us return to those for which we can test and those that fall into the category of inhalants with which we are all familiar. I'm sure all of you know that not everyone who gives a positive reaction to ragweed has hay fever, and so it is in industry. There is a very high incidence, reported by many investigators, of positive reactions in nonsensitive people, or people who are certainly clinically not having any trouble at all. The incidence is reported as high as 40 to 46 per cent. With people working as bakers, who have no trouble at all, 40 per cent will give positive reactions to wheat, and if they change industries where there is another allergen, will lose that skin sensitivity and develop to a high incidence the new one.

Everyone who reacts to flour does not have asthma, but if he is a baker he may have straight ragweed hay fever. The skin test by itself is not an adequate certain criterion for the diagnosis of an occupationally related difficulty. We all know this since we have seen patients who sneeze in the ragweed season, give a positive test, and have pure mold spore allergies.

A patient may have a dog in the house and give a positive reaction to dog and to no other allergen. He removes the dog and he still suffers. These may be crude examples but I'm sure many of you can bring to mind quickly instances where the skin test did not resolve the clinical situation and you are asked to determine a causal relationship.

The next thing we are confronted with then is the exposure test about which I think we know even less. I for one like to sprinkle the suspected substance around to try to imitate the conditions at work. The worst that can happen is that the patient will wheeze as he does at work, but sometimes that can be dangerous. For example, I have for a patient a young truck driver, and whenever he went to certain docks to pick up shipments from Japan, he would wheeze for three or four days. He was sent to one of the laboratories that does skin testing, and they tested him with full strength castor bean. He was hospitalized for the severe asthma which resulted from the test and did not completely recover after being in the hospital for three months.

I would be very hesitant about exposing somebody to some of these things indiscriminately. As another example we may have a dyer who is undoubtedly exposed to formaldehyde. We know he cannot even come into a laboratory building where they use formaldehyde without getting into trouble. So, how do you test him and when do you stop?

It is possible to "exposure-test" a patient by nebulizer. But what happens to a person who is almost wheezing and you nebulize water or a mild irritant? We cannot do controls on such a patient. A dermatologist walks around with patches of all the materials he is testing his patients with, but I would not give myself intracutaneous tests, and I certainly would not do inhalation tests with a whole group of substances that we may be using to test our patients.

We are left with a difficult decision to make. We have seen dyers who have inhaled oxidized paraphenylendiamine in high dilution, and they will begin to wheeze. It will clear and they won't wheeze with plain water. But, many times a patient is about to wheeze because of infectious asthma and you give him some irritant and you set him off wheezing and it may be entirely unrelated.

Whenever possible I try to get the patient to go back to work and come to me immediately afterwards. Very often you will see a patient with tremendous conjunctivitis, rhinitis, or wheezing, with sputum loaded with eosinophils, and there is very little doubt in those instances about the occupational relationship.

I think that the biggest problem is our controls in these situations. For many of these things I can't find any in the literature. We had a very interesting case of a man who worked for a vermouth factory and developed asthma. They use 38 herbs in preparing vermouth. They use sulfur dioxide to clean out barrels and cleansing agents, soaps, and detergents of all kinds as well as other bleaching agents.

I've seen such patients tested with cleansing agents. I'd expect anybody to wheeze from that. I certainly wouldn't even want to try it, but I wouldn't be surprised if they did wheeze.

The determatologist has lists of substances like picric acid and paraphenylendiamine, where the concentration which is irritating is known and tends to be nonspecific. The useful concentration is established, and if the test is positive it has some significance. We don't even have a rough guide of this type. Every patient becomes a research problem. You start out with a huge dilution and cautiously work up and hope nothing happens.

Beauty parlor operators, for instance, inhale lacquer. I don't know what happens to normal people if you blow lacquer at them with freon and a little alcohol in it. I know that in the case of my lab technician, if anybody opens a case with butyl alcohol the coughing is tremendous. I don't know whether that's an allergy. It surely is irritating. Some of the beauticians I have seen certainly had plain dye allergy and when they spray the stuff around they probably sneeze a little more. I wouldn't be surprised. That's not strange to us, and yet we have to make a decision in all fairness to everybody concerned.

In conclusion, I think that we have to—we're forced by the law—to make a decision. Fortunately for the claimant, it has been my experience that the lay people who sit on most of the compensation cases in allergy lean in the direction of favoring the claimant. That's just as well, except if you decide this patient has absolutely no occupational allergy and they decide in favor of the claimant.

Actually the State Insurance Company and the others are not social service agencies, and it is unfortunate that they end up being that way. For example, I had a painter who sprayed a basement with spray paint forty years ago and hasn't worked a day since. He began coughing and wheezing and that's it. It is possible, especially in some rare individual case, that the spraying may very well have set off a chain of events, but it's rather unlikely. Yet he has no source of support other than compensation. They were favorably disposed in his case.

I was instructed a long time ago not to worry about such decisions. I think that's the biggest problem that we are confronted with and the hardest one to answer: How long after he is no longer exposed to an occupational irritant or allergy are you expected to assume he is going to continue with his symptoms? I don't know any answer to this, and I don't think there are any figures or any statistics. This is one of our biggest problems.

The worst part of the whole thing is that the legal aspects of this thing seem to be a secret. We tried to have one of the lay judges discuss with us what aspects of this are of importance so we could be guided thereby. They refused to come because of the ethical question, so I understand. They didn't want to appear here and then have one of us appear before them.

Dr. Claman: Thank you, Dr. Perlman. I don't know how many are confused. I'm sure some people are nervous and depressed, but I think we'll have questions afterwards that will probably create areas of agreement and dispel the confusion.

I will be very glad now to introduce our second speaker, Dr. Arthur W. Glick, assistant attending dermatologist at Mount Sinai Hospital, who is going to tell us about the "Diagnosis of Occupational Allergy of the Skin."

Diagnosis of Occupational Allergy of the Skin

Dr. Arthur W. Glick: For this discussion I shall eliminate all occupational skin diseases not excited by sensitizers, such as those due to soaps and wet work or from primary irritants such as solvents, alkalis, and acids; from trauma, and so on. About 15 per cent of occupational dermatoses are due to true allergic mechanisms.

A first premise in handling occupational dermatoses is that one must have the ability to make a dermatologic diagnosis. For many years I have seen "compensation cases" turn out to be psoriasis, atopic eczema, dyshidrosis, fungous processes, and other nonoccupational dermatoses. Therefore the physician first consulted should have the ability to eliminate nonoccupational eruptions and to determine whether or not there is causal relationship to the patient's occupation.

The following cases as illustrated by slides will demonstrate these points.

The first illustration is that of a soap and water eczema in a beautician. An experienced observer could immediately eliminate sensitizing substances, such as a dye, as being the causal factor. Patch tests would not be of too much value.

The next group of cases is of contact dermatitis of nonoccupational origin, such as axillary eruptions from deodorants, facial and neck eczemas from hair dyes, face lotions, plants, and so on, and hand eruptions from materials used in the home. Many patients assume their eruptions are due to their occupations, but home factors as well as occupational ones must be considered.

This next case shows that all dermatitides of the feet are not fungal in nature. This eruption was due to sensitization to a water-soluble chemical used in the lining of a safety shoe to prevent molds from growing. In this case, since the shoe was supplied by the employer, this was a compensable dermatitis.

Seborrheic dermatitis can mimic occupational dermatoses. However, in these cases it can be seen that the eyelids are clear of any process. This happens in this disease, but it would be unusual to have a contact allergy of the face which would spare the eyelids. In fact, the first evidence of facial contact dermatitis usually begins on the eyelids because of the thin structure of the skin there.

Hand eruptions can be confusing. It is important to be able to differentiate among an allergic reaction, psoriasis, and fungous infection. Very often the latter two can mimic occupational disease. Cultures and biopsies are helpful. Rarely does one find involvement of the palms in allergic contact dermatitis, because of the thickness of the skin. Psoriasis is usually well marginated and can be seen on the back of the hand as well as on the palms. Very often stippling of the nails is corroborative. Contact dermatitis ordinarily does not show definite margins but is more irregular, with satellite areas of erythema and vesiculation. Elbow, scalp, knee, and perianal involvement are also seen with psoriasis. Fungous infection of the feet may help in the diagnosis of a hand eruption. Dermatophytids of the hands are secondary to fungous infection of the feet. Yet the presence of fungous disease of the feet does not necessarily mean that a hand eruption is due to it. One can have contact allergy of the hands plus tinea of the feet. A trichophytin test is positive in practically all patients with ids on their hands. Lichen planus of the hand, as illustrated in the next case, may also be confused with contact dermatitis.

Neurodermatitis as here exemplified is seen as a well-marginated eruption, with thickening of the skin and accentuation of skin markings. In allergic contact dermatitis ordinarily one does not get such sharp demarcation.

The following cases demonstrate a vesicular eruption of the hands that looks as though it could be an allergic contact process. However, the presence of excess sweating of hands and feet as well as a history of recurrences in warm weather would eliminate contact allergy and help prove this to be a dyshidrotic eczema.

Atopic eczemas also can be confused as occupational in origin. The presence of personal and familial history of allergy, as well as evidence of lesions elsewhere, helps eliminate this disease as being occupational.

The next case is of an eruption with widespread erythema and scaling of the face which could be confused with a contact allergy, but it is a rare eruption, called rosacea-like tuberculid.

Each of these cases illustrates the point that many skin diseases can mimic contact allergy. The ability to make this basic diagnostic differentiation is important.

The history is the most important factor in the diagnosis of occupational allergy of the skin. These are the most pertinent questions to ask the patient: Did the eruption begin the first or second day after starting the new job? If so, then possibly we are dealing either with a primary irritant or sensitization from a previous exposure. Did the dermatitis occur about ten days or later after exposure? If it did, the patient may have become sensitized on the job.

Do other workers have similar eruptions? If they do, a sensitizer is more likely to be implicated. Does the dermatitis improve on vacation or over the week-end? Is there a history of any other skin eruptions in the past? Where did the eruption begin? Rarely does a sensitizing dermatitis begin on the palms. If this is found to be so, one should look for other causes. The eruption is usually most severe at the point of greatest contact, that is, on the dorsum of the hands, exposed surfaces, and also where the skin is thin, such as the neck, eyelids, antecubital spaces, and genitalia. It should be borne in mind that although a right-handed person ordinarily would have the greatest involvement on the back of his right hand, close investigation may show that his job requires more contact of the offending substance with his left hand.

A detailed description of the job must be secured. The patient should be queried as to what materials are used and their chemical formulas, whether or not gloves are worn, and whether or not he is supplied with protective clothing and protective creams. The use of the latter indicates an industry in which there are factors inducing industrial dermatitis. Various local applications the patient uses should be discussed. The individual's hobbies should be noted.

Following the above analyses, patch-testing is to be considered after the eruption has become quiescent or has disappeared. Not only are the materials used in his employment brought in, but also hair tonics, shaving lotions, and all substances used topically by the patient. Utmost care in using primary irritants or too strong concentrations of materials are necessary in order to avoid false positive tests. Textbooks of dermatology and allergy give the proper dilutions.

The usual length of time to keep a patch test on the skin is forty-eight hours. If the patient complains of discomfort under a test, he must be instructed to remove the patch at once. False negative tests may be due to poorly applied patches (for example, a curved solid material, such as a piece of plastic, may not touch the skin properly), to an inadequate length of application, or because there is only one observation of the patch test site. Repeated examinations may be required to discover a positive delayed reaction.

The patch test may be negative, yet the patient may react when he works with the suspected material. This so-called usage test is more important sometimes than a positive patch test. Factors such as humidity, sweating, and friction may incite a reaction while at work, whereas a patch test may not duplicate such factors.

Analysis of the materials used in industrial processes is very often the key to successful diagnosis. Although cement is a primary irritant, it is also an important sensitizer because of its chromium content. In the resin industries, one should determine whether plastics contain phenol, formaldehyde, catalysts, plasticizers, and/or stabilizers. Is there complete polymerization and condensation of the resins in the final products? Monomers not completely polymerized can cause sensitivity. These are but a few examples that indicate the scope of knowledge necessary in determining causal relationships.

Cross-sensitizations are becoming increasingly important. A person working in the resin industry, using cashew nut oil, may erupt on the first day of his employment because this oil has a common denominator with the exciting chemicals in poison ivy. If he is sensitive to the latter, he could then promptly develop dermatitis to cashew nut oil. This phenomenon is well documented in those cases of cross-sensitivity to quinone groupings, as seen in users of paraphenylendiamine dyes, "caine," drugs, antihistamines, azo dyes, para-amino benzoic acid, and the sulfonamides. Therefore a reaction in the past to any one of these substances may cause sensitivity to a completely new substance never before handled but belonging to the same chemical group.

One of the greatest causes of misdiagnosis in hand eruptions is the factor of fungous infections and dermatophytids. Not only must the feet be examined clinically and cultures and scrapings done, but trichophytin tests must be made to eliminate the possibility of a hand eruption being an id or fungous infection rather than a compensable dermatitis. A negative trichophytin test eliminates the diagnosis of ids. A positive test in a hand eruption is not diagnostic but indicates either past sensitivity or recently induced sensitivity to fungi.

The law courts recognize occupational aggravation of existing nonoccupational dermatitis as compensable. This problem of aggravation of some previous skin condition, such as psoriasis, is one we constantly face. Such aggravation may be due to primary irritation or superimposed sensitivity. Unfortunately overtreatment of dermatitis often confuses the diagnosis. Patch-testing will usually show the exciting factor.

In the management of occupational dermatitis correlation of history and careful testing and observation will generally result in the proper final diagnosis.

Dr. Claman: Thank you, Dr. Glick. We're going to open the meeting to questions from everyone. I thought before we started perhaps Dr. Perlman would like to ask Dr. Glick a question or vice versa.

Question-and-Answer Period

Dr. Perlman: Psychiatrists often warn us not to use hypnosis because you can make the patient very sick, and then they do it and make the patient sick. Allergists tell the general doctor not to do a skin test because if he doesn't know what he's doing, he'll make the patient very sick, and then he makes the patient very sick. The dermatologist tells us we don't know how to do our patch tests, and that we've got to make a differential diagnosis.

How often would you say that the dermatologist, by looking at the skin, can tell the difference between psoriasis, contact dermatitis, seborrheic dermatitis, or dermatophytosis? How often are you confronted with that problem, just looking at a skin?

Dr. Glick: It can be difficult. I think the most important thing very often is to look. Look at the elbows, another look at the rectal folds, and the scalp, and look for pits in the fingernails. That might lead you to a diagnosis of psoriasis.

I've seen chiefs of hospitals do patch-testing that I was ashamed of for their sake. I've seen some patch-testing done by allergists that wouldn't be the kind that I would recommend.

There are all kinds of individuals in the profession and all kinds of training. Those able to do it well or with the experience are the ones who should do it.

Dr. Claman: Now we are ready for questions from the floor.

Member: Dr. Glick, have you seen cases of urticaria and angioneurotic fever caused by contact with plastics, and if so, is there a diagnostic test?

Dr. Glick: I have not seen a case of urticaria or angioneurotic edema due to plastics.

Dr. Abraham Harold Fineman: We have been told tonight that it is very difficult to make a proper and complete diagnosis of respiratory allergy due to various occupational contacts. Now, I think that is true with men in the compensation department of the Compensation Bureau, or where they are presented cases in which they have to come before a board or a legal body.

We allergists who are not doing occupational, compensation, or factory work do come across here and there a case of a true allergy due to a contact or irritant in a factory. I want to cite a case of chromate paint causing asthma.

Dr. Perlman said he doesn't remember seeing a patient developing asthma from aerosol paint. Dr. Glick mentioned that it certainly could cause a dermatitis.

There's one man who developed asthma while working in an airplane factory in Long Island. He was employing a paint sprayed on the airplane. It was a chromate paint. Within six months he developed terrific asthma and also a dermatitis.

He was tested in the usual way with scratch and intradermal tests, and he was negative to everything except the sample of paint that he brought from the factory. It was surprising to me—this is the first case I ever saw of a marked wheal in the scratch test with the chromate paint. I never expected it.

Now, of course, one can analyze further what's in the chromate paint, but I tell you I saw a marked 4 + reaction repeatedly to this chromate paint. He stayed away from the factory for several years and recovered. Then two or three years later he went back to the factory and performed similar work and got his asthma back again.

I think the causative factor was more or less proved. The chromate paint was definitely a factor in the causation of his asthma.

I'm not going into the legal side of it or the compensation side of it. This is the first case that I have ever seen of a positive wheal reaction to chromate paint.

There's another case of a man with fur asthma. This man handled only racoon fur. We tested him with all kinds of furs to which he was negative except for a positive reaction with scratch and intradermal tests to racoon extract. When he stayed out, he was fine. When he went back to the factory, he got asthma again. He also had ragweed fever.

The third case was a man who makes paint brushes. He said he handled ermine and sable brushes. We tested him with many furs and he was negative to all of them. He was negative to many other things. Complete testing was negative. The sable brush itself nevertheless brought on a positive reaction. This man had asthma. When he stayed away from his business he was perfectly clear of asthma.

To repeat then, I think as allergists who treat hay fever and asthma and urticaria, who don't handle much of the compensation work or the occupational type of allergies, whether it's respiratory or dermatitic, we see an occasional case that is more or less clear cut. We don't get those difficult and obstinate cases where you have to find out whether it's due to the fixing material or the formaldehyde. In the general run, we have an easier task, I think, in these occupational allergies.

DR. PERLMAN: I was just going to say I'm sorry if I gave the impression that there was no such thing as occupational asthma. Actually in going over about 30 or 40 of the most recent patients, I think well over 40 per cent of them were definitely occupationally connected. There was no doubt in my mind.

But to us those aren't the challenging cases. The bulk of my practice is not occupational allergy either. They're interesting because they're so different. They certainly exist. The reason I spent so much time on the others is because they're the problem cases.

I think about half of the cases that have come to our attention are certainly due to their occupation. There wasn't any question about those.

I don't know what urticariogenic substances there are in chromated paint. I also know that it's possible for some people even to get an urticarial reaction to a patch test from phenobarbital. I know this is very rare. We're confronted with new things all the time. We don't have to start testing the normal population with ragweed pollen because all of us, as allergists, know what to expect in the normal population. But, with each one of these individual patients, our controls are difficult. I don't mean that the straightforward cases are difficult. They're the simplest.

MEMBER: Dr. Glick, how are we to test for the possibility of a mango dermatitis? That's a possibility that arose in our clinic one day. We took a piece of the mango skin and got a marked reaction about five days after we took the patch off.

DR. GLICK: I think you did the right thing. In the countries where mangoes grow, they take the mango skin and test the handlers with it. I think there are several related foods in the mango family though. If you're allergic to the mangoes, you also may be sensitive, show a positive sensitivity to other foods in that same family. You did the right thing in testing although I would test not only the surface of the mango but also the meat.

MEMBER: I recall a case of asthma in a baker and, of course, we tested and we got positive skin test with various flours that he worked with. Then we thought we would like to reproduce the effects so we put a little bit of the flour on the end of a toothpick, and we told him to sniff. He seemed to have an attack of asthma and we gave him some adrenalin, and the effect subsided.

Of course, that was a true case of occupational allergy. Two years ago a younger man, who didn't have very much experience, was talking to me about this case. I told him what I did. He tried to reproduce the same thing but instead of putting a little bit of the flour on the toothpick, he put some on gauze and applied it to the man's nose and kept it there. The patient had a constitutional reaction and was unconscious.

The method of testing in these cases, of course, is important and with experience you learn how to do these things.

Dr. Perlman: It has been pointed out in the literature that occupational dusts, if they are used as extracts, will give about the same incidence of positive reactions as house dusts will and are often very helpful. I'm talking about general factory dust.

But when you're involved with plastics which can give off by slow hydrolysis small amounts of formaldehyde, or with the plasticizers in them, and with chemicals and all kinds of substances, which presumably can cause asthma, I think the only way you can extract them is the usual way that we're familiar with. If you extract them and do a skin test, they don't make any sense at all.

We're confronted with this additional problem in each industry. We all know that you don't try to do a skin test by intracutaneous injection with paraphenylendiamine, but what none of us knows is how to approach many of these problems. We know they cause trouble. Metals can cause trouble but they're rarely used for intracutaneous testing. They may cause trouble by particle inhalation.

We just have no precedent to go by to confirm our suspicions. The only one is the usage test, and that, as has been pointed out, can be very dangerous.

Dr. Murray Dworetzky: Dr. Glick, I think that most of us as allergists find very little effect of steroids on intradermal skin testing. I wonder if patch tests are affected at all by steroids?

Dr. Glick: Well, we all know that the steroids have anti-inflammatory action. I would say very often the reading of patch tests is a very difficult thing. I have my problem with them many times in reading them, trying to make up my mind, is there or is there not a reaction.

Let me say that sometimes our slight reactions would be influenced by steroids. Therefore, one should not do patch-testing at the time the steroids are taken because you may get a false negative reaction. A patch test is a reproduction of the original eczematous process, and you all know the effect of steroids on the eczematous processes.

It would be much better, therefore, to stop all steroids at the time of patch-testing.

Member: Dr. Glick, you mentioned chromates. Of course, chromates are used in tanning shoes, and many patients who are subject to allergy from chromates have to wear vegetable-tanned shoes. Sensitizing due to modern shoes is probably never due to dyes. They've learned how to incorporate the dyes so well in the leather that we have no dye dermatitis in shoes. What is much more important is rubber sensitivity in the shoes, especially the cheap shoes that have a rubber box-toe.

The lining of the shoe is also cemented with a rubber cement. Therefore, the first and most important cause of shoe dermatitis is rubber; second is chromate sensitivity. Dye is very low. In the modern shoe, it's an azo dye. Azo dyes can cross-sensitize with the paraphenylene dyes. They both have the phenyl structure that you mentioned.

Dr. Glick: I agree that the linings of the shoes are the most frequent sensitizers, not only the rubber that's used in the adhesive backing but also the antifungicides that are used. You can very often determine that by taking acetone-soluble patch tests and water-soluble patch tests and determine which of these is the causative factor.

Member: I would like to raise another aspect of this discussion. When we are confronted with a case of bronchial asthma, and Dr. Perlman brought this out very well, it may take us several months to determine clearly whether this is an occupational disease. That is, if you're going to do it properly and not just take the patient's word for it.

When you clearly determine to your satisfaction that it is an occupational allergy, you will then submit your report and not when the patient was first seen, when as far as you were concerned it was not an occupational disease.

Several months may have gone by without any forms being submitted. If you do call the insurance company during your investigation, they will immediately tell you they are not giving you permission. They're not authorizing you to go ahead with your investigation in a bronchial asthma case which has not been proved to be occupational. When you have finally proved it to your satisfaction, and this is presented to the referee—and granted that he will accept the diagnosis of occupational allergy—your insurance company still is in a position to controvert your bill because you have not submitted forms properly, because you have not submitted the form within forty-eight hours from the time you have first seen your patient.

I know of several such instances, and I've heard of many others. I think this is something that possibly the group as a body might be able to clarify with the Workmen's Compensation Board as to what should be done in such cases which have to be studied first before the diagnosis can be made, and where you can't say definitely at first that it is an occupational allergy.

Dr. Perlman: I'd like to say that that is a very valuable suggestion. I think that the group can do something on it if no more than to get some organized information.

Dr. Dworetzky: I must say that my experience has been quite different concerning contacting the insurance carrier at the outset.

I have called the insurance carrier and invariably I've gotten the "go ahead" signal to study the patient to my satisfaction. Basically these companies are anxious to get a decision one way or the other. Ultimately the people who pay the carriers their premiums are the ones who pay the cost of this.

In the majority of cases, when one puts the situation to the insurance carrier, unless this patient has been to several allergists and has been ruled on, I think that they usually tell you to go ahead.

There's one problem that is even more serious: when one goes eight months, or even eight weeks, and then comes up with a decision that the case is not compensable, the insurance carriers therefore quite rightly say it's not compensable and you are entitled to no fee for your services.

Dr. Glick: I have had many cases that were sent to me as compensable dermatoses and after a few visits and testing decided that they weren't; I sent my bill in to the insurer, saying that it wasn't, and I've never failed to be paid by any of the Workmen's Compensation insurers.

I think you must protect the patients because it may be something that might influence their entire lives. It will be best to report it any way. The forms are very simple today.

Member: May I say that my experience has been a little happier with the compensation case in reference to asthma. In one instance, after several months of investigation I finally decided that I did have a compensable case. I immediately wrote a letter to the insurance company explaining why my first report was late. They acknowledged the lateness of my report and were perfectly willing that I proceed with the case as compensable.

I may say that I think the doctor is legally right in saying to his patient that the patient is obligated to pay the cost. If and when the insurance company does declare it compensable then the money received by the doctor will be returned to the patient.

Dr. Claman: We have here a point that needs some investigation. We have an economics committee and the chairman is Dr. Nachtigall. This question might be a pertinent one to refer to the economics committee to study and report.

Dr. Eugene Somkin: In the chronic asthma cases, if there are a lot of psychogenic factors, it's like cases of chronic back pain that drag on until there's a settlement. If one decides for the patient, he may become a chronic invalid. The asthmatic patient has a great tendency to do this anyway.

Member: Isn't it true that if you have a patient who develops a compensable asthma although he leaves this job the asthma continues for quite a while? Maybe other factors have come in now, infection, for example, and he even develops emphysema and bronchiectasis. Under the law, what was initiated from an occupation and anything that followed, or resulted in aggravating, is still compensable. Therefore, if he's sick for twenty or thirty years more, he's still compensable.

Dr. Perlman: In defense, one has to be a Solomon and it's not always easy. I'm sure there are many cases where it's perfectly reasonable to believe that the long exposure to an allergy resulted over a long period of time in many of these things. But it's a very difficult job to be fair on all scores. That's why I think it is wise for the referee to favor the employe.

Dr. Claman: This is a fascinating subject. I think we're very much indebted to our two speakers. Doctor, would you make it the last question, please.

Dr. Harold Gelfand: Yes. I would just like to suggest that we appoint a committee to study this entire subject to get some clear ideas on it. How to determine eligibility for compensation in the case of allergic patients where you deem it a constitutional allergic type; where irritant substances play a part; and so forth.

Dr. Claman: I'll call for volunteers for that committee. If Dr. Siegel and Dr. Gelfand will be kind enough to act together through the economics committee and communicate with Dr. Nachtigall, I think we may come up with something.

I want to thank our speakers for a very enjoyable and interesting evening and to thank our discussors for all that they contributed.

Does Epilepsy Run in the Family?

Contrary to common belief, epilepsy doesn't always "run in the family," according to *Patterns of Disease*, prepared by Parke, Davis and Company for the medical profession.

If one parent is epileptic, the chances of having an epileptic child are about one in 40 as against one in 200 for normal parents. If both parents are normal but genetic carriers, they are more likely to have an epileptic child than in the case where one parent is epileptic and the other is normal.

The influence of heredity in epilepsy is approximately the same as in diabetes, half as much as in obesity, and one eighth as much as in migraine. It is greater in female patients and in those people who had seizures early in life. It is believed that only a predisposition to the disorder may be inherited as a recessive trait.

Epilepsy occurs in about 4 per cent of the children of epileptics and to about the same extent in the siblings and parents of epileptic children.

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Ingestion of Isopropyl Alcohol, Coal Tar, and Other Substances

THE following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Isopropyl Alcohol	26 years	Female

It is reported that this patient ingested a pint of isopropyl alcohol during a half day. She had abdominal pains and nausea and was taken to the hospital several hours after ingestion where her stomach was lavaged with sodium bicarbonate. The patient was kept in the hospital for two days for observation and was then sent home as recovered.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Isopropyl Alcohol	18 months	Male

The patient presumably ingested 8 ounces of isopropyl alcohol, which he found in the hall of the apartment building where this family lives. The child became nauseated and vomited. He was taken to the hospital emergency room where his stomach was lavaged with 1:10,000 potassium permanganate within ten minutes after ingestion. On admission to the hospital the child was still nauseated, vomited, and appeared drowsy. In addition to the gastric lavage he was also given caffeine and sodium benzoate. He was observed for several hours and then sent home.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Rubbing Alcohol	19 months	Male

This infant ingested an unknown quantity of rubbing alcohol and was immediately rushed to a hospital emergency room where his stomach was lavaged twenty minutes after ingestion.

After the gastric lavage with saline and water the patient made an uneventful recovery.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Isopropyl Alcohol	3 years	Male

This case was reported from Portchester, New York. The patient ingested several ounces of isopropyl alcohol. Stupor was the only presenting symptom. The patient was taken to the hospital where his stomach was lavaged with saline and milk. After gastric lavage and supportive therapy the patient made a complete recovery.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Isopropyl Alcohol	45 years	Female

This patient ingested one pint of isopropyl alcohol at 2:00 P.M. and vomited a half-hour after ingestion, became comatose, and was taken to the hospital where her stomach was lavaged with water within an hour after ingestion. She was also given sodium bicarbonate, oxygen, and caffeine. After four days of hospitalization she made a complete recovery.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Isopropyl Alcohol	28 years	Male

This patient ingested from 2 to 8 glasses of isopropyl alcohol. He became comatose and was taken to Mount Sinai Hospital where his stomach was lavaged with water.

On admission to the hospital his blood pressure was 102/70 and pulse 80. Oxygen was administered as well as other supportive therapy. After several days of hospitalization the patient made a complete recovery.

This patient is a known alcoholic who went on a three-day drinking spree. One of the items ingested was isopropyl alcohol. It was surprising to the hospital authorities how quickly after lavage the patient came out of a coma.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Isopropyl Alcohol	2 years	Female

An empty baby food jar was filled with alcohol and used as a sterilizing agent for rectal thermometers. The jar containing the thermometers was placed on the bureau in the bedroom. The child obtained the jar, took out the thermometers, and drank the alcohol. The presenting symptoms were burning in the mouth and throat. The child was taken immediately to a hospital where her stomach was lavaged. After a period of observation the child was sent home from the emergency room.

From other reports involving the misuse of wide-mouth baby food jars, it would appear helpful if the admonition "Discard jar after using" would appear on the label in order to discourage its use for other purposes.

This is only a fractional list of the number of isopropyl alcohol intoxications reported to our center. In general, the toxicity time of isopropyl alcohol may be considered to be comparable to one and one-half times the toxicity of ethyl alcohol and should be treated as such.

Incidentally, two other sources of hazards from vaporizing substances existing in hospitals or office practice are carbon tetrachloride and benzol (benzene) which are used for the removal of bandages. Neither of these materials has a place in either the hospital or doctor's office and should be replaced by the less hazardous methylchloroform or methylene chloride and trichlorethylene or perchlorethylene respectively.

Senz and Goldfarb[1] report on a two-and-one-half-year-old female child for whom alcohol sponging was prescribed because of a high temperature due to an ear infection. A towel was saturated with 12 ounces of 70 per cent isopropyl alcohol and wrapped about the patient. A window in the bathroom was partly open. Four hours after this application the patient could not be aroused and was limp and totally unresponsive when admitted to the hospital. The patient became apneic. An endotracheal tube had to be inserted because of poor pulmonary ventilation, and artificial respiration had to be given. By the following morning, however, the patient became fully conscious, but she remained irritable and inactive for several days. The blood contained 130 mg. of isopropyl alcohol per 100 cc.

The authors rightly warn that physicians when ordering alcohol sponging for the reduction of body temperature should be aware that a serious poisoning may occur as a result of inhalation of alcohol fumes. They also suggest that a history of a comatose child should also include a specific inquiry with regard to alcohol sponging preceding the coma.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Easter Egg Coloring	4 years	Male

A call was received from a physician in Pennsylvania concerning the ingestion of Easter egg coloring. Although the label disclosed that the dye was certified, the physician was concerned because the words "coal tar" were also used. The certified colors are coal tar products. Our communications with physicians reveals that there is a widespread misconception about coal tar and aniline dyes. The term "coal tar" should not arouse any apprehension since many valuable drugs used in therapy are coal tar derivatives. The same applies to aniline derivatives.

The ingestion of an aniline derivative has no particular significance unless the chemical has been metabolized to an intermediate product, such as paranitroaniline or aniline, which may cause a blood dyscrasia. Some coal tar hair dyes are synthetic derivatives while others of the oxidizable type contain free amine compounds. The paraphenylene hair dyes are included in this class. Although some serious injuries from the latter have been reported, especially with application around the eyes, we have had a number of ingestions of these products without any reported sequela.

The appearance of a deeply colored oral mucosa due to an indelible pencil may arouse very alarming superficial symptoms without any underlying damage. Instances involving sucking on colored crepe paper have been reported being treated with lavage, which is hardly indicated or justified. A simple mild cathartic or perhaps the use of activated charcoal, which has highly absorptive properties for dyestuffs, would appear to be all that is indicated. Ingestion of children's poster paints and coloring set paints are included in this category. The following incident is an example of undue alarm and mistreatment involving such substances.

A custodian of a public school in Brooklyn apparently discarded some methylene blue dye in a barrel of rubbish. It was powdered ink in 8-ounce can containers. Some children in the neighborhood found the containers in the barrels and spread the dye throughout the neighborhood. They threw the powder down from the roofs of the buildings in the vicinity, and some of it entered the households in the community. A few of the children possibly ingested some of the dye. Before long, panic and hysteria reigned in the area, and most of the children and adults involved appeared at a local hospital. The hospital immediately called the Poison Control Center and the technical director ascertained the nature of the dye and told the superintendent that it is nontoxic, that no harm would come to the children, that they could be discharged home.

For some unknown reason, however, the superintendent of the hospital was very cautious and admitted all 40 cases to the hospital for an overnight stay although none of them presented any symptoms. A public health nurse was sent to the hospital and school. None of the children suffered from ill effects and they were all attending school the following day.

A review of the reported incidents to this center does not indicate one instance where an injury was involved from ingestion of dyes. The literature does, however, contain reference to blood dyscrasias occurring after the ingestion of some colored crayons, presumably due to paranitroaniline, marking inks on infants diapers, etc.

It may be pertinent to mention that some paints on toys may have a lead constituent as well as a coal tar constituent. A careful review of all lead poisoning cases reported to this Center indicates that toys are not a source of lead poisoning in New York City but that lead poisoning mainly results from ingestion of flakes of painted wall plaster, paint peelings from ceilings, and peelings from window sills.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Thallium Ant Trap	2 years	Male

The ant trap was placed on the kitchen floor. The child and his father were both in the kitchen at the time of the accident. The child picked up the ant trap and ingested some of it. The child was rushed to the hospital where his stomach was lavaged in the emergency room. He remained in the hospital for two days and was finally discharged as improved.

It may be of interest to indicate that the mother is a teacher and the father is a physician.

The type of thallium dispenser in this case is a metal container with scorings to provide several openings in the metal. In view of the child's limited access to the contents, the actual amount ingested in these instances appears to be very small, a conclusion supported by the lack of clinical findings in these accidents. Even though thallium is a dangerous poison, the physician should inquire about the type of container and draw his conclusions as to the significance of the incident and gauge his treatment in accordance with the findings. Overtreatment should be avoided. Incidentally, there is no known specific antidote for thallium poisoning, creating a serious gap in treatment.

Other types of thallium containing baits, such as coated peanuts, present greater hazards.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Rat Poison	13 months	Male

The mother purchased some rat poison to rid the kitchen of mice. She put the rat poison on the kitchen floor. The pellets resembled pieces of dried meat. They were put in a box which had a slot in it to permit mice to reach the pellets.

The infant awoke in the morning and while still half asleep wandered into the kitchen, obtained the pellets from the box, and apparently ingested some of them. When the mother entered the kitchen, she found the patient sleepy and apparently stuporous. She immediately called the druggist and the private physician and they advised hospitalization. The child was taken to the hospital where his stomach was lavaged. The patient was given egg yolk prior to admission to the emergency room. After several hours of observation the child was sent home as improved.

It is repeated that in these days the ingestion of rat poison by a child may be a matter of not too much concern. The most widely used modern rodenticides are based on anticoagulant agents, such as Warfarin and Pival. One ingestion by a child of a commercial anticoagulant bait should not present an emergency. Vitamin K is a specific antidote, and the prothrombin depletion from one ingestion should not be considered significant.

In New York City there have been many of these ingestions without any serious disturbance to the prothrombin reported. Our data corroborates the findings of the Wisconsin Alumni Research Foundation which pioneered in the development of anticoagulant rodenticides.

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Antitussive Tablets	18 months	Female

A physician called requesting information about the ingestion of one or two 10-mg. cough tablets by a one-and-one-half-year-old female. The child obtained the tablets from a medicine chest in the bathroom. The child displayed symptoms of irritability, flushing of the face, dilation of pupils, and dryness of the mouth, lasting for four hours. There was also a tachycardia and a sluggish reaction to light. Milk and tea were administered by nurses, and the child was closely observed.

In discussing this case with the physician, who turned out to be the father of the victim, it was decided that observation would be the best procedure. Subsequently, it was learned that there were no sequela of note.

This is just another in a long series of incidents occurring in doctors' homes and offices.

INCIDENT 12

Toxic Agent	*Age*	*Sex*
Ammonia	16 months	Male

The patient obtained the bottle of ammonia and ingested about a cup of its contents. He developed dyspnea and cyanosis and was taken to the hospital where his stomach was lavaged with water and orange juice.

Laboratory findings were as follows: Blood analysis revealed the hemoglobin to be 12.5 Gm. and white cell count 28,200. Urinalysis findings were negative. In addition to gastric lavage the patient was put in a steam room and given fluids intravenously and Chloromycetin. A tracheotomy had to be done because of edema of the glottis. Eventually the child made a complete recovery.

INCIDENT 13

Toxic Agent	*Age*	*Sex*
Tranquilizer, Antiemetic Capsules	3 years	Female

The patient opened her grandmother's purse which contained the medication. She sucked on the pill but did not swallow it. It was still in the child's mouth when the grandmother discovered what had happened. The grandmother was not certain whether the child similarly ingested other pills previously.

The patient presented symptoms of dyspnea and stupor on admission to the hospital. Her stomach was lavaged with saline in the emergency room about one hour after ingestion. In addition, ipecac was administered. After observation of several hours, the patient was sent home as recovered. Other similar poisonings reported to the Center have alarmed physicians considerably because of severe manifesting symptoms.

Jabbour, *et al.*[2] report on severe neurologic manifestations in 4 children receiving prochlorperazine. All children recovered rather rapidly without any specific treatment being required and no aftereffects were noted after a period of one month.

The severe neurologic symptoms encountered in these 4 children were recurrent episodes of marked drowsiness and lethargy, oculogyric crises, retraction of the neck, in some with torticollis, trismus, and opisthotonus, at times flexor rigidity, and hypereflexia. The most severe reactions were manifested in a nineteen-month-old female child who presumably received the usual recommended dosage. The pseudotetanic reactions made the authors suspect tetanus, meningitis, or encephalitis in 2 of the 4 cases reported.

We also have reported several incidents of prochlorperazine intoxication in which severe neurologic manifestations were encountered. The children appeared stuporous and developed convulsions, but all of them made complete recoveries after several days of hospitalization and treatment with fluids and caffeine sodium benzoate.

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(*Number twenty-seven in a series of Briefs on Accidental Chemical Poisonings*)

Hereditary Factor Implicated in Multiple Sclerosis

A hereditary factor was termed "a distinct possibility" as a cause of multiple sclerosis after a new study of twins suffering from the disease. Heredity has long been considered as possibly playing a role in multiple sclerosis.

A preliminary report of the study—one of the first conducted among twins and their relatives—was made by two Chicago scientists in the December *Archives of Neurology and Psychiatry*, published by the American Medical Association. The study involved 63 sets of twins, of whom 54 sets were completely studied and nine are still being studied. They were selected through the National Multiple Sclerosis Society who advertised for twins in whom at least one had multiple sclerosis.

The study showed that among identical twins there were two sets in whom both members definitely had the disease, five sets in whom it appeared that both had the disease, and 22 sets in whom only one twin had the disease. Among the nonidentical twins, there was one set in whom both twins had the disease, three in whom it appeared that both had the disease, and 21 in whom only one twin had it.

Using "the most rigid diagnostic standards," both members of only three sets definitely had multiple sclerosis; however, with less rigid standards, 11 sets could be considered as having "concordant" disease, the authors said. They noted that it is sometimes difficult to tell definitely if a nervous disorder is multiple sclerosis, and that there are cases in which the disease process "burns out" before it presents the standard symptoms.

It is possible that more concordant cases may appear in future years, since there is great variability in the age of onset of disease. In addition, the partial symptoms presented by many of the twins "will probably flower into the full clinical picture in many of them, while others now quite free may come to show the full-blown disease," the authors said.

It seems most unlikely that multiple sclerosis is of purely genetic origin. "There must be more than one cause if genetic factors play any role at all. Thus it is possible that a genetic factor may require the addition of an environmental agent before the disease can develop. Concordance in identical twins may thus fail to develop because one of the pair has not yet encountered the unknown environmental factor necessary to produce the disease."

Studies of more than 1,000 relatives of these twins showed a prevalence of the disease ranging from 20 to 33 times that found in the general population. This finding—similar to those of other studies—"strongly suggests a genetic factor as one agent in the causation of multiple sclerosis," and makes the "equivocal genetic evidence" disclosed in the study of twins less equivocal and more favorable to the genetic hypothesis.

"Follow-up studies of these twins and their relatives, planned for five and ten years from now, will either confirm our predictions or modify our conclusions to more final ones."

The authors are Roland P. Mackay, M.D., and Ntinos C. Myrianthopoulos, Ph.D., both of the University of Illinois College of Medicine.

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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Cardiovascular Collapse in a Minor Procedure

CERTAIN surgical interventions may be classified as "minor" procedures. But it need not follow that administration of anesthesia for such procedures be classified as "minor" also. One can say that a minor surgical procedure will require general anesthesia of short duration. But similar serious hazards may occur in an anesthesia of short duration as in a more prolonged one, and the anesthesiologist may be confronted with decisions to be made during management of any anesthetic procedure. The following case report illustrates such a series of difficulties in a minor surgical procedure.

Case Report

A nine-year-old boy had a malignant tumor of the conjunctiva of his right eye which was found to have invaded the lower orbit and maxilla and required resection of the involved areas. This was carried out uneventfully. Nine days later the patient was brought back for removal of the packing which had been inserted previously. This was delegated to be done by one of the surgeon's assistants and the anesthetist selected was one uninformed of what the previous surgical intervention had been. The procedure was to take only a minute or two.

The young boy was sedated one and a half hours earlier by the subcutaneous injection of 100 mg. of demerol, 100 mg. of seconal, and 0.4 mg. of scopolamine. Despite this heavy medication, the patient was very frightened and suspicious. Induction of anesthesia was done with open hose cyclopropane. When the patient became drowsy enough to accept a mask on his face, a circle absorption system was substituted for the open hose and cyclopropane was continued. The mask was small in order to allow the surgeon access to the maxillo-orbital region and covered nose and lips well enough to assist ventilation despite a leak in the system. With vital signs stable and a clear airway being maintained, the surgeon was advised to proceed with

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Discussed at a conference held at Bellevue Hospital, New York City, January 5, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

removal of the packing. The latter was grasped and removed en masse. Since the opening of the wound was smaller in diameter than the packing, the fragile skin of the nasomaxillary corner of the wound split for a distance of 3 cm., reaching the alar fold of the nares. To permit suture of the wound the patient was more deeply anesthetized and the mask was removed from the area. The surgeon then proceeded to clean the edges of the laceration, producing an active, bright red, pulsatile flow of blood. The blood accumulated faster than it could be suctioned off and finally trickled down into the wide open nasopharynx, causing complete laryngeal spasm and respiratory arrest. Two sutures had to be placed immediately to stop further bleeding. A surgical assistant was asked to monitor the patient's heart beat by means of a precordial stethoscope while the anesthesiologist attempted positive pressure resuscitation with 100 per cent oxygen. The laryngeal spasm was not immediately interrupted with positive pressure, and the jaw was too tight to permit laryngoscopy. A small oral airway was inserted to retract the tongue, and positive pressure by way of the face mask was resumed while an assistant was preparing to inject succinylcholine intramuscularly. Before this could be accomplished, laryngeal spasm was finally broken. Artificial respiration succeeded in converting the patient from deep cyanosis to a good pink color. Immediately before the airway was re-established, the heart beat had become inaudible and the patient's pulse could not be felt. The surgeon was poised with a knife, prepared to do a thoracotomy if the heart beat did not improve with ventilation. Fortunately, the heart became audible again within a few seconds after the first breath of oxygen so that thoracotomy was not necessary. The patient started to breathe within two minutes after onset of artificial respiration, and in another two minutes the mask was removed and more careful aspiration was performed. The patient's color remained good. His pulse and blood pressure immediately returned to preoperative levels, and he was reacting and cooperating within ten minutes of the initial laryngeal spasm.

Comment

This case is an example of what our British colleagues refer to as "snowballing," with a sequence of seemingly insignificant events culminating in disaster.

Decision to anesthetize the child for removal of packing in the eye wound perhaps could be justified on the basis of the obviously unfavorable impact on the youngster of his total experience thus far. For example, despite rather heavy preanesthetic medication for a nine-year-old, he still arrived in the anesthesia room very frightened and suspicious. It was most unfortunate that neither the anesthesiologist nor the surgical assistant had been present at the previous operation, when the packing had been inserted, for neither was fully aware of the extent of the procedure. If the same team as previously had been present, the surgeon might have removed the packing more gently and more gradually and the anesthesiologist might have elected to insert an endotracheal tube before starting the surgical procedure instead of relying on a face mask. However reasonable their choices might have been beforehand, based on the inadequate information they possessed, both anesthesiologist and surgeon needed to re-evaluate the situation at the time the packing was removed and the patient's skin had split. Unfortunately, the surgeon proceeded to traumatize the wound in the process of cleansing it, thus producing the next hazard, bleeding extending into the nasopharynx. At this point the anesthesiologist again had to decide whether to intubate the trachea rapidly as a protective measure. Apparently feeling that the surgical situation would shortly be in hand, he did not do so. With the direct communication existing between the bleeding site and nasopharynx, the stage was now set for the next act in what could have been a tragedy, for the final outcome of this sequence of minor missteps could have been fatal for the child. Fortunately, the desperate situation created by the blood-triggered laryngospasm was resolved happily.

(Number sixty-one of a series of Clinical Anesthesia Conferences)

CANCER ALERTS

A series of radio talks for the practitioner
presented over Station WNYC-FM under the sponsorship of the

New York Academy of Medicine
with the cooperation of the
New York City Cancer Committee

Oral and Facial Cancer

HAROLD H. SAGE, M.D., NEW YORK CITY

IN THIS PAPER I would like to emphasize certain features of this common form of cancer that are within the scope of most practitioners. Since the oral cavity and face are accessible to sight and touch, early recognition is feasible, and with proper examination, a precise estimation of the nature and extent of the cancer is possible. Nowhere else in the body is there more useful information concerning the causation, development, and spread of cancer. This includes many known causative factors such as sunlight and smoking, as well as observations of the development of epithelial cancer through the precancerous and benign epithelial states, such as leukoplakia, keratosis, and papilloma. Oral and facial cancer is mostly epidermoid in type. It spreads by direct invasion and through lymphatics, as a rule, and only rarely by the blood stream to distant sites. The invaded tissues and lymphatics are usually confined to the head and neck region, even at the time of death. We can observe, estimate, and treat the most advanced stages of the cancer if we give careful attention to the lymph pathways and the principles of lymph spread of cancer.

Because it is an accessible epidermoid cancer, it can often be cured in its primary site by surgery or radiation. Even the advanced stages can be cured by modern methods, such as surgical dissection in continuity. This means excision of the primary cancer area, for example, the tongue, in continuity with excision of adjacent tissues and lymphatics, in the floor of the mouth region, as well as radical excision of all metastatic lymph nodes in the neck. The entire specimen is excised en bloc. Nowhere else in the body are the principles of such radical treatment of advanced cancer better able to be demonstrated. The end results are good.

Facial cancer includes cancer of the skin, nasal sinuses, and nasopharynx, as well as the parotid and submaxillary glands. Oral cancer, which will be discussed first, includes cancer of the lips, buccal mucosa, gum, palate, tonsil, floor of the mouth, and tongue. The three subdivisions of the tongue—anterior, lateral, and base—each presents separate problems in diagnosis and treatment. The five-year cure rate, so-called, of cancer of these individual sites varies. For lip cancer in all stages it is about

75 per cent. For tongue, floor of the mouth, and cheek cancer it is about 30 per cent; for palate about 35 per cent; and for gum and tonsil about 20 per cent. In the early, or primary, stage of the disease, before metastasis occurs, the cure rate is about twice as high as when the cancer has metastasized to the lymph nodes.

Since over 90 per cent of all these cancers are epidermoid in type and spread similarly by direct extension and lymphatic invasion, the differences in cure rates must be due to other factors. There are biologic differences in virulence due to the specific tissue of origin. Some cancers are more anaplastic and rapidly-growing than others. Those of the base of the tongue and tonsil are frequently more anaplastic than those arising in the anterior parts of the mouth. Also, the blood and lymphatic supply and mobility of the part produce differences in the tendency to local extension as well as in lymphatic invasion. The direction of growth of the various cancers also may be different. Some—the exophytic type, for instance—grow outward and can produce a bulky cancer without invasion or metastasis, such as is occasionally found on the lip. This highly curable cancer may be contrasted with inward-growing, endophytic types, or ulcerative cancers, which invade and spread early. Thus, metastasis may occur even in a 1-cm. cancer.

Second, differences in the cure rates may be due to differences in the signs and symptoms produced. The lack of dramatic events may delay the recognition and diagnosis of the cancer. Thus, cancer of the base of the tongue may grow fairly large without any signs or symptoms at all, and the first sign, in over 40 per cent of cases, may be an enlarged painless metastatic lymph node in the neck. This is also true of nasopharyngeal cancers. By contrast, cancers of the lip and anterior part of the mouth are usually subject to constant irritation and are prone to infection and ulceration producing pain and bleeding. Also, cancers in the anterior regions of the mouth are better adapted to self recognition by sight or by tactile sensation of the patient's tongue as well as by sight and touch of the examining physician or dentist.

The practicing dentist shares a great part of the responsibility for recognition of mouth cancer since about half of the patients consult a dentist first. A high index of suspicion is important toward all chronic ulcerative or nonhealing lesions in the mouth as well as toward all obvious growths. Watchful waiting and symptomatic treatment are poor policies here. Syphilitic ulcers and other chronic infections, such as tuberculosis of the mouth, are rare in comparison with cancer. Biopsy, therefore, should be done without delay. This, however, cannot be done casually. The type and technic of biopsy are important in obtaining maximum information. It is also important to time the definitive treatment of the cancer, following the biopsy closely in order to avoid any potential spread of disease.

Recognition of the primary cancer site in the oral cavity is only part of the total picture of diagnosis. The spread to the lymph nodes of the neck must be recognized. About 40 per cent of all oral cavity cancer has metastasized to the neck nodes at the time of first diagnosis. In certain locations, as in the base of the tongue, and in the later stages of all oral cancer the percentage of metastasis is much higher.

How can metastatic cancer of lymph nodes of the neck be recognized? Of course, the classical advanced stage presenting a large stony-hard, fixed, painless lymph node mass is easily identified as cancer. But this is not always the case, especially in the earlier stages. A meticulous, systematic search may be necessary to find a node which is only a few centimeters in size or even one centimeter and which may lie under the sternomastoid muscle in the deep jugular chain of nodes. All anatomic subdivisions of the neck—submental and submaxillary as well as deep jugular and posterior triangles—must be examined.

The significance of palpable nodes may be difficult to assess. I have found that 100 per cent of normal medical and dental students have palpable lymph nodes in the submaxillary region and almost always in other neck regions. Also, the differentiation of inflammatory disease and metastatic cancer in lymph nodes is sometimes difficult. Classically, acute inflammation produces painful, tender, soft nodes. However, chronic inflammatory nodes occasionally may be painless, nontender, and hard, and cancerous nodes may be soft as well as tender. Necrosis and secondary inflammation are common in such cancerous nodes since these oral cancers are almost all epithelial in origin and subject to constant trauma with secondary infection.

However difficult the final assessment of enlarged lymph nodes, the first stage is to locate them. If such enlarged nodes are in the anatomic region of lymph drainage from the primary site in question, they must be investigated. Nodes which cause suspicion should not be ignored, for treatment confined to the primary cancer alone will result in eventual disaster. However, one should not routinely perform large neck incisions for biopsy of neck nodes in suspected metastatic cancer cases, since such incisions frequently interfere with a later proper cancer dissection. There often are better ways to find out whether the lymph nodes are invaded, such as aspiration biopsy or investigation at operation, including frozen section.

Primary oral cancer frequently can be cured by surgery or radiation, the choice of method depending on various factors, such as accessibility of the area to the treatment method and the attendant problems of local invasion of bone. If the primary cancer alone is treated, the secondary lymph node cancer will cause death of the patient. As stated previously, I believe that the basic treatment of metastatic neck nodes from oral cancer should include neck dissection, and this treatment should be instituted as early as possible. Continuity principles should be followed.

Preventive treatment of oral cancer includes elimination of many causative agents, such as excessive sunlight, which may cause lower lip cancer, smoking, bad mouth and tooth hygeine, infections, and mechanical and chemical irritants, which contribute to the production of oral cancer. All chronic irritations should be eliminated. Syphilis is a factor associated with the production of tongue cancer, possibly because of the treatment with heavy metals which are excreted in the mouth as well as the infection itself. The development of oral cancer on leukoplakia makes recognition, observation, and treatment of such thick, white patches on mucous membrane important. Papillomas of the mouth should be removed since they may possibly undergo malignant change.

Because of the importance of all these conditions, a thorough examination of all parts of the mouth should be done on all adults. A single look while the patient says "ah" is not sufficient. The use of two wooden tongue depressors or a metal tongue blade may facilitate the examination. Good lighting should be available. Palpation always should be included in the examination.

Facial cancer presents many similar problems. Thus, skin cancer may be caused by excessive sunlight in people of fair complexion. Also, certain precancerous states in the skin, such as senile keratoses, can be readily recognized, and should be carefully observed and sometimes excised. Certain benign moles, particularly junctional nevi, which may become malignant with irritation or hormone changes should often be removed.

The epidermoid cancers of the skin of the face behave like epidermoid cancer in the oral cavity with predilection for lymph node spread. However, basal cell cancer of the skin does not show such spread, with very rare exceptions. Basal cell cancer is a localized, slow-growing cancer, easily recognized by its raised, pearly edge. It is highly curable with proper surgery or radiation, although inadequate treatment may result in recurrence with extensive local destruction and even death.

Cancer of the paranasal sinuses presents a special problem in diagnosis because it is not accessible to simple examination and symptoms and signs may be late in appearing. X-ray studies may be necessary to make the diagnosis. Later stages may produce recognizable invasion of the cheek, palate, nose, orbit, or other adjacent structures.

Tumors of the parotid gland present a unique problem. The appearance of a painless lump in the parotid region calls for early removal. If removed in toto, recurrence is rare. The policy of permitting such growths to remain for years—so-called "ripening"—should be condemned. Although their natural history may be one of slow growth with clinically benign features, almost one fourth of these tumors will become clinically malignant if allowed to remain or if they are incompletely removed. Tumors of the submaxillary gland show an even higher tendency to malignant change and spread. These must be handled very carefully, avoiding mistaken diagnoses of inflammation, etc., and consequent incision. Such incision may help spread the disease.

The worst features of cancer are its elusiveness and unpredictability. These frequently defeat our best efforts at cure. The head and neck region, for which there is a precise body of knowledge concerning the causation, development, and spread of cancer, is somewhat exceptional, however. Cancer here can be readily observed and well-defined and frequently can be cured.

25 Central Park West

(*Number twenty in a series of Cancer Alerts*)

Legal Obstacles Present Difficulties for Epileptics

Despite the fact that new drugs have made it possible for the epileptic to either control or greatly reduce his seizures, legal obstacles still make it difficult for epileptics to lead normal lives, according to *Patterns of Disease*, prepared by Parke, Davis & Company for the medical profession. These place restrictions on his marrying and having children, driving a motor vehicle, and obtaining employment.

Following are some restrictions cited in the publication: Fifteen states have statutes affecting the marriage of epileptics; seventeen states have eugenic laws making sterilization mandatory or permissible for epileptics; all states except South Dakota either deny drivers' licenses to epileptics or outline procedures for issuing limited licenses to them; seven states have laws requiring the compulsory reporting of epilepsy; other laws exclude epileptics from immigration, unless seizures are due to brain lesions.

CASE REPORTS

Athrombocytopenic Purpura Caused by Chlorothiazide

HERBERT I. HOROWITZ, M.D., BERNARD SHAPIRO, M.D., AND IRA L. RUBIN, M.D., BRONX, NEW YORK

(*From the Medical Division, Montefiore Hospital*)

CHLOROTHIAZIDE (Diuril), in the brief period since its introduction,[1] has achieved justifiable popularity and wide usage. It is a safe, potent, orally effective nonmercurial diuretic.[2] Reported side-effects include nausea, weakness, lassitude, easy fatigability, postural hypotension, circulatory collapse, sodium, potassium, and chloride depletion, digitalis intoxication, arrhythmias, loss of libido, nitrogen retention, and hepatic coma in severe liver disease.[3-9] These effects for the most part can be ascribed to the drug's action on renal electrolyte excretion. A few instances of skin rash have been noted among patients taking this drug.[3,10] Allergic side-effects have otherwise not been noted. We present here a case of athromobocytopenic purpura apparently due to chlorothiazide therapy.

Case Report

E. S., a fifty-eight-year-old white housewife, was admitted to the hospital for the second time with a rash on her hands and legs of nine days duration. Her first admission, fourteen weeks previously, was for rheumatic heart disease, mitral stenosis and insufficiency, atrial fibrillation, and congestive heart failure. She was given chlorothiazide and placed on digoxin and a low-salt diet. Since discharge she had taken chlorothiazide, one or two days a week, for weights above her baseline level. Nine days prior to the present admission, and three days after her last dose of chlorothiazide, she noted the onset of an erythematous eruption from her ankles to her knees. The rash was warm, pruritic, and spared the shoe areas. Three days later a similar eruption appeared about both wrists and in her neck area. There were associated flushes and feelings of warmth in her extremities. In addition to the previously mentioned medication, chlorothiazide and digoxin, she had been taking multivitamins for many years and had recently taken Bufferin for an upper respiratory infection. She has no known allergies, no easy bruising tendency, no episodes of hemoptysis, melena, or hematemesis. Her family history includes one grandchild with bronchial asthma. She does not smoke.

Physical examination revealed a well-developed, well-nourished white female who was apprehensive but not acutely ill. Blood pressure was 140/75 mm. of Hg. Radial pulse was 82 per minute and grossly irregular. There was a rash over the base of the neck, the dorsum of both wrists, and from just below the knees to both ankles. This rash was diffusely erythematous, with scattered discrete purpuric spots which did not blanch on pressure. The skin of the affected areas felt warm. Examination of the heart revealed a grossly irregular ventricular rate of 82 per minute. The point of maximal impulse was in the sixth intercostal space at the midclavicular line. There was a diffuse systolic apical thrill and a harsh systolic murmur at the left sternal border. The pulmonic second sound was markedly increased. The liver was palpated one cm. below the right costal margin. Physical examination was otherwise unremarkable.

The hematocrit on admission was 34 with 13.4 Gm. hemoglobin per 100 cc. and 3.35 million red cells. The white cell count was 6,300 with 54 per cent neutrophils, 5 per cent eosinophils, 36 per cent lymphocytes, 4 per cent monocytes, and 1 per cent atypical cells. Platelet counts, by direct phase contrast microscopy, ranged from 150,000 to 220,000 during her hospital course. The results of the Rumpel-Leede test on admission were strongly positive.

All medications were discontinued during her hospital stay. The rash and symptomatology gradually subsided and were gone eight days after admission. The results of the Rumpel-Leede test remained positive for an additional three days. She was "patch-tested" to concentrated solutions of Lanoxin, Bufferin, and Diuril. These test results were negative despite the application of negative pressure. When her rash had cleared and the Rumpel-Leede test result had become negative, medications were resumed. After one day of digoxin the Rumpel-Leede test result remained negative, and the patient remained well. That day chlorothiazide was given. The following day the Rumpel-Leede test result was slightly positive, and there was a return of feelings of warmth in her extremities. After an additional 0.5 Gm. of chlorothiazide, the Rumpel-Leede test result was strongly positive. The symptomatology and rash cleared ten days after the last dose of chlorothiazide, and the Rumpel-Leede test result became negative four days later. During this period and to the present Digoxin, Bufferin, and vitamins have been continued, and the patient has remained free of purpura.

Comment

In the adult, the appearance of purpura without thrombocytopenia in the absence of infection, avitaminosis, joint or gastrointestinal bleeding, or positive family history, is most often associated with drug allergy. Following the appearance of purpura, all medication should be discontinued. The diagnosis of drug-induced purpura, either thrombocytopenic or athrombocytopenic, then depends on the demonstration of recurrent purpura on readministration of the suspected drug.[11] A wide variety of drugs has been reported to produce purpura. A smaller group, including quinine, sulfapyridine, and digitoxin, have been proved by this method to cause athrombocytopenic purpura, although all these drugs have more frequently been associated with the thrombocytopenic variety.[11] An immunologic pathogenesis with qualitatively differing effects on platelets and capillary endothelium has been suggested for both varieties.[11]

Chlorothiazide (6-chloro-7-sulfamyl- 1 2, 4-benzothiadiazine-1, 1-dioxide) is a heterocyclic sulfonamide. Cross-sensitivity in individuals allergic to multiple sulfa drugs has not been described. However, with increasing usage other allergic manifestations to chlorothiazide may be anticipated. Indeed, similar purpuric rashes have occurred in patients taking chlorothiazide, although they have not yet been reported in the medical literature.[12]

In our patient, purpura without thrombocytopenia but with evidence of increased capillary fragility on two separate occasions followed chlorothiazide therapy. Signs and symptoms persisted for two or three weeks and cleared on withdrawal of the drug despite continuation of other possible sensitizers. This case therefore satisfies Ackroyd's[11] criteria for etiologic demonstration of drug-induced purpura. Patch-testing with suspected antigens, followed by provocative negative pressure, as described by Friedman, *et al.*[13] was unsuccessful in the present case. Where positive, it is a simple and safe method of establishing a causative diagnosis.

Summary

A case of athrombocytopenic purpura probably induced by chlorothiazide has been reported.

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Too great haste to repay an obligation is a kind of ingratitude.—DUC DE LA ROCHEFOUCAULD

Agranulocytosis Following Acetazolamide Therapy

YOGESH CHANDRA ARORA, M.D.,* BROOKLYN, NEW YORK

(From the Binghamton City Hospital, Binghamton, New York)

ACETAZOLAMIDE (Diamox: 2-acetylamino-1,3,-4-thiadiazole-5 sulfonamide) is an oral diuretic and acid-base regulator which has been in widespread use in the treatment of patients with chronic congestive failure.

Agranulocytosis is very rare following the use of acetazolamide. This report describes a case of agranulocytosis following use of this drug.

Case Report

A fifty-year-old white housewife was admitted to the Binghamton City Hospital on March 7, 1958, with complaints of severe fatigue and easy bruising of about three weeks duration. The patient had had severe rheumatoid arthritis for several years and had been on prednisone, 5 mg. three times a day, for about two years. Three weeks previously she had been switched to triamcinolone in an attempt to reduce the dosage of corticosteroid and to eliminate the ankle edema which had been present on and off for about six months. In this six-month period she had also taken 250 mg. acetazolamide daily for control of the ankle edema, with very good results.

About three weeks before admission she noted easy bruising from even minor bumps on the shins and arms. There had also been areas on both the breasts which showed spontaneous reddish blue discolorations. Two weeks before admission, the total white count was 2,200 per cu. mm. with 21 per cent granulocytes. Ten days later there was a further fall in the total white count to 1,550 per cu. mm. with 16 per cent granulocytes. There was no associated anemia.

With the above complaints the patient was admitted to Binghamton City Hospital for treatment and investigation. On admission the patient's temperature was 99.2 F., and the pulse rate was 84 per minute and regular. Respiratory rate was 20 per minute, and blood pressure was of 160/95 mm. of Hg. No cyanosis, dyspnea, or jaundice were present. There were no petechial hemorrhages on the mucous membrane of the mouth. The conjunctivas were not anemic, jaundiced, or injected, and there were no petechial hemorrhages. On both breasts small petechiae were present. The lungs were clear to percussion and auscultation. The heart rate was 84 per minute and regular. The heart size was within normal limits. The heart sounds were well defined. There were no associated murmurs.

The abdomen was flat and soft, and the veins were not prominent. The liver, spleen, and kidneys were not palpable. There were no palpable masses and no tenderness. The bowel sounds were normal.

In the extremities there was no ankle edema. Few ecchymotic and petechial areas were present on both legs along the shin.

The blood study revealed the following data: hemoglobin 14.9 Gm., 96 per cent; red cell count 5,050,000 per cu. mm.; platelet count 190,000 per cu. mm.; total white count 1,900 per cu. mm. with 7 per cent lymphocytes, 5 per cent monocytes, 12 per cent stab forms, 11 per cent segmented cells, and 23 per cent total granulocytes.

Prothrombin time was thirteen seconds with 100 per cent activity (control time was thirteen seconds). Clotting time was twelve minutes. Bleeding time was three minutes. Blood nonprotein nitrogen was 38 mg. per cent, blood sugar was 83 mg. per cent. Blood smear for lupus erythematosus cells was negative.

The total cellularity of the bone marrow was not altered in any way, nor was there any appreciable increase in the adipose tissue. The granulocytic series of cells was relatively more numerous. It was an increase in the myeloid erythroid ratio over that encountered in normal individuals. Among the granulocytic type of cells, the myelocytes seemed to predominate over all other forms, and the number of mature segmented cells was greatly reduced. Myeloblasts were quite numerous, but their total number was not abnormal. Some of the myelocytes contained a nucleus usually seen at the promyelocyte or myeloblastic level, thus suggesting a nu-

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* Dr. Arora is presently affiliated with the Department of Medicine, Kings County Hospital Center.

TABLE I.—Chart of Blood Studies

Date	White Blood Count Per Cu. mm.	Lymphocytes	Monocytes	Stab Forms	Segmented Cells	Total Granulocytes	Hemoglobin (Grams)	Hemoglobin (Per Cent)	Red Blood Count (Per Cu. mm.)	Hematocrit (Per Cent)	Platelet Count
Before Diamox Therapy											
May 6, 1957	6,750	44		3	49	52	13.5	87	4,670,000		
After Diamox Therapy											
February 15, 1958	2,200	78	1	3	18	21	14.5	94	5,380,000	5	190,000
March 1, 1958	1,550	83	1	5	11	16	14.5	94	5,360,000		
March 8, 1958*	1,900	72	5	12	11	23	14.9	96	...	44	...
March 10, 1958*	2,750	64	10	16	10	26	...	..	...	..	...
March 12, 1958*	1,700	73	4	2	21	23	...	..	...	..	...
March 14, 1958*	2,150	83	8	..	9	9	15.1	97	5,050,000	65	148,000
March 17, 1958*	2,450	70	3	3	24	27	...	..	...	..	...
March 19, 1958*	1,800	78	6	3	13	16	...	..	...	..	...
March 21, 1958*	2,300	74	3	11	7	18	...	..	4,800,000	..	...
March 24, 1958*	1,550	82	2	5	11	16	15.2	97	5,180,000	..	...
March 31, 1958	2,150	90	2	1	7	8	...	..	...	..	...
April 7, 1958*	3,150	93	..	3	4	7	14	91	5,210,000	..	...

* Studies done in hospital.

clear cytoplasmic disassociation, the cytoplasm maturing at a more rapid pace. A number of degenerated cells belonging to the myelocyte-metamyelocyte stage were present. The erythroid series showed a normal rate of maturation without any significant increase in the early erythroblastic type of cells. Megakaryocytes were not very numerous. The granularity of the cytoplasm was within normal limits. Platelets seemed to be slightly reduced in number. A few lymphocytes were also present.

The study suggested a disturbance in the maturation response at the metamyelocyte stage, together with a degenerative process affecting the granulocytic series of cells at the myelocyte-metamyelocyte stage. Myeloblastic regenerative response was not significantly altered. These changes may have been the result of some toxic agent or it may have been an incipient form of maturation arrest, partially corrected by cortisone therapy.

The hospital course was uneventful, except that on the third day of admission the temperature went up to 100.2 F. but was controlled by antibiotics. The patient was kept on the following treatment: Achromycin 250 mg. every eight hours, and triamcinolone 4 mg. twice a day.

Other medications were completely withdrawn. A white blood count was done every second day (Table I). The patient was discharged without any remarkable improvement on March 24, 1958.

Summary

A case of agranulocytosis associated with prolonged acetazolamide therapy in a fifty-year-old white woman is presented. Her white blood cell count prior to acetazolamide therapy was 6,750 per cu. mm. with 56 per cent total granulocytes. Acetazolamide, 250 mg. once a day, was given for about six months.

Investigations and clinical course suggest that agranulocytosis was due to this drug. A review of the literature reveals that this is a rare complication, but one that is worth mentioning in view of the widespread use of acetazolamide.[1–6]

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If we were without faults, we should not take so much pleasure in remarking them in others.—Duc De La Rochefoucauld

Suppuration Masked by Antibiotics

CAPT. JACOB J. ROBBINS (MC) U. S. NAVY, ST. ALBANS, NEW YORK

(From the Department of Medicine, U.S. Naval Hospital)

THE ineffectiveness of antibiotics when employed alone in the treatment of loculated suppurative infections is well established.[1] Only in rare circumstances is complete cure possible without surgical drainage of the purulent exudate or extirpation of the infected focus. However, the extent to which premature administration of antimicrobial agents may so alter the clinical and laboratory findings that it obscures the presence of such localized collections of pus has not been sufficiently emphasized.

It is the purpose of this paper to illustrate this fact by reporting recent experiences with cases of phlegmonous pericarditis, perinephric abscess, and brain abscess in which premature administration of antibiotic agents masked the suppurative process and led to nearly disastrous delay in diagnosis and treatment.

Case Reports

CASE 1.—The fifth hospital admission of a sixty-one-year-old white female on March 30, 1957, was occasioned by complaints of pain in her right hip and flank for three days, persistent vomiting, and general weakness. A hysterectomy had been performed in 1946. In 1955 a gastric resection was done for lymphosarcoma, with subsequent roentgen therapy. During the five years prior to the present admission she had been under treatment and observation by a urologist for two large calculi in the right renal pelvis and had intermittently received antibiotics to control urinary infection. During the three months before the last admission sulfisoxazole was given alternately with nitrofurantoin.

Physical examination at time of admission revealed a chronically ill white woman. Her temperature was 98.6 F., pulse 80, respirations 16, and blood pressure 116/80. There was marked tenderness to palpation of the right upper quadrant, and an impression of fullness was obtained although no definite mass could be delineated. There was no gross lymphadenopathy, and the spleen could not be palpated. An intravenous pyelogram showed a nonfunctioning right kidney containing two large calculi (Fig. 1). Comparison with previous roentgen studies revealed displacement of the stones, as though by a mass. An upper gastrointestinal series confirmed the impression of a mass in the right upper quadrant, as evidenced by displacement of the small bowel.

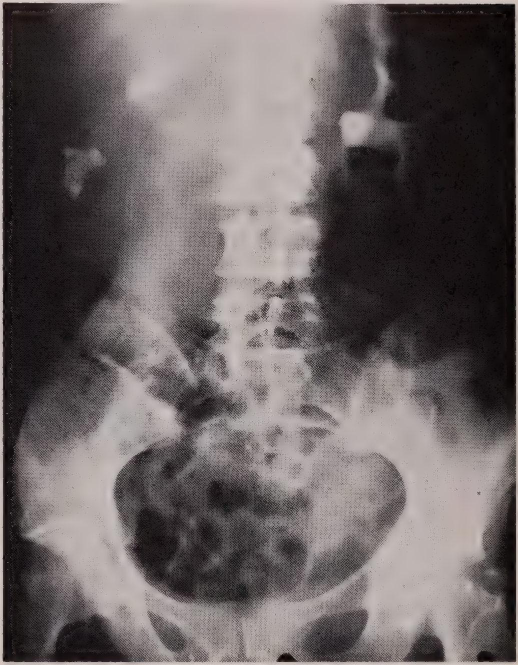

FIG. 1. *Case 1.*—Film of intravenous pyelogram showing two large calculi, right upper quadrant density, and distortion of psoas shadow in nonfunctioning right kidney.

Laboratory studies disclosed a white blood cell count of 13,000 with 85 per cent neutrophils. Urinalysis showed a 3 plus proteinuria and sediment with an abundance of pus cells. Blood urea nitrogen was 29.2 mg. per cent. Liver function studies gave negative findings except for bromsulphalein retention of 21 per cent. The patient continued on an afebrile course, but pain in the flank continued and a definite mass began to manifest itself with a distinct firm tender border. Suspected pyonephrosis was ruled out by failure to demonstrate pus on retrograde catheterization of the renal pelvis. The findings two

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Opinions expressed herein are those of the author and do not necessarily reflect the views of the Navy Department.

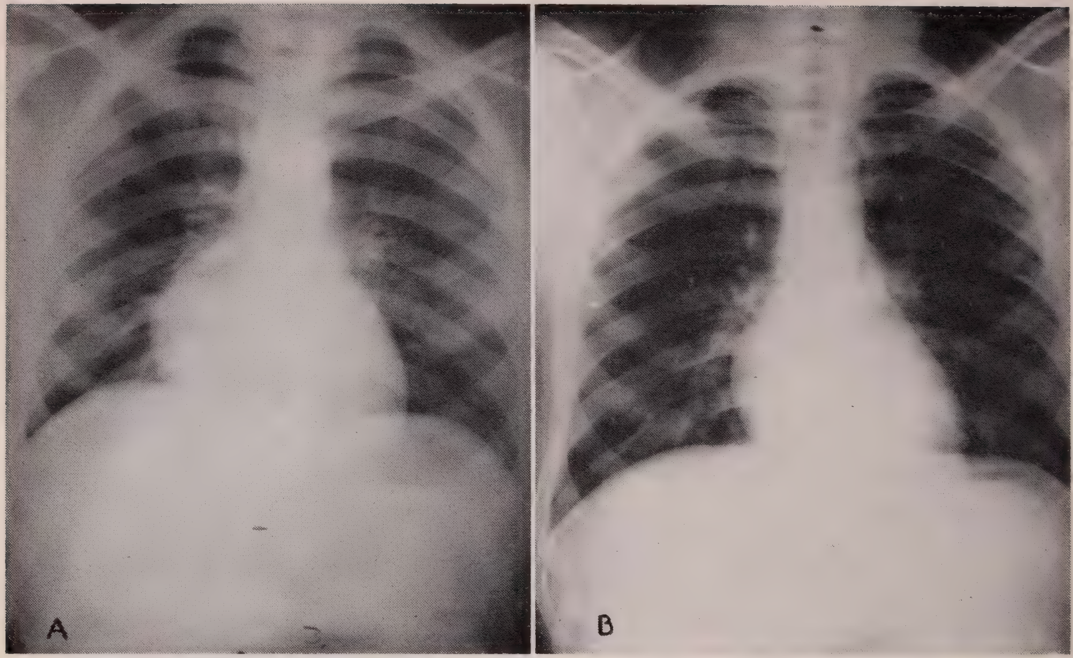

FIG. 2. *Case 2.*—X-ray film showing (*A*) convex extension of shadow of right side of heart and (*B*) normal cardiac silhouette after three weeks of therapy with oxytetracycline.

years previously of lymphosarcoma suggested localized recurrence of this disease in the retroperitoneal lymph nodes, and a trial of roentgen therapy was considered. Fortunately, decision for surgical exploration prevailed and a huge perinephric abscess containing more than a liter of purulent material was evacuated. The patient made an uneventful recovery without evidence of recurrence of malignant disease.

COMMENT.—This patient harbored a large accumulation of pus which had remained undetected for many months. Absence of fever and other usual clinical signs of sepsis and a previous finding of lymphosarcoma confused the diagnosis and nearly occasioned further delay and harmful therapy. Had greater consideration been given to the vagaries of suppuration under the influence of antibiotics, the true situation might have been recognized much earlier. Adherence to the principle of demanding accurate diagnosis before institution of treatment is credited for directing exploration and institution of proper therapy.

CASE 2.—A twenty-two-year-old Negro, private first class, USMC, was first seen in a civilian hospital on May 20, 1955, with complaints of sore throat, chills, fever, and multiple joint pains. A spinal tap was reported to be negative. He received one injection of penicillin and some unidentified tablets by mouth, and was then transferred to a service hospital on the following day.

Physical examination at that time revealed a well-developed, acutely ill colored male. His temperature was 103 F., pulse 126, respirations 20. There was moderate swelling of both knees, ankles, and wrists. A grade II apical systolic murmur was the only abnormal cardiac finding. Laboratory studies revealed a white blood count of 18,000, with 76 per cent polymorphonuclears, a positive C-reactive protein, and an antistreptolysin 0 titer of less than 100 Todd units and a 3 plus proteinuria. Chest roentgen examination showed the heart to be globular in shape, but no definite diagnosis of pericardial effusion could be established.

The patient was placed on penicillin 1,200,000 units, 6 Gm. aspirin, and 200 mg. cortisone daily. On this regimen joint pain diminished but fever continued to spike daily, 103 to 105 F. On the fourth hospital day a to-and-fro pericardial friction rub was heard and heart sounds were described as distant. Electrocardiograms showed T-wave inversion throughout limb and precordial leads consistent with pericarditis or myocarditis. Subsequent chest roentgen examinations showed enlargement of the cardiac shadow suggestive of pericarditis and a right pleural effusion. An intravenous pyelogram gave negative results. Repeated cultures of blood and of one pleural specimen gave negative results. Addition of streptomycin, digitalis, and diuretics to the regimen produced no improvement in the patient's condition. Fever continued to spike to 104 to 105 F. daily. He appeared toxic and complained of severe joint pain and difficulty on swallowing. After thirty-seven days of hospitalization he was transferred to this hospital for further treatment with the tentative diagnosis of rheumatic fever with carditis.

On admission all treatment was discontinued in an attempt to establish a definite diagnosis. For the first ten days, the patient's fever spiked to 105 F. Marked inflammatory swelling of the wrists, ankles, and knees recurred. Electrocardiograms showed T-wave inversion in all leads and a P-R interval of 0.32 seconds. Lupus erythematosis cell preparations, sickle cell preparations, bone marrow specimens, and biopsies of muscle, skin, and liver gave normal findings. Two urine and four blood cultures were negative. Roentgen examination of the chest showed a hemispheric extension of the right border of the heart with slight pulsation at fluoroscopy (Fig. 2). Needle aspiration of this area with a 20-gauge needle failed to yield blood or purulent material. However, a sensation of entering an indurated mass was noted by the operator. Culture of a small amount of aspirate failed to grow bacteria. On a presumptive diagnosis of localized phlegmon, administration of oxytetracycline 2 Gm. daily was begun. Fever and all symptoms dramatically subsided in three days, and within one month the electrocardiogram, cardiac silhouette (Fig. 2), and laboratory findings had returned to normal. During a two-month period of observation without treatment there was no recurrence of symptoms, and the patient was discharged without residual disability.

Comment.—Although bacteriologic confirmation was not obtained and surgical drainage was not required to effect complete cure of this patient, the diagnosis of pericarditis of bacterial causation complicating upper respiratory infection or pneumonia appears tenable. A septic febrile course, leukocytosis, transient pericardial friction rub, and response to large doses of oxytetracycline all tend to confirm this. Had the cardiac shadow enlargement been due to chamber dilatation, repeated aspiration would have revealed blood. Absence of murmurs, normal antistreptolysis 0 titer, complete recovery without disability, and thorough laboratory studies, including muscle, liver, and skin biopsies, all giving negative findings rule out the original diagnosis of rheumatic fever, collagen disease, and other suggested entities. The arthritis may be explained by septic embolism, and prolongation of the P-R interval by involvement of the conducting system and/or vagus innervation. Penicillin in the dosage given was apparently effective only in controlling the infection to the extent of preventing necrosis of tissue and pus formation but not in eradicating the pathogenic organisms.

Case 3.—A twenty-year-old USAF enlisted man developed nasal stuffiness and rhinorrhea three weeks before admission to this hospital. Treatment at a local dispensary with nose drops and chlorotetracycline was followed by clearing of nasal discharge, but nausea, vomiting, and intermittent fever supervened. When nuchal rigidity developed four days later, despite addition of penicillin to the regimen, the patient was transferred to a station hospital with a diagnosis of encephalitis. With continuation of penicillin over a period of two weeks, the patient's condition did not improve. Lethargy and low grade fever persisted.

Studies, including urinalysis, serologic tests, and blood chemistry, gave normal results except for a leukocytosis of 16,000 with 90 per cent polymorphonuclears. Lumbar puncture revealed clear spinal fluid under pressure of 290 mm. of water containing 44 lymphocytes and 12 polymorphonuclear cells per high power field, 55 mg. per cent protein, and 40 mg. per cent sugar. The culture was negative. Development of nuchal rigidity, papilledema, and bradycardia finally aroused suspicion of intracranial suppuration, and the patient was transferred to this hospital on the twentieth day of illness.

Physical examination at time of admission revealed an acutely ill, dehydrated white male who was well oriented but lethargic. His pulse was 60, temperature 99.8 F., blood pressure 110/80. There was moderate tenderness over both frontal sinuses, nuchal rigidity, bilateral papilledema, left facial and hypoglossal weakness, hyperactive deep reflexes, and bilateral ankle clonus. Roentgen examination of the skull revealed clouding of the right frontal sinus. The electroencephalogram was diffusely abnormal, particularly on the left side. Bilateral arteriography showed marked displacement of the anterior cerebral arteries.

Emergency surgical exploration revealed a right frontal subdural abscess from which 85 cc. of greenish yellow pus was evacuated. Cultures disclosed beta hemolytic streptococci. Subsequent evacuation of a frontal lobe abscess and removal of the right frontal lobe were required. Administration of penicillin, chloramphenicol, polymixin, and streptomycin were necessary adjuncts in treatment. After a stormy postoperative course the patient made a complete recovery without residual disability.

COMMENT.—This patient's infection, apparently originating in the frontal sinuses, was affected by antibiotics given early in his illness only to the extent of ameliorating symptoms and signs of the infectious process without preventing extension of bacterial invasion to brain and meninges. Thus, suppuration remained unsuspected for a period of nearly three weeks under the guise of encephalitis before the true nature of the process was suggested when the patient was seen in consultation. Bunn[2] reported a similar case of meningitis which also progressed to a brain abscess because the clinical symptoms were masked and the spinal fluid rendered sterile by premature use of antibiotics.

Comment

Basic medical discipline requires that in cases of suspected infectious disease all available measures be taken by smears and cultures to identify the specific causative agent before instituting antibiotic or other forms of therapy. Failure to obey this precept not only subjects the patient to hazards of unnecessary drug administration but, as illustrated in the cited cases, renders most difficult the subsequent (1) identification of the invading organisms and (2) accurate diagnosis of the nature and extent of involvement by the infectious process.

It is not an uncommon experience in hospital practice to be unable to culture pathogenic organisms from patients who have received as little as a single injection of penicillin even though the subsequent course of the disease clearly indicates bacterial infection. Employment of penicillinase has, in our experience, been most disappointing in promoting growth of pathogenic organisms in culture media under such circumstances.

It is not the intent of the author to convey the impression that in the presence of suspected bacterial infection all treatment must be withheld pending laboratory confirmation. In fact, concern for the patient's early recovery with a minimum of complications and disability frequently demands institution of therapy with the antibiotic most likely to be effective as soon as indicated cultures have been inoculated. However, the hazards of this type of management must be recognized and accepted as a calculated risk. Specimens for culture may prove inadequate, media may be of incorrect type, incubation may take place under less than ideal conditions for growth of a specific organism, and, as in Case 2, the source of inoculum (spinal fluid instead of blood or sputum) may be ill chosen. However, when the patient's response is unsatisfactory, treatment should be discontinued and the entire situation reappraised. One should not be misled by subsequent negative culture results. The diagnosis must then be made on clinical findings, including exploration, when this measure appears indicated.

Summary

1. Cases of perinephric abscess, phlegmonous pericarditis, and brain abscess are reported in which diagnosis and therapy were dangerously delayed by premature administration of antibiotics.

2. Although early treatment of severe infections before accurate bacteriologic diagnosis has been clearly established is frequently justified (particularly in staphylococcal, streptococcal, or pneumococcal infections), one of the dangers inherent in this type of management is illustrated by the difficulties in diagnosis encountered in the cases cited.

3. It is suggested that patients presenting diagnostic problems who have received antibiotics at some time during the course of their illness be carefully evaluated for the possibility of localized suppuration even when the clinical findings are not characteristic and all bacteriologic study findings are negative.

The author gratefully acknowledges permission received from surgeons who carried out surgical treatment in Cases 1 and 3 for use of pertinent clinical data, Capt. Jesse F. Richardson and Lt. Comdr. Jose Alvarez respectively.

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Polyarthritis Mutilans

ISADORE ZADEK, M.D., AND MILTON BUDNICK, M.D., MOUNT VERNON,
NEW YORK

(From the Department of Orthopedics and Medicine, Mount Vernon Hospital, Mount Vernon, New York)

POLYARTHRITIS mutilans is a rare and most interesting condition. The name was given to it by Stursberg[1] in 1935, differentiating it from arthritis deformans. A similar or the same disease was described by Harnasch[2] in 1947 who called it acro-osteolysis. He theorized on the possibility of a dysfunction of the pituitary gland as the causative agent, the opposite of acromegaly.

Case Report

A fifty-year-old white male was first admitted to Mount Vernon Hospital on February 2, 1950, from the orthopedic clinic. The acute symptoms that brought him to the hospital began about Christmas, 1949. At that time he began to have sharp back pain radiating bilaterally into the lower extremities. He was first treated by adhesive strapping by his local physician. Subsequently he was treated in a number of other hospitals.

PAST HISTORY.—In 1931, after one year of soreness and stiffness of the ankles, he went to a hospital in Connecticut. His ankles were swollen and tender.

X-ray studies revealed a moderate general atrophy of all bones of the feet. There was a slight increase in density at the extreme articulating end of the left tibia. The joint spaces were normal. He did not return for further follow-up treatment.

In 1932 he had scarlet fever after which he had a severe attack of polyarthritis. During the following few years he was exposed to tuberculosis in a neighboring family.

In June of 1938 the joints of his fingers began to swell and movement became painful. The pain would sometimes leave the fingers and appear in the shoulders. The fingers were always stiff. The knees were not affected until early in August, 1938, when the left leg suddenly became painful and swollen from knee to ankle. When he stood, the swelling would appear over his shoe tops, partially subsiding when he lay down.

He was seen at a hospital in Rhode Island and admitted in August, 1938. The left knee and the left ankle were greatly swollen and moderately sensitive to pressure. The patient complained of a sore area in the calf of the swollen leg. The fingers of both hands were swollen and painful.

At that time the condition was diagnosed as rheumatoid arthritis affecting the phalanges of both hands. Urinalysis findings and blood count were normal. No x-ray examinations of the extremities were made at this time.

The patient was next seen in April, 1940, at a hospital in Massachusetts. He complained of pain in all of his joints and rapidly progressive deformity of his hands. X-ray examination of the hands and wrists showed extensive destruction of the proximal interphalangeal joints and adjacent bone, the destruction being more marked on the left hand. There was considerable erosion of the distal ends of the radii and ulnas. There also was erosion of the metatarsophalangeal joints of both feet and marked hallux valgus of the left foot. The tarsal joints were narrowed and there was pronounced generalized bone demineralization. X-ray studies of the knees, shoulders, and elbows showed only minor arthritic changes. A neurologic examination gave negative findings.

The treatment which was recommended consisted of increasing doses of bacterial antigen. The patient continued on this treatment until December, 1940, and his condition improved until the onset of the acute symptoms that brought him to the Mount Vernon Hospital clinic in December, 1949.

The patient had never been exposed to anyone with a condition similar to his own. His only work throughout his life had been in a cleaning and dyeing establishment.

FIRST ADMISSION.—Physical examination at the time of admission, on February 2, 1950, revealed an acutely ill white male showing signs of weight loss and general cachexia. His temperature was 100 F., pulse 80, respirations 20, and blood pressure 130/80. His head was held

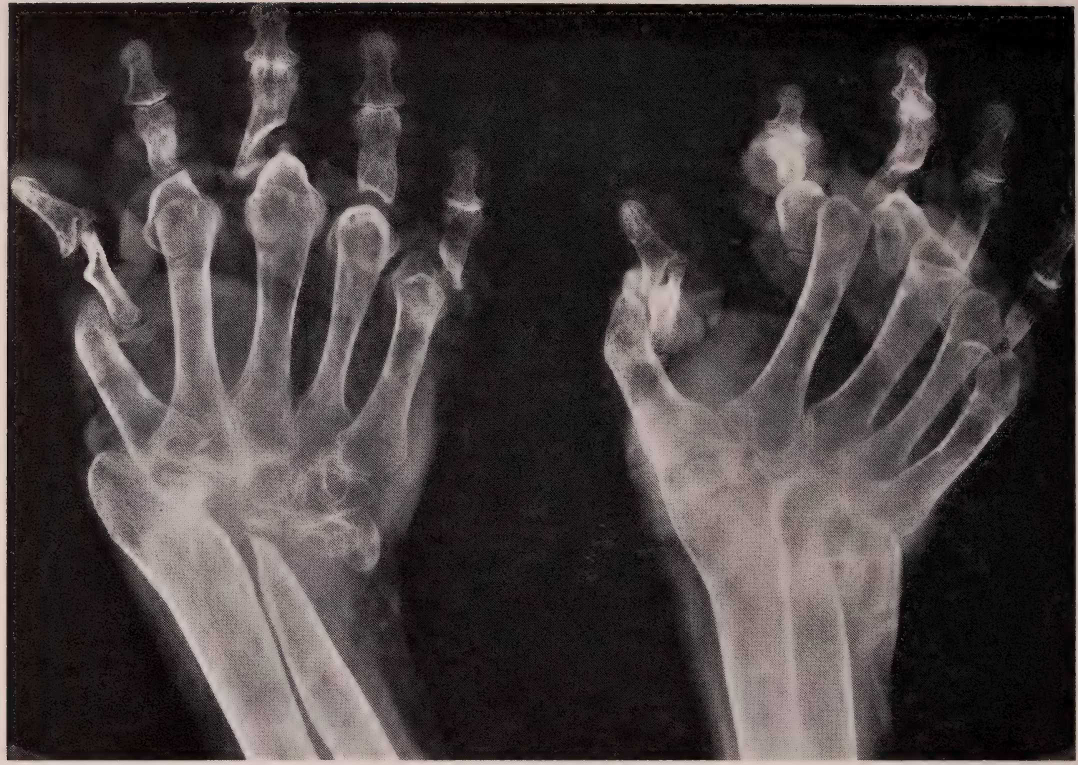

FIG. 1. X-ray of the hands and wrists showing marked destruction, absorption, and disorganization of the left wrist and of the metacarpophalangeal joints, subluxation with dislocation of the affected joints, and considerable demineralization.

forward and to the right. The eye, ear, nose, and throat examination gave negative findings. His neck and heart were normal, lungs clear, and abdomen soft and nontender. No abnormal masses were palpable. Rectal examination gave negative findings.

The fingers were extremely short and stubby with marked subluxation and loss of substance. The proximal phalanges appeared to be absent in all digits except the thumbs. There was marked atrophy of the soft parts about the wrists. The wrists were in palmar flexion. The patient was able to oppose the thumbs to all of the fingers. His toes were peculiarly shaped, with loss of substance similar to that of the fingers. No other joints appeared to be involved. There was some pain on movement of his shoulders and spine as well as some tenderness over the lumbar spine.

There was muscle atrophy of all of the extremities. On neurologic examination the sensory status was intact except for some diminution of pain sensation in the hands. There was no loss of motor power.

Blood count on admission revealed the hemoglobin to be 86 per cent, or 12.6 Gm., red cell count 4.35 million, and white cell count 7,700 with 79 polymorphonuclears, 13 lymphocytes, and 8 monocytes.

Urinalysis on admission revealed a specific gravity of 1.020, a trace of albumin, no sugar, and 10 to 40 red blood cells and occasional white blood cells seen microscopically. On repeat examination several days later urinalysis findings were completely negative.

Blood chemistries on admission revealed the sugar to be 95 mg. per cent, nonprotein nitrogen 42 mg. per cent, total protein 6.30 mg. per cent, albumin 4.55 mg. per cent, globulin 1.75 mg. per cent, calcium 9.6 mg. per cent, phosphorus 4.4 mg. per cent, and alkaline phosphatase 5.8 Bodansky units. The blood Wassermann test gave a negative result.

Spinal fluid examination revealed the protein to be 42 mg. per cent, sugar 86 mg. per cent, and sodium chloride 125 mEq. No cells were seen. A spinal fluid Wassermann gave a negative result.

The sedimentation rate on February 8, 1950,

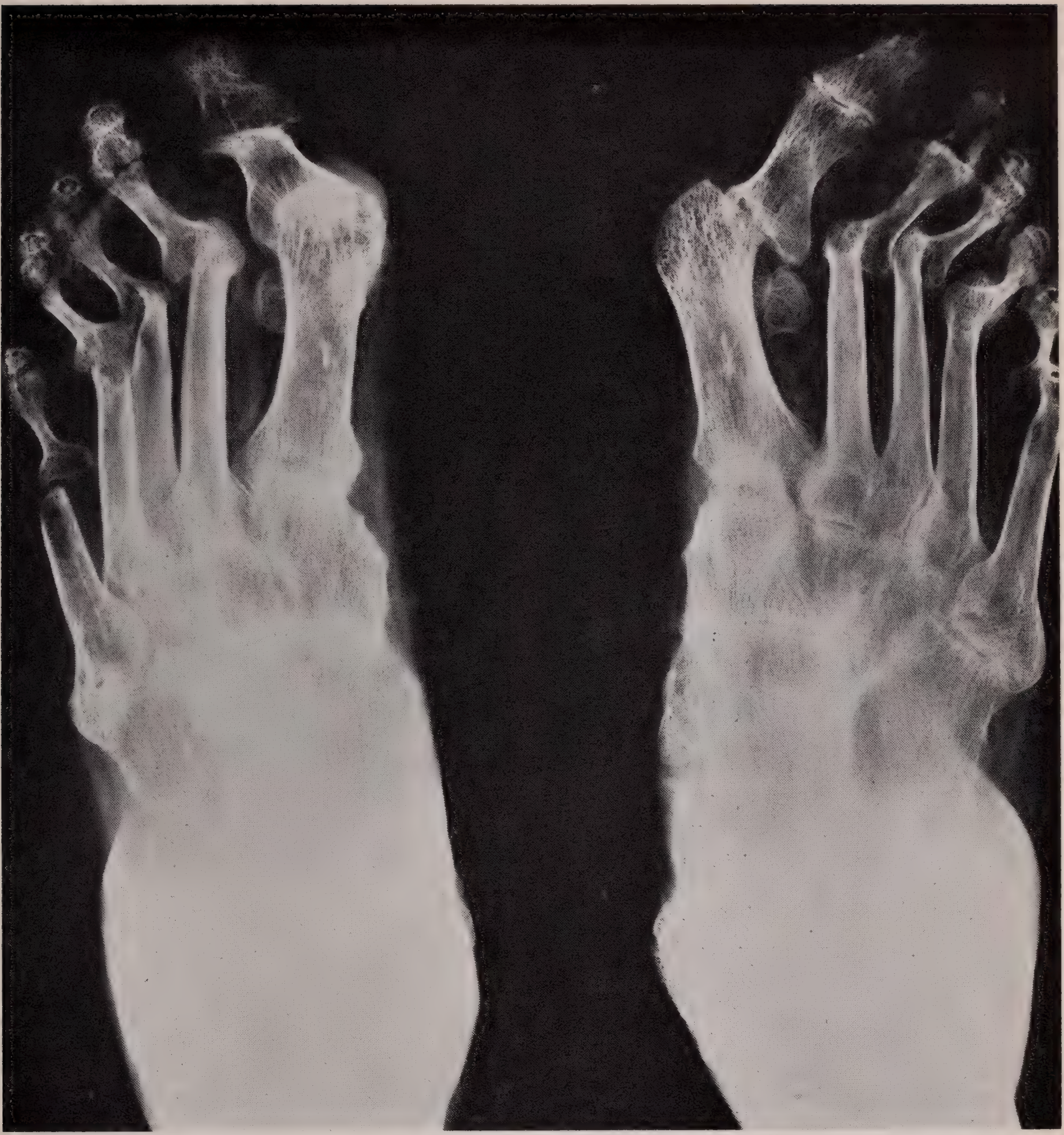

FIG. 2. X-ray film of the feet showing changes at the metatarsophalangeal joints of both feet, marked hallux valgus of the left one, narrowed tarsal joints, and pronounced generalized bone demineralization.

was 52 mm. per hour and on February 14, 1950, 60 mm. per hour. On repeated examination the sedimentation rate remained elevated. Bence Jones protein was absent from the urine. A sternal marrow puncture was done and the cells seen on smear were within normal limits.

Repeated examinations of nasal secretions and scrapings for acid-fast bacilli gave negative results.

Shortly after his admission the patient was started on a high calcium diet and was given testosterone in an attempt to increase the deposit of calcium in the bones.

At this time a serum acid phosphatase was found to be 21.2 Gutman units. It remained elevated, varying from 15.9 to 27.7 Gutman units. The alkaline phosphatase was 6.8 Bodansky units.

The genitourinary consultant found some mild prostatic hypertrophy with no evidence of prostatic carcinoma. The patient was given a course of estrogen therapy to determine any

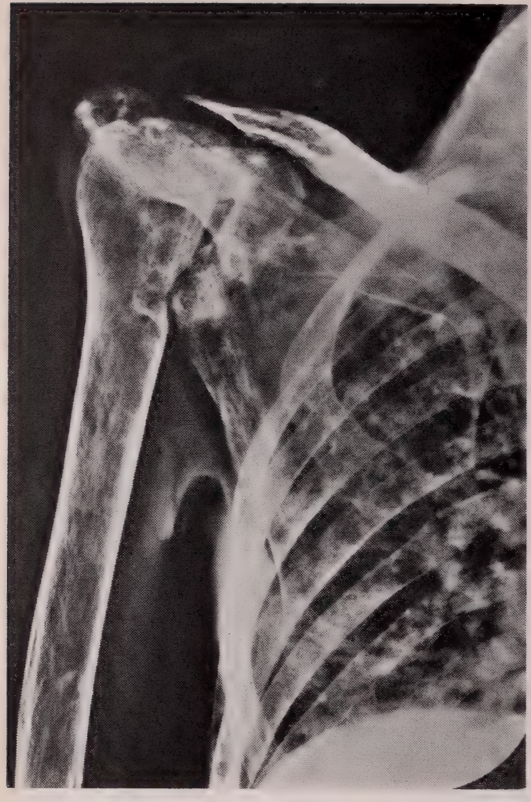

Fig. 3. X-ray film of the right upper part of the torso showing softening, demineralization, and destruction of the bones of the shoulder.

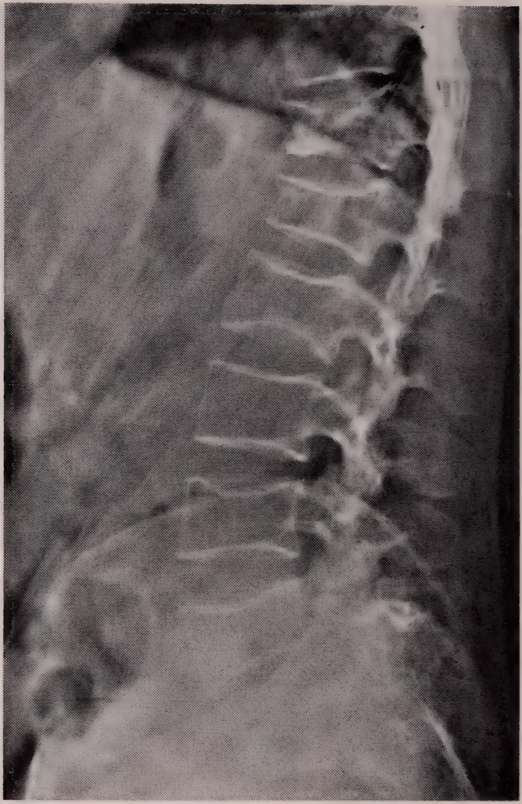

Fig. 4. Lateral view of the spine showing compression of the bodies of the twelfth dorsal vertebra and first lumbar vertebra.

change in the acid phosphatase level.

Clinically, it was difficult to believe that the patient had a prostatic malignancy. With such an elevation of the acid phosphatase one would have expected to see sclerotic rather than osteolytic changes in the bone.

After two days of estrogen therapy the acid phosphatase dropped to 2.4 and then to 1.9 Gutman units and remained at that point. The serum alkaline phosphatase rose to 9.7 Bodansky units.

The patient was given a spinal brace at this time since the x-ray films showed compression of the bodies of many of the vertebrae. With the brace the patient was ambulatory and was discharged home.

Second Admission.—He was readmitted to the hospital on June 20, 1950. Since his discharge his condition had deteriorated. He lost weight and developed anorexia. He occasionally was nauseated and vomited and had intermittent dyspnea and edema of the ankles. He developed further deformity of the spine with vague aches and pains radiating into the shoulders. He now had intermittent numbness and tingling of the fingers.

Physical examination revealed a chronically ill male. His head was markedly tilted to the right. Movement to the left caused pain in the left shoulder. There was tenderness to deep palpation along the cervical spine. The trachea was in the midline. Due to further collapse of the vertebrae the lower ribs almost reached the iliac crests. The digits were extremely short and stubby, with further subluxation and loss of substance. The wrists were in palmar flexion. There was pain on attempted movement of the hips and shoulders. There was tenderness over the upper dorsal spine. There was muscular atrophy of the lower extremities. Except for the numbness of the fingers there were no sensory changes. The deep tendon reflexes were equal and active.

Blood count on readmission revealed the

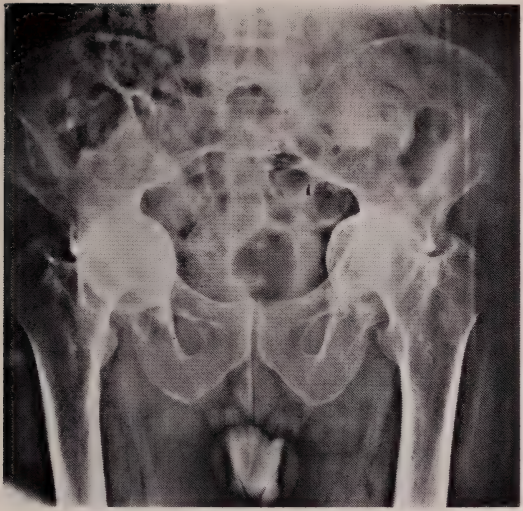

FIG. 5. An anteroposterior view of the pelvis and hip joints showing demineralization with inward protrusion of the acetabula due to softening.

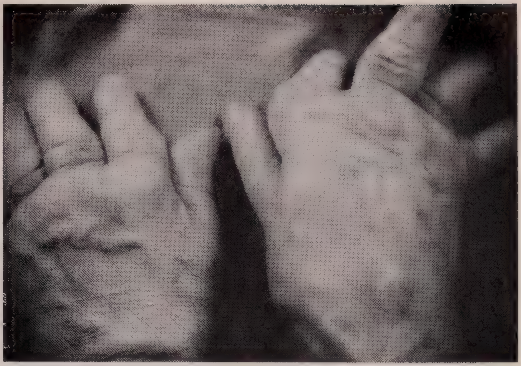

FIG. 6. Telescoped deformities of the fingers indicated by the deep creases.

hemoglobin to be 8.3 Gm., or 57 per cent and the red cell count to be 3.2 million. Urinalysis gave normal findings. The sedimentation rate was 97 mm. per hour.

Blood sugar was 95 mg. per cent, nonprotein nitrogen 42 mg. per cent, calcium 7.6 mg. per cent, phosphorus 4.2 mg. per cent, total protein 6.5 mg. per cent, albumin 4.6 mg. per cent, globulin 1.9 mg. per cent, acid phosphatase 13.0 Gutman units, and alkaline phosphatase 11.6 Bodansky units.

See figures 1, 2, 3, 4, 5, and 6.

It was the impression that we were dealing with two distinct lesions: (1) osteoporosis of unknown causation associated with destructive arthritis and (2) carcinoma of the prostate gland with metastases.

The patient did not respond to therapy and expired on the twelfth day of his second hospital admission.

Postmortem Findings

Postmortem examination showed a well-developed but markedly emaciated white male appearing much older than the stated age of fifty-eight. There was a marked kyphoscoliosis of the dorsal and lumbar spines. There also were marked flexion deformities at the wrists and metacarpophalangeal joints with extensive deformities of the fingers. There were similar, but not as marked, changes seen in both lower extremities.

In the abdomen, extending from the lower dorsal spine area to a little below the bifurcation of the aorta and lying on the vertebral bodies and attached to the aorta above it, was a matted mass of what appeared to be enlarged lymph nodes. On section, some areas were hemorrhagic, others necrotic, and still others gray-white in color.

The prostate gland was not enlarged. On section the tissue was firm, gray-white in color, and fibrotic in consistency.

On microscopic examination the prostate showed marked fibrosis of the stroma. It was diffusely invaded by small, solid acinar cords of markedly atypical neoplastic epithelial cells. The abdominal and mediastinal lymph nodes and bone sections were invaded by similar neoplastic cells, as described previously.

There was extensive interstitial fibrosis of the thyroid gland. Occasional acini were large, filled with colloid, and formed of flattened epithelial cells. Other areas revealed small atrophic acini with no colloid. No definite parathyroid tissue could be identified.

The involvement in this case was more extensive than in the 2 similar cases which have been reported[3,4] both as to the number of joints involved and as to the amount of local destruction in the joints.

Summary

1. A case of a rare form of destructive polyarthritis which is slowly progressive has been reported.
2. Leprosy was ruled out.
3. It was not rheumatoid arthritis nor

arthritis deformans.

4. The designation, "polyarthritis mutilans," given by Stursberg[1] aptly describes the condition.

5. Its cause is unknown.

6. There is no specific therapy of value.

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Heart-Lung Machine Used in Cancer Treatment

A new treatment for at least one type of cancer, involving the use of a heart-lung machine and a chemical, has been described by three Tulane University physicians. Writing in the January 24 *Journal of the American Medical Association,* Drs. Oscar Creech, Jr., Robert F. Ryan, and Edward T. Krementz, New Orleans, said they have used the technic to treat 41 cases of malignant cancer, including 8 of melanoma.

Melanoma is a malignant and rapidly fatal tumor resulting from excessive growth of the pigment-containing cells in the skin. Often beginning as a mole which undergoes rapid change, the cancer spreads rapidly to other parts of the body through the blood and lymph systems. This characteristic makes it difficult to treat.

The cases of melanoma were treated with a heart-lung machine and phenylalanine mustard, an analogue of nitrogen mustard, a fairly common cancer treatment drug. One of the problems of both phenylalanine mustard and nitrogen mustard is their severe side-effects, especially the depression of blood cell production by the bone marrow. The doctors feel these side effects can be avoided through the use of a heart-lung machine. They explained how they used it in the treatment of melanoma of the lower extremities.

The normal blood flow to the leg is shut off from the rest of the body, and a separate circulatory system is set up for the leg by attaching the heart-lung machine to an artery and a vein. (The machines generally used in heart surgery maintain circulation and oxygenation.) After the machine is operating, phenylalanine mustard is injected into the artery and allowed to circulate through the leg. The isolation of the tumor-bearing area prevents the spread of the chemical throughout the body, thus reducing the chances of side-effects. In addition, the chemical is concentrated in the affected area, thereby increasing its effect on the tumor.

The doctors used this "isolation-perfusion technic" in addition to surgical removal of the primary or recurrent melanoma lesions.

Among the patients, six were treated for extensive (cutaneous) spread of the melanomas, the primary lesion having been removed previously. The other two had the primary lesions removed in conjunction with the isolation-perfusion technic. All but one were free of disease outside the involved extremity.

The first patient to be treated with the technic has been followed for more than a year. During the year, almost all of his cutaneous lesions disappeared, and only six of an original 175 diseased areas remained. They have shown no evidence of growth and apparently the disease is controlled.

One patient, a seventy-two-year-old man, died. He had metastatic melanoma covering almost the entire surface of the right leg which spread to the lymph nodes in the region of the small intestine. The doctors noted that isolation of the perfused area was not complete, and severe depression of bone marrow occurred within a few days.

They said evidence, derived largely from the first patients, suggests that phenylalanine mustard, in addition to destroying the cancerous cells directly, also initiates certain changes which make the cells more susceptible to resistance factors in the body. This assumption is based primarily on the observation that regressive changes in tumors continue long after the drug has become inactive and after the period of acute cell destruction resulting from the chemical agent has passed.

PUBLIC RELATIONS CONFERENCE

Sponsored by the Medical Society of the State of New York

Council Committee on Public Relations

JOHN F. ROGERS, M.D., *Chairman*

Held at the HOTEL ROOSEVELT, NEW YORK CITY — OCTOBER 25, 1958

The Case of the Disappearing Doctor

KENNETH T. ROWE, M.D., HORNELL, NEW YORK

(*Member, Council Committee on Public Relations, Medical Society of the State of New York*)

MOST of you here are public relations chairmen of your county medical societies. You have one of the most important positions in your county groups, if your committee is functioning properly. To us I believe public relations should mean the responsibility of doing not only the best but actually showing our local community that we as a medical organization are doing the best job possible for that community. Our state officers and public relations committee are doing a splendid job at the top level. Time will not permit me to summarize the many accomplishments of this committee in improving public relations with the press, industry, organized labor, and so forth.

It is our duty as individual, free-practicing doctors to take a second look at ourselves as to how we stand. Seldom do we go to a big meeting where we as individuals can leave with a thought on how to improve the entire organization. This morning I hope to give you such a plan.

By carefully studying what has often appeared to be a complicated problem it is frequently possible to come up with a simple solution. For us, as physicians, there are only three objectives to be fulfilled for good public relations: First, be available; second, render competent and satisfactory service; and third, charge a fair and reasonable price for services rendered.

Of these three principles which I believe we will all accept as basic to our profession, it is the first which has not been attained because doctors are not always available. I will clarify the complaint more specifically. The doctor's phone is just not being answered. This is the number one complaint across the State. We have tried, and I am sure that each one of your committees has worked equally hard to correct this abuse by various measures: by having an emergency doctors' service, a special listing in the phone book, or a doctor on call at a local hospital, and many other such plans. These have all helped. They have given, mostly, an excuse when there has been some unfortunate local situation where no doctor could be reached.

Our retort has been, "Oh, they didn't call the emergency service." This situation, while it has improved, has not been solved, and we who are here today must carry home the answer.

The Physician's Responsibility

Every private practicing physician, general practitioner, or specialist must have his phone answered. We can't be available twenty-four hours a day. We can't answer our phone twenty-four hours a day, of course, but we can have phone-answering services arranged in various ways according to our own communities. You can have an extension phone in a home where a middle-aged couple will answer your phone and give the patient information as to where you can be reached in an emergency, or what doctor is covering for you. You can have an arrangement made so that an extension phone can be placed at a hospital switchboard, or maybe in a nursing home. In other words, when you leave your office and your office is closed, your phone will be answered. So many times the patient rings and there is no answer; as a result, the entire burden is placed on the emergency service. That service naturally bogs down because the doctors just go away and forget about it.

As a doctor you are able to contact a fellow physician if an emergency arises in your family regardless of the day or the time of night. But the average patient does not have this information or privilege. It should not be too difficult for you to appreciate the situation of a parent whose child becomes very ill and delirious on a Thursday afternoon and finds that one after another of the doctors' phones is not answered. And on those phones that are answered some voice may say, "Doctor won't be in until Tuesday," or "I can't give you his address."

Phone-answering services have been recognized as a deductible expense by the Internal Revenue Service and the cost, therefore, should hardly be a big item to us. It means only two things. First, you have an extension phone at a location where the phone will be answered at all times when you are not in the office. As I mentioned, this can be done by various means which are most suitable to your community. And second, we must each work with another colleague who will alternate coverage.

There is no gain to the patient to have an answer to the effect that the doctor is away for three days unless the doctor has prearranged coverage for the patient.

Some of my colleagues may wonder why this responsibility and concern? Frankly, there is a growing attitude of complacency. One M.D. bluntly stated, "I'm putting in a full day and when I'm through, I'm through. Let someone else answer." This is a sin of the gravest character. This individual is not only unfair to the public, but to all of the medical profession. His selfishness is unforgivable. When his phone is unanswered, his patient will by necessity go down the list in the yellow pages under physicians and call and upset many doctors because of the first doctor's indifference. Each conscientious doctor tries to arrange for his patient's care, but certainly he is disturbed, and rightly so, when called during his off-hours by unknown patients of some other doctor.

I wonder if we realize our importance as American doctors: We are able to practice the highest type of medicine in the world, under the freedom which exists nowhere else except in these United States. The heritage we have is priceless. Our ability and efficiency is the result not only of our endeavors, but also of the combined experiences of our senior members of the profession; the great research laboratories and medical centers; as well as industrial contributions in developing and making new and better instruments, sutures, and appliances. And do not forget the improved roads, transportation, and communications. All these factors have made our existence what it is. Lest we forget, we as a profession represent one of the strongest remaining forces of free enterprise in a world crowding hard toward Socialism.

Let us keep our standards high. Let us try to make ourselves available and keep our phones answered, with adequate coverage always accessible.

Medical Legislation in New York State—A Perennial Problem

I. Legislation Plans of the Medical Society for 1959

JAMES M. BLAKE, M.D., SCHENECTADY, NEW YORK

(*Chairman, Council Committee on Legislation, Medical Society of the State of New York*)

THE subject which has been chosen by your chairman, Dr. Rogers, and the members of the Public and Professional Relations Bureau for discussion today is medical legislation.

We frequently hear legislation—medical legislation—spoken of as a problem. I don't think we should use this term. Legislation should not be a problem. Legislation should be a method of progress and unless we consider it as a method of progress, we cannot possibly obtain the best results. This is, I think, particularly true of medical legislation at the present time.

I have frequently thought that people who are interested in legislation are usually interested in it because of a possible personal gain. I am sure that our legislators are all too often haunted by groups, or individuals, supposedly interested in legislation for the good of our State but truly active because of what they or their organizations are going to get out of it.

Legislation rightly used as a method of progress can be for the good of all of us. If we consider legislation from this point of view, we will have the opportunity of aiding in the enactment of laws which will be beneficial to our Society and in time beneficial to us as individuals. To get one must give.

Dr. Rogers referred to the importance of public relations and all of you are very familiar with the significance of good public relations. I do not know of anything that has grown more rapidly and with greater strides in the last ten years than has public relations unless perhaps it might be the manufacture of outboard motors. Dr. Rogers referred to the large number of people who are active in this work and to the effect it is having on various phases of our way of life.

We as a profession, if I may speak very bluntly, are not keeping up with the times. It really irks you when at medical society meetings, or among other groups of physicians, you hear a physician say, "We don't need public relations." He really doesn't mean it or else he is simply ignorant of the true facts of the ways of our Society. Maybe a county society or some other group doesn't need a public relations organization. I think it does. Maybe it can get by without one, but you certainly cannot get by without public relations as individuals. This is really at the basis of good public relations. The trained director can see our needs and faults and can advise us, but he cannot act for us.

I know of no place where there is a better opportunity for good public relations than there is in medical legislation. The opportunity for creating good relations and community respect in this field is unlimited. We are a profession, but whether we like it or whether we accept it, we are also a business. Yes, we are Big Business, very big business. If we are going to conduct our profession in a business-like manner, then we must follow certain business methods just as does any other business organization. If we don't like the methods of conducting this business, that's fine. We have all the opportunity in the world to change it, but we cannot change it by only sitting around in the doctors' rooms and "cussing" it out with our colleagues, nor by meeting a fellow physician in the hospital corridor and there venting our vim and vigor. If we wish to make a change, we must be active at the level where it will do some good. Here is where good public relations is important and where contact with our legislators is important.

We not infrequently hear people, including physicians, say that the legislators are "just a bunch of politicians." I have not had too much contact with them, but I do not agree with that attitude. True, there may be some who are just politicians, but I believe they are in the minority. The people who are forming our laws in Albany are men of excellent background, wide interest, and broad experience. They are interested in our views and are willing to listen, but what often happens is that we fail to give them adequate information or suggestions. I think the legislators are interested in doing a good job and welcome recommendations and suggestions.

I don't believe they are necessarily swayed by politics when considering medical legislation. They are interested in it because of what it does for the people of the State as a whole and not necessarily because of political affiliations alone.

There are two types of medical legislation just as there are two types of general legislation. There is legislation which affects the public or community as a whole and there is the legislation which affects us as individuals.

Where does this medical legislation come from? It comes in part from our Society, but far more important most of it today comes from other sources. If you will watch legislation which is introduced after January 1st, you will find that the vast majority of medical legislation is coming from sources other than the Medical Society. There are lots of people interested in medical legislation who are not members of our profession.

What about the Medical Society's program? First, we should consider types of legislation which we think would be beneficial for the public as a whole and which may be beneficial for our Society. Second, we should be alert to all types of medical legislation which may be introduced by other sources and which might be good or bad in our opinion for our communities and for our profession. We are planning this year to work as closely as we can with the various State departments regarding health legislation. We have contacted the Commissioner of Health, the Commissioner of Education, and the Commissioners of Social Welfare and Mental Hygiene and have offered to them the services of our Committee on Legislation in relation to their over-all legislative program.

Legislation Committee

The Legislation Committee of the Medical Society of the State of New York is composed of 18 members appointed by the President of our Society. Each area of the State is represented and the State is subdivided into districts with a district chairman. We are now visiting these various areas of the State for the purpose of reviewing with the representative members subjects for possible legislative action, and obtaining their ideas and views not only regarding these specific items but also of medical legislation in general.

Up to the present time we do not have any potential legislation of truly major significance. There are a few matters in which we are interested and we hope to suggest legislation pertaining to them. I will refer to only a few of these at this time.

There is the so-called autopsy law. All of us who practice medicine and all who are associated with hospitals realize the importance of this type of legislation. We, as a Society, feel that this law as it now stands is not satisfactory to the hospital, to the physician, or to anyone concerned. A considerable amount of study of this problem is necessary to arrive at a satisfactory decision. We are approaching it by having those who are primarily interested and concerned and who are most familiar with it review the problems involved and report to us so that we can then say to the legislators, "Here are the facts: one, two, three. Here is how this law works, how it does not work, and how we think it could be made better." In approaching the problem in this way we hope that we can make some real changes that will be satisfactory to everyone and helpful to medical science.

Some of our members are concerned about the law calling for medical certification for the licensing of automobile drivers. The automobile is quite a part of our daily life and how it can and does affect us is important. This law needs further study in order to clarify the problem of the physician's responsibility.

We are concerned with the inadequate practice of medical care, or, more important, we are concerned with the illegal practice of cults in the area of medical care. The Medical Society of the State of New York has not changed its attitude toward this matter. We have never approved the legalizing of practice of any cult in the medical care of the citizens of our State. It is important that we express our feelings and our thoughts and that we express them in a very clear and very concise manner. We are an organization interested in providing to the people of the State the very best in medical service that they can possibly obtain. We are able and we have the facilities with which to do this. It depends a great deal on us as individuals, but as a group we can do a great deal working together.

The Legislation Committee is very anxious to have any suggestions that members of public relations committees throughout the State might want to give regarding legislation. We stand as a committee on the State level, willing to work with you and willing to help in every respect. I repeat that I think the most important part, or one of the most important fields, in medical public relations is medical legislation.

Sometimes we are accused of being against everything. Well, maybe it seems that way at times. I do not believe, however, that we as individual physicians, or as a professional group, are against everything. We may be conservative and perhaps drag our heels about some things, but nevertheless most members of the profession are for progress. It is desirable that we take a definite stand and a positive approach about medical legislation. It is important that you as individual members of the Society, and particularly as public relations chairmen, make it your duty to know the legislators in your area. You should encourage the members of your county societies to get to know their legislators, to discuss medical legislation with them, and to give them your ideas and full information about medical care.

You will find that legislators are very nice people, that they are willing to talk with you, and are willing to listen to your ideas. You will also find that they have ideas of their own that are mighty important and helpful.

II. How the Medical Profession Can Help Legislators Resolve Issues of Mutual Concern from the Senate's Point of View

SENATOR GEORGE R. METCALF, AUBURN, NEW YORK

I AM very happy to talk with you on the subject of public relations. I am going to begin by reading one sentence from a letter from Dr. Rogers in which he outlined today's program.

This is what he said: "We should like both you and Assemblyman Ryan to tell the doctors very frankly what is right and what is wrong with the manner in which the State Society's program of legislation is handled." Now, using this as an introduction, I will tell you my personal feelings on the subject and I assure you before starting that there is nothing political about this.

I believe that those who run the Medical Society do a good job of informing doctors at the grass roots of what is going on, but from that point I think your program sags badly. During the session, any session, I receive letters from say a Dr. "X" who is head of the "Y" medical society telling me how the medical profession feels in his county on a particular issue; but the other members in that society show a complete lack of understanding whenever I speak to them. In other words your communications are breaking down between the head of the society and the doctors who are out on the firing line.

Now, let's talk about public relations a little further. The first time I ran for office, I received a letter from our local medical society two days before the election asking for my stand on socialized medicine. At that time this was a very volatile subject which produced much heat and little enlightenment. I answered in the best way I knew how but as soon as the election was over I heard nothing more about it. I haven't to this day. It was merely an effort to make a candidate dance so the whole profession would know where he stood and I say that is not a good way to improve public relations with persons who hold public office.

Incidentally, you will recall the animal research act which Gould Hatch of Rochester and I sponsored in both 1951 and 1952. One of the local doctors had contacted me after my first election and said that he wanted to tell me something about this particular bill. I had never heard of vivisection up to that point. He said that the doctors thought they needed something like this to implement medical research. He explained the various points telling why animal research was necessary, and I said that it sounded like logical legislation to me. The gentleman who was originally supposed to introduce the bill in the Senate refused to do so. Maybe he had had enough experience to know what the mail would be. At any rate I was asked to do so and accepted the responsibility.

Well, I just happened to discuss this legislation yesterday with one of Assemblyman Ryans' contemporaries in Brooklyn and he told me that in all his sixteen years of legislative experience, his combined mail hadn't equaled what he received on the animal research bill. So it was, to use that word again, a very volatile subject. The reason we passed the bill, and this is very interesting, was not because of any domination in Albany from either party. We passed the bill because you doctors and the people in New York State wanted the legislation and the legislators bowed to their wishes. Otherwise it would never have passed.

Value of Expressed Opinion

I mention this for this reason: I think it shows that when the people are interested in something they will do the work and pass the legislation that is needed. There are a lot of other issues that you should be interested in but they, generally speaking, go by the board. I am going to give you one illustration. In 1957 we had a bill which would have required Blue Cross plans to include podiatrists. Now I am not going to discuss with you today the merits of podiatry. I don't think it is relative to the situation. The chief point is that the greatest problem for the Blue Cross and Blue Shield Plans is their flexibility. If you require them to absorb new benefits willy-nilly, these may kick them right out of business because commercial carriers with their deductibles and their coinsurance features are in a much better competitive position than either the Blue Cross or the Blue Shield. We all know that. Therefore, I think that no matter how good podiatry is, it is a dangerous precedent to require that these various insurance plans carry something that they may not want to carry. If you can do this one year through the Legislature, what is to prevent the chiropractors from coming next year, getting enough support, and saying that the Blue Cross must care for them too? Now you see how this proposition was dangerous and why I had letters from your various local groups saying they were very averse to this legislation.

But what happened? I couldn't get a corporal's guard to support me on the floor of the Legislature on this particular subject. I spoke against it and I think there were all told about four or five who felt the same way that I did, but the majority of senators voted to include podiatric aid. Their lobby worked continuously to build up friendly relations and they were successful. Now, whether the podiatrists are officially in or out, and I think the matter is in the courts, it is a dangerous thing and we should be very careful not to put Blue Cross and Blue Shield Plans in an economic strait jacket.

I say to you today that if you feel about this the way I feel, then it behooves you, wherever you are, to contact your legislators and talk to them. Don't just call them on the phone, but go and see them and tell them how you feel and explain the dangers that lurk beneath the surface. Blue Cross and Blue Shield are basically your programs. The service benefit idea didn't come from commercial carriers. You proposed it yourselves.

I think I have said enough to explain why in my opinion you are failing in your public relations with legislators. I would like to say just a few words about the aims of the Joint Legislation Committee on Health Insurance Plans, of which I am chairman, because we are going to continue our work this coming year and we would like very much to get as much support from you as you feel you can give us. Many of you have probably read Nelson Rockefeller's program on health insurance. I am sorry that all of you couldn't read his entire remarks. Any story which appears in the newspaper has to be cut. Many times in cutting we get the bare bones and not the meat.

He suggested a form of catastrophic protection for all workers in the State of New York operated in the same way as the Disability Insurance Law with extended benefits from Blue Cross and Blue Shield or major medical from one of the commercial carriers. Presumably the employer would pick his own type, but in any event we would have all the employes of the State, not just those in places where four or more persons are employed, covered by some form of major medical insurance or extended benefits.

This is something which has been close to my heart for some time. I think I talked about it, or a form of this kind of protection, with Dr. Anderton at least seven years ago. It has great possibilities for health protection. The alternative is to have the government enter the field of socialized medicine through the back door.

If you don't think so, I invite you to look at the Forand Bill, which is already shuttling around the congressional halls. To me that is just the first step. Also our committee is making a study of what happens to health insurance coverage when people become unemployed. We know that certain people drop their insurance and we want to find out what the figures are. We have already sent out a group of poll takers, but we haven't correlated their figures. We will have them in the not-too-distant future and we will probably suggest a solution.

These then are some of the goals we are trying to reach to make insurance available to everyone in the State at a price he can pay. We feel this can be done if part of the money which carriers receive from people in their early years is funded toward a reserve from which premiums can be paid after age sixty-five. As you know, the State of New York is already doing this through its state health program and, incidentally, it is using the Blue Cross and Blue Shield mechanisms.

I often think that today we are building the finest medical plant in the world. We have the finest doctors, the finest laboratories, and the finest equipment; but if the people can't pay for the service, they are either going into bankruptcy or the government is going to care for them; either way, I don't think this is the solution. I think people ought to pay for what they get and not have somebody spoon-feed them as conditions change.

That's what we are trying to do and with your help we will be able to do it in the not too distant future.

III. How the Medical Profession Can Help Legislators Resolve Issues of Mutual Concern from the Assembly's Point of View

ASSEMBLYMAN JOHN J. RYAN, BROOKLYN, NEW YORK

I WOULD like to tell you at the outset that the last time that Senator Metcalf and I got together we were in total disagreement. I would like, however, to say that this morning I find myself in complete agreement with his remarks on the public relations aspect of your profession.

I know something about the business of public relations and legislation because of two facts. One is that after eleven years in the Legislature I should know something about legislation even if I did nothing but attend the sessions, and the second is that my law firm has specialized in the field of advertising and public relations law for the past twenty years.

I would like to say that what you people are doing here this morning and have evidently been doing for many years is very important work. As I see it, your job is to organize your profession on the state level and also see that it is organized on the local level. Perhaps of the two the local level is the more important. In any event it is your job to speak for the medical profession, for the grass roots as well as for the upper echelon.

I would warn you of one thing above all others. Be sure to have unanimity of opinion and expression as nearly as that is possible when you come before the State Legislature or any other legislature. Now what do I mean by that? Let me give you an example. Last year there was a bill before our Legislature which was of very particular interest to a sister profession of yours, the dental profession. My local dental organization felt very strongly that this was bad legislation and they conveyed that opinion to me. I wanted to do something about it because I thought their opposition to the bill was well founded. However, I was quite taken aback when I got to Albany and found that the state dental organization had taken a diametrically opposite stand to the county organization. In other words, there was no unanimity of opinion. I need not tell you that the Legislature was not greatly impressed by this position, or rather lack of position, on the part of the dentists.

We legislators have enough problems of our own without having your problems thrown to us in those areas where you can't make up your own minds, and when a group of taxpayers cannot help us even to the extent of deciding what is good for themselves, I think you will understand that that group gets very little attention.

On this subject of unanimity of opinion I had an experience several years ago which some of you might appreciate. It occurred right after we had passed the Hatch-Metcalf Bill. I was standing outside the polls one bleak election morning greeting my constituents, when along came a neighbor of mine, Dr. "X" we will call him. I felt I could really count myself as a friend of his because I had just voted in favor of the Hatch-Metcalf Bill. I went over and extended my hand to the doctor and he greeted me very warmly and said he was delighted I was there and that he was going to do the right thing by me. His wife was standing right behind him and she said, "Is this Mr. Ryan?" and he said, "Yes." She said, "Mr. Ryan, I have something to tell you." Now what I didn't know about the doctor's wife was that she had three cats and two dogs. She proceeded to tell me in no uncertain terms what she thought of my vote in favor of the Hatch-Metcalf Bill. Well, I got half the votes in that family anyway. I am not going to tell you gentlemen, certainly, that you can influence your wives in their voting but I do think you might be able to influence your fellow doctors.

The Physician and Legislation

The business of public relations with the Legislature is a lot more complicated than the hiring of a lobbyist. A group such as yours, which is made up of citizens in all geographic areas of the State, in all economic levels, and of all ethnic, racial, religious, and political groups, must work from the grass roots up. Every local doctor is a man of some importance in his community and I think you should consider that as a truthful statement even if it might sound a little immodest. People do look up to you. They have confidence in you. They value your opinion. This is so whether they are butchers, bakers, or candle stick makers, or members of the Legislature. But before you can put this feeling of good will to work, you must become acquainted with the people who make your laws.

Over in Brooklyn the Medical Society gives a little informal dinner to the members of the Legislature each year. I think that is a very good thing. We legislators get enough to eat, but it's nice for us to meet the people in our community and get their points of view, especially in an atmosphere divorced from politics.

I've thought for a long time that one of the difficulties of the medical profession is that doctors are not active enough in the political life of their communities. Now you may answer me and say, "I haven't got time for it." Gentlemen, let me reply to you that if your profession has anything at stake in our State or National Legislature, you've got to make time for it.

We should remember that we are living in a democratic system. The people are the ones who make the laws actually and we who are in the Legislature are there to do their bidding. We are compelled to run for office every two years to let the people decide whether we have complied with their wishes. We would like to make it every ten years but the framing fathers felt that the interests of the people are better served if we, their lawmakers, are kept close to the people. You are the people of this State and if any of you live in my district, you are the people I am particularly interested in serving. You have only to tell me what your needs are, but you must take the trouble to do so. Otherwise you can have no complaint with any decision that I arrive at on my own.

As a legislator I can tell you that when a piece of legislation comes before me and I receive no expression of opinion on it from my constituents, I get the feeling that this bill is of no particular interest to them. If I am deluged by letters and telephone calls from the people in my district, I can assure you that I take a great deal of time in arriving at my decision and do so with an awareness of the messages that have been conveyed to me by the public. And if somebody that I know particularly well or whose opinion I particularly respect contacts me about a given measure, you may be sure that my decision will be influenced by his expression of opinion. This is the very essence of the democratic system. It is a recognition of fundamental principles of human nature.

It might not be a bad idea either for every doctor to join a political club of his own political faith because that is the quickest and surest way of learning who your representatives are and what they stand for. Whether you take this step or not, I would most certainly recommend that every one of you go to the trouble of becoming acquainted with your State and National legislators, not because you have any specific legislation in mind, but just as a matter of, let us say, precaution. As soon as you find that you have a new legislator in your area, you as an individual should get acquainted with him. A great general once said that in time of peace we should prepare for war, and that is good advice. If you gentlemen got better acquainted with the political people in your neighborhood, attended more of the political and civic meetings of your community, and stood up at meetings occasionally and let your voices be heard, I can assure you of two results: number one, your voice would be heard; number two, you would be doing a very great favor to your profession.

Too often medical men live in an ivory tower of their own and they feel that because they devote a great deal of their time to work in medical activities in the community, their obligation is finished. Gentlemen, we all do understand the amount of time that you dedicate so unselfishly and without hope of reward in our great clinics and hospitals, but remember this—in the business of government your voice must be heard and the only way to make it heard is to speak for yourselves. Now I know that you cannot all become politicians and you wouldn't want to if you could; but I would say this, that you should pay enough attention to this business of politics, which after all is just another word for government, to ensure that when legislation which affects public health is presented to our State and National bodies for consideration, the position of the medical profession will be known, and favorably. And when the legislator gets up and votes "Aye" or "Nay" on the legislation before him, he will know that he has the backing of a responsible and unanimous profession behind him.

It often happens that the uninformed are a lot more vocal than those who have solid reasoning behind their positions. On the Hatch-Metcalf Bill for example, I must have received 1,000 very emotional letters from the "dog and cat" people, as we call them. As a matter of fact I received one note which I thought was pressing it pretty far. A lady wrote me and said that when it came to my time to vote on the Hatch-Metcalf Bill, I should remember that "dog" is nothing more nor less than "God" spelled backward. This was a new, if unscientific, approach to the problem.

Ladies and gentlemen, there isn't much more that I could add to what I have said. I would say this, however, in conclusion. Although a good professional lobbyist is very helpful in any legislative endeavor, you the members of the medical profession in your own towns, cities, and villages are the most effective lobbyists that your profession could ask for.

How the Woman's Auxiliary Promotes the American Medical Education Foundation

MRS. HENRY I. FINEBERG, JAMAICA, NEW YORK

(*Chairman, American Medical Education Foundation Committee, Woman's Auxiliary to the Medical Society of the State of New York*)

IT IS a pleasure to have the opportunity to explain how the Auxiliary promotes the American Medical Education Foundation program. This is the fifth year of our active participation in the support of the Foundation which is dedicated to the private subsidization of medical education.

Most members of the medical professional family, and even a large segment of the general public, are aware of the income problems that our medical schools have been facing for the past decade. Federal subsidy has been considered; but experience has demonstrated that this method could affect controls over teaching programs and the medical profession. I need not explain the American Medical Association's stand on this proposal.

For the last two years, our national Auxiliary presidents have listed the endeavor to further the cause of American Medical Education Foundation as the first priority project of the Auxiliary at the county level. At conventions, fall conferences, district branch meetings, and through county A.M.E.F. chairmen the membership is constantly alerted to the fact that many trustees wonder how long they can continue to run their medical schools at a loss. Interest in A.M.E.F. and contributions have been on the increase, but we have not yet been able to meet our quota.

What are we doing to help you meet this important obligation? We are promoting the use of the In Appreciation, In Memoriam, and utility cards. Bridge parties, luncheons, dinner dances, and cake sales are held and the proceeds are turned over to A.M.E.F. chairmen. The Woman's Auxiliary to the Medical Society of the State of New York has a Christmas card project that is gaining in popularity. This year we have three cards to choose from.

At Kingston, New York, a few weeks ago, Mrs. James McCartney, president-elect of the Auxiliary and regional chairman for A.M.E.F., informed me that New York has a quota of $12,000 for this year. Since our total for 1957 was $5,571.80, we will have to work harder and longer than before.

I hope that you gentlemen are aware that you can now donate to your own medical school through the American Medical Education Foundation.

Your school will receive the full amount of your donation, in your name. All donations to A.M.E.F. are tax free.

Organized Labor—A Special Public

I. Medicine, Union Health Centers, and Problems of Public Relations

JOSEPH A. LANE, M.D., ROCHESTER, NEW YORK

(*Chairman, Ad Hoc Committee on Labor Unions and Industrial Health, Medical Society of the State of New York*)

FOR the past few years I have occasionally heard of union health centers, but they have not concerned me to any great extent. However, about one year ago I was invited to lunch by a friend of mine who is an executive vice-president of a large clothing firm. He asked me if I would be willing to meet with a group composed of representatives of management, labor, and the medical profession. I was told that this meeting would concern the provision of medical care to union employees. I agreed to attend this meeting.

The meeting was held at the home of a member, one of the clothing executives, and there were about 15 or 16 people present. These included about five doctors, two or three hospital administrators, several representatives of management, and the local representative of the clothing workers union with his assistant. We were told that this meeting was called to obtain the advice of the medical profession on the proper way to set up a union health center in Rochester. We were also told that a fund had been started in July of 1956, contributed to by both management and labor for the purpose of setting up such a center.

After a period of discussion of about an hour and a half, the members of the medical profession advised the representatives of management and labor that the Monroe County Medical Society should be approached as the first step in an effort to work out a plan of establishment and organization that would be agreeable to all parties concerned. It was indicated by the representatives of management and labor that they would be willing to finance trips to Philadelphia or to other cities where union health centers were already established if the medical people felt this would be valuable in acquiring information about this problem. It was agreed that the county society would be approached and arrangements were made to do this.

Subsequently, a luncheon meeting was held and was attended by the president of the county society, Dr. Arthur Walker; the union representative and his assistant; two representatives from management; and two other doctors, including myself. The problem was presented to Dr. Walker and later taken to the executive committee of the county society.

The executive committee of the county society then recommended that a special committee be appointed to study the problem on a local level and also agreed to go to the Hillman Health Center in Philadelphia. This trip was taken by all members of the committee although one or two of us had to go at special times. Several meetings of this committee have been held and an effort is now under way to present to management and labor what is felt to be the proper type of a setup for Rochester. The county medical society decided to pay the expenses of their members who went to Philadelphia.

The problem of union health centers also was brought to the attention of the Council of the State Society at its meeting in New York in April of this year (1958). As a result of the discussion at that time, an ad hoc committee was appointed by the President with the approval of the Council to study this problem further.

The committee is composed of myself as chairman; Dr. Henry I. Fineberg, President-Elect of the State Society; Dr. John F. Rogers, chairman of the Committee on Public Relations; Dr. George Rehmi Denton of Albany; Dr. John C. McClintock, chairman of the Medical Economics Committee; and Dr. Peter J. Di Natale, chairman of the Industrial Health Committee. It was decided that the main function of this committee should be to try to develop some set of recommendations that would be useful to county societies as guides in advising groups who might be setting up union health centers.

The Industrial Health Committee of the State Society has also been studying this matter for some period of time. A fair amount of literature has been available and this has been perused very carefully. Among the more important pamphlets is the "Guides for Evaluation of Management and Union Health Centers," which was revised and issued by the American Medical Association in December, 1957. The pamphlet put out by the American Labor Health Association entitled "Your Right to Medical Care" has also been given considerable attention.

The problem of the United Mine Worker in the coal mining areas has given us great concern especially since there has been a situation concerning the free choice of physicians.

It is realized by representatives of medicine that a very difficult situation exists because management and labor are attempting to provide as complete medical care as possible for a vast majority of their employes, some of whom are in rather low income groups. In fact, the information we were given in Rochester is that most of their employes, due primarily to seasonal variations, had very low incomes. This is certainly a worthy attitude especially in view of the cost of medical care at the present time.

Participation of Medical Profession

I feel that the medical profession is willing to cooperate as far as possible in the provision of medical care to everyone who needs it. However, there are certain considerations that must be an important part of this cooperative effort.

Our studies to date would indicate that no hard and fast rules can be laid down because of the variation of the local situations as well as the different groups involved. There are certain recommendations that seem to be very definitely indicated, so that medicine can participate to as full an extent as possible. They are as follows:

1. Union health centers should be primarily concerned with diagnostic services and these services should be restricted to the employee and his or her spouse.
2. There should be strict adherence to ethical principles.
3. There should be an establishment of a fee schedule for physicians employed in the health center.
4. Adequate physical facilities and equipment should be available to carry out complete diagnostic work-ups.
5. The board of directors should be composed of at least 50 per cent physicians. A medical advisory committee composed of physicians who are members of the county medical society should be set up, and this committee should be a liaison between the health

center and the society.

6. The medical staff should be headed by a full- or part-time medical director who is a physician. The remainder of the staff should be made up of qualified physicians and should include general practitioners.

7. The medical director should supervise all professional work.

8. Patients referred to the health center for a diagnostic work-up should be referred back to the referring physician. Those patients who do not have their own physician should be referred to a specialist or general practitioner of their choice or, if there is no choice, to one of the panel physicians. (Talking to the union health center people in Philadelphia we found that rather a large number of their patients come from local physicians who send them to the centers either for a complete work-up or for a partial work-up. These patients in all instances certainly should go back to their referring physicians.)

9. The diagnostic service should be supplemented by hospital and professional coverage, such as Blue Cross and Blue Shield.

Comment

I think it is only fair to state that there have been union health centers or other similar organizations that have made every effort to permit a free-choice-of-physician setup and some of the experiences that they have had have not been very happy insofar as the cooperation of medical persons has been concerned. I am referring especially to an article that appeared in *New York Medicine,* July 20, 1958, entitled "Free Choice—Decision At Hand." It indicated that a survey of 1,500 doctors, who had agreed to provide services to 25,000 members of an AFL-CIO union at fees comparable to an indemnity allowance that had been set up in order to provide this free choice of physician to the members of the union, showed that only 50 per cent adhered to their pledges while 50 per cent charged fees over the plan's rate of reimbursement. Those doctors who did not sign a pledge but who had given care to some of these employes charged fees in excess of the plan's fees in 70 per cent of the cases. Among both cooperating and noncooperating groups of doctors, the excess of fees averaged about 100 per cent over the plan's fee schedule.

I am emphasizing this survey because this was a plan that tried to get the cooperation of the doctors, and it was set up to provide free choice as opposed to a closed panel method of comprehensive care that had previously been given by a group here in New York. It would seem that this particular union group made a distinct effort to have the cooperation of the doctors on a free choice basis and the survey that was made would indicate that even those doctors who signed the pledge to cooperate failed rather badly.

At the A.M.A. meeting in San Francisco this year it was recommended that an effort be made by the representatives of the A.M.A. to contact and discuss with the representatives of management and labor the problems of third party participation in the provision of medical care. This matter is within the scope of our committee and it has been recommended to the committee that we take such action. That will be done in the future, but there are other plans that are not complete at present, so that the time for a formal meeting on that matter depends on those other activities.

I believe that this presentation should point up to each one of us that there is a growing problem that may affect many of our communities and that our best efforts should be pointed toward cooperation with groups that may be planning to set up union health centers. This method of providing diagnostic services and probably some medical care is doubtless going to spread rather rapidly. As physicians we should do all in our power to try to point out to these groups what seems to us the best method of providing the best services to their subscribers. An increasingly large number of people will receive services through some type of union health center and whatever we can do to see that this is the best type of service by the best-qualified physicians will tend toward a happy solution in the long run.

II. Public Relations through Public Service

LEO PERLIS, NEW YORK CITY

(*Director of Community Service Activities, AFL—CIO*)

I SHOULD like to say that, if given a choice, I would not favor union health centers. I would prefer, instead, comprehensive community medical care programs available to all citizens, union members or not.

However, I shall speak here about public relations through public service as it applies to medical care, and about the relationships between organized medicine and organized labor and between physician and patient.

I suspect that the physician still has great prestige and status in our community. The physician has had prestige since time immemorial. Since the days of the medicine man, the physician has had great status and prestige. Even today, despite all attacks, resentment, and controversy, the physician still stands on a pedestal. But I fear that the pedestal is somewhat shaky. This is because the physician, in our complex and complicated society, has a tough time making up his mind whether he wants to be a physician or a business man.

I am not saying that this is a simple choice. What I am saying is that the physician is faced with this choice whether we like it or not. This results, at least in part, from the changes in our society, the growth of industry and trade unionism, the expansion of collective bargaining, and the growth of medical care plans. There are other reasons. The physician, whether he likes it or not, has become involved in the business world and he has thus absorbed the ethics and morality of the market place. All you have to do is read the newspapers to learn that some of us in labor, too, have absorbed some of the low standards and ethics of the market place.

I do not wish to cast the stone, but it is simply a fact. This, then, is the music we must face. I should think that the thing to do is to get out of the market place and reach out again for the high principles of the medical profession which have sustained it through the years and which have created for us a longer, more healthful life.

The tremendous contributions which you and the scientists in our medical laboratories have made are almost unsurpassed, but the fact is you have done little work in our economic laboratories. Perhaps you haven't been trained for it. You have a responsibility, a right, a vested interest, but no training.

There is a great deal of confusion, therefore, about some of your functions. In the final analysis physicians are expected to do several things, just as office workers, engineers, lawyers, and politicians do. First, they are supposed to practice their art and their science, but they are supposed to be concerned, also, with the total welfare of the whole community. In other words, you are citizens as well as physicians. You are political and economic as well as professional and you are supposed to be concerned with the political and economic welfare of the whole community—just as we are supposed to concern ourselves. We are not always doing it and you are not always doing it, but certainly these are worthwhile goals.

Publicity media, the radio, TV, the printed word, and all the rest are not going to do, by themselves, a public relations job for medicine, for labor, or for anybody else for that matter. Gimmicks of all kinds, Madison Avenue or otherwise, will not accomplish the kind of public relations job we want. The only way we get public relations is through public service.

Public relations is a by-product of public service. Public relations is human relations. Public relations is ethics and morality and the highest standards of service. The status of the organized labor movement in this country is, I suppose, low because of the exposure of some racketeers and some corrupt elements in our ranks. No gimmick and no publicity medium is going to eradicate that. The only way we, in the labor movement, can gain the esteem of our fellow citizens is by eliminating the corrupt elements and by serving the public.

The same goes for medicine. The people want to be served and the people want to compensate those who serve. The people want comprehensive medical care. They want not only surgical care in the hospital or medical care in the hospital, but home visits and office visits as well, and coverage for mental care, dental care, and optical care to boot. We want a comprehensive medical care program.

I think the public is wise enough to know that this type of comprehensive care isn't going to come about overnight. It may not even come about in five years or ten years, but the people will not be satisfied with words about socialized medicine. This sort of thing does not scare us one bit. We think it is a phony. It does not serve medicine, or any physician, to label a plan socialized medicine for propaganda purposes. I don't think it serves a useful purpose, for example, to say that prepaid group practice, such as HIP, is socialized medicine. That is a lot of nonsense, and you know it. As a matter of fact, prepaid group practice, such as HIP, may very well turn out to be your last and best hope against national health insurance legislation.

Group Health Plans

The issue really is not whether the government will do the job, or voluntary plans. I think we can agree that we all prefer voluntary effort. We can say that there isn't a single person or organization in this country who values our democratic society who would not rather see voluntary effort work. We in labor want voluntary effort to work. The question is: Can we make voluntary efforts work for all of the people? The answer, of course, lies in the hands of the people, labor, management, citizens—and the medical profession. We are still looking to the man on the pedestal, to the man who has served. We are looking to him for continued service.

Are we prepared, therefore, to continue with our experiments? Yes, union health centers, in a way, are experimental: the Sidney Hillman medical centers, in Philadelphia and New York, the I.L.G.W.U. centers, the miners' hospitals, LHI in St. Louis, and all the rest. They are different in many ways, but we must continue to experiment with health insurance schemes.

Are you prepared to experiment rather than condemn out of hand? Are you prepared to say, for example, that Blue Shield must not necessarily be the handmaiden of organized medicine, that if Blue Shield is to be successful it must continue to experiment, broaden its benefits, and represent all the people. There are no labor people on the board of directors of the Blue Shield here. There is one representative in Chicago, I think, and one in Buffalo.

I am very happy to see GHI experimenting with mental health coverage. Let's see what happens. Let's see what happens also with HIP instead of condemning it out of hand. This, too, is a voluntary plan. Certainly we don't want to be limited in our choice if we can help it. We don't want to be limited in our choice of a plan at this point. We should have free choice of plan as well as free choice of physician. But free choice of physician depends on medicine and if organized medicine will say that it is worthwhile to experiment with HIP, then there will be as much free choice of physician in HIP as you will find in the open market.

This is good public relations because it is public service.

Community Health Responsibility

If I were a physician, or the AMA, or the Medical Society of the State of New York, I think I would have said when the Salk vaccine came out: "We have a direct responsibility in helping to spread this thing. Let us, then, as physicians working through hospitals, schools, plants, unions, and all other voluntary organizations in our community, provide the vaccine shots as a public service." This, too, would have been good public relations because it would have been in the public service.

Instead, what has happened? Less than one half of the children under five today have protection. Dr. Joseph G. Molner, the health commissioner of Detroit, where there was a high incidence of polio this summer, said their program is threatened with collapse because so many people just will not pay and also because of "chiselers."

Well, I know something about Detroit. I know that as soon as the Salk vaccine came out we approached the National Foundation for Infantile Paralysis, the public health department, the county medical society, and others and we suggested a program of mass vaccination at a cost of $1.00 per shot. We know that millions of people in this country, migrant workers, unemployed workers, and even many employed workers, whose annual family income is less than $2,500, cannot afford $5.00 and $7.00 a shot. Our proposed program would have been in the public service if approved by organized medicine, but it was not carried out.

How about other areas? How about our voluntary health organizations? You know, many people in this country identify the independent fund-raising drives of many voluntary health agencies with organized medicine. The constant competitive appeals, by the way, have been approved by the AMA in San Francisco.

We are concerned with the total health of the whole man. We are concerned with the allocation of funds on the basis of relative needs. We are concerned with the elimination of waste and inefficiency in fund raising, and we are concerned with basic medical research. This cannot be done well in the present competitive system. There is a great deal of dissatisfaction around the country. Something like a national health fund, which I first proposed in 1944, probably would help, and organized medicine may want to consider it.

We are concerned, too, about the appearance of actors representing themselves as physicians, the men in white coats in TV commercials endorsing all sorts of things. This is a terrible nick in your pedestal. Organized medicine should put a stop to that and all kinds of indiscriminate endorsements and testimonials. This is bad public relations because it is not in the public service. If you want to smoke, smoke; but don't endorse it, don't recommend it. The use of the phony statements, the use of the man in white which, I am sure, is done without consultation with you, should be stopped by the profession because it simply destroys the confidence of the people in medicine.

Participation, Identification, and Experimentation

I think, in the final analysis, public relations is spelled PIE for participation, identification, and experimentation. This means participation of consumers and purchasers of services in the formulation of policies and programs designed to meet their needs. We talk a good deal about self-reliance. I am for self-reliance. Self-reliance means to me also the right and the responsibility of participating in health insurance schemes, in medical care plans, in hospital service plans, which affect me not only as a consumer of these services but also as a purchaser of these services.

I recall receiving a folder just about three or four weeks ago from Pennsylvania. This was interesting to me because it was issued by the Medical Society of the State of Pennsylvania for the purpose of promoting physician representation on hospital boards and committees. This is a fine thing. Years ago it was the other way around. Doctors should be represented, but sound public service would require that consumers, labor, citizens, including doctors, be represented. I would be opposed to any group, including labor, controlling any hospital, any medical care plan.

I think it is not in the public service and, therefore, bad public relations for the Medical Society of the State of New York, for example, to say it is not going to approve any plan unless 51 per cent of the board of directors is made up of physicians. It would be like saying that labor will not support any plan unless 51 per cent of the board is composed of labor. This, of course, is silly. You certainly wouldn't like that. We think these organizations must be democratic, they must be representative of the people, and responsive to the people's needs. This is good public relations because it is good public service.

Identification is no less important than participation. It isn't enough for the physician to be a skilled craftsman. He must identify himself with the good of the whole community, just as we all must. We have all made mistakes here. We, too, were separatists, isolated in many ways from the community. There were reasons and traditions. There was a history of struggle for the very survival of the labor movement—with management, collective bargaining—and you struggled in your early days of training in medical schools, where there was specialization but no humanities, craftsmanship but no liberal arts, the practice of medical care but not the economics of medical care. How little physician participation there is in community life! This is bad public relations because it is not in the public service.

Most important of all is experimentation, the need for keeping the mind open until we find the answers in our economic laboratories as well as in our medical laboratories. And unless we are successful soon enough on a voluntary basis, the government will not only have to do it, the government will do it.

SPECIAL ARTICLES

The Doctor and His Office

JOHN R. SEDGWICK, CHICAGO, ILLINOIS

(*Consultant, Sears-Roebuck Foundation*)

I WAS happy to learn the subject assigned to me is, "The Doctor and His Office." It brings to mind some advice given me by Bernard Baruch many years ago, shortly after I left college. He told me, "Young man, when you select your employer, don't pick the most efficient corporation to go with. Pick the most inefficient—then anything you may do will look great." In other words, the more vulnerable the subject—the easier is the job.

Everyone will agree the average doctor's office can stand a lot of improvement. Most offices are makeshifts at best. If it is a downtown building, the space selected has definite limitations. It may have satisfied the former tenant, but for the doctor's use it usually has to be remodeled, and as with all remodeling, whether it is in your home or your office, you are never fully satisfied with the result. Since it is the best the doctor can do at the time, he learns to live with it regardless of its inefficiencies and shortcomings, and in most offices it is inefficiency which causes that five-o'clock fatigue rather than the number of patients seen.

This subject naturally divides itself into three parts—The Patient and the Office, The Office Staff and the Office, and the Doctor and His Office—all three are vital to the success of any practice.

The Patient

So let us start with the patient. What does he expect in his doctor's office?

1. He expects consideration for his comfort as well as his ills. This consideration can start even before he opens the office door by providing him with a convenient place to park. I admit this is difficult with a downtown office, but the biggest kick patients voice against medicine today is, "I have to wait too long in the doctor's office before he can see me." This was brought out forcibly in the survey work now being done by the Sears-Roebuck Foundation. This Foundation, in collaboration with the A.M.A., is conducting person-to-person surveys in communities across the country to determine the medical needs of the area. This is part of a program to encourage a better distribution of doctors. Many of those interviewed who objected to the waiting time added this, "When I do get in to see the doctor, he is so busy he rushes me through!"

Why is it that the patient today is so time-conscious? Is it the tempo of the times, or is it because he is parked down on the street beside a busy parking meter? It may be the latter.

Since the main gripe against medicine today is that of having to wait too long to see the doctor, anything a doctor can do to counterbalance this is just so much to the good. I know a doctor who has his receptionist note the time of arrival of each patient. This is delivered to him on a slip attached to the patient's medical record. If there was any delay in seeing the patient, the doctor apologizes for the delay and explains the cause. This is not only excellent public relations but it is just plain common courtesy.

Another thing which disturbs the patient is to walk into his doctor's office and find every chair in the waiting room occupied, and he has to stand until someone leaves for the inner sanctum. This is not an uncommon occurrence in many offices today. Some doctors believe a crowded waiting room gives the impression of popularity, but I assure you it does not. It gives the impression of inefficiency and lack of consideration for his patients. Too many offices have too small a waiting room. While the doctor's practice has grown, the size of his waiting room has remained static.

Many doctors are apparently not aware of this. They enter and leave the office by the back door, and weeks on end they never see their waiting rooms. If these doctors would but take a few minutes, sometime when they are the busiest, and inspect the outer office, what they would see

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Presented at the forum on "The Doctor and His Practice," sponsored by the Wm. S. Merrell Company, Cincinnati, Ohio, and the Erie County Medical Society, Hotel Statler Hilton, Buffalo, November 6, 1958.

would surprise them.

But consideration for the patient's comfort should not be limited to just the waiting room. It should be in the other rooms as well. Have any of you, as a patient, been escorted into an examining room and told to disrobe and wait for the doctor only to find there wasn't a single place to hang your clothes, so you threw them on the only chair in the room? The chair wasn't too inviting anyway. It was one of those white enameled things with a cold metal seat. The only other place to sit down was on the examining table, and that can get mighty uncomfortable after a few minutes. A comfortable chair, a clothes rack, fiber glass drapes at the window, and soft pastel colors can do wonders for an examining room. And it is surprising what little things will do. A doctor told me when he started supplying his office patients with robes, disposable combs, and paper slippers it caused more favorable comment around town than did the installation of his new expensive x-ray machine.

The Office Staff

Now let us consider the staff employe and the office. Just who is she and what does she do. Frequently she has had no previous office experience. Her education usually is high school plus possibly a few months of business college—or she may have been a hospital nurse who is interested in office work. Regardless of past experience or background, she must be trained and trained thoroughly in the specific routine of the office.

Too many doctors, especially those who consider the business side of their practice merely a necessary evil, hire an aide and then heave a great sigh of relief and say, "Now go to work." Even if the applicant has had previous experience in a doctor's office, it doesn't exempt her from the need of training. Sometimes such a person has more to unlearn than to learn. The job of training an aide in her duties is a necessary and an important duty of the doctor and none other, for the doctor knows best what he wants. Also, any time so spent pays excellent dividends in a smoothly running office.

I am frequently asked, "How many girls should a doctor have on his office staff?" I can only answer, "It all depends on the doctor. If adding an employe will relieve the doctor from some of his worries and permit him more time with his patients, then it is worth while, otherwise it isn't." From observation of many, many offices, I would say the average doctor's office is considerably understaffed rather than overstaffed.

After the doctor achieves a smooth running office staff, it is a great temptation to turn the responsibility over to someone and to concentrate his efforts exclusively to therapy. If the employe is able to carry the load, give her the responsibility, but remember this, even responsibility must be supervised—and supervision is the duty of the doctor. I have seen offices in which the physician has divorced himself completely from the mundane operation of his office. Someone on his staff takes care of that while he lives his professional life, just seeing patients and banking a monthly check. But such a life is too good—it is too dangerous.

The other day I was flying back from New York City. My seat-mate happened to be a special auditor with the Bureau of Internal Revenue. In our conversation the subject of embezzlement came up, and he made this rather startling statement. He claimed in all classes of business and professions there is more embezzling going on in doctors' offices than in any other class. And I agreed with him! This isn't because doctors hire more crooks than other people, but they make more crooks from what would otherwise be honest employes.

Embezzlement is seldom premeditated. Over 90 per cent of the convictions for embezzlement in our courts started out quite harmlessly, and it is surprising how frequently it follows the same format. The employe finds herself broke and borrows from the till until payday. When payday comes along she pays it back and no one is the wiser. The next time she is broke she does the same thing, only this time she "borrows" a little more. The more she "borrows" and pays back, the more broke she is. This goes on until her pay-check doesn't cover what she has "borrowed." And then she is in real trouble. It was that first temptation to dip into the till that caused her downfall.

Not too long ago I did a job for a small group of four doctors. Among the recommendations I submitted was that they should install a modern bookkeeping system. When they asked how much it would cost I said, "From a thousand to fifteen hundred dollars." With that they threw up their hands and said they couldn't afford it.

I told them if I was their bookkeeper, I knew of six ways I could steal them blind and they would never know it. I also added, if I was on a jury and a case of embezzlement came up where the employer had placed as much temptation before the employe as the doctors placed before their bookkeeper, I would consider the employer equally as guilty as the employe.

With that the doctors decided to go ahead and put in the new system. There is a sequel to this story. When the auditor was setting up the new books, he found that the two girls in the front office had "taken" them for over $10,000 over the last five years.

How can doctors eliminate this temptation to dip into the till? In an office where one person takes in the cash, writes the receipts, does the bookkeeping, deposits the money, and is responsible for all the other duties—everything that has to do with the money—I admit it is difficult to devise a system that is theft proof, but if doctors will do the following, it will greatly reduce the temptation on the part of the employe to take that first fatal step.

1. Pay more attention to the business side of your practice.
2. Pay your employes adequate wages. In many offices wages are substandard.
3. Arrange with an auditor to audit your books at least once a year, with spot checks from time to time.
4. Have every employe who has anything to do with money covered with a surety bond.
5. Bank your receipts every day.
6. And most of all, have a modern bookkeeping system where entries can be checked and double checked.

If this is done the employe will think twice before "borrowing" that first few dollars.

The Doctor

Now we come to the doctor and his office. Every doctor should take time off every once in a while and look at his office objectively. With a notebook in hand he should go over every room and look at it as if he were seeing it for the first time. Every doctor, in the back of his mind, has a picture of his "ideal" office, and the job is to compare his actual office with his "ideal." If it does not compare favorably, something is wrong.

THE WAITING ROOM.—1. *Is it clean?* (Patients not only expect cleanliness in their doctor's office—it should be immaculate.)

2. Is it light, cheerful, and airy?
3. Is it warm in winter and cool in summer?
4. Is it large enough?
5. Are the chairs comfortable, not too close together. (Patients do not expect privacy in a doctor's waiting room, but they do appreciate a chair arrangement which assures as much privacy as possible.)
6. Is the receptionist's desk so located that she can talk with a patient without being overheard by others—but still near the front door where she can greet patients on entering? If she is in sight of the waiting patients they will be more content to wait. They will not worry over the possibility of being overlooked.

Nothing is quite so bad as having to talk to the receptionist through a little hole cut in a frosted pane of glass.

THE HALLS.—1. Are they wide enough so two people can pass without crowding?

2. Does the platform of the scales stick out inviting an accident?

3. Are other things cluttering the halls, such as chairs, tables, drinking fountains, record cabinets, etc.?

THE CONSULTATION ROOM.—1. Is its atmosphere one to encourage confidence and confidences? Does the doctor talk to the patient across a large desk—or is the patient's chair to one side? The tendency today is to minimize the need for the desk. In some of our modern consultation rooms, the desk has disappeared completely—and in its stead is a grouping of comfortable furniture giving the appearance of a quiet club room or a room at home. Thus the room becomes what the name actually implies—a consultation room.

THE EXAMINING ROOM.—This is the "workshop" of the doctor. It should be the most efficient room of his office. Frequently it is just the opposite. The examining room should be tailor-made to the doctor's needs and manner of working. Because of this it is impossible to make any generalities as to its improvement, but in each, regardless of the doctor, the following should be checked:

Are instruments and supplies within easy reach without having to bend or squat? I know a doctor who had an efficiency engineer study the routine activities in his office, and it was found over half of the doctor's effort was unnecessary. This does not mean that all doctors should hire efficiency engineers—but there is no reason why the doctor cannot do a little efficiency engineering on his own. In his work he should be constantly saying to himself—"is this the right way to do it?," "Can't this be more conveniently placed?," or "Are these steps necessary?" By eliminating wasted effort, more patients can be seen without giving them the impression they were "rushed through."

THE BUSINESS OFFICE.—One time a doctor told me he had so much trouble with his business office he was tempted to throw out the whole thing, and in its stead put a barrel at the front door with a sign over it which read, "Put it here." It would be an interesting experiment.

The reason many doctors have trouble with their business offices is because they relegate to it the role of a "step child." It is a sort of "Topsy" that needs no guiding.

Invariably when I run on to an inefficient business office in a doctor's set-up I find a combination of the following: (1) inadequate personnel in both intelligence and number; (2) lack of sufficient space wherein to function; (3) old-fashioned business methods, systems, and equipment; (4) lack of supervision by the doctor, and (5) low employe morale.

This is a big subject in itself and to do it justice requires more time than I am able to give here. I will say this, however, that if the doctor does not care to give his front office the supervision it needs, then the next best thing is to turn over the job to one of the many professional management organizations located across the country. For a fee (usually compensated for by the increased collections) doctors can be relieved of this bother. The rapid increase in the number of such organizations in the last five years certainly proves they must be following a need.

Since the last war we have seen a tremendous migration from the cities to the suburbs and to the small surrounding towns. This also encouraged many doctors to abandon their downtown locations and build new offices where they were not cramped for room. This has resulted in almost a renaissance in medical office architecture. It opens up an entirely new field of thought, ideas, and opportunities for a better office life.

But regardless of efficiencies, and so on, the practice of medicine will always remain a human thing—dealing with human ills and weaknesses, and because of this there is no danger of a doctor's office ever becoming a machine.

It will always have its troubles, personnel difficulties, and differences—but, thank God, it will always be interesting.

Is There a Doctor in the Courtroom?

R. CRAWFORD MORRIS, CLEVELAND, OHIO

(Attorney, Arter, Hadden, Wykoff, and Van Duzer)

MEDICAL malpractice litigation has come of age and is now big business. To quote from a recent article of mine—

> *Newsweek Magazine* reports: "Some 5,000 cases are now being tried each year with thousands of other cases settled out of court. Since 1950, one out of every 35 doctors insured under the New York State Medical Society's group-insurance plan has been sued in the courts for malpractice."
>
> The chairman of the District of Columbia Medical Society Professional Liability Insurance Committee (where recently 115 malpractice cases were pending and the doctors found all group insurance withdrawn from them) states: "Only about one in seven or eight of the district cases shows any voluntary negligence on the doctor's part. Nonetheless, the doctor loses about one in four cases."
>
> England's experience is the same: "The flood of claims against doctors, which has been steadily rising during the past few years, shows no sign of subsiding. In fact, in the year under review, the number of such claims has again shown an increase."
>
> Verdicts are even more alarming. In a very recent case, a San Francisco jury returned a malpractice verdict in the sum of $250,000. A few months before, a San Diego jury returned a malpractice verdict in the sum of $210,000. A Tennessee jury returned a malpractice verdict of $200,000, a Federal jury one of $123,000, a Texas

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Presented at the forum on "The Doctor and His Practice," sponsored by the Wm. S. Merrell Company, Cincinnati, Ohio, and the Erie County Medical Society, Hotel Statler Hilton, Buffalo, November 6, 1958.

jury one over $100,000, and a Wisconsin jury one of $97,000.

Such cases can take your hard-earned money away from you faster than your Uncle Sam, and perhaps the time has come to take a fresh hard look at the problem of medical malpractice in the courtroom.

At the outset let me say, and these figures are purely my own from my own experience, that of the malpractice cases crossing my desk 2 per cent are what I call "blood-money" cases, where the patient or plaintiff was looking for trouble from the beginning and the chance for easy money either by way of recovery in the lawsuit or to forestall the collection of the doctor's bill; that 3 per cent are merited, that is the defendant-doctor has been guilty of malpractice; but that 95 per cent are completely unmerited. In my opinion this 95 per cent arises as a combination of two factors: first, an untoward result so that there has been considerable pain and suffering, and second, superimposed upon the first, poor public relations either on the part of the defendant-doctor himself or quite often on the part of a subsequent treating doctor who on viewing a poor result unthinkingly exclaims, "My heavens, who did this to you?"

The trial of a malpractice lawsuit, like the trial of a domestic relations case, is almost always a personal, bitter affair. In my career I have been physically struck twice in the courtroom, once by opposing counsel in the heat of battle and once by a patient-plaintiff in a malpractice suit after the jury returned to the courtroom after two days deliberation, unable to reach a verdict, being bitterly divided, six for the doctor and six for the patient. The reason for the bitterness is, in part, the pain and suffering following an untoward result, and, in part, the patient's feeling that the defendant-doctor has violated the personal confidence that goes with the exceedingly close relationship of physician and patient. Whenever you add bad public relations to pain and suffering, you are throwing a lighted match into a powder keg, and the resulting explosion blows the patient right into the lawyer's office door. In this class of cases you can do nothing about the untoward result, but you can do much about the public relations, and in view of the recent trend in jury verdicts in medical malpractice cases, the time has come when you must do something about your public relations and that something must be a great deal more than you have done in the past.

What is the nature of this beast that stalks you, the medical malpractice suit? First, it is a jury trial before 12 of your fellow-citizens. The theory of the law is that she who accuses must prove. In a criminal case she must prove beyond a reasonable doubt, but in a civil malpractice case she need only prove her case by the preponderance of the evidence or the greater weight of the evidence, that is evidence which tips the scales more heavily against your defense. The patient's proof against you must rise to that level where reasonable minds can reach different conclusions concerning your guilt, otherwise the patient's case must be dismissed by the court.

Historically in malpractice cases the law has protected you by requiring the patient to prove her case against you by expert medical testimony of another doctor of your same school of medicine, in the same or similar community, to testify that you did something or failed to do something that doctors of ordinary skill and of the same school of medicine, practicing in the same or similar community, would have done or would not have done under the same or similar circumstances. The reasons for this safeguard is that a lay jury can have no opinion about scientific medical problems and therefore the patient must furnish such opinion to them to give them a yardstick by which to measure your conduct.

Rule of Res Ipsa Loquitur

There has always been an exception to this protective rule and that exception is that where the events in question were so simple that a lay jury would have an intelligent opinion of its own on the matter, then the patient need produce no doctor as a witness in her own behalf. Examples of this exception include the case of the foreign body such as a hemostat left in the body cavity, failure of the doctor to attend the patient, and so on. Recently this exception has, in my opinion, been distorted by some courts and extended beyond its true limits to permit the patient to submit her case to the jury against you without proof of your malpractice by any doctor testifying on the patient's behalf in cases of complicated medical problems, with the result that the jury has been forced to speculate and in so speculating has more often than not resolved the complexities against you and in favor of the patient-plaintiff, whose untoward result with its attendant pain and suffering naturally wins the jury's sympathy.

This exception is known in the law by the Latin phrase *res ipsa loquitur*, which simply means "the thing speaks for itself," originally limited to cases where the untoward result would not ordinarily happen unless the defendant was negligent and to cases where the defendant had exclusive possession and control of the instrumentality causing the injury and where there could be no contributory fault on the part of the patient. Some of our courts have extended this doctrine to include cases where the patient cannot explain what went on, whereas the doctor can, the dramatic example of this being of course surgery. I call this extension or perversion of *res ipsa loquitur* by the courts a "rule of sympathy," because in my opinion it is based on the sympathy the courts feel for a badly injured patient who was unconscious on the operating table at the time of her injury, whereas the defendant-doctor was fully aware of what went on.

The danger to you of this rule of sympathy is obvious when you consider the facts (1) that it is the operating room which produces in abundance the sympathetic picture of the unconscious patient who knows nothing of what goes on; (2) that it is the same operating room that is most likely to produce an unforeseen, untoward result; (3) that it is the operating room which harbors a medical situation almost always too complicated for a lay jury to have any opinion thereon. To apply the rule of sympathy to such cases is to hurl you into the lion's den of jury speculation, wherein you are judged, not by your fellow-doctors who are fully aware of the medical facts of life confronting you during the operation, but by 12 lay citizens who can have no comprehension of such complicated medical facts, but who have a very great deal of comprehension and natural sympathy for the pain and suffering attendant on almost every untoward result.

Time does not permit a detailed discussion of this problem, but if you are interested you will find a detailed study of this problem as presented by me in volume 163 of the *Journal of the American Medical Association*, page 1055. The end result of applying this "rule of sympathy" to medical malpractice cases is to make you an insurer of a good result in every operation you perform, which is a thing the law has never required of you. As one of our courts said a long time ago (1897):

> "If the maxim *res ipsa loquitur* were applicable to a case like this (glaucoma developing subsequent to cataract operation) and a failure to cure her, held to be evidence, however slight, of negligence on the part of the physician or surgeon causing the bad result, few would be courageous enough to practice the healing art, for they would have to assume financial liability for nearly all the "ills that flesh are heir to."

And as an English Court has said recently (1954):

> We should be doing a disservice to the community if we imposed liability on hospitals and doctors for everything that happens to go wrong. Doctors would be led to think more of their own safety than of the good of their patients, initiative would be stifled and confidence shaken. A proper sense of proportion requires us to have regard to the conditions in which hospitals and doctors work. We must insist on due care for the patient, but we must not condemn as negligence that which is only misadventure.

It is easy to accuse; it is difficult to defend. The safeguard of the law "she who affirms must prove," and in malpractice cases "must prove actual negligence by expert medical testimony" is sound and should be preserved To do otherwise is to force the medical profession into the role of insurer, a burden which it cannot and will not bear, with the resultant loss of useful technics and retardation of the progress of medical science. Ultimately this loss will fall on the patient himself, who sooner or later may be any one of us.

Negligence

With the exception of the doctrine of *res ipsa loquitur* and its "rule of sympathy" perversion, the patient-plaintiff must prove her case against you by proving first that you were negligent and second that your negligence directly produced her injury. Negligence we have defined before. You are to be judged by other doctors of the same school of medicine, of the same specialty, practicing in the same or similar localities and under the same or similar circumstances, and judged by the state of medical knowledge as of the time that the events complained of took place.

The law entitles you to an honest mistake of judgment, provided you are not negligent in getting all of the facts on which to base your judgment. Where there are two or more respectable schools of thought concerning a problem you are not negligent in choosing one of them, even though the one you choose may be the minority view.

Even if you are negligent, however, you are not liable to the plaintiff-patient unless your negligence was the direct cause of the patient's injury or damages, that is, the cause without which her damages would not have occurred. In this regard a mere loss of chance or recovery is too speculative to permit the patient to prevail. For example, in a case from my own jurisdiction of Ohio, the patient sustained a fracture of the neck of the left femur, which was properly treated by x-ray, closed reduction, further x-rays, checkup, x-rays one month; post reduction showed bony union and good position. Later on, however, when the cast was removed, the patient complained of pain and grating sensation. The patient testified she told the defendant-doctor, "My goodness, my hip isn't together, I can feel it grating," and the patient testified the defendant-doctor said to her, "You are crazy—ligaments make that grating noise." (If true this was bad public relations as well as bad medical practice.) Be that as it may the defendant-doctor failed to take further x-ray pictures.

Six months later, still in pain, the patient went to another doctor who x-rayed and found that the previously appearing bony union had disappeared owing to absorption. At the trial of the case the patient produced a doctor who testified that good medical practice required the taking of another x-ray picture when the patient complained of the grating sensation upon removal of the cast, to see if the bony union had disappeared through absorption; that if it had proper treatment it would have required remanipulation of the broken bones in an attempt to cause fluid to exude to reunite the fracture; that six months later was too late to do this remanipulation technic. The subsequent doctor performed an operation removing the head of the femur and wiring the socket with a 50 to 75 per cent permanent disability result. The medical testimony at the trial also was that if the defendant-doctor had taken the x-ray when the cast was removed and the grating sensation felt by the patient and had remanipulated the bones at that time, that even so there was only a 25 per cent chance that nature would achieve the bony reunion. The Supreme Court held that the patient had made out a case sufficient to be submitted to the jury against the defendant-doctor on the question of negligence, but had failed to prove, sufficiently to go to the jury, that any such negligence on the part of the defendant-doctor was the cause of the patient's disability, because the jury would have to speculate concerning whether, had the defendant followed the proper course, nature would have caused bony union to again take place; that the mere loss of this chance of recovery was too speculative for the jury to consider.

Testimony

The trial of a medical malpractice lawsuit is many things. It is impossible in the time allotted to begin to cover them. Before leaving the subject, however, I would like to bring the matter a little closer to reality for you. If you are the defendant-doctor you will find yourself on the defensive, extremely nervous, and apprehensive of the dangerous position that you are in. This will make your testimony even more difficult for you. Once I defended a prominent doctor on a completely unmerited case, but one with some dangers to the defense, who had testified many times both for and against me as an expert witness in regular personal injury cases. This doctor was one of the ablest and most impressive witnesses to a jury in such cases I have ever seen. When I placed him on the stand in his own defense in the malpractice case, however, he made a very poor witness, being extremely nervous, as you can well imagine. Whether called to the stand as a defendant in a malpractice case or as an expert medical witness in a regular personal injury case, however, the basic rules governing your testimony are the same and here they are:

1. Admit the Obvious.—Do not say as this doctor said in one of my cases—

Q. Will glass penetrate fat?

A. Well it depends on how the fat is lying.

Q. My question is, will glass penetrate fat?

The doctor's counsel: Go ahead, answer, doctor.

A. It is hard to say.

Q. Doctor, examine that piece of glass which you have there. Will you tell us whether or not a person about 5 feet, $7^1/_2$ inches, weighing approximately 168 pounds, falls on a coffee table about 2 feet high, and in falling shatters the glass and breaks the frame; now, under those facts and circumstances, do you believe a piece of glass of that type *could* penetrate the human fat?

A. I would say, *no.*

2. Watch Your Language.—To use a slang expression—"T'aint what you say it is the way how you say it"—that is important in verbal testimony. For example, in a malpractice lawsuit of mine involving the appearance of vesicovaginal fistula arising after a total hysterectomy where the claim was that the doctor negligently nipped the bladder during the operation, the defendant-doctor testified:

Q. Did you examine her bladder at the time of this operation to determine whether there had been any nipping or cutting or puncturing of that bladder?

A. Well, I didn't even expect. . .

Patient's attorney: Just answer the question, yes or no, doctor.

A. No.

However, the doctor later recovered himself, during the course of the same cross-examination:

Q. So for the reasons that you have just expressed, doctor, you didn't make any particular check of that bladder to determine whether or not it had been injured in the course of that operation, did you?

A. Yes, during the entire operation, when you strip back the bladder you observe the surface and if the bladder is not diseased after it is once separated, and there is no bleeding, you have no reason to examine further; you could get urine into the abdominal cavity if there was a cut or a puncture.

3. Leave No Harmful Innuendoes in Your Testimony.—Define it, qualify it, limit it. For example, one of the best medical witnesses I have ever had was a surgeon testifying for the defense in my case of the vesicovaginal fistula following the total hysterectomy. This surgeon ably protected himself during cross-examination by insisting on precise answers to precise questions. For example, the doctor testified:

Q. I want to know, doctor, whether the bladder after a hysterectomy may become distorted as a result of the lack of care or skill of the operating physician, in the performance of a hysterectomy, a complete hysterectomy?

A. Do you mean it is *possible* to have a person—

Q. Yes.

A. That quality of surgeon—Oh, it is *possible,* certainly.

Q. Well, there is considerable blood supply to the bladder, is there not, doctor?

A. Ordinarily yes, there is.

Q. And you did see the patient's bladder, did you not?

A. Yes.

Q. And it was well supplied with blood, was it not, doctor?

A. Of course, I saw her a considerable time after the operation.

Q. But it did have a good supply of blood, I believe?

A. No, I would not say that the patient's bladder had a good blood supply.

Q. It had no blood supply?

A. I wouldn't say that. I said it didn't have a good blood supply, particularly the part from which the uterus had been removed.

4. Don't Make Up Answers; If You Don't Know Say So.—The jury will understand your not knowing a question beyond your specialty. Remember, if you guess, you guess at your peril.

5. Never Volunteer.—Listen to the question asked and answer it. Do not ramble on. (This rule has an exception, namely where the naked answer, though truthful, hurts you unless explained, then explain.)

6. Be Sincere.—Look at the jury, use simple language, sell yourself and your opinion to the jury.

Conclusion

In conclusion let me give you my eight oversimplified but basic rules for preventive prophylaxis against medical malpractice litigation:

1. Never guarantee a cure unless you mean to be held to it.
2. Watch the time factor. In most states the patient has one year within which to sue you for malpractice, whereas you have six years within which to sue her for your bill.
3. Keep up with the advance of medicine.
4. But not too far up. Do not experiment unless you have the patient's permission in writing.
5. Get the patient's consent for everything you do, preferably in writing. Unauthorized treatment is assault and battery for which the plaintiff-patient can recover without proof of negligence.
6. Good housekeeping—Keep good records, full and adequate. Have all proper laboratory tests performed and keep results of these tests.

Remember, records are called "witnesses whose memories never die."

7. Do not be negligent. Here you are on your own and I cannot advise you, for you know far better than I what constitutes good medical practice. However, one word of advice from the defense trial lawyer. If you feel the case is beyond your experience, do not hesitate to call for a consultation and make a written record of the consultant's opinion, for a jury is not so apt to find two doctors, acting independently, guilty of malpractice as they are a single doctor acting on his own.

8. Public relations—Good public relations is your greatest asset and this will be increasingly true in the coming era of change that lies ahead. Be considerate of your patients, remembering that their reaction to what you say as well as what you do is important and is governed by a complicated emotional behavior pattern developed over years of sometimes bitter experience. The words you speak may not convey to the patient's mind the communication you intended in your own mind. *Be as careful with your tongue as you are with your scalpel.* Joke with your patient about your hobbies, your mother-in-law—but never about your treatment.

Remember these are times of rapidly changing conditions. The medical profession has come of age and is now big business, but it should not be big business—it should be what it was always meant to be—a big profession. The times call for the professional attitude on your part more than ever before.

And finally, never forget that as a doctor you are a member of a relatively small fraternity in the vast commonwealth of men. As such, as any responsible minority leader can tell you, whenever you fail in your professional public relations, you are condemned not as "Mr. Jones," but as "Mr. Doctor"—a representative of the entire medical profession which is thus condemned with you and suffers because of your conduct. I have heard a prominent judge, irked at the conduct of many doctors in court cases, exclaim (upon a doctor's abuse of the privilege of testifying out of order at a trial accorded him by court and counsel alike to conserve his valued time)—"these doctors think they are a law unto themselves." In a recent edition of one of Cleveland's newspapers there appeared the following account:

> DOCTOR IGNORES SUBPOENA, JUST MISSES NIGHT IN JAIL
>
> An east side physician who refused to come to court as a witness in a personal injury case yesterday narrowly escaped spending the night in County Jail for ignoring a subpoena. (Although) personally served with a subpoena the doctor refused to attend Court, saying he was too busy. The doctor still refused to come even though the court offered to hear him out of order so as not to inconvenience him. The judge thereupon issued a body attachment for him. The deputy sheriff seized the doctor in his office. Brought before the judge the doctor was told he would be released if he promised to appear in court at 9:15 this morning. Again he refused, saying he would not be able to appear before tomorrow afternoon. The judge said, "It is of the utmost importance that you be here. If you refuse, I will have to turn you over to the sheriff to be held in jail until morning and brought here." The doctor turned on his heel before the stunned court attachés saying, "All right, I will go with the sheriff." (After conferring with his attorney the doctor promised he would be in court the next morning whereupon the judge ordered the doctor released.) The judge, still a little shaken by the event said, "We certainly are not tough on doctors, but I must emphasize that they are as amenable to the court's orders as is anyone else."—*Cleveland Plain Dealer, Wednesday, October 22, 1958*

For shame, doctor! For shame! ! You are not a law unto yourselves, let me assure you. Nor should you give that impression to jury or judge.

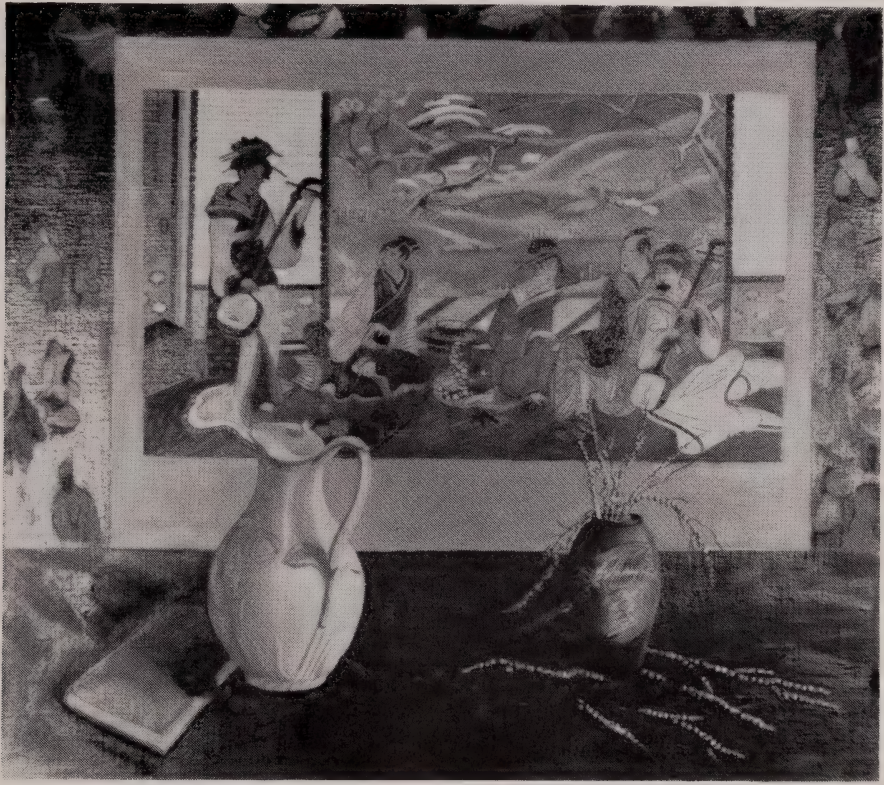
The community needs you. It will always need you. But, you, too, need the good will of the community. And in these uncertain times you will increasingly need the good will of every person wherever you practice your profession.

Beyond your need lies your community's need of you. You must serve that need in all of its amplified aspects. For, in a larger sense, this is what it means to be a professional man.

These then are a few of the basic rules of preventive prophylaxis for combating malpractice disease: "Study well before using. Take daily, as directed—doctor!" Here endeth the lesson.

the Gallery

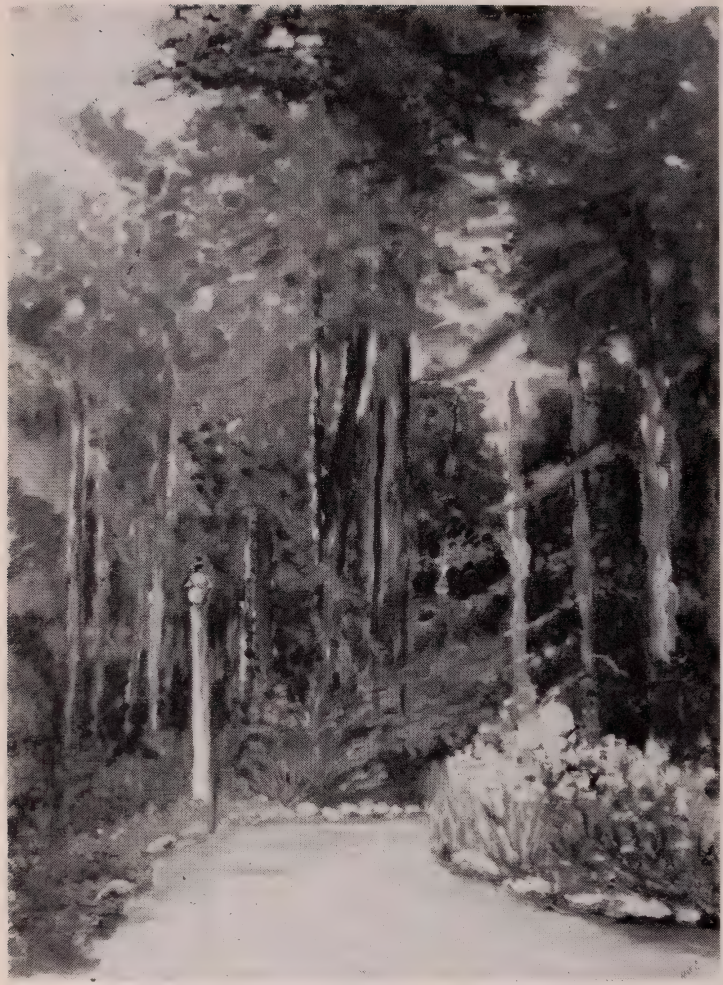
WALTER J. ALEXANDER, M.D., EDITOR



Wedgewood Pitcher in Oriental Setting, oil by ANTHONY RUGGIERO, M.D., of Ellenville. Dr. Ruggiero has painted since 1946 and has completed at least 50 oil paintings; Mr. Zavin Malik of New York City was his instructor.

Dr. Ruggiero has not attempted to exhibit and consequently has not received any prizes. He loves painting for its own sake and has no interest in competition.

His subject matter is largely still life in the oriental vein.



Driveway, oil on canvas, by H. W. CULBERTSON, M.D., of Buffalo. This was painted by Dr. Culbertson in August of 1956 in Colden, New York. He has painted all of his life and has had no professional instruction.

INFORMATION ABOUT "THE GALLERY"

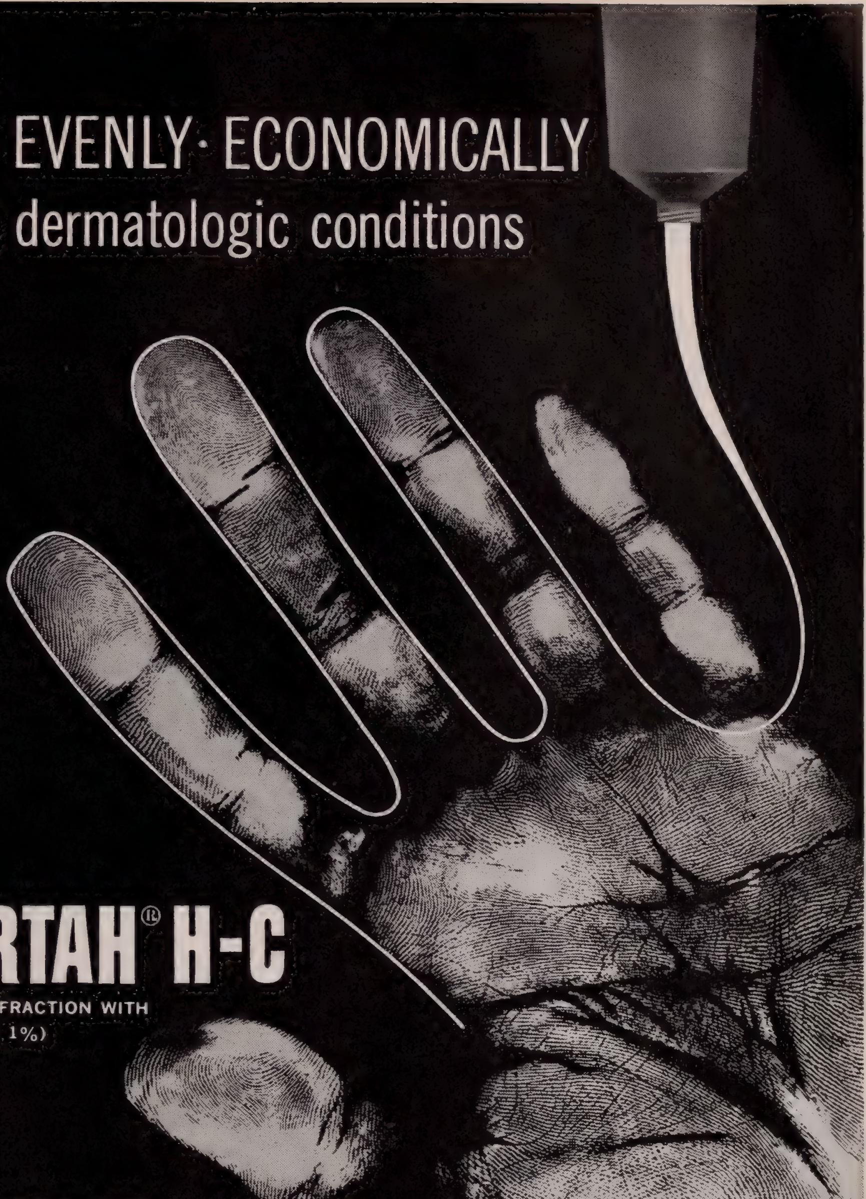
On these pages, the JOURNAL is presenting a series of reproductions of physician art work, and each member of the Medical Society of the State of New York is invited to contribute to this feature.

If you would like to participate, please furnish an 8 by 10 inch black and white glossy print of good quality suitable for reproduction. Prints of the art work are not returnable. This should be sent in a cardboard back manila envelope to the editor of "The Gallery":

Walter J. Alexander, M.D.
333 Main Street
Binghamton, New York

Please include the following information:

1. Your name and address
2. Title of picture
3. Where and when painted or sculpted
4. Where previously exhibited; any prizes received
5. Short interpretation of the work
6. How long you have painted; any instruction you have had.



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MEDICAL NEWS

Rochester Roentgen Ray Society Elects—At a meeting on January 26, the following officers of the Rochester Roentgen Ray Society were elected: Dr. Alphonsus L. Grohowski, president; Dr. John W. Colgan, vice-president; and Dr. Theodore F. Van Zandt, secretary-treasurer.

The Society meets on the last Monday of each month, September through May.

Postgraduate Course in Cardiology—St. Francis Hospital and Sanatorium, Roslyn, will offer a postgraduate course in cardiology April 6 through 18, under the direction of the hospital staff and guest speakers.

Designed to give intensive training in the diagnosis and management of heart disease, the course is divided into three sections: diagnostic technics in cardiology, medical cardiology, and cardiovascular surgery.

Submit applications to: Rev. Mother Superior, F.M.M., Administrator, St. Francis Hospital and Sanatorium, Rosyln, New York.

Dr. Stone on Trip Around the World—Dr. Abraham Stone, New York City, director of the Margaret Sanger Research Bureau, left New York City, February 6 on a trip around the world in connection with the problems of population and family planning.

While in New Delhi, India, Dr. Stone will take part in the seventh international conference of the International Planned Parenthood Federation, of which he is a vice-president. Among the other countries Dr. Stone will visit are Russia, Pakistan, the Philippines, and Japan.

Postgraduate Course in Allergy at Buffalo—The University of Buffalo School of Medicine will hold a postgraduate course in allergy March 25 through 27.

The clinical management of common allergic problems, such as bronchial asthma, allergic rhinitis, urticaria, and eczema will be presented. Diagnostic procedures will be demonstrated and therapeutic methods evaluated.

For information contact: Department of Postgraduate Education, University of Buffalo School of Medicine, 3435 Main Street, Buffalo 14, New York.

Radiological Society Lists New Officers—The following officers were elected at the annual meeting of the Central New York Radiological Society: Dr. Theodore Perl, Syracuse, president; Dr. Robert MacCallum, Utica, vice-president; Dr. Joseph A. Head, Syracuse, secretary; Dr. Leo P. Larkin, Ithaca, counselor to the American College of Radiology; Dr. Paul A. Riemenschneider, Syracuse, alternate counselor of the Central New York Radiological Society; Dr. Clayton H. Hale, Syracuse, delegate to the New York State Radiological Society; and Dr. Edwin Euphrat, Syracuse, alternate delegate.

Psychiatrists Receive Awards—The following awards of $125 each were given for papers at the third annual meeting of the Eastern Psychiatric Research Association: Dr. Loring Chapman, New York City, for "The Cerebral Hemispheres, the Unadapted State, and Schizophrenia"; Dr. Leon Roizin, New York City, and coauthors, for "Histopathologic Findings in the Liver and Central Nervous System Following the Administration of Some Tranquilizing Drugs in Humans"; and Dr. John D. Rainer, New York City, for "Convergency of Psychodynamic and Physiodynamic Approaches in Psychiatric Research." These awards were part of the annual R. Thornton Wilson Prize for Preventive and Genetic Psychiatry.

Dr. Ferruccio di Cori, New York City, was awarded the Association's annual award of $100 for the presentation of the best paper during the year. His subject was, "A Drawing Completion Test; an Incisive Interpretation of the Unconscious."

Postgraduate Assembly in Anesthesiology—The twelfth postgraduate assembly in anesthesiology of the New York State Society of Anesthesiologists, held December 10 through 13, had a record attendance of 1,469 physicians.

Drs. James O. Elam and David G. Greene, Roswell Park Memorial Institute, Buffalo, received honorable mention in the awards for scientific exhibits. The subject of their exhibit was "Respiratory Resuscitations."

March of Dimes Advisory Committee Named—A medical advisory committee on research consisting of top American scientists has been named to guide the National Foundation's expanded scientific program. The new committee will pass on all grants for research projects supported by the March of Dimes.

Among the members of the committee will be Dr. Frank L. Horsfall, Rockefeller Institute, New York City; Dr. Charles A. Ragan, Jr., Presbyterian Hospital and Columbia University College of Physicians and Surgeons, New York City; and Dr. Lewis Thomas, New York University College of Medicine, New York City.

Catholic Psychiatrists Elect—Dr. Eugene N. Boudreau of Syracuse was elected president of the Guild of Catholic Psychiatrists at the organization's tenth annual meeting on February 4. Among those elected as directors was Dr. Joseph D. Sullivan of New York City.

Symposium on Advances in Medical Technology—The Institute of Microbiology will sponsor a symposium on "Recent Advances in Medical Technology" to be held at Wagner College, Staten Island, on Saturday, June 6, 20, and 27, from 10:00 A.M. to 3:00 P.M. Registration closes May 23. For information contact: Professor Natale Colosi, Wagner College, Staten Island 1, New York.

Training Program for Steroid Biochemistry—The Worcester Foundation for Experimental Biology, Shrewsbury, Massachusetts, with the Department of Chemistry, Clark University, Worcester, Massachusetts, and the Department of Biochemistry, College of Medicine, University of Utah, Salt Lake City, have announced the 1959–1960 training program for steroid biochemistry.

Sponsored by the United States Public Health Service through the National Cancer Institute of the National Institutes of Health, the courses will stress theoretic and practical aspects and specialized laboratory technics in steroid research.

Final date for application is June 1. For information and application forms write to: Dr. William R. Nes, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, Massachusetts.

Booklet on Diagnosis of Cardiac Defects—A revised and expanded edition of the American Heart Association's booklet *Diagnosis of Congenital Cardiac Defects in General Practice* by Dr. Regina Gluck, is available to physicians free of charge through their local heart associations.

Designed primarily for general practitioners and pediatricians, it is intended to clarify the function of the family physician in diagnosing and referring patients with congenital cardiac defects. It describes common congenital cardiac defects and pre-

[Continued on page 1160]

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[Continued from page 1159]

sents briefly the physiology and clinical findings and the indications for surgery in defects that may be operable.

Personalities

Awarded

Dr. Hilary Koprowski, New York City, a decoration from the Société d'Encouragement pour la Récherche et l'Invention, February 11.

Installed

Dr. Leonard J. Goldwater, professor of occupational medicine, Columbia University School of Public Health and Administrative Medicine, as president of the American Academy of Occupational Medicine, February 12.

Appointed

Dr. William C. Spring, Jr., as associate medical director of J. B. Roerig and Company, pharmaceutical division of Chas. Pfizer & Company.

Honored

Dr. Richard Lewisohn, New York City, as an honorary Fellow of the Royal College of Surgeons of England, February 12.

Speakers

Dr. David Adlersberg, Mount Sinai Hospital, on the topic "Clinical and Pathologic Aspects of the Malabsorption Syndrome in Man" at a symposium sponsored by the National Vitamin Foundation, March 3. . .Dr. Herbert Berger, Staten Island, at a conference on narcotics problems at the New York Society for Ethical Culture, February 8. . .Dr. Sidney Blumenthal, the Babies Hospital, at the March 19 meeting of the Thursday afternoon Lenten sewing class of the Cribside Social Service Committee of the Babies Hospital. . .Dr. W. Kenneth Clark, vice-president for medical affairs of the American Cancer Society, at an area meeting of the Society, January 31. . .Dr. William Dock, professor of medicine, State University College of Medicine, March 12, at a meeting at Boulevard Hospital, Long Island City, on the subject "Pathogenesis and Management of Coronary Atherosclerosis". . .Dr. Henry Doubilet, associate professor of surgery, New York University College of Medicine, February 16, at a clinical conference at Forest Hills General Hospital. . .Dr. Sidney Fox, on the topic "The Handling of Entropion and Ectropion," February 23, before the Nassau Ophthalmological Society. . .Dr. Arthur D. Hengerer, assistant professor of obstetrics and gynecology, Albany Medical College, February 17, on "Management of Infections in Obstetrics and Gynecology". . .Dr. Norman Jolliffe, director of the Bureau of Nutrition of the Department of Health of the City of New York, at a dinner given by the National Vitamin Foundation, March 3, on the topic "The Anti-Coronary Club". . .Dr. Herman E. Pearse, professor of surgery, University of Rochester School of Medicine and Dentistry, February 8 at the annual Congress on Medical Education and Licensure, Chicago. . .Dr. Frederick Reiss, associate clinical professor of dermatology, New York University Post-Graduate Medical School, February 9, before the Society of Medical Jurisprudence, on the subject "Products Liability". . .Dr. Howard A. Rusk, at the Adelphi College midyear convocation commemorating World Brotherhood and Religious Emphasis Week, February 11, on the topic "Health for Peace". . .Dr. Abraham Weinberg, chairman, Committee on Mental Hygiene, New York Academy of General Practice, on "Indications and Technics of Hypnosis for the General Practitioner" March 12. . .Dr. S. Bernard Wortis, professor of psychiatry, New York University College of Medicine, at a conference on narcotics problems at the New York Society for Ethical Culture, February 7.

From the Doctor's Mailbox

Dear Doctor,

I have had real good night sleep. Now would you kindly let my husband know. Have I to take 4 heart tablets and just same with along medicine I got. also do I have to take little tablets as well 4 a day and also have I to take green ones 2 at night. Or have I just to take 4 heart besides 3 times medicine a day and brown ones 4 times a day and 2 green ones at night and just let him know which as to be taken with medicine please and oblige.

P.S.—Please let me know what as to take. I av wedding on Saturday. Mrs Maggie Bullock.

—*The Lancet, January 10, 1959*

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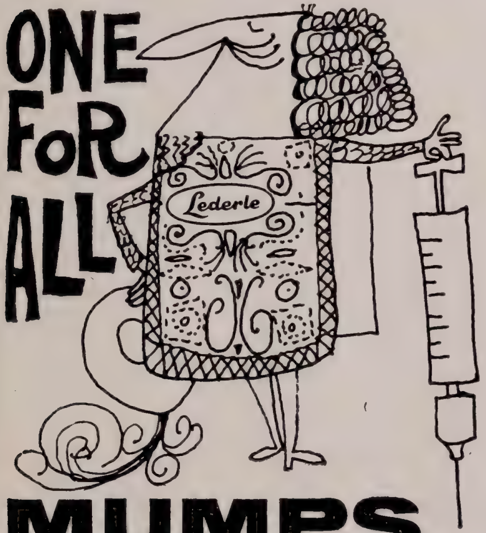

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MEDICAL MEETINGS

Association of American Physicians and Surgeons

The Association of American Physicians and Surgeons, will hold its sixteenth annual meeting of the assembly and delegates at the Hilton Hotel, Fort Worth, Texas, April 2 through 4.

All physicians who are members of their county medical societies are invited to attend. They need not be members of the Association of American Physicians and Surgeons.

Phi Lambda Kappa Scientific Meeting

The seventh annual interim scientific meeting of Phi Lambda Kappa, national medical fraternity, will be held at the Deauville Hotel, Miami Beach, Florida, April 5 through 12.

The program is designed for the general practitioner and will feature papers and symposiums by specialists in their fields. All members of the medical and dental professions are welcome.

For registration and information write to: Dr. Samuel L. Lemel, 1621 Euclid Avenue, Cleveland 14, Ohio.

New York Proctologic Society Annual Banquet

The annual banquet meeting of the New York Proctologic Society will be held at the New York University Club, 123 West 43rd Street, New York City, on Thursday, April 16. Cocktails will be served at 6:10 P.M. and will be followed by dinner at 6:30 P.M.

The speaker for the evening will be Dr. Rupert B. Turnbull, surgeon, Cleveland Clinic, by invitation. His topic will be, "Newer Surgical Procedures in Ulcerative Colitis."

For information concerning the meeting contact: Dr. Norman L. Freund, secretary, 163 Ocean Avenue, Brooklyn 25, New York.

International Symposium on Myasthenia Gravis

The second international symposium on myasthenia gravis will be held under the joint auspices of the Myasthenia Gravis Foundation, Inc., and the National Institute of Neurological Diseases and Blindness, April 18 and 19 at the Statler-Hilton Hotel, Los Angeles, California.

Programs of the symposium are available upon request from: Dr. Kermit E. Osserman, 4 East 89th Street, New York 28, New York.

Charles A. Elsberg Lecture

Dr. Francis C. Grant, emeritus professor of neurologic surgery, University of Pennsylvania School of Medicine, University Hospital, Philadelphia, will deliver the annual Charles A. Elsberg Lecture on Tuesday, May 19, at 8:30 P.M. at the New York Academy of Medicine, 2 East 103rd Street, New York City. Dr. Grant will speak on "Trigeminal Neuralgia."

New York Division, International College of Surgeons

The annual spring meeting of the New York Surgical Division, International College of Surgeons, will be held at the Concord Hotel, Kiamesha Lake, New York, May 28 through 30. For information write to: Dr. Milton S. Weinberg, chairman of arrangements, 37–41 75th Street, Jackson Heights 72, New York.

World Conference of Angiology

The fifth annual meeting of the American College of Angiology, World Conference of Angiology, will be held at the Marlborough Blenheim Hotel, Atlantic City, New Jersey, June 5 through 7. For further information concerning this meeting contact: Dr. Alfred Halpern, 11 Hampton Court, Great Neck, New York.

Oregon Cancer Conference

A cancer conference will be held July 16 and 17 in Portland, Oregon, under the joint sponsorship of the Oregon State Medical Society, the Oregon Division of the American Cancer Society, the University of Oregon Medical School, and the Oregon Academy of General Practice. Among the guest speakers will be Dr. Gilbert Dalldorf, Albany, director, Medical and Scientific Research Department of the National Foundation.

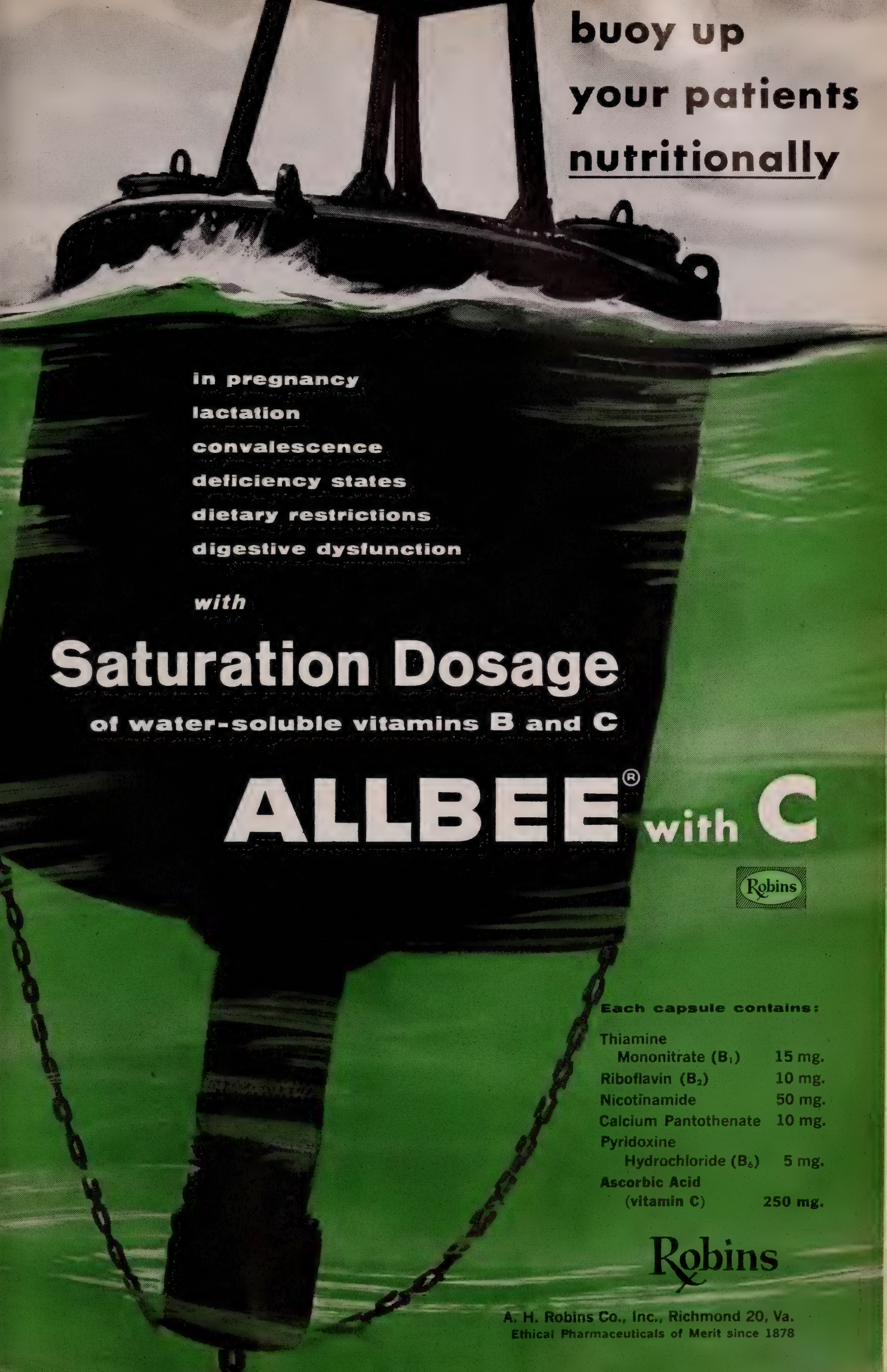
A complete program may be obtained by writing to Mr. Roscoe K. Miller, executive secretary, Oregon State Medical Society, 1115 S. W. Taylor Street, Portland 5, Oregon.

New York Chapter, American College of Chest Physicians

The New York Chapter of the American College of Chest Physicians will hold a three-day meeting March 19 through 21, in New York City.

The program on Thursday, March 19, will be

[Continued on page 1168]



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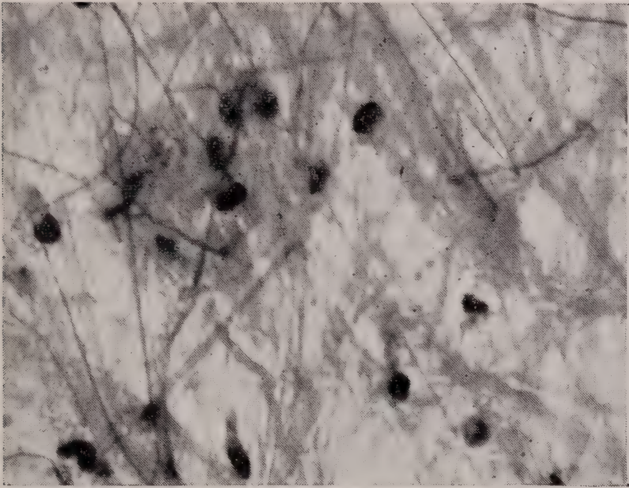

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[Continued from page 1162]

held at the Hotel Commodore at 8:00 P.M. and will feature a panel discussion entitled "Stump the Experts." The audience is urged to bring problem cases, proved or unproved, for presentation. Five minutes will be allowed for each presentation. Dr. Emil A. Naclerio, chief, thoracic surgery, Columbus and Harlem Hospitals, New York City, will be moderator.

Friday's program, March 20, will be held at the College of Physicians and Surgeons, 630 West 168th Street, Amphitheatre A. Dr. Ralph A. Deterling, Jr., associate professor of clinical surgery, Columbia University, associate attending surgeon, Presbyterian Hospital, director, Surgical Research Laboratories, Columbia University, and Dr. George H. Humphreys, II, director of Surgical Service, Presbyterian Hospital, will be moderators of the morning session and Dr. Naclerio, moderator of the afternoon session.

Saturday's program will take place on March 21, at Roosevelt Hospital, 59th Street and 9th Avenue. Moderator will be Dr. J. Maxwell Chamberlain, attending in charge, Thoracic Surgery, Roosevelt Hospital, assistant clinical professor of surgery, Columbia University, New York City.

NECROLOGY

Michael Burghardt, M.D., of Brooklyn, died on January 10 at the age of fifty-five. Dr. Burghardt graduated in 1931 from Long Island College of Medicine Medical School and interned at Norwegian Lutheran Deaconess Home and Hospital. He was an assistant in surgery at Lutheran Medical Center and Prospect Heights Hospital. Dr. Burghardt was a Diplomate of the International College of Surgeons, a Fellow of the International College of Surgeons, and a member of the Kings County Surgical Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Julius George Colantuono, M.D., of Forest Hills and Glen Cove, died on February 4 at his home at the age of thirty-eight. Dr. Colantuono graduated in 1946 from Albany Medical College and interned at Queens General and Hillside Hospitals. He was an assistant in psychiatry at Community Hospital at Glen Cove. Dr. Colantuono was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry), a Member of the American Psychiatric Association, and a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Eugene Floyd Du Bois, M.D., of New York City, retired, died on February 12 at his home at the age of seventy-six. Dr. Du Bois graduated in 1906 from Columbia University College of Physicians and Surgeons and interned at Presbyterian Hospital. He was a consulting physician at New York Hospital. In 1941 he retired as physician in chief of New York Hospital and professor of medicine at Cornell University Medical College to concentrate on his work with the Navy. In April he was to have received the John Phillips Memorial Award of the American College of Physicians in Chicago. In 1928 he was director of the Russell Sage Institute of Pathology. Dr. Du Bois received the Navy Cross, was awarded the Kober Medal of the Association of American Physicians in 1947, was chairman of the Committee on Aviation Medicine of the National Research Council from 1940 to 1945, and was a member of the Association of American Physicians, the New York Academy of Medicine, the New York County Medical Society, and the Medical Society of the State of New York.

Mark Glinert, M.D., of Brooklyn, died on February 3 at the age of sixty-three. Dr. Glinert received his medical degree in 1924 from the University of Vienna. He was a member of the Kings County Medical Society and the Medical Society of the State of New York.

William R. Gladstone, M.D., of Walton, died on February 2 at the age of eighty-two. Dr. Gladstone graduated in 1898 from Bellevue Hospital Medical College. He had practiced for sixty years and in 1948 received a plaque from the Medical Society of the State of New York for fifty years of practice. Dr. Gladstone was a member of the Delaware County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frank Perry Goodwin, M.D., of Jamestown, died on January 16 at his home at the age of seventy-six.

[Continued on page 1172]

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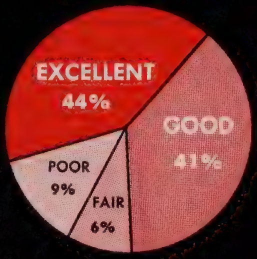

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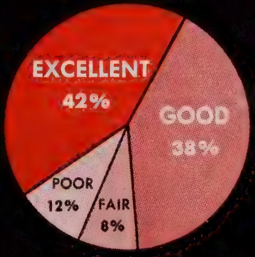

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References: 1. Cooperative Study, Department of Medical Research, Winthrop Laboratories • 2. Lichtman, A. L.: Kentucky Acad. Gen. Pract. J. 4:28, Oct., 1958 • 3. Baker, A. B.: Modern Med. 26:140, April 15, 1958.

***tran-qui-lax-ant** [< L. *tranquillus*, quiet; L. *laxare*, to loosen, as the muscles]

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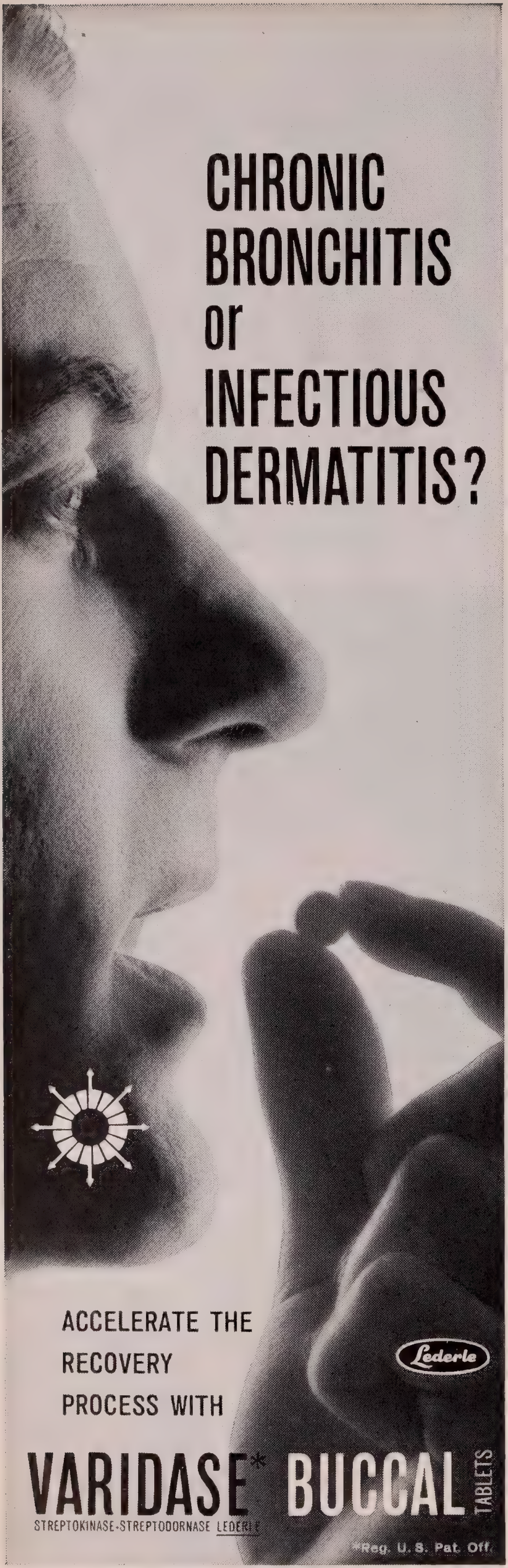

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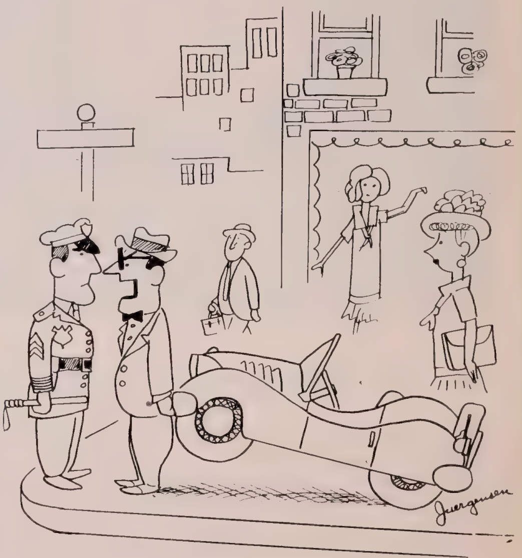

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[Continued from page 1168]

Dr. Goodwin graduated in 1906 from Cornell University Medical College. He was an attending physician at Woman's Christian Association Hospital and a member of the staff at Jamestown General Hospital. Dr. Goodwin was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the Buffalo Academy of Medicine, the Chautauqua County Medical Society of which he was a past president, the Medical Society of the State of New York, and the American Medical Association.

Lee O'Donnell, M.D., of New York City, died at his home on February 8 at the age of fifty-eight. Dr. O'Donnell graduated in 1927 from Cornell University Medical College. He was director of obstetrics and gynecology at Lenox Hill Hospital. A former associate clinical professor of obstetrics and gynecology at New York University, Dr. O'Donnell was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Projector, M.D., of Washington, D.C., formerly of the Bronx, died on January 29 at the age of seventy-five. Dr. Projector graduated in 1913 from New York University and Bellevue Hospital Medical School. Retired, he had been an adjunct in gynecology at Bronx Hospital and chief of gynecology at Bronx Hospital Outpatient Department. Dr. Projector was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lionel Rosenberg, M.D., of Brooklyn, died at his home on February 6 at the age of seventy-five. Dr. Rosenberg graduated in 1907 from Long Island College Hospital Medical School. He was an associate attending physician at Flower and Fifth Avenue Hospitals and Flower and Fifth Avenue Hospitals Outpatient Department. He had served as associate professor of clinical medicine at New York Medical College and was a former chief of medicine and past president of the medical board at the Broad Street Hospital. Dr. Rosenberg was a Diplomate of the American Board of Internal Medicine and a member of the Kings County Medical Society and the Medical Society of the State of New York.

Harry Rosenstein, M.D., of the Bronx, died on January 30 at Lebanon Hospital at the age of sixty-four. Dr. Rosenstein graduated in 1917 from Fordham University School of Medicine and interned at Lebanon Hospital. He was a member of the Bronx County Medical Society and the Medical Society of the State of New York.

William Davies Sherwood, M.D., retired, died on February 1 at the age of seventy-six. Dr. Sherwood graduated in 1906 from Columbia University College of Physicians and Surgeons. He was a consultant in neuropsychiatry at University Hospital. He was formerly professor of neurology at the College of Physicians and Surgeons and professor of clinical neurology and psychiatry at the New York Post-Graduate Medical School. Dr. Sherwood was a Diplomate of the American Board of Psychiatry and Neurology, a Fellow of the American Academy of Compensation Medicine, Inc., and a member of the New York Society for Clinical Psychiatry, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Albert Vander Veer, M.D., retired, of Charlotte, North Carolina, formerly of New York City, died on January 31 in Presbyterian Hospital (Charlotte) at the age of seventy-nine. Dr. Vander Veer graduated in 1904 from Columbia University College of Physicians and Surgeons. He has been assistant chief of allergy at the Roosevelt Hospital Outpatient Department and a consultant in allergy at Roosevelt Hospital. Dr. Vander Veer was a Diplomate of the American Board of Internal Medicine and a member of the New York Academy of Medicine, the New York County Medical Society, and the Medical Society of the State of New York.

David Wechsler, M.D., of Rego Park, died on January 11 at the age of seventy-six. Dr. Wechsler graduated in 1907 from New York University and Bellevue Hospital Medical College.

Victor L. Zimmermann, M.D., of Chatham Center, died on February 4 in Columbia Memorial Hospital, Hudson, at the age of eighty-seven. Dr. Zimmermann graduated in 1897 from Bellevue Hospital Medical College and interned at St. Mary's Hospital. He was a consultant in obstetrics and gynecology at the Hospital of the Holy Family, senior obstetrican and gynecologist at St. Mary's Hospital, and emeritus obstetrician and gynecologist at the Brooklyn Hospital. A former president of the Brooklyn Gynecological Society, Dr. Zimmermann was a Fellow of the American College of Surgeons and a member of the New York Obstetrical Society, the Brooklyn Gynecological Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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MONTH IN WASHINGTON

CONTRARY to the usual procedure in a first session, the 86th Congress this year already is getting on with its work, particularly in health fields. In past Congresses, not much is accomplished the first session, with most bills held over to the second, which always is an election year.

The session was only weeks old when action was under way. Here are some of the developments, portending enactment before adjournment, of a number of bills:

1. After hearings, a subcommittee of the Senate Banking and Currency Committee reported favorably on a housing bill that contained provision for mortgage guarantees for proprietary nursing homes. Subsequently, the measure was passed by the Senate.

At this writing the House is at work on another housing bill that also contains the nursing home loan section. With House passage assumed, the question is whether the bill (containing more money than the White House wants spent) will be vetoed, and if vetoed whether it can be enacted anyway by two-thirds majorities in both houses.

2. Without bothering with hearings, the House Ways and Means Committee overwhelmingly approved the Keogh bill to encourage retirement plans for the self-employed. It acted in line with the committee's established procedure to quickly reapprove bills that passed the House the previous Congress, but not the Senate. The Keogh bill is identical with a measure that easily cleared the House last session but lost out in the Senate.

3. Driven forward by Chairman Carl Vinson of the House Armed Services Committee, legislation to extend the regular and doctor drafts four years rolled through the House. However, indications were that the Senate would take its time and give careful consideration to the need for a four-year extension.

4. The Senate Labor and Welfare Committee, under the leadership of Chairman Lister Hill (D., Ala.), demonstrated its interest in legislation for the aged. Senator Hill named a subcommittee to make a full year's study of problems of the aged, taking in housing, employment and recreation, as well as medical aspects.

Chairman of this subcommittee is Senator Pat McNamara, Detroit Democrat. Other Democrats are Senators John Kennedy of Massachusetts, Joseph Clark of Pennsylvania, and Jennings Randolph of West Virginia. Republicans are Senators Everett Dirksen of Illinois and Barry Goldwater of Arizona.

5. At the same time, three members of the standing health subcommittee of the Hill Committee, Senators Jacob K. Javits of New York, Clifford B. Case of New Jersey, and John Sherman Cooper, all Republicans, asked Congress to authorize a two-year study of the health problems of the entire population. If approved by Congress, the investigation would look into the quality and quantity of health services, problems of extending health insurance, special problems of the aged and minority groups, and the distribution of health services.

Notes

Fifty-four Senators are supporting legislation that would project the U.S. farther into the international medical picture. It would set up an Institute of International Medical Research as part of NIH, establish an advisory council, and authorize spending of $50 million a year for research, part of it to go to foreigners in the form of grants.

Medicare has not been able to keep within the $72 million "ceiling" recommended by Congress for the present year. Through the Navy it is asking $6 million more. In addition, Army and Air Force will shift funds to meet the bill, estimated at $93.6 million. The budget asks $89 million for next year in expectation that restrictions begun in October will bring a saving of between $4 million and $5 million.

Medicine has won an argument within the new Federal Aviation Agency. As a consequence, FAA's civil air surgeon will assist the administrator in setting standards for fitness, direct physical examination and inspection programs, advise on research needs, and evaluate all of FAA's medical personnel plans.

The President's health budget, now under scrutiny in Congress, is expected to be substantially increased. As an example of the White House efforts for economy, Mr. Eisenhower recommended $101.2 million for Hill-Burton hospital construction grants, in contrast to $186.2 million HB has for the current fiscal year.

Through the Civil Service Commission, the Federal government is attempting to recruit physicians for service in this country and abroad.

[Continued on page 1176]

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[Continued from page 1174]

Salary ranges from $7,510 to $12,770.

The Administration is pressing Congress to pass legislation giving the U.S. power to regulate coal tar and other colors in foods, drugs, and cosmetics. One objective is to require that manufacturers demonstrate that the colors are harmless before the products can be put on the market.

BOOKS RECEIVED

(The following books were received during the month of January, 1959)

Bone Tumors. Second edition. By Louis Lichtenstein, M.D. Octavo of 402 pages, illustrated. St. Louis, The C. V. Mosby Co., 1959. Cloth, $12.

The Central Nervous System and Behavior. Transactions of the First Conference, February 23, 24, 25 and 26, 1958. By Mary A. B. Brazier, Ph.D. Octavo of 450 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1959. Cloth, $5.25.

Psychological Stress. By Irving L. Janis. Octavo of 439 pages. New York, John Wiley & Sons, Inc., 1958. Cloth, $6.95.

Fracture Surgery. By Henry Milch, M.D., and Robert A. Milch, M.D. Octavo of 470 pages, illustrated. New York, Paul B. Hoeber, Inc., 1959. Cloth, $17.50.

The Management of Fractures and Dislocations. An Atlas. Volumes I and II. By Anthony De Palma, M.D. Volume I, quarto of 483 pages, illustrated. Volume II, quarto of 973 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $35 set of two volumes.

The Medical Clinics of North America. Volume 43, No. 1. The Major Pulmonary Diseases. Veterans Administration Hospitals Number. Octavo of 337 pages, illustrated. Quarterly Book Series. Philadelphia, W. B. Saunders Co., January, 1959. Cloth, $18 per year.

Amino Acids and Peptides with Antimetabolic Activity. Ciba Foundation Symposium. By G. E. W. Wolstenholme and Cecilia M. O'Connor. Duodecimo of 280 pages, illustrated. Boston, Little Brown & Co., 1958. Cloth, $8.75.

The Flaming Heart. By Deborah Deutsch. Duodecimo of 271 pages. Boston, Bruce Humphries, 1958. Cloth, $3.75.

The Sedimentation Rate of Human Erythrocytes. By Frank Wright, M.D. Duodecimo of 43 pages, illustrated. New York, Vantage Press, 1958. Cloth, $2.50.

Practical Dermatology. Second Edition. By George M. Lewis, M.D. Octavo of 363 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $8.00.

Long-Term Illness. Management of the Chronically Ill Patient. By Michael G. Wohl, M.D. Octavo of 748 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $17.

Treatment of Cancer and Allied Diseases. Second edition, volume II. Tumors of the Nervous System. By George T. Pack, M.D., and Irving M. Ariel, M.D. Octavo of 316 pages, illustrated. New York, Paul B. Hoeber, Inc., 1959. Cloth, $15.

Gynecologic Radiography. By Jean Dalsace, M.D., and J. Garcia-Calderón, M.D. Octavo of 188 pages, illustrated. New York, Paul B. Hoeber, Inc., 1959. Cloth, $8.00.

Pulmonary Circulation. By Wright R. Adams, M.D., and Ilza Veith, Ph.D. Octavo of 316 pages, illustrated. New York, Grune & Stratton, Inc., 1959. Cloth, $4.50.

Vascular Surgery. By Geza de Takats, M.D. Octavo of 726 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $17.50.

The Middle Ear. By Heinrich G. Kobrak, M.D. Octavo of 254 pages, illustrated. Chicago, University of Chicago Press, 1959. Cloth, $15.

Viral and Rickettsial Infections of Man. Third edition. By Thomas M. Rivers, M.D., and Frank L. Horsfall, Jr., M.D. Octavo of 967 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1959. Cloth, $8.50.

Dorland's Pocket Medical Dictionary. Twentieth edition. Sextodecimo. Philadelphia, W. B. Saunders Co., 1959. Cloth, $4.50.

BOOKS REVIEWED

Chronic Illness in the United States. Commission on Chronic Illness, June 1949–June 1956. Volume 1, Prevention of Chronic Illness. Pub. 1957. Cloth, $6,00. **Volume 2—Care of the Long Term Patient.** Pub. 1956. Cloth, $8.50. Cambridge, Mass. Harvard University Press. Published for the Commonwealth Fund.

These books are two of a series of comprehensive studies conducted under the auspices of the Commission on Chronic Illness, and constitute an impressive inventory of the nation's health problems and resources in the field of chronic disease. The remaining volumes deal with chronic illness in a rural area (Hunterdon Medical Center, New Jersey), and chronic illness in a large city (Baltimore).

This ambitious cooperative endeavor, which has included most of the country's leading health agencies, will be an invaluable source book in this field. With the aging of the population and control of acute diseases, chronic disorders have emerged as our major health problem and have assumed an increasingly important aspect of the physician's practice. While these volumes are not specifically designed for the individual practitioner of medicine, there is much that will be of interest to him, as well as to all others engaged in matters concerning the health of our population.

In Volume I the chapters on periodic health examinations and screening procedures will be of particular interest to the practicing physician. The chapters on summaries of information on prevention of selected chronic diseases comprise the greater portion of this volume. They represent authoritative and conservative statements on etiology, pathogenesis, clinical aspects, prevention, management, and possible areas of research.

The result is a necessarily over-abbreviated outline which limits the value of these chapters so that the physician cannot expect to derive much of a practical nature. However, these summaries represent an accurate portrayal of our present knowledge of and approach to the major chronic diseases.

The second volume on "Care of the Long-Term Patient" is a larger one and is replete with useful information on the various aspects of disabling illness. The chapters on the patient at home, the patient in an institution, and rehabilitation at home and in institutions, which total some 200 pages, should be invaluable to all who are engaged in problems of patient care.—Richard S. Gubner

[Continued on page 1178]

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[Continued from page 1177]

Ophthalmic Plastic Surgery. Second edition. By Sidney A. Fox, M.D. Quarto of 324 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $15.

This book is a successful and clear attempt to present all the basic classic operations in ophthalmology. It is mainly directed towards the practicing ophthalmologist, not the surgical specialist. The diagrams are clear, simple, and self-explanatory. The basic technics are clearly outlined and the author calls attention to the common errors to be avoided.

A clear discussion of grafts such as skin, hair-bearing lash and eyebrow, cartilage, bone and muscular grafts among others, is presented. The fundamentals of lid surgery, entropion, ectropion, ptosis are simply illustrated. Surgery of the common chalazion is very neatly presented. In addition, socket reconstruction and reconstruction of the lower and upper lids are discussed.

Since this book is so well written, so clearly illustrated, and the steps of each procedure are so basically detailed, it will be of great value to the ophthalmologist in an approach to ophthalmic plastic surgery.—Norris C. Elvin

Electrocardiography. By Michael Bernreiter, M.D. Octavo of 134 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1958. Cloth, $5.00.

The fundamental aspects of electrocardiography are presented in this 129 page book in the most elementary style. While this has the distinct advantage of simplicity for the beginner, efforts at simplification have resulted in the omission of numerous important conditions. Thus, only anterior and posterior wall involvement is discussed while less common myocardial infarctions (high lateral, diaphragmatic, auricular, etc.) are not described at all. Patterns related to myocarditis, congenital heart disease, ventricular aneurysm, cardiotoxins, trauma, and many other fairly common disorders are not even mentioned. A primer of this sort would also have profited from the insertion of tables of the various norms, but only a single table of normal QT intervals is reproduced. Oversimplification has also reduced the quality of many electrocardiographic descriptions. For example, the differentiation of ST segment configurations in acute myocardial infarction and acute pericarditis omits the pertinent fact that the segment is usually convex in the former and concave in the latter.

On the other hand, the book begins with a compact but lucid explanation of the basic physical principles involved in electrocardiography. This is simplified further by copious tracings and diagrams. These illustrations are clearly reproduced. Major cardiac arrhythmias and ventricular strain patterns are adequately presented. This book should appeal to the needs of the medical student and anyone else who is interested in the most basic electrocardiographic phenomena. As such, it is highly recommended.—Nathaniel E. Reich

Transactions of the International Society of Plastic Surgeons. First Congress. Stockholm and Uppsala, 1955. By Tord Skoog, M.D., and Robert H. Ivy, M.D. Octavo of 568 pages, illustrated. Baltimore, Williams & Wilkins Co., 1957. Cloth, $20.

This publication is a record of the First Congress of the International Society of Plastic Surgeons. Its contents include the statutes and officers of the Society and 14 succeeding chapters.

The individual papers in the various chapters are written by many of the most capable plastic surgeons of the world and the complete volume is really an advanced textbook covering the broadest field of reconstructive surgery. The subject matter is so all inclusive and so authoritative as to preclude specific individual review. Any physician who uses reconstructive surgical technics should include this book in his library.—Gerald Richard O'Brien and Raymond Shapiro

Cardiovascular Diseases. Third edition. By David Scherf, M.D., and Linn J. Boyd, M.D. Octavo of 829 pages, illustrated. New York, Grune & Stratton, Inc., 1958. Cloth, $17.75.

This is the third edition of a justly popular text which has been translated into several languages. The new edition has been completely reset and contains much new material.

The basic principles of the original edition have been retained. The emphasis is on bedside diagnosis and treatment, so that the volume will appeal mostly to general practitioners. The arrangement of the material and its nature are marked by common sense and an up-to-date approach to the subject. The book is not intended for the specialist who is not likely to find it very valuable but will make no mistake in adding it to his library. —Milton Plotz

Callander's Surgical Anatomy. By Harry J. Anson, Ph.D., and Walter G. Maddock, M.D. Fourth edition. Octavo of 1157 pages, illustrated. Philadelphia, W. B. Saunders Co., 1958. Cloth, $21.

A top-flight anatomist and a top-flight surgeon collaborate on a textbook of surgical anatomy—only Shakespeare has the proper words so we plagiarize and say, "A consummation, devoutly to be wished."

[Continued on page 1180]

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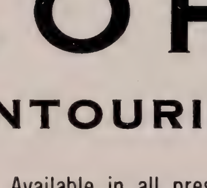

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[Continued from page 1178]

The new Anson-Maddock edition of a fine standard work is a scholarly, lucid presentation of surgical anatomy in every respect that these two words imply. Your reviewer enjoyed using the first edition as a student and as house officer in surgical training. He will equally enjoy using this edition as a quick reference text to clear up some minute detail in a specific surgical problem.

The illustrations are clear and are carefully done with great attention to detail. The added spice of a "surgical consideration" of these many illustrations makes this different from such similar texts. In describing surgical approaches, great pains are taken to mention surgical pitfalls. As an example, in describing radical groin dissection, mention is made about not making the repair so snug as to compromise the lumen (and therefore circulation) in the femoral vessels.

It would be of interest to your reviewer to compare a group of students taught anatomy with this text as opposed to the standard works such as Gray, Cunningham, and Morris.

As a personal note, the only criticism we have is the type of shiny paper used in this volume. Our old edition is easier reading because light is not reflected from the pages.—Phillip E. Lear

The Student Physician. By Robert K. Merton, George G. Reader, M.D., and Patricia L. Kendall. Octavo of 360 pp. Cambridge, Harvard University Press, 1957. (Published for the Commonwealth Fund.) Cloth, $5.00.

Medical schools teach a body of knowledge, technics, and skills but at the same time they teach much more. They provide the climate for the acquisition of some basic attitudes and perspectives by medical students regarding themselves, their profession, other health personnel, and patients.

The editors of this volume set as their goals the clarification of the processes whereby such attitudes are acquired within the medical school setting and with a description of the processes by which the neophyte student is converted into the mature physician.

These are worthy goals, but they are not fully achieved in this particular publication. Essentially the contents consist of a series of preliminary reports concerned with some limited aspects of medical student attitudes and attitude changes in three schools—Cornell, University of Pennsylvania, and Western Reserve. Eleven authors have written ten different chapters, and as might be expected, the continuity necessary for a systematic attack on this area of investigation is lacking.

However, lack of continuity should not detract from the most interesting results revealed in some of the reports. The chapter by Merton is an excellent statement of the dimensions of the problem, and it contains considerable material which should help clarify the role of a sociologic approach in a field such as medical education. Some of the later chapters prepared by different authors contain data and results which any person interested in medical education may want to know about.

The scope of ongoing studies hinted at various times by the editors leads one to the conclusion that what has not yet been said may be the more important contributions of these investigators. It is still too early to judge the extent to which these series of projects will illuminate the role of the medical school milieu in attitude formations of medical students.—Walter L. Johnson

Clinical Radiology of Acute Abdominal Disorders. By Bernard S. Epstein, M.D. Octavo of 352 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $15.

X-ray of the abdomen has come to be a distinct aid in the diagnosis of the acute abdomen. The added help of the "scout film" as a preliminary procedure in diagnosis is part of the armamentarium of the surgeon. Often the decision to operate or not is dependent on this modality of diagnosis. This volume covers a very extensive group of diseases. It brings the radiologist into an extremely important position in the diagnosis and ultimately in the treatment of acute abdominal disorders. It correlates the pathogenesis of the disease with the x-ray findings. Throughout the treatise the author reveals the reason for the x-ray findings.

Instead of showing a series of roentgenograms and merely enumerating the findings on that particular film, the author reveals what the disease entails pathologically and how the x-ray is affected by these changes.

There is a correlation of recent advances in x-ray diagnosis of congenital and acquired alimentary abnormalities in pediatric disorders. The book is recommended.—Alan A. Kane

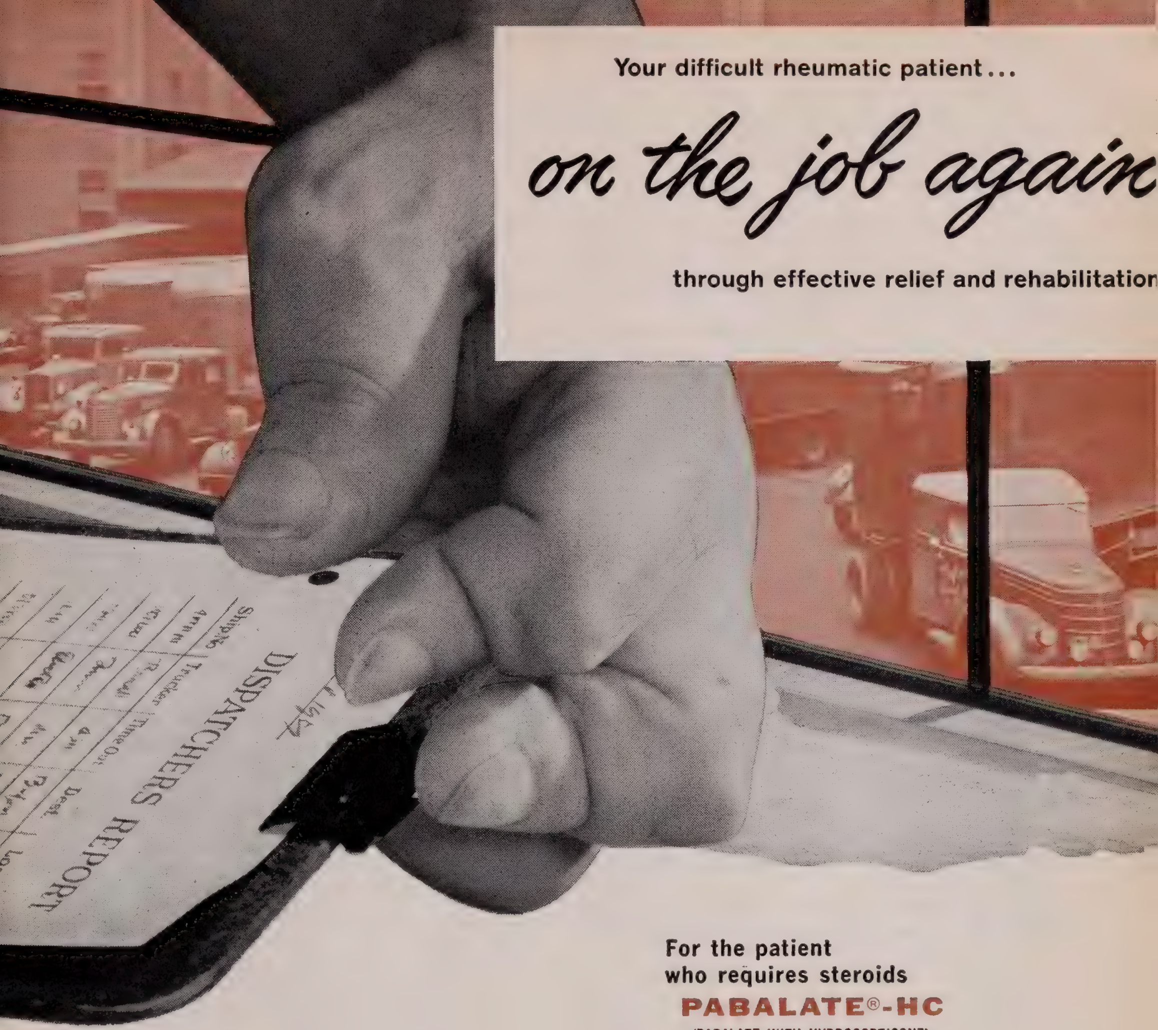
Progress in Radiation Therapy. By Franz Buschke, M.D. Octavo of 284 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $9.75.

It was the editor's desire not to prepare a digest of recent contributions in therapy, but to present comprehensive reviews of fundamental problems in relation to clinical radiation therapy.

After a chapter on the history of the subject, contributors discuss in succession three fundamental biologic problems—the relative biologic effectiveness of external beams of ionizing radiation, the time-dose relationship in radiotherapy, and the modification of radiation effects by chemical means.

Two clinical problems—ultra-fractionated roent-

[Continued on page 1182]



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[Continued from page 1180]

gen therapy and the cytohistologic evaluation of radiation response in carcinoma of the cervix are taken up.

A discussion of therapy in renal embryoma, intracranial tumors, carcinoma of the thyroid, radiation tolerance of the central nervous system, and therapy of nonmalignant diseases of the eye completes this publication.

The articles are interesting, readable, and authoritative. The book is of specific interest to students and practitioners of radiology.—E. Mendelson

Lumbar Disc Lesions. Pathogensis and Treatment of Low Back Pain and Sciatica. By J. R. Armstrong, M.D. Second edition. Octavo of 244 pages, illustrated. Baltimore, The Williams and Wilkins Co., 1958. Cloth, $12.

When the first edition of this book was published in 1952, it was well received by the medical profession.

This English author, who is very well qualified, has felt the need to bring the subject matter up to date. The book is very well written. The illustrations are simple, clear, and excellently done.

This reviewer enjoyed the author's comments on myelography, nucleography, the local use of hydrocortisone, and the role of spinal fusion in the treatment of lumbar discs.

The book is recommended especially for orthopedists and neurosurgeons.—Carmelo C. Vitale

Atrial Arrhythmias, Digitalis and Potassium. By Bernard Lown, M.D., and Harold D. Levine, M.D. Duodecimo of 222 pages, illustrated. New York, Landsberger Medical Books, Inc., 1958. Cloth, $6.90.

Digitalis has been in continuous use for almost two centuries. Withering, in his classic monograph published in 1785, defined the use and hazards of digitalis. With the advent of electrocardiography, the full spectrum of toxic reactions was carefully catalogued. Digitalis-induced derangements of ventricular rhythm are well delineated. Unfortunately, this is not the case with disturbances of auricular rhythm. The thesis presented by the authors is that atrial disorders resulting from digitalis are not only common, but are steadily increasing in frequency. The most common arrhythmia resulting from this drug is paroxysmal atrial with block. Clinically, this may contribute to an overtaxed myocardium or intractable heart failure. From the electrocardiographic viewpoint, it links the unifocal tachycardia (such as P.A.T.) with the so-called "circus rhythms" such as atrial flutter. From the biochemical standpoint, the pathogenesis of this condition is the result of a digitalis-induced lesion involving electrolytes and neurohumoral factors. Unless the abnormalities in electrolyte partition and neurohumoral production in the myocardium are identified, the prevention and treatment of all the arrhythmias will be empirical and frequently ineffective. These mechanisms and their possible correction are discussed authoritatively.

The present study was based upon numerous animal experiments, upon a large clinical experience, and upon 198 references on the subject matter. Clinical material was highly selected to emphasize not accomplishment but glaring error. P.A.T. with block was especially selected for study since it is the prototype of the auricular disorders due to digitalis. The development of this condition, which sensitizes the myocardium, is frequently due to deficits in body potassium. However, the authors did not find any such deviations in the majority of their cases.

The etiology, mechanism, clinical features, electrocardiographic studies, differentiation from other arrhythmias, and therapy are discussed in detail. This book is highly recommended for any practitioner who prescribes digitalis preparations. He may learn that the old lady from Shropshire really started something a long long time ago.—Nathaniel E. Reich

Diagnostic Laboratory Hematology. Second edition. By George E. Cartwright, M.D. Duodecimo of 250 pages, illustrated. New York, Grune & Stratton, Inc., 1958. Cloth, $6.75.

This concise and compact little manual is worth its weight in gold. It can be useful to the student of medicine, medical technologist, or physician.

The latest advances in hematology including electrophoresis, coagulation, and other problems are dealt with in brief and authoritative form. The book is highly recommended.—Maurice Morrison

Electrocardiogram Clinics. By Joseph E. F. Riseman, M.D., and Elliot L. Sagall, M.D. Octavo of 259 pages, illustrated. New York, The Macmillan Company, 1958. Cloth, $10.50.

This is a reference book on electrocardiography for the general practitioner. It consists of a series of cases in which the clinical findings, the history and the course of the illness, the electrocardiogram with its interpretation are skillfully blended to round out a complete picture for the diagnosis, the prognosis, and treatment of the cardiac case. It is a simple and logical study of angina pectoris, coronary thrombosis, and pulmonary embolism and discusses the every-day problems that confront the general practitioner in this particular field. It is a valuable book for the physician who has a limited knowledge of electrocardiography.—Simon Frucht

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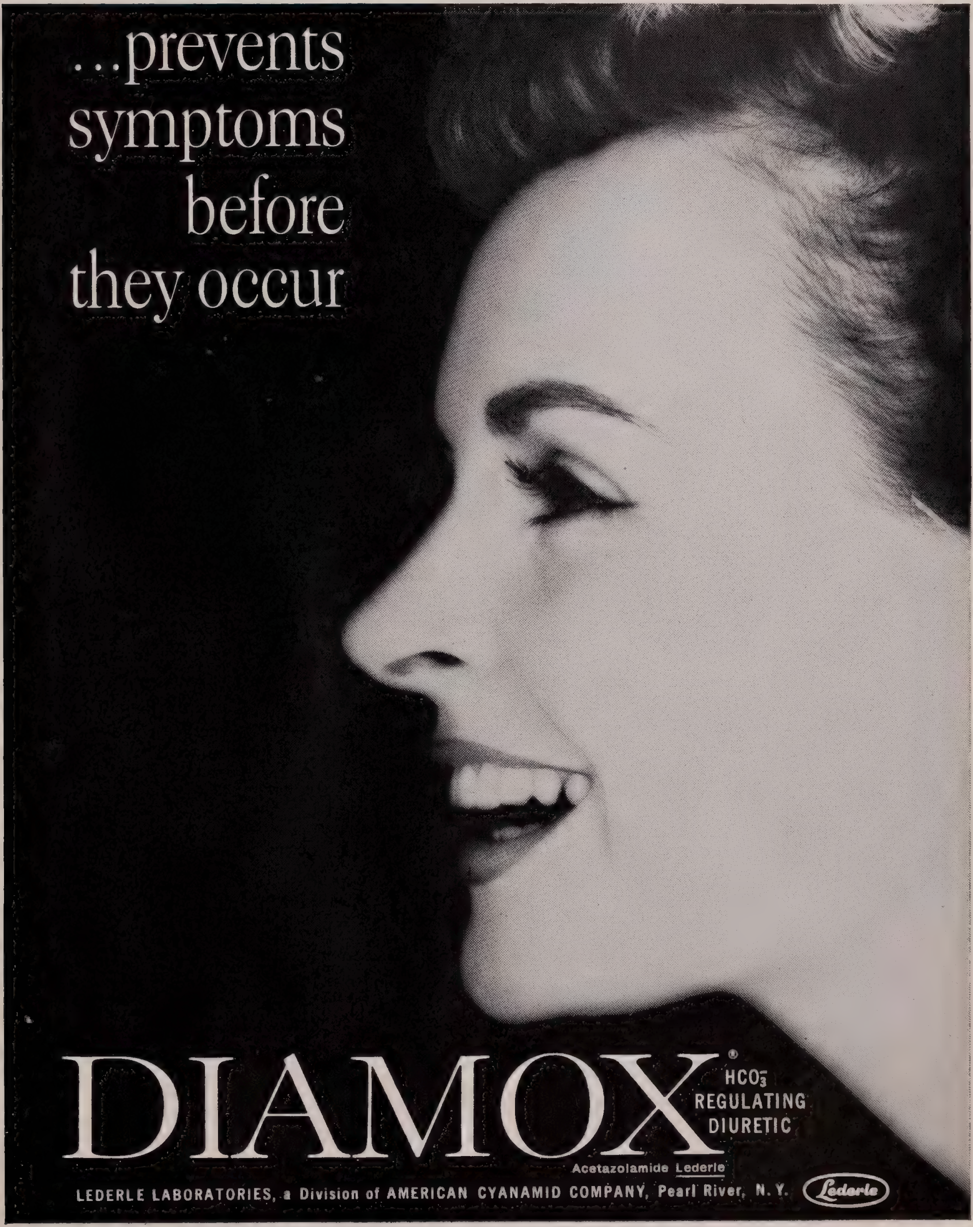
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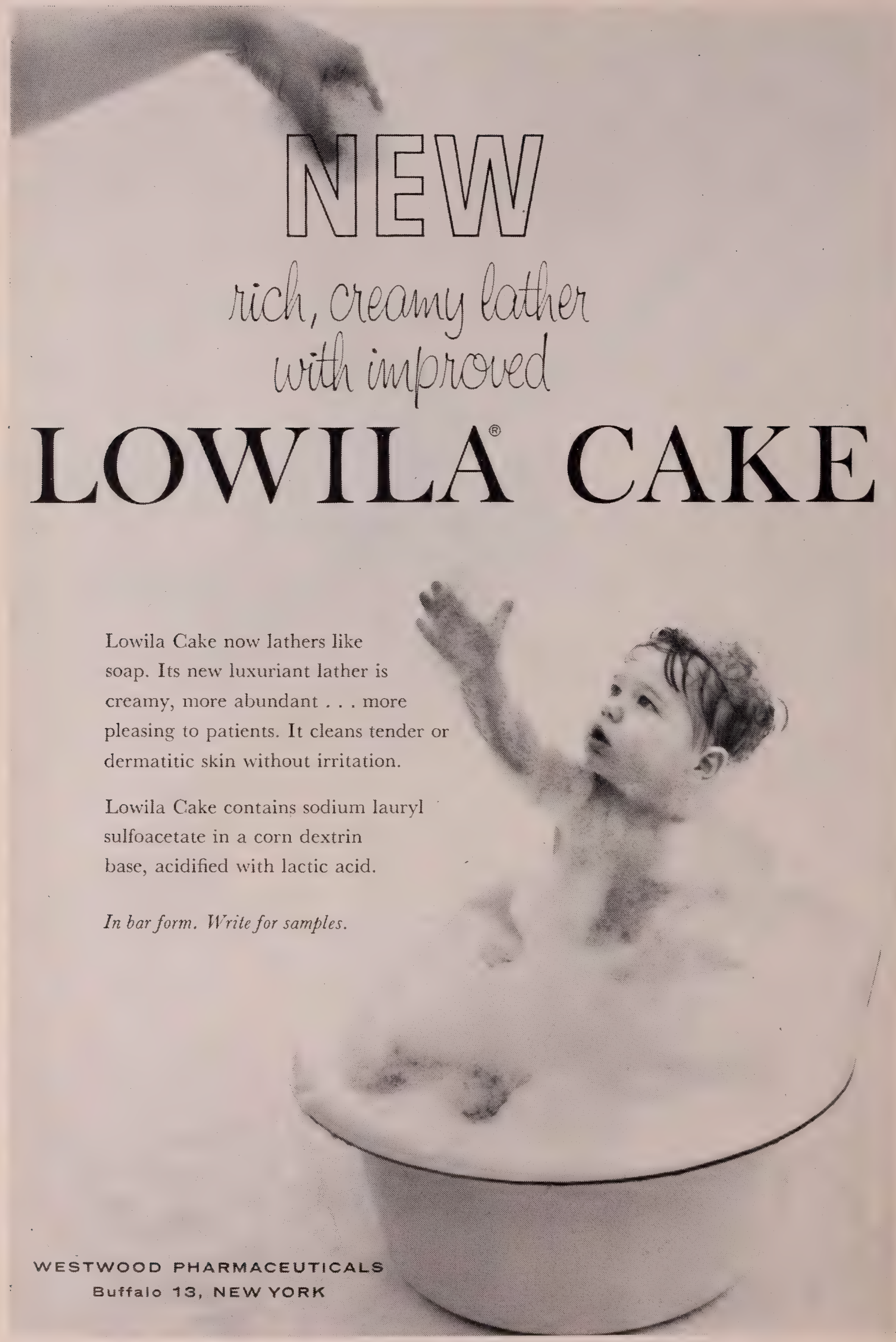

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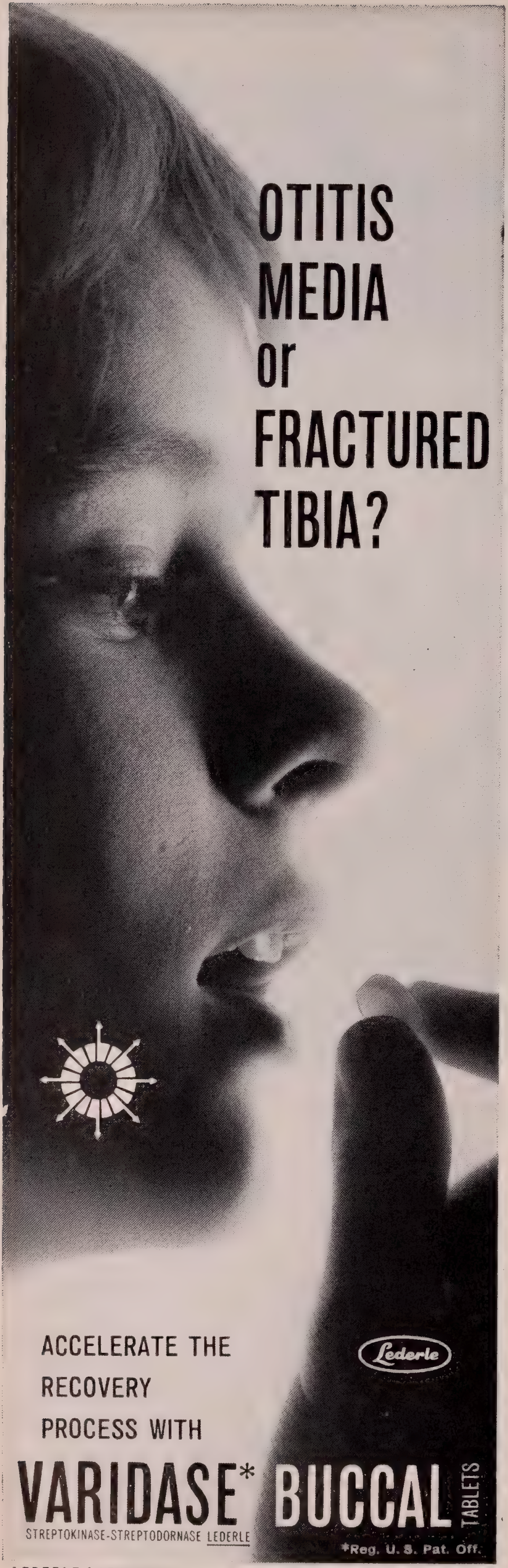
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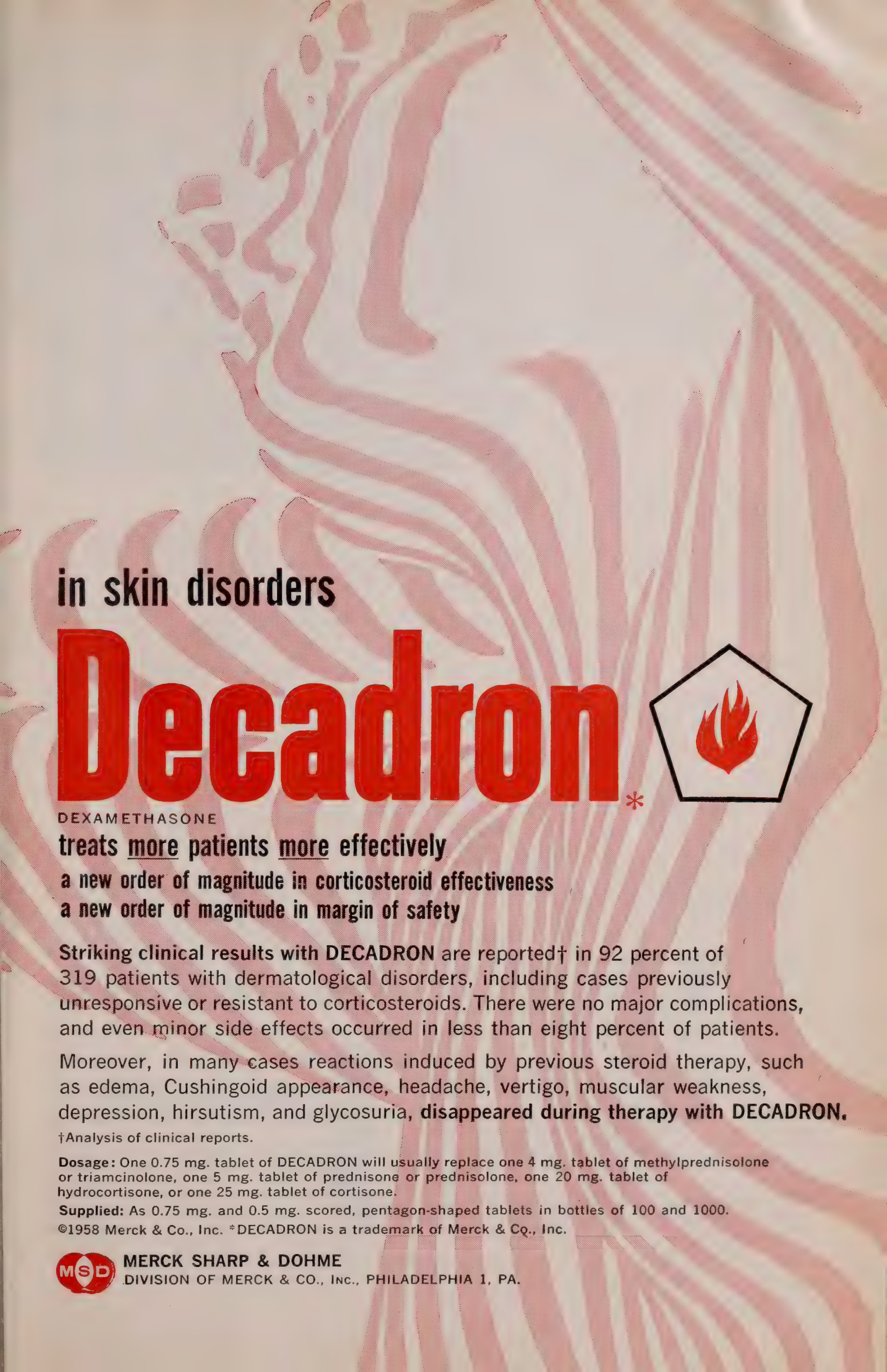

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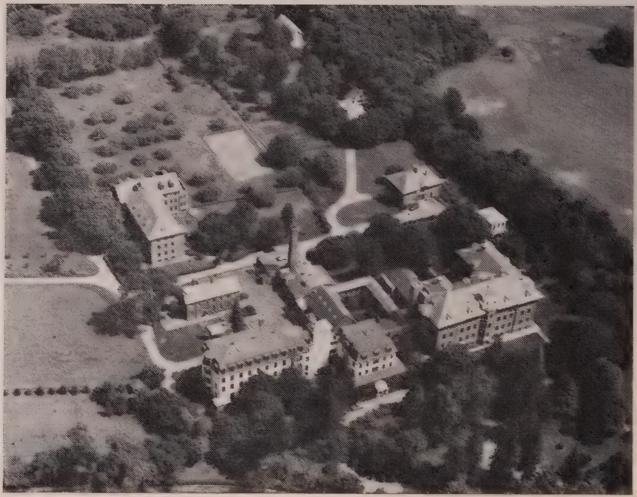

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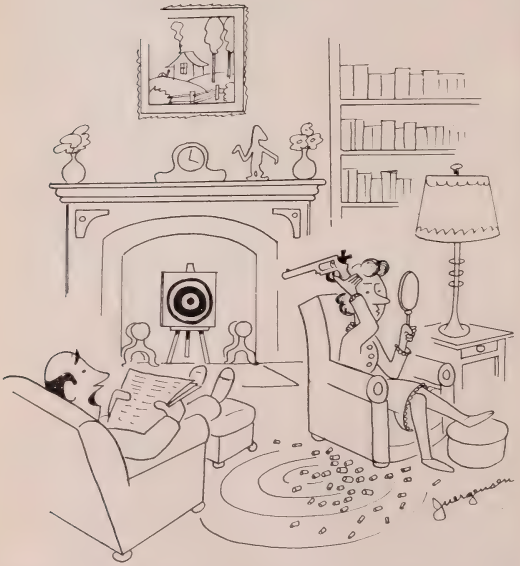

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1. Alexander, L.: Chemotherapy of depression—Use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride. J.A.M.A. **166**:1019, March 1. 1958.
2. Current personal communications; in the files of Wallace Laboratories.

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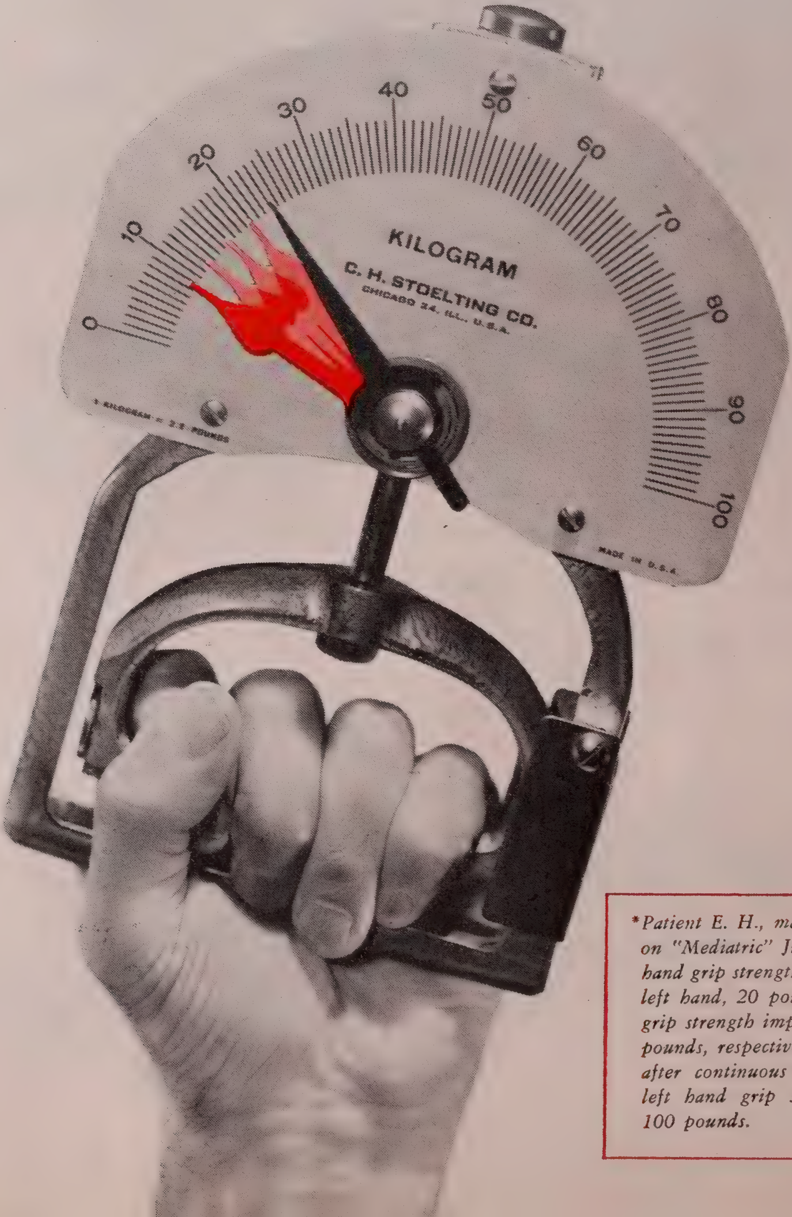
in six weeks' time, left hand grip strength increased from 20 to 52 pounds—nearly doubled in right hand.*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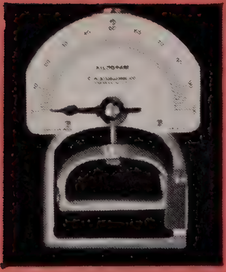

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[1] *Perlman, R. M., and Dorinson, S. M.: Presented before the Third Congress of the International Association of Gerontology, London, England, July 19-23, 1954.*

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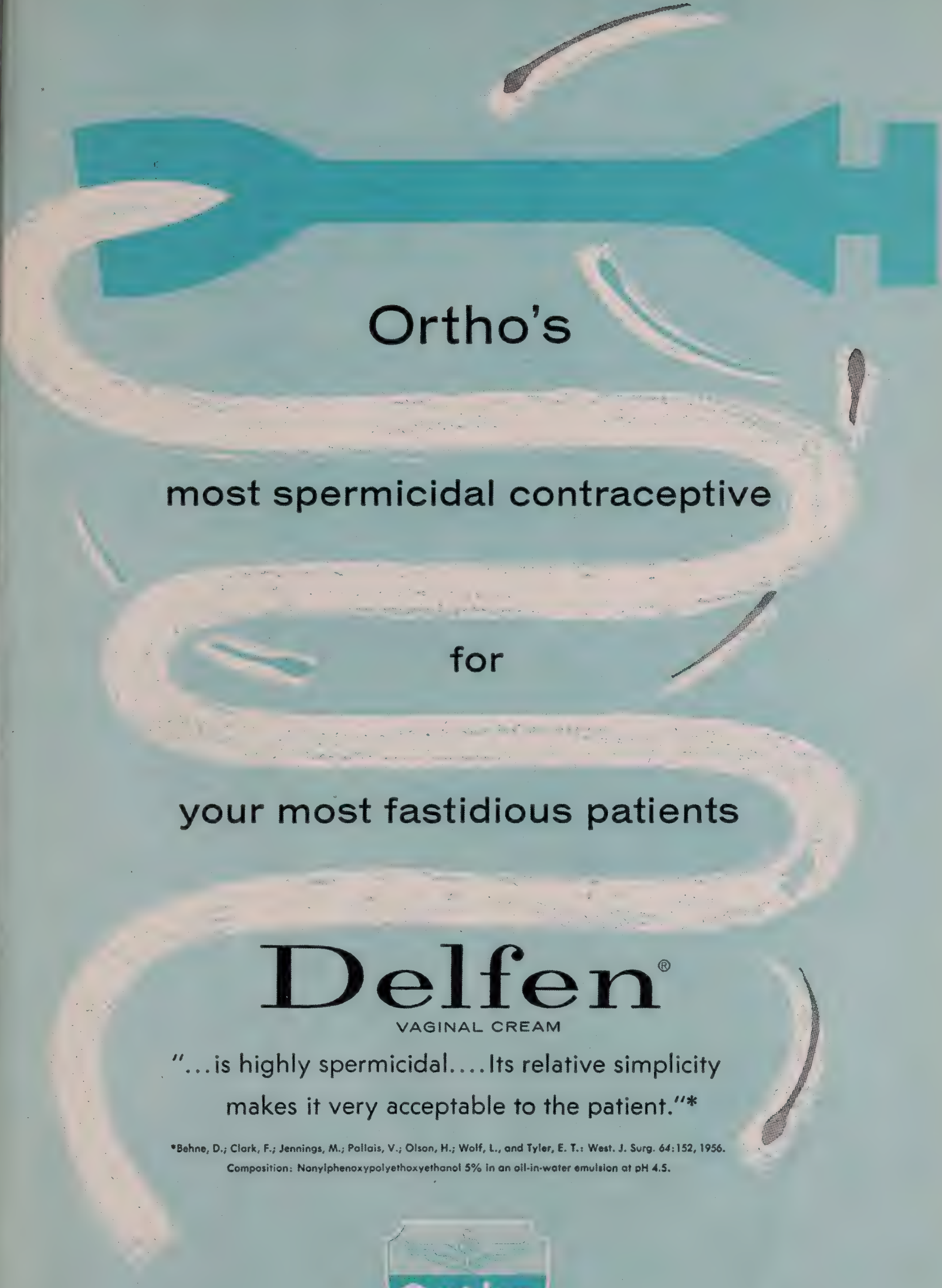

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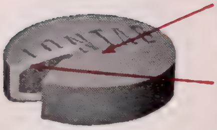

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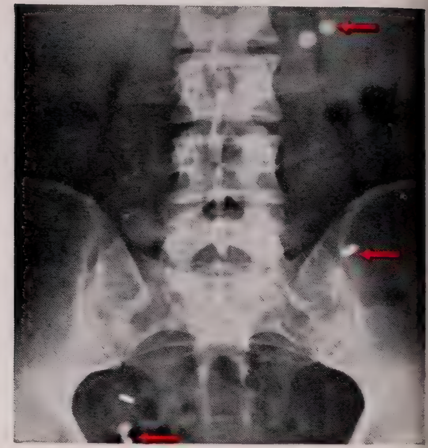

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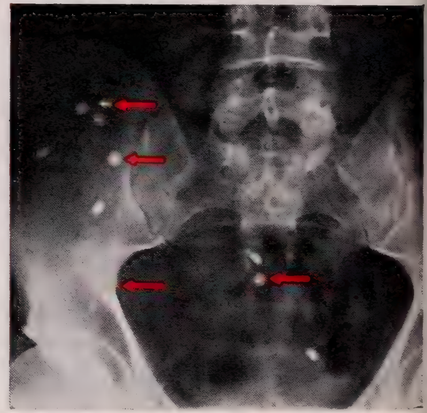
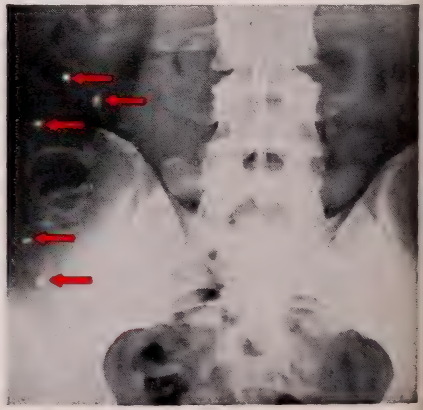


8 hours Lontabs are still visible as substance of core continues to be released.



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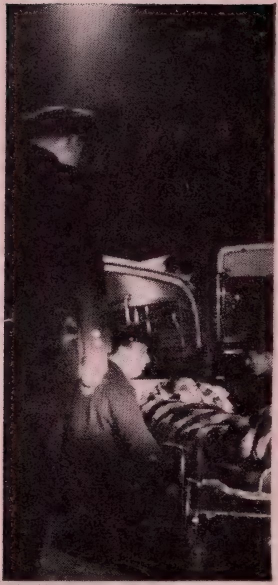

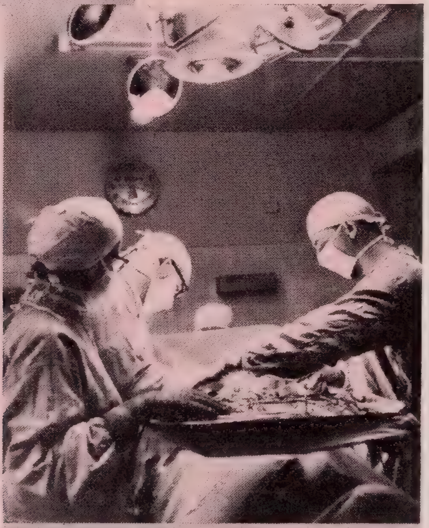

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1. Proctor, R. C., Southern Psychiatric Assoc. Meeting, October 7, 1957. **2.** Feuss, C. D. and Gragg, L. Jr.: Dis. Nerv. Sys. *18*:29, 1957.

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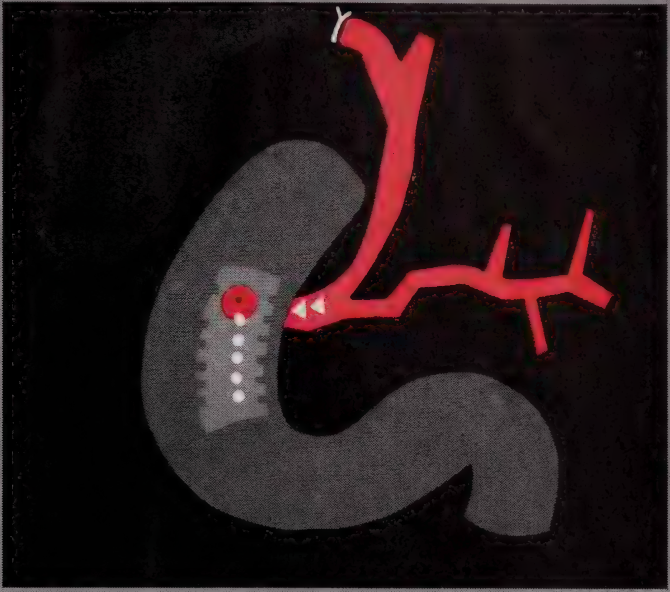

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[1] Halpern, S. L.: Ann. New York Acad. Sc. 63: 147-164 (Oct. 28) 1955.

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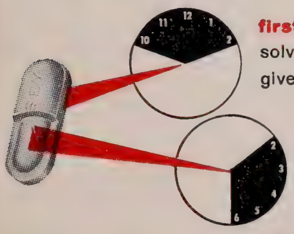

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Table 1.

No. of Patients	Results	Percent
6,822	Excellent	31.1%
11,201	Good	51.1%
2,802	Fair	12.8%
1,088	Unsatisfactory	5.0%
622	Side effects	3.0%

Basic Hypertensive Therapy

Although many of the patients in the Study also received diuretics and/or tranquilizers during the course of treatment, it was noted that the vasodilating effect of Unitensen was required to obtain optimum blood pressure control. Unitensen, a true hypotensive agent is potentiated by diuretics. A combination of the two is frequently recommended for lower dosage of each drug, minimizing the side effects of either.[1,2,3,4]

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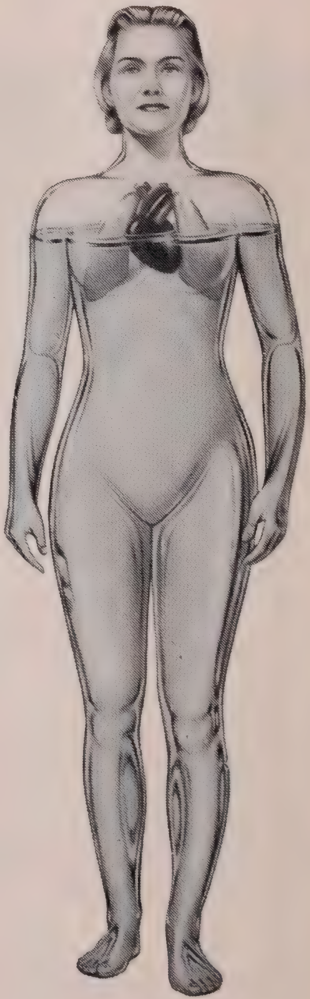

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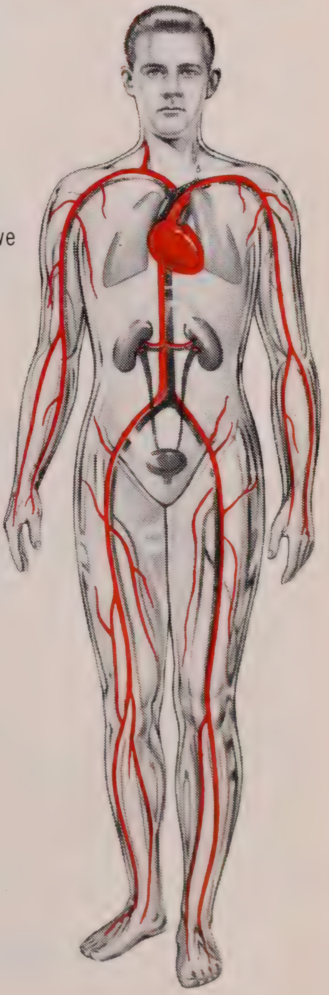

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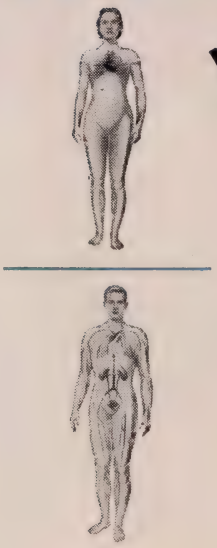

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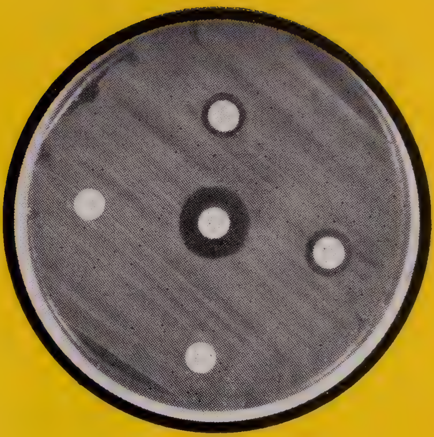

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pediatric drops

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ACHROMYCIN V Syrup: Each teaspoonful (5 cc.) contains equiv. 125 mg. tetracycline HCl. Bottles of 2 and 16 fl. oz. *Dosage:* at 45 lbs., one teaspoonful 4 times daily; adjust for other weights.

1. *Based on six-month National Physicians Survey.*

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Tyzine® **SUPERIOR NASAL DECONGESTANT**

brand of tetrahydrozoline hydrochloride

Nasal Solution, 1-oz. dropper bottle and pint bottle, 0.1%. ***Nasal Spray,*** 15 cc., in plastic bottle, 0.1%.

Pediatric Nasal Drops, 1/2-oz. bottle, 0.05%, with calibrated dropper.

Note: As with certain other widely used nasal decongestants, overdosage may cause drowsiness or deep sleep in infants and young children: KEEP OUT OF HANDS OF CHILDREN OF ALL AGES. Use Pediatric Nasal Drops (0.05%) for children under six years. When Tyzine Nasal Spray is administered, it should be held only in an upright position.

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. . . Cruise in a Maid of the Mist

. . . Spanish Aero Car

. . . Lilac, tulip and cherry blossom festivals

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. . . Visit to Old Fort Niagara

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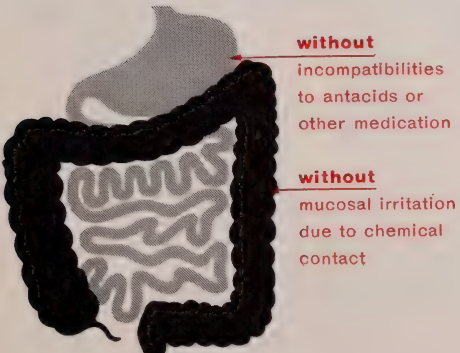
TABLETS / GRANULES

"...acts in a way almost indistinguishable from the normal physiologic mechanism..."

Herland, A. L., Lowenstein, A.: Quart. Rev. Surg., Obst. & Gynec. 14:196 (Dec.) 1957.


without
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to antacids or
other medication
without
mucosal irritation
due to chemical
contact

ADVANTAGES: 'Senokot' Tablets or Granules assure • predictable, controllable, reproducible evacuation • gentle, strain-free elimination 8-10 hours after bedtime administration • no mucosal irritation or griping • normalized stool consistency • reduction of dosage and withdrawal of medication • rehabilitation of the large bowel mechanism.

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Whenever the diet is faulty, the appetite poor, or the loss of food is excessive

through vomiting or diarrhea—

Valentine's
MEAT EXTRACT

stimulates the appetite,
increases the flow of digestive juices,
provides: supplementary amounts of vitamins, minerals and soluble proteins,
extra-dietary vitamin B_{12},
protective quantities of potassium, in a palatable and readily assimilated form.

Supplied in bottles of 2 or 6 fluidounces.

DOSAGE *is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy.*

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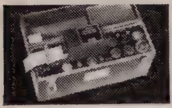

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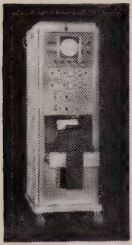

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For physiological research, cardiac catheterization and routine electrocardiography. When used with pertinent transducers, these new Recorders provide simultaneous indication and recording of EKG's, EEG's, stethograms and other physiological phenomena.

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Provides continuous observation of the Electrocardiogram and heart-rate during surgery. Warns of approaching cardiac stand-still. Explosion-proof. This cardioscope is a "must" for the modern Operating Room.

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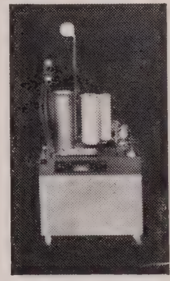

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An instrument for the determination of such functions as Functional Residual Capacity, Tidal Volume, Vital Capacity, Total Breathing Capacity, Basal Metabolic Rate, etc.

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yes, any rheumatic"itis"calls for
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corticoid-salicylate compound
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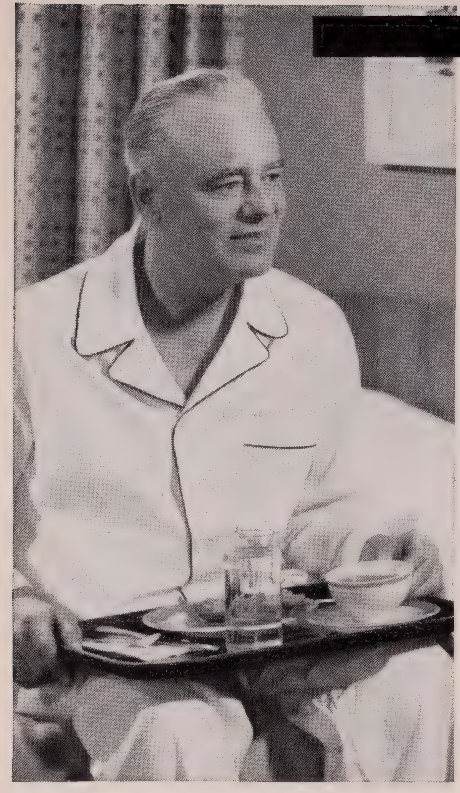
IN DEBILITATING DISEASE



Patients receiving NILEVAR®

Eat more...
Feel better...
Recover faster

Compared to control patients, those receiving Nilevar (brand of norethandrolone) have repeatedly demonstrated more rapid and more complete recovery from serious acute illness and increased comfort and well-being in chronic illness.

A multitude of case histories are now adding individual clinical color to the earlier controlled investigations which defined the actions of Nilevar as an effective aid in reversing negative nitrogen balance and in building protein tissue.

In typical case reports such gratifying comments as these appear:

Underweight —"Appetite considerably increased within one week. Sense of well-being and vigor increased along with increased appetite."

Prematurity (Birth weight: 2 pounds, 4 ounces) — "Gradual improvement in appetite and capacity for formula. . . . Excellent progress and weight gain for a very immature infant."

Carcinoma of the Uterus —"Within four days appetite became excellent, took full diet. . . . More ambition while on Nilevar. Enjoys life. Takes part in church and other social affairs."

Third Degree Burn—". . . soon began eating all that was offered. . . . Began to show signs of hope for recovery. . . . Perhaps one of the greatest changes was in the appearance of his wounds which were so very much improved."

The dosage for adults is 20 to 30 mg. daily in single courses no longer than three months. For children the daily dosage is 0.5 mg. per kilogram of body weight, in single courses no longer than three months.

Nilevar is supplied in tablets of 10 mg., ampuls of 25 mg. (1 cc.) and Nilevar Drops of 0.25 mg. per drop.

G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.

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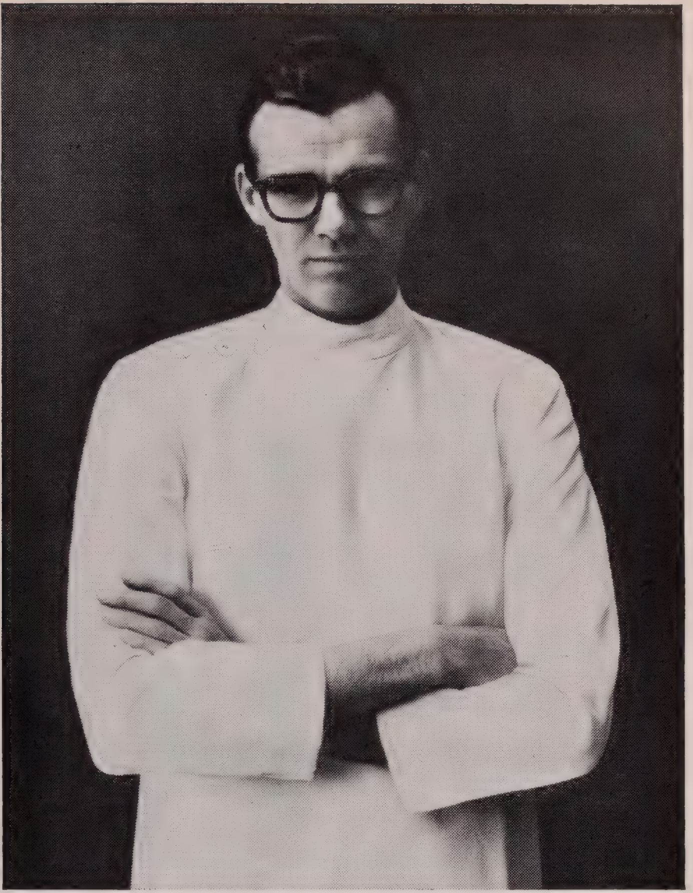
physician
needs
special
protection,
too



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Proper preventive measures *now* can protect your patients' futures. You are especially qualified to offer this protection.

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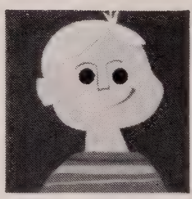
The **LIFE** *Insurance Company for TRUE SECURITY*

UNIQUE VITAMIN SUPPLEMENT

NEW VIGRAN CHEWABLES

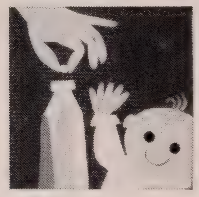
SQUIBB MULTIPLE VITAMIN SOFT TABLETS

fruit-punch flavored tablets that will actually "melt in the mouth"

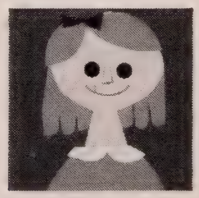


can be chewed like candy

can be crushed and sprinkled on cereal or other food



can be dissolved in water, juice or milk



can be sucked and will dissolve like a lozenge

can be easily swallowed (small tablet size)

VIGRAN CHEWABLES *taste like candy*, but contain *no ingredients harmful to teeth.* Important, too, is that VIGRAN CHEWABLES *dissolve easily* in the mouth and *smell good.* These advantages will also appeal to your elderly patients. And VIGRAN CHEWABLES provide at least 125% of the minimum daily requirements for vitamins A, D, B_1, B_2, niacinamide and C, and significant amounts of other essential vitamins.

Each VIGRAN CHEWABLE tablet contains:

Vitamin A	5,000 U.S.P. units
Vitamin D	1,000 U.S.P. units
Vitamin C	75 mg.
Vitamin B_1	3 mg.
Vitamin B_2	3 mg.
Vitamin B_6	2 mg.
Niacinamide	25 mg.
Calcium Pantothenate	3 mg.
Vitamin B_{12}	5 mcg.

Available in Rx-size bottles of 30 and 90.

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AROUND-THE-CLOCK CONTROL OF APPETITE

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PRELUDIN®
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A PROLONGED-ACTION DOSAGE FORM

Clinical experience has long established PRELUDIN as an antiobesity agent distinguished by its efficacy and its relative freedom from undesirable side actions. Now, convenience is added to reliability in ENDURETS... a specially devised long-acting pharmaceutical form. **Just one PRELUDIN ENDURET (75 mg.) tablet after breakfast curbs appetite throughout the day, in the vast majority of cases.**

PRELUDIN® (brand of phenmetrazine hydrochloride) ENDURETS T.M.
Each ENDURET prolonged-action tablet contains 75 mg. of active principle
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NOW...
for congestive heart failure
for other edematous states
for hypertension...

Clinical data ▶

highest fluid yields,
lowest blood pressure levels
yet achieved with oral
diuretic-antihypertensive
therapy...

Esidrix T.M.

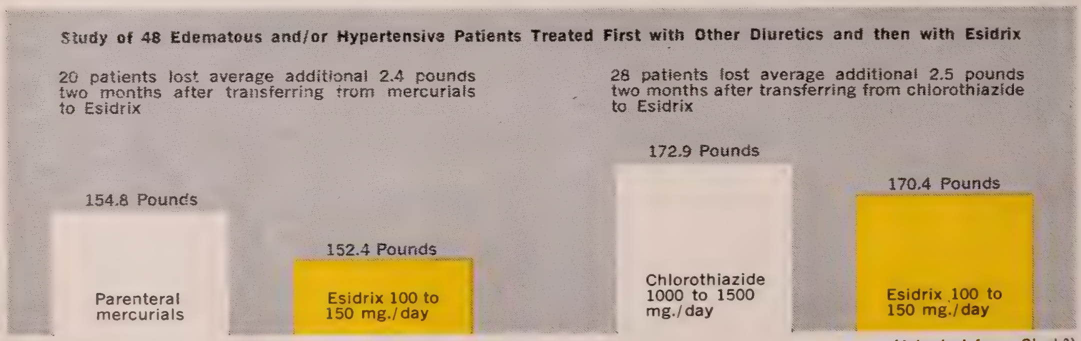
(hydrochlorothiazide CIBA)

2/2675MK-1

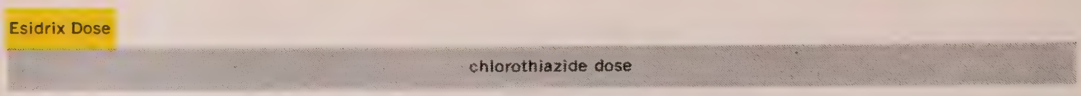
Esidrix: 10 to 15 times more active than chlorothiazide in edema and hypertension

Esidrix relieves edema in many patients refractory to other diuretics: Studies reveal that certain patients unresponsive or refractory to mercurials and chlorothiazide respond readily to Esidrix. Brest and Likoff[1] observed that 9 of 12 patients with congestive heart failure—who failed to respond to other diuretics—were completely controlled with Esidrix. Esidrix appears to have clinical value even after the patient has developed partial tolerance to chlorothiazide, and may be found useful in cases of sensitivity to chlorothiazide.[2]

Therapy with Esidrix often results in more weight loss than with other diuretics: In a study[3] of 48 patients with edema and/or hypertension, who were treated originally with chlorothiazide or with mercurial diuretics, substitution of Esidrix at a dose of 100 to 150 mg./day resulted in additional average weight loss of 2.4 to 2.5 pounds.



(Adapted from Clark[3])



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1. Brest, A. N., and Likoff, W.: Am. J. Cardiol. *3*:144 (Feb.) 1959. 2. Esch, A. F., Wilson, I. M., and Freis, E. D.: M. Ann. District of Columbia *28*:9 (Jan.) 1959. 3. Clark, G. M.: Clinical report to CIBA. 4. Dennis, E. W.: Clinical report to CIBA. 5. Hejtmancik, M. R., Herrmann, G. R., and Kroetz, F. W.: In press. [A preliminary report by these investigators has been published in Texas J. Med. *54*:854 (Dec.) 1958.]

A product of CIBA research

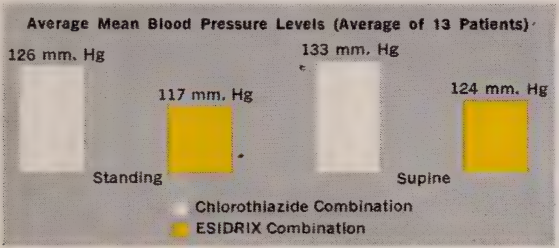
CIBA
SUMMIT, N. J.

2/2676MK-2

Esidrix T.M.

(hydrochlorothiazide CIBA)

Produces greater average reduction in blood pressure: Eleven of 13 hypertensive patients[4] were treated initially with a chlorothiazide-mecamylamine-reserpine combination (10 patients had 1000 mg. and 1 patient 500 mg. chlorothiazide daily); 1 patient had been treated with hydralazine and 1 had no previous medication. Nine were then transferred to an Esidrix-mecamylamine-reserpine combination and 4 to an Esidrix-reserpine combination for periods of 3 to 7 weeks (12 patients had 100 mg. and 1 patient 50 mg. Esidrix daily). Average mean blood pressure levels were recorded in the standing and supine positions. As shown in graph below, left, there was a further drop in blood pressure after patients were transferred to Esidrix.



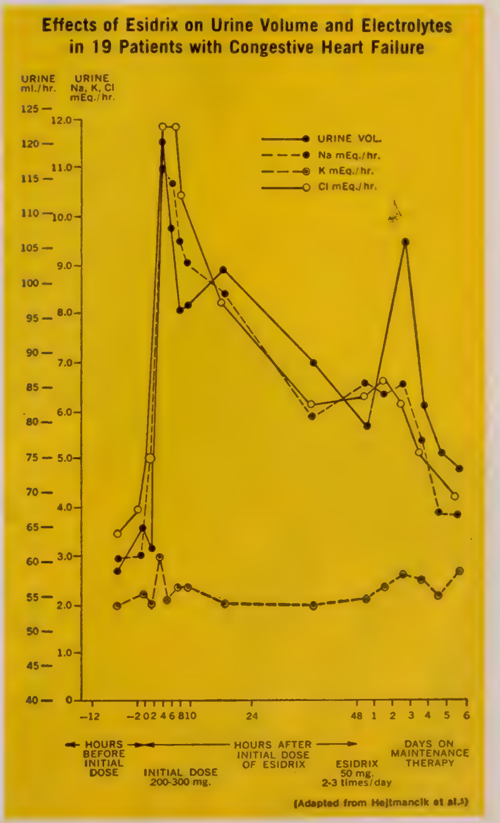
(Adapted from Dennis[4])

Exceptional safety . . . reduced likelihood of electrolyte imbalance: While Esidrix markedly increases sodium and chloride excretion, it has far less effect on excretion of potassium (see chart at right) and bicarbonate. Hence, there is little likelihood of disturbing electrolyte balance when recommended procedures are followed.

DOSAGE: Esidrix is administered orally in an average dose of 75 to 100 mg. daily, with a range of 25 to 200 mg. A single dose may be given in the morning or tablets may be administered 2 or 3 times a day.

SUPPLIED: *Tablets,* 25 mg. (pink, scored); bottles of 100 and 1000. *Tablets,* 50 mg. (yellow, scored); bottles of 100 and 1000.

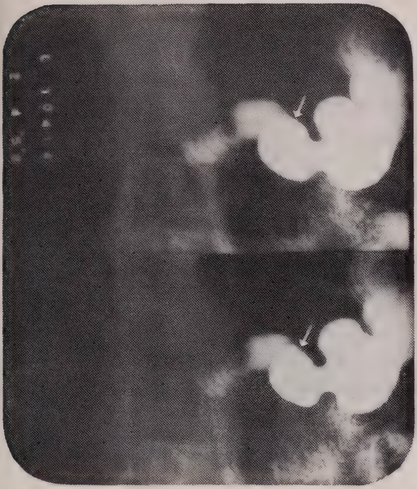
Effects of Esidrix on Urine Volume and Electrolytes in 19 Patients with Congestive Heart Failure



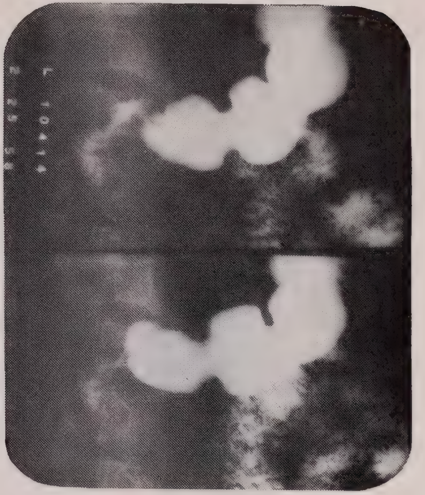
(Adapted from Hejtmancik et al.[5])

relieve the tension

—and control its G.I. sequelae



Patient A.S., age 53.
Intermittent crises of severe pain over 2 year period; hospital management with Sippy regimen provided relief of symptoms; however, symptoms recurred after each sojourn.



Pathibamate *(Tabs. ī t.i.d. and H.S.)*; prompt relief of symptoms. Radiograph (21 days later) confirms healing of minute lesser curvature gastric ulcer crater.

predictable results in the control
of tension and
G.I. trauma

Pathibamate®

Meprobamate with Pathilon® Tridihexethyl Chloride* LEDERLE

Used prophylactically in anticipation of periods of emotional stress, or therapeutically to relieve tension and curb hypermotility and hypersecretion, Pathibamate is particularly well-formulated for the control of gastrointestinal disorders.

Pathibamate combines Meprobamate (400 mg.) —the noted tranquilizer-muscle relaxant widely accepted for management of tension and anxiety states—and Pathilon (25 mg.)—an extremely well-tolerated anticholinergic, long noted for prompt symptomatic relief based on peripheral atropine-like action with few side effects.

Indications:
Duodenal ulcer, gastric ulcer, intestinal colic, spastic and irritable colon, ileitis, esophageal spasm, anxiety neurosis with gastrointestinal symptoms, gastric hypermotility.

Supplied:
Bottles of 100 and 1,000. Each tablet (yellow, ½-scored) contains Meprobamate, 400 mg.; Pathilon Tridihexethyl Chloride, 25 mg.

Administration and Dosage:
1 tablet three times a day at mealtimes and 2 tablets at bedtime. Adjust dosage to patient response. Contraindicated in glaucoma, pyloric obstruction, and obstruction of the urinary bladder neck.

Also Available: Pathilon in four forms — *Tablets* of 25 mg., plain (pink) or with *phenobarbital*, 15 mg. (blue);
Parenteral — 10 mg./cc. — 1 cc. ampuls;
Pediatric Drops — 5 mg./cc. — dropper vials of 15 cc.

*Pathilon is now offered as tridihexethyl chloride instead of the iodide, an advantage permitting wider use, since the latter could interfere with the results of certain thyroid function tests.

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℞ Tao* designed for superior control of common Gram-positive infections

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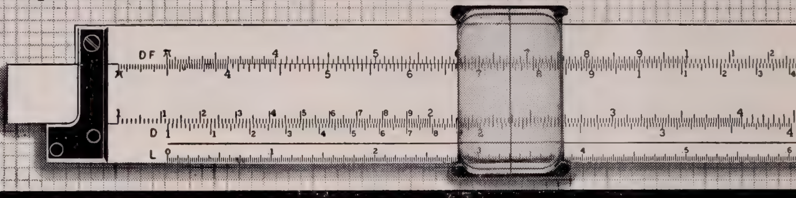
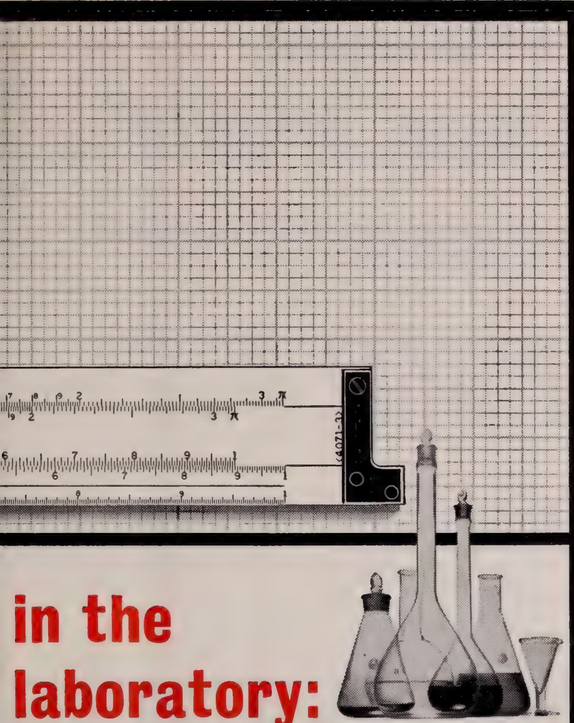


in the patient:

95% effective in published cases[1-8]

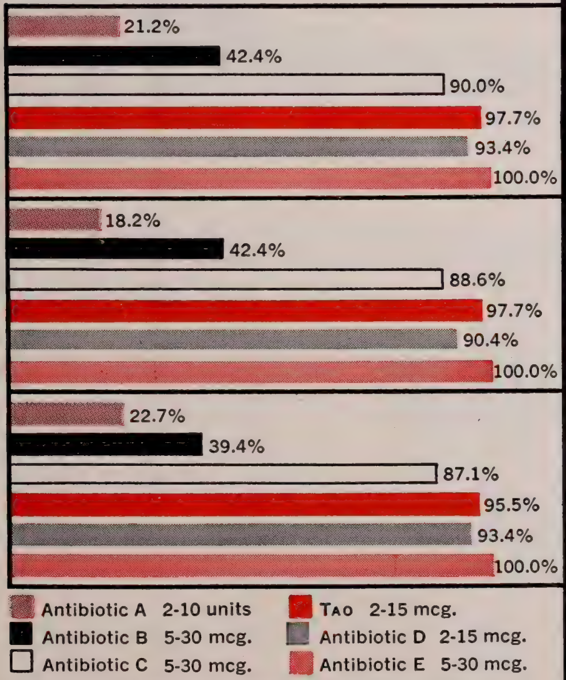
Conditions treated	No. of Patients	Cured	Improved	Failure
ALL INFECTIONS	**558**	**448**	**80**	**30**
Respiratory infections	**258**	**208**	**31**	**19**
Pharyngitis and/or tonsillitis	65	58	5	2
Pneumonia	90	66	17	7
Infectious asthma	44	38	—	6
Otitis media	31	29	2	—
Other respiratory (bronchitis, bronchiolitis, bronchiectasis, pneumonitis, laryngotracheitis, strep throat)	28	17	7	4
Skin and soft tissue infections	**230**	**191**	**38**	**1**
Infected wounds, incisions and lacerations	41	33	8	—
Abscesses	51	43	8	—
Furunculosis	58	51	6	1
Acne, pustular	43	28	15	—
Pyoderma	19	19	—	—
Other skin and soft tissue (infected burns, cellulitis, impetigo, ulcers, others)	18	17	1	—
Genitourinary infections	**28**	**19**	**3**	**6**
Acute pyelitis and cystitis	10	8	2	—
Urethritis with gonorrhea or cystitis	8	8	—	—
Pyelonephritis	4	1	—	3
Salpingitis	5	1	1	3
Pelvic inflammation with endometriosis	1	1	—	—
Miscellaneous (adenitis, enteritis, enterocolitis, subacute bacterial endocarditis, fever, hematoma, staphylococcus carriers, osteomyelitis, tenosynovitis, septic arthritis, acute bursitis, periarthritis)	**42**	**30**	**8**	**4**



in the laboratory:

over 90% effective against resistant staph

COMPARATIVE TESTS BY THREE METHODS (DISC, TUBE DILUTION, CYLINDER PLATE) ON 130 STAPHYLOCOCCI[9]



Percentage of organisms inhibited by the range of concentrations listed for each antibiotic.

Other Tao advantages:

Rapidly absorbed—stable in gastric acid,[7] TAO needs no retarding protective coating

Low in toxicity—freedom from side effects in 96% of patients treated; cessation of therapy is rarely required

Highly palatable—"practically tasteless"[7] active ingredient in a pleasant cherry-flavored medium.

Dosage and Administration: Dosage varies according to the severity of the infection. **For adults,** the average dose is 250 mg. q.i.d.; to 500 mg. q.i.d. in more severe infections. **For children** 8 months to 8 years, a daily dose of approximately 30 mg./Kg. body weight in divided doses has been found effective. Since TAO is therapeutically stable in gastric acid, it may be administered without regard to meals.

Supplied: TAO Capsules—250 mg. and 125 mg., bottles of 60. TAO for Oral Suspension—1.5 Gm., 125 mg. per teaspoonful (5 cc.) when reconstituted; unusually palatable cherry flavor; 2 oz. bottle.

References: 1. Koch, R., and Asay, L. D.: J. Pediat., in press. 2. Leming, B. H., Jr., et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 3. Mellman, et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 4. Olansky, S., and McCormick, G. E., Jr.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 5. Shubin, H., et al.: Antibiotics Annual 1957-1958, New York, N. Y., Medical Encyclopedia, Inc., 1958, p. 679. 6. Isenberg, H., and Karelitz, S.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 7. Wennersten, J. R.: Antibiotic Med. & Clin. Therapy 5:527 (Aug.) 1958. 8. Kaplan, M. A., and Goldin, M.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 9. Truant, J. P.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958.

TAO dosage forms—for specific clinical situations

TAO Pediatric Drops

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Supplied: In bottles of 36 capsules.

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For dual control of Gram-positive and Gram-negative infections.

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Intramuscular or Intravenous

For direct action—in clinical emergencies.

Supplied: In 10 cc. vials.

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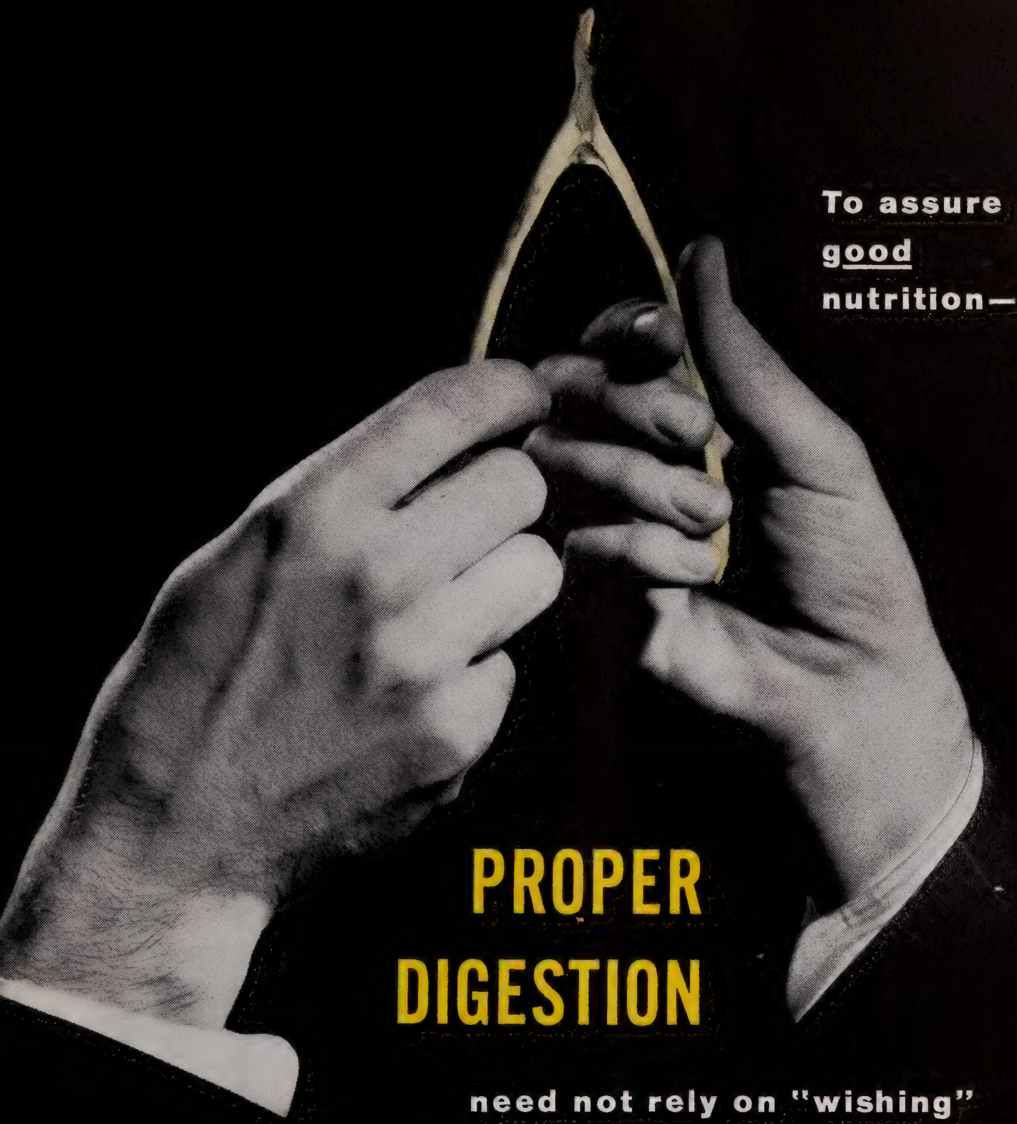

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GENERAL INFORMATION

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EDITORIALS

The Annual Convention: 1959

The 153rd Annual Convention of the Medical Society of the State of New York will be held this year at the Hotel Statler Hilton in Buffalo, May 9 to 15, 1959. For the first time the House of Delegates will be called to order on Saturday, May 9, and will be in session through Sunday and part of Monday. The scientific portion of the meeting will commence on Monday, May 11, and continue through Friday, May 15.

It is hoped that this departure from previous procedure will facilitate the transaction of business of the House and permit delegates who remain to attend the scientific portions of the program. In previous years delegates have had little opportunity to do so since the House was in session the first two and one-half days of the week. The change appears logical and should work out advantageously to all concerned.

We call attention at this time to the dates of the Convention and urge all members who plan to attend to make their hotel reservations as early as possible. The House of Delegates this year will have some momentous policy decisions to make which will affect the basic structure and future of the Society.

We call attention to the fact that any member of the Society in good standing may attend the sessions of the House of Delegates if he or she desires to do so. We hope that the Convention will be well attended. Mark the dates on your calendars now.

Physician Leadership in Community Programs of Child Accident Prevention

Every member of the Medical Society of the State of New York received in late December a letter of information about child accidents as leading causes of crippling and death in children. That letter gives detailed information concerning the need and the ways in which physicians may take leadership in community programs of public information regarding this serious problem. Unfortunately, because of unavoidable delays in mailing, the letters arrived in the Christmas mail rush and losses may have occurred. If you have not seen it, please look for a flat, manila envelope which you may find in the pile of advertising material which accumulates in most offices.

On the second and third pages of the same letter you will find detailed suggestions as to the part which you may take as a physician as well as a respected leader in your community.

Physicians in general and pediatric practice throughout the State have the widest contact with family groups and the problems of child health. Their awareness of the importance of this problem and their leadership in the program of public education directed toward child accident prevention are essential. Their efforts in the prevention of many childhood diseases have paid great dividends in the past, and it appears certain that their efforts in this leading child health problem will give them equal satisfaction even though it will be more difficult and less dramatic without the use of a syringe and a needle.

Although this program is sponsored primarily by the American Academy of Pediatrics, it has had from the very beginning more than a year ago the fullest and most cooperative support of the State Department of Health, the State Medical Society, and the State Chapter of the Academy of General Practice. For example, the cost of printing and mailing the letter which you have received was shared by the State Department of Health and the State Medical Society.

If you wish help or advice in your community program toward child accident prevention please contact any of those who are listed on the last page of the State Society letter. If you are in need of printed or visual aid material for talks to various community groups, your best contact would be your local health official or the chairman of the Pediatric Academy's section in your part of the State as listed on the last page of the State Society letter.

In addition to the speaker's material it appears now that the two most promising aids in practice are posters and placards for physicians' waiting rooms and child safety guidance slips for different age groups. These slips are to be given to parents in physicians' examining rooms along with the routine instruction sheets and immunization records. The safety posters are now being developed for distribution in the next few months and you will be informed when they are available.

A set of the six safety guidance slips for the young age groups may be obtained without charge by writing Dr. E. H. Christopherson, Executive Secretary, American Academy of Pediatrics, 1801 Hinman Avenue, Evanston, Illinois. You will also receive an order blank so that you may order as many as you wish for your office practice. —Tyrell C. Wyatt, M.D.

The Confidential Relationship of Physician and Patient

A recent appeal in the Supreme Court of Michigan involving a criminal sexual psychopathy proceeding emphasizes the importance the Courts place on the prevention of any breach of the confidential relationship between physician and patient.

On January 24, 1956, the accused had been charged with the crime of gross indecency. The prosecuting attorney on February 23, 1956, requested that he be examined by three psychiatrists to determine whether he was a criminal sexual psychopathic person. The court granted the request and appointed three psychiatrists, approved by the State Department of Mental Health, to examine him in accordance with the procedure specified by the applicable statutes of the State of Michigan.

The examination was held in due course, and it appeared that a large part of the questioning of the accused was done by a Dr. Davis, using hospital records and notes made in connection with his prior private consultation with the accused. These private consultations occurred after the accused had entered his plea of not guilty and had been released on bond, at which time he placed himself under the care of the physician mentioned above. Treatment apparently occurred in January of 1956.

Subsequent to their examination, the panel of psychiatrists filed a report in which they found the accused to be a criminal sexual psychopathic person. In May, 1956, a hearing was held before a jury to determine this issue, and it found him to be a criminal sexual psychopath, from which finding he appealed.

The main issue raised by the accused on the appeal was his claim that the entire examination, and accordingly the report and opinion of the psychiatrists as given to the jury, was in violation of the physician-patient privilege as to communications between them, and thus in violation of his constitutional rights.

The prosecuting authorities in resisting this claim urged that the accused knew the identity of the three psychiatrists appointed by the Court to examine him and therefore knew that his own private psychiatrist was among their number. They argued that since he made no objection prior to the hearing on the question of his psychiatric status, he therefore waived any privilege which he might otherwise have been entitled to claim as regards his private psychiatrist's participation. The trial judge had agreed with this view and ruled that the objection to the psychiatrist's report and testimony, as based on confidential communications, came too late when it was first raised at the trial. The prosecuting authorities also argued that the whole situation indicated that a clever trap was set by the accused and his attorney by their failure earlier to object to the examination of the private psychiatrist as a court-appointed examining psychiatrist, and in saving the objection based on the claim of privilege until the trial.

The appellate court in a unanimous decision reversed the finding that the accused was a criminal sexual psychopathic person and ordered new proceedings. It said in part as follows:

> Perhaps such a trap was set, but if so it should be remembered that the successful operation of a trap requires a susceptible victim. The troubling claim of appellant that his constitutional rights were violated in permitting his personal psychiatrist to use confidential information in the psychiatric examination and in testifying for the People, is not answered satisfactorily by the prosecution's claim that it has been trapped. We do not find that appellant was under any obligation, prior to trial, to raise objections to the appointment of a panel of psychiatrists, and therefore his objection at trial to the testimony of the psychiatrists on the grounds that they were of necessity based in part upon confidential communications was timely. There does not appear to have been any waiver of the privilege. . . .The admission of the testimony of the three psychiatrists over the objection of appellant was prejudicial error in that it permitted and in fact required the use of confidential information obtained by them through the treatment of appellant by one of their number in the private consultation noted above. These communications by appellant to Dr. Davis were privileged, and the privilege was not waived even though appellant could have earlier objected to Dr. Davis' inclusion on the panel of psychiatrists. (People *v.* Wasker, 353 Mich. 447, Sept. 9, 1958.)

Warning on New Experimental Drug

The Cancer Chemotherapy National Service Center has reported that mitomycin C, an antibiotic reported as giving promising results in cancer treatment in Japan, has frequently produced major toxic reactions but seldom objective improvement in clinical trials in the United States.

The antibiotic has been under pilot clinical evaluation in this country as an antitumor agent in a substantial variety of tumors.

In view of the effects observed in three current studies, it has not so far replaced the standard chemotherapeutic agents in any form of cancer. Studies are being continued and full reports on the clinical trials will appear later in the scientific literature.

Time is infinitely long and each day is a vessel into which a great deal may be poured, if one will actually fill it up.—GOETHE

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References:

1. Alexander, L.: J.A.M.A. 166:1019, March 1, 1958.
2. Current personal communications; in the files of Wallace Laboratories.
3. Pennington, V.M.: Am. J. Psychiat. 115:250, Sept. 1958.

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1959 ANNUAL CONVENTION

Medical Society of the State of New York

May 9 through 15—Hotel Statler Hilton, Buffalo

House of Delegates

The annual meeting of the House of Delegates of the Medical Society of the State of New York will be called to order at 10 A.M. on Saturday, May 9, 1959, in the Terrace Room, main floor of the Hotel Statler Hilton, Buffalo.

In accordance with Chapter II, Section 3 of the Bylaws, the House will assemble according to the following schedule:

Saturday, May 9, 1959, 10 A.M.
Sunday, May 10, 1959, 10 A.M. and 2 P.M.
Monday, May 11, 1959, 9 A.M.

At the last adjourned session (9 A.M., Monday, May 11) the election of officers, councillors, trustees, and delegates to the American Medical Association will occur in accordance with Chapter II, Section 1 of the Bylaws.

JOSEPH A. LANE, M.D., *Speaker*
W. P. ANDERTON, M.D., *Secretary*

153rd Annual Meeting

The 153rd Annual Meeting of the Medical Society of the State of New York will be held on Monday, May 11, at 7 P.M. in the Ballroom, main floor, Hotel Statler Hilton, Buffalo.

LEO E. GIBSON, M.D., *President*
W. P. ANDERTON, M.D., *Secretary*

Registration

Registration for delegates will be held in the foyer of the Terrace Room, main floor of the Hotel Statler Hilton, on Saturday, May 9 after 9 A.M.; for members and guests on the mezzanine on Monday through Thursday, May 11 through 14, from 8:30 A.M. to 5:30 P.M. on Friday, May 15, from 8:30 A.M. to 12 NOON.

Exhibits

Scientific Exhibits will be located in the Mezzanine Lounge, Maple Leaf Room, and Grover Cleveland Room, Mezzanine.

Scientific Motion Pictures will be shown in the St. Louis Room, Mezzanine.

Industrial Exhibits will be located in the Showroom, Mezzanine.

All exhibits will open at 9 A.M. and close at 5:30 P.M. daily, May 11 through May 15, except Friday, when they will close at 12 NOON.

Scientific Program

General Sessions will be held every afternoon, Monday, May 11, through Friday, May 15, at 2 P.M. in the New York Room, Mezzanine.

Section and Session Meetings will be held Tuesday, May 12, through Friday, May 15, at 9 A.M.

See page 1248 for program of meetings.

Dinner Dance

The Dinner Dance, in conjunction with the Annual Meeting, will be held in the Ballroom, main floor, Monday, May 11, at 7 P.M.

Tickets will be available at the registration desk on the Mezzanine and in the foyer of the Terrace Room, main floor.

Woman's Auxiliary

See page 1281 for program.

SCIENTIFIC PROGRAM

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Associate Chairmen

William F. Lipp, M.D., Erie
Bernard J. Pisani, M.D., New York

and

Chairmen of Sections and Sessions

GENERAL SESSIONS

Hotel Statler Hilton, Buffalo

Monday, May 11, 2 P.M.
New York Room, Mezzanine
Alfred P. Ingegno, M.D., Presiding

Symposium and Panel Discussion: **Hypnosis in Clinical Practice**

Hyman S. Barahal, M.D., West Brentwood, *Moderator*

Associate Director, Pilgrim State Hospital; Associate Clinical Professor of Psychiatry, New York School of Psychiatry

Introduction

Hyman S. Barahal, M.D., West Brentwood

Value in Psychiatric Disorders

Herbert Spiegel, M.D., New York City

Faculty, William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology

Value in Obstetrics

William E. F. Werner, M.D., Queens

Director of Obstetrics, Rockaway Beach Hospital; President, Metropolitan New York Chapter of the American Society of Clinical Hypnosis

Value in Clinical Medicine

Arthur Shapiro, M.D., Brooklyn

Associate Visiting Physician, Kings County Hospital Center; Clinical Associate Professor of Medicine, State University of New York Downstate Medical Center

After each participant has given a ten- to fifteen-minute introductory presentation, there will be an informal panel discussion of questions submitted through the moderator.

Monday, May 11, 3:30 P.M.
New York Room, Mezzanine

SYMPOSIUM AND PANEL DISCUSSION: **Management of Patients Requiring Operation**

IRVING PALLIN, M.D., Brooklyn, *Moderator*

Director of Anesthesiology, Jewish Hospital of Brooklyn; Clinical Professor of Anesthesiology, State University of New York Downstate Medical Center

Choice of Anesthesia in Relation to Systemic Status

VINCENT J. COLLINS, M.D., New York City

Attending Anesthesiologist, Bellevue Hospital; Associate Professor of Anesthesiology, New York University Post-Graduate Medical School

Hazards to Consider in Recommending Emergency Surgery

FRANCIS F. FOLDES, M.D., Pittsburgh, Pennsylvania (*By invitation*)

Director, Department of Anesthesiology, Mercy Hospital; Associate Professor of Anesthesiology, University of Pittsburgh School of Medicine

Problem of Commonly Used Drugs in Patients Who Require Surgery

E. M. Papper, M.D., New York City

Director of Anesthesiology Service, Presbyterian Hospital; Professor and Chairman, Department of Anesthesiology, College of Physicians and Surgeons of Columbia University

After each participant has given a ten- to fifteen-minute introductory presentation, there will be an informal panel discussion of questions submitted through the moderator.

Tuesday, May 12, 2 P.M.
New York Room, Mezzanine
Alfred P. Ingegno M.D., Presiding

SYMPOSIUM AND PANEL DISCUSSION: **Advances in Pulmonary Diagnosis and Treatment**

ARTHUR Q. PENTA, M.D., Schenectady, *Moderator*

Director, Department of Bronchology and Esophagology, Ellis Hospital and Department of Bronchoscopy, St. Clare's Hospital; Visiting Lecturer, Department of Medicine, Temple University Medical School, Philadelphia, Pennsylvania

Clinical Implications of Studies on Pulmonary Hypertension Secondary to Lung Disease

DAVID T. DRESDALE, M.D., Brooklyn

Director, Cardiopulmonary Laboratory, Maimonides Hospital; Clinical Associate Professor of Medicine, State University of New York Downstate Medical Center

Aerosol-Induced Cough in Pulmonary Diagnosis

ALVIN L. BARACH, M.D., New York City

Attending Physician, Presbyterian Hospital; Clinical Professor of Medicine, College of Physicians and Surgeons of Columbia University

Nonsurgical Treatment of Pulmonary Metastases

George C. Escher, M.D., New York City

Associate, Sloan-Kettering Institute, Memorial Center for Cancer and Allied Diseases; Assistant Attending Physician, Chemotherapy Service, Memorial Hospital

After each participant has given a ten- to fifteen-minute introductory presentation, there will be an informal panel discussion of questions submitted through the moderator.

Tuesday, May 12, 3:30 P.M.
New York Room, Mezzanine

Symposium and Panel Discussion: **Surgery in Cardiovascular Disease: Indications and Results**

Francis W. O'Donnell, M.D., Buffalo, *Moderator*

Thoracic Surgeon, Millard Fillmore Hospital and Deaconess Hospital

In Valvular Heart Disease

J. Maxwell Chamberlain, M.D., New York City

Attending Surgeon, In Charge of Thoracic Surgery, Roosevelt Hospital; Assistant Clinical Professor of Surgery, College of Physicians and Surgeons of Columbia University

Open-Heart Surgery for Cardiac Septal Defects

Edgar P. Mannix, Jr., M.D., Brooklyn

Director of Surgery, St. Francis Hospital and Sanatorium, Roslyn; Chief Attending Thoracic and Cardiovascular Surgeon, Brooklyn Hospital

In Coronary Artery Disease

Charles P. Bailey, M.D., Philadelphia, Pennsylvania (*By invitation*)

Director, Bailey Thoracic Clinic; Chief of Cardiopulmonary Division, Albert Einstein Medical Center

In Peripheral Vascular Disease

Jere W. Lord, Jr., M.D., New York City

Visiting Surgeon, (Fourth Division), Bellevue Hospital; Professor of Clinical Surgery, New York University Post-Graduate Medical School

After each participant has given a ten- to fifteen-minute introductory presentation, there will be an informal panel discussion of questions submitted through the moderator.

Wednesday, May 13, 2:00 P.M.
New York Room, Mezzanine
Alfred P. Ingegno, M.D., Presiding

The A. Walter Suiter Lecture—Recent Progress in Our Understanding of Bilirubin Metabolism and Jaundice

Irwin M. Arias, M.D., Bronx

Senior Research Fellow, New York Heart Association; Associate in Medicine, Albert Einstein College of Medicine of Yeshiva University

Wednesday, May 13, 3:30 P.M.

New York Room, Mezzanine

SYMPOSIUM AND PANEL DISCUSSION: **Present Status of Oral Hypoglycemic Agents**

GROSVENOR W. BISSELL, M.D., Buffalo, *Moderator*

Chief of Medical Service, Veterans Administration Hospital; Associate Professor of Medicine, University of Buffalo School of Medicine

Mode of Action of Sulfonylurea Derivatives in Diabetes Mellitus

JOSEPH L. IZZO, M.D., Rochester

Associate Physician, Strong Memorial Hospital; Clinical Assistant Professor of Medicine, University of Rochester School of Medicine and Dentistry

Action of the Sulfonylureas in Postpancreatectomy and in Spontaneous Diabetes

KERMIT L. PINES, M.D., New York City

Assistant Attending Physician, Presbyterian Hospital; Assistant Professor of Clinical Medicine, College of Physicians and Surgeons of Columbia University

Clinical Studies with Tolbutamide and Chlorpropamide

LEON M. LEVITT, M.D., Brooklyn

Attending Physician, Kings County Hospital Center and Long Island College Hospital; Clinical Assistant Professor of Medicine, State University of New York Downstate Medical Center

After each participant has given a ten- to fifteen-minute introductory presentation, there will be an informal panel discussion of questions submitted through the moderator.

Thursday, May 14, 2 P.M.

New York Room, Mezzanine

William F. Lipp, M.D., Presiding

1. **Motor Vehicle Accidents in New York State**

   JOHN H. POWERS, M.D., Cooperstown

   Surgeon-in-Chief, Mary Imogene Bassett Hospital; Clinical Professor of Surgery, College of Physicians and Surgeons of Columbia University, New York

2. **The Limping Child**

   ARTHUR A. MICHELE, M.D., Brooklyn

   Director of Orthopedic Surgery, United States Public Health Hospitals, New York City Area; Assistant Professor of Orthopedic Surgery, New York Medical College, Flower and Fifth Avenue Hospitals

3. **Surgical Advances in the Treatment of Arthritis**

   ROBERT L. PRESTON, M.D., New York City

   Associate Attending Orthopedic Surgeon, University Hospital; Associate Professor of Orthopedic Surgery, New York University Post-Graduate Medical School.

4. **Pressurized Therapy: A New Treatment for Low Back Pain and Hypotension**

   MILTON E. EISEN, M.D., New York City

   Chief, Peripheral Vascular Clinic, Metropolitan Hospital; Senior Clinical Physician, Peripheral Vascular Service, Mount Sinai Hospital (OPD)

Thursday, May 14, 3:30 P.M.
New York Room, Mezzanine

SYMPOSIUM AND PANEL DISCUSSION: **Prognosis in Surgically Treated Cancer**

HARRY W. HALE, JR., M.D., Buffalo, *Moderator*

Associate Director of Surgery, Edward J. Meyer Memorial Hospital; Assistant Professor of Surgery, University of Buffalo School of Medicine

Stomach and Esophagus

GEORGE T. PACK, M.D., New York City

Attending Surgeon, Flower and Fifth Avenue Hospitals and Memorial Center for Cancer and Allied Diseases

Colon and Rectum

MICHAEL R. DEDDISH, M.D., New York City

Attending Surgeon, Memorial Center for Cancer and Allied Diseases; Associate Professor of Clinical Surgery, Cornell University Medical College

Breast

CHARLES L. ECKERT, M.D., Albany

Surgeon-in-Chief, Albany Hospital; Professor and Chairman, Department of Surgery, Albany Medical College of Union University

Uterus

JOHN G. MASTERSON, M.D., Brooklyn

Director of Gynecologic Tumor Service, Kings County Hospital Center and St. John's Episcopal Hospital; Associate Professor of Obstetrics and Gynecology, State University of New York Downstate Medical Center

After each participant has given a ten- to fifteen-minute introductory presentation, there will be an informal panel discussion of questions submitted through the moderator.

Friday, May 15, 2 P.M.
New York Room, Mezzanine
Bernard J. Pisani, M.D., Presiding

SYMPOSIUM AND PANEL DISCUSSION: **Control of Infectious Hazards in Home and Hospital**

MORRIS GREENBERG, M.D., New York City, *Moderator*

Director, Bureau of Preventable Diseases, Department of Health, the City of New York; Consulting Pediatrician, Knickerbocker Hospital and Beth David Hospital

Tuberculosis

JEAN F. HUDDLESTON, M.D., New York City

Clinic Physician, Bureau of Tuberculosis, Department of Health, the City of New York; Associate Visiting Physician, Chest Service, Bellevue Hospital

Infectious Hepatitis

SIDNEY LEIBOWITZ, M.D., New York City

Medical Director, Board of Education, the City of New York; Associate Physician, Beth Israel Hospital

Staphylococcal Infection

ANDREW C. FLECK, JR., M.D., Albany

Epidemiologist, Department of Health, the State of New York; Assistant Professor of Community Health (Epidemiology) and Acting Chairman, Department of Community Health, Albany Medical College of Union University

After each participant has given a ten- to fifteen-minute introductory presentation, there will be an informal panel discussion of questions submitted through the moderator.

Friday, May 15: 3:30 P.M.

SYMPOSIUM AND PANEL DISCUSSION: **Role of the General Hospital in the Care of Special Medical Problems**

WILLIAM A. KELLY, M.D., Mount Vernon, *Moderator*

Director of Mount Vernon Hospital

The Alcoholic

I. JAY BRIGHTMAN, M.D., Albany

Executive Director, New York State Interdepartmental Health Resources Board; Associate Professor of Community Health, Albany Medical College of Union University

Nervous and Mental Disorders

MILTON ROSENBAUM, M.D., New York City

Director of Psychiatric Service, Bronx Municipal Hospital Center; Professor and Chairman, Department of Psychiatry, Albert Einstein College of Medicine of Yeshiva University

The Aged and Infirm

THEODORE C. KRAUSS, M.D., Buffalo

Assistant Attending Physician, Edward J. Meyer Memorial Hospital and Millard Fillmore Hospital; Assistant Clinical Professor of Medicine, University of Buffalo School of Medicine

After each participant has given a ten- to fifteen-minute introductory presentation, there will be an informal panel discussion of questions submitted through the moderator.

SECTIONS

All papers read before the Society by members become the property of the Society. The original copy of each paper shall be left with the Secretary of the Section or Session.

Discussants should have their remarks typed and should hand them to the Secretary.

Time limits: Twenty minutes for each paper, five minutes for individual discussion.

Section and Session meetings shall begin promptly at the hour specified.

Executive Session—The first order of business, election of officers. *"To participate in the election of any section, a member must register with such Section."*—Bylaws, Chapter XII, Section 3.

Section on
Allergy

Chairman..........HARRY MARKOW, M.D., Kings
Vice-Chairman..................................
........DOUGLAS E. JOHNSTONE, M.D., Monroe
Secretary.........HARRY LEIBOWITZ, M.D., Kings

Thursday, May 14—9 A.M.

Buffalo Room, Mezzanine

1. **Chairman's Address—Cellular Study of Respiratory Secretions in Allergic Disease**

   HARRY MARKOW, M.D., Brooklyn, Chief, Department of Allergy and Allergy Clinic, Beth-El Hospital

2. **Present Concepts of Hay Fever Treatment**

   HAROLD D. DUNDY, M.D., Brooklyn, Associate Physician (Allergy), Beth-El Hospital; Clinical Instructor in Pediatrics (Allergy), New York University Post-Graduate Medical School

   Discussion: MURRAY DWORETZKY, M.D., New York City, Assisting Attending Physician, New York Hospital, Assistant Professor of Clinical Medicine, Cornell University Medical College

3. **Pulmonary Conditions Simulating or Associated with Bronchial Asthma**

   COLEMAN B. RABIN, M.D., New York City, Attending Physician, Mount Sinai Hospital; Consulting Physician, Beth-El Hospital, Brooklyn

   Discussion: CARL E. ARBESMAN, M.D., Buffalo, Attending Allergist, Children's Hospital; Assistant Clinical Professor of Medicine, University of Buffalo School of Medicine

4. **Molds as a Factor in Winter Allergy**

   NATHAN SCHAFFER, M.D., East Orange, New Jersey (*By invitation*), Chief, Department of Allergy, East Orange Hospital and Orange Memorial Hospital

   Discussion: Hyman Sherman, M.D., Brooklyn, Attending Allergist, Coney Island Hospital and Jewish Hospital of Brooklyn

PANEL DISCUSSION

Allergy of Infancy and Childhood

VICTOR L. COHEN, M.D., Buffalo, *Moderator*, Attending Physician, Children's Hospital; Assistant Clinical Professor of Pediatrics, University of Buffalo School of Medicine

1. **The Infection Problem**

   SAMUEL J. PRIGAL, M.D., New York City, Chief, Department of Allergy, Flower and Fifth Avenue Hospitals; Associate Professor of Medicine, New York Medical College, Flower and Fifth Avenue Hospitals

2. **The Pollenosis Problem**

   DOUGLAS E. JOHNSTONE, M.D., Rochester, Assistant Pediatrician, Strong Memorial Hospital; Instructor in Pediatrics, University of Rochester School of Medicine and Dentistry

3. **The Inhalant Problem**

   DAVID MERKSAMER, M.D., Brooklyn, Associate Physician (Allergy), Jewish Hospital of Brooklyn; Clinical Assistant Professor of Medicine (Allergy), State University of New York Downstate Medical Center

4. **The Pro and Con of Early Treatment**

   Paul F. deGara, M.D., New York City, Assistant Attending Pediatrician, New York Hospital; Associate Professor of Clinical Pediatrics (Allergy), Cornell University Medical College

General Discussion

Section on Anesthesiology

Chairman . . . John J. Della Porta, M.D., Monroe
Vice-Chairman. Lester C. Mark, M.D., New York
Secretary. . . . . Solomon G. Hershey, M.D., Bronx

Tuesday, May 12—9 A.M.

Washington Room, Mezzanine

1. **Open Drop Fluothane Anesthesia for Ophthalmologic Examination of Ambulatory Children: Report of 400 Cases**

   Herman Schwartz, M.D., New York City, Associate Attending Anesthesiologist, Presbyterian Hospital

   Discussion: Samuel L. Lieberman, M.D., Buffalo, Chief Anesthesiologist, DeGraff Memorial Hospital, North Tonawanda

2. **Anesthesia for the Difficult Laryngoscopy**

   Olga Schweizer, M.D., New York City, Attending Anesthesiologist, Memorial Center for Cancer and Allied Diseases

   William S. Howland, M.D., New York City, Director of Anesthesiology, Memorial Center for Cancer and Allied Diseases

   Discussion: Irving M. Pallin, M.D., Brooklyn, Director of Anesthesiology, Jewish Hospital of Brooklyn; Clinical Professor of Anesthesiology, State University of New York Downstate Medical Center

3. **Physiologic Management of Ventilation during Anesthesia**

   James O. Elam, M.D., Buffalo, Director of Anesthesiology, Roswell Park Memorial Institute

   Johns L. Evers, Ph.D., Buffalo (*By invitation*), Senior Scientist, Department of Anesthesiology, Roswell Park Memorial Institute

   Clinton D. Janney, Ph.D., Buffalo (*By invitation*), Associate Scientist, Department of Anesthesiology, Roswell Park Memorial Institute

   Discussion: Duncan A. Holaday, M.D., New York City, Associate Attending Anesthesiologist, Presbyterian Hospital; Associate Professor of Anesthesiology, College of Physicians and Surgeons of Columbia University

4. **Hypnosis as an Adjunct in Anesthesiology**

   Albert M. Betcher, M.D., New York City, Director of Anesthesiology, Hospital for Joint Diseases

   Discussion: Victor J. Tofany, M.D., Rochester, Senior Attending Anesthesiologist, St. Mary's Hospital

5. **Considerations in the Changing Management of Pediatric Anesthesia**

   Richard Ament, M.D., Buffalo, Assistant Attending Anesthesiologist, Children's Hospital; Assistant Clinical Professor of Anesthesiology, University of Buffalo School of Medicine

   Carl B. Mischka, M.D., Buffalo, Clinical Assistant Anesthesiologist, Children's Hospital; Assistant in Anesthesiology, University of Buffalo School of Medicine

   Discussion: Thomas W. Morgan, M.D., Rochester, Senior Attending Anesthesiologist, Rochester General Hospital

6. **The Use of Fluothane in Obstetric Anesthesia**

   James A. Cutter, M.D., Buffalo, Assistant Professor of Anesthesiology, University of Buffalo School of Medicine

   Benton D. King, M.D., Buffalo, Professor of Anesthesiology, University of Buffalo School of Medicine

   Discussion: Gertie F. Marx, M.D., New York City, Assistant Professor of Anesthesiology, Albert Einstein College of Medicine of Yeshiva University

Section on Chest Diseases

Chairman . . . . Ida Levine, M.D., Kings
Vice Chairman . . . .
. . . . Francis W. O'Donnell, M.D., Erie
Secretary . . . . Harry Golembe, M.D., Sullivan

Tuesday, May 12—9 A.M.

Los Angeles Room, Mezzanine

PANEL DISCUSSION

1. **Lung Biopsy in Diffuse Pulmonary Disease**

   Walter F. Bugden, M.D., Syracuse, *Moderator*, Attending Thoracic Surgeon, Crouse-

Irving Hospital; Clinical Professor of Thoracic Surgery, State University of New York Upstate Medical Center at Syracuse

PAUL BUNN, M.D., Syracuse, Professor of Medicine, State University of New York Upstate Medical Center at Syracuse

CLIFFORD J. STRAEHLEY, JR., M.D., Syracuse, Clinical Assistant Professor of Surgery, State University of New York Upstate Medical Center at Syracuse

JOHN T. PRIOR, M.D., Syracuse, Associate Professor of Pathology, State University of New York Upstate Medical Center at Syracuse

2. **What's Ahead in the Hospital Treatment of Tuberculosis**

I. D. BOBROWITZ, M.D., New York City, Director of Tuberculosis, Department of Hospitals of the City of New York; Associate Clinical Professor of Medicine (Pulmonary Diseases), Albert Einstein College of Medicine of Yeshiva University

Discussion: Richard Nauen, M.D., Perrysburg, Director, J. N. Adam Memorial Hospital

PANEL DISCUSSION

3. **Polycythemia and its Clinical Significance**

HAROLD A. LYONS, M.D., Brooklyn, *Moderator,* Director, Second Pulmonary Disease Division, Kings County Hospital Center; Professor of Medicine, State University of New York Downstate Medical Center

JOHN J. KELLY, JR., M.D., Brooklyn, Chief, Cardiovascular Division, and Associate Professor of Medicine, State University of New York Downstate Medical Center

HERBERT C. LICHTMAN, M.D., Brooklyn, Chief, Hematology Section, and Associate Professor of Medicine, State University of New York Downstate Medical Center

MELVIN M. NEWMAN, M.D., Brooklyn, Chief, Thoracic Surgery Section, and Associate Professor of Surgery, State University of New York Downstate Medical Center

Section on Dermatology and Syphilology

Chairman.....HERBERT L. TRAENKLE, M.D., Erie
Vice-Chairman...DAVID BLOOM, M.D., New York
Secretary....RICHARD L. SAUNDERS, M.D., Niagara

Tuesday, May 12—9 A.M.

Buffalo Room, Mezzanine

1. **Clinical Evaluation of Treponema Pallidum Immobilization Test Results**

NORBERT G. RAUSCH, M.D., Buffalo, Acting Director of Syphilis Control, Erie County Health Department; Associate in Dermatology and Syphilology, University of Buffalo School of Medicine

2. **New Forms of Scalp Ringworm in Western New York**

JOHN T. CRISSEY, M.D., Buffalo, Attending Dermatologist, Edward J. Meyer Memorial Hospital; Assistant Clinical Professor of Dermatology, University of Buffalo School of Medicine

ROBERT MARTIN, M.D., Buffalo (*By invitation*), Resident in Dermatology, Edward J. Meyer Memorial Hospital

3. **The Use of Antimalarial Preparations in the Treatment of Cutaneous Diseases**

ORLANDO CANIZARES, M.D., New York City, Consultant in Dermatology, Veterans Administration Hospital, Bronx; Professor of Clinical Dermatology and Syphilology, New York University Post-Graduate Medical School

HARRY SHATIN, M.D., Bronx (*By invitation*), Chief in Dermatology, Veterans Administration Hospital

FRANKLIN S. GLICKMAN, M.D., Bronx (*By invitation*), Resident in Dermatology, Veterans Administration Hospital

Discussion: JOSEPH J. HALLETT, M.D., Rochester, Chief Dermatologist, Rochester General Hospital; Clinical Senior Instructor in Medicine (Dermatology), University of Rochester School of Medicine and Dentistry

4. **The Management of Hemangiomas from the Viewpoint of a Pediatrician**

DONALD P. PINKEL, M.D., Buffalo, Attending Pediatrician, Roswell Park Memorial Institute; Associate in Pediatrics, University of Buffalo School of Medicine

Discussion: GEORGE C. ANDREWS, M.D., New York City, Consultant in Dermatology, Columbia Presbyterian Medical Center; Clinical Professor of Dermatology (Retired), College of Physicians and Surgeons of Columbia University

5. **The Clinical Diagnosis of Malignant Melanoma**

GEORGE C. ANDREWS, M.D., New York City, Consultant in Dermatology, Columbia Presbyterian Medical Center; Clinical Professor of Dermatology (Retired), College of Physicians and Surgeons of Columbia University

ANTHONY N. DOMONKOS, M.D., New York City, Assistant Clinical Professor of Dermatology, College of Physicians and Surgeons of Columbia University

Discussion: HERBERT L. TRAENKLE, M.D., Buffalo, Dermatologist, Roswell Park Memorial Institute; Assistant Clinical Professor of Dermatology, University of Buffalo School of Medicine

Section on
Gastroenterology and Proctology

Chairman.....M. LUTHER MUSSELMAN, M.D., Erie
Vice-Chairman....SIDNEY M. FIERST, M.D., Kings
Secretary..MICHAEL R. DEDDISH, M.D., New York

Tuesday, May 12—9 A.M.

Detroit Room, Mezzanine

1. **The Management of Acute Bleeding from Esophageal Varices**

   SEYMOUR I. SCHWARTZ, M.D., Rochester, Instructor in Surgery, University of Rochester School of Medicine and Dentistry

2. **Recent Advances in the Drug Therapy of Ulcerative Disease of the Gastrointestinal Tract**

   ASHER WINKELSTEIN, M.D., New York City, Consulting Gastroenterologist, Mount Sinai Hospital

3. **Ulcerative Colitis in the Aged**

   Z. T. BERCOVITZ, M.D., New York City, Associate Physician, Bellevue Medical Center; Assistant Professor of Clinical Medicine; New York University Post-Graduate Medical School

4. **Factors in the Prognosis of Gastric Cancer**

   WILLIAM F. LIPP, M.D., Buffalo, Assistant Attending Physician, Buffalo General Hospital; Assistant Clinical Professor of Medicine, University of Buffalo School of Medicine

   A. H. AARON, M.D., Buffalo, Consulting Physician, Buffalo General Hospital; Clinical Professor of Medicine (Emeritus), University of Buffalo School of Medicine

5. **Current Concepts in Surgical Management of Carcinoma of the Colon**

   RUPERT B. TURNBULL, JR., M.D., Cleveland Ohio (*By invitation*), Cleveland Clinic

6. **The Effect of Gliadin in Adult Celiac Disease**

   JOHN M. GRANT, M.D., Rochester (*By invitation*), Instructor in Medicine and Psychiatry, University of Rochester School of Medicine and Dentistry

General Discussion

Section on
General Practice

Chairman....ROYAL S. DAVIS, M.D., Westchester
Vice-Chairman....ARTHUR HOWARD, M.D., Fulton
Secretary...........LAWRENCE AMES, M.D., Kings

Tuesday, May 12—9 A.M.

New York Room, Mezzanine

Joint Meeting with Section on Industrial Medicine and Surgery

SYMPOSIUM

Trauma

This is a symposium on four of the more common types of trauma preceded by a discussion of wound healing in general. These are problems of interest to general practitioners and specialists in private practice, on one hand, and industrial physicians on the other. It is important for both the patient and industry that all those responsible for the handling of traumatic pathology understand their common goal.

1. **Current Thoughts on the Problems of Wound Healing**

   CLARENCE E. SANFORD, M.D., Buffalo, Assistant Attending Surgeon, Millard Fillmore Hospital; Assistant in Surgery, University of Buffalo School of Medicine

2. **Early Management of Burns**

   WORTHINGTON G. SCHENK, JR., M.D., Buffalo, Assistant Professor of Surgery, University of Buffalo School of Medicine

3. **Soft Tissue Injury About the Ankle**

   JOSEPH M. DZIOB, M.D., Buffalo Director of Surgery, Bethlehem Steel Corporation; Associate in Surgery, University of Buffalo School of Medicine

4. **Clinical Evaluation of Low Back Trauma**

   JAMES P. COLE, M.D., Buffalo, Attending Surgeon, Millard Fillmore Hospital; Clinical Professor of Orthopedic Surgery, University of Buffalo School of Medicine

5. **Whiplash Injury of the Cervical Spine**

   Eugene R. Mindell, M.D., Buffalo, Assistant, Orthopedic Surgeon, Millard Fillmore Hospital; Associate in Orthopedics, University of Buffalo School of Medicine

   Discussion: Willis M. Weeden, M.D., New York City, Medical Director, Workmen's Compensation Board, State of New York

   Joseph D. Godfrey, M.D., Buffalo, Chief of Orthopedic Surgery, Mercy Hospital; Attending Orthopedic Surgeon, Buffalo General Hospital

Section on Industrial Medicine and Surgery

Chairman....Norman Plummer, M.D., New York
Vice-Chairman..Harry A. Hanson, M.D., Monroe
Secretary.....Raymond J. Murray, M.D., Nassau

Tuesday, May 12—9 A.M.

New York Room, Mezzanine

Joint Meeting with Section on General Practice (For program, see Section on General Practice. See also Section on Otolaryngology—Papers 3 and 4.)

Section on Legal Medicine

Chairman.....Alfred Koerner, M.D., New York
Vice-Chairman........George A. Friedman, M.D., New York
Secretary...........Harry Siegel, M.D., Queens

Friday, May 15—9 A.M.

Washington Room, Mezzanine

1. **Unstressed Factors in Malpractice**

   William F. Martin, Esq., New York City (*By invitation*), Counsel to the Medical Society of the State of New York

2. **Medicolegal Implications of Operating Room Deaths**

   Arthur J. Mannix, Jr., M.D., New Rochelle, Associate Attending Surgeon, St. Agnes Hospital, White Plains

   Discussion: Alfred Angrist, M.D., Bronx, Director of Pathology, Bronx Municipal Hospital Center; Professor and Chairman, Department of Pathology, Albert Einstein College of Medicine of Yeshiva University

3. **Sex as a Medicolegal Entity**

   Alfred Koerner, M.D., New York City, President, the American Board of Legal Medicine, Inc.

4. **Breach of Warranty: Does It Affect the Doctor?**

   George A. Friedman, M.D., New York City, Secretary, the American Board of Legal Medicine, Inc.

Section on Medicine

Chairman....Victor L. Pellicano, M.D., Niagara
Vice-Chairman...........Thomas F. Frawley, M.D., Albany
Secretary......Albert H. Douglas, M.D., Queens

Wednesday, May 13—9 A.M.

Buffalo Room, Mezzanine

1. **A New Test for Pituitary Function**

   Grosvenor W. Bissell, M.D., Buffalo, Chief of Medical Service, Veterans Administration Hospital; Associate Professor of Medicine, University of Buffalo School of Medicine

   Alvin L. Scott, M.D., Buffalo, Internist, Veterans Administration Hospital; Instructor in Medicine, University of Buffalo School of Medicine

   Discussion: Thomas F. Frawley, M.D., Albany, Director, Department of Endocrinology and Metabolism, and Professor of Medicine, Albany Medical College of Union University

2. **The Practical Use of the Newer Diagnostic Tests for Rheumatoid Arthritis**

   Ralph F. Jacox, M.D., Rochester, Associate Professor of Medicine, University of Rochester School of Medicine and Dentistry

   Edward C. Atwater, M.D., Rochester (*By invitation*), U.S. Public Health Service Trainee in Rheumatic Diseases

   Discussion: L. Maxwell Lockie, M.D., Buffalo, Professor of Therapeutics, University of Buffalo School of Medicine

3. **Recent Experience with Gastrointestinal Hemorrhage Complicating Liver Disease**

   John E. Kiley, M.D., Albany, Assistant Attending Physician, Albany Hospital; Assistant Professor of Medicine, Albany Medical College of Union University

   C. Stuart Welch, M.D., Albany, Attending Surgeon, Albany Hospital; Professor of

Surgery, Albany Medical College of Union University

Discussion: William F. Lipp, M.D., Buffalo, Assistant Attending Physician, Buffalo General Hospital; Assistant Clinical Professor of Medicine, University of Buffalo School of Medicine

4. **Chairman's Address—The Use of Medical Hypnosis in Internal Medicine**

Victor L. Pellicano, M.D., Niagara Falls, Chief of Staff and Attending Physician, Mount St. Mary's Hospital; Attending Physician, Niagara Falls Memorial Hospital

Discussion: Philip Ament, D.D.S., Buffalo (*By invitation*), Editor, *Journal of American Society of Psychosomatic Dentistry and Medicine;* Examiner, American Board of Dental Hypnosis

Bernard H. Smith, M.D., Buffalo, Chief Attending Neurologist, Edward J. Meyer Memorial Hospital; Professor of Neurology, University of Buffalo School of Medicine

5. **The New York State Society of Internal Medicine: Progress Report**

Virgil H. F. Boeck, M.D., Buffalo, Attending Physician, Edward J. Meyer Memorial Hospital and Veterans Administration Hospital

Section on Neurology and Psychiatry

Chairman......Isaac Shapiro, M.D., Schenectady
Secretary.........Harry A. Kaplan, M.D., Kings

Friday, May 15—9 A.M.

Buffalo Room, Mezzanine

1. **The Basis for the Appearance of Abnormal Involuntary Movements in Man**

Abraham M. Rabiner, M.D., Brooklyn, Director of Neurology, Jewish Chronic Disease Hospital; Professor of Neurology, Emeritus, State University of New York Downstate Medical Center

Discussion: Wallace B. Hamby, M.D., Buffalo, Professor of Neurosurgery, University of Buffalo School of Medicine

2. **The Pathology of Viral Myositis**

Stanley M. Aronson, M.D., Brooklyn, Associate Professor of Neuropathology, State University of New York Downstate Medical Center

Discussion: Irving Hyman, M.D., Buffalo, Clinical Professor of Neurology, University of Buffalo School of Medicine

3. **Recent Advances in the Organic Approach to Psychosis**

Alfred M. Freedman, M.D., Brooklyn, Associate Professor of Psychiatry, State University of New York Downstate Medical Center

Discussion: Victor Schenker, Ph.D., Brooklyn (*By invitation*), Associate Professor and Head of Section on Biochemistry Research, State University of New York Downstate Medical Center

Duncan Whitehead, M.D., Buffalo, Director, Buffalo State Hospital

Section on Obstetrics and Gynecology

Chairman...Michael J. Jordan, M.D., New York
Vice-Chairman.....Richard W. Baetz, M.D., Erie
Secretary.....Bernard J. Pisani, M.D., New York

Friday, May 15—9 A.M.

New York Room, Mezzanine

PANEL DISCUSSION

Diagnosis and Management of Preinvasive and Invasive Carcinoma of the Endometrium

James Price Palmer, M.D., East Aurora, *Moderator,* Associate Chief Cancer Gynecologist, Roswell Park Memorial Institute; Associate Clinical Professor of Gynecology, University of Buffalo School of Medicine

1. **Early Diagnosis and Detection**

Genevieve M. Bader, M.D., New York City, Attending Physician, Strang Clinic, Memorial Center for Cancer and Allied Diseases; Assistant Professor of Preventive Medicine, Sloan-Kettering Division of Cornell University Medical College

2. **Cytology and Pathology**

Leopold Koss, M.D., New York City, Director of Cytology Laboratory and Associate Attending Pathologist, Memorial Center for Cancer and Allied Diseases

3. **Treatment and Management**

Irving R. Lang, M.D., Buffalo Assistant Obstetrician and Gynecologist, Edward J. Meyer Memorial Hospital and Sisters of Charity Hospital; Instructor in Obstetrics and Gynecology, University of Buffalo School of Medicine

4. **Treatment and Management**

   Raymond W. Mitchell, M.D., Hamburg, Former Associate Chief of Cancer Research in Gynecology, Roswell Park Memorial Institute; Associate in Obstetrics and Gynecology, University of Buffalo School of Medicine, Buffalo

Section on Ophthalmology

Chairman....Donald E. Moore, M.D., Onondaga
Vice-Chairman.................................
..........Thomas M. d'Angelo, M.D., Queens
Secretary.............Ivan J. Koenig, M.D., Erie

Thursday, May 14—9 A.M.

New York Room, Mezzanine

SYMPOSIUM

Cataracts

1. **Types of Cataracts**

   Philip H. Landers, M.D., Binghamton, Associate Ophthalmologist, Binghamton City Hospital

   Discussion: Herbert R. Reitz, M.D., Buffalo, Clinical Assistant Ophthalmologist, Buffalo General Hospital; Assistant Ophthalmologist, Deaconess Hospital

2. **Cataract Surgery: Use of the Enzyme (Alpha Chymotrypsin) in Cataract Extraction**

   Richard C. Troutman, M.D., New York City, Ophthalmologist, Kings County Medical Center, Brooklyn; Professor of Ophthalmology, State University of New York Downstate Medical Center

   Discussion: John F. Gipner, M.D., Rochester, Chief Ophthalmologist, Strong Memorial Hospital; Professor of Ophthalmology, University of Rochester School of Medicine and Dentistry

3. **Preoperative and Postoperative Care of Cataract Patients**

   K. Elizabeth Pierce Olmsted, M.D., Buffalo, Associate Ophthalmologist, Millard Fillmore Hospital and Buffalo General Hospital

   Discussion: William T. Boland, M.D., Elmira, Ophthalmologist, Arnot-Ogden Memorial Hospital and St. Joseph's Hospital

4. **Immediate Postoperative Complications and Care**

   John M. McLean, M.D., New York City, Surgeon in Charge of Ophthalmology, New York Hospital; Professor of Ophthalmology, Cornell University Medical College

   Discussion: John A. Cetner, M.D., Albany, Assistant Ophthalmologist, Albany Hospital; Assistant Clinical Professor of Ophthalmology, Albany Medical College of Union University

5. **Postoperative Glaucoma Following Cataract Surgery**

   Brittain F. Payne, M.D., New York City, Executive Surgeon and Surgeon Director of Pathology, New York Eye and Ear Infirmary; Director of Ophthalmology, Lenox Hill Hospital

   Discussion: John H. Sulzman, M.D., Troy, Ophthalmologist, Cohoes Memorial Hospital and St. Mary's Hospital

Section on Orthopedic Surgery

Chairman..Edward M. Winant, M.D., New York
Secretary........Benjamin E. Obletz, M.D., Erie

Wednesday, May 13—9 A.M.

Empire State Room, Mezzanine

SYMPOSIUM

Fractures Involving the Lower Extremity

1. **Fracture of the Tibial Spine in Children**

   Bernie P. Davis, M.D., Tonawanda, Orthopedic Surgeon, Veterans Administration Hospital; Clinical Assistant Orthopedic Surgeon, Children's Hospital

2. **Fractures of the Patella; An Evaluation of Results**

   William D. Dugan, M.D., Buffalo, Clinical Assistant in Orthopedic Surgery, Buffalo General Hospital; Associate in Orthopedic Surgery, University of Buffalo School of Medicine

3. **Open Reduction of the Fibula in Certain Fractures of the Ankle**

   William J. Rogers, III, M.D., Tonawanda, Clinical Assistant Orthopedic Surgeon, Children's Hospital; Instructor in Orthopedic Surgery, University of Buffalo School of Medicine

4. **Pathologic Fractures of the Lower Extremities**
   Peter A. Casagrande, M.D., Buffalo, Clinical Assistant Orthopedic Surgeon, Children's Hospital; Associate in Orthopedic Surgery, University of Buffalo School of Medicine

   Discussion: James P. Cole, M.D., Buffalo, Chief of Orthopedic Surgery, Edward J. Meyer Memorial Hospital; Clinical Professor and Head of Orthopedic Surgery, University of Buffalo School of Medicine

Section on Otolaryngology

Chairman....Alfred W. Doust, M.D., Onondaga
Vice-Chairman.........Daniel C. Baker, Jr., M.D., New York
Secretary.....George M. Trainor, M.D., Monroe

Friday, May 15—9 A.M.

Empire State Room, Mezzanine

1. **A New Method of Control of Immediate Adenoid Bleeding**
   Marshall Y. Soldineer, M.D., Buffalo, Consultant in Otolaryngology, Veterans Administration Hospital; Associate in Otolaryngology, University of Buffalo School of Medicine

2. **Tympanoplasty**
   Edward C. Brandow, Jr., M.D., Albany, Attending Otolaryngologist, Albany and Memorial Hospitals; Associate Otolaryngologist, Veterans Administration Hospital

   Discussion: Wesley H. Bradley, M.D., Syracuse, Associate Attending Otolaryngologist, Syracuse Memorial Hospital and Hospital of the Good Shepherd; Clinical Assistant Professor of Otolaryngology, State University of New York Upstate Medical Center at Syracuse

3. **Industrial Noise—Laryngeal Considerations**
   David W. Brewer, M.D., Syracuse, Attending Otolaryngologist, Syracuse Memorial Hospital; Clinical Associate Professor of Otolaryngology, State University of New York Upstate Medical Center at Syracuse

   F. Bertram Briess, Syracuse (*By invitation*), Instructor of Otolaryngology, State University of New York, Upstate Medical Center at Syracuse

   Discussion: Daniel C. Baker, Jr., M.D., New York City, Attending Otolaryngologist, Presbyterian Hospital; Associate Attending Surgeon, Delafield Hospital

PANEL DISCUSSION

Problems of Noise-Induced Hearing Loss: Changes in the New York State Workmen's Compensation Law Relative to Defective Hearing

Alfred W. Doust, M.D., Syracuse, *Moderator*, Professor and Chairman, Department of Otolaryngology, State University of New York Upstate Medical Center at Syracuse

C. Stewart Nash, M.D., Rochester, Attending Otolaryngologist, Strong Memorial Hospital; Consultant to the Faculty, University of Rochester School of Medicine and Dentistry

Noel S. Symons, Esq., Buffalo (*By invitation*), Member of Special Committee on Workmen's Compensation, New York State Bar Association; Member of Workmen's Compensation Advisory Committee of Associated Industries of New York State, Inc.

Joseph C. Serio, M.D., Buffalo, Chief of Otolaryngology, Emergency Hospital; Attending Otolaryngologist, Sisters of Charity Hospital

Section on Pathology, Clinical Pathology, and Blood Banking

Chairman.......Joseph D. Gioia, M.D., Dutchess
Vice-Chairman..Louis R. Ferraro, M.D., Nassau
Secretary...George K. Higgins, M.D., New York

Wednesday, May 13—9 A.M.

New York Room, Mezzanine

1. **The Nonspecific Aspects of Endocarditis: An Experimental Study and Its Clinical Applications**
   Alfred Angrist, M.D., Bronx, Director of Bronx Municipal Hospital Center; Professor and Chairman, Department of Pathology, Albert Einstein College of Medicine of Yeshiva University

   M. Oka, M.D., Bronx (*By invitation*), Visiting Instructor, Albert Einstein College of Medicine of Yeshiva University

   K. Nakao, M.D., Bronx (*By invitation*), Visiting Instructor, Albert Einstein College of Medicine of Yeshiva University

   Discussion: Geroge K. Higgins, M.D., New York City, Secretary, New York State Society of Pathologists

2. **Medicolegal Aspects of Blood Bank Transfusion**

   Lester J. Unger, M.D., New York City, Director of Blood Bank, University Hospital

3. **A Bacteriophage Typing Staphylococcus Survey of an 800-Bed General Hospital**

   Morton C. Kahn, M.D., New York City (*By invitation*), Chief Bacteriologist, St. Vincent's Hospital

   Ilona Ring, M.D., New York City (*By invitation*), Associate Research Bacteriologist, St. Vincent's Hospital

Section on Pediatrics

Chairman........John A. Monfort, M.D., Kings
Vice-Chairman...Richard A. Downey, M.D., Erie
Secretary..........Hugh F. Leahy, M.D., Albany

Thursday, May 14—9 A.M.

Detroit Room, Mezzanine

1. **Oxygen: Its Current Status in Pediatrics and Obstetrics**

   Donal Dunphy, M.D., Buffalo (*By invitation*), Director, Outpatient Department, Children's Hospital

2. **Fluid and Electrolyte Therapy in the Young Infant and Child Undergoing Surgery**

   Philip Calcagno, M.D., Buffalo, Assistant Professor of Pediatrics, University of Buffalo School of Medicine

   Discussion: Theodore C. Jewett, Jr., M.D., Buffalo, Assistant Attending Pediatrician, Children's Hospital

3. **Endocrine and Genetic Problems in Infancy and Childhood**

   Lytt I. Gardner, M.D., Syracuse (*By invitation*), Professor of Pediatrics, State University of New York Upstate Medical Center at Syracuse

4. **The Management of Renal Failure in Children**

   Mitchell I. Rubin, M.D., Buffalo, Chief, Department of Pediatrics, Children's Hospital; Professor of Pediatrics, University of Buffalo School of Medicine

5. **Hemolytic Anemias in Early Childhood**

   Clare N. Shumway, M.D., Buffalo, Assistant Professor of Pediatrics, University of Buffalo School of Medicine

   Discussion: George H. Selkirk, M.D., Buffalo, Assistant Pediatrician, Children's Hospital; Assistant Clinical Professor of Pediatrics, University of Buffalo School of Medicine

Section on Physical Medicine

Chairman............Leslie Blau, M.D., Broome
Vice-Chairman................................
...........Joseph B. Rogoff, M.D., New York
Secretary......Frederick Ziman, M.D., New York

Thursday, May 14—9 A.M.

Empire State Room, Mezzanine

1. **Clinical Electromyography: Its Usefulness in Differentiating Myopathies from Neuropathies**

   Joseph B. Rogoff, M.D., New York City, Director, Rehabilitation and Physical Medicine, Jewish Chronic Disease Hospital, Brooklyn; Associate Clinical Professor of Physical Medicine and Rehabilitation, New York Medical College, Flower and Fifth Avenue Hospitals

2. **The Electrodiagnosis and Prognosis of Facial Paralysis**

   Joseph Moldaver, M.D., New York City, Director of Neuromuscular Diagnostic Service, Hospital for Special Surgery; Associate Attending Neurologist, Presbyterian Hospital

3. **Vasospastic and other Ischemic Lesions of Nerves as a Basis for Use of Physical Medicine**

   Joseph T. Roberts, M.D., Buffalo, Chief of Cardiology, Veterans Administration Hospital; Lecturer in Medicine, University of Buffalo School of Medicine

   Discussion: John S. LaDue, M.D., New York City, Assistant Professor of Medicine, Cornell University Medical College

   Richard H. Lyons, M.D., Syracuse, Professor and Chairman, Department of Medicine, State University of New York Upstate Medical Center at Syracuse

4. **The Management of Decubitus Ulcers**

   Andor A. Weiss, M.D., Bronx, Chief, Spinal Injury Section, Veterans Administration Hospital; Assistant Professor of Clinical Rehabilitation Medicine, Albert Einstein College of Medicine of Yeshiva University

Section on Preventive Medicine and Public Health

Chairman......RALPH M. VINCENT, M.D., Albany
Vice-Chairman...WILLIAM E. MOSHER, M.D., Erie
Secretary.....ROBERT H. BROAD, M.D., Tompkins

Wednesday, May 13—9 A.M.

Washington Room, Mezzanine

1. **The Public Health Aspects of Ionizing Radiation**

   DONALD B. THOMAS, M.D., Buffalo, Deputy Commissioner of Health, Erie County

   Discussion: THEODORE ROSENTHAL, M.D., New York City. Assistant Commissioner of Health, the City of New York

2. **Experience in Reporting Habitual Narcotic Users in New York State**

   EDWARD R. SCHLESINGER, M.D., Albany, Associate Director, Division of Medical Services, New York State Department of Health

   JOHN J. BELLIZZI, PH.G., Albany (*By invitation*), Acting Chief, Narcotic Control Section, New York State Department of Health

   ELIZABETH PARKHURST, M.SC., Albany (*By invitation*), Principal Biostatistician, New York State Department of Health

3. **Aseptic Meningitis Due to ECHO (Enteric Cytopathogenic Human Orphan) and Other Viruses: Clinical and Laboratory Data**

   PAUL F. WEHRLE, M.D., Syracuse, Assistant Professor of Pediatrics, State University of New York Upstate Medical Center at Syracuse

   Discussion: A. C. SILVERMAN, M.D., Syracuse, Deputy Commissioner of Health, Syracuse City Health Department

Section on Radiology

Chairman..........JOHN F. ROACH, M.D., Albany
Vice-Chairman..................................
............ALBERT A. DUNN, M.D., New York
Secretary...
......PAUL RIEMENSCHNEIDER, M.D., Onondaga

Thursday, May 14—9 A.M.

Washington Room, Mezzanine

1. **Visual Physiology in Diagnostic Roentgenology**

   WILLIAM J. TUDDENHAM, M.D., Philadelphia, Pennsylvania (*By invitation*), Associate Radiologist, Hospital of the University of Pennsylvania; Assistant Professor of Radiology, University of Pennsylvania School of Medicine

   Discussion: JOHN F. ROACH, M.D., Albany, Professor of Radiology, Albany Medical College of Union University

2. **Film Reading Session**

   Interesting, unusual, and pathologically proved cases will be presented as diagnostic problems

   WILLIAM J. TUDDENHAM, M.D., Philadelphia, Pennsylvania (*By invitation*), Assistant Professor of Radiology, University of Pennsylvania School of Medicine

   FRANK J. BORRELLI, M.D., New York City, Professor and Director of Radiology, New York Medical College, Flower and Fifth Avenue Hospitals

   JOSEPH A. HEAD, M.D., Syracuse, Assistant Professor of Radiology, State University of New York Upstate Medical Center at Syracuse

   NORMAN HEILBRUN, M.D., Buffalo, Assistant Clinical Professor of Radiology, University of Buffalo School of Medicine

Section on Surgery

Chairman.EDMUND N. GOODMAN, M.D., New York
Secretary........HARRY W. HALE, JR., M.D., Erie

Thursday, May 14—9 A.M.

Los Angeles Room, Mezzanine

SYMPOSIUM

The Postgastrectomy Patient

1. **The Incidence and Duration of Dumping**

   VERNON A. WEINSTEIN, M.D., New York City, Assistant Attending Surgeon, Mount Sinai Hospital

2. **The Follow-Up Incidence of Dumping and Weight Loss**

   HAROLD HARVEY, M.D., New York City, Associate Attending Surgeon, Presbyterian Hospital; Professor of Clinical Surgery, College of Physicians and Surgeons of Columbia University

3. **The X-Ray of the Postgastrectomy Patient with Barium and with a Meal**

   Ralph Schlaeger, M.D., New York City, Assistant Attending Radiologist, Presbyterian Hospital

4. **Fat Absorption Studies: Postgastrectomy Using Radioactive Isotopes**

   Harold Barker, M.D., New York City, Associate Attending Surgeon, Presbyterian Hospital; Associate Professor of Clinical Surgery, College of Physicians and Surgeons of Columbia University

5. **Nutritional Studies in Absorption Following Gastrectomy for Carcinoma**

   George N. Cornell, M.D., New York City, Assistant Attending Surgeon, New York Hospital; Assistant Professor of Clinical Surgery, Cornell University Medical College

6. **The Electrogastrogram in Postgastrectomy Patients**

   Edmund N. Goodman, M.D., New York City, Assistant Attending Surgeon, Presbyterian Hospital; Assistant Clinical Professor of Surgery, College of Physicians and Surgeons of Columbia University

   Henry Colcher, M.D., New York City, Associate in Medicine, College of Physicians and Surgeons of Columbia University

Section on Urology

Chairman.....William J. Staubitz, M.D., Erie
Vice-Chairman..E. Craig Coats, M.D., New York
Secretary...Howard T. Thompson, M.D., Monroe

Wednesday, May 13—9 A.M.

Los Angeles Room, Mezzanine

1. **Biopsy of the Prostate**

   William L. Parry, M.D., Syracuse (*By invitation*), Chief, Division of Urology, Veterans Administration Hospital; Assistant Professor of Urology, State University of New York Upstate Medical Center at Syracuse

   Joseph F. Finelli, M.D., Syracuse, Clinical Instructor in Urology, State University of New York Upstate Medical Center at Syracuse

   Discussion: Imre V. Magoss, M.D., Buffalo (*By invitation*), Associate Cancer Research Urologist, Roswell Park Memorial Institute; Instructor in Urology, University of Buffalo School of Medicine

2. **Management of Vesicle Neck Contractures in Children**

   Howard T. Thompson, M.D., Rochester, Chief, Division of Urology, Northside Hospital

   Discussion: Edgar Slotkin, M.D., Buffalo, Attending Urologist, Children's Hospital; Assistant Clinical Professor of Urology, University of Buffalo School of Medicine

3. **Medical Management of Recurrent Urinary Calculi**

   Donald F. McDonald, M.D., Rochester, Chief, Division of Urology, Strong Memorial Hospital; Professor and Chairman, Department of Urology, University of Rochester School of Medicine and Dentistry

   Discussion: Kurt E. Steinborn, M.D., Buffalo (*By invitation*), Medical Director, University of Buffalo Respiratory and Rehabilitation Center; Associate in Pediatrics, University of Buffalo School of Medicine

4. **Surgical Management of Testicular Tumors**

   William J. Staubitz, M.D., Buffalo, Chief, Division of Urology, Roswell Park Memorial Institute; Assistant Clinical Professor of Urology, University of Buffalo School of Medicine

   Imre V. Magoss, M.D., Buffalo (*By invitation*), Associate Cancer Research Urologist, Roswell Park Memorial Institute; Instructor in Urology, University of Buffalo School of Medicine

   Melbourne H. Lent, M.D., Buffalo, Assistant Chief, Division of Urology, Roswell Park Memorial Institute; Instructor in Urology, University of Buffalo School of Medicine

   Eugene M. Sigman, M.D., Buffalo, Senior Cancer Research Urologist, Roswell Park Memorial Institute

   James Grace, M.D., Buffalo (*By invitation*), Chief Cancer Research Surgeon, Roswell Park Memorial Institute; Associate in Surgery, University of Buffalo School of Medicine

   Discussion: Andrew A. Gage, M.D., Buffalo, Assistant Chief of Surgery, Veterans Administration Hospital; Instructor in Surgery, University of Buffalo School of Medicine

SESSIONS

Session on History of Medicine

Chairman...........ELIOTT B. HAGUE, M.D., Erie
Secretary.....RICHARD B. STARK, M.D., New York

Friday, May 15—9 A.M.

Los Angeles Room, Mezzanine

Open to Public

SYMPOSIUM

History of Microscopy—1950 to the Present

Modern Developments Include Phase-Contrast, Ultraviolet, and Electronmicroscopy

The panel will develop the history of all phases of microscopy. The nature and applications of the more specialized technics will be discussed.

1. OSCAR W. RICHARDS, PH.D., Southbridge, Massachusetts (*By invitation*), Chief Biologist, American Optical Company Research Center
2. S. G. ELLIS, PH.D., Princeton, New Jersey (*By invitation*), Radio Corporation of America, David Sarnoff Research Center
3. ERNST H. BEUTNER, PH.D., Buffalo (*By invitation*), Assistant Professor of Bacteriology and Immunology, University of Buffalo School of Medicine

General Discussion

Session on Public Relations

Chairman.....GEORGE A. BURGIN, M.D., Herkimer
Secretary.......KENNETH T. ROWE, M.D., Steuben

Wednesday, May 13—9 A.M.

Detroit Room, Mezzanine

1. **Public Relations from the County Medical Society Viewpoint**

   HENRY W. MAYO, JR., M.D., Syracuse, Chairman, Public Relations Committee, Onondaga County Medical Society

2. **The Public Relations Aspects of Hospital Insurance in Canada**

   A. D. KELLY, M.D., Toronto, Canada (*By invitation*), General Secretary, The Canadian Medical Association

3. **A Profession's Public Relations Under the Microscope**

   HOWARD CHASE, New York City (*By invitation*), President, Communications Counselors, Inc.

General Discussion

SCIENTIFIC EXHIBITS

Hotel Statler Hilton, Buffalo, May 11 through 15, 1959

WILLIAM L. WATSON, M.D., NEW YORK, *Chairman*
BEVERLY C. SMITH, M.D., NEW YORK, *Cochairman*
FREDERICK LEE LIEBOLT, M.D., NEW YORK
EUGENE L. LOZNER, M.D., ONONDAGA

Grover Cleveland Room, Mezzanine Lounge, Maple Leaf Room

Booths 101 through 151

Management of Thrombophlebitis with Phenylbutazone (Butazolidin)

Irwin Daniel Stein, M.D.

Mount Vernon Hospital
Mount Vernon

The potent anti-inflammatory action of phenylbutazone is the basis for its use in treating thrombophlebitis. Despite the varied etiology in superficial phlebitis (varicose veins, chemical and physical trauma, and Buerger's disease) the acute process promptly subsides the first day of its use. Used either by itself or in conjunction with anticoagulants, it readily produces relief of discomfort and fever in deep vein thrombosis, although peripheral edema persists because of the mechanical obstruction. It has made the management of superficial phlebitis an ambulatory type of treatment and has shortened considerably the period of bed rest, nursing care, and hospitalization for the deep vein thromboses. The exhibit includes serial color illustrations of experimental and clinical experience with this therapy, as well as charts and drawings outlining the principles of its use, contraindications, and the results in approximately 800 patients treated in the past four years. *(Booth 101)*

Is It an Allergy?—A Scoring System for Diagnosis

James M. Steele, M.D. *(By invitation)*

Robert Packer Hospital
Sayre, Pennsylvania

Diagnosis of the atopic state is fraught with difficulty, but in order to conserve the physician's time and efforts, this predisposition should be determined before vigorous efforts to identify sensitizing agents are made. A scoring system designed to facilitate diagnosis of the atopic diathesis has been developed. The method is described and its application demonstrated. *(Booth 102)*

Hodgkin's Disease in Childhood

Harold W. Dargeon, M.D.
Charolotte T. C. Tan, M.D.
Mauricio L. Origenes, M.D. *(By invitation)*

Memorial Center for Cancer and Allied Diseases
New York City

Hodgkin's disease rarely occurs in American children. A total of 45 children with Hodgkin's disease seen at Memorial Center for Cancer and Allied Diseases in the past thirty years was analyzed. The clinical courses, therapy, and survival time are presented. *(Booth 103)*

Palliative Management of Cancer

Eugene L. Bronstein, M.D.
James J. Nickson, M.D.

Memorial Center for Cancer and Allied Diseases
New York City

While cure of cancer remains the ultimate goal, today's victim must rely upon his physician's awareness and the utilization of currently available treatment. Newer technics of radiation therapy can provide significant long-term palliation to the patient with advanced disease. In this exhibit examples of these are illustrated in cases of cancer of the esophagus, the lung, and the breast; metastatic cancer to brain, bone, liver, eye, and soft tissue; and pleural effusion and ascites. *(Booth 104)*

Tissue Diagnosis of Curable Prostatic Cancer

Perry B. Hudson, M.D.
Florian Yandel, Jr., M.D.

College of Physicians and Surgeons of Columbia University
New York City

This exhibit presents a study of unsuspected prostatic cancer in a segment of the living male population in New York City's Bowery. An incidence rate of 10.4 per cent was found by means of arbitrary open perineal prostatic biopsy; the surgical procedure is illustrated. Graphs and textual material give details of the study, and preliminary results of curative and/or palliative measures. With the increasing population of men in the prostatic cancer age group, early detection and treatment of this condition become an increasing responsibility of the local physician and general surgeon. Criteria for determining operability are illustrated, and the biopsy technic found most accurate in determining such early, operable cases is shown in considerable detail. (*Booth 105*)

Management of Metastatic Cancer of Breast

Thomas L. Dao, M.D. (*By invitation*)

Roswell Park Memorial Institute
Buffalo

The importance of palliative therapy for advanced mammary cancer cannot be overemphasized. Temporary but gratifying palliation can be accomplished by irradiation, by administration of hormones or endocrine ablative procedure, and by chemotherapy. There are many misconceptions as to the type of therapy one selects and the proper timing. The purpose of this exhibit is to present the principles of the methods of treatment and to demonstrate how patients can benefit best by these several modalities of treatment. (*Booth 106*)

Cancer Detection in the Well Adult

Walter E. O'Donnell, M.D.
Louis Venet, M.D.
Emerson Day, M.D.

Memorial Center for Cancer and Allied Diseases
New York City

The periodic cancer detection examination of the asymptomatic well adult remains the single best method of cancer control available at present. The fundamentals of the basic clinical examination recommended for the detection of malignant and premalignant lesions are outlined. Specific attention is directed to those elements of the history, physical and laboratory screening procedures which have proved most sensitive and reliable. Examples of the findings encountered are cited as well as their immediate management. Reference is made to epidemiologic evidence which is useful in identifying high-risk individuals for the most intensive investigation. (*Booth 107*)

Management of Atypical Lesions of the Cervix

Michael J. Jordan, M.D.
Emerson Day, M.D.
Genevieve M. Bader, M.D.

Memorial Center for Cancer and Allied Diseases
New York City

A realization of the lack of fundamental knowledge of cervical lesions and their management led to plans for a special study group in 1950 to carry out a closely correlated clinical cytopathologic study of cervical lesions. The exhibit illustrates the diagnosis and management of 257 cases in the study group. This correlated study has added greatly to our knowledge of diagnosis and management of atypical lesions of the cervix. We believe it has already begun to set a pattern for more conservative management, at the same time assuring full protection to all patients with cervical lesions ranging from atypical to invasive carcinoma. (*Booth 108*)

Aortoiliopelvic Lymphadenectomy with Resection for Cancer of Left Colon and Rectum: Five-Year Survivals

Harry E. Bacon, M.D. (*By invitation*)
Julius L. Berkley, M.D. (*By invitation*)
Julio R. Pineda, M.D. (*By invitation*)
Burchard E. Winne, M.D. (*By invitation*)

Temple University Medical Center
Philadelphia, Pennsylvania

This exhibit shows five-year survival rates and the anatomy and dissection technic of lymphadenectomy. Two moulages of the lower abdomen and pelvis demonstrate the operation. A colon resection technic combined with a local type of cancerocidal chemotherapeutic agent is shown. (*Booth 109*)

Cytology in General Practice

Herman E. Hilleboe, M.D., *Commissioner*

New York State Department of Health
Albany

This exhibit illustrates visually the effectiveness of cytologic examination for early detection of cervical cancer and the method of taking smears. It includes illustrations of cytologic smears, biopsies, and cancers in situ. (*Booth 110*)

The Study of Viruses in Cancer

E. A. Mirand, Ph.D. (*By invitation*)
O. T. Mount, M.S. (*By invitation*)
George E. Moore, M.D.
J. T. Grace, M.D. (*By invitation*)
J. E. Sokal, M.D.
Roswell Park Memorial Institute
Buffalo

The exhibit presents evidence of a neoplastic virus(es) which is neither strain nor species specific. Moreover, this mammalian virus can induce multiple neoplasms in inbred strains of mice, rats, and hamsters. The hamster is most sensitive to this mouse virus derived from a mouse parotid tumor propagated in mouse embryo tissue cultures. The sarcomas occur in the hamster as early as fifteen days after injection and the site of tumor formation is most readily observed in the heart, kidney, blood vessels, stomach, mediastinum, lung, and subcutaneous area. Tumors often seen in the mouse are leukemias, osteogenic sarcomas, and mixed carcinomas. The average latent period in the mouse is seventy-five days. The rat is least sensitive to the virus; however, squamous cell carcinomas and sarcomas are readily seen about one hundred eighty days after injection. The intracellular mechanisms underlying this viral oncogenesis remain to be elucidated. However, the importance of these findings gives tremendous support to the viral theory of cancer. (*Booth 111*)

Treatments for Heart Pain

Joseph T. Roberts, M.D.
Veterans Administration Hospital
Buffalo

Standard measures are presented with such experimental efforts as: (1) group therapy or class guidance for heart disease patients and families; (2) use of several forms of pentaerythritol tetranitrate (PETN), in double-blind tests; experimental methods of directing new blood to the heart by endocardial puncturing, implanting arteries, veins, muscles, nerves, lung edges, valves, or other items into heart muscle or cavities, and connecting coronary sinus, veins, or arteries to aortic branches or ventricle. For possible use in mass disasters, a simple, one-knot method of connecting blood vessels by implantation of artery into a vein or artery using only household items is shown. (*Booth 112*)

The Clinical Significance of Arterial Sounds

Simon Rodbard, M.D.
J. Ciesielski, M.D. (*By invitation*)
M. Miyahara, M.D. (*By invitation*)
University of Buffalo Chronic Disease Research Institute
Buffalo

Phonarteriograms and sound recordings obtained under various conditions are shown. In these records, factors affecting the amplitude and duration of the arterial sounds, mechanisms of the auscultatory gaps, and doubling of the sounds are analyzed. Technics for determining pulse-wave contour and arrival time from records of the arterial sounds are demonstrated. The clinical significance of the arterial sounds is presented. (*Booth 113*)

Prolonged Venoarterial Pumping for the Relief of Cardiac Stress

James F. Dickson, III, M.D. (*By invitation*)
Neil A. J. Hamer, M.D. (*By invitation*)
James W. Dow, M.D. (*By invitation*)
Glover Clinic
Philadelphia, Pennsylvania

In acute reversible conditions with a diminished cardiac output such as myocardial infarction and massive pulmonary embolism and in intractable congestive heart failure associated with a surgically correctable lesion, mechanical support of the circulation for a number of days may be beneficial. This exhibit demonstrates a closed system for withdrawing blood by gravity from the superior vena cava and pumping it into the aorta at the bifurcation by means of external cannulation that has been employed experimentally for as long as fifty-two hours and clinically for twenty-six hours without ill effect. (*Booth 114*)

Returning the Coronary Patient to Productivity

Shepard Shapiro, M.D.
Goldwater Memorial Hospital
New York City

This exhibit represents an approach to the long-term management of the coronary patient which recognizes that primary concern must be given to the patient's adjustment to his environment. Avenues of medical, social, and psychologic rehabilitation are explored and evaluated. Results of an extended follow-up of 100 patients are cited. (*Booth 115*)

Medical Procedure in Workmen's Compensation

Willis M. Weeden, M.D.
New York State Workmen's Compensation Board
New York City

This exhibit is designed to educate the medical profession in workmen's compensation procedures, thus bringing about better cooperation between the Workmen's Compensation Board and those treating claimants. This will result in mutual benefits. Illuminated charts, pertinent points of the law, and photographs are shown. Interesting historical background of the Workmen's Compensation Law is presented and the rehabilitation aspect of compensation is also stressed. (*Booth 116*)

Glaucoma Screening

Commission for the Blind

New York State Department of Social Welfare
New York City

Glaucoma, the third leading cause of blindness, usually occurs in persons over forty years of age. The onset is so insidious that much of the field of vision can be lost without any awareness that eye changes have taken place. Vision lost from glaucoma cannot be restored. Early diagnosis, followed by adequate treatment, is the basis for control of glaucoma. The aging population has increased and glaucoma screening is imperative if vision is to be conserved for old age. (*Booth 117*)

Aortic Stenosis—Visualization of the Aortic Valves by X-ray: A Positive Diagnostic Sign

Maxwell L. Gelfand, M.D.
Louis Goodkin, M.D.

New York University Post-Graduate Medical School
New York City

The diagnosis of aortic stenosis frequently is missed because of strict reliance on: (1) a systolic murmur; (2) thrill at the base; (3) the absence of the second aortic sound, and (4) pulsus, parvus, and tardus, all of which may not be present at the same time. Since necropsy studies reveal that 90 per cent of cases of aortic stenosis show calcification of the aortic valve, this should be a pathognomonic sign. The purpose of this exhibit is to show that by routine x-ray examination of the heart in the right lateral or oblique view, calcification of the aortic valves can be seen in many patients with aortic stenosis, thus confirming the diagnosis. X-ray films illustrate this point. (*Booth 118*)

Progress in the Management of Essential Hypertension

Garfield G. Duncan, M.D. (*By invitation*)
Robert J. Gill, M.D. (*By invitation*)
William K. Jenson, M.D. (*By invitation*)
Brooks W. Gilmore, M.D. (*By invitation*)
Richard B. Freeman, M.D. (*By invitation*)

Pennsylvania Hospital
Philadelphia, Pennsylvania

Methods of medical treatment for the four grades of hypertension are outlined and a graphic illustration of the pharmacologic sites of action of the various drugs employed is presented. Several cases responding to treatment are illustrated. In addition to drug therapy other points in the management of hypertensive patient are mentioned. (*Booth 119*)

Chronic Thyroiditis and Autoimmunization

Ernest Witebsky, M.D.
John R. Paine, M.D.
Kornel Terplan, M.D. (*By invitation*)
Noel Rose, Ph.D. (*By invitation*)
Richard W. Egan, M.D.

University of Buffalo School of Medicine
Buffalo

This exhibit shows the method of preparing saline extracts of thyroid glands, their injection into animals of the same species, and the demonstration of specific thyroid antibodies. A large number of human sera have been examined in the same manner and about 80 per cent of the patients with histologically-proved chronic nonspecific thyroiditis were found to have antibodies directed specifically against extracts of human thyroid glands. On the basis of the histologic and immunologic similarities to experimental thyroiditis in animals, it is proposed that the pathogenesis of some types of chronic thyroiditis in man is related to autoimmunization against constituents of the patient's own thyroid gland, presumably thyroglobulin. (*Booth 120*)

Parallel Flow Dialyzer: A Versatile Synthetic Capillary Bed Mechanism

Roland Anthone, M.D.
Sidney Anthone, M.D.
John E. Doyle, M.D.
Arthur E. MacNeill, M.D. (*By invitation*)

University of Buffalo School of Medicine
Buffalo

The versatility of a parallel flow dialyzer is outlined by the various uses to which it has been applied both clinically and experimentally. Besides hemodialysis for the correction of blood chemical derangements and extraction of diffusable poisons, this exhibit demonstrates its use for ultrafiltration of large volumes of fluid to relieve intractable edema as seen in congestive heart failure; for the expedience of exchange transfusion as might be necessary in a patient with severe hemolysis or methemoglobinemia; and for partial oxygenation and heat exchange as may be warranted in some clinical condition or surgical procedure. (*Booth 121*)

Management of the Patient with Rheumatoid Arthritis

William B. Rawls, M.D.
Walter L. Evans, M.D.

St. Clare's Hospital
New York City

Irving F. Hermann, M.D. (*By invitation*)

Benjamin Franklin Clinic
Philadelphia, Pennsylvania

A comparison of prednisone and prednisolone is made. Cardiovascular complications, electrocardiographic findings, and the effect of the steroids with reserpine on anxiety-induced hypertension, plus the effect of long-term therapy on lipid metabolism are analyzed. The exhibit also deals with gastrointestinal complications and the effect of long-term steroid therapy on the blood sugar. The frequency of these complications in 1,000 cases is analyzed: 350 receiving steroid therapy and 650 not receiving the steroids—as well as the technic of intra-articular injections of hydrocortisone and its effect upon the cell count of the joint fluid. (*Booth 122*)

Management of the Nephrotic Syndrome in Adults

Ernest L. Becker, M.D.
John T. Ellis, M.D.
D. D. Thompson, M.D. (*By invitation*)

New York Hospital—Cornell Medical Center
New York City

The signs, symptoms, and laboratory studies necessary for the diagnosis of nephrotic syndrome in adults are presented. The usefulness of percutaneous renal biopsy as a means of establishing a tissue diagnosis is illustrated. Photomicrographs of normal and pathologic tissue observed with the light and electron microscope are displayed. Information obtained by this technic is helpful in the diagnosis, management, and prognosis of the nephrotic syndrome. The therapeutic indications for steroid therapy, dietary management, antibiotics therapy, and general supportive measures are presented. (*Booth 123*)

Connective Tissue Diseases

Bernard M. Norcross, M.D.
Salvatore R. LaTona, M.D.

Buffalo General Hospital
Buffalo

The fundamental pathologic changes which occur in the "ground" substance and the cellular elements of the connective tissues are demonstrated and correlated with the clinical manifestations of this group of diseases. The many similarities and also the differences in the clinical syndromes are illustrated. Various etiologic factors and the most favorable methods of therapy are presented. (*Booth 124*)

Long-Term Evaluation of Triamcinolone Therapy in Allergic Diseases

Henry Sherwood, M.D. (*By invitation*)

The Roosevelt Hospital
New York City

This exhibit evaluates the therapeutic response of 200 individuals suffering from a variety of allergic diseases (asthma, rhinitis, eczema, urticaria, and poison ivy dermatitis) during a three to sixty-eight-week period of treatment with triamcinolone. Also included is a summary of the ulcerogenic effect of triamcinolone as determined by an x-ray study of 24 patients during more than fifteen months of steroid therapy. Charts, tables, and other graphic matter relate such data as the variety and number of allergic cases, complications, various dosages and periods of treatment, additional forms of treatment, therapeutic response, side-effects, summary, recommendations, and so forth. (*Booth 125*)

Your Breath Can Save a Life

James O. Elam, M.D.
Max A. Schneider, M.D.
David G. Greene, M.D.

Roswell Park Memorial Institute
Buffalo

Color transparencies show the correct method of rescue breathing, the most efficient method of resuscitation of the apneic victim under emergency field conditions. The cyanosis of the victim and its change to pink with adequate ventilation is shown. (*Booth 126*)

Posterolateral Fusion of the Lumbosacral Spine

George Truchly, M.D. (*By invitation*)
Walter A. L. Thompson, M.D.

Veterans Administration Hospital
New York University—Bellevue Medical Center
New York City

The definition, development, and indications of the posterolateral fusion of the lumbosacral spine are presented. The technic of operation is illustrated. Advantages of the procedure and modification of the original Watkins technic are indicated. (*Booth 127*)

Effect of Bowel Function on Peripheral Circulation

Alfred Halpern, Ph.D. (*By invitation*)
David Selman, M.D.
Paul H. Kuhn, M.D.
Norman Shaftel, M.D.

Stuyvesant Polyclinic
New York City

While it has been generally established that the peripheral venous circulation is the principal source of emboli interfering with the pulmonary circulation, the mechanism for introducing a blood thrombus into the circulation remains to be demonstrated. A study of the effects of the straining patterns of both constipated and normal subjects on the dynamics of venous circulation, segmental and digital blood flow, and peripheral vascular resistance suggests a rationale for this occurrence. This exhibit describes the fluctuation of the peripheral circulation observed during actual and simulated bowel function. The frequently overlooked pitfalls of stool straining may have serious consequences for the patient predisposed toward vascular disease. (*Booth 128*)

Cholecystokinetic Effect of D-Glucitol

Harry Tirsch, M.D.

Jewish Hospital of Brooklyn
Brooklyn

The function of the gallbladder is to store bile during the interdigestive periods, to regulate the pressure in the biliary passages in close coordination with the sphincter of Oddi, and to supply the right amount of potent bile to the duodenum. The stimulus for gallbladder contractions is the hormone cholecystokinin, which is produced by the duodenal mucosa on contact with acid chyme and fats. D-Glucitol is a hexahydric alcohol which is slowly absorbed from the gastrointestinal tract and in low concentration acts as a potent cholagogue by activating the normal cholecystokinetic reflex and stimulating the evacuation of the gallbladder. To produce the gallbladder reflex, D-Glucitol was given to 22 patients in lieu of a fatty meal in an oral cholecystography. As evidenced by x-ray films, this procedure induced in the normal gallbladder a contraction of the fundus reaching a maximum at the end of thirty minutes. (*Booth 129*)

U-Shaped Anomaly: Postbulbar Duodenum

David E. Ehrlich, M.D.
C. Philip Naidorf, M.D.
Morris Witten, M.D. (*By invitation*)

U.S. Veterans Administration Outpatient Clinic
Brooklyn

This exhibit demonstrates a duodenal anomaly which may simulate intrinsic deformity. Variations in the duodenal sweep with respect to course, size, position, and length due to anomalies of the mesentery are described. A U-shaped dip is observed in the postbulbar duodenum in 3 per cent of consecutive gastrointestinal series. The dip may be shallow or deep, wide or narrow, and the angle of its plane may vary considerably with the sagittal plane of the body. Recognition of this anomaly is important. When the limbs of the U-shaped anomaly are superimposed, the appearance can resemble disease. (*Booth 130*)

The Red Eye: Differential Diagnosis and Treatment

Arnold S. Breakey, M.D.
Conrad Berens, M.D.

New York University Post-Graduate Medical School
New York City

This exhibit is designed to help doctors outside of ophthalmology to differentiate between conjunctivitis, keratitis, iritis, and glaucoma. At a casual glance these diseases may resemble one another closely. An attempt is made to demonstrate the most distinguishing feature of each entity by means readily and inexpensively available to all doctors. The immediate treatment is given. Methods of checking improvements also are noted. (*Booth 131*)

Indwelling Catheter: Its Urologic Management in Chronically Ill Patients

Boris P. Petroff, M.D.

St. Barnabas Hospital for Chronic Diseases
Bronx

The exhibit presents the management of indwelling catheters by conservative and surgical means. It recommends the complete elimination of use of catheters as a means of reducing infections and other complicating risks, and promulgates the retraining of patients in urologic rehabilitation. (*Booth 132*)

Boxing Hematuria

Aaron H. Kleiman, M.D.

New York Polyclinic Hospital and Medical School
New York City

This exhibit presents a report on 2,200 prebout urinalyses and 1,518 postbout urinalyses performed on 764 boxers who participated in 150 events in Madison Square Garden and St. Nicholas Arena in New York City. The study was initiated for the New York State Athletic Commission in 1955 and is still in progress. It includes more than 100 intravenous pyelograms on professional boxers who had a red blood count of six or more in the urine after a bout. Seventy-four follow-up radiographic observations were made. Complementary studies on boxers and nonboxer controls are also included. (*Booth 133*)

Vascular Surgery of the Brain

Wallace B. Hamby, M.D.
Lorenzo Belmusto, M.D. (*By invitation*)

Buffalo General Hospital
Buffalo

The exhibit demonstrates lesions and surgical attacks in vascular pathology of the brain with models and x-ray pictures. (*Booth 134*)

Control of Seizures and Hypertonus

Meyer A. Perlstein, M.D. (*By invitation*)
Harry Elam, M.D. (*By invitation*)
Marcos Turner (*By invitation*)

Cook County Hospital
Chicago, Illinois

The control of convulsions of tetanus without depressing the patient to a dangerous point is most difficult to achieve. With the use of some of the newer drugs, it has been possible to achieve some control of these seizures. One drug with interesting action is Miltown, which given parenterally seems to have specific action in control of seizures of tetanus which are induced by somatic stimuli, but no effect on seizures caused by visceral stimuli. Apparently, this drug acts on the somatic afferent fibers only. One of the great values of the use of Miltown in the control of seizures of tetanus is that the patient may be kept fully awake during the course of the disease. (*Booth 135*)

Designs in Anesthesia

Stephen N. Steen, M.D.

St. Barnabas Hospital for Chronic Diseases
Bronx

The function of controller-respirator with a built-in anesthesia unit that is safe in use, simple to operate, and sturdy of construction is demonstrated. The unit is portable and handles nonexplosive anesthetic inhalation agents. A portable aspirator actuated by a remote control lever is shown attached to a stretcher as used in a hospital. A carbon dioxide analyzer with a transistorized amplifier is shown and made available for demonstrating various gas samples. Various supplemental anesthetic designs in equipment are exhibited. (*Booth 136*)

Prevention of Major Airway Complications by Intubation of the Conscious Patient

Frank E. Fierro, M.D.
Dante Bizzarri, M.D.
Joseph G. Giuffrida, M.D.
Albert Schmookler, M.D.
Francis S. Latteri, M.D.
Howard C. Berger, M.D.

New York Medical College, Flower and Fifth Avenue Hospitals
New York City

The major airway problems encountered during anesthesia are demonstrated. Technics of intubation of the conscious patient prone to these complications are shown. Patients with certain deformities and/or diseases are prone to serious and, at times, tragic airway complications. The exhibit directs attention to the stark reality of these situations and the possible consequences, both immediate and delayed. Many of these catastrophes can be prevented when their possible occurrence is realized. (*Booth 137*)

The Sacroiliac Region

Charles J. Sutro, M.D.

Hospital for Joint Diseases
New York City

Otto Fliegel, M.D.
Morris Witten, M.D. (*By invitation*)
David E. Ehrlich, M.D.

U.S. Veterans Administration Outpatient Clinic
Brooklyn

The sacroiliac region is occasionally the site of disease as well as the cause of low-back disorder. The bones of the sacroiliac joint are shaped normally in bizarre fashions and therefore are problems of radiographic interpretation. Radiographs of the normal sacroiliac regions are presented in the exhibit. Normal variations as seen in various age groups are emphasized. In addition, various stages of the common diseases and injuries affecting the sacroiliac regions are demonstrated by radiographic studies. (*Booth 138*)

Common Ocular Problems

Dan M. Gordon, M.D.

New York Hospital—Cornell Medical Center
New York City

The ocular problems encountered by the nonophthalmologist are usually those involving a red or painful eye rather than loss of vision. The most important of the first group are those due to inflammation and allergy. These tend to respond to steroid therapy, as do granulation tissue, edema, and certain infections. In the latter, concomitant antimicrobials are mandatory. It is important that the physician have a knowledge of glaucoma. There are three primary glaucomas—acute, chronic open, and closed angle. As the exhibit indicates, all are managed differently. The gonioscopic examination is important in the differentiation and management of the various glaucomas. (*Booth 139*)

Neural Mechanism of Emesis and Antiemesis

William Amols, M.D.
H. Houston Merritt, M.D.
S. C. Wang, M.D., (*By invitation*)

College of Physicians and Surgeons of Columbia University
New York City

This exhibit graphically demonstrates the nervous pathways of the vomiting reflex with emphasis on the importance of the chemoceptive emetic trigger zone as the principal site of action of centrally acting emetic and antiemetic agents. The mechanism of reflex vomiting from the gastrointestinal tract and the theory of competitive inhibition as a possible explanation of the action of antiemetic agents are explained. Laboratory and clinical data comparing the antiemetic activity of perphenazine with that of certain other phenothiazine compounds are also presented. (*Booth 140*)

Elective Rhinoplasty

Irving B. Goldman, M.D.

Mount Sinai Hospital
New York City

Irvin J. Fine, M.D. (*By invitation*)
Perth Amboy, New Jersey

This exhibit presents the effects on postoperative sequelae (edema, discoloration, and pain) of therapy with prednisone following cosmetic surgical procedures. It includes the rationale for this therapy and data illustrating the marked suppression of the inflammatory response consequent to surgical trauma. (*Booth 141*)

Pliable Synthetic Mesh for Repair of Hernias and Tissue Defects

Richard H. Adler, M.D.

Constante N. Firme, M.D. (*By invitation*)
University of Buffalo School of Medicine
Buffalo

This exhibit concerns the use of a pliable synthetic mesh in the repair of certain hernias and tissue defects. Over two years experimental and clinical experiences with various types of reinforcing materials are summarized. Long-term behavior of these substances implanted in animals, with and without added infection, is shown. The development of our current concepts for using Dacron mesh with interlocked fiber junctures is described. Clinical experience to date using nylon and Dacron mesh is summarized. (*Booth 142*)

Segmental Colitis

Richard H. Marshalk, M.D.
Bernard S. Wolf, M.D.
Joan Eliasoph, M.D. (*By invitation*)

Mount Sinai Hospital
New York City

This exhibit illustrates the roentgen features of varieties of nonspecific colitis involving a limited portion of the colon. One hundred and fifty-one cases of this type are analyzed. Numerous terms have been used to describe these entities—right-sided ulcerative colitis, regional colitis, segmental colitis, regional enterocolitis, regional migratory colitis, and so forth. In some of these cases, the process is primarily ulcerative and exudative as in diffuse ulcerative colitis. In others, the process is granulomatous simulating regional enteritis. In many cases, there is no agreement among pathologists as to the exact nature of the underlying pathologic process.. Differentiation of the various forms of segmental colitis is important since the clinical behavior, treatment, and prognosis, particularly after surgery, are variable. (*Booth 143*)

Posterior Vaginal Anus

Edward J. Donovan, M.D.
J. Frederick Eagle, M.D.
Edward G. Stanley-Brown, M.D.

St. Luke's Hospital
New York City

This exhibit demonstrates the types of imperforate anus with emphasis on the commonest anomaly in females, posterior vaginal anus. The incidence of imperforate anus is estimated at one in 3,000 births. In male or female patients without a fistula surgery should be undertaken at an age of about forty-eight hours. Girls with posterior vaginal anus should have corrective surgery at age four to five months. The diagnosis, surgical technics, pre- and postoperative care are detailed, and postoperative dilatation of the newly constructed anus is emphasized. The difficulties resulting from previous surgical management are reported, as well as the corrective surgery which was necessary. (*Booth 144*)

Controlled Passive Respiration under General Anesthesia for Peroral Endoscopy

Ira A. Polisar, M.D.
E. Stewart Owre, M.D.
Charles R. Weeth, M.D.
Benjamin Burbank, M.D.

State University of New York Downstate Medical Center
Brooklyn

A safe method of general anesthesia for peroral endoscopy utilizing a short-acting intravenous barbiturate, an ultrashort-acting paralysant (succinylcholine), and a mechanical thoracoabdominal respirator is demonstrated. The exhibit contains a manikin in the respirator, in operation; chest x-rays comparing voluntary and respirator action of diaphragm and chest; respirometer graphs illustrating voluntary and respirator tidal volume and vital capacity; endoscopic views; and outline of advantages, contraindications, and details of the method. (*Booth 145*)

Arteriography in Bone and Soft Tissue Tumors

Ru-Kan Lin, M.D.
Elliott C. Lasser, M.D. (*By invitation*)
Herschel C. Moss, M.D.
Paul Zuckerman, B.S. (*By invitation*)

Roswell Park Memorial Institute
Buffalo

Tumor growth is accompanied by changes in local blood supply. The vascular pattern of the tumor and its adjacent tissue can be sufficiently characteristic to serve as a guide to diagnosis. This exhibit is a study of the characteristic vascular pattern of various tumors of bone and soft tissue. Twelve cases are illustrated with information on technic and result. Histologic examination and follow-up verified the value of this study. (*Booth 146*)

The Use of Cadmium Sulfide Crystals for the Detection of X-Radiation

Elmer G. St. John, M.D.
Earl Fish, R.T. (*By invitation*)

Binghamton City Hospital
Binghamton

This exhibit simulates demonstration of continuous measurement of x-radiation by means of a very small cadmium sulfide crystal. When exposed to x-radiation, the resistance of the crystal falls depending upon the intensity of the x-ray beam. The current is supplied by two ordinary 1.5 volt dry cells connected in series. A vacuum tube voltmeter has been placed across a series resistor to measure voltage drop when the resistance of the crystal falls as it is being exposed to the x-ray beam. These crystals are extremely sensitive, responding to a dose as low as ten 4 r per minute. They are placed in probes measuring no more than 2 mm. in diameter with a miniature phone jack being placed at the opposite end of the probe so that the crystal can be connected to the measuring apparatus. This probe, containing a crystal, can be placed within tumor sites for direct measurements, aiming and monitoring of x-radiation. The use of such crystal-containing probes or needles would be especially valuable during rotational therapy or centering the axis of an x-ray beam. (*Booth 147*)

Diagnostic Enzymology

Felix Wroblewski, M.D.

Memorial Center for Cancer and Allied Diseases
New York City

Diagnostic enzymology is concerned with the measurement of enzyme activity of tissues and body fluids and the use of this enzymatic information for the etiologic and anatomic diagnosis of disease states. The exhibit describes the pathophysiologic mechanisms which appear to account for the enzyme alterations observed in plasma, serum, leukocytes, erythrocytes, cerebrospinal fluid, urine, and serous effusions. An outline of the enzyme measurements which are of diagnostic help in cardiology, hematology, gastroenterology, oncology, neurology, and surgery are presented. (*Booth 148*)

Effects of Vitamin B_1 and B_{12}: Stimulation of Appetite and Weight Gain in Undernourished Children

Emanuel Dubow, M.D.
Robert H. Broh-Kahn, M.D. (*By invitation*)

Beekman-Downtown Hospital
New York City

A critical evaluation is made of the role of the so-called trophic vitamins (B_1 and B_{12}) in stimulation of appetite and weight gain. Controlled studies demonstrate little, if any, beneficial effect can be produced by these substances alone in many undernourished children in whom weight deficit is attributable to poor appetite. Further studies indicate the need to enhance such treatment with specific therapy designed to correct the basic cause of the anorexia. (*Booth 149*)

Studies with Amine Oxidase Inhibitors

Henry V. Agin, M.D.
I. J. Greenblatt, Ph.D. (*By invitation*)

Beth-El Hospital
Brooklyn

The exhibit demonstrates clinical and laboratory studies of the effects of monoamine oxidase inhibitors, which were evaluated for their use in clinical psychiatry as antidepressant agents. The exhibit correlates the effectiveness of these agents and electroshock, Metrazol, the amphetamines, and other chemicals commonly utilized in the depressions. (*Booth 150*)

Cerumenolysis

Arthur C. Reiniger, M.D.
James Q. Gant, M.D. (*By invitation*)
Manning J. Rosnick, M.D. (*By invitation*)

Stuyvesant Polyclinic
New York City

The clinical problem of excessive cerumen has been related to a variety of pathologic symptoms ranging from deafness and vertigo to exfoliative dermatitis. This exhibit describes the pathogenesis of ceruminosis, the pharmacology of cerumenolytics, and the clinical utility of the procedures suggested to remove cerumen. Particular emphasis is placed upon the pitfalls of these technics and the over-all results which may be expected. Experiences with several hundred patients are reported. (*Booth 151*)

Medical Society Exhibits

Mezzanine

The Directory

Medical Society of the State of New York
New York City

The great amount of painstaking detailed work that is involved in compiling the *Medical Directory of New York State* requires the full-time services of 10 staff members in our editorial department. Our exhibit traces the flow of work from the start of compilation to the completed book.

Voluntary Prepaid Blue Shield Medical Care Plans

Bureau of Medical Care Insurance
Medical Society of the State of New York
and
Medicare—New York State Division
New York City

Material describing the various benefits offered by the seven Blue Shield plans in New York State is available.

Information regarding medical benefits supplied to servicemen's dependents under Public Law 569 (Medicare) during 1958, as well as changes in the law affecting benefits during the period of January 1, 1958, through December 31, 1958, also is available.

New York State Journal of Medicine

Medical Society of the State of New York
New York City

We look forward to seeing many of our readers at the booth in the main corridor by the elevators halfway between the scientific and industrial exhibits. Please come and let us know your feelings about the Journal—suggestions, criticisms, "good words," etc. Facilities will be available for new subscribers to "sign up." (We may ask you a question or so in the bargain.) All physicians are welcome.

Public Relations in 1959

Public and Professional Relations Bureau
Medical Society of the State of New York
New York City

This exhibit depicts the work of the Public and Professional Relations Bureau of the State Medical Society. It shows how the Bureau builds good will for the Society through its projects with individual doctors, county medical societies, outside organizations, the information media, and others. Through these activities it is hoped that interrelations among physicians will be improved as well as the relations between the medical profession and the public.

SCIENTIFIC MOTION PICTURES

Monday, May 11, through Friday Noon, May 15, 1959

St. Louis Room, Mezzanine

Colgate Phillips, M.D., Westchester, *Chairman*
Walter F. Stafford, Jr., M.D., Erie, *Cochairman*
E. Dean Babbage, M.D., Erie
William E. Sullivan, M.D., Westchester

Monday, May 11

Presentation by the Medical Film Guild, Ltd.

9:00 A.M. **Arterial Insufficiency of the Extremities**

Brooklyn Hebrew Home and Hospital for the Aged

9:24 A.M. **The Heart: Surgical Correction of Atrial Septal Defects Under Hypothermia**

Universitaire Film—Stichting Film en Wetenschap, Utrecht, The Netherlands

Medical Society Presentation

10:00 A.M. **Hemorrhoidectomy from Within**

Paul B. VanDyke, M.D., Suffern

10:21 A.M. **Cold Coning of the Uterine Cervix**

H. W. Seiger, M.D., Santa Monica, California

10:44 A.M. **Venous Angioma: A Cause of Complicated Cerebral Palsy**

Samuel Rosner, M.D., Bronx

11:03 A.M. **Cataract Extraction with Anterior Sclerectomy and Iridencleisis**

Peter H. Ballen, M.D., Brooklyn

11:18 A.M. **Split-Skin Graft Following Necrosis of Upper Lid**

Peter H. Ballen, M.D., Brooklyn

11:33 A.M. **Lesions of the Fallopian Tube**

Newell E. Philpott, M.D., Montreal, Canada and Norris J. Heckel, M.D., Chicago, Illinois

INTERMISSION

2:00 P.M. **The Complete Office Gynecologic Examination**

F. J. Hofmeister, Milwaukee, Wisconsin

2:17 P.M. **Coronary Endarterectomy for Angina Pectoris**

William P. Longmire, Jr., M.D., Los Angeles, California

2:55 P.M. **Staphylococcal Infections in Surgery**

H. Rocke Robertson, M.D., Vancouver, British Columbia

3:23 P.M. **The Anatomic Basis for Surgery of Mitral Insufficiency**

Julio C. Davila, M.D., and Robert P. Glover, Philadelphia, Pennsylvania

3:41 P.M. **Separation of Conjoined Twins**

Universitaire Film—Stichting Film en Wetenschap, Utrecht, The Netherlands (This film is shown through the courtesy of Medical Film Guild, Ltd.)

Presentation by the Medical Film Guild, Ltd.

4:26 P.M. **The Blood Vessel and Living Pathology**

BRENTON R. LUTZ, PH.D., and GEORGE FULTON, PH.D., Boston University Graduate School, Department of Biology, Boston, Massachusetts

4:45 P.M. **Radioisotopes—Their Application to Humans**

U.S. ATOMIC ENERGY COMMISSION

5:20 P.M. **To Your Health (Alcoholism)**

WORLD HEALTH ORGANIZATION

Tuesday, May 12

Presentation by the Medical Film Guild, Ltd.

9:00 A.M. **I see the Wind**

THE LIGHTHOUSE, NEW YORK ASSOCIATION FOR THE BLIND

9:23 A.M. **Congenital Abnormalities of the Long Bones**

UNIVERSITAIRE FILM—STITCHING FILM EN WETENSCHAP, Utrecht, The Netherlands

Medical Society Presentation

10:00 A.M. **Benign and Malignant Tumors of the Larynx**

PAUL H. HOLINGER, M.D., and KENNETH C. JOHNSTON, M.D., Chicago, Illinois

10:15 A.M. **Retropubic Prostatovesiculectomy**

MCCLEERY GLAZIER, M.D., and LOUIS J. LOMBARDO, JR., M.D., University of Southern California School of Medicine, Los Angeles, California

10:28 A.M. **Vaginal Repair of Urethrovaginal Fistula**

JAMES W. MERRICKS, M.D., Chicago, Illinois

10:53 A.M. **Metallic Elbow Arthroplasty**

EDWARD P. DALY, M.D., Bronxville

11:17 A.M. **Selective Cardiac Arrest in Open Heart Surgery**

WILLIAM H. FALOR, M.D., CLIFFORD R. BOECKMAN, M.D., and JEAN GUY VALLEE, M.D., Akron, Ohio

11:32 A.M. **Correction of an Interventricular Septal Defect Utilizing Elective Cardiac Arrest**

PHILIP CRASTNOPOL, M.D., Brooklyn

11:51 A.M. **Pericardiectomy for Constrictive Pericarditis**

ALLAN STRANAHAN, M.D., HARVEY W. KAUSEL, M.D., and RALPH D. ALLEY, M.D., Albany

Personal narration and/or question and answer discussion by one of the above

INTERMISSION

2:00 P.M. **The Diagnosis of Poliomyelitis**

THE NATIONAL FOUNDATION

2:23 P.M. **Recognition and Management of Respiratory Acidosis**

REGINALD H. SMART, M.D., HURLEY L. MOTLEY, M.D., and JOSEPH F. BOYLE, M.D., Cardio-Respiratory Laboratory, University of Southern California, Los Angeles, California

3:01 P.M. **Chemopallidectomy in the Treatment of Hyperkinetic Disorders**

IRVING S. COOPER, M.D., New York City

3:24 P.M. **The Jugular Venous Pulse**

WELLCOME FOUNDATION, LTD., in collaboration with PAUL WOOD, M.D., London, England

3:47 P.M. **Pulmonary Function Studies in Evaluation of Patients for Thoracic Surgery**

ALLAN STRANAHAN, M.D., RALPH D. ALLEY, M.D., HARVEY W. KAUSEL, M.D., and ALAN S. PECK, M.D., Albany

Personal narration and/or question and answer discussion by one of the above

Presentation by the Medical Film Guild, Ltd.

4:10 P.M. **Peripheral Vascular Disease**

NEW YORK MEDICAL COLLEGE, BOSTON UNIVERSITY GRADUATE SCHOOL, LEMUEL SHATTUCK HOSPITAL OF THE COMMONWEALTH OF MASSACHUSETTS, ST. VINCENT'S HOSPITAL, and MONTEFIORE HOSPITAL, New York City

4:48 P.M. **Pitfalls in Management of Refractory Heart Failure**

GEORGETOWN UNIVERSITY MEDICAL CENTER, Washington, D.C., and the AMERICAN COLLEGE OF PHYSICIANS

Wednesday, May 13

Presentation by the Medical Film Guild, Ltd.

9:00 A.M. **Fractures of the Femur About the Hip**

U.S. VETERANS ADMINISTRATION

9:24 A.M. **Peripheral Vascular Disease**

NEW YORK MEDICAL COLLEGE, BOSTON UNIVERSITY GRADUATE SCHOOL, LEMUEL SHATTUCK HOSPITAL OF THE COMMONWEALTH OF MASSACHUSETTS, ST. VINCENT'S HOSPITAL, and MONTEFIORE HOSPITAL, New York City

Medical Society Presentation

10:00 A.M. **Staphylococcal Infections in Surgery**

H. ROCKE ROBERTSON, M.D., Vancouver, British Columbia

10:28 A.M. **Recognition and Management of Respiratory Acidosis**

REGINALD H. SMART, M.D., HURLEY L. MOTLEY, M.D., and JOSEPH F. BOYLE, M.D., Cardio-Respiratory Laboratory, University of Southern California, Los Angeles, California

11:05 A.M. **Coronary Endarterectomy for Angina Pectoris**

WILLIAM P. LONGMIRE, JR., M.D., Los Angeles, California

11:43 A.M. **Surgical Anatomy of Hepatic Veins**

RICHARD D. BRASFIELD, M.D., New York City

Personal narration by Richard D. Brasfield, M.D.

11:50 A.M. **Iridium^{192} Implantation into Internal Mammary Vessels for Metastatic Breast Cancer**

RICHARD D. BRASFIELD, M.D., and ULRICH K. HENSCHKE, M.D., New York City

Personal narration and/or question and answer discussion by Richard D. Brasfield, M.D., and Ulrich K. Henschke, M.D.

INTERMISSION

2:00 P.M. **Human Gastric Function**

STEWART WOLF, M.D., University of Oklahoma, Norman, Oklahoma, and HAROLD G. WOLFF, M.D., Cornell University Medical College, New York City

2:21 P.M. **The Complete Office Gynecologic Examination**

F. J. HOFMEISTER, M.D., Milwaukee, Wisconsin

2:38 P.M. **Lesions of the Fallopian Tube**

NEWELL E. PHILPOTT, M.D., Montreal, Canada and NORRIS J. HECKEL, M.D., Chicago, Illinois

3:12 P.M. **Selective Cardiac Arrest in Open Heart Surgery**

WILLIAM H. FALOR, M.D., CLIFFORD R. BOECKMAN, M.D., and JEAN GUY VALLEE, M.D., Akron, Ohio

3:27 P.M. **The Use of Synthetic Knitted Mesh in Hernia Repair**

JOHN R. PAINE, M.D., and RICHARD H. ADLER, M.D., Buffalo

Personal narration and/or question and answer discussion by John R. Paine, M.D.

Presentation by the Medical Film Guild, Ltd.

4:00 P.M. **Radioisotopes—Their Application to Humans**

U.S. ATOMIC ENERGY COMMISSION

4:35 P.M. **The Heart—Surgical Correction of Atrial Septal Defects Under Hypothermia**

UNIVERSITAIRE FILM—STICHTING FILM EN WETENSCHAP, Utrecht, The Netherlands

5:13 P.M. **Salmonella Food Poisoning**

COMMUNICABLE DISEASE CENTER, U.S. PUBLIC HEALTH SERVICE

Thursday, May 14

Presentation by the Medical Film Guild, Ltd.

9:00 A.M. **Congenital Abnormalities of the Long Bones**

Universitaire Film—Stichting Film en Wetenschap, Utrecht, The Netherlands

9:36 A.M. **Human Reproduction (Sex Education)**

Medical Society Presentation

10:00 A.M. **The Diagnosis of Poliomyelitis**

The National Foundation

10:23 A.M. **The Jugular Venous Pulse**

Wellcome Foundation Ltd., in collaboration with Paul Wood, M.D., London, England

10:46 A.M. **Iridium^{192} Implantation into Internal Mammary Vessels for Metastatic Breast Cancer**

Richard D. Brasfield, M.D., and Ulrich K. Henschke, M.D., New York City

11:04 A.M. **Chemopallidectomy in the Treatment of Hyperkinetic Disorders**

Irving S. Cooper, M.D., New York City

11:27 A.M. **Vessels of the Heart and Nerves in Angina**

Joseph T. Roberts, M.D., Buffalo

Personal narration and/or question and answer discussion by Joseph T. Roberts, M.D.

INTERMISSION

2:00 P.M. **The Use of Synthetic Knitted Mesh in Hernia Repair**

John R. Paine, M.D., and Richard H. Adler, M.D., Buffalo

2:29 P.M. **Pulmonary Function Studies in Evaluation of Patients for Thoracic Surgery**

Allan Stranahan, M.D., Ralph D. Alley, M.D., Harvey W. Kausel, M.D., and Alan S. Peck, M.D., Albany

2:52 P.M. **The Anatomic Basis for Surgery of Mitral Insufficiency**

Julio C. Davila, M.D., and Robert Glover, M.D., Philadelphia, Pennsylvania

3:10 P.M. **Metallic Elbow Arthroplasty**

Edward P. Daly, M.D., Bronxville

3:34 P.M. **Rescue Breathing**

James O. Elam, M.D., Buffalo

Personal narration and/or question and answer discussion by James O. Elam, M.D.

Presentation by the Medical Film Guild, Ltd.

4:00 P.M. **Peripheral Vascular Disease**

New York Medical College, Boston University Graduate School, Lemuel Shattuck Hospital of the Commonwealth of Massachusetts, St. Vincent's Hospital, and Montefiore Hospital, New York City

4:38 P.M. **Separation of Conjoined Twins**

Universitaire Film—Stichting Film en Wetenschap, Utrecht, The Netherlands

5:23 P.M. **The Blood Vessel and Living Pathology**

Brenton R. Lutz, Ph.D., and George Fulton, Ph.D., Boston University Graduate School, Department of Biology, Boston, Massachusetts

Friday, May 15

Presentation by the Medical Film Guild, Ltd.

9:00 A.M. **Arterial Insufficiency of the Extremities**

Brooklyn Hebrew Home and Hospital for the Aged

9:24 A.M. **Pitfalls in Management of Refractory Heart Failure**

Georgetown University Medical Center, Washington, D.C., and the American College of Physicians

Medical Society Presentation

10:00 A.M. **Vaginal Repair of Urethrovaginal Fistula**

James W. Merricks, M.D., Chicago, Illinois

10:25 A.M. **Retropubic Prostatovesiculectomy**

McCleery Glazier, M.D., and Louis J. Lombardo, Jr., M.D., University of Southern California, Los Angeles, California

10:38 A.M. **Correction of an Ostium Primum Type of Atrioseptal Defect, Utilizing Extracorporeal Bypass**

Philip Crastnopol, M.D., Brooklyn

10:57 A.M. **Vessels of the Heart and Nerves in Angina**

Joseph T. Roberts, M.D., Buffalo

11:30 A.M. **Cold Coning of the Uterine Cervix**

H. W. Seiger, M.D., Santa Monica, California

The committee is most grateful for the cooperation of the Medical Film Guild, Ltd., and of its president, Mr. Joseph P. Hackel, who will handle all our films on the convention program.

Mr. Hackel will present his own films before 10:00 A.M. and after 4:00 P.M. The State Society program will be scheduled from 10:00 A.M. to 4:00 P.M.

Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

23rd Annual State Convention
Statler Hilton, Buffalo, May 10 through 13, 1959

The twenty-third annual convention of the Woman's Auxiliary to the Medical Society of the State of New York will be held in Buffalo, from May 10 through 13 at the Hotel Statler Hilton. Our president, Mrs. Maurice G. Sheldon, officers of the State Auxiliary, and the convention committee extend a cordial invitation not only to Auxiliary members but to all doctors' wives to register and attend our meetings and social functions.

Program

All meetings and functions will be held in the Ballroom unless otherwise indicated.

Sunday, May 10

3:00 P.M.— 5:30 P.M.	Registration—*Ballroom Foyer*
4:00 P.M.	Board of Directors Meeting
8:00 P.M.—10:00 P.M.	Reception for Out-of-Town Arrivals

Monday, May 11

8:30 A.M.— 4:30 P.M.	Registration—*Ballroom Foyer*
9:00 A.M.—12:30 P.M.	House of Delegates
1:30 P.M.— 5:00 P.M.	Round Table Discussions
7:00 P.M.	Medical Society Dinner Dance

Tuesday, May 12

8:30 A.M.— 4:30 P.M.	Registration
9:00 A.M.—12 NOON	House of Delegates
12:45 P.M.— 2:45 P.M.	Luncheon honoring Mrs. Maurice G. Sheldon, President, at the *Chez Ami,* 311 Delaware Avenue, Buffalo
3:00 P.M.— 5:00 P.M.	House of Delegates
7:00 P.M.	Buffet Supper Party honoring Mrs. E. Arthur Underwood, National Auxiliary President; preceded by social hour honoring past State presidents—*Empire State Room* (ladies and the men are invited)

Wednesday, May 13

8:30 A.M.—10:30 A.M.	Registration
9:00 A.M.—12 NOON	House of Delegates
12:15 P.M.— 1:30 P.M.	Postconvention meeting of State officers, chairmen, county presidents, and presidents-elect
1:30 P.M.	Board of Directors meeting

Officers

President	MRS. MAURICE G. SHELDON, Olean
President-Elect	MRS. JAMES L. MCCARTNEY, Garden City
First Vice-President	MRS. O. P. WILLSON, Phelps
Second Vice-President	MRS. H. D. VICKERS, Little Falls
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Corresponding Secretary	MRS. CARLETON HEIST, Westfield
Parliamentarian	MRS. THOMAS D'ANGELO, Flushing

Convention Committee

Chairman	MRS. HERBERT J. ULRICH, Buffalo
Cochairman	MRS. WALTER T. ZIMDAHL, Williamsville

WOMEN'S MEDICAL SOCIETY OF NEW YORK STATE

Annual Meeting

Statler Hilton, Buffalo
Sunday, May 10

2 P.M. Business Meeting, *Buffalo Room*

4 P.M. Reception, *Buffalo Room*

Monday, May 11

10 A.M. to
12:30 P.M. Scientific Meeting, *Detroit Room*

Panel Discussion: Adolescence

1. *Psychiatric Aspect*
   EVELYN ALPERN, M.D., Buffalo, *Moderator*, Director, Child Guidance Clinic, Children's Hospital
2. *Pediatric Aspect*
   LOIS J. PLUMMER, M.D., Buffalo, Attending Pediatrician, Edward J. Meyer Memorial Hospital and Children's Hospital
3. *Facts About Juvenile Delinquency*
   EGAN A. RINGWALL, PH.D., Buffalo, Director of Psychological Clinic, University of Buffalo
4. *Endocrinologic Aspect*
   LILA WALLIS, M.D., New York City, Attending Physician, New York Hospital Outpatient Department

12:30 P.M. Luncheon, *Detroit Room*

2 P.M. General Session, Medical Society of the State of New York (see program, page 1248), *New York Room*

7 P.M. Dinner Dance, Medical Society of the State of New York, *Ballroom*

Officers

President	Gertrude Felshin, M.D., New York City
President-Elect	Lois J. Plummer, M.D., Buffalo
Vice-President	Helen L. Miller, M.D., New York City
Secretary	Mabel G. Silverberg, M.D., New York City
Treasurer	S. Elizabeth Vuornos, M.D., Liberty

INDUSTRIAL EXHIBITS

After an absence of three years, the industrial exhibits at the Annual Convention of the Medical Society of the State of New York will again be available to the doctors of Western New York in their own territory and to other doctors from all over the State who attend the meeting. These exhibits for the first time will be located on the mezzanine floor of the Hotel Statler Hilton and will include the largest and most varied display ever set up in Buffalo at a State medical convention. A staff of experts will be at the booths to answer questions and assist you with your equipment purchasing problems. Following is a bird's-eye view of what you may look forward to seeing at the exhibits.

Abbott Laboratories, North Chicago, Illinois (Booth 53), will feature the antibiotic triad—three products which together provide control of all coccal infections: Erythrocin stearate for control of staphylococci, streptococci, and pneumococci; Compocillin-VK against penicillin-sensitive organisms; and Spontin for the serious coccal infections that hospitalize the patient. Also exhibited will be two products now available in Abbott's unique new "metered release" dose form: Tral Gradumets and Desoxyn Gradumets, plus a selection of other Abbott specialties.

American Sterilizer Company, Erie, Pennsylvania (Booth 26), features the following: Autoclaves—Model 613-R, new autoclave which is exceedingly popular and is the finest small autoclave on the market; Model 8816, square in size, 8 by 8 by 16 inches, designed for increased loading capacity; Model 1022, size 10 by 10 by 22 inches, the complete automatic unit for clinics or centralized sterilization, 10 inches square; Sterilizers: See the 8-inch and 16-inch portable boiling type units and dry heat sterilizers; Stills: water stills in $^1/_2$ to 3 gallons per hour capacity.

Amfre-Grant, Inc., Brooklyn, New York (Booth 60). In the heart and peripheral vascular field, Corovas Tymcaps and Neo-Corovas Tymcaps, Nitrovas timed-disintegration tablets, and Diurbital tablets. Also, Causalin for arthritis; Baculin Vaginal tablets for vaginal infestations; Banausea for prevention of nausea and vomiting in pregnancy; desPlex, an antiabortive, and Dicorvin tablets for palliation in carcinoma of the prostate.

Armour Pharmaceutical Company, Chicago, Illinois (Booth 6), will feature Armour products of original research, such as Sinaxar, our skeletal muscle relaxant, Chymar, and other products of our manufacture. Our representatives will be happy to discuss all our products with doctors who wish to visit our booth.

The Baker Laboratories, Inc., Cleveland, Ohio (Booth 20). You are invited to visit our booth where Baker's Modified Milk and Varamel, two successful products for infant feeding, are on display. Baker representatives will be glad to discuss with you the special features of Baker milk products which promote better tolerance, less colic, better gain, and improved tissue turgor for bottle-fed infants.

Baxter Laboratories, Inc., Morton Grove, Illinois (Booth G-78), cordially invites you to view its latest developments in parenteral fluid therapy. The Travenol Division features its newest product, Cozyme, for the physiologic correction and prevention of intestinal atony, abdominal distention, retention of flatus and feces, and paralytic ileus.

Borcherdt Company, Chicago, Illinois (Booth 47). Two time-tested products are being shown at this meeting: Malt Soup Extract, for constipation and intractable pruritus ani, a dietary product that acts on the intestinal flora to produce a predominately aciduric flora; and Urolitia, a mild soothing urinary antiseptic for geriatric patients. Register for samples and information on these products.

The Borden Company, New York City (Booth 61). Most important new item at the Borden Pharmaceutical Division's booth is Liquid Bremil which adds all the convenience of a liquid to the significant advantages already established by Bremil Powdered. Borden's full line of formula products is on display including Mull-Soy, the original hypoallergenic formula. Other new additions are Dermabase and Junitar, the nonstaining tar bath, and Marcelle hypoallergenic cosmetics, pure beauty aids for delicate skins.

Brewer & Company, Inc., Worcester, Massachusetts (Booth 42), will present their well-known specialties: Thesodate, Luasmin, Enkide, Amchlor, Asteric, and Injectable Quinidine Hydrochloride. In addition to Injectable Quinidine Hydrochloride, we also manufacture a capsule and a tablet of Natural Quinidine Sulfate which we market under the name Quindrul. Another outstanding new injectable is our Sus-Phrine (aqueous suspension of epinephrine 1:200) for subcutaneous administration for prompt and prolonged relief of bronchial asthma. Also featured will be a new specialty item developed by Brewer research: Nabcon, a complete natural B-complex liquid concentrate, each teaspoonful of which is derived from 35 Brewers' yeast tablets.

Bristol-Myers Products Division, Bristol-Myers Company, New York City (Booth 66). Bufferin, the better tolerated analgesic for long-term salicylate therapy, is featured by Bristol-Myers. Also on view will be Theraderm, for dandruff control.

Buffalo X-Ray Company, Buffalo, New York (Booth 23). Come in and meet this area's fastest growing medical equipment dealer where service counts. The popular priced Universal Treatmaster Therapy and Scopemaster Diagnostic Radiographic-Fluoroscopic X-Ray Unit and a complete line of accessories will be displayed. Also featured will be the new Mattern Medalist X-Ray Equipment, Beck-Lee Electrocardiograph, and physicians' equipment.

Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, New York (Booth 35). The extensive research facilities of B. W. & Co., both here and in other countries, are directed to the development of improved therapeutic agents and technics. Through such research B. W. & Co. has made notable advances related to leukemia, malaria, diabetes, and diseases of the autonomic nervous system; and to antibiotic, muscle-relaxant, antihistaminic, and antinauseant drugs. An informed staff at our booth will welcome the opportunity to discuss our products and latest developments with you.

Cambridge Instrument Company, Inc., New York (Booth 51). The new Cambridge Versa-Scribe, the versatile portable electrocardiograph; the well-known Cambridge Simpli-Scribe model direct-writing portable electrocardiograph; and the Cambridge standard string galvanometer type electrocardiograph will be displayed at this booth. Also other important Cambridge instruments, including the Audio-Visual Heart Sound Recorder, Operating Room Cardioscope, Educational Cardioscope, Multi-Channel Physiological Recorder, Electrokymograph, Plethysmograph, pH Meters, and Pulmonary Function Tester. The Cambridge engineers in attendance will be glad to give you complete information on these instruments.

Carnation Company, Los Angeles, California (Booth D), invites you to their exhibit where the latest in infant feeding services to the profession on Carnation Evaporated Milk and the new prepared infant formula Carnalac will be on display, and also Carnation Instant Nonfat Dry Milk.

Ciba Pharmaceutical Products, Inc., Summit, New Jersey (Booth 49). The Ciba exhibit will feature Singoserp, a new synthetic analog of reserpine which possesses the favorable cardiovascular effects of the Rauwolfia drugs but at the same time is less sedative. The drug is indicated in most forms of arterial hypertension and preeclampsia associated with pregnancy when rapid reduction of blood pressure is not required. Singoserp has a wide margin of safety and an excellent therapeutic index which permits individualization of dosage and keeping side-effects at a minimum.

The Coca-Cola Company, Atlanta, Georgia (Booth 56). Ice-cold Coca-Cola served through the courtesy and cooperation of The Coca-Cola Bottling Company of New York, Inc., Buffalo, New York, and The Coca-Cola Company.

Dalzo, Inc., Hackensack, New Jersey (Booth G-82), will have on display a complete line of pressure bandages that are used in the treatment of varicosities, phlebitis, leg ulcers, and other diseases of the extremities. There will also be on display the various types of English-made zinc oxide tapes, plastic strapping, individual dressings, and other medicated bandages.

Davies, Rose & Company, Limited, Boston, Massachusetts (Booth 12). We cordially invite the members of the Medical Society of the State of New York to visit our booth. Although most physicians need no introduction to our outstanding cardiac therapies, Pil. Digitalis and Tablets Quinidine Sulfate, Natural, our representative, Mr. H. V. Orne, will be on hand to greet you and to explain the dependability of our laboratory productions.

DeJur-Amsco Corporation, Long Island City, New York (Booth B), marketers of the DeJur-Grundig Stenorette and DeJur-Triumph Typewriters. The Stenorette is the most versatile dictating machine you can own today. Dictate, transcribe, erase, correct errors directly on modern, reusable, magnetic tape with flick-of-the-thumb microphone control; records conferences, phone conversations. Famous Triumph Electrics and Standards are the finest heavy-duty typewriters on the market.

Desitin Chemical Company, Providence, Rhode Island (Booth 15). Desitin Ointment is the pioneer cod liver oil ointment for treatment of burns, ulcers, diaper rash, abrasions, etc. Desitin Powder is saturated with cod liver oil, dainty, relieves chafing, sunburn, diaper rash, etc. Desitin Hemorrhoidal Suppositories and Rectal Ointment relieve pain and itching, promote healing, give comfort in uncomplicated hemorrhoids and fissures. No anesthetics or styptics. Desitin Baby Lotion is protective, antiseptic, emollient, and contains no mineral oil, cleanses baby skin with tender care. Desitin Acne Cream is a nonstaining, flesh-tinted "Medicream" for the treatment of acne vulgaris and skin blemishes, is effective in removal of skin oiliness, and is antiseptic. Desitin Cosmetic and Nursery Soap is supermild, pleasantly scented, antiseptic, and deodorant.

The Dietene Company, Minneapolis, Minnesota (Booth 21). Have you tasted Meritene, the whole protein supplement that does taste good? Visit our booth; enjoy a Meritene milk shake with its multiple nutritive values. While you're there, review the Dietene diet based on Dietene reducing supplement. It provides the rare combination of low calories (1,000) with high intake of protein and all essential vitamins and minerals in an interesting, effective, safe weight-reducing diet.

Doak Pharmacal Company, New York (Booth 28). Are psoriasis and acne problems in your practice? Then please stop at our booth for a description of two products that we feel sure can be of real value to you. They are: (1) Psoriacide, the latest European-proved specialty for psoriasis, now available here, anthralin in an applicator stick for precise application; and (2) pHoam Cleanse Pac, a unique modality that actually encourages the teenager to keep acne-plagued skin clean. Clinical studies are available on both.

Doho Chemical Corporation, New York (Booth 33), is pleased to exhibit Auralgan, ear medication in otitis media and removal of cerumen; Otosmosan, fungicidal and bactericidal in the suppurative and aural dermatomycotic ears; Rhinalgan, nasal decongestant free from systemic or circulatory effect; Larylgan, throat spray and gargle for infectious and noninfectious sore throat involvements; Turgasept, ionic deodorizer aerosol spray, which neutralizes odor immediately without floral masking or substituting a new odor. It is highly bactericidal and fungicidal and was primarily formulated for use in hospitals, nursing homes, and animal clinics; however, it can be used in any type malodorous condition. *Mallon Chemical Corporation, Division of Doho,* is featuring Rectalgan for relief of pain and discomfiture in hemorrhoids, pruritus, and perineal suturing and Dermoplast, an aerosol spray for surface pain, burns, and abrasions, and also for obstetric and gynecologic use.

Dome Chemicals Inc., New York (Booth 13), will introduce the complete acne treatment: Acne-Dome Creme, compact, medicated cleanser, lotion; Domerine Shampoo; Acne-Cort-Dome; Acid Mantle; Domeboro; Vi-Dom-A-C Pillettes; and Vlem-Dome. Also to be shown will be the most complete line of topical corticosteroids incorporated in the exclusive Acid Mantle vehicle: Cort-Dome, Neo-Cort-Dome, Cor-Tar-Quin, Cort-Quin, Hist-A-Cort-E, and Es-A-Cort.

Eaton Laboratories, Norwich, New York (Booth 55). New Furacin (brand of nitrofurazone) cream now available to control infection and facilitate tissue repair of the vagina, cervix, anorectal area, and elsewhere when a cream base of fine consistency is preferred. It is water-miscible, self-emulsifying in body fluids, esthetically acceptable, and ideal for hospital use.

C. B. Fleet Company, Inc., Lynchburg, Virginia (Booth 30), will feature Clysmathane, its most recent contribution in the field of medication by rectum, an advanced method of xanthine therapy. Clysmathane is a stable solution of theophylline monoethanolamine, easily retained, with rapid and uniform absorption, prompt and predictable blood levels, and with no rectal irritation after prolonged use.

The Foregger Company, Inc., Roslyn Heights, New York (Booth G-81), will display the latest developments in anesthesia apparatus equipped with the copper kettle for unexcelled ether and Fluothane vaporization, along with new designs in CO_2 absorbers and endotracheal equipment. Also displayed will be the new Eiffel Model Anesthesia Apparatus, a light mobile, compactly designed unit incorporating such features as the copper kettle, individually calibrated flowmeters, connections for piped gases, etc., sturdily constructed on a tip-proof base.

Geigy Pharmaceuticals, Division of Geigy Chemical Corporation, Ardsley, New York (Booth 52), extends a cordial invitation to members of the Society to visit their exhibit. Reports of the most recent clinical research studies regarding Butazolidin, Preludin, Sterosan with hydrocortisone, and Dulcolax will be presented by the staff in attendance.

Health Insurance Council, New York City (Booth 57). This exhibit is designed to provide general information on health insurance as underwritten by insurance companies. In addition, it also makes available information on uniform claim forms for use by doctors and hospitals in support of health insurance claims.

H. J. Heinz Company, Pittsburgh, Pennsylvania (Booth 10). Both new Heinz high meat dinners, beef, veal, chicken, and ham which are "main dish" items and fruit juices for babies, all of which contain the same amount of vitamin C as orange juice, are important sources of nutrients and vitamins. These and literature for physicians, nurses, and mothers are on display at the Heinz booth.

Heublein, Inc., Food Division, Hartford, Connecticut (Booth 62). You are invited to stop for a snack and register for complimentary packages of Maltex and Maypo Oat Cereal. We also offer reducing diets, daily diet records, and an analysis of our products. You will be interested in the low sodium content of both Maltex and Maypo.

Holland-Rantos Company, Inc., New York City (Booth 14). You are invited to discuss with Holland-Rantos representatives: mechanical advantages of contouring Koro-flex Diaphragms; new improved Nylmerate Jelly and Solution for vaginal leukorrheas; special Koromex/A for use where jelly alone is indicated; beneficial cutaneous effects of Hollandex Ointment (with silicones and natural vitamins A and D) on contact and neurodermatitis, decubitus ulcers, diaper rash, skin rash, skin dryness and chafing, etc.

Hyland Laboratories, Los Angeles, California (Booth 70). Two new diagnostic tests of special interest to physicians are featured. Both are slide screening tests: one rapidly estimates the level of gamma globulin in patients' serum; the other indicates, in less than a minute, the presence or absence of rheumatoid factor in serum specimens. Hyland gamma globulin products and Antihemophilic Plasma will also be shown.

Irwin, Neisler & Company, Decatur, Illinois (Booth 58). When "dieting is torture" Obocell TF is indicated for the control of appetite without the disturbing factors that prevent obese patients from staying on a diet. Obocell TF adds to the benefits of Obocell, that is, d-amphetamine for positive appetite control; Nicel for bulk hunger suppression; and an antidisturbant, methapyriline, to provide a "controlled lift" and mood elevation without nervousness, jitteriness, or excessive central nervous system stimulation.

Jeffery-Fell Company, Buffalo, New York (Booth 63), supplier of ethical medical, surgical, and hospital supplies for nearly one hundred years, will display new items of interest to the profession. Our diversity of supply makes immediately available in Western New York practically everything the surgeon, physician, or hospital requires.

Lederle Laboratories, Division of American Cyanamid Company, Pearl River, New York (Booth 16).

Eli Lilly & Company, Indianapolis, Indiana (Booth 40), cordially invite you to visit their booth. The Lilly sales people in attendance welcome your questions about Lilly products and recent therapeutic developments.

Loma Linda Food Company, Arlington, California (Booth 11). With the background of years of experience in perfecting a hypoallergenic milk powder and also a newly developed concentrated liquid milk, the protein of which is fully derived from the soy bean and formulated with other essential additives to care for the needs of babies, growing children, and adults, the Loma Linda Food Company will be happy to welcome you to their exhibit. Attendants will be pleased to discuss the values of Soyalac powder and concentrated liquid. Samples of this flavorful product will be served at the exhibit.

Maico Electronics, Inc., Minneapolis, Minnesota (Booth G-85). Society members are invited to discuss the latest advances in the field of medical acoustical instruments with representatives of Maico Electronics, Inc. The pioneer Minneapolis, Minnesota, hearing research firm will show the latest of their complete line of audiometers, and the improved Maico Stethetron for accurate selective amplification of body sounds.

Massachusetts Indemnity and Life Insurance Company, Boston, Massachusetts (Booth G-80). As a leader in the field of noncancellable, guaranteed-renewable accident and health insurance, the Massachusetts Indemnity welcomes the opportunity to discuss the unique features of our coverage with all the members of the Medical Society of the State of New York. Trained representatives will be on hand to give you the facts about accident and health insurance. Our famous "facts" booklet, "Is your accident and health policy favorable or unfavorable?" will be available for distribution. To our policyholders an especially warm welcome is extended. Stop by. Let us have the pleasure of talking with you again.

Mead Johnson & Company, Evansville, Indiana (Booth 38). The Mead Johnson exhibit has been arranged to give you the optimum in quick service and product information. To make your visit productive, especially trained representatives will be on duty to tell you about their products.

Medco Products Co., Inc., Tulsa, Oklahoma (Booth 68). Presenting the Medco-Sonlator, providing a new concept in therapy by combining muscle stimulation and ultrasound simultaneously through a single three-way sound applicator. The Medco-Sonlator is a distinct advance in the effectiveness of physical therapy in your office or hospital. A few minutes spent in our booth should prove of value to your practice.

Medical Film Guild, Ltd., New York City (Booth 43). Attention: All who are interested in the "Visual Education in Medicine" series which appeared in the NEW YORK STATE JOURNAL OF MEDICINE authored by Joseph P. Hackel, president of Medical Film Guild, Ltd., are cordially invited to visit our exhibit to discuss your problems in film production, preparation of slides, or programming for your local society meetings or hospital staff conferences. We are pleased to announce the addition of several engaging new films to our "Medical Film of the Month" program which is now international in scope. Every member of your society or hospital staff will acclaim such subjects as: "The Frisian Conjoined Twins (the separation of Siamese twins)"; "Congenital Abnormalities of the Long Bones"; "The Heart—Surgical Correction of Atrial Septal Defects (Under Hypothermia)"; "The Human Nose—What Makes it Different"; "The Nose and Paranasal Sinuses." Our comparatively new "Medical Films for the Laity" program has also been expanded and has proved a boon to the doctor invited to lecture to lay audiences. A novel subscription arrangement with 60 subjects to choose from allows interchange of professional and lay films as lecture demands vary. A nurses training program is also available. While visiting our exhibit you will enjoy our display of "Humor in Medicine," a series of wooden wall tiles with hand-painted caricatures of medical specialists and a unique collection of wood carvings.

Merck Sharp & Dohme, Division of Merck & Co., Inc., Philadelphia, Pennsylvania (Booth 76). A new and very promising adrenocortical steroid is featured at the Merck Sharp & Dohme booth. Decadron dexamethasone possesses all the basic actions and effects of other glucocorticoids but in different degree. Its anti-inflammatory activity is more potent on a weight basis than any other known glucocorticoid. Electrolyte imbalance is not ordinarily a therapeutic problem. Neither abnormal salt and water retention nor potassium excretion are discernible in most patients receiving therapeutic dosages. In other respects, also, Decadron is generally well tolerated. Diuril, a diuretic compound that possesses favorable biologic properties common to both the mercurial preparations and the carbonic anhydrase inhibitors, is also of interest. Diuril acts essentially without toxic effects or other disadvantages. Following a single oral dose, Diuril produces effects within two hours which last for six to twelve hours. It is repeatedly effective when administered continuously once or twice daily for a long period. Technically trained personnel will be present to discuss these and other subjects of clinical interest.

The Wm. S. Merrell Company, Cincinnati, Ohio (Booth 24). Quiactin for quieting is an improvement over present transquilizers for tension, anxiety states; patients remain alert, feel better. Simron, a new low-dose iron, provides full therapeutic response in treatment of iron-deficiency anemia. You are invited to discuss these and other Merrell research products with our representatives.

Milex of New York, Long Island City, New York (Booth G-79). The Milex cancer detection program is featured. Also on display will be Tricho-San, our effective therapy for trichomoniasis, moniliasis, and nonspecific vaginal infections; Crescent, the most imitated diaphragm; as well as other recent gynecologic developments.

The C. V. Mosby Company, St. Louis, Missouri (Booth 29). New knowledge, new ideas, new research and technic—all are waiting for you in the newest Mosby books for 1958 and 1959. Come in. Look over these books at your leisure and convenience. If you wish his assistance, our experienced representative will be happy to discuss any book with you.

National Drug Company, Philadelphia, Pennsylvania (Booth 36). Our exhibit features the Parenzyme family of products. The newest member is Parenzyme Ointment. Its topical enzymatic action quickly debrides necrotic tissue present in surface wounds and ulcerations. Parenzyme Ointment controls surface infection with the bactericidal action of 9-aminoacridine. Our representatives will present the latest clinical data on all Parenzyme products.

Nordson Pharmaceutical Laboratories, Inc., Irvington, New Jersey (Booth 46). Levonor, a new compound for suppression of appetite without central nervous system overstimulation, is featured. The smooth action of Levonor permits its use during evening hours; it may be given as late as 8 P.M. without keeping the patient awake. Latest clinical studies will be available. Also displayed: Ferronord Liquid and Ferronord tablets, the chelate hematinic that provides more rapid hemoglobin response with virtually no undesirable side-effects.

North American Philips Company, Inc., New York City (Booth 3), introduces the new Examix single tube x-ray combination for radiography and fluoroscopy. It is designed for small office use yet incorporates many of the features required of elaborate hospital installations. Minimal cost and simplicity of operation coupled with maximum flexibility ideally suit this x-ray plant to the busy practitioner.

Organon, Inc., Orange, New Jersey (Booth 67). Physicians are cordially invited to visit the Organon booth for information on new therapeutic specialties. Included among these will be: Stenisone, Organon's brand of doubly protected prednisone (prednisone with anabolic and antacid protection); Cortrophin-Zinc, the long-acting aqueous ACTH now manufactured by a unique electrolytic process; Wigraine, the rapid-acting, complete migraine therapy; Medache, the new and safe analgesic-calmative; Nugestoral, the clinically effective antiabortive formula; and Trevidal, the balanced, protective antacid. Organon representatives will gladly discuss these products with all interested physicians.

Ortho Pharmaceutical Corporation, Raritan, New Jersey (Booth 27), cordially invites you to their booth where the well-known line of obstetricals and gynecologic pharmaceuticals will be on display. Particular emphasis will be placed on Ortho preparations for conception control. Featured will be Delfen vaginal cream, Ortho's most spermicidal contraceptive, and Rarical iron-calcium tablets. Ortho representatives welcome the opportunity to serve you.

Parke, Davis & Company, Detroit, Michigan (Booth 39). Medical service members of our staff will be in attendance at our booth to discuss important Parke-Davis specialties which will be on display.

Pet Milk Company, St. Louis, Missouri (Booth 69). We will be pleased to have you stop and discuss the variety of time-saving material available to busy physicians. Our representatives will be on hand to discuss the merits of "Pet" Evaporated Milk for infant feeding and Instant "Pet" Nonfat Dry Milk for special diets.

Pfizer Laboratories, Division Chas. Pfizer & Co., Brooklyn, New York (Booth 9). Visit the Pfizer display which features Cosa-Tetracyn, Cosa-Terramycin, and Cosa-Signemycin, Pfizer's glucosamine potentiated antibiotics. The Pfizer representative will be pleased to provide you with information on Diabinese, a new oral hypoglycemic agent; Vistaril, which is classified by the Council on Drugs of the American Medical Association as a psychotherapeutic antihistamine; and Daricon, a new anticholinergic compound possessing a high order of therapeutic effectiveness and prolonged duration of action.

Picker X-Ray Corporation, New York City (Booth 18).

Pharmacia Laboratories, New York City (Booth G-77), will exhibit its product, Azulfidine, a new sulfa compound for the treatment of ulcerative colitis and regional enteritis. Also, Pharmacia will exhibit Pharmalax, the suppository with enema-like action. The quick action of Pharmalax causes defecation through mechanical stimulation of the intestinal musculature by carbon dioxide released from the suppository. Skopyl, a new concept in the medical treatment of hypertrophic pyloric stenosis and infant dyspepsia, will also be displayed. Literature and important reprints will be available on request.

Personal Size
IVORY

Procter & Gamble Company, Cincinnati, Ohio (Booth 48). Ivory soap offers a series of time-saving leaflet pads for doctors, each pad containing 50 identical tear-out sheets. These sheets, which may be given to patients, contain routine instructions covering six different topics. There are also samples of other free, helpful material prepared especially for physicians. Mrs. Christyne Schwab is in charge.

The Purdue Frederick Company, New York City (Booth 59), will present: Cerumenex, a cerumenolytic containing cerapon, an effective new surfactant; Somatozyme, growth and appetite stimulant containing B_{12} d-sorbitol and a multivitamin formula; Senokot, neuroperistaltic constipation corrective containing total concentrated senna glycosides; Senokap, Senokot plus stool softener, dioctyl sodium sulfosuccinate; Senokot with psyllium, Senokot with a bulk agent; and Senobile, Senokot plus bile salts.

Reed & Carnrick, Jersey City, New Jersey (Booth 71). Members of the Medical Society of the State of New York and their guests are invited to visit the Reed & Carnrick exhibit. On display will be: Sycotrol, the new antiphobic, for the relief of fear-anxiety which is manifested by somatic complaints in the gastrointestinal tract or the heart; and Modutrol, new peptic ulcer therapy that is antiphobic, antispasmodic, and antacid. Also on display will be Alphosyl Lotion for psoriasis. Our representatives will be pleased to supply information on these and other Reed & Carnrick specialties.

Research Supplies, Albany, New York (Booth G-83), will feature the following products at their booth: Glukor, Glutest, Contra Creme, Wandex, Gould's Stethoscope, and A-3 Foot Powder.

Ritter Company, Inc., Rochester, New York (Booth 34), proudly exhibits an innovation in surgical lighting, featuring dust dispersal facilities for reasons of asepsis, elimination of counterweight, etc. Change in light pattern size as well as beam direction is accomplished by surgeon or by nurse through fully remote control. Also exhibited are Ritter motor hydraulically operated examination and treatment tables, and the L-F BalaMeteR, Bovie, and Diathermy units.

A. H. Robins Company, Inc., Richmond, Virginia (Booth 5). Physicians attending the meeting of the Medical Society of the State of New York are extended a cordial invitation to visit the exhibit of the products of the A. H. Robins Company. Experienced medical representatives will be in attendance to welcome you and answer inquiries relative to any of Robins prescription specialties.

Roche Laboratories, Division of Hoffmann-La-Roche, Inc., Nutley, New Jersey (Booth 50), will feature Madribon, a completely new, low-dosage antibacterial distinguished by particular therapeutic effectiveness in upper respiratory infections. Findings in approximately 5,000 clinical subjects demonstrate that low doses of Madribon administered at twenty-four-hour intervals provide good to excellent results in over 85 per cent of the patients. Madribon is characterized by a high degree of safety plus a notable absence of skin rashes.

J. B. Roerig & Company, New York City (Booth 9), will welcome members of the medical profession at the company's exhibit of leading specialties and new products. Representatives will be in attendance to answer any questions you may have. Roerig recently introduced a number of new products which representatives at the exhibit will describe and give information on the results of clinical reports.

William H. Rorer, Inc., Philadelphia, Pennsylvania (Booth G-84). Maalox, the nonconstipating, pleasant-tasting antacid, and the new double strength tablet Maalox No. 2 are featured. Other product highlights are Fermalox, a new buffered iron tablet; Fermatin, a dynamic new tonic in a capsule for underpar patients; and Parepectolin, a palatable antidiarrheal preparation for adults and children. Representatives will be on hand to answer questions about these and other Rorer products.

Ross Laboratories, Columbus, Ohio (Booth 72). As adjunct to the physician's oral reassurance of anxious new parents the Ross Developmental Series offers visual materials (individual case records, behavioral development folders, emotional development booklets). Current concepts stress the development of the infant as a whole being. Physiologic infant feeding may be discussed with your Similac representative.

Sanborn Company, Waltham, Massachusetts (Booth 74). New electrocardiographs of advanced design and function, as well as latest models of other instruments for diagnostic use, will be displayed and demonstrated at the Sanborn Company booth. Demonstrations and/or data will also be available on Sanborn instruments for biophysical research, single and multichannel recording systems, monitoring oscilloscopes, and physiologic transducers. Qualified Sanborn representatives will be pleased to answer questions and assist you with technical problems.

Sandoz Pharmaceuticals, Division of Sandoz, Inc., Hanover, New Jersey (Booth 22), cordially invite you to visit their display, featuring Mellaril, the first potent tranquilizer with a selection action (for example, no action on vomiting centers), which unique action gives specific psychic relaxation with safety at all dosage levels; Bellergal Spacetabs assure around the clock control of functional complaints (example, menopause symptoms) in the periphery where they originate; Cafergot P-B, the most effective oral medication for the relief of migraine headache with gastrointestinal disturbance accompanied by tension. Any of our representatives in attendance will gladly answer questions about these and other Sandoz products.

Saratoga Springs Authority, Saratoga Springs, New York (Booth 54). The exhibit portrays the many physical attractions and natural beauty of the Saratoga Springs Reservation, home of the Saratoga Spa; naturally carbonated and mineralized bottled waters; the Simon Baruch Research Laboratories; the luxurious Gideon Putnam Hotel; plus golfing, swimming, picnicking, cycling, and various other forms of recreation. Sketches depict the more common physical medicine procedures constituting the Spa "cure." Part of the public health program of the State of New York, the reservation is directed by a doctor of medicine and is under medical supervision throughout.

W. B. Saunders Company, Philadelphia, Pennsylvania (Booth 2). New Saunders titles published within the last few months include: Roberts, *Difficult Diagnosis*; De Palma, *Fractures and Dislocations*; Cecil and Loeb, *Medicine*; Boies, *Otolaryngology*; de Takats, *Vascular Surgery*; Duncan, *Metabolism*; Lewis, *Dermatology*; and the 1959 edition of *Current Therapy* published just this spring.

SchenLabs Pharmaceuticals, Inc., New York City (Booths 64 and 65), cordially invites you to discuss with our representatives the important discovery Neutrapen, the only specific for penicillin reactions which successfully eliminates more than 93 per cent of allergic reactions to penicillin. Also featured will be other unique products of SchenLabs research and development.

Schering Corporation, Bloomfield, New Jersey (Booth 32), welcomes the doctors of New York State. We cordially invite you to visit the Schering booth where representatives will be on hand to discuss with you the most recent advances in tranquilizer, antihistaminic, and corticosteroid therapy. Products such as Trilafon, Polaramine, and Deronil will be featured.

Julius Schmid, Inc., New York City (Booth 8). An interesting and informative exhibit features Immolin Cream-Jel for use without a diaphragm, Ramses Flexible Cushioned Diaphragm, Ramses Vaginal Jelly, Vagisec Jelly and Liquid for vaginal trichomoniasis therapy, and XXXX (Fourex) Skin Condoms, Ramses and Sheik Rubber Condoms for the control of trichomonal reinfection.

Joseph E. Seagram & Sons, Inc., New York City (Booth A). Congeners (fusel oil, aldehydes, acids, etc.) are compounds found in all alcoholic beverages that provide the taste, bouquet, and color. In too high concentrations, however, they can cause undesirable after-effects. This exhibit, based on analyses by Foster D. Snell, Inc., consulting chemists, shows how leading brands of various alcoholic beverage types differ in their congeneric concentration. Physicians who advise moderate drinking for some of their patients can be guided by these findings.

G. D. Searle & Company, Chicago, Illinois (Booth 31). You are cordially invited to visit the Searle booth where our representatives will be happy to answer any questions regarding Searle products of research. Featured will be Dartal, the new tranquilizing agent which controls activities associated with anxiety states and other neuroses; Enovid, the new synthetic steroid for treatment of various menstrual disorders; Zanchol, a new biliary abstergent; Nilevar, the new anabolic agent, and Rolicton, a new, safe, nonmercurial oral diuretic. Also featured will be Vallestril, the new synthetic estrogen with extremely low incidence of side-reactions; Pro-Banthine and Pro-Banthine with Dartal, the standards in anticholinergic therapy; and Dramamine and Dramamine-D, for the prevention and treatment of motion sickness and other nauseas.

7-Up Bottling Companies of New York State, Buffalo, New York (Booth G-86), will provide chilled 7-Up for all booth visitors. Each booth visitor will be eligible to win a beautiful 7-Up aluminum picnic cooler. 7-Up recipe booklets will be available.

Smith, Kline & French Laboratories, Philadelphia, Pennsylvania (Booth 75) features Temaril Tablets, an oral medication for the relief of itching, regardless of cause and the new dosage form; Termaril Syrup, especially for the control of itching in children; Vi-Sorbin, a potent modern tonic containing B_{12}, B_6, iron, folic acid, and the absorption enhancement factor, d-sorbitol; Compazine, the tranquilizer and antiemetic virtually free from drowsiness and depressing effect; Thorazine, one of the fundamental drugs in medicine; and Spansule sustained-release capsule preparations, each providing both prompt and sustained therapeutic effect.

E. R. Squibb & Sons, New York City (Booth 1), has long been a leader in development of new therapeutic agents for prevention and treatment of disease. The results of our diligent research are available to the medical profession in new products or improvements in products already marketed. At this booth, we are pleased to present up-to-date information on these advances for your consideration.

Stiefel Laboratories, Inc., Oak Hill, New York (Booth C). Acne of all types may now be treated by a completely new but thoroughly evaluated modality: graded superficial abrasion. Termed "one of the most significant developments in acne therapy in recent years," new Brasivol abrasive cleansing pastes permit the patient to scrub away keratinous plugs in the follicular openings.

Swift & Company, Chicago, Illinois (Booth 41). Swift's baby foods, the most complete variety of meats and egg yolk products, plus High Meat Dinners for your infant patients, are being featured at the Swift exhibit. Reprints showing results of Swift-sponsored clinical studies, including effect of meat on infant iron metabolism, are available. Also obtainable is our new revised Mother Booklet attractively illustrated in color.

The Upjohn Company, Kalamazoo, Michigan (Booth 17). Professional representatives of The Upjohn Company are eager to contribute to the success of your meeting. We are here to discuss with you products of Upjohn research that are designed to assist you in the practice of your profession. We solicit your inquiries and comments.

U. S. Vitamin Corporation, New York City (Booth 7). The exhibit features C.V.P., an exclusive water-soluble citrus bioflavonoid compound with ascorbic acid for restoring and maintaining capillary integrity. Corrects or minimizes capillary abnormality and bleeding associated with diabetes, hypertension, epistaxis, purpura, gingivitis, and certain forms of gastrointestinal, rectal, and vaginal bleeding. Effective therapy in habitual and threatened abortion.

Walker Laboratories, Inc., Mount Vernon, New York (Booth 25). Peptolin, a tonic for relief of chronic fatigue, will be featured. Peptolin is a palatable, deep brown elixir, with a sparkling sherry wine base providing a mood elevator and energizer with vitamins, iron, minerals, and bioflavonoids. Hedulin, the oral anticoagulant of choice, will also be featured. Full details pertaining to the drug and reprints of all medical papers are available in complete portfolio form. Other features will include Geralin, Precalcin, Bacimycin products, and Viacets.

Wallace Laboratories, New Brunswick, New Jersey (Booth 4). The representatives at this booth will be glad to discuss Milpath with the doctors attending. Milpath has been proved effective for the relief of gastrointestinal dysfunction which is caused by or aggravated by emotional stress.

Westwood Pharmaceuticals, Division of Foster-Milburn Co., Buffalo, New York (Booths 44 and 45), invites physicians to stop by their booth to discuss their unique dermatologic products: Fostex Cream, Fostex Cake, Sebulex, Lowila Cake, and Lowila Emollient. These products are particularly suitable for personal use by physicians and their families who may be plagued with dandruff, acne, dry itchy skin, and sensitivity to soap. Register, so that we may send prescription units to your home.

White Laboratories, Inc., Kenilworth, New Jersey (Booth 73). Orabiotic chewing gum troches for effective topical treatment of oropharyngeal infections. Each chewing troche combines neomycin and gramicidin for complementary effect against pathogens common in oropharyngeal infections. The local analgesic action of propesin is free of adverse effects on the sense of taste so common to banzocaine, and especially effective following tonsillectomy.

Winthrop Laboratories, New York City (Booth 37), features Trancopal, a new major chemical contribution to therapeutics, a nonhypnotic muscle relaxant and tranquilizer which combines high clinical effectiveness with low toxicity (as safe as aspirin), 100 mg. Caplets (average dose 1 Caplet three times a day).

MEMBERS OF THE HOUSE OF DELEGATES, 1959

Medical Society of the State of New York

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President-Elect	Henry I. Fineberg, Queens
Vice-President	Harry Golembe, Sullivan
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Vice-Speaker	Frederick A. Wurzbach, Jr., Bronx

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Term Expires 1960

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Edward C. Hughes, Onondaga
Raymond S. McKeeby, Broome
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Term Expires 1961

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1950–1951—Carlton E. Wertz, Erie
1951–1952—J. Stanley Kenney, New York
1952–1953—Edward T. Wentworth, Monroe
1953–1954—Andrew A. Eggston, Westchester
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1956–1957—James Greenough, Otsego
1957–1958—Thurman B. Givan, Kings

Commissioner, New York State Department of Health

Herman E. Hilleboe, Albany

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(*Elected Delegates of District Branches*)

First —Edward H. Robitzek, Richmond
Second—Charles W. Shlimbaum, Suffolk
Third —Edwin G. Mulbury, Greene
Fourth—Roman R. Violyn, Montgomery
Fifth —Arthur F. Gaffney, Oneida
Sixth —Norman C. Lyster, Chenango
Seventh—William L. Dorr, Cayuga
Eighth —Wilfrid M. Anna, Niagara
Ninth —Earl C. Waterbury, Orange

Section Delegates

(*Delegates from Scientific Sections*)

Allergy	Francis E. Ehret, Erie
Anesthesiology	Vincent J. Collins, New York
Chest Diseases	Arthur Q. Penta, Schenectady
Dermatology and Syphilology	Joseph J. Hallett, Monroe
Gastroenterology and Proctology	Sydney D. Weston, Kings
General Practice	Mary H. Wyttenbach, Chemung
Industrial Medicine and Surgery	James H. McDonough, Oneida
Legal Medicine	Milton Helpern, New York
Medicine	Herbert Berger, Richmond
Neurology and Psychiatry	Meyer Rosenberg, Kings
Obstetrics and Gynecology	Arthur R. Wilsey, Fulton
Ophthalmology	James I. Farrell, Oneida
Orthopedic Surgery	Frederick Lee Liebolt, New York
Otolaryngology	Samuel F. Kelley, New York
Pathology, Clinical Pathology, and Blood Banking	Harry P. Smith, New York
Pediatrics	Fred W. Bush, Monroe
Physical Medicine	Henry Fleck, Bronx
Preventive Medicine and Public Health	Joseph H. Kinnaman, Nassau

Radiology............Frank J. Borrelli, New York
Surgery..............Paul A. Kennedy, Erie
Urology..............E. Craig Coats, New York

Delegates from Component County Societies

Albany (4)
David John Locke, Albany
James A. Moore, Albany
Joseph J. Russo, Albany
Francis A. Stephens, Albany

Allegany (1)
Irwin Felsen, Wellsville

Bronx (12)
Carl R. Ackerman, Bronx
Joseph P. Alvich, Bronx
Henry J. Barrow, Bronx
Herbert G. Cohen, Bronx
Jerome B. Flynn, Bronx
Leonard L. Heimoff, Bronx
Moses H. Krakow, Bronx
Frank LaGattuta, Bronx
Samuel Leo, Bronx
Thomas F. McCarthy, Bronx
Charles Sandler, Bronx
Samuel Wagreich, Bronx

Broome (3)
John A. Kalb, Endicott
Jason K. Moyer, Binghamton
James L. Palmer, Binghamton

Cattaraugus (1)
Joseph A. Wintermantel, Olean

Cayuga (1)
Bernard J. Hartnett, Auburn

Chautauqua (2)
Herbert A. Laughlin, Westfield
Garra L. Lester, Chautauqua

Chemung (2)
William T. Boland, Elmira
Swen L. Larson, Elmira

Chenango (1)
Thomas M. Flanagan, Norwich

Clinton (1)
Edward Siegel, Plattsburgh

Columbia (1)
Carl G. Whitbeck, Hudson

Cortland (1)
George F. Nevin, Cortland

Delaware (1)
Philip J. Hust, Sidney

Dutchess (3)
Frank A. Gagan, Poughkeepsie
E. Gordon MacKenzie, Millbrook
Albert A. Rosenberg, Poughkeepsie

Erie (8)
John C. Brady, Buffalo
Matthew L. Carden, Buffalo
Max Cheplove, Buffalo
Martin L. Gerstner, Buffalo
John D. Naples, Buffalo
Samuel Sanes, Eggertsville
Clarence A. Straubinger, Buffalo
Walter Scott Walls, Buffalo

Essex (1)
James E. Glavin, Port Henry

Franklin (1)
Alfred A. Hartmann, Malone

Fulton (1)
Joseph J. Thompson, Gloversville

Genesee (1)
Alfred L. George, Batavia

Greene (1)
Kenneth F. Bott, Greenville

Herkimer (1)
George A. Burgin, Little Falls

Jefferson (1)
Charles A. Prudhon, Watertown

Kings (22)
George E. Anderson, Brooklyn
Louis Berger, Brooklyn
Leo S. Drexler, Brooklyn
David Farber, Brooklyn
John J. Flynn, Brooklyn
David Kershner, Brooklyn
Aaron Kottler, Brooklyn
Arthur E. Lamb, Brooklyn
Warren A. Lapp, Brooklyn
Isaac Levine, Brooklyn
Harry A. Mackler, Brooklyn
A. W. Martin Marino, Brooklyn
John G. Masterson, Brooklyn
Charles F. McCarty, Brooklyn
David B. Monheit, Brooklyn
Irving M. Pallin, Brooklyn
Solomon Schussheim, Brooklyn
Abraham D. Segal, Brooklyn
Milton B. Spiegel, Brooklyn
Charles E. Spratt, Brooklyn
Julius E. Stolfi, Brooklyn
Robert F. Warren, Brooklyn

Livingston (1)
Melville A. Hare, Caledonia

Lewis (1)
Edgar O. Boggs, Lowville

Madison (1)
Felix Ottaviano, Oneida

Monroe (6)
Michael J. Crino, Rochester

Lawrence A. Kohn, Rochester
Charles R. Mathews, Rochester
Lynn Rumbold, Rochester
James M. Stewart, Rochester
Arthur H. Walker, Rochester

MONTGOMERY (1)
Norbert Fethke, Amsterdam

NASSAU (8)
Maurice B. Berger, Valley Stream
C. Dean Bohrer, Westbury
Gerard V. Farinola, Roosevelt
Leo T. Flood, Hempstead
Abraham W. Freireich, Malverne
Edward K. Horton, Rockville Centre
Paul H. Sullivan, Great Neck
Joseph G. Zimring, Long Beach

NEW YORK (25)
Philip D. Allen, New York City
Michael C. Armao, New York City
Norton S. Brown, New York City
Samuel B. Burk, New York City
William A. Cooper, New York City
Harold B. Davidson, New York City
C. Joseph Delaney, New York City
Lawrence Essenson, New York City
James H. Ewing, New York City
George W. Fish, New York City
Samuel Frant, New York City
Carl Goldmark, Jr., New York City
Frances Harmatuk, New York City
George Himler, New York City
John J. H. Keating, New York City
Ely Elliott Lazarus, New York City
William Hall Lewis, Jr., New York City
Julia V. Lichtenstein, New York City
Frank J. McGowan, New York City
Peter M. Murray, New York City
Herbert S. Ogden, New York City
Henry T. Randall, New York City
William B. Rawls, New York City
Adelaide Romaine, New York City
William L. Wheeler, Jr., New York City

NIAGARA (2)
Joseph A. D'Errico, Lockport
John C. Kinzly, North Tonawanda

ONEIDA (3)
Irwin Alper, Utica
Anthony G. Jarosewicz, Utica
John F. Kelley, Utica

ONONDAGA (5)
Irving L. Ershler, Syracuse
Robert F. McMahon, Syracuse
William J. Michaels, Jr., Syracuse
William E. Pelow, Syracuse
W. Walter Street, Syracuse

ONTARIO (2)
Robert E. Doran, Geneva
Philip M. Standish, Canandaigua

ORANGE (3)
Robert J. Hewson, Monroe
Theodore R. Proper, Newburgh
Irving Weiner, Newburgh

ORLEANS (1)
Angelo F. Leone, Medina

OSWEGO (1)
Kent W. Jarvis, Oswego

OTSEGO (1)
John W. Latcher, Oneonta

PUTNAM (1)
Robert S. Cleaver, Brewster

QUEENS (13)
Alfred A. Angrist, Beechhurst
Sol Axelrad, Woodhaven
William Benenson, Flushing
Monroe M. Broad, Jamaica
Thomas M. d'Angelo, Flushing
Albert H. Douglas, Jamaica
Harry H. Epstein, Jamaica
John L. Finnegan, Flushing
Jerome L. Leon, Forest Hills
John Edward Lowry, Flushing
Charles C. Mangi, Woodhaven
Louis J. Morse, Kew Gardens
Tobias M. Watson, Jackson Heights

RENSSELAER (2)
Richard P. Doody, Troy
Gilbert A. Clark, Troy

RICHMOND (3)
Walter T. Heldmann, Staten Island
Cyril M. Levin, Staten Island
Frank Tellefsen, Staten Island

ROCKLAND (2)
Harold W. Grosselfinger, Suffern
George Gordon Knight, Piermont

ST. LAWRENCE (1)
Henry Vinicor, Norwood

SARATOGA (1)
Webster M. Moriarta, Saratoga Springs

SCHENECTADY (3)
Raymond J. Byron, Schenectady
John L. Clowe, Schenectady
Donald C. Walker, Delanson

SCHOHARIE (1)
John H. Wadsworth, Cobleskill

SCHUYLER (1)
Fritz Landsberg, Watkins Glen

SENECA (1)
Stanley B. Folts, Interlaken

STEUBEN (2)
Thomas S. Cotton, Hornell
Maynard W. Gurnsey, Corning

SUFFOLK (5)
Earl W. Douglas, West Islip
Anthony Kohn, Bay Shore
John L. Sengstack, Huntington
Sol Shlimbaum, Bay Shore
Robert W. Unangst, Huntington Station

SULLIVAN (1)
S. Elisabeth Vuornos, Liberty

TIOGA (1)
John H. Jakes, Candor

TOMPKINS (1)
C. Stewart Wallace, Ithaca

ULSTER (2)
Eugene F. Galvin, Rosendale
Edward F. Shea, Kingston

WARREN (1)
Morris Maslon, Glens Falls

WASHINGTON (1)
Walter S. Bennett, Granville

WAYNE (1)
James H. Arseneau, Lyons

WESTCHESTER (7)
Arthur H. Diedrick, Port Chester
John N. Dill, Yonkers
Harold J. Dunlap, New Rochelle
Donald R. Reed, Irvington
William P. Reed, Larchmont
Waring Willis, Bronxville
Reid R. Heffner, New Rochelle

WYOMING (1)

YATES (1)
John A. Hatch, Penn Yan

1959 HOUSE OF DELEGATES—REFERENCE COMMITTEES

Credentials
Charles F. McCarty, *Chairman*, Kings
Frances A. Harmatuk, New York
Bernard J. Hartnett, Cayuga
Garra L. Lester, Chautauqua
E. Gordon MacKenzie, Dutchess

President's Report
John L. Sengstack, *Chairman*, Suffolk
Walter S. Bennett, Washington
John C. Brady, Erie
Frank J. McGowan, New York
Lawrence A. Kohn, Monroe

Reports of Secretary, Judicial Council, District Branches
John G. Masterson, *Chairman*, Kings
George F. Nevin, Cortland
Melville A. Hare, Livingston
Adelaide Romaine, New York
John A. Kalb, Broome

Reports of Treasurer, Trustees, Budget, War Memorial
John E. Lowry, *Chairman*, Queens
C. Stewart Wallace, Tompkins
Thomas M. Flanagan, Chenango
Edward F. Shea, Ulster
Lynn Rumbold, Monroe

Planning Committee for Medical Policies
Herbert Berger, *Chairman*, Richmond, Section Delegate
John N. Dill, Westchester
Irving Weiner, Orange
Wilfred Anna, Niagara, District Delegate
Robert F. Warren, Kings

Malpractice Insurance and Defense Board, Legal Counsel
John D. Naples, *Chairman*, Erie
John L. Finnegan, Queens
Solomon Schussheim, Kings
Thomas S. Cotton, Steuben
Robert E. Doran, Ontario

Council—Part I

CONSTITUTION AND BYLAWS COMMITTEE, PUBLIC HEALTH AND EDUCATION, CIVIL DEFENSE AND CATASTROPHE, COMMITTEE TO STUDY ESTABLISHMENT OF A SCIENTIFIC AND EDUCATIONAL TRUST, QUESTIONS OF ETHICS

Joseph P. Alvich, *Chairman*, Bronx
James H. Arsenau, Wayne
John J. Flynn, Kings
Carl G. Whitbeck, Columbia
Arthur H. Walker, Monroe

Council—Part II

PUBLIC HEALTH ACTIVITIES A—MATERNAL AND CHILD WELFARE, SCHOOL HEALTH, ACCIDENT PREVENTION, CHILD ACCIDENTS

Maynard W. Gurnsey, *Chairman*, Steuben
Fred W. Bush, Monroe, Section Delegate

Joseph G. Zimring, Nassau
James E. Glavin, Essex
William L. Wheeler, Jr., New York

Council—Part III

PUBLIC HEALTH ACTIVITIES B—RURAL MEDICAL SERVICE, GENERAL PRACTICE

William E. Pelow, *Chairman,* Onondaga
James H. Ewing, New York
Mary Wyttenbach, Chemung, Section Delegate
Alfred A. Hartman, Franklin
Samuel Wagreich, Bronx

Council—Part IV

PUBLIC HEALTH ACTIVITIES C—CANCER, BLOOD BANKS, MENTAL HYGIENE, FILM REVIEW, HEART DISEASE

Alfred A. Angrist, *Chairman,* Queens
Moses N. Krakow, Bronx
Jason K. Moyer, Broome
Edwin G. Mulbury, Greene, District Delegate
Max Cheplove, Erie

Council—Part V

PUBLIC HEALTH ACTIVITIES D—PHYSICAL MEDICINE AND REHABILITATION, AGING, DIABETES, HARD OF HEARING AND THE DEAF, ALCOHOL AND NARCOTICS ADDICTION, DISABILITY DETERMINATIONS, POLIOMYELITIS

Samuel Sanes, *Chairman,* Erie
Herbert S. Ogden, New York
Irwin Felsen, Allegany
Irving S. Ershler, Onondaga
Henry Fleck, Bronx, Section Delegate

Council—Part VI

HOSPITAL AND PROFESSIONAL RELATIONS, DENTAL HEALTH, JOINT COMMITTEE TO COMBAT STAPHYLOCOCCAL INFECTIONS

William T. Boland, *Chairman,* Chemung
Frank LaGuttuta, Bronx
James A. Moore, Albany
Louis Berger, Kings
Samuel Frant, New York

Council—Part VII

ECONOMICS, MEDICARE, MEDICAL EXPENSE INSURANCE, PUBLIC MEDICAL CARE, LIAISON WITH VETERANS ADMINISTRATION, SPECIAL COMMITTEE ON RESOLUTION 58–49 (MEDICAL CARE AND THE JOB OF THE MEDICAL PROFESSION), COLUMBIA UNIVERSITY STUDY OF NONPROFIT MEDICAL INSURANCE PLANS IN NEW YORK STATE

John F. Kelley, *Chairman,* Oneida
Gilbert A. Clark, Rensselaer
Harrry A. Mackler, Kings
Charles R. Mathews, Monroe
John H. Keating, New York

Council—Part VIII

AMERICAN MEDICAL EDUCATION FOUNDATION, WOMAN'S AUXILIARY, JOINT COMMITTEE WITH PHARMACEUTICAL ASSOCIATION OF NEW YORK STATE

John W. Latcher, *Chairman,* Otsego
Sol Axelrad, Queens
George G. Knight, Rockland
Paul H. Sullivan, Nassau
Frank Tellefsen, Richmond

Council—Part IX

LEGISLATION, CULTS, FEDERAL LEGISLATION, AUTOPSIES

Peter M. Murray, *Chairman,* New York
James I. Farrell, Oneida, Section Delegate
Raymond J. Byron, Schenectady
Michael J. Crino, Monroe
Albert H. Douglas, Queens

Council—Part X

WORKMEN'S COMPENSATION, INDUSTRIAL HEALTH OPERATING ROOM DEATHS

Carl R. Ackerman, *Chairman,* Bronx
George A. Burgin, Herkimer
William A. Cooper, New York
Frank A. Gagan, Dutchess
John C. Kinzly, Niagara

Council—Part XI

PUBLICATION, PUBLIC RELATIONS, MEDIA OF INFORMATION

Philip D. Allen, *Chairman,* New York
Thomas F. McCarthy, Bronx
Felix Ottaviano, Madison
Walter W. Street, Onondaga
Henry Vinicor, St. Lawrence

Council—Part XII

CONVENTION, NURSING EDUCATION, OFFICE ADMINISTRATION AND POLICIES, SPECIAL COMMITTEE ON 1958 SURVEY REPORT, BELATED BILLS

Waring Willis, *Chairman,* Westchester
Thomas M. d'Angelo, Queens
Kent W. Jarvis, Oswego
Aaron Kottler, Kings
Joseph A. Wintermantel, Cattaraugus

Miscellaneous Business

Norton S. Brown, *Chairman,* New York
Leo T. Flood, Nassau
Stanley B. Folts, Seneca
Charles A. Prudhon, Jefferson
Francis A. Stephens, Albany

Résumé of Instructions of the 1958 House of Delegates and Actions Thereon by the Council, Board of Trustees, and Officers

Eligibility for County Society Membership (Section 162).—Resolution 58–9, calling for enforcement of the second sentence of Section 1, Chapter XIV of the Bylaws, was referred by the House of Delegates to the Council "for study and recommendation as to necessary changes in the Bylaws." At its June, 1958, meeting the Council referred this to the Special Committee on Constitution and Bylaws. (*See Annual Reports in April 15 issue, Special Committee on Constitution and Bylaws*)

Pension Fund Assessment (Section 147).—The House voted that a $10 assessment for all new members in 1958 be levied and that "this policy be considered for a continuation by subsequent houses of delegates." Upon the advice of legal counsel, the Council voted in October, 1958, to collect the $10 assessment "from members elected, reelected, or reinstated between the adjournment of the House of Delegates (May 14, 1958) and October 1, 1958." Treasurers of the county medical societies were informed of this action on October 30, 1958.

American Medical Association Dues (Section 147).—The House voted "that continued effort be exerted toward the direct collection of American Medical Association dues." At its June, 1958, meeting the Council referred this action to the Board of Trustees. (*See Annual Reports in April 1 issue, Report of the Board of Trustees, page 1315.*)

Blood Banks Appropriation (Section 147).—The instruction of the House of Delegates that "the $16,000 budgeted for the Blood Banks Association and the North East District Clearing House be considered a maximum sum" was referred to the Board of Trustees for their guidance.

Emergency Care of Indigent Doctors (Section 151).—The House of Delegates instructions that the Council study the allocation for this purpose, proposed in resolution 58–33, were referred in June, 1958, to the Budget Committee. (*See Annual Reports in April 15 issue, Report of Budget Committee*)

1958 Management Survey (Section 209).—The House voted that "those portions of the recommendations and suggestions of the 1958 Survey Report which do not require amendment to the constitution and Bylaws be referred to the Council for consideration and action." Appointment of a special committee to study the report was authorized in June. (*See Annual Reports in April 1 issue, Report of the Special Committee to Study the 1958 Management Survey Report, page 1389.*)

Arbitration of Malpractice Claims (Section 190).—House resolution 58–10 that "a limited number of malpractice claims . . . be submitted to arbitration arranged by the American Arbitration Association" was referred by the Council in June to the Malpractice Insurance and Defense Board. (*See Annual Reports in April 1 issue, Report of the Malpractice Insurance and Defense Board, page 1378.*)

Participation in Group Plan (Section 191).—Resolution 58–12 directing the Council to take action "toward obtaining a greater percentage of participation in the Group Plan of Malpractice Insurance on the part of members of county medical societies in and about the New York City area" was referred at the June meeting to the Malpractice Insurance and Defense Board. (*See Annual Reports in April 1 issue, Report of the Malpractice Insurance and Defense Board, page 1378.*)

Liability of Certifying Physician in Motor Vehicle Accidents (Section 192).—Resolution 58–20, recommending that the Committee on Legislation give serious thought to initiating legislation that will hold a physician free and harmless on account of certifications required by the Bureau of Motor Vehicles, was referred by the Council in June to the Committee on Legislation. (*See Annual Reports in April 1 issue, Report of Council, Part IX, page 1343.*)

Operating Room Deaths (Section 143).—In accordance with resolution 58–43 a committee was appointed to conduct a statistical study and evaluation of operating room deaths in order to develop a standard classification and uniform terminology relating to this subject. The committee will report to the House of Delegates.

Sections referred to are from the minutes of the House of Delegates of the 1958 Annual Meeting, as published in the NEW YORK STATE JOURNAL OF MEDICINE, September 1, 1958, Part II.

School Medical Examinations (Section 141).—The House of Delegates instructions "that efforts should be continued to reduce the number of yearly routine school medical examinations" were referred by the Council to the Committee on Legislation. The committee reported in September, 1958, that Dr. Ezell of the Department of Education states this departmental policy will undoubtedly not be changed but suggests the proposal might be referred to the Interdepartmental Health Resources Board. The recommendation of the committee that no action be taken was adopted by the Council.

General Practice Residency (Section 95).—The House approved statements (1) that "future general practitioners be encouraged to complete a two-year residency in general practice, the second year of which should be devoted to the subspecialties in surgery and obstetrics for the purpose of rounding out a general practice training" and (2) that "diligent and persuasive methods should be found to impress medical school administrations in New York State with the importance in the community of the general practitioner." The instructions of the House of Delegates were referred to the General Practice Subcommittee of the Committee on Public Health and Education. (*See Annual Reports in April 1 issue, Council, Part III, page 1328.*)

Section on Pathology, Clinical Pathology, and Blood Banking (Section 135).—In accordance with resolution 58–1 the scientific program subcommittee of the Convention Committee was instructed to assign activity in the blood banking field to the Section on Pathology and Clinical Pathology and to include "Blood Banking" in the name of the section. Dr. Herbert Berger, president of the Blood Banks Association of New York State, was so notified.

Practice of Medicine by Hospitals (Section 195).—At the June, 1958, meeting of the Council, Mr. Martin was requested to implement the instructions of the House of Delegates "that further legal opinion be obtained from the attorney general of the State of New York and from Eugene A. Sherpick, Esq., regarding the legality or illegality of the practice of medicine by hospitals."

Hospital-Physician Relationships (Section 195).—The House voted (1) that the "Proposed Guiding Principles of Hospital-Physician Relationships" be approved with the exception of Article IV; (2) that further meetings with representatives of the Hospital Association of New York State be arranged; and (3) that no agreement be entered into which is contrary to Section 6514 of the State Education Law, Section 13-d of the Workmen's Compensation Law, the *Principles of Professional Conduct* of the Medical Society of the State of New York, or the American Medical Association's Guide for Conduct of Physicians in Relationship with Institutions. These instructions were referred by the Council in June, 1958, to the Committee on Hospital and Professional Relations. (*See Annual Reports in April 1 issue, Council, Part VI, page 1335.*)

State University Hospital in Brooklyn (Section 195).—At its June meeting the Council instructed the secretary to notify the Medical Society of the County of Kings of the decision of the House of Delegates "that the question of conditions for disapproval or endorsement of the proposed establishment of a hospital in Brooklyn by the State University of New York be left to the county society." This was done.

Internship (Section 197).—The House voted that a resolution recommending a two-year rotating internship be introduced at the June, 1958, session of the A.M.A. House of Delegates. This was done.

The House also voted that copies of resolution 58–39 be sent to deans of medical colleges, presidents of hospital boards, administrators of hospitals in the State of New York, secretaries and other officers of the Army, Navy, and Air Force, and the secretaries of the national specialty boards. This was done by the secretary in accordance with instructions received at the June, 1958, meeting of the Council.

Electrocardiogram Fees (Section 198).—Resolution 58–51, disapproving the practice of a hospital charging a fee for taking an electrocardiogram and another fee for interpreting it, was referred to the Council "for further study and action" and by them to the Hospital and Professional Relations Committee. (*See Annual Reports in April 1 issue, Council, Part VI, page 1335.*)

Support of Jenkins-Keogh Bills (Section 171).—Resolution 58–7 that the Council "mobilize the militant support of the Society's 25,000 members behind the Jenkins-Keogh bills immediately by means of a direct mail appeal" was referred in June to the Federal Legislation Subcommittee of the Committee on Legislation. (*See Annual Reports in April 1 issue, Council, Part IX, page 1350.*)

Blue Cross and Blue Shield Insurance for Infants (Section 177).—Resolution 58–17 requesting that Associated Hospital Service of New York include the acutely ill infant under ninety days of age in its regular contract was referred to the Subcommittee on Medical Expense Insurance of the Economics Committee. In December, 1958, the Council approved the recommendation of the subcommittee that newborn infants be covered, from birth, in Blue Cross and Blue Shield insurance and its request that Blue Shield and Blue Cross plans of the State be so informed. The plans were so informed.

Medicare Program (Section 178).—Resolution 58–18 that in subsequent negotiations under public Law 569 of the 84th Congress the Society resist any "Extensions to Persons" or "Extensions of Services" in the Medicare program was referred to the Economics Committee, and a copy of the resolution was sent to the director of the Medicare program in Washington for his information.

Paramedical Services in Medical Care Insurance Contracts (Section 180).—Resolution 58–23 declaring that an amendment to Article 250 of the Insurance Law, making reimbursements for such services permissive rather than compulsory, "is essential to the orderly and efficient operation of IX-C corporations" was referred to the Committee on Economics. The Medical Expense Insurance Subcommittee recommended in December, 1958, that a resolution to have such an amendment presented be adopted by the Council and referred to the Legislation Committee for implementation. This recommendation was referred back to the subcommittee for reconsideration and rewording. (*See Annual Reports in April 1 issue, Council, Part VII, page 1336.*)

County Society Autonomy in Negotiating Medical Welfare Fee Schedules (Section 183).—The House adopted resolution 58–45, affirming "the right of all component county societies to negotiate with their respective county or local welfare commissioners or departments of welfare all schedules pertaining to physicians' fees" and that such fee schedules "shall not be required to conform to any fee schedule previously approved by the Medical Society of the State of New York." In accordance with the instructions of the Council, the secretary notified the secretary of each county medical society of this action.

Fees for Consultative Services in Disability Determinations (Section 185).—House resolution 58–60 recommended "to the Social Security Administration that the Medicare fee schedule be adopted as the minimum standard for payment for medical consultative services rendered upon the order of the Bureau of Disability Determinations in the State of New York." The Council referred this to the Special Advisory Committee to the Bureau of Disability Determinations. (*See Annual Reports in April 1 issue, Report of the Advisory Committee to the Bureau of Disability Determinations, page 1395.*)

This resolution also provided for introduction of a similar resolution on this subject in the American Medical Association house of delegates. This was done in June, 1958.

Study of Medical Needs and Provision Made for Them in this State (Section 187).—Resolution 58–49 provided that the Council, with the cooperation and advice of the constituent county medical societies, study the medical needs of all the people of New York State and make recommendations to the 1959 House of Delegates, with due regard to "adequacy of coverage, economics, freedom of the patient, freedom of medicine, the individual's responsibility for the welfare of himself and his family," and the determination of the Society "to take care of all sick people." At its June meeting the Council voted that a special committee be appointed by the president to make the study. This was done. (*See Annual Reports in April 15 issue, Report of the Special Committee on Resolution* 58–49.)

Autopsy and the Dead Human Body (Section 201).—House resolution 58–40 requests the creation of a legislative commission to study the law with respect to the dead human body. It instructs the Council to pursue this objective by an "educational campaign" among legislators and State officials. The Council referred these instructions to the Committee on Legislation. The Legislation Committee requested the formation of a special committee to investigate this further, supply them with exact facts for presentation to the Legislature when requesting such a commission, and suggest a specific plan for the work of the commission to be presented by its legislative proponents. This committee was appointed and will report to the Council. (*See Annual Reports in April 1 issue, Autopsy Committee, page 1396.*)

Confidential Physician-Patient Relationship (Section 202).—Resolution 58–47 instructed the Legislation Committee to oppose passage of any bill which might be introduced at the 1959 session of the Legislature to except from the protection of Section 352 of the Civil Practice Act the report of injuries of a litigant seeking damages based upon a claim for personal injuries. The committee reported to the Council in September, 1958, that, should such a bill be introduced again, "we would vigorously oppose it as was done last year."

The resolution provides "that the Society distribute all pertinent information concerning this bill to all county societies with a request to take all local measures available to each society in order to oppose and defeat this bill if it should reappear." This was included in the secretary's letter of June 30, 1958, to county medical society secretaries.

Lien Law (Section 203).—The House adopted resolution 58–54, to proceed in every proper and lawful manner to amend the present lien law to include physicians. The Council referred this resolution to the Committee on Legislation with instructions to consider this one of the most important parts of our legislation program. The committee reported in September, 1958, the opinion of its legal counsel that such a bill would have no chance of becoming a law and its own opinion that the proposed amendment to the lien law would not be desirable.

Workmen's Compensation Fees (Section 156).—The House resolved "to approve the principle that physicians engaged in the care of compensation claimants prepare and submit bills for treatment of such claimants in accordance with regular fees for persons of like standards of living, which may be in excess of the Minimum Fee Schedule, to advocate initiation of this practice on July 1, 1958, and to instruct the director of the Workmen's Compensation Bureau to notify all physicians in the State of the resolution." In June, 1958, the Council voted that, because conditions surrounding the proposed new workmen's compensation minimum fee schedule had markedly changed since the meeting of the House of Delegates, the implementation of the resolution would be postponed pending study of the newly promulgated fee schedule. The Council directed that a letter, over the signatures of the president and the chairman of the Workmen's Compensation Committee, be sent to every member of the State Society, notifying him of this action. This letter was sent. The new fee schedule was expected to go into effect March 1, 1959.

Health Insurance and Industry (Section 157).—Resolution 58–37, suggesting that the county medical societies request consultation with industry in their respective counties in their present and future contracts for medical care programs, was referred by the House of Delegates to the Medical Expense Insurance Subcommittee of the Committee on Economics. The committee reported to the Council in December, 1958, that it approved the resolution "with the suggested minor revision—that the county societies invite representatives from the State Society and other interested groups to their respective counties for consultation regarding the development of their medical care programs."

Free Choice of Physician in Industrial Health Centers (Section 158).—The House approved in principle resolution 58–53 "that immediate action be taken in cooperation with union representatives and the State Department of Social Welfare to promote State legislation covering the entire field of industrial health centers, in which the principle of free choice of physician shall be requisite." The Council referred this to the Committee on Legislation in June, and in September, 1958, at the request of the Committee on Legislation, the resolution was referred to the Ad Hoc Committee on Labor Union and Industrial Health Centers. (*See Annual Reports in April 1 issue, Ad Hoc Committee on Labor Union and Industrial Health Centers, page 1394.*)

Medical Practice Committee (Section 159).—Resolution 58–57, instructing the Committee on Legislation to initiate legislation to abolish the Medical Practice Committee of the Workmen's Compensation Board, was referred by the Council to the Committee on Legislation. (*See Annual Reports in April 15 issue, Council, Parts IX and X, pages 1343 and 1353.*)

Evaluation of Health Centers (Section 160).—In accordance with the instructions of the House of Delegates, the Council referred to the Ad Hoc Committee on Labor Union and Industrial Health Centers, for study and report, the "Guides for Evaluation of Management and Union Health Centers" published by the American Medical Association Committee on Medical Care for Industrial Workers. (*See Annual Reports in April 1 issue, Ad Hoc Committee on Labor Union and Industrial Health Centers, page 1394.*)

Time of Annual Meeting (Section 102).—The House voted to begin the 1959 meeting of the House of Delegates at approximately 2 P.M. on the Saturday preceding the Annual Convention of the Society and to hold its sessions on Saturday afternoon and evening, Sunday, and Monday morning. The Speaker, on account of the expected volume of business has felt it necessary to call the meeting for Saturday, May 9, 1959, at 9 A.M. rather than 2 P.M., in accordance with Chapter II, Section 3 of the Bylaws.

The House also voted that the scientific session of the Annual Convention begin Monday afternoon and continue for as many days as are required to complete the program. The Council referred these instructions to the Convention Committee, who have arranged scientific sessions beginning Monday afternoon and continuing through Friday.

At the same time the House voted that the annual meeting and dinner of the Society be held on the Monday night following the adjournment of the 1959 House of Delegates. This will be May 11, 1959.

Nurses' Salaries, Training, and Recruitment (Section 104).—Resolution 58–41 instructs the Council to "undertake an active campaign to obtain higher salaries for nursing personnel," promote expansion of existing facilities and creation of new facilities for nurses training in all categories, and "institute an active campaign in the secondary schools to encourage students to enter nurses training." The Council referred this to the Committee on Nursing Education. (*See Annual Reports in April 1 issue, Council, Part XII, page 1372.*)

Attendance of Alternates at A.M.A. House of Delegates Meetings (Section 93).—Resolution 58–50 provided that "the top alternate (not acting as a delegate) in each elected class accompany the delegation to the American Medical Association convention with expenses paid by the Society" and that the Board of Trustees appropriate the necessary funds. This was done.

Participation in Free Clinics (Section 94).—In accordance with resolution 58–38 the Council instructed the secretary to inform the secretary of each county medical society and the chairman of each committee of our Society of the Society's adherence to "the basic tenets of the private practice of medicine," that is, free choice of physicians by patients, and the belief "that every individual financially able should pay for his or her medical care and that free medical service is reserved for the indigent." This was done.

The same resolution directed the Council to make a full, careful study of the question of participation of physicians in the work of free clinics whose service is not limited to indigent patients, inviting comment at the county level, and to suggest methods of implementing the correction of this abuse. This was referred by the Council to the Public Medical Care Subcommittee of the Committee on Economics. (*See Annual Reports in April 15 issue, Council, Part VII.*)

Examination of Nonprofit Medical Care Insurance Plans (Section 186).—In accordance with resolution 58–63 the Council voted in May, 1958, that the president, with the advice of the chairmen of the Blue Shield plans, write to the Superintendent of Insurance requesting him to state "the intent, the scope, and the means for his proposed examinations of nonprofit plans . . . so that the boards of directors of Blue Shield plans may take intelligent action on the request to have such examination made." This was done.

Medical Service in Blue Cross Contracts (Section 174).—Resolution 58–8 to oppose the inclusion of medical services in hospital insurance contracts and recommend the transfer of coverage for such services from Blue Cross to Blue Shield organizations was referred by the Council to the Committee on Economics for submission to its Subcommittee on Medical Expense Insurance. The December, 1958, report of the committee to the Council expressed the opinion of the subcommittee that the study now being conducted by the Insurance Department might "consider these factors and provide a suitable and equitable solution," that Blue Shield plans should formulate plans for diagnostic services, such as x-ray, to prevent overutilization of hospitalization, that Blue Shield contracts should be drawn to cover x-ray, anesthesiology, pathology, and physiotherapy both in and out of the hospital, and that, if the Council approved, Blue Shield and Blue Cross plans in the State should be so informed. The plans were informed by Dr. W. P. Anderton, secretary. (*See Annual Reports in April 1 issue, Council, Part VII, page 1336.*)

Wisconsin Plan for Blue Shield (Section 175).—Resolution 58–11 directed that the Council "investigate the feasibility of such a plan for New York State." This was referred to the Committee on Economics for its Medical Expense Insurance Subcommittee. The subcommittee disapproved adoption of the features of the Wisconsin plan, disapproved urging New York State plans to formulate such a plan, and recommended to the Council in December, 1958, that this resolution be referred to the Special Committee to Study Resolution 58–49. (*See Annual Reports in April 15 issue, Council, Part VII, page 1336.*)

Fee to Physicians for Execution of Insurance Forms (Sections 176 and 184).—Resolutions 58–16 and 58–46 approved the policy of physicians requiring fees from insurance companies for preparing reports. The Council referred this to the Publication Committee, and in August an editorial on the subject appeared in the JOURNAL. In December, 1958, the Economics Committee requested that the subject be given more extended coverage in the JOURNAL. This was done in the January 15, 1959, issue.

Dates of District Branch Meetings (Section 167).—A copy of resolution 58–58, "that the executive committee of each district branch be permitted to arrange the date of its annual meeting with the secretary of the State Medical Society or with any other officer of the Medical Society of the State of New York who is designated to work with the district branches," was sent to the president of each district branch. The dates of 1958 annual meetings of the district branches were set as provided in this resolution.

A.M.A. Resolutions.—In accordance with instructions of the 1958 House of Delegates of this Society, ten resolutions were introduced in the A.M.A. House of Delegates in June, 1958.

The resolutions are listed below, with the disposition made of each and identifying references to the minutes of our House of Delegates.

1. *Two-Year Rotating Internship in Community and Municipal Hospitals* (*Section 99, 125, 128, 197, and 199; resolutions 58–59 and 58–64*).—Introduced by Dr. Thomas M. d'Angelo and referred to the Council on Medical Education and Hospitals. The report of the Council on Medical Education and Hospitals relating to this and the following resolution appears on pages 1087 and 1088 of the October 25, 1958 issue of the *Journal of the American Medical Association.* The reference committee on this subject recommended in December,

1958, that the A.M.A. house of delegates approve the report and appendices of the A.M.A. Council. See page 606 of the *Journal of the American Medical Association* for February 7, 1959.

2. *Plan to Promote Improved Intern Education and to Correct the Shortage of Interns* (*Section, 70, 197; resolution 58–39*).—Introduced by Dr. William B. Rawls and referred to the Council on Medical Education and Hospitals. Action taken is described above.

3. *Advertising of Proprietary Remedies* (*Sections 55 and 91; resolution 58–24*).—Introduced by Dr. William B. Rawls but withdrawn because of the A.M.A. House of Delegates decision to join other groups in a program, to be coordinated by the National Better Business Bureau, directed toward achieving the purpose of the resolution.

4. *Mail Poll of Membership on Inclusion of Physicians in Social Security System* (*Sections 37 and 170; resolution 58–6*).—Introduced by Dr. Peter J. Di Natale. The A.M.A. house of delegates voted that any poll should be taken on a state-by-state basis, to be transmitted to the A.M.A. by delegates from constituent states associations and societies.

5. *Poll of A.M.A. Members re Compulsory Social Security* (*Sections 44 and 173; resolution 58–13*).—Introduced by Dr. Peter J. Di Natale. For action, see that listed under "4" above.

6. *Social Security Benefits for the Self-Employed Physicians* (*Sections 36 and 169: resolution 58–5*).—Introduced by Dr. Peter J. Di Natale and defeated. The existing A.M.A. policy was reiterated.

7. *Social Security for Physicians* (*Sections 45 and 172; resolution 58–14*).—Introduced by Dr. Peter J. Di Natale and defeated.

8. *Operating Room Mortality* (*Sections 74 and 123; resolution 58–43*).—Introduced by Dr. Renato J. Azzari and referred to the Board of Trustees with a recommendation that an ad hoc committee be appointed to study "this entire matter." The Trustees reported (page 1039 of the October 25, 1958, *Journal of the American Medical Association*): "All resolutions referred to the Board of Trustees by the House of Delegates at its meeting in June, 1958, have been forwarded to the several councils, committees, and departments of the Association concerned for study. As soon as reports are available from these groups, they will be transmitted to the House of Delegates for action."

9. *Artificial Respiration for Rescue Work* (*Sections 73 and 122; resolution 58–42*).—Introduced by Dr. James Greenough. "No action" was taken because it was held poor policy for the A.M.A. to endorse specific technics.

10. *Fee Schedule of the Bureau of Disability Determinations Under the Old Age and Survivors Insurance Program* (*Sections 113 and 185; resolution 58–60 advocating use of the Medicare schedule of allowances.*).—Introduced by Dr. Leo E. Gibson and passed.

1958—1959

ANNUAL REPORTS

of the

Officers, Council, Trustees, and Committees

of the

Medical Society of the State of New York

to the

HOUSE OF DELEGATES

153rd Annual Convention May 9 to 15, 1959

Hotel Statler Hilton, Buffalo

Report of the President

To the House of Delegates, Gentlemen:

The time that has elapsed since the last meeting of the House of Delegates has been an historic period for our State Medical Society and a memorable experience for me, as your president.

LEO E. GIBSON, M.D.

At the very outset of this report I should like to express my gratitude to the members of the House for the privilege that they gave me of serving as president of the third largest medical society in the world. There have been many problems but at the same time there have been numerous occasions which have brought me great pleasure. Among these was working with the members of our official family and the members of the various committees of our organization. Allow me at this time to thank publicly all those who either directly or indirectly have assisted me during my term of office. These individuals have been too numerous for me to mention. I should like, however, to make special mention of the assistance given to me by our president-elect, Dr. Henry I. Fineberg; Dr. W. P. Anderton, secretary; and our new executive director, Dr. Herbert T. Wagner.

History has been made in the annals of our Society since your last meeting in May of 1958. A few months after that meeting our Society moved into its new headquarters, a move which has resulted in a tremendous improvement in the efficiency of our organization and in the morale of the staff. Steps were taken to implement the 1958 survey report. One of the big steps taken was the selection of our new executive director. A report of the latest developments in regard to the survey will be presented to the House.

After many months of negotiations a new workmen's compensation fee schedule was promulgated. The Medicare program was curtailed and there were problems concerned with this operation. The Society endorsed the Columbia University study of nonprofit medical care plans in the State and we shall hear more about this later. The Society also came to grips with the problem of union health clinics. We considered more intensely than ever before what we as physicians should do to meet the growing problem of the aging. These and other factors made the past several months a time of unique significance in the history of our Society.

It is not my intention to go into detail concerning all the problems which were faced by our Society during the term of office that has transpired up to this moment. The committees concerned with these matters will submit detailed reports to the House. I urge every member of the House to study these reports carefully so that when the House convenes in May intelligent action can be taken upon them. I do intend, however, to comment briefly on some of the outstanding activities which took place during the past year. Since many activities are still in the process of development, a supplemental report will be presented to the House in May.

Legislation.—Although a complete report on legislation will be given to the House, I should like to make a few brief comments about this activity—one of the most important in our organization.

Last year the composition of the committee remained unchanged, consisting of 18 members and two advisers representing the various sections of the State. A meeting of the committee was held early in the fall at which time all resolutions referred to it by the House and other sources were carefully reviewed. Later the committee chairman and the executive officer visited the various sections of the State, meeting with the chairmen of county medical societies and other representatives. The program of the committee and the resolutions referred to it were carefully reviewed and the basic policy of medical legislation discussed in general. These special meetings turned out to be most worth while, giving opportunities to representatives throughout the State to express their opinions and to discuss in detail the various items under consideration.

I should like to point out that the consensus of the committee is that our Society should not consistently introduce measures into the Legislature which we know have little or no chance of becoming law. We should concentrate on specific phases of legislation which have some chance of becoming laws of the State. We should spend considerably more time in improving our general relations with the legislators. In this respect, each county society through its legislation and public relations chairmen as well as individual members should contact their legislators, get to know them personally, and discuss with them the various phases of medical legislation in which the medical profession is specifically interested. This point has been very much emphasized not only by members of our Society who have had great experience in this field but particularly by legislators who last fall appeared at the annual conference of county medical society public relations chairmen in a portion of the program dedicated to medical legislation.

The test of medical legislation extends well beyond the individual desires of the individual himself. Too many times in the past we, as a Society, have had presented in the House resolutions with the request that they be presented to the Legislature. These measures were simply for the benefit or gain of a single person or a few individuals, not the Medical Society as a whole. The intent of such measures is readily recognized by legislators and the enactment not only is practically impossible but such attempt may create a bad impression in the mind of the lawmakers towards the Medical Society itself. County medical societies, therefore, should carefully scrutinize resolutions pertaining to legislation before submitting them to the House for action.

I should like you to know too that the Committee to Combat Cults, of which the chairman of the Legislation Committee is also chairman, is active at the moment this report is being prepared in attempting to prevent the licensure of chiropractors.

Dr. James M. Blake, chairman, Dr. Harold B. Smith, executive officer, committee members, and legal counsel have done a fine job and we extend to them our sincere thanks.

Malpractice Insurance and Defense.—The revised master policy introduced September 1, 1958, together with the safeguards afforded by the close cooperation between the Board and our insurance carrier, provides our members insured under the Group Plan with broader protection than they can get anywhere else.

The classification system that was put into effect in September, 1957, has been better accepted than any plan previously introduced for the purpose of equitably allocating premium costs.

As this report is written in February, the past few months have shown a substantial increase in the number of applicants for Group Plan insurance. Among the reasons given for returning to the Group Plan are: rate increases, dissatisfaction with claim service provided by other carriers, inability to renew insurance because an individual carrier has decided to eliminate or reduce its malpractice lines, or because the insured doctor has had a malpractice case.

It is interesting to note that during the past year one national specialty group insured with Lloyd's has dropped its group program and two others have changed to other carriers. These developments indicate that the members who have consistently maintained their Group Plan coverage have been more farsighted than those who dropped out to secure what appeared to be the same thing for half the price.

While conditions seem to be improving in this area of our activities, we must not become overoptimistic. We have been told many times that we must have a larger number participating in the Group Plan or we shall lose our carrier. I should like to reiterate once again that the insurer can desert the field of malpractice but the physician cannot since he must live with the problem. Let us renew our efforts to increase participation in our Group Plan.

The responsibilities that the Society has imposed upon members of the Malpractice Insurance and Defense Board, especially that of deciding when, in the interests of all, the privilege of being insured under the Group Plan must be withdrawn, are onerous. Our thanks to Dr. John F. Kelley and his associates for the manner in which they have carried out their duties.

Economics.—The Council Committee on Economics, with the cooperation of the Health Insurance Council, has made possible the distribution of a pamphlet describing simplified claim forms that are widely used by health and accident insurance companies to simplify and reduce the work of the doctor in submitting claims.

The Economics Committee has briefly touched upon the question of group life insurance and major medical insurance protection for members of our Society. At the present time, no conclusions have been reached.

The committee also, through the Subcommittee on Medical Expense Insurance, has held joint meetings with Blue Shield plan presidents, physician directors, and plan executive directors, to consider problems of mutual interest to Blue Shield plans and our Society.

In addition, the committee has acted as the physicians review committee for Medicare claims which required adjudication. A new contract was negotiated with Dependents' Medical Care in Washington, effective as of August 1, 1958.

Because of restrictions placed on the Medicare program regarding benefits as of October 1, 1958, only one copy of the schedule of allowances was furnished to each county medical society.

This committee has been one of the most active groups in our organization. It has been faced with many difficult problems. All of us should be thankful to Dr. John C. McClintock, chairman, his committee and subcommittee members, Mr. George P. Farrell and his staff for the many hours devoted to this important work.

Study of Medical Care Plans.—In the spring of 1958, Columbia University School of Public Health and Administrative Medicine was requested by the Superintendent of Insurance of the State of New York to conduct a study of nonprofit plans for prepayment of medical care. Directed by Dr. Ray E. Trussell of the University, the study is financed by the nonprofit plans in the State. At the request of Dr. Trussell, I appointed a special advisory committee which has met with Dr. Trussell's group on at least two occasions.

On the recommendation of the committee, the Council endorsed the study and urged county medical societies to cooperate if called upon by the study group to contribute to the investigation. Steps also were taken to acquaint our members with the principles of the study, at Dr. Trussell's request, through the *Newsletter*.

A final report will be made to the Superintendent of Insurance by the University group, and the committee will present reports to the House as the study progresses.

The head of the committee, Dr. John C. McClintock, and his fellow members are watching this project very carefully and are keeping abreast of developments. We are grateful to them.

Public Health and Education.—Permit me to point out that the activities of the Council Committee on Public Health and Education and the problems facing it are worthy of your attention. As a liaison group between our Society and the State Health Department, as well as the New York City Department of Health, the committee continues to be effective. This year it increased its scope to cover areas of medical practice in hospitals involving public health principles. The committee, for example, acted as a catalyst to bring together all agencies affected by the increasing problem of staphylococcus infection outbreaks in hospitals. Through this effort the medical profession and hospitals were given the opportunity to meet the problem voluntarily and thus avoid the compulsory feature of a sanitary code amendment. The early success of this unique venture will be reported to the House by the committee handling this project.

Enough meetings between the committee and medical educators of the State have been held to assure Society members that adequate discussion has taken place concerning the various views on medical education presented to the committee by the Subcommittee on General Practice and last year's resolution of the House. The committee also has learned from the subcommittee that the methods it has used for postgraduate education for the last two decades are no longer adequate and different systems of diffusion of knowledge must be devised. The committee, therefore, has explored various methods for future use and has investigated possible means of financing new ways of keeping the modern doctor abreast of the times.

In recent years, the work of the committee has increased so rapidly that it is believed its work could be facilitated and become more representative of all regions of the State if the committee was enlarged. The committee, therefore, last year sponsored an amendment to the Bylaws authorizing its enlargement to include a member from Westchester County and one from the Rochester area. Final action on this amendment to the Bylaws will take place at this meeting of the House. It is generally felt that this change in the size of the committee will increase the value of the committee's work to the Society by quickening the pace of its work and by more thorough explanations of its recommendations to members of county societies. If new formulas for postgraduate education are adopted, probably involving medical school regions of the State, it would seem expedient to have each region represented on the committee.

Dr. Norman S. Moore, chairman, his fellow members, and subcommittee members are worthy of praise. They have accomplished much and are planning wisely and intelligently for the future. Miss Susan V. Baker, executive assistant, has done a great deal to advance the work of this committee.

Industrial Health.—This field, in which the State Society greatly intensified its efforts last year through establishing a special bureau in conjunction with Workmen's Compensation, received a great deal of attention from the director and the chairman of the committee. An innovation during the year was the presentation of the first award for distinguished service in the field of occupational medicine to the New York University-Bellevue Medical Center Institute of Industrial Medicine.

An active interest also was taken in legislation. Physicians attending hearings concerning the New York State Disability Benefits Law are now paid for time lost from their usual work during their appearance as a witness, through the passage of a law last year. Opposition was expressed to a proposed law that would mandate the establishment of first aid stations in industry employing 50 or more persons, because the enabling act did not describe the educational qualifications of the persons in charge of such first aid stations.

At the suggestion of the committee our Society made several recommendations to the Department of Social Welfare of New York State, which is responsible for establishing standards for union health centers and for their supervision. Among these was a suggestion that union health center authorities establish greater coordination with the local county medical societies, preferably through an advisory committee to which would be sent representatives from the county society.

The committee also recommended to the Council that the A.M.A.'s "Guides for Evaluation of Management and Union Health Centers" be adopted in New York State with the exception that one item dealing with expenditures for press and public relations be deleted. The Council approved this recommendation.

Certainly this committee, through its new Bureau, has made much progress. We want the chairman, Dr. Peter J. Di Natale, his comembers, the director, Dr. Anthony A. Mira, and his staff to know that their efforts are deeply appreciated.

Public Relations.—The public relations program of the State Society was carried on in two general areas—internal professional relations within our organization and external relations with the people of our State. The committee, through its Public and Professional Relations Bureau, conducted 25 activities in both fields.

The development of new projects and the improvement of long-established activities formed the core of the program within our Society. Briefly, these were spelled out in the "PR Target for 1958–59" which recommended eight basic projects and 18 supplemental activities. Included among the basic projects were emergency call plans, mediation committees, courses for medical assistants, and others. It is interesting to note that the courses for medical assistants continued to meet with success and are gaining in popularity with our county societies. Citations of merit were issued to 26 county medical societies for these courses. In all about 45 courses have been held to date. One of the highlights within the Society was the successful conference of county medical society public relations chairmen attended by 55 persons.

In dealing with the public, excellent relations were maintained, particularly through the "Guide for Cooperation for Doctors, Hospitals, and Reporters." For the fifth consecutive time the Subcommittee on Cooperation with Media of Information, headed by Dr. John C. McClintock, met with representatives of the various media of information. Many television programs in which members of our Society participated were telecast locally in the metropolitan area through the work of the Bureau. "Standards of Practice for Doctors and Lawyers" was promoted by the Bureau as mandated by the House of Delegates. Much progress has been made in having local county societies agree upon similar standards with local bar associations.

I am pleased to note that a special panel of speakers, particularly for the purpose of fighting the licensure of chiropractic, was developed. Special training sessions for our members who volunteered for this work were conducted by the Bureau. All of the activities, internal and external, were carried on by the Bureau's field and secretarial staff and publicized in the *Newsletter*, under the supervision of Mr. Frederick W. Miebach, director.

For a sound public relations program efficiently administered we are grateful to Dr. John F. Rogers, committee chairman, Dr. McClintock, subcommittee chairman, all the committee members, as well as to the field and secretarial staffs and the director.

1958 Management Survey.—Realizing that the implementation of the 1958 Management Survey will not only alter the structure of our Society but affect the welfare of its members for many years to come, I selected a committee to study this report, composed of past presidents of our Society, the president-elect, and the chairman of our Board of Trustees. Your president and Dr. W. P. Anderton, secretary, served as ex officio members. This committee went into action immediately after its formation and has done an excellent job.

At the time this report is being written, an executive director, as already mentioned, has been selected and has been at work since last December 1. He was selected only after the committee had painstakingly considered many capable men as candidates and actually screened in person a selected number of these. Three candidates, finally, were submitted to the Council which selected Dr. Wagner. The committee is now working on further implementation of the report.

A detailed analysis of the 1958 management survey report was made by the committee, for submission to the February meeting of the Council. A complete report of its recommendations will be submitted to the House when it meets in May.

On behalf of every member of our State Society I take the liberty of extending to Dr. Renato J. Azzari, chairman of the committee, and his very active colleagues, our deepest appreciation for what has been accomplished in so short a time and on their behalf express the hope that the committee will continue its excellent work.

Workmen's Compensation.—The important development in the field of workmen's compensation during the past year was, of course, the promulgation of the new workmen's compensation medical fee schedule on December 8, 1958, after many months of negotiations between the State Society, other groups concerned, and the Workmen's Compensation Board. As you know, this schedule will not become effective until March 1 of this year. The delay may have caused concern to many of our members, perhaps due to lack of understanding of the processes involved. The delay was brought about by the time needed for the rating board to calculate the actual charges that must be made to employers to meet the new fees and for the Superintendent of Insurance to review and approve them. Every effort was made by the Society's committee to keep the county medical societies aware of the developments and to advise the societies and members at large concerning the reason for the delay in actually putting the schedule into operation.

The schedule as finally promulgated did not meet all of the demands that the State Society made upon the Workmen's Compensation Board but in general is satisfactory. We must all realize that there are many factors that must be considered by the chairman of the Workmen's Compensation Board in promulgating a new schedule, outside of the ideas propounded by our Society. I want to assure you that no more complete and masterful presentation of the arguments in behalf of the State Society's suggestions could have been made than the presentation made by the chairman of the Council Committee on Workmen's Compensation, Dr. Gerald D. Dorman. Those who were present at the hearings at which he argued our case were most impressed and came away satisfied that everything possible had been done to advance the cause of our Society members.

In addition to working on the new schedule, the committee through its Bureau of Workmen's Compensation and Industrial Health handled many other problems. Among these were negotiations with the chairman of the Workmen's Compensation Board to prevent the promulgation of a fee schedule for podiatrists which would permit them to exceed the scope of podiatry and at the same time increase the fees for their services to the same level that physicians are entitled to for equivalent services. No revision of the podiatrists fee schedule was promulgated in 1958, nor is one anticipated to be promulgated this year.

Needless to say, the work of the committee, particularly its chairman, and the Bureau's director, Dr. Anthony A. Mira, has advanced the interests of our members to a considerable degree and is deserving of an exceptional vote of thanks from all of us.

Union Health Clinics.—One of the most pressing problems facing the medical profession in this country today is the rapidly growing tendency for labor unions to establish their own health clinics. As a preliminary step towards establishing policy in regard to this matter the American Medical Association has set up a special group and our own Council authorized the creation of a special Ad Hoc Committee on Labor Union and Industrial Health Clinics which I appointed some time ago. Much work already has been done by the committee, and it is planning to sit down with labor and management as often as is necessary to discuss the problem of health clinics. Already at least one meeting has been held with management.

I should like to emphasize that since the problem concerning these centers is growing not only in this State but nation-wide, we in the medical profession must take a realistic view of the problem. No longer can we close our eyes to the situation. Unless we take definite and concrete steps to set up a policy by which we can cooperate with labor unions, the labor unions will work by themselves and establish centers no matter what we have to say. Bear in mind that such centers are already in operation, particularly in Brooklyn, and others are contemplated for other parts of the State.

Basic principles by which we can evaluate union health centers and find a way to cooperate effectively with labor unions in setting them up and keeping them within the bounds of medical ethics will, we hope, be forthcoming in the final report of our ad hoc committee.

Dr. Joseph A. Lane, chairman, and his committee have devoted many hours of hard work to this problem. We are very grateful to them for what they have already done and for what they will accomplish in the future.

American Medical Education Foundation.—During the past year our State Society increased its contributions to the American Medical Education Foundation over those of the previous year. In 1957 members of the State Society gave $42,511 to the Foundation while in 1958 the total was $49,636.39. While this increase, slight though it be, is appreciated by the Foundation we, as physicians in the great State of New York, should do much more towards supporting the Foundation. As we all know, the work of this organization is to help medical schools through private means rather than through government subsidies.

If we take a look at what other state medical societies are doing in furthering the purpose of the Foundation, we will find that our contributions are very small in comparison. The State of Illinois, for example, through its medical society, contributed $200,000 in 1958 while the State of California gave over $170,000. When we consider the size of our Society in comparison with the sizes of the societies just mentioned we can readily see that there is much to be done in this State towards improving our contributions to the Foundation.

I hope that you as delegates to the State Medical Society will interest yourselves in this great project and help our medical schools prosper through voluntary aid rather than through governmental subsidization.

I want to thank Dr. Willian Pelow, chairman of this committee, and his members for their efforts in trying to encourage our members to make larger contributions.

Blood Banks.—Since the last meeting of the House the Blood Banks Commission has been very active. It has met on several occasions and has been in touch with the president and certain members of the board of directors of the Blood Banks Association of New York State as well as its executive director.

One of the services the Commission performed for our members was to answer the often-asked question, "What are the functions of the Blood Banks Association?" At the October, 1958, meeting of the Council the chairman of the Commission outlined in detail the functions of the association and this outline was published in the *Newsletter* for the benefit of the members. It is my understanding that a detailed explanation will be reported in full to this House. Concerning the Blood Banks Association, I should like to report that it is carrying out its educational program with the assistance of the Public and Professional Relations Bureau. At the present time it is working with a New York City group in an attempt to establish a community blood bank at no cost to the association. A scientific blood bank program is being prepared for the Association during the time of the 1959 annual convention of our Society.

From all reports the North East District Clearing House is "a going concern." We are told that it appears quite certain that the organization will become self-supporting in the not too distant future.

It is expected that there will be an announcement shortly of the cooperative efforts of the Greater New York Hospital Association and the Clearing House in setting up a basic organization plan for the City of New York which will include coordinator and affiliated banks in each borough of the City. Such a program should prove of value to other cities and other districts as the clearing house program develops.

We are indebted to Dr. Henry I. Fineberg, chairman, and the members of his committee for their work during the past year and their plans for the future. Miss Evelyn P. Clarke, executive director of the association, is to be commended for her work.

New York State Journal of Medicine.—As a means of improving its format and of exciting new interest, the NEW YORK STATE JOURNAL OF MEDICINE added a new feature during the past year, "The Gallery," to acquaint readers with the excellent art work being done by New York State physicians.

In spite of the many operational difficulties connected with the publication of a journal the size of ours, it appeared on time for all 24 issues during 1958 as well as for one supplemental issue.

During the year Dr. William Hammond was appointed to the staff as assistant editor and has been doing a fine job. Two changes occurred among the editorial assistants; one has been replaced. The permanent editorial and advertising staffs continued to do their excellent, accurate work in spite of the fact that the amount of material has been the largest ever received by the JOURNAL.

Dr. Alfred P. Ingegno was appointed chairman of the Publication Committee, replacing Dr. John J. Masterson who had served with distinction in that capacity since 1952. Dr. Masterson was responsible for many of the improvements that have taken place in the JOURNAL since he became chairman of the committee. The members of our Society are fortunate that he continues on the committee as adviser.

I should like to point out that in 1958 there was a marked increase over previous years in the number of articles received for possible publication. Since the cost of operations increased, it was necessary to make an increase in the advertising rates, which was approved by the Council.

To Dr. Ingegno, Dr. Laurance D. Redway, editor, and his associates on the editorial board; Miss Alvina Rich Lewis, assistant to the editor, and the members of her editorial staff must go the thanks of all our members for continuing to publish an outstanding medical journal.

Nursing Education.—This committee devoted considerable time to exploring methods of helping to reduce the nursing shortage. After consultation with the New York State Nurses Association, the State Department of Education, and the Woman's Auxiliary to our Society, the committee recommended that all doctors, particularly those engaged as school physicians, cooperate with nurses in their efforts to acquaint young ladies with nursing as a career.

The committee likewise suggested that school physicians make their school offices a center of nursing information. Also that doctors accept every invitation to speak on nursing during "Career Day" in the schools.

The committee also has been in contact with the Nursing Resources Committee of the State Department of Education with a view to helping that committee focus greater attention on the need for more bedside nurses.

It is also interesting to note that the committee on careers of the National League for Nursing reported that there has been a 5 per cent increase in admissions to schools of professional nursing in 1958 over 1957. The committee has extended its thanks to all who are responsible for this helpful sign.

As physicians we know the need for more nurses. Dr. John M. Galbraith and his committee deserve credit for trying to solve a most difficult problem.

Planning Committee.—The Planning Committee had only one matter before it during the past year. This involved the election of delegates. A subcommittee to which this question had been submitted has reported that they are in complete agreement that no change should be made in the present status of election of delegates. This action was scheduled to be reported to the Council at its February meeting.

Your president should like to call to the attention of the House that in the 1958 Management Survey Report there are suggestions concerning the Planning Committee's scope of activities. I suggest that when this matter is submitted to the House at its meeting in May that you give the suggestions contained therein your very careful consideration.

Our thanks go to Dr. Frederick A. Wurzbach, Jr., chairman of this committee, and its members.

Rural Medical Service.—The Committee on Rural Medical Service has been very active during the past year. A survey by the committee shows that while New York State has been a leader in many medical and public health programs, it has not established a modern medical health program for the rural areas. The quality of medicine which is practiced in these areas decreases the farther the area is located from medical centers or larger cities. Many areas in these parts of the State have not been properly staffed with adequate medical personnel and facilities. No attempt has been made to extend educational medical programs to these individuals.

The committee also has found that the inhabitants of rural areas are extremely interested in better medical care and have spent considerably more money on medical care and insurance in the past years than they did in previous times. While medical care has improved in rural areas and many rural areas have become suburbanized in recent years, the committee feels that there is room for improvement.

To improve the present status of rural medical service, the committee believes there are many diversified, yet coordinated, educational programs, together with plans for better medical staffing, that can be instituted. Our State Society, in cooperation with medical colleges in this State, should take an active part in improving and carrying out this service, which should be extended to every rural county area.

As a definite means of implementing its basic ideas for improving rural medical care, the committee submitted a seven-point program to the Council in October of 1958, which was approved. Since that time, action has been taken to put this program into effect. A pilot study, for example, involving the Counties of Onondaga, Oswego, and Cortland, has been decided upon. A detailed report of the seven-point program and the steps which have been taken will be submitted to this House by the committee.

For taking an active interest in developing a concrete plan of action to meet the challenge of how to improve rural medical health, we are grateful to Dr. Edward C. Hughes, chairman, and the members of his committee.

War Memorial Fund.—I wonder how many of us are conscious of the fact that one of the Society's most humane activities, the War Memorial Fund, is now in its eleventh year of existence. During the period that has passed, the fund has granted educational benefits to children of members who served in World War II and lost their lives as a direct result of enemy action or other accident or illness incurred in the service. As you know, children of members who died during or as a result of the Korean War are now also entitled to benefits. These children, however, are not yet old enough to qualify for such benefits. A full report of the activities of the fund will be presented to the House by the chairman of the War Memorial Committee, Dr. Renato J. Azzari.

To Dr. Azzari and his committee we are deeply grateful for carrying on a fine project in a business-like manner.

Woman's Auxiliary.—Those of us who watch the fine work the members of the Woman's Auxiliary are doing know that they have continued their efforts to supplement the State Society's public relations program and to bring medicine's stand on health issues to members of women's groups. The Woman's Auxiliary also has endeavored to create a closer liaison among its own membership, by means of district meetings and its publication, the *Distaff*.

Among the major projects which the Auxiliary has stressed were the nurse recruitment program, child health education through the annual health poster contest, and a new project, home and child safety.

Listed among the Auxiliary's more successful programs have been its campaign against the Forand Bill which resulted in a copy of its resolution on this important national issue being printed in the *Congressional Record*; the capturing of first prize by the Cattaraugus County Auxiliary for its work with retarded children; and a second prize by the Jefferson County Auxiliary for its work in nurse recruitment.

It is good news to learn from the hard-working president of the Auxiliary, Mrs. Maurice G. Sheldon of Olean, that the Montgomery County Auxiliary has reactivated itself and that doctors wives in Putnam County are in the process of organizing an auxiliary. We look forward to the time when every county in the State has an auxiliary if such a group is practical in a particular section.

Our thanks go to Mrs. Sheldon and her official family for the fine work that they have done during the past year and for the work we know they will do during the coming year.

Scientific and Educational Trust.—At recent meetings of the Council there has been much discussion about the adequacy of the system of postgraduate education which our Society has been following for many years. In order to meet the demands of our times the suggestion has been made that a new system of bringing postgraduate education to our physician-members should be studied and, if feasible, finally put into operation. In connection with this suggestion another suggestion was made. That suggestion was that the State Society join with other interested parties, such as foundations and pharmaceutical houses, and set up a scientific and educational trust similar to the one now in operation in Pennsylvania. The suggestion was made by the chairman of the Council Committee on Public Health and Education, which is responsible for our postgraduate program.

With the authorization of the Council I appointed a special committee to study such a trust. In a preliminary report the committee pointed out that the trust would be an independent organization, under our sponsorship. The activities of such a group would result in the up-grading of postgraduate medical education, improvement in the practice of rural medicine, the furtherance of research, and the fulfillment of other hopes and dreams of a similar nature. The medical profession in this State would be able, through the trust, to present positive programs for better public health and medicine.

In a final report to the Council the committee recommended that an educational and scientific trust be approved in principle. It also recommended that the entire matter be referred to the Council Committee on Public Health and Education so that it might work out the details and technicalities of starting and maintaining such a program. The blueprint prepared by this committee would be submitted to our counsel for evaluation and legal approval. The Council approved these recommendations.

For doing his usual efficient and thorough job, we thank Dr. Henry I. Fineberg, chairman, and the members of his committee.

Staphylococcal Infection.—Another matter of deep concern to the medical profession was the outbreak of staphylococcal infections in hospitals. To meet this crisis, at the suggestion of the Public Health Council in March of 1958 a meeting of interested parties was held and the result was the formation of the Joint Committee to Combat Staphylococcal Infections, in which the State Society participated. The other groups involved were the Hospital Association, of New York State, the Greater New York Hospital Association, the State Social Welfare Department, and the State Health Department.

An advisory committee drawn from the fields of epidemiology, nursing, hospital administration, laboratory directors, and clinical specialists was set up. The end result has been the publication of a new 48-page manual entitled "Control of Staphylococcal Infections in Hospitals," which was published by the State Health Department and was distributed on December 1, 1958. To date 6,500 copies have been published. Your president is pleased to report that this extremely worth-while project which can do a great deal to meet a serious problem has been accomplished to date at a cost of only about $750 to the State Society.

At this time it is only proper that the State Society through your president congratulate and thank all those who participated in this progressive activity, particularly our own members on the Joint Committee, Dr. James Greenough, who served as chairman; and Dr. Norman S. Moore.

Conclusion.—Before bringing this report to a conclusion, I should like to remind the House that only part of my term of office has been completed as of this moment of writing. In the months ahead before the actual meeting of the House I shall do my best to fulfill the duties of my office and to bring to a successful conclusion the many projects which have been undertaken during my regime. Again, allow me to thank all those who have been so helpful to me during the year of my service as president of our Society.

May I express my earnest hope that the 1959 House of Delegates will face the problems that come before them with frankness, honesty, and intelligent consideration so that they may be brought to a successful solution for the betterment not only of the Medical Society of the State of New York but for the advancement of the health and welfare of the people of the Empire State.

Respectfully submitted,

Leo E. Gibson

LEO E. GIBSON, M.D., *President*

Report of the Secretary

To the House of Delegates, Gentlemen:

Your secretary takes pleasure in submitting his fifteenth and last report.

General.—During the past year two marked changes have occurred in our Society. We moved the headquarters office from 386 Fourth Avenue to 750 Third Avenue, New York City, in July; and Dr. Herbert T. Wagner became executive director on December 1, 1958.

The Society now occupies the 18th floor in a new building, air-conditioned and tastefully furnished. We have acquired considerable new equipment, such as typewriters, furniture, and an offset duplicator. There is adequate room for Council meetings and most of your committees meet there.

Dr. Wagner brought with him a reputation gained from experience as an executive in hospitals, public health, and the National Foundation for Infantile Paralysis. He immediately instituted improvements in office procedures, and his interest and leadership have been demonstrated in committee and Council meetings.

On the whole, the past year has been successful with the Society ever striving to serve and bring its message to the public and the profession.

Council and Board of Trustees.—Immediately after the 1958 House of Delegates adjourned the Council held its organization meeting, which was followed by a meeting of the Board of Trustees. These bodies have met monthly, except during July and August. The Council has carried out directions from the House of Delegates and has wisely guided the policies of your Society. The Board of Trustees has supervised all expenditures, has carefully guarded our protective surplus, and has administered the War Memorial Fund. President Gibson, Chairman Mott of the Board of Trustees, and their fellows deserve your profound appreciation for their wise and timely accomplishments.

American Medical Association.—Our delegates represented the Society well as reported in Council minutes. Dr. Carlton E. Wertz has again been a member of the Council on Medical Services and has been chairman of its Committee on Insurance and Prepayment Medical Care Plans. Dr. Gerald D. Dorman has been on Dr. Wertz's committee and has been chairman of the Committee on Radio and Television in the Communications Division, along with Drs. Renato J. Azzari and Henry I. Fineberg. Dr. Thurman B. Givan has been a member of the Committee to Study Aims and Objects (Heller Report).

On December 31, 1958, the Medical Society of the State of New York had 16,797 active members of the American Medical Association, entitling us to 17 seats in the house of delegates. In 1958 our members contributed $19,868 to the American Medical Education Foundation, not counting donations from the Woman's Auxilliary and those of some physicians to their individual medical colleges.

Government Contacts.—(1) FEDERAL.—Medicare has functioned well under Dr. John A. McClintock and the Economics Committee, which monthly reviews controversial claims. Veterans Medical Care Plan of New York, Inc., continued to cooperate diligently with the United States Veterans Administration. The authorizing physicians worked in VA facilities at Buffalo, Syracuse, Albany, and New York City under the direction of Drs. Herbert H. Bauckus and George A. Burgin, president and chairman, respectively, of the Plan and of the Liaison Committee with the U.S. Veterans Administration. Also our Society has cooperated with Col. Boughton, director of Selective Service in New York State, by nominating to him several physicians who unselfishedly function on draft boards. Dr. George Himler's advisory committee to the Bureau of Disability Determinations has also been active.

(2) NEW YORK STATE.—Dr. Norman S. Moore, chairman of the Public Health and Education Committee, has continued to be the chief contact between the Medical Society of the State of New York and the State government. He has been a member of the Advisory Council of the New York State Department of Health, and of the Temporary Health Insurance Commission.

The Council has cooperated with the Board of Regents of the University of the State of New York by nominating members for the New York State Board of Medical Examiners and for the Committee on Medical Grievances. The Regents have also accepted the Council's nomination of Dr. John M. Galbraith for their Nurse Advisory Council.

Allied Professions.—Our Joint Committee with the Dental Society of New York State, like our Joint Committee with the New York State Pharmaceutical Association, has not met during the past year because no matters were referred to them. However, our Society has been active in helping establish the Interprofessional Association of New York State in cooperation with the Dental Society and the New York State Veterinary Medical Association, with the purpose of cooperation among the healing arts for the good of the public and professions.

Representation.—At the annual meeting of the Medical Society of the State of Pennsylvania Dr. Thurman B. Givan and Dr. James Greenough represented our Society. At the Vermont Society meeting Dr. Renato J. Azzari and Dr. Henry I. Fineberg were present, whereas Drs. Walter W. Mott and W. P. Anderton visited Connecticut. Drs. John A. Rogers and W. P. Anderton have been selected to visit New Jersey.

During the year President-elect Henry I. Fineberg has represented the Council at meetings of the Coordinating Council (Executive Committee) of the First District Branch.

County Societies.—Relations between the State Society and its component county societies have been cordial and smooth during the past year. Officers of the Society have attended several county society meetings. Dues have been promptly forwarded, requested remissions have been granted, and many county society meetings have been enriched by speakers provided by the Public Health and Education Committee.

At the behest of the Council, as requested by the Medical Society of the County of Monroe, your secretary advocates that the House of Delegates elect Dr. William Perrin of Rochester a life member posthumously as of May 19, 1948, until April 7, 1958. Dr. Perrin was eligible for life membership but failed to apply formally.

District Branches.—Attendance at annual district branch meetings in 1958 was as follows:

District	*Total Active Members at Meeting*	*Per Cent at Meeting (Approximate)*
I	Meeting limited to Delegates from county societies to House of Delegates.	
II	36	1
III	63	6
IV	81	11
V	4	0.3
VI	42	5
VII	60	4
VIII	88	1
IX	28	1
		Average 3.66

These figures show how poorly most district branch meetings are attended. The Fifth District

Branch is scheduled for a special meeting in Oswego on February 26.

Secretaries Conference.—The annual conference of county medical society secretaries was held October 23, 1958, at the Syracuse Corinthian Club, through the courtesy of President and Mrs. Leo E. Gibson. Forty-four persons attended, including four executives secretaries and members of the Council. The program was well received, and there were lively discussions.

Reorganization.—Many of the suggestions and recommendations in the 1958 Survey have been instituted by the Council after study by a committee under the chairmanship of Dr. Renato J. Azzari, Trustee. They are expected to improve the conduct of Society affairs and to enhance the benefits of membership.

Publications.—The NEW YORK STATE JOURNAL OF MEDICINE during the past year has continued to be a credit to our Society. Its admired editorials and such features as clinicopathologic conferences, new advances in medicine and surgery, nutrition excerpts, clinical anesthesia conferences, briefs on accidental chemical poisonings in New York City, and cancer alerts, as well as its well-rounded scientific articles have brought much praise to the editor, Dr. Laurance D. Redway, and his assistant editor, Dr. William Hammond. The associate editorial board, Miss Alvina Rich Lewis, assistant to the editor, and her efficient staff are also deserving of your applause; whereas the Publication Committee, Mr. Thomas E. Alexander, the business manager, and the advertising representatives have contributed splendidly towards the financial success of the JOURNAL. And Dr. Alfred P. Ingegno, chairman of your Publication Committee, has shown his usual wise guidance and sound judgment.

The *Newsletter* has also appeared regularly with prompt items of interest. Its special "Medicare" issue was of tremendous assistance to many members in their care of dependents of men in the armed forces, Public Health Service, and Coast Guard.

The 1959 *Medical Directory of New York State*, as fine as ever, has progressed apace and is expected to appear in May.

Physicians Placement Bureau.—During the year 1958, the Placement Bureau received requests from 26 communities in the State for help in finding a physician. Three of these requests were for specialists; 22 were for general practitioners; one was for a college physician.

One hundred ninety-five physicians sought help in finding a location for practice in the State; many of these were referred by the American Medical Association. About 41 per cent were interested in general practice.

On December 31, 1954, the Placement Bureau listed 37 opportunities. On December 31, 1958, the list numbered 74—an increase of 100 per cent in five years.

It is unfortunate that we have no accurate means of determining the number of physicians who have been helped by our service. This feature should be developed.

We are extremely grateful to Miss Dorris Webb of the Placement Service of the Council on Medical Service of the American Medical Association for her continued interest and cooperation.

Dr. John H. Iselin, Jr., has conducted this bureau with his usual careful and painstaking attention, with Mrs. Beatrice Moosa. Many physicians and New York State communities have become aware of this generous social effort on the part of our Society.

Membership.—

1957—Membership	24,182	
1958—Members reinstated	344	
1958—New members	886	
		25,412
1958—Deaths	365	
1958—Resignations	250	
1958—License suspensions	3	
1958—Membership suspensions	4	
		622
		24,790
1958—Delinquent members		420
1958—TOTAL MEMBERSHIP		24,370

Honor counties (all of whose members 1958 dues were received by the State Society in 1958) include Allegany, Broome, Cattaraugus, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Essex, Fulton, Genesee, Greene, Herkimer, Jefferson, Livingston, Madison, Niagara, Ontario, Orleans, Putnam, Schenectady, Seneca, Steuben, Tompkins, Washington, Wayne, Wyoming, and Yates.

Comparative totals of membership since 1947 follows:

1947	21,303	1953	23,145
1948	21,171	1954	23,545
1949	21,489	1955	23,838
1950	21,861	1956	24,031
1951	22,124	1957	24,182
1952	22,637	1958	24,370

Remissions of 1958 dues were voted for illness, temporary service in the armed forces or United States Public Health Service, and financial hardship as follows:

County	*Illness*	*Armed Forces and USPHS*	*Financial Hardship*	*Total*
Albany	4	1	. . .	5
Allegany	1	. . .	. . .	1
Bronx	2	1	. . .	3
Broome	3	2	. . .	5
Cattaraugus	1	. . .	. . .	1
Cayuga	1	. . .	. . .	1
Chenango	. . .	. . .	1	1
Columbia	. . .	1	. . .	1
Cortland	. . .	1	. . .	1
Dutchess	1	. . .	. . .	1
Erie	. . .	6 (1 rescinded)	. . .	6
Franklin	1	. . .	. . .	1
Fulton	1	. . .	. . .	1
Herkimer	. . .	2	. . .	2
Kings	32	14	. . .	46
Monroe	2	2	. . .	4
Montgomery	. . .	. . .	1	1
Nassau	5	5	. . .	10
New York	30	11	. . .	41
Niagara	2	. . .	1	3
Oneida	. . .	. . .	1	1
Onondaga	3	1	. . .	4
Orange	. . .	2	. . .	2
Queens	6	7	1	14
Rensselaer	. . .	1	. . .	1
Richmond	1	. . .	. . .	1
Schenectady	3	. . .	1	4
Suffolk	1	1	1	3
Ulster	3	. . .	. . .	3
Washington	2	. . .	. . .	2
Wayne	1	. . .	. . .	1
Westchester	5	2	. . .	7
Yates	1	. . .	. . .	1
Total	112	60	7	179
Rescinded	. . .	−1	. . .	−1
TOTAL	112	59	7	178

Comments.—Our gratitude to the officers, councillors, and trustees is rivalled only by similar sentiments towards members of your staff. President Leo E. Gibson has proved himself a thoughtful, patient leader who has upheld the traditions of his predecessors. Dr. Walter W. Mott, Chairman of the Board of Trustees, also has been ever alert toward the best interests of the Society. And their committees, board, and commission have contributed most helpfully during the year. Your treasurer, Dr. Maurice J. Dattelbaum, as chairman of the Budget Committee and in many other ways has justified your wisdom in his election. And William F. Martin, Esq., Legal Counsel, as shown in his annual report has displayed wisdom, foresight, and intrinsic legal ability in his advice, guidance, and negotiations. Similar accomplishments have been demonstrated by his partner, Robert J. Bell, Esq., and his assistant, J. Richard Burns, Esq.

Each and every member of your staff at both headquarters and Albany offices deserves credit for conscientious work. Dr. Herbert T. Wagner, executive director since December 1, 1958, has already demonstrated his ability and the justification of the reputation which he brought with him. The indefatigable Mr. Thomas E. Alexander, accountant, business manager, and office manager, has not known the meaning of "overtime." The bureau directors and their assistants have been assiduous wheelhorses, and my own immediate staff has always been diligent and resourceful. To Dr. John H. Iselin, Jr., and Miss Doris K. Doughterty I accord profound gratitude, and Miss Roslyn Feinberg, Miss Dorothy Hart, Mrs. Beatrice Moosa, and Miss Mollie Pesikoff have always been ready efficiently to work beyond the call of duty. Miss Janet Loy and Miss Mary McMahon in *Directory* and membership departments, respectively, have won admiration for their accomplishments.

This is the last of my fifteen annual reports to the House of Delegates of the Medical Society of the State of New York. In December, 1944, I became your secretary, and in 1946 at the suggestion of the Board of Trustees I ceased my private practice of medicine, also to become general manager until December of 1958. Thanks to the Society I have enjoyed a busy life, enriched by friendships of such men as you have elected to be our presidents. From my heart, allow me to say, "Thank you."

Respectfully submitted,
W. P. ANDERTON, M.D., *Secretary*

Report of the Board of Trustees

To the House of Delegates, Gentlemen:

Pursuant to the provisions of Chapter V, Section 3, of the Bylaws, your Board of Trustees herewith submits its annual report. In order to meet publication deadlines, the report can deal only with matters up to February 1, 1959.

The report of the auditors, setting forth a detailed account of the financial affairs of the Society, follows. If necessary, a supplementary report will be made before the Annual Meeting.

The Board of Trustees held its organization session following the adjournment of the House of Delgates in May, 1958. The full membership was present; also our newly elected president, Dr. Leo E. Gibson. Dr. Walter W. Mott, as senior trustee, was elected chairman for the ensuing year. He announced the appointment of the following gentlemen to serve on the two committees of the Board:

INVESTMENT COMMITTEE

J. Stanley Kenney, M.D., *Chairman*
Frederic W. Holcomb, M.D.
John J. Masterson, M.D.

WAR MEMORIAL COMMITTEE

Renato J. Azzari, M.D., *Chairman*
Herbert H. Bauckus, M.D.
James Greenough, M.D.
Maurice J. Dattelbaum, Treasurer, *ex officio*

Because of the rapidly changing market in securities, it has required unusual vigilance of the Board through its investment committee, the treasurer, and our financial advisors, the Chase Manhattan Bank, to keep the assets of our Society in prudent balance. Some changes were made from the original investment of certain funds, which had been restricted to U.S. Government bonds, to funds legal for investment by savings banks in New York State. At present, the anticipated income from funds of the Society is:

Regular Account	3.46 per cent
Employes Beneficiary	3.25 per cent
Pension	3.84 per cent
War Memorial	2.70 per cent

Care has been exercised to avoid idle funds by the purchase of U.S. Treasury short-term issues. A policy of quarterly conferences with our financial advisers in the Chase Manhattan Bank has been adopted, and the Investment Committee has maintained close liaison in the interim. Dr. Dattelbaum, our treasurer, has been very helpful, as always, in discussion of our financial problems, and his long and faithful service deserves our sincere thanks.

William F. Martin, Esv., legal counsel to the State Society, has regularly attended our meetings, and thus has been immediately available for advice on any legal matters that may have arisen.

Under the chairmanship of Dr. Azzari, the War Memorial Committee has continued to function smoothly. It has proved to be one of the most rewarding activities of our Society. A separate report of this committee will give further details.

It is now becoming necessary to use capital in paying the beneficiaries, but the actuarial projection which will be exhibited in the committee's report indicates that sufficient funds will be avilable to last until 1974, when the project will end.

At the suggestion of the Council, the Board decided to write off the amount of $103,000 already advanced to the Blood Banks Association, which had been carried as a loan, and to regard this as a humanitarian gift of the Society toward the betterment of public health. The North East District Clearing House has been supported by the budgeted amount of $16,000 and we have been assured that this project will soon be self-supporting.

A Medicare agreement was renegotiated in July and signed by the chairman. Mr. George P. Farrell's work in administering this important activity is gratefully acknowledged.

Two major problems confronted the Council and Trustees during the year. The management survey conducted by Rogers, Slade & Hill was presented to the House of Delegates too late for well-considered action to be taken at the 1958 meeting. As adoption of all the recommendations made in the survey will require extensive changes in the Constitution and Bylaws, these proposals were all introduced at the meeting, to conform with the rule that all proposed alterations in the Constitution and Bylaws must lay over for one year. These proposals will be considered at the Annual Meeting in May. If they are adopted in toto, this will be the last report of your Trustees as presently constituted.

One recommendation of the survey, which did not require changing the Bylaws, was the selection and appointment of an executive director for the headquarters of the Society. A committee was appointed by the president of the Society, which was headed by Dr. Azzari and of which the chairman of the Board of Trustees was a member, to interview prospective applicants and report its choice to the Council.

On the committee's recommendations, the Council, acting for the House of Delegates in the interim between sessions, selected Herbert T. Wagner, M.D., of Bronxville, New York, and authorized the Board of Trustees to employ him as executive director. He took office on December 1, 1958.

As of this date, the committee is studying the entire survey report and will report to the Council its recommendations before the Annual Meeting.

The second major project was the moving of the headquarters from a cramped and inadequate location to the 18th floor of 750 Third Avenue. The Moving and Furnishings Committee, headed by Dr. Dorman, did a superb job, and, with Dr. Anderton and Mr. Alexander, accomplished the very intricate undertaking of moving with a minimum of disturbance to routine. The modern airconditioned comfort of the new headquarters has already resulted in increased efficiency of the staff and affords a dignified home for our great Society.

Most committee meetings are now held at headquarters, thus achieving both greater convenience in the availability of records and considerable economy. By a judicious reapportionment of funds, the moving and furnishing was accomplished without using any of the general funds of the treasury. Additional space, at a reduced rate, has been rented in the basement for the storage of inactive records.

The Physicians' Home has leased space in the headquarters for its executive director.

The past year has been a happy one for your chairman, as he has been afforded an opportunity to continue to work with the loyal and dedicated men you have selected as your officers, councillors, and trustees. To single out certain names would be invidious. All have contributed to the welfare and prosperity of the Society. Dr. Anderton, who retires as secretary this year, must of course, be cited for special mention, for his unfailing courtesy, helpfulness, and extensive knowledge of the proper functioning of the Society. Miss Doris K. Dougherty and Mrs. Augusta Grimm have been loyal and devoted workers.

Respectfully submitted,

Walter W. Mott, M.D., *Chairman*
Renato J. Azzari, M.D.
Herbert H. Bauckus, M.D.
James Greenough, M.D.
Frederic W. Holcomb, M.D.
J. Stanley Kenney, M.D.
John J. Masterson, M.D.

Auditor's Certificate

To the Board of Trustees, Medical Society of the State of New York:

We have examined the balance sheet of the Medical Society of the State of New York as of December 31, 1958, and the related statements of operating income and expenses and general and other funds for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

We did not confirm the unpaid members' dues by correspondence with the members; nor did we confirm the amounts due from the U.S. Government under the "Medicare" program, but with respect to the latter we satisfied ourselves by other auditing procedures.

In our opinion, the accompanying balance sheet and the statements of operating income and expenses and general and other funds present fairly the financial position of the Medical Society of the State of New York as of December 31, 1958, and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding period.

PATTERSON AND RIDGWAY
Certified Public Accountants

February 24, 1959

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Statement of Operating Income and Expenses

For the Year Ended December 31, 1958

OPERATING INCOME		
Members dues after reserve		$574,949.71
Less: Allocation to JOURNAL circulation income, as authorized by the Board of Trustees		92,062.00
		482,887.71
Net operating income from JOURNAL		70,724.52
Sales of *Medical Directory*		6,025.66
Interest on savings accounts and treasury bills		3,337.03
Moving expense reimbursed by Building and Repair and Replacement Funds, per contra		63,312.53
Sundries		32.50
		626,319.95
OPERATING EXPENSES		
Administrative	$165,804.51	
Public and Professional Relations Bureau	76,060.05	
Legislation Bureau—Albany	31,837.57	
Workmen's Compensation Bureau	32,037.42	
Bureau of Medical Care Insurance	14,461.59	
Scientific Activities	18,454.90	
Woman's Auxiliary	8,903.46	
District branches	3,705.26	
Planning Committee for Medical Policies	118.92	
Malpractice Insurance and Defense Board	2,081.34	
Malpractice Defense Audit	2,000.00	
Legal counsel—retainer and expenses	35,000.00	
Traveling expenses	42,029.80	
Moving expense—per contra	63,312.53	
Management survey	10,784.90	
Veterans Medical Service Plan of New York	2,126.38	
American Medical Association Hospitality room expenses	2,016.66	
World Medical Association	1,000.00	
Pensions	8,932.40	
Sundries	2,266.51	
Expenses of Blood Banks Association of the State of New York, Inc.	10,577.14	
Annual Meeting 1958	19,869.78	
Medical Directory—1959 (one-half of estimated loss)	63,360.00	
		616,741.12
TRANSFERRED TO GENERAL FUND		$ 9,578.83

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Balance Sheet—December 31, 1958

ASSETS

GENERAL FUND			
Current Assets			
Cash in banks and on hand	$113,518.33		
Less: Due American Medical Association	7,322.50	$106,195.83	
Accounts and notes receivable (after reserves)		18,155.60	
Dues receivable—net, estimated		6,500.00	
Due from other funds, per contra		55,887.53	
Due from U.S. Government "Medicare"		19,410.74	
Inventories		16,103.74	
Advances to employes		145.63	
Total Current Assets			$ 222,399.07
Prepaid Expenses			
Sundry expenses and deposits			22,261.69
Furniture and Fixtures			
At nominal value			2.00
Advances (After Reserve)			
Veterans Medical Service Plan of New York		13,885.53	
Blood Banks Association of New York State, Inc.		3,200.00	
Total Advances			17,085.53
TOTAL GENERAL FUND			261,748.29
INVESTMENT FUND			
Cash in banks		76,336.90	
Investments at cost (market or redemption value $829,906.02)		497,121.55	
Accrued interest receivable		2,258.26	
		575,716.71	
Less: Due to Other Funds, per contra		5,961.79	
TOTAL INVESTMENT FUND			569,754.92
SPECIAL FUNDS UNDER CONTROL OF THE BOARD OF TRUSTEES			
Building Fund			
Investments—U.S. Treasury and other obligations, at cost (market value $99,025.62)	108,381.25		
Accrued interest receivable	712.34		
Due from Investment Fund, per contra	351.13	109,444.72	
Employes Beneficiary Fund			
Investments—U.S. and other obligations, at cost (market value $95,492.50)	106,009.97		
Accrued interest receivable	674.48		
Due from Investment Fund, per contra	5,360.80	112,045.25	
Repair and Replacement Fund			
Investments, at cost (market value $60,052.00)	56,407.01		
Accrued interest receivable	268.85		
Due from Investment Fund, per contra	249.86	56,925.72	
TOTAL SPECIAL FUNDS			278,415.69
ENDOWMENT FUNDS			
Cash in banks		14,763.17	
TOTAL ENDOWMENT FUNDS			14,763.17
PENSION FUND			
Cash in bank		2,589.95	
Investments, at cost (market value $236,477.50)		237,257.10	
Interest receivable		2,581.64	
Due from General Fund, per contra		225.00	
TOTAL PENSION FUND			242,653.69
WAR MEMORIAL FUND			
Cash in bank		5,668.67	
Investments—U.S. Treasury Bonds (market value $181,214.24)		195,332.70	
Accounts and interest receivable		1,143.48	
		202,144.85	
Less: Due to General Fund, per contra		300.00	
TOTAL WAR MEMORIAL FUND			201,844.85
TOTAL ASSETS			$1,569,180.61

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Balance Sheet—December 31, 1958

LIABILITIES AND FUNDS

GENERAL FUND			
Current Liabilities			
Accounts payable		$ 19,273.51	
Taxes payable (including withholding)		10,059.81	
Due to Pension Fund, per contra		225.00	
Total Current Liabilities			29,558.32
Deferred Credits			
Membership dues 1959		15,153.25	
Annual Meeting 1959		12,467.50	
Sundry		8,445.15	
Total Deferred Credits			36,065.90
General Fund			196,124.07
TOTAL GENERAL FUND			261,748.29
INVESTMENT FUND			
Reserve for depreciation of investments		50,000.00	
Balance		519,754.92	
TOTAL INVESTMENT FUND			569,754.92
SPECIAL FUNDS UNDER CONTROL OF THE BOARD OF TRUSTEES			
Building Fund	$76,425.10		
Due to General Fund, per contra	33,019.62		
		109,444.72	
Employes Beneficiary Fund		112,045.25	
Repair and Replacement Fund	34,357.81		
Due to General Fund, per contra	22,567.91		
		56,925.72	
TOTAL SPECIAL FUNDS			278,415.69
ENDOWMENT FUNDS			
Lucien Howe Prize Fund		6,133.44	
Merit H. Cash Prize Fund		2,158.81	
A. Walter Suiter Lectureship Fund		6,470.92	
TOTAL ENDOWMENT FUNDS			14,763.17
PENSION FUND			242,653.69
WAR MEMORIAL FUND			201,844.85
TOTAL LIABILITIES AND FUNDS			$1,569,180.61

NOTE: The Society has a revolving fund of $245,000 from the U.S. Army (Medicare Program). It has claims from physicians, either paid or approved for payment, totaling $256,390.28, that have not yet been reimbursed by the government.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Cash in Banks and on Hand

December 31, 1958

GENERAL FUND	$113,518.33*
INVESTMENT FUND	76,336.90
PENSION FUND	2,589.95
TOTAL	192,445.18
ENDOWMENT FUNDS	
Lucien Howe Prize Fund	6,133.44
Merit H. Cash Prize Fund	2,158.81
A. Walter Suiter Lectureship Fund	6,470.92
TOTAL (UNION DIME SAVINGS BANK)	14,763.17
WAR MEMORIAL FUND	
On deposit	5,668.67

* Includes $7,322.50 due American Medical Association.

Investments

The investments of the Society are summarized as follows:

	Cost	Market
INVESTMENT FUND		
U.S. Government obligations	$ 80,300.00	$ 77,390.92
Railroad Bonds	5,551.25	5,760.00
Industrial and Finance Bonds	22,481.17	22,037.50
Utility Bonds	112,617.54	105,860.00
Mortgage	1,951.85	1,951.85
Preferred Stocks	29,501.47	28,007.50
Common Stocks	244,718.27	588,898.25
TOTAL	$497,121.55	$829,906.02
PENSION FUND		
Utility Bonds	$189,251.11	$186,758.75
Bank and Finance Bonds	38,212.50	38,468.75
Common Stocks	9,793.49	11,250.00
TOTAL	$237,257.10	$236,477.50
BUILDING FUND		
U.S. Treasury Bonds	$100,000.00	$ 90,700.62
Utility Bonds	8,381.25	8,325.00
TOTAL	$108,381.25	$ 99,025.62
EMPLOYES BENEFICIARY FUND		
U.S. Treasury Bonds	$ 55,019.37	$ 48,998.75
Public Utility Bonds	40,670.98	37,618.75
Industrial Bonds	10,319.62	8,875.00
TOTAL	$106,009.97	$ 95,492.50
REPAIR AND REPLACEMENT FUND		
U.S. Treasury Bonds	$ 29,987.50	$ 28,558.00
Utility Bonds	16,577.60	16,568.75
Common Stocks	9,841.91	14,925.25
TOTAL	$ 56,407.01	$ 60,052.00
WAR MEMORIAL FUND		
U.S. Government Obligations	$195,332.70	$181,214.24

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Statement of General and Other Funds

For the Year Ended December 31, 1958

	General Fund	Investment Fund	Building Fund	Employes Beneficiary Fund	Repair and Replacement Fund	Pension Fund	War Memorial Fund	Lucien Howe Prize Fund	Merit H. Cash Prize Fund	A. W. Suiter Lectureship Fund
BALANCE AT JANUARY 1, 1958	$186,545.55	$491,345.55	$112,182.67	$109,090.47	$56,950.93	$231,040.75	$216,600.75	$6,030.93	$2,080.49	$6,304.06
ADDITIONS										
Interest on bank balances	.....	2,161.33	215.09	132.36	378.74	.....	.....	202.51	78.32	216.86
Income from securities	.....	28,065.28	2,812.59	2,822.42	1,555.42	8,669.07	5,032.10	.....	.....	.....
Profit from sale of securities	.....	167.55	.....	.....	.....	25.54	.....	.....	.....	.....
Assessments and contributions received	.....	.....	.....	.....	.....	3,113.33	12.00	.....	.....	.....
Excess of operating income over expenses, not including income from securities	9,578.83	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total Additions	9,578.83	30,394.16	3,027.68	2,954.78	1,934.16	11,807.94	5,044.10	202.51	78.32	216.86
DEDUCTIONS										
Custodian and investment service fees	.....	1,984.79	.....	.....	.....	.....	.....	.....	.....	.....
Prizes	.....	.....	.....	.....	.....	.....	.....	100.00	.....	50.00
Transfers—moving expense reimbursed to General Fund	.....	.....	38,785.25	.....	24,527.28	.....	.....	.....	.....	.....
Benefits disbursed	.....	.....	.....	.....	.....	195.00	19,800.00	.....	.....	.....
Total Deductions	.....	1,984.79	38,785.25	.....	24,527.28	195.00	19,800.00	100.00	.....	50.00
Net Increase or (Decrease)	9,578.83	28,409.37	(35,757.57)	2,954.78	(22,593.12)	11,612.94	(14,755.90)	102.51	78.32	166.86
BALANCE, DECEMBER 31, 1958	$196,124.07	$519,754.92	$76,425.10	$112,045.25	$34,357.81	$242,653.69	$201,844.85	$6,133.44	$2,158.81	$6,470.92

Report of the Council

To the House of Delegates, Gentlemen:

Your Council has the honor to report on the executive and administrative affairs of the Society in the period following your last meeting, May 12 to 14, 1958. The various matters that came before it, actions thereon, and recommendations are here presented.

PART I

Constitution and Bylaws

The Council Committee on Constitution and Bylaws has the following membership:

Ezra A. Wolff, M.D., *Chairman*	Queens
Norman C. Lyster, M.D.	Chenango
Homer L. Nelms, M.D.	Albany

The Committee on Constitution and Bylaws has had submitted to it numerous amendments and revisions of the constitutions and bylaws of many component county societies and of the State Woman's Auxiliary. These changes have all been studied carefully by the committee with the aid of Mr. Burns of the office of the State Society's counsel. Where appropriate, recommendations for alteration or clarification were made and all were reported to the Council for approval.

The thanks of the chairman are extended to his fellow committee members, Drs. Nelms and Lyster, to Mr. Burns, and to Dr. Anderton for their diligent cooperation and unstinted aid.

Questions of Ethics

The Council Committee on Questions of Ethics consists of the following members:

Harold F. Brown, M.D., *Chairman*	Erie
Frank LaGattuta, M.D.	Bronx
Ezra A. Wolff, M.D.	Queens

Since the meeting of the House of Delegates in 1958 there have been no serious problems concerning ethics brought before our committee. Some inquiries have been made concerning the application of the code of ethics to specific situations and the opinion of the committee has been sent to the interested parties.

At the time that this report is being written (February 1), there is a matter before the committee from the Erie County Medical Society. This is to be taken up at a meeting of the committee on February 11. If, after consideration, the matter is deemed important enough, a supplementary report of the committee will be given before the meeting of the House of Delegates.

Public Health and Education

The Council Committee on Public Health and Education has as its members:

Norman S. Moore, M.D., *Chairman*	Tompkins
A. H. Aaron, M.D.	Erie
Charles D. Post, M.D.	Onondaga
Herman E. Hilleboe, M.D., Commissioner, New York State Department of Health, *Adviser*	Albany
Leona Baumgartner, M.D., Commissioner of Health, City of New York, *Adviser*	New York

The work of the Committee on Public Health and Education more than ever portrays the constant change that is going on in the field of public health and medical education. The work of the committee emphasizes the fact that change is necessary to keep the physician abreast of the times. In the public's interest the Medical Society may well recognize the trends sensed by the committee and publicize them to the membership of the Society. It is perhaps the responsibility of this committee to call to the attention of the practicing physician his changing role in modern society. This and other expansion of responsibility calls for wider geographic representation by members of the committee. It is for this reason that the House of Delegates this year will be called upon to approve Bylaw changes permitting a larger committee.

The committee is pleased to report that liaison with the New York State and New York City Health Departments officials has continued on the same high level as in previous years and has maintained progress in joint cooperative ventures. For example, when the toll from childhood accidents came to the attention of the committee and the State Health Department, as you will see in the report of the Subcommittee on Child Accidents, a communication signed by the President of the Medical Society and the Commissioner of Health was widely distributed.

The Diabetes Subcommittee has been active during the year in formulating working relationships between the Diabetes Association, the county medical societies, and the State Health Department. Now it can be reported that these agencies for the first time are joining forces for the common good of the unknown diabetic.

While no further progress has been made in formal recommendations concerning qualifications for driver licensure, the Subcommittee on Accident Prevention has had under advisement and is still studying the possible role of the mental patient in accident occurrence. The rules which resulted from the subcommittee's previous recommendations to the Bureau of Motor Vehicles are being evaluated by the Driver Research and Testing Center of the State Health Department.

The Subcommittee on Geriatrics (now called Subcommittee on Aging) and the State Health Department, following the stimulus of endorsement of interest in geriatrics by the House of Delegates of the A.M.A., are planning a State-wide conference on the subject of aging and by the time the New York State House of Delegates meets, members of the Social Welfare Department, the State Health Department, and county medical societies will have formulated a joint working policy toward improving the lot of the aging in the State of New York—a planning organizational attempt well ahead of the White House Conference on Aging scheduled for January, 1961.

The Subcommittee on Cancer is endeavoring to call to the attention of hospital staffs of the State the high yield of previously unsuspected cancer that would ensue if routine vaginal smears on admission of patients to hospitals were as common as are blood counts and urinalyses during the first twenty-four hours of stay.

This year the committee recognized its responsibility with respect to the sudden appearance of staphylococcic infections in epidemic proportions in certain localities. At the request of the Public Health Council it sponsored a meeting for the purpose of organizing a joint effort of hospital personnel, Health Department officials, and the medical profession in an attempt to avert an amendment to the Sanitary Code by means of voluntary participation in remedial plans. An ad hoc committee was formed at the suggestion of the group, which in turn formed an advisory committee representing many medical disciplines. Both the ad hoc advisory committees worked throughout the summer and fall and have produced the well-known publication, "Control of Staphylococcal Infections in Hospitals," the first real guide to physicians and hospital personnel. The ad hoc committee's report appears elsewhere and all members of the Society are urged to read it.

Other subcommittee reports portray the many specialized interests present among members of the medical profession. The problems connected with the work of the Committee on Public Health and Education give evidence of the interests and beliefs of the practicing physician as he evaluates these problems from his point of view. There seems to be a detectable urge on the part of the general practitioners to ensure that their way of practice will be perpetuated.

Consequently, during the year the Committee on Public Health and Education made considerable effort to acquaint the Subcommittee on General Practice with the point of view of medical educators. The committee is of the opinion that the curricula of the medical schools of this State are weighted neither in favor of nor against influencing medical students with regard to general practice. The meetings with medical educators have demonstrated in many ways that they are more concerned with the family unit and the individual as a whole than were the medical educators of yesterday, whose graduates in large numbers devoted themselves to general practice. The medical educators of this State make the point that they are teaching the medical student about the preservation of health and the diagnosis and treatment of the ills of the entire family. In support of this view they point out that sociologists and/or cultural anthropologists are included on the faculty of many medical schools in New York State who expose the medical student to family interrelationships without prejudicing the student in favor of one specialty or another. Further, the medical educator believes it is the individual and his hospital experience which sparks the desire to be a specialist after graduation. In other words, at the completion of medical school studies all students have had equal experience. If decision for specialization occurs before graduation, the committee is convinced it is not made through faculty influence.

The Committee on Public Health and Education does not pretend that it envisions the practitioner of tomorrow in rural areas, and because of this deficiency in foresight it joins other committees, such as the Committees on Rural Medical Service, Medical Expense Insurance, Hospital and Professional Relations, and others, in the hope that some system of the practice of medicine can be worked out to care for the people in areas where the general practitioner is not replaced.

At the same time the Committee on Public Health and Education does not necessarily believe that the day of the general practitioner is gone. It has no evidence that the trend toward specialization, so prevalent in the past decade, will necessarily continue. There are many devoted men in medicine who feel somehow that specialization has robbed the profession of the great service opportunity that the practice of medicine once offered. In all likelihood there will be a combination of systems of practice which will take care of the medical needs of the people adequately as the advances in medicine are brought into play by the new formulas.

The problem of the changing formula has occupied a major portion of the thinking of the committee this past year, and to that end it has sought advice from representatives of all the medical educational institutions in the State, not only about undergraduate education but on postgraduate education as well. It seems certain that, with the methods of undergraduate education changing so rapidly from the lecture type of presentation to the seminar or panel-type method, within a few years these same individuals who rejected the formal lectures in undergraduate days will reject them also in their postgraduate pursuits.

With this in mind the committee has extensively searched for ways and means of changing the formula. It has sponsored an exploratory committee for the establishment of a scientific and educational trust which could finance recruitment of staff and implementation of new formulas.

Also, the committee feels that the essay type of medical article such as it has contributed to *Health News* should receive the same critical review that the lectureship formula has undergone. To that end the committee proposes that at the beginning of the next Medical Society year the committee's contributions to *Health News* be comments of current interest to the profession and to the public health officials of the State.

WHAT GOES ON.—The latest responsibility of the committee which certainly has the status of a subcommittee, is the bulletin, *What Goes On*. Last year it was reported that this project was under way. This year the editorial assistant gives an accounting to the members of the eleven months of the publication's experience (*see below*). More and more meetings, lectures, symposia, and other postgraduate opportunities are made known to members of the Society in advance, not only for their respective areas of the State but for all other areas, so that one traveling may take advantage of programs in other areas than one's own or even design a trip around a distant medical program. The committee wishes to acknowledge the helpful cooperation of Lederle Laboratories, a division of the American Cyanamid Company, and especially that of Mrs. Charlotte Troutwine. Her valuable assistance and advice is sincerely appreciated by the committee.

The committee wishes to extend its appreciation to Dr. Herman E. Hilleboe and his staff of the New York State Department of Health and to Dr. Leona Baumgartner and her staff of the Health Department of the City of New York for excellent cooperation and assistance. To Deputy Commissioner Granville W. Larimore especially go the committee's sincere appreciation and thanks for his cooperation and aid in programming and implementing many of the important accomplishments of this committee.

Finally we express our sincere appreciation to Dr. Leo E. Gibson, president, and to Dr. W. P. Anderton, secretary of the State Medical Society, and to his executive assistant, Miss Doris K. Dougherty, for their assistance, support, and encouragement. Also, the committee is indebted to all the staff of the State Society who have assisted the committee in carrying out its tasks and assignments.

The committee's special thanks go to Miss Susan V. Baker, executive assistant to the committee, whose knowledgeable ability and intelligent handling of committee affairs is appreciated.

Since submitting its annual report for 1957–1958, the committee has arranged, as of February, 1959, postgraduate instruction for 38 groups, presented as lecture series, symposia, single lectures, or teaching days. A total of 177 speakers have already participated or will participate in these meetings. We express our thanks to the New York State Department of Health for the continued assistance they give us by providing a $25 honorarium for these speakers, to the Society's Bureau of Public and Professional Relations for sending releases to local newspapers, and to the editorial staff for inserting notices in the NEW YORK STATE JOURNAL OF MEDICINE. It might be noted here that a larger proportion of these meetings would appear in the monthly bulletin, *What Goes On*, if program chairman made it a point to submit their requests for speakers to this committee as far in advance as possible.

Of the following list of postgraduate sessions, 3 were arranged by the Postgraduate Education Department of the State University of New York College of Medicine at Syracuse and 4 by the Albany Medical College, in cooperation with our committee.

COUNTY	ORGANIZATION	NUMBER OF LECTURES
Albany	Medical Society	5
Broome	Binghamton Academy of Medicine	8
Cayuga	Medical Society and Auburn Hospital Tumor Board (symposium)	3
Chemung	Medical Society and county chapter of Academy of General Practice	4
Chenango	Medical Society (arranged by Syracuse)	3
Cortland	Medical Society	3
Dutchess	Medical Society	3
Fulton	Medical Society	5
	Medical Society and county chapter of Academy of General Practice	1
Herkimer	Medical Society	1
Jefferson	Medical Society	7
	Medical Society and county Association for Mental Health	6
Madison	Medical Society	1
Montgomery	Medical Society	1
Nassau	Medical Society	1
Oneida	Medical Society and Utica Academy of Medicine	1
	Utica Academy of Medicine	16
	Utica Academy of Medicine, Section on Obstetrics and Gynecology	8
	Rome Academy of Medicine	1

County	Organization	Number of Lectures
Onondaga	Medical Society	1
	Syracuse Academy of Medicine	1
Ontario	Medical Society	3
	Geneva Academy of Medicine	9
Otsego	Medical Society	3
Putnam	Medical Society	1
Rensselaer	Medical Society	6
Rockland	Medical Society	2
St. Lawrence	Medical Society	2
Schenectady	Medical Society at Ellis Hospital, arranged by Albany	4
	Medical Society	1
Steuben	Medical Society	5
Suffolk	Medical Society	29
	South Side Clinical Society	4
Sullivan	Medical Society	11
Ulster	Medical Society	3

REGIONAL MEETINGS AND TEACHING DAYS.—For regional meetings and regional teaching days, invitations are sent to the members of the medical societies in counties adjacent to that in which the instruction is given. The committee usually arranges for the speakers, has stamped envelopes addressed for the memberships of the county societies, and reimburses the sponsoring county medical society for the cost of printing the programs.

This year the following such meetings have been held:

County	Region	Subject	Number of Lectures
Broome Medical Society	Chemung, Chenango, Cortland, Tioga, Tompkins	Heart	3
Our Lady of Lourdes Hospital	Same as above	Infections	3
Greene Medical Society and county Heart Association	Columbia, Ulster	Heart	5
Oneida Medical Society and Utica Academy of Medicine	Chenango, Herkimer, Jefferson, Lewis, Madison, Onondaga, Oswego, Otsego, St. Lawrence	Cancer	3

WHAT GOES ON BULLETIN (*Written by Mrs. Maxine Peckman, Editorial Assistant*).—The *What Goes On* bulletin has been published monthly since March, 1958, by the Council Committee on Public Health and Education of the Medical Society of the State of New York, in financial cooperation with Lederle Laboratories, a division of the American Cyanamid Company.

Grateful acknowledgment is made of the editorial guidance of Miss Susan V. Baker and of the help in financial matters offered by Mr. Thomas Alexander. The editorial staff appreciates the advice and guidance of Dr. Norman S. Moore, chairman of the Council Committee on Public Health and Education, on matters of publication and editorial management. It is noted that Mrs. Charlotte Troutwine, manager of Postgraduate Information Service for Lederle Laboratories, has fostered a friendly relationship between the sponsoring organizations and has offered many helpful suggestions as to undertaking the routine details in contrast to the bulletin's over-all purpose.

What Goes On has been sent monthly to every practicing physician in New York State, to every hospital in the State, and to those medical libraries and persons allied with the medical profession who have requested it. The actual mailing is handled by the firm of Clark-O'Neill, Inc., which maintains medical mailing lists. The number of physicians, hospitals, interns, and interested persons receiving the bulletin in the December, 1958, mailing was 32,177.

The *What Goes On* bulletin is published to provide members of the medical profession with a handy monthly reference to opportunities in postgraduate medical education. It provides succinct information on the educational programs available to any interested physician in New York State. The published data is acquired through constant written contact with specialized medical organizations, hospitals, medical schools, academies of medicine, and county medical societies. Letters inviting participation in the publication of *What Goes On* are sent to officers of medical groups, representatives of hospital staffs, medical school deans, and editors of other medical publications. Such letters were sent in March, April, May, June, August, and December.

Through its eleven months of publication the bulletin has varied in number of pages and number of items published. In March, 1958, *What Goes On* was 32 pages in length and consisted of 88 items. These 88 items were divided as follows: specialty organizations, 20; hospitals, 25; county medical societies, 14; medical schools and academies, 29. In December, 1958, *What Goes On* had 32 pages listing 106 items which were categorized as follows: specialty organizations, 5; hospitals, 22; county medical societies, 4; medical schools and academies, 75.

The largest issue of the bulletin was published in October, 1958, and contained 127 items on 40 pages. The smallest issue, with 16 pages listing 30 items, was published in June. The bulletins published from March 15, 1958, through July 15, 1958, were printed by LaSalle Litho Company. The bulletins published from July 15 through the current issues have been printed by the York Litho Company. In the course of the work done by York Litho, the type has been modernized and the white space on each page increased. These technical changes were initiated to improve the bulletin's readability.

The exact figures concerning the financial status of the *What Goes On* bulletin are not available at this date. It is the opinion of the editorial assistant that money expended for *What Goes On* did not exceed the total figure budgeted for its publication. Printing and mailing costs were increased during 1958, however, and a revised budget commensurate with these increases has been submitted to the accounting department of the Medical Society.

Judging from mail and telephone response to the bulletin, it would appear that thus far *What Goes On* has been successful in its informative objectives. The editorial office has received approximately 175 requests to be included on the mailing list. This indicates previous word-of-mouth interest as well as visual contact with *What Goes On.* In contrast to these figures it is well to take note that only two letters have been received which questioned the content of the bulletin and the cooperation between the Medical Society and a pharmaceutical firm.

In the coming year the editorial staff of the *What Goes On* bulletin hopes to improve its listings in the upstate areas. It is felt that Buffalo and Albany have more medical programs available to physicians than are presently being published. Effort will be made through written contact to find medical groups which sponsor educational activities of interest to the medical profession.

The second year of publication should bring forth an improved format with respect to the line-by-line layout on each page. Professional typographic advice will be offered for this purpose by York Litho Company and its office representative. Suggestions as to maintaining future events pages in each issue and revising the area headings will also be taken into consideration.

This bulletin is a new venture in public relations and educational service. If past interest can be used as an indication of the future, it can be said that added attention and increased cooperation will be given to *What Goes On.*

PART II

PUBLIC HEALTH ACTIVITIES A

Maternal and Child Welfare

The Subcommittee on Maternal and Child Welfare has the following membership:

Edward C. Hughes, M.D., *Chairman*	Onondaga
Frank A. Disney, M.D.	Monroe
Eugene R. Duggan, M.D.	Monroe
William Mallia, M.D.	Schenectady
William J. Orr, M.D.	Erie
Clyde L. Randall, M.D.	Erie
Frederick H. Wilke, M.D.	New York
Harold Jacobziner, M.D.	New York

There have been no meetings of the subcommittee during the past year.

Dr. Charles A. Gordon, chairman of this subcommittee for many years, died suddenly on October 30, 1958. The death of Dr. Gordon, whose tireless efforts and guidance have been the inspiration to all who have served with him on this committee, has caused a severe setback to the functioning of the committee. During his leadership, maternal deaths which occurred throughout the State of New York were studied and surveyed. The committee also conducted a survey concerning maternal and infant mortality in patients who have had cesarean sections in three districts of the State. This survey has not yet been completed but interesting data have been accumulated.

The Council of the Medical Society of the State of New York appointed Dr. Edward C. Hughes as chairman of this committee after the death of Dr. Gordon and since his appointment time has been spent getting records together and planning for the future function of this committee. Communications have been sent to the members of the committee and plans are being made to call a meeting of its members together with members of the staff of the New York State Department of Health. It is planned that further surveys of the maternal deaths will be continued throughout the State and the results of these surveys will be reported yearly to the Section on Obstetrics and Gynecology at the annual convention.

School Health

The Subcommittee on School Health has the following membership:

William E. Ayling, M.D., *Chairman*	Onondaga
Thomas S. Bumbalo, M.D.	Erie
Frederick A. Groff, Jr., M.D.	Schenectady
Rocco J. Martoccio, M.D.	Oneida
Edward L. Schwabe, M.D.	Chautauqua
Joseph A. Geis, M.D., New York State Department of Education, *Adviser*	Albany
Anne M. Drislane, M.D., Acting Director of Maternal and Child Welfare, New York State Department of Health, *Adviser*	Albany

A meeting of this committee was held at the Hotel Statler in New York City on May 13, 1958. All members were present; also Dr. Charles D. Post of the parent Council committee.

Correspondence which had been received and answered by the chairman was read and approved. The committee approved of a plan of Mr. Lawrence W. Grimes, executive secretary of the New York State High School Athletic Protective Plan, Inc., to send out 700 copies of the American Medical Association booklet entitled, "Protecting the Health of the High School Athlete." However, Mr. Grimes was to be asked that he consult with the county medical societies relative to following up the suggestions contained in the booklet. This committee furnished copies of the booklet to the county medical societies through the New York office.

It was voted to ask the Section on Ophthalmology of this Society for a statement on the adequacy of the Snellen test of school pupils, or other tests. This was done by the chairman via a letter dated October 1, 1958. No reply has been received. In September, 1958, the Bureau of Health Service of the State Education Department sent booklets to all physicians entitled, "Why and How—The Snellen Test Does the Job." This probably took care of the matter.

The efforts of this committee and of the Committee on Legislation to change the requirement of the State Education Department for annual examinations of school children failed, but efforts will be continued to bring about this needed change.

A very successful teaching day for physicians on school health topics was held in Syracuse on September 11, 1958. It was attended by over 50 central New York doctors, many of whom expressed satisfaction and appreciation of the sessions. The College of Medicine of the State University of New York at Syracuse acted as cosponsor of this program.

Several letters asking for advice on school health activities and for reference material have been received and answered by the chairman of this committee. These came from Albany, Rome, Marcellus, and Poughkeepsie.

The next meeting of the committee probably will be held at Lake Placid in May in conjunction with the annual meeting of the State School Physicians Association and the Annual Health Conference of the State Health Department.

During the year your chairman attended meetings of this Society in New York in May; the Health Conference in Rochester in June; the Teaching Day for School Physicians in Syracuse in September, at which he participated in the program, giving a paper on "Tuberculosis Case Finding"; the annual meeting of the American School Health Association and the American Public Health Association in St. Louis in October; and many local conferences on public health. All but one of these were attended without expense to the State Society.

Accident Prevention

The Subcommittee on Accident Prevention has the following membership:

S. Bernard Wortis, M.D., *Chairman*	New York
Arthur S. Abramson, M.D.	Bronx
Conrad Berens, M.D.	New York
Harold Brandaleone, M.D.	New York
Arthur D. DeVoe, M.D.	New York
Edmund P. Fowler, Sr., M.D.	New York
Richard H. Freyberg, M.D.	New York
Milton Helpern, M.D.	New York
Walter D. Ludlum, M.D.	New York
Norman S. Plummer, M.D.	New York
John H. Powers, M.D.	Otsego

A small subgroup of the Subcommittee on Accident Prevention met on August 7, 1958, for preliminary discussion of criteria for mental illness as applied to the applicant for an operator's license, but no conclusions have been reported. Inasmuch as the administration of the Bureau of Motor Vehicles will change on April 1, it is planned to have the new commissioner meet with the subcommittee early in the next Medical Society year.

Child Accidents

The Subcommittee on Child Accidents has the following membership:

Tyree C. Wyatt, M.D., *Chairman*	Onondaga
Russell S. Burdge, M.D.	Nassau
Thurman B. Givan, M.D.	Kings

This subcommittee was appointed at the suggestion of Past President Thurman B. Givan, who as a past New York State chairman of the American Academy of Pediatrics was actively supporting the Academy's program of child accident prevention. The New York State program was first publicized at the spring meeting of the Academy in New York City in April, 1958. Dr. Givan attended the luncheon meeting of the New York State members and, as president of the State Medical Society, spoke in strong support of the program.

With the approval of the Council and the combined financial support of the State Society and the State Health Department, a full-page letter in regard to the child accident prevention problem was mailed in late December to all members of the State Medical Society. This letter emphasized the importance of the problem and gave detailed suggestions as to physician leadership in community programs of public education.

There are indications that this letter directed toward physician leadership was very valuable, not only in our State program, but as a demonstration through the American Academy of Pediatrics and other state and regional programs throughout the country. The progress of the State program will be publicized from time to time in the news bulletins of the State Health Department, the State Medical Society, the State chapter of the American Academy of General Practice, and the American Academy of Pediatrics. The members of the subcommittee are very grateful for the support of its parent committee as well as of the Council of the State Society.

PART III

PUBLIC HEALTH ACTIVITIES B

General Practice

The Subcommittee on General Practice has the following membership:

Floyd C. Bratt, M.D., *Chairman*	Erie
Jeff J. Coletti, M.D.	Nassau
Seymour Fiske, M.D.	New York
Gregory A. Galvin, M.D.	Tompkins
Arthur Howard, M.D.	Fulton
Garra L. Lester, M.D.	Chautauqua
C. J. F. Parsons, M.D.	Westchester
Robert V. Persson, M.D.	St. Lawrence
William G. Richtmyer, M.D.	Albany

The Subcommittee on General Practice has considered, since it was established in 1950, problems of general physicians in New York State, giving special attention to the following items:

1. Hospital relationships of the general physician and the medical staff, with a hospital survey to obtain information concerning the integration of the general practitioner into hospital staffs, and an analysis of general practice departments in hospitals.

2. Cooperation with the various groups of organized medicine, including coordination of the aims and purposes of the New York State Academy of General Practice with the program of the Medical Society of the State of New York.

3. Opportunities for continued education to general physicians, with exchange of ideas and points of view of general physicians and medical educators.

4. Support of pertinent public health programs.

5. Health examinations and cancer detection with the development of a health examination form which has been made available to physicians of the State.

6. Immunization programs, emphasizing polio prevention.

7. The need for each family to choose a capable family physician.

8. Preceptorships, and education for a career in general practice.

9. Public relations and doctor participation in local civic affairs of each community.

A well-attended meeting was held on December 11, 1958, at the offices of the Medical Society of the State of New York, with consideration of the following problems:

1. A report by Dr. Norman S. Moore on the February, 1958, meeting with medical school representatives on postgraduate medical education, where the matter of orienting students in general practice was discussed. He read letters reinforcing the stand that all possible was currently being done by medical schools, since they emphasize basic training to prepare a student to follow the course of his choice.

2. A letter from Dr. Richard Bellaire, chairman of the postgraduate education committee of the New York State Academy of General Practice, asking for a follow-up on the implementation of resolution 10 of the Academy's congress of delegates in 1956. It called for a joint committee of the Medical Society of the State of New York, the New York State Department of Health, and the New York State Academy of General Practice to study "the basic causes and reasons for the insufficient increase of physicians entering or engaging in general practice, and to offer constructive suggestions and proposals for steps that can be taken to correct or improve this condition." The subcommittee referred the matter for opinion as to the need for such a study to Dr. Edward C. Hughes, chairman of the Rural Medical Service Committee of the State Society, and also asked for comment on this subject from Dr. Franklyn B. Amos of the New York State Health Department.

3. Members of the subcommittee wish to remind physicians of New York State of the health examination form, which has recently been revised and will be available at little more than cost, provided enough advance orders are received to warrant the printer's undertaking the job.

4. The subcommittee also recommends that physicians furnish their patients with personal health cards issued by the American Medical Association or by the American Academy of General Practice.

5. In the field of continued education for physicians both the Medical Society of the State of New York and the New York State Academy of General Practice have programs to serve general practitioners. Dr. Norman S. Moore, chairman of the Council Committee on Public Health and Education of the Medical Society, outlined plans which when put into effect deserve the support of all New York State physicians.

6. It was reported to the subcommittee by Dr. Seymour Fiske that replies from a questionnaire on the problem of integration of the general practitioner

into the hospitals of New York State were being tabulated. The subcommittee favors and recommends implementation of a program to interest hospitals in sponsoring inhospital training of general practitioners in the various fields of medicine in which they are interested.

7. In support of continued interest in vaccination for polio the following resolution was approved by the subcommittee (and subsequently by the Council):

> That the Council of the Medical Society of the State of New York do everything possible to draw the attention of the physicians of this State to the necessity of having everyone under the age of forty immunized by Salk vaccine.

8. The subcommittee discussed the problem of mental health at length and offered to cooperate with the Subcommittee on Mental Hygiene in developing programs of interest to general practitioners.

The continued valuable assistance to the Subcommittee on General Practice of Council committee chairman Dr. Norman S. Moore and Council committee members Dr. A. H. Aaron and Dr. Charles D. Post, as well as Miss Susan V. Baker, executive assistant, is gratefully acknowledged. The helpful cooperation of Dr. W. P. Anderton, secretary, and other officers of the State Society, and of officials of the New York State Department of Health in developing programs of importance to the general practice of medicine in New York State is also acknowledged.

Rural Medical Service

The Rural Medical Service Committee consists of:

Edward C. Hughes, M.D., *Chairman*	Onondaga
Thurston L. Keese, M.D., *Vice-Chairman*	Onondaga
Donald C. Walker, M.D.	Schenectady
Bert Ellenbogen, *Adviser*	Ithaca
John H. Iselin, Jr., M.D., *Adviser*	New York
Granville D. Larimore, M.D., *Adviser*	Albany

The Committee on Rural Medical Service has held several meetings throughout the year to discuss the problem of the rural areas of our State. Surveys by the committee have revealed that although New York State has been a leader in many medical and public health programs, it has not established a modern medical health program for the rural areas. It has been noted that the quality of medicine which is practiced in rural areas decreases the farther the area is located from medical centers or larger cities. An important reason for this is that many areas in these parts of our State have not been properly staffed with adequate medical personnel and facilities, and no attempt has been made to extend educational medical programs to these individuals. Surveys by the committee have revealed that inhabitants of rural areas are extremely interested in better medical care and are more able to pay for such service. They have spent considerably more money on medical care and insurance in the past few years. These people are extremely interested in keeping their medical care in their local areas and do not want government interference. Although it is correct to say that the medical care has improved in rural areas and that many rural areas have now become suburbanized, it is evident that there is room for more improvement.

After careful consideration of the possible functions of the Committee on Rural Medical Service, it is the opinion of its members that there are many diversified yet coordinated educational programs together with plans for better medical staffing that can be instituted in these areas. It is the thought of the committee that the Medical Society of the State of New York, together with the medical colleges in New York State, should have an active part in attempting to improve and carry out such service. The committee feels that in order to be effective in its efforts, their services must extend into every county of the rural areas. Therefore, the committee has been working on the following program which it presents at this time.

It is proposed that an educational program, particularly directed toward lay individuals, be set up in the rural areas using the combined efforts and skills of local physicians and health officers together with those of local and State farm organizations. Local agencies should be involved in such a program and should discuss and plan the future.

1. The State should be divided into districts according to the approved plan of the New York State Department of Health. The center of each district should be located in the corresponding medical center located in each area or a correspondingly large city.

2. District chairmen would be selected by the Rural Medical Service Committee to serve as coordinators in each district.

3. Representatives from lay and farm groups should also be selected in these key cities. The representatives would be appointed by their district chairman.

4. Rural county medical societies will be asked to select a doctor of medicine in its county to represent the Rural Medical Service Committee in their respective areas. These appointments should be rotated every two years so that every physician would have an opportunity to serve on the committee.

5. The rural health officers in each area would also be invited to be a part of the program.

6. Field representatives from the Committee on Public Relations of the State Medical Society would act as coordinators in each individual area and should help greatly to keep the plan rolling.

7. Speakers designated from the roster of the Committee on Public Health and Education under the direction of Dr. Norman S. Moore will be used to provide whatever lectures and educational programs are needed for postgraduate education of the doctors.

The program was presented to the Council of the State Society of New York in October and was approved. Permission was granted by this body to proceed with the planning. On November 22, 1958, the chairman of this committee presented this plan to the executive secretary and secretary of the Onondaga County Medical Society at Syracuse. There was considerable favorable comment and discussion about the plan. On January 15, 1959, the chairman of the committee together with Professor Ellenbogen met with Professor Hazel Reed, assistant State leader of the home demonstration units; Professor Clifford Harrington, State leader of the county agricultural agency; and Professor William Pease, State leader of the 4-H clubs. The program, as presented, was outlined to them at this time. These individuals are very much interested in the plan and have taken it to other representatives of these groups, and a second meeting is planned to take place in the middle of February.

At a meeting of the Rural Medical Service Committee in Syracuse, January 31, 1959, the plan was further discussed. It was decided that a pilot study program be put into action in a definite district of our State. In reviewing the various areas which would be most applicable to the pilot study, it was decided to use the counties of Onondaga, Oswego, and Cortland. These areas were chosen because considerable research has been conducted by Dr. Ellenbogen and his committee on rural medical health, because these counties were in close contact with the representatives of the agricultural extension service, home demonstration units, and 4-H clubs whose agencies are located in Cornell University, and because these counties were also in close relationship to the Upstate Medical Center. It is the further plan of the committee to have the appointments of the physicians and lay individuals of these counties completed relatively soon, followed by a combined meeting of these individuals with the Dean of the Upstate Medical Center, Dr. Norman S. Moore, chairman of the Committee on Public Health and Education, and Dr. John F. Rogers, chairman of the Committee on Public Relations of the State Medical Society, to consolidate the program.

The following is a report from Professor Bert Ellenbogen on "A Study of the Organizational Processes by Which Rural Communities Seek to Obtain a Resident Doctor."

1. The data-gathering phase of the research has been completed. Of the 272 questionnaires sent to selected informants in 78 rural communities, 244 questionnaires were returned. Likewise, abbreviated case studies were made in four selected localities.

2. Data from the questionnaires have been coded, tabulated, and analyzed. A content analysis has been made of the four case studies.

3. A preliminary report of the research has been completed and is now undergoing modification. Upon the rewriting of the first draft, a copy of the report will be submitted to the chairman of the Committee on Rural Medical Service.

PART IV

Public Health Activities C

Cancer

The Subcommittee on Cancer has the following membership:

John G. Masterson, M.D., *Chairman*	Kings
George E. Moore, M.D., *Vice-Chairman*	Erie
Daniel Burdick, M.D.	Onondaga
W. Kenneth Clark, M.D. (American Cancer Society)	New York
Emerson Day, M.D.	New York
Paul G. Gerhardt, M.D., New York State Department of Health, *Adviser*	Albany
Theodore Rosenthal, M.D., New York City Department of Health, *Adviser*	New York

There have been three meetings of this subcommittee: October 24 and December 5, 1958, and February 11. The subcommittee has recommended two major activities, both of which have had Council approval but neither of which has been implemented as of this writing.

The first is an attempt to inform hospital staffs of the State as to the high yield of cancer detection in asymptomatic patients that can accrue from a program which screens all adult female patients in the hospitals. The subcommittee is organizing a campaign to enlist as many hospitals in the State as they can to conduct a vaginal smear diagnostic survey of all adult women patients in hospitals during the first week in April.

The second objective of the subcommittee is to assist and cooperate in every way possible in a broad study of leukemia, comparing the incidence of leukemia in the States of Minnesota and Maryland with a selected section of the State of New York. This study is under the sponsorship of the American

Cancer Institute in conjunction with the departments of health of the respective states. The Subcommittee on Cancer hopes that all local cancer societies, county medical societies, and hospitals, in addition to individual physicians, will cooperate in this venture.

Heart Disease

The Subcommittee on Heart Disease has the following membership:

J. G. Fred Hiss, M.D., *Chairman*	Onondaga
Maurice A. Donovan, M.D.	Schenectady
A. Wilbur Duryee, M.D.	New York
John J. Finigan, M.D.	Monroe
David G. Greene, M.D.	Erie
Norman Plummer, M.D.	New York
Willard H. Willis, M.D.	Oneida
J. C. Zillhardt, M.D.	Broome

There have been no meetings of the subcommittee this year. However, your chairman and a subcommittee of this subcommittee have been active in exploring better methods of teaching the general practitioner advances in the diagnosis and treatment of heart disease and have attempted to find some equitable solution for both the employer and employe when the latter is employed in industry while undergoing treatment for heart disease.

A special report in this connection will be considered by the whole subcommittee at a meeting which has been called during March. A supplementary report of this meeting will be rendered.

Mental Hygiene

The membership of the Subcommittee on Mental Hygiene consists of the following:

William A. Horwitz, M.D., *Chairman*	New York
C. Douglass Darling, M.D.	Tompkins
Edward F. Shea, M.D.	Ulster
Marvin Stern, M.D.	Kings
Duncan Whitehead, M.D.	Erie
Paul H. Hoch, M.D., New York State Commissioner of Mental Hygiene, *Adviser*	Albany

The Subcommittee on Mental Hygiene has had no meetings this year. Your chairman attended the fifth annual conference of mental health representatives of state medical associations held by the A.M.A. in Chicago on November 21 and 22, 1958. The subjects discussed were under five main headings: (1) "Emotional Block versus Brain Damage in the Diagnostic Categories of Mental Retardation or Mental Deficiency in School Children," (2) "Communicability of Mental and Emotional Illness," (3) "Education for Psychiatric Medicine," (4) The Joint commission on Mental Illness, and (5) "Mental Illness and Health in the Aged."

It would appear that the Subcommittee on Mental Hygiene, either alone or in conjunction with other subcommittees, should explore the great problem of retardation—the number of retardates among the school children of the country and whether New York State is above or below the average in this striking disability. Also, it should cooperate with other subcommittees in making every attempt possible to study the goals of prevention and therapy.

The subcommittee is glad to know that the House of Delegates supported its resolution to the State Commissioner of Mental Hygiene with regard to upgrading the quality and remuneration of professional personnel in State hospitals.

Your chairman has worked with the Council Committee on Legislation regarding limiting the activities of psychologists, but inasmuch as the present Legislature session has only begun at this writing it is difficult to predict what will come of this effort.

Your chairman referred to the Committee on Hospital and Professional Relations the question of Blue Cross extending the privilege of admission of psychiatric patients to hospitals in the State. The committee notes that Senator Metcalf and the Joint Legislative Committee on Health Insurance Plans have held hearings throughout the State and it is quite possible that pressure from all directions may result in Blue Cross accepting what seems to be an important social advance.

One of the major medical insurance plans (GHI) has in the past month held an organization meeting with representatives of labor, private hospitals, psychiatrists, and sociologists for the purpose of promoting a pilot study of medical insurance with psychiatric coverage for both outpatient care and a limited thirty-day period of inpatient care, in the metropolitan area. This pilot survey will in all probability begin within the next few months.

During the year your chairman has made endeavors to work out an appropriate liaison arrangement with the New York State district branches of the American Psychiatric Association. If some of these matters explored by the chairman appear to be near fruition a subcommittee meeting will be called, in which event a supplementary report will be rendered.

There is one area of impending legislation that needs careful observation. In the past year two hearings to consider legislation affecting the welfare of physicians have been held at Albany. The purpose of these hearings has been to consider a law to the effect that any physician suffering from an emotional or mental illness, admitted to a psychiatric hospital, automatically will have his license suspended. Your chairman, along with representatives of various district branches of the American Psychiatric Association and the Commissioner of

Mental Hygiene, have expressed themselves in opposition to this. In the last few days we have received a notice that such a bill has been introduced before the Legislature. The district branches of the A.P.A. in the New York State area and the Subcommittee on Mental Health oppose this discriminating legislation and will cooperate in this area. We will need the support of the Committee on Legislation and their cooperation will be enlisted.

Medical Film Review

The Subcommittee on Medical Film Review has the following membership:

Kenneth B. Olson, M.D., *Chairman*	Albany
Irwin Alper, M.D.	Oneida
Joseph P. Arcomano, M.D.	Kings
Jean D. Watkeys, M.D.	Monroe
William L. Wheeler, Jr., M.D.	New York
James J. Quinlivan, M.D., Director, Office of Public Health Education, New York State Department of Health, *Adviser*	Albany

The Subcommittee on Medical Film Review did not meet formally during the past year. Many medical films were suggested and 39 were reviewed, and 29 films were purchased by the New York State Health Department. Several suggestions were made by subcommittee members and outside sources.

Films available for loan have been used chiefly by nursing schools, public health department staffs, and college biology students. Few films are used by physicians or medical schools, and this is a matter of concern to the committee. Do medical school teachers not like to use films, or are they unaware of the existence of excellent teaching films? Films are an audiovisual aid and as such can provide a third dimension in the teaching of basic sciences and clinical subjects. Such subjects as embryology, neurology, and physical diagnosis are a few of the areas where films can add to the education of the students by providing motion and illustration. These ideas are the thoughts of the subcommittee members.

In order to stimulate the use of teaching films, a "film institute" is planned for April 17, 1959, at the New York State Health Department building on Holland Avenue, Albany. The New York State Division of the American Cancer Society has offered to sponsor this meeting. It is planned to invite the representatives of the deans of the four upstate medical schools, the coordinators of cancer teaching, the directors of medical education in upstate hospitals, and the directors of a number of tumor clinics. Dr. David Ruhe of the University of Kansas will discuss the use of audiovisual aids.

During the past year the following films were distributed:

	Requests	Films
Hospital medical staffs	247	365
Private physicians	171	277
Medical schools	88	118
Pharmacy schools	3	3
Nursing schools	3,859	6,732
Public health staff	870	1,440
Voluntary health agencies	504	714
College biology	955	1,434
TOTALS	6,697	11,083

PART V

PUBLIC HEALTH ACTIVITIES D

Physical Medicine and Rehabilitation

The Subcommittee on Physical Medicine and Rehabilitation has the following membership:

George M. Raus, M.D., *Chairman*	Onondaga
Alvin R. Carpenter, M.D.	Broome
Morton Hoberman, M.D.	New York
Alfred L. Lane, M.D.	Monroe
Edward J. Lorenz, M.D.	Westchester
Leonard D. Policoff, M.D.	Albany
Jerome S. Tobis, M.D.	New York
Edward W. Lowman, M.D., *Adviser*	New York

There have been no meetings of the Subcommittee on Physical Medicine and Rehabilitation during the past year.

By mail vote the subcommittee chose Dr. Willis D. Weeden as the State Society's candidate for the Physician's Award of the President's Committee on Employment of the Physically Handicapped. As a result Dr. Weeden received the Citation for Meritorious Service from the Governor's Committee on "Employ the Physically Handicapped."

Aging

The Subcommittee on Aging (formerly the Subcommittee on Geriatrics) is composed of the following members:

Joseph J. Witt, M.D., *Chairman*	Oneida
Stephen A. Graczyk, M.D., *Cochairman*	Erie
Ben Albert Borkow, M.D.	Kings
Elton R. Dickson, M.D.	Broome
Lawrence S. Kryle, M.D.	Nassau
Samuel R. Powers, Jr., M.D.	Albany
Charles Steyaart, M.D.	Wayne
Frank W. Reynolds, M.D., Director of Bureau of Chronic Diseases and Geriatrics, New York State Department of Health, *Adviser*	Albany

The subcommittee has taken the following action in carrying out the joint educational project with the State Department of Health on "Health Maintenance and Disease Prevention in Old Age":

1. A letter was sent to each county society informing them of the joint project and recommending a scientific program on periodic physical examinations and health counselling.
2. "Day After Tomorrow" and "Management of the Patient with Hemiplegia," two booklets prepared by the Bureau of Chronic Diseases and Geriatrics of the State Department of Health, were sent to all county societies.
3. A symposium on "Periodic Health Inventories and Health Counselling," consisting of 14 articles by outstanding authorities, has been prepared and will appear in the March 1 issue of the NEW YORK STATE JOURNAL OF MEDICINE.
4. On requests from county medical societies speakers were provided on the subject, "Health Maintenance and Disease Prevention in the Aged," but the number of such requests has fallen short of expectation.

The chairman of this subcommittee represented the State Society at the Planning Conference for Medical Society Action in the Field of Aging sponsored by the American Medical Association in Chicago on September 13–14, 1958. As the result of recommendations by this group a State-wide conference on the same subject will be held in Utica on March 7, 1959, under the joint sponsorship of this subcommittee and the Bureau of Chronic Diseases and Geriatrics of the New York State Department of Health.

The subcommittee has met only once since May, 1958, on December 11, when a report of the A.M.A. conference was made and plans were laid for the New York State conference.

Diabetes

The Subcommittee on Diabetes has the following membership:

Charles B. F. Gibbs, M.D., *Chairman*	Monroe
George E. Anderson, M.D.	Kings
Joseph B. Cortesi, M.D.	Schenectady
Maynard E. Holmes, M.D.	Onondaga
Herbert Pollack, M.D.	New York
Frederick W. Williams, M.D.	Bronx

A meeting of the subcommittee was held October 9, 1958. The fact was emphasized that the Subcommittee on Diabetes, the State Health Department, and the American Diabetes Association had common interests in the detection of diabetes and in the continuing education of the profession and laity to secure the optimal treatment and control. These efforts can well be carried out by the local county medical societies, local health departments, and the diabetes affiliates of the American Diabetes Association.

Since each has attempted to accomplish the same results separately, it was recommended that representatives of each group meet and consider plans for concerted action.

A letter was authorized and sent to each county medical society, urging local activity in detection and education and urging the use of the offer of the A.D.A. to supply various testing and publicity materials. The county medical societies were also urged to schedule programs and speakers to promote physician education in diabetes.

Other details, such as our attitude toward artificially sweetened ice cream for diabetics, and a proper procedure of making a diagnosis of diabetes after surveys indicated it, were considered and action taken.

On December 10, a joint meeting was held which included Dr. Norman S. Moore, Dr. George E. Anderson, Dr. Joseph B. Cortesi, Dr. Frank Reynolds, Mr. Richard Connelly from the A.D.A., and your chairman. The possibilities of combined action were carefully considered, utilizing the interests and capabilities of each group.

The need for proper procedures for diabetes testing and diagnosis was considered and action taken to supply this. It was felt that after such a standard for interpretation was adopted it should be published in the NEW YORK STATE JOURNAL OF MEDICINE and distributed as reprints to the profession throughout the State.

The possibility of sustained year-round search for diabetes in admissions to all hospitals in the State was discussed. The need for urine and blood sugar testing after a meal, rather than fasting, was emphasized.

To implement the joint activities of the three groups, it was suggested that communications be sent to the county chairmen stating that any county deserving help from the local health department or health officer or from the A.D.A. would receive such assistance.

Efforts to further these projects are now under way.

Hard of Hearing and the Deaf

The Subcommittee on Hard of Hearing and the Deaf has the following membership:

Edmund P. Fowler, Sr., M.D., *Chairman*	New York
Greydon G. Boyd, M.D.	New York
Karl W. Gruppe, M.D.	Oneida
Gordon D. Hoople, M.D.	Onondaga
Harrison M. Karp, M.D.	Schenectady
C. Stewart Nash, M.D.	Monroe
Samuel Zwerling, M.D.	Kings

Clarence D. O'Connor, Ph.D., Lexington School for the Deaf, *Adviser*..............New York
Mrs. Eleanor C. Ronnei, New York League for Hard of Hearing, *Adviser*...........New York

There have been two meetings of the subcommittee this year, on May 11, 1958, and January 8, 1959.

At the first meeting the subcommittee discussed variations in amounts reimbursed to the Hearing and Speech Center in Utica by the State Health Department for patients from Oneida County as compared to those from other counties. The Health Department said they had tried to work out a fee that would cover everyone, even though in some instances it might be too high. The fee is scaled according to the type of workup.

There was discussion of the extravagant claims which are made in advertising of hearing aids, both the old type and the binaural. In one upstate city prosecution was attempted against a certain firm. In this same connection, the subcommittee condemned the so-called "audiologists" of these companies for trying to function in the capacity of M.D.'s and diagnosing the deafness of the customer. It was agreed that the hearing and speech centers must carry out their programs intensively, making their facilities known to the public and the doctors. The otologists themselves should keep up to date on all tests.

It was reported that some changes had been made in the law regarding industrial hearing loss. A six-months postulate had been incorporated in the law; the last employer is liable; there is also a stipulation in regard to the date of disability. There must be a competent otologic examination, but this will probably inflict an enormous burden upon the otologists.

It was suggested that the vocational rehabilitation form which has to be filled out by the examining otologist for the Department of Education should be revised, as it appeared out of date in the light of modern hearing testing.

However, at the January 8 meeting the form was reviewed and it was realized by the subcommittee that the form is fundamentally for the use of case workers so that they can place handicapped persons in jobs. For their purpose it is satisfactory and they would not wish to have it changed. The subcommittee thought it best for the physician to leave the first page of the form for the case worker to fill out. It was also recommended that the physician indicate in his part of the report whether or not the child has had an ear operation.

Concern was voiced over the fact that the preschool child with hearing difficulty is unknown to the State administration in most cases, whereas the Bureau for Handicapped Children of the State Education Department is aware of the school-age child with such handicap. It was wondered whether there should be the same penalty for failing to report these preschool children as for failure to report contagious diseases. The subcommittee will obtain copies of the law on this point and give the matter further consideration.

It was reported that a project had been instituted at the State Psychiatric Institute dealing with the emotional problems of the illiterate deaf. Eventually the responsibility for service to this type of person will probably be transferred to the Department of Mental Hygiene.

At the Lexington School for the Deaf (New York City) a study is being conducted whereby a correlation is being determined between the PGSR and the standard audiometry tests. The school also will publish a manual setting forth criteria of the time when a deaf child is ready to move out of the special into the regular class; this would also guide the teacher in the management of these children in the classroom.

Increasing interest in the brain-damaged child, particularly the aphasic, is apparent and might well lead to an enlarged concept of the type of child to be served by schools for the deaf, and to consequent overloading.

It was reported that the Council of Agencies for the Hearing Impaired (New York City) had been making strides since its inception the previous year. It is hoped that it will work with the Community Council of Greater New York to (1) provide a better directory for the medical profession for services for the hard of hearing; (2) eliminate the sales tax on batteries and hearing aids; (3) promote better teacher training in this area to alleviate the shortage of personnel in clinics, where the pay is not as good as in other states; (4) do away with the red tape and long delay surrounding the procuring of hearing aids through the State-aid program.

It was reported that there is a new program for young babies up to two years and eight months, which started at Bellevue Hospital and is being extended to the Hunter College center. It was also stated that the director there is urging that a coordinator be obtained for all activities for the hard of hearing in the metropolitan area. It was agreed that your chairman would confer with him.

Three articles in the *Daily News* were brought to the attention of the subcommittee, as it was stated that in the metropolitan area a teacher applying for a license is not permitted to teach if he is deaf. The committee recommended "that if a person can function satisfactorily with a hearing aid he should be permitted to teach in any school."

Delays were reported in the completion of the new Speech Center in Kings County (State University of New York). Dr. Zwerling will be associate professor of speech and hearing at the clinic.

The problem was discussed of reconciling the discrepancies in the results of tests at Johns Hopkins University on children already tested by members of the subcommittee and found by the latter to be without hearing. It was thought that probably there would be developed a differential diagnosis of peripheral deafness versus central deafness. One of the obstacles in testing the little child is that he has to be taught to do the things through which he will be diagnosed. It was stressed by the subcommittee that diagnosis should be the result of more than one visit to the otologist.

Addiction to Alcohol and Narcotics

The Subcommittee on Addiction to Alcohol and Narcotics has the following membership:

John M. Galbraith, M.D., *Chairman*	Nassau
Marvin A. Block, M.D	Erie
Jerome L. Leon, M.D	Queens

There have been no meetings of this subcommittee during the past year.

PART VI

Hospital and Professional Relations

The Hospital and Professional Relations Committee consists of:

Raymond S. McKeeby, M.D., *Chairman*	Broome
Bernard A. Watson, M.D	Ontario
Vincent J. Collins, M.D	New York

A meeting of the Hospital and Professional Relations Committee was held on January 7, 1959, in the Medical Society headquarters. Resolution 58–51 having to do with the disapproval "of the practice of a hospital charging a patient a fee for taking an electrocardiogram, and the hospital charging another fee not covered by Blue Cross insurance for the interpretation of the same electrocardiogram" was discussed further. Although proper distribution as suggested has been made, the committee felt that the specific hospitals doing this practice should be ascertained and that this action of the House of Delegates should be made known directly to them. It will be discussed at a meeting with the Hospital Association, and further information will be given in the supplement to this report which will be submitted at the time of the annual meeting.

Also at this meeting, another item discussed was a letter from Dr. Henry T. Randall suggesting tripartite representation of medical schools, Medical Society, and Hospital Association. The committee approved in principle the ideas set forth in Dr. Randall's letter, and also referred this to the meeting to be held with the Hospital Association, since it directly concerns them as well as the Medical Society.

The third item was in regard to the request of the Subcommittee on Mental Health that the Public Health and Education Committee should press for psychiatric units in general hospitals. This had been referred to the committee for their consideration. It was noted that some Blue Cross plans will give allowance for thirty days hospital care for mental disease. Members of the committee felt that since many problems arise in the case of mental patients admitted even for diagnosis alone, it could only be recommended in those hospitals which are equipped with a psychiatric team. It was also mentioned that inasmuch as Blue Cross subscribers pay taxes to support now existing State mental institutions, it would not be fair to shoulder them with higher premiums necessary for this expanded program. Since there are other committees studying the whole problem, among these the Metcalf Committee of the Legislature, it was concluded that before any action could be recommended, it would await the results of their study.

The Hospital and Professional Relations Committee also has attempted to answer routine inquiries which have been presented to them throughout the year.

Negotiations have been continued with the Hospital Association of New York State, and probably the most important thing which has been accomplished to date of the writing of this report is the formation of the Joint State Committee as outlined in the "Proposed Guiding Principles." The two members from the Medical Society of the State of New York appointed by the president are Dr. Norton S. Brown, New York, and Dr. Raymond S. McKeeby, Broome. The two members from the Hospital Association are Dr. Bernard Watson and Dr. Morris Hinenburg. This committee met on February 12 in the Medical Society offices for the purpose of selecting a fifth member who would serve as chairman. The chairman selected, who has accepted, is the Honorable David Peck of New York City. The functions of this committee are outlined under paragraph 9 of the "Guiding Principles of Hospital-Physician Relationship." A meeting composed of the Committee on Medical Relations of the Hospital Association of New York State and the Hospital and Professional Relations Committee of the Medical Society of the State of New York is scheduled for March 19 in the Medical Society offices. The conclusions arrived at in this meeting will be presented in the supplementary report.

Dental Health

The Joint Dental Health Committee with the Dental Society of the State of New York consists of:

Fred S. Dunn, M.D., *Chairman*	New York
Robert M. McCormack, M.D.	Monroe
Earle M. Crysler, D.D.S., *Chairman*	Jefferson
William F. Harrigan, D.D.S.	Nassau

Our committee did not meet during the past Society year because nothing was referred to us.

PART VII

Economics

The Council Committee on Economics has the following members:

John C. McClintock, M.D., *Chairman*	Albany
Merle D. Evans, M.D.	Monroe
Waring Willis, M.D.	Westchester

This committee has met regularly. Resolutions, transmitted from the House of Delegates by the Council, were referred to the proper subcommittees or acted upon, and the recommendations will be found in the reports of these subcommittees.

The committee has maintained liaison with the Health Insurance Council and, with their help and assistance, a notice was published in the November 15, 1958, issue of the New York State Journal of Medicine clarifying those insurance forms for which a doctor is entitled to charge a fee. Also, in cooperation with this group, a letter was prepared for signature of the secretary of the Medical Society of the State of New York which accompanied distribution of a pamphlet describing simplified claim forms that are now being widely used by health and accident insurance companies. This pamphlet was sent to every member of the Medical Society of the State of New York.

The committee reviewed resolutions 58–16 and 58–46 regarding fees by doctors for preparing insurance company reports. After discussing this with the Health Insurance Council representatives, it was felt that no concerted action on the part of either the State Society or any insurance company would be advisable at this time. It was recommended that the matter be called to the attention of the doctors throughout the State by the Publication Committee of the New York State Journal of Medicine and that each individual physician make his own private arrangement with the respective insurance company requesting the forms to be filled out.

The Economics Committee has investigated the problem of group versus franchise versus noncancellable types of health and accident insurance. Representatives of insurance companies, insurance brokers and the Health Insurance Council have generously given their advice to your committee. In addition, the committee has briefly touched upon the question of group life insurance and major medical insurance protection for members of the State Medical Society. At the present time no conclusions have been reached. The complexities of these insurance programs require additional study.

Under Medicare, the committee has acted as the physicians review committee to study claims, and recommendations have been made for adjudications. In July, the chairman of the committee, with the president and secretary of the Society, negotiated the new contract with the Office for Dependents' Medical Care in Washington. Because Congress limited the funds available for Medicare, drastic reductions in the services available from civilian physicians and civilian facilities became effective October 1. Essentially, no elective medical or surgical care has been available since that date. Because of this restriction and because further changes were anticipated, it was decided, after prolonged discussion, to provide only one copy of the fee schedule to each county medical society.

The chairman of the committee took into consideration resolution 58–18, introduced by the Medical Society of the County of Queens, which was referred to it by the Council, to resist any "extensions to persons" or "extension of services" in the Medicare program.

Medical Expense Insurance

The Medical Expense Insurance Subcommittee is composed of the following members:

Carl R. Ackerman, M.D., *Chairman*	Bronx
George R. Denton, M.D.	Albany
Arthur F. Gaffney, M.D.	Oneida
C. Otto Lindbeck, M.D.	Chautauqua
Melvin S. Martin, M.D.	Wyoming
Dwight V. Needham, M.D.	Onondaga
Carlton E. Wertz, M.D.	Erie
A. Vaughn Winchell, M.D.	Monroe
George P. Farrell, *Adviser*	New York

The subcommittee met on October 9, 1958, and jointly with Blue Shield Plans of New York on January 31, February 1, 1959, and on the evening of January 31, 1959.

The subcommittee considered and acted upon the following resolutions referred to it by the Council:

Resolution 58–11, introduced in the 1958 House of Delegates by the Medical Society of the County of Oneida, urged the State Society through its appropriate committee to urge Blue Shield Plans in New York State to formulate and effectuate a plan similar to the program in Wisconsin, a plan without a fixed schedule of allowances. A member of the Medical Society of the County of Queens was present on invitation and stated his society was in favor of such a plan whereby the doctor would charge his usual fees and if out of line, the matter would be presented to a central committee for adjudication.

It was pointed out that a plan of this type was not feasible for New York State because of the variation in doctors' fees throughout the State, the fact that the Wisconsin plan's enrollment was 40,000 as compared to millions in New York State, and, also, it was doubtful if the State of New York Insurance Department would permit the plans to sell this type of contract.

After discussion, the subcommittee voted disapproval of the adoption of the features of the Wisconsin plan, disapproval of urging New York State plans to formulate such a plan, and recommended to the Council that the resolution be referred to the Advisory Committee to the Columbia University Study of Nonprofit Medical Insurance Plans and to notify the special committee of the subcommittee's recommendation.

Resolution 58–49, introduced by Dr. Carlton E. Wertz of Buffalo, on the subject "Medical Care, the Job of the Medical Profession," was not considered by the subcommittee because of previous Council action referring it to a special committee.

Resolution 58–8, introduced by the Nassau County Medical Society dealing with medical services in Blue Cross contracts, was discussed. The subcommittee agreed with the principle of the resolution and was of the opinion that Blue Shield Plans should formulate plans for diagnostic services to prevent overutilization of hospitalization. A member of the subcommittee made the suggestion that we continue opposition to the inclusion of these services in Blue Cross contracts, and it was his feeling that the study being conducted for the Insurance Department would consider these factors and provide a suitable and equitable solution.

The subcommittee voted that Blue Shield coverage be so arranged that it encompass medical services such as x-ray, anesthesiology, pathology, and physiotherapy, both in and out of the hospital, and if this action is adopted and approved by the Council the subcommittee requests that Blue Shield and Blue Cross plans in the State be notified.

The subcommittee was in agreement with Resolution 58–17, introduced by the Medical Society of the County of Queens, regarding hospital and medical care of acutely ill infants under ninety days of age and recommended that infants should be covered from birth in Blue Cross and Blue Shield contracts. If approved by the Council, the subcommittee requests Blue Shield and Blue Cross plans in the State to be so informed.

Resolution 58–23, introduced by the Medical Society of the County of New York, requested that the State Society go on record in favor of amending Article 250 of the Insurance Law making reimbursements for paramedical services permissive on the part of XI-C corporations rather than compulsory. After discussion, it was voted that the resolution as presented be modified to read "Resolved, that the Medical Society of the State of New York go on record declaring that an amendment to Article 250 of the Insurance Laws of the State of New York making all reimbursements for paramedical services permissive on the part of the IX-C corporations rather than compulsory," and that this recommendation be made to the Council with the suggestion that the resolution as amended be referred to the Legislation Committee for implementation.

Resolution 58–37, introduced by the Medical Society of the County of Seneca, dealt with health insurance and industry and was approved with a suggested minor revision that "the county societies invite representatives from the State Society and other interested groups to their respective counties for consultation regarding the development of medical care programs."

Resolution 57–48, introduced in the 1957 House of Delegates by the Medical Society of the County of Oneida, that the Bureau of Medical Care Insurance or a pertinent committee of the State Society be instructed to take immediate action with their Blue Shield counterparts to protect the rights and interests of the medical profession from encroachment and detriment by the rating committees of other than medical groups, was first considered by the subcommittee in January, 1958. A member of the subcommittee at that time explained that the resolution was presented apparently because of a misunderstanding in legal terminology regarding inclusion of dental and podiatric services in Blue Shield Plans rendered by dentists and podiatrists.

To clarify any misunderstanding regarding this resolution, the chairman stated confirmation in writing had been sent to the president of the Medical Society of the County of Oneida of the action taken on this resolution at the joint meeting of Blue Shield Plans and the subcommittee on February 22 and 23, 1958, that the managing directors readily stated that the setting of fees for physicians by nonmedical groups was unthinkable and would never be allowed to occur in Blue Shield contracts in this State.

The chairman further stated that according to the "Standards for Approval of Nonprofit Plans by the State Society," the boards of directors must constitute a majority of physicians; therefore the doctors are setting fees for physicians in these approved plans. He further explained that one of the functions of the subcommittee was to receive complaints where such practices were not being carried out.

The subcommittee voted a recommendation to the Council that a letter be sent to the Medical Society of the County of Oneida embodying the following points: That the "Standards for Approval of New York State Plans as approved by the Medical Society of the State of New York" require control by physicians on the boards of directors and under such control the physicians do establish fees, and further, that complaints relating to "rating committees other than medical groups" setting such fees be referred to the Subcommittee on Medical Expense Insurance.

On January 31 and February 1, 1959, the subcommittee met jointly with representatives of Blue Shield Plans to stimulate an exchange of ideas following presentations of various topics of mutual interest to the Plans and the medical profession.

Legislative matters, State and Federal, were clearly outlined by Mr. Richard Davis of Sherpick, Ragan & Davis covering pending State legislation. This was augmented by the executive officer of the Medical Society of the State of New York, Dr. Harold B. Smith, who outlined in detail the various bills of interest to the medical profession pending in the New York State Legislature.

Dr. John C. McClintock, chairman of the Council Committee on Economics, presented a comprehensive picture of labor attitudes and liaison, pointing out that labor leaders have expressed the objective of complete health coverage. The problem is to secure liaison between organized medicine and the labor plans to see that good medical care is provided. The Council of the State Society approved a recommendation from the Ad Hoc Committee on Labor Unions and Industrial Health that "All health centers under the State Welfare Department shall provide the best quality of medical care, with the advice of the county medical society in cooperation with an advisory committee." Dr. McClintock referred to a "Guide for Evaluation of Management and Union Health Centers" prepared by the A.M.A. with a recommendation that any county society confronted with the proposed organization of a health center use it as a guide in programs sponsored by labor, management, consumer groups, fraternal organizations, and others.

Mr. Frank Van Dyk, vice-president of United Medical Service, explained in detail the problems confronting Blue Shield in successfully securing the writing of the program for State Civil Service groups.

Dr. Leonard Raider, vice-president and secretary of United Medical Service, presented a paper on relative value schedules, citing the California relative value study as a pattern so that uniform nomenclature, code numbers, questionnaires, etc. may be employed. Dr. Raider pointed out that with seven plans, as we have in New York State, much confusion has arisen relative to the merits of the various fee schedules. The California Relative Value Study as recommended by the A.M.A. as a pattern could produce the adjusting of some of the items in the schedules in order to render them more realistic both for the physicians and the public. It was noted that A.M.A. stands ready to assist in the studies.

Mr. R. C. Cashmore of the Western New York Medical Plan presented an interesting approach on "Extended Benefits Rider," pointing out that his plan had enrolled a large industrial group in Tonawanda.

Dr. Carlton E. Wertz, president of Blue Shield Medical Care Plans, spoke on prepayment coverage for the aged, pointing out that Plans should see that their present subscribers keep their insurance, if they retire the plans should carry them on; that new contracts should be developed to attract additional subscribers in the lower age range; and offer plans for people who reach sixty-five who have modest incomes and limited resources.

Mr. Lynn Doctor, vice-president of United Medical Service, spoke on "Group Experience vs. Community Rating." Mr. Doctor's presentation pointed out clearly the differences between commercial and Blue Shield premium rates and the fact that Blue Shield has the advantage of being able to offer service benefit contracts.

The discussion which followed Mr. Doctor's talk brought out the necessity for educating the doctors and the public as to the provisions of Blue Shield plans and their advantages over commercial insurance plans; also the urgency for a united front between plans and organized medicine in legislative matters.

The subcommittee met at 8 P.M., January 31, 1959, and Dr. Ackerman brought up the matter of the composition of a proposed liaison group to consider top issues which will doubtless confront organized medicine and the plans in the near future. Several suggestions were made and after discussion it was felt that the Subcommittee on Medical Expense Insurance should serve as a catalyst and the nucleus for future joint action.

It was voted to urge representatives of Blue Shield Plans to develop an active organization to cooperate with the State Medical Society in the many problems concerning prepayment medical care insurance, including legislative matters.

In order to render the subcommittee as effective as possible in a leadership capacity, Dr. McClintock, chairman of the parent Economics Committee, stated he would obtain Council approval for the subcommittee to meet as frequently as necessary with representatives of the Plans, preferably in central New York, to equalize traveling expense for the smaller plans.

Concern was again expressed over the apathy of the physician members of the boards of the plans to attend joint meetings, and it was voted to send a letter from the chairman of the subcommittee to every physician member who is a trustee of a Blue Shield plan with a report of the joint meeting, expressing regret to those plans which sent no representative.

Dr. McClintock brought up the action by the A.M.A. in December, 1958, when it adopted a resolution calling for voluntary health insurance or prepayment plans to cover persons "over sixty-five with reduced incomes and modest resources." After discussion, it was voted to recommend to the Economics Committee that they request the Council to petition Blue Shield plans in the State to make available a contract for the low-income aged groups; also that the Council call upon county medical societies to approve implementation by Blue Shield of the proposal by the A.M.A. to cover the aged and that a copy of the A.M.A. proposal accompany such requests.

The chairman stated that the issue of dual coverage was in the hands of the Insurance Department; that hearings had been held on it with resultant proposed changes in the law. The impression was gained from information presented at the hearing that proposed legislation is to be dropped.

The subcommittee voted that suitable publicity be given the two-day joint session January 31 and February 1 in the *Newsletter* and the New York State Journal of Medicine including Council action on the recommendations.

At the February 1 joint session the chairman reported the actions of the subcommittee at its meeting the previous evening and stated the purpose of this session was to reach a decision for the establishment of a permanent mechanism for resolving matters of mutual concern to the State Society and Blue Shield Plans.

Dr. Louis H. Bauer, Chairman of the Board of United Medical Service, brought out the apathy of the doctors and medical societies and that the medical profession had allowed the "doctors plans" to slip out of their control; that commercial companies can undersell Blue Shield in many instances. He stated certain principles were important to all seven plans in the State; namely, uniform coverage, local differences in community problems, even fee schedules might be different; that they should unite in an organization similar to the national organization to work in harmony and coordinate efforts dealing with policy toward legislation, etc., not the technical aspects; effect close liaison with the State Society, setting up a joint group with the Medical Society with elected representatives; establish closer relationship with the medical profession because in many places physicians feel they have no voice even though doctors serve on the boards; educate the doctors as to what Blue Cross and Blue Shield really are, as many do not know the difference; and demonstrate to the doctors who may look on the dollar as more important than humanitarian services that actually their incomes are greater than they would be if there was no Blue Shield.

After discussion, Dr. Bauer's motion was carried that there should be an organization of the seven Blue Shield Plans, in collaboration with the State Medical Society; that a rough outline of such an organization be included in a statement to each plan from the chairman of the Subcommittee on Medical Expense Insurance; that approval of each plan be requested together with a designation of a representative for an organization meeting; that copy of the communication be conveyed to the Council of the State Society.

It was suggested that the first regular organizing meeting be held as soon as possible. The chairman designated Dr. H. Dan Vickers, chairman; Dr. Louis H. Bauer, and Dr. John C. Kinzly as a committee to draft an outline of the above-mentioned organization.

The subcommittee approves for the ensuing year the following Blue Shield Plans: United Medical Service, Inc., New York City; Western New York Medical Plan, Inc., Buffalo; Genesee Valley Medical Care, Inc., Rochester; Central New York Medical Plan, Inc., Syracuse; Medical and Surgical Care, Inc., Utica; Northeastern New York Medical Service, Inc., Albany; and Chautauqua Region Medical Service, Inc., Jamestown.

The subcommittee wishes to express its thanks to the officers of the State Society, Dr. John C. McClintock, chairman of the Economics Committee; and to Dr. Herbert T. Wagner, executive director of the Medical Society of the State of New York, for their interest and attendance at meetings. It is especially grateful to Mr. George P. Farrell, director of the Bureau of Medical Care Insurance and adviser to the subcommittee, for his assistance to the subcommittee.

Bureau of Medical Care Insurance

The Bureau of Medical Care Insurance, Mr. George P. Farrell, director, and administrative officer of Medicare, reports through your Economics Committee and its subcommittee. The Bureau operates under the direction of the Council Committee on Economics and its Subcommittee on Medical Expense Insurance.

Mr. Farrell has not only conducted the Bureau

Location	Membership		Increase	
	Medical	Hospital	Medical	Hospital
New York	5,027,617	7,110,567	197,865	236,961
Rochester	442,551	509,987	8,053	9,397
Buffalo	574,652	716,887—	3,671	−17,653
Syracuse	245,936	426,586	23,591	42,591
Utica	221,875	226,285	10,419	8,131
Albany	279,398	350,790	28,898	17,107
Jamestown	29,334	54,525	5,551	1,398
Watertown	. . .	28,783	. . .	1,280
TOTALS	6,821,363	9,424,410	278,048	299,212

NOTE: Utica Plan serves Watertown area for Blue Shield members.

of Medical Care Insurance throughout the year, but he has also efficiently administered the Medicare Program with its myriads of detail. In addition, Mr. Farrell has been adviser to the American Medical Association Medicare Task Force. He has appeared before county medical societies, district branches, and the Woman's Auxiliary to the Medical Society of the State of New York, to explain the Medicare Program. He has also made valuable contributions to several teaching sessions for physicians office assistants.

The Bureau compiled the twelfth annual progress report for 1958, showing detailed analysis of each plan in regard to membership, incurred and paid claims, claim incidence, operating expenses, premium rates, reserves, distribution of earned premium income, etc., for the information of the House of Delegates and members of the State Society.

Progress of the Blue Shield plans in New York State shows that at December 31, 1958, total membership (subscribers and dependents) was 6,821,363, an increase of 278,048 during the preceding year.

The table above is a statement of membership in Blue Shield medical care plans and Blue Cross hospital plans, showing comparative increases for 1958.

The Blue Shield medical care plans had an earned premium income during 1958 of $87,529,940 as compared to $76,736,086 in 1957, an increase of $10,793,854.

Incurred claim expense during 1958 amounted to $76,127,305, as compared to $65,295,327 during 1957, an increase of $10,831,978. Incurred claims were 86.97 per cent of earned premium in 1958, as compared to 85.09 per cent in 1957.

The annual and quarterly progress reports are of great value to each plan because they analyze each plan's experience and indicate trends in utilization. It is recommended that they be reviewed carefully by those who are responsible for the operation of a plan. The basic information in these reports is available to the members of the State Society at the Medical Care Insurance Bureau.

Medicare

The program became effective on December 7, 1956, to provide medical and hospital care for dependents of people in active military duty.

For the period ending December 31, 1958, 20,772 claims were paid in the amount of $1,558,151.41 in New York State. There were 6,700 physicians who rendered services under the Medicare Program. This compared to 12,497 claims in the amount of $949,988.29 in 1957 and 4,500 physicians rendering services.

On August 1, 1958, a Schedule of Allowances was renegotiated with the Office for Dependents' Medical Care by Dr. John C. McClintock, chairman of the Council Committee on Economics, under whose jurisdiction the Medicare Program operates. A copy of this new schedule has been sent to each county medical society secretary.

On August 8, 1958, a meeting was called by General Paul I. Robinson, Executive Director, Office for Dependents' Medical Care, in Washington, D.C., to consider with all of the states, the American Medical Association, the American Hospital Association, and the hospital contractors the experience regarding the cost of the Medicare Program to date. It was pointed out that the Program was exceeding the appropriation of the government by approximately twelve million dollars per year; therefore, immediate action would be necessary to curtail costs so expenditures would remain within the appropriation.

On October 1, 1958, a directive issued by General Paul I. Robinson became effective requiring that dependents should utilize uniformed services medical facilities to the optimum to help effect certain economies in the Medicare Program. Medicare was also to discontinue all services not clearly specified in the law for both those living with and apart from their sponsors. Medical care which had been originally rendered on an outpatient basis, such as (1) injuries not requiring hospitalization, (2) termination visits (when one physician sees patient in his office and turns over to another physician for hospital care), (3) pre- and postsurgical tests before and after hospitalization, (4) neonatal visits (two well baby visits following hospitalization), and (5) elective and plannable surgery, was no longer covered. Nervous and mental diseases were also no longer covered under the Program.

A special issue of the *Newsletter* of the Medical Society of the State of New York was sent to all members regarding these changes, including the information contained in the government directive.

The relationship with the Washington office has been most pleasant and cooperative. When it has been necessary to submit claims of an unusual nature for adjudication, in practically every instance the recommendation of the Physician's Review Committee has been accepted.

We regret to announce that as of September 1, 1958, General Paul I. Robinson, with whom we have had the utmost cooperation, retired from the Office for Dependents' Medical Care. His successor is General Floyd L. Wergeland, who has given us the same type of cordial contacts.

Liaison with U.S. Veterans Administration

The membership of the Subcommittee on Liaison with U.S. Veterans Administration of the Economics Committee is as follows:

George A. Burgin, M.D., *Chairman*...Herkimer
Herbert H. Bauckus, M.D..................Erie
Harry Golembe, M.D..................Sullivan

The subcommittee has had a busy, interesting, and perhaps a provocative year. It will be recalled that in our annual report of May, 1958, it was noted that a fee schedule had been prepared with the aid of and after careful study by this subcommittee, some members of the board of trustees of the Veterans Medical Service Plan of New York, Inc., and the coordinators. It was anticipated that this schedule would be the basis for negotiation with the V.A.

The subcommittee did, however, recommend that the V.A. schedule be adopted for the fiscal year beginning July 1, 1958, when a contract was signed by the corporation. This was recommended with the understanding that the desired changes be presented to the V.A. for its consideration before January, 1959. These negotiated changes could then be incorporated in the contract to be signed in June, 1959, by the Veterans Medical Service Plan of New York, Inc.

On August 7, 1958, a meeting of the subcommittee was held at the State Society's new offices in New York City and the comfortable, airconditioned atmosphere, in contrast to the humid heat of the city on that day, was conducive, we believe, to a most congenial and educational discussion. Meeting with us were Sylan A. Frankenthaler, M.D., chief medical officer, V.A., in New York, and Felice Pepe, medical administrative officer.

It was pointed out by Dr. Frankenthaler that the few pages of introduction in the fee schedule, now in effect, would prove very helpful to the physician giving hometown care to the veteran. He also explained that final arrangements for the contract and fee schedule were in the hands of the central office of the V.A. in Washington.

Following this meeting a determined effort was made to present the proposed fee schedule to all physicians of the State Society, first, because we wanted everyone to understand what we were striving for, and, second, the "hometown-care" of veterans with service-connected disease or disabilities would fall to their care.

With considerable expense to the State Society, copies of the present fee schedule with our proposed changes and a place to make recommendations were sent to each county society. Sixty-one of these copies with an explanatory letter to each county society president produced a return of 14 replies. The majority concurred with the adjusted schedule; several thought we were completely unrealistic. The constructive data were carefully analyzed.

During this period, October 1, 1958, to December 1, 1958, in an effort to acquaint all physicians of the State with the situation, a column was released in the October 15 issue of the *Newsletter*, and an editorial entitled "The Medical Society and the Sick Veteran" was published in the November 15, 1958, issue of the NEW YORK STATE JOURNAL OF MEDICINE explaining the work of this subcommittee and the function of the Veterans Medical Service Plan of New York, Inc.

On December 12, 1958, the subcommittee met in our New York City headquarters with Dr. Turner Camp, director of clinics, representing the central office of the V.A. Mr. William F. Martin, our State Society counsel, was also present and a constructive meeting resulted. Dr. Camp was formally presented with our proposed fee schedule and promised a sympathetic review of the entire problem.

The terms and form of the contract between the V.A. and the Veterans Medical Service Plan of New York, Inc., were discussed. Our New York State contract is unique in that it provides for coordinators, appointed by the corporation in the key cities of New York, Albany, Syracuse, and Buffalo. The corporation, Council, and the subcommittee have always felt that this system was essential to the smooth working of the plan.

On advice of Mr. Martin, Dr. Camp was informed that whether our agreement with the V.A. was in the form of a "contract" or "letter of agreement" was immaterial, as long as the system of coordinators could be continued. Dr. Camp emphasized the fact that economy was essential to the V.A. and their budget would depend upon the grant made to it by Congress. Dr. Herbert Bauckus, president of the Veterans Medical Service Plan, Inc., and a member of this subcommittee, assured Dr. Camp that serious consideration would be given to the problem of the reduction of cost of the coordinators.

As this report is being compiled, a portion of a letter, received two days previously from Dr. Camp, contains the following paragraph: "The fee schedule in New York for treatment of Veterans Administration beneficiaries will be increased. The increase will be on a selective basis. The amount of increase has not been determined by us at this time because we have not completed our national survey of requests for increased fees." It is probable that a supplemental report regarding this problem will be available before our annual meeting in Buffalo, in May.

To summarize, it may be said that the Subcommittee on Liaison with the United States Veterans Administration has: formulated a fee schedule, publicized it to the physicians of New York State by detailed copies to the 61 county societies and articles in State Society publications, met with representatives of the V.A., recommended the continued form of the V.A. contract or letter of agreement with the Veterans Medical Service Plan of New York, Inc., containing the provision for coordinators, and established a more congenial relationship with representatives of the V.A.

This subcommittee is deeply indebted to the experienced advice given us by Dr. Herbert Bauckus, president of the Veterans Medical Service Plan of New York, Inc., Dr. W. P. Anderton, secretary of the State Society, and Miss Mollie Pesikoff, whose untiring patience and interest has made possible the detailed functioning of this committee.

PART VIII

Woman's Auxiliary

The Advisory Committee to the Woman's Auxiliary consists of the following:

Thurman B. Givan, M.D., *Chairman*	Kings
Thomas M. d'Angelo, M.D.	Queens
Albert Vander Veer, II, M.D.	Albany

Encouraged by the year's solgan "Through Knowledge We Grow" the Auxiliary continued its efforts to make known the State Society's position on health and medical issues to women's groups whenever and wherever possible.

Guided by the president, Mrs. Maurice G. Sheldon, Olean, the executive board and State chairmen lent their support to all the existing projects and added a new one—home and child safety.

Greater emphasis was placed on the value of the individual member as part of the team. Each member was urged to study the issues of the day so that she could be prepared to explain what decisions on national, State, and community issues would help or hinder medicine, especially those that affect our older people.

Among the Auxiliary projects to be continued on a State-wide basis are nurses' scholarships and recruitment, health poster contest, State Fair exhibit, and the home and child safety program.

Many county auxiliaries made particular progress in local projects.

Among these were Cattaraugus in its work with retarded children and Jefferson in the field of nurse recruitment.

The State chairman of nurse recruitment is considering means of increasing its effectiveness in the general field of recruitment through cooperation with the Council Committee on Nursing Education in a program relating to health career day in high schools.

The executive board recommended some amendments to its constitution and bylaws, participated in the fall Conference of County Auxiliary Presidents and Presidents-Elect, planned a most interesting State convention in Buffalo, and took special steps to strengthen the internal organization of both the State and county auxiliaries.

Your chairman feels that the Auxiliary could be of greater assistance to the doctors in planning and arranging the district branch meetings.

It is suggested that district officers consider the advisability of requesting the Auxiliary district councillors to assist in planning the social side of the programs.

The *Distaff*, Auxiliary publication, continues its growth under the egis of its editor, Mrs. Herbert J. Ulrich, Buffalo, who has strengthened its financial position by accepting an advertisement from New York's seven Blue Shield plans.

The individual Auxiliary members who give so unselfishly of their time and efforts to medicine in New York State are too numerous to mention, but your committee suggests that those county officers who are aware of their auxiliaries' special accomplishments pause and take note of the ladies' activities, especially in public relations and legislation, by noting them in the minutes of the annual meeting.

On behalf of our president, Dr. Leo E. Gibson, the officers, and members of the State Society, I should like to say thank you to Mrs. Sheldon and the officers of the State and county auxiliaries for the assistance and loyal support they have given the State and county societies during the past year.

Joint Committee of Medical Society of the State of New York and Pharmaceutical Association of New York State

The members of this joint committee are as follows:

L. Maxwell Lockie, M.D. *Chairman*	Erie
Eli A. Leven, M.D.	Monroe
Herbert Pollack, M.D., Ph.G., L.L.D.	New York
Nicholas S. Gesoalde, Ph.G., *Chairman*	New York
Calvin Berger, Ph.G.	New York
John F. O'Brien, Ph.G.	Monroe

The committee has not met during the current Society year because there have been no matters of immediate concern before it.

We desire to educate physicians to realize that medications have become quite expensive and that physicians should bear this fact in mind when writing prescriptions. We hope that an editorial on this subject will be written for the NEW YORK STATE JOURNAL OF MEDICINE.

PART IX

Legislation

The report of the Council Committee on Legislation must, of necessity due to publication schedule, be presented early in the session of the State Legislature. The report, therefore, is that of the activities and actions of the committee based upon discussion with various members of the Society throughout the State and upon the advice and recommendation of the legislation counsel and the executive officer of the Legislation Bureau.

The membership of the committee remains comparable to that of last year, with representation from the various areas of the State and, in addition, including an adviser from the Department of Health and one from the Department of Education. The following is a list of the members of the committee:

James M. Blake, M.D., *Chairman*	Schenectady
Henry I. Fineberg, M.D.	Queens
John C. Brady, M.D.	Erie
Aaron Kottler, M.D.	Kings
George J. Lawrence, Jr., M.D.	Queens
E. Craig Coats, M.D.	New York
Roman R. Violyn, M.D.	Montgomery
Jurgens H. Bauer, M.D.	Onondaga
Thomas M. Watkins, M.D.	St. Lawrence
James F. Gardner, M.D.	Monroe
E. Yale Clarke, M.D.	Warren
Elton R. Dickson, M.D.	Broome
Frederic W. Holcomb, M.D.	Ulster
Henry W. Kaessler, M.D.	Westchester
Jacob L. Lochner, Jr., M.D.	Albany
Herman B. Snow, M.D.	St. Lawrence
E. MacDonald Stanton, M.D.	Schenectady
Joseph G. Zimring, M.D.	Nassau
Granville W. Larimore, M.D., *Adviser*	Albany
Stiles D. Ezell, M.D., *Adviser*	Albany

The basic operation of the legislation program of the State Society is again this year centered in the activities of the legislation counsel and the Legislation Bureau, as was established in the fall of 1957. Dr. Harold B. Smith has continued as executive officer of the Legislation Bureau, with the advice and counsel of the law firm of DeGraff, Foy, Conway, and Holt-Harris. This arrangement, although relatively new, has been quite satisfactory. It is reasonable to assume that subsequent changes or alterations in activity may be indicated or desirable in the future, and this type of program should prove quite satisfactory and beneficial to the Medical Society.

The first meeting of the committee was held in the fall of 1958, at which time the basic policies of the Society in reference to legislation, as well as the various measures referred to the committee, were reviewed.

The executive officer and the chairman of the Committee on Legislation visited various sections of the State, discussing the legislation policy and the specific items of legislation with the county medical society legislation chairmen and other members of the various societies. These meetings were well attended and seemed to be quite helpful to all who participated. The meetings were held in New York City, Kingston, Schenectady, Cortland, Geneva, Buffalo, and Ogdensburg.

The Committee on Legislation is of the opinion that if a program of legislation is to be effective and satisfactory, the activities and interest in legislation must extend beyond the committee itself to the various county societies, actually to the individual members of each society throughout the entire State. It was further agreed that more effort should be made toward improving our general relationship with the members of the Legislature.

Therefore, it has been recommended to each county society that through its legislation chairman and its public relations chairman, as well as through other individual members of the society, contact be made with various legislators in their area. Getting to know the legislators personally and having the opportunity of discussing in detail with them the various phases of medical legislation and the reasons for our interest in such can perhaps do more than anything else in enhancing good medical legislation.

The Public and Professional Relations Bureau conducted a forum for its respective county public relations chairmen, at which time the principal speakers were Senator Metcalf and Assemblyman Ryan. It was pointed out by both of these gentlemen that the great weakness of the Medical Society in their opinion, as it refers to legislation, was our failure as individual physicians to contact and become acquainted with our respective legislators and to take advantage of the opportunity of discussing with them our ideas pertaining to medical legislation.

It is therefore strongly emphasized in this report that each county medical society make specific arrangements, if it has not already done so, to meet either as a group or as individuals with the legislators from the area, become acquainted with them, and discuss with them the phases of medical legislation in which they are interested.

It was further the thought of the members of the committee that we as a Society should not consistently introduce multiple measures into the Legislature which we knew beforehand, based upon advice of our legislation counsel, would have little or no chance of being enacted into law. It seems much more desirable that we concentrate on specific phases of legislation from year to year and, of course, legislation which has some chance of becoming reality. In this respect it is emphasized that the program of medical legislation must extend well beyond the desires of a single individual. Frequently resolutions have been presented with a request for legislative action which, in reality, are measures for the benefit or gain of a single or a few individuals and not for the Medical Society as a whole. It is quite obvious that legislation of this type is readily recognized by the members of the Legislature as to its intent; therefore the chance of enactment is not only essentially impossible but the introduction of such legislation may even be harmful to the Medical Society itself by giving the members of the Legislature an erroneous impression of our desires. A county medical society should carefully scrutinize resolutions pertaining to legislation which are being approved and submitted to the State Society for legal action.

The following is a summation of the resolutions presented to the Committee on Legislation and the recommendations and actions of the committee in reference to these resolutions. It should be emphasized that the actions and recommendations of the Committee on Legislation are based upon the advice and counsel of our legislation counsel and Legislation Bureau.

The following items have been approved by the Committee on Legislation and bills have been introduced in both the Senate and Assembly in each instance:

1. *Injunction against the illegal practice of medicine.*—This bill, or similar legislation, has been introduced in previous years, unfortunately without success. What the attitude will be this year is as yet undetermined. It is possible that it may be necessary to undertake further study in this direction in order to arrive at a satisfactory solution to this problem. This legislation would authorize the Attorney General to maintain an action for injunction against the illegal practice of medicine.

2. *To amend the insurance law in relation to authorizing medical expense indemnity for dental and podiatric care on a permissive basis.*—This legislation would amend the law making such insurance coverage by nonprofit corporations permissive rather than mandatory. It is recognized that there is justification for authorization for dental and other paramedical services, but it is further felt that the insurer should not be in a position where he is unable to offer coverage not including these paramedical services inasmuch as many subscribers to this type of insurance may not desire this auxiliary coverage. Therefore, it seems more logical to permit such on a permissive basis rather than on a mandatory basis. It is further recognized that the continued and further encroachment upon nonprofit insurance corporations by multiple medical coverages can only result in decreased coverage or increased premiums. Further, it is felt that the original intent of this type of insurance was primarily for basic medical coverage and therefore should be retained on this basis, with other additional coverage being on a permissive basis if the carrier so desires.

3. *To amend the Workmen's Compensation Law in relation to the territorial jurisdiction of the medical practice committee.*—It has been strongly urged in previous years and again this year by those in counties supervised by the medical practice committee that an attempt be made to repeal this act and have such jurisdiction under the legislation committee of the county medical society, as is in effect in counties of less than one million population. Unfortunately, all attempts in the past to repeal this legislation have been unsuccessful, and the attitude toward it remains the same this year. On the advice of the legislation counsel, this legislation is being introduced this year to prevent the extension of the supervision of the medical practice committee. This legislation would restrict the existence of the medical practice committee to counties of one million or more population, wholly included in a city. This would not affect the activities of the medical practice committee in the four large counties in New York City, but would preserve in the other counties of the State the existence of the voluntary committees of the Medical Society, even should any of the other counties reach a population of one million. Although this may be considered a compromise, a repeal of the original legislation itself is, unfortu-

nately, apparently impossible at the present time. If it can be shown with factual information at a later date that the medical practice committee in New York City is not satisfactory and does not have an advantage over a voluntary committee, and by the use of the latter we can save considerable expenditure of tax funds, the Legislature might then give serious consideration to repeal of this act.

4. *To amend the Insurance Law, in relation to group life insurance on the lives of members of an association of persons in a particular calling or profession.*—This legislation would permit the issuance of group life insurance to the members of associations such as the Medical Society. It is purely permissive legislation with certain restrictions, such as requiring that it be open to all members who qualify medically and requiring at least 75 per cent of eligible members to be insured if the association has less than 200 members. If it has more than 200 members, 75 per cent of the first 200 must be insured, plus 60 per cent of the number of persons in excess of 200. This or similar legislation has been introduced in previous years but unfortunately has been opposed by some groups of our own Society who perhaps have similar type of insurance coverage. The Committee on Legislation feels there is no reason for opposition to this, nor is there any reason for conflict inasmuch as this type of insurance is entirely permissive and does offer certain features of insurance coverage based on group life issuance, which is not available and which groups now having insurance do not have.

In addition to the above items which were referred to the committee and received its approval and the approval of the Council, the following are summations with reference to other resolutions and suggestions received by the Committee on Legislation:

1. *Resolution 58–20 from the House of Delegates, entitled "Group Insurance Against Third Party Actions."*

> Whereas, the Bureau of Motor Vehicles of the State of New York requires a physician's certificate when an applicant for renewal of an operator's license indicates that he has been disabled; and
>
> Whereas, a physician who certifies that a patient is physically fit to operate a motor vehicle on the highway with safety to himself and others assumes a legal responsibility; and
>
> Whereas, the physician may be found negligent in court as a third party, if his patient is involved in an automobile accident; and
>
> Whereas, such third party action may result in serious financial loss; and
>
> Whereas, neither malpractice insurance nor other insurance currently available will protect physicians against such loss; now therefore be it hereby
>
> *Resolved*, that the Council of the Medical Society of the State of the New York be requested to investigate and study this problem and to take any necessary and appropriate action.

This resolution would afford protection of physicians from liability arising out of certifications to the Motor Vehicle Bureau with respect to physical fitness of operators. The question arose as to the liability of the physician under such circumstances, and our legislation counsel advised us that it was their opinion that a physician would not be held liable under such circumstances and that it was not necessary that specific legislation be introduced.

The resolution was referred to the Malpractice Insurance and Defense Board, and they subsequently reported to the committee that in case of such action the malpractice insurance of the Medical Society of the State of New York, as currently written, did protect physicians so insured in this plan against such loss.

This was pursued further and it was subsequently determined that it probably could be settled on an administrative basis with the Motor Vehicle Bureau. It is contemplated that there will be a change in the application for licensure for operation of a motor vehicle within the year and that these changes will incorporate questions covering such possible liability.

Following this, it was therefore the opinion of the committee that this problem should be pursued further on an administrative basis and that no specific legislation be introduced this year pertaining to such, hoping it can be determined satisfactorily in the above manner.

2. *Frequency of routine school medical examinations.*—The subcommittee on school health suggested that "effort should be made to reduce the number of yearly routine school medical examinations." Legislation of this type was introduced by the Medical Society last year and was opposed by the State Education Department and failed to be enacted into law. This question was discussed extensively by the members of the committee, also advice sought from our State Education adviser, Dr. Ezell. There was some difference of opinion brought out among physicians interviewed inasmuch as some felt strongly that the type of routine medical examinations which are now conducted on a yearly basis are not adequate or satisfactory and that it would be much better to do a complete examination at a longer interval. On the other hand, other physicians interviewed pointed out that the interval of time would, in reality, make no difference as far as type of examination carried out; further, that many other organizations, such as health camps and activities of this type, all require examinations which are done regularly by the family physician and are in line with the present activities. It is further felt by many that the yearly contact of the physician

with the school student is beneficial and should be carried on just as routine yearly examination for adults is recommended. Dr. Ezell advised that the Department of Education would not at this time sponsor changing the regulations as they are; therefore, they would oppose this type of legislation.

Following the interviews and discussions by interested parties, it was the opinion of the Committee on Legislation that no legislation of this type should be introduced.

3. *The creation of a joint legislative committee to study the law with respect to autopsy and burial.*—It has been recommended over a period of several years that a commission be created for this study, but this unfortunately has been strongly opposed and has never actually had any possible chance of being enacted into law. The opposition has come from several sources and certain specific religious factors have been particularly involved.

Considering these factors, the Committee on Legislation felt that it was desirable that a special committee consisting of pathologists and representatives of the hospital associations be appointed to study this problem, and to bring forth the necessary facts to be presented to the Legislature to encourage them to create such a commission to study and correct the laws as they are currently in force. Such a committee was appointed (Special Committee on Autopsies and the Law Regarding Dead Human Bodies) and the report and recommendations of this committee is as follows: (*see annual report in this issue, page 1396*).

Based on their recommendations, it is therefore decided this year not to introduce legislation pertaining to the Autopsy Law. It has been recommended to the Council that the recommendations of the special committee be considered and carried out so at a later date this problem can be presented more satisfactorily.

4. *The licensure of clinical laboratories.*—During the year the Committee on Legislation received a request to consider the question of licensing of clinical laboratories based upon the Medical Practice Act and the practice of medicine. A subcommittee of physicians practicing in clinical laboratories and clinical pathology was appointed to study this problem and to make recommendations referable to possible introduction of legislation. This committee after study did not arrive at any conclusion as to legislation for this; therefore, it was recommended that no legislation be introduced pertaining to such.

There is attached a report of this subcommittee concerning the question of clinical laboratories (*see page 1349*).

5. *Resolution 58–54 from the House of Delegates, referring to the New York State Lien Law.*—This resolution requested that the Medical Society of the State of New York again proceed in every proper and lawful manner to amend the present lien law to include physicians.

> WHEREAS, it is evident that physicians should be protected under the New York State Lien Law; and
>
> WHEREAS, numerous previous attempts to include physicians under the New York State Lien Law have failed; now therefore be it hereby
>
> *Resolved*, that the Medical Society of the State of New York again proceed in every proper and lawful manner to amend the present lien law to include physicians.

This legislation has been introduced previously in the Legislature but unfortunately has not been looked upon with favor. Following receipt of this resolution, this was again discussed with many members of the Society throughout the State, also with members of the Legislature. Based upon information received and upon advice of our legislation advisers and counsel, action on this legislation was tabled by the committee and it was subsequently recommended that no attempt be made this year to include this as part of our legislation program. It would appear that before success for this type of legislation can be expected, considerable effort and contact will need to be made with the various members of the Legislature throughout the entire State.

6. *Resolution 58–47 from the House of Delegates.*—This resolution refers to the confidential physician-patient relationship and requests that the committee be alert and oppose legislation should it appear, as it has in the past, which would disrupt this standard procedure.

The committee is totally in accord with this and should such legislation appear will oppose its enactment.

7. *Resolution 58–53 from the House of Delegates.*—

> WHEREAS, the Medical Society of the State of New York has never indicated its position with respect to legislation incorporating union health center plans; and
>
> WHEREAS, numerous unions with headquarters in the New York metropolitan area already have set up their own health centers by special enabling acts of the State Legislature; and
>
> WHEREAS, collective bargaining by A.F.L.-C.I.O. unions is directed toward ever-increasing health plan improvements for their members; and
>
> WHEREAS, it is the prime interest of the medical profession to offer to the public the best health care possible; now therefore be it hereby
>
> *Resolved*, that this House of Delegates commend the Council of the Medical Society of the State of New York for its pioneer effort in establishing a Bureau of Industrial Health to study these problems; and be it further
>
> *Resolved*, that immediate action be taken in cooperation with union representatives and the State

Department of Social Welfare, to promote State Legislation covering the entire field of industrial health centers in which the principle of free choice shall be requisite in order that organized medicine may give its proper leadership to plans for purveying medical care to the public.

This resolution was referred to the Ad Hoc Committee on Labor Unions and Industrial Health, and legislation will be based on the recommendation of this committee.

8. *Amendment to the General Municipal Law.*—This resolution was submitted by the comitia minora of the Medical Society of the County of Oneida and is as follows:

WHEREAS, physicians perform many gratis professional services for the public through municipal, county, charitable, educational, and eleemosynary organizations; and

WHEREAS, some recipients of the physician's gratis services under these auspices suffer injuries as a result of these services or otherwise, which cause them to seek redress in the form of payments for alleged malpractice; and

WHEREAS, the General Municipal Law in Section 50-d absolves certain physicians from liability resulting from suits for damages due to alleged malpractice in public institutions operated by municipal corporations, wherein the physician is either an intern, resident, or other physician who serves without compensation; now therefore be it hereby

Resolved, that the House of Delegates mandate the Legislation Committee to prepare an amendment to General Municipal Law, Section 50-d, to add after "Public Institutions operated by Municipal Corporations" the words, "and County and State Boards of Control"; and if it be found unsuitable to include county and State under the Municipal Law, then to prepare the same legislation under the pertinent laws to cover county and State institutions; and be it further

Resolved, that the House of Delegates mandate the Legislation Committee to prepare legislation of similar import under the proper laws affecting charitable, educational, and eleemosynary institutions to the effect that physicians who work for the benefit of the public under their auspices and without compensation shall not be liable for damages for personal injuries due to alleged malpractice, but shall be considered as the employes of such charitable, etc., institutions which shall primarily assume such liability; and be it further

Resolved, that the legislation counsel or other agency of the Medical Society of the State of New York take steps to have such legislation introduced during the next session of the State Legislature.

Action on this resolution was deferred, based upon the recommendation of our legislation counsel that no such legislation be introduced at the 1959 session of the Legislature. Further study seems desirable before recommendation is made for definite action.

The following are items which have come to the attention of the Committee on Legislation to date and the action of the committee with approval of the Council pertaining to these items:

1. *An act to amend the Education Law, in relation to suspension of license or right to practice certain professions when the practitioner has been received in a State hospital or private institution for care and treatment of mental illness, and termination of suspension.*—This legislation has been introduced upon the recommendation of Attorney General Louis J. Lefkowitz. Mr. Lefkowitz held two hearings, on July 15, 1958, and September 26, 1958, at which time the problem of the practice of the professions by practitioners who have become mentally ill was discussed. There were many members of the medical profession present at these hearings and various aspects of the subject were presented.

This subject has been further discussed by the Committee on Legislation, and we are totally opposed to such legislation and have registered our opposition. It is the opinion of the committee that the legislation which has been proposed is totally unsatisfactory and would by no means solve such a problem if such a problem does actually exist. It is to be pointed out that it has not been shown statistically that there is a problem, and at the hearings it was definitely requested that this be considered and the size and extent of the problem be presented before legislation was enacted.

Further, this legislation would make suspension of licensure automatic after sixty days of hospitalization. Certainly sixty days is no criterion for the need or desirability of suspension. It is further pointed out that there is no definition in the legislation as to the meaning of "mental illness."

In total, it is felt that such law would do much more harm than good, therefore our reason for definite opposition.

The proposed law is as follows:

AN ACT to amend the education law, in relation to suspension of license or right to practice certain professions when practitioner has been received in a state hospital or private institution for care and treatment of mental illness, and termination of the suspension.

The people of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. The education law is hereby amended by adding thereto a new section, to be section two hundred eleven-a, to read as follows:

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§ 211-a. 1. Whenever a practitioner of any of the professions covered by section two hundred eleven of this chapter is received for care and treatment of mental illness as defined in article one of the mental hygiene

law, pursuant to certification by a court or voluntary application or otherwise, in a state hospital, state psychopathic hospital, or any private institution licensed under the mental hygiene law, and remains in such hospital or institution for care and treatment after the expiration of sixty days from the day he is so received, the license or right to practice of such practitioner under this chapter shall be deemed suspended as of the sixty-first day after such practitioner has been received in such hospital or institution, and the director or superintendent of the hospital or institution shall thereupon promptly report such facts to the board of regents.

2. Upon release of the practitioner from the hospital or institution, the director or superintendent shall promptly notify the board of regents thereof. After release from the hospital or institution, the practitioner may apply to the board of regents for termination of the suspension of the right or license to practice. The board of regents shall not terminate such suspension of the right or license until it shall be satisfied that the mental condition of the practitioner is such that the right or license to practice may, with due regard to the public interest, be reinstated. Upon practitioner's application for termination of the suspension of the right or license to practice, the board of regents shall have the right to inspect and to be furnished by the hospital or institution with a copy of practitioner's record of admission, diagnosis, treatment, and release. The provisions of the civil practice act with respect to privileged communications and the provisions of the mental hygiene law with respect to accessibility of records under that law shall not be construed to affect or prevent the disclosure to the board of reagents of such records or reports.

3. The record of the suspension of the right or license to practice and all papers, reports and records furnished to or received by the board of regents in connection with the suspension and with any application for termination of suspension of practitioner under this section shall be sealed and be accessible only to the board of regents, the commissioner of education and any officers or subordinates designated by them to examine such records for official use to carry out the intent and purpose of this section, and to the court in event of a proceeding to review pursuant to subdivision four of this section.

4. The denial of any application for termination of suspension of the right or license to practice hereunder shall be subject to judicial review, pursuant to the provisions of article seventy-eight of the civil practice act.

§. 2. This act shall take effect July first, nineteen hundred fifty-nine.

It should be pointed out that Attorney General Lefkowitz did hold two hearings and requested the advice and recommendations of the various professions involved. He has further stated that he will hold subsequent public hearings on the bill before it is passed for enactment. This hearing has not been scheduled as yet, but when it is scheduled we will be represented at the hearing and will definitely register our opposition.

2. *An act to incorporate Amalgamated Laundry Workers Health Center, Inc.*—This legislation has been presented to allow for the extension of medical services beyond the Amalgamated Laundry Workers to other labor organizations affiliated with the A.F.L. and C.I.O. This legislation would in essence permit this organization to sell medical services to other unions beyond that provided to their own membership. This is not in keeping with good medical practice and will be opposed by the Committee on Legislation.

3. *Optometry.*—There have been several bills introduced in the Legislature referring to the fitting of contact lenses, school eye examinations, the right to practice optometry, and the inclusion of optometrists in Article 9-C referring to medical insurance plans.

The New York State Society of Ophthalmologists has established a legislative lobby with reference to this type of activity, and we are working with them through the Legislation Bureau and our legislation counsel. Some of the suggested items of legislation affect primarily the ophthalmologists and specialized groups; therefore, it is their desire to take initiative in this direction.

It is to be pointed out, however, that the inclusion of optometrists in Article 9-C on a mandatory basis is contrary to legislation which we have introduced making all such activities on a permissive basis. Therefore, the Committee on Legislation will actively oppose this legislation.

4. *Bioanalysts.*—Reference was made earlier to the question of licensing of laboratories, and in this respect legislation has again been introduced this year calling for the licensing of lay laboratories for the inclusion of bioanalysts in Article 9-C of the Insurance Law, also for the abolition of physician contracts for laboratory services.

These items all have been discussed by the Committee on Legislation. Based upon the information we have at the present time, the committee is opposed to these legislative acts and will register its opposition accordingly.

There are a few other minor items which have appeared so far in this session of the Legislature and these are being watched by the Legislation Bureau and our legislation counsel and appropriate action will be taken accordingly. It is of course possible that more legislation will be introduced that may become more specific in character.

You are all familiar with Governor Rockefeller's message to the Legislature of January 7, 1959. The following are excerpts concerning health and medical care:

> *Social Insurance.*—Farsighted action by your Honorable Bodies led to a number of social insurance programs to alleviate the impact of loss of earnings arising from certain economic hazards. These include, primarily, unemployment insurance, workmen's compensation and sickness disability benefits. In the last two sessions of the Legislature these laws were improved and their benefits increased. They should be further strengthened and improved as need is demonstrated.
>
> I intend to recommend legislation in two special areas: a program of extended unemployment insurance for workers displaced by automation, coupled with retraining aid; and coverage under our social insurance programs of regular workers in single-

employe businesses. Such an extension of coverage should be accompanied by the simplification and consolidation of forms to which I have referred.

A serious accident or illness to the breadwinner, with accompanying hospitalization and doctor's bills, can imperil the economic future of an entire family and leave a legacy of suffering long after the medical recovery period has passed. State employes and employes of many private firms already have protection—frequently called "major medical" insurance—against this kind of economic disaster. However, in the aggregate only an estimated 10.1 per cent of our workers have such protection. This type of coverage is needed to supplement basic health insurance.

I shall bring together a group of experts to consider the practicability of extending the Disability Benefits Law to encompass this kind of protection for all wage earners in the State. Any such protection should be written by private insurance organizations and nonprofit prepayment plans.

As our social insurance programs expand, it becomes increasingly important that we scrutinize their administration for abuses. An undeserved benefit, if paid, weakens the system for those it was intended to protect and creates resentments and an unfavorable climate for job opportunities. I pledge a careful review of the administration of these programs. I will take all possible steps to eliminate abuses and to obtain strict adherence to the spirit of the law in carrying them out.

Employe Retirement Benefits.—A major factor in the economic security of workers is the development by employers and employes of retirement, health and welfare programs. Activities in these areas are the responsibility of employers and labor. Nevertheless in view of the importance to our economy of mobility of the labor force, the State has an interest in these programs.

Because of that interest I will create a representative committee to study the complexities and costs involved in early vesting of pension rights and the possible transferability of such rights for workers who change jobs.

Health and Private Health Insurance.—Many new opportunities have been opened up in the field of public health and mental hygiene. At a later date I shall transmit to your Honorable Bodies a special message relating to State activities in these areas.

Constantly facing us in the field of health is the economic aspect—the payment of the costs of adequate private medical care. To assist in solving this problem, we must encourage improvements in basic health insurance coverage under private plans, such as:

(*a*) coverage of costs of doctor's and nursing care outside the hospital; of diagnostic and preventive services; and of mental illnesses;

(*b*) continuation of health insurance benefits for those who have retired; and

(*c*) continuation of protection during periods of unemployment.

My Administration will work closely with your Honorable Bodies in exploring these areas and recommending legislative action if required.

Vocational Rehabilitation: the Physically Handicapped.—An integral part of the fields of health and welfare is the process of medical and vocational rehabilitation—the restoration of disabled persons to lives of greater usefulness and self-sufficiency through medical treatment and training. Rehabilitation has incalculable human values. It also yields important economic returns to the individual and to society in the form of earnings, savings in the cost of nursing and other personal care, and savings in public assistance costs.

I will recommend a revision of our present vocational rehabilitation program, designed to facilitate expansion of rehabilitation services and to coordinate them more closely with our workmen's compensation and other State programs. In a special message I will spell out the details of this recommendation.

Older Persons.—For older persons, advances must be made in programs of employment, retirement income, health, housing and recreation. The activities of all Departments and agencies of the State Government will be coordinated from the Governor's office to help achieve this.

Numerous recommendations of this Message will directly benefit older persons.

A significant part of the strengthening of the State Commission against Discrimination should be devoted to more vigorous administration of the law enacted by your Honorable Bodies last year relating to discrimination on the basis of age.

Child Welfare.—Child welfare programs should be given continuous attention to the end that they meet current needs. The State must work actively with localities and private agencies to help assure effective child welfare case work services, including counseling, referral, protective, homemaker and other services; foster care; adoptive services; and other child health and welfare programs.

The subsequent actions of the Legislature and of the Governor pertaining to the various items of medical legislation presented this year will be reported to you in the supplementary report of the Committee on Legislation.

The committee will also submit in its supplementary report any suggestions or recommendations made to it by the Legislation Bureau or its legislation counsel.

Licensure of Clinical Laboratories

The Subcommittee on Licensure of Clinical Laboratories has the following membership:

John J. Clemmer, M.D., *Chairman*	Albany
Herbert Derman, M.D.	Ulster
Angelo Sala, M.D.	New York
Harry P. Smith, M.D.	New York
Jacob Taub, M.D.	New York
Granville W. Larimore, M.D., *Consultant*	Albany
John DeGraff, Esq., *Legal Counsel*	

This subcommittee has held two meetings, one in New York City, November 22, 1958, and one in Albany, December 20, 1958. The chairman had arranged two conferences with Mr. John DeGraff for legal advice and one with Mr. Robert Killough and Dr. Stiles D. Ezell of the Education Department of the State of New York.

The main problems facing the subcommittee center upon the existence of lay laboratories in metropolitan New York which are currently licensed by the New York City Department of Health. These laboratories are not required to be under the direction of a licensed physician. Several letters of complaint concerning the operation of such laboratories have been addressed to the New York State government.

The subcommittee believes that most of the causes for complaint would be removed if clinical laboratories were under the direction of qualified licensed physicians. The existing Education Law, Section 6501, paragraph 4, defines the practice of medicine as follows:

> "The practice of medicine is defined as follows: A person practices medicine within the meaning of this article, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition, and who shall either offer or undertake, by any means or method, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition."

The practice of pathology is defined by the American Society of Clinical Pathologists as:

> "That specialty in the practice of medicine which contributes to diagnosis, treatment, observation, and understanding of the progress of disease or medical condition in the human subject by means of information obtained by morphologic, microscopic, chemical, microbiological, serological or any other type of laboratory examination made on a patient or on any material obtained from the human body."

It is the opinion of the subcommittee that the specialty of pathology is a part of the profession of medicine and that the legal definition of the practice of medicine, as it is currently stated in Section 6501, includes the practice of pathology as it has been defined by the American Society of Clinical Pathologists. The subcommittee, therefore, sees no immediate need to change the existing Education Law in this regard.

The subcommittee disapproves of the action of the Health Department of the City of New York licensing clinical laboratories under lay ownership, which precludes the adequate direction of such laboratories by well-qualified licensed physicians. The subcommittee also opposes any State legislation which would permit the ownership or operation of clinical laboratories by others than well-qualified licensed physicians.

Clinical laboratories should be under the immediate, close supervision of properly qualified physicians and the latter should be the judge of the competence and reliability of the technologists. Under these conditions, voluntary certification is an adequate badge of competence, without licensure.

The programs of the American Medical Association, the American Society of Clinical Pathologists, and the American Society of Medical Technologists, through the Board of Schools of Medical Technology and the Registry of Medical Technologists (ASCP), have established high standards in the profession of medical technology. The subcommittee recommends that individuals certified by the Registry of Medical Technologists (ASCP) receive due professional recognition and proper remuneration for the valuable part which they play in the well-run clinical laboratory.

Federal Legislation

The Subcommittee on Federal Legislation of the Council Committee on Legislation is composed of the following:

John F. Rogers, M.D., *Chairman*	Dutchess
Walter Gifford Hayward, M.D.	Chautauqua
George J. Lawrence, Jr., M.D.	Queens

The report of this subcommittee can only carry in it results of the 85th Congress. Any comments of the new (86th) will of necessity include generalities, probabilities, and recommendations of the American Medical Association.

There has been a new organization evolved in the AMA for legislation, and the directing force will come entirely from Chicago, particularly the lobbying reins. The Washington office is to be reduced to a chore-performing field station. A lawyer, Mr. Edwin Patterson, will manage the Washington office, but initiative will be retained in Chicago. Experts in lobbying will work in the Capitol and physicians will be intrusted with the responsibility of indirect lobbying, with patients being the "third parties." Dr. Blasingame states, "We are going to concentrate at the grass roots, since two million patients per day are treated by the country's doctors."

The field division of the AMA, under Mr. Aubrey Gates, will cultivate state, county, and municipal contacts throughout the country and will implement the lobbying effort. The AMA board of trustees feels the development of this field force is especially important. Congressmen are naturally responsive to persuasion from their constituents, who are responsible for their selection. Congress is never stimulated by an opinion given by a medical man or any other individual, whom the local congressman of his district has never known, civically or socially

The 85th Congress heard statements read from organized medicine on such subjects as increased Social Security, old age problems, Medicare, Jenkins-Keogh Bills, VA hospitalization, research facility needs, medical educational grants, and reams of material on the Forand Bill.

A weary Congress finally adjourned in the early morning hours of August 25, but despite the hustle, flurry, and fury of its closing days, it did not slight bills dealing with health issues. It passed a dozen.

The Social Security amendments bill (HR 13549) received the most attention on the part of the American Medical Association and when your chairman notes "most attention," it cannot convey to you the tremendous number of letters, telegrams, telephone calls, and other media used in this all-out effort. The Forand proposal for hospitalization of the aged under Social Security benefits (HR 9467) received "No Action" along with HR 306, Grants and Scholarship for Nursing; HR 3765, National Compulsory Health Insurance; and HR 6506 and HR 6507, Health Insurance Pooling.

Passed over until the next Congress (86th) were (1) Mortgage loan guarantees for proprietary nursing homes; (2) Jenkins-Keogh legislation for tax deferral of funds paid by self-employed into retirement plans; and (3) spelling out of veterans' entitlement to VA hospitalization.

The 85th Congress enacted and sent to the White House the Fogarty Bill (HR 9822) authorizing a White House Conference on the Aging in January, 1961, which was signed and is Public Law 908.

A point of information on the Keogh bill, relative to the deferment of income taxes on the part of the self-employed, is that it made more progress in this session than ever before. It passed the House by an overwhelming vote and its sponsors, led by the American Thrift Assembly, are prepared to renew efforts in the 86th Congress. The Senate decided this bill was "not germane" as an amendment to another taxation bill and the Treasury Department claimed it would mean a tax loss of 365 million dollars and Senator Morse (D., Ore.) said it might be 1.9 billion dollars. The Senate Parliamentarian reversed himself twice and the amendments were not considered.

Attached herewith is a box score of the important health measures enacted. It is interesting to note that the majority of doctors who testified at committee hearings did not have a happy experience. One prominent medical educator concluded wryly, "It would seem we are not among friends." Why?

Why does organized medicine continually have to make last-ditch fights by constantly exhorting physicians to wire Congress at the eleventh hour that its views on proposed health legislation are valid in order to make known the honest beliefs they have held for years?

Dr. Ervin Bernhardt, new president of the Conference of Presidents and Other Officers of State Medical Associations, has stated that "Medicine is failing to protect itself and the public health by forgetting the first fundamental of grass roots politics: personal contact. Most state and national politicians begin their careers in the city council or county board. That's where they form their first impressions of physicians—and where they should first become sympathetic with the problems confronting medicine, but the individual doctors in the community have not taken the time or trouble to give them accurate information."

Dr. Bernhardt asks, "How many doctors at this moment are active in helping to choose the candidates who will be elected to the next Congress or in furnishing medicine's side of the story to those who have already been chosen?" The number is pitifully small.

Your chairman, who has constantly exhorted physicians and the public to heed these warnings by trying to set an example of civic responsibility, agrees that we all must fight for organized medicine's opinion at the grass-roots level, to inform, to choose, to elect.

Your chairman would like to advise you that while the Forand Bill for a hospitalization program under Social Security failed to clear the House Ways and Means Committee, the committee did order the Department of Health, Education, and Welfare to make a thorough study of the problem of financing medical care for the aged with emphasis on the use of Social Security. The "Washington Report" of Gerald Gross notes in the January 5 issue that a 13-member advisory council filed an unanimous report holding methods of financing the Federal Social Security program to be sound and without need of fundamental change. Organized medicine's opposition to inclusion of physicians and widening of benefits to covered persons has been based in part on counsel from certain sources that the Social Security structure is financially irresponsible. The method of financing OASDI is sound and the contributive schedule now in the law makes adequate provision for meeting both short- and long-range costs. In order to keep the system in sound financial condition, it was suggested that periodic scrutiny of all factors which in any way affect the financing of the program be started.

Medicare officials, after another look at the account books, see the possibility of a shutdown of the civilian phase of the program early in 1959.

Congress set a new high in appropriation for the U.S. Public Health Service, going from $562 million to $745 million this year.

The Hill-Burton construction program received a boost of 55 per cent.

These factors show that the peak of health spending has not yet been reached, because House and Senate committees are becoming more and more health oriented.

Eleven schools of public health were promised $1 million each in Federal grants to assist them in professional training, consultative services, and technical assistance within states.

When the 86th Congress convened in January there was included in the flood of bills many in the field of health. They cover a wide range, from the Keogh Bill for the self-employed to "drop the age fifty limit" for Social Security disability payments. Four fifths of the total budget of the Department of Health, Education, and Welfare will be earmarked for grants to state and local governments. At this writing of January 24, 1959, there are over 3,000 bills and resolutions introduced. One of these is a bill to create a new Bureau of Older Persons in the Department of Health, Education, and Welfare. Its purpose is to alleviate "social, financial, medical burdens" borne by senior citizens.

President Eisenhower plans to name a committee of educators and representatives of the professions, labor, management, finance, and other useful activities to set long-range goals for the country. He stated that during the next fiscal year "we will be spending increased amounts on health programs."

The Joint Council set up by the AMA, the AHA, and the ADA to work out programs to handle the medical problems of old folks has its work cut out for it to have a proper approach before the Forand Bill really gets rolling. Medical care for the aging is a real challenge to organized medicine, and the private practitioner is the keystone of the arch over voluntary medicine. If he hopes to survive, a positive effort in the grass roots of civic activity and politics must be undertaken. Certain fees must be reduced in the care of the aged and disabled. This applies to hospital charges, costs of voluntary insurance coverage, and catastrophic illness premiums.

Every "corporation," whether membership or business, is in politics, up to its ears in politics, and we must either start swimming or drown. Labor's political powers must now be opposed by a matching force, and there is no place in the United States where such a force cannot be generated except among the corporations that make up American business. Organized labor has for years made a survey of Congressional members bearing on attendance, voting on key issues, who contributed to their campaigns, what organizations they belong to, and who their intimate friends are. That is why labor leaders have achieved dominance over Congress, and if our free competitive institution and voluntary medicine are to survive and be preserved from destruction by this unholy combination of predatory gangsterism and crackpot socialism that is thriving and expanding under labor's congressional benevolence, then we in business have no choice. We must do likewise or throw in the towel!

Each state and each county of a state must be stimulated to put pressure on their respective elected legislators. This can only be done by exhorting the individual physician to exert a greater effort to develop a positive liaison with civic activity, so that when the name of Dr. Jones is mentioned, whether it be at a golf club, or Rotary, or at a legislative hearing, immediately the audience is impressed, not by his medical degree, but by his interest in the community. Your chairman sincerely believes that under the reorganization implemented as a result of the Heller report, the AMA and its respective state societies have begun to build up again a great respect from the public at large.

A supplementary report will be rendered for the annual meeting of the House of Delegates of the Medical Society of the State of New York in May, 1959, which will summarize the current activities and programs of the 86th Congress with the results of the newly constituted legislative housekeeping reshuffle of the AMA.

Bill Number	Description	Public Law
HR 53	To codify veterans laws re compensation, pension, hospitalization and burial benefits. No AMA action.	56
HR 9700	Codifying all veterans laws. No AMA action.	857
HR 6548	Extends doctor draft until July 1, 1959. Physicians over 35 not to be called. AMA supported with modifications.	62
HR 6191	Extends deadline for disabled persons to apply for disability freeze under social security. No AMA action.	109
HR 7238	Permitted states choice of vendor medical payments programs. No AMA action. (superseded by Public Law 840)	110
HR 8053	Grants for construction of community joint Indian and non-Indian hospitals. No AMA action.	151
HR 8429	Extends time for use of Federal funds in planning and expansion of rehabilitation programs. No AMA action.	213
HR 9822	Authorize state and White House Conferences on Aging. AMA actively supported this bill.	908
HR 11414	Earmarks $1 million annually for grants to nonprofit public health schools.	544
HR 12541	Reduces number of assistant secretaries in Defense Department. AMA favored retention of position of Assistant Secretary (Health and Medical). Agreement obtained that position will be retained.	599
HR 13254	To prohibit chemical additives in food not adequately pretested for safety. AMA supported in principle.	929
HR 12628	Extends Hill-Burton program until June 30, 1964. AMA supported with modifications.	664
HR 12694	Provides loans in lieu of grants	589

	in Hill-Burton Hospital Construction program. No AMA position on this specific proposal but AMA supported FHA-type loan insurance for health facility construction.	
HR 12876	Extends Health Research Facilities Act to June 30, 1962. AMA approved one-time matching grants for construction of teaching-research facilities.	777
HR 12738	Appropriation for Medicare Program. AMA supported removal of restrictions on funds.	724
HR 13549	Benefit and tax increases, etc., amendments to social security. AMA successfully opposed addition of a medical benefits program.	840
S 1971	Federal aid for three-year courses of study in physical medicine and rehabilitation in Vocational Rehabilitation program. No AMA action.	198
S 2888	Requires disclosure of information of union health and welfare plans. AMA favored this bill.	836
Reorganization Plan 1	Merger Civil Defense Administration and Office of Defense Mobilization. AMA successfully urged medical functions be given stature.	effective July 1, 1958

Committee to Combat Cults

The Committee to Combat Cults is composed of the following members of the Society.

James M. Blake, M.D., *Chairman*	Schenectady
Edward C. Hughes, M.D.	Onondaga
John F. Rogers, M.D.	Dutchess
Harold B. Smith, M.D., *Adviser*	Albany
Frederick W. Miebach, *Adviser*	New York

The Committee to Combat Cults is again this year directing its attention toward the licensure of chiropractic. The attitude toward this form of cultism is unchanged, and we shall continue to oppose the licensure of chiropractic in the State of New York.

Again this year a bill has been introduced into the Legislature calling for the licensure of chiropractors. This bill is similar in all respects to that which has been introduced in years gone by. This, of course, is being opposed by the Medical Society through this committee.

During the past year there has been a very close relationship between the Committee on Cults and the Public and Professional Relations Bureau. It is to be emphasized that the Public and Professional Relations Bureau is extremely important in this field inasmuch as a great deal of the activity of the committee is that of dissemination of proper information to the public as well as to the profession itself with reference to cultism. The Public and Professional Relations Bureau arranged two sessions for the specific purpose of advising and directing interested members of our Society in the actual facts concerning the practice of cults in the State of New York. These sessions have been held in the metropolitan area, primarily for physicians in greater New York. This appears to be rather successful, and it is probable that consideration will be given to extending it further throughout the State. It has been quite informative and undoubtedly will be very helpful as needed in the campaign against cultism.

The committee has not as yet found it necessary to establish a definite timetable with reference to the legislation pertaining to the licensing of chiropractic. If this issue becomes paramount, as it well may, an all-out effort will be made as indicated to oppose passage of such legislation.

It has been pointed out by several members of our Society that it might be desirable for us to consider a more specific offensive attack against the practice of cultism. Certainly, the Medical Society of the State of New York is desirous of protecting the health and welfare of the people of the State from the practice of cultism in any form; therefore, more direct methods of abolishing this practice might be worth considering.

A supplemental report with reference to the activities of the committee and the question of licensure of chiropractic or cultism in other forms will be submitted at a later date.

PART X

Workmen's Compensation

The Committee on Workmen's Compensation consists of the following physicians:

Gerald D. Dorman, M.D., *Chairman*	New York
Stanley E. Alderson, M.D.	Albany
Herbert M. Bergamini, M.D.	Franklin
Arthur E. Corwith, M.D.	Suffolk
Harold W. Grosselfinger, M.D.	Rockland
Joseph P. Henry, M.D.	Monroe
William E. Pelow, M.D.	Onondaga
Charles D. Squires, M.D.	Broome
Joseph A. Wintermantel, M.D.	Cattaraugus
Anthony A. Mira, M.D., *Director*	Queens

The Council Committee on Workmen's Compensation held one meeting during the year, on October 30, 1958, in Amsterdam.

PODIATRY.—During the latter part of 1957, the podiatrists, through their official organization, attempted to obtain a fee schedule from the Chairman of the Workmen's Compensation Board that would permit them to exceed the scope of podiatry and at the same time increase the fees for their services to the same level that physicians are entitled for equivalent services. A letter of complaint was written by the Bureau of Industrial Health and Workmen's Compensation, with the approval of the Workmen's Compensation Committee and its chairman, Dr. Gerald D. Dorman, and addressed to Mr. William F. Martin, Counsel for the Medical Society of the State of New York, which asked his opinion as to whether or not podiatrists are entitled to the extension of their limited field under the State Education Department. In response, Mr. Martin submitted an answer which was well documented and ably presented. This correspondence was published in the NEW YORK STATE JOURNAL OF MEDICINE, June 1, 1958. Copies of these letters were then submitted to the Chairman of the Workmen's Compensation Board, Miss Angela R. Parisi, in an effort to provide her with suitable material and documentation that would assist in the evaluation of the podiatrists' request. In 1958 no revision of the podiatrists fee schedule was promulgated, nor is one anticipated in 1959.

LEGISLATION.—Two items concerning workmen's compensation were introduced into the legislative hopper in 1958.

1. *Payment of physicians for attendance at hearings involving nonoccupational disability:* This bill was sponsored by the Medical Society of the State of New York and was passed. Physicians now receive payment for attending these hearings at the same rate that is allowed attendance at hearings involving workmen's compensation cases.

2. *Rehabilitation and panel of impartial specialists:* This bill was sponsored by the Commerce and Industry Association and was endorsed by the Medical Society of the State of New York. The first part was intended to stress the importance of rehabilitation in workmen's compensation cases by defining rehabilitation as a separate entity in the course of treatments of the claimant. It provided for the special licensing of clinics dealing primarily with rehabilitation by the Chairman of the Workmen's Compensation Board.

The second part of this bill provided for the appointment of impartial specialists by the Chairman of the Workmen's Compensation Board only upon the recommendation of the State Medical Society or country medical societies.

This bill was not passed. It is believed there was opposition by hospitals to part I of the bill and of the Workmen's Compensation Board to part II of the bill. The hospitals felt that the definitions for rehabilitation were too stringent and it was learned that the Workmen's Compensation Board objected to the mandate described in this bill which would prohibit the Chairman of the Workmen's Compensation Board from appointing physicians to the impartial panel of specialists unless these physicians were recommended by the Medical Society.

For the 1959 session, the Commerce and Industry Association will reintroduce this bill concerning rehabilitation and panel of impartial specialists, and it is again endorsed by the State Medical Society for the principles contained therein.

Action toward the abolition of the Medical Practice Committee was held in abeyance pending further study.

REVISION OF THE MINIMUM MEDICAL FEE SCHEDULE.—For the record here is the chronology of the 1958 revision of the feed schedule.

1. *March, 1955:* The new Chairman of the Workmen's Compensation Board, Miss Angela R. Parisi, was petitioned by the Medical Society of the State of New York for an upward revision of the fee schedule.

2. *April, 1955:* The Chairman of the Workmen's Compensation Board, through Dr. Chester L. Davidson, who was chairman of the Medical Practice Committee, asked each county medical society to indicate which items in the fee schedule required "clarification, interpretation, or modification." It was not the intent at that time to revise the entire fee schedule.

3. *November, 1955:* The Medical Society of the State of New York was asked by the Chairman of the Workmen's Compensation Board to prepare a suggested revision of the entire schedule.

4. *November 9, 1955:* The Medical Society of the State of New York sent notices to all members of the Council Committee on Workmen's Compensation and asked for suggestions for the revision. The Council Committee on Workmen's Compensation is composed of a representative from each district branch and it was presumed that each member of the committee would communicate with his constituent group for any suggestions.

5. *January, 1956:* A letter to all county medical societies was sent asking for any changes. A follow-up letter was sent in July, 1956.

6. In *September* and *November, 1956* and also *January, 1957*, the Medical Society of the State of New York attempted to negotiate with representatives of insurance carriers and self-insured employers a suitable revision of the fee schedule. However, negotiations were broken off since an impasse was reached.

7. In the early *spring of 1957*, the Chairman of the Workmen's Compensation Board learned of the stalemate and called a hearing on May 24, 1957, in the Assembly Chamber in Albany and directly invited every county medical society president and chairman of the county medical society workmen's compensation committee, since she felt that "some counties were too busy to answer the call for suggestions," made by the State Medical Society.

8. *May, 1957:* During the House of Delegates meeting in New York City, the county societies throughout the State were asked to send representatives to a preliminary meeting to discuss the revision of the fee schedule prior to the hearing to be held by the Chairman of the Workmen's Compensation Board in Albany; 147 out of a potential 184 delegates from the county medical societies attended.

9. On *May 23, 1957*, another preliminary meeting was called prior to the hearing in Albany to determine what the latest wishes of the county medical societies were, concerning the fee schedule revision.

10. *May 24, 1957:* The hearing called by the Chairman of the Workmen's Compensation Board was held. There was an alphabetic roll call of all counties and each was asked to make a statement or recommendation for the record. A deadline was set for final recommendations for any revision for September 1, 1957. This was later extended to October 15, 1957, because it was realized that the summer vacations would interfere with adequate review.

11. The Bureau of Industrial Health and Workmen's Compensation sent out a compilation comparing each item in the old schedule with those recommended by the county medical societies prior to and on May 24, 1958. Each county society was asked to make any final recommendations or comments.

12. A consensus was prepared of all these comments and was presented formally by the president of the Medical Society of the State of New York to the Chairman of the Workmen's Compensation Board.

13. It was learned that the Chairman of the Workmen's Compensation Board assigned the task of studying the proposed medical fee schedule of the State Medical Society to four members of her staff (three physicians and one layman) and "two other doctors."

14. The Chairman of the Workmen's Compensation Board asked permission to appear before the House of Delegates on May 12, 1958, to make an announcement on a proposed revision of the medical fee schedule.

15. The Chairman of the Workmen's Compensation Board was unable to appear at the meeting of the House of Delegates on May 12 as previously anticipated.

16. The House of Delegates passed a resolution on May 13, 1958, to approve the principle, effective July 1, 1958, that "physicians charge usual fees for workmen's compensation cases, the same as would be charged persons of a like standard of living."

17. Soon after, the Chairman of the Workmen's Compensation Board asked permission to speak at a meeting of the Council of the State Medical Society on June 12, 1958.

18. *June 12, 1958:* During a meeting of the Council of the State Medical Society, the Chairman of the Workmen's Compensation Board presented the proposed revision of the medical fee schedule for final consideration by the Medical Society of the State of New York. It was indicated that the Chairman would also send copies of this proposed schedule to all members of the House of Delegates. A deadline for any further comments of August 15, 1958, was then set. It was also indicated that it would require at least sixty days for the consideration of all statements and comments made by all interested parties in the proposed fee schedule. It was anticipated that promulgation of the fee schedule could be expected on December 15 or no later than January 1, 1959.

On the basis of the above statement made by the Chairman of the Workmen's Compensation Board, the Council voted to suggest to the entire membership to hold in abeyance the enforcement of the resolution with reference to workmen's compensation fees, although passed by the House of Delegates on May 13, 1958.

19. *December 8, 1958:* The Chairman of the Workmen's Compensation Board promulgated a new fee schedule which would be made effective for new cases and the reopening of old cases on March 1, 1959.

The State Medical Society made some major recommendations to the Chairman of the Workmen's Compensation Board which did not involve fees for services rendered. These are outlined below.

1. It was suggested that a special rating for thoracic surgery be established. It was recommended that the code "M-17" be utilized as that designated to physicians who specialize in thoracic surgery. It was pointed out to the Chairman of the Workmen's Compensation Board that this specialty has increased by leaps and bounds in the past decade and that it would be advisable to set up a code for this phase of medicine. It was pointed out that 159 physicians in New York State are especially qualified by a diploma by the "Boards" in thoracic surgery. It was also pointed out to the Chairman of the Workmen's Compensation Board that many surgeons who are qualified by SA (specialists in general surgery) could perform surgical thoracic procedures. It was recommended that "SA" should include all procedures that are involved in the "M-17" but that "M-17" be allocated for surgery involving the contents of the thoracic cavity only.

2. It was recommended to the Chairman of the Workmen's Compensation Board that surgeons be paid the fee for an initial examination in addition to the unit fee in those cases where the diagnosis had to be confirmed or where a general examination of

the patient would have to be made to determine whether or not the surgery could be accomplished. This item was granted in the new fee schedule.

3. It was also recommended that physicians appearing at hearings before the Workmen's Compensation Board referees be paid for the time at an equitable rate. It was suggested that general practitioners receive no less than $20 and that specialists in any classification receive no less than $35. No response to this request has been received from the Chairman of the Workmen's Compensation Board.

4. Radiologists throughout the State objected to the recommendation by the State Medical Society that fees for equivalent services be paid regardless of the specialty rating of the individual who rendered the service. In other words, if an internist took x-rays of the chest, the internist's fee would be the same as that submitted by a radiologist. Objections were received by the radiologists to this statement. The radiologist felt that if another specialist received a fee for the services he may have rendered within his field, then the x-ray determination should carry a fee less than that permitted to radiologists. The radiologists suggested that three fourths of their fee be allowed to other specialists who rendered similar services. In the new fee schedule, this recommendation by the radiologists was honored.

5. The Council Committee on Workmen's Compensation, recommended that its chairman, Dr. Dorman, memorialize the Chairman of the Workmen's Compensation Board of the following items:

(*a*) that general practitioners should receive $4.00 for subsequent visits in the treatment of workmen's compensation cases that were not covered by unit fee schedules;

(*b*) that the new schedule be made retroactive to November 1, 1958;

(*c*) that a review of the schedule be made by all interested parties at least every two years;

(*d*) to abide by the recommendations of the House of Delegates that efforts be made to abolish the Medical Practice Committee;

(*e*) that support be given, "for the principles contained therein" for the bill in the Legislature sponsored by the Commerce and Industry Association concerning the rehabilitation of claimants under the Workmen's Compensation Law and the appointment of impartial specialists by the Chairman of the Workmen's Compensation Board;

(*f*) that bill padding and overtreatment is untenable in the care of claimants under the Workmen's Compensation Law and that every effort will be made to abolish this evil.

General.—During the year 1958, arbitrations were held in the following cities: Hempstead, Albany, Utica, Syracuse, Rochester, Buffalo, Niagara Falls, and Newburgh. Two hundred and three cases were scheduled for arbitration. Ninety-two cases were arbitrated and 56 were settled without arbitration. The total amount in dispute was $8,963.43 and the amount awarded was $4,097.94. The Workmen's Compensation Bureau settled bills for physicians, the total amount in dispute being $4,798.27. The final settlement in these cases amounted to $3,462.59.

The director of the Bureau spoke before meetings of medical assistants in four counties.

The director attended a Workmen's Compensation Institute sponsored by the Workmen's Compensation Board in Albany on January 22, 1958.

The director of the Bureau also attended the following meetings: May 5, Disability Advisory Committee of the Workmen's Compensation Board; May 12–14, the annual convention of the Medical Society of the State of New York held at the Statler-Hilton Hotel, New York City; the Second, Third, Fourth, Sixth, Seventh, Eighth, and Ninth District Branch meetings; September 6, he spoke before the Oneida County Medical Society; October 10, a conference on "The Employment of the Physically Handicapped"; October 25, a meeting of the public relations committee chairmen conducted by the Professional and Public Relations Bureau, held at the Hotel Roosevelt, New York City; and on December 18 he appeared before the Medical Appeals Unit of the Workmen's Compensation Board on behalf of the Onondaga County Medical Society.

On August 1, 1958, an examination in diagnostic radiology was given by the special radiology examining committee for one applicant for the Workmen's Compensation Board rating "SD."

Industrial Health

The Committee on Industrial Health consists of the following physicians:

Peter J. Di Natale, M.D., *Chairman*	Genesee
Melvin N. Newquist, M.D.	New York
William P. Shepard, M.D., *Adviser*	New York
Harry E. Tebrock, M.D.	Queens
Anthony A. Mira, M.D., *Director*	Queens

During the year 1958 the Council Committee on Industrial Health of the Medical Society of the State of New York, with the assistance of the Bureau of Industrial Health and Workmen's Compensation, accomplished the following:

Policy.—1. The Department of Social Welfare of New York State is responsible for establishing standards for union health centers and for their supervision. The Medical Society of the State of New York, upon the suggestion of the Council Committee on Industrial Health, made the following recommendations to the State Department of Social Welfare:

(*a*) That union health center authorities establish greater coordination with the local county medical society preferably through an advisory committee to which could be sent representatives from the county medical society.

(*b*) That the New York State Department of Social Welfare recommend in all legislation involving the establishment of union health centers, and to all existing union health centers under the supervision of the State Department of Social Welfare, that the free choice of physician be made available to the beneficiaries of the center wherever possible.

2. Advised that small industries group together to establish occupational medical facilities for their employes. However, it was recommended that this be accomplished by encouraging a physician to establish this facility as a private enterprise and that this facility be made available to the group membership through private arrangements rather than to have a group of small industries pool resources, establish a medical facility, and then hire a physician and nurse.

3. Recommended to the Medical Society of the State of New York that the "Guides for the Evaluation of Management and Union Health Centers" be adopted in New York State with the exception that the item on page 12, VIII, A(4) that deals with expenditures for press and public relations be deleted.

AWARD.—Presented the first award for distinguished service in the field of occupational medicine to the New York University-Bellevue Medical Center, Institute of Industrial Medicine.

EMPLOYMENT OF THE PHYSICALLY HANDICAPPED.—At the suggestion of the Industrial Health Committee, the Medical Society obtained formal representation on the Governor's Committee on the Employment of the Physically Handicapped. Subsequent to the nomination of the Medical Society of the State of New York to the Governor's Committee of the physician who made the outstanding contribution in 1958 in advancing the employment of the physically handicapped, Dr. Willis M. Weeden was presented the award by the Governor.

EDUCATION.—The Council Committee on Industrial Health, through its Bureau of Industrial Health and Workmen's Compensation, elicited sufficient interest in the membership to establish an additional postgraduate course at the New York University-Bellevue Medical Center, Institute of Industrial Medicine, on a one-afternoon-a-week basis throughout an academic year, in occupational medicine.

LEGISLATION. Through the efforts of the Medical Society of the State of New York

(1) legislation that would mandate the establishment of first aid stations in industry employing 50 or more persons was *opposed* since the enabling act did not describe the educational qualifications of the person in charge of such first aid stations;

(2) physicians attending hearings concerning the New York State Disability Benefits law are now paid for time lost from their usual duties during the physician's appearance as a witness.

WORKMEN'S COMPENSATION.—The Bureau, through the Council Committee on Workmen's Compensation, aided in the promulgation of a fee schedule for medical services rendered under the Workmen's Compensation Law in New York State. No major revision of this schedule had been undertaken for the past ten years.

SURVEY.—1. *Union and Management Health Centers in New York City:*

(*a*) State Department of Welfare approved:
  (1) ILA—Brooklyn, 10,000 members, 30,000 dependents, total 40,000.
  (2) Sidney Hillman Health Center (as of 1954), 34,000, members only.
  (3) Local 32-B (Building Service) members only, 37,000.
  (4) Hotel Trades—members only, 33,800.
  TOTAL—144,800.
  Proposed:
  (a) ILA—New York City, 69,000 members (three times this number if dependents are accepted) not yet established.
  (b) United Wire, Metal and Machine—4,000 to 5,000 members, not yet established.
  TOTAL—74,000.

(*b*) Not under Department of Welfare Jurisdiction:
  (1) ILGWU—members and a small number of dependents totalling 205,000.
  (2) New York Telephone Company—diagnosis and emergency care only, 83,216 members.
  (3) Consolidated Edison—members only, 22,396.
  TOTAL—310,612.

(*c*) Union Medical Services:
  (1) Provision Salesmen & Distributors Union—diagnostic only, 2,000 members, also wives and dependents under 18 (4,000–6,000).
  (2) Hebrew Butchers Workers Union—2,500 members, 4,500 dependents, diagnostic and treatment.
  (3) Local 338 Health Service—Retail and Wholesale & Chain Store Food Employees, 6,000 members plus 24,000 dependents.
  (4) Bakery & Confectionery Salesclerks—1,009 active members, plus dependents under 18, 3,000.
  (5) Others—Union headquarters also give some sort of medical advice or service—but information is not available.
  TOTAL—49,009.

(*d*) No response received from:
  Amalgamated Lithographers

Food Handlers Medical Center (Local 400).

2. *Medical Facilities in Small Plants*—A survey of medical facilities in industrial establishments that are members of the Commerce & Industry Association that employ less than 1,000 persons was conducted through the wholehearted cooperation of the Commerce & Industry Association. The study involved 700 companies. Some of the conclusions derived are as follows:

There are apparently many small plants that could readily utilize the services of a physician, if each of these small plants could pool a small amount of money for the service.

Second, the greatest concern in rendering medical service to employes apparently revolves around the "compensation case." Practically all plants, regardless of size, express concern and their need for providing service to the individual who is ill or becomes ill on the job.

Third, of some 322 plants who reported no medical facilities whatsoever, 96 had some provision for preemployment physical examinations.

General.—During the year, the Council Committee on Industrial Health had three meetings.

The director of the Bureau attended the following meetings during the year: May 14 to 21, the annual convention of the Medical Society of the State of New York, where he addressed the Section on Industrial Health; May 2, the Governor's Conference on Employment of the Handicapped; October 1, at a special meeting of the New York State Society of Industrial Medicine, served as program chairman for "Proctoscopy in Industry"; October 7 and 8, the Governor's Conference on Occupational Health and Safety; October 27 to 29, the American Public Health Association in St. Louis, Missouri; November 12 and 19, the Coordinating Council of the First District Branch, symposium on "Voluntary Health Insurance"; December 1 to 4, the American Medical Association clinical session in Minneapolis, Minnesota; December 10, annual meeting of the New York State Society of Industrial Medicine, served as program chairman on "Psychiatry in Industry"; January 7, 1959, ad hoc committee, Cardiac in Industry; January 27, Conference on Heart in Industry; February 16 to 18, Congress on Industrial Health, Cincinnati, Ohio.

PART XI

Publication

The Publication Committee for the year 1958–1959 is composed of the following:

Alfred P. Ingegno, M.D., *Chairman*	Kings
W. P. Anderton, M.D.	New York
Maurice J. Dattelbaum, M.D.	Kings
Laurance D. Redway, M.D.	Westchester
William Hammond, M.D.	Westchester
John G. Masterson, M.D.	Kings
Norman S. Moore, M.D.	Tompkins
John J. Masterson, M.D., *Advisor*	Kings
Albert H. Douglas, M.D., *Observer*	Queens

Since the last report, the editorial board of the Journal has been composed of the following by appointment of the president and the Council of the Society:

Laurance D. Redway, *Editor*, Westchester
William Hammond, M.D., *Assistant Editor*, Westchester
Norman S. Moore, M.D., *Consulting Editor*, Tompkins
John G. Masterson, M.D., *Consulting Editor*, Kings
Alvina Rich Lewis, *Assistant to the Editor*
Thomas E. Alexander, *Business Manager*

The Publication Committee met monthly during the year except for the months of July and August. During the period covered by this report the Survey by Rogers, Slade and Hill has been under study. Pending action on this survey no changes other than as indicated above have been made in the management and operation of the Journal and *Directory* as of the end of 1958.

The middle of July the Society moved to new quarters. Moving of the personnel and equipment of the Journal and *Directory* were made without interruption to the flow of production and processing of editorial material. Work in the new quarters now proceeds smoothly in spite of some changes in personnel of the Journal staff.

It is recommended that circulation of the Journal "gratis" to senior class students of the medical schools of the State during the academic year 1959–1960 be again carried out as in the past as a continuing gesture of good will.

Gross advertising revenue has continued to hold up well during the year although costs of operation have risen due to the ordinary salary increases of employes, rising costs of paper, printing, and mailing, and increased budgetary items charged against the Journal and *Directory* for rent, heat, light, and the like, since occupancy of the new quarters.

New York State Journal of Medicine.—The Journal has appeared uninterruptedly in 24 issues and a supplement, Part II of the September 1 issue containing the Minutes of the House of Delegates, making a total for the year of 25 issues. The Journal has had a consistent growth during recent years. In 1955 total number of pages was 3,840; in 1956, 4,172; in 1957, 4,244; and in 1958, 4,316. Submitted articles rose from 503 in 1955 to 639 in 1958. In addition to the regular departments "The Gallery" was added this year showing the high quality of artistic talent among the physicians of the State. This addition has already interested doctors and will, it is hoped, continue to be an unique feature among state journals. A new series of Two-way Radio Conferences originating at Albany Medical College commenced in the JOURNAL in November and, it is hoped, will continue indefinitely. "Briefs on Accidental Poisoning" also commenced in the JOURNAL, derived from the Poison Control Center, New York City Department of Health. The series, "Visual Education in Medicine," also commenced in 1958. So it may be seen that many new features of broad interest to doctors have been added during the year. Negotiations are under way for a new series of articles on nutrition which will run through 1959.

Through the appointment of Dr. William Hammond as assistant editor, the editor has been relieved of some routine work and has been able to make personal contact with a number of new sources of material as well as to stimulate interest in some former sources where personnel changes have diminished interest temporarily.

The recent increase in editorial material received has pointed up the excellent coordination of the editorial staff work under the direction of Miss Alvina Rich Lewis. She has coped well with the problem of integrating new recruits into the team and has maintained our high standards of accuracy and promptness in preparation of material. She also represented the JOURNAL with distinction again this year at the September meeting of the American Medical Writers Association.

Miss Frances Casey, Miss Joan Vitrano, Miss Anne-Marie Fanshaw, Miss Nele Lape, Miss Elizabeth Smith, and Miss Deborah Pritzker, of the editorial staff, deserve the highest praise for their excellent production record and cooperative spirit, while Miss Grace West, Miss Camille Marra, and Mrs. Marcia Werbin of the advertising staff handled well their difficult jobs. Mr. Thomas E. Alexander, business manager, deserves particular mention on account of the difficult job of moving the JOURNAL without interruption of production.

The excellent work of Mr. C. Lansing Baldwin, Mr. Joseph A. Mullaney, and Mr. James M. Kelly continued to produce advertising contracts of high quality. The relationship of advertising to editorial text has been held to the proportion of 40–60 per cent on a yearly basis.

STATISTICAL REPORT, 1958

In 1958 there were 24 issues and 1 supplement published, totaling 4,316 pages, the highest total every published in one year.

A comparison of total pages for preceding years will show the growth of the JOURNAL, as follows:

1953	1954	1955	1956	1957	1958
3,208	3,620	3,840	4,172	4,244	4,316

The issues in 1958 were divided as follows:

1 issue of 240 pages (April 1 Convention Issue)
3 issues of 208 pages
3 issues of 192 pages
3 issues of 176 pages
4 issues of 168 pages
5 issues of 160 pages
1 issue of 152 pages
1 issue of 144 pages
3 issues of 136 pages

During 1958 a total of 639 articles were submitted, of which 161 or 25 per cent, were rejected. This compares with previous years as follows:

	1954	1955	1956	1957	1958
Number submitted	482	503	519	511	639
Number rejected	96	103	99	87	161
Per cent rejected	19	20	19	17	25

It should be explained that several of the manuscripts rejected for publication were revised and rewritten by the authors in accordance with the suggestions of the editors and were subsequently accepted for publication.

There were 558 authors represented in the 415 articles published in 1957. These 415 break down as follows:

169 scientific articles
49 case reports
22 special articles
20 clinicopathologic conferences
5 history of medicine
1 doctor in civil defense
16 fundamentals of allergy
17 clinical anesthesia conferences
22 recent advances in medicine and surgery
3 two-way radio conferences
9 treatment of alcoholism
3 medical and surgical conferences
7 selected reprints
1 Cornell conference on therapy
21 briefs on accidental poisonings
2 proceedings of allergy society
17 cancer alerts
6 health forums
5 nutrition excerpts
1 public relations conference
16 visual education in medicine
1 religion in medicine
1 crash injuries panel
1 infant mortality conference

Comparative statistics on page breakdowns follow:

	1956	1957	1958
Total number of pages	4,172	4,244	4,316
Text pages	2,878	2,900	2,920
Advertising pages (not including inserts and covers)	1,294	1,344	1,396
Number articles submitted	519	511	639
Number articles published	397	388	415
Number authors represented	543	548	558
Scientific text, pages	1,719	1,877	1,907
Features, pages	626	647	444
Editorials, pages	128	107	112
Minutes and reports, pages	249	274	289
House of Delegates minutes, pages	156	148	168

An analysis of the text pages for 1958 follows:

Scientific articles	923
Case reports	117
Special articles	59
Clinicopathologic conferences	129
History of medicine	55
Fundamentals of allergy	113
Clinical anesthesia conferences	45
Recent advances	116
Cancer alerts	45
Infant mortality	17
Two-way radio conferences	18
Treatment of alcholism	61
Medical and surgical conferences	27
Cornell conference on therapy	9
Accidental poisonings	90
Allergy society proceedings	21
Health forums	23
Nutrition excerpts	11
Religion in medicine	8
Crash injuries panel	20
Visual education in medicine	45
Public relations conference	15
Selected reprints	29
The Gallery	12
Doctor in civil defense	4
Workmen's compensation and industrial health	9
Letters to the editor	24
Medicare	4
Month in Washington	12
Medical news	63
Medical meetings	25
Medical school news	21
Necrology	54
Books received and reviewed	67
Woman's auxiliary	10
Film reviews	10
Annual convention program	44
Annual meeting reports	123
District branches	6
Openings for physicians	5
Council minutes, summary of	85
Index	37
State Society officers	72
County society officers	13
Table of contents	37
Announcements and fillers	40
House of Delegates minutes	168

An analysis of advertising pages for 1958 follows:

Covers	72
Inserts	128
pages	1,396

The financial report for JOURNAL operations in 1958 is as follows:

Income		
Advertising	$364,884	
Cash subscriptions	4,861	
Other	7,530	
Total income		$ 377,275
Expenditures		
Printing and mailing	$215,244	
Advertising	96,237	
Editorial	70,867	
Other	16,264	
Total expenditures		398,612
Net income before dues allocation		$−21,337
Dues allocation		92,062
Net income after dues allocation		$ 70,725

MEDICAL DIRECTORY OF NEW YORK STATE.—Work on the 1959 edition of the *Directory* is now nearing completion. As of December 31, 1958, a total of 2,057 copies of the 1957 issue had been sold to individual purchasers. The appreciation of the Publication Committee is extended to Miss Janet Loy, Mrs. Evelyn De Marco, Mr. Robert W. Miller, and others of the *Directory* staff for their helpful assistance in the production of this publication.

Indicated below is the tentative financial report for the 1957 *Medical Directory:*

Income	
Advertising (net)	$ 10,373.25
Cash subscriptions	29,968.50
Total income	40,341.75
Expenditures	
Printing and mailing	$ 73,443.63
Advertising	5,266.21
Editorial	69,859.44
Administration	8,056.95
Total expenditures	156,626.23
Net expense	$116,284.48

Comment.—The work of Mr. Thomas E. Alexander, who has acted as secretary to the Publication Committee at all its meetings, is gratefully acknowledged. He has also served as business manager for the Journal and in this capacity has been most helpful in assisting with the solution of many production problems that have arisen during the year.

The secretary of the Medical Society of the State of New York, Dr. W. P. Anderton, has rendered, as in previous years, invaluable counsel and assistance in the preparation and editing of the vast amount of data necessary to compile the *Directory* and editing of reports of the bureaus and many committees of the State Society.

The chairman of the Publication Committee would be remiss at this time if he did not express his sincere appreciation, thanks, and gratitude to the other members of the committee for their helpful cooperation. We have previously mentioned personally those who carry on the routine work of the Journal and *Directory*.

The Journal has steadily grown in stature and reader acceptance under the splendid editorial guidance of Dr. Redway. The authoritative position our publication now enjoys in the field of medical literature is in no small measure due to his firm standards of excellence and his constant search for new and better ways of conveying to the reader medical material of the highest quality. We are, indeed, proud of his accomplishments!

Library.—With the close of 1958 the Library of the Medical Society of the State of New York, the Library of the Medical Society of the County of Kings, completed one hundred thirteen years of continuous service to the medical profession. Since the Library was organized, and especially in recent decades, tremendous changes have taken place in medical research—changes never dreamed of a century ago and even thought impossible only fifty years ago. A modern up-to-date medical library of a hundred years ago would have contained about 5,000 volumes and would have had about 30 serial publications on its current subscription list.

As a result of medical research one by one many of the dread diseases that plagued mankind have been conquered, and the nation has decided that those remaining also must go and is pouring 400 million dollars annually into further medical research, all of which produces an immense mass of printed materials, a large part of which a medical research library must have, for it is as important to the practicing physicians of today as was the meager literature to their medical ancestors of the last century.

In order to keep the Library up to date and useful to the medical profession, 2,602 selected volumes were added during 1958, bringing the total in the collection to 197,600 volumes. Current periodical publications continue to contain the most important literature in the medical library field, and the Library has a list of 2,538 current subscriptions received regularly.

Busy practices, heavy traffic, and difficult parking keep many from coming to the building, but in spite of these conditions the Library continues to render effective service to the medical profession. During the past year 7,422 readers consulted 42,779 volumes in the reading room and withdrew for home and office use 10,711 volumes. Another 7,343 obtained information from the Library through telephone requests. A few years ago, one telephone handled all such calls, but now five extensions are used for this purpose and last year an additional direct line was installed for outgoing calls.

Through interlibrary loans many local hospital, school, and veteran administration libraries receive help, some sending messengers daily for publications, and in addition, 1,063 volumes were mailed beyond the metropolitan area to libraries of the nation and Canada, the only cost to the borrowing library being the transportation charges. In place of loans 3,436 pages of photo copy were supplied to individuals and other libraries requesting this service.

The Library derives its chief support from the county medical society membership dues, about $16 per year from each member being required for this purpose. In addition the Library depends upon income from endowments and gifts from individuals, organizations, and commercial firms for the purchase of material not received by gift or through review and exchange. The Medical Library Association of Brooklyn, a friend of the Library group now provides $4,000 or more per year which is used exclusively for the acquisition and care of medical literature. Anyone wishing to join these Library supporters may do so by simply making a contribution of ten dollars or more to the Library.

Inadequate space continues to plague the Library staff and is a severe handicap in providing the type of service that the medical profession has a right to expect from its library. Partial relief was obtained by moving about a thousand shelves of books to an unused floor graciously provided by the Swedish Hospital across the street and a block from the Library. However, this arrangement will not last indefinitely, as the Hospital is engaged in an active building program and eventually will need that area for its own use.

The Library Survey Committee, working under a grant from the Rockefeller Foundation, is still actively engaged in planning a new building in a different location. Under the terms of the grant the committee is to "investigate the desirable location and possible sites for the Library, to study its functional needs, and to prepare schematic drawings and budget estimates for the building, all in relation to the general problem of making its facilities of maximum use and value to the Society as well as to the medical communities it serves." The committee will soon complete its work and submit its findings and recommendations on what the future of the Library should be.

In connection with this survey and in order to keep up with current developments in medical library services and management the Librarian attended several conferences, especially those discussing problems pertaining to buildings and mechanical aids for libraries. During 1958 conferences of the Medical Library Association and the Special Libraries Association were attended, as well as the International Conference on Scientific Information held in Washington, D.C., November 16 to 21.

One of the first questions considered by the Survey Committee was a site for the building, a location where the Library could provide adequate service to the largest possible number of physicians, not only in the Metropolitan and Long Island areas, but throughout the State as well. Wherever the Library is placed there will be many physicians who cannot easily visit it. For a time it was thought that library service for them might be provided through facsimile transmission of library materials. Even though at present this is not feasible, copying machines are available which are not too expensive, and copies of many periodical articles can be provided at a price the average physician can afford, sometimes costing less than transportation charges on books borrowed from the Library and sent through the mail. Location of the Library is not so important as it was a generation ago, and although facsimile transmission is not yet available, all parts of the country are only a short time away through means of modern air travel. If the Library had the space it needs, with these modern facilities available, it could render much better service to the whole medical profession.—HAROLD R. MERWARTH, M.D., *Directing Librarian;* WESLEY DRAPER, *Librarian.*

Public Relations

The Public Relations Committee for the current year is made up of the following members:

John F. Rogers, M.D., *Chairman*	Dutchess
George A. Burgin, M.D	Herkimer
James T. Carroll, M.D	Monroe
Reid R. Heffner, M.D	Westchester
John W. Latcher, M.D	Otsego
John C. McClintock, M.D	Albany
John D. Naples, M.D	Erie
Kenneth T. Rowe, M.D	Steuben
Edward Siegel, M.D	Clinton
C. Stewart Wallace, M.D	Tompkins

PUBLIC AND PROFESSIONAL RELATIONS BUREAU.—During the year the Public and Professional Relations Bureau carried on regular assignments while developing projects in keeping with advanced ideas of public relations in the field of medicine. Notable were areas in which persons assisting doctors were involved, and representatives of information media, such as radio, television, the press, and magazines, and lawyers representing the bar association were concerned. All activities were under the direction of Mr. Frederick W. Miebach, Director, supervised by the committee chairman. The field representatives implemented the over-all program by work with county medical societies and by activities at headquarters. Mr. A. C. Schuyler traveled throughout the Fifth, Seventh, and Eighth District Branches; Mr. Martin J. Tracey worked with the Second and Fourth District Branches; and Mr. Thomas E. Walsh assisted the Third, Sixth, and Ninth District Branches. More than in the past, the field representatives devoted their efforts to projects emanating from the new headquarters. Mr. Schuyler obtained many new commitments for television programs and developed research projects. Mr. Walsh expanded speakers activities through the new speakers panel as well as working with the Woman's Auxiliary, and Mr. Tracey improved the format of the *Newsletter*, wrote speeches, prepared special reports, and designed exhibits. Due credit must be given to the secretarial staff, Miss Gretchen Wunsch and Mrs. Evelyn G. Clark, for the detailed amount of work necessary to carry out the work of the Bureau.

GENERAL PROGRAM.—Offense, not defense, has been the basic policy of the committee since the last report to the House. Aware of the fact that "basement approaches" through proposed Federal laws are still being made to government control of the medical profession, a watchful eye was kept on such measures as the Forand Bill. Opposition to this measure was expressed by the committee in cooperation with the Subcommittee on Federal Legislation of the Legislation Committee, with approval of the Council. As a constructive program the committee sponsored the following basic principles:

(1) Improving relations between the individual doctor and his patient, especially through his office assistant;

(2) Strengthening relations between the medical profession and outside groups, such as the press, radio, television, and magazine writers, and allied professions, such as lawyers, dentists, and pharmacists;

(3) Collaborating in efforts to solve problems besetting the medical profession and labor unions such as union health clinics;

(4) Provoking county medical societies into a more realistic attitude in promoting public relations programs that meet the needs of the times;

(5) Stimulating new approaches to voluntary health insurance programs under the direct supervision of the medical profession, particularly in regard to "senior citizens."

There are two basic fields in which the committee functions through the Public and Professional Relations Bureau, internal professional relations and external public relations. Internally, activities centered around medical assistants courses, public relations conferences, and briefing sessions for speakers panels. Externally, meetings with representatives of the press, radio, television, and lawyers were principal activities. About 25 areas were covered. Detailed reports have been made to the Council. The following is a summary of the year's activities.

Field Program.—One of the basic factors in the betterment of both internal professional relations and external public relations was the field program. Cooperating closely with officials of county medical societies, the field representatives continued their work of improving relationships between the committee and local groups. Through personal visits to county society officials, they explained the overall public relations program for the year to doctors in the various local areas. Not only did they present the activities sponsored by the committee but aided the local doctors in putting the projects into practice whenever they were called upon to do so. The field representatives also brought back ideas and comments by local medical society officials to the committee to enable them to meet in a more effective and practical fashion the needs of the local county societies. This two-way system of communication between the societies and your committee has proved mutually helpful.

As a practical means of stimulating county medical societies to renewed activity a new "PR Target for 1958–59" was drawn up by the field men and distributed to public relations chairmen during visits to their counties. This "PR Target" outlined eight basic public relations projects which the committee, through the field men, urged that every county society put into effect if they had not already done so and to implement and improve the projects already in operation. These projects included such old standby activities as emergency call systems and mediation committees and listed 18 supplemental projects through which the committee could add much strength to every public relations program in the State, including sponsoring of exhibits at local fairs and publishing periodical bulletins for members.

Aware of the fact that some of the basic projects now in operation for many years might be in danger of deteriorating, the field staff urged county medical societies to re-examine such projects as emergency call services and mediation committees to ascertain whether they were functioning properly and meeting the needs of the times. Much time was devoted by the men in furthering the sponsorship of courses for medical assistants, with success. A detailed report on this subject will be given hereafter.

Another project on which the field representatives concentrated was the adoption of "Standards of Practice for Doctors and Lawyers" by county medical societies in conjunction with local bar associations. In this field also a great deal was accomplished and a report will be given later.

In addition to attending district branch meetings, the field staff this year attended the regional meetings conducted by the Council Committee on Legislation, getting a better idea of what was going on in legislation and being in a better position to discuss legislation when working with county medical societies. This practice and the new practice of permitting the men to attend the monthly meetings of the Council should be continued. The chairman and the committee strongly urge that the field staff be invited to attend such meetings and others of a nature that would aid them in being more helpful to county medical societies in the future.

At the end of 1957 the field staff for the first time compiled a chart of county medical society activities, as a means of evaluating the activities being sponsored by county societies. Recently this chart was brought up to date and shows how many of 12 selected important activities each of the 61 county medical societies is sponsoring.

The following is a recapitulation of the data contained in the chart; the number indicates the county medical societies sponsoring the particular activity:

Emergency Services	59
Mediation Committees	59
Woman's Auxiliaries	49
Speakers Services	41
Medical Economics Bureau	9
Community Projects	48
Bulletins	26
Radio, TV Programs	33
Press Liaison	60
Assistants Courses	27
Adequate Medical Care	59
Telephone Listing	26

Although due credit must be given to county medical societies executive secretaries, public relations chairmen, and other officials for the activities mentioned above, the labors of the field men during the many years that have passed since the beginning of the field program are very largely responsible for the number of important activities now being sponsored by county medical societies.

Much also was accomplished in the area of external public relations through personal contacts by the field men with such groups as chambers of commerce, health departments, representatives of the press, radio, and television, and other organizations. Attention is called to the increased activity in the field of television which is reported later.

Public Relations Conference.—On Saturday, October 25, 1958, the annual conference of county medical society public relations chairmen was held at the Hotel Roosevelt, New York City. Some 55 individuals, including public relations chairmen, executive secretaries, State Medical Society officials, and out-of-town guests attended. Included on the program was a discussion of medicine, union health centers, and public relations problems by Dr. Joseph A. Lane, Rochester, chairman, Ad Hoc Committee on Labor Union and Industrial Health Centers; and Mr. Leo Perlis, New York City, director of Community Services, AFL-CIO; as well as an analysis of the State Medical Society's legislation program by Dr. James M. Blake, Schenectady, chairman, Council Committee on Legislation; Assemblyman John J. Ryan, Brooklyn; and Senator George R. Metcalf, Auburn. Also on the program was a discussion of problems caused by physicians who do not cover their practices, by Dr. Kenneth T. Rowe, Hornell, member, Council Committee on Public Relations; and an explanation of how the Woman's Auxiliary promotes the American Medical Education Foundation by Mrs. Henry I. Fineberg, Queens, chairman of the Woman's Auxiliary Committee on AMEF.

As a result of discussions of topics on the program, it was the consensus at this conference that each year one stated meeting of a county medical society should be given over exclusively to public relations topics.

The meeting was considered the best yet held, and the reaction to the legislation portion was so favorable that a special tape recording was made entitled "Medical Legislation in New York State—A Perennial Problem," for the purpose of presenting the thoughts of the Legislation Committee chairman, Senator Metcalf, and Assemblyman Ryan to county medical society meetings. It was made available free of charge to county medical societies, and at the time this report is being written many county medical societies have taken advantage of this opportunity. Others have indicated that they will use it at a future meeting.

The text of all the papers given at the conference was published in the March 15 issue of the New York State Journal of Medicine.

Guide for Cooperation.—The Bureau continued to implement the "Guide for Cooperation for Doctors, Hospitals, and Reporters" through its advisory service for press, radio, and TV and by filling requests for copies. Much publicity was given to the fact that the Bureau maintains this advisory service. The March 1, 1958, issue of the newsletter published by the National Association of Science Writers called attention to this service, indicating that the Guide has been helpful to science writers when it stated that the Guide "advises much more freedom and cooperation than the oldtimers among us ever dreamed of getting from the medicos."

Once again the committee wishes to call attention to the fact that although the Guide has been given wide distribution steps should be taken to make our members more aware of its provisions. As in the past, the field representatives will call attention to the Guide at county society meetings and the *Newsletter* will call attention to its provisions. In this connection, the February, 1959, issue of the *Newsletter* carried a first page feature story entitled "Medicine, Television Act to Ban Objectionable 'Men-In-White' Ads."

Detailed information about the annual meeting to review and renew the Guide will be found in the special report by the Subcommittee on Cooperation with Media of Information.

Standards of Practice.—For the first time the "Standards of Practice for Doctors and Lawyers" will appear in the 1959 Medical Directory of New York State. The Bureau was successful in inducing many county medical societies to work with local bar associations in adopting local standards. There were many joint meetings between the medical and legal professions at the local level and in many instances joint committees were set up.

Further details about these standards will be found in the report of the Subcommittee in Cooperation with Media of Information.

Advisory Service for Press, Radio and TV.—The advisory service and information center, inaugurated several years ago to implement the "Guide for Cooperation for Doctors, Hospitals, and Reporters," is now a well-established liaison medium between the medical profession in the State and the representatives of the various media of information. At recent meetings to "review and renew" the Guide media men and women have frankly stated that the document has been very helpful to them in their work. The National Association of Science Writers, as already mentioned, has given the Guide wide publicity among its members. Finally, each week several calls are received from representatives of the media for information, or some other kind of help, from the service of the Bureau.

The field representatives man this service at headquarters. They obtain the information required for the media representatives or set up an appointment with a qualified physician in the field of investigation, either to talk to a media representative over the telephone or in person. In addition to cooperating with the major radio and television networks, the service assisted writers for national magazines and local newspapers. Among these were *Pageant*, *Electronics Magazine*, *Scientific American*, Reuters News Agency, the Department of Public Information, United Nations, *Norwegian News*, *Better Homes and Gardens*, *Business Week*, *Look*, *Medical Economics*, *Medical News*, *Scope Weekly*, *American Weekly*, the *New York Times*, the *New York Herald-Tribune*, the *New York World Telegram & Sun*, and the *Wall Street Journal*. It is interesting to note that the Bureau's advisory service was one of the first organizations consulted concerning the New York City physician who got into trouble because he changed his name after having been in a mental institution.

Exhibits.—During the 1958 annual convention of the Society an exhibit in the form of a calendar entitled "Every Month is PR Month," showing the activities of the Bureau throughout the year, was on display. A pamphlet rack with suitable materials accompanied this exhibit.

Continuing the practice of the past several years, the Bureau and the A.M.A. cosponsored an exhibit at the Hall of Springs in Saratoga from Memorial Day to Columbus Day. The display, "Organs of the Human Body," designed by the A.M.A., attracted 110,000 visitors. The chairman would like to point out that a great deal of interest in this exhibit has been shown by the Board of Education of New York City. The authorities seem to feel that an exhibit of this type or some other type on a medical topic would be of educational value to high school students. The Bureau is cooperating with the authorities in trying to obtain suitable exhibits which the Board of Education may be able to use in schools.

District Branch Meetings.—Before the district branch meetings held in the past year, the Bureau distributed newspaper releases concerning the speeches scheduled to be given by the president or president-elect and the scientific or medical economic programs. At the meetings, the field staff handled registration of doctors and guests and helped in any other way in which they were requested. On occasion, the Bureau also assisted in obtaining speakers for the meetings.

The director was present at the meetings to work with local newspapers, reporters, and photographers. Stories about the district branch meetings were featured in the *Newsletter*.

Between the district branch meetings, representatives of the Bureau attended meetings of different committees of the branches. After the meetings the secretarial staff compiled reports on the attendance based on data gathered by the field staff for Dr. W. P. Anderton, secretary.

Annual Convention.—Before the convention, general releases were sent out. Specific releases concerning delegates, participants, and scientific papers were given wide distribution. Special digests of certain scientific papers were made by the field staff for use during the convention as bases for newspaper releases. Invitations were sent to hospital superintendents inviting them and their staffs to attend the meeting. A compilation of the list of fifty-year doctors was completed and news releases concerning these doctors were sent to various parts of the State.

An innovation was the publication of the April issue of the *Newsletter* in color and in eight pages rather than the usual four. It was devoted exclusively to details of the scientific portions of the convention. This special issue was prepared by the Bureau which worked closely with Dr. Alfred P. Ingegno, chairman of the Scientific Program Subcommittee. Because he felt that the special issue had been instrumental in increasing attendance at the meeting, Dr. Ingegno secured Council approval of a similar *Newsletter* publicizing the 1959 meeting.

During the meeting, a press room was maintained at the Hotel Statler for the convenience of reporters. Thirty-six reporters, representing such papers as the *New York Times*, the *Post*, the *Journal-American*, and the Associated Press, made use of these facilities. Also present in the press room were representatives of such publications as *Medical Economics*, *Medical News*, and *Scope Weekly*. In order to assist the reporters in preparing their stories, a member of the Bureau covered the proceedings of the House of Delegates and presented to the reporters whatever news seemed appropriate. Several items appeared in the local press concerning the activities of the convention and the *New York Times* carried a favorable editorial commending the State Society for its position on advertising of proprietary medicines on television. The secretarial staff, which was active at the convention, sent out 144 certificates to the fifty-year doctors.

After the meeting, a digest of the proceedings of the House of Delegates was sent to all members of the House and to county medical society secretaries and executive secretaries. The June issue of the *Newsletter* was devoted almost exclusively to a review of the happenings during the annual meeting, including a capsule report of the proceedings of the House of Delegates.

As a result of experiences at past conventions and particularly in 1958, the chairman made two recommendations to the Council concerning future conventions: first, that the Bureau be authorized to call a press conference prior to the meeting for the purpose of briefing reporters and medical writers on all phases of the scientific program and giving them the opportunity to indicate in advance their interest in any paper or scientific panel discussion which may require a follow-up, second that copies of the resolutions which have been submitted in advance to the House be turned over to the Bureau for their information in advance. Both recommendations were approved by the Council.

Medical Assistants Courses.—The growing popularity of the medical assistants courses promoted by the Bureau and sponsored by the county societies is evidence of their value to the participants. The chairman is happy to report that in accordance with the authorization given by the Council, 26 county societies have been awarded citations of merit for conducting medical assistants courses: Albany, Bronx, Broome, Chautauqua, Chemung, Columbia, Dutchess, Fulton, Herkimer, Jefferson, Kings, Madison, Monroe, Montgomery, Nassau, New York, Oneida, Onondaga, Queens, Richmond, Rockland, Schenectady, Suffolk, Sullivan, Ulster, and Westchester.

Attention is called to the fact that many of the above-named societies have conducted two courses, others have sponsored three, and one county, Broome, five. The total of courses held to date is 45. As this report is written, the Bureau's clipping service shows that more than 20 newspapers carried stories about the citations.

While most of these courses have been limited to a single session covering three or four important topics, some have been quite extensive. The Tri-County course (Oneida, Herkimer, and Madison) was eight sessions in length, while the Dutchess course took two morning periods. Attendance on the whole has been excellent. Numbers ranged from 500 in New York County to 48 in Steuben County. In the latter instance the girls represented about one half the physicians in the county.

Since the courses have been given for the past several years and have been repeated in many areas with little or no variation in content, the committee recommended to the Council that new topics be added—malpractice, medical ethics, and how to assist a doctor in examinations. The committee also recommended that the form of these lectures should be approved by the Malpractice Insurance and Defense Board and the Ethics Committee of the Council, as well as other groups connected with the subject matter. The Council approved both recommendations.

The Bureau also cooperated with schools and colleges giving courses for assistants or girls interested in becoming assistants. Mr. Walsh spoke to students in two community colleges and two private schools. Mr. Schuyler and Mr. Tracey also participated in the county society courses.

Future plans call for the Bureau to encourage more variation and wider scope in the type of programs presented. Efforts will be continued to have every county society become active in the projects either individually or in union with other small societies. Encouragement and assistance will be given to those societies already participating to sponsor a course every year, if practical.

Medical Assistants Organizations.—Since participants in the medical assistants courses have expressed the desire to have thei own county organizations and the A.M.A. has endorsed the formation of such groups under county medical society supervision, the committee made two recommendations to the Council. The first was that the Bureau be permitted not only to advise but to encourage actively county societies to sponsor local organizations. The second was that the Bureau be empowered to assist in bringing about a State-Wide organization in which interest has been expressed by several local groups. The Council approved both recommendations and steps have been taken to implement them.

At report time, five county organizations had been formed. They are Albany, Broome, Nassau, Onondaga and Orange. Dutchess has a steering committee and Rockland has expressed interest in a group. The Bureau has been working closely with the associations and has helped in their formation. Letters have been sent to county society presidents, public relations chairmen, and executive secretaries regarding the formation of a state-wide organization. A meeting of all interested parties, perhaps in Albany, is under consideration. It should be noted that 23 states now have state-wide organizations.

Several out-of-state medical assistants associations have expressed interest in the Bureau's publications in this field. Some have requested copies and others have requested permission to reprint them. The Bulletin of the Wisconsin State Medical Assistants Society, for example, published "Telephone Cues for Medical Personnel" while the publications of the Society of Medical Assistants of Santa Clara County (California) carried a copy of "Seven PR Pointers for Medical Personnel."

Mr. Walsh attended the second annual convention of the American Association of Medical Assistants, which is approved by the A.M.A., held at the Palmer House, Chicago, October 31 through November 3, 1958. He reported that the 480 delegates in attendance represented 23 state groups. The program contained many projects which might be tried in this State.

The Bureau will intensify its efforts toward the formation of both county associations and a State group. It also will continue to assist local associations in presenting programs at meetings.

Woman's Auxiliary.—As in the past, the Bureau acted as liaison between the State Society and the Woman's Auxiliary with the cooperation of the Advisory Committee to the Auxiliary. Many secretarial duties were performed and executive assistance given. Among the projects undertaken were the following: the health poster contest, the State Fair exhibit, the *Distaff*, official Auxiliary publication; articles for the New York State Journal of Medicine; nurse recruitment, child safety, career day programs, and the first self-sustaining advertisement in the *Distaff*.

The chairman addressed the 1958 annual convention of the Auxiliary on Federal legislation.

Mr. Walsh continued as liaison representative and spoke at several meetings, including the fall conference.

A vote of thanks is extended to Mrs. Maurice G. Sheldon, president, and her official family for their cooperative efforts.

Speaker Service.—Twenty-five physicians attended the briefing session for a special panel of speakers held at the Society's headquarters in January, 1959. The meeting, limited to doctors interested in speaking against chiropractic licensure and practicing in the metropolitan area, was held because of the more than 70 physicians who responded to a call for speakers published in the *Newsletter*. The president-elect, chairman, Council Committee on Legislation; executive officer, executive director, and members of the Bureau staff took part in the session. At report time, a second session is planned for mid-February. These meetings were held in cooperation with the Council Committee To Combat Cults.

The service also continued to operate as it has in past years by aiding county medical societies seeking speakers for local appearances. Many requests were received and fulfilled for this purpose. Speakers appeared before Parent-Teacher Associations, military reserve units, and bar associations. Talks on nonmedical subjects such as legislation, medical aspects of the law, and relations with the press, radio, and television were arranged for county medical society meetings.

Outstanding General Practitioner Award.—The committee, for the third successive year, had the privilege of recommending the outstanding general practitioner of the year. A subcommittee, named by the chairman, selected Dr. John D. George, Sr., of Oneida County, whom the Council approved. His name was sent to the A.M.A. as New York State's nominee for the national award.

Your chairman calls attention to the fact that only five nominations for this award were made. In the past, county societies have selected a "G.P." who has been in practice for over half a century. The time has come, perhaps, for county societies to re-evaluate the importance of this award. It was originally intended to honor the general practitioner and to give him his proper place in the medical profession along with the growing number of specialists. Younger men are eligible, as one county in past years demonstrated and the A.M.A. proved by selecting a forty-six-year-old physician a few years ago. New York is long overdue in having one of its G.P.'s selected for the A.M.A. award.

Emergency Service Listing.—Carrying out a recommendation of the committee, the Bureau contacted the New York Telephone Company for the purpose of getting better publicity for emergency call services in telephone books. Telephone books used throughout the State usually contain a special section in the front devoted to instructions for making emergency calls. For example, "In an emergency dial the operator, tell her this is an emergency call, give her your telephone number and say, 'I want to report a fire.'" The staff is now exploring the possibility of having a caption such as, "I need a doctor" inserted in such a section. Conferences already have been held with a representative of the telephone company and the prospects of obtaining better publicity seem very good.

Committee Meetings.—The chairman is pleased to report that the members of his committee have been most cooperative during the past year. Although it was unnecessary to call meetings monthly, whenever meetings were scheduled attendance was excellent.

The Subcommittee on Cooperation with Media of Information was very active. Meetings were held both with the representatives of the press, radio, and television in regard to the "Guide for Cooperation for Doctors, Hospitals, and Reporters" and the legal profession concerning the "Standards of Practice for Doctors and Lawyers."

Public Relations Session.—Assistance was given to Dr. John W. Latcher, chairman of the annual Public Relations Session, in obtaining speakers. The program, which was well attended, provoked many lively discussions in regard to the different subjects presented. Many favorable comments were heard after the session.

At the present time the Bureau is cooperating with Dr. George A. Burgin, 1959 chairman, in arranging the program. The services of several outstanding speakers already have been obtained.

Health Films.—The Bureau received numerous requests for all kinds of health films. Although the majority of requests are for A.M.A. films, which are filled through the facilities of the Modern Motion Picture Service, the Bureau also refers applicants to the New York State Department of Health and the New York City Department of Health film libraries. A review of the A.M.A. reports indicate that about 30 local groups receive A.M.A. health and public relations films each month.

The Bureau also receives requests for professional films for use by physicians. These are usually turned over to the Council Committee on Public Health and Education.

Radio and Television.—Broadcasting activities were greatly increased during the past twelve months. Twenty-three members of the State Medical Society discussed 12 medical or related topics on eight established interview programs originating in New York City. The majority of the interviews were on local television stations of major networks. As this report went to press five more physicians were scheduled for an equal number of broadcasts.

The State Society was credited at least once on all broadcasts for its cooperation in securing the speakers. In addition, the Society was mentioned on the air in 15 advance promotions for programs.

Among the broadcasting accomplishments was the establishment of what is believed to be the first series of medical interviews ever arranged on a permanent basis by the State Society. As the result of a proposal made by the Bureau and approved by the committee, the producers of "Hi Mom," a local television program in New York City, inaugurated on December 12, 1958, a series of weekly eight-minute interviews with local physicians on topics of interest to mothers and expectant mothers.

The interviews are conducted by a uniformed nurse. Guest speakers are secured by the Bureau with the cooperation of the five county medical societies in New York City. Each society is represented by a different physician once every five weeks on a rotation basis. The interviews are telecast Fridays from 9 to 10 a.m. on WRCA-TV, Channel 4. The program has an estimated average viewing audience of about one and three quarter million persons per week.

Special Mailing.—In order to keep public relations chairmen and other interested individuals posted about the latest developments in medical public relations and allied fields, the Bureau made special mailings during the past year. Among these were two articles concerning the medical profession by two prominent columnists which appeared in a New York City paper. The first article was highly critical of the medical profession while the second article by a top-drawer columnist was a favorable, friendly column. Another letter contained a message from the administrator of the Glen Cove Hospital on Long Island explaining how the hospital did an excellent public relations job in handling the Roy Campanella accident story as well as an article from the magazine *Woman's Day* on the abuses of TV advertising.

To give public relations chairmen the benefit of talks presented by three New York State physicians at the A.M.A. PR Institute in Chicago, August, 1958, copies of the following talks were sent to them: "Reducing Staphylococcal Infections," by Dr. James Greenough of Oneonta; "Physicians Guide to Social Services for the Older Patient," by Dr. Joseph J. Witt of Utica, and "Promoting Community Week," by Dr. Edgar C. Beck of Buffalo.

Publications.—At the time this report is being written approximately 65,000 pieces of literature have been distributed by the Bureau since the last report to the House. For the most part this literature was designed to bring the medical profession's views to the public about medical economics problems, to explain the State Medical Society's functions, and to present reasons for opposing chiropractic licensure. A good part of the literature sent out was directed at young ladies who act as medical assistants in doctors' offices, physicians themselves and county society officials.

During the year the Bureau undertook the task of revising its publication, "You and the Medical Society of the State of New York," so that copies could be used in the membership drive authorized by the Council. Another Bureau publication, "How the State Medical Society Serves You," which was designed for the sesquicentennial celebration and interprets activities of the Society to the public, is also in the process of being revised. The portion referring to the sesquicentennial celebration will be omitted and the remaining facts will be brought up to date. The brochure is intended to be used in connection with exhibits and other public affairs. A mimeographed version of the tape recording already referred to, entitled, "Medical Legislation in New York State—A Perennial Problem," also was prepared by the Bureau. This mimeographed version was sent to county society public relations and legislation chairmen.

The antichiropractic campaign conducted during 1958 was responsible for the distribution of many pamphlets as has been the case for the past several years. In all, approximately 32,000 pieces of literature were mailed by the Bureau in connection with this project.

The House will be pleased to learn that many of the established pamphlets of the Bureau are still in great demand not only here in New York but in other parts of the nation. Mention already has been made of the popularity of "Telephone Cues for Medical Personnel" and "Seven PR Pointers for Medical Personnel" in connection with the courses for medical assistants. In addition, other societies asked for copies of our pamphlets. Many of the requests for the pamphlets were the result of notices and order blanks published in the *Newsletter*.

Newsletter.—For the seventh consecutive year, the *Newsletter* was published every month, twice during one particular month, except August and September, and mailed to every member of the State Medical Society. Copies also were distributed to other interested individuals including newspaper editors and medical school deans, who agreed to distribute the publication to senior students. As this report is being written, the first senior class of the Albert Einstein College of Medicine is being sent the *Newsletter* for the first time. In all, a total of 292,000 copies were placed in the mails. The usual monthly distribution was 25,000 copies. The increase over past years was due to the fact that one particular issue was enlarged and there was a special additional issue in October.

At the request of the chairman of the scientific program of the Society's annual convention and the chairman of the Council Committee on Economics, two editions of the *Newsletter* were designated as "special," with the approval of the Council. The first was the April edition, which for the first time was dedicated entirely to the scientific program of the annual meeting. It was published in color and ran eight pages. The second was the October 1 issue, which was labeled as "The Official Notice of the Revisions in the Medicare Program" and was also printed in color. The publication of these two editions, upon request of the Society's officials, indicates not only the value but the popularity of the *Newsletter*.

Many steps were taken to make the *Newsletter* more interesting and worthwhile for the members of the Society. The new feature, "The State Medical Society at Work," was extended to two columns. This feature gives highlights of the Council meetings. More space was given to problems of current interest to physicians, such as the developments concerning negotiations about the new Workmen's Compensation fee schedule. Pictures and illustrations were used more profusely in order to enliven the copy.

There were many indications that the *Newsletter* is being widely read and is stimulating physicians to action. Mention already has been made of the fact that 70 doctors volunteered for speakers roles as result of a box. A request that physicians send in information about themselves for the *Medical Directory of New York State* brought numerous phone calls and letters to headquarters. An article on the new staphyloccal infection control manual resulted in many requests for the booklet. Notices of the availability of pamphlets had similar reactions.

Two out-of-state medical associations requested information about the cost and other data concerning the publication of the *Newsletter*. Mr. Tracey, editor, compiled this data and forwarded it to the proper officials, who expressed appreciation for our assistance.

Liaison with the A.M.A.—Once again in keeping with the experience of the past several years the Bureau cosponsored an exhibit with the A.M.A. at the Hall of Springs in Saratoga during the summer months. Another exhibit is planned for 1959.

The chairman, the director, and staff members of the Bureau worked very closely with representatives of the A.M.A. through meetings and other activities. The chairman, director, and a field representative attended the annual Public Relations Institute of the A.M.A. held in Chicago in late August. It is significant evidence of the working arrangements of the two groups that in addition to the Bureau's representatives four New York men took part in the program. The chairman and the director also attended the first regional workshop on covering medical and scientific news, cosponsored by the A.M.A. and the National Science Writers Association held here in New York State. The director also attended the annual meeting of the A.M.A. held in San Francisco and the clinical meeting in Minneapolis. He also was present at a conference of radio and television representatives on advertising of proprietary medicines which was held in New York City. He discussed the House resolution of 1958 which opposed such advertising.

The Bureau also cooperated in carrying out requests made by the A.M.A. Among these were activities concerning Medical Education Week and transmitting the views of the A.M.A. on the health care of the aged to proper parties in this State.

Within the past few weeks, the chairman, the director, and the staff met with the new A.M.A. field representative, Mr. Charles Johnson, at headquarters. At the moment, Mr. Johnson is primarily interested in Federal legislation, and the committee and Bureau are cooperating with him in setting up meetings and making contacts for him here in New York State.

The chairman should like to call to the attention of the House the 1958 index of "PR Doctor," a compilation of outstanding public relations projects carried on by various societies throughout the country, made by the A.M.A.'s Public Relations Department. Listed therein are 16 projects carried on by either our State Medical Society or county medical societies in this State. This indicates that not only the State Society but particularly the county societies which are frequently mentioned in "PR Doctor" are carrying on progressive public relations programs.

Liaison with Society Committees.—More than ever before, the committee and the Bureau cooperated with committees and subcommittees within our Society. The occasions are too numerous to list in detail. Mention, however, already has been made of the mutual activities of the Bureau and the Legislation Committee in regard to a tape recording and other matters. The dedication of the *Newsletter* to activities of the Convention Committee and the Economics Committee in regard to Medicare also have been cited. In addition, liaison work was carried on with the Public Health and Education Committee, the Nursing Committee, the Workmen's Compensation Committee, Rural Health Committee, U.S. Veterans Committee, the Ad Hoc Committee on Labor Unions and Industrial Health, and other groups. The committee and Bureau also worked very closely with the NEW YORK STATE JOURNAL OF MEDICINE.

LIAISON WITH OTHER GROUPS.—In dealings with groups outside the framework of the State Society there was a great deal of activity. Notable was the close working arrangement with the New York State Department of Health. The director attended the 54th Annual Health Conference of the Department held during the summer in Syracuse. Among the projects on which the Bureau and the Department worked was the water pollution problem campaign of the Department and publicity for the new staphylococcal infection control manual. All of these efforts were carried on in conjunction with the Society's Public Health and Education Committee. The chairman and the committee feel that much has been accomplished to the mutual advantage of the State Society and the Health Department through the activities of the past year.

There were many other groups with which the Bureau had contact. These included the Empire State Chamber of Commerce, the New York State Chamber of Commerce, the National Association of Science writers, the Board of Education of New York City, the Workmen's Compensation Board of New York State, and others. An example of the activity in this area was the assistance given to the Ad Hoc Committee on Labor Unions and Industrial Health, by obtaining the names of representatives of management, from the two Chambers of Commerce, who would be willing to discuss with the committee problems concerning union health clinics.

NEWS RELEASES.—In connection with its advisory service and information center operation, the Bureau prepared and mailed many news releases concerning subjects of a scientific nature and other matters.

In addition to the releases concerning the annual convention of the Society and the meeting of its House of Delegates already mentioned herein, a great deal of publicity was given to lectures cosponsored by the Committee on Public Health and Education and the New York State Health Department. Eighty-nine releases of this type were prepared and distributed to newspapers in the counties where the lectures were scheduled to be given. On occasion, releases describing articles that were to appear in the NEW YORK STATE JOURNAL OF MEDICINE also were circulated among newspapers in the State.

In the nonscientific field, there were many releases also sent out. Among these were releases announcing the awarding of the State Society's Annual Industrial Health Award to N.Y.U. and publicity concerning the new staphylococcal infection control manual. Based upon material supplied by the Bureau, a feature article on the Blood Banks Association of New York State appeared in a Sunday edition of the *New York Daily News*.

ANTICHIROPRACTIC CAMPAIGN.—The Bureau, since the last report to the House, cooperated with the Committee on Cults during the entire 1958 antichiropractic licensure campaign and as this report is being written has taken steps to go into action at a moment's notice when requested by the committee.

During the 1958 campaign, the director and the field staff in cooperation with the then chairman of the committee, Dr. Henry I. Fineberg, agreed upon a "plan of action" which outlined the objectives of the campaign and gave the timetable of activities. The secretarial staff also participated in the campaign by sending out letters to various persons and groups. Special trips were made by the field men into their territories to gain support for the campaign's objectives. After the House convened last year the final figures for the number of pieces distributed during the 1958 campaign were compiled and published. During the time the campaign was in effect 32,000 pieces of literature were distributed by the Bureau. The following is a brief resume of the pamphlets distributed: "Should Chiropractors Be Licensed?"—18,664; "Science vs. Chiropractic"—3,275; and "Why Chiropractors Should Not Be Licensed"—9,891, for a total of 31,830. A small box announcing the availability of pamphlets printed in the March issue of the *Newsletter* brought requests for 1,585 copies.

As part of the current 1959 activities, a special speakers panel is being organized to answer charges by chiropractors as well as to present affirmatively the Society's views. As already mentioned, one briefing session has been held and another is scheduled for mid-February. To date, 25 physicians have attended.

PUBLIC RELATIONS PROGRAM FOR 1959.—Major activities in the public relations program already under way as this report is being written are the following projects:

(1) Urging and helping county medical societies to implement or inaugurate the State Society's public relations program of eight basic projects and 18 supplemental projects outlined in "PR Target for 1958–59" (*see below*);

(2) Accelerating and expanding medical assist-

ants courses as a means to better public relations;

(3) Actively promoting the organization of medical assistants associations as approved by the Council;

(4) Developing greater interest on the part of the individual physician in dealings with the press, radio, television, and magazine writers through the Society's "Guide for Cooperation for Doctors, Hospitals, and Reporters";

(5) Breaking down barriers between the medical profession and the legal profession through the "Standards of Practice for Doctors and Lawyers" in the mutual interest of both and especially for the benefit of the public;

(6) Widening the scope of television and radio activities on the part of individual physicians as part of the State and county medical society's public relations programs and reactivating speakers groups on the State and local level;

(7) Strengthening the now well-established advisory and information service for press, radio, television, and magazine writers who seek help in preparing stories and checking completed manuscripts;

(8) Building a constructive public health education program through pamphlets, exhibits, radio and television, and other media;

(9) Continuing and improving liaison relations with committees within the State Society;

(10) Expanding associations with influential groups outside the State Society such as the New York State Chamber of Commerce;

(11) Assisting the Woman's Auxiliary at State and county levels to achieve their objectives;

(12) Broadening the area of the activities of the Bureau's field work to advance the purposes of the State Society in every way possible.

This is the report of the chairman and his committee. The committee and its chairman wish to express thanks to all who have been instrumental in helping to make the past year a successful public relations experience. Included among those to whom they are grateful are the officers, councillors, trustees, committee members, members of the Society, and staff as well as friends in outside organizations and officials of the county medical societies.

A special word of gratitude must be expressed to those responsible for the new headquarters which have lifted the morale not only of the Bureau's staff but of all the employes.

Not only the general acceptance but particularly the implementation of the Society's public relations program has been and will continue to be a source of inspiration to the committee and the Bureau in strengthening firmer internal professional relations and external public relations for the Medical Society of the State of New York.

PR TARGET FOR 1958–1959

Basic Projects

(1) Renewing drive to revitalize emergency call services and mediation committees and improving them where necessary.

(2) Promoting and conducting courses for medical assistants in doctors' offices.

(3) Encouraging implementation of "Standards of Practice for Doctors and Lawyers" at county level through joint meetings of both professions.

(4) Developing better relations with the press through the "Guide for Cooperation for Doctors, Hospitals, and Reporters" and sponsoring luncheons or similar get-togethers with the newspaper men.

(5) Stimulating county societies into greater action concerning press releases of meetings by means of a revised manual "How to Write a Press Release."

(6) Inducing county societies to have doctors speak at lay meetings, such as Rotary, P-TA, and Kiwanis, through the promotion of a speakers kit.

(7) Making all members aware of the socioeconomic problems facing medicine by devoting at least one county society meeting to these problems and indoctrinating new members in their responsibilities as society members.

(8) Awaken members to the need of proper utilization of health insurance plans, especially Blue Cross and Blue Shield by both doctors and patients to avoid destruction of these plans and to prevent the substitution of government medicine for these plans.

Supplemental Projects

(1) Promoting rural health programs.

(2) Conducting joint meetings with professional groups (lawyers, dentists, druggists, newspaper and other media representatives).

(3) Maintaining close working arrangements between public relations and legislation chairmen.

(4) Publishing periodic bulletin for members.

(5) Encouraging contributions to American Medical Education Foundation.

(6) Cooperating with local health officials.

(7) Promoting active liaison between county and State Medical Society committees.

(8) Sponsoring medical forums in cooperation with newspapers.

(9) Promoting citizen health education by distributing pamphlets.

(10) Promoting adequate medical care for all regardless of ability to pay.

(11) Preparing leaflets describing local medical facilities for new residents for distribution through Welcome Wagon.

(12) Placing exhibits at fairs.

(13) Encouraging display of A.M.A. fee plaque.

(14) Participating in community affairs.

(15) Accepting leadership in health councils and assisting in health drives.

(16) Presenting live radio and television programs and using A.M.A. transcriptions and films.

(17) Establishing a medical economics bureau.

(18) Encouraging use of voting franchise.

Cooperation with Media of Information

The Subcommittee on Cooperation with Media of Information, of the Public Relations Committee, consists of the following:

John C. McClintock, M.D., *Chairman*. . . .Albany

C. Stewart Wallace, M.D.	Tompkins
John D. Naples, M.D.	Erie

GUIDE FOR COOPERATION.—The chairman, Dr. C. Stewart Wallace, Dr. Leo E. Gibson, Dr. W. P. Anderton, Dr. Herbert T. Wagner, and Dr. John Rogers met with 22 representatives of the media of information to "review and renew" the "Guide for Cooperation for Doctors, Hospitals, and Reporters" at State Society headquarters on January 8, 1959. Among the media people were representatives of the Newspapers Reporters Association, the New York State Editors Association, the Greater New York Hospital Association, science writers, radio and television broadcasters, A.M.A., and public relations representatives from industry. Those present expressed appreciation, as they have in the past years, for the assistance provided to them in their efforts to collect and disseminate accurate scientific news not only through the Guide but also through the advisory service operated by the Public and Professional Relations Bureau. The media representatives urged once again that the members of the medical profession continue their efforts to persuade individual doctors of medicine to follow the principles laid down in the Guide.

Only one major change was suggested. This concerns the wording of Article 9 of the Guide which seems to single out television and radio for special consideration since it fails to mention the press, magazines, and science writers. The chairman, who presided at the meeting, promised that suitable corrections would be suggested to the Council of the State Society. At the time this report is being written such a suggestion has been submitted to the Council for consideration at its next meeting. If the Council approves the suggested change, a reprinting of the Guide will be necessary. The subcommittee plans such a reprinting next year. This reprinting will not only provide the opportunity to correct Section 9 but will enable the Society to remind members of the importance of the Guide and to reiterate its contents.

An important change in the television code of the National Association of Broadcasters was discussed at the meeting. As of January 1, 1959, every doctor of medicine, dentist, and nurse who appears on television must be a fully accredited member of his or her profession. This means that doctors of medicine will be and in fact already have been, beseiged by advertising firms to appear on programs to advertise commercial medical products. The Guide, the *Principles of Professional Conduct* of the State Society, and the Code of Ethics of the A.M.A. all disapprove of such mercenary conduct. The chairman wishes to point out that there are six to eight thousand doctors in the State of New York who are not members of either the county or State Medical societies. Both societies must be prepared to cope with this problem as it arises in the future.

During the past year about 150 representatives of the various media of information, particularly writers, contacted the Bureau's advisory service for assistance and were helped by the field staff who man the service. In all, there were 1,900 copies of the Guide distributed by the Bureau in compliance with requests.

STANDARDS OF PRACTICE.—At the time this report is being written, no meeting has as yet been held with the lawyers to discuss the "Standards of Practice for Doctors and Lawyers." A meeting, however, has been scheduled to take place on March 12, 1959. A supplemental report about this meeting will be given to the House in May.

PART XII

MISCELLANEOUS

Belated Bills

On October 27, 1958, a voucher was received from Dr. G. Rehmi Denton, Albany, as a member of the Ad Hoc Committee on Labor Union and Industrial Health Centers, for $36.60, the expense of attending a meeting of the committee in New York City on May 12, 1958.

On February 4, 1959, a voucher in the amount of $65.51 was received from Dr. Lyman C. Boynton, Monroe, a member of the Subcommittee on Public Medical Care, covering expense of attending a meeting of the subcommittee in New York City on October 24, 1958.

These bills are submitted to the House of Delegates because they were received more than ninety days after the expenses were incurred.

Nursing Education

The Committee on Nursing Education consists of the following:

John M. Galbraith, M.D., *Chairman*	Nassau
Louis M. Rousselot, M.D.	New York
Charles M. Smith, M.D.	Seneca

As suggested by the American Medical Association and other interested groups, your committee has been investigating the possibilities of promoting greater interest in nursing as a career. A part of our work consisted of a survey of our Auxiliary's efforts in this field. We are pleased to report that the ladies are doing a good job in five areas, namely in providing nursing scholarships and loans, promoting

Future Nurses Clubs, participating in career days, arranging panel discussions, and providing literature to interested young women.

In a report prepared by Mrs. J. A. Chaintreul, recruitment chairman, mention is made of two areas in which the State Society might assist the Auxiliary in its program. Our committee plans to study these suggestions and perhaps shall make a recommendation at a later date.

One area, however, in which your committee feels this House and each member of this Society can begin immediately to help interest young women and men in nursing as a career is by taking an interest in the program or activity known as "Career Day." "Career Day" is a full day, or evening program, that is staged in almost every high school in our State. Its purpose is to make it possible for the students in the graduating class to hear and speak with people actually engaged in every profession, trade, and business. We understand that our doctors cooperate very well and that almost every program has a physician speaker.

Our committee, however, believes that physicians could make a great contribution to the nurse recruitment program if they would discuss nursing as a career with those young women of high school age who are their patients and would cooperate with the school nurses in their efforts to interest students in nursing. Doctors who serve as school physicians could also help materially by offering to discuss nursing and by making sure that their school office contains up-to-date material on schools of nursing which they could present to all young women who they feel might be interested in nursing. School physicians might also check with the local auxiliary and determine whether or not there is a Future Nurses Club in the high school. If not, they could arrange for a meeting between the guidance counselor at the school and a representative of the auxiliary for the purpose of exploring the possibility of the local auxiliary establishing a Future Nurses Club.

As physicians we are aware of the great need for bedside nurses. Your committee and you realize how imperative it is that something be done to help cut down the shortage.

Convention

The Convention Committee consists of the following:

Samuel Z. Freedman, M.D., *Chairman*	New York
Albert J. Addesa, M.D.	Erie
Maurice J. Dattelbaum, M.D.	Kings
Thomas E. Alexander, *Adviser*	New York
Charles L. Baldwin, *Adviser*	New York

The 152nd Annual Convention of the Medical Society of the State of New York was held at the Hotel Statler in New York City, May 12 through 16, 1958.

Registration.—The registration figures follow:

Physicians	4,125	
Guests	1,515	(Included are members of allied professions, such as nurses, dentists, technicians, and medical students)
Industrial exhibitors	1,409	
Total	7,049	

This total, 7,049, exceeds the previous record total of 6,170, in 1957.

House of Delegates.—The House of Delegates met the first three days of the convention and included an evening meeting. Sixty-six resolutions were presented for consideration of the delegates.

A resolution was passed which made the Session on Legal Medicine a Section. The newly-formed section elected officers for the 1958–1959 year, and a section delegate to the 1959 meeting of the House.

The name of the Section on Pathology and Clinical Pathology was changed to include blood banking.

The House also voted to start the 1959 convention on Saturday preceding convention week. The House of Delegates will convene Saturday, Sunday, and Monday. The scientific program will start Monday afternoon and continue through Friday. There will be section meetings in the morning Tuesday through Friday, and general sessions every afternoon.

The dinner dance and annual meeting will be held Monday evening.

Scientific Program.—The Scientific Program Subcommittee has the following members:

Alfred P. Ingegno, M.D., *Chairman*	Kings
William F. Lipp, M.D., *Associate Chairman*	Erie
Bernard J. Pisani, M.D., *Associate Chairman*	New York

and chairmen of Sections and Sessions

A total of 20 section and three session meetings was held in 1958. These took place on Wednesday, Thursday, and Friday mornings. General sessions were held on Monday and Tuesday mornings, and each afternoon, Monday through Friday.

The following are the attendance figures for the scientific meetings:

Sections	*Number Attending*
Allergy	82
Anesthesiology	106
Chest Diseases	100
Dermatology and Syphilology	200

Gastroenterology and Proctology	55
General Practice	150
Industrial Medicine and Surgery	70
Medicine	90
Neurology and Psychiatry	100
Obstetrics and Gynecology	78
Ophthalmology	100
Orthopedic Surgery (No meeting held in 1958)	
Otolaryngology	55
Pathology and Clinical Pathology	70
Pediatrics	102
Physical Medicine	50
Preventive Medicine and Public Health	100
Radiology	100
Surgery	50
Urology	41
Sessions	
History of Medicine	50
Legal Medicine	40
Public Relations	34
General Sessions	
	125
	150
	200
	250
	300
	300
	250
Blood Banks	250

1959 Convention.—A meeting of the Scientific Program Subcommittee was held on October 18, 1958, in Buffalo. The chairmen of sections and sessions presented their tentative programs and discussed titles that might be suitable for the general sessions. The Section on General Practice and the Section on Industrial Medicine and Surgery agreed to have a combined meeting. The General Sessions programs will consist almost entirely of symposiums and round-table discussions which seem to be the preference of our members.

SCIENTIFIC EXHIBITS.—The Scientific Exhibits Subcommittee consists of the following:

William L. Watson, M.D., *Chairman*	New York
Beverly C. Smith, M.D., *Cochairman*	New York
Frederick Lee Liebolt, M.D.	New York
Eugene L. Lozner, M.D.	Onondaga

In 1958 there were 60 scientific exhibits; they were well received by our members and guests. Six were chosen by the Scientific Awards Subcommittee to receive recognition—a first award, a second award, and honorable mention in two classes, scientific research and clinical research.

SCIENTIFIC RESEARCH

First Award
"Tumor Cells in the Blood"
Avery A. Sandberg, M.D.
George Eugene Moore, M.D.
Roswell Park Memorial Institute, Buffalo

Second Award
"Biochemical Biopsy via Body Fluids"
Felix Wroblewski, M.D.
Memorial Center for Cancer and Allied Diseases, New York City

Honorable Mention
"Electron Microscopy of the Heart and the Capillaries"
Bruno Kisch, M.D.
Elmhurst General Hospital, Elmhurst

CLINICAL RESEARCH

First Award
"Clinical Pharmacologic Evaluation of Diuretics"
Arthur C. DeGraff, M.D.
Leonard B. Gutner, M.D.
Lawrence Kryle, M.D.
New York University College of Medicine.
Herbert S. Kupperman, M.D.
New York University Post-Graduate Medical School
Walter Newman, M.D.
Bronx Veterans Administration Hospital, New York City

Second Award
"The Cardiovascular Dynamics of Bowel Function"
Alfred Halpern, Ph.D. (*By invitation*)
Norman Shaftel, M.D.
David Sehman, M.D.
Stuyvesant Polyclinic, New York City

Honorable Mention
"Kulick-Rousselot Automatic Tamponade Controls for Bleeding Esophagogastric Varices"
Louis M. Rousselot, M.D.
George Kulick, M.D. (*By invitation*)
Louis R. W. Del Guercio, M.D. (*By invitation*)
St. Vincent's Hospital, New York City

Certificates of award were sent to the winning exhibitors. Letters of acknowledgment from the recipients indicate gratitude on the receipt of the handsome certificates.

1959 Convention.—The committee met on February 3, 1959, in the State Society offices to pass on the applications for scientific exhibit space. Fifty-one applications out of 65 were accepted for showing. This number is larger than in any other year of exhibiting in Buffalo. The committee trusts it has chosen well to make this an interesting and valuable exhibit.

SCIENTIFIC MOTION PICTURES.—The Scientific

Motion Picture Subcommittee has the following membership:

Colgate Phillips, M.D., *Chairman*	Westchester
Walter F. Stafford, Jr., M.D., *Cochairman*	Erie
E. Dean Babbage, M.D.	Erie
William E. Sullivan, M.D.	Westchester

The Motion Picture Subcommittee is pleased to report a most satisfactory program for the 1958 convention. The audience continues to grow. Twenty-five new and recent films were shown, including two premieres. One of these, "The Technic of Femoral Herniorrhaphy," was produced by a committee member, Dr. Martin J. Healy, Jr., of Yonkers. The other, produced by Dr. Leo Leveridge of New York City, was "Dynamics of Phagocytosis." In addition to the excellent photography, because this film was shown before the sound track had been added, a discussion of editing was given during its projection.

In accordance with our recent innovation, four films were discussed by their authors. These included "Reconstruction of the Breast Following Mastectomy," by Dr. Tibor de Cholnoky of Greenwich, Connecticut; "Esophageal Replacement by a Reversed Gastric Tube," by Dr. Henry J. Heimlich of New Rochelle; "Dynamics of Phagocytosis," by Dr. Leo Leveridge of New York City; and "Symposium on Heparin," by Dr. William Foley of New York City.

"Doctor Defendant" and "Medical Witness," produced by the American Medical Association in cooperation with the American Bar Association, were overwhelmingly attended. Great enthusiasm was also shown for such films as "Resuscitation for Cardiac Arrest," "Technic of Angiography," "Surgical Exploration for Massive Upper Gastrointestinal Hemorrhage," "Stress and the Adaptation Syndrome," and others.

1959 Convention.—This year we have the largest number of films within the last ten years. The response from the State Society membership has been unusually good and we are anticipating a fine program. There was an excellent response to the notice in the *Newsletter* and the STATE JOURNAL requesting application forms.

INDUSTRIAL EXHIBITS.—The 1958 Convention in New York City had 160 exhibitors. There are 90 for the 1959 Convention in Buffalo; ten more than we have ever had at an upstate convention. This number, however, is considerably less than we have at New York City conventions, despite the lower cost to exhibitors when conventions are held upstate. The lower cost of exhibit space in Buffalo is due to the appreciable difference in attendance. The State Society incurs an expenditure of money to cover costs of an upstate convention, whereas a convention in New York City more than pays for itself.

ANNUAL MEETING AND DINNER DANCE.—The Annual Meeting and Dinner Dance was held on Wednesday evening of convention week, under the able chairmanship of Dr. Frank J. Borrelli. An excellent dinner was served to over 300 guests and there was dancing to a fine orchestra. Many valuable prizes donated by pharmaceutical and appliance houses were won by lucky guests.

1959 Convention.—Plans are now under way for the 1959 Dinner Dance on Monday evening, May 9, in the ballroom of the Hotel Statler Hilton, Buffalo.

WOMAN'S AUXILIARY.—The Woman's Auxiliary to the Medical Society of the State of New York held its convention concurrently with ours. A hostess committee of Auxiliary members aided in taking attendance at some of our scientific meetings. This is appreciated.

MISCELLANEOUS.—A card of thanks was sent to each participant in the scientific program and to each scientific exhibitor.

We were pleased to make facilities for meetings available to the following: Blood Banks Association of New York State, New York State Academy of Preventive Medicine, New York State Chapter of the American College of Chest Physicians, New York State Society of Anesthesiologists, Radiological Society of New York State, and Veterans Medical Service Plan of New York, Inc., among others.

The Reception Subcommittee, Dr. Henry J. Barrow, chairman, acted as hosts for out-of-State guests.

All members of the various committees were active. The chairman of the 1958 Convention Committee, Dr. Frederick A. Wurzbach, Jr., wishes to thank all the committee members, but more especially, Drs. Alfred P. Ingegno, Frank J. Borrelli, William L. Watson, Beverly C. Smith, Colgate Phillips, and Henry J. Barrow.

The staff of the State Society were the usual pleasant assistants; and without the technical advice and aid of Mr. Charles L. Baldwin, Mr. Thomas E. Alexander, and Miss Mollie Pesikoff, the convention could not have been the huge success it was.

The 1959 Annual Convention will be held at the Hotel Statler Hilton in Buffalo, May 9 through 15. All of the scientific meetings, the scientific exhibits, the scientific motion pictures, and the industrial exhibits will be located on one floor—the mezzanine. This should make it very convenient for all our members and guests.

Nominating Committee

To the House of Delegates, Gentlemen:

The Nominating Committee met at the headquarters office of our Society, 750 Third Avenue, New York City, December 12, 1958. All members were present except Dr. John M. Galbraith (Second District), who was detained by an emergency.

Present were the following:

First District	George J. Lawrence, Jr., M.D.	Queens
Third District	Frederic W. Holcomb, M.D.	Ulster
Fourth District	James M. Blake, M.D.	Schenectady
Fifth District	Irving L. Ershler, M.D	Onondaga
Sixth District	James Greenough, M.D.	New York
Seventh District	Gordon M. Hemmett, M.D.	Monroe
Eighth District	John C. Brady, M.D.	Erie
Ninth District	John F. Rogers, M.D.	Dutchess
Member-at-Large	Philip D. Allen, M.D., *Chairman*	New York
Member-at-Large	Thurman B. Givan, M.D.	Kings
Ex officio	Leo E. Gibson, M.D.	Onondaga
Ex officio	W. P. Anderton, M.D.	New York
By invitation	Herbert T. Wagner, M.D.	New York

We take the liberty of drawing attention to Article V of the Bylaws entitled, "Officers" in which the first sentence reads, "The officers of the Society shall be a President, a President-Elect, a Vice-President, a Secretary, an Assistant Secretary, a Treasurer, an Assistant Treasurer, a Speaker, and a Vice-Speaker of the House of Delegates . . ." Under Chapter III of the Bylaws, entitled, "Election of Officers, Councillors, Trustees, and Delegates," Section 2 reads, "The President, the President-Elect, the Vice-President, the Secretary, the Assistant Secretary, the Treasurer, the Assistant Treasurer, the Speaker, and the Vice-Speaker of the House of Delegates shall be elected for one year or until their successors have been duly chosen."

And finally, under Chapter XI, entitled, "Special Committees," Section 4 reads, "The Nominating Committee shall comprise eleven members. . . It will be the duty of this committee to propose and nominate members of the Society for all vacancies to be filled at the annual meeting of the House of Delegates succeeding their appointment."

Acting on those requirements, your Nominating Committee is pleased to present the following gentlemen for the offices indicated.

Each has signified his willingness to accept office, if elected.

Respectfully submitted,

Philip D. Allen, M.D., *Chairman*

President-Elect	Norman S. Moore, M.D., Tompkins
Vice-President	John L. Sengstack, M.D., Suffolk
Secretary	William L. Wheeler, Jr., M.D., New York
Assistant Secretary	Ezra A. Wolff, M.D., Queens
Treasurer	Maurice J. Dattelbaum, M.D., Kings
Assistant Treasurer	John F. Rogers, M.D., Dutchess
Speaker	Joseph A. Lane, M.D., Monroe
Vice-Speaker	Frederick A. Wurzbach, Jr., M.D., Bronx

Councillors (three years)

James M. Blake, M.D., Schenectady
Peter J. Di Natale, M.D., Genesee
George J. Lawrence, Jr., M.D., Queens
Waring Willis, M.D., Westchester

Trustees (five years)

Leo E. Gibson, M.D., Onondaga
James Greenough, M.D., Otsego

Delegates to the American Medical Association (two years commencing January 1, 1960). . . . .

Renato J. Azzari, M.D., Bronx
James M. Blake, M.D., Schenectady
Peter M. Murray, M.D., New York
William B. Rawls, M.D., New York

Harold F. Brown, M.D., Erie
George A. Burgin, M.D., Herkimer
Peter J. Di Natale, M.D., Genesee
Leo E. Gibson, M.D., Onondaga
James Greenough, M.D., Otsego
Walter T. Heldmann, M.D., Richmond
Norman S. Moore, M.D., Tompkins
John C. Rogers, M.D., Dutchess
Solomon Schussheim, M.D., Kings
Robert F. Warren, M.D., Kings
William L. Wheeler, Jr., M.D., New York
Waring Willis, M.D., Westchester
Ezra A. Wolff, M.D., Queens
Frederick A. Wurzbach, Jr., M.D., Bronx

Planning Committee for Medical Policies

To the House of Delegates, Gentlemen:

Your Planning Committee for Medical Policies consists of the following members:

Frederick A. Wurzbach, Jr., M.D., *Chairman*	Bronx
Leo E. Gibson, M.D., *President*	Onondaga
Henry I. Fineberg, M.D., *President-Elect*	Queens
W. P. Anderton, M.D., *Secretary*	New York
Joseph A. Lane, M.D., *Speaker*	Monroe
Walter W. Mott, M.D., *Trustee*	Westchester
Paul H. Sullivan, M.D.	Nassau
Edward F. Shea, M.D.	Ulster
Arthur Q. Penta, M.D.	Schenectady
Arthur F. Gaffney, M.D.	Oneida
William T. Boland, M.D.	Chemung
Donovan M. Jenkins, M.D.	Monroe
Peter J. Di Natale, M.D.	Genesee
Frank A. Gagan, M.D.	Dutchess
John J. Bourke, M.D., *Consultant*	Albany

There was no meeting of the committee since no new business was referred by the Council, and pending action on the Survey Report any new policies might better be presented by the special committee appointed by the president to study and report recommendations based on this report.

Resolution 56-6 was given to the Planning Committee in 1957. The 1957–1958 subcommittee did not present a report. The resolution was given to a subcommittee consisting of Dr. Joseph A. Lane, chairman, Dr. William T. Boland, and Dr. Paul H. Sullivan.

The resolution reads as follows:

> Whereas, representation from the county medical societies to the House of Delegates of the Medical Society of the State of New York should be based on the relation of the membership of the county medical society to the total membership of the State Society; and
>
> Whereas, study of the representation as now constituted shows great disparity in the delegations from counties to the State between "upstate" and "downstate"; and
>
> Whereas, the question of the necessity for representation from the various scientific sections to this House of Delegates is open to discussion; and
>
> Whereas, the matter of representation from the district branches can likewise be considered a subject for study; and
>
> Whereas, we are fully cognizant of the numerous problems involved and believe that order and justice and equity should prevail; now therefore be it hereby
>
> *Resolved*, that the Speaker of the House, with the advice of the Council, be authorized to appoint a special committee to study this problem, with instructions to report its findings and recommendations at the next meeting of this House of Delegates in 1957.

The chairman of the subcommittee, Dr. Joseph A. Lane, reported: "We are in complete agreement that no change should be made in the present status of election of delegates." The full committee was polled by mail and unanimously agreed with the report of the subcommittee. This action of the committee was reported to the Council on February 12, 1959.

The chairman of the Planning Committee wishes to thank all the members of the committee for their understanding of the seeming inactivity of the committee.

Respectfully submitted,

Frederick A. Wurzbach, Jr., M.D., *Chairman*

Malpractice Insurance and Defense Board

To the House of Delegates, Gentlemen:

The Malpractice Insurance and Defense Board consists of the following:

John F. Kelley, M.D., *Chairman*	Oneida
Thomas M. d'Angelo, M.D., *Vice-Chairman*	Queens
Waring Willis, M.D.	Westchester
Joseph A. Lane, M.D.	Monroe
J. Stanley Kenney, M.D.	New York
Renato J. Azzari, M.D.	Bronx
John C. Brady, M.D.	Erie
W. P. Anderton, M.D., *ex officio*	New York
Maurice J. Dattelbaum, M.D., *ex officio*	Kings
William F. Martin, counsel, *ex officio*	New York
James M. Arnold, indemnity representative, *ex officio*	New York

The purchase of reliable malpractice insurance protection continues to be of vital concern to doctors today. Suit frequency and severity continue to be high. During the past year, one national specialty group retracted its official sanction of its group program and three others switched from Lloyd's to domestic carriers, in one instance at a considerable increase in rates. These, of course, are just further indications that the latent liability of this type of insurance is bound to show up eventually in the rates charged. Some domestic carriers, writing on an individual basis, have informed doctors with little warning that they simply no longer wish to carry their insurance. Other doctors tell us that their carriers have raised their rates on an individual basis or restricted coverage or imposed deductible features.

In view of this unrest in the malpractice field, the stability of the State Society program assumes even greater importance. In the face of strong price competition we have continued to adhere to the basic principles of the Group Plan. We have not recommended approval of "cut rate insurance" but have endeavored to see that our rates are no higher than required by our experience, yet adequate to take care of losses. In no other way can a reliable source of insurance be preserved.

We are satisfied that the broader policy placed in effect last September 1 is in accord with the increasing hazards of modern medical and surgical practice. Certainly the classification system which went into effect September 1, 1957, has proved to be the most equitable method of allocating premium costs that has been devised thus far. The board will continue to be receptive to suggestions for further improvements.

While the report of the Society's actuary has not yet been received, we are able at this time to present the following statistical data.

New and Closed Cases.—A comparison of suits, claims, and events recorded and closed during the past two years shows the following:

	1958	*1957*
On hand at first of year	832	827
Reported during year	484	458
Total	1,316	1,285
Disposed of during year	455	453
On hand at end of year	861	832

The following breakdown shows the distribution, by policy years, of the 484 cases reported during 1958:

1949	1
1950	1
1951	1
1952	5
1953	3
1954	16
1955	50
1956	106
1957	205
1958	96

Underwriting Results.—The following statement summarizes the experience of our present carrier for the period July 1, 1949, through December 31, 1957, as developed to December 31, 1958:

Premium income	$15,153,505	
Contingent loss factor	803,146	
		$15,956,651
Operating costs	3,695,131	
Taxes on contingent loss factor	24,094	
		3,719,225
Available for losses		12,237,426
Cost of closed cases	7,536,573	
Reserves on open cases	5,211,400	
Reserve for unreported cases	1,052,818	
Premium insufficiency		13,800,791
		$ 1,563,365

Since the "premium insufficiency" figure takes into account reserves, which are estimates, the actual loss to the company may prove to be either greater or less than the amount shown.

Group Plan Participation.—The usual report by county of membership is shown in Table I. For the first time since 1952 we have had an increase in the number of members insured in the Group Plan as compared with the preceding year. It is also significant that the average increase in the last quarter was greater than the over-all average for the year. We cannot help but wonder if members who transferred to other companies on the basis of price alone would have done so if they had stopped to ask themselves, "Would I take this step if I did not believe that the Group Plan will be available to me should I wish to return?"

As noted above, several members of the State Society insured by companies other than the Group Plan carrier have been notified that their insurance was about to be cancelled or would not be renewed on expiration. Many of these doctors have submitted applications for coverage in the State Society Group Plan.

While insurance under the State Society Group Plan is a privilege of membership, the board believes it is unfair to those members who have continuously supported the plan if the applications of those who have remained outside the plan or left to obtain cheaper insurance are automatically accepted when their carriers no longer consider them desirable risks. Therefore, the board recommends that the indemnity representative be instructed to postpone the acceptance of any application which in his judgment he feels should be further examined by the board. In such cases insurance under the Group Plan should not be issued until the board has had an opportunity to investigate and, when it believes necessary, actually interview the applicant in person.

Defense by Legal Counsel.—The present regulations governing malpractice insurance and defense provide that a member who elects to secure insurance from a company other than the carrier of the Group Plan shall have the same right of defense by the counsel of the Medical Society of the State of New York as those members not insured, provided said carrier is authorized to do business in the State of New York. This right of defense by the counsel is also subject to other qualifications, including agreement of the insurance company to comply with certain requirements.

The board feels that this provision of the regulations is misleading and has caused members insured with other than the Group Plan carrier to rely upon a defense by the legal counsel that is not provided in the vast majority of cases. The board also believes that a member who contracts for insurance

TABLE I.—Annual Report of Members Insured as of December 31, 1958, Showing Percentage Insured of County Membership

County	Number of Members	Number Insured	Per Cent Insured
Cayuga	77	71	92
Schoharie	19	16	86
Chemung	114	95	84
Jefferson	94	75	80
Oneida	300	236	79
Sullivan	48	38	79
Allegany	32	25	78
Genesee	55	42	77
Herkimer	57	44	77
Madison	52	40	77
Tompkins	89	67	75
Orleans	19	14	74
Oswego	61	45	74
Fulton (and Hamilton)	58	42	73
Steuben	114	84	73
Broome	289	211	73
Chenango	40	29	73
Yates	22	16	71
St. Lawrence	97	69	71
Rensselaer	150	106	70
Albany	429	295	69
Orange	208	143	69
Schuyler	9	6	69
Wayne	63	43	69
Onondaga	584	399	68
Monroe	865	582	67
Tioga	23	15	65
Essex	31	20	65
Schenectady	228	146	64
Ontario	107	67	62
Otsego	63	39	62
Wyoming	26	16	62
Warren	76	46	61
Ulster	118	71	60
Putnam	19	11	59
Cattaraugus	94	55	59
Chautauqua	135	79	59
Delaware	41	24	59
Erie	1,267	745	59
Saratoga	62	36	57
Westchester	1,237	686	55
Washington	40	22	55
Niagara	198	107	54
Clinton	57	30	53
Cortland	45	23	52
Montgomery	56	29	52
Rockland	182	94	52
Columbia	53	26	50
Greene	30	15	50
Suffolk	577	286	49
Franklin	63	29	47
Seneca	28	13	46
Nassau	1,399	603	43
Livingston	44	19	43
Dutchess	258	109	42
New York	6,981	2,668	38
Lewis	17	6	35
Bronx	1,485	495	33
Queens	1,993	642	32
Richmond	221	69	31
Kings	3,171	939	30
Total	24,370	11,113	46

outside the Group Plan is entitled to receive only whatever benefits are provided for under the terms of the policy he selects. The board recommends that the regulations governing malpractice insurance and defense be amended to read as follows:

> "A member who elects to secure malpractice protection from a company other than the carrier of the Group Plan shall not be entitled to defense by the counsel of the Medical Society of the State of New York."

AMA Films.—The board invites the attention of county societies and other groups to three films that have been produced by the William S. Merrell Company with the cooperation of the American Medical Association and the American Bar Association. These films are entitled: *The Doctor Defendant, The Medical Witness,* and *The Man Who Didn't Walk.* Prints of these films may be obtained from the Film Library of the American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

The Doctor Defendant (16 mm., black and white, sound, 30 minutes running time) presents four cases of doctors involved in malpractice suits or claims. It contains suggestions of how to avoid such actions and shows how local society committees can be of assistance.

The Medical Witness (16 mm., black and white, sound, 34 minutes running time) illustrates the right and wrong ways to give medical testimony.

The Man Who Didn't Walk is a new film that illustrates the opposing viewpoints arising out of a case of alleged traumatic neurosis.

Conclusion.—We cannot predict or guarantee what future malpractice rates will be any more than a doctor can or should guarantee the results of treatment. We can and shall continue our efforts to maintain the strength of the Society plan and, with the support of members and even greater teamwork by county societies, endeavor to decrease frequency and severity of malpractice suits and provide the best possible defense for those that do develop.

The board wishes to thank all those who have worked with it during the past year to maintain the stability of the Group Plan that has provided reliable coverage, under the supervision of the State Society, during the past thirty-eight years.

Respectfully submitted,
John F. Kelley, M.D., *Chairman*

Special Committee on Civil Defense and Catastrophe

To the House of Delegates, Gentlemen:

Your Special Civil Defense and Catastrophe Committee consists of the following:

Edward A. Burkhardt, M.D., *Chairman* ....New York
Solomon Schussheim, M.D. ....Kings

The January 24, 1959, edition of the *Journal of the American Medical Association* gave a complete review of the papers presented at the Ninth County Medical Societies Civil Defense Conference in Chicago. Your State Society was represented at this meeting.

Several conferences have been held with officers of the New York State Department of Health, Office of Medical Defense. Conferences were also held with the New York State Civil Defense Commission. These conferences reveal the presence of 18 Civil Defense services in the county and city defense areas. Medical defense represents one of these services.

The Federal and State plans and appropriations are all centered around political-geographic areas. Civil Defense personnel are made up of appointed civil employes.

The New York State Department of Health, under the direction of Drs. Hilleboe, Ingraham, and Lade, is responsible for the procuring of medical supplies, their storage, and training of defense personnel.

Effective planning by the State or county societies must be done within the framework of one of these political-geographic areas:

1. New York State Health Department
2. One of five regional offices of the State Health Department
3. District health offices
4. County health departments
5. City health units.

Regional Civil Defense offices are organized about target areas and do not always correspond to the geographic distribution of the Health Department areas.

Stock Piling.—The State Health Department through its Office of Medical Defense has the following materials stockpiled for emergency use and training: 2,902 packaged aid station outfits (cost $1,800 each); 1,200,000 blood collection outfits; 200 mobile hospitals (average cost $35,000).

Each mobile hospital unit has 843 different supply items ranging from simple drugs and dressings to x-ray equipment. The units supplied with each outfit are in excess of 30,000. These are packaged in 514 cartons per outfit. One half of all State supplies are stored in State-approved areas within 75 to 100 miles of New York City.

Narcotics are stored in high security vaults of 8 State institutions.

The value of the supplies that are stored in New York State is in excess of $18,000,000. The State of New York supplied $12,000,000 and the matching Federal fund was $6,000,000.

Federal Public Law 606 was enacted in August, 1958, and appropriates up to $25,000,000 for personnel and administrative purposes under State and local matching funds. In the consideration of the potential target areas of the country, New York State should obtain approximately 20 per cent of this appropriation if the State will assume the matching responsibility.

Now how does all of this political-geographic central stockpiling and potential funds for operation affect the planning and activities of your State and county medical societies?

1. The tools are available in abundance. Most of these are available in areas outside of target areas. Training kits are available, on request, to responsible organizations.

2. Transport of supplies is well planned and trucking firms in the storage areas have their orders.

3. Appropriations for salaries for personnel to organize training programs, mobilize doctors, nurses, and paramedical personnel seems to be near. This seems to be the area most essential for the functioning of medical defense personnel.

Dr. J. G. Fred Hiss, in his report last year listed the budget of each county in the State and noted the full-time and part-time medical administration of each county. Of the 84 reporting Civil Defense jurisdiction, 76 had no full-time or part-time medical administration help. This must be rectified. In this politico-geographic Civil Defense organization, the medical societies have only acted in an advisory capacity.

Approximately 100,000 persons in New York State have had some formal training in medical assistance in Civil Defense; yet most of the doctors in the State have had no specific assignments since 1952. Do you know where to go in case of a civil or military catastrophe?

Our important areas of activity lie in these programs: (1) Training, (2) mobilization, and (3) encouraging paramedical aid.

Your Civil Defense and Catastrophe Committee is working to obtain paid civil and medical personnel (from the new Federal matching funds) to help us organize these important areas of activity. The supplies are here. We must mobilize and train. Our Society budgets cannot afford appropriations for this work. Formal organization is the personal and financial responsibility of every citizen in the State.

Respectfully submitted,
E. A. BURKHARDT, M.D., *Chairman*

(This report is referred to the Reference Committee on Report of the Council, Part I)

War Memorial Committee

To the House of Delegates, Gentlemen:

The War Memorial Committee consists of the following members of the Board of Trustees:

Renato J. Azzari, M.D., *Chairman*	Bronx
Herbert H. Bauckus, M.D.	Erie
James Greenough, M.D.	Otsego
Maurice J. Dattelbaum, M.D., *ex officio*	Kings

The War Memorial Fund is now in its eleventh year. The War Memorial Committee continues to administer the fund, as enjoined by the 1948 House of Delegates, by passing on the eligibility and granting educational benefits to children of State Society members who served in World War II and lost their lives as a result of enemy action or service-connected illness. Although children of members who died as a result of the Korean War are now also entitled to benefits, none has yet attained the college entrance age. These students, when they enroll in an accredited college and present proper documents, receive $900 a year.

To date, 47 students have received benefits. Payments have been made for periods ranging from one to eight years. Actual disbursements have covered a total of 157 years of college studies.

There are 21 students in our 1958–1959 roster of beneficiaries. Four entered college as freshmen in the fall of 1958.

The interests of our students cover a wide range—medicine, nursing, engineering, and journalism, among others. The colleges they attend include several in New York State; some are situated in the Middle West; and others are located as far west as California.

Most of our students maintain excellent scholastic standards. They have a real awareness of the privilege of a college education which the fund helps them to achieve. The students and their mothers keep in touch with us to report progress in college. Their letters repeatedly thank the War Memorial Fund and the State Society for this constructive memorial to our deceased members who lost their lives in the service of our country.

A projection of the estimated assets and payments of the fund showed that the probable date of termination will be 1978, and that there might be a balance of over $40,000 when obligations to all beneficiaries will have been paid. (A previous projection had estimated the probable terminal date of the fund to be 1974, but now that the children of Korean War victims are eligible to receive benefits, the date is estimated to be 1978.)

Following is the financial report as of December 31, 1958:

	Amount
Total assessments received*	$248,606
Total interest received*	50,537
Total paid in benefits*	96,300
Assets of fund, December 31, 1958	202,796
Year ended December 31, 1958	
Assessment received	12
Interest received	5,119
Payments to beneficiaries	19,800

* Since inception of fund.

The War Memorial Committee extends to Miss Mollie Pesikoff appreciation for her continued devoted interest and assistance in carrying out the administration of the fund.

Respectfully submitted,
RENATO J. AZZARI, M.D., *Chairman*

Joint Committee to Combat Staphylococcal Infection

To the House of Delegates, Gentlemen:

The committee consisted of the following:

Granville W. Larimore, M.D., Deputy Commissioner, New York State Department of Health . . . . . Albany
Victor N. Tompkins, M.D., Assistant Commissioner for Laboratories and Research, New York State Department of Health . . . . . Albany
Christopher Parnall, M.D., Hospital Association of New York State . . . . . Albany
Martin R. Steinberg, M.D., Secretary, Greater New York Hospital Association . . . . . New York
Alonzo Yerby, M.D., Deputy Commissioner for Medical Affairs, New York State Department of Social Welfare . . . . . Albany
Norman S. Moore, M.D., Chairman, Public Health and Education Committee, Medical Society of the State of New York . . . . . Tompkins
James Greenough, M.D., Trustee, Medical Society of the State of New York, *Chairman* . . . Otsego

As result of a suggestion of the Public Health Council in March, 1958, a meeting of interested parties was held April 25, 1958, and the above committee was appointed to plan methods of combating staphylococcal infections.

At a meeting of this committee held May 15, 1958, the following motions were approved:

1. To draw up a guide for the control of staphylococcal infections for hospitals, physicians, and other medical personnel.
2. To secure an advisory committee to assist this project.
3. To acquaint the American Medical Association, the American Hospital Association, and the United States Public Health Service of the proposed action.
4. To divide the expenses of this project equally between the Medical Society of the State of New York, the Hospital Association of New York State, the New York State Department of Health, and the New York State Department of Social Welfare.

The following advisory committee was obtained:

Robert M. Albrecht, M.D., Director, Bureau of Epidemiology and Communicable Disease Control, New York State Department of Health
Karl Bambach, M.D., Executive Vice-President, Pharmaceutical Manufacturers Association, Washington 5, D.C.
John E. Blair, M.D., Hospital for Joint Diseases, New York City
Paul A. Bunn, M.D., Upstate Medical Center, State University of New York, Syracuse
J. O'Neill Closs, M.D., Administrative Vice-President, Pharmaceutical Manufacturers Association, Washington 5, D.C.
DuMont Elmendorf, M.D., Assistant Director of Clinical Research, Division of Laboratories and Research, New York State Department of Health
Henry I. Fineberg, M.D., Deputy Commissioner, Department of Hospitals, New York City
Andrew C. Fleck, M.D., Bureau of Epidemiology and Communicable Disease Control, New York State Department of Health
G. Alexander Galvin, M.D., President, New York State Chapter, American Academy of General Practice
Mr. Nicholas Gesoalde, Executive Secretary, New York State Pharmaceutical Association
Morris Greenberg, M.D., Director, Bureau of Preventive Diseases, New York City Department of Health
Thomas Hale, Jr., M.D., Director, Albany Hospital
Clinton V. Z. Hawn, M.D., Mary Imogene Bassett Hospital, Cooperstown
Arnold Karan, M.D., Director, The Bronx Hospital
Irvin Klein, M.D., New York State Workmen's Compensation Board
Yale Kneeland, Jr., M.D., Presbyterian Hospital, New York City
Miss Marguerite Koderl, Director of Nurses, Rochester General Hospital
*Mrs. Veronica Marks, Consultant Public Health Nurse, New York State Department of Health
Robert E. L. Nesbitt, Jr., M.D., Professor of Gynecology and Obstetrics, Albany Medical College
Erwin Neter, M.D., Children's Hospital, Buffalo
Miss Madeleine Phaneuf, Consultant Nurse (Hospital), New York State Department of Health
Ernest L. Sarason, M.D., State University of New York, Syracuse

Meetings of the advisory committee were held on June 4 and July 16, 1958. At the first meeting, the advisory group discussed material for the manual in four subgroups; professional technics and practices, epidemiology, laboratory practices, and administrative technics and practices. At the second meeting, the reports of the four groups were reviewed and corrections, deletions, and additions made.

Following the second meeting on July 16, 1958, the material was rewritten in a form suitable for publication. In accomplishing this rather difficult task, invaluable assistance was contributed by Dr. Paul A. Bunn, Dr. Clinton V. Z. Hawn, and Dr. Robert E. L. Nesbitt, Jr., on the advisory committee and Dr. Victor N. Tompkins of the joint committee.

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* Deceased

After final approval by the joint committee 1,500 copies of the manual were published and distributed on December 1, 1958. A few corrections were made and a second edition of 5,000 copies was published January 12, 1959.

Distribution, to date, has been to the Medical Society of the State of New York, science writers, committee members, Public Health Council, hospitals of York State, health officers, and others.

The committee, with the consent of the Health Department, plans to combine the staphylococcus manual with the present Health Department publication, "Guide for Prevention and Control of Infections in Hospitals," in order to provide a more complete manual concerning all infection control.

The committee wishes to express its deep appreciation to all those who have cooperated in this undertaking. Special thanks are due to the members of the advisory committee and the personnel of the New York State Department of Health whose contributions have made the manual possible.

Respectfully submitted,
JAMES GREENOUGH, M.D., *Chairman*

(*This report is referred to the Reference Committee on the Report of the Council, Part VI*)

American Medical Education Foundation

To the House of Delegates, Gentlemen:

Your American Medical Education Foundation Special Committee consists of the following members:

William E. Pelow, M.D., *Chairman*	Onondaga
William C. T. Gaynor, M.D.	Suffolk
Milton J. Greenberg, M.D.	Washington
William O. Jackson, M.D.	Steuben
John W. Latcher, M.D.	Otsego
William L. Orr, M.D.	Erie
Edwin P. Russell, M.D.	Oneida
Irving Weiner, M.D.	Orange
Carl G. Whitbeck, M.D.	Columbia
Jerome L. Leon, M.D.	Queens

There have been no meetings of this committee during the past year for several reasons, namely, airline strikes, snow, and the difficulty of assembling such a large committee.

Your chairman has been in communication with each member of the committee and suggestions were made for each member to keep in touch with the secretary of each county society in his district relative to the problems of the American Medical Education Foundation. It has always been the feeling of your chairman that no "hard sell" method for contributions could or should be used with the members of the State Society. This committee has carried on an educational campaign through county society bulletins, at component meetings, and in personal conversations.

Figures are not out for 1958 but the computations, comparing 1956 and 1957, show that in 1956 10,171 members contributed $356,573.78; in 1957 10,878 contributions totaled $454,437, an increase of $86,863.22; 707 members contributed in 1957, above 1956. As the monthly statements were received from the Chicago office in 1958, it appeared that our efforts had availed little, but the report for December was voluminous and 1958 may surpass 1957.

At this time I wish to thank the members of the committee for their efforts in their respective districts. I am sure that the figures above show progress. The total amount for the whole country in 1957 was $4,005,484. This included contributions and interest on securities. The latter amounted to $10,239.

If anyone has any suggestions that would improve the work of this committee, they would be appreciated. It is the opinion of the chairman that education about and publicity at the county society level is the best and possibly the only way that this committee can function without antagonizing members. I firmly believe that the "hard sell" method would defeat the objective of private contributions to medical colleges.

Respectfully submitted,
WILLIAM E. PELOW, M.D., *Chairman*

(*This report is referred to the Reference Committee on Report of the Council, Part VIII*)

Committee to Study Possible Establishment of a Scientific and Educational Trust

To the House of Delegates, Gentlemen:

The Committee to Study Possible Establishment of a Scientific and Educational Trust consists of the following:

Henry I. Fineberg, M.D., *Chairman*	Queens
Norman S. Moore, M.D.	Tompkins
Frank M. Woolsey, Jr., M.D.	Albany
Herman E. Hilleboe, M.D., Commissioner of Health	Albany
W. P. Anderton, M.D., *ex officio*	New York
Leo E. Gibson, M.D., *ex officio*	Onondaga
William F. Martin, Esq., *ex officio*	New York

At the December, 1958, meeting of the Council, Dr. Norman S. Moore, chairman of the Committee on Public Health and Education, broached the subject of the establishment of an educational and scientific trust, similar to the one that was organized in Pennsylvania during the early part of 1955. It was his opinion that the development of such a group would be most worth while.

The Educational and Scientific Trust of the Medical Society of the State of Pennsylvania is an instrumentality designed to promote through medical education and scientific research "the protection and conservation of human resources."

> *Creation and Purpose of the Trust*
>
> In January, 1955, a group of Pennsylvania physicians cognizant of the philosophies, vision, and objectives of the Medical Society of the State of Pennsylvania, and having a sincere concern for what organized medicine was doing and the additional programs that should be undertaken to assist its members and county medical societies in the areas of progressive medical education and science, established The Educational and Scientific Trust.
>
> *The Trust is a New and Unique Institution*
>
> The Educational and Scientific Trust is the first of its kind founded by any state medical society, and it is hoped this instrumentality will be used successfully to develop, supervise, and administer educational and scientific projects in the field of medicine, and extend professional educational programs in health fields to physicians throughout the State.
>
> Clinical institutes, symposiums, conferences, and demonstrations always have been periodically available to physicians on programs which concern technical scientific research or the management and treatment of disease entities. On the other hand, very few opportunities of a similar nature ever have been offered or made available to physicians in such fields as preventive medicine and public health, socioeconomic aspects of community health, medical practices, medical care and rehabilitation, or interrelated and public relation phases of the practice of medicine.
>
> *Programming and Projects*
>
> The Educational and Scientific Trust from its inception has been exploring the possibility and advisability of initiating professional educational and scientific research programs related to certain above-mentioned phases of the practice of medicine where assistance or improvements are needed. Four projects have already been started.

These projects are: (1) a professional education program to promote community health; (2) recruitment of physicians for public health; (3) financial aid for medical studies; (4) effective hospital utilization study.

Although it appears that the program of The Educational and Scientific Trust of Pennsylvania is particularly pitched toward public health, its activities have been extended to include rural health and postgraduate education; and it has other projects in mind.

The objectives of The Educational and Scientific Trust of the Medical Society of the State of Pennsylvania have been approved by such persons as Dr. Donald A. Dukelow of the Bureau of Health Education of the American Medical Association; Dr. Thomas Parran, dean of the School of Public Health of the University of Pittsburgh; Dr. John S. De Tar, past president of the American Academy of General Practice; Dr. Robert E. Coker, Jr. of the University of North Carolina; and others.

It was the opinion of the Council that our president should appoint a committee to study the possible establishment of such a trust and that the matter should be discussed with Mr. William F. Martin, our legal counsel.

Your chairman and Dr. W. P. Anderton, our secretary, consulted Mr. Martin on January 5. It was his opinion that a trust of this type for New York State would not only be feasible but desirable. It was decided, however, that before making any definite plans we must carefully and concretely delineate the objectives and the ways of accomplishing the important features of such a program. The activities of the trust should not be restricted too much. There must be latitude for permissive breadth of scope.

A progress report containing these conclusions was approved by the Council at its meeting in January.

The committee met in New York City on the evening of January 22, 1959. Copies of the brochure of The Educational and Scientific Trust of the Medical Society of the State of Pennsylvania—describing its conception, philosophy, and objectives—were distributed; as were copies of the December, 1958, issue of "The Physician and Public Health," which is published by the Trust.

It was pointed out that the contemplated Educational and Scientific Trust would be an independent organization—under the sponsorship of the Medical Society of the State of New York. The activities of such a group would result in the upgrading of postgraduate medical education, improvement in the practice of rural medicine, the furtherance of research, and the fulfillment of other hopes and dreams of a similar nature. The medical profession of our State would be able to present positive programs for better public health and medicine—something tangible and not nebulous.

There is no doubt but that the Committee on Public Health and Education is performing important functions in taking care of the everyday problems that arise. However, because of a lack of sufficient funds and resultant curtailment of personnel and other necessities, important projects are sidetracked too often. The Trust would make it possible for many essential matters to be handled much better and with dispatch. Here we would have the means of telling the public what the doctors are doing to promote the health and welfare of the people of our State. The Trust would be operated wholly by the medical profession, not by lay people and not by health authorities. There is no doubt but that new technics for reaching more doctors could be developed; and postgraduate education would be extended to areas never touched before.

It was our feeling that it would be wise for the State Society to allot the funds needed to initiate the Trust; with the anticipation and hope that foundations, trusts, individuals, and corporations would then come into the picture by making contributions to assist in financing and underwriting educational and scientific projects in the arts and sciences of medicine.

After considerable discussion, it was agreed to recommend to the Council that:

1. The Educational and Scientific Trust be approved in principle;
2. The entire matter be referred to the Committee on Public Health and Education to work out the details and technicalities of starting and maintaining such a program;
3. The "blueprint" prepared by the Committee on Public Health and Education be submitted to our counsel for evaluation and legal approval.

It was also the opinion of the committee that our executive director should visit the Educational and Scientific Trust of the Medical Society of the State of Pennsylvania in Harrisburg in order to study its organization, its modus operandi, and its accomplishments.

As this report is being written (January 29), it is planned to submit these recommendations to the Council at its meeting on February 12; and it is our hope that they will be approved.

The committee has completed the task assigned to it, and we will ask that it be discharged.

Respectfully submitted,
Henry I. Fineberg, M.D., *Chairman*

(This report is referred to the Reference Committee on Report of the Council, Part I)

Blood Banks Commission

To the House of Delegates, Gentlemen:

This report was prepared during the latter part of January.

The members of the Blood Banks Commission are as follows:

Henry I. Fineberg, M.D., *Chairman*	Jamaica
Leo E. Gibson, M.D.	Onondaga
Norman S. Moore, M.D.	Tompkins
John F. Rogers, M.D.	Dutchess
Herbert R. Brown, Jr., M.D.	Monroe
Leon N. Sussman, M.D.	New York
Herman E. Hilleboe, M.D.	Albany
Herbert Berger, M.D.	Richmond

A number of meetings of the Blood Banks Commission have been held since the annual meeting of the House of Delegates in May, 1958. We have also been in touch with the president and certain members of the board of directors of the Blood Banks Association of New York State and its executive director.

It should be noted that, in accordance with the wishes of the House of Delegates, the Council was asked to submit the names of nine persons to the Blood Banks Association, three of whom were appointed to its board of directors. They were Dr. J. Stanley Kenney of New York City, Dr. Herbert Berger of Staten Island, and Dr. Robert S. Jenks of Batavia. Dr. Berger is the president.

The organization of the Blood Banks Commission, the Blood Banks Association of New York State, and the North East District Clearing House was discussed in great detail and fairly well clarified. As a result of this evaluation, the following conclusions were reached:

The Blood Banks Commission acts as the State Society's liaison with the Blood Banks Association of New York State.

The Blood Banks Association has functions which are concerned with educational matters—the establishment of blood banks, the improvement of the standards of blood banking, advice to donor procurement programs, the setting-up of programs at the annual meetings of the State Society—in general, policies of better publicity and promotion of blood banking.

The Blood Banks Association has three types of membership—individual, institutional, and affiliate. This is in keeping with the membership procedures and requirements of the American Association of Blood Banks. Both institutional and individual members have voting privileges.

The Association maintains the following committees: membership, scientific procedures, nominating, North East District Clearing House, blood bank personnel, civil defense, donor procurement, and budget.

The blood Banks Association acts as the sponsor of and directs the *North East District Clearing House*, which functions primarily as a bookkeeping agency for member banks to provide the following services: (1) handling the exchange of donor replacements between blood banks; (2) facilitating the borrowing and lending of blood between banks, wherever and whenever needed; (3) keeping records, balancing accounts, and arranging settlements to cancel interbank indebtedness; (4) engaging in those auxiliary services that are best conducted through a central agency. Member banks pay a transaction fee.

The Blood Banks Association staff consists of two persons: Miss Evelyn P. Clarke, the executive director, who carries the responsibility for the activities of the Blood Banks Association and the public relations and educational aspects of the North East District Clearing House program; and Miss Jan Ritzler who is the Clearing House secretary and is concerned with the operational detail of the Clearing House.

The 11th annual meeting of the American Association of Blood Banks was held in Cincinnati, Ohio, November 19 to 22, 1958. Representing the Blood Banks Association of New York State were Dr. J. Stanley Kenney, Dr. Dorothea Worcester, and the executive director.

As this report goes to press, the Blood Banks Association is continuing to carry out its educational program, with the assistance of the Public and Professional Relations Bureau of the Medical Society of the State of New York. It is engaged in working with a group in New York City in order to establish a community blood bank, at no cost to the Association.

A scientific blood bank program is being prepared for the 153rd annual meeting of our Society, the funds for this project to be taken from the budgetary allotment of the Blood Banks Association. This program will be part of the agenda of the new Section on Pathology, Clinical Pathology, and Blood Banking.

The North East District Clearing House is "a going concern." It appears fairly certain that it will, in the not too distant future, become self-supporting, perhaps this year.

It is hoped that within a short time there will be a public announcement of the cooperation of the Greater New York Hospital Association with the Clearing House program in New York City. The North East District Clearing House committee and the staff have been working on a basic organization plan for the City of New York which will include coordinator and affiliate banks in each borough of the City. This is a pilot and pioneer project in organization for the Clearing House program and should prove of value to other cities and other districts as the Clearing House program develops.

An effort is being made to convince the New York City Department of Hospitals that it should participate in the program of the North East District Clearing House. A meeting with the blood bank directors of the major hospital centers has been scheduled for this purpose.

Your Commission strongly suggests (1) that there should be a closer relationship between the Blood Banks Association and the Public and Professional Relations Bureau, and (2) that the Council should recommend that a member of the Council Committee on Public Relations be elected to the board of directors of the Blood Banks Association.

Early in September of last year it was determined that the $16,000 allocated to the Blood Banks Association and the North East District Clearing House for the year 1958 would not be used in full. The annual deficit of the Blood Banks Association was $1,273 and that of the North East District Clearing House was $4,124, for a total of $5,397. This very rosy picture is the result of having had $4,455 in reserve. This sum was also utilized, so that the actual deficit was $9,852.

The budget estimate (expenditures over income) for the operation of the Blood Banks Association and the North East District Clearing House for 1959 calls for approximately $8,100. Of this amount, $3,350 represents a loan to the Clearing House, which will be returned; and the remainder (a little over $4,700) is to be alloted to the Blood Banks Association and will not be repaid.

Therefore, the Blood Banks Commission has recommended an appropriation of $8,500 for both projects for the year 1959. This has been approved by the Council and the Board of Trustees.

Respectfully submitted,

HENRY I. FINEBERG, M.D., *Chairman*

(This report is referred to the Reference Committee on Report of the Council, Part IV)

Special Advisory Committee to the New York State Health Department Regarding Poliomyelitis

To the House of Delegates, Gentlemen:

The Special Advisory Committee to the New York State Health Department Regarding Poliomyelitis consists of the following members:

Thomas M. Rivers, M.D., *Chairman*	New York
Thurman B. Givan, M.D.	Kings
Joseph Golomb, M.D.	Bronx
Tyree C. Wyatt, M.D.	Onondaga

This committee has not met during the year.

(This report is referred to the Reference Committee on Report of the Council, Part V)

Ad Hoc Committee to Study 1958 Management Survey Report

To the House of Delegates, Gentlemen:

The members of the Ad Hoc Committee of the Council To Study the 1958 Management Survey Report are as follows:

Renato J. Azzari, M.D., *Chairman*	Bronx
Henry I. Fineberg, M.D.	Queens
Thurman B. Givan, M.D.	Kings
James Greenough, M.D.	Otsego
John J. Masterson, M.D.	Kings
Walter W. Mott, M.D.	Westchester
Leo E. Gibson, M.D., *ex officio*	Onondaga
W. P. Anderton, M.D., *ex officio*	New York

It is the opinion of the Survey Committee that most, if not all, of the suggestions and recommendations in the Survey Report may well be adopted by the Medical Society of the State of New York. However, there are 52 suggestions and 22 recommendations and to implement all of them within the space of one year could well be disastrous to our Society. Several of the recommendations and suggestions are disapproved by the Survey Committee for what appear to be sound reasons.

Some of the proposed changes require alterations in the Constitution or Bylaws. Naturally, these cannot be implemented prior to the annual meeting in May, 1959. Others not requiring such actions could be instituted at any time, but an orderly, carefully planned procedure will be of far more benefit to the Society than hasty, possibly mistakened changes, which would damage our prestige, function, and even existence.

With these few introductory remarks the report now presents in detail the opinion of our committee on all the recommended changes in the Survey Report.

RECOMMENDATIONS

I.—Authorize a committee to select an executive director: Already accomplished by the appointment of Dr. Herbert T. Wagner.

II.—Authorize the Trustees to engage an executive director: Already accomplished.

III.—Authorize the Council and Trustees to employ any professional assistance in employing an executive director: Unnecessary.

IV.—Utilize the annual meeting of medical society executives in conjunction with AMA meeting in San Francisco in June to obtain candidates for this office: Impossible to use this opportunity for lack of time.

V.—Authorize the Council and Trustees prior to amendment of the Bylaws to waive Section 7, Chapter VII, which puts the secretary in complete charge of the administration of the headquarters of the Society: No action was taken.

VI.—Give the executive director full administrative authority: This requires amendment to the Bylaws and except for agreement of the secretary, cannot be effected until the annual meeting in May. The committee recommends such change in the Bylaws.

VII.—Make the office of secretary purely an elective, nonsalaried office: This requires a change in the Bylaws. The committee recommends such change:

(1) The committee recommends that the executive director should be mentioned in Chapter IV, Council, Section 1.

(2) That the duties of the executive director not be spelled out in the Constitution and Bylaws, but left to action of the Council.

(3) Article IV, page 2, executive director shall attend meetings of the Council (put in with Editor of JOURNAL).

At this point a report of the committee in regard to the employment of Dr. Wagner would appear timely.

Meetings were held July 24, September 4, October 5, and November 9, 1958, to consider applicants for the position of executive director. Every effort was made to encourage applications from as many qualified persons as possible. Early in its deliberations the committee decided that it would be advisable to appoint a physician rather than a layman. Altogether 30 men were considered. After interviews with the nine leading candidates, three names were submitted to the Council on November 13, 1958, and Dr. Wagner was chosen at that time. Dr. Wagner undertook his duties on December 1, 1958.

VIII.—Let the executive director appoint a personnel director: In the opinion of the executive director, such an officer is unnecessary. The duties might be delegated as part of the activities of some member of the office staff. The committee recommends that this decision be left to the executive director.

IX.—Let the personnel director formulate with the executive director personnel policies: See above. The committee is opposed to the employment of a personnel director.

X.—Development of county societies and district branches with two-way communication with the State Society: Approved by committee.

XI.—Assist county societies to encourage salaried doctors, as well as those in private practice, to participate in Society activities: Approved by the committee. Article VI, Section 3, last sentence, page 18, of the *Principles of Professional Conduct* makes it difficult to interest men on salary in county, district, and State Medical Society affairs.

XII.—In counties where there are medical schools, to make efforts to produce scientific and other programs that will be of mutual interest to the schools, the hospitals, and the practicing doctors of the community: Much work has already been done along these lines. Further exploration is advised by the committee.

XIII.—House of Delegates should declare that public and professional relations activities are necessary and vital parts of the Society's work: The committee agreed, commented that this action had been taken repeatedly and would continue to be the policy of the Society.

XIV.—Develop and officially approve a clear statement of objectives of the public and professional relations work. There are three subheadings to this recommendation concerning: (*a*) individual doctors; (*b*) programs in county, district, and State Society meetings to improve internal and external relations; (*c*) to make available material for promotion of public relations at all levels: The committee approves this recommendation and feels that more work should be devoted to these purposes.

XV.—Keep the members informed repeatedly about the detailed expenditures of the money raised by dues: The committee strongly approves of this recommendation and suggests that at intervals graphic representations of dues expenditures be furnished the members through the *Newsletter* or JOURNAL. This could well be done by the usual "pie-plate" segmentation of the dues dollar, or a similar graph.

XVI.—Secure all assistance possible from the Public Relations Department of the A.M.A.: The committee feels this is already effected but could be intensified and increased.

In reference to Recommendations XIII through XVI inclusive, it was the unanimous opinion of the committee that public and professional relations was an individual problem between doctor and patient. Until many of the existing abuses, such as difficulty in obtaining medical attention during "off" hours, malfunctioning of "grievance" committees, and excessive charges are corrected, the entire medical profession suffers for these actions by a few. Concerted action by the profession at all levels to eliminate these abuses should be taken.

XVII.—Employ a publications consultant for a thorough study of the JOURNAL, *Directory*, and *Newsletter:* The committee opposed this action, at the present time. While improvement is always possible, it would be wiser, at this time, to refer this matter to the executive director, the editor, and the Publication Committee for study and advice.

XVIII.—Direct your officers to analyze expected receipts and expenditures of the Society for the next three to five years: The committee approved this in principle, but further study of the entire fiscal set-up should be undertaken by the executive director before definite action be taken.

XIX.—Request Council and Trustees to inaugurate an educational campaign through every means at their disposal, including cooperation of county societies, if possible to:

1. Inform members how dues are expended;
2. Tell what each dollar buys in activity or service;
3. Explain why expenses will increase;
4. Specify what increases are anticipated for what, and with what expected results; and
5. Say how much in dues will be necessary to support the larger program.

This recommendation was considered with numbers XV and XVIII. They were approved in principle and the executive director is studying methods of implementation now.

XX.—Fiscal set-up under the executive director:

1. As at present, deposit income to the Society in a treasury bank account: Approved.

2. Checks on Society's treasurer to be signed by treasurer, assistant treasurer, or other duly organized alternate, but not by the executive director: The committee believes that no change should be made in the present Bylaws, Chapter VII, Sections 7, 8, 9, which requires two signatures for these checks—either the treasurer or assistant treasurer and either the secretary or assistant secretary.

3. Set up a separate bank account in the Society's name, preferably in a separate bank, to be the executive director's revolving fund. Checks on this fund to be signed by the executive director without cosignature: The committee recommends amending this section and implementing it as follows: "Set up separate bank accounts in the Society's name to be the executive director's revolving funds. Checks on these funds to be signed by the executive director or, in his absence, by an alternate who shall be selected by the Council and Trustees."

The executive director suggests three funds: (*a*) revolving to pay bills; (*b*) payroll; (*c*) Medicare. He, also, suggests a basic impressed account to prevent overdrafts.

4. Each month, on the basis of the annual, approved budget (or as duly amended by the Council and Board of Trustees), the executive director is to forward to the treasurer an estimate, in reasonable detail, of the funds required to meet Society expenditures the following month. On approving the estimate, the treasurer is to draw a single check

on his treasurer's account to transfer the necessary funds to the executive director's revolving fund: The committee approved this section but recommends substituting the word "checks" for the words "a single check" and substituting the word "funds" for the word "fund."

5. The executive director to pay all bills from his revolving fund(s): Approved with addition in parenthesis.

XXI.—Include in annual budgets, reasonable amounts for contingencies. Permit executive director to draw on such amounts when needed: Approved.

XXII.—Bond the executive director and any alternate authorized to sign checks: Already done.

Suggestions

I.—Redefine objectives of the Society: The committee believes no action should be taken at this time.

II.—Streamline government of State Society by electing one governing body instead of two: The committee recommends that no action be taken this year because of divided opinions in various areas of the State. Further study of this suggestion would be advisable.

III.—Suggestions for implementing suggestion II: Same comment as for II.

IV.—Reduce meetings of unicameral board to four or six a year: Same comment as Suggestion II.

V.—Establishment of a more powerful executive committee: Same comment as Suggestion II.

VI.—Establishment of a finance committee: Postpone as long as the Board of Trustees as presently constituted is in existence.

VII.—Should read—"Let Council, Trustees, and Executive Committee eliminate needless and cluttering detail from meetings. Devote meetings mainly to problems and policy, leaving administration to executive director": The committee approves of this suggestion. It will require change in Bylaws, Chapter VII, section 7, to transfer certain duties from the secretary to the executive director. The committee also recommends an agenda for the executive committee to be mailed at the same time as the agenda for the Council.

VIII.—Eliminate needless recording of every word spoken at meetings of Council and Trustees: The committee recommends that a stenotypist be present to record, verbatim, minutes for filing and reference and a stenographer to record the important actions taken. This latter report to be used for published minutes, as soon as possible, after the meetings.

IX.—To restrict attendance at Trustees meetings: The committee recommends that the suggestion be amended to read—"Restrict attendance at Council, Board of Trustees, and Executive Committee to members of these bodies, the executive director, the editor of the JOURNAL at Council meetings, and such assistants, including legal counsel, as they may desire.

X.—Prepare special materials to show to doctors on salary what the A.M.A. means to them and why they, equally with the practitioner, should be members: The committee recommended approval but amended to read—"To prepare special materials or secure them from the A.M.A., urging all doctors of medicine not now members of the A.M.A. to become members of the A.M.A."

XI.—To study what method of billing A.M.A. dues produces best result: The committee points out that this is now being done and approves further study.

XII, XIII, XIV.—These suggestions have to do with nomination of officers, councillors, trustees, and delegates to the A.M.A. The committee discussed these suggestions at length and was of the opinion that all the factors suggested have been considered in the past by the nominating committees.

XV.—To abolish "bullet voting": After much discussion, the majority of the committee disapproved this suggestion, claiming that the right to vote was, also, the right not to vote. This decision was not unanimous.

XVI.—Concerning personnel policies: This suggestion was approved by the committee, and it is recommended that it be referred to the executive director for implementation.

XVII.—Authorize the executive director to engage outside consultants to assist on personnel policies: The committee voted that these functions come within the purview of the executive director, and, if he desires outside help, he shall request this of the Council.

XVIII.—Concerns retirement age limits: The committee recommends deferring action until after further study.

XIX, XX, XXI, XXII.—These suggestions concern commission and committee set-up: The committee recommends, at this time, that Chapter IV, section 10, of the Bylaws be amended to eliminate the requirement that the chairman of a Council committee shall be a member of the Council. The committee hopes to bring in a recommendation in regard to the committees and commissions before the 1959 annual meeting.

XXIII.—Restore the Planning Committee to an actual long-range planning committee to work with the executive director: This recommendation was strongly approved by the committee.

XXIV.—Appointment of a subcommittee of the Planning Committee to work with the president-elect on objectives for the year ahead: The committee approves this recommendation.

XXV.—Appointment of committees on medical school and practitioner relationship and on accident prevention in children: The committee notes with approval that both of these objectives have already been accomplished by Dr. Moore's Committee on Public Health and Education.

XXVI.—Assignment of a staff member to all committees (and commissions): The committee approves.

XXVII.—Appoint an ad hoc committee to study again the whole subject of committee organization: The committee disapproved the suggestion and suggested a review of the minutes of the Planning Committee where this study has been thoroughly made.

XXVIII.—Employ field directors to assist the executive director: This recommendation should be referred to the executive director for implementation.

XXIX.—To encourage county societies to employ executive directors: No action is necessary as this is being done.

XXX.—To study the district branch set-up. This is disapproved by the committee. The Planning Committee has much material on this subject. The minutes should be reviewed and then recommendations should be made by the Planning Committee.

XXXI, XXXII, XXXIII.—State and county societies to educate doctors to join. To urge doctors to participate in community activities. Have field directors work out best relations and programs for each district branch and county medical society: The committee feels that these actions have been done for years and little more can be done until field directors are appointed.

XXXIV.—Employ an outside public relations agency: The committee disapproves this suggestion. It has been tried before with poor results.

XXXV.—Join the *Newsletter* to the JOURNAL: The committee disapproved this suggestion but felt the *Newsletter* might be published more frequently.

XXXVI.—Provide occasionally to doctors, clear, brief, and interesting aids and suggestions useful in relationships with patients and others. (Perhaps a small Society periodical to patients, for use in waiting rooms.) Perhaps "pointers" to doctors on all kinds of relationships with patients, within the profession, with the community: The committee approved this suggestion with the exception of the sentence in parentheses. Such a periodical, unless very carefully planned, could do much more harm than good.

XXXVII.—Point out to the public the cost of medical education: The committee strongly disapproves. This approach only produces antagonism.

XXXVIII.—Produce syndicated articles on medicine throughout the State: Disapproved as being very difficult to produce and liable to have a deleterious effect.

XXXIX.—Try to prevent doctor endorsements of various products: The committee disapproves this suggestion as the A.M.A. has a committee at present working to abolish this practice, and local effort by a single state might jeopardize the national program.

XL.—Arrange one program a year in each county society, and possibly in each district branch, to be devoted to discussion of public relations problems: The committee recommends no action pending study of the Planning Committee minutes on this subject.

XLI, XLII.—Investigate closed television or radio programs between the Society and county societies, with or without sponsorship or assistance of advertisers, and develop much more extensively public and professional relations conferences in district branches. This is being done in some areas: The committee recommends that these subjects be referred to the Public Relations Committee for further study.

XLIII.—Develop closer relationships between the Public and Professional Relations Bureau and the legislation activities of the Society, including the Albany office. Suggest Public Relations and Legislation belong together under a Commission on Public Policy: The committee approved the first sentence but disapproved the second pending further study of committees and commissions.

XLIV.—With outside help, establish a publishing department of the Society, with a publisher responsible to the executive director functioning under policies set up by the Council and Trustees: The committee recommends postponement of any action at this time.

XLV.—Make the publishing department budget autonomous: The committee disapproves this suggestion at this time.

XLVI.—Reduce the subscription rate of the JOURNAL from $7.50 to $5.00: The committee disapproves this suggestion at this time.

XLVII.—Let the JOURNAL join the Magazine Publishers Association: The committee believes this should be referred to the Publication Committee.

XLVIII.—Permit executive director to develop a staff in the future, five to eight men of executive caliber, more than at present: The committee recommends approval of this suggestion by the Council.

XLIX.—To encourage long-range planning including budgeting three years ahead, with revisions every six months: The committee disapproves of this suggestion as being impractical and cumbersome at this time.

L.—Reduce to writing relationships of the Society and its officers with the Blood Banks Commission and Association and their officers: The committee recommends that this suggestion be referred to the executive director for further study.

LI.—Changes in the annual meeting procedures: The committee approves in principle and recommends reference to the Convention Committee for study.

LII.—Change method of amending Bylaws and Constitution to reduce delay: The committee disapproves this suggestion, feeling that alterations in Bylaws and Constitution should have thorough study before being voted upon.

Additional meetings are scheduled, and an additional report will be submitted.

Respectfully submitted,

RENATO J. AZZARI, M.D., *Chairman*

(*This report is referred to the Reference Committee on Report of the Council, Part XII*)

Advisory Committee to Columbia University Study of Non-Profit Medical Insurance Plans in New York State

To the House of Delegates, Gentlemen:

During last spring, Columbia University School of Public Health and Administrative Medicine was requested to conduct a study of nonprofit plans for prepayment of medical care. Ray E. Trussell, M.D., was made director of this study. At the request of Dr. Trussell, Dr. Gibson appointed the following committee:

John C. McClintock, M.D., *Chairman*	Albany
Carl R. Ackerman, M.D.	Bronx
Merle D. Evans, M.D.	Rochester
Carlton E. Wertz, M.D.	Buffalo
Norman S. Moore, M.D., *Adviser*	Tompkins
Leo E. Gibson, M.D., *ex officio*	Onondaga
W. P. Anderton, M.D., *ex officio*	New York

The committee met with the staff of the study from Columbia University on September 25. At that time, the advisory committee was advised of the scope of the study which includes items requested by the Superintendent of Insurance of the State, such as hospital reimbursement cost formulas, hospital operating practices in relation to accounting, charges for ancillary services, standards of care, utilization of hospital facilities, length of stay in hospital, and evidence of excessive utilization of facilities, and, finally, corporate features of the nonprofit plans were to be studied.

Dr. Trussell requested cooperation of the State Medical Society and suggested that it would be helpful if principles of the study could be conveyed to every member of the State Medical Society, and this was accomplished with approval of the Council in the October 15, 1958, *Newsletter*.

The Council, upon recommendation of this committee, endorsed the study and urged county medical societies to cooperate if called upon by the study group to contribute to the investigation.

On December 4 and 5, the Columbia University study group held a meeting at West Point, New York, to which were invited representatives of Blue Cross Plans, hospital administrators, and delegates from the various advisory committees to the New York State Prepayment Study. Dr. Carl R. Ackerman, a member of our committee, attended the meeting, which was largely concerned with a discussion of hospital costs, the methods of establishing such costs, and the ways of establishing Blue Cross rates.

This study, called for by the Commissioner of Insurance and financed through contributions from the nonprofit plans in the State of New York, was designed to continue for a year. The final report of the study group will be directed to the Commissioner of Insurance. I am happy to say that Dr. Trussell has kept the committee fully advised at all times and that he has sought the advice of this advisory committee on matters relating to the medical profession. Because the study is not yet complete, this is, of necessity, a progress report.

Respectfully submitted,

JOHN C. McCLINTOCK, M.D., *Chairman*

(*This report is referred to the Reference Committee on Report of the Council, Part VII*)

Ad Hoc Committee on Labor Unions and Industrial Health

To the House of Delegates, Gentleman:

As a result of action of the Council of the Medical Society of the State of New York, this committee was established in April of 1958.

The members are:

Joseph A. Lane, M.D., *Chairman*	Monroe
Henry I. Fineberg, M.D.	Queens
Peter J. Di Natale, M.D.	Genesee
John C. McClintock, M.D.	Albany
John F. Rogers, M.D.	Dutchess
G. Rhemi Denton, M.D.	Albany

The reason for this committee was primarily to study union health centers, as well as other facets of industrial medical care, and their relationships to organized medicine as a whole.

Several meetings have been held and reports have been given to the Council regularly. The committee approved the distribution of the "Guides for Evaluation of Management and Union Health Centers," as amended, for distribution to the presidents and secretaries of the component county medical societies.

A resolution, 58–53, which resolved "that immediate action be taken in cooperation with union representatives and the State Department of Social Welfare to promote State legislation covering the entire field of industrial health centers in which the principle of free choice shall be requisite in order that organized medicine may give its proper leadership to plans for purveying medical care to the public," was also considered in cooperation with the Bureau of Industrial Medicine. It was the opinion of the committee that since this matter is already law, it will be impossible to change the statute.

The committee feels that efforts should be made to arrange meetings with representatives of management and labor in an effort to discuss the problems that are common to everyone involved, with the hope that these problems can be resolved and that congenial relations can be established. In keeping with this plan, a meeting was to be held on February 11, 1959, in the Roosevelt Hotel, New York City, at which Mr. Harold Hanover, president of the A.F.L.-C.I.O. of New York State, and one of his associates will be present.

It is anticipated that meetings will be held at a later date with representatives of management, and it is hoped that a further meeting can be held at which representatives of management and labor and medicine can be brought together.

It is the general consensus of the committee that all efforts should be made towards obtaining cooperation of management and labor in the establishment of union health centers. Certain recommendations have been made in keeping with the "Guides" as stated previously. It is noted in the literature that there are now at least 150 such facilities throughout the country, and it is anticipated that many more will be set up. Two or three unions in San Joaquin County in California are using the services of local doctors to provide benefits for their subscribers. This has been in operation only for about two years but shows considerable promise for the future.

It is anticipated that the committee will continue to bend its efforts to arrive at a reasonable solution, if possible, of a very complicated problem.

Respectfully submitted,

Joseph A. Lane, M.D., *Chairman*

(This report is referred to the Reference Committee on Report of the Council, Part X)

Medical Advisory Committee to the Bureau of Disability Determinations of the New York State Department of Social Welfare

To the House of Delegates, Gentlemen:

The committee consists of the following:

George Himler, M.D., *Chairman*	New York
Lewis Dickar, M.D.	Kings
Lawrence S. Kryle, M.D.	Nassau

The committee met with representatives of the Bureau on five occasions in the current year. The members of the committee have now become thoroughly familiar with the functions of the Bureau and its methods of operation.

The committee turned its attention to two main topics. The first concerned methods of payment for consultative examinations. In some instances, where the consultant does not perform the necessary x-ray or laboratory services, he is still paid for his services and the laboratory work in one check and is expected in turn to reimburse the individual who did perform the laboratory work. Consultants had expressed dissatisfaction with this mode of payment, and the committee made suggestions to the Bureau as to how these objections could be met.

It was further pointed out that consultant services are sometimes difficult to secure, especially in rural areas. The committee ascribed part of the difficulty to the fee schedule, which, generally speaking, is out of date and lower than present conditions warrant. It was thought that the fee schedules should be raised and that remuneration should be based on one current schedule rather than three as is presently the case. The chairman therefore introduced resolution 58–60 at the 1958 session of the House of Delegates, recommending to the Social Security Administration that the Medicare fee schedule be used as the basis for payment for consultative services. This was passed.

The second main topic for discussion was ways and means of informing the doctors of New York State about the disability determinations program, to secure their cooperation in the interest of their patients. There is now considerable misunderstanding as to what is required when a request for information regarding a claimant is sent to his doctor.

Two items of literature were discussed in detail. The first of these was a pamphlet distributed by the BOASI entitled "Disability and Social Security, Evaluation of Disability." This was considered to be a very informative and readable pamphlet. It is to be distributed chiefly to hospital libraries, record rooms, and business offices. Distribution to individual physicians will be only on request. On December 11, 1958, the Council acceded to the committee's request to have these pamphlets stamped "Approved by the Medical Society of the State of New York."

Another article prepared by the BOASI and intended for state medical journals was discussed. It was agreed that it was too long and too difficult to read. The committee therefore suggested that four or five short articles be prepared covering the historical background of the Bureau, its relationship with BOASI, the rights of claimants under the program, what is expected of the physician when he is asked for information concerning a patient, and so on. The articles were to be about the equivalent of one half to three quarters of a page in the NEW YORK STATE JOURNAL OF MEDICINE. The Bureau agreed to prepare them and after editing by the committee to submit them to the editor of the STATE JOURNAL for publication.

This work has been slowed by the fact that the Bureau has had a great influx of claims and is currently engaged in expanding its capacity to deal with them. It is expected that they will be ready for presentation in two or three months.

Respectfully submitted,
GEORGE HIMLER, M.D., *Chairman*

(This report is referred to the Reference Committee on Report of the Council, Part V)

Special Committee on Autopsies and the Law Regarding Dead Human Bodies

To the House of Delegates, Gentlemen:

Your Special Committee on Autopsies and the Law Regarding Dead Human Bodies has the following members:

Alfred Angrist, M.D., *Chairman*	Bronx
Herbert Derman, M.D.	Ulster
Jacob Taub, M.D.	Bronx
Angelo M. Sala, M.D.	New York
John V. Connorton, *Adviser*	New York

At the single meeting of the committee the past failure in amending the Autopsy Law was discussed. It was the opinion of the committee that any effort to change the Autopsy Law to be the equivalent of the Wisconsin Law was undoubtedly doomed to failure because of the determined opposition of a small minority, and that no such attempt be made this year.

The question of resubmitting the bill approved last year for the appointment of a legislative commission was discussed. It was the consensus of opinion that a commission held under the auspices of the Legislature would require open hearings and might wake "sleeping dogs," raise more problems than it would solve, and thus worsen the situation. It was therefore the unanimous opinion of the committee that no such resolution should be introduced this year.

It was further the unanimous opinion of the committee that there was a distinct need for such a study by an impartial committee or commission, but that this study be undertaken outside of the Legislature by an impartial nongovernmental group with the support of some foundation. The possible component organizations and interested parties for the makeup of such a commission were indicated. It was felt that such a study could be undertaken under the auspices of the New York Academy of Medicine, alone or in conjunction with the Medical Society of the State of New York, and the City and State Bar Associations.

It was urged that the above recommendation be implemented by having the president of the Medical Society of the State of New York, or the executive director, or any designated interested individual or group explore the possibilities of enlisting the active interest of the New York Academy of Medicine and the Bar Associations in sponsoring such a study and in obtaining foundation support for such an endeavor.

The recent action of the Board of Regents in declaring the performing of an unauthorized autopsy as unethical conduct, thus exposing pathologists to revocation of license, was discussed. The very ambiguity of what constitutes illegal authorization and consent under present law is in contrast to what prevails in actual practice and adds gravity to the situation.

It was the unanimous opinion of the committee that the Medical Society of the State of New York undertake immediate active steps to have this ambiguous regulation or ruling of the Board of Regents withdrawn or revised.

There was general agreement as to the need for an active program of public education to note the advantages of autopsies for public health and public welfare. It was urged that a program of publicity and education be undertaken, in collaboration with as many organizations as possible, to promote the acceptance of the autopsy investigation in modern society for the benefit of general good and welfare, and of public health in particular.

Respectfully submitted,

ALFRED ANGRIST, M.D., *Chairman*

(*This report is referred to the Reference Committee on Report of the Council, Part IX*)

Reports of the District Branches

Second District Branch

To the House of Delegates, Gentlemen:

On April 19, 1958, the executive committee of the Second District Branch met at the Garden City Hotel. Present were Dr. Arthur E. Corwith, Dr. Charles W. Shlimbaum, Dr. George C. Erickson, Dr. Albert Biglan, Dr. W. P. Anderton, Dr. Ralph S. Emerson, Mr. J. Louis Neff, and Mrs. Albert Biglan.

It was decided to hold a fall meeting at the Nassau County Academy of Medicine. The date was left open but it was later decided that it would be held on November 19, 1958. In view of the poor attendance at previous meetings, it was decided to try a new type of program. It was the opinion of the committee that the Second District Branch could function best as a forum for discussion of problems common to the Nassau and Suffolk County Medical Societies. It was decided that the program this year should consist of panel discussions with panel members from both component societies, followed by dinner and open discussion of whatever conclusions were drawn by the panel. Dr. George Erickson and Dr. Charles Shlimbaum were appointed to arrange the program.

It was recommended that in the future the Auxiliary district councillor and the Auxiliary presidents of the component counties be invited to be present at the executive committee meetings.

Inasmuch as Dr. Shell, the Second District Branch first vice-president, was unable to continue in office, Dr. Joseph Zimring of Long Beach was nominated as first vice-president.

On July 15, a meeting was held at the Nassau Academy of Medicine. Present were Drs. Corwith, Emerson, Erickson, Freireich, and Zimring, and Mr. Neff and Mr. Werne. Mr. Werne was invited to attend the meeting because of his broad knowledge of labor relations. At this meeting it was decided that organized medicine's role in labor matters be one of the subjects for panel discussion at the fall meeting. It was decided that the program committee would meet later and work out the details of the panel discussions.

On August 13, 1958, Drs. Shlimbaum, Erickson, and Corwith and Mrs. Pitrelli, the district councillor of the Auxiliary, met at the Southside Hospital, Bay Shore, in order to make final plans for the program.

The regular meeting of the Second District Branch was held on November 19, 1958, at the Nassau County Academy of Medicine, Garden City. At 6:00 P.M. a panel, consisting of members from the component societies, held a discussion monitored by Dr. Erickson. The subjects discussed were under the heading of "Is Organized Medicine Meeting the Challenge of Organized Labor?" Subheadings were: "Union Welfare Funds, Medical Insurance Plans"; "The Responsibility of Organized Medicine," and "The Responsibility of Individual Doctors." At 7:15 there was registration of the members, and at 8:00 dinner was served, followed by an address given by Dr. Henry I. Fineberg, president-elect of the Medical Society of the State of New York. Mrs. Maurice Sheldon, president of the Auxiliary to the Medical Society, spoke next. Following this, the conclusions reached by the panels were presented, and a general discussion followed.

The officers of the Second District Branch felt that, while the attendance at this meeting was disappointing, a start had been made in the right direction and that meetings of this type might be of value in the future. The panel discussions were too lengthy to include in this report, but it is hoped to publish them separately at a future date.

In closing, I should like to thank everyone who contributed to the success of the meeting, and Dr. Fineberg and Mrs. Sheldon for their interesting and inspiring talks.

Respectfully submitted,
ARTHUR E. CORWITH, M.D., *President*

Third District Branch

To the House of Delegates, Gentlemen:

The executive committee meeting was convened at the Governor Clinton Hotel, Kingston, at 8:00 P.M., Thursday, May 22, 1958. A very excellent dinner was enjoyed before the formal meeting got under way.

Those attending were Dr. Edwin G. Mulbury, president; Dr. Frederic W. Holcomb, Dr. W. P. Anderton, Dr. Herbert F. Schwartz, Dr. Harry Golembe, Dr. George R. Mills, and Dr. H. J. Noerling.

On opening the formal meeting, a brief discussion took place regarding the Third District Branch health and accident insurance plan. This discussion was prompted by correspondence from some of the members regarding the availability of such a program, and recent communications indicating premium increases decided necessary by the Bertholon-Rowland Corporation, and Mr. George P. Farrell, director of the Medical Care Insurance Bureau of the Medical Society of the State of New York. It was also decided that it might be appropriate for Mr. Farrell to give a brief, informative presentation of this subject for the general membership of the branch at the forthcoming annual meeting.

The decision was made that the annual meeting would be held on Thursday, October 16, 1958, combining the facilities of the Greene County Memorial Hospital and the Saulpaugh Hotel in Catskill. It was agreed that the subject for the scientific meeting would be "Hypnosis—Its Application in the Medical Arts." And since there is a growing interest in this field among the dentists, members of the dental societies were to be invited to attend the scientific meeting.

Dr. Mulbury appointed a nominating committee for the annual meeting consisting of Dr. Harry Golembe, chairman; Dr. Albert Vander Veer, and Dr. John Wadsworth.

Dr. Anderton brought to the attention of the committee members two decisions which were made by the State Society affecting branch activities: (1) That no gifts would be solicited by any branch of the Society without endorsement by the excutive committee of the State Society, and (2) that each district branch could and would decide upon its own meeting date.

On October 16, 1958, at about 10:30 A.M. the fifty-second annual meeting of the Third District Branch began with registration at the Saulpaugh Hotel in Catskill. There was a total attendance of 128 including guests. The business meeting was called to order at 11:40 A.M. by the president, Dr. Mulbury, and the minutes of the fifty-first annual meeting were read and approved. The minutes of the executive committee meeting held in May were read and approved. The nominating committee offered the following slate of officers for the coming year:

Dr. Lee R. Tompkins, Liberty, *President*
Dr. Eugene Galvin, Rosendale, *First Vice-President*
Dr. Albert R. Vander Veer, Albany, *Second Vice-President*
Dr. Henry J. Noerling, Valatie, *Secretary-Treasurer*
Dr. Edwin G. Mulbury, Windham, *Delegate*

The report of the nominating committee was accepted and the new slate of officers was unanimously voted into office.

Mr. George P. Farrell, director of the Medical Care Insurance Bureau of the Medical Society of the State of New York, then addressed the meeting, presenting many interesting and important facts relating to group health and accident insurance available to branch membership. He also discussed certain aspects of group life insurance in which there is a growing interest. Evidence of the interest that Mr. Farrell's talk created was the lively discussion that followed.

Members of the Woman's Auxiliary, invited dentists, and guests obviously enjoyed the cocktail hour and luncheon that followed. After introductions, an inspiring address was given by Dr. Henry I. Fineberg, president-elect of the Medical Society of the State of New York, during which he touched on such presently important points as public relations, the legislation program of the State Society, chiropractic, cultism and quackery in general, and the constant need for the medical profession to be alert to any ill-considered legislation that might favor their perpetuation.

Mrs. Maurice G. Sheldon, president of the Woman's Auxiliary to the State Medical Society, addressed the group forcefully and with good humor concerning the year's outstanding and numerous accomplishments arising out of the valued efforts of the Auxiliary.

The scientific meeting convened at 2:40 P.M. featuring the theme, "Hypnosis and Its Use in the Medical Arts." Great interest in this subject was apparent at the very outset, with all at the luncheon remaining, and the appearance from time to time of new listeners. The panel of speakers on the subject consisted of Dr. Hyman S. Barahal, acting director of Pilgrim State Hospital at West Brentwood, moderator and speaker; Dr. Herbert Spiegel, of the faculty of the William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology, who discussed the subject from the standpoint of the psychiatrist; Dr. William E. F. Werner, attending gynecologist and director of obstetrics, Rockaway Beach Hospital, who presented the subject in relation to his field of medicine with demonstration of technics on two patients who accompanied him; Dr. Paul M. Wood, consulting anesthetist, Cornwall Hospital, and Horton Memorial Hospital, Middletown, who discussed hypnosis from the point of view of the anesthetist, including in his talk much of interest in the history of anesthesia and hypnosis.

It was apparent that the meeting was a complete success from all points of view. All present at the scientific meeting seemed to be completely captivated by the subject under discussion.

Respectfully submitted,
EDWIN G. MULBURY, M.D., *President*

Fourth District Branch

To the House of Delegates, Gentlemen:

The executive committee of the Fourth District Branch met on April 17, 1958, at Queensbury Hotel, Glens Falls, at which the following officers were present: Dr. Roman R. Violyn, acting president; Dr. Milton J. Greenburg, second vice-president; Dr. Arthur Q. Penta, secretary, and Dr. Webster Moriarta, treasurer. Dr. W. P. Anderton was also present.

Most of the time was devoted to considering the type of program that would attract a large number of the members from our district. It was decided to have two panels, one on compensation and the other on medicolegal and malpractice insurance. Dr. Roman R. Violyn and Dr. Arthur Q. Penta were asked to make arrangements for the speakers. Dr. Violyn suggested that the annual meeting be held at Amsterdam, and it was so voted. The final date of the annual meeting was not selected until May, after the New York meeting, when it was decided to hold the meeting on October 30 so as not to conflict with the other branches.

In order to hold the annual meeting in Amsterdam, and for the Montgomery County Medical Society to be able to act as host, we had the problem of not having a woman's auxiliary in that county. The first thing on the schedule was to reorganize the wives of the doctors in Montgomery County. This was very well done by Mrs. Norbert Fethke, the wife of our county president. She invited the ladies to a luncheon, and after a pep talk from Dr. Violyn, the women said that they would do their part; and they did. By holding our annual meeting in Amsterdam, we did accomplish a very definite objective, the reorganization of the womans' auxiliary in Montgomery County. The arrangements for the entertainment of the ladies at luncheon, and the decorations, fashion show, and other details were the result of the work of our auxiliary. It is hoped that their organization will continue to function in the future.

On October 30 our annual meeting began with the executive committee meeting at the Elks Club, at noon in Amsterdam. This meeting was very well attended, but it was late in starting because some members thought that we should wait for Dr. Anderton and Dr. Leo Gibson, who were to be present but were held up at their meeting of the State Society workmen's compensation committee, also held at Amsterdam.

The executive committee meeting was conducted by Dr. Violyn, acting president, and all the other officers of the district branch were present, together with a large number of the officers of the component county societies. At this meeting, a discussion took place concerning health and accident insurance and Mr. George Weber, of Mutual of Omaha, was present to answer questions. He stated that about 66 per cent of the members of the district are insured with Mutual of Omaha.

Dr. Oscar Green, Essex County, first discussed the right of a member of the executive committee to offer a resolution that would eventually be presented to the State Society, and finally a resolution was passed to be presented to the regular business meeting later in the afternoon. The resolution in substance was that if a county medical society was not in position to discipline its own members or member, it could refer the case to the district branch or to the State Society. A great deal of discussion took place concerning such a resolution, and the secretary was instructed to draw up the resolution and to have it presented to the House of Delegates at the next annual meeting of the State Society.

The afternoon program was very well attended at the Century Club. The panel on compensation consisted of Miss Angela R. Parisi, New York State Workmen's Compensation Board Chairman, who together with Dr. Weideman, medical director for the Compensation Board, acted as moderators. The rest of the panel consisted of Dr. Gerald D. Dorman, chairman, Workmen's Compensation Committee of the State Society; Dr. Joseph E. Colaneri, medical director, New York State Insurance Fund, and Frederick A. Partyka, Esq., associate counsel to the Moreland Commission.

The discussions were such that we were late for our second panel, which was started by Dr. J. Stanley Kenney, who honored our meeting with his presence. The second panel was on "Malpractice Defense and Medical Legal Practice." Dr. Milton Helpern, Chief Medical Examiner, City of New York, was present to also act as moderator. Dr. John F. Kelley, chairman, Malpractice Board, was unable to be present, and Dr. Kenney took his place on the panel. Mr. Richard Burns also replaced Mr. Martin, counsel for the Medical Society. Mr. James M. Arnold, Indemnity Representative, Medical Society of the State of New York was also at the panel table.

A very lively period of discussion took place during this panel, and again we were delayed for our business meeting, which was short and to the point. A new slate of officers was elected for the next term. The report of the nominating committee, consisting of Dr. Carl F. Runge, Dr. Norbert Fethke, and Dr. Clem E. Gritsavage, was accepted and the secretary was instructed to cast the vote for: Dr. Roman R. Violyn, president; Dr. Milton J. Greenburg, first vice-president; Dr. Arthur Q. Penta, vice-president; Dr. Webster M. Moriarta, secretary; Dr. Arthur Howard, treasurer. Delegate to the State Society is Dr. Roman R. Violyn. Dr.

Arthur Q. Penta was appointed member of the State Society Planning Committee by Dr. Violyn, as acting president.

Following the afternoon meeting, there was a great rush back to the Elks Club, where a social hour was arranged. Then, when all the "thirsts" were satisfied, a crowd of over 180 were seated in the main hall dining room, where the tables were decorated with October colors and fruits, flowers, and such. Everybody enjoyed a steak dinner. About 24 were seated at the head table. The president of the Montgomery County Society, Dr. Fethke, welcomed the members and guests at the dinner. He then referred the program to Dr. Violyn, who in turn, introduced the many honored guests who were present. Among them were Dr. and Mrs. Leo Gibson, Dr. and Mrs. Harry Golembe, Dr. J. Stanley Kenney, Dr. W. P. Anderton, Dr. and Mrs. Gerald D. Dorman, Dr. Milton Helpern, Mrs. Maurice G. Sheldon, Mrs. McCartney, Mr. James Arnold, and Mr. J. Richard Burns. The newly elected officers of the Fourth District Branch were also introduced, as were Dr. and Mrs. Liston, newly appointed medical director of the Saratoga Spa. Mr. George Weber, of Mutual of Omaha, presented everyone present with a cigaret lighter, filled and ready to fire.

This year we were honored to have Dr. Leo E. Gibson, president of the State Society, deliver the address of the evening. His speech contained so much "meat" of the various problems confronting the medical profession at this day and age, that many of us, and even our wives, began to take some serious notice of what we have to face in order to remain in the practice of medicine. Mrs. Maurice G. Sheldon, president of the Woman's Auxiliary, as always gave a very sparkling talk. That girl has so much personality that it will be very difficult for any one person to fill that position as she has done. It just is not fair to those who have to follow her in the office that she vacates.

After a very active session that started at noon and was just closing with the speeches, there was a floor show and dancing for those that were able to stay. The evening entertainment was arranged by Dr. Adam Kindar and Dr. Robert Dunlap, members of the entertainment committee of the Montgomery County Society.

The whole meeting was a great success. We are grateful for the interest shown by the various members of the State Society who honored us with their presence, also the lovely wives that were able to come with their husbands, and finally to the many wives of the Montgomery County Medical Society, who reorganized and worked so hard to have this meeting, as all of the other meetings of our district should be if the woman's auxiliary of each county society where the meetings are held would do the same. Mrs. Ralph Isabella, Schenectady, district councillor, contributed a great deal of her time to help make this meeting a success.

As I have previously reported on the 1957 activities of the Fourth District Branch meeting, such a meeting would be impossible to hold unless all the woman's auxiliaries took an active part in the participation and attendance. It is the "wife" who will bring her husband to the meeting—that is, provided all the men have wives!

Respectfully submitted,
Roman R. Violyn, M.D., *President*

Fifth District Branch

To the House of Delegates, Gentlemen:

The Fifth District Branch annual meeting was held October 9, 1958, at the Hotel Utica in Utica. We were again privileged to participate in a splendid program by the Heart Committee in the tricounty group. We wish to express our grateful appreciation for the opportunity of holding the district branch meeting following the scientific program of this body.

It is with regret that we must record less than quorum attendance making it impossible to hold an official meeting. However, in the impromptu discussion it was felt advisable to support the growing feeling in this district branch for the past several years that the scientific meeting put on as an annual event cannot compete with the well-arranged and well-staffed postgraduate session and courses.

It now appears, as evidenced by the decreasing interest and attendance during the past six years, that operation of the official district branch meetings may be difficult if held for that purpose alone. This leads to the question: Are some correct when they state that the district branch level group has completed its usefulness and that emphasis should be directed to the State and County levels?

In addition, they question if the support given by the State Society to the district branch meeting could not be more wisely invested in other avenues.

These expressions are given in this report as conviction of a growing concern. However, it is again with regret that a more positive note cannot be given by the president.

Respectfully submitted,
Olin J. Mowry, M.D., *President*

Sixth District Branch

To the House of Delegates, Gentlemen:

The executive committee met at the Arlington Hotel, Binghamton, on April 30, 1958. Plans were made to hold the annual meeting of the district branch at the Otesaga Hotel, Cooperstown, on September 24, 1958, with afternoon and evening sessions. Plans were made for a diversified program which had to be slightly altered, as time passed.

The fifty-second annual meeting was held in Cooperstown on September 24, 1958. It was the opinion of those members who attended that a September date was preferable in the Sixth District Branch on account of fall weather. However, it was unfortunate that, inadvertently, the date chosen was a religious holy day which limited the attendance to some degree. Care should be taken to avoid such a conflict in the future.

The afternoon program comprised "The Medical Witness," an American Medical Association film, and a talk on "Staphylococci" by Dr. Victor D. Tompkins, director, Division of Laboratories and Research, New York State Department of Health. The paper was an outstanding one.

At the business meeting, Dr. Norman C. Lyster was elected delegate from the Sixth District Branch to the House of Delegates.

Seventy-five persons attended the annual dinner, including several officers and staff members of the State Society.

After dinner, Mrs. Maurice G. Sheldon, president of the Woman's Auxiliary to the Medical Society, and Dr. Leo E. Gibson, president of the State Society, addressed the meeting. Both presentations were well received and appreciated.

The final paper of the evening was a discussion of "Implantation, Placentation, and Early Embryogenesis," by Dr. Robert E. L. Nesbitt, Jr., Professor of Obstetrics and Gynecology, Albany Medical College. The subject matter presented very interesting information aimed at the preservation of early pregnancies.

Dr. Nesbitt's paper was published in the December 1, 1958, issue of the NEW YORK STATE JOURNAL OF MEDICINE.

Following the annual meeting, arrangements, approved by a mail vote of the officers and county society presidents, were made to hold the 1959 meeting at the new Sheraton Hotel, in Binghamton, on Wednesday, September 23, 1959. This action was taken so that reservations could be made.

Respectfully submitted,
JAMES GREENOUGH, M.D., *President*

Seventh District Branch

To the House of Delegates, Gentlemen:

During the year there were two meetings of the executive council in addition to the annual meeting on October 1, 1958. The meeting of February 27, 1958, was highlighted by the fact that there was a fire in the Treadway Hotel in Canandaigua requiring a quick change in plans which was ably handled by Canandaigua doctors with the cooperation of the Arrowhead Lanes.

One of the important matters that occurred was the request of Cayuga County to transfer to the Fifth District Branch because of its geographic location near Syracuse and the fact that its Compensation, Blue Cross and Blue Shield, as well as other matters, are much more easily handled than through the Seventh District Branch. A resolution was introduced into the House of Delegates in May of 1958 and favorable action is anticipated at the annual meeting in Buffalo in 1959.

The annual meeting on October 1, 1958, was very ably handled by Dr. James Arseneau who presided for me as I had been called out of town by a death in the family. All reports as to the social and scientific parts of the meeting were very favorable and I wish to thank Dr. Arseneau in this report for his excellent work in handling the meeting as well as his efforts as chairman of the program committee.

The December meeting included the appointment of nominating and program committees for the annual meeting in 1959 as well as setting up committees to study insurance problems and a committee on child accident prevention in keeping with the request of the State Society.

Efforts are being made to straighten out certain dues payments with the component county societies, and it has been intimated that there will be complete cooperation in this matter.

Election of officers for this district branch will be held at the annual meeting in September, 1959.

Respectfully submitted,
JOSEPH A. LANE, M.D., *President*

Eighth District Branch

To the House of Delegates, Gentlemen:

The year 1958 for the Eighth District Branch of the Medical Society of the State of New York was marked by its annual scientific meeting and dinner dance, the best attended in many years, two dinner meetings of its advisory council of presidents and secretaries and other auxiliary bodies, and a joint cocktail party and dinner meeting of the Eighth District and Seventh District Branches, held in conjunction with the 1958 Annual Meeting of the State Medical Society in New York City in May.

Especially gratifying to branch officers and members was the tribute paid to the activity and progressiveness of the Eighth District Branch in the report of the survey of the Medical Society of the State of New York presented to the House of

Delegates at the May Annual Meeting of the State Society. The Eighth District Branch was spotlighted in this report which lauded the manner in which the branch had made itself a vital unit in the State Society set-up and "provided a pattern for other branches to follow."

The year 1958 was also distinguished by a renewed drive to bring even more physician-members into an active role in branch affairs and to strengthen the bonds of professional fellowship throughout the eight-county district.

The Eighth District Branch embarked on its year of programs and activities at the annual midwinter dinner meeting of the advisory council and allied groups at Hotel Statler Hilton, Buffalo, on the night of February 6. Dr. Elmer T. McGroder, president, presided over the meeting whose attendance was cut to 20 by highly unfavorable regional weather. The main business was the consideration and taking of action on a large number of bills of interest to medicine, pending before the 1958 Legislature, notably the Peterson-Butler chiropractic licensure measure, discussion being led by Dr. John C. Brady, Buffalo, member of the Council Committee on Legislation of the State Society and chairman of the Legislation Committee of the Erie County Medical Society.

This meeting also (1) voted to unite with the Seventh District Branch for a joint dinner meeting of delegates, officers, and other elements in New York City on the night of May 12, opening day of the Annual Meeting of the State Medical Society; (2) received preliminary reports on plans for the 1958 annual scientific meeting and dinner dance of the branch to be held at Lockport on October 2 from Dr. Milton Terris, scientific program committee chairman, and Dr. John T. Donovan, Jr., Lockport, chairman of the local arrangements committee; (3) reelected Dr. Joseph C. O'Gorman, Buffalo, chairman of the central conference committee on workmen's compensation problems.

Approximately 40 delegates, county society officers, State Society heads, and others attended the third joint dinner meeting of the Eighth and Seventh District Branches at Hotel Statler Hilton, New York City, on the evening of May 12, with President McGroder presiding. Speakers were Dr. Samuel Sanes, Buffalo, chairman of the Erie County Society's delegation in the 1958 House; Dr. James H. Arseneau of Lyons; and Dr. Herbert H. Bauckus, Buffalo, a member of the Board of Trustees of the State Society.

The largest turnout in years of Western New York physicians and their ladies marked the fifty-third annual meeting of the Eighth District Branch on October 2 at Lockport, Niagara County. More than 80 physicians and guests registered for the afternoon scientific session held at Mount View Hospital, while upwards of 190 persons attended the evening meeting and dinner dance at the Park Hotel. Dr. Wilfrid M. Anna, Lockport, branch president, presided at both get-togethers, and Dr. John T. Donovan, Jr., local arrangements committee chairman, supervised the evening's festivities.

The dinner meeting was addressed by Dr. Leo E. Gibson, Syracuse, president of the State Society, and Mrs. Maurice G. Sheldon, Olean, president of the Woman's Auxiliary to the State Society. The advisory council and other groups at their noontime "curtain-raiser" luncheon meeting (1) elected president Anna as district delegate for the branch to the House of the State Society; (2) endorsed a program of low-cost life insurance for members of the branch; (3) expressed the thanks of the branch to Dr. Milton Terris, former assistant dean for postgraduate education of the University of Buffalo School of Medicine, for the help rendered in the preparation of scientific programs for branch annual meetings.

The scientific meeting heard lectures by three speakers as follows: Charles L. Eckert, M.D., Albany, professor of surgery, Albany Medical College of Union University; Lawrence E. Young, M.D., Rochester, professor of medicine, University of Rochester School of Medicine and Dentistry; Lytt I. Gardner, M.D., Syracuse, professor of pediatrics, State University of New York Upstate Medical Center.

An address by Dr. Erwin Neter, director of bacteriology at Buffalo Children's Hospital, on "The Problem and Control of Hospital Staphylococcus Infections" outlined an impressive 12-point program for control, and the branch adopted a resolution suggested by Dr. W. P. Anderton, secretary of the State Society, supporting Dr. Neter's program and proposing methods of implementing the recommendations presented by the speaker.

The branch year came to a close with the holding of the annual early-winter dinner meeting of the advisory council and other auxiliary groups at Hotel Statler Hilton, Buffalo, on the evening of December 4, with 30 branch leaders present. It was voted to hold the 1959 annual scientific meeting and dinner dance at the Wellsville Country Club, Wellsville, Allegany County, in the latter part of September or early in October. Dr. Irwin Felsen of Wellsville was appointed by President Anna as chairman of the program committee to be aided by Dr. Joseph E. Genewich of Lockport.

The meeting also selected February 5 as the date for the annual midwinter dinner meeting of the advisory council and other branch groups. Dr. Harold B. Smith, Executive officer of the State Society and chief of the Legislation Bureau of the

State Society at Albany, addressed the gathering on the 1959 session of the State Legislature.

Respectfully submitted,
Wilfrid M. Anna, M.D., *President*

Ninth District Branch

To the House of Delegates, Gentlemen:

The Ninth District Branch annual meeting was held on October 15, 1958, at Purchase in the Carl and Lily Pforzheimer Memorial Building which is the home of the Westchester County Medical Society. For those of our members who have not visited the medical society's headquarters, this meeting would have afforded an opportunity to do so. The setting, overlooking Long Island Sound, is ideal. Ample parking space, together with offices, conference rooms, library, and dining room, are available for all activities of the medical society.

After dwindling attendance at scientific and then social meetings of the branch for the past several years, it was apparent that there was little value in continuing these yearly meetings. A breakdown of attendance is indicative of this. In a district comprised of five counties, with a membership of over two thousand, 30 doctors were registered: Westchester 19, Orange 6, Dutchess 4, Putnam 1, and Rockland 0.

At the business meeting it was voted unanimously that Chapter III, Section 1 of the Bylaws be amended to read:

> "The Ninth District Branch shall hold its annual meeting at the time and place of the annual meeting of the House of Delegates of the Medical Society of the State of New York, and during the said session, and the annual meeting of the Ninth District Branch shall consist of the delegates of the Medical Society of the State of New York from the constituent county medical societies of the Ninth District Branch. A quorum shall consist of three quarters of the delegate members."

This was approved by the Council of the State Society.

The following officers were elected to serve for two years following the meeting of the State Society in May, 1959:

President. . Reid R. Heffner, M.D., New Rochelle
First Vice-President. . . . . William P. Kelley, Jr., M.D., Carmel
Second Vice-President. . . . . Maxwell Gosse, M.D., Poughkeepsie
Secretary. . . . Frank E. Ciancimino, M.D., Nyack
Treasurer. . . . . Nathaniel T. Keys, M.D., Goshen

Dr. Henry I. Fineberg, president-elect of the State Society, in his address stressed the fact that the art as well as the science of medicine must be practiced by the true physician. Dr. Fineberg urged all doctors to discuss their fees as well as consultants fees with patients and further stated that the true physician should explain diagnoses to his patients in a sympathetic manner using simple language.

Mrs. Maurice G. Sheldon, president of the Woman's Auxiliary to the State Medical Society, commented on the activities of the Auxiliary.

The Honorable Edwin B. Dooley, Congressman from the 26th District of New York, guest speaker of the evening, gave an account of the work and accomplishments of the 85th Congress.

As retiring president, I wish to take this means of expressing my appreciation for the cooperation of the officers of the branch, the woman's auxiliary, and Dr. W. P. Anderton and his staff.

Respectfully submitted,
E. C. Waterbury, M.D., *President*

NECROLOGY

Samuel Barone, M.D., of Buffalo, died on January 29 in Millard Fillmore Hospital at the age of sixty-eight. Dr. Barone graduated from the University of Buffalo School of Medicine in 1916. A World War I veteran, he was a member of the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edward B. Bukowski, M.D., of Buffalo, died on February 21 at the age of sixty. Dr. Bukowski graduated from the University of Buffalo School of Medicine in 1923. He was Erie County Health Commissioner and previously had been City Health Commissioner before the agency was superseded by the county department. He had also served in State Department of Health district offices in Oneonta, New York, Syracuse, and Rochester. Dr. Bukowski was a Diplomate of the American Board of Preventive Medicine (Public Health), and a member of the American Public Health Association, the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Morris Cooper, M.D., of New York City, died on February 18 at Trafalgar Hospital at the age of sixty-four. Dr. Cooper graduated from New York Homeopathic Medical College and Flower Hospital in 1921. A former adjunct professor of surgery at Polyclinic Hospital, he was a Fellow of the American College of Surgeons and of the American Academy of Compensation Medicine, and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frederick Isaac Dessau, M.D., of Grand View, died on February 23 at Harkness Pavilion, Columbia-Presbyterian Medical Center, at the age of forty-nine. Dr. Dessau received his medical degree from the University of Hamburg in 1937. He was head pathologist at the Lederle Laboratories in Pearl River. Dr. Dessau was a Diplomate of the American Board of Pathology (Pathologic Anatomy), a Member of the College of American Pathologists, and a member of the American Association of Pathologists and Bacteriologists, the Rockland County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

David Halliday Moffat Gillespie, M.D., of New York City, died on February 27 at the age of eighty-four. Dr. Gillespie graduated from Columbia University College of Physicians and Surgeons in 1902 and interned at New York Hospital. He was a consultant in surgery at the Hospital for Special Surgery. Dr. Gillespie was a Fellow of the American College of Surgeons and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

David Oscar Gorlin, M.D., of Ozone Park, died on November 11, 1958 at the age of fifty-five. Dr. Gorlin graduated from George Washington University School of Medicine in 1928. He was a Fellow of the American College of Chest Physicians and a member of the Queens County Medical Society and the Medical Society of the State of New York.

David Greenberg, M.D., of the Bronx, died on February 25 at the age of seventy-one. Dr. Greenberg graduated from New York University and Bellevue Hospital Medical College in 1913 and interned at Lebanon Hospital. He was a consulting physician at Morrisania, Jewish Memorial, and Lebanon Hospitals. During World War I he served with the U.S. Navy. For thirty years he had served as a police surgeon and retired from the Police Department in 1947. A past president of the Bronx County Medical Society, Dr. Greenberg was a member of the New York Academy of Medicine, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James Finlay Hart, M.D., of New York City, died on February 24 in Polyclinic Hospital at the age of seventy-three. Dr. Hart graduated from Syracuse University College of Medicine in 1911. He was an adjunct consultant in metabolism and diabetes at Polyclinic Hospital and director of metabolism at Midtown Hospital. Dr. Hart was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Selian Hebald, M.D., of New York City, died at his home on Feburary 17 at the age of sixty-three. Dr. Hebald graduated from Columbia University College of Physicians and Surgeons in 1919 and interned at Mount Sinai Hospital. He was an attending physician in allergy at the Hospital for Joint Diseases, an assistant physician in allergy at Roosevelt Hospital, and an attending physician in allergy at Roosevelt Hospital Outpatient Department. Dr. Hebald was a founding member and a Fellow of the American Academy of Allergy as well as a former chairman of its credentials committee, and a member of the New York Academy of Medicine, the New York Allergy Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leon Aaron Goldstein, M.D., of Syracuse, died on February 18 at the age of fifty-six. Dr. Goldstein graduated from Syracuse University College of Medicine in 1928. He was an attending physician at Crouse-Irving Hospital and senior physician in general practice at Onondaga General Hospital. Dr. Goldstein was a member of the American Academy of General Practice, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ernest S. Kinsey, M.D., of Syracuse, died on February 18 at the age of forty-two. Dr. Kinsey graduated from Syracuse University College of Medicine in 1941. He was a member of the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Vladimir M. Konheim, M.D., of Poughkeepsie, died in February in Vassar Hospital at the age of sixty-six. A native of Russia, Dr. Konheim received his medical degree from the University of Berlin in 1923. He was a consultant in dermatology at Northern Dutchess Health Center, Rhinebeck, an attending physician in dermatology at Harlem Valley State Hospital, Wingdale, and an associate in dermatology and an assistant in radiotherapy at Montefiore Hospital. Dr. Konheim was a member of the Russian Medical Society, the Dutchess County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Raphael Lehrman, M.D., of Bayside, died on December 2, 1958 at the age of seventy. Dr. Lehrman graduated from Long Island College Hospital Medical School in 1918. He was a member of the Kings County Medical Society and the Medical Society of the State of New York.

Alexander Victor Lyman, M.D., of New York City, died on Feburary 27 at the age of sixty-three. Dr. Lyman graduated from Columbia University College of Physicians and Surgeons in 1926. He was on the medical staff of Roosevelt Hospital.

Abraham P. Orlick, M.D., of Brooklyn, died in Miami Beach, Florida, on February 13 at the age of seventy. Dr. Orlick received his medical degrees from the University of Kharkov in 1916 and from Long Island College Hospital Medical School in 1932.

Adolfo Pisani, M.D., of New York City, died on February 15 in the Italian Hospital at the age of eighty-nine. Dr. Pisani received his medical degree from the University of Naples in 1898. He was an associate attending physican at Italian Hospital.

John Joseph Rothwell, M.D., of Flushing, died on February 15 at the age of eighty-seven. Dr. Rothwell graduated from Bellevue Hospital Medical College in 1893.

Max Schloss, M.D., of Jackson Heights, died on November 20, 1958, at the age of sixty. Dr. Schloss received his medical degree from the University of Munich in 1923. He was an associate in anesthesiology at Morrisania Hospital and an attending physician in anesthesiology at Roosevelt Hospital, Metuchen, New Jersey. Dr. Schloss was a member of the American Society of Anesthesiologists, the New York State Society of Anesthesiologists, the Queens County Medical Society, and the Medical Society of the State of New York.

Gottwald Schwarz, M.D., of New York City, died on February 26 at the age of seventy-eight. Dr. Schwarz received his medical degree from the University of Vienna in 1904. He was a former professor of radiology at the University of Vienna and director of radiology at Elizabeth Hospital, Vienna. Dr. Schwarz was a member of the American Roentgen Ray Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Martin James Sheehy, M.D., of Ridgewood, died on March 2 at the age of fifty-four. Dr. Sheehy graduated from Columbia University College of Physicians and Surgeons in 1928. He was an associate in peripheral vascular disease and traumatic surgery at Wyckoff Heights Hospital. Dr. Sheehy was a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Archibald Henderson Watt, M.D., of the Bronx, died in Union Hospital on February 23 at the age of sixty-six. Dr. Watt graduated from the University of Michigan Medical School in 1918. He was an associate physician at Morrisania Hospital. Dr. Watt was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Morris Wolf, M.D., of Brooklyn, died on December 29, 1958, at the age of seventy. Dr. Wolf graduated from Long Island College Hospital Medical School in 1921.

He was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Reserve the Dates . . .

153rd Annual Convention

Medical Society of the State of New York

May 9 to 15, 1959

Hotel Statler Hilton **Buffalo**

NEWS FROM THE MEDICAL SCHOOLS

Albert Einstein College of Medicine

Grants—During the month of February grants received by the College were: $10,976 from the American Cancer Society to the Department of Biochemistry for "The Effects of Steroids on Normal and Malignant Lymphocytes"; and $5,000 from United Cerebral Palsy to the Department of Rehabilitation Medicine for "Services and Treatment for Cerebral Palsy Children."

Visiting Lecturers—Dr. S. M. McCann, associate professor of physiology, University of Pennsylvania; Dr. Harry Kaplan, associate professor of neurosurgery, State University of New York; Dr. Harry Gordon, director of pediatrics, Sinai Hospital of Baltimore; Dr. Philip Henneman, associate professor of medicine, Seton Hall Medical College; Dr. E. S. Hodgson, associate professor of zoology, Columbia University; Dr. John M. Buchanan, Division of Biochemistry, Massachusetts Institute of Technology; Dr. Margaret Mead, Columbia University; Dr. Edwin L. Prien, Boston University Medical School; Dr. W. G. Van Der Kloot, professor of pharmacology, New York University; Dr. J. Luow, Capetown University; Dr. G. Farrell, associate professor of physiology, Western Reserve University; Dr. Henry D. Janowitz, chief, Gastrointestinal Clinic, Mount Sinai Hospital; Dr. Stanley James, College of Physicians and Surgeons, and Dr. Herbert Kupperman, associate professor of medicine, New York University.

Albany Medical College

Guest Speaker—Dr. Arthur G. Watkins, dean of clinical and postgraduate studies, Welsh National School of Medicine, Cardiff, England, was the guest of the Pediatrics Department in February and addressed the junior medical students on February 16 and the entire student body and faculty on February 17. Dr. Watkins is also professor of child health, Welsh School, and pediatrician, United Cardiff Hospitals. While at the College Dr. Watkins also served as professor pro tem of pediatrics.

College of Physicians and Surgeons

Gift—Mrs. Frederic G. Oppenheimer presented $250,000 to establish a fund for advancement of education in the field of psychiatry in memory of her father, Alexander Joske. Mrs. Oppenheimer stated that she preferred that the income be used as a fellowship for instructors at the level of assistant or associate professor and if possible no incumbent should hold the fellowship for a period greater than three to five years.

Grant—A March of Dimes grant of $55,814 from The National Foundation has been received to continue the studies of how polio viruses transmit their inheritable characteristics when they reproduce and the relationships between polio viruses and their so-called virus "cousins." The project is to be directed by Dr. Hattie E. Alexander, professor of pediatrics, in association with Dr. Katherine Sprunt, associate in pediatrics.

Separate Unit—The School of Dental and Oral Surgery will have independent status as the Faculty of Dentistry beginning July 1, 1959.

New York Medical College

Awarded—Dr. Israel S. Kleiner, director, Department of Biochemistry, was awarded the third annual Van Slyke Award of the New York Section, American Association of Clinical Chemists, on February 10.

New York University Post-Graduate Medical School

Lecture—The second Howard Fox Memorial Lecture will be given by Dr. Louis A. Brunsting, Sr., on April 21 in the auditorium at 8 P.M. Dr. Brunsting is head of the section of dermatology, Mayo Clinic, and professor of dermatology, The Mayo Foundation.

Anniversary—The one hundredth anniversary of the Third Surgical Division, Bellevue Hospital Center, was the highlight of the New York University College of Medicine Alumni Day on February 21. Dr. Frank B. Berry, assistant secretary of defense (health and medical) and former director of Bellevue's first surgical division, received the University Bronze Medal and gave the principal address. The annual Distinguished Service Award was presented to Dr. John H. Mulholland, chairman, Department of Surgery, and the Presidential Citation was awarded to Dr. Henry M. Scheer, former president of the Association. Dr. Allen E. Dumont, Department of Surgery, was the chairman of the ceremonies and speakers were Dr. Claude E. Heaton, professor of obstetrics and gynecology; Dr. Ernest S. Breed, assistant professor of surgery; Dr. Carroll V. Newsom, president of New York University, and Dr. George E. Armstrong, vice-president for medical affairs.

State University of New York Downstate Medical Center

Appointment—Dr. Samuel Zwerling, associate surgeon, Brooklyn Eye and Ear Hospital, and consulting otolaryngologist, Brunswich General Hospital, Amityville, and Southside Hospital, Bay Shore, as professorial lecturer in otolaryngology: to the Department of Rehabilitation Medicine, Drs. Lewis Dickar and Samuel Feuer as clinical assistant professors, and Dr. Joseph B. Rogoff, as lecturer.

Program in Neuro-Ophthalmology—A program in neuro-ophthalmology was presented before the Brooklyn Ophthalmology Society on February 23 by Dr. Stanley M. Aronson, associate professor of pathology, on "Clinical and Pathologic Studies on Infantile Amaurotic Family Idiocy," Dr. Edward Vastola, assistant professor of neurology, on "Binocular Interaction in the Lateral Geniculate Body," Dr. Harry Kaplan, associate professor of neurology, on "Vascular Supply to the Neurovisual System," and Dr. Robert S. Jampel, assistant professor of ophthalmology, on "Deficiency in Upward Gaze as a Sign of Vascular Insufficiency of the Mid-Brain."

Special Lectures—The annual Jean Redman Oliver Lecture was delivered by Dr. Howard A. Rusk, Director, Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, on March 2. His topic was "Rehabilitation—A New Frontier in Medicine."

Dr. David Grob, professor of medicine, delivered the annual Murray B. Gordon Lecture on March 9 on "Diseases of Muscle: Pathologic Physiology and Clinical Implications."

A special lecture on the "Enzymic Hydrolysis and Synthesis of Peptide Bonds" was delivered by Joseph S. Fruton, Eugene Higgins Professor of Biochemistry at Yale University on March 11.

State University of New York Upstate Medical Center

Participants—Dr. Julius B. Richmond, professor and chairman, Department of Pediatrics, and Dr. Louis M. DiCarlo, professor of audiology and speech pathology, Syracuse University, and executive director, Gordon D. Hoople Hearing and Speech Center, participated in the conference on the "Role of Pediatric Services in the Prevention of Juvenile Delinquency" which was held at Arden House, Harriman, New York, in February. Dr. Richmond was recorder of a group session devoted to delinquency related to causes within the individual.

Evermore in the world is this marvelous balance of beauty and disgust, magnificence and rats.—RALPH WALDO EMERSON

MEDICAL NEWS

Elmhurst General Hospital Reverts to Old Name—The name of City Hospital, Elmhurst, Long Island, has been restored to Elmhurst General Hospital. This hospital is the direct continuation of the City Hospital formerly situated on Welfare Island which has a history dating from the year 1832.

Upon the obsolescence of the old buildings the new group of modern buildings was erected at Elmhurst. Patients, nurses, administrative personnel, and the medical staff were transferred from the old City Hospital and the name was changed for a time to Elmhurst General Hospital.

The Commissioner of Hospitals, with the advice of the Board of Hospitals, has decided to perpetuate the valued old tradition by renaming the hospital.

Dr. Briskier Lectures in France—At the invitation of the dean of the University of Paris, France, Dr. Arthur Briskier, New York City, delivered a series of lectures in March, before the University's medical school. Dr. Briskier's lectures dealt with the latest of his methods, "The Universal Method of Charting the Heart Auscultation—Cardio-Charting," and "Instant and Universal Heart Examinations and Consultations at any Distance through Radio and Radio-Photo Transmissions."

Dr. Scheer Receives Citation—A highlight of New York University College of Medicine's alumni day was the celebration, on February 21, of the 100th anniversary of the third surgical division of New York University-Bellevue Medical Center.

Dr. Henry M. Scheer, past-president of the alumni association, was awarded the presidential citation for his pioneering efforts in the medical planning of the Center. The presentation was made by Dr. Carroll V. Newsom, president of New York University, and Dr. George E. Armstrong, vice-president of medical affairs.

Civil Service Position Offered—The New York State Department of Civil Service will accept applications until April 10 from qualified candidates for the position of supervisor of school medical services, State Education Department. For this position, no written or oral test will be required. Candidates will be rated on their training and experience in relation to the duties and requirements of the position. At present there is one vacancy in Albany, and another is anticipated.

Candidates must possess a license to practice medicine issued by New York State or be eligible to enter the examination for such a license; and in addition must have two years of satisfactory experience in the practice of medicine, of which one year must have included service as a school physician.

The annual salary range for this position, which is open only to legal residents of New York State, is $8,750 to $10,520. A supervisor of school medical services performs field and office work in the supervision and guidance of the health services program in the schools of the State.

For detailed announcement and application blanks write to: Recruitment Unit, New York State Department of Civil Service, State Campus, Albany 1, New York.

Wayne County Joint Meeting—The annual joint meeting of Wayne County physicians, dentists, and lawyers was held at Lyons, February 24.

The meeting was presided over by Dr. David Ennis, president of the Wayne County Medical Society. Speaker of the evening was Dr. Clyde Nagel, senior physician at the Elmira Reception Center. Dr. Nagel's subject was "Young Male Offenders."

Workmen's Compensation Fee Schedule—The new Workmen's Compensation medical fee schedule, effective March 1 with respect to new cases arising or old cases reopened on or after that date, has been mailed by the Workmen's Compensation Board to all members of the Society.

Any physician who has not yet received his copy should address a request to the Public Relations Office, Workmen's Compensation Board, 50 Park Place, New York 7, New York. Physicians who desire additional copies of the schedule should send 20 cents for each copy to the Secretary, Workmen's Compensation Board, at the same address.

Dr. Brown Accepts Red Cross Chairmanship—Dr. Norton S. Brown, president of the Medical Society of the County of New York, has accepted appointment as chairman of the physicians division for the New York Red Cross Chapter's 1959 fund campaign.

The appeal for members and funds, which opened March 1, is part of a national drive to obtain gifts totaling 95 million dollars to meet Red Cross needs in the coming year. New York City has been asked to raise six million dollars.

Effect of Cessation of Breathing to Be Studied—The effects of prolonged cessation of breathing on various body functions of patients undergoing surgery will be investigated at Columbia University under a March of Dimes grant of $7,154.

The work will be under the direction of Dr. M. Jack Frumin, assistant professor of anesthesiology at Columbia's College of Physicians and Surgeons.

Dr. Herbert Receives Honorable Mention—Dr. Victor Herbert, Mount Sinai Hospital, has received honorable mention for the manuscript which he submitted to the 1958 Modern Medical Monographs Awards. These awards have been established to encourage young physicians to communicate their work in the classical form of the monograph and to achieve high standards of medical writing.

50th Anniversary of Neurological Institute—1959 marks the 50th anniversary of the founding of the Neurological Institute of New York, a specialty hospital for the medical and surgical treatment of the nervous system. In 1929 the Institute became affiliated with the Presbyterian Hospital of New York as a part of the Columbia-Presbyterian Medical Center.

To commemorate the anniversary a series of special events has been planned. On April 27 and 28 the Society of Neurological Surgeons will hold its 50th meeting at the Neurological Institute to honor the Institute's anniversary.

A special anniversary celebration will be held at the Columbia-Presbyterian Medical Center on Friday and Saturday, May 15 and 16. Scientific sessions at which alumni and guests will speak will be held Friday morning and afternoon. Luncheon will be served to all alumni and guests. Friday evening there will be a commemorative dinner in the Sert Room of the Waldorf-Astoria Hotel. Culmination of the 50th anniversary celebration will take place on Saturday morning, May 16, at the Medical Center with a special convocation of Columbia University and the Presbyterian Hospital in honor of the Institute.

Gift to New Rochelle Hospital—A gift of $200,000 has been given to New Rochelle Hospital by Mr. and Mrs. James Picker of Larchmont. The money will be utilized to build and equip a new pediatric department. The new department will have 40 beds with all associated facilities.

The gift is in memory of the late Dr. Myrtle Picker, attending pediatrician at New Rochelle Hospital, who died last November.

Institute on Medical Teaching—The second summer institute on medical teaching jointly sponsored by the University of Buffalo and the Association of American Medical Colleges will be held in Buffalo June 9 through 18.

The institute will provide an opportunity for medical instructors to join educational specialists in an examination of teaching and learning in medical schools. Included in the presentations, demonstrations, and discussions led by University of Buffalo faculty from the Schools of Medicine, Education, and Arts and Science will be such topics as the nature of learning; the nature of medical students and medical faculties; the philosophic background for higher education in the United States; the use of lecture and laboratory, ward exercise and clinical conference, as well as less familiar methods of instruction; and the use of tests and other appraisal devices for measuring student performance in a medical school.

Interested members of medical school faculties in the United States and Canada may apply for registration or for further information by writing to: Dr. George E. Miller, associate professor of medicine, University of Buffalo School of Medicine, Buffalo 14, New York.

Course in Pediatric Oncology—The Pediatric Department of the Memorial Center for Cancer and Allied Diseases will hold its annual three-day course in pediatric oncology for pediatricians, general practitioners, and health officers, April 29 through May 1.

Current developments and established methods in diagnosis, differential diagnosis, and management of benign and malignant tumors, Hodgkin's disease, leukemia, and reticuloendotheliosis in childhood are included. There will be ward rounds, seminars, demonstrations, and examinations of children in pediatric, surgical, chemotherapy, and radiotherapy clinics.

The faculty will consist of 20 members of the attending staffs of Memorial Hospital and Sloan-Kettering Institute for Cancer Research. The class will be limited to 15 physicians.

For information address: Director, Pediatric Service, Memorial Center for Cancer and Allied Diseases, 444 East 68th Street, New York 21, New York.

Rockefeller Names Two Physicians—Governor Rockefeller has named Dr. Henry F. Albrecht, Jr., Troy, and Dr. James S. Murphy, New York City,

[Continued on page 1412]

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[Continued from page 1410]

as members of the State Mental Hygiene Council. They were appointed to terms ending December 31, 1964.

Conferences at Montefiore Hospital—The following conferences are scheduled at Montefiore Hospital for the months of April and May:

Monday, April 6, 13, 20, and 27, and May 4, 11, 18, and 25—8:00 A.M., surgical conference; 9:00 A.M., pathology conference (neoplastic); 1:30 P.M., attending rounds (neoplastic); 3:00 P.M., clinical medicine conference.

Tuesday, April 7, 14, 21, and 28, and May 5, 12, 19, and 26—12:30 P.M., psychosomatic medical conference; 12:30 P.M., electrocardiography conference; 2:30 P.M., pulmonary medical-surgical conference; 4:00 P.M., cardiovascular surgical conference.

Wednesday, April 1, 8, 15, 22, and 29, and May 6, 13, 20, and 27—8:30 A.M., alternating rounds (neoplastic); 1:30 P.M., grand rounds (neoplastic); 3:00 P.M., clinical medicine pathology conference.

Thursday, April 2, 9, 16, 23, and 30, and May 7, 14, 21, and 28—8:00 A.M., radiology-pathology conference; 9:00 A.M., alternating rounds (neoplastic); 1:30 P.M., attending rounds (neoplastic); 1:30 P.M., diagnostic radiology conference; 3:30 P.M., gastroenterology conference; 3:30 P.M., rehabilitation conference.

Friday, April 3, 10, 17, and 24, and May 1, 8, 15, 22, and 29—9:30 A.M., neurology-neurosurgery staff conference; 1:30 P.M., attending rounds (neoplastic); 3:00 P.M., neoplastic seminar; 3:00 P.M., dermatology conference.

Symposium on Thyroid Diseases—On May 8 and 9, the Office of Postgraduate Education, University of Oklahoma, will present its fifth annual surgery, radiology, and pathology symposium. This year the symposium will deal with "Diagnosis and Treatment of Thyroid Diseases."

New York City physicians who will be guest speakers are Dr. Edgar L. Frazell and Dr. Rulon W. Rawson.

For registration and information write to: Office of Postgraduate Education, University of Oklahoma Medical Center, 801 Northeast 13th Street, Oklahoma City 4, Oklahoma.

Chicago Committee on Trauma Presents Course—The third annual postgraduate course in "Fractures and Other Trauma" will be presented by the Chicago Committee on Trauma of the American College of Surgeons, April 15 through April 18, at the John B. Murphy Memorial Auditorium, 50 East Erie Street, Chicago 11, Illinois.

For information concerning the course contact the chairman, Dr. John J. Fahey, 1791 West Howard Street, Chicago 26, Illinois.

Courses in Otolaryngology in Chicago—The Department of Otolaryngology, University of Illinois College of Medicine, announces the following special postgraduate courses to be offered in the fall:

Annual Otolaryngologic Assembly—The assembly will be held September 18 through 26, and will consist of a series of lectures and panels concerning advancements in otolaryngology. Some of the sessions will be devoted to surgical anatomy of the head and neck and histopathology of the ear, nose and throat.

Course in Laryngology and Bronchoesophagology—This course is under the chairmanship of Dr. Paul H. Holinger and is scheduled to be held November 9 through 21.

For information write to: Department of Otolaryngology, 1853 West Polk Street, Chicago 12, Illinois.

Walter L. Niles Memorial Lecture—The annual Walter L. Niles Memorial Lecture, sponsored by Tau Chapter, Nu Sigma Nu, Cornell University Medical College, was given this year by Dr. Owen H. Wangensteen, professor and chief of surgery at the University of Minnesota.

Dr. Wangensteen's topic was "Studies in Peptic Ulcer," A dinner in his honor was held before the lecture.

Personalities

Awarded

Dr. Howard A. Rusk, an illuminated plaque from President Eisenhower, for his services as the physician who has made the most outstanding contribution during the last year to the national program to widen job opportunities for physically impaired workers.

Re-elected

Dr. Harris J. Levine, as president of the Jewish National Fund, for the tenth consecutive term.

Appointed

Dr. Charles H. Loughran, as a member of the Board of Hospitals of the City of New York. . . Dr.

Melvin M. Udel, as director of safety and occupational health of the Metropolitan Life Insurance Company.

Elected

Dr. Harold Brandaleone, as grand consul of the Phi Delta Epsilon medical fraternity. . . Dr. Leonard Goldwater, as president of the American Academy of Occupational Medicine.

Speakers

Dr. Lauren V. Ackerman, professor pathology and surgical pathology, Washington University School of Medicine, St. Louis, presenting the annual Phi Delta Epsilon Lecture at the State University Upstate Medical Center, February 25. . . Dr. Arnold S. Breakey, associate ophthalmologist, Lenox Hill Hospital, February 27, at the annual Sight-Saving Conference of the National Society for the Prevention of Blindness. . . Dr. Lewis H. Bronstein, associate chief of the work classification unit of Bellevue Hospital, February 14, before the Ulster County Heart Chapter luncheon, on the subject "Returning the Cardiac to the Community as an Asset". . . Dr. Herman E. Hilleboe. State Health Commissioner, at the third congress for nurses held at St. John's University, February 19. . . Dr. Howard A. Rusk, director of the Institute of Physical Medicine and Rehabilitation, presenting the annual Jean Redman Oliver Lecture at the State University of New York Downstate Medical Center, March 2, on the topic "Rehabilitation, a New Frontier in Medicine". . . Dr. Sol L. Warren, New York State Division of Vocational Rehabilitation, on the "Expanding Role of Counselors in Rehabilitation" before the annual conference of coordinators of rehabilitation counselor training, February 19. . . Dr. W. W. Westerfeld, professor and chairman of the biochemistry department of the State University College of Medicine, February 8, on the subject of cancer research.

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The sexes look alike, you see;
But she can tell, and so can he.—ROLAND YOUNG

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MEDICAL MEETINGS

Bernard Sutro Oppenheimer Lecture

The third Bernard Sutro Oppenheimer Lecture will be given in Hosack Hall of the New York Academy of Medicine, 2 East 103rd Street, New York City, on Thursday evening, April 2 at 8:30 P.M.

The lecturer will be Dr. C. Walton Lillehei, professor of surgery, University of Minnesota Medical School. Dr. Lillehei's subject will be "Open Heart Surgery for Acquired and Congenital Heart Disease."

Symposium on Enzymes

A major symposium on the subject of enzymes in health and disease will be held at the University of California Medical Center in San Francisco, April 2 through 4. The three-day meeting is presented under the auspices of the Department of Continuing Medical Education, University of California School of Medicine.

Eastern Psychiatric Research Association

The Eastern Psychiatric Research Association will hold its eighteenth scientific meeting, April 24 at 8:00 P.M., in Alumni Hall "B," New York University Medical School, 30th Street and First Avenue, New York City.

A film entitled "Migraine Equivalents" will be shown. Dr. Ugo Cerletti, Rome, Italy, will speak on "Remarks on ECT." "Abnormal Cerebral Transmission and Psychosis" will be discussed by Dr. Amadeo Marazzi, Veterans Administration, Chief Research Laboratory in Neuropsychiatry, Pittsburgh, Pennsylvania.

The question of the evening for open discussion will be "Drugs in Psychiatry: those actually being used in your practice; method of administration; dosage; results; complications and precautions."

American Venereal Disease Association

The American Venereal Disease Association will hold its annual meeting April 27 and 28, in cosponsorship with the United States Public Health Service's tenth annual symposium on recent advances in the study of venereal diseases. The meeting will take place in the auditorium of Johns Hopkins Hospital, Baltimore, Maryland.

Aero Medical Association

Retirement point credits may be earned by reserve Medical Corps officers who attend the scientific sessions of the thirtieth annual meeting of the Aero Medical Association in Los Angeles, April 27 through 29. This authorization covers eligible physicians who are Medical Corps officers of the reserved components of the U.S. Army, Navy, and Air Force on inactive status.

Dr. Hans Selye, professor and director of the Institute of Experimental Medicine and Surgery, University of Montreal, Canada, will deliver the fifth annual Louis H. Bauer Lecture on "Stress in Aviation Medicine." Among the guest speakers at the meeting will be Dr. Hubertus Strughold, "father of space medicine."

International Society for Research in Irradiation of Endocrine Organs

The first international congress on irradiation of endocrine organs will take place in Amsterdam May 30 through June 1. For information concerning this meeting write to the Congress, in care of Dr. Johanna M. van Went, Banstraat 30 (hoek de Lairessestraat), Amsterdam Z^1, Nederland.

American College of Chest Physicians

The American College of Chest Physicians will hold its silver anniversary meeting at the Ambassador Hotel, Atlantic City, June 3 through 7. Examinations for fellowship in the College will be held on Thursday, June 4. The presidents' banquet and annual dance will take place on Saturday, June 6.

American Heart Association

The 1959 annual meeting and scientific sessions of the American Heart Association will be held October 23 through 27 in Philadelphia. The scientific sessions are scheduled for October 23 through 25 at the Trade and Convention Center. The annual meeting of the national assembly, delegate body representing all program interests and geographic areas of the Association, will be held in the Hotel Bellevue Stratford, October 26 and 27.

A deadline of June 12 has been set for submission of abstracts of papers to be presented at the scientific sessions and for space applications for scientific exhibits. Papers intended for presentation must be based on original investigation in, or related to, the cardiovascular field.

Official forms for submitting abstracts and space applications for scientific exhibits may be obtained from Dr. F. J. Lewy, assistant medical director, American Heart Association, 44 East 23rd Street, New York 10, New York.

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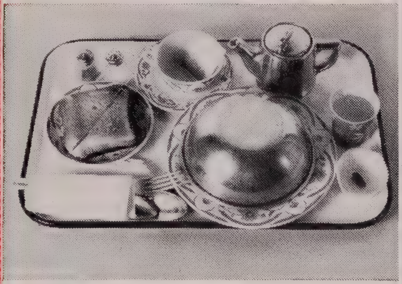

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BOOKS REVIEWED

Ocular Allergy. By Frederick H. Theodore, M.D., and Abraham Schlossman, M.D. Octavo of 420 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $12.

This book re-evaluates and classifies the clinical manifestations of ocular allergy in ophthalmology. No such comprehensive book has been written in twenty-five years. In ophthalmology, allergy has always been accepted as a major etiologic factor, since it is possible to observe reactions clinically. Allergy is often not recognized because of its resemblance to inflammation of nonallergic origin, and an erroneous diagnosis may be made.

Different allergic responses require different approaches and the authors formulate the methods. Interpretations are based on atopic, anaphylactic, contact, and microbial reactions. The role of staphylococcus toxoid in the treatment of various allergic manifestations is noted, since the harmful effect of microorganisms on the human body are manifestations of allergy.

Allergy as a factor in diseases of the uvea, retina, lens, and optic nerve of the eye is discussed. Emotional stress, which the authors state augments allergic symptoms, is very briefly summarized.

This book should be useful to the ophthalmologist, allergist, dermatologist, and the cosmetic industry.—Norris C. Elvin

Essentials of Gynecology. By E. Stewart Taylor, M.D. Octavo of 502 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $12.

This book is just what the title indicates, i.e., essentials without digression or diversion. It encompasses the entire gamut of embryology, anatomy, physiology, disease and its treatment, and the technic of the commoner gynecologic operations. Its presentation follows the anatomic route from vulva through vagina to uterus to adnexae, benign and malignant. It is clearly and simply written and well illustrated throughout, though most of the illustrations are in black and white. The ideas expressed and laboratory tests and treatments recommended are thoroughly in keeping with present-day thinking, facilities and chemotherapeutic and antibiotic measures available. The reference index following each chapter covers a wide segment of pertinent current literature, predominantly American, but including an occasional foreign reference as well.—J. Thornton Wallace

Psychopathology of Communication. By Paul Hoch, M.D., and Joseph Zubin, Ph.D. Octavo of 305 pages, illustrated. New York, Grune & Stratton, Inc., 1958., Cloth $6.75.

This volume contains the proceedings of the Forty-Sixth Annual Meeting of the American Psychopathological Association, held in New York City, June, 1956. The theme of this meeting, "Psychopathology of Communication," was attacked from many angles with emphasis upon psychopathologic research. Herein is admirably exemplified collaboration among a variety of disciplines which give a deeper understanding of the underlying facts and factors entering into normal as well as abnormal deviations in speech communication.

Following a dedicatory lecture on the admirable scientific contributions and personality of Dr. Sandor Rado, one finds descriptions of experimental studies pertaining to the role of communication in the psychiatric case conference, psychologic effects of language structure, the tangential response, reactions to delayed auditory feedback in schizophrenic children, autistic patterns and defective communication in blind children with retrolental fibroplasia, personality patterns manifested during a standard interview, changes in language during electroshock therapy, problems in conceptualization and communication in children with developmental alexia, impaired verbal communication in psychoanalysis and psychotherapy in the light of pharmacologic psychotherapy factors, defensive verbal communication processes in psychotherapy, changes in language patterns as defensive mechanisms and problems in communication between physician and schizophrenic patients. The presidential address by Dr. Oskar Diethelm on "The Psychopathologic Foundation of Psychiatry" neatly reviews the history and current trends in the understanding and treatment of psychopathologic disorders.

There are many practical upshots of this symposium which point up more comprehensively the importance of communication in understanding the mental content of patients. The growing importance and use of the psychiatric interview as a strategic scientific tool in solving problems of mental disease is brought to the front as a method which could be used more expertly in the search for etiologic factors.

Although this book is primarily intended for the psychiatrist and others specializing in problems of

[Continued on page 1418]

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[Continued from page 1416]

communication, the general practitioner may also find herein, the answers to his many inquiries and interests in this important phase of practice.—Frederick L. Patry

The Psychology of Medical Practice. By Marc H. Hollender, M.D. Octavo of 276 pages. Philadelphia, W. B. Saunders Co., 1958. Cloth, $6.50.

Dr. Hollender is professor of psychiatry, Upstate Medical Center, and Director of Syracuse Psychiatric Hospital. In writing this book, he has secured the help of three collaborators—an internist, an obstetrician, and a pediatrician. Together they have produced a volume which should be of inestimable value to all doctors and all others who have to answer questions in regard to patients with heart disease, carcinoma, and other chronic and disabling diseases.

The material is presented in a very readable manner with subtitles which make discussions easy to follow. This is not another book on psychiatry. Rather, it follows the present trend of attempting to make medical men, other than psychiatrists, aware of the psychologic aspects of their patients.

Special attention is paid to psychologic problems arising in patients suffering with heart disease, carcinoma, diabetes, amputations, etc. What and how much a doctor should tell his patient will prove of value to general practitioners and is stressed clearly, succinctly, and informatively. Nurses will find in this book many suggestions which will guide them in dealing with their patients. It is a practical book to have in any library.—Joseph L. Abrahamson

The Psychiatric Hospital as a Small Society. By William Caudill. Octavo of 406 pages, illustrated. Cambridge, Harvard University Press, 1958. Cloth, $6.50.

This is an anthropomorphic approach to an understanding that ". . . a psychiatric hospital is indeed a social system and that the properties of such a system constitute a set of significant variables which affect the quality of behavior in all areas of hospital life. This is the main conclusion of the present book. . ." The methods used to reach this conclusion are represented by much detailed example to justify the method itself as well as the conclusion.

The author is an anthropologist who is particularly interested in psychiatric problems. Previously he has gained recognition in efforts to evaluate the social and cultural factors influencing psychiatric treatment by various studies in collaboration with dynamically oriented psychiatrists.

In psychiatry, the urge to see ourselves as others see us may be partly satisfied by this book. It represents the viewpoints of the various categories of people connected with a small psychiatric hospital and points up the lack of communication and understanding between the various groups, i.e., patients, nurses, residents, and senior staff. It is suggestive of the story of the blind men and the elephant. Caudill attempts to describe the elephant by consulting each blind man and correlating the findings.

The methods used are fascinating. The picture interview study and the group interaction in the administrative conferences are extremely impressive. The difficulties encountered in using the language of dynamic psychiatry (not to mention the use of "on-going" for continuous or progressing) as well as the relative newness of this field of study are acknowledged.

This book tends to be tedious in style. However, the effort of reading it should be rewarding to those interested in psychiatric services in mental hospitals and particularly in the smaller units in general hospitals.—Edward L. Pinney

A Cancer Therapy. Results of Fifty Cases. By Max Gerson, M.D. Octavo of 402 pages, illustrated. New York, Whittier Books, Inc., 1958. Cloth, $8.50.

It is Gerson's theory that there is no cancer in normal metabolism, that a disturbed metabolism frequently results from the modern processing of food products, and that it is possible by the use of the rather extreme and restricted diet which he has developed to improve the body metabolism, and, in this way, help the body combat the abnormal cancer metabolism. The development of this theory, I must admit, has confused this reviewer.

Some of the end results reported in these 50 cases are definitely startling, particularly the relatively long-term alleviation mentioned in several cases of melanosarcoma and carcinoma of the cervix.

This book may be read because of its unusual approach to the therapy of inoperable malignancy. The author has promised to document at least 400 more cases treated by his diet. Certainly it would seem that this is necessary to convince a skeptical medical profession.—E. Mendelson

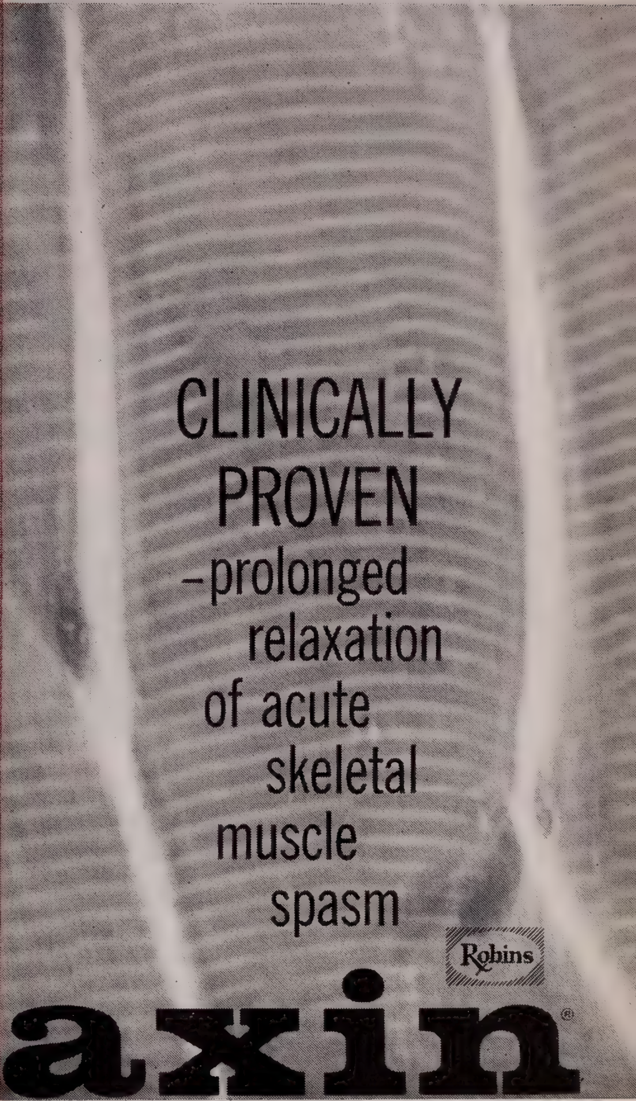
Counterfeit—Sex. Second revised edition. By Edmund Bergler, M.D. Duodecimo of 380 pages. New York, Grune & Stratton, Inc., 1958. Cloth, $6.50.

This edition relates to Bergler's experiences and ideas on certain sexual disturbances. It is refreshing to come across a book in which the ideas are somewhat different and unusual combined with the author's repeated statement that the theoretical conclusions are his personal opinion. Another point repeatedly made herein is that people who

[Continued on page 1427]

Fiber of skeletal muscle in spasm

Fiber of skeletal muscle relaxed *(photomicrographs)*



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TABLETS

Summary of six published clinical studies:

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	NO. PATIENTS	RESPONSE			
		"marked"	moderate	slight	none
Carpenter[1]	33	26	6	1	–
Forsyth[2]	58	"pronounced" 37	20	–	1
Lewis[3]	38	"good" 25	6	–	7
O'Doherty & Shields[4]	17	"excellent" 14	2	1	0
Park[5]	30	"significant" 27	–	2	1
Plumb[6]	60	"gratifying" 55	–	–	5
TOTALS	236	184 (78.0%)	34 (14.4%)	4	14

- **Highly potent—and long acting.**[1,2,3]
- **Relatively free of adverse side effects.**[1,2,3,5,6]
- **In ordinary dosage, does not reduce muscle strength or reflex activity.**[1]

REFERENCES: **1.** Carpenter, E. B.: Southern M. J. 51:627, 1958. **2.** Forsyth, H. F.: J.A.M.A. 167:163, 1958. **3.** Lewis, W. B.: California Med. 90:26, 1959. **4.** O'Doherty, D. S., and Shields, C. D.: J.A.M.A. 167:160, 1958. **5.** Park, H. W.: J.A.M.A. 167:168, 1958. **6.** Plumb, C. S.: Journal-Lancet 78:531, 1958.

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Orentreich[2] made a double-blind study of 71 patients with a variety of dermatoses treated with ARISTOCORT CREAM 0.1% and 1% hydrocortisone acetate cream. Twenty-eight per cent of the patients preferred ARISTOCORT CREAM to the hydrocortisone cream, 68% found both creams equally effective, while only 4% preferred hydrocortisone.

Callaway[3], in a comparison study of 62 patients with various dermatoses treated with ARISTOCORT CREAM and hydrocortisone, concluded that ARISTOCORT CREAM 0.1% is as effective as 1% hydrocortisone in comparable conditions. "In no instance have we seen any evidence of sensitization develop and in no patient has there been any evidence of primary irritation." He describes ARISTOCORT CREAM as "a welcome addition to our dermatological armamentarium."

Robinson[4] also reported that 0.1% triamcinolone acetonide in a water-miscible base was at least as effective as 1% hydrocortisone in an identical base. He found it significant that of 40 patients in this comparison study, 12 preferred triamcinolone acetonide to hydrocortisone while only 3 preferred hydrocortisone.

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Supply: 5 Gm. and 15 Gm. tubes.

References: 1. Blau, S., and Kanof, N. B.: Clinical Report, cited by permission. 2. Orentreich, N.: Clinical Report, cited by permission. 3. Callaway, J. L.: Clinical Report, cited by permission. 4. Robinson, R. C. V.: *Bull. School Med. Univ. Maryland,* 43:54, July, 1958.

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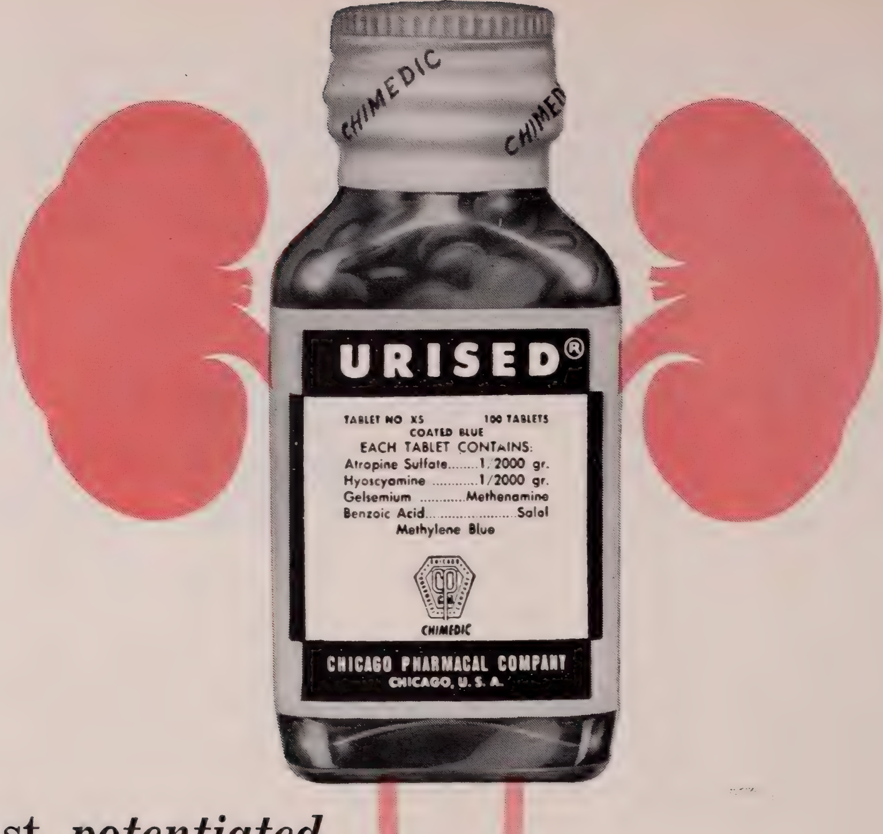
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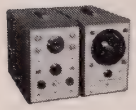

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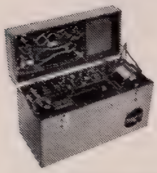

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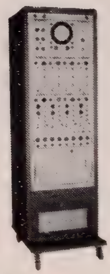

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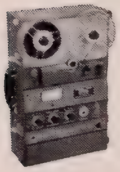

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[Continued from page 1418]

suffer from these difficulties should be treated by adequate psychiatric procedure. The book contains a comprehensive account of these sexual disorders with many illustrative examples of case material, including descriptions of the exchanges occurring in interviews in diagnostic and treatment settings.

These "back and forths" are entertaining and support Bergler's theoretical conclusions.

The approach and description of the cases and their treatment suggests that Bergler is sincerely interested in these cases. Taking everything into consideration, this somewhat controversial book belongs in the library as the representative of the viewpoint of an experienced, reputable physician who presents his ideas in an exciting style.—EDWARD L. PINNEY

Pediatric Index. By Edwin F. Patton, M.D., Octavo of 639 pages, St. Louis, The C. V. Mosby Co., 1958. Cloth, $13.50.

This book, according to the author, required six years of laborious reading, study, and writing. It is divided into three sections: Section 1, dealing with symptomatologic diagnosis; Section 2, definitive diagnoses and current management; and Section 3, special data and technic.

It is not surprising that in a work of such magnitude there are some omissions. Thus, one finds no mention of levocardia. Vitamin A hypervitaminosis is described without mention of bulging fontanelle or the presence of abnormal calcification in both the flat bones and the long bones, however leg tenderness and swelling are mentioned. Under "heart, blood vessels and circulation" there is no mention of vascular ring (double aorta). Sepsis is not mentioned as a cause of fever in the age group from infancy to two weeks. Under "swelling of the legs" filaria infection is mentioned, but there is no mention of Milroy's Disease.

This is hardly a book to be read, neither will it make possible the adding machine type of diagnosis since the third dimension, which is the time element in the development of a clinical picture cannot be included in this type of book. Nevertheless, when used as a reference, it should be a comfort to the clinician who is always harassed by the fear that he may be forgetting one or more of the rare clinical entities from which the patient may be suffering.—BENJAMIN KRAMER

Anomalies of Infants and Children. By D. McCullagh Mayer, M.D., and Wilson A. Swanker, M.D. Duodecimo of 454 pages, illustrated. New York, McGraw-Hill Book Co., 1958. Cloth, $12.

In this book the authors include both congenital

[Continued on page 1432]

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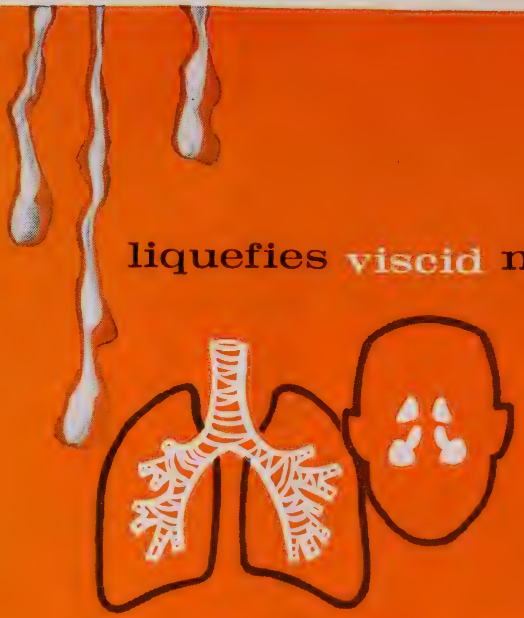

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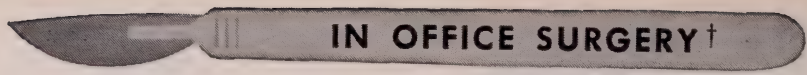

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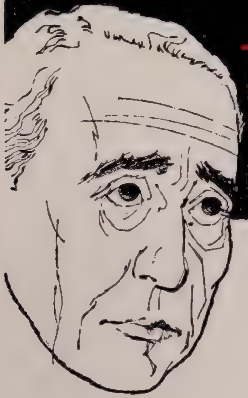

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Literature and bibliography available upon request.

Riker Northridge, California

[Continued from page 1427]

anomalies and those resulting from burns and accidents.

The point of view in selection is that of the plastic surgeon to which surgical discipline both authors belong. Dr. Mayer teaches his speciality at the New York Medical College and practices it in a number of busy hospitals in New York City. Dr. Swanker has done considerable research work in this type of surgery, and is at present teaching in Ankara University, Istanbul, Turkey.

The plan of exposition is that of elucidating the developmental background of the congenital anomalies at the beginning of the chapter dealing with each particular system, and then cataloguing the various defects of each such system with a short description of the accepted type of treatment. The background knowledge is lucidly and concisely given. The treatment does not include the surgical technical details.

The book is well written and the text is adequately illustrated.—KENNETH JENNINGS

Radioactive Isotopes in Clinical Practice. By Edith H. Quimby, Sc.D., Sergei Feitelberg, M.D., and Solomon Silver, M.D. Octavo of 451 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $10.

This book consists of three major divisions—one on basic physics; a second on instrumentation and laboratory methods, and a third on clinical applications.

Since each part is written by an authority in his field, this book is a worth-while addition to the library of every radiologist and every internist interested in this field.

Parts I and II are complete discussions of their subjects. Part III on clinical applications is limited as stated to the purely clinical aspects of this field. Research applications without clinical usage have been omitted.

This book presents a moderately complete bibliography and is highly recommended.—E. MENDELSON

Developmental Potential of Preschool Children. By Else Haeussermann. Octavo of 285 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $8.75.

This book summarizes the experiences of its author who has worked with handicapped children for more than a quarter of a century. The aim of the work is to provide an evaluation of intellectual, sensory, and emotional functioning.

The first portion of the work explains what is meant by an educational evaluation. In the second section there is a discussion of the type of child for whom this educational evaluation is intended. In the third part there is a description of technic and the final portion is devoted to recording, interpreting, and reporting the results.

The educational evaluation determines whether a child can function in all areas of learning and the level reached in each area. Thus, one obtains a complete picture of the child's potentials and deficits. The tests reveal uneven functioning of the central nervous system when due to brain damage. They provide a basis for a sound educational training plan.

This manual, while essentially for teachers, psychologists, and therapists, may well be read with profit by any physician who is interested in the handicapped child.—STANLEY S. LAMM

Medical Society of the State of New York

153rd Annual Convention—May 9 to 15, 1959

From the Lancet

"Medicine in the tropics," said the senior medical officer, "is not only different from what one sees in Europe, but borders at times on the incredible, if not the impossible." Before the year was over I had confirmed the truth of his words.

My new outpost had a small but well-equipped hospital. My Malay staff consisted of one sister and two male nurses. My predecessor had been removed with blackwater fever the week before, so I began without much of an introduction.

The first emergency did not take long to appear. A multiparous woman was admitted in extremis. Even her husband could not remember how many children she had had, but assured me proudly that it ran into double figures. To my horror I diagnosed a ruptured uterus. I had never operated for anything more serious than appendicitis or inguinal hernia before, but the woman survived and I proudly kept her uterus in a jar—my first subtotal hysterectomy.

When she left, I patted her on the back and assured her that she need not fear to have any more babies. She was deeply grateful, though she did not appear to be convinced. Nine months later she came back, squatted by my chair and said, "I am pregnant again." "No," I said, "as it happens, my dear that is impossible." I was thinking of her uterus standing in the bottle on my shelf. But no matter what I said, she remained quietly insistent and there was a definite bulge. "Must be a cyst," I thought as I took an x-ray—and there it was, a faint outline of a fetal skeleton.

I packed her off to the base hospital with her fateful x-ray, her uterus, and my resignation. In my letter I tried to explain. My resignation was not accepted, but later I returned to base hospital for a spell of training. The woman had returned in the meantime with her new baby son, named after me. My nights had been spent in an agonizing reappraisal of the operation, as I wondered what in fact I had removed.

Not until my return and to the great hilarity of the whole staff, who made a point of discussing the technic of hysterectomy with me for years to come, was the mystery explained. The woman had had a double uterus and in my agitation I had not noticed the small other horn and had just removed the pregnant one.

It did one thing for me, though—I took up psychiatry.—*January 10, 1959*

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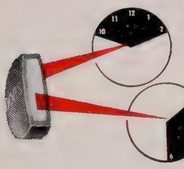

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Dosage: One tablet in the morning, mid-afternoon and in the evening, if needed.

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1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

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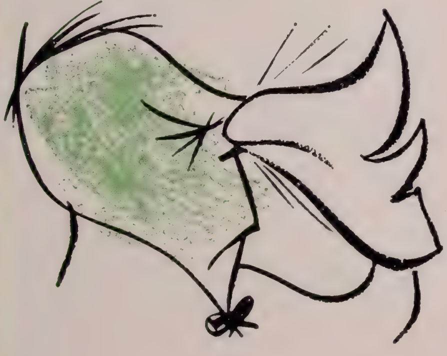

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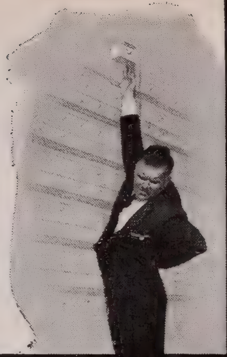

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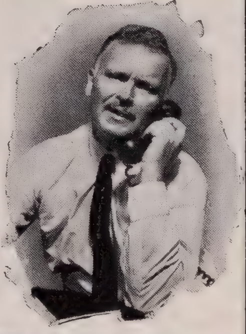

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Bronchitis	11	10	1
Obstructive laryngotracheitis	3	3	0
Tonsillitis	21	18	3
Cervical adenitis	13	13	0
Purulent rhinitis or sinusitis	19	16	3
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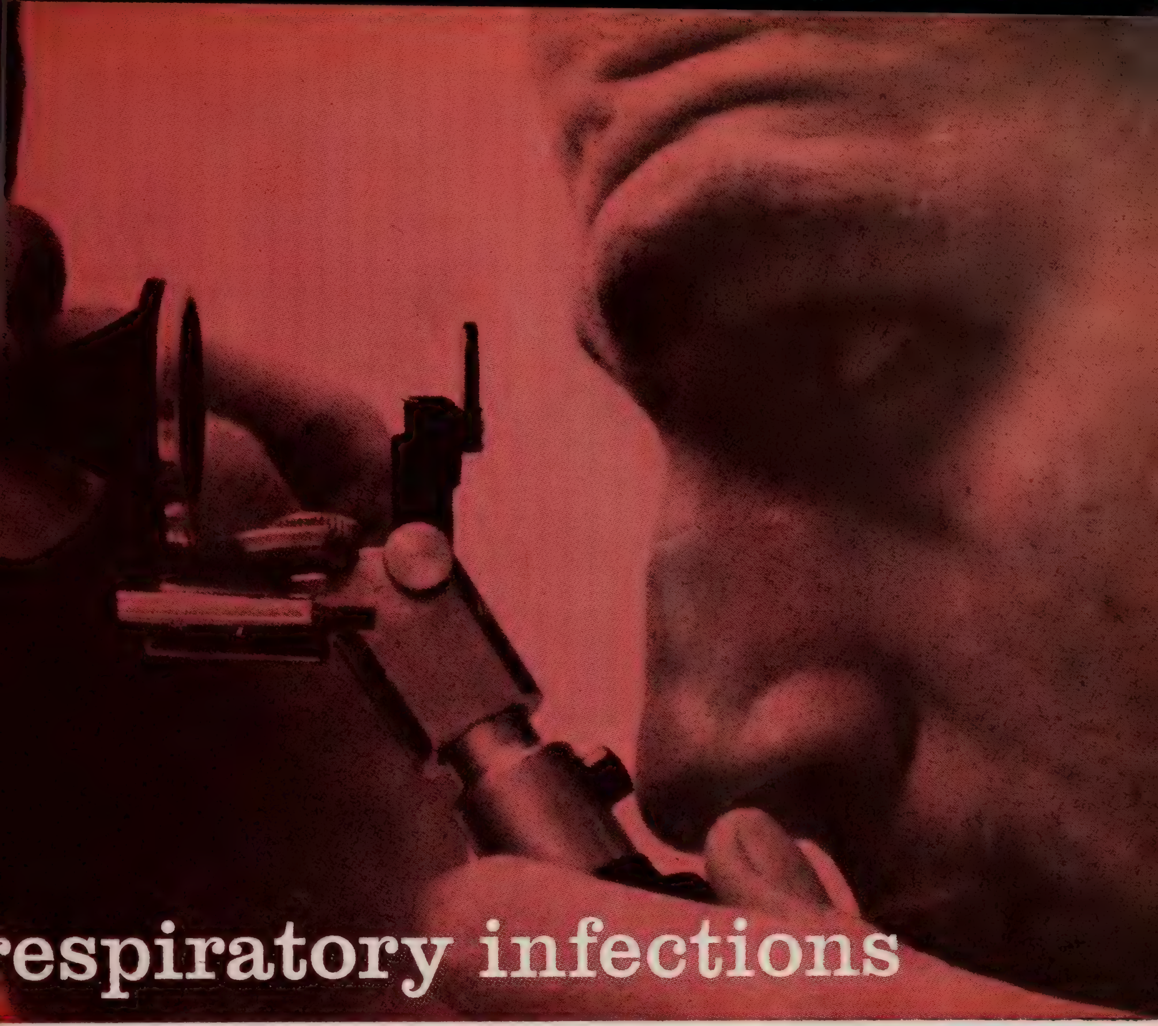

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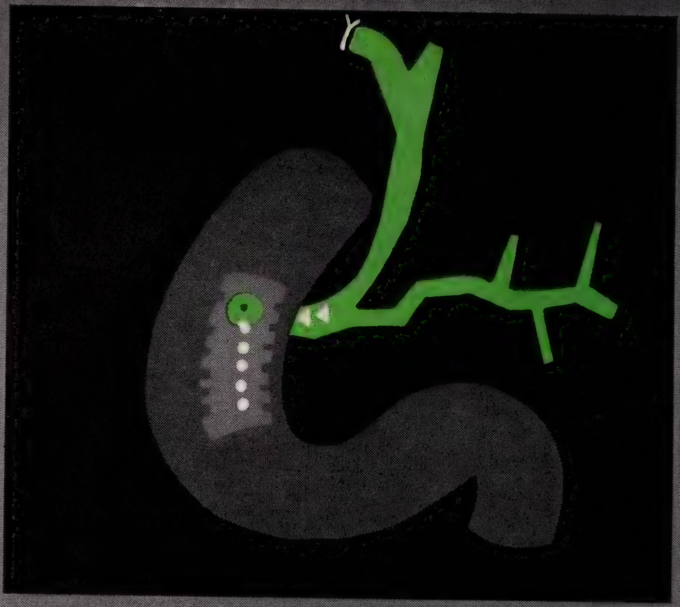

How can the problem of "postcholecystectomy syndrome" be reduced?

A "routine" operative cholangiogram is now recommended in addition to thorough surgical exploration, reducing the number of cholecystectomized patients later presenting the same symptoms as before the operation.

Source: Vazquez, S. G.: J. Internat. Coll. Surgeons *28*:394, 1957.

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*Hydro*choleresis with DECHOLIN combats bile stasis by flushing the biliary tract with dilute, natural bile...

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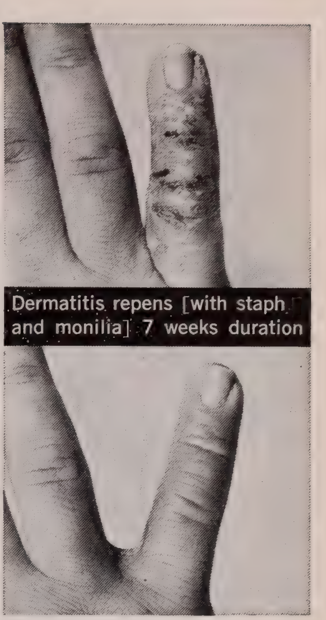
new for total management of itching,[1,2] inflamed,[3,4] infected[5,6] skin lesions


Dermatitis repens [with staph and monilia] 7 weeks duration

Cleared in 5 days

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Kenalog, Spectrocin and Mycostatin in Plastibase

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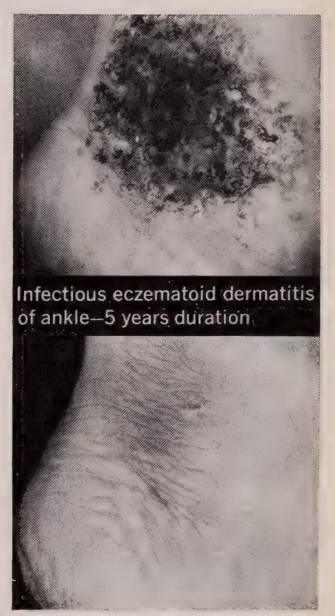
antipruritic/anti-inflammatory/antibacterial/antifungal

Mycolog Ointment – containing the new superior topical corticoid Kenalog – reduces inflammation,[3,4] relieves itching,[1,2] and combats or prevents bacterial, monilial and mixed infections.[5-7] It is extremely well tolerated, and assures a rapid, decisive clinical response for most infected dermatoses.

> "Thirty-one of 38 patients . . . obtained excellent or good control of dermatological lesions . . . [Mycolog] was highly effective, particularly in the management of mixed infections. Several recalcitrant eruptions which had not responded to previous therapy were remarkably responsive to the daily application of this preparation over periods of 2 to 3 weeks."[5]

For total management of itching, inflamed, infected skin lesions, Mycolog contains triamcinolone acetonide, an outstanding new topical corticoid for prompt, effective relief of itching, burning and inflammation[1-4] – neomycin and gramicidin for powerful antibacterial action[7] – and nystatin for treating or preventing Candida (Monilia) albicans infections.[8,9]


Infectious eczematoid dermatitis of ankle–5 years duration

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References: 1. Shelmire, J.B., Jr.: Monographs on Therapy 3:164 (Nov.) 1958. • 2. Nix, T.E., Jr., and Derbes, V.J.: Monographs on Therapy 3:123 (Nov.) 1958. • 3. Robinson, R.C.V.: Bull. School of Med., U. Maryland 43:54 (July) 1958. • 4. Sternberg, T.H.: Newcomer, V.D., and Reisner, R.M.: Monographs on Therapy 3:115 (Nov.) 1958. • 5. Clark, R.F., and Hallett, J.J.: Monographs on Therapy, 3:153 (Nov.) 1958. • 6. Smith J.G., Jr.; Zawisza, R.J., and Blank, H.: Monographs on Therapy, 3:111 (Nov.) 1958. • 7. Monographs on Therapy, 3:137 (Nov.) 1958. • 8. Howell, C.M., Jr.: North Carolina M.J. 19:449 (Oct.) 1958. • 9. Bereston, E.S.: South. M.J. 50:547 (April) 1957.

And whatever the topical corticoid need, a suitable Squibb formulation is available—Kenalog-S Lotion—7½ cc. plastic squeeze bottles. Each cc. supplies 1.0 mg. (0.1%) triamcinolone acetonide, 2.5 mg. neomycin base and 0.25 mg. gramicidin. Kenalog Cream, 0.1%—5 Gm. and 15 Gm. tubes. Kenalog Lotion, 0.1%—15 cc. plastic squeeze bottles. Kenalog Ointment, 0.1%—5 Gm. and 15 Gm. tubes.

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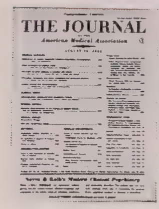
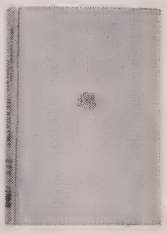
Question:
Why do so many physicians prefer Cafergot and Cafergot P-B for migraine and other recurrent throbbing headaches?

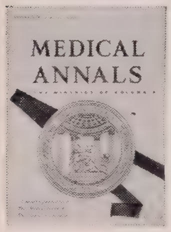
Answers:
By leading clinicians, quoted from their published investigations.



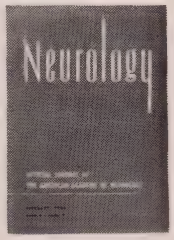
"The highest percentage (83%) of patients with symptomatic relief is obtained by early and adequate administration of ergotamine and caffeine (Cafergot), alone or combined with antispasmodics and/or sedatives (Cafergot P-B)." *(Friedman, A. P.: J.A.M.A. 163:1111, March 30, 1957.)*



"For those patients in whom nausea and vomiting occur so early in the attack that oral medication cannot be used, rectal administration is sometimes a simple and effective solution. Cafergot suppositories . . . and Cafergot P-B suppositories . . . are useful additions to the armamentarium." *(MacNeal, P. S., et al.: Management of the Patient with Headache, 1957.)*



"The tablets [Cafergot P-B] were especially useful when the headaches were accompanied by nervous tension and gastrointestinal upset. . . . Cafergot P-B Tablets constitute an important addition to the treatment of vascular headache." *(Blumenthal, L. S., and Fuchs, M.: Med. Annals District of Columbia 26:175, April 1957.)*



"Symptomatic treatment is essentially one of pharmacotherapy, and the best results have been obtained with the use of ergotamine derivatives, notably a compound of ergotamine and caffeine (Cafergot)." *(Friedman, A. P., von Storch, T. J. C., Merritt, H. H.: Neurology 4:773, Oct. 1954.)*

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and other recurrent,
throbbing headaches

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ergotamine tartrate 1 mg., caffeine 100 mg.
Dosage: 2 at first signs of attack; if needed, 1 additional tab. every ½ hour until relieved (max. 6 per attack).

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ergotamine tartrate 2 mg., caffeine 100 mg.
Dosage: 1 as early as possible in attack; second in one hour, if needed (max. 2 per attack).

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Dosage: same as Cafergot Tablets.

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ergotamine tartrate 2 mg., caffeine 100 mg., Bellafoline 0.25 mg., pentobarbital sodium 60 mg.
Dosage: same as Cafergot Suppositories.

SANDOZ

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Columbia	Heinz Salm	Hudson	Roger C. Bliss	Hudson	Roger C. Bliss	Hudson
Cortland	Nicholas J. Gabriel	Cortland	Lawrence Z. Shultzaberger	Cortland	Lewis H. Berk	Cortland
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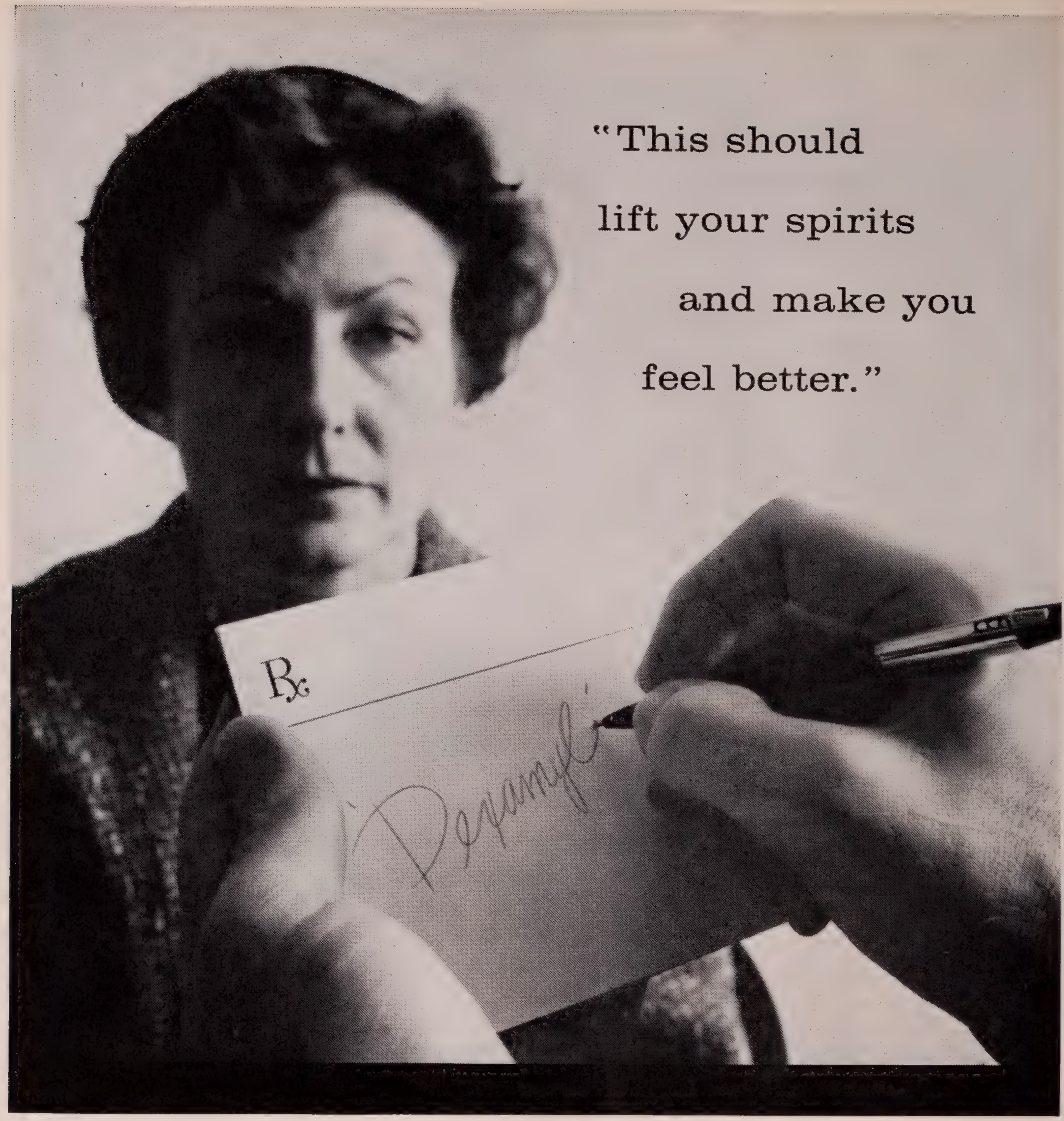

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(c) Continue weekly adjustments during first month of therapy until maintenance dose has been established. Adjustments below 250 mg. daily are best made in steps of 100 mg. (one 100 mg. tablet). The maintenance dose may occasionally be as low as 100 mg. (one 100 mg. tablet daily) or, rarely, as high as 1.0 Gm. (four 250 mg. tablets) daily. Do not exceed daily dose of 1.0 Gm.

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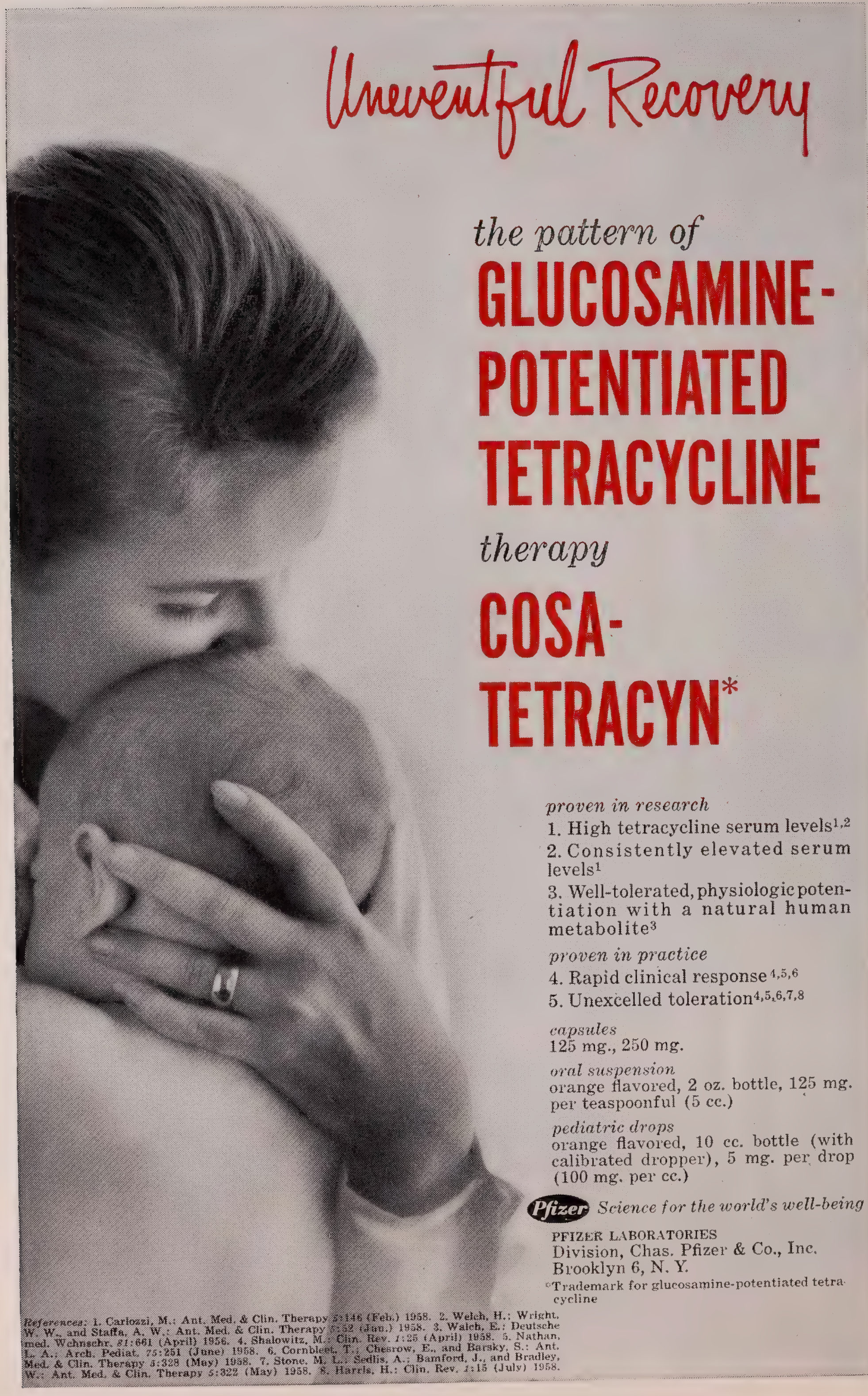

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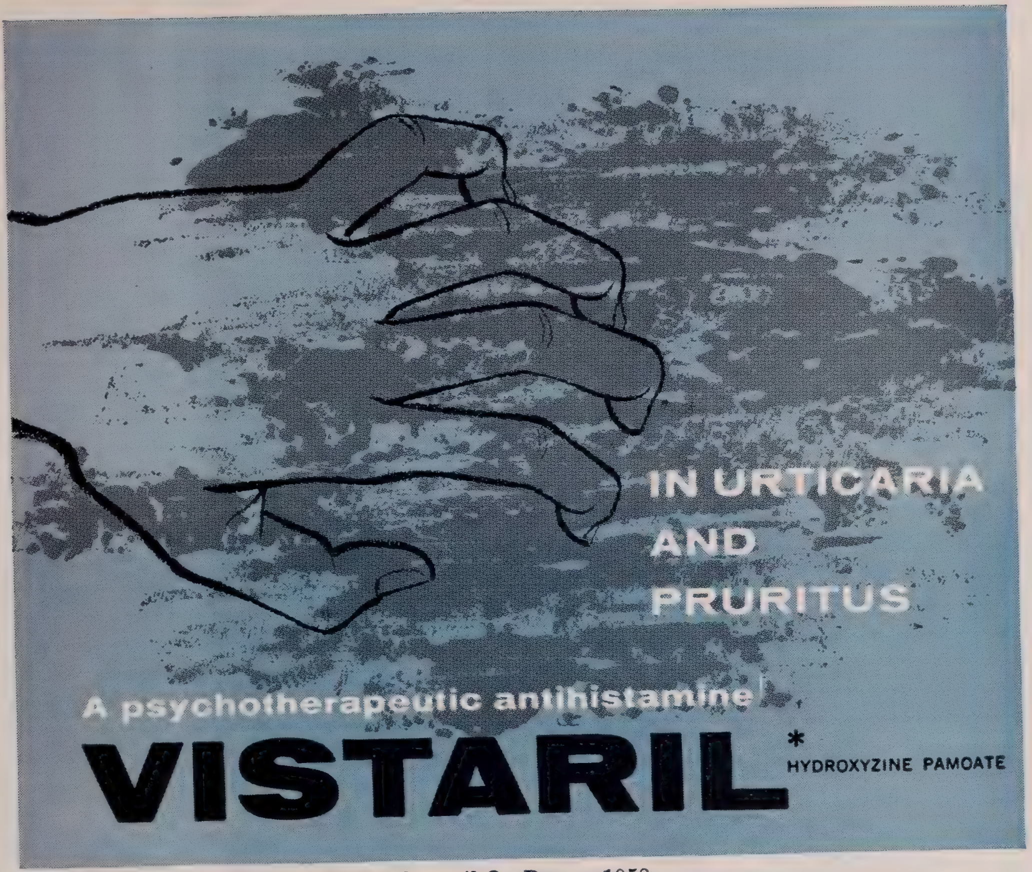
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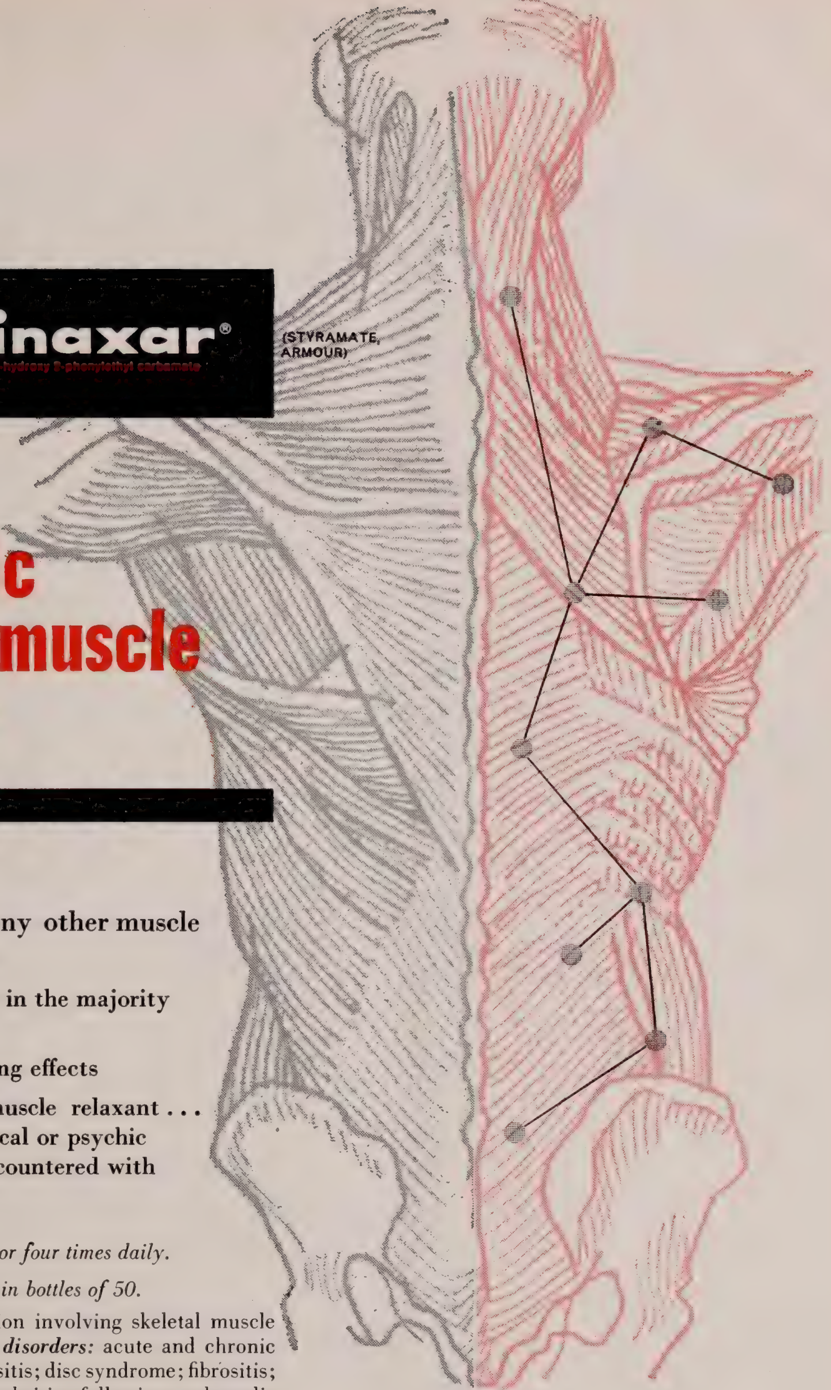

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1. Bandes, J.: Combined Drug Therapy in Gastrointestinal Disturbances; Increased benefit through diminished side reactions, Am. J. Gastroenterology, *30*:600, Dec. 1958.

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in Parkinsonism

"HIGHLY SELECTIVE ACTION"

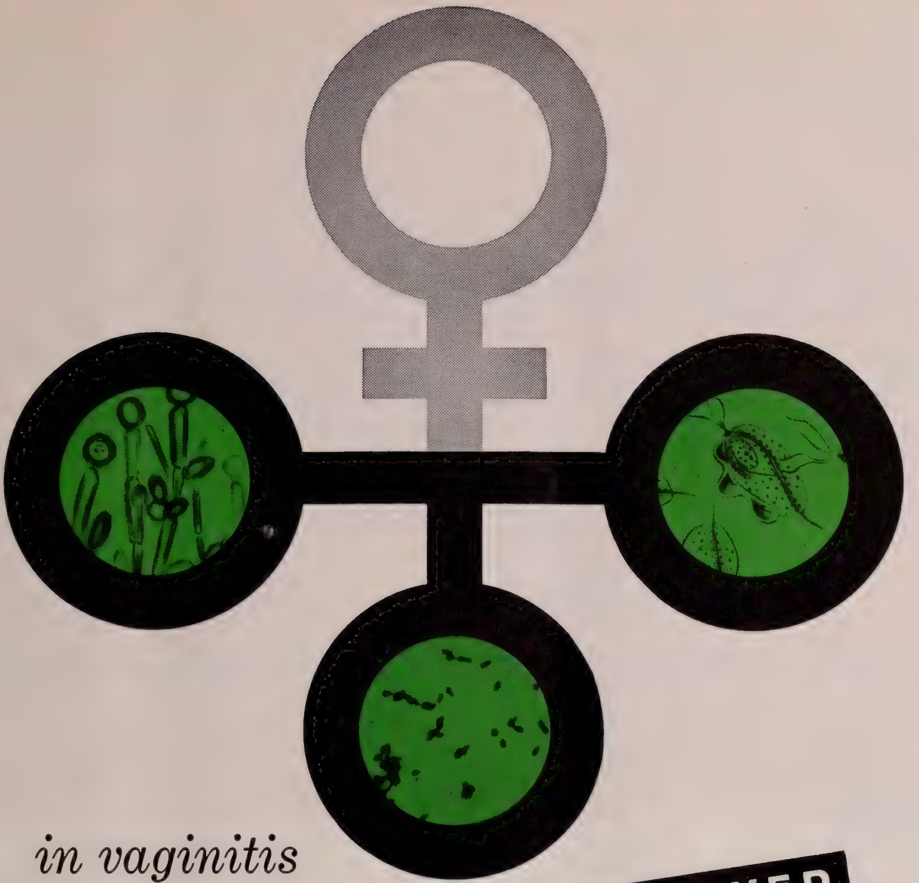
Disipal*
Brand of Orphenadrine HCl

"...effective as a euphoriant...and as an energizing agent against weakness, fatigue, adynamia and akinesia... potent action against sialorrhea, diaphoresis, oculogyria, and blepharospasm...also lessens rigidity and tremor... minimal side reactions...safe...even in cases complicated by glaucoma."

Doshay, L. J., and Constable, K.: J.A.M.A. *163*:1352 (Apr. 13) 1957.

Riker
Northridge, California

*Trademark of Brocades-Stheeman & Pharmacia. U.S. Patent No. 2,567,351. Other patents pending.



in vaginitis

IMPROVED

TRICOFURON®

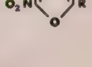
destroys all **3** *principal pathogens*

Whether vaginitis is caused by Trichomonas, Monilia or Hemophilus vaginalis—alone or combined—TRICOFURON IMPROVED swiftly relieves symptoms and malodor, and achieves a truly high percentage of cultural cures, frequently in 1 menstrual cycle. TRICOFURON IMPROVED provides: a *new* specific moniliacide MICOFUR® brand of nifuroxime, the *established* specific trichomonacide FUROXONE® brand of furazolidone and the *combined* actions of both against Hemophilus vaginalis.

1. *Office* insufflation once weekly of the Powder (MICOFUR [*anti*-5-nitro-2-furaldoxime] 0.5% and FUROXONE 0.1% in an acidic water-soluble powder base). **2.** Continued *home* use twice daily, with the Suppositories (MICOFUR 0.375% and FUROXONE 0.25% in a water-miscible base).

℞ **NEW BOX OF 24 SUPPOSITORIES WITH APPLICATOR FOR MORE PRACTICAL AND ECONOMICAL THERAPY.**

NITROFURANS—a *new* class of antimicrobials—neither antibiotics nor sulfonamides.



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MOST

SIGNIFICANT IMPROVEMENT

IN
ANTACID
THERAPY

SINCE THE INTRODUCTION OF ALUMINUM HYDROXIDE
IN 1929

NEW

CREAMALIN®

ANTACID TABLETS

Each Creamalin Antacid Tablet contains 320 mg. specially processed, highly reactive, short polymer dried aluminum hydroxide gel, stabilized with hexitol, with 75 mg. magnesium hydroxide.

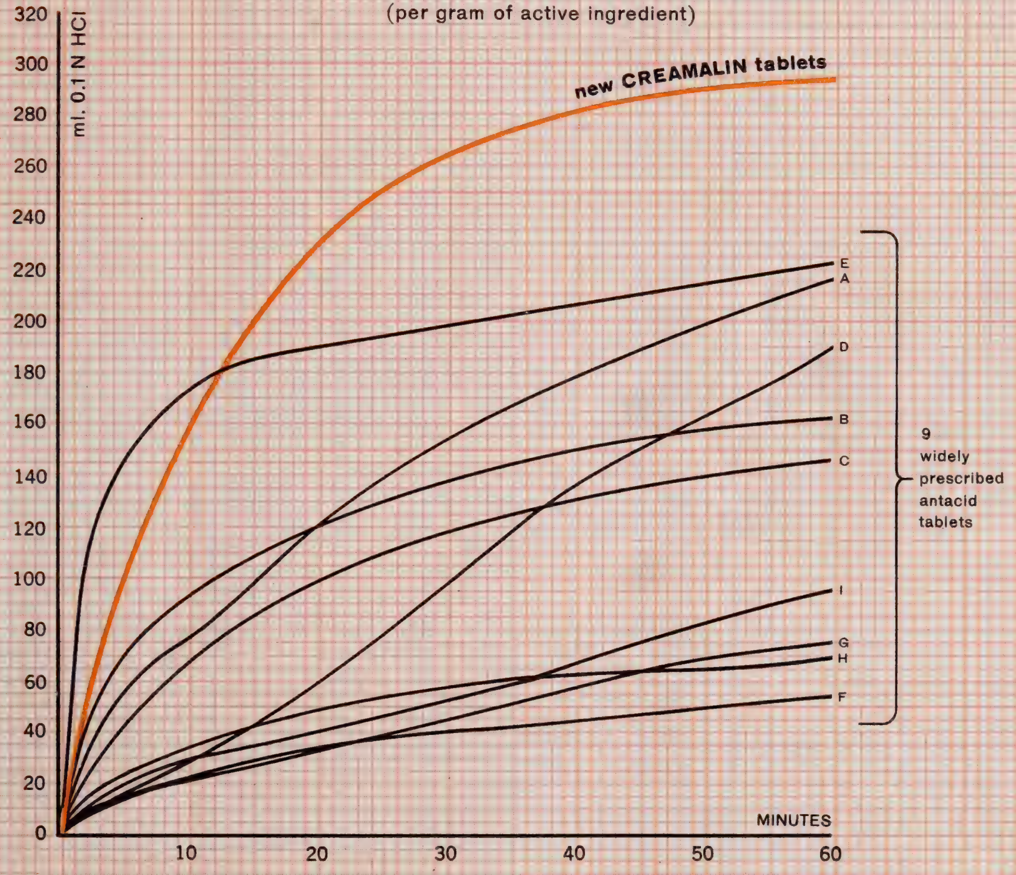
1. *Neutralizes acid faster (quicker relief)*
2. *Neutralizes more acid (greater relief)*
3. *Neutralizes acid longer (more lasting relief)*
4. *No constipation · No acid rebound*
5. *More pleasant to take*

CREAMALIN NEUTRALIZES MORE ACID FASTER

Quicker Relief · Greater Relief

Acid neutralization with 10 leading antacid tablets*

(per gram of active ingredient)

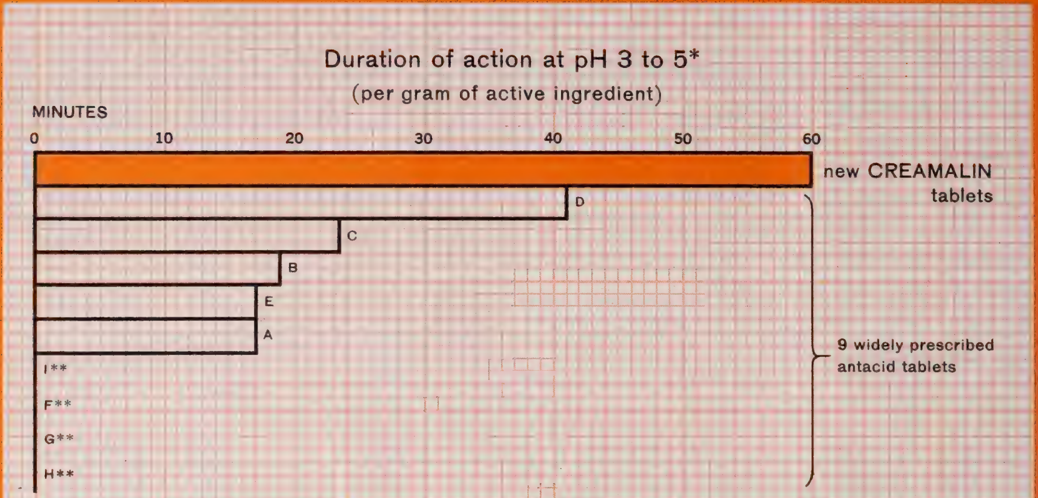


Tablets were powdered and suspended in distilled water in a constant temperature container (37°C) equipped with mechanical stirrer and pH electrodes. Hydrochloric acid was added as needed to maintain the pH at 3.5. Volume of acid required was recorded at frequent intervals for one hour.

*Hinkel, E. T., Jr., Fisher, M. P. and Tainter, M. L.: A new highly reactive aluminum hydroxide complex for gastric hyperacidity. To be published.

CREAMALIN NEUTRALIZES MORE ACID LONGER

More Lasting Relief



*Hinkel, E. T., Jr., Fisher, M. P. and Tainter, M. L.: A new highly reactive aluminum hydroxide complex for gastric hyperacidity. To be published.

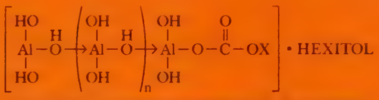
**pH stayed below 3.

No chalky taste. New CREAMALIN tablets are not chalky, gritty, rough or dry. They are highy palatable, soft, smooth, easy to chew, mint flavored.

NEW

CREAMALIN®

ANTACID TABLETS



$$\left[\begin{array}{c}HO\\|\\Al\\|\\HO\end{array}{-}\overset{H}{O}{\rightarrow}\left(\begin{array}{c}OH\\|\\Al\\|\\OH\end{array}{-}\overset{H}{O}{\rightarrow}\right)_n\begin{array}{c}OH\\|\\Al\\|\\OH\end{array}{-}O{-}\overset{\overset{O}{\|}}{C}{-}OX\right]\cdot\text{HEXITOL}$$

n is at least 1 and averages less than 6. X is a cation.

- NO ACID REBOUND
- NO CONSTIPATION
- NO SYSTEMIC EFFECT

Composition: Each Creamalin Antacid Tablet contains 320 mg. specially processed, highly reactive, short polymer dried aluminum hydroxide gel, stabilized with hexitol, with 75 mg. magnesium hydroxide.

Adult Dosage: Gastric hyperacidity – 2 to 4 tablets as necessary. Peptic ulcer or gastritis – 2 to 4 tablets every two to four hours. Tablets may be chewed, swallowed with water or milk, or allowed to dissolve in the mouth.

Supplied: Bottles of 50, 100, 200 and 1000.

Winthrop LABORATORIES · NEW YORK 18, NEW YORK

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in arthritis

Butazolidin®

(phenylbutazone GEIGY)

tablets · alka capsules

potent · nonhormonal · anti-inflammatory agent

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Recent clinical reports continue to justify the selection of Butazolidin for rapid relief of pain, increased mobility, and early resolution of inflammation.

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Rheumatoid Arthritis: In "A total of 215 cases...over half, 50.7 per cent showed at least major improvement, with 21.8 per cent showing minor improvement...."[2] **Osteoarthritis:** 301 cases showed "...a total of 44.5 per cent with complete remission or major improvement. Of the remainder, 28.2 per cent showed minor improvement...."[2] **Spondylitis:** All patients "...experienced initial major improvement that was maintained throughout the period of medication."[3] **Painful Shoulder Syndrome:** Response of 70 patients with various forms showed "...8.6 per cent complete remissions, 47.1 per cent major improvement, 20.0 per cent minor improvement...."[2]

References: 1. Graham, W.: Canad. M. A. J. **79**:634 (Oct. 15) 1958. **2.** Robins, H. M.; Lockie, L. M.; Norcross, B.; Latona, S., and Riordan, D. J.: Am. Pract. Digest Treat. **8**:1758, 1957. **3.** Kuzell, W. C.; Schaffarzick, R. W.; Naugler, W. E., and Champlin, B. M.: New England J. Med. **256**:388, 1957.

Availability BUTAZOLIDIN® (phenylbutazone GEIGY): Red coated tablets of 100 mg. BUTAZOLIDIN® Alka: Capsules containing BUTAZOLIDIN® (phenylbutazone GEIGY), 100 mg.; dried aluminum hydroxide gel, 100 mg.; magnesium trisilicate 150 mg.; homatropine methylbromide, 1.25 mg.

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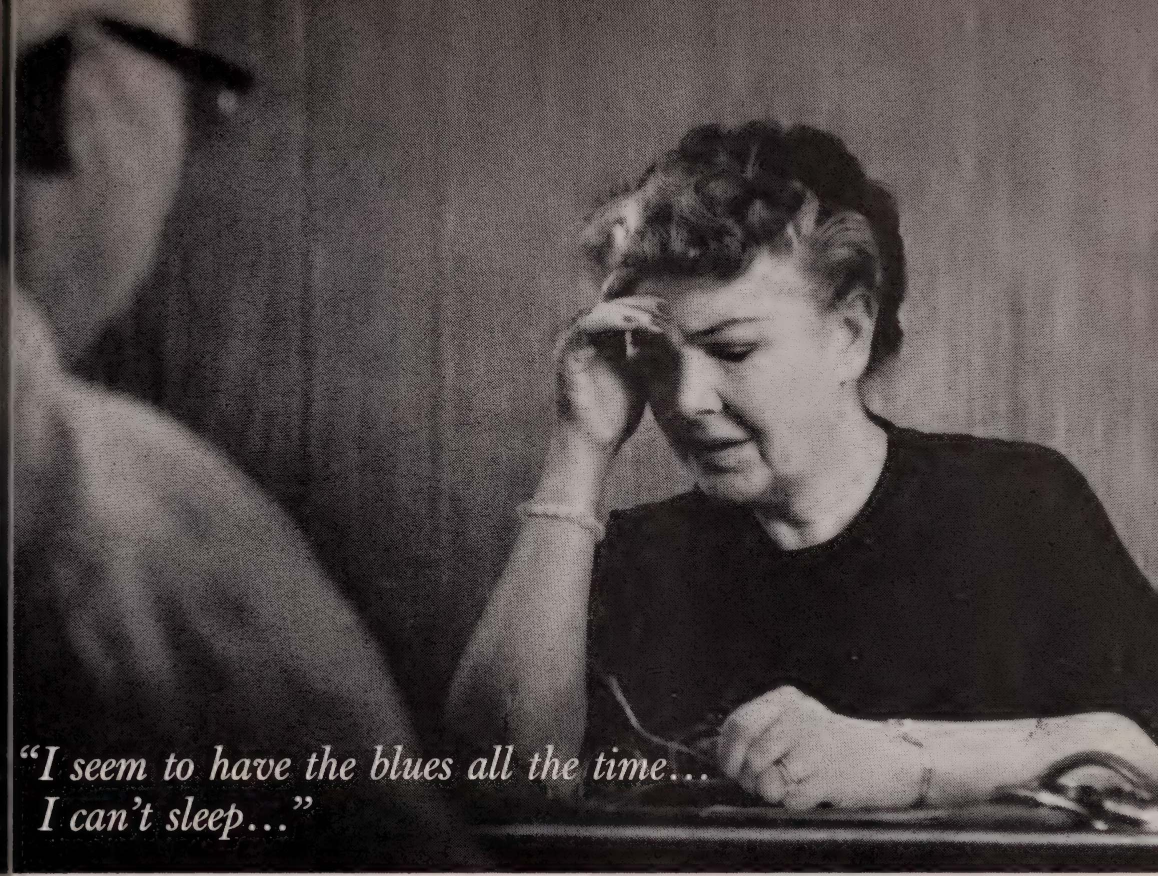
"I seem to have the blues all the time...
I can't sleep..."

in the depressed, unhappy patient

PROMPTLY IMPROVES MOOD

without excitation

- **Acts fast to relieve depression and its common symptoms:** sadness, crying, anorexia, listlessness, irritability, rumination, and insomnia.
- **Restores normal sleep**—without hang-over or depressive aftereffects. Usually eliminates need for sedative-hypnotics.

EFFICACY AND SAFETY CONFIRMED IN OVER 3,000 DOCUMENTED CASE HISTORIES.[1, 2, 3]

Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

Composition: Each light-pink, scored tablet contains 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate.

▲Deprol▲

References:

1. Alexander, L.: J.A.M.A. 166:1019, March 1, 1958.
2. Current personal communications; in the files of Wallace Laboratories.
3. Pennington, V.M.: Am. J. Psychiat. 115:250, Sept. 1958.

Ⓦ®WALLACE LABORATORIES, *New Brunswick, N. J.*

†TRADE-MARK

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for congestive heart failure
for other edematous states
for hypertension...

Clinical data ▶

highest fluid yields,
lowest blood pressure levels
yet achieved with oral
diuretic-antihypertensive
therapy...

Esidrix T.M.

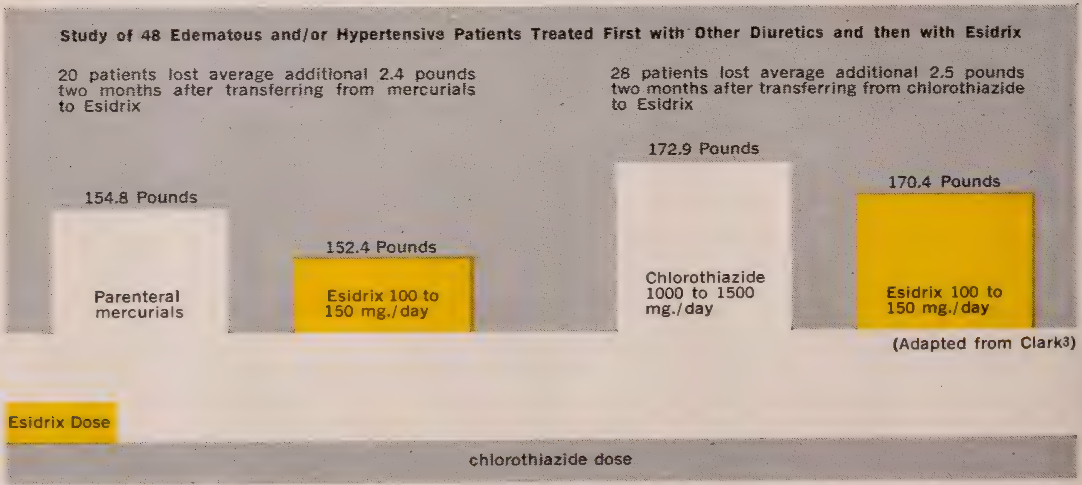
(hydrochlorothiazide CIBA)

2/2675MK-1

Esidrix: 10 to 15 times more active than chlorothiazide in edema and hypertension

Esidrix relieves edema in many patients refractory to other diuretics: Studies reveal that certain patients unresponsive or refractory to mercurials and chlorothiazide respond readily to Esidrix. Brest and Likoff[1] observed that 9 of 12 patients with congestive heart failure—who failed to respond to other diuretics—were completely controlled with Esidrix. Esidrix appears to have clinical value even after the patient has developed partial tolerance to chlorothiazide, and may be found useful in cases of sensitivity to chlorothiazide.[2]

Therapy with Esidrix often results in more weight loss than with other diuretics: In a study[3] of 48 patients with edema and/or hypertension, who were treated originally with chlorothiazide or with mercurial diuretics, substitution of Esidrix at a dose of 100 to 150 mg./day resulted in additional average weight loss of 2.4 to 2.5 pounds.


Study of 48 Edematous and/or Hypertensive Patients Treated First with Other Diuretics and then with Esidrix

(Adapted from Clark[3])

REFERENCES:
1. Brest, A. N., and Likoff, W.: Am. J. Cardiol. *3*:144 (Feb.) 1959. 2. Esch, A. F., Wilson, I. M., and Freis, E. D.: M. Ann. District of Columbia *28*:9 (Jan.) 1959. 3. Clark, G. M.: Clinical report to CIBA. 4. Dennis, E. W.: Clinical report to CIBA. 5. Hejtmancik, M. R., Herrmann, G. R., and Kroetz, F. W.: In press. [A preliminary report by these investigators has been published in Texas J. Med. *54*:854 (Dec.) 1958.]

A product of CIBA research

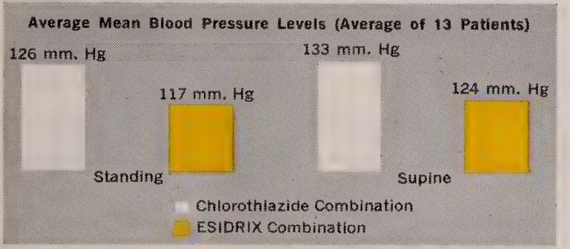
CIBA
SUMMIT, N. J.

2/2676MK-2

Esidrix T.M.

(hydrochlorothiazide CIBA)

Produces greater average reduction in blood pressure: Eleven of 13 hypertensive patients[4] were treated initially with a chlorothiazide-mecamylamine-reserpine combination (10 patients had 1000 mg. and 1 patient 500 mg. chlorothiazide daily); 1 patient had been treated with hydralazine and 1 had no previous medication. Nine were then transferred to an Esidrix-mecamylamine-reserpine combination and 4 to an Esidrix-reserpine combination for periods of 3 to 7 weeks (12 patients had 100 mg. and 1 patient 50 mg. Esidrix daily). Average mean blood pressure levels were recorded in the standing and supine positions. As shown in graph below, left, there was a further drop in blood pressure after patients were transferred to Esidrix.

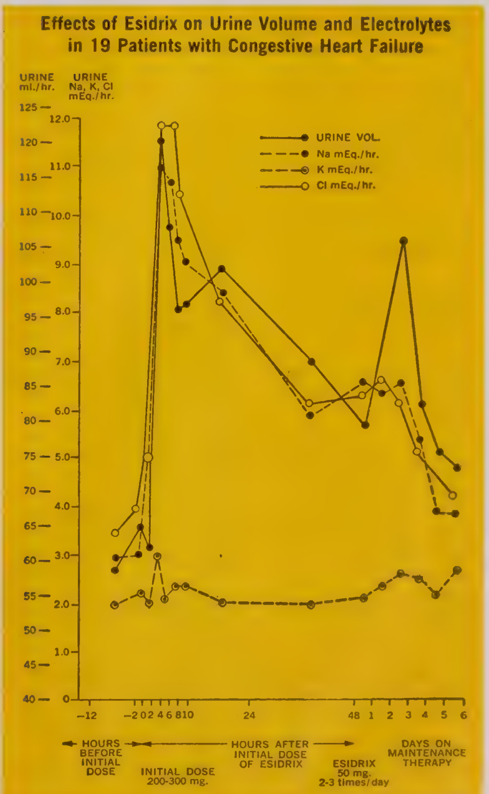

Average Mean Blood Pressure Levels (Average of 13 Patients)

(Adapted from Dennis4)

Exceptional safety . . . reduced likelihood of electrolyte imbalance: While Esidrix markedly increases sodium and chloride excretion, it has far less effect on excretion of potassium (see chart at right) and bicarbonate. Hence, there is little likelihood of disturbing electrolyte balance when recommended procedures are followed.

DOSAGE: Esidrix is administered orally in an average dose of 75 to 100 mg. daily, with a range of 25 to 200 mg. A single dose may be given in the morning or tablets may be administered 2 or 3 times a day.

SUPPLIED: *Tablets,* 25 mg. (pink, scored); bottles of 100 and 1000. *Tablets,* 50 mg. (yellow, scored); bottles of 100 and 1000.


Effects of Esidrix on Urine Volume and Electrolytes in 19 Patients with Congestive Heart Failure

(Adapted from Hejtmancik et al.5)

re-evaluating tranquilizers?

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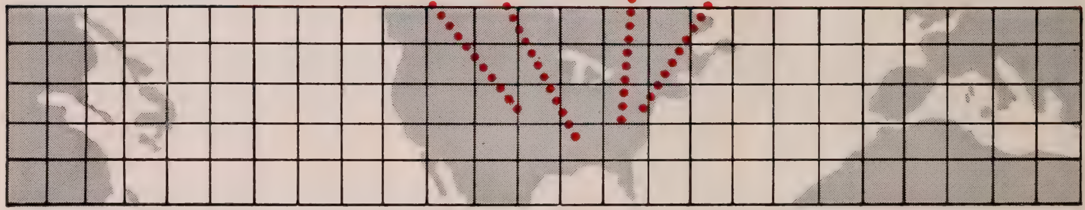
(brand of hydroxyzine)

IN GERIATRICS
"ability to decide correctly has increased, while the illogical response to anxiety has diminished."[1]

IN WORKING ADULTS
"especially well suited for ambulatory patients who must work, drive a car, or operate machinery."[3]

IN PEDIATRICS
"ATARAX appeared to reduce anxiety and restlessness, improve sleep patterns and make the child more amenable to the development of new patterns of behavior . . . ."[2]

IN GENERAL
ATARAX is "effective in controlling tension and anxiety. . . . Its safety makes it an excellent drug for out-patient use in office practice."[4]



INVESTIGATORS AGREE ON OPTIMAL ATARAX DOSAGES

For childhood behavior disorders	10 mg. tablets	3-6 years, one tablet t.i.d. over 6 years, two tablets t.i.d.
	Syrup	3-6 years, one tsp. t.i.d. over 6 years, two tsp. t.i.d.
For adult tension and anxiety	25 mg. tablets	one tablet q.i.d.
	Syrup	one tbsp. q.i.d.
For severe emotional disturbances	100 mg. tablets	one tablet t.i.d.
For adult psychiatric and emotional emergencies	Parenteral Solution	25-50 mg. (1-2 cc.) intramuscularly, 3-4 times daily, at 4-hour intervals. Dosage for children under 12 not established.

Supplied: Tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution, 10 cc. multiple-dose vials.

References: 1. Smigel, J. O., et al.: J. Am. Ger. Soc., in press. 2. Freedman, A. M.: Pediat. Clin. North America **5**:573 (Aug.) 1958. 3. Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957. 4. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. 5. Coirault, M., et al.: Presse méd. **64**:2239 (Dec. 26) 1956. 6. Bayart, J.: Presented at the International Congress of Pediatrics, Copenhagen, Denmark, July 22-27, 1956.

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Fostex®

treats their acne while they wash

Fostex provides essential actions necessary in treating acne. It degreases, dries and peels, and degerms the skin while the patient washes.

Fostex is well-tolerated and easy to use. Instead of using soap, patients wash with Fostex Cream or Cake, following this simple routine two or four times a day—

> Wet face and other affected areas with warm water. Massage Fostex lather into the skin for 5 minutes. Rinse and dry.

FOSTEX CREAM . . . for therapeutic washing in the initial phase of oily acne treatment. In 4.5 oz. jars.

FOSTEX CAKE . . . for therapeutic washing to keep the skin dry and free of blackheads during maintenance therapy. Also used in relatively less oily acne. In bar form.

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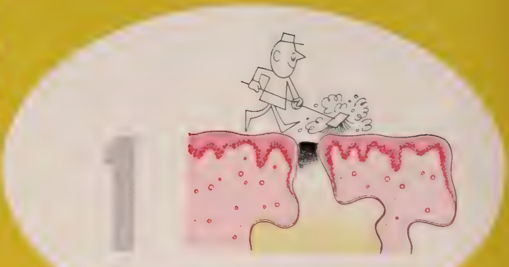
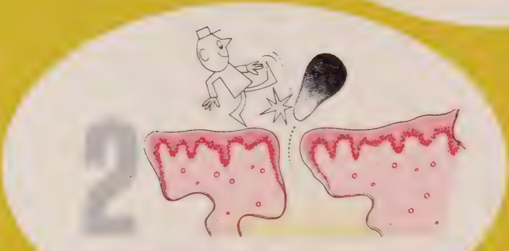
Makers of Lowila® Cake, Lowila Emollient, Sebulex,® Alpha-KERI,ᵀ Gentia-Jel®.

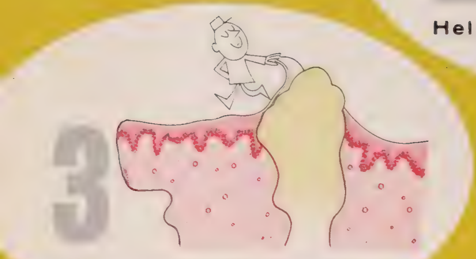
this is how Fostex works IN ACNE



Degreases the skin



Helps remove blackheads



Dries and peels the skin

Fostex completely emulsifies and washes off excess oil from the skin. It unblocks pores by penetrating and softening blackheads and sebum plugs. Keratolytic action dries and peels the skin, removing papule coverings, thus permitting proper drainage of sebaceous glands.

Fostex effectiveness is provided by Sebulytic®, a combination of surface-active cleansing and wetting agents (sodium lauryl sulfoacetate, sodium alkyl aryl polyether sulfonate, and sodium dioctyl sulfosuccinate). These agents have remarkable antiseborrheic, keratolytic and antibacterial actions which are enhanced by sulfur 2%, salicylic acid 2% and hexachlorophene 1%.

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DEMEROL® COMPOUND

(MEPERIDINE HYDROCHLORIDE)

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DEMEROL® APAP

DOSAGE: Adult dose is 1 to 2 tablets orally, repeated if necessary every 3 or 4 hours.

Tablets containing Demerol hydrochloride 50 mg., acetyl-p-aminophenol 300 mg., bottles of 100.

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FOR PATIENTS DESERVING MORE THAN ROUTINE ATTENTION

Triple action of Demerol,® APAP and dihydrocodeinone for:

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Cough suppressant action of dihydrocodeinone — at least six times as potent as codeine but essentially nonconstipating — enhanced by the broncho-spasmolytic effects of Demerol.

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Addition of Demerol to APAP and dihydrocodeinone provides more complete relief of mild to moderate pain. The mild sedation without respiratory depression is widely beneficial.

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APAP—Active metabolite of phenacetin — produces more rapid and prolonged fever reduction than aspirin or APC without gastric irritation or hematologic changes.

AVAILABILITY: stratified green, white and pink tablets containing Demerol hydrochloride 25.0 mg., dihydrocodeinone bitartrate 5.0 mg., acetyl-p-aminophenol 150 mg., bottles of 100.

DOSAGE: one or two tablets

CHRONIC BRONCHITIS or INFECTIOUS DERMATITIS?
ACCELERATE THE RECOVERY PROCESS WITH
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VARIDASE* BUCCAL TABLETS
STREPTOKINASE-STREPTODORNASE LEDERLE
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for edema and hypertension

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Wide range of action is reassuring when culture and sensitivity tests are impractical.

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capsules	*oral suspension*	*pediatric drops*
125 mg. 250 mg.	raspberry flavored, 2 oz. bottle, 125 mg. per teaspoonful (5 cc.)	raspberry flavored, 10 cc. bottle (with calibrated dropper), 5 mg. per drop (100 mg. per cc.)

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Type of infection	Number of Patients	RESULTS Excellent to Good	Fair	Poor
Respiratory[3,4]*	32	32		
Shigella dysentery[3]	14	14		
Enteritis[3]	10	6	2	2
Bacteremia[3,5]	5	5		
Meningitis[3,5]	4	3		1**
Rocky Mountain spotted fever[3,5]	2	2		
Ear abscess with cellulitis[4]	1	1		
Lung abscess[4]	1			1
Typhoid fever[5]	1	1		
TOTALS	70	64	2	4

*Includes 15 patients who were administered CHLOROMYCETIN SUCCINATE by nebulization under intermittent positive pressure breathing.

**Patient was hydrocephalic at birth; cerebrospinal fluid was sterile at time of death.

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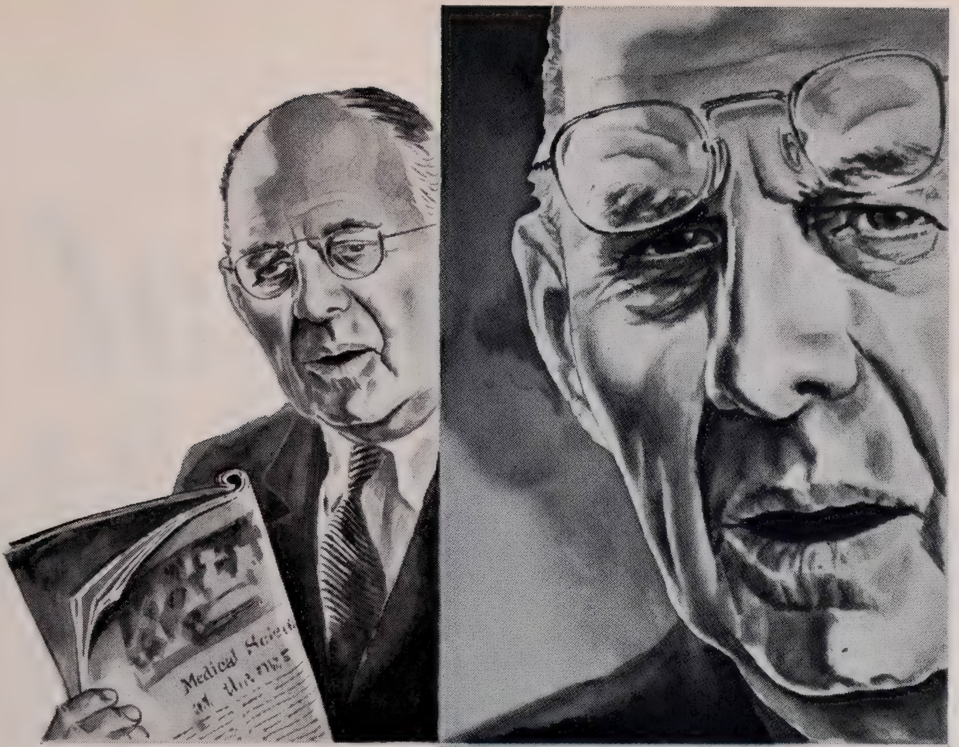

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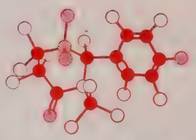

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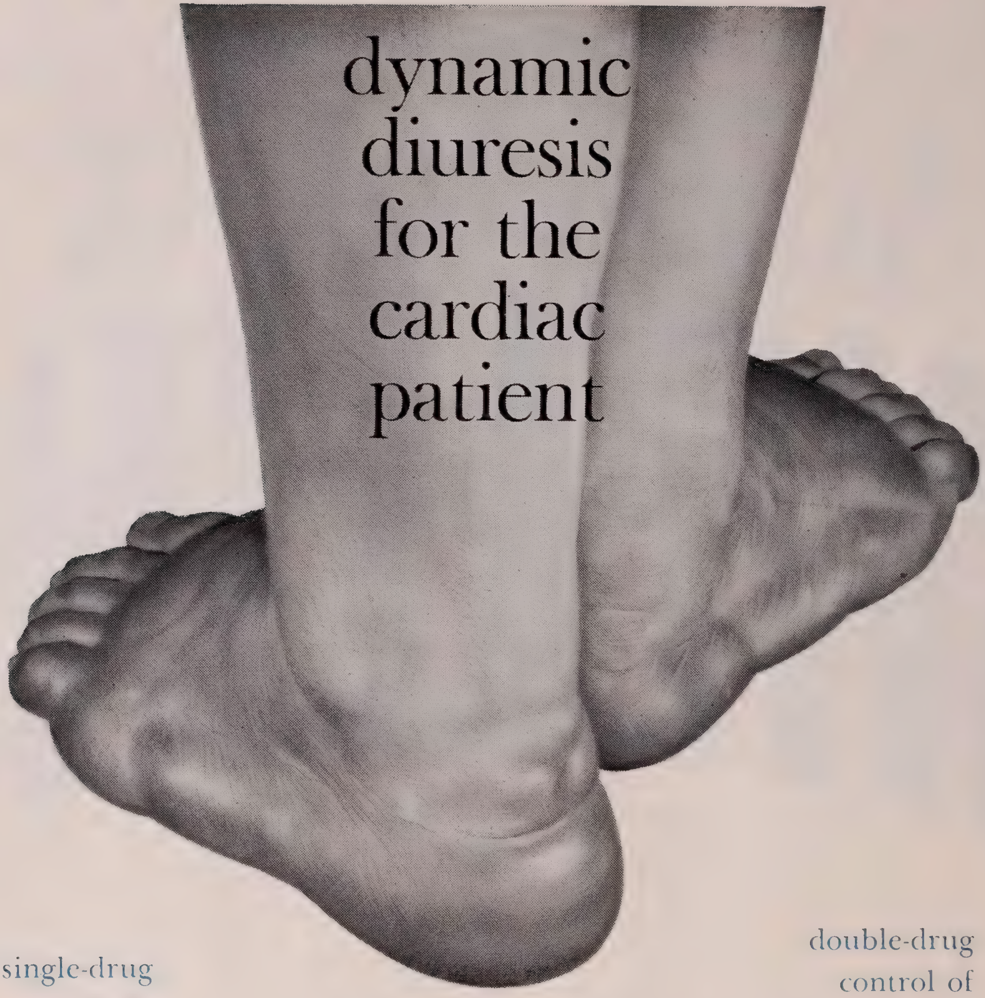

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1. Chamberlain, D. T.: Gastroenterology *17*:224, 1951. 2. Hock, C. W.: J.M.A., Ga. *43*:124, 1951. 3. Derome, L.: Canad. M.A.J. *69*:532, 1953. 4. Cholst, M., Goodstein, S., Berens, C., and Cinotti, A.: J.A.M.A. *166*:1276, 1958.

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GENERAL INFORMATION

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EDITORIALS

Poison Control Centers

Elsewhere in this issue there appears for the first time a graphic illustration of the five poison control centers in New York State plus one in near-by Connecticut. This becomes a permanent fixture, and the location of the page will be listed in the table of contents and will be found in the JOURNAL in each issue.

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Continuing the Fight Against Tuberculosis

A quote from the *A.M.A. News* of October 20, 1958 follows: "TB REPORT: Despite the fact TB death rate has been reduced from 188.1 to 8.4 per 100,000 during 54-year crusade to eradicate the disease, nearly 14,000 died of tuberculosis in U.S. last year—more than from all other infectious diseases combined. New active cases reported: 69,000." Thus, a major health problem exists in spite of great gains in tuberculosis control, particularly by treatment with effective chemotherapy.

The search for unknown cases of tuberculosis infection and disease is a never-ending task, since trends in the epidemiology can best be predicted only with knowledge of existing infection, active or latent. Mortality and morbidity rates from tuberculosis have declined approximately 50 per cent in the U.S. during the past ten years, but the rate of decline in infection is less well documented and the reservoir of infection is unknown.

The two major tools in the search for infection and disease are the tuberculin skin test and chest x-ray. In children and in young adults the tuberculin test is the screening method of choice for two reasons: inability to exclude infection by chest x-ray, and inability to protect from unnecessary x-ray exposure since only positive reactors need be x-rayed. Chest x-rays for screening the mature, especially the older adult population, remain the method of choice, and when applied in selective groups such as routine hospital admissions, workers in hazardous occupations, inmates of mental institutions, prisons and old folks homes, results in a high yield of significant disease. Mass examination by chest x-ray of apparently healthy adults also yields a considerable number of unsuspected active or significant latent cases. Although the danger of x-ray exposure in screening such groups is negligible, the need for exposure may be reduced by use of the tuberculin test and x-raying only positive reactors. The tuberculin test is increasingly employed in the differential diagnosis of undiagnosed x-ray lesions or systemic disease simulating tuberculosis. A positive tuberculin reaction alone by no means confirms a diagnosis of active disease, but a negative test, when properly performed and interpreted, will exclude active disease except in rare instances.

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0.0001 PPD (Parke, Davis & Co., strength equivalent to PPD-S* International Standard) or 0.1 mg. Old Tuberculin (O.T., New York State Health Department) is the testing method of choice. Both basic products are quite stable and if refrigerated may be stored for months or years. However, when diluted for administration should not be used beyond a few days (PPD three days, O.T. one week). When properly administered and interpreted practically all tests will result in specific positive with a minimum of false reactions. The tuberculin patch test is less dependable since the desired dose cannot be measured as it can by intradermal administration, and the composition of the patch itself produces a higher incidence of arbitrary reactions. However, the patch test is safe and, when better methods are unavailable or impractical, may be justifiably used, and its usefulness may be potentiated by intradermal testing of equivocal reactions.

To administer the test the forearm should be cleansed with an alcohol sponge which is discarded, the skin pulled taut by grasping and squeezing, and 0.1 cc. of proper dilution from a tuberculin syringe through a $^1/_2$ inch short bevel platinum iridium needle injected between the layers of the skin. A blanched elevated wheal should appear if the dilution is properly administered. Reading of the test should be made from forty-eight to seventy-two hours after injection. The majority of reactions reach a maximum within forty-eight hours, though some are delayed. For a positive reading there must be an area of induration not less than 5 mm. with or without redness. In equivocal reactions the test should be repeated. Principal contraindications are recent acute illness, small pox vaccination, impetigo, and allergic dermatitis.

By the diligent use of tuberculin and chest x-ray examination in detecting tuberculosis, both latent and active, early isolation and proper use of tuberculosis antimicrobials for clinical and prophylactic indications will eventually reduce tuberculosis mortality from its present unenviable place as a greater killer than all other infectious diseases in the U.S. combined to one of much less significance.—William G. Childress, M.D.

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* Refined product of original PPD, adopted in 1952 by World Health Organization as the International Standard Tuberculin.

Editorial Comment

Medical Practice in This Changing World. When he delivered an address* at the dedication ceremonies of the Nassau Academy of Medicine, among other things Dr. Louis H. Bauer said:

> There is something I said when I was inaugurated president of the A.M.A. and I'm going to repeat it. Thomas Jefferson fought against too much power in central government, but supported the centralized government and freedom of individual citizens. Slowly but surely, one by one, we are losing those freedoms guaranteed by the Bill of Rights. Personal liberties are being traded for government subsidies. We are selling our birthrights for a mess of pottage. Unless we watch out we shall suddenly wake up to find that we have traded liberty for shackles, the shackles of destructive, confiscatory taxation. The shackles of complete dependence upon government for everything in life. The shackles of suppression of initiative in competition. The shackles of the suppression of a free press and free speech. Now I'm afraid that it is still true today and I think we are in increasing danger. At the same time I quoted the following, which I'll quote again. About one hundred years ago Daniel Webster said, "It were but a trifle even if the walls of yonder castle were to crumble, if its lofty pillars should fall, and its

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* December 7, 1958

gorgeous decorations be all covered by the dust of the valley. All these may be rebuilt but who shall reconstruct the fabric of demolished government? Who shall rear again the well proportioned columns of constitutional liberty? Who shall frame together the skilled architecture which unites national sovereignty with states rights, individual security and public prosperity. No, if these columns fall they will be raised not again."†

If anyone is qualified to speak authoritatively about what goes on in medicine all over the world, Dr. Bauer as Secretary-General of the United States Committee of the World Medical Association is preeminently so qualified. He has observed the effect on the practice of medicine of governmental subsidies and control at first hand and warns the profession here against the sure consequences of indifference and disunity which in the case of Great Britain contributed to the formation of the National Health Service which has skyrocketed costs so that the "average Britisher pays 43 per cent of his income in taxation . . ."

It has been said that "nothing is certain but death and taxes." Incontrovertibly true; at the time this was written the canny Benjamin Franklin (1789) in a letter to M. Leroy was discussing our Constitution of which he wrote that "it is in actual operation; everything *appears*** to promise that it will last; but in this world nothing is certain but death and taxes." At that time the average life span during which an individual had to pay his taxes before death relieved him of the burden was much less than now and death duties and estate taxes such as we have at present did not exist. Let anyone think back over the one hundred seventy years between and see what has happened to this Republic. Again, just after the Constitution had been ratified it is said that a lady asked Dr. Franklin: "Sir, what kind of a government have we?" To which he replied: "Madam, you have a Republic—if you can keep it."

The passing years have seen rapidly expanding government because citizens have demanded more and more services in nearly every category from this source. They seem unaware that the important thing is not what government does for you but what it does to you. No one gets something for nothing. Dr. Franklin seems to have had some reservations respecting the durability of our Constitution. Many of us have lived to see States' rights seriously invaded by the Federal government and the guarantees of the Bill of Rights eroded as Dr. Bauer observes. Many facets of medicine are already directly or indirectly under government control. The camel has his nose in the tent. How long before he gets all the way in?

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† Nassau M. News **31**: 3 (Feb.) 1959.

** Italics ours.—Ed.

The shaft of the arrow had been feathered with one of the eagle's own plumes. We often give our enemies the means of our own destruction.—Aesop

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(1) Leslie, A., and Simmons, D. H.: Am. J. M. Sc. *234*:321, 1957. (2) Settel, E.: Am. Pract. & Digest Treat. *8*:1249, 1957.

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SCIENTIFIC ARTICLES

Current Use of Immunizing Agents

RODERICK MURRAY, M.D., BETHESDA, MARYLAND

(Director, Division of Biologics Standards, National Institutes of Health)

UNTIL recently, when one thought of immunization or of the biologic products which are used in immunization, it was natural to think of the well-established products and procedures which had been in use for a great many years. Their association with great names of the past, such as Jenner, Pasteur, and Ehrlich, placed the origin of these products, in terms of the time scale of modern medical progress, in a period almost of antiquity. It was early recognized that the preparation of these materials, which are derived for the most part from pathogenic or potentially pathogenic microorganisms, requires careful control to minimize hazards which might occur in the course of their use as well as to assure materials of satisfactory potency. Most governments have adopted special laws covering this group of agents, and in the United States this goes back to 1902 when the statute known variously as the Virus Law, Virus Serum and Antitoxin Act, or Biologics Law, and now incorporated in the Public Health Services Act, was enacted.

Preoccupation with antibiotics and the fact that many of the agents are used mainly in the preventive medicine field have been factors contributing to low interest in many of these biologics. Nevertheless, during the past few years at least two biologic products have come into forceful public attention and created new hope and interest on the part of the medical profession. These are poliomyelitis vaccine and the vaccine used in connection with the recent influenza pandemic due to the Asian strain of influenza virus. These experiences emphasized that far from being dormant this is a field in which new discoveries are attracting added interest.

It would seem desirable, particularly in view of our recent experience with influenza vaccine, to review a few of the problems which have arisen in the current use of immunizing agents.

Table I gives the chronology of the licensing of certain immunizing agents and incidentally reflects the times at which important advances in production methods opened up new fields.

Smallpox vaccine is still prepared by the classical method on the calf skin although a preparation derived from chick embryo material is available. In the same way, rabies vaccine continues to be prepared from the brain and spinal cord of rabbits in the traditional manner, and although many attempts have been made toward purification of this vaccine and removal of the factors responsible for the postvaccinal paralysis, or isoallergic encephalitis, no really satisfactory immunizing agent derived from central nervous system tissue has thus far developed to the point of practical utility. It should be noted, however, that a vaccine prepared

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Presented at the 152nd Annual Meeting of the Medical Society of the State of New York, New York City, Section on Industrial Medicine and Surgery, May 14, 1958.

TABLE I.—Chronology of the Licensing and Mode of Propagation of 21 Immunizing Agents

Agent	Mode of Propagation	Date of Licensing
Smallpox vaccine	Calf skin	1904
Rabies vaccine	Rabbit central nervous system	1910
Cholera vaccine	Culture medium	1910
Plague vaccine	Culture medium	1910
Typhoid vaccine	Culture medium	1910
Tuberculosis vaccine*	Culture medium	1912
Pertussis vaccine	Culture medium	1914
Meningococcus vaccine*	Culture medium	1914
Diphtheria toxoid	Culture medium	1926
Scarlet fever toxin	Culture medium	1931
Staphylococcus toxoid	Culture medium	1933
Tetanus toxoid	Culture medium	1933
Typhus vaccine	Chick embryo	1941
Rocky Mountain spotted fever vaccine	Chick embryo	1942
Influenza vaccines	Chick embryo	1945
Diphtheria and tetanus toxoids and pertussis vaccine	Culture medium	1946
Mumps vaccine	Chick embryo	1950
BCG vaccine	Culture medium	1950
Yellow fever vaccine	Chick embryo	1953
Poliomyelitis vaccine	Tissue culture	1955
Adenovirus vaccine	Tissue culture	1957

* License no longer in effect.

from rabies virus grown in embryonated duck eggs has been licensed, and a live avianized strain vaccine is in veterinary use.

Apart from smallpox and rabies vaccine all of the licensed immunizing agents listed were produced by classical bacteriologic methods until 1941. It may be noted with some surprise that a tuberculosis vaccine was licensed in 1912. This certainly was before its time, and it is of interest to note that reports are appearing in the literature today concerning killed vaccines for tuberculosis. In 1941 we had the first vaccine produced by growing microorganisms in the embryonated hen's egg. This was typhus vaccine which was quickly followed by other virus and rickettsial vaccines produced by similar means. These included Rocky Mountain spotted fever, yellow fever, and mumps vaccines. Actually, yellow fever vaccine was in use in the early 1940's, but it was first produced by the Rockefeller Institute and later by the Public Health Service at the Rocky Mountain Laboratories, both noncommercial production. The date 1953 represents the date of licensing of a commercial establishment. Poliomyelitis vaccine was licensed in 1955, and the attendant effort has resulted in a considerable expansion of research in the field of virology. All indications point to the fact that further immunizing agents will be produced from viruses propagated by the technics which have been developed following our ability to grow viruses by tissue culture methods. Adenovirus vaccine is one, and we could guess at others. A vaccine for measles would seem like a distinct possibility in the near future.

I would like to present brief summaries concerning a few of the immunizing agents in which there has been recent interest.

Typhoid Vaccine

Typhoid vaccine in one form or another, as a monovalent preparation or combined with paratyphoid components, has been licensed since 1910. It was, of course, used prior to that time. It has been widely used both in military and civilian practice and is usually administered to large numbers of people when disaster conditions prevail; however, there has been little actual proof that typhoid vaccine per se has been a real instrument in the reduction of typhoid morbidity.

During 1953 and 1954 a study on the effectiveness of typhoid vaccine in the prevention of typhoid was carried out in Yugoslavia. These studies were supported by the Yugoslav authorities, the World Health Organization, and the United States. Two vaccines were used: an alcoholized vaccine prepared according to the method devised by Felix, and a phenolized vaccine similar to that used in the United States. Both of these vaccines were prepared in Yugoslavia.

Although the results were not as clear as one could hope, the data as reported in the *Bulletin of the World Health Organization* indicated that the occurrence of typhoid was 23 in those who received alcoholized vaccine, 9 in those who received phenolized vaccine, and 31 among controls. Each group comprised approximately 12,000 individuals. The findings may be summarized as follows: Both vaccines gave statistically effective protection. The phenolized vaccine as used was superior to the alcoholized vaccine. Protection was not complete. The results of the trials and the associated laboratory tests of the vaccine served to indicate the complexity of the problem. It is unfortunate that it was not possible to demonstrate direct correlation between laboratory tests and results in the field.

The report, which was prepared by the Yugoslavia Typhoid Commission, was careful to point out that the results do not necessarily mean that the same degree of protection would be obtained with other batches of either vaccine. Obviously, more work remains to be done, and definitive information can only be obtained in further field trials, which are, of course, dependent on the conjunction of trained people and the opportunity for such trials. The study certainly does indicate that administration of typhoid vaccine is not without value.

Diphtheria and Tetanus Toxoids For Adult Use

Immunization procedures with diphtheria and tetanus toxoids, either separately or in combination, with or without other antigens such as pertussis vaccine, have become firmly established and accepted in practice. Their use in primary immunization calls for little comment. The general use of tetanus toxoid in military personnel has demonstrated that this is a highly effective measure in preventing tetanus. Experience in both World War II and the Korean War has been excellent. It has also been shown that even after a considerable lapse of time the antitoxin response to a booster dose of tetanus toxoid is prompt and significant, with values rising to protection levels within four to six days. With this experience one would expect that this immunization procedure would have universal use. However, this is not so, and it is difficult to persuade people to accept the procedure voluntarily. It can only be accomplished effectively in closed groups such as military personnel in whom such immunization procedures are mandatory. Probably the only reason why younger people do receive tetanus toxoid is because it is included in the triple antigen along with the diphtheria and pertussis components for which the inoculations are actually sought.

Since most of the children in the United States are Schick negative, the use of diphtheria toxoid without prior Schick testing is a safe and satisfactory method of immunizing action in this age group. However, in older children and adults the incidence and severity of reactions following the administration of full doses of diphtheria toxoid is a serious matter. This is complicated by the fact that reports in recent years have indicated that data based on Schick surveys show increased susceptibility of adults to diphtheria and that in some outbreaks a high proportion of adults have been involved. The incidence of reactions can be reduced (1) by prior Schick testing, (which is time-consuming and irksome and thus has little appeal), (2) by using purified diphtheria toxoid, a procedure which is theoretically valid, but the requisite degree of purity is difficult to attain, and (3) by reduction of the dose of toxoid used. The third alternative has proved feasible, and it has been shown that small doses of diphtheria toxoid (purified) are capable of inducing satisfactory levels of antitoxin in a large percentage of adults. The amount of toxoid used is 2 Lf, and this results in only occasional minor systemic or local reactions. The inclusion of this small amount of diphtheria toxoid with tetanus toxoid simplifies the immunization procedure for these two antigens and has been used successfully in the Armed Forces for a number of years. It is certainly a preparation which merits careful consideration in the immunization of adults against either diphtheria or tetanus or both.

Asian Strain Influenza Vaccine

The experience during the past year with influenza due to the Asian strain and the use of vaccine against the causative virus has brought to attention a number of problems in the manufacture of the vaccine and in its use. Some of these were previously known and understood, but few were fully appreciated by the medical profession as a whole.

It was early recognized that the antigenic structure of influenza virus was such that a single vaccine could not provide complete antigenic coverage. For this reason the viruses represented in the vaccine have been changed from time to time in order to provide such coverage, based on the types prevalent in a particular year and particularly on those associated with epidemics.

When the first strains of a new virus were isolated from cases in the Far East in the spring of 1957, it was quickly realized that the antigenic make-up of this strain was such that it could give rise to an epidemic since, among other things, sera from affected population groups did not show the presence of antibodies.

Accordingly, every effort was made to initiate the production of a vaccine. Strains were sent to the licensed manufacturers on May 12. Each of these manufacturers had had long experience, extending ten or more years, in the manufacture of influenza vaccine and had attempted a dry run on a similar problem in 1951 when the "London strain" was isolated. On that occasion the manufacturers were able to produce token quantities of influenza vaccine in thirty to sixty days. The London strain had been adapted to growth in the chick embryo so that production did not present a real problem. With the Asian strain unfortunately this was not the case. Production was difficult to get underway, and yields were poor. However, the first lots were released on August 12.

It was early realized that the demand for vaccine containing the Asian strain could be met only if production efforts were concentrated on a monovalent vaccine rather than on a polyvalent vaccine. As yields increased with improved adaptation of the strain, the outlook for vaccine became brighter, so much so that at a meeting held in Washington on August 27 and 28 it was estimated that a total of 60 million doses would be manufactured by February 1, 1958. Actually almost 54 million doses were released during the period August 18 to December 6. This represents a tremendous achievement on the part of all concerned. However, even this volume was insufficient, and although a great many individuals were vaccinated, it was not enough to go around before the epidemic.

It is doubtful whether we will have even this amount of time in future influenza epidemics. It must be remembered that the 1957 pandemic reached its peak later in the United States than in a great many other countries. Consideration, therefore, must be given to making the available antigen more effective in the sense of going further, whether this be by the use of adjuvants as has been suggested or by other means. Even with United States industry, which is versatile in these matters, it is difficult to achieve sudden expansion of facilities, and the effort of 1957 would probably not be exceeded by a very great margin.

A few other aspects of this experience are worth mentioning. It was initially difficult to measure antibody levels in a meaningful way because of the presence of inhibitors. Consequently, early estimates of antibody response to injection of vaccine, which were relied on in determining the dose of vaccine to recommend, were not fully reliable. The initial potency of 200 chick cell agglutinating units per dose was arrived at on the basis of analogy with earlier vaccines and on the available information as to antibody responses. It also proved to be a good compromise in terms of the production capabilities at the time. Actually, this proved to be a good estimate. As yields became higher and more information became available, it was recommended that the potency of the vaccine be raised to 400 chick cell agglutinating units.

It should be remembered that the experience with Asian strain influenza represented a primary immunization for the vast majority of the population. Consequently, the responses to vaccination were not as brisk as would be expected in the case of individuals who had had a prior experience and in whom the administration of vaccine represented a boostering effect. It was probably lack of clarity concerning this circumstance which gave rise to the widespread use of small intracutaneous doses of vaccine despite the official recommendation that 1-cc. amounts should be used subcutaneously.

It is now recommended that the vaccine of choice for the present is a polyvalent vaccine and that the primary course should be two doses in order to secure adequate antibody levels. It is probably well realized but certainly worth mentioning that the incubation period of influenza is so short that the infected individual with prior experience has little opportunity for his immunologic mechanism to respond with a rise in antibodies to protective levels before the illness reaches its height. This is in contradistinction to illnesses which have a longer incubation period and which themselves produce a boostering effect in individuals who have had previous experience with the antigen. In the case of influenza the blood levels at the time of infection probably play the most important part in the progression or otherwise of the disease.

Poliomyelitis Vaccine

Poliomyelitis vaccine, its production and its problems, have been so well presented in the popular press as well as in the medical press that it need only be referred to here because of a few important aspects. Poliomyelitis vaccine was the first tissue culture-produced vaccine used on any extensive scale in human beings. The experience of the past three years is such that this product has been proved to be a safe and effective immunizing agent apart from the vaccine-associated cases of poliomyelitis which occurred in 1955. These difficulties have not recurred, and present production and testing methods have been validated by the fact that over 260,000,000 doses now have been manufactured and, for the most part, administered without serious untoward effects. In fact, poliomyelitis vaccine has proved to be an agent which can be administered without expectation of significant reactions. In such a complex system as is involved in its preparation, however, it is inevitable that some reactive elements may be encountered, and we do have occasional reports which indicate that particular lots are causing an unexpected number of reactions. Had the vaccine injected been typhoid vaccine or even influenza vaccine, no complaint would have been made, since reactions are expected with these products.

Whereas in 1955 the question at issue was safety, the question raised today is potency, and questions concerning a fourth dose have frequently been asked. This was recently the subject of a statement by the Surgeon General of the Public Health Service based on the findings of a committee of advisors which met on March 21, 1958. It was noted that vaccine effectiveness was being maintained at levels of approximately

90 per cent after three injections, that all available evidence pointed to the effectiveness of the present three-dose schedule, and that routine fourth doses were not necessary. At this time it was also agreed that exceptions might be made by individual physicians under circumstances such as the beginning of local outbreaks of poliomyelitis or when persons were going into areas where the incidence of poliomyelitis was high. The decision to administer an additional dose should be made by the individual physician, and it need not be administered sooner than a year after completion of the three-dose schedule. A statement by the American Academy of Pediatrics in a later release covered much of this information but noted that its Committee on Control of Infectious Diseases had expressed the opinion that a fourth injection "though not mandatory was advisable this year in anticipation of the approaching 'poliomyelitis season' for those who received their third injection more than one year earlier." It was recommended that all persons below forty be given poliomyelitis vaccine at properly spaced intervals.

Two matters may be noted in passing. (1) In many circumstances today the rapid development of information and the need for rapid dissemination call for public statements such as the above rather than the classical presentations of the detailed evidence in the usual channels of medical publication. It goes without saying that the latter should follow in due time. (2) Poliomyelitis vaccine, which was a scarce item until 1957, is now in plentiful supply.

Adenovirus Vaccine

This is the most recent virus vaccine to come into use. Because of its novelty, a short discussion of its development is in order. The first members of the group of microorganisms now referred to as adenoviruses were discovered in 1953. It was soon found that they were one of the principal causes of acute respiratory illnesses in recently recruited military personnel. Experimental vaccines of a killed type were rapidly developed and tested in military populations, and by the middle of 1956 it had been demonstrated that such vaccines were effective in reducing the occurrence of adenovirus infections due to at least two types (4 and 7) of the three (3, 4, and 7) studied. Following this demonstration of effectiveness, official standards were adopted under the biologics control provisions of the Public Health Service Act on September 24, 1957, and the first license to manufacture such a product was issued soon thereafter. The rapid development of this vaccine and its early licensing as a commercially acceptable product was greatly facilitated by the tremendous increase in experience with tissue culture research and production methods which resulted from the scientific efforts which went into the development and production of poliomyelitis vaccine. It is clear that adenovirus vaccine containing antigens for types 3, 4, and 7 was effective in military recruits. These are young men who are suddenly brought together as a group for training purposes under which conditions the occurrence of upper respiratory infections due to adenoviruses can be relatively high. The seasoned personnel of the military post involved in the same training programs do not show this high incidence of adenovirus infection.

Immediately the question is asked: Could adenovirus vaccine have value in other population groups? According to Hilleman[1] and to Jordan[2] among others, attack rates for adenovirus infections among a variety of population groups, including college students, family groups, hospital employes, etc., are low. On this basis it has been concluded that the indication for the use of adenovirus vaccine in particular civilian population groups has yet to be demonstrated. Nevertheless, situations may undoubtedly arise where circumstances simulate the military recruit conditions, and there then will be a clear indication for the use of adenovirus vaccine.

At present the recommendations for the use of adenovirus vaccine are for a dose of 1 ml. given only once. This is related to the fact that in adults we are dealing with a recall phenomenon similar to what we find with influenza vaccine containing strains which have been isolated during earlier years. The situation in young children is different, and it is not known what protection the vaccine given in this way would afford against primary infection with one of the adenoviruses. It also has been shown that a number of other types of adenoviruses are associated with infection in children. These observations suggest that the role of adenovirus vaccine in the prevention of upper respiratory infections in adult populations other than military recruits and in pediatric practice are matters for further study.

Frequent Questions

1. Can a biologic product be safely used beyond the dating period shown on the label?

This question has been frequently asked in the case of poliomyelitis vaccine for which the dating period is admittedly restrictive (six months) and curiously in the case of immune serum globulin, that is, gamma globulin or one of the forms in which it is marketed, such as poliomyelitis immune globulin.

Obviously there must be an element of arbitrariness in the selection of the dating period for any particular product. A decision on dating is arrived at after considering a number of factors, such as stability of the product, storage temperature, type of container, and, in some cases for which the dating period is long, the type of closure used because it too is subject to deterioration and must be taken into account. In general the safety of the product is not involved, and the main property implicated in dating consideration is, of course, potency which gradually deteriorates during storage.

The potency stability varies quite considerably from that of the antitoxins which are extremely stable to that of some of the antigens which are much more labile and to that of live vaccines, such as smallpox and yellow fever vaccines, which require special precautions to maintain stability. Clearly this loss of potency is a gradual process and can be expected to be gradual also at the time that the date on the label is reached and exceeded. It would thus seem quite reasonable to ask the question posed. Although no untoward consequences may result from the use of such a product after the period prescribed for its use has expired, and in some instances such use may have value, the simple fact is that there is no way of extending the dating period once the vials in question are on the market or in various storage places, such as dispensaries or doctors' offices, without considerable misunderstanding and difficulty and even legal implications. Once a particular lot of material has moved into distribution channels, it ceases to be a homogeneous group of containers. If the entire consignment were maintained under identical storage conditions by the manufacturer, it would be possible to reassay its potency and, if this were satisfactory, to assign a new expiration date according to existing regulations and requirements. If a physician uses material which has exceeded its expiration date, he does so on his own responsibility.

2. May a biologic product be used after it has been out of cold storage for a period of time?

Except in the case of biologics, such as smallpox or yellow fever vaccines, for which continuous maintenance at low temperatures is imperative even during transport, the determination of the dating period of most biologic products takes into account periods of time up to seven days at ambient temperatures to permit distribution through normal channels. Thus, material should be satisfactory if the total time of cold storage does not exceed seven days and the temperature to which it is exposed does not exceed those normally encountered.

These considerations apply only to unopened containers. Once a container has been opened, that is, the seal removed and a needle inserted, it should be kept under refrigeration from that time onward until fully used or discarded. This should be done despite the fact that almost all biologic products contain bacteriostatic agents or preservatives of one sort or another designed to minimize or eliminate the danger of contamination due to growth of adventitious organisms which may gain entry into the container, as by needle puncture of the closure. Many complaints of contamination have proved on investigation to be associated with multiple entries of the container coupled with improper storage. In the rare instances in which no preservative is present the material should be used promptly after opening the vial. In such circumstances the instructions or circular will give a statement to this effect, and this should be carefully followed, since many of the products are particularly excellent substrates for bacterial growth.

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Reserve the Dates . . .

153rd Annual Convention

Medical Society of the State of New York

May 9 to 15, 1959

Hotel Statler Hilton **Buffalo**

Venomotor Responses to Mechanical Occlusion and Their Modifications after Ganglionic Blockade

ANTONIO BOBA, M.D., ALBANY, NEW YORK

(From the Departments of Anesthesiology, Albany Medical College of Union University and Albany Hospital)

IT HAS been reported that ganglionic blockade is a valid adjunct in the treatment of conspicuous hemorrhage.[1,2] There are two general concepts which lend support to this therapeutic approach. The first states that the autonomic responses to hemorrhage if continued over a prolonged period of time become a noxious stimulus which should be avoided. Ganglionic blockade has been proved a satisfactory and effective protection against these responses.[3]

The second is related to the more general assertion that the rate of leak of a fluid from a closed container is directly related to the size of the opening and the intraluminal pressure, or, in other words, a decrease in the values for pressure will bring about a reduction in the rate of leak.[4] As applied to frank arterial bleeding, this implies that the administration of a ganglionic blocking agent, by decreasing peripheral vascular resistance downstream at the level of the metarterioles and arterioles, should be expected to reduce the lateral pressure upstream, thus reducing the rate of bleeding for any given defect. This concept applies poorly to venous bleeding in general because of the absence of an anatomic and functional counterpart to the metarterioles and arterioles.

We have been particularly concerned with venous bleeding because of the problems created by patients with ruptured esophageal varices. In these cases the nature of the downstream resistance, that is, the modified intrahepatic circulation, is such that one should not expect any changes in its value after ganglionic blockade. However, if it were possible to show that the venous pressure proximal to the obstruction is the resultant of not only a mechanical but also a vasomotor component, it would be obvious that suppression of the vasomotor component will result in decreased venous pressure, which in turn will reduce the rate of hemorrhage.

Therefore, the validity of the second concept as applied to venous bleeding is conditioned by two requirements. First, that the muscles in the walls of the vein are endowed with some sort of reflex activity; and second, that these reflexes may be influenced by interfering with autonomic regulatory mechanisms.

We believe that at the present time there is proof of an independent venomotor tone[5,6] which satisfies the first requirement. On these bases we have limited our task to the study of the influence of ganglionic blockade on venomotor responses to mechanical obstruction.

Method

Splenectomized, adult, mongrel dogs weighing 8 to 17 Kg. were anesthetized by the intravenous administration of Nembutal. Immediately thereafter endotracheal intubation was performed and the animals allowed to breathe room air spontaneously. The inferior vena cava was approached retroperitoneally through a flank incision and a loop of number 3 braided silk was placed around it immediately below the renal veins and just above the right ovarian vein. The right femoral artery and vein were exposed.

Presented at the 152nd Annual Meeting of the Medical Society of the State of New York, Section on Anesthesiology, May 16, 1958.

This study was supported in part by a grant from Hoffmann-La Roche Inc., Nutley, New Jersey.

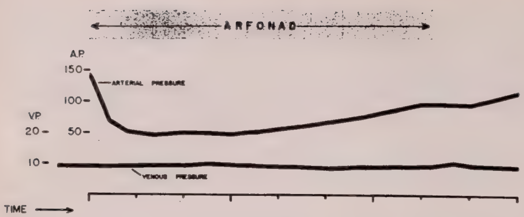

FIG. 1. Arfonad administration results over a three-hour period showing failure of ganglionic blockade to produce any noticeable change in venous pressure. (Arterial pressure in mm. Hg, venous pressure in cm. saline, and time units each twenty minutes.)

The artery was cannulated, and continuous arterial pressure recorded through a Statham strain gauge connected to a preamplifier and recorder. A polyethylene tubing which admitted a number 15 gauge needle for an adaptor was inserted into the right femoral vein, and venous pressures were measured intermittently with a conventional spinal manometer.

After completion of the surgical preparation a period of ten minutes was allowed for stabilization to occur. Then, three venous pressure readings were taken at approximately three-minute intervals. These readings were always close, with no more than 0.4 cm. of saline pressure separating the highest from the lowest value. The average of these three readings was considered to be the base line for venous pressure, and the experiment was begun.

Occlusion of the inferior vena cava was achieved by pulling the free ends of the silk loop surrounding it through a piece of rubber tubing in tourniquet fashion and by securing the tightened loop in position with the aid of a hemostat applied to the strands of silk. To release occlusion the hemostat, rubber tubing, and silk loop were removed.

Trimethaphan camphorsulfonate (Arfonad) was the drug used to produce ganglionic blockade. It was given by drip in a 0.01 per cent concentration through the venous pressure catheter. The rate of administration was adjusted to establish and maintain a mean arterial pressure equal to approximately 40 per cent of the control level.

The following experiments were carried out:

1. Ganglionic blockade was induced in a prepared dog, but no caval occlusion was performed. Arterial and venous pressure recordings were continued for three hours, the arterial pressure being maintained at 40 per cent of the control value.
2. Inferior vena cava occlusion was maintained for one and one-half hours. Arterial and venous pressure recordings were continued throughout the period of occlusion and protracted for one hour following the release of the occlusion.
3. The same experiment as the previous one was repeated after the arterial pressure had been reduced to 40 per cent of control values by the intravenous administration of Arfonad.
4. Arterial and venous pressures were recorded during one and one-half hours of inferior vena cava occlusion.
5. The same experiment as the previous one was repeated with the exception that ganglionic blockade was induced at the end of the first hour of caval occlusion.

A total of 15 dogs was used in the course of the experiments.

Results

1. The induction of a ganglionic blockade alone, although producing a marked fall in systemic arterial pressure, failed to alter the pressure in the inferior vena cava (Fig. 1).

2. Occlusion of the inferior vena cava in control animals resulted in an immediate rise in venous pressure, which exceeded 60 cm. of saline at the end of five minutes. This procedure resulted in minimal fall in arterial pressure which, however, returned to control levels within thirty to forty-five seconds. During the ensuing ninety minutes the arterial pressure remained essentially unchanged while the venous pressure stabilized itself at a fairly high level. On release of the venous occlusion a fall in venous pressure was observed. This fall, although sharp, failed to return the venous pressure

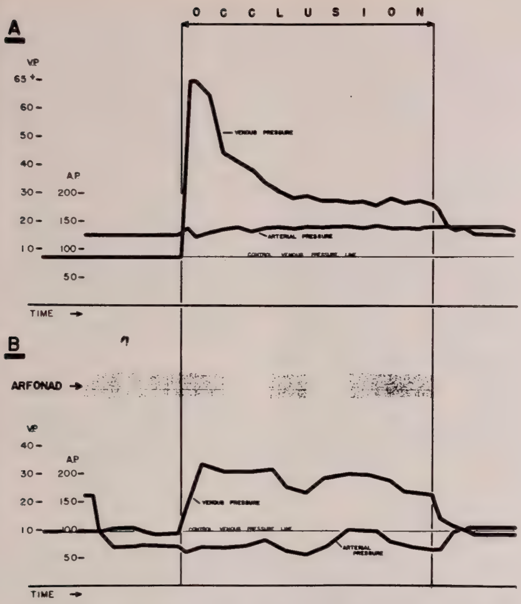

Fig. 2. (*A*) Results of inferior vena cava occlusion lasting ninety minutes showing sudden change in venous pressure after occlusion, leveling off which follows very shortly, and failure of venous pressure to return to the control level on release of the occlusion. (*B*) Results of ganglionic blockade showing the absence of the initial spike in venous pressure and the return to normal of the venous pressure on release of the occlusion. (Arterial pressure in mm. Hg and venous pressure in cm. saline.)

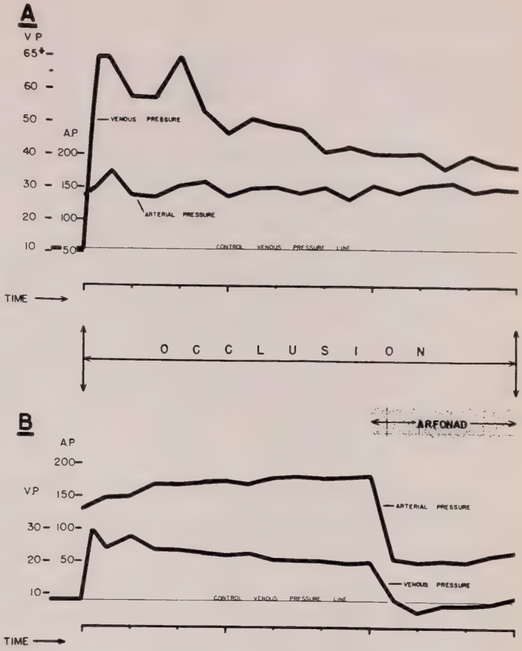

Fig. 3. (*A*) Results of one and one-half hours of inferior vena cava occlusion showing that venous pressure does not have a tendency toward further fall after it levels off. (*B*) Results of ganglionic blockade after one hour of occlusion showing the drop of venous pressure from its stable plateau to the control level. (Arterial pressure in mm. Hg, venous pressure in cm. saline, and time units each ten minutes.)

to the preocclusion baseline level. The release of the venous occlusion did not affect the arterial blood pressure. During the following hour the venous pressure stabilized itself at a level slightly above the control base line and the systemic arterial pressure remained unchanged. The results of a typical experiment are shown in Figure 2A.

3. In this group of animals after the administration of the drug a stable blood pressure floor was established at 40 per cent of the control value. At this time occlusion of the inferior vena cava was performed. The venous pressure rose slowly and in no instance did it exceed 25 cm. of saline above control levels. The systemic arterial pressure showed no appreciable change. During the ensuing sixty minutes the venous pressure did not show a tendency to form a plateau at a lower level; rather, it remained close to the immediate postocclusion readings. On release of the occlusion the venous pressure returned promptly to the preocclusion base line. The arterial pressure was essentially unaffected by release of the occlusion. The results of a typical experiment are shown in Figure 2B.

4. This group of control animals subjected to one and one-half hours of inferior vena cava occlusion gave results similar to those of the second group (Figure 3A).

5. In this group occlusion of the inferior vena cava produced immediate results similar to those observed in the previous one. However, at the end of one hour of occlusion ganglionic blockade was induced. This resulted in a drop in systemic arterial pressure. The venous pressure fell abruptly toward the base line, actually reaching it in one instance in spite of the continued caval occlusion (Fig. 3B).

Comment

These results indicate that in the inferior vena cava sudden mechanical obstruction will result in increased venous pressure. The pressure modifications induced by ganglionic blockade suggest that both mechanical and neurogenic factors concur in its determinism. These conclusions substantiate previous reports about the existence of an independent venomotor tone, although they do not contribute conclusively toward the solution of the controversy whether such venomotor tone is a local phenomenon or reflex in nature.[7]

It should be observed that results similar to ours were obtained by others who investigated the portal venomotor responses.[8] Admittedly we are not interested in the therapeutic applications of ganglionic blockade to all hypertensive venomotor states, such as those concomitant to myocardial insufficiency.[9] Rather, we wish to discuss the possibility of extending the use of ganglionic blockers as an adjunct to the management of conspicuous hemorrhage from ruptured esophageal varices.

A liberal translation of the available laboratory evidence into clinical terms would mean that the high portal pressure which is seen in this disease is due, at least in part, to an increased venomotor tone. Pressure changes observed after ganglionic blockade at the time of splenoportography validate this assumption.[10]

We feel that hemorrhage from ruptured esophageal varices may benefit from the administration of ganglionic blockade, for the same reasons and with the same limitations that apply to other types of hemorrhage. The reasons are: (1) it reduces or prevents such compensatory autonomic body responses which may become harmful if prolonged over a period of time, (2) it reduces the rate of bleeding, thus facilitating replacement, and (3) it must be considered an adjunct in the general management of the problem.[2–4] The relative rarity of this ailment in our institution is illustrated by the fact that our clinical experience has been limited to 2 cases. The results, however, have been encouraging, and we feel justified in further clinical trials.

Summary

The administration of a ganglionic blocking drug was found to inhibit the venopressor responses to total occlusion of the inferior vena cava. Possible clinical applications are discussed.

The author wishes to acknowledge the valuable technical assistance of Miss Margaret M. Riedy, Head Technician, Anesthesiology Research Laboratory.

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Discussion

Paul N. Yu, M.D., *Rochester, New York.*—I was pleased to hear Dr. Boba's report on the continuing exploration in the realm of protection from hemorrhage and concomittant physiologic alteration. There is no doubt that many questions regarding hemorrhagic shock are still unanswered, but progress is being made in the explanation of capillary circulation and nervous regulation of the vascular tone. Dr. Boba's paper deals with another facet of the problem—the presence of specific nervous control over the venous system and its modification by the ganglionic blocking agent.

Anatomic evidence of constrictor fibers throughout the arterial tree definitely exists, but for some time it has been difficult to demonstrate the venomotor fibers. Dr. Boba now gives us some experimental data showing specific venous relaxation under the ganglionic blockade of Arfonad by intravenous infusion. However, since the experiments dealt with occlusion of acute character, the possibility of reflex increase in venomotor tone secondary to occlusion cannot be eliminated. In patients with portal hypertension the changes develop over a long period of time and the venomotor tone, reflex or local, may well be altered. Hence, the administration of the ganglionic blocking agent may not be so effective. The encouraging results in the 2 cases observed by Dr. Boba certainly deserve further study so that the ganglionic blocking agent may be used beneficially in patients with bleeding esophageal varices secondary to portal hypertension.

In our hands ganglionic blocking agents have been extremely helpful on several occasions when posthemorrhagic vasoconstriction and peripheral cyanosis were alarming and failed to respond to the usual therapeutic measures.

Furthermore, these agents have been very usefu in treating pulmonary edema secondary to mitral stenosis, left ventricular failure, and rapid transfusion.

Hormone Injections Solving Obstetrical Problem

A common obstetric problem is being solved by the use of a new combination of hormones, two groups of New York researchers have reported.

Breast enlargement and milk flow in women who do not wish to nurse their babies can be inhibited by the injection of the hormone combination during or immediately after delivery. The preparation is composed of a male hormone and a female hormone.

Drs. Benjamin Lo Presto and Erol Y. Caypinar, Brooklyn, said in the January 17 *Journal of the American Medical Association* that classic methods (fluid limitation, breast binders, ice packs, or sedation) have rarely been successful in eliminating the discomfort in non-nursing mothers. The individual use of the two hormones also has not been too successful.

Dr. Lo Presto and Dr. Caypinar treated 197 women with the preparation. They found it to be most effective when given as a single injection immediately after the first stage of labor. It was "notably free" of unwanted effects, they said.

Three Binghamton physicians gave single injections to 132 women. They found it to be most successful when given within one hour after delivery. The only undesirable effect that occurred, the doctors said, was a slight to moderate reddening and swelling at the site of injection.

The Binghamton physicians are Drs. Joseph B. Watrous, Jr.; Robert E. Ahearn, and Milton A. Carvalho.

Panel Discussion

INFLUENCE OF ULTRAVIOLET LIGHT ON HUMAN SKIN

Moderator

MEYER H. SLATKIN, M.D., BROOKLYN, *Attending Dermatologist,*
Beth-El Hospital; Associate Attending Dermatologist,
Vanderbilt Clinic, Columbia–Presbyterian Medical Center

Panelists

JOHN H. LAMB, M.D., OKLAHOMA CITY (By invitation), *Professor of Dermatology and*
Syphilology, University of Oklahoma School of Medicine

JOSEPH J. HALLETT, M.D., ROCHESTER, *Attending Dermatologist, St. Mary's*
Hospital; Assistant Attending Dermatologist, Strong Memorial Hospital

BERTRAM SHAFFER, M.D., PHILADELPHIA (By invitation),
Assistant Professor of Dermatology and Syphilology,
University of Pennsylvania School of Medicine

FRANCES PASCHER, M.D., BROOKLYN, *Attending Physician, Department of Derma-*
tology and Syphilology, University Hospital; Professor of Clinical Dermatology,
New York University Post-Graduate Medical School

DR. MEYER H. SLATKIN: We are to hear a panel discussion on "The Influence of Ultraviolet Light on the Human Skin." In order to cover this rather wide field, it was thought best to divide our discussion. The first half will be a discussion by each member of the panel.

Dr. Joseph Hallett will introduce the subject to us and will speak particularly on solar urticaria, photodynamic dermatoses, and chronic polymorphic light dermatitis.

Dr. John Lamb has kindly consented to speak on the group of diseases occurring in skin that is presumably abnormal; porphyria and porphyrinuria, hydroa vacciniforme, epidermolysis bullosa, xeroderma pigmentosum, light sensitivity associated with infection and endocrine disturbances, and diseases occurring in skin after prolonged exposure to sunlight such as keratoses and epitheliomas.

Dr. Frances Pascher will talk on the effect of ultraviolet light on the following important diseases which may react to light as a Koebner's phenomenon: pellagra and pellagroid eruptions, lupus erythematosus, keratosis follicularis, pityriasus rubra pilaris, urticaria papulosa, and others.

It is in recent years that real steps forward have been made in the treatment of light dermatoses. Dr. Bertram Shaffer will outline the management and treatment of light dermatoses.

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The second half of the discussion will be devoted to answers by the panel to questions which the members of the audience may wish to ask.

Dr. Hallett will you kindly begin?

Dr. Joseph J. Hallett: Although this symposium is primarily concerned with the effect of the ultraviolet spectrum of the sun's rays on the skin, it is impossible to discuss the various cutaneous reactions to light without including some other action spectrums outside the ultraviolet wave band. In all cutaneous manifestations due to light there is an alteration of a host reaction, but our main problem is to discover whether or not this altered host reaction is a true allergic phenomena or is a photodynamic or phototoxic reaction.

In many light syndromes the exact causative mechanism is still in doubt, and I am sure that there would not be a unanimity of opinion among the speakers here today. However, it is the purpose of this symposium to help clarify for you the existing knowledge as precisely as we can.

It has been stated that no appreciable radiation of the sun's rays less than 2,900 angstroms penetrates the earth's atmosphere and that the biologic effects or action of the wave lengths in the sun's spectrum longer than 4,000 angstroms have not been sufficiently explored.

The continuous solar spectrum of electromagnetic waves with which we are most concerned in cutaneous light eruptions are the ultraviolet rays which fall between 2,900 Å and 3,900 Å; visible light which falls between 3,900 Å and 7,700 Å; and the near infrared rays which fall between 7,700 Å and 14,000 Å. The action spectrum of sunburn is between 2,900 Å and 3,200 Å with a peak at 2,967 Å. Exposure of the human skin to this action spectrum will cause an erythema in two to six hours which usually reaches its maximum within twenty-four hours in the normal untanned white skin. Depending on the exposure and the tolerance of the skin to sunlight, the response varies from a mild erythema to an intense sunburn with edema and blistering and systemic symptoms in severe cases of sunburn. Following the sunburn a pigmentation of the skin usually develops.

Transient erythematous eruptions of the face and neck may occur within a few minutes after exposure to sunlight and consist of simple erythema or erythema and edema which disappears without a trace after an interval of a few minutes or several hours. This type of transient erythema and sunburn is a phototoxic reaction of the skin.

Photodynamic cutaneous reactions are those eruptions in which a person is sensitized to light by a substance serving as a light absorber with photochemical reactions in which oxygen takes part. The substances may be dyes, drugs, or plants and may be injected or ingested or may contact the skin directly. These photodynamic substances may be either phototoxic or photoallergic.

Solar urticaria consists of urticarial lesions occurring at the site of exposure to the sun or other light sources. The degree of urticarial response varies with the patient's sensitivity and the intensity of the radiation. Usually within half an hour one notices erythema, itching, and wheal formation, but occasionally there is a delayed reaction of two to six hours. The wheal reaction may last from several hours to two days. Occasionally in severe cases there may be systemic reactions with generalized urticaria, edema, and syncope, and the urticarial response may occur on other areas of the skin than those exposed to the light source. The action spectrum varies, but usually it is less than 3,700 Å except for those unusual cases of urticaria solaris due to blue and violet light with an action spectrum between 4,000 Å and 5,000 Å and those due to infrared rays.

Solar urticaria may begin suddenly at any time in life and is seen predominantly in females, the ratio of females to males being three to one. It is not as uncommon as the literature would lead one to believe. The allergic response may last for years; however, in some cases there may be a spontaneous improvement. In one case of urticaria solaris which I have followed for twelve years, the patient now states that she no longer is bothered with her sun allergy and that she has lost her sensitivity to the sun after having had the disease for eighteen years. Since I have not tested her reaction to ultraviolet rays, I cannot say definitely that this patient has lost her sensitivity and it may be there is only spontaneous improvement so that she no longer has clinical symptoms. This type of reaction is a truly allergic reaction of the skin as passive transfer tests have proved positively. The exact nature of the allergen still is in doubt though some have postulated that the metabolite or allergen is a substance that occurs normally in the skin whenever it is exposed to light and that only in certain susceptible individuals does this metabolite act as an allergen. The metabolite exists preformed in the skin and simply is released on exposure to the stimulus of light in susceptible individuals. A second possibility is that the allergen is formed from a pre-existing normal metabolite after exposure to light, therefore converting a proantigen into an antigen.

I wish to speak briefly about a type of polymorphic light eruption which I have seen in children from four to six years of age. This eruption is usually an erythematous papular wheal eruption of the malar areas of the face and tips of the ears. Quite often there is a definite vesiculation on the tops of the ears. It has been my experience that after a period of two or three summers this sensitivity disappears.

Dr. Slatkin: Thank you Dr. Hallett. Dr. Lamb, will you please continue.

Dr. John H. Lamb: The group of subjects given me—hydroaestivale, hydroa vacciniforme, and porphyrinuria—are really too many to discuss in full at this time, but I can say that in order to clear up the difference between hydroaestivale and hydroa vacciniforme it was agreed at a panel on this subject with Dr. H. E. Michelson at the American Academy of Dermatology several years ago that none of us could make a differentiation between these two diseases even though it has been attempted many times in the literature. We all came to the final agreement that it was nothing but solar dermatitis starting in childhood and that the condition cleared up in some patients at puberty because of the higher hormone levels at this time. In those who go on into adult life the condition is called prurigo aestivalis or is better known as prurigo-like solar dermatitis.

As far as the porphyrins are concerned, in all of our 18 cases of light eruption, we found none with abnormal porphyrins. Dr. Louis A. Brunsting of the Mayo Clinic ran these porphyrins for us. He and all of us, I think, agree that porphyrinuria has very little to do with light sensitivity in the human being. However, it may have a photosensitizing effect in patients who are alcoholic and who are, consequently, avitaminotic.

The next subject is epidermolysis bullosa with porphyrinuria. I believe that these cases are very rare. Although most of our cases of epidermolysis bullosa even without porphyrinuria were worse in the summer, I think that this resulted from heat and infection rather than sunlight.

What is the treatment in the former group? We have reported previously[1] on 2 little girls with mild hydroaestivale whom we treated intramuscularly with 200 units of aqueous theelin once a week for five weeks. The lesions of all were well controlled. Finally all lesions cleared up when the girls reached puberty and the menstrual cycles were established.

I think that boys are more difficult to treat. Chloroquine 250 mg. once or twice a day along with 400 international units of gonadogen once or twice weekly are worth a trial. However, the gonadogen therapy may cause a marked increase in the size of the genitals. If this happens the parents may ask that the drug be discontinued even though the skins of the boys are clearing.

For the past forty years in Oklahoma we have seen solar dermatitis in American Indians. Most of the cases were considered by Dr. E. S. Lain and others to have a prurigo type of lesion; some seemed to be prurigo aestivalis, others prurigo simplex. Usually these eruptions are located across the face in childhood and continue into adult life. Many factors have been suggested as the causative agent, for example, allergy, weeds, phytophotodermatitis, tuberculin sensitivity, avitaminosis, and pellagra.

DR. SLATKIN: Thank you, Dr. Lamb. Now, Dr. Pascher, would you begin?

DR. FRANCES PASCHER: The previous speakers have established the fact that light can elicit a wide variety of dermatologic manifestations. May this physical agent also provoke cutaneous lesions in dermatoses not due primarily to light hypersensitivity? Whether or not light can be an adequate stimulus to produce the Koebner phenomenon is controversial. It is perhaps more important to examine this question in relation to lupus erythematosus than to any of the other diseases in which this problem has been debated and to which I shall refer in passing.

There are two schools of thought on the role of light in lupus erythematosus. In support of those who contend that exposure to sunlight may initiate either the systemic or the discoid form or that a severe sunburn can convert discoid to systemic lupus erythematosus there are the following facts: (1) There is a high seasonal incidence of the condition in spring and early summer. (2) A larger incidence of the discoid form is found in white people than in colored and the systemic form is relatively rare in the Negro. This last point may be disputed, however, for in at least one statistical survey[2] the incidence in Negroes has been found to be in the same ratio to the population as it is in whites. (3) The areas exposed to sunlight—the face, "V" of the chest, hands, and forearms—are the areas of predilection in this disease. In addition, one may cite the shortening of the exposure time required to produce an erythema in lupus erythematosus subjects observed by Zarafonetis[3] and Sapuppo[4] and the study by Garzon[5] in which cutaneous lesions were elicited by exposing a patient with subacute lupus erythematosus to ultraviolet light. Finally, there are Rothman's[6] findings, namely, that the provocative effect of sunshine in lupus erythematosus is a function of the sunburn range in the region of 3,000 angstroms and that para-aminobenzoic acid which filters out this range gives protection.

Now for the other side of the coin. First, statistics indicate that the incidence of this disease is higher in temperate than in tropical climates although Fergusson,[7] I must hasten to add, regards the conversion from the chronic discoid to the acute disseminate state as a major dermatologic problem in the tropics. Second, the eruption in lupus erythematosus may appear in the oral cavity and on the covered parts of the body as well as on the uncovered areas. Third, the disseminated form does not necessarily follow prolonged or unaccustomed exposures to ultraviolet light. This point has been emphasized by Michaelson.[8] Patients with chronic discoid lupus erythematosus of long standing may engage in outdoor activities without apparent harm. Hollander[9] among others supports this view. One of the principle arguments, furthermore, of the proponents of light hyperreactivity is now challenged, namely, that quinacrine hydrochloride, and chloroquine are effective in lupus erythrmatosus because they act as sunscreening agents. Recent clinical and experimental observations[10,11] indicate that these drugs may have a nonspecific antiphlogistic or suppressive effect in dermatoses unrelated to light and on artificially produced cutaneous inflammation. It is curious that chloroquine phosphate, (Aralen phosphate), the most widely used of the antimalarial drugs, should be of some benefit in the very same conditions for which bismuth and gold were used less than a decade ago:[11,12] rheumatoid arthritis, lichen planus, scleroderma, as well as lupus erythematosus. So much for this disease.

I think you will agree that sunlight on the whole has a beneficial effect in psoriasis and in seborrheic dermatitis. The Goeckerman treatment which was introduced in 1933 and the Loveman modification of the Goeckerman technic for psoriasis are recognized procedures. There are instances of course where exposure to light is harmful. Some of these at least are attributable to an overdose or a miliaria-like effect rather than to true photosensitivity.

Lichen planus does not appear to be readily influenced by light. An interesting exception to the rule, however, was described in 1949 by Dostrovsky and Sagher.[13] They observed 51 cases of so-called subtropical lichen planus in which the lesions were almost all of the annular type distributed over the face, neck, "V" of the chest, and upper extremities. Recurrences were noted in spring and summer and the lesions were intensified by exposure to light. I can recall having seen such a case at the New York Skin and Cancer Hospital in a boy of fifteen years who developed lichen planus with this inverse localization while in Florida.

Lichen urticatus (papular urticaria) in children recurs seasonally; while some cases can be traced to insect bites, others do appear to be a response to light or light and heat. Exacerbations in keratosis follicularis, Darier's disease, and pityriasis rubra pilaris have also been linked with light. While I'm ready to agree that patients with Darier's disease fare better in cool than in hot weather, I am more inclined to attribute the flare in signs and symptoms to sweat retention than to the Koebner phenomenon. Functional sweat studies and serial sections of biopsy specimens carried out in a few cases by Dr. Franz Herrmann and Dr. Sonia D.-Morrill at the New York Skin and Cancer Hospital disclosed varying degrees of reduced or absent thermal seating depending on the severity of the disease not only in the affected areas but also in the apparently normal skin adjacent to and beyond the involved portions.

I should like to point out in closing that tomes have been written about the role of sunlight in pellagra, now an almost forgotten disease. Today it matters little whether or not the incidence of pellagra was higher in the summer or in the winter, whether more prevalent in rural areas than in the cities, or more conspicuous on the uncovered than the covered areas of the body. So it may be when the cause of lupus erythematosus or the causes of some of the other diseases considered have been found. Until such time, however, it would seem wise to insulate patients with lupus erythematosus particularly from the sun and, incidentally, from cold and wind just as they should be warned against elective surgical procedures and certain drugs. In the management of chronic discoid lupus erythematosus it might be better also not to throw all caution to the winds until all the facts are in.

DR. SLATKIN: Thank you, Dr. Pascher. Dr. Shaffer, will you take the floor?

DR. BERTRAM SHAFFER: I am going to confine my discussion to the treatment of polymorphous light eruption because this is the disease in which a group of us at the University of Pennsylvania—namely Dr. Milton M. Cohn, Dr. Edward J. Levy, and I—have had most experience.

For about five years we have been following a group of approximately 45 cases with this disease using various antimalarial drugs. We have not used hormones in this condition because it seemed to us that the eruptions we saw in Philadelphia were mild and could be controlled by simpler measures. The obvious procedures were done in many of these patients. They included the avoidance of sunlight, having the patients walk on the shady side of the street, the wearing of a broad-brimmed hat, the wearing of high-necked and long-sleeved garments, and the wearing of stockings by the women. We have also resorted to the use of cosmetic protective creams which in the majority of our cases seem to work very well. And finally, we have investigated the use of the antimalarial drugs and have found them quite successful in the vast majority of cases.

These are the antimalarial drugs that we have used on our patients. Atabrine comes in a dosage of 100 mg. Chloroquine comes in a dosage form of 250 mg. Hydroxychloroquinine sulfate or Plaquenil has a dosage form of 200 mg., and amodiaquin hydrochloride or camoquin comes in tablets of 200 mg. each.

We have found that each one of these drugs seems to be effective in about 75 per cent of cases. We have also found that if one drug fails, another of this series will very often be effective. We have not used a combination of drugs. We feel that Plaquenil sulfate and camoquin hydrochloride are the most effective, and we think that atabrine is the least effective.

Every one of these drugs has a certain range of toxicity, and it has been our feeling that these drugs are largely toxic rather than allergic in their untoward reactions. In other words, the number of untoward reactions and their intensity seems to be dependent on the dosage of the drug and the prolongation of the therapy. The longer the drug is used, the more unfavorable are the reactions one is apt to have. These drugs cause a certain group of reactions in common. They will cause, for instance, gastrointestinal symptoms, nausea, vomiting, diarrhea, and abdominal pain. They may also result in a feeling of nervousness or irritability. Finally, these drugs may give rise to toxic eruptions usually of the macular variety. The most toxic of these preparations happens to be atabrine. You're all familiar with many of the atabrine reactions. You know that it causes a yellowish discoloration of the skin and fluorescence of the fingernails. You know that it's likely to cause a lichen planus or chronic eczematous type of eruption which is chronic, very intractable, and highly pruritic. You're also familiar with the fact that an occasional case of exfoliative dermatitis occurs, and there have been cases of hepatitis and aplastic anemia which have been fatal. Atabrine we feel is not the drug of first choice. Perhaps the most common drug used in this condition is chloroquine, and chloroquine does produce those unfavorable reactions that I described previously in connection with this group: gastrointestinal symptoms, vertigo, nervousness, nightmares, and so forth. It has, however, a unique reaction that none of the other drugs have. Many of these patients complain of loss of accommodation and it's been found that this loss of accommodation is presumably a subjective manifestation because when the ophthalmologist examines these patients he cannot demonstrate objectively a loss of accommodation. Another rather rare reaction that occurs in some patients is whitening of the hair. We have not seen any of these cases ourselves. And finally, there's been one case each of fatal agranulocytosis, of methemoglobinemia, and of porphyria reported in connection with the use of this drug.

Hydroxychloroquine sulfate produces very few reactions. It produces unusual gastrointestinal manifestations, nervousness, and occasional toxic eruptions. It does produce occasional whitening of the hair. Camoquin hydrochloride will also produce the same symptoms with the exception of whitening of the hair. There has been one case of fatal agranulocytosis reported in connection with the administration of this particular preparation.

We have been able to produce the polymorphous light eruption artificially by the administration of hot quartz ultraviolet light in patients with this disease and we have been able to demonstrate that in our patients the ultraviolet range responsible for this entity lies between 2,900 and 3,100 angstrom units. It was originally felt that the action of the antimalarial drugs in this condition was due to their light-screening effect. However, the absorption spectrum of these drugs indicates that their absorption maxima are not all the same. It can also be demonstrated that in the range between

2,900 and 3,100 angstrom units there is the least amount of absorption on the part of these preparations. So, we believe that these drugs work not by absorbing ultraviolet light but by somehow or other changing the specific reaction that we call polymorphous light eruption.

Questions and Answers

Dr. Slatkin: Thank you, Dr. Shaffer. We shall now attempt to answer questions from the audience. We have a question for Dr. Hallett. What work-up does one do in the office when confronted with a patient suspected of having a light-sensitive eruption?

Dr. Hallett: In the first place one takes an adequate history. One obtains a history of a rash occurring seasonally, mostly in the summer and early spring, which involutes in the late fall and winter. Then, I think the next most important part in your history is to find out what drugs are being taken because these polymorphic light eruptions and other light eruptions can be simulated by a drug reaction. Just lately I had such a case in the office, in which aspirin simulated a polymorphic light eruption. I really thought this case was a polymorphic light eruption until I went into the history just a little farther and, of course, it was aspirin that the patient had been taking. So dermatitis medicamentosa is very important to rule out. Of course, the next thing is that you have to be sure the patient is not contacting any plants which might give a phototoxic or photoallergic reaction.

As far as the work-up in the office is concerned, the next procedure is a white blood count to see that there is no leukopenia present because our greatest fear, it seems to me, is that we might possibly miss an incipient or beginning acute lupus erythematosus and call it a polymorphic light eruption. We are now more cognizant of the polymorphic light eruptions, and we might lose sight of the fact that we should always be thinking of this phenomenon, acute lupus erythematosis, which in its incipient form may not give you all the characteristic cutaneous pictures of acute lupus erythematosus. A hematocrit is valuable if there is a need to know whether or not there is a decrease in the red count and cell volume. All cases of light eruption should have a peripheral blood smear for lupus erythematosus phenomena. This is for our own benefit, I feel, as we usually only run one peripheral lupus erythematosus preparation unless there is something else that makes one feel he should run a series of three such peripheral preparations.

Urinalysis is also valuable because if there are some red cells in the urine or if there is an albuminuria one is more suspicious that he may not be dealing with a polymorphic light eruption. We rarely take a biopsy of the lesion. Occasionally we do because you have to rule out lymphocytic infiltration and chronic discoid lupus erythematosus.

These are the usual things that we do. If you then feel that you have to work up the case more extensively, chemical analysis of the ketosteroids and porphyrins in the urine could be done. You can have the battery of liver function tests done, but these latter tests are only performed in those cases in which we are not too confident that we're dealing with a polymorphic light eruption.

Dr. Slatkin: A question for Dr. Shaffer. Please discuss the more frequent laboratory abnormalities found in patients who are sensitive to sunlight or ultraviolet rays.

Dr. Shaffer: I'm afraid that's a rather broad area to cover. In polymorphous light eruption, of course, the disease with which I am most familiar, the general laboratory examination findings are always negative. I should like to add that in differentiating polymorphic light eruption from lupus erythematosus, I think the single most important test and most reliable test is the sedimentation rate. The second most important thing, perhaps the easiest thing that you can do, is to have the patient take her temperature daily in the afternoon and keep a record of this over a period of several weeks to several months. In most cases of lupus erythematosus there will be a slight rise in the temperature from time to time, usually correlated with an increased sedimentation rate. Of course in the other types of light sensitivity, for instance in the porphyrias, the obvious thing is to examine the urine and feces for abnormal and increased amounts of porphyrins. I don't believe that there are any general laboratory tests in cases of photosensitivity of an urticarial nature.

Dr. Slatkin: Dr. Lamb, do you recommend the use of testosterone in females with chronic lupus erythematosus who are resistant to Aralen phosphate and chloroquine?

Dr. Lamb: I think this is a very important question on a matter which I would like to emphasize in all cases of women with lupus erythematosus who are not doing well on routine treatment with antimalarial drugs. We have found that 50 mg. of Oreton (testosterone) for both males and females once a week seem to make a remarkable change in the well-being of these patients and improve the lesions. This result could be predicated on changes in the connective tissue and muscle strength of these patients. The lesions seem to heal much more quickly and the patients feel better immediately. I would like to say that there is a known protein-sparing action from the quinine-chloroquine group. This was proved at our Oklahoma Medical Research Foundation by Dr. E. Reifenstein who found that the effectiveness of quinidine, which had been used for many years in heart disease, was based on the protein-sparing action of these quinine derivatives. Of course, the protein-sparing action of testosterone is about three times as strong as that of the antimalarial drugs.

Dr. Slatkin: Dr. Lamb, are the antimalarial drugs of value in treating xeroderma pigmentosum?

Dr. Lamb: I asked that question at a clinic I was attending in Minneapolis several months ago. Although they have reported on several cases they have not had any experience with its use, but I don't see why it wouldn't be good to try.

Dr. Slatkin: Here is a question for the panel. Have you had experience with Triquin? This drug is a combination of atabrine, Aralen phosphate, and Plaquenil sulfate and is undergoing clinical trial.

Dr. Hallett: We had some clinical experience with it. We were supplied with this by Winthrop Laboratories and used it for patients with polymorphic light eruptions or chronic lupus erythematosus. Our feeling is that this is about as good as chloroquine. I can't say it's better. I will say one thing, I don't think we saw as many untoward reactions from the combination as we did from chloroquine or Plaquenil sulfate alone.

Dr. Slatkin: This question is directed to Dr. Pascher on the subject of the antimalarial drugs. Are they safe? Are the drugs really effective? What about the recurrence rate? And what laboratory procedures should be done in following a patient who is taking these drugs?

Dr. Pascher: Dr. Shaffer answered this question before in considerable detail. I don't know that any more can be added except to caution against the use of these drugs in the treatment of psoriasis. We have seen adverse effects with atabrine and also with Aralen phosphate in this disease. That exfoliative dermatitis may be induced by atabrine is generally known. Chloroquine phosphate (Aralen phosphate) may also cause extensive dissemination of this disease.

Dr. Slatkin: Another question directed to you, Dr. Pascher. Do patients suffering from light-sensitive eruptions show false-positive results to serologic tests for syphilis?

Dr. Pascher: In cases we have tested we have not found any false-positive reactions. This may well be an additional laboratory procedure that can be used to differentiate lupus erythematosus-like polymorphous light reactions from lupus erythematosus. We have seen cases of disseminating lupus erythematosus of the skin in which during the first few weeks of their course it was most difficult to know whether the patients had polymorphic light eruptions or an exacerbation or initiation of subacute lupus erythematosus. One should point out that a biopsy may not be helpful at this stage. Montgomery has shown that it may take at least three weeks for characteristic features of lupus erythematosus to develop.

Dr. Slatkin: Dr. Lamb, how many doses of testosterone in a month are safe in the female before masculinization phenomena may occur?

Dr. Lamb: I think that up to 400 mg. a month can be given without masculinization taking place. Particularly in those who are sick and seem to need the drug a higher dosage can probably be used since it seems to be broken down and utilized for metabolic purposes other than growing hair. We have never had any problems with masculinization. Those who have severe dermatomyositis feel so much better on the drug that the growth of hair does not seem important. Some have found that the use of Premarin (estrogen) ointment locally on the face prevents the hairs from growing.

Dr. Slatkin: Another question for Dr. Lamb. Why does pregnancy seem to clear some eruptions due to sunlight?

Dr. Lamb: Well, there are high levels of estrogen and progesterone in the last trimester of pregnancy that gradually go up until the end. I can see how these high levels would tend to clear the light eruptions.

Dr. Slatkin: What effect has cortisone or its derivatives on polymorphous light eruptions? Will you please take this one, Dr. Shaffer?

Dr. Shaffer: We have no experience with cortisone in this disease.

Dr. Slatkin: Dr. Pascher?

Dr. Pascher: I haven't found it necessary to resort to corticosteroids.

Dr. Slatkin: What is the panel's experience regarding the permanence of repigmentation of vitiliginous skin after 8-methoxypsoralen treatment? Would you like to answer that, Dr. Pascher?

Dr. Pascher: On the whole, I have found it disappointing. Repigmentation, when it does occur, may be incomplete or of a bizarre pattern. The end result from the cosmetic viewpoint is sometimes worse than it was to start with.

Dr. Hallett: I second the motion.

Dr. Shaffer: I third the motion.

Dr. Lamb: The treatment seems to be more effective in the younger age group than in the older. We had a couple of children and we thought they pigmented pretty well. Our experience with the adult is about what the panel has expressed and we were enthusiastic about it for two years.

Dr. Slatkin: Does not pigmentation occur after exposure in the range of from 2,900 to 3,200 angstroms as well as in the range of from 3,300 to 4,400 angstroms?

Dr. Shaffer: There is some pigmentation produced between 2,900 and 3,200 angstroms, but the greatest degree of pigmentation occurs from 3,400 to 4,400 angstroms.

Dr. Slatkin: Psoralens taken orally have been reported to increase tolerance of the skin to ultraviolet light. Marked potentiation of melanogenesis has been noted. Might not these drugs be used in combination with the antimalarial drugs?

Dr. Pascher: I have used psoralen in one case of photosensitivity in which there was no benefit from either Aralen phosphate or Plaquenil sulfate. This woman was actually disabled in the sense that she couldn't go outdoors during the day. Her tolerance for sunlight gradually increased with the administration of psoralen. The result was particularly gratifying in this instance. Nevertheless I think a word of caution is in order pertaining to the use of psoralens to promote melanogenesis. I noticed in the brochure of the Society for Investigative Dermatology that one of the papers to be read this June (1958) deals with the carcinogenic effect of this drug in mice.

Dr. Shaffer: May I say just one word? I just recently returned from the Upjohn Symposium on psoralens, and the work that was reported seemed to indicate that psoralens, if they produce any good at all, do so, first, by thickening the stratum corneum, and second, by creating an abnormal sensitivity of the skin to light in the longer ultraviolet ray range with subsequent pigmentation.

Dr. Lamb: I'd like to say that 3 of our patients on chloroquine and with light-sensitive eruptions still became sunburned. That bears out what you said about the likelihood of there being some other effect beside light screening, because patients are protected within that range. Their light eruption is gone but they are still sunburned.

Dr. Slatkin: Well, I am afraid this is all the time we have for answering questions.

Comment

Dr. Slatkin: I am sure you will all agree that it has been a privilege to listen to these excellent presentations and discussions.

It is apparent from these discussions and the literature that there is much interest in the problem of sensitivity to light, and that remarkable progress has been made in this field in the recent years. We realize that photosensitivity is not an uncommon condition.

The effect of light on the skin apparently does not involve simply allergic reactions but, as was pointed out by Dr. Hallett, also involves multiple factors. Light-sensitive dermatoses based on allergy include inflammatory responses and urticaria. There are chemicals such as bergamot oil and psoralen, acting by external application, which produce photodynamic or photosensitizing responses. There are chemicals such as chlorpromazine hydrochloride and sulfanilamide which act as photosensitizers when given parenterally.

The effect of ultraviolet light in lupus erythematosus was described thoroughly by Dr. Pascher. It is one of the most difficult light sensitivity phenomena to understand. Some believe it to be an isomorphic reaction triggered by sunlight. This may also be one of the mechanisms in outbreaks of psoriasis, keratosis follicularis (Darier's disease), and pityriasis rubra pilaris.

Porphyrins may play a role as a Koebner phenomenon. In recent years we have been increasingly aware of the subject of porphyria. Dr. Lamb has pointed out that porphyrinuria has very little to do with light sensitivity in the human. Increased excretion of coproporphyrins may occur in diverse pathologic conditions as well as in dermatoses. More patients with photodermatoses, however, have increased coproporphyrins than have those with other dermatoses, particularly lupus erythematosus and alcoholic pellagrins. Persons with photosensitivity are by no means always subject to disturbance of porphyrin metabolism and, conversely, persons with disturbed porphyrin metabolism may not be photosensitive. Abnormal amounts of uroporphyrin are also found in many patients with hydroa vacciniforme and the epidermolysis bullosa-like eruptions in patients with porphyria.

There are numerous wide gaps in our knowledge of light dermatoses. One is the lack of knowledge regarding causal wave lengths in the nonurticarial eruptions due to sunlight. Another is the sometimes difficult differentiation between polymorphous light eruption and chronic discoid lupus erythematosus. It is difficult to explain why photosensitivity has rarely been proved in porphyria congenita and porphyria cutanea tarda and why photosensitivity should be so rare in acute porphyria. In persons with porphyria cutanea tarda there may be factors other than light which produce the eruption, particularly trauma, heat, and friction. Blisters cannot as a rule be directly reproduced by exposure to sunlight. In some cases they can be produced by mild trauma and in other cases they appear without any apparent provocation only in areas previously exposed to light. It is believed that uroporphyrin produces skin alteration by photodynamic action thus making the skin more sensitive to trauma and blistering. Liver damage and malnutrition due to alcoholism are contributing factors. In their experimental demonstration of photosensitivity in porphyria cutanea tarda, Wells and Rimington[14] produced positive reactions (erythema and ecchymoses) with sunlight, sun through window glass, and carbon arc lamp but not with mercury vapor or Kromayer or heat lamps. Knowledge of absorption bands of various substances is necessary in addition to the type of radiation produced by the various light generators. Exposure to radiation of suitable wave length is necessary to demonstrate photosensitization.

The treatment and management of light-sensitive dermatoses was outlined by Dr. Shaffer. Antimalarial drugs such as chloroquine and related compounds have a definite place in the treatment of chronic discoid lupus erythematosus and polymorphous light dermatoses, although the precise mode of action is unknown. Chloroquine has also been used in combination with the corticosteroids in systemic lupus erythematosus. Dr. Lamb pointed out the value of hormonal therapy in patients with polymorphous light eruptions. Testosterone apparently decreases sensitivity of the skin to light.

We have not had time to discuss the beneficial influences of sunlight and the effects of prolonged exposure to sunlight or sunburn. Excessive exposure to sunlight as an important factor in the causation of skin cancer has been noted by many observers. Continued exposure to solar radiation is associated with basophilic degeneration in the dermis, premature aging, and thickened leathery skin. Recent studies indicate that the vascular effect of moderate to severe erythema produced by a single exposure to ultraviolet light may last for several months.

I want to thank Dr. Hallett, Dr. Lamb, Dr. Pascher, and Dr. Shaffer for their interesting discussions.

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At thirty, man suspects himself a fool;
Knows it at forty, and reforms his plan;
At fifty chides his infamous delay,
Pushes his prudent purpose to resolve;
In all the magnanimity of thought
Resolves, and re-resolves; then dies
the same.

—EDWARD YOUNG

Absorption of Vitamin B_{12} in a Patient with Intestinal Stasis: Improvement By Gentian Violet and Antibiotics

ROBERT L. WOLF, M.D., EUGENE A. BRODY, M.D., AND SOLOMON ESTRIN, M.D., NEW YORK CITY

(*From the Departments of Medicine and Hematology, Mount Sinai Hospital*)

THE relationship of megaloblastic anemia and impaired absorption of vitamin B_{12} in some patients with intestinal stasis associated with intestinal stricture or anastomosis is well known.[1–12] Halsted, Lewis, and Gasster[12] collected 78 cases from the literature and added 3 of their own. Observations have been reported on the occurrence of clinical and hematologic responses as well as of increased absorption of vitamin B_{12} following the oral administration of antibiotics.[6–8,12] The opportunity to study a patient with this syndrome suggested studies on the effect of the administration of antibiotics and of a nonantibiotic antibacterial agent on the intestinal absorption of vitamin B_{12}.

The pathogenesis of megaloblastic anemia and impaired vitamin B_{12} absorption associated with intestinal stricture or anastomosis is still a matter of speculation. Radioactive vitamin B_{12} absorption was decreased in all of the cases in which it was measured, and megaloblastic anemia was present in all of these cases.[7,8,12] Intestinal stasis is the feature common to all of these cases of intestinal stricture or anastomosis. Pathologic observations and animal experiments indicate that there is an abnormal small intestinal bacterial flora in these cases. The duration of the intestinal and bacterial stasis, the type and number of abnormal bacteria, the metabolic needs of the abnormal bacteria for vitamin B_{12}, and the amount of stored vitamin B_{12} in the patient's body are variable. These factors suggest that all degrees of megaloblastic anemia from marked to mild, as well as absence of megaloblastic anemia, might occur with the decreased absorption of vitamin B_{12} in this syndrome. The case presented in this paper illustrates that megaloblastic anemia may be mild or absent despite markedly impaired absorption of vitamin B_{12}. Furthermore, the theory that abnormal bacterial stasis impairs the intestinal absorption of vitamin B_{12}, which is supported by clinical and hematologic responses and increased absorption of vitamin B_{12} after oral antibiotic administration, is enhanced by similar observations which followed the oral administration of gentian violet. If the mode of action of antibiotics either decreases bacterial competition for hematopoietic agents or destroys abnormal bacteria which produce antihematopoietic toxins, a nonantibiotic, antibacterial agent like gentian violet might be expected to produce similar results. If the mode of action of antibiotics is a specific hematopoietic action of the antibiotic, increased absorption of vitamin B_{12} following oral gentian violet administration will not occur. The experimental results of the case presented in this paper support the former explanation.

Case Report

A twenty-three-year-old Puerto Rican female jewelry factory worker was admitted to the Mount Sinai Hospital on August 24, 1956, because of weakness. At the age of twenty an ap-

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This study was aided by grants from Merck & Co., Inc., Rahway, New Jersey; The Squibb Institute for Medical Research, New Brunswick, New Jersey.

pendectomy had been performed at another hospital. The postoperative course was uneventful, and the patient was asymptomatic until January, 1954, when she suddenly developed severe abdominal pain. A laparotomy disclosed six feet of gangrenous ileum distal to an adhesion which had compromised the blood supply. The gangrenous ileum was resected and a side-to-side ileoileal anastomosis was performed. After this surgical procedure the patient developed a watery, nonfoul smelling diarrhea with five to ten bowel movements daily. Two months prior to her admission to this hospital she had noted the onset of weakness, pruritus of the tongue, and exertional dyspnea. On the day of admission she became dizzy and consulted her family physician who found a hemoglobin of 4.5 Gm. per 100 cc. and advised hospitalization.

The patient's past history revealed that her first pregnancy had terminated in a therapeutic abortion with a macerated fetus. The second pregnancy was normal, terminating in the spontaneous delivery of a full-term male infant. After this delivery her menstrual periods were normal and there was no history of blood loss. No blood transfusions were administered during her delivery.

Physical examination at the time of the present admission revealed a small, thin, pale, nonicteric Puerto Rican female with slight atrophy of the papillae of the tongue. There were two well-healed surgical scars in the right lower quadrant. Neurologic examination gave normal findings.

The hemoglobin was 4.5 Gm. per 100 cc., red blood count 2.3 million, hematocrit 17, white blood count 4,200, reticulocyte count 2.6 per cent, and platelet count 208,000. A blood smear revealed moderate poikilocytosis and anisocytosis with many hypochromic microcytes. A rare macrocyte and hypersegmented polymorphonuclear leukocyte were noted. There were no nucleated red blood cells. Examination of a sternal marrow aspiration disclosed slight erythroid hyperplasia and a few macrocytic metamyelocytes. Erythropoiesis was normoblastic. Megaloblasts were not present. The blood urea nitrogen was 11.0 mg. per 100 cc., and the fasting blood sugar was 95 mg. per 100 cc. The serum albumin was 3.2 Gm. per 100 cc., serum globulin 2.5 Gm. per 100 cc., total serum bilirubin 0.39 mg. per 100 cc., direct serum bilirubin 0.16 mg. per 100 cc., total cholesterol 108 mg. per 100 cc., and serum alkaline phosphatase 7.9 King-Armstrong units. Gastric analysis showed free hydrochloric acid. An oral glucose tolerance test showed no abnormalities. Oral iron tolerance and vitamin A tolerance tests both demonstrated low fasting levels with normal absorption. Total serum vitamin B_{12} was 96 micrograms per cc., and free serum vitamin B_{12} was 16 micrograms per cc. Twenty-four hour-urinary vitamin B_{12} excretion was 0.058 micrograms. The direct antiglobulin test result was negative, and there was no sickling of the red blood cells. Radioactive iodine study findings were consistent with euthyroidism. There was no bile in the urine. Multiple stool examination findings were intermittently guaiac positive. They were brown and nonfoul smelling and on repeated microscopic examinations failed to disclose any neutral fat, fatty acid, starch particles, or undigested meat fibers. Quantitative seventy-two-hour fecal urobilinogen was normal. Stool culture revealed Aerobacter aerogenes and Escherichia coli. Repeated stool examination findings for ova and parasites were negative, and rectal biopsy did not disclose any Schistosoma ova.

Barium meal examination of the upper gastrointestinal tract and small bowel revealed the esophagus, stomach, and duodenum to be normal. The small bowel was examined at suitable intervals and showed an essentially normal mucosal pattern and normal transit time. In the right lower quadrant a collection of barium was seen in a diverticulum-like structure about 2 inches in diameter. This corresponded in appearance to a blind loop at the site of the presumed side-to-side anastomosis of the ileum to ileum. At the end of twenty-four hours only a tiny amount of barium was seen in the colon and in this pocket. Barium enema examination yielded similar information.

The patient received 1,000 ml. of whole blood on the second hospital day followed by 3 tablets of oral Mol-Iron four times daily. There was an increase in the reticulocyte count from 3 per cent to 9.8 per cent and a rise in hemoglobin from 7.3 Gm. per 100 cc. to 12.8 Gm. per 100 cc. Concomitant with this therapy the patient became asymptomatic.

Comment

It is of interest that this young woman with a demonstrated blind loop of ileum had a marked anemia which was predominantly due to iron deficiency but which nevertheless had several features of vitamin B_{12} deficiency: low serum vitamin B_{12} level, rare macrocytes and large hypersegmented polymorphonuclear leukocytes in the peripheral blood, and large metamyelocytes in the bone marrow. In addition, there was a markedly decreased absorption of radioactive vitamin B_{12}, as will be described. There was no increase in the reticulocyte count following the parenteral administration of 2,000 micrograms of vitamin B_{12} during the radioactive vitamin B_{12} absorption studies. Subsequently, when iron was administered orally, the reticulocyte count and hemoglobin increased. It is not unlikely that the failure of increase in reticulocyte count and hemoglobin following parenteral vitamin B_{12} administration was a manifestation of a combined deficiency of vitamin B_{12} and iron. The iron deficiency was probably related to both blood loss in the stools and repeated pregnancies. This is a case of intestinal stasis due to a blind loop, which showed anemia associated with impaired intestinal absorption of vitamin B_{12} complicated by iron deficiency.

Material and Methods

The urinary excretion of radioactive vitamin B_{12} was determined by a modification of the original method of Schilling.[13] An oral dose of 0.5 micrograms of radioactive vitamin B_{12}* was given with 30 ml. of water to the fasting patient in the morning. An intramuscular injection of 1,000 micrograms of nonradioactive vitamin B_{12} was given at the time of the oral dose. The urinary bladder was emptied at the time of the oral dose, and all urine passed during the following twenty-four hours was collected. The patient fasted for twelve hours before and two hours after the administration of the test dose. The amount of radioactivity excreted was measured by means of scintillation counting of a 500 cc. aliquot of the total twenty-four hour urine, using a thallium-activated sodium iodide crystal. The radioactivity measured in this manner was corrected to the total volume of urine, and the percentage of the oral dose excreted was calculated by measurement of an appropriate standard.

TABLE I.—EFFECT OF INTRINSIC FACTOR, NEOMYCIN, AUREOMYCIN, AND GENTIAN VIOLET ON THE URINARY EXCRETION OF RADIOACTIVE VITAMIN B_{12} IN A PATIENT WITH INTESTINAL STASIS ASSOCIATED WITH DECREASED RADIOACTIVE VITAMIN B_{12} ABSORPTION

Test	Drug	Percentage of Ingested Dose of Radioactive Vitamin B_{12} Excretion in Twenty-four-Hour Urine
1	None	0.2
2	Intrinsic Factor	0.3
3	Neomycin	1.7
4	Aureomycin	1.2
5	None	1.2
6	Gentian Violet	2.4

A total of 25,600 counts were employed in both the test urine and the urine used to determine background radioactivity. The test was performed on six occasions (Table I). The test was first performed without concomitant therapy. It was then repeated with 30 mg. of a preparation of intrinsic factor prepared from desiccated hogs' stomach,† which was administered simultaneously with the solution of radioactive vitamin B_{12}. Subsequently the test was repeated after eight-day periods of oral therapy with the following drugs in sequence: neomycin in doses of 6 Gm. daily and aureomycin in doses of 2 Gm. daily and, before and after gentian violet, in doses of 120 mg. daily. At least three weeks intervened between successive tests. In Tests 1 through 5 cobalt^{58} vitamin B_{12} was employed and in Test 6 cobalt^{60} vitamin B_{12} was used.

In order to evaluate the significance of the difference in the urinary radioactive vitamin B_{12} excretion both before and after antibiotic or nonantibiotic antibacterial (gentian violet) therapy, it is necessary to have a

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* Cobalt^{58} or Cobalt^{60} vitamin B_{12} was generously supplied by Dr. Charles Rosenblum and Dr. Nathaniel Ritter, Merck & Co., Inc., Rahway, New Jersey.

† We are indebted to Dr. Arnold Osterberg, Abbott Laboratories, North Chicago, Illinois, for liberal supplies of this intrinsic factor.

TABLE II.—DUPLICATE DETERMINATIONS OF URINARY RADIOACTIVE VITAMIN B_{12} EXCRETION IN PATIENTS WITH PERNICIOUS ANEMIA

Controls	Percentage of Ingested Dose of Co^{60} B_{12} Excreted in Twenty-four-Hour Urine Test 1	Test 2	Percentage Difference between Tests
1	1.5	1.9	0.4
2	0.4	0.4	0
3	1.2	1.2	0
4	0.3	0.3	0
5	0	0	0
6	0	1.4	1.4
7	0	0.2	0.2
8	1	1	0
9	0.3	0.3	0
10	0	0	0
11	0	0	0
12	0.4	0.4	0

Data for Controls 1 and 2 from Reference 14; that for Controls 3 to 12 from Reference 15.

control group of duplicate urinary radioactive vitamin B_{12} determinations in patients with this syndrome. Since such data is difficult to obtain because of the infrequency of such patients and the relatively recent development of the urinary vitamin B_{12} excretion test, a control group of duplicate urinary radioactive vitamin B_{12} determinations in addisonian pernicious anemia patients was used in which the urinary excretion of radioactive vitamin B_{12} was of the same order of magnitude as in this patient. The control group data are enumerated in Table II.[14,15]

Results

Comparison of the data in Tables I and II suggests that the administration of the intrinsic factor preparation in the dosage used in this experiment did not significantly increase the absorption of vitamin B_{12}. Similarly the administration of aureomycin, in contrast to other reported cases,[6–8,12] did not increase vitamin B_{12} absorption by an appreciable amount. The data support the hypothesis that after the administration of neomycin and gentian violet the excretion and therefore the absorption of vitamin B_{12} was significantly greater than in the control group of patients with pernicious anemia. The increased excretion of vitamin B_{12} after the administration of neomycin is also in contrast to the results reported by others.[8,12] When a comparison is made in our patient between Test 5, performed more than three weeks after the therapy with neomycin and aureomycin was discontinued, and Test 6, using the same group of pernicious anemia patients as a control, the difference is significant. It is presumed that the administration of neomycin and, perhaps, intrinsic factor and aureomycin in the same interval between Tests 1 and 5 increased the excretion of vitamin B_{12} from 0.2 per cent of 1.2 per cent. Since the excretion of vitamin B_{12} was significantly increased only after the administration of neomycin and not after the administration of aureomycin or intrinsic factor, it is probable that the neomycin was principally, if not entirely, related to this increase.

The published observations of three experimental groups agree, although there is no recorded statistical confirmation, that intrinsic factor preparations which increase the excretion of vitamin B_{12} to between 2 and 2.5 per cent in patients with pernicious anemia in relapse also produce significant clinical responses.[14–16] It is of interest that the increase in vitamin B_{12} excretion in our patient following the administration of gentian violet was 2.2 per cent, an increase that is significant.

Summary

1. The amount of radioactive vitamin B_{12} excreted before and after the administration of intrinsic factor preparation, neomycin, aureomycin, and gentian violet in a patient with a blind loop was determined.

2. The data support the hypothesis that intrinsic factor preparation and aureomycin did not appreciably increase the excretion of vitamin B_{12} and that neomycin and gentian violet did significantly increase the excretion of vitamin B_{12} when compared to a control group of pernicious anemia patients.

3. These results support the hypothesis that antibiotics and nonantibiotic antibacterial agents act by decreasing bacterial competition for vitamin B_{12} in patients with intestinal stasis.

20 East 74th Street, New York 21

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Day Centers for Older Persons

Many physicians are unaware of opportunities offered to geriatric patients by the Day Center Program for Older Persons, sponsored by the New York City Department of Welfare in cooperation with various community agencies and civic groups. Now in its fifteenth year, the Day Center Program has succeeded in relieving thousands of aging citizens from loneliness and boredom.

Starting in 1943 with the William Hodson Day Center for Older Persons, in the Bronx, the program now embraces 26 day centers located in all five boroughs with more than 8,000 participating members. They present a mental health and adult education program which promotes the social and emotional adjustment of the older person, giving him companionship and activity in a favorable environment.

The centers cooperate with physicians who refer patients to them. A study of clinic attendance of a group of the members for a period before and after joining a center disclosed the fact that from the time of membership there was a 50 to 70 per cent reduction in the total number of clinic visits.

In addition to activities such as picnics, boatrides, bus excursions, lectures, and films, there are also classes in languages, nutrition and health, discussion groups, musical activities, and a wide variety of arts and crafts. Members also belong to committees responsible for kitchen duty, hospitality, entertainment, and visits to homebound and hospitalized members.

For more detailed information concerning the centers contact Welfare Commissioner Henry L. McCarthy, chairman, or Mr. David Laurence, executive secretary, Mayor's Advisory Committee for the Aged, 250 Church Street, New York 13, New York.

Autocortisolation: the Use of Stress in Prophylaxis and Therapy

KARL SCHUTZ, M.D., MOUNT McGREGOR, NEW YORK*

(*From the New York State Veterans' Camp*)

THE progress achieved in the protection of the individual by prophylaxis and therapy as in the development of antibiotics and surgery has not been matched by far by the development of a science to improve the constitution; this is the science of increasing the resistance of the individual to stress, of improving his mental and physical condition to the optimal possibility.

Knowledge and the art of protecting against specific damaging agents and conditions must be supplemented by efforts at improving the "terrain," a term used by Claude Bernard for the organism reacting to different agents.[1]

To achieve that goal our knowledge of physiology, pathology, eugenics, and ecology has to be combined with the field of education of body and mind to find a new complex: the science of anthropology in a wider sense. The knowledge gained in these studies in healthy man will improve our ways of therapy.

The patient needs improvement of his mental and physical powers even more than does the healthy person. We have lost a knowledge in a related field of therapy that the physicians of ancient Greece possessed two thousand years ago. It has been reported that they treated their patients so successfully with gymnastics that some of these patients later emerged as victors in the Olympic Games.[2]

As a contribution to the study of improvement of the constitution a concept will be presented in this paper which explains a part of the prophylactic and therapeutic value of stressors.

The Concept of Autocortisolation

Endocrinologic reactions to stress have been described by Selye.[3] He has pointed out that there are transitional steps between physiologic adaptive processes to the stress and strain of everyday life and severe alarm reactions which cause death during the shock phase. Certain alarming stimuli (stressors) can be used for systematic increase of the defense powers of the organism.

One of the therapeutically most valuable alarming stimuli appears to be muscular exercise because it causes very little shock but does cause pronounced countershock phenomena.[3] In the countershock phase the adrenal cortex is stimulated to increased production of gluco-corticoids. The most important natural antiphlogistic corticoid is hydrocortisone.[4] Many studies confirm the greater importance of hydrocortisone as compared with cortisone.[5–11]

The author uses the term "autocortisolation" to describe the increased production of hydrocortisone within the body that is induced by certain alarming stimuli which cause pronounced countershock phenomena. Cortisol is the name given to hydrocortisone by Shopee.[12]

In a state of deranged adrenocortical hormone balance caused by deficient production of gluco-corticoids, autocortisolation induced by therapeutic alarming stimuli[13] can be used to increase the production of hydrocortisone sufficiently so that the hormonal balance is reinstated. We could call it a stimulation to homeostatic function. At the same time a training of the adrenal cortex is promoted in contrast to its atrophy which can be caused by introducing gluco-corticoids into the organism from the outside for a prolonged period of time.

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* Present address: Byrdcliffe Road, Woodstock, Ulster County, New York.

Beneficial effects obtained with the use of certain stressors (alarming stimuli) in the treatment of bronchial asthma led to the concept of autocortisolation. This concept is based on Selye's work on the adaptation syndrome.[3] It is furthermore supported by other research work of Selye.[14] He was able to increase the resistance of guinea pigs to anaphylactic shock by exposing them to various stressors. Since in this species the immediate cause of death during anaphylaxis appears to be bronchial constriction, the author's clinical findings may be closely related to Selye's animal experiments.[15]

The author's conclusions are also supported by observations by Richter.[16] Richter found that the adrenal glands of the domesticated Norway rat undergo a marked atrophy during the process of domestication. According to Richter, man may have undergone parallel changes during his transition from a wild to a controlled environment. These atrophied glands are less able to help the individual to protect himself from the effects of stress and fatigue.

This lack of stimulation of the adrenal glands in civilized life may be counteracted by systematic training of the glands by individually adapted alarming stimuli such as muscular exercise and other physical as well as emotional stimuli. Cannon[17] has already stressed the importance of sports activities as a means of upholding the fighting emotions needed for stimulation of adrenal function.

These considerations lead to the conclusion that autocortisolation can be used as a prophylactic as well as a therapeutic measure. They will also add to the understanding of the prophylactic and therapeutic value of physical activities.

Observations on Autocortisolation and Conditioning Factors

The following observations will illustrate the influence of certain stressors on the production of autocortisolation and also the favorable influences of conditioning factors.

Improvement of bronchial asthma by use of stress, such as muscular exercise as reported by the author[13,18] and others[19–22] can, to a great extent, be explained by autocortisolation. The effect of hydrocortisone on the treatment of asthma has been described.[23] It is highly probable that bronchial asthma is at least partly due to a deficiency in glucocorticoid production.

Since muscular exercise appears to be effective in the restoration of a deranged adrenocortical hormonal balance, bronchial asthmatic patients should not be deprived of the benefit of physical activities and should be trained systematically.[18–22]

Good results with another kind of alarming stimulus, ultraviolet radiation in bronchial asthmatic patients, has been observed previously by the author. Lately he was able to achieve a distinct therapeutic effect in such a patient by use of regular ultraviolet radiation. Here again, stress in form of the mild alarming stimulus of ultraviolet rays apparently produced autocortisolation.

During treatment of patients with pulmonary emphysema the author observed that an individually adapted amount of training proved to be beneficial in this condition. Even patients sixty years of age improved markedly if they followed closely the advised and demonstrated therapy.[24] The importance of sufficient exercise in patients with pulmonary emphysema has been stated.[25]

Far fewer stimuli can and should be used in the treatment of the average patient with chronic pulmonary emphysema than in the treatment of the average bronchial asthmatic patient. Independently this author[24] and Crenshaw[26] came to the conclusion that the primary factor in producing structural changes in pulmonary emphysema is an endarteritis of the bronchial and pulmonary arteries. Observations of Heilmeyer and Schmid[27] support this conclusion.

Based on his observations and on Selye's stress concept[3] this author came to the further conclusion that chronic pulmonary emphysema is in a greater number of cases the result of a disease of adaptation with the bronchial and pulmonary arteries as the target structures.[24] Hormones with catabolic properties appear to play a role in the pathogenesis of this condition. Consequently, medication with gluco-corticoids has to be employed with caution, an opinion supported by Latts and coworkers[28] who observed a relatively high incidence of duodenal ulcer in pulmonary emphysema. Therefore, and because of the ventilatory handicap, an especially careful evaluation of the quality and quantity of exercise and other stimuli to be applied in the treatment of pulmonary emphysema is advisable.

Training in the ability to relax is of value; training in relaxation again is intimately connected with training in physiologic breathing technic. A patient treated by the author suffered from rheumatoid arthritis of hands, knee, and hip joints with pain, deformities, and marked limitation of motion, also with dyspnea of psychogenic origin. The dyspnea was very much improved by educating the patient to a physiologic type of breathing; in connection with breathing therapy the patient was systematically treated with other muscular exercises. After one month of treatment not only had the dyspnea improved, but also a definite improvement of motility was present.

An even better effect could be achieved with exercise therapy in a woman suffering from rheumatoid arthritis of the wrist joints. These beneficial effects can again be explained by autocortisolation induced by muscular exercise. Major improvement of rheumatoid arthritis by treatment with hydrocortisone has been reported.[5]

That the adrenal cortex may play an important role in the pathogenesis of rheumatic and rheumatoid conditions in man has been indicated by experiments on rats.[29,30]

Observations of the author showed that the concept of autocortisolation can explain the effect of bee stings. A local as well as a systemic reaction observed after bee stings resembles closely the local and the general adaptation syndrome of Selye.[3,31–33]

Regarding the great influence of emotions as stressors we have to consider that stressors can act as alarming stimuli or as conditioning factors by conditioning the actions of the adaptive hormones.[34] That emotions have a marked influence on the bronchial asthmatic condition is suggested by the experience of all physicians who have occupied themselves extensively with the treatment of bronchial asthmatic patients. Significant was the report of one of our bronchial asthmatic patients that an emotional state of anger regularly caused an improvement of his asthmatic condition. Emotions of a different type such as anxiety had the contrary effect.

Whether emotions of different quality have a different influence on adrenocortical hormone production deserves further investigation. The author frequently observed an unfavorable conditioning influence resulting from an emotional disturbance, especially anxiety and tension, in patients with bronchial asthma and pulmonary emphysema. The state of anxiety and tension apparently caused by dyspnea also induces the patient to accelerate his motions rather than slow them down. Thus, a vicious circle is created because fast motion increases the dyspnea and dyspnea increases anxiety. Therefore the author uses training in the ability of relaxation as part of the therapy on these patients. Education to a physiologic type of respiration belongs in that training because the change from the strained thoracic type of respiration to correct diaphragmatic respiratory technic has a marked relaxing influence besides its other therapeutic effects. The technic of relaxation[35,36] and that of physiologic respiration[13,37] have been described.

Impaired exercise tolerance resulting from exaggerated cardiac mobilization during emotional disturbance, especially anxiety, has been reported.[38] Apparently anxiety acts here as an additional stress unfavorably conditioning adrenal hormonal balance. But adequately adapted and conditioned physical activity appears to be one of the most suitable of the alarming stimuli for producing and restoring optimal adrenocortical hormonal balance.

The human organism is geared to activity. Rest is needed to restore metabolic balance after activity. The quality, duration, and intensity of activity that is sufficient to cause metabolic changes which will require rest is different for each person. Rest should therefore be considered as a preparation for the resuming of activity and should not be prolonged over the time needed for that preparation in normal individuals.

Kraus[39] has pointed out the fact that physical inactivity is a large factor in a number of disease entities, such as coronary disease, diabetes, duodenal ulcer, and psychiatric disorders. He gave these entities the common name of "hypokinetic disease." From the viewpoint of the general adaptation syndrome "hypokinetic disease" may be considered an appropriate term comprising many diseases of adaptation resulting from the common conditioning factor of insufficient exercise.

On the other hand, we have to remember also that overactivity has pathologic consequences. Therefore appropriate training must involve the saving of adaptation energy.[40] It is known that highly trained sportsmen are not infrequently susceptible to colds, furunculosis, and so forth. Increased incidence of tonsillitis in skiers during excessive sports activity in high altitudes has been reported.[41]

It is now generally accepted also that in pathologic conditions undue prolongation of rest will be harmful. Restoring of physiologic conditions by improving the metabolic activity to the optimal limit is a goal of therapy. This goal can be achieved only by means of individually different optimal combinations of exercise and rest.

One of the reasons for the therapeutic effect of physical exercise is that it stimulates the adrenal cortex to an appropriate production of gluco-corticoids or autocortisolation. Contraindications for autocortisolation are infections, especially tuberculosis. Increased secretion of antiphlogistic corticoids (cortisol) in such situations will deprive the body of the protective homeostatic function of inflammation and will lead to deleterious propagation of infection.[42-44]

Conclusion

The work of Selye has given us a new concept of the etiology of disease. It is the opinion of the author that it has also laid the foundation for a new concept of prophylaxis and therapy.

From a clinical standpoint the author distinguishes two opposite problems involved in the action of stressors and in the somatic manifestations of nonspecific stress.[34]

1. Pathologic manifestations of stress and their prevention and treatment. Alarming stimuli (stressors) of what quality, intensity, and duration acting on individuals with different predispositions resulting from conditioning factors[45] will cause reactions finally resulting in pathologic conditions, the "diseases of adaptation"?[3,40] What importance have conditioning factors on the individually different predispositions to the action of stressors? The extent to which these factors can determine the selective breakdown of different organs[45] must be studied.

These studies will help in the understanding of the causes of diseases and may explain why the same kind of stressor can cause various types of diseases of adaptation in different individuals.[45] Systematic alteration of conditioning factors will consequently be of prophylactic and therapeutic value.

2. The problem of the use of stress for prophylaxis and therapy. What kinds of stressors and conditioning factors can be used to achieve preventive effects in healthy individuals and therapeutic results in pathologic conditions?

For the kind of nonspecific stressors which by stimulating hormonal production of optimal balance will produce the best possible preventive and therapeutic results the author uses the terms "optimal preventive" and "optimal therapeutic alarming stimuli." The term "optimal sportdosis" has also been used.[41,46] Prophylactic and therapeutic autocortisolation belong to the second problem. We will have to study and learn the optimal alarming stimuli for different sexes, age levels, individuals, and conditions.

The study of the optimal conditioning factors involves nutrition, previous exposure to stress, emotional condition, environment, temperature, and so forth. In what amount, quality, and combination should these factors be applied in order to permit optimal production of the adaptive hormones and their optimal effect on individual target organs?[34]

The search for the optimal alarming stimuli, or stimuli producing optimal autocortisolation, will have repercussions in the field of prophylaxis, therapy, hygiene, and education.

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It's easy 'nough to titter w'en de stew is smokin' hot, but hit's mighty ha'd to giggle we'en dey's nuffin' in de pot.—PAUL LAURENCE DUNBAR

Spasm of Round Ligaments in Pregnancy

OSCAR GLASSMAN, M.D., NEW YORK CITY

(From the Department of Obstetrics and Gynecology, Cornell University Medical College and the Lying-In-Hospital, New York Hospital)

PAIN in the region of the round ligaments is a frequent occurrence during the antepartum period. It usually is mild and frequently mistaken for gas pains or pressure. At times the pain can be severe and may be confused with appendicitis, threatened abortion, premature labor, renal colic, or twisted ovarian cyst.

Review of Literature

Although this syndrome is not mentioned in modern textbooks, round ligament pains were described in several articles on the subject of pain in pregnancy. Such pains were also mentioned one hundred years ago by Montgomery[1] who wrote, ". . .from the stretching of the round ligaments of the uterus, as well as from the increased sensibility of the nerves which they contain, considerable uneasiness is felt in the direction of these cords and about their termination at the sides of the pubes." In 1926, Williams[2] described pain due to stretching of the round ligaments as relatively common and sometimes severe. Two years later Lane-Roberts[3] stated, "The stretching of the round ligaments often causes pain between the twelfth and thirtieth weeks either in the groins or in one or both sides of the uterus. During the early weeks the pain may cause suspicion of an extrauterine gestation, appendicitis, or other serious lesion. . ."

Haultain and Fahmy[4] noted that tenderness at the sides of the uterus, sometimes associated with a dragging feeling, may be caused by stretching of the round ligaments. Gardner[5] is in accord with this view. Blakely[6] asserts that 85 per cent of pregnant patients complain of some abdominal pain, that primiparas complain more frequently than multiparas, that it is more frequent in the region of the lower abdomen than in the upper abdomen, and that it is more prone to be on the right than on the left side. According to Blakely, the coincidental stretching of the round ligaments and of the lower abdominal wall is a cause of pain which is worse at the end of the day. He notes that walking or sudden body movements sometimes cause a painful local cramp in these structures and that a painful round ligament is not uncommonly stretched and made worse when the patient lies on the opposite side. Browne[7] confirms this last statement in a slightly different form by stating that relief is often obtained by lying on the painful side. Fahmy[8] suggests that iliac fossa pain, which he associates with the round ligament, must be borne in mind, for it occasionally is confused with appendicitis and frequently with ectopic pregnancy.

Physiology

Although considerable attention has been given to the rhythmic uterine contractions during pregnancy and labor, very little investigation of the physiology of the round ligaments has been done. Unlike the broad and sacrouterine ligaments, the round ligaments have muscle tissue. This is a reflection from the uterus, and it hypertrophies during pregnancy, enlarging five to six times that in the normal nonpregnant state (Fig. 1). In the latter half of pregnancy and during labor one can often feel these cordlike structures on either side of the uterus. They act as guy ropes and prevent volvulus or torsion of the uterus. In early pregnancy they help lift the en-

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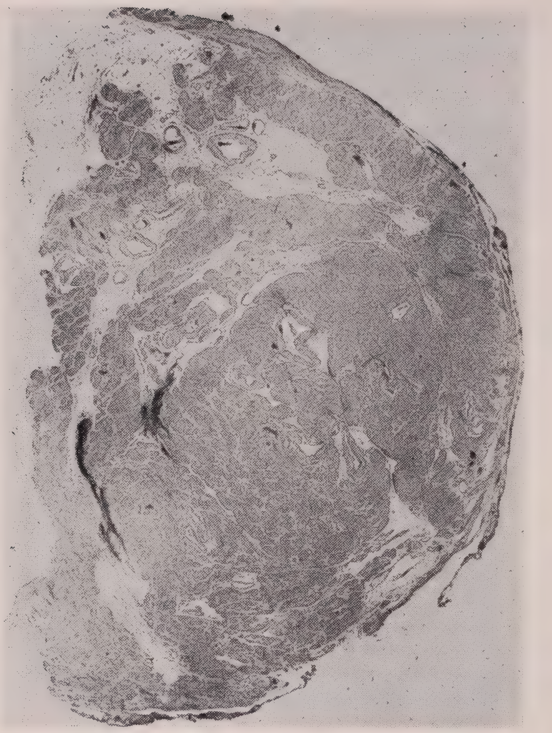

Fig. 1. High power view of round ligament in pregnancy showing muscle bundles.

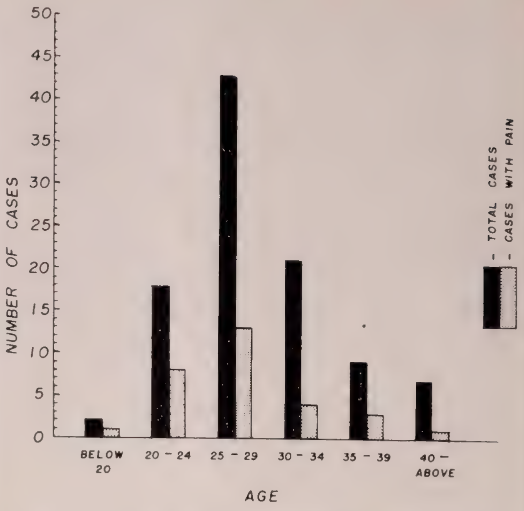

Fig. 2. Age range distribution differentiating patients with and without round ligament pains in 100 pregnant women.

larging heavy uterus from the true pelvis and in doing so prevent incarceration. During labor the contractions of the round ligaments lift the uterus forward and help to bring the presenting part in the plane of the inlet.

Symptoms

The pain varies from mild to "knifelike." In the milder cases, it is attributed to gas or pressure of the uterus. It can be annoying and often worries the patient. At times it is severe and may even worry the attending physician. Located on one or both sides, it generally radiates toward the inguinal regions, and this is of diagnostic significance. As the fundus rises, the location of the discomfort also rises. When the pain is bilateral, the patient may complain of pain across the lower abdomen, especially in the early months. Close questioning reveals that the true location is on both sides, radiating toward the inguinal regions and giving the impression of extending across the abdomen. It occurs when the woman arises from a sitting position, turns while in bed, coughs, and, according to 1 patient, before and after urination. It seems to be aggravated if the patient is on her feet for a great length of time and is more marked in the afternoon or evening.

Material

In 30 of 100 consecutive private patients, pain in one or both round ligaments was an unsolicited complaint. Ten complained of pain on the right side, 5 on the left, and 15 had bilateral pain.

Age.—The ages ranged from nineteen to forty-three years, and although there were more patients who complained of round ligament pain in the twenty-five to twenty-nine-year age group, this would seem to be of little significance since there were more patients in this group and the graph curve followed that of the total group very closely (Fig. 2).

Parity.—There were 14 primiparas and 16 multiparas with round ligament pains. Of the multiparas, only 3 had three or more children (1 of the 3 had eleven). In the total group of 100 patients 45 were primipara and 55 were multipara, 19 of which had three

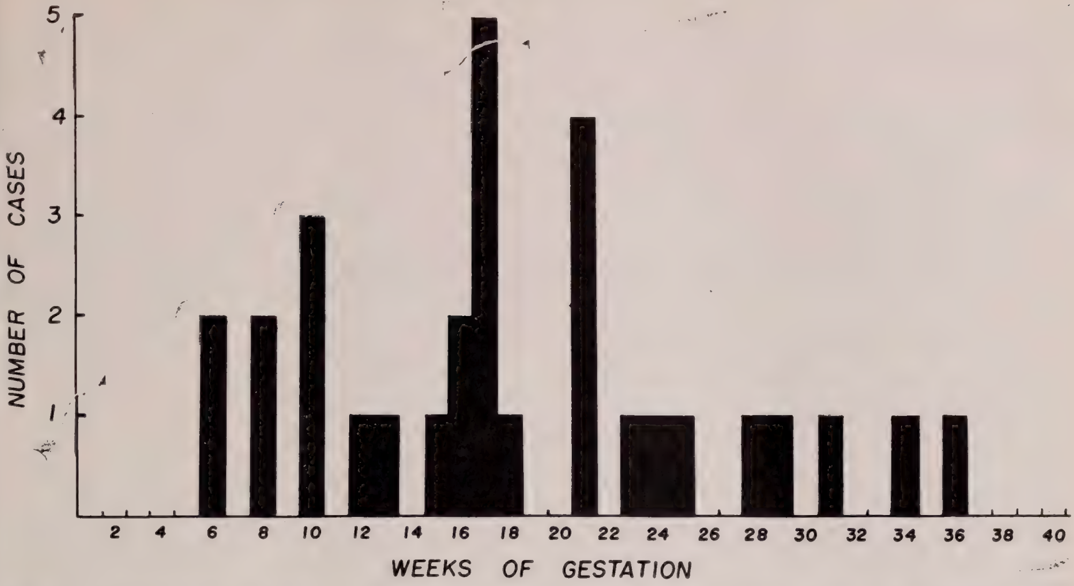

FIG. 3. Distribution of onset of round ligament pains according to length of gestation in 35 pregnant women.

or more children. Of the 30 patients with round ligament pains, 27 had either one or two children, 14 being primipara, and 13 had two children.

TRIMESTER.—Seventeen patients first complained of pain during the second trimester. Five complained in the last trimester, and 8 in the first trimester. Although the pain occurred throughout pregnancy, the seventeenth and twenty-first weeks predominated in this small series. It was surprising to find that the onset of pain in 2 patients began as early as six weeks (Fig. 3).

A few of the possible errors in differential diagnosis are briefly outlined in the following case histories:

Case Reports

CASE 1.—A twenty-six-year-old woman, gravida 2, para 1, with normal full-term delivery two years previously was admitted to the hospital October 25, 1954, complaining of right lower quadrant pain radiating to the right groin and associated with vomiting since the previous night. Her last menstrual period had begun on June 27, 1954.

Her white cell count was 15,850 with 71 polymorphonuclears, 17 band cells, 11 lymphocytes, and 1 metamyelocyte. Her red cell count was 3,910,000 with 11 Gm. hemoglobin (75 per cent) and a color index of 0.96. Urinalysis revealed the specific gravity to be 1,014, albumin ± sugar negative, and five or six white blood cells.

The patient was thought to have appendicitis and was prepared for operation. Other possible diagnoses entertained were twisted ovarian cyst, threatened abortion, and ureteral colic. On consultation the patient was highly nervous and apprehensive. The abdomen was noted to have voluntary rigidity but no rebound pain. The uterus was globular, soft, and about the size of that of a twenty-week gestation. There was marked tenderness along the region of the right round ligament. A diagnosis of round ligament pain was made, and further observation was advised. The symptoms subsided within forty-eight hours, and the patient was discharged from the hospital. She was readmitted on February 14, 1955, at which time she delivered spontaneously.

CASE 2.—A twenty-eight-year-old woman, gravida 3, para 1, was observed with moderate bilateral round ligament pains from about the tenth to the sixteenth week of gestation. The patient gave a history of similar pains occurring early in her last pregnancy. The pains at that time were mistaken for uterine contractions, and because of a previous spontaneous abortion she was mistakenly diagnosed as a threatened abortion by her doctor who treated her with bed rest and, at intervals, progesterone for four months. With her present pregnancy, she had a full-term spontaneous delivery, and no needless bed rest or medication was required.

Case 3.—A twenty-four-year-old primigravida had an appendectomy in 1941. Her last menstrual period had begun on July 12, 1947. She was highly emotional and had marked morning sickness. During her fourth month of gestation she took a trip with her husband to another city where she developed marked pain and tenderness in the right lower quadrant associated with vomiting. A diagnosis of twisted ovarian cyst was made, and a laparotomy was performed. An ovarian cyst was not found, and the cause of the pain was not determined. In a subsequent pregnancy the patient had episodes of right round ligament pains which she described as similar to the pain in the previous pregnancy.

Case 4.—A twenty-one-year-old primigravida whose last menstrual period had begun on January 28, 1957, had nausea and vomiting during early pregnancy. On March 20, 1957, she developed pain in the right lower quandrant, in which there was tenderness and rebound, and vomited. Her temperature was 100 F.

She had a white cell count of 8,050 with 72 polymorphonuclears, 26 lymphocytes, 1 eosinophil, and 1 monocyte. Her red cell count was 4,210,000 with 12.7 Gm. hemoglobin and a color index of 1. Urinalysis findings were negative.

She was thought to have acute appendicitis, and an operation on March 20, 1957, revealed a normal appendix. She subsequently had typical round ligament pains.

Case 5.—A thirty-six-year-old woman, who had been married in 1953, developed pain in both lower quadrants, more marked on the right, on September 1, 1956. Her last menstrual period had begun on July 18, 1956. On September 22, 1954, she had a full-term spontaneous delivery of a male infant weighing 2,500 Gm.

She was subjected to a barium enema and an intravenous pyelogram by her local medical doctor. These tests gave negative results. When seen by me on September 12, 1956, she had pain and tenderness in the region of the right round ligament, typical of the round ligament pain syndrome.

Treatment

Reassurance and explanation of the source of the pain may be all that is required. Rest often relieves the pain, and lying on the affected side is helpful. A well-fitting maternity support after the third or fourth month of gestation is of value. The local application of a hot water bottle or heating pad is suggested, and a mild sedative or antispasmodic is prescribed.

Comment

Throughout pregnancy, rhythmic contractions of the uterus occur. It is a well-known fact that the round ligaments also contract during labor. It is assumed that such rhythmic contractions also occur during pregnancy. At times these contractions become spastic and painful. The mechanism is not known. There are, however, several possibilities. With enlargement of the uterus there is increased tension on the ligaments. Sudden increase in tension will cause spasm. The blood supply may not be increased commensurate with the marked hypertrophy of the muscles in the ligaments, and therefore hypoxia may at times occur.

Recognition of this syndrome will allay a great deal of anxiety on the part of the patient as well as the physician. In some instances it eliminates unnecessary bed rest, time and expense in a hospital, and an operative procedure.

Summary and Conclusions

1. Pain or spasm may occur in the region of one or both round ligaments during pregnancy.
2. In a series of 100 consecutive private patients this pain was present in at least 30 patients and probably in more.
3. Age and trimester of pregnancy are of no significance.
4. It is more frequent during the first and second pregnancy.
5. The pain is usually mild, but at times

it may be mistaken for appendicitis, threatened abortion, premature labor, renal colic, twisted ovarian cyst or other conditions.

936 Fifth Avenue

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Protective Measures Against Stinging Insects

R. A. MORSE, PH.D, AND R. L. GHENT, B.S.A., ITHACA, NEW YORK

(*From the Department of Entomology, Cornell University*)

The purpose of this article is to present some of the characteristics of stinging insects relative to their stinging behavior and to suggest sensible measures which may be taken to reduce the incidence of stings and the severity of the resulting effects. Each year the Department of Entomology at Cornell University receives several requests for such information, and it is hoped that this article may be of some help to physicians in advising their patients.

Stinging insects belong to an entirely separate group from biting insects. The latter occur mostly in the order Diptera, which includes mosquitoes and the biting flies, all of whose members inflict wounds with their mouthparts in the course of feeding. In doing so they inject substances into the wound, including an anticoagulant, which, although irritating, do not produce severe reactions. The stinging insects mostly belong to the order Hymenoptera. In common parlance, they are divided into such groups as hornets, ants, wasps, yellow jackets, and bees. These terms vary from one locality to another and among individuals and are used so ambiguously that none of them is definitive. The term "yellow jacket," for example, is equally descriptive of several species. Only the term "bee" denotes a particular group, but even this may be misleading for there are several hundred species of bees in this country.

The honeybee (Apis mellifera) is the most common single species of stinging insect in the United States and in most other countries. It also is probably the most intensively studied insect, and advice given here will be drawn to a large extent from our knowledge of honeybee behavior. Most of the conclusions, however, apply to other stinging insects and, in some cases, to biting insects.

Parrish,[1] in reviewing death certificates provided by the United States Public Health Service from 1950 to 1954, states that there were 215 fatalities from venomous animals and insects. Of this number, 86 resulted from Hymenoptera stings, 71 from poisonous snake bites, 39 from black widow spider bites, and the remainder from scorpions and the like. Of the 88 fatal Hymenoptera stings, 52 were from bees, 21 from wasps, 7 from yellow jackets, 5 from hornets, and 1 from an ant.

Because the reaction of some hypersensitive persons is so severe and occurs immediately, death may result before a physician can be reached. Therefore, measures that may be taken to reduce the incidence of stings should be considered as important as, or even more important than, remedial treatment.

Experience in our laboratory indicates that repellents are of little or no value in warding off stinging insects. Although the chemicals and odors of repellents may be effective against biting insects whose sole concern is food, these substances do not change the purpose of a stinging insect whose object is to defend or attack.

People who have slight or moderate reactions to stings can usually develop a certain degree of immunity if stung very frequently, as in the case of beekeepers. However, immunity to one species of insect does not necessarily imply immunity to all species.

It has been suggested that persons who react most severely to stings should move to areas where there are few bees. In the

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opinion of the authors this would be an almost futile action. Honeybees are kept within the bounds of all our cities and may be encountered in any neighborhood, rural or urban.

The ordinary bee encountered in the garden is not usually inclined to sting unless touched, trodden on, or otherwise molested. Beekeepers, who in a day's work come in contact with several million bees, usually receive fewer than 50 stings a day, and it is an exceptionally irritated colony in which 1 per cent of the population is provoked to attack.

There are many times when no stinging or biting insects are abroad. Most flying insects are not active at low temperatures. For this reason, honeybees and most other stinging insects will not be found afield on days when the temperature is below 55 F. Honeybees rarely venture forth on very dull or damp days, although other stinging insects and many biting insects will be encountered then, provided the temperature is high enough.

The type of clothing a person wears affects the probability of his being stung. Mackie, *et al.*[2] reports that white or light-colored clothing is less provocative to bees than dark colors. Experienced beekeepers concur in this and, in fact, consider clothing color to be one of the most important factors. Brett,[3] Hocking and Richards,[4] and Brown[5] also report that dark-colored clothing is attractive to mosquitoes and black flies. These authors further state that smooth, hard-finished khaki, drill, or nylon clothing is less attractive to black flies and mosquitoes than blue denim or serge. Dadant[6] advises beekeepers to wear white or tan coveralls of some hard-finished material in preference to dark, rough, or woolly clothing. Possibly because of their leather or animal odor, suede or other leather materials seem to be especially irritating to bees. For these reasons, tweeds, flannels, or other rough textiles, especially if they are of dark color and/or have an inherent odor, should never be worn by a hypersensitive person where bees are likely to be encountered. Women are advised to wear a head covering, such as a silk shawl or scarf, where bees are present to prevent a bee from accidentally becoming entangled in the hair.

Odors other than those natural to certain fabrics also play an important role in sting and bite prevention. People who handle bees are aware that the odor of sweat irritates the bees. Brown[7] reports that the mosquito (Aëdes aegypti) is more attracted to apparel that smells of sweat worn by a robot at body temperature than to clean apparel. Bates,[8] however, was unable to demonstrate that Albanian mosquitoes were attracted by the smell of sweat when the carrier was not at body temperature. Also under the heading of odor comes the use of perfumes and pomades. Probably because of their floral odor, bees are attracted to these and once entangled in the wearer's clothing or hair are inclined to sting even if it was not their original intention to do so.

Bates[8] and Sippel and Brown[9] report that biting insects (flies, mosquitoes, etc.) are more inclined to attack a moving object than a stationary one. Lecompte[10] states that guard bees attack moving bee robots more readily than they do immobile ones, and people who handle bees often become painfully aware that this is also true of honeybees that attack humans. To flail wildly at an approaching bee, therefore, is one of the worst things to do. It usually is possible to retreat unharmed simply by using the hands with the fingers extended as a shield before the face and by moving slowly from the vicinity. Assuming a prone position on the ground with the face covered by the arms or taking unhurried refuge in nearby bushes or shrubs are other recommended stratagems. One should resort to a running retreat only when a colony of bees or a nest of wasps has been accidentally disturbed, for in this event anyone remaining in the vicinity will almost certainly be stung.

Since the sting of a honeybee is barbed, it is torn from the bee and remains in the victim. The loss of this appendage is fatal to the honeybee, and, therefore, the honeybee can sting only once. During the stinging process and for about a minute thereafter the shafts of the sting continue to force themselves deeper into the skin. At the same time, venom glands attached to the sting pump their contents into the wound, making it imperative that the sting be removed as promptly as possible. If the poison sacs are squeezed, the venom still in them will be forced into the wound; therefore, the honeybee sting must be scraped out in such a way that these glands are not touched. Because speed in removing the sting is important, it is most expedient to use a fingernail. When a person is stung, the wound should be examined at once and anything in the immediate area should be removed by scraping. The sting shafts are black and attached to them are some bits of white tissue; the whole unit is about one quarter the size of a match head.

Other stinging insects do not leave the sting in the wound and can inject their venom much more rapidly than honey bees. Some may sting two or three times, making the second and third wounds usually within a few inches of the first. The sting of the largest stinging insects in this country is about one eighth of an inch long and is usually inserted at an angle perpendicular to the victim's body.

Conclusion

1. Stinging insects are found everywhere; in fact, honeybees are kept in cities. Moving into a metropolitan area would lower the incidence of encounters but would not remove the danger completely. In country areas, removal of flowers in any form would reduce but not eliminate the number of stinging insects in the vicinity.

2. White or light-colored cotton, nylon, or khaki clothing should be worn. Dark-colored clothing, tweeds, woolens, flannels, or suede-type clothing should be avoided any time the temperature is high enough for insect flight (above 60 F.).

3. Clothing of the proper type should cover as much of the body as possible, and women are advised to cover their hair completely with a smooth-finished or closely woven scarf.

4. Clothing should be changed frequently to avoid sweaty or other objectionable odors.

5. Hair oils and perfumes should be avoided.

6. When an apparently hostile bee is encountered, one should not move rapidly. The eyes should be slowly covered to avoid attracting attention to their movement or a prone position should be assumed with the face hidden. A hasty retreat should be made only when a whole nest or hive of stinging insects is disturbed.

7. If stung, one should examine the wound immediately, and if a stinger is seen, it should be removed as quickly as possible with a fingernail by means of a scraping motion.

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The ripest peach is highest on the tree.—JAMES WHITCOMB RILEY

The Use of Lectins in Blood Banking

HANNAH PRETSHOLD, M.T., NEW YORK CITY

(From the Blood Bank, Beth Israel Hospital)

THE finding of plant agglutinins with definite specificities has made two satisfactory antiserums available to blood bankers: (1) Dolichos biflorous for subgrouping types A and AB blood and (2) Ulex europeus for differentiating secretors from nonsecretors.*

Until recently, absorbed B serum was the only antiserum available for subgrouping types A and AB blood. Anti-H serum to test for type O secretors could be obtained only with difficulty from (1) human blood with anti-O, (2) blood of a goat immunized with Shiga's bacilli, and (3) blood of an eel with anti-H, the latter source being particularly unreliable because not all eels have anti-H.

Plant agglutinins have also been called phytagglutinins, hemoagglutinins, plant extracts, and lectins. It is not accurate to apply the term "agglutinins" to these substances. An agglutinin is an antibody which is formed in response to stimulation by an antigen. These plant extracts are not antibodies. They are part of the normal cellular structure of the plant and are protein or mucoprotein in nature. Boyd[1,2] prefers to call them "lectins," from the Latin *lego*, to choose or pick out.

The field of plant agglutinins, or lectins, is not new. They were discovered in 1888 by Stillmark[3] who noticed that ricin agglutinated the red blood cells of some animals but not others. Landsteiner[4] in 1925 pointed out that some plant extracts demonstrated various degrees of specificity. By 1955 more than 1,000 plant species had been studied.

The most comprehensive and detailed monograph on the hemoagglutinins was published by Makela in 1957.[5,6] He studied 743 plant species and found that 69 of them agglutinated human red blood cells selectively. To make his specificity tests he chose panels of cells which included the blood factors ABO, MN, P, Ss, Le^a and Le^b. He also used the cells of the cow, sheep, goat, rabbit, chicken, and guinea pig. He found plant extracts which were specific for types A, A and B, B, H, and N. Some of these extracts worked better in an albumin or PVP medium, like univalent antibodies, others were enhanced when tested with papainized cells, but most of the lectins worked best in normal saline.

Method of Preparation of Lectins

The simple method recommended by Boyd[7,8] is used in the preparation of both Dolichos biflorous and Ulex europeus.

1. The seeds are ground to a meal in a mill (a small pepper mill will do).
2. For each gram of meal 10cc. of saline are added.
3. The mixture is then agitated for one hour on a Kahn shaker, poured into large test tubes, and centrifuged at high speed for five minutes. This process packs the sediment down and leaves a clear, yellowish supernatant. The supernatant contains the lectins and can be used "as is" or filtered through a Seitz filter.
4. The supernatant or filtrate is then distributed in 2-cc. vials and frozen.

The lectins do not lose their potency even after they have been thawed out and kept in the refrigerator until used.

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* Secretors are persons who possess A or B or O substance in their tissues and secrete it in saliva, urine, tears, semen, gastric juice, and milk.

TABLE I.—STICK TESTS WITH ULEX FOR DIFFERENTIATING BLOOD GROUPS

Blood Type	Number of Individuals	Results: Agglutination	Results: No Agglutination
A_1B	9	0	9
A_2B	9	8	1
A_1	66	14	52
A_2	10	10	0
B	30	18	12
O	101	101	0
TOTAL	225	151	74

Technics for Determining Subgrouping of A and AB Blood

TUBE TEST.—

1. Set up as many 8.5 by 75 mm. tubes as there are tests to perform plus two tubes, one for a positive and one for a negative control.

2. To each tube add one drop of the Dolichus biflorous extract.

3. Then add a stick of cells from the clot of each blood tested.

4. To the positive control add a stick of A_1 cells, and to the negative control a stick of A_2 cells.

5. Centrifuge for one minute and read macroscopically.

The positives will be agglutinated in a solid mass which cannot be shaken apart; the negatives shake out easily.

SLIDE TEST.—

1. Place a drop of the whole blood to be tested on a slide.

2. Do the same with a positive and a negative control.

3. Add a drop of the Dolichos biflorous to each.

4. Mix with an applicator stick and place on a light box in order to read.

The positives will come down almost immediately in strong clumps; the negatives will remain smooth. A final reading can be made within two minutes. Dolichos biflorous agglutinates A_1 and A_1B cells but not A_2, A_2B, B, or O cells. In more than 300 tests with this lectin there has not been a false positive or negative result.

The other lectin, Ulex europeus, gives agglutination with types O, A_2, and A_2B bloods, but no agglutination with A_1B blood. The results are detailed in Table I. No explanation can be offered for the failure of Ulex to agglutinate an A_2B blood. A similar case is cited by Race and Sanger.[9]

Technic for Testing Saliva for Secretors and Nonsecretors

Ulex europeus is anti-H in character and separates the secretors from the nonsecretors.

1. The salivas to be tested are collected in tubes and placed in a boiling water bath for twenty minutes to inactivate enzymes and kill bacteria.

2. The specimens are then centrifuged at high speed for five minutes, and the supernatant is poured off into another tube. This can be put in the refrigerator if the tests are to be done the next day or stored in the freezer for a long period of time.

3. At the same time that the unknown salivas are collected, salivas from known secretors and nonsecretors of the types to be tested are collected to be run as controls.

4. To 0.1 cc. of saliva supernatant 0.1 cc. of Ulex is added. This is then shaken.

5. The mixture is allowed to stand at room temperature for thirty minutes.

6. One drop of the mixture is transferred to another tube and one drop of a 5 per cent suspension of O cells in saline is added.

7. The same procedure is followed for the controls. A control is also set up with Ulex and O cells, and another of the O cells in saline.

8. All tubes are centrifuged for two minutes and read immediately, or they are allowed to stand at room temperature and are read hours later without being centrifuged.

If the saliva tested is from a secretor the O cells will not be agglutinated, but if the saliva is from a nonsecretor the O cells will be agglutinated. Persons who are secretors secrete not only their specific blood-type substance but also H substance, and it is the H substance that inhibits the Ulex lectin anti-H. The reverse is true of

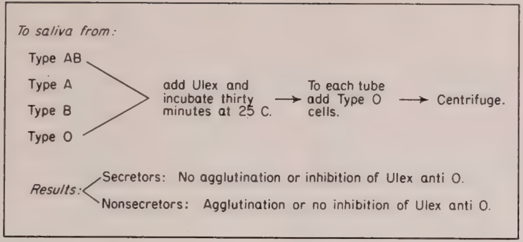
To saliva from:
Type AB
Type A
Type B
Type O
add Ulex and incubate thirty minutes at 25 C.
To each tube add Type O cells.
Centrifuge.
Results:
Secretors: No agglutination or inhibition of Ulex anti O.
Nonsecretors: Agglutination or no inhibition of Ulex anti O.

FIG. 1. Diagram of the "one-step" saliva test with Ulex for separating secretors from nonsecretors.

nonsecretors. This explains the "one-step" test (Fig. 1).

Results of Saliva Studies

There were no discrepancies in the saliva study results with Ulex when checked with anti-A and anti-B.

There was one saliva from an A_2B person which did not appear to fit in. The anti-B serum and Ulex were inhibited but the anti-A serum was not. The anti-A tube was set up again using A_2 cells and showed inhibition. The A substance in this person's saliva was apparently specific for A_2.

Summary

Lectins have the following advantages:

1. They are cheap and easy to prepare.
2. Large or small quantities can be kept indefinitely, if frozen, to be used as needed. They can be thawed and refrozen time after time without loss of potency.
3. Small quantities can be kept in the refrigerator for daily use without loss of potency.
4. The tests are rapid and easy to perform. Readings are strong, clear, and immediate.
5. With the use of lectins, even the smallest blood bank can perform two more services: subgrouping of blood and separating secretors from nonsecretors of all types by means of the "one-step" method.

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Medical Society of the State of New York

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HYPNOSIS AND ITS USE IN THE MEDICAL ARTS

Third District Branch

Medical Society of the State of New York

HYMAN S. BARAHAL, M.D., *Moderator*

Hypnosis in Medicine

HYMAN S. BARAHAL, M.D., WEST BRENTWOOD, LONG ISLAND

(From the Pilgrim State Hospital)

In this presentation the word "hypnotism" will be used to signify the science of hypnosis as distinguished from "hypnosis" the phenomenon itself. Hypnosis has been known for thousands of years and is undoubtedly as old as civilization itself. In ancient times among the Egyptians, Greeks, and Romans it played a role in religious and magic rites and was considered an expression of supernatural powers. During the Middle Ages it was incorporated in the thinking of the era as a manifestation of the malevolent power of witches, sorcerers, and other agents of the devil, with the hypnotized person as the victim of an evil spell.

A more scientific approach to the subject of hypnotism did not evolve until the eighteenth century when Mesmer, a German physician, in 1772 presented his views to the medical profession. However, his theory involved the concept of "animal magnetism" and "universal fluids" passing from one person to another. Although mesmerism became quite the vogue, there was a remnant of medieval mysticism surrounding it. His work was not acceptable to the scientists of the day. He was declared a charlatan and discredited by a scientific commission in Paris which included Benjamin Franklin.

A scientifically more acceptable approach awaited the work of an English physician, Braid, who in the nineteenth century created the term hypnosis to describe the phenomenon he was studying. He discarded the previous physical, magnetic, and physiologic concepts for a psychologic approach. There followed rapidly the development of various schools of thought regarding hypnosis. Charcot and his Paris School related the phenomenon to the then little-known subject of hysteria and was able to demonstrate artificial states of hysteria produced by hypnosis. The explanations for these were along physiologic and neurologic lines. The Nancy School with Liebeault and Bernheim followed a more psychologic approach and used hypnotic suggestion extensively in therapy. It is not the intent of this

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presentation to offer a complete historic survey of the subject of hypnosis nor of the various theories involved. There have been many waves of interest in hypnosis through the years, with a considerable infusion of mysticism, charlatanism, and unscientific formulations. At the beginning of his work with psychoanalysis, Freud used hypnosis as a means of uncovering forgotten memories in his patients. However, he later discarded the procedure because only a few of his patients were capable of reaching a somnambulistic hypnotic state and also because he believed that the type of relationship existing between the hypnotist and the subject was inimical to healthy therapeusis.

For the most part during the twentieth century hypnosis as a medical and scientific procedure found itself in disrepute, although a few pioneering psychiatrists and psychologists, intrigued by the potentialities of the method, continued to develop theoretical and therapeutic concepts in spite of generalized suspicion and disapproval. In recent years nothing has contributed more to the ill repute of hypnosis than its exploitation by stage entertainers as well as the frequent and fantastic claims of cures of every human problem including obesity, cigaret smoking, and marital difficulties.

Hypnotism is now coming of age and there has been a resurgence of interest in its use in medicine, particularly as a substitute for anesthesia in general surgery, obstetrics, and dentistry. In psychiatry it has long been used to recall repressed emotionally charged memories; to help clear up psychosomatic symptoms by suggestion; and to alleviate hysteric phenomena such as amnesia, deafness, paralysis, and similar manifestations. In hypnoanalysis it is used as an adjunct in working through unconscious conflicts psychoanalytically with due regard to transference and resistance phenomena. This involves the interpretation of dreams induced during hypnosis or as posthypnotic suggestions, hypnotic regression to earlier stages of life with a reliving of traumatic experiences, the use of automatic writing in which the patient writes down feelings without awareness, crystal gazing in which the patient visualizes under hypnosis the dramatic events of his life, the use of art productions and their interpretation by the patient under hypnosis, and many other technics which may be suggested by the situation or opportunity.

Comment

But even with the slow, tedious process of hypnoanalysis the hypnotic process is fraught with considerable difficulty and danger. I am now treating a forty-year-old woman hypnoanalytically whom I have seen daily for one year, with sessions of from one to two hours daily. She was hospitalized because of a total amnesia. She did not know her name, where she came from, or anything of her past. Under hypnoanalysis these amnesias gradually evolved an almost unbelievable background of emotional trauma and mutilation, the details of which cannot be gone into at the present time. It is hoped, however, that some day this material can be documented as a most interesting and fantastic record of the interplay of human emotions and the sadomasochistic situations to which human beings can be subjected and still survive. In the treatment of this case the patient analyzed her own dreams under hypnosis and her symbolic art productions also played an important role in the therapy. However, as the patient began to gain insight into her past and the dreadful memories returned, she became increasingly more tense, confused, depressed, and preoccupied with suicidal thoughts. It became apparent that the amnesia was essential to her and by removing it she was left with a devastating hopelessness. Attempts to remove these feelings by hypnosis failed. As a matter of fact she began to go into autohypnotic episodes during which self-destructive acts and feelings predominated. Drugs were ineffective in controlling this impossible situation. It was finally necessary to give her electroconvulsive therapy. After 20 such treatments she has again developed a total amnesia and the acute symptoms have subsided. I still see her regularly but the therapy is on a superficial level with no effort to uncover memories or to hypnotize. It is difficult to prognosticate the future of this woman. Forgetting may be a life- and sanity-preserving mechanism.

Hypnosis has also been used to a considerable degree in teaching as well as in research of unconscious mental functioning. It is impossible to deny the existence of unconscious motivations after observing the reactions of a subject under hypnosis. The American Medical Association has recently approved medical hypnosis as an acceptable therapeutic instrument. This symposium is an indication of the growing interest in the field and similar discussions are being conducted on local and national levels. More and more physicians and dentists are taking courses in hypnosis.

In one sense, we are witnessing a healthier and more scientific approach to the subject. On the other hand, there now exists a distinct danger of oversimplifying the practice of hypnosis and of attracting people to the field who lack the emotional maturity, understanding, and experience to handle not only the technic but also to avoid the dangerous pitfalls which may attend the procedure. It is well to remember that anyone can be taught to hypnotize within a matter of minutes; but the more important aspect, a thorough understanding of the psychodynamic factors involved, is unfortunately frequently neglected.

To understand the manifestations of hypnosis, it is important to remember that at the turn of the century a revolution occurred in our knowledge of mental processes. Primarily through the work of Freud and the development of the psychoanalytic theory we now know that the larger segment of our mental and emotional functioning takes place on an unconscious level and that the thin superficial conscious facade presented by an individual to himself and the outer world is no indication of the turmoil which may exist beneath the surface. Mental symptoms, be they psychosomatic, hysteric, obsessive-compulsive, or even psychotic are indications of this turmoil and are attempts on the part of an individual to resolve these unconscious conflicts in some sort of a compromise fashion so as to keep their demands submerged with as little discomfort and anxiety as possible. These unconscious conflicts have to do with socially unacceptable and therefore consciously inadmissible hostilities, death wishes, prohibited sexual feelings, and similar problems which plague civilized man. The accepted therapy for such neurotic symptoms, in favorable cases, is the gradual elucidation of these problems with subsequent understanding and insight by means of a specialized technic known as psychoanalysis. This is a long, drawn out, expensive procedure and is available to only a limited proportion of the people who are emotionally suited for such therapy. Hypnosis, therefore, seemed to offer a faster, more easily accessible means of clearing up such symptoms. However, what many fail to understand is that the symptoms are defensive maneuvers which are as necessary to the neurotic person as a crutch is to one who is physically crippled. Merely removing the symptom by hypnotic suggestion may leave the patient in a hopelessly helpless state.

I can recall a case in the early period of my medical career which brought this understanding to me poignantly and tragically. While I was serving as an intern in the Panama Canal Zone in 1930, a nineteen-year-old peacetime soldier was admitted to the hospital with a suddenly developed paralysis of the right arm. This had occurred only minutes before, while he was practicing on the rifle range. Physical examination revealed no significant findings and neurologically he had a typical hysteric paralysis of the right arm. The history revealed that the young man had run away from home two years previously and had enlisted in the army because of an intolerable home situation. His father was tyrannical and abusive and during a number of arguments with the father the young man had reached such degrees of rage that the impulse to kill his father became almost ungovernable. His decision to run away was, therefore, a defensive maneuver against such a terrible eventuality. He had adjusted moderately well in the army until recently when a new captain had been assigned as commanding officer to his unit. This officer was a petty, unreasonable, tyrannical individual who in many ways reminded the young man of his father from whom he had run away. Other than this, no significant data could be obtained except that it was the patient's impression that he had been on the target range all day and his "muscles probably got tired." This was the only explanation he could give of the paralysis. He was surprisingly happy and unconcerned about his disability, the "belle indifference" described by the French.

Under hypnosis, the following additional information was obtained. While waiting to resume shooting at the target during a rest period, the captain had appeared at the scene close to the target and suddenly the overwhelming urge to pick up his rifle and shoot, ostensibly at the target but actually to destroy the object of his hostility, had occurred to the patient. This, as was obvious, was similar to the urge which earlier had caused him to run away from home. However, there was no running away from this conflict. It was at this point that he felt his arm becoming weak and totally paralyzed. It was his unconscious defense against murder. Were he my patient now I would treat him through psychoanalysis or hypnoanalytic procedures so that he could gradually gain insight into his feelings and thus eliminate the need for the paralysis. Instead I suggested that the paralysis would disappear which it did quite promptly and dramatically, a miraculous cure. However, I did not take into consideration this man's impelling need for a right arm paralysis. Within a matter of hours his "belle indifference" changed to intense anxiety and depression followed by a serious suicidal attempt.

It is relatively easy to suggest away symptoms hypnotically but as clinicians we must be careful not to substitute something more dreadful or destructive for the original symptom. A recent United Press report from London is indicative perhaps of an unfortunate trend: London, September 20, 1958: "Hypnosis by Phone. Henry Blythe today won permission to set up a hypnosis-by-telephone service, the first of its kind in Britain. Permission was granted by the Post Office, which operates the state-owned telephone system. Blythe said he would charge patients $9 for a six-minute session. He estimated it would take three six-minute sessions to make a smoker quit smoking, cure fingernail-biters, and persuade fat people to diet."

Many lay people with not the healthiest motives are tampering with the lives and emotional well-being of sick people through the injudicious use of hypnosis as evidenced by notices in newspapers and magazines. There are many unrecognized ambulatory schizophrenic persons who function adequately on a borderline level who can be pushed into more acute psychotic states through hypnotically induced delusional and hallucinated states.

Conclusions

Just a word to qualified physicians and dentists who are impressed by the facility with which hypnosis can be used in their practices: I would personally hesitate to use this procedure unless other means were not accessible to the patient for physical or other reasons. Also, the practitioner should become trained thoroughly not only in the induction of the hypnotic state but also and more importantly in the understanding of psychodynamic functioning and the personality needs of each patient. Certainly any patients with histories of past psychotic episodes, nervous breakdowns, periods of depression, or showing any evidence of emotional instability should be evaluated very carefully before hypnosis is used for medical or surgical reasons.

I would also urge very strongly that legal restrictions be placed on the use of hypnosis, limiting it to properly qualified physicians, dentists, and psychologists either in the direct treatment of patients or in doing teaching and research in the field. Its use by unauthorized, unqualified people for entertainment purposes or for self-aggrandizement should be prohibited.

Hypnosis from the Viewpoint of Psychiatry

HERBERT SPIEGEL, M.D., NEW YORK CITY

(*From the William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology*)

HYPNOSIS has been regarded by some as a weird mystical magnetic power by one person over another; others regard it as some unexplained neurophysiologic alteration occurring in the hypnotized subject; still others regard it simply as fakery and nonsense promulgated by slick operators who inflict this form of trickery on unsuspecting fools. I believe none of these formulations to be true.

Because hypnosis is used by charlatans and quacks for exploitation or by amateurs for amusement does not mean that the phenomenon itself is necessarily beyond the scope of our serious consideration and use. The history of medicine amply documents the versatility and pervasiveness of charlatans in all fields of medicine.

We cannot easily approach an understanding of this incredibly fascinating phenomenon as an entity in itself, but we can get some insight into its nature by examining the data in the context of some thesis of human behavior. Thus, in the context of our current thinking about the nature of human interaction the following definition can be proposed.

Definition

Hypnosis is an altered state of relatedness characterized by an irrational submission into a regressed dissociated state with abandonment of executive control, instigated and actively enhanced by the hypnotist.

This definition assumes that man often varies his degree of consciousness and awareness in a complex way from one extreme of complete attention and concentration to the opposite extreme of complete inattention and indifference; from a total integration with another person to a merely fragmented contact or even total dissociation; and from various depths of sleep to various levels of being awake.

In this dynamic interchange of forces both within the person and between persons an alteration of focus can take place when the hypnotist structures a specific modality of relating with a participant who has the capacity, be it talent or vulnerability, to respond with the specific trait of irrational submission and dissociation.

This alteration of awareness and relationship can be so profound as to evoke changes in sensory perception, so marked that even total anesthesia can occur or hallucinations be elicited. In addition, there can be changes in motor power even to the point of paralysis; changes in memory from total amnesia to partial amnesia; and intense revivification of past memories with emotional as well as factual recall which cannot be readily elicited in any other way.

This broad range of sensory and motor alteration provides the therapist with many opportunities to influence symptoms by means of proper intervention, as well as by offering challenging research possibilities.

Research

The potential for studying human behavior and personality development is tremendous. In one study, for example, a subject was regressed to various birthdays from one year to twenty-three years. He was then tested with standardized procedures such as the Stanford-Binet, Bender-Gestalt, Koh's block, man-woman drawings, conditioned reflex, and Rorschach tests. In each instance, the result corresponded with the regressed hypnotized age. It was even possible to reconstruct an intellectual growth curve on the basis of these test results.[1] With the further development of this technic, controlled cross-section interviews at various age levels will be possible in the same person. Correlating these cross-section studies with longitudinal trends will be a new and unique way to study character and personality development.

Another promising area for research is that aspect of relatedness between persons that is irrational, such as transference and rapport. This complex phenomenon is related to the hypnotic trance itself.[2] Also data about this can enhance our knowledge of the irrational aspects of interpersonal relationships in the nonhypnotic state as well.

Other uses relate to the memory and forgetting phenomenon. The revivification possible in the deep trance intensifies the accuracy of recall. This provides a new dimension in the study of forgetting and repression.

Therapy

The clinical therapeutic uses of hypnosis can be divided into five broad categories: (1) psychotherapy, (2) symptom alteration, (3) attitude alteration, (4) abreaction, and (5) special uses.

PSYCHOTHERAPY.—Hypnosis can be a useful adjunct in intensive analytic psychotherapy. For example, circumscribed periods of amnesia can be penetrated with the revivification and memory recall that is possible in a deep hypnotic trance.

By means of hypnotic regression to past age levels it is possible to recover the early atmosphere of a patient's home life, especially the emotional tone in relation to the important people around him. One patient I worked with, a thirty-five-year-old male, would spontaneously put his left hand to his neck to suffocate himself when regressed to any age period under three. This was consistent with the general atmosphere in his home where he was a child rejected by a cruel stepmother and an indifferent, weak father. The corroborative evidence that we have obtained from other members of the family suggests that the stepmother on more than one occasion did try to suffocate the child, but the alert eyes of other members of the family prevented this.

This paper does not aim to focus on this specialized area but instead invites your attention to uses of hypnosis that can, with reasonable effort, be developed as part of the broad therapeutic armamentarium of the general physician.

SYMPTOM ALTERATION.—In the process of influencing symptoms or attitudes two generalities can be made: (1) The hypnotic signal must to some extent be consistent with the "unconscious grain" of the subject. If the suggestion is too foreign or alien to the patient it is not likely that the signal will be obeyed. On the other hand, if the signal is within the general scope of likelihood, then the patient will very likely respond. (2) The deeper the trance, the greater is the likelihood that the implanted hypnotic suggestion will hold. It is consistent that the greater the depth of the trance the greater is the likelihood that the hypnotic suggestion can deviate somewhat from the general tendency of the patient's unconscious.

The ideal circumstance in which symptom alteration can be applied exists when the physician can utilize the following three steps. (1) The previous level of self esteem and executive control is revived and enhanced. (2) The environmental stress that provoked the symptom formation in the first place is changed. This is one reason why psychiatric casualties during catastrophe or wartime have such a high likelihood for improvement or cure. With the use of brief intensive psychotherapeutic intervention this can be coordinated with a substantial environmental change. That is, a soldier who breaks down in combat can be evacuated to a safe area and if necessary some assurance can be made that he will never return to a similar hazardous situation. In civilian life, if the symptoms are evoked by some unusual catastrophe, it is likely that with reasonable assurance the patient will be protected from a recurrence of the same calamity. (3) The symptom that expresses not only the evidence of illness but also the nature of the person's over-all defense against the insult, is acknowledged as a crutch that serves to avoid a still further disaster. This mode of treatment is not aimed at understanding the symbolism of the symptom. Therefore it is generally useful not to remove the symptom entirely but to modify the gross overstatement which the symptom represents to a more reasonable version of the same.

To illustrate this, a twenty-four-year-old soldier awoke in an army hospital twenty-four hours after he had been overwhelmed by a sequence of combat calamities, including the death at his side of his two close friends. Soon after he regained consciousness in the hospital he developed marked compulsive tic movements of his eyes, face, and head, so that he became an almost tragi-comic illustration of the stereotyped notion of a crazy man. The more he tried to control these tic movements the more exaggerated they became. With the usual psychiatric treatment of reassurance and eventual discharge from the Army to his home, he became panic-stricken at the thought that he had to face his family and friends at home with these telling and embarrassing facial and head movements. He pleaded for help. In this context he was hypnotized and without going into the dynamics of the symptoms it was possible to influence considerably both the frequency and intensity of the head and facial movements; it was possible to displace these movements from his head to his arms, then down to his feet, until ultimately with a gradual shift downward a residual symptom remained that amounted to a twitching of the big toe of his right foot. In the hypnotic trance he was told that in times of tension he would get recurrence of these hyperkinetic movements in his right big toe, but nowhere else. When he left the hospital he most certainly approximated a return to his previous level of self esteem. We were able to change most the threatening quality of his environment and the exaggerated symptoms of the disaster were attenuated to a relatively harmless but still hyperkinetic expression of the emotional conflict that was not resolved.[3] About five years after this soldier was discharged I received a letter from him telling me that he is gainfully employed, is doing well, and has had no return of the embarrassing head symptoms; but he did remind me that on occasions when he feels nervous he notices a peculiar twitching in his right big toe and asked me in the letter whether I had any idea why that occurred. He obviously had a complete amnesia for what had transpired during the hypnotic treatment.

In a similar way anxiety states, stuttering, paralyses of a psychiatric nature, pain, and amnesia can be treated. I recall an event that occurred during my early days in the Army when I first developed an interest and a skill with the hypnotic technic. I was Officer of the Day at the Fort Meade station hospital. That night the military police brought to the hospital a perplexed, bewildered young woman who had been picked up near the camp and was unable to identify herself. She knew that she was at Fort Meade but did not know her name or where she came from. The registrar of the hospital was oriented along strictly military lines. He reminded me that the regulations of the hospital made no allowances for the treatment or admission of nonmilitary personnel. Yet this was the middle of the night: the woman was in a serious predicament, and he refused to shoulder the responsibility of sending her away; and so he went back to the office and made a search in Army regulations to see how he could legally admit this unfortunate woman as an emergency patient.

While his research was going on I succeeded in putting the woman into a trance, and while in a deep trance she was able to identify herself and give in detail the whole sequence of her dilemma. She had come up from her home in Florida when a friend of hers told her that her husband was dating a woman near the camp. She decided to surprise her husband, a sergeant on the post, and planned to exert her influence to break up the affair. As she approached the camp gate her conflict as to whether she really wanted to face what she was afraid she would see or whether she would be better off not seeing what she feared became so intense that she resolved the conflict in a typically irrational manner by dissociating her identity from the whole situation. So she developed an amnesia and, in a manner of speaking, became nothing as a protection against the impending crisis. With the hypnotic trance it was possible to help her restore some of her former self regard; then it was possible to contact her husband. With the mediation of some common sense and understanding, she was able to meet with him and within a matter of a few hours they embraced, reaffirmed their love for each other, and her amnesia was obliterated.

Just as this dramatic scene took place the registrar returned from his office with a triumphant smile on his face: He had found an Army regulation that sanctioned the admission of this woman to the hospital. When he saw that she had recovered from her symptoms it was so difficult for him to reorient himself to this entirely new situation that he found himself saying, "But she must be admitted, we've already made out the papers."

ATTITUDE ALTERATION.—Attitude alteration is useful in controlling excessive smoking, excessive eating, or in enabling a patient to adopt a new attitude toward his own irremediable difficulty. With a dieting program, for example, instead of naming in detail what foods can and cannot be eaten, it is possible to focus just on an over-all attitude toward the compulsion to overeat. In addition to the conscious motivation to control the amount and type of food eaten, reinforcement by hypnotic implantation can serve as the extra and constant control that can overcome the inner compulsion, even though the psychologic dynamics of it are not understood. In a way, the impact and the transaction are similar in effect to a group inspiration such as that of Alcoholics Anonymous, only here the group is composed of two—the doctor and the patient.

Another use of attitude alteration is for direct support in depth for accepting an unpleasant new reality; for example, confronting society, especially former friends and acquaintances, with a recently amputated limb, a new facial scar, or an artificial eye. The reinforcement and encouragement made possible by the posthypnotic seed can avoid many secondary withdrawal symptoms or evasions from natural social pursuits. If the timing of this hypnotic implantation is early enough and appropriate enough it can serve well as a preventive and protective measure.

ABREACTION.—One of the most dramatic

and rewarding uses of hypnosis is for the victims of overwhelming catastrophe who survive at the cost of personality disorganization, total or fragmented amnesia, and various dysjunctive sensory and motor symptoms (numbness, tingling, paralysis, tics, hyperkinesis, and so forth). Induction of the trance as soon as feasible after the trauma increases the likelihood of total recovery. The regression possible in a deep trance enables the therapist to return quickly to an earlier period of the patient's life—the precatastrophe period when the ego integrity and self regard were still intact. With this as a therapeutic starting point, the catastrophe can be relived and put into its proper historical perspective, thus allowing a reintegration of executive functions to the precatastrophic level with a minimum loss of self esteem. Time is a significant factor. The longer the disabilities remain unchallenged, the more secondary gain through illness can become fixated, and the greater then will be the resistance to this mode of help.

Special Uses.—Hypnoanesthesia in dentistry, surgery, and obstetrics is covered in detail elsewhere in this symposium. Although the exact incidence in terms of percentages varies considerably from one group to another there are more than a few patients able to develop such total levels of anesthesia that major operative procedures are possible. In a larger group the hypnotic induction of anesthesia serves as an adjunct to standard chemical anesthetic agents, but with this group there can be a decided decrease in the quantity of chemical anesthesia required. There is still another group that does not respond at all to hypnoanesthesia.

Other uses that are being developed currently include fixation of joints for specified periods of time to enable skin graft transplantation. Still another is reinforcement by partial anesthesia to overcome the initial discomfort and inconvenience that occur during the first stages of applied contact lenses.

Diagnostically, with a hypnotizable patient it is sometimes possible to clarify a complex symptom picture by differentiating which sign or symptom results from an organic pathologic condition and which is a functional accompaniment.

Scope of the Doctor-Hypnotist

The same rules of reasonable therapeutic intervention apply to the use of hypnosis as to any other treatment technic. In competent hands the technic can be useful. In incompetent hands it can be not only not useful but also possibly harmful. Although my State license as a physician authorizes me to perform an appendectomy, as a psychiatrist I acknowledge that my training, experience, and conscience would not permit me to undertake this task under ordinary circumstances. In fairness to a patient in distress I should instead use my ability to locate a physician whose area of competence includes surgical skill. On the other hand, I can think of several minor surgical procedures that I can perform with a reasonable degree of competence, and indeed I would if there were no one else available. Similarly, we can acquire levels of competence to varying degrees in mastering the use of hypnosis.[4,5] Each person, however, can then delineate for himself what he can do well, and by doing so clarify his own boundary lines.

For example, when the obstetrician focuses his hypnotic work on the production of anesthesia during the labor period and the secondary anxiety related to the pregnancy, he is well within the reasonable use of this technic in the noblest meaning of medical therapeutics; but should he use the hypnotic trance to evoke long repressed memories without preparing the patient for its usefulness or relevance as a treatment goal, then he is thereby misusing a good technic and provoking unnecessary anxiety in the patient. Likewise, when the dentist can produce hypnotic anesthesia to perform his work this is admirable, but if he uses the trance to investigate the marital history of his subject he is extending beyond reason the relevance and boundaries of his intervention and possibly evoking unnecessary anxiety and humiliation for the patient. When the general physician structures his role as a hypnotist to allay anxiety, permit abreaction, control tic movements or stuttering, produce anesthesia for specific surgical or obstetric procedures, or reinforce attitudes toward food or smoking with a definite goal in mind, he is, I believe, making reasonable use of hypnosis without specialized psychiatric knowledge.

But to explore dormant memories and phantasies, to expose latent hostilities and anxieties without first structuring the therapeutic relevance and usefulness and without the technical skill of psychotherapeutic intervention does raise questions of professional propriety and wisdom. Using a scalpel to open an abdomen does not require much skill, but just as skill and knowledge are necessary to explore and correct a pathologic condition in the abdomen, so skill and knowledge are necessary for the psychotherapeutic management of the preceding exploration.

One last word about safeguards. We all agree that our patients must be treated with dignity and respect. In general, our patients, except those under anesthesia, can participate in maintaining this regard for themselves. But in the deeply hypnotized subject, a very special situation exists. His usual executive, self-protecting functions are more or less inactivated so that he becomes much more vulnerable to carelessness or exploitation by the hypnotist or by others he may encounter if the technic is faulty. This obviously adds to the responsibility of the hypnotist toward his patients.

19 East 88th Street, New York 28

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Hypnosis from the Viewpoint of Obstetrics and Clinical Demonstration of the Training of Patients for Delivery under Hypnosis

WILLIAM E. F. WERNER, M.D., ROCKAWAY PARK, NEW YORK

(From Rockaway Beach Hospital)

For a very long period of time the medical profession has been beset with the problem of delivering a mother of her baby in the most comfortable and painless manner without detriment to either mother or child. In utilizing hypnosis during the past year I have found that the delivery of patients in the hypnotic trance state is the method closest to that which we, as obstetricians, desire.

I like to think of hypnosis as a state of profound relaxation, in which the patient is highly suggestible to ideas which will prove of benefit to her and to which she will be able to react in a manner which will also benefit her. DeLee[1] of Chicago pointed out that the only anesthetic agent without danger is hypnosis. "I am irked when I see my colleagues neglect to avail themselves of this harmless and potent remedy." Greenhill,[2] also of Chicago, comments: "Hypnosis has been used for a long time in obstetrics and should be employed more often than it is at present. Even if complete hypnosis is not to be resorted to, repeated suggestions can accomplish a great deal in labor for the relief of fear as well as the pains of labor."

At present, hypnosis is having a worldwide rebirth. There are several reports by Malinowsky[3] of Russia which are very favorable. There are a number of German reports[4,5] on hypnosis, with or without small amounts of opiates, particularly those of Wolff[6] at Heidelberg on hypnonarcosis. In this country most of the reports have come from Kroger and DeLee[7] in Chicago.

At the present time about two thirds of my patients are asking about the use of hypnosis for their coming deliveries. In the past year, in 100-odd cases which I have already delivered with this technic, I have found that 10 per cent of my patients have failed to go into a trance or have given up during the training period or at some time during the labor in the hospital. Thirty per cent have been able to use the hypnotic trance through various parts of the labor and have been helped with the addition of anesthesia or analgesia at some time of labor. I do not consider these cases as failures because the amount of analgesia and anesthesia used were always routinely less than the amounts which I used in our patients who have not accepted this program. Also these patients were as a rule calmer during the antepartum stage and had fewer fears and apprehensions than did routine patients. Also, they were able to accept posthypnotic suggestion for their well-being in the postpartum period. The remaining 60 per cent (most of these in the last six months when our training program was considerably improved by the experience of the first six months) were able to complete the first two stages of labor without any anesthesia or analgesia and most of these also completed the third stage, a few requiring about 10 cc. of 1 per cent Xylocaine hydrochloride injected subcutaneously at the site of the episiotomy or laceration for closure.

The doctor, particularly the obstetrician and the general practitioner doing obstetrics, is in the very enviable position of being able to induce hypnosis in a great percentage of his patients because of strong rapport. The personal relationship between the doctor and his patient is usually very strong in the practice of obstetrics. The motivation of the patient also is very great in this situation. First the patient has heard or has been reading that hypnosis is being used more and more widely in obstetrics with apparently excellent results. The obstetric patient who fears being asleep, as with an anesthesia, or who fears spinal anesthesia is looking for a means whereby these can be avoided. Mothers who have delivered under hypnosis, particularly in small comunities, have given excellent reports to their friends, relatives, and the entire community at times. These reports do much to motivate the pregnant woman to at least inquire about the possibilities of her own situation. Human beings are unconscious imitators, and as hypnosis becomes more fashionable more women will be amenable to this therapy.

Procedure

There are two basic methods used: first, repeated posthypnotic suggestions with amnesia for labor and delivery; and second, education for childbirth without fear. I particularly prefer the second method in most cases, although in the case of certain patients who want to be oblivious to the whole procedure, the first is more satisfactory.

In my practice, at the first antepartum visit I discuss anesthesia with my patients. I have not as yet suggested hypnosis to anyone who has not inquired about it, or to anyone who has been perfectly satisfied with previous deliveries. However word gets around, in small communities particularly, that Dr. So-and-So is delivering patients by hypnosis and many patients having first babies and even those who have been perfectly satisfied to date with previous deliveries are inquiring about its use in their particular pregnancies. I generally ask the patient why she happens to be interested in hypnosis and usually get the answer that a neighbor or friend has been very satisfied with it or raves about it, she would like to try it out of curiosity and feels that if someone else did it she can do it, and so forth. Those patients who express an interest are invited to a class in which expectant mothers are being trained to deliver in the hypnotic state. We feel that observing these women has a very beneficial effect on newcomers. They watch well-conditioned patients and usually marvel at their accomplishments. We do not let them watch primary inductions.

When the patient arrives for her visit at about the end of her fifth month we attempt a primary induction. At this session, before the actual induction is accomplished, we explain in detail what hypnosis is, how it can be used, and attempt to answer and negate any false conceptions or apprehensions which the patient may have. If the primary induction is successful, before arousing the patient we develop a signal so that in the future the patient by her own will may return to the hypnotic trance state at a moment's notice. We also suggest to the patient that in the future she will enter the trance state much more rapidly and be able to go into it much more deeply; that she will find it increasingly more pleasant and comfortable; and that on awakening she will always feel very comfortable, very refreshed, and very relaxed. When the patient has been aroused, we ask her to comment on what she has experienced, and after a few moments we test the signal to prove to her that now she can reenter the trance very rapidly.

At her next visit, either as an individual or in a class, we begin her education in what to expect during labor and delivery in the trance state. This is all described to her in detail while she is in a trance state. We tell her that labor in the first stage will consist of contractions (never the word pains). These contractions are necessary and valuable because they do something for the patient: they dilate the mouth of the womb, an organ called the cervix, so that when the cervix is fully dilated the baby can leave the womb, pass through the birth canal, and be born. We explain to her that the passage of the baby from the uterus through the birth canal to its complete birth constitutes the second stage of labor. We tell her that she will know before we will when she reaches the end of the first stage and starts the second stage because she will get a very definite urge to push, to bear down, a sensation that her bowels want to move. Then she is told that she will awaken at the end of the second stage to see her baby, to hear its first cry, and to hold it if she cares to. (Later those patients who can attain the somnanbulistic trance are told that they may watch the delivery if that is their desire.) Next, she is told that she will be asked to return to the pleasant state of relaxation for the third stage of labor, at which time the placenta or afterbirth, as it is commonly known, will be delivered, and that any repair work that may have to be done, because of a laceration or an episiotomy, can be accomplished. She is told that it may be necessary in some cases to be able to produce a numbness or anesthesia in the so-called saddle area of her body for this repair, and that this will be taught to her at a subsequent session.

At each subsequent session, most of the above is repeated to insure the patient's complete education. Anesthesia is taught by several methods. One method is the development of glove anesthesia of the right hand with eventual transference to other parts of the body. The patient gains confidence in being able to do these things and is assured that, when the time is necessary for her to transfer or manufacture anesthesia in the saddle area, she will be able to do it. A second method may be used for many patients who have delivered under saddle block, pudendal block, or caudal anesthesia. They are told that their memory is stored in the subconscious mind and consequently that in the hypnotic trance state, in which the subconscious mind is being utilized, they can reproduce their previous anesthetic experiences, and many are able to reproduce completely these phenomena.

A third method is that of dissociation. The patient is asked to see an individual sitting across the room who, by description, corresponds to herself. When she identifies the person, we attempt to anesthetize the hallucinated patient. When the dissociated person accepts the anesthetic state for the hallucinated image, she is asked to let the image disappear. Now on questioning the patient, we find that she has been anesthetized. Other methods are also used, but the ones described are the ones that we have found to be most satisfactory.

Many patients are able to learn time distortion by experiments which we conduct in the class, and this becomes useful during the second stage of labor in making the contractions seem to be a very few seconds in duration, and the interval between contractions a fifteen- to twenty-minute rest period. At the patient's visit around the seventh month we change from the arm signal which we have been using to a new set of signals. Since the obstetric patient in the first stage of labor is usually only uncomfortable during the actual contractions. we have found it unnecessary to maintain the trance uninterrupted throughout this first stage. We use the words "contraction starting," explaining to the patient that these words take the place of the previous signal for induction of the trance and that when the real contractions of labor begin they will have the same effect as the spoken words in inducing a trance. We use the words "contraction over" and explain to the patient that these will take the place of the waking signal, and that when a real contraction comes to an end it will induce waking in the same manner. When the patient has accepted the new signals, she is told that when labor does start she is to inform her obstetrician, and that when she is told to proceed to the hospital she may utilize the self-induced trances on the journey to the hospital.

The obstetric staff at the Rockaway Beach Hospital has been trained to receive these patients in a manner conducive to aiding the patient throughout her labor. She is told that after the preparation and enema she will go to an anteroom where she may sit in a comfortable chair during the entire first stage of her labor. Her husband or some close relative is invited to stay with her and can be utilized to reinforce the self-induced trances by the suggestion of deep relaxation to the patient when she is in hypnosis. She is instructed that at the first feeling of a bearing down or pushing sensation she is to instruct whoever happens to be with her at the time that she feels like pushing or bearing down. She knows that she will then be taken directly to the delivery room where her second stage of labor will be culminated in a comparatively short time. She will bear down and work with each contraction during the second stage without any prodding by any staff member, she will have a wonderful sensation of taking an active part in her delivery, and will have a tremendous sense of accomplishment when she has completed her task. After she has returned to the trance in the third stage of labor, various posthypnotic suggestions are given during delivery of the placenta or during suturing of the perineum. "In the next few days you will pass your water without being catheterized; you will move your bowels without enemas; you will have a good appetite; the food will appeal to you; the nursing service will appeal to you; you have a few sutures, but they are not going to bother you, in fact, you won't even know they are there; the entire stay at the hospital will be like a very pleasant vacation."

During the scientific assembly of this meeting, Mrs. Helen Dwyer of Kew Gardens and Mrs. Gertrude McGuire of Howard Beach, who had volunteered their services, were able to demonstrate the various stages of their training to the group assembled. Both of these women had recently delivered in the hypnotic trance state.

Just a word about cesarean section. This may be accomplished entirely without anesthesia with about 10 to 20 per cent of these patients. However, this complete absence of chemo-anesthesia is not necessary. With hypnotic training the patient may be brought to the operating room in a trance state, completely relaxed, without preoperative medication. Anesthesia is readily induced, the amount of anesthetic agent greatly reduced, and the patient receives posthypnotic suggestions for a rapid and comfortable recovery. We like to use novocain infiltration of the skin and usually find that it is all that is necessary to complete a section. Occasionally small amounts of novocain may be required for fascia or other deeper lying structures, but this is very rare. These patients are given a so-called dress rehearsal the day before surgery and seem to accept the procedure readily.

Conclusions

What are the advantages of labor and delivery in this manner? There are no harmful anesthetic effects. The patients may eat and drink if they desire during the first stage of labor. There is no discomfort from the preparation, enema, or examinations. The speed of the delivery is not important since neither mother nor baby is receiving depressive drugs. The patient has a tremendous sense of accomplishment and well-being. The postpartum period truly seems to be a vacation. In our 100-odd cases, not one baby has suffered from colic. The usual comment of the mother when seen again after discharge from the hospital is that "this is the grandest baby that I have ever had." There is experimental evidence that vital capacity in the hypnotic trance state is increased 50 per cent over normal breathing and over 100 per cent in the breathing of the anesthetic state. It appears to be self-evident that the oxygen supply to the fetus is extremely adequate and resuscitation of the newborn infant is a rare procedure. During delivery there is relaxation of the perineal tissues which is greater than that achieved in other forms of anesthesia and which permits many more normal deliveries, fewer and smaller episiotomies, and fewer extensions high up into the vagina. The musculofascial ring in the vagina, which I am sure we all have noticed, seems to be completely obliterated.

During our training program our patients are conditioned for relaxation in the dental chair as part of their training; they are taught autohypnosis, which is helpful in relieving certain stress situations at home and some muscular aches and pains which are characteristic of the patient in late pregnancy. Hypnosis may be used to relieve the nausea and heartburn of pregnancy and to control excessive weight gain. Resistance to fatigue and obstetric shock is considerably raised. There is no depressive action on contraction and retraction. Capillary blood loss is cut down. In our experience although our series is not controlled, I believe that there is some diminution in the duration of the first stage and very definite diminution in the second stage.

Hypnosis is centuries old. It has had its periods of wide use and its periods of being discarded. Fortunately, it has recently had a marked rebirth. It is not a panacea and has its limitations. However, for the obstetric patient who, through motivation, desires to utilize it and is either a good hypnotic subject naturally or can be trained to become a good subject, delivery under hypnosis may very reasonably be the answer to the elimination of fear, anxiety, and pain for this segment of our obstetric population.

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Hypnotism from the Viewpoint of Anesthesia

PAUL M. WOOD, M.D., HIGHLAND FALLS, NEW YORK

(*From the Wood Library–Museum of Anesthesiology*)

"And the Lord God caused a deep sleep to fall upon Adam . . . ."[1]

Hypnotism is defined as "An induced sleep-like state during which the patient is peculiarly susceptible to the suggestions of the hypnotist."[2] Further clarified: "Hypnosis—A state of sleep or trance induced artificially."[3]

Anesthesiology is defined as the study and practice of the art and science of anesthesia in all its forms and all that pertains thereto.[4] This is interpreted by the College and the Board of Anesthesiology to include local, regional, general, intravenous, rectal, spinal, inhalation, topical, and psychic anesthesia for therapeutic or diagnostic procedures and resuscitation.

Modern use of the term anesthesia has expanded and enlarged the original meaning of the ancient Greek word. Briefly it was "*an*—not" (loss of or against) "+ *aesthesis*—feeling" (sensation or touch).[5] From earliest time loss of the universal sensation, pain, has been sought by every human being. Magicians, priests, and doctors of all the ages have sought and are still seeking the perfect way to accomplish this goal.

Speculation as to the first pain relief opens several possibilities. In the light of present knowledge the "deep sleep" of Adam might have been psychic-hypnotic, a result of inhalation of natural gases such as those found in the Grotto del Canni,[6] or the result of an imbibed draught such as was recorded and used in the earliest reports on pain relief. Perhaps it was just cold, but the answer is not known at this time.

This present discussion is timely since only this past June, 1958, the American Medical Association House of Delegates approved the medical use of hypnosis. It is perhaps less well known that the same Association, founded the same year (1846) in which William Thomas Greene Morton publicly demonstrated the use of ether in Boston, was so extremely cautious that anesthesiology was not recognized as a medical specialty until 1941. Until that date physicians who limited their practice to anesthesia were listed in the official Directory as "surgeon—specializing in anesthesia." Now both the previously aggrieved surgeons and the anesthetists are properly listed in their specialties.

Ralph M. Waters, while director of anesthesiology at the General Hospital, Madison, Wisconsin, was an oustanding teacher, authority, and historian whose extensive reading and research led him to remark to a group of colleagues that hypnosis might have been an outstanding means of producing anesthesia if Simpson had not discovered the use of chloroform the year after Morton displayed the use of ether.

Hypnosis like many methods for the production of an anesthetic state has had periods of popularity and of disfavor. Introduced as animal magnetism in 1766 by Franz Mesmer, investigated, scorned, restudied, and renamed, it became hypnotism under the aegis of James Braid. There can be no doubt that it was used with success in many cases of surgical operation with varying to complete success. Names that should be recalled in the history of this development include Greatrakes the Irish "Stroker"; also Esdaile, Elliotson, Charcot, Freud, and Collier. The latter, Robert H. Collier, an English physician, visited his father in New Orleans and while there treated a Negro who had dislocated his hip after becoming unconscious from the inhalation of fumes from a vat of rum. This caused Collier to compare the effects of alcoholic inhalation and of pain relief under hypnotic influence, judging both to be phenomena of narcotism.

A few days prior to Morton's demonstration of anesthesia by letheon ether,[7] Sir Benjamin Brodie[8] spoke at St. George's Hospital, London, October 1, 1846, and referred to mesmerism (hypnotism) in these words: "There is no greater desideratum, either in medicine or surgery, than to have the means of allaying or preventing bodily pain, not only in cases of surgical operation, but in other cases also; but there is no good reason to apprehend that it has not been reserved for the revival of animal magnetism under a new name, to accomplish that for which all physicians and surgeons have been looking in vain, from the days of Hippocrates down to the present time."

Loysel,[9] a doctor of medicine, published a report in France concerning the amputation of a leg of a young girl seventeen years old under the influence of "Le Sommeil Magnetique" dated October 2, 1845. This book with the hand-written signatures of the patient and five witnesses is in the collections of the Wood Library–Museum of Anesthesiology. Also there can be seen copies of Estlin's "Remarks on Mesmerism," a presidential address given in 1845 at the Bristol Branch of the Medical and Surgical Association. Another publication entitled "Hypnotism as a Therapeutic Agent," by Louis Lictenstein, appeared in May, 1896, in the *New York Medical Journal.* Again, in this library is a copy of Elliotson[10] reporting "Numerous Cases of Surgical Operations Without Pain in the Mesmeric State." On the flyleaf is found "In the whole domain of human arguments, no art or science rests upon experiment more numerous, more positive, or more easily ascertained." "To me (and before many years the opinion must be universal) the most extraordinary event in the whole history of human science is that MESMERISM ever could be doubted."[11]

Turnbull[12] referring to hypnotic anesthesia and its analogous states in their various aspects says, "Having, in my previous edition, brought forward this agency as a means of producing a certain form of anesthesia, which can be employed in certain rare surgical operations, I have endeavoured to improve the opportunity to study the subject more in detail, especially in its anesthetic and medicolegal aspect, so as to make my work more useful to my medical, dental, and scientific confreres."

He states under the heading "Hypnotism as an Anesthetic," "Hypnotism (from hypnos) is the production of sleep by what was generally known as animal magnetism. Only certain individuals are susceptible to its influence. The person who operates has, in our opinion, great will power over the individual operated upon. The patient hypnotized is not absolutely insensible, but operations of a trifling nature can be performed without apparent pain."[13]

The modern anesthesiologist is cognizant of the value of this agency in many instances. He is also aware of the unfortunate result of meager information in its proper application. It is still true that many persons are not susceptible, but today with increased knowledge of its management, many persons may be given real relief from pain and the fear of pain. It is especially adaptable in the field of obstetrics; in dentistry; and, as demonstrated recently in a young person at the American Medical Association convention in California, it can be used successfully in cardiac surgery.[14] The American Society of Anesthesiologists' recent Post Graduate Assembly presented a closed circuit television demonstration of hypnotic anesthesia for a breast amputation.[15]

In conclusion from the viewpoint of anesthesia a new tool has been added officially to the armamentarium of the anesthesiologist. It is so recently approved that some still doubt its value. It is suggested that an open mind be maintained as in the letter of Harriet Martineau:[16] "And now one word of respectful and sympathizing accost unto those reverent and humble spirits who painfully question men's right to exercise faculties whose scope is a new region of insight and foresight. They may ask whether to use these faculties be not to encroach upon holy ground, to trespass on the precincts of the future and higher life. May I inquire of these in reply what they conceive to be the divinely appointed boundry of our knowledge and our powers?. . .Is it not the most remarkable feature of the progress of Time that, in handing over the future into the past, he transmutes its material, incessantly, and without pause, converting what truth was mysterious, fearful, impious to glance at, into that which is safe, beautiful and beneficent to contemplate and use."[16]

23 Cozzens Avenue

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RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Recent Advances in Neurosurgery

EMANUEL H. FEIRING, M.D., NEW YORK CITY

(*From the Department of Surgery, Albert Einstein College of Medicine, and the Neurosurgical Service of the Montefiore and Mount Sinai Hospitals*)

DURING recent years various developments have taken place in the field of neurologic surgery. Diagnostic methods have changed, additional entities have been recognized, methods of management altered, and new technics utilized as therapeutic adjuncts.

Brain

INTRACRANIAL NEOPLASMS.—The role of radiology in neurologic investigation has been one of increasing importance.[1-8] Considerable information may be derived from a study of the plain x-ray films of the skull.[9] It is essential that the films be of good technical quality, since otherwise they may be useless or even misleading. Special views are necessary for visualization of certain structures such as the optic foramina and petrous pyramids. At times laminagraphy is essential for adequate study of a particular area obscured by overlying structures in the plain x-ray films.

The value of cerebral arteriography in the diagnosis and localization of brain tumors has been firmly established.[10-21] By revealing displacement of the major intracranial blood vessels or by disclosing the presence of abnormal vessels, in a high proportion of cases arteriography makes it possible to localize or outline expanding lesions, especially those involving the cerebral hemispheres or base of the brain. Frequently the vascular pattern of a tumor is sufficiently characteristic to warrant a presumptive diagnosis of its histologic nature. Radioactive thorotrast as a contrast medium has been largely replaced by diodrast and more recently by Hypaque. With experience it is possible to accomplish the injection by percutaneous puncture almost invariably so that surgical exposure of the artery is rarely necessary. By proper timing of the roentgenographic exposures both the arterial and venous phases of the cerebral circulation may be visualized. This is usually desirable since pathologic states are often best demonstrated in one or the other phase. An automatic rapid cassette changer is essential. Untoward reactions, though not unknown, are uncommon even in elderly subjects.[22] The tendency toward the use of smaller quantities of contrast media combined with fewer injections has undoubtedly been largely responsible for a diminution in the frequency of complications. Radiographic equipment is now available which makes it possible to obtain arteriograms in two planes simultaneously. This is a salutary innovation since it reduces to a minimum the number of injections required for an adequate study. Although it is possible to visualize both the carotid and vertebral circulation, generally speaking the indications for vertebral angiography in the diagnosis of brain tumor are relatively few. An important non-neoplastic mass lesion which lends itself especially well to disclosure by arteriography is a subdural hematoma. Anteroposterior views are essential when this condition is suspected.

Whereas arteriography is the diagnostic method of choice when there is evidence of a lateralized supratentorial tumor, at times pneumoencephalography may be required in addition to indicate clearly the nature and/or location of the lesion.[23] Neoplasms involving the midline or posterior fossa are best demonstrated by means of pneumoencephalography.

A technic of pneumoencephalography involving the use of small quantities of gas, fractionally injected, appears to have been widely adopted.[24–28] Via the lumbar route 5 to 10 cc. of gas are slowly injected before any cerebrospinal fluid is withdrawn. Films are taken to determine whether the ventricular system is being filled, since otherwise the position of the head must be readjusted. Thereafter additional small quantities of gas are injected, removing lesser amounts of cerebrospinal fluid. Unless the ventricles are dilated, a total of 25 cc. of gas is generally sufficient for adequate study of the ventricles, cisterns, and subarachnoid spaces. Encephalography performed by the lumbar route, without removal of cerebrospinal fluid, has been recommended in cases of intracranial neoplasm, including tumors of the posterior fossa. Proponents of this method contend that the hazard of a medullary or tentorial herniation is minimized because at no time during the procedure is the pressure within the spinal subarachnoid space allowed to fall below its original level. The possibility of continued leakage of cerebrospinal fluid at the site of lumbar puncture following withdrawal of the needle is nevertheless conceded. Although favorable reports on the use of encephalography in brain tumors have appeared, especially from abroad where this method has been practiced on a large scale, most neurosurgeons in this country still consider encephalography too dangerous in cases of increased intracranial pressure or posterior fossa tumor. Ventriculography, though admittedly not wholly innocuous, seems safer than fractional pneumoencephalography in the presence of intracranial hypertension, an opinion shared by this reviewer.

In order to visualize parts of the ventricular system more clearly, especially the aqueduct and fourth ventricle, positive contrast ventriculography using pantopaque has been advocated.[29,30] A small quantity of the contrast medium is injected through a burr hole into the lateral ventricle and the head manipulated under fluoroscopic control, so as to facilitate the flow of pantopaque through the foramen of Monro and third ventricle into the aqueduct and fourth ventricle.

The electroencephalogram has proved to be an exceedingly valuable aid in the diagnosis and localization of brain tumors. About 70 per cent of all growths involving the cerebral hemispheres can be localized by this means. Infiltrating, malignant tumors usually produce a more marked abnormality than benign, slowly growing neoplasms. Other types of intracerebral masses such as a hematoma or abscess may also be accurately localized since they frequently give rise to a focal electrical abnormality. Midline tumors, including posterior fossa lesions, cannot be localized by this method.

The enthusiasm which greeted the introduction of radioactive substances for the localization of brain tumors appears to have abated.[31–33] Additional experience has indicated that the value of this method by comparison with electroencephalography, pneumoencephalography, and arteriography is distinctly limited. At present it can be relied on only to supplement rather than to replace any of the established diagnostic methods. The use of a probe technic for demarcating neoplasms at operation with radioactive phosphorus continues to be investigated.[34]

Considerable interest has been displayed in the use of hypothermia and induced hypotension in the treatment of vascular tumors and intracranial vascular malformations.[35–45] The reduction in metabolism and oxygen consumption during general hypothermia is especially important with regard to the nervous system because of the high metabolic rate of brain tissue. Hypothermia produces a progressive decrease in cerebral metabolic rate as the body temperature is lowered. Cerebral oxygen consumption drops sharply between 31 and 27 C. Cerebral blood flow is decreased and the caliber of the cerebral blood vessels is diminished during hypothermia. Intracranial pressure and brain volume are also reduced at lowered temperatures. For optimal effects temperatures between 30 and 27 C. have been recommended. Below 27 C. cardiac irregularities may develop and the body pH may be affected by the drop in respiratory rate. The value of hypothermia in intracranial surgery lies in the fact that it affords protection against cerebral ischemia and anoxia, thereby permitting a more prolonged interruption of afferent circulation to the brain when necessary without increasing the risk of infarction. The reduction in brain volume resulting from hypothermia further facilitates surgical management.

Hypotension induced by ganglionic blocking agents has also been utilized in order to cope with the problem of operative hemorrhage. Pendiomide, arfonad, and hexamethonium have been employed for this purpose. Reduction in arteriolar tone resulting from interruption of sympathetic impulses lowers the peripheral vascular resistance so that a high systolic pressure is no longer required for maintenance of an adequate circulation. Without hypothermia the systolic pressure of a normotensive individual probably should not be allowed to drop below 80 mm. mercury since profound hypotension may cause brain damage as a result of anoxia. Blood must be replaced whenever necessary so as to maintain an adequate total blood volume. Induced hypotension is inadvisable in older patients with hypertension and arteriosclerosis. In the event serious bleeding is anticipated, consideration should be given to the combined use of hypothermia and hypotension.

The physiologic mechanisms involved in cases of increased intracranial pressure are not fully understood. Normally the maintenance of intracranial pressure is dependent on the cerebral blood flow. Compression of veins by a tumor resulting in an impairment of the velocity of blood flow leads to a compensatory arteriolar dilatation. Reduction in cerebral blood flow has been consistently observed only in cases in which the intracranial pressure has exceeded 450 mm. water.[46] In addition to its effects on the cerebral circulation, a tumor may raise the intracranial pressure by interfering with the flow of cerebrospinal fluid. A midline tumor may readily do so by virtue of its strategic location. The cerebrospinal fluid circulation may, however, be obstructed by neoplasms located elsewhere as a result of herniation of the brain. Herniation of the tonsils of the cerebellum through the foramen magnum is a well-recognized effect of tumors of the posterior fossa. No less serious is the displacement of the uncus of the temporal lobe through the tentorial opening leading to compression of the brain stem, which may occur as a consequence of a supratentorial neoplasm.

From a clinical standpoint, the individual types of intracranial tumor will be dealt with only insofar as there is progress to report regarding their recognition or treatment. Several excellent reviews are available for those desirous of more detailed accounts.[47,48] The morphology of tumors of the nervous system, together with a brief discussion of their clinical features, is well presented in a recent monograph by Zimmerman, Netsky, and Davidoff.[49]

Unfortunately there is essentially nothing new to report concerning the management of the gliomas, the most common of the primary neoplasms of the brain. It is usually impossible to remove a gliomatous tumor of the cerebrum completely. The duration of life following the removal of a cerebral astrocytoma is variable, though periods of long survival are not uncommon. Postoperative irradiation is advisable despite the fact that the response in any particular case cannot be anticipated. Astrocytomas of the cerebellum represent a particularly favorable group of tumors in which total removal is often feasible; the prognosis in such cases is excellent. The treatment of glioblastoma multiforme, a highly malignant primary brain tumor, remains wholly unsatisfactory. It appears to be refractory to all types of radiation.

The ideal treatment of the meningiomas is total removal. This is not always possible, however, because of their inaccessibility and, in some cases, because of their proximity to vital structures. In such cases x-ray therapy may be given a trial, since there is some evidence that meningiomas are occasionally radiosensitive.[50]

It is now apparent that total extirpation is the procedure of choice in the treatment of tumors of the acoustic nerve. Recurrence is avoided and the postoperative disability is less marked than that following partial removal. The mortality is about 10 per cent. Occasionally it is possible to preserve the facial nerve, although usually it must be sacrificed. The resulting facial paralysis may be partly corrected by means of a facial-hypoglossal anastomosis. In the case of elderly patients who tolerate the radical operation less well, subtotal (intracapsular) removal remains the procedure of choice.

Whereas in most cases of acoustic neurinoma the clinical picture is characterized by a typical sequence of events occurring in chronologic order, as described by Cushing, variations from the usual course are encountered in a significant number of patients.[51,52] Thus at times the presenting symptoms are failing vision or mental changes, both of which are due to hydrocephalus. Other atypical manifestations resulting from brain stem involvement include motor phenomena, disturbances of consciousness, and impairment of conjugate gaze.

The effectiveness of irradiation in the treatment of the pituitary adenomas of all types has been demonstrated beyond reasonable doubt. Although a difference of opinion still exists regarding the relative merits of surgery and radiation therapy, a trial of irradiation is advisable whenever vision is not seriously impaired. Recently Horrax[53] reported an extraordinary degree of success utilizing the 2,000,000-volt machine and administering a tumor dose of 4,000 r. Of 66 patients thus treated only eight (12 per cent) subsequently required operation. The use of cortisone pre- and postoperatively has proved valuable in patients undergoing surgery for pituitary tumor, especially those with severely depressed adrenal function.

Acute degenerative changes characterized by widespread necrosis and/or hemorrhage may occur in adenomas of the pituitary.[54,55] This condition, termed pituitary apoplexy, is characterized by an abrupt onset of stupor or coma, headache, nuchal rigidity, ocular paralysis, loss of vision, and occasionally hemiparesis. The cerebrospinal fluid is either bloody or xanthochromic and its protein and cell content are increased. Prompt surgical treatment combined with the administration of cortisone is indicated in patients with marked loss of vision.

The pituitary may be the site of primary malignant disease.[56] Of infrequent occurrence, primary carcinoma of the pituitary is not characterized by any distinctive clinical symptomatology or radiologic features. The histologic appearance of the tumor is marked by pleomorphism, bizarre cells, mitotic and amitotic figures, multinucleated giant cells, absence of specific cellular granules, and a lack of alveolar pattern.

Cranial lesions are of frequent occurrence in polyostotic fibrous dysplasia. At times the skull may be exclusively affected.[57] Localized symptoms may be present, particularly when the base of the skull is affected, in which case ocular manifestations are especially likely to be prominent. Confusion may arise in distinguishing between localized fibrous dysplasia and the bony changes associated with meningiomas. The age of the patient affords a valuable differential criterion, fibrous dysplasia being a disorder of childhood and adolescence, whereas meningiomas as a rule occur during adult life.

The etiology of the syndrome to which various names have been applied, most commonly pseudotumor and otitic hydrocephalus, and most recently benign intracranial hypertension, apparently is diverse.[58–60] The term otitic hydrocephalus, introduced by Symonds,[59] is applicable only to some cases, since aural infection is not invariably the predisposing factor. Extracranial infection, trauma, and extracranial venous thrombosis appear to be related etiologically in some instances, in addition to which there exists a group of cases consisting largely of obese females in which the causative factor is entirely obscure. There is reason to believe that dural sinus thrombosis, particularly occlusion of the lateral sinus, is the cause of the otitic group. It is still uncertain how extensive sinus thrombosis must be to produce this syndrome and what part, if any, cerebral edema contributes to the picture. The cases in which evidence of increased intracranial pressure develops after a closed head injury are thought to result from thrombosis of the superior longitudinal sinus.[61] The importance of this syndrome lies in the fact that it is not uncommon, it must invariably be differentiated from a brain tumor or other space-occupying lesion, and its prognosis, as a rule, is good. Although the diagnosis may be suspected on clinical grounds in a patient with evidence of increased intracranial pressure, no localizing signs, and a normal electroencephalogram, confirmation by means of ventriculography, which reveals normal or small ventricles without deformity or displacement, is essential. Some difference of opinion exists regarding treatment. In cases in which vision is in jeopardy, undoubtedly a subtemporal decompression should be performed. Operative treatment is not invariably necessary, however, and in cases with less pronounced pressure effects, repeated spinal drainage, dehydration, limitation of fluids and salt, and the use of diuretics will suffice.

Among the conditions which may require consideration in the differential diagnosis of brain tumor are chronic pulmonary insufficiency and occlusive disease of the internal carotid artery. Neurologic manifestations including headache, papilledema, impairment of consciousness, and tremor and twitching of the limbs may occur in patients with chronic pulmonary and cardiac failure.[62] At times the neurologic symptoms, particularly headache and papilledema, are so prominent that a primary intracranial disorder is erroneously suspected.

It is now apparent that spontaneous occlusion of the internal carotid artery is not at all uncommon.[63–66] The clinical manifestations of this disorder are variable. Hemiplegia of abrupt onset often associated with loss of consciousness occurs in about 35 per cent of cases. Transient episodes of headache, hemiparesis, or monoparesis which may not clear entirely or may be terminated eventually by a sudden hemiplegia are observed in about 40 per cent of patients. The remaining 25 per cent exhibit a slowly progressive course marked by contralateral weakness, sensory loss, aphasia, headache, mental impairment, and occasionally convulsions. It is this last group of cases which may lead to confusion in diagnosis prior to arteriography.

Occasionally the edema resulting from a massive cerebral infarct caused by an occlusion of a major vessel such as the internal carotid or middle cerebral artery is sufficiently pronounced to raise the intracranial pressure appreciably, and even lead to papilledema.[67,68]

Intracranial Vascular Malformations; Intracranial Hemorrhage

ANEURYSMS.—Considerable attention has been devoted in recent years to the subject of vascular malformations owing largely to advances in diagnosis and localization made possible by the introduction of cerebral angiography. It is generally believed that most aneurysms are congenital in origin. The majority involve the anterior half of the circle of Willis, arising mostly from the internal carotid, anterior communicating, and anterior and middle cerebral arteries. Symptoms usually appear during adult life, occurring after the age of forty in about 50 per cent of cases. The clinical picture is variable depending on whether the aneurysm is intact or has ruptured.[69,70] Most often there are no complaints until the lesion suddenly ruptures, in which case the symptomatology is that of a subarachnoid hemorrhage. When neurologic manifestations arise prior to rupture, they do so as a result of compression of adjacent structures. Supraclinoid aneurysms involving the internal carotid artery often cause an isolated paralysis of the oculomotor nerve of abrupt onset, which may be associated with pain about the eye and forehead due to impingement on the trigeminal nerve. Aneurysms of the carotid artery within the cavernous sinus (infraclinoid) most commonly affect middle-aged or older women and give rise to sudden, severe, unilateral pain about the eye together with an ipsilateral ophthalmoplegia and a trigeminal sensory deficit. Rarely do aneurysms in this location rupture into the subarachnoid space. They may, however, break into the cavernous sinus, with the resultant formation of a carotid-cavernous fistula. Anteriorly located aneurysms originating from the internal carotid or anterior cerebral arteries may give rise to visual manifestations caused by involvement of the optic nerves. Seizures and focal symptoms referable to the frontal and temporal lobes, such as weakness and olfactory hallucinations, may occur in association with aneurysms of the middle cerebral artery. Basilar artery aneurysms are usually arteriosclerotic in origin and cause manifestations referable to the brain stem and cranial nerves, especially the facial and acoustic nerves.

It is not uncommon for aneurysms to rupture into the substance of the brain as well as into the subarachnoid space.[71] Hemorrhage into one or both frontal lobes may occur as a consequence of an aneurysm of the anterior cerebral or anterior communicating artery. Aneurysms of the middle cerebral artery or carotid bifurcation may cause bleeding into the frontal or temporal lobes. The clinical picture in such cases is one of subarachnoid hemorrhage combined with evidence of a focal neurologic lesion depending on the area of the brain affected. Evidence of a focal lesion does not invariably signify the presence of an intracerebral hematoma since, at times, there are other responsible factors such as ischemia due to vascular occlusion. Occasionally rupture of an aneurysm, or angiomatous malformation, is further complicated by the formation of a subdural hematoma.[72]

Although plain x-ray films of the skull are occasionally useful in the diagnosis of an intracranial aneurysm or, more often, an intracerebral hemorrhage, definitive evidence of the nature and location of the lesion is dependent on arteriography. By this technic it is possible to demonstrate the lesion and its site of origin in the majority of cases. The disposition of the cerebral blood vessels also provides evidence of the presence of an associated intracerebral hematoma. Bilateral carotid arteriography as well as vertebral arteriography may be required in order to visualize an aneurysm. To rule out the possibility of multiple aneurysms, bilateral carotid arteriography is usually performed in any event. Opinion is divided concerning the value of routine vertebral angiography, since few aneurysms demonstrated by way of the vertebral circulation are at present amenable to treatment. In recent years a more aggressive policy has been instituted with regard to the diagnosis and treatment of aneurysms, and most neurosurgeons today concur in the advisability of early angiographic study, that is, within a day or two following subarachnoid hemorrhage.

Rupture of an aneurysm poses a serious threat to life. It is generally conceded that the mortality is somewhere between 35 and 50 per cent. The prognosis is probably even worse in older patients and in those with hypertension. Furthermore, recurrence of bleeding may take place at any time, especially during the first two or three weeks following the initial episode, and is no less dangerous. In view of these hazards, more effective means of treatment than the so-called conservative method have been sought. The object of surgical therapy has been to eliminate the aneurysm from the cerebral circulation whenever possible, or else to diminish the pressure within its lumen by interfering with its blood supply, so that rupture is less likely to occur and thrombosis may be facilitated. Experience with the surgical treatment of aneurysms is still relatively limited, and many current concepts will undoubtedly be revised. It must also be admitted that there is still some question regarding the value of surgical therapy on the basis of the available statistical data.[73]

There are two approaches to surgical treatment—ligation of the carotid artery in the neck and intracranial exposure of the lesion so that it may be dealt with directly. Factors that must be considered in arriving at a decision as to the surgical management in any particular case are the age and condition of the patient, the location and size of the aneurysm, and the time that has elapsed since rupture. Generally speaking, the trend at the present time is to favor a direct attack on the lesion as soon as the patient's condition permits. Proximal carotid ligation is largely reserved for aneurysms of the internal carotid artery at or below its bifurcation. It is uncertain whether carotid ligation is effective in cases in which the aneurysm arises beyond the bifurcation of the internal carotid artery. Carotid ligation entails some risk especially in elderly patients. To lessen the likelihood of complications, measurement of the intracarotid pressure before and after occlusion has been recommended. If the fall in pressure is no greater than 60 per cent, it is thought safe to proceed with ligation of the artery.[74,75] Angiography performed while occluding the contralateral carotid artery may be utilized to test the adequacy of the cross-cerebral circulation. Gradual occlusion by means of the Selverstone clamp, which may be released in the event of an untoward reaction, provides an additional safeguard. Whether it is preferable to ligate the internal or common carotid artery is still unsettled. Although there is some evidence to the contrary, experience would seem to indicate that ligation of the common carotid is probably safer, especially in people beyond middle age.

Aneurysms involving the anterior cerebral, anterior communicating, posterior communicating and middle cerebral arteries, and the internal carotid artery at or below its bifurcation (supraclinoid) are theoretically best treated by direct surgical approach. Whenever feasible, the neck of the aneurysm or the parent arterial trunk on either side is occluded by means of a metallic clip. Considerable risk is involved in this type of surgery. In the event of hemorrhage, it may be necessary to interrrupt one or more major arterial vessels with disastrous consequences. Thus rupture of an aneurysm of the anterior communicating artery may necessitate ligation of both anterior cerebral arteries. Hypothermia combined with temporary occlusion of the carotid and vertebral arteries in the neck has been employed to cope with the problem of hemorrhage at the time of exposure of the lesion.[40,45] In the case of aneurysms arising from the anterior cerebral or anterior communicating artery, proximal ligation of the anterior cerebral artery may be beneficial.[76]

The optimum time for surgical treatment following subarachnoid hemorrhage has not been fully determined. Except for cases of aneurysm of the middle cerebral artery with intracerebral hematoma, the results of operation in critically ill patients are about the same as with conservative treatment. Patients in good condition probably should be operated on at an early stage so as to minimize the risk of further hemorrhage.[77] The operative mortality is distinctly greater in patients over fifty years of age.

The most recent statistics available on the results of the surgical treatment of aneurysms utilizing hypothermia are those of Botterell, *et al.*[45] Of 64 patients operated on within seven days following rupture, 19 died. Included among the 64 cases were 26 aneurysms of the internal carotid artery (7 deaths), 25 aneurysms of the anterior cerebral or anterior communicating artery (10 deaths), and 13 aneurysms of the middle cerebral artery (2 deaths). Only 1 of the 33 patients operated on a week or more after rupture of the aneurysm succumbed. This latter group consisted of 20 cases of aneurysm of the internal carotid artery, 9 of the anterior cerebral or anterior communicating artery (1 death), and 4 of the middle cerebral artery. The over-all operative mortality was 21 per cent.

It is difficult at the present time to lay down rules concerning the management of patients seen relatively late following subarachnoid hemorrhage. In view of the fact that the mortality rate drops sharply in patients who have survived a period of three weeks, the advisability of surgery with its attendant risks has been seriously questioned.[73,78]

ANGIOMAS.—As in the case of aneurysms, the introduction of arteriography has led to renewed interest in the angiomas of the brain. Judging from the number of cases reported in several recent reviews, it is obvious that the incidence of arteriovenous malformations is much greater than was heretofore recognized. Most commonly situated in an area corresponding to the distribution of the middle cerebral artery, they may occur almost anywhere within the cranium, including the frontal and occipital regions, the medial aspect of the hemisphere, the "central" area (thalamus, basal ganglia, and midbrain), ventricle, orbit, corpus callosum, and posterior fossa.[79] The angiomas of the hemispheres may be superficial or deep, and are often wedge-shaped with their base toward the surface. Symptoms appear early in life, usually before the age of thirty. The clinical manifestations consist of convulsions, often focal in nature; subarachnoid or intracerebral hemorrhage; periodic migrainous headache; a bruit; focal neurologic signs; and occasionally mild papilledema, exophthalmos, and dementia.[79,80]

Plain x-ray films of the skull usually show no abnormality, though occasionally the vascular markings of the skull at the site of the angioma may be more prominent, or calcification may be observed within the lesion. Pneumoencephalography may reveal slight displacement of the ventricular system. A definitive diagnosis is usually established on the basis of the angiographic findings, though in rare instances visualization of the malformation may not be achieved.

Although it has been stated that most patients harboring angiomas eventually die of hemorrhage or become incapacitated, this opinion is not borne out by the available facts.[79,81] A substantial number of patients remain in good health indefinitely. It is well known that hemorrhage resulting from an angioma is less likely to lead to serious consequences than bleeding due to an aneurysm. Intracerebral hemorrhage may lead to permanent disability, in which case the likelihood of progressive deterioration is greater.

In the past these lesions have been treated by decompression, carotid ligation, and radiotherapy, the effects of which have been difficult to assess. More recently total excision has been performed in selected cases and favorable results reported.[79,82] The operative mortality rate has not been excessive. Additional experience is required to evaluate the accomplishments of surgery relative to the natural course of the untreated lesion. The occurrence of intracerebral hemorrhage is an indication for operation; removal of the lesion may be more readily accomplished at such a time.

HEMORRHAGE.—According to Zimmerman,[83] 38 per cent of spontaneous cerebral hemorrhages occur in the region of the basal ganglia and internal capsule. The remainder involve other parts of the brain including the frontal, temporal, and occipital lobes; the pons; and the cerebellum. Rupture of a miliary dissecting aneurysm of an atherosclerotic arteriole is thought to be the most frequent cause of hemorrhage, hypertension being an important predisposing factor. Spontaneous hemorrhage may also occur as a consequence of a blood dyscrasia, rupture of a vascular malformation, or mycotic aneurysm and bleeding into a tumor. At times the cause is obscure. Though it may occur at any age, cerebral hemorrhage is most commonly encountered during the sixth and seventh decades of life.

The prognosis for life in cases of massive intracerebral hemorrhage is grave. An extensive hematoma acts as a rapidly expanding lesion which not only destroys tissue but also compresses adjacent structures and usually results in a fatal outcome. For this reason operative removal of the clot as early as possible would appear to be a reasonable therapeutic measure, and there are, in fact, a number of reports in the literature attesting to the value of surgical treatment.[84–86]

Prognostic as well as therapeutic considerations make it important to distinguish between cerebral hemorrhage and thrombosis. The clinical evidence in favor of a diagnosis of hemorrhage is as follows: headache, vomiting or convulsions at the onset; nuchal rigidity or a Kernig's sign; unilateral pupillary dilatation or bilateral fixed pupils; conjugate deviation of the head and eyes; bilateral Babinski reflexes; progressive focal neurologic signs; leukocytosis; and bloody cerebrospinal fluid under increased pressure. As a preliminary to surgical treatment, further investigation is usually indicated to verify the presence of a mass lesion and to determine its precise location. A focal abnormality is frequently demonstrable in the electroencephalogram. Plain x-ray films of the skull may reveal displacement of the pineal gland and thereby provide confirmatory evidence of a space-occupying lesion. Pneumoencephalography or arteriography is required for exact localization. When the side of the brain affected is known, arteriography is usually the diagnostic procedure of choice. Depending on the pattern of the cerebral vasculature, it may be possible to distinguish between a subcortical hematoma and one involving the region of the basal ganglia. In general the results of surgical treatment have been much more favorable in younger individuals, in patients whose state of consciousness was not severely depressed, and in cases in which the hemorrhage involved the subcortical white matter.

Spontaneous cerebellar hemorrhage is fortunately relatively uncommon; it is difficult to diagnose and usually progresses rapidly to a fatal termination.[87] Coma occurs early and evidence of cerebellar localization is usually not demonstrable.

In the occasional case in which the course of events is less rapid and the neurologic signs point to a cerebellar lesion, evacuation of the clot is indicated, following preliminary ventriculography.

Intracranial Suppuration

Brain Abscess.—The use of penicillin and the sulfonamides in the treatment of infections generally, including those usually responsible for secondary intracranial involvement, has led to an appreciable diminution in the incidence of brain abscess. Moreover, the introduction of antibiotics has completely changed the treatment of brain abscess and rendered the prognosis distinctly more favorable.[88,89]

The development of neurologic manifestations in a patient with a known primary extracerebral focus of infection or history of penetrating head injury is presumptive evidence of a brain abscess. In a fair proportion of cases, however, the site of the primary infection may be obscure.[90] The relatively frequent occurrence of brain abscess in patients with congenital heart disease is well recognized. The diagnosis and localization of a brain abscess can usually be definitely established on the basis of the history and neurologic examination, the cerebrospinal fluid findings, the electroencephalographic data when the cerebrum is the site of the lesion, and the evidence provided by arteriography or ventriculography.

Having arrived at a diagnosis of intracranial sepsis, treatment consists of the administration of massive doses of penicillin, combined with streptomycin and a sulfonamide preparation. Resolution of the infection may be achieved by this means without resorting to surgical intervention presumably if treatment has been instituted during the nonsuppurative phase. In the event, however, that the progress of the infection is not halted, as indicated by an advancing neurologic picture or deterioration in the patient's state of consciousness, surgical treatment is mandatory. Antibiotic therapy is continued pre- and postoperatively. Excision of the abscess, whether encapsulated or not, with primary closure of the wound is undoubtedly the therapeutic method of choice. Should the abscess be located in an area concerned with speech or motor function, repeated aspiration through a burr hole combined with instillation of an appropriate antibiotic may suffice to effect a cure. Injection of thorotrast permits radiographic visualization of the abscess cavity, thereby providing a means of determining its subsequent size and the need for further treatment. Extirpation of the abscess cavity may eventually be necessary following an initial attempt at treatment by aspiration. A pneumoencephalogram should be performed in all cases treated by aspiration alone in order to be certain that the abscess has been wholly eradicated.[88]

As an indication of the progress that has been achieved in the treatment of brain abscess, Lewin[91] reported a mortality of 46 per cent in a series of 48 cases treated between 1938 and 1943 before penicillin was available; the mortality rate dropped to 19 per cent in a series of 36 cases treated between 1950 and 1954.

Subdural Empyema.—A subdural abscess usually develops as a complication of middle ear or paranasal sinus infection. It may be accompanied by osteomyelitis of the skull and an extradural and/or intracerebral abscess. Involvement of the subdural space is widespread and not uncommonly bilateral. Pus may be present over the convexity of the brain, along the falx, beneath the frontal and temporal lobes, and over the tentorium. The clinical manifestations of subdural empyema include headache, fever, nuchal rigidity, convulsions, focal neurologic signs, stupor or coma, and an increase in the pressure and cell and protein content of the cerebrospinal fluid.[92] Empyema of the frontoparietal convexity of sylvian fissure causes focal seizures and hemiparesis. Focal fits beginning in the lower extremity followed by hemiparesis predominantly of the lower limb are indicative of interhemispheral empyema. An homonymous hemianopia occurs in cases in which pus accumulates between the falx and the tentorium.

Early diagnosis and prompt treatment are essential if a fatality is to be avoided.[89, 93–95] The diagnosis is most readily confirmed by means of exploratory burr holes. Treatment consists of the administration of antibiotics in massive doses combined with a sulfonamide and removal of the subdural pus through adequate openings in the skull wherever it is encountered. The convexity of the brain, the parasagittal region, the orbital surface of the frontal lobe, and the epitentorial space must all be explored. Antibiotics are instilled through tubes left in the subdural space.

Epilepsy

According to Penfield and Jasper,[96] "craniotomy is to be recommended for the relief of seizures when medical therapy has failed, provided (1) careful study gives reasonable evidence of an objective abnormality of the brain, (2) clinical and electrographic analysis indicates the location of a zone of epileptic discharge within the cortex, and (3) the area of cortex thus identified proves to be dispensable." The surgical treatment of epilepsy involves excision of a focal area in which epileptogenic discharges responsible for clinical seizures are believed to originate.

Birth lesions and trauma accounted for 70 per cent of the 234 cases of focal epilepsy treated surgically between 1945 and 1950 at the Montreal Neurological Institute.[97] Incisural sclerosis of the hippocampal and uncal area due to brain compression at birth resulting in herniation of the temporal lobe through the tentorium was the most common pathologic condition responsible for psychomotor epilepsy. Evaluation of the results in 203 cases revealed that 28 per cent have remained free of seizures and that 17 per cent have had no more than three seizures following discharge from the hospital.

Less favorable results were reported by Meyers[98] in a series of 81 cases available for follow-up study; only 11 per cent remained seizure-free for five years or more, and an additional 24 per cent were improved.

Partial temporal lobectomy appears to be an effective therapeutic procedure in some cases of psychomotor epilepsy refractory to medical treatment that are associated with an electroencephalographic focal abnormality in the anterior temporal region.[99–101] Surgical treatment is particularly likely to be beneficial when the focus of abnormality is confined to one temporal lobe and major convulsive seizures are not a prominent feature. In Bailey's[100] series of 92 patients subjected to anterior temporal lobectomy, 64 per cent of those with unilateral electroencephalographic foci were free of attacks postoperatively without anticonvulsant medication or with amounts that had been ineffectual prior to surgery; only 23 per cent of those with bilateral foci were improved. Relief of psychotic manifestations occurred in about 45 per cent of cases.

Patients with infantile hemiplegia whose fits cannot be controlled by medication may be considerably benefited by cerebral hemispherectomy.[102–105] Removal of the diseased hemisphere does not cause any further motor deficit or intellectual impairment and may, in fact, result in improvement in behavior.

Cerebral Trauma

Unless complicated by the occurrence of intracranial hemorrhage or an open head wound, there is no specific treatment for cerebral trauma. General supportive measures including maintenance of an adequate airway and prevention of aspiration are most important. A tracheotomy may be necessary in deeply comatose patients to facilitate suction of secretions and to ensure proper aeration. Interference with respiration may raise the intracranial pressure and further damage the brain because of hypoxia. Lumbar puncture, hypertonic solutions, and dehydration measures are no longer advocated. There is no reason to believe that prolonged bed rest is beneficial and, in fact, the current trend is to permit early ambulation.

Though uncommon, extradural hemorrhage may occur during infancy and childhood.[106] It develops as a result of a tear either of a branch of the middle meningeal artery or of a dural vein. If arterial in origin, symptoms develop rapidly, whereas if the source of the bleeding is a vein, the clinical course may be more protracted. A fracture or diastasis of a suture is often, though not invariably, demonstrable. A history of loss of consciousness following the injury is elicited infrequently. Progressive stupor, contralateral hemiparesis, and an ipsilateral dilated pupil followed by evidence of medullary compression are the usual manifestations. Swelling of the scalp at the site of injury is often present. In infants anemia and shock may be induced by loss of blood into the epidural space. Prompt surgical treatment is essential.

Extradural hemorrhages of the posterior fossa are rare and their recognition is difficult.[107,108] Acute, subacute, and chronic forms have been described. The back of the head is invariably the site of injury, and the transverse sinus or torcular Herophili usually the source of hemorrhage. Signs of medullary compression—deepening coma, pupillary abnormalities, cardiovascular changes, and respiratory failure—characterize the acute variety. Ataxia, marked hypotonicity, nuchal rigidity, headache, vomiting, nystagmus, diminution or loss of reflexes, extensor plantar responses, pupillary alterations, increasing drowsiness, a preference to lie on the affected side, and eventually papilledema are the usual clinical manifestations of the subacute and chronic forms. A fracture involving the occipital bone and crossing the lateral sinus is usually present. Early diagnosis and operation are of the utmost importance.

Chronic subdural hematoma occurs fairly often during the first two years of life and presents a more complex problem then than it does in adults.[109,110] No distinct clinical picture characterizes this condition during infancy. Babies with subdural hematoma take nourishment poorly; are irritable; fail to gain weight; and may develop convulsions, stupor, and paralysis. Common findings include fever, anemia, enlargement of the head, a bulging fontanel, separation of the sutures, hyperactive reflexes, and retinal hemorrhages. Puncture of the subdural space yields bloody fluid, thereby establishing the diagnosis. Treatment involves removal of the fluid by means of repeated subdural taps followed by burr holes in order to determine the presence of a membrane. In infants subdural membranes must be removed, together with the hematoma, so as to permit normal growth of the brain. A craniotomy is required to achieve this.

Congenital Malformations

HYDROCEPHALUS.—Of the three possible mechanisms responsible for internal hydrocephalus—excessive formation of cerebrospinal fluid, defective absorption by the arachnoid villi, and mechanical obstruction in the ventricular system or subarachnoid pathways—the last one is regarded by Russell[111] as the causative factor in the vast majority of cases. In noncommunicating hydrocephalus, the obstruction may be in the aqueduct of Sylvius (stenosis, atresia, or gliosis) or at the outlet of the fourth ventricle (atresia of the foramina of Magendie and Luschka). Obliteration of the subarachnoid spaces, especially the basal cisterns, resulting from hemorrhage or infection probably accounts for most cases of communicating hydrocephalus. The Arnold-Chiari malformation, characterized by a projection of the cerebellar tonsils and brain stem into the cervical canal, occurring commonly in association with myelomeningocele in infants, is usually accompanied by hydrocephalus of the communicating variety.[112]

Many surgical procedures have been devised for the treatment of hydrocephalus, including choroid plexectomy and various shunts intended to divert the flow of cerebrospinal fluid from its usual course. Utilizing plastic catheters, anastomoses have been made between the ventricle or lumbar subarachnoid space and the mastoid, the pleural or peritoneal cavities, and the ureter. None have proved consistently reliable in the long run. More favorable results have been reported by Spitz,[113] who treats hydrocephalus by means of a shunt between the lateral ventricle and the superior vena cava via the internal jugular vein, incorporating a valve in the system.

Craniosynostosis.—Closure of any or all of the cranial sutures may occur prematurely and lead to various types of deformity of the skull.[114,115] Mental retardation and various ocular phenomena including exophthalmos, papilledema, and optic atrophy are common sequelae. The diagnosis is readily confirmed by x-ray examination of the skull. Early treatment, preferably during the first few months of life, is desirable so as to minimize the likelihood of permanent injurious effects. At operation artificial sutures are made and lined with polyethylene film to prevent recurrent closure; an orbital decompression may be necessary, in addition, in patients with exophthalmos.

Congenital Dermal Sinus.—Congenital dermal sinuses occur in the midline anywhere along the back or head, most commonly in the lumbosacral and occipital regions.[116–118] Their importance lies in the fact that they may extend intraspinally or intracranially where they may expand to form a mass, either an epidermoid or dermoid cyst; in addition, they may give rise to meningitis or abscess formation. X-ray films usually disclose a defect in the skull or, in the case of a sinus extending through the vertebral column, a spina bifida. Prophylactic excision of the entire sinus tract, including its intraspinal or intracranial component, is the treatment of choice.

Platybasia; Basilar Impression.—Although often used interchangeably, strictly speaking platybasia is not synonymous with basilar impression. The term platybasia refers to a condition characterized by an increase in the angle formed by the junction of the plane of the sphenoid with that of the clivus. It is probably of no clinical significance. Basilar impression denotes an invagination of the foramen magnum into the cranial cavity.[119–122] Most commonly occurring as a developmental anomaly, it may also develop as a result of Paget's disease, rickets, or osteomalacia. Neurologic symptoms, when present, include weakness of the limbs, ataxia, nystagmus, lower cranial nerve palsies, and manifestations of increased intracranial pressure. There may be evidence of intramedullary cavitation (syringomyelia). In a lateral roentgenogram of the skull, the odontoid process is displaced upward relative to a line drawn from the hard palate to the posterior rim of the foramen magnum (Chamberlain's line). When indicated, treatment consists of a suboccipital craniotomy and upper cervical laminectomy so as to decompress the posterior fossa and upper cervical cord.

Arnold-Chiari Malformation.—Reference has already been made to the occurrence of the Arnold-Chiari malformation in infants with lumbosacral myelomeningocele and hydrocephalus. This abnormality is also known to occur in the absence of a lumbosacral myelomeningocele, in which case symptoms may not appear until adult life.[119,121–124] In such instances developmental craniovertebral anomalies may also be present, although not invariably. The neurologic manifestations result from involvement of the brain stem, cerebellum, and lower cranial nerves; the intracranial pressure is often increased. Myelography is useful in establishing the diagnosis. Decompression of the region of the foramen magnum is necessary in patients with progressive neurologic deficit or intracranial hypertension.

Miscellaneous

Trigeminal Neuralgia.—In 1952 Taarnhøj[125] reported favorable results following decompression of the sensory root and ganglion of the trigeminal nerve in the treatment of tic douloureux. It was hoped that this operation would avoid the undesirable sequelae of retrogasserian rhizotomy but, unfortunately, additional experience has indicated a high incidence of recurrence of pain—75 per cent in the Mayo Clinic series.[126] Various other methods of treatment have been advocated, including the use of stilbamidine.[127] The value of this drug is limited owing to its slow action and the fact that it gives rise to disturbing paresthesias in about 20 per cent of cases. Section of the sensory root by way of the temporal extradural route is still the method of treatment preferred by most neurosurgeons.

Involuntary Movements. Until relatively recently, operations for the relief of involuntary movements were designed to interrupt the corticospinal pathway at various levels. A successful result was usually achieved at the expense of some impairment of voluntary motor function. At the present time the globus pallidus and its efferent pathways and the region of the ventrolateral nucleus of the thalamus are the chief sites of surgical attack.[128] Undoubtedly the largest number of basal ganglia operations have been performed by Cooper.[129,130] He occluded the anterior choroidal artery in 50 cases of Parkinsonism and made lesions in the medial segment of the globus pallidus (chemopallidectomy) or ventrolateral nucleus of the thalamus (chemothalamectomy) using alcohol in 550 cases. Favorable results were obtained in 70 per cent of the patients in whom the anterior choroidal artery was occluded and in a slightly higher percentage of the cases treated by chemopallidectomy and chemothalamectomy. According to Cooper, in properly selected cases a combination of pallidal and thalamic lesions "will almost invariably produce marked or complete alleviation of tremor and rigidity on the side contralateral to operation without inducing neurologic deficit."

Various types of stereotaxic apparatus have been devised to cope with the problem of producing accurately placed discrete lesions in subcortical structures.[131] The efforts of Spiegel and Wycis[132] are especially noteworthy, though their apparatus is much too complicated for general use.

Post-meningitic Subdural Effusion.—Bacterial meningitis, particularly during the first year of life, may be complicated by the development of a subdural collection of fluid, usually xanthochromic, though occasionally clear or even hemorrhagic in appearance.[110,133] In such cases the causative organism of the meningitis most often is the H. influenzae or a pneumococcus. The possibility of a subdural effusion should be considered and a diagnostic subdural tap performed in any infant who fails to improve after seventy-two hours of treatment, develops focal seizures or gross neurologic abnormalities, vomits or has a convulsion during convalescence, whose fontanel remains tense, or in whose cerebrospinal fluid organisms continue to be demonstrable after an adequate course of antibiotic therapy. Repeated aspiration may effect a cure; in cases in which the effusion becomes encapsulated, surgical excision of the membranes is required.

Hypophysectomy for Malignant Disease.—In about 50 per cent of cases of metastatic breast carcinoma, a remission may be induced by hypophysectomy.[134–136] Postoperative hormonal replacement therapy is essential. The effect of hypophysectomy on other types of malignant diseases except possibly prostatic carcinoma has not been beneficial. Pain due to skeletal metastases in cases of breast cancer is often relieved following operation.

Encouraging results have also been reported by Luft, *et al.*[137] in the treatment of the vascular complications of severe diabetes by hypophysectomy.

Lobotomy.—The enthusiasm for lobotomy in the treatment of mental disease has dwindled considerably in recent years, especially since the introduction of the tranquilizing drugs. Nevertheless, in certain types of cases such as obsessive-compulsive neurosis or involutional melancholia, in which all other forms of therapy have failed, lobotomy may be indicated for symptomatic relief.[138,139] Patients in whom anxiety, agitation, or obsessive preoccupation are prominent features may improve considerably following operation. Schizophrenic individuals may be benefited to a varying degree. A number of operations have been devised but at the present time bimedial prefrontal lobotomy appears to be the procedure of choice.[140]

Patients with intractable pain may be relieved temporarily by prefrontal lobotomy, especially when anxiety is a prominent feature. The alteration in personality which occurs as a consequence of interruption of the frontothalamic connections is a serious drawback and most surgeons are in agreement that lobotomy should be resorted to in the treatment of intractable pain only after measures such as cordotomy have been attempted.[141]

Spinal Cord

Congenital Disorders.—*Diastematomyelia.*—Among the developmental anomalies of the spinal cord are congenital clefts through which a spicule of bone or a cartilaginous or fibrous septum projects and transfixes the cord.[142,143] The clinical manifestations of this condition include neurologic disturbances referable to the lower limbs and sphincters, various midline cutaneous abnormalities and evidence of a spina bifida occulta in most instances together with a fusiform widening of the spinal canal, and a demonstrable bony spicule as shown in the roentgenograms. The anomaly may be clearly demonstrated by myelography. Surgical treatment is indicated as a prophylactic measure to permit normal migration of the cord and prevent further neurologic damage.

Achondroplasia.—The congenitally narrowed spinal canal of achondroplastic dwarfs makes them more susceptible to compression of the spinal cord and cauda equina by protruding intervertebral disks or hypertrophic osteophytes.[144,145] Compression is most pronounced in the upper lumbar region in such cases. Symptoms may be progressive as a result of multiple disk protrusions or may develop abruptly because of extrusion of a disk fragment. Myelography correspondingly discloses interruption of the column of oil at multiple levels or a block at one interspace. Laminectomy combined with removal of extruded disk tissue, when present, is effective in relieving compression.

Trauma.—Although most injuries result from excessive flexion of the spine, in older people with hypertrophic osteoarthritis, cervical cord trauma may be produced by hyperextension.[146] Cervical cord injury may also occur in the absence of any demonstrable skeletal lesion. A dislocation of transient duration ("recoil injury of the cervical spine") has been generally regarded as the responsible factor in such cases. This explanation is open to question. There is evidence to indicate that hyperflexion can cause cord compression only if it is sufficient to dislocate and lock the articular processes. The possibility that temporary prolapse of an intervertebral disk is responsible for the cord trauma appears highly unlikely. In those cases in which acute retropulsion of an intervertebral disk causes injury to the cord, the disk remains permanently dislodged. It has also been suggested that cervical cord injury without vertebral fracture or dislocation may result from forcible extension rather than from hyperflexion, with a forward bulge of the ligamentum flavum inflicting the damage.[147]

The value of laminectomy in the treatment of closed spinal cord injuries has long been debated. Undoubtedly operation is indicated when there is evidence that a bony fragment, such as a fractured lamina or an extruded intervertebral disk, is exerting pressure on the cord. Exploration is also advisable in patients with incomplete lesions in whom the neurologic deficit is progressive, presumably owing to extradural hemorrhage; such a situation is encountered extremely infrequently. The problem of laminectomy most often arises, however, when the clinical picture is that of a complete transverse lesion and the Queckenstedt test reveals a block of the subarachnoid space. Although opinions differ, most neurologic surgeons still remain unconvinced of the beneficial effects of operation in such cases.[148,149] The block is usually caused by edema or hemorrhage within the cord, gross lesions which operation is unlikely to remedy.

In recent years Schneider[150] has described a syndrome of acute cervical cord injury for which early operation is advocated. The syndrome is characterized by immediate complete paralysis, hypalgesia, and hypesthesia, with preservation of position sense. It may occur as a consequence of an extruded disk, compression fracture, or fracture dislocation resulting in compression or destruction of the anterior portion of the spinal cord. There is no demonstrable block of the subarachnoid space. Since a distinction between compression and destruction on clinical grounds is impossible, exploratory laminectomy is indicated to determine whether a lesion amenable to surgical treatment exists.

Potts' Paraplegia.—Paraplegia resulting from tuberculosis of the spine was the subject of a detailed report by Griffiths, Seddon, and Roaf.[151] A trial of conservative treatment was recommended in cases in which the degree of cord involvement is not severe. The indications for operative decompression were stated as follows:

1. Paraplegia developing while the patient is under adequate conservative treatment for spinal caries.
2. Paraplegia of increasing severity despite adequate conservative treatment.
3. Complete loss of power for one month in the face of adequate conservative management. (Reviewer's note: Few neurosurgeons would delay operation until the patient was totally paraplegic, let alone wait a month thereafter.)
4. Complicating factors, such as spasms or severe spasticity, making immobilization difficult.
5. Paraplegia of rapid onset.
6. Severe degree of paraplegia.

The authors' "relative" indications for operation include recurrent paraplegia, paraplegia arising in old age, painful paraplegia, and the presence of complications such as urinary infections or calculi. In the thoracic region, the most frequent site of spinal involvement, the surgical procedure recommended is an anterolateral decompression. This operation entails the resection of several ribs, transverse processes and pedicles, and excavation of the diseased vertebral bodies, permitting removal of whatever sequestrated disk tissue or bone may be compressing the dural contents.

Cervical Spondylosis.—It is only during the past decade that cervical spondylosis has been recognized as an important cause of compression of the spinal nerve roots and/or the spinal cord.[152–156] Radicular symptoms may occur as a result of dorsolateral or intraforaminal spondylotic protrusions, narrowing the intervertebral foramina and impinging on the nerve roots. Thereafter obliteration of the root sleeves by fibrous tissue takes place not only at intervertebral foramina narrowed by osteophytes but also at uninvolved foramina as a result of nerve root displacement and irritation consequent to shortening of the cervical spine relative to the spinal cord. The brachial pain in cervical spondylosis may be acute or chronic and is often widespread; it may be associated with acroparesthesiae, especially in women. Weakness and atrophy of segmental muscles, while not ordinarily a conspicuous feature, may nevertheless occur and even overshadow the sensory symptoms.

Involvement of the spinal cord occurs as a consequence of osteophytes projecting posteriorly into the spinal canal, narrowing its anteroposterior diameter. Interference with the blood supply of the spinal cord resulting from compression of the anterior spinal artery may play an important part in the pathogenesis of the myelopathy. It has also been suggested that the dentate ligaments augment the effects of compression by exerting a restraining influence on the mobility of the cord.

The clinical picture of spinal cord involvement due to cervical spondylosis is a variable one, depending on whether one or more intervertebral spaces are implicated and on the severity of the damage inflicted on the cord and spinal roots respectively. Evidence of both upper and lower motor neuron involvement may be observed in the upper limbs. Sensory changes in the upper extremities are often peripheral in distribution. Spasticity and weakness are the most conspicuous features in the lower limbs. Any of the sensory modalities may be impaired. Sphincter function is usually preserved. A block of the subarachnoid space may be demonstrable with the head held in extension.

X-ray films of the cervical spine disclose narrowing of the intervertebral spaces and foramina and the presence of osteophytes. Further information may be gained from myelography which reveals obliteration of the root sleeves of the affected nerves and narrowing of the spinal subarachnoid space opposite the involved intervertebral spaces.

Bed rest, cervical traction, physiotherapy, and immobilization by means of a support are useful measures in the treatment of patients with radicular symptoms. Occasionally radiotherapy provides relief of pain. Surgical decompression of the affected nerve root or roots is necessary in patients with persistent or recurrent symptoms. In cases in which the spinal cord is involved, the progress of the disease is frequently slow. Neurologic deterioration may proceed more rapidly, however, and require operative treatment. Laminectomy with section of the dentate ligaments will benefit about one third to one half of the patients so treated. Whether removal of the osteophytes through an anterior approach, as has been recently advocated,[157,158] will prove more effectual remains to be seen.

Peripheral Nerves

COMPRESSION NEURITIS.—Compression of the median nerve within the carpal tunnel may occur spontaneously or following trauma or other disorders, such as acromegaly, leading to changes about the wrist joint.[159–161] It is especially common in middle-aged females and is frequently bilateral. Pain, numbness, paresthesias, and sensory loss in the distribution of the median nerve in the hand, together with weakness of the thumb and thenar atrophy, are the usual clinical manifestations. Flexion of the wrist or percussion over the transverse carpal ligament may accentuate the symptoms.

Section of the transverse carpal ligament provides relief of the pain and acroparesthesiae. Restoration of function may also be anticipated provided the operation is not unduly delayed. Occasionally ganglia are a cause of compression of adjacent nerves.[162] At the wrist the deep branch of the ulnar nerve may be affected by a ganglion arising in a carpal joint.

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(*Number fifty-seven of a series on Recent Advances in Medicine and Surgery*)

Bleeding Following Tonsil and Adenoid Operations

In a study of 1,650 tonsil and adenoid operations performed during 1941–1957 the authors, Dr. Donald F. Proctor and Dr. Carleton C. Douglas, Johns Hopkins University, suggest that the key factor in postoperative bleeding is likely to be surgical technic rather than pre- or postoperative medication.

In this series less than 1 per cent of the patients showed any significant postoperative bleeding; of patients who received aspirin but no vitamin K, only 0.67 per cent bled after the first twenty-four hours. The authors accordingly conclude that at present there is no adequate justification for the widely accepted belief that the use of vitamin K, Adrenosem, or other so-called hemostatic drugs, or the omission of aspirin, will reduce the incidence of postoperative bleeding below that anticipated with careful surgical procedures alone.—*Transactions: Am. Acad. Ophthal. and Otol. July-Aug. 1958.*

CLINICOPATHOLOGIC CONFERENCE

ST. JOSEPH'S HOSPITAL

ELMIRA, NEW YORK

Conducted by JOSEPH F. SHORTSLEEVE, M.D.

NOVEMBER 13, 1957

Discussed by JOSEPH FOLEY, M.D.,* BOSTON, MASSACHUSETTS

Case History

A fifty-eight-year-old white factory worker was admitted to this hospital on October 15, 1956, with low back pain of six weeks duration. It was while building a dock at his cottage that he first experienced this pain which gradually increased in severity up to the time of admission.

Previously he had had a duodenal ulcer which had been asymptomatic for two years. The family history and systems review were otherwise noncontributory.

On admission there was some spasm and tenderness of the lumbosacral muscles on the left side. His blood pressure was 170/100. No neurologic irregularities were detected. The complete blood count, sedimentation rate, and urinalysis findings were normal.

On the eighth hospital day the back pain increased and the patient developed weakness of the legs. Examination showed paresis of both lower extremities. The abdominal, cremasteric, and deep leg reflexes were absent. Flexion of the neck caused left buttock pain. The cranial nerves were intact. There was no papilledema. Sensation and coordination were normal. Left straight leg raising caused left buttock pain at 20 degrees, and right straight leg raising caused pain at 45 degrees.

Blood serologic findings and spinal fluid findings were normal. X-ray of the lumbosacral spine disclosed slight hypertrophic changes and apparent widening and calcification of the abdominal aorta. A gastrointestinal series showed an old duodenal ulcer with no change since 1946. The barium enema result was normal, and the lumbar myelogram was not regarded as showing any significant findings. After ten days he was transferred to another hospital for consultation.

A myelogram at the consulting hospital five days after admission showed a cutoff of the column at the fifth lumbar vertebral level with a large oblique indentation on the left. The radiologist felt that this represented a large herniated disk at that level, and on November 1, 1956, a lumbar laminectomy was done at that level. No disk protrusion was found. However, the lamina was abnormal and appeared to be loose. The bone on the left side felt softer than the one on the right. Pathologic examination did not show a tumor but under polarized light showed an alteration of the haversian pattern of the bones in a focal area. Immediately after the operation the patient was relieved of his leg and low back pain.

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* Assistant Professor of Neurology, Harvard Medical School, and Visiting Physician for Neurology, Boston City Hospital.

One week postoperatively he developed difficulty in voiding, necessitating periodic catheterization. Definite atrophy of the quadriceps and hamstring groups on both sides was noted, and the patient progressed to almost complete paralysis of his legs.

A consulting neurologist found some patchy segmental sensory involvement extending up to the level of the iliac crest. A repeat myelogram up to the second cervical vertebra showed no evidence of obstruction. The manometrics were brisk and normal. An x-ray survey of the chest, spine, and long bones showed no evidence of metastases. Complete blood counts, urinary studies, and stool tests for blood gave negative results.

Cerebrospinal fluid examination repeated on October 30 and November 21 gave the following findings respectively: serologic findings negative, gold curve third zone, chlorides 113 and 112 mg. per cent, sodium 140 mEq., protein 150 and 98 mg. per cent, sugar 9 and 7 mg. per cent, total cells 1,280 and 133 cu. mm., and white blood cells 60 and 27 cu. mm. Smears and cultures of spinal fluid were negative.

The following chemistries, the tests repeated on October 26 and November 12, were all normal: blood urea nitrogen, alkaline phosphatase, acid phosphatase, calcium, phosphorous, total protein, albumin-globulin ratio, fasting blood sugar, thymol turbidity, and cholesterol and cholesterol esters.

The patient was readmitted to St. Joseph's Hospital on November 22, 1956, with muscular tremor, marked atrophy of the lower extremities, a cord bladder, and spotty sensory loss up to the first lumbar vertebra. He then began to show dysarthria and dysphagia and became opisthotonic. He showed no paresis of the lower extremities. The tongue, jaw, facial, and ocular movements were normal. There was no nystagmus.

About the tenth hospital day he became confused and disoriented at intervals. The opisthotonos and dysphagia progressed, and he developed a slight left facial paralysis. On the sixteenth day confusion increased, and he became cyanotic and succumbed. His final demise occurred about two months after his first hospital admission.

Discussion

DR. JOSEPH FOLEY: Let us be honest with one another and let me say that if this patient was a problem to you while he was living, he is a problem to me now that he is dead. It might be well for me to begin my erudite discussion by confessing that I intend to conclude with the admission that I don't have the faintest idea what the trouble was with this patient. I look forward with interest and hope to the pathologic findings because nothing I say is going to clear the air in the slightest.

There are some interesting sociologic and economic overtones to the problem. Low back pain in a fifty-eight-year-old man, occasioned by working on his dock in the summer, is a stock situation in the practice of medicine. I have such a patient to whom I give a lecture each year on the evils of working on one's dock. He returned last year with an enormous laceration of his anterior leg. He had failed to work on his dock and fell through it, cutting his legs to shreds. He then gave me a lecture on the lecture I had given him about not working on the dock.

The duodenal ulcer of two years duration I'm just writing off. This is standard in our culture. It only indicates that he had been working steadily enough and under enough pressure to have a summer place and a dock and has, I believe, no bearing on the medical problems that confront us.

On the other hand, here is a man who did not have the usual backache or strain, which is maximal at the outset, or within a day or two, and then either stays on a plateau or gets better. This patient's backache gradually increased in severity. Considered statistically for this age group this kind of symptom always gives rise to the suspicion of a malignant condition somewhere, perhaps in the kidney, spine, bladder, or prostate.

His physical examination on admission disclosed a high blood pressure, perhaps as much due to fright as to disease, and some spasm and tenderness of the lumbosacral muscles on the left side. There were no neurologic findings. This must have been most perplexing to the physicians who saw him at that time. However, as his back pain increased, he developed weakness of the legs and then clearly began to show neurologic signs. Bilateral leg weakness means that we are not confronted with a simple malfunctioning sacroiliac joint or with a lesion compressing a single nerve route unilaterally. It means that the lesion involves either the cauda equina or spinal cord. He also lost his reflexes. Areflexia may occur when a lesion involves the cauda equina in such a way that both anterior and posterior routes are involved. A catastrophic lesion to the spinal cord may cause a temporary state of areflexia. The information thus far, however, does not help us to distinguish between a chorda or a spinal lesion. To put it another way, it does not help us to distinguish between a lesion located above or below the spinal first or second lumbar level. There were, however, no other neurologic findings at that time. The lesion was apparently localized low down in the spinal region, and there was no reason to suspect disease of the nervous system above.

Then we are told that he had trouble with straight leg raising. This suggests one of three things: disease of bone, traction on nerve routes, or diffuse meningeal irritation. He did not have a stiff neck but did have pain in the buttocks when his neck was flexed. Lesions that I would have considered then would have been a tumorous compression in the area or a midline herniated disk. If a midline disk, it would have to be higher than the standard one. With this in mind, a myelogram was undertaken and in the lumbar region, at least, showed no significant change. This I would have found a rather unhappy situation from the point of view of diagnosis. I presume that no spinal subarachnoid block was demonstrated and that we are therefore not dealing with a severe compressive lesion above the point of lumbar puncture.

We are then told that at a consulting hospital a cutoff in the column was demonstrated at the fifth lumbar vertebral level. A large oblique indentation on the left suggests the possibility of an artefact. It is not infrequent after lumbar puncture. A small epidural hematoma caused by lumbar puncture can simulate a laterally displaced disk. That is why we are not anxious to do a lumbar puncture before the myelogram if we are thinking in terms of lumbar disease. We do them both together. Dr. Donald Monroe has the notion that a lumbar puncture may precipitate the herniation of a disk. I suppose this is a possibility here. However, bilateral paresis of the legs is surely not going to be explained by a laterally displaced disk. Theoretically I suppose a midline disk might possibly cause bilateral paresis but it certainly is not a common consequence of such lesions. To those of us who do myelograms with any frequency, laterally placed disks are a dime a dozen. In cervical disease one very commonly finds an asymptomatic lumbar disk and pays no attention to it.

The lumbar laminectomy findings just baffle me. No disk was found but the lamina was said to appear loose. Does that mean you could pry it up just a bit? It seems it ought to be attached at both ends. To be completely relieved of pain with only a lamina removed is most remarkable; it would seem that a more extensive decompression must have been done. I expected that the pathologist would find a tumor but then, to my amazement, this was not the case. We are then told that under polarized light an alteration in the haversian pattern of bone was apparent. This pathologist must have been research minded or, perhaps, the neurosurgeon was waiting at the door for some sort of comment or, perhaps, that situation means a fracture. However, we are not told that there was a tumor or a fracture resulting from it. Still, in spite of the history, my presumptive diagnosis at this point would have been secondary neoplasia of bone with a pathologic fracture. The case was certainly baffling at this stage, with complete relief of pain while the disease was obviously progressive.

The patient then developed trouble voiding. The areflexia of the lower extremities, absence of extensor plantar responses, and bladder difficulties once again point to either a cauda equina or spinal cord lesion, resulting from compression or infiltration of the roots. I would still be thinking of a gradually progressive lesion that doesn't seem to be infectious. That is, I would be thinking in terms of a tumor. The next finding, patchy sensory involvement, would again support my contention that the lesion was inside the canal and damage was being done to either roots or cord. Actually it would suggest the cauda equina itself rather than the cord.

Once again the feeling that this must be metastatic put him through the diagnostic mill of x-rays, stool and urine tests, etc. No primary site could be found. The acid and alkaline phosphatases were normal. However, we now find that he had an increased protein of 150 and 98 mg. per cent on the second determination. I presume, incidentally, that the spinal fluid examination on October 30 was done in advance of the myelogram. The injection of a foreign substance, even such a benign one as pantopaque, into the spinal canal does set up an inflammatory reaction that may persist for several weeks. The increased protein would mean, to me, some process causing permeability of blood vessels in or near the leptomeninges. This may occur with many lesions, including tumors, and infections.

Finally, we come to the one clue that I think might cast some light on the problem, reduced spinal fluid sugars on two occasions. Sugars of 7 and 9 mg. might, for all practical purposes, be considered down to zero. Sugar may be dropped by three causes. First, hypoglycemia, which I mention only to exclude. It doesn't drop it this far. Second, organisms proliferating within the subarachnoid space, particularly bacteria or fungi; and third, tumor cells proliferating in or near the subarachnoid space. The number of white cells in the spinal fluid, the entire course of the illness, and the early localized restricted nature of the lesion to the lower spinal canal do not make an infection in the leptomeninges likely. The third possibility, tumor cells proliferating in or near the subarachnoid space, can drop the sugars to levels comparable to those seen with bacterial infection. I would seize this clue because there are so few. The neoplasm involved in order of frequency are probably metastatic melanoma and carcinoma of the stomach. In the latter instance, broad sheets of cells extend throughout the ventricular subarachnoid pathway. And so this clue would really force my conviction that there is a tumor in the subarachnoid space and this probably represents metastatic meningeal disease.

I would be troubled at this point at the localized nature of the illness. Ordinarily when you see metastatic leptomeningeal carcinomatosis or sarcomatosis, it is very pronounced at the base of the brain. These patients come in with stiff necks and cranial nerve palsy. They are inflicted with opisthotonos and become decerebrated very easily. They develop, sometime after admission, marked nonspecific muscular tremors. By this time they have developed marked atrophy of the lower extremities, cord bladder, spotty sensory loss up to the first lumbar vertebral level and usually show cells in the fluid that look like white cells. The sugars are always low.

Finally he begins to show signs higher up, dysarthria, dysphagia, and opisthotonos. He does not develop any extra ocular muscle weakness, but disorientation and confusion suggest that the brain itself has become involved. Of course, systemic illness is the commonest cause of confusion, but with opisthotonos, dysphagia, and a slight facial paralysis I think that whatever processes were involving the lower end of the neuraxis are now involving the upper end with disseminated metastatic lesions.

Feeling unhappy about it, I would say that his death was due to a malignant condition of the type that infiltrates the subarachnoid space, invades the roots of the spinal segments, and then extends itself to involve the other ends of the neuraxis. My final diagnosis would be tumor cells proliferating in or near the subarachnoid space. I could go no further.

Question: Other diagnoses raised during the course of this illness were possible disturbance in the circulation to the spinal cord and torulosis. Would you care to comment on these possibilities?

Dr. Foley: Although other diagnoses seemed entertainable at certain points during the illness, I suspect that they are considered less feasible in retrospect when the whole course of the illness is apparent. Torula I would find very hard to consider in this situation because of the original absence of brain disease. The focal character of this lesion at the beginning of the illness does not seem at all in keeping with the cause of torulosis. I have seen a fair amount of torulosis; it usually occurs in association with lymphomas, and I don't think I have seen a Torula which would remain localized in the lower portion of the neuraxis any length of time. For that reason I would not give it serious consideration. It may be. If so, it will be the first in my experience.

Question: During the course of your discussion you mentioned certain specific carcinomas. Would you favor any particular one, perhaps, on a statistical basis?

Dr. Foley: Statistically the commonest lesions in my experience have been metastatic melanoma and carcinoma of the stomach. I go no further than this.

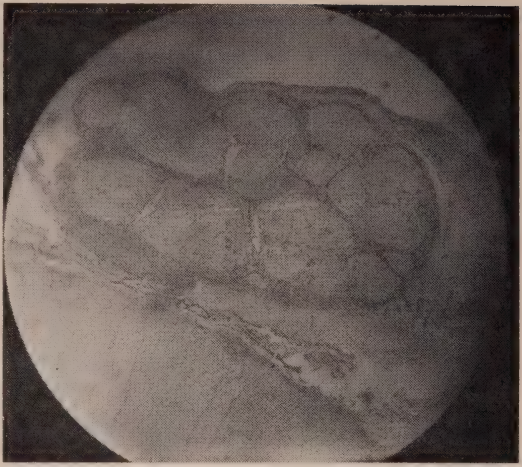

Fig. 1. Microscopic view of section of the spinal cord showing infiltration of the tumor around the nerve roots.

Diagnoses

Clinical.—*Progressive neurologic disease, cause undetermined.*

Dr. Foley.—*Malignant condition involving the meninges and subarachnoid space.*

Anatomic.—*Malignant condition involving the meninges and subarachnoid space due to primary malignant meningothelioma.*

Pathologic Report

Dr. James A. Mitchell: I must congratulate Dr. Foley since we found at postmortem examination precisely what he suggested we would—malignant condition involving the meninges and subarachnoid space. We could find no site of primary visceral lesion, however, and we believe we are dealing with an unusual primary tumor of the meninges.

We found practically nothing on the gross examination. All the organs were of normal size. There was moderate atherosclerosis of the coronaries. Microscopically the kidneys showed pyelonephritis, apparently from infection in the bladder. The gastrointestinal tract showed no evidence of tumor. There was no enlargement of lymph nodes throughout the body. The prostate gland was normal in size and gross, and microscopic examination showed no evidence of tumor. The adrenal glands and pancreas

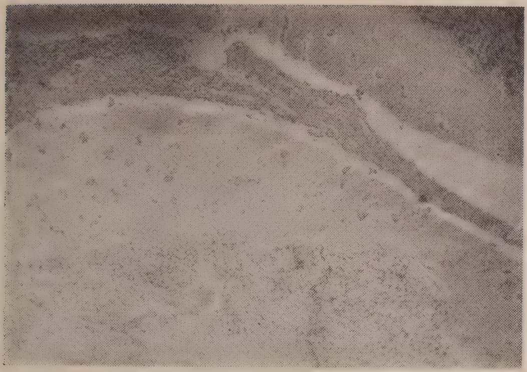

FIG. 2. Microscopic view of section of the cerebellum showing infiltration of the pia-arachnoid with superficial infiltration of the parenchyma.

were normal. We found no gross evidence of any primary tumor in the viscera.

The brain and spinal cord were grossly negative except that there seemed to be some slight thickening throughout the arachnoid, but there were no gross lesions of the parenchyma of the cord or brain. We were completely in the dark as to the nature of the pathologic condition until the microscopic examination of the cord and brain was available.

Sections through the lumbar region of the cord showed a neoplastic infiltration in the arachnoid which extended out along the nerve roots but did not involve the cord itself (Fig. 1). An occasional psammoma body was noted. It also extended around blood vessels into the dura. The same infiltration was noted in sections taken from various levels of the cord, always confined to the arachnoid.

The only portion of the brain which showed any invasion of cerebral parenchyma was a superficial invasion of the cerebellum just below the involved arachnoid (Fig. 2). Sections of the pons showed only involvement of the surrounding arachnoid. Sections of cortical areas of the brain showed the same involvement of the arachnoid but no invasion of the cortex itself (Figs. 3 and 4).

The tumor consists of polygonal-shaped cells and spindle-like cells, many with large hyperchromatic nuclei and prominent nucleoli. An occasional cell containing melanin pigment was noted. Many mitotic figures were noted.

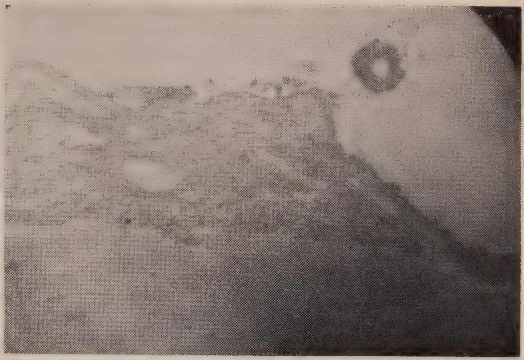

FIG. 3. Microscopic view of section of the brain showing infiltration of the pia-arachnoid.

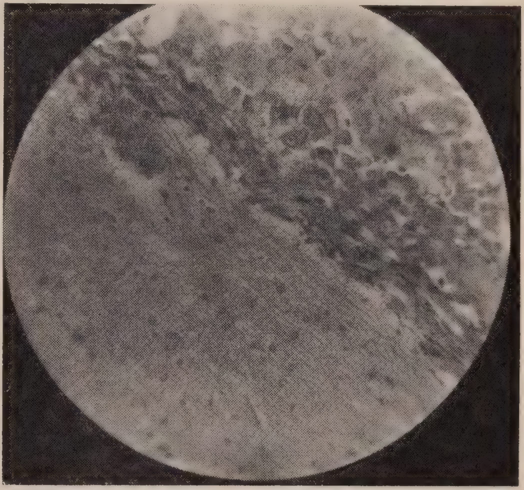

FIG. 4. High power view of infiltration of the pia-arachnoid of the brain.

The only conclusion I can reach from the histologic findings is that the tumor is of endothelial origin arising in the arachnoid. No evidence of osseous invasion of the vertebra was noted.

QUESTION: Wasn't there something that suggested the possibility of melanoma? As I recall, either you or one of the several pathologists who reviewed the case mentioned the subject.

DR. MITCHELL: The possibility of this being metastatic melanoma was considered, but in view of the fact there was no visceral involvement and no evidence of any skin lesions this diagnosis was considered unlikely. There is a primary melanoblastic meningioma which involves the meninges but I don't believe there is enough pigment to call it a melanoblastic tumor. I think it represents what Ewing* called "meningothelioma," arising in the cells of the arachnoid.

Dr. Foley: Dr. Charles King and I have a paper[1] coming out shortly on a primary reticulum cell sarcoma of the leptomeninges. The disease behaved much the same way as this one but never did drop the sugar. That, I think, is a happenstance. There were 2 other such cases reported from my lab by Meissner a few years ago. They were both carcinomas of the stomach but had no brain involvement at all. They were strictly localized to the leptomeninges.

Dr. Mitchell: We could find no evidence of gastric neoplasm. The duodenal ulcer was healed. No primary bronchogenic or prostatic focus could be identified.

Dr. Foley: Do you think there is any possibility that it might be a reticulum cell? The cells are too big, I imagine.

Dr. Mitchell: No, I don't think they are reticulum cells. They have the characteristics of endothelial cells.

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* "Neoplastic Diseases" by James Ewing.

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153rd Annual Convention

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HOTEL STATLER HILTON BUFFALO

Special Committee on

INFANT MORTALITY

Medical Society of the County of New York

HAROLD ABRAMSON, M.D., *Editor*

EDITOR'S NOTE.—*More and more interest is being shown today with regard to the origin and nature of factors which influence the occurrence of abnormalities in the fetus. In this timely discussion, Dr. Fraser considers the defects according to three categories, namely, those with a definite genetic basis, those with a clear environmental basis, and those with no well-defined genetic or environmental cause. The multifactorial background of many of the congenital malformations is emphasized.*

Antenatal Factors in Congenital Defects

Problems and Pitfalls

F. C. FRASER, PH.D., M.D., MONTREAL, CANADA

(*From the Departments of Genetics and Paediatrics, McGill University, and The Montreal Children's Hospital*)

IF THE Committee have invited me to speak tonight with the hope that I will say how infant mortality can be reduced by lowering the frequency of congenital malformations, I am afraid they are going to be disappointed. The causes of congenital defects are numerous, often multiple, and usually subtle. At present the great majority of malformations in human beings have no clearly identified causes, and so we are a long way from taking any rational measures to reduce their frequency appreciably.

The idea that there is "a cause" of malformations which if found would show the way toward prevention is a pitfall that has trapped many victims. In ancient times the idea of maternal impressions affecting the embryo provided a convenient explanation for unexpected variations in offspring,[1] and such superstitions still exist in the lay mind. Within the scientific field, environmentalists have reasoned that since embryos known to have grown in poor soil, such as the fallopian tube, are often malformed, therefore the majority of malformed embryos are the result of growth in poor soil,[2] or that since some malformed children are gestated under unfavorable environmental circumstances, most malformations are caused by environmental insults.[3] Equally unjustified generalizations have been made

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by geneticists. Because some malformations in some families follow simple Mendelian patterns and many types of defect, treated statistically, show a familial tendency, it has been concluded that the great majority of malformations are genetic in origin.[4,5]

Defects with a Clearly Genetic Basis

It is certainly true that some malformations show, in some families, simple Mendelian patterns of inheritance. There are numerous well-documented pedigrees of polydactyly, for instance, in which the defect is clearly due to a single dominant gene.[6] One should not, however, fall into *pitfall number 1, the mistake of thinking that because some cases are clearly genetic, all cases are clearly genetic;* and it is quite misleading to state that the risk of recurrence in siblings of a person with polydactyly is one in two[7] unless there is a dominant family history. The polydactyly of the Ellis-van Creveld syndrome,[8] for instance, is recessively inherited, and in many cases of polydactyly there is no evidence of any simple pattern of inheritance. Some of these sporadic cases may represent homozygosity for recessive gene pairs, some may be the result of dominant mutations, and it is quite possible that some of them are mainly environmental in origin, although this is difficult to prove.

On the other hand, one must avoid *pitfall number 2, thinking that because there are no affected relatives the origin of a defect is necessarily nongenetic.* I will mention two instances in which a relatively simple genetic situation may lead to the occurrence of sporadic cases.

With the usual small family size of modern society a recessively inherited condition (which has one chance in four of occurring in the patient's siblings) will occur only once in a family more often than it will occur more than once. Consider chondrodystrophia calcificans congenita, for instance. A mother was referred to us for counseling after having had two children with the disease. After the birth of the first baby, the mother was advised by her physician that the disease was very rare, and that it almost never occurred more than once in a family, so that the risk was negligible for her subsequent children. Her referral to us led us to survey the literature and it was found that, although the majority of cases were solitary, the proportion of affected siblings and the increased parental consanguinity rate provided strong evidence that the disease was, in fact, due to a single recessive gene pair.[9] The risk for each sibling of an affected child is therefore one in four of being similarly affected.

Another situation in which a genetically caused disease may appear to be sporadic is that of dominant mutations. In such a case the parents are unaffected since their somatic cells carry the normal form of the gene, but one of the germ cells giving rise to the child carries an abnormal form of the gene, which has arisen by mutation, and will cause the child to be affected. We have seen, for instance, a father and daughter with bilateral absence of the tibia, polydactyly, and other skeletal defects. When the father was born, his mother was told that this was a developmental accident and would not recur in the family. Nevertheless, his daughter was affected. It seems likely, therefore, that the father received a dominant mutated gene from one of his parents, that each of his children would have a fifty-fifty chance of inheriting this gene, and that the hereditary nature of the disease is not generally recognized because very few affected persons have children. Numerous other examples of sporadic cases of persons with rare diseases having affected children could be quoted from the literature and from our own experience to support the conclusion that a negative family history does not mean that the disease is necessarily nongenetic, and that one should be careful in such situations not to give false assurances to the family concerned.

Since we are concerned with the problem of reducing the frequency of malformations, it might be pointed out here that the group of cases with clear-cut genetic causes represents a minority of the sum total of defects. But, small as this group may be, its size could be lowered appreciably by preventing affected individuals and other carriers of the abnormal genes from reproducing. For diseases showing a dominant pattern of inheritance, preventing reproduction of the affected persons would in one generation eliminate all affected individuals except the few that occurred as the result of fresh mutations. For sex-linked recessive genes the effect would be less and for other recessive genes less still, although the possibility of detecting clinically normal carriers in an increasing number of diseases would improve the efficiency of such negative eugenic measures.

Such a program of negative eugenics might, however, create so many moral, ethical, and legal complications that it would raise more problems than it would solve, and in any case it would involve only a minority of malformations. In our society compulsory sterilization does not seem to be the answer, but we can make some eugenic progress by making the public aware of the hereditary nature of certain diseases and of the responsibility that carriers of abnormal genes have to future generations. A voluntary restriction of family size in situations where there is a relatively high risk that the children will inherit a disease would lower the frequency of such diseases somewhat, and even a small improvement is better than none. As our methods of treating such diseases as hemophilia, spherocytosis, and phenylketonuria improve, the necessity for such eugenic measures increases, since more carriers of the abnormal genes reproduce themselves and the gene frequency increases.

Defects with a Clearly Environmental Basis

There are now several environmental agents which have been clearly demonstrated to cause developmental anomalies in humans. These include radiation of the fetus,[10] maternal infection with rubella[11] or toxoplasmosis,[12] and maternal treatment with a folic acid antagonist.[13] Production of malformations by these teratogens could be eliminated by protecting pregnant mothers from exposure to the agents, but such measures would reduce the sum total of malformations by only a very small amount.

Maternal Impressions.—The identification of environmental teratogens is a difficult matter. One of the difficulties is illustrated by the phenomenon of maternal impressions. When a mother gives birth to a deformed child it is natural for her to think back and try to identify some event during the pregnancy that might have caused the defect. Particularly if she is superstitiously inclined she is quite likely to find one, and I have heard mothers attribute malformations to an astonishing variety of prenatal events. One example will suffice. A French-Canadian mother read in the newspaper that wolves were roaming the country near the town in which she lived. During her pregnancy she had to drive through the area where the wolves were said to be, and was so upset by this that her baby was born with a "geule-de-loup" ("wolf-mouth" —a synonym for "harelip"). Such inferences are perhaps excusable when drawn by a superstitious mother, and I do not suppose that a scientist would seriously consider this as a cause of harelip. But some scientists seem to be much less critical when the mother has been exposed not to imaginary wolf packs but to some agent that has been shown to be teratogenic in the lower animals. When such an agent is found, we should of course consider the possibility that the agent may be teratogenic in humans; but unless there is clinical evidence to this effect, one cannot assume that exposure to the agent and malformation occurring in the same pregnancy are causally related. They may be coincidental.

Coincidental Association.—This brings us to *pitfall number 3, the temptation to associate a malformation in a child with a retrospectively identified prenatal event.* One should not assume in a case where the mother of a malformed child was exposed to a particular agent, known to be teratogenic in experimental animals, that the agent caused the malformation. We have shown, for instance, that maternal treatment with cortisone can cause congenital cleft palate in mice.[14] Recently I saw a case in which the mother received cortisone during one of her pregnancies and had a child with a cleft palate. But in fact the child with the cleft palate was the first-born and the cortisone was given during the second pregnancy, so there was obviously no connection between the two events. But if the cortisone had been given in the first pregnancy one might have been tempted to conclude that the association was causal. (Actually there have been cases reported of babies with cleft palates which have resulted from pregnancies in which the mother received cortisone,[15,16] but the numbers are too small to permit any conclusions as to whether this association was causal or coincidental.)

Similarly, hypoxia has been shown to be teratogenic in experimental animals,[17–19] but this should not make us jump to the conclusion that a malformed child with a prenatal history of hypoxia is malformed because he was hypoxic in utero. We have seen a case of microphthalmia, for instance, in which the mother flew across the Atlantic while in the first trimester, and there are those who would claim that hypoxia occurring during the flight was the cause of the malformation.[20] As it turned out, the child had congenital toxoplasmosis and there was no need to invoke hypoxia as a cause of the malformation.

The point here is that the association in a particular case between a given prenatal factor and a malformed child may be coincidental, and coincidences may happen more often than we think. In our series of about 300 cases of harelip and cleft palate, for instance, there are two patients, unrelated, and unknown to each other, named Paul Wilkinson. The Montreal Telephone Directory lists no P. Wilkinsons among over 500,000 names, and so the probability of living in Montreal and being named Paul Wilkinson must be something less than 1 in 500,000, and the chance of two patients with this name both occurring in our series would be less than one in ten million. Nevertheless it happened, and if the 2 cases had both, say, been born of mothers with bicornuate uteri rather than both being called Paul Wilkinson one might be tempted to think there was a causal association.

METHODS OF IDENTIFYING TERATOGENIC FACTORS.—Identification of teratogenic factors in human beings can be done (a) by demonstrating, retrospectively, that a given prenatal factor occurs more frequently in pregnancies giving rise to malformed babies than in pregnancies giving rise to normal babies, or (b) by demonstrating, prospectively, that pregnancies in which the given factor occurs give rise to malformed babies more often than do pregnancies in which the factor does not occur. In both methods, the possibility that the factor is a result of the malformation, or that there is a cause underlying both the factor and the malformation must be considered.

The prospective method is time consuming and expensive since large populations must be surveyed to get relatively few suitable cases, except in special circumstances where unusually large numbers of persons are exposed to a particular agent such as a rubella epidemic or an atomic bomb blast. So far this approach has provided rather small returns for the effort and money expended insofar as identification of teratogens is concerned, although it is of course valuable in estimating the frequency with which maternal exposure to an environmental teratogen, such as rubella, actually results in a malformed child.

The retrospective approach is an easier way of collecting data, but is subject to a number of biases such as the tendency of mothers to remember abnormal events in pregnancies with abnormal outcomes more often than in pregnancies with normal outcomes. Such biases are extremely difficult if not impossible to control, but at least one ought to be aware of them and avoid drawing fallacious conclusions from inadequate data. In this respect I would like to mention a study purporting to show that maternal psychologic stress during pregnancy was a cause of congenital cleft palate.[21] Much of the information was collected by questionnaire, which is a good way to acquire biases, particularly if some of the persons sent the questionnaire did not return it. The control data were collected by a second questionnaire on the other pregnancies of the mothers of the cleft palate patients. Having thus no control data on parity, the authors became impressed with the fact that in their patients with cleft palates, first-borns were more frequent (40 per cent) than any other birth rank. This, they reasoned, was because first pregnancies tend to be more stressful and supported their thesis that maternal stress is teratogenic. But it is inevitable that more people will be first-born than will fall into any other birth rank, since one can have a first-born child without having a second-born, but one cannot have a second-born child without having had a first-born. Actually in our series of patients with harelip and cleft palate 37 per cent are first-born as compared to 40 per cent in a control group, and there is thus no evidence here that primogeniture is teratogenic.

The authors then go on to state that 69 per cent of the mothers reported emotional upsets during the pregnancy giving rise to a child with cleft palate. Upsets included a wide variety of things such as death or divorce in the family, incompatibility, hyperemesis gravidarum, and so on. The frequency of upsets will of course vary with the breadth of the investigator's criteria, but it would seem likely that only a minority of pregnant women could exist for three months without having something upsetting happen to them. This is why the controls are so important. The authors found that only 15 per cent of these mothers of children with cleft lip or palate reported upsets in the pregnancies that gave rise to unaffected babies, and furthermore that 85 per cent of the mothers did not have upsets during these pregnancies. It turns out that this 85 per cent includes 10 per cent who did not have any other pregnancies, which is a good reason for not having upsets during them, but it seems hardly fair to include these cases when measuring the frequency of upsets during gestation!

Even allowing for this statistical bias it would seem that the authors found a higher frequency of maternal stress in the pregnancies giving rise to children with cleft palates than in the pregnancies giving rise to their unaffected siblings. We wonder how much of the difference is due to biases such as the maternal memory bias and those commonly associated with questionnaire studies (for example, did mothers who did remember something unusual during the pregnancy answer the questionnaire more often than mothers who did not remember anything unusual? Unfortunately, the authors did not state what proportion of the questionnaires sent out were answered).

In our series of patients with harelip and cleft palate (considered separately from those with cleft palates alone, which are an etiologically different group[22,23]) we have compared the frequencies of various prenatal events for the harelip and cleft palate group with those in a control group. The control group consists of children with a variety of diseases such as albinism, fibrocystic disease of the pancreas, and hemophilia which are not classified as malformations, and where the disease is clearly due to a change at a single genetic locus, not to intra-uterine insults. Although this may not be an ideal control, it is comparable to the cleft lip and palate group in features such as age of patient, parental age, racial extraction, and so forth. It also has the advantage, which a group of normal controls would not, that these control patients have a chronic disease, often of prenatal onset, so that the mothers are more likely to try to remember unusual events that occurred during such a pregnancy than if no such condition is involved. We have also collected information on the siblings' pregnancies, both in the cleft lip and palate and control groups as an additional control, and as one way of trying

TABLE I.—Percentage Frequency of First Trimester Flights, Vomiting, and Emotional Upsets in Prenatal Histories of Patients with Harelip and Cleft Palate, of Control Patients, and of Their Respective Siblings

	Cleft Lip and Palate Group		Control Group	
	Patients	Siblings	Patients	Siblings
Air flights	1.4	0.0	1.7	1.0
Severe vomiting	13.0	11.7	8.3	5.2
Emotional upsets	21.3	8.3	18.3	12.4

to estimate the maternal memory bias. It is important, by the way, to ask the desired questions about each pregnancy separately. If one asks "Did such-and-such happen in any of your other pregnancies?" the mother is likely to answer "No" before she has thought about each one, particularly if there have been many pregnancies. A good deal of bias can thus be avoided by having on the protocol a space for each question, for each pregnancy, and checking each one off separately.

Our data are not yet ready to publish, but I will present here a few preliminary results, so that we can discuss the methodology and the sort of problems that arise in interpreting such figures.

Table I compares the frequency of various prenatal events for patients and siblings in the cleft lip and palate and control groups. Line 1 deals with first trimester airplane flights. These occurred more often in the prenatal histories of cleft palate patients than in those of their siblings. But even if these differences were significant, one should not jump to the conclusion that airplane flights are therefore teratogenic, since the control patients also rate higher than the control siblings. Perhaps, if these differences turn out to be statistically significant they will form an estimate, however rough, of maternal memory bias. In any case, the control patients have as many flights in their prenatal histories as the cleft lip and palate patients, and so these data provide no evidence that airplane flights during pregnancy have anything to do with the production of harelip and cleft palate.

Severe vomiting would seem likely to be associated with maternal stress, and might also conceivably lead to nutritional deficiencies for the fetus. Again, we find severe vomiting a little more often in the prenatal histories of cleft lip and palate patients than in those of their siblings, and more often in the prenatal histories of the control patients than in those of their siblings. But how do we account for the fact that the cleft lip and palate patients rate higher than the control patients, and the cleft lip and palate group siblings higher than the control siblings? Are babies with harelip and cleft palate more likely to be born to mothers who are prone to vomit during pregnancy, are these differences due to sampling error, or are the differences due to a tendency of mother and/or investigator to look harder for abnormalities in some groups than in others? Collection of more data and comparisons between more groups of patients may help to decide between these possibilities, but at present we are unable to say.

Finally, let us consider the question of maternal emotional upsets. These can be so varied in nature and degree that it is difficult to establish criteria of classification and at present, for lack of a better one, the main criterion used is the mother's statement as to whether or not she was seriously upset. Again the patients rate higher than the siblings in both the cleft lip and palate and control groups, and here the difference is quite large. It is reasonable to suppose that maternal memory bias might be more pronounced in something as vague as emotional upsets than in something more definite such as severe vomiting or air flights. However, the figures for the cleft lip and palate patients are not significantly higher than those for the controls and so we have been unable to provide any evidence that maternal emotional upsets are teratogenic.

Defects Without Any Clear-Cut Genetic or Environmental Cause

The great bulk of the common malformations do not have any clearly identifiable cause. It seems to be a fairly general rule that any particular clinical category will contain a variety of cases of differing origins. A minority of cases will have a fairly clear-cut genetic basis, a few may have an identifiable environmental cause, but the great majority will be the result of various combinations of multiple genetic and multiple environmental factors interacting in various proportions to determine whether the particular baby does or does not cross the threshold of abnormality[24,25] Take harelip and cleft palate, for example. In a large series of cases one would expect to find a small proportion (about 1 per cent) resulting from inheritance of a dominant gene that causes accessory salivary glands of the lower lip and, in about half the carriers, harelip and/or cleft palate. Cleft lip and/or palate may also occur as one of the manifestations of other rare genes such as the one for lobster-claw defect and perhaps arachnodactyly.[26] If the series is a big one it may also contain a case or two attributable to attempted abortion with aminopterin or to some other environmental teratogen. Most cases cannot be placed in either of these categories. There is clearly a tendency for the defect to occur in families more often than is expected by chance[22,23] which suggests either an inherited predisposition or some sort of familial environmental agent. Twin studies strongly support the idea that the familial tendency is due to a genetic predisposition, since in pairs where at least one is affected about 33 per cent of the monozygotic pairs are concordant as compared with only 5 per cent of the dizygotic pairs.[27] However, the familial distribution does not seem to fit a simple Mendelian pattern and about all we can say of the genetic basis for the predisposition to harelip and cleft palate is that it is probably polyfactorial and certainly ill defined.

Equally nebulous are the environmental factors that interact with the genetic predisposition to decide whether or not the embryo will be abnormal. Why is it that in 67 per cent of monozygotic twin pairs where one twin has a harelip the other does not? This dichotomy in outcome is almost certainly not caused by genetic differences between the two members of the pair, and is equally difficult to account for by invoking environmental maternal insults such as hypoxia or emotional stress as the causal factor. One is forced to postulate differences in the uterine environment that determine that only one of the two embryos, both genetically predisposed to abnormality, actually becomes abnormal. One can imagine various factors that could lead to such environmental differences between the two inhabitants of the same chorionic membranes, but there is virtually no direct evidence of what these might be in human beings.

Evidence from Experimental Teratology

Warkany's demonstration[12] that specific vitamin deficiencies in pregnant rats could produce characteristic patterns of malformations in the offspring was a great impetus to the science of mammalian teratology, and since then a large number of agents when applied to pregnant animals have been shown to be teratogenic. As we have mentioned before, however, and as Dr. Warkany has repeatedly stated,[28] there is no justification for extrapolating such results to human malformations in the absence of positive clinical evidence. The agents known to be teratogenic in the lower animals are effective only in or close to the dose range that causes abortion or resorption of some embryos in the litter. If you suffocate a pregnant animal to the point of prostration,[18] or give her amounts of cortisone that might kill her if she were not pregnant,[14] or starve her till she loses 20 per cent of her body weight,[29] or batter her with sublethal doses of roentgen rays,[30] or create in her an acute vitamin deficiency,[31] the offspring are likely to be malformed. These are what Landauer calls "sledgehammer" blows to the embryo.[32] They are useful tools in the analysis of abnormal development, but I doubt that they have very much to do with the bulk of human malformations where no such violent maternal insults are evident.

Our work with cortisone-induced cleft palates in mice has shown that the frequency of malformations varies with the dose of the environmental agent, the stage at which it is applied,[14] maternal weight,[33] and the genetic constitutions of mother and embryo.[34] Furthermore, the mechanism by which cortisone causes cleft palate is only one of several ways in which this malformation can occur.[25] In short, palate closure can be thought of as the result of the interaction of many delicately integrated processes each under genetic control and capable of alteration by a number of environmental factors.

Again, however, we return to the most tantalizing question of all: In a uterus containing a number of genetically identical embryos why are some born with a cleft palate and others not? We are at present investigating this problem and have a few intriguing findings (such as Trasler's observation[35] that spontaneous cleft palates with associated harelips occur most frequently in the ovarian end of the uterus) but no answers.

My final thought is this. In our laboratory we have a strain of mice (A/Jax) in which about 5 per cent of the embryos have spontaneous harelip, usually with an associated cleft of the palate. In another strain, C57BL, there are no harelips, but about 5 per cent of the offspring have microphthalmia. In both cases few if any animals in a litter are affected, and since the lines are highly inbred it can be assumed that differences within a litter are probably due to variations in the intrauterine environment. Both strains are raised in the same laboratory under reasonably constant conditions and so it must be assumed that the occurrence of harelip in one strain and of microphthalmia in the other are caused by genetic differences between the strains. None of the female mice are normally exposed to hypoxia, virus infections, nutritional deficiencies, or emotional upsets. Yet here we have in the same environment one set of genes causing a few of the mice carrying them to have a harelip while their litter-mates are normal, and another set of genes causing a few of the mice carrying them to have microphthalmia while their litter-mates are normal. These may represent what Lerner calls "phenodeviants,"[36] abnormalities occurring with a relatively low frequency in a population and thought to result from homozygosity for genes which when heterozygous help to buffer the organism's developmental mechanisms against environmental variations.

Regardless of the terminology, it follows that the pattern of abnormality (in this case, harelip vs. microphthalmia) is decided by the genetic constitution of the strain, but whether or not a given embryo follows the abnormal path is decided by variations in the features of its uterine environment. Since no one has yet identified these variations they must be rather subtle. In other words, the embryo may be sensitized by its genes to react in a particular way to relatively minor and perhaps nonspecific abnormalities in its intrauterine environment. One wonders if this is also the basis for most of the common human malformations.

Summary

1. Within any clinical category of the common malformations it is likely that there will be a few cases with a well-defined genetic cause, a few with a definite environmental origin, and a great majority which are the result of complicated interactions between multiple genetic and environmental factors.

2. It is a mistake to think that because some cases of a particular malformation are clearly genetic, all cases of the malformation are genetically caused, or on the other hand that because a patient has no affected relatives the defect is not genetic.

3. There is no justification for concluding, in the absence of positive clinical evidence, that because a child with a malformation was exposed prenatally to an agent known to be teratogenic in experimental animals, the agent caused the child's defect.

4. There is no evidence from our data on the prenatal histories of children with harelip and cleft palate to show that maternal emotional stress plays any role in the causation of this defect. Possible reasons why other workers have reached the opposite conclusion are discussed.

5. It is suggested that the basis for many malformations may be a multifactorial genetic system that predisposes the embryo to react in a particular way to minor variations in the intrauterine environment.

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The codfish lays ten thousand eggs
  The homely hen lays one.
The codfish never cackles
  To tell you what she's done.

And so we scorn the codfish,
  While the humble hen we prize,
Which only goes to show you
  That it pays to advertise.—ANON

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Lead Poisoning and Pica in Children

THE following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Lead Poisoning	5 years	Male

When this child was one year old, he was hospitalized for twenty-six days at the Kingston Avenue Hospital, Brooklyn, for lead poisoning because of a history of having eaten flakes of wall plaster over a period of several months.

For two weeks prior to a second hospital admission, in March, 1958, he again complained of abdominal pains, cramps, and nausea, and he vomited frequently. He was taken to Cumberland Hospital where he was admitted. At the hospital the x-ray result was suggestive of a heavy metal poisoning. After nine days of hospitalization and therapy the child was discharged as improved with referral to the outpatient department for follow-up.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Pica	2 years	Male

This patient had a history of eating hair and paint for several months. He began to vomit, with the presenting symptoms of abdominal pains, nausea, and convulsions. He was taken to a hospital for examination and treatment. On admission the red blood cell count was 3,500,000, hemoglobin 11 Gm. (67 per cent), and the blood lead level was normal. After twenty-five days of hospitalization and appropriate treatment the child improved.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Lead Poisoning	$1^1/_2$ years	Male

The history obtained on this child was that he was in the habit of looking out of the window frequently and sucking the window ledge while doing so. The mother was aware of this practice but did not realize that it was harmful. The patient complained of nausea and abdominal pains and vomited frequently. He was taken to a hospital for investigation and treatment. The red blood cell count showed a marked anemia, and the urine showed a 2 plus albumin. X-ray results were positive for heavy metal poisoning, and the blood lead level was elevated.

On admission this patient had an elevated temperature and paralysis of the left lateral rectus muscle. He was treated with calcium versenate, Chloromycetin, and Donnatal.

After thirty-nine days in the hospital the blood lead level went down to 0.04 mg. per 100 cc., and most of the symptoms subsided with the exception of squinting of both eyes.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Pica	$3^1/_2$ years	Male

The history on this patient reveals that he had been eating plaster since he was six months of age. He spent a great deal of time at the refrigerator picking and eating a lot of ice frosting off the freezing unit.

The public health nurse happened to visit the family with regard to a follow-up on a lye poisoning, the child having ingested the lye three months earlier. On questioning the parents and in an effort to obtain a complete epidemiologic history, the nurse became suspicious of a pica problem in this child. Both this patient and his sister were referred for a blood lead determination which proved to be highly positive.

The physician from the child health station where both children are under supervision referred them to a hospital for further investigation and treatment.

An inspection of the home by a public health sanitation official revealed the existence of broken plaster about 5 inches in diameter around the pipe beside the toilet and broken plaster over the top of the bathtub. A small patch of broken plaster was also seen on the kitchen wall, and flakes of wall paint were near the window in the bedroom.

The children were said to be playing near this wall and window constantly. The apartment had been painted about a year previously with paint supplied by the landlord. The lead content in the paint is unknown. In addition to the lead poisoning the child also had hypochromic anemia.

At the time this report was received, which was three weeks after admission, these children were still in the hospital receiving appropriate treatment.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Pica	$4^1/_2$ years	Female

This incident concerns the sister of the preceding case. The history is essentially the same except that she has been ingesting paint since she was one and one-half years of age.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Lead Poisoning	3 years	Female

The patient gave a history of pica of about six weeks duration. She complained of vomiting, nausea, and abdominal pains. She also appeared pale and was taken to the hospital.

The following findings were noted: red blood cell count 3,400,000, hemoglobin 6.7 Gm. per 100 cc., and white cell count 18,500 with 65 per cent polymorphonuclears and 27 per cent leukocytes. The basophilic stippling test result was positive, and the blood lead content was 0.017 mg. per 100 cc. of blood. X-ray of the long bones showed lead. These findings were as of May 25, 1958; the patient was admitted May 13.

A week after admission the blood lead content was 0.06 mg. per 100 cc. of blood and urine findings were negative. The patient was treated with calcium versenate 75 mg. per Kg. per day. After twenty-nine days of hospitalization and therapy the patient was discharged as improved.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Lead Poisoning	2 years	Female

This child had a history of pica of unknown duration. She chewed frequently on window sills and walls. Her parents did not realize that the practice was harmful. She had abdominal pains and nausea and vomited frequently. On and prior to admission to the hospital she appeared lethargic, convulsive, and in coma.

The laboratory findings were as follows: red blood cell count 2,800,000, hemoglobin 6.5 Gm. per 100 cc., and white blood cell count 19,400 with 66 per cent polymorphonuclears and 34 per cent leukocytes. The basophilic test result was positive, and the spinal fluid was colorless.

The patient was treated with calcium versenate intravenously. Thorazine, penicillin, and Chloromycetin were also administered.

In spite of this heroic therapy the patient expired one day after admission and six days following onset of symptoms. A home investigation by a public health sanitarian revealed broken plaster and paint peelings in several areas in the home.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Lead Poisoning	3 years	Female

This child lived in a house in which the sanitary conditions were very poor. Her mother stated that the child frequently ate fallen plaster from the walls since moving into this apartment. Because of repeated vomiting she was taken to a hospital where a history of pica, vomiting, and headache was obtained.

The laboratory findings ten days after admission were as follows: red blood cell count 4,680,000, hemoglobin 9.6 Gm. per 100 cc., and white blood cell count 11,250 with 56 per cent polymorphonuclears and 42 per cent leukocytes. The basophilic stippling test result was positive. The blood lead content was 0.85 mg. per 100 cc. Urine findings and x-ray results were essentially negative. Spinal fluid findings showed a protein of 74 mg. per cent, sugar 80 mg. per cent, and sterile spinal fluid culture.

The child's first admission was on September 15, 1957, at which time a diagnosis of nonparalytic polio was made. On the basis of the subsequent history and findings the diagnosis of polio made on the first admission was found to be erroneous. This child was readmitted on May 21, 1958, with a history of pica, vomiting, lethargy, stupor, convulsions, and coma.

The laboratory findings on the second admission were as follows: red blood cell count not done, hemoglobin 6.9 Gm. per 100 cc., and white blood cell count 10,650 with 70 per cent polymorphonuclears and 30 per cent leukocytes. The urine had a 3 plus acetone and was positive for coproporphyrin. The cerebrospinal fluid was clear with a protein of 127 mg. per cent and a sugar of 141 mg. per cent (both elevated). The culture was sterile.

Treatment was started with calcium versenate 560 mg. every twelve hours. However, only 2 doses were given since the patient expired the following day. Death was attributed to lead poisoning.

In retrospect it is regrettable that a definite diagnosis of lead poisoning was not made on the first admission, September 16, 1957, since earlier treatment might have saved the child's life.

The other two siblings in the family were referred for blood lead determinations but fortunately showed a low blood lead content, 0.04 and 0.02 mg. per 100 cc. The Department of Health will keep track of the family with periodic blood lead determinations.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Lead Poisoning	$2^1/_2$ years	Female

A history was obtained from an older sibling who states that the child drank some paint from an open can in the hallway of the building. The paint was not in the apartment of the family.

The child was first seen by a private physician and then was hospitalized. This child's history began with anorexia and vomiting about one and one-half weeks prior to admission. She was taken to a pediatric clinic where she was treated for tonsillitis. On admission to the hospital, however, on September 4, 1958, a history of pica, anorexia, vomiting, abdominal pains, pallor, and headache was obtained. The child appeared lethargic and had symptoms of generalized weakness.

The laboratory findings were as follows: hemoglobin 8 Gm. per 100 cc. and white blood cell count 7,900 with 60 per cent polymorphonuclears and 34 per cent leukocytes. Basophilic stippling was not noted. The blood lead content on June 18, 1958, was 0.11 mg. per 100 cc. The coproporphyrin test for the urine was not done.

X-ray of the abdomen revealed numerous small opaque points in the small intestines. The cerebrospinal fluid showed clear color and a protein of 48 mg. per cent and a sugar of 46 mg. per cent. The patient was treated with calcium versenate 0.4 mg. in 100 cc. of glucose and water twice daily. In spite of the therapy the patient expired on the following day.

A public health sanitarian and a public health nurse who visited the home found 2 other siblings who looked anemic and ill and had high blood lead levels. They were referred for further investigation and therapy and are now being treated for lead poisoning. The public health sanitarian who made an environmental inspection reports evidence of paint peelings and gnawing at window sills.

It is regrettable that in this case too the possibility of lead poisoning was not entertained when the child was originally seen by the physician in the clinic. He might still have been alive. It may be pertinent to re-emphasize that failure to make a correct diagnosis has likewise been noted in carbon monoxide poisoning.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Lead Poisoning	2 years	Female

The mother of this child was completely unaware of the child's habit of ingesting any lead-containing substances. From the age of two months to one and one-half years the child was cared for at a foster home. According to the mother, the home was very "clean" and the child was well cared for by the foster parents. It is, of course, difficult to interpret the meaning of cleanliness or what the mother meant by "clean."

According to the history obtained by an epidemiologist from the Bureau of Preventable Diseases, the child was hospitalized in Kings County Hospital in the summer of 1957 with a history of fever. A definitive diagnosis was not made at that time. After discharge from the hospital the child appeared well until June, 1958, when she was admitted to Cumberland Hospital, again because of a fever. A diagnosis of tonsillitis and upper respiratory infection was made. The child was treated and discharged as cured.

On July 16, 1958, the mother noted the child had anorexia, vomited, and complained of abdominal pains. She was again rushed to the hospital where she was immediately admitted, but she expired before very much work could be done in the way of examination or treatment. Since on admission the blood sugar was 141 mg. per cent and the spinal fluid sugar 152 mg. per cent and there were no other positive findings, a diagnosis of diabetes was entertained and regular insulin 25 units was given intravenously. The patient was also given 250 mg. of

Chloromycetin. Subsequently, however, x-rays of the long bones, such as the femur and tibia, revealed marked density of the metaphyseal areas. The blood lead determination showed a level of 0.09 mg. per 100 cc. It may be stated parenthetically that increases both in blood sugar and cerebrospinal fluid sugar are encountered not infrequently in cases of lead poisoning.

The laboratory findings were as follows: red blood cell count 3,860,000, hemoglobin 6.8 Gm. per 100 cc., and white blood cell count 11,400 with 68 per cent polymorphonuclears and 29 per cent leukocytes. The basophilic stippling test result was positive, and the blood lead level 0.09 mg. per 100 cc. The urine had an albumin of 2 plus and a sugar of 2 plus; no coproporphyrin was noted. X-rays showed an increased density of the metaphyseal areas of the femur, tibia, and fibula. The cerebrospinal fluid was clear but showed a protein of 152 mg. per cent and a sugar of 152 mg. per cent.

It is possible that although the parents disclaim any knowledge of pica or the child's ingestion of any lead source, the original admission in 1957 also may have been due to lead poisoning.

As was pointed out in the previous 3 cases, an awareness of the possibility of lead poisoning and a more specific inquiry into the symptoms of lead poisoning and lead blood determinations in doubtful cases might have thrown light on this case at a much earlier date and might have prevented the death.

A careful review of the cases reported here indicates some common denominators which may prove helpful and serve as guideposts to practicing physicians in diagnosis and treatment.

1. There is a high association between pica and lead poisoning.

2. In nearly all cases there is a history of chewing flakes of painted wall plaster and paint peelings from window sills and ceilings.

3. The most common symptoms encountered early in all cases were: anorexia, abdominal pains, nausea, vomiting, and anemia of moderate severity.

4. The children were between one and five years of age, chiefly Puerto Rican and nonwhite.

It is therefore strongly recommended that whenever the signs and symptoms presented in the foregoing are encountered, particularly when a definitive diagnosis is not made in relation to the findings, the examining physician rule out the possibility of lead poisoning.

This can be done only by means of a blood lead determination, x-rays of long bones, and other similar diagnostic tests. It is also important to examine all siblings below twelve years of age of positive cases since the attack rate in household contacts is rather high even though they may be entirely asymptomatic.

(*Number twenty-eight in a series of Briefs on Accidental Chemical Poisonings*)

There is so much good in the worst of us,
And so much bad in the best of us,
That it hardly behooves any of us
To talk about the rest of us.—Anon

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ELIZABETH J. CRAWFORD, M.D.
JAMES MARIN, M.D.
VALENTINO D. B. MAZZIA, M.D.
GEORGE WALLACE, M.D.

Cardiovascular Collapse with Ventricular Fibrillation and Myocardial Infarction

Although sudden cardiovascular collapse occurring during surgical intervention may be recognized quickly and treated satisfactorily, problems of diagnosis and adequate therapy still remain. The following case report illustrates some of these difficulties in a patient who required cardiac resuscitation on two separate occasions.

Case Report

A fifty-two-year-old man was admitted to the hospital with the chief complaint of abdominal pain of three days duration. He had been well until three weeks prior to admission, at which time he noted a loss of appetite, mild abdominal discomfort, and several loose stools a day. He recovered quickly from this episode, but abdominal pain had recurred three days before and had become very severe in the past twenty-four hours. Stools decreased in amount, and the patient was unable to pass gas by rectum for two days. He had had anorexia for two days and vomited on the day of admission.

His past history included a well-documented posterior wall myocardial infarction five years ago. He had been on 0.1 mg. digitoxin daily but was not in congestive heart failure. In addition, he had heavy alcoholic consumption which required hospitalization. Antabuse therapy had been attempted unsuccessfully. A generalized convulsion had occurred five years before admission following excessive alcoholic intake, and a second convulsion had occurred three weeks before admission. Past surgical history included a ruptured appendix with peritonitis at the age

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Discussed at a conference held at Bellevue Hospital, New York City, January 5, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

of twelve and right inguinal hernia repair at the age of forty-six.

Physical Examination.—His temperature was 36.4 C., pulse 85 per minute and regular, respirations 22 per minute, and blood pressure 130/80. He was a well-developed, well-nourished male in acute distress. The lungs had late inspiratory basilar rales bilaterally. The heart was not enlarged and had a normal sinus rhythm and no murmurs. The abdomen was soft, not distended, and with marked tenderness in the midepigastric region and rebound in all quadrants.

Laboratory Findings.—Urinalysis revealed albumin ++, two red blood cells, and two white blood cells per high power field. Blood analysis revealed a hematocrit of 54, white cell count 16.7 thousand, amylase 68 Somogyi units, and blood urea nitrogen 7 mg. per cent.

A flat roentgen plate of the abdomen showed intestinal obstruction.

Electrocardiographic Findings.—The heart has a left bundle branch block. The form of the T waves and R-T segments suggests coronary disease and digitalis effect. A deep Q_3 suggests an old posterior base coronary occlusion.

Course.—Aspiration of the stomach produced 800 cc. of fecal liquid. An emergency laparotomy for intestinal obstruction was proposed. The patient was prepared with gastrointestinal decompression and intravenous administration of fluids with electrolytes and antibiotics. He was taken to the operating room three hours after admission.

Preoperative medication consisted of atropine 0.2 mg. subcutaneously fifty minutes before induction. Anesthesia induction was accomplished by a $2^1/_2$ per cent solution of sodium thiopental 0.5 Gm. and succinylcholine 40 mg. intravenously for intubation. Intubation was accomplished with a number 34 plastic orotracheal tube under direct vision without trauma or regurgitation. Maintenance of anesthesia was accomplished by means of nitrous oxide and oxygen in proportion of 4 liters to 2 liters per minute on a semiclosed circle system with a succinylcholine drip and assisted respiration throughout the procedure. Surgery began twenty minutes after induction of anesthesia.

At laparotomy a fixed carcinoma of the splenic flexure and intestinal obstruction were found. A right-sided transverse colostomy was performed. Surgery took one hour and ten minutes, during which time the pulse remained at 80–90 per minute and blood pressure at 120–140/60. As the dressing was being applied to the colostomy wound and before extubation, the colostomy site and the skin were noted to be cyanotic. A rapid check for heart sounds, pulse, and blood pressure revealed none, and a transverse thoracotomy incision through the left fourth intercostal space was made. The pericardium was not entered. The heart was found to be dilated and not beating. Manual cardiac massage produced an immediate palpable carotid pulsation. Oxygen was administered through the endotracheal tube. Manual cardiac massage for thirty minutes failed to restore an effective cardiac beat although the patient's skin color improved and he moved his extremities. It was decided to incise the pericardium and at this time the ventricles were noted to be fibrillating. Over the next one and one-half hours cardiac manual massage, a total of 18 defibrillating shocks, and procaine 1 per cent were administered before an effective sustained heart beat was produced. The chest was closed with supplemental nitrous oxide. The patient was fully oriented and alert. His pulse rate was 100 per minute, and his blood pressure could be palpated at 100 mm. Hg systolic.

Postoperatively the diagnosis of a mixed myocardial infarction which had occurred at the end of surgery was confirmed by serial electrocardiograms. The patient experienced a generalized convulsion on his second postoperative day, and he was given Dilantin sodium. Digitalis administration was continued. Ambulation was begun on the twentieth postoperative day.

On his forty-first postoperative day the patient was again taken to the operating room for definite surgery of his carcinoma. Preoperative medication consisted of sodium amytal 100 mg. and atropine 0.6 mg. intramuscularly one hour before induction. Anesthetic induction was accomplished by 250 mg. of $2^1/_2$ per cent thiopental sodium and succinylcholine drip for intubation. Maintenance was accomplished by intermittent $2^1/_2$ per cent thiopental (totaling 1 Gm.), assisted respiration, nitrous oxide with oxygen in proportions of 4 liters to 2 or 3 liters on a semiclosed circle, and succinylcholine drip. Vital signs remained steady with a pulse of 90 per minute and a blood pressure of 130/70 over the six hours and twenty minutes required to accomplish partial pancreatectomy for primary carcinoma of the pancreas, partial gastrectomy, partial colectomy, splenectomy, and left adrenalectomy. Fifteen hundred cc. of whole blood were administered. The procedure was well tolerated.

The patient was apparently recovering when, on the seventh postoperative day, he developed auricular fibrillation. Digoxin dosage was increased. Suddenly, later on in the seventh postoperative day, ventricular fibrillation developed. Manual cardiac massage was attempted with supplemental potassium, calcium, procaine, ouabain, adrenalin, and defibrillating shocks. After three hours the heart was still atonic and a perforation of the right ventricular wall occurred.

Autopsy revealed hypertensive and arteriosclerotic cardiovascular disease with old and recent myocardial infarction, pulmonary edema, and resected carcinoma of the pancreas with metastatic carcinoma in the lymph nodes.

Comment

As was stated previously, we still may be faced with certain problems of diagnosis and therapy when sudden cardiovascular collapse occurs in the operating room. Even after analysis of the case reported, it is difficult to explain the cause of the first episode of cardiac arrest. Recent myocardial infarction was diagnosed soon after the accident, but it is not known whether this caused cardiovascular collapse or whether it was a result of the latter. The circulatory comportment during surgical anesthesia was not characterized by any period of arterial hypotension so that it would seem that coronary circulation should have been adequate. It is possible that myocardial infarction was a result of coronary thrombosis. It will be recalled that the patient's hematocrit was 54 preoperatively. This would indicate hemoconcentration. It is possible that impairment of the circulatory flow with the development of sludge during surgical anesthesia caused such thrombosis.

Sudden cardiovascular collapse occurring in a patient during general anesthesia at the termination of an abdominal operation and just prior to extubation with an endotracheal tube in place raises the possibility that the depth of anesthesia was lightened, causing bucking on the endotracheal tube and a resulting vagovagal reflex with cardiac arrest. Immediate observation of the heart disclosed it to be dilated and not beating, a condition to be expected in cases of severe vagal reflex. It would have been desirable to have had continuous electrocardioscopy in order to observe the change at the time when cardiovascular collapse occurred and possibly just preceding it. Such continuous electrocardioscopy would have been valuable in observing the type of change from a regular sinus rhythm to either sinus arrest or ventricular fibrillation. Early depictment of electrocardiographic changes may have prompted earlier therapy and prevented the final course to either state of cardiovascular collapse. Regardless, this case illustrates the need for constant close supervision of a patient undergoing surgery by means of cardiac monitoring. The first episode of cardiovascular collapse occurred at a time when no one usually watches the patient because surgery is over.

Manual cardiac contractions resulted in effective systemic circulation but it failed to restore spontaneous cardiac action. After thirty minutes of this treatment, the pericardium was incised, and it was noted then that ventricular fibrillation was present. This poses the question whether the pericardium should be incised as soon as the heart is exposed in order to be certain of the condition of the heart. This procedure is of considerable help in the determination of important proper pharmacologic therapy. Atropine or sympathomimetic drugs would be contraindicated in ventricular fibrillation, and procaine would be detrimental in a heart that is arrested in diastole due to myocardial depression. On the other hand, if cardiac resuscitation can be accomplished without opening the pericardium, it would be preferable. It would seem advisable, therefore, to do manual cardiac contractions with the pericardium intact, as was done in this case, since in many instances this maneuver can restore normal cardiac contractions. If spontaneous cardiac action does not resume, it would be advisable to open the pericardium to permit direct cardiac observation. Ventricular fibrillation may be detected through an intact pericardium, but in some instances, as in this case, this condition may be masked until the pericardium is incised. Effective cardiac resuscitation can be then accomplished by electric defibrillation, intravenous or intracardiac administration of procaine, and continuous manual cardiac contractions until heart action resumes. This is what happened in this case.

Despite a previous pathologic cardiac condition complicated by additional myocardial infarction, this patient satisfactorily sustained major surgical intervention for a second time, forty-one days after the previous intervention. This illustrates that prompt cardiac resuscitation can produce good recovery and that major surgery can be accomplished on poor risk patients.

The cardiac complication which occurred seven days after radical abdominal surgery was the development of auricular fibrillation for which the amount of Digoxin therapy was increased. When ventricular fibrillation developed, cardiac resuscitation was ineffective, and right ventricular perforation occurred after three hours of manual cardiac contractions. Presumably this complication occurred in the patient's room with considerable delay in performing thoracotomy. When the proper cardiac resuscitation team was assembled, it took three hours of continuous manual cardiac contractions before perforation of the right ventricular wall occurred. Such traumatic cardiac perforation is a common complication, and it has prompted development of artificial devices with adequate but proper pressures. Perfection of such devices will, it is hoped, dispense with the tiring job of rapidly and intermittently contracting the heart by hand as well as prevent or diminish the incidence of cardiac perforations.

(*Number sixty-two of a series of Clinical Anesthesia Conferences*)

What Causes Epilepsy?

What do we know about the causes of epilepsy? About 70 per cent of all cases are of the idiopathic type; the other 30 per cent are associated with evidence of brain lesion.

Of principal causes of seizures in 535 patients with evidence of organic brain lesions, injury at birth ranked first, accounting for 30 per cent, postnatal trauma second with 21 per cent, exposure to infections third, with 17 per cent.

Among the disturbances which can lead to epileptic seizures are injections of convulsant drugs, photic stimulation, alcoholic excess, and hypoglycemic states. The growing appreciation of the role of emotions in precipitating seizures has added another facet to the physician's understanding of the disease.—*Patterns of Disease.*

CANCER ALERTS

A series of radio talks for the practitioner
presented over Station WNYC-FM under the sponsorship of the

New York Academy of Medicine
with the cooperation of the
New York City Cancer Committee

The Significance of Rectal Bleeding

EDWARD M. MILLER, M.D., NEW YORK CITY

Early visceral cancer is a silent disease. Any possible indication of its presence warrants thorough investigation so that treatment may be instituted while the lesion is still localized. The patient may assign little importance to the vague abdominal symptoms which occasionally are associated with an early intestinal neoplasm. However, rectal bleeding is a definite visible sign which should direct the attention of both patient and physician to the possibility of an underlying serious condition. All too often the patient procrastinates in seeking medical attention, attributing the presence of blood in the stool to piles or constipation. The average prediagnostic period in cases of rectal bleeding associated with intestinal cancer is eight to twelve months, indicating the continuing need for effective education of the public.

Nor is the physician himself entirely innocent in connection with belated diagnosis. Several studies have revealed that 25 to 40 per cent of patients with carcinoma of the rectum have undergone hemorrhoidectomy within the eighteen months preceding diagnosis of the malignant condition. Although it is true that hemorrhoids are the most common cause of rectal bleeding in adults, it is also a fact that 9 out of 10 individuals with carcinoma of the rectum give a history of blood in the stools. Aside from hemorrhoids, there are numerous other benign conditions of the anal canal and perianal area which may produce blood in the stool. These include anal fissure or fistula, proctitis, cryptitis, papillitis, as well as lymphogranuloma venereum, tuberculosis, and the blood dyscrasias. Nevertheless, the fact that a neoplasm may be coexistent with any one of these conditions makes a thorough work-up imperative.

A careful history frequently yields valuable clues to the cause of the rectal bleeding. Occasional spotting of bright blood on the toilet tissue usually indicates bleeding from the anal margin. Bright blood in the toilet bowl following a bowel movement suggests a ruptured internal hemorrhoid. Streaks of red blood on the surface of formed stool are suggestive of a rectal polyp, while blood which is mixed with stool indicates a lesion of the colon. The bulky, tarry stools accompanying a bleeding peptic ulcer and the frequent sanguinopurulent discharges of ulcerative colitis, are quite characteristic of these diseases. Infrequently a lesion of the bowel may give rise to massive hemorrhage, the usual causes of which are a necrotic neoplasm, ulcerative colitis, and diverticulitis.

Along with a description of the characteristics of the rectal bleeding, as noted in the previous paragraph, the history should contain information regarding weakness, anorexia, weight loss, abdominal or anal pain, change in bowel habits, and the presence of constipation, diarrhea, or increased flatulence.

Physical examination should include inspection of the abdomen for distention and peristaltic waves and palpation for masses, enlarged viscera, and areas of tenderness. The perianal area should be inspected carefully.

A digital examination of the anus and rectum should be performed on all individuals with a history of rectal bleeding. The examination may be accomplished with the patient in either the Sims' or knee-left shoulder position. The finger should palpate the entire circumference of the bowel within its reach. Approximately 60 per cent of all malignant lesions of the colon and rectum can be detected by the palpating finger. This fact emphasizes the extreme importance of digital examination of the rectum. Whether or not the latter yields positive information, proctosigmoidoscopic examination should be performed next.

Proctosigmoidoscopy also is an essential part of the study of the patient with rectal bleeding since at least 70 per cent of all carcinomas and polyps of the large bowel are within reach of the sigmoidoscope. With proper equipment and some experience, the procedure is relatively simple and can be performed successfully with little discomfort to the patient. After preparation of the patient with a cathartic and cleansing enemas, the distal 25 cm. of the bowel can be well visualized in the great majority of patients. Certain precautionary measures should be taken: (1) digital examination of the rectum before passage of the sigmoidoscope, (2) primary insertion of the instrument no further than the distance explored by the examining finger, identification of the bowel lumen at all times before advancing the instrument, (3) judicious use of air insufflation, (3) not forcing the instrument when a strictured or ulcerated area offers resistance, (4) avoidance of the use of anesthesia, and (5) routine employment of the knee-left shoulder position except in cases of skeletal deformity or severe constitutional disease when the Sims' position may be indicated.

The following pathologic findings may be noted: (1) erythema, granularity, or ulceration of the mucous membrane, (2) sessile or pedunculated polyps, (3) annular, fungating, or plaquelike neoplasms, (4) and areas of stricture, fixation, or extramural pressure. When an area which causes suspicion is encountered, a biopsy should be performed with one of the forceps designed for this purpose. The biopsy should be deep enough to include a representative portion of the lesion for histologic study, but care should be observed not to penetrate the bowel wall. Small lesions are better excised in toto rather than inadequately biopsied. Smears for ova and parasites may be taken from mucosal ulcerations. Bloody mucus, especially when seen beyond the level of the sigmoidoscope, should always arouse suspicion and may be studied for the presence of tumor cells by either the Papanicolaou or Gelfoam technic.

Roentgenographic study of the colon by barium enema is a valuable adjunct to sigmoidoscopic examination in the work-up of the patient with rectal bleeding. The two examinations are complementary for neither one can replace the other. It is usually best to do sigmoidoscopy before rather than after barium enema examination. Small lesions of the upper rectum and rectosigmoid which are accessible by sigmoidoscopy are often difficult to demonstrate roentgenographically. In the event that a lesion is discovered by either examination, the other procedure still should follow because multiple carcinomas of the colon occur in approximately 5 per cent of cases, and polyps are associated with other polyps or malignant lesions elsewhere in the large bowel in 30 to 40 per cent of patients.

Throughout the foregoing, stress has been placed on rectal bleeding as a danger signal which should stimulate the physician to investigative action. Although the commonest symptom consistent with the possible presence of a polyp or cancer of the bowel in the adult is rectal bleeding, the fact remains that most small polyps and most early carcinomas are not associated with the presence of gross blood in the stool. In several large series, sigmoidoscopic examinations have been performed as part of the routine clinical examination on adults over the age of forty-five who had no history of passage of blood from the rectum nor any change in bowel habits. These investigations have demonstrated that approximately 10 per cent of asymptomatic individuals over forty-five have one or more polyps in the large bowel. There is general agreement that most, if not all, adenocarcinomas of the colon and rectum originate in adenomatous polyps. With these facts in mind one can readily recognize the great potential for cancer prophylaxis in the diagnosis and eradication of all polyps before they become malignant. If the greatest number of these precancerous lesions of the bowel are to be discovered, sigmoidoscopy should be carried out on all individuals over the age of forty-five as a part of the general physical examination. If a polyp is found, it should be biopsied for histologic examination, and barium enema roentgenography, preferably by the air contrast method, should be employed to rule out the presence of additional lesions. Polyps within reach of the sigmoidoscope are readily removed by extirpation and fulguration; those above are treated by transabdominal segmental excision. Sigmoidoscopic examination should be repeated annually in a patient who has had a polyp removed.

Summary

Rectal bleeding should alert the physician to the possible presence of neoplastic disease of the large bowel. It is a signal which deserves a complete investigation which should include sigmoidoscopy and, in the majority of cases, roentgenologic study of the colon. The diagnosis and eradication of adenomatous polyps in asymptomatic patients offers a rich opportunity to the physician interested in the prevention of cancer.

521 Park Avenue

(*Number twenty-one in a series of Cancer Alerts*)

Tobacco is a dirty weed. I like it.
It satisfies no normal need. I like it.
It makes you thin, it makes you lean,
It takes the hair right off your bean.
It's the worst darn stuff I've ever seen.
I like it.—Graham Hemminger.

CASE REPORTS

Libman-Sack's Disease in Adult Male Negro

JOSEPH P. CARONNA, M.D., KOSUBE MORI, M.D., AND ANTHONY M. SIRAGUSA, M.D.,
NEW YORK CITY

(*From the Department of Medicine, Columbus Hospital*)

Lupus erythematosus disseminatus with atypical verrucous endocarditis (Libman-Sack's disease) has been generally reported as occurring almost exclusively in young females of child-bearing age. The disease especially when manifested by verrucous endocarditis is only occasionally reported in males, even more rarely in male adults of the colored races.[1–7] Search of the literature has revealed a scarcity of reports of lupus erythematosus disseminata with atypical verrucous endocarditis in colored males. Since the colored races make up at least one tenth or more of our population, one would expect that the disease would not be such a rarity. A more careful search for the L.E. cell of Hargraves is indicated in all cases resembling rheumatic fever in adults in which there is glomerulonephritis with azotemia in the presence of a normal blood pressure. The L.E. cell of Hargraves, a manifestation of the L.E. phenomenon, is more typically found in lupus erythematosus disseminatus, but has been reported in other diseases of the collagen group, such as polyarteritis, rheumatoid arthritis, dermatomyositis, scleroderma, and hyperimmune states.

The L.E. phenomenon is probably the most characteristic diagnostic feature of the disease. The gamma globulin fraction of the serum has the peculiar ability to produce prompt lysis of the nuclei of certain mesenchymal cells. Being highly chemotactic this altered nuclear material attracts to itself polymorphonuclear cells in a rosette pattern. Eventually this nuclear material is engulfed by leukocytes, and these cells become the so-called L.E. cell of Hargraves.

A simple precipitation test, believed specific for lupus erythematosus disseminatus has been described.[4] This test should prove of diagnostic value in all cases of suspected active lupus erythematosus disseminatus and in cases of atypical endocarditis.

Our case is that of an adult Negro of fifty-one years with Libman-Sack's disease, confirmed ante mortem by the finding of the L.E. cell, and post mortem by the classical pathologic findings.

Case Report

A fifty-one-year-old Negro male was admitted with a chief complaint of shortness of breath and swelling of legs on October 7, 1957.

Present Illness.—This patient was in good health up to three to four months prior to admission, when he first noticed mild dyspnea on moderate exertion. Within the subsequent three months this had increased in severity progressively to the extent that he could hardly climb one flight of stairs without resting. For the past two months he had been coughing moderately with sticky yellowish expectoration, and within the last four days he had developed pretibial and ankle edema in both legs in association with chills, fever, and moderate pain in both ankles. He had been anorectic with mild constipation and occasional abdominal cramps since the onset of present illness. There is no history of paroxysmal nocturnal dyspnea. Nocturia occurred 3 to 4 times per night.

Past History.—The patient had had gonorrhea as a youth, bilateral penumonia in 1953.

Family History.—The family history was noncontributory.

Social History.—The patient assisted an apartment superintendent, smoked heavily, and drank moderately.

Physical Examination.—On admission the

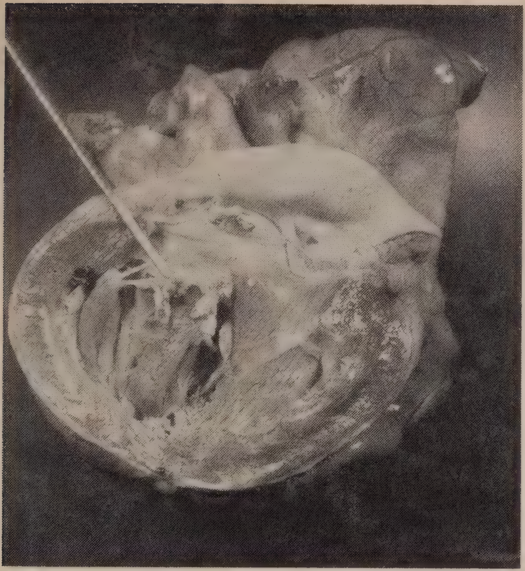

FIG. 1. Macroscopic view of heart showing vegetations of mitral and aortic cusps (Libman-Sack's endocarditis).

temperature was 103 F., pulse 100, respiration 24, and blood pressure 120/80. The patient was a well-developed, well-nourished, and coherent Negro male in no acute distress.

Skin.—The skin was warm and dehydrated, with no eruptions or petechae.

Head and Eyes, Ears, Nose, and Throat.—Examination showed markedly anemic conjunctivas and no inflammation of the throat.

Neck.—The neck was supple with no nodes or thyroid enlargement; and the veins were engorged, with positive hepatojugular reflexes.

Lungs.—The lungs were clear to percussion and a moderate amount of medium-sized moist and crepitant rales were noted over the bilateral lower half of the lung fields.

Heart.—A regular sinus rhythm Grade IV sawing systolic murmur was noted at the apex, and the aortic second sound equaled the pulmonic second sound. The point of maximal impulse was 2 cm. lateral to the midclavicular line in the fifth intercostal space.

Abdomen.—The abdomen was soft, the liver $1^1/_2$ fingerbreadths below the right costal margin with slight tenderness. No other organs or masses were palpable.

Extremities.—There was 3 plus pretibial and ankle edema bilaterally, moderate tenderness over the ankle joints without hyperemia, and clubbing of all fingers.

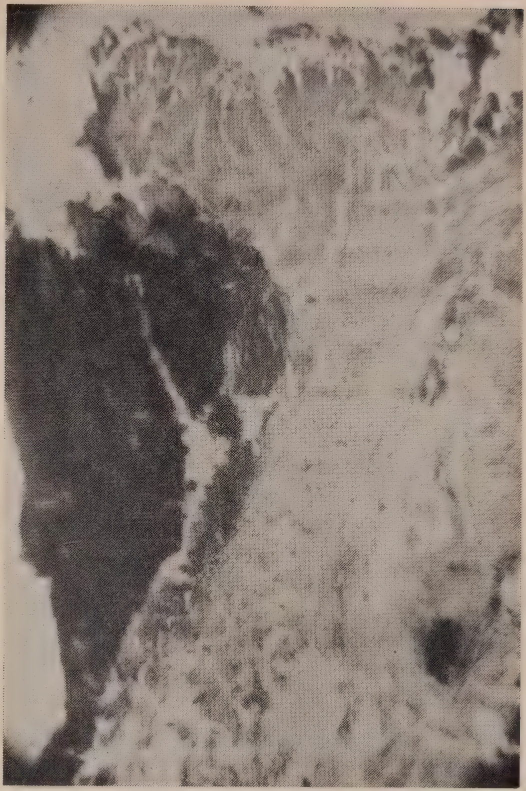

FIG. 2. Vegetations of mitral valve. The valve is covered with fibrinous aseptic material.

Neurologic.—The neurologic findings were physiologic.

Genitalia and Rectum.—There were no positive findings in the genitalia or rectum.

COURSE ON WARD.—The patient was placed on absolute bed rest with salt-free soft diet, digitalized with Digoxin, and given mercurial diuretics parenterally. After blood cultures had been taken, treatment with penicillin and massive doses of salicylates was started. Most of symptoms—fever, dyspnea, tachycardia, joint manifestations, and edema—subsided rapidly, the patient became afebrile within a week, but many of the objective signs remained. After the patient had been in the hospital several days and the tachycardia had subsided, examination of the heart revealed a coarse, low-pitched aortic diastolic murmur with transmission of the murmur down the left side of the sternum to the apex. It was observed that the quality of the murmur was coarser than the usual high-pitched murmur of aortic insufficiency.

Several weeks later the patient was presented at the medical staff conference and on examination it was now observed that the quality of the aortic murmur had changed, becoming much fainter and barely audible. It was then reasoned that the changing quality of the aortic diastolic murmur might be due to vegetations on the valve, and it was decided to stop all antibiotic treatments, take more blood cultures, and make a careful search for L.E. cells in the peripheral blood. Pulmonary congestion, mild hepatomegaly, and secondary anemia were constant findings to the end. Urinalysis revealed considerable hematuria at various times with persistently low specific gravity.

Blood cultures taken on three different occasions were negative for bacterial growth. Blood serology was negative. As the patient improved salicylates and Digoxin were reduced to maintenance doses.

For the next two weeks the patient remained afebrile. At the beginning of the fourth week he began to complain of backache with definite tenderness on both sides.

In addition, the laboratory findings of increasing blood urea and markedly delayed phenolsulfonphthalein excretion made a suspicion of renal involvement unequivocal by this time. Shortly thereafter the patient started to show mental confusion with an occasional elevation of temperature.

Neurologic and genitourinary consultations resulted in opinions of psychosis of obscure origin and of chronic glomerulonephritis respectively. Additional laboratory examinations revealed a strongly positive cephalin-flocculation test, several sicklings on sickle cell preparations, and unequivocal L.E. cells. The patient suddenly relapsed, developed peripheral edema with advancing mental confusion, and expired unexpectedly on the thirty-second day of his hospital stay.

DIAGNOSIS.—We have presented a case of lupus erythematosus disseminatus in a fifty-one-year-old male Negro, involving principally the heart with verrucous endocarditis (Libman-Sack's disease), the kidneys with chronic glomerulonephritis with azotemia and fixed low specific gravity of the urine, and the liver with a mild hyperproteinemia with inversion of the albumin-globulin ratio. It is interesting to note the total absence of skin manifestations.

Ante mortem, L.E. cells of Hargraves were demonstrated in the circulating blood, and on post mortem classical findings were demonstrated in the heart, kidneys, and spleen.

Laboratory Data (October, 1957)

BLOOD COUNT.—	October 8	October 11	October 18	October 25	October 29
Red blood count	2,940,000	3,680,000	3,340,000	3,170,000	3,100,000
Hemoglobin (Gm.)	9.0	10.8	9.9	9.0	8.7
White blood count	5,350	5,150	6,250	7,150	
Eosinophils	2	2	4	1	
Stabs	0	0	0	0	
Segmented forms	65	59	56	60	
Lymphocytes	33	38	40	35	
Monocytes	1	0	0	1	

BLOOD CHEMISTRY.—	October 8	October 22	October 25
Glucose	70.0		
Blood urea nitrogen	19.0	39.5	37.0
Nonprotein nitrogen		60 0	75.0

URINALYSIS.—	October 8	October 16	October 23	October 30
Specific gravity	1,012	1,010	1,010	1,010
Albumin	1 plus	0	trace	0
Sugar	0	0	0	0
White blood count	15 to 20	occasional	5 to 10	5 to 10
Red blood count	many	many	many	5 to 10

MISCELLANEOUS.—	October 8	October 28
Sedimentation rate	60 mm. corrected 23	48 corrected 20
Hematocrit	28	32
Antistreptolysin-O titer	12 Todd units	12
C-reactive protein	4 plus	

Total protein 7.5; albumin 2.9; globulin 4.6

L.E. preparation: occasional polynuclear resembling an L.E. cell

Sickle cell preparation: occasional sickle cell present

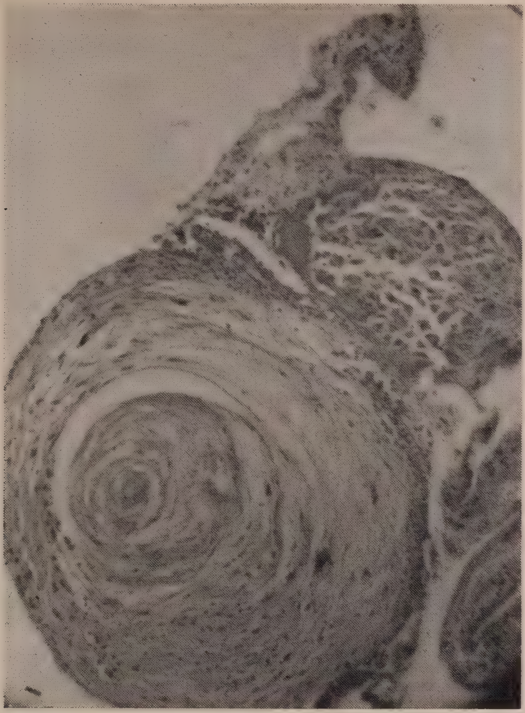

FIG. 3. Nodule of collage of aortic valve.

Blood Culture.—October 8, 1957, to November 8, 1957, blood culture shows no growth after two weeks.

Electrocardiogram.—Two electrocardiograms are nonremarkable except for left axis deviation.

Roentgenogram Reports.—*Findings in Chest (October 8, 1957).*—There is considerable enlargement of the heart in all diameters. There is elongation and sclerosis of the aorta. There are moderately advanced congestive changes in both lungs.

Findings in Chest (October 23, 1957).—Re-examination shows no change in the size or configuration of the heart. The appearance of the lungs is also unchanged.

Findings in Chest with Barium Swallow and in Abdomen (October 5 and 7, 1957).—There is a marked degree of cardiac enlargement and both ventricles are enlarged. There is a small collection of fluid at the right costophrenic angle. The appearance is that of cardia enlargement with failure. The cardiac configuration does not suggest rheumatic mitral heart disease.

Examination of the abdomen reveals a moderate degree of localized small bowel distention which is probably upper jejunum. The liver appears to be considerably enlarged which is presumably owing to passive congestion. There may be some abnormal fluid collections in the peritoneal cavity.

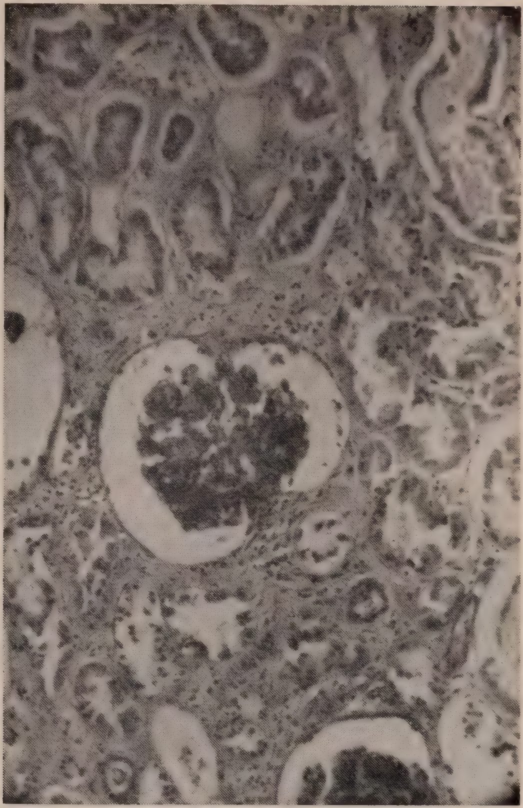

FIG. 4. Chronic glomerulonephritis with wire-loop glomerulus.

Macroscopic Pathology of Heart (Dr. A. Saccone).—The heart weighs 800 Gm. Right ventricle is 2 cm. in thickness. Pulmonary valves are normal. Left ventricle is about 3 cm. in thickness. Aortic valves show at the edge of the medical valve corresponding to the tuberculum aurantii a large vegetation of 2 cm. semisoft on palpation and yellowish in color. There are also many vegetations of the same type, with some more elongated and some more round present in the mitral valve, especially in the middle leaflet. No pathologic condition is found in the tricuspid. The foramen ovale is closed. Myocardium is uniform in color. Aorta shows its normal shining coat and elasticity in all its layers (Fig. 1).

Microscopic Pathology of Tissues (Dr. A. Saccone).—*Heart.*—Lesions are present in the valve rings and valve leaflets with very little extension to the mural endocardium. Occasional lesions are present in the attachment of the dorsal tendinae to the valve. At the base of the vegetations there are present fibroblasts and mononuclear cells, but the vegetation itself is formed of amorphous hyaline substance with occasional precipitation of calcareous salts. The pericardium shows some areas of fibrinous appearance (Fig. 2). The myocardium shows areas of fibrosis with some alteration of collagen with fibrinoid degeneration and necrosis of the walls of the small vessels (Fig. 3).

Kidney.—The kidneys show subacute glomerulonephritis with the so-called wire-loop changes in the glomeruli (Fig. 4).

Spleen.—The spleen shows increase of collagen surrounding the central arteriole of the follicles.

Note that no areas of embolization were present anywhere—not in the spleen, kidney, or other organs.

Comment

The term lupus erythematosus disseminatus is incomplete and indefinite because it only denotes a skin disease, lupus, which in itself is not disseminated nor is it a tuberculid. The term is a carry-over from dermatology before it was known that other and more important lesions were associated with the condition. The disease shows various systemic manifestations some or all of which may be present at the same time. There are heterogeneous visceral lesions with involvement of a common basic substance, the collagenous connective tissues of the body, terminating in fibroid degeneration. Collagen diseases involve mesenchymal tissues of the same embryonal anlage. The possibilities are that the various manifestations of the collagen diseases may be due to a hereditary embryonal biochemic deficiency or imbalance.

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Rupture of the Liver with Acute Intraperitoneal Hemorrhage

ELIZABETH J. BOTTCHER, M.D., ROCHESTER, NEW YORK

(*From the Department of Pathology, Rochester General Hospital*)

SPONTANEOUS rupture of the liver with fatal intraperitoneal hemorrhage is an extremely rare occurrence.[1-3] Yet at this hospital there were 2 such cases within two weeks of each other, both unsuspected clinically.

Case Reports

Case 1.—A seventy-four-year-old man had a sudden onset of severe right upper quadrant abdominal pain during the evening of admission. He had had vague abdominal distress all day; the severe pain developed a few hours after a heavy supper. This was followed by shock, and he was admitted at 1 A.M. He had been in the hospital previously with cirrhosis of the liver and massive gastrointestinal hemorrhage from esophageal varices. Also, he was diabetic. On admission he was in shock. There was abdominal tenderness but no rigidity. X-ray of the abdomen gave normal findings, serum amylase was normal, and the urine contained gross pus. There was no external evidence of bleeding. No specific diagnosis was

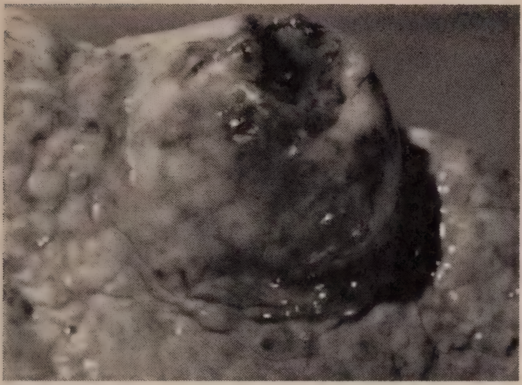

FIG. 1. *Case 1.*—Ruptured hepatoma of the liver.

made, and the patient expired seven hours after admission.

At autopsy the peritoneal cavity was filled with 2 to 3 L. of blood, including a blood clot. The liver was extremely cirrhotic and nodular, but one nodule bulged far above the others, was softer, and had a central crater-like cavity (Fig. 1). It was well encapsulated, and the adjacent part of the liver was compressed. On microscopic examination the nodule was seen to be made up of anastamosing cords of liver cells. The sinusoids were dilated, so much so that on cross section they appeared almost glandular (Fig. 2). No bile ducts were found in any of the multiple sections. In a few areas bile canaliculi were greatly distended with bile pigment. This nodule was quite different from the rest of the liver, which had a typical Laennec's cirrhosis. Careful search was made for blood vessel invasion or other evidence of malignant condition, but nothing was found.

Case 2.—A seventy-eight-year-old man had dull constant abdominal pain for five or six weeks. On the day of admission he vomited for the first time. There was no history of trauma. When admitted he was lethargic and complained of abdominal pain and extreme thirst. He was slightly jaundiced. He had a history of being a heavy drinker. The alkaline phosphatase was 27.4 units, the icterus index 20, and serum transaminase 94 units. There was no external evidence of bleeding although there was some old blood found in a gastric analysis. His abdomen was described as feeling doughy and, on the fourth day, as resembling ascites. He gradually became comatose and expired five days after admission.

Fresh unclotted blood was found in the abdominal cavity at autopsy. The liver was markedly enlarged with many bulging purple cystic nodules (Fig. 3). These cysts were filled with fluid blood which ran out freely when the cysts were cut. On the right side of the liver there was a depression resembling a rupture of one of the cysts. The liver markings around these cysts were indistinct but of the same yellowish-red color as the rest of the liver. However, near the gallbladder the liver was replaced by solid firmer tissue resembling a tumor. The tip of the gallbladder had a thickened wall and thick polypoid mucosa with abrupt transition to relatively normal mucosa in the proximal part. The periportal lymph nodes

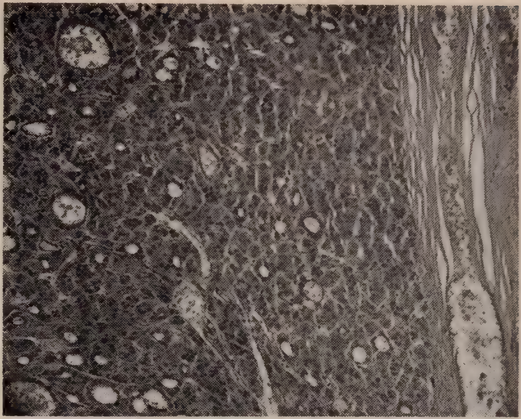

FIG. 2. *Case 1.*—Microscopic appearance of benign hepatoma of the liver.

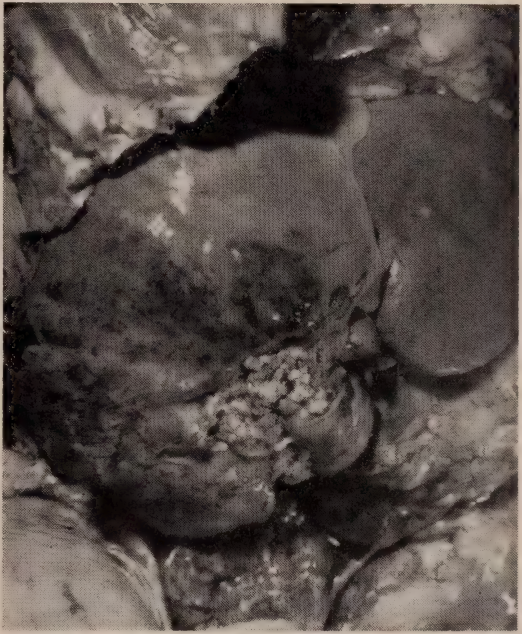

FIG. 3. *Case 2.*—Adenocarcinoma of the gallbladder with metastases to the liver.

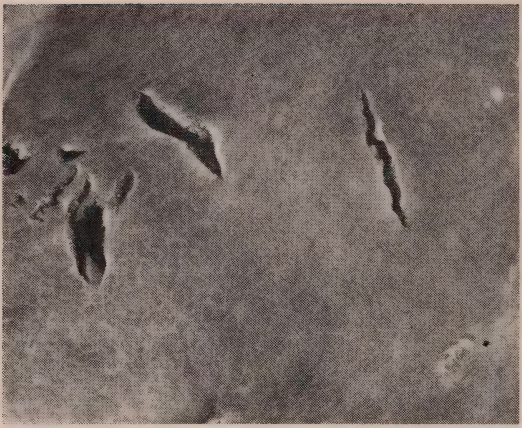

FIG. 4. Fracturing of the liver after punch biopsy in amyloidosis.

were also filled with hemorrhagic necrotic tumor tissue. Microscopic examination showed that all of this was adenocarcinoma with extensive areas of necrosis and hemorrhage. The best-differentiated carcinoma was in the gallbladder mucosa, but it became more poorly differentiated and necrotic as it progressed through the wall. Throughout the rest of the liver there was a rather severe hemorrhagic centrolobular necrosis.

Comment

These 2 cases illustrate a rare occurrence. Without a history of trauma of any type it is not surprising that a rupture of the liver was unsuspected clinically. Intraperitoneal hemorrhage in itself may at times be an extremely difficult diagnosis to make. In Case 2 the tendency of the metastatic tumor toward necrosis and hemorrhage is a creditable reason for the spontaneous rupture. However, since neither invasion nor necrosis was evident in the hepatoma in Case 1, the reason for the spontaneous rupture is in the realm of speculation.

Massive intraperitoneal hemorrhage, although rare in metastatic carcinomas, is frequently found in primary liver carcinomas because of their tendency toward necrosis, invasion of the larger portal veins, and formation of large blood-filled spaces. Metastatic choriocarcinoma is also likely to result in hemorrhage because it too has the same tendencies. Other metastatic tumors usually do not behave in this manner. Of the benign tumors, hemangiomas occasionally result in severe hemorrhage, especially if the hemangioma forms a bulging nodule near the surface. This, however, is usually secondary to trauma. Trauma, of course, is the most common cause of rupture of the liver, and massive bleeding is due to tearing of the veins. In diseases of the liver spontaneous rupture does not occur. The liver is quite different from the spleen in this respect. In diseases in which the liver may be more fragile than usual, it is more susceptible to damage from trauma. In severe amyloidosis even such a minor procedure as a punch liver biopsy may cause enough cracking of the brittle liver parenchyma to result in severe hemorrhage. Figure 4 illustrates how this can occur after such a liver biopsy, as in amyloidosis (fortunately, in this case, the punch biopsy was done at the autopsy).

Summary

Two cases of spontaneous rupture of the liver with acute fatal intraperitoneal hemorrhage, one from a ruptured hepatoma and the other from a ruptured metastatic adenocarcinoma, are reported.

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He may look just the same to you,
And he may be just as fine,
But the next-door dog is the next-door dog,
And mine—is—mine!—DIXIE WILLSON

SPECIAL ARTICLES

Radioactive Fallout and Medicine

WILLARD F. LIBBY, PH.D., WASHINGTON, D.C.

(*Commissioner, United States Atomic Energy Commission*)

RADIOACTIVE fallout [1–22] is the radioactive debris of nuclear explosions consisting of the materials formed by the splitting of uranium or plutonium atoms. This material is incorporated into and deposited on the surfaces of the dust formed by the explosion of the bomb. The dust is formed by the vaporization of and subsequent recondensation of the vapors from bomb parts, dust already in the air, and dirt from the ground if the explosion occurs close enough to the surface for the incandescent fireball to touch the ground. The radioactivity of the fission products is due to the natural instability of the atoms formed by the fission act. This instability is removed by the emission of radiations.

The radiation is either the simultaneous emission of an electron and an antineutrino—a process often called beta particle emission or beta radiation—or the emission of a gamma ray which is a type of hard x-ray. The first process—electron radiation with antineutrinos which are themselves essentially undetectable—constitutes on the average about one third of the radiations emitted by fallout; gamma rays constitute the remainder. An important difference between the two kinds of radiation is that the electron (beta) radiation has a much smaller penetrating power, though both carry about the same energy on the average. The electron radiation is 50 per cent absorbed in about $^1/_{70}$ inch of wood or flesh or water, while the gamma radiation requires about $2^1/_2$ inches of the same materials for 50 per cent absorption. In denser matter the penetrations are less, but the order and relative ranges of penetration are much the same as in light material.

The effects of fallout radiation thus are due to these very different kinds of radiation—the short-range more absorbable electron radiation being able to cause effects only when the fallout is either taken internally or is in contact with the skin, since ordinary clothing is adequate protection against it. On the other hand, the gamma radiation is so penetrating that a yard or two of earth or concrete is required for full protection under heavy fallout conditions which require many factors of two of reduction in intensity for reasonable safety. The law of absorption of these radiations is that the intensity is decreased by twofold for each $^1/_{70}$ inch of water for the electron radiation and for about each $2^1/_2$ inches in the case of fallout gamma radiation.

As stated before, the radioactive fission products produced in the explosions become part of and attach themselves to the solid particles formed by the cooling gases of the fireball, part of which are volatilized solids from the bomb, air dust, and, in case of surface bursts, soil particles. After the detonation, these particles return to earth carrying the fission products. This is radioactive fallout.

The size of the particles is of great importance in determining the rate of return. In the case of surface bursts over land, not only is soil vaporized and then recondensed together with the vapor from the bomb itself, but also great tonnages of soil are taken up into the fireball and melted and partially vaporized. These effects result in larger particles than are formed in the case of air bursts and probably also larger particles than in the case of surface bursts over sea water; consequently, the fallout falls more rapidly from surface bursts and to a greater degree. In the case of ground bursts as much as 80 per cent is brought down in the first few hours in this way in a type of oval-shaped pattern stretched in the downwind direction. Similar early fallout occurs for surface bursts over water although the total fraction brought down is less than for land bursts, possibly as little as 20 per cent.

Presented before the Council on Food and Nutrition, American Medical Association, Symposium on "Factors Involved in Formation and Diseases of Bone," Madison, Wisconsin, October 16, 1958.

Kinds of Fallout

LOCAL FALLOUT.—This early fallout is called local fallout for the reason that it falls in the vicinity of the bomb explosion. The local fallout may extend downwind for 200 or 300 miles, depending on the strength of the wind and the bomb yield. For example, on March 1, 1954, a megaton-yield bomb fired in Operation Castle on the Bikini coral atoll in the Pacific gave a local fallout of over 7,000 square miles. The fine dust made from the totally- and partially-vaporized coral fell back in the downwind direction in the first thirty-six hours after the explosion. Since the local fallout descends so quickly and in such a concentrated way, it is much more dangerous in the affected areas than are slower falling types of world-wide fallout which constitute the rest of the fallout.

The mixture of fission products formed in a nuclear detonation decay in such a way that the radiation intensity decreases about tenfold for every sevenfold increase in age. Thus, fallout occurring at one hour after the explosion will at the end of seven hours be reduced to 10 per cent of the intensity it had when it first fell and at the end of forty-nine hours or two days and nights its intensity will be 1 per cent.

Since the local fallout is so young and virulent, shelter for protection is required, particularly against its penetrating gamma radiation; and the problem of civilian defense against nuclear attack is in large part the problem of understanding and hiding from local fallout. Some warning will always be possible, so shelter can be sought with good hope of success. Fallout shelters can be improvised in many existing buildings; the basement of the ordinary home is a good example.

STRATOSPHERIC FALLOUT.—The particles which are too fine to fall in the first hours eventually descend over a very wide area and constitute the world-wide fallout types. In the case of bombs large enough to push their clouds into the top part of the atmosphere lying above about 40,000 feet, which is called the stratosphere, this delayed fallout is truly world-wide. It is known then as stratospheric fallout after the stratosphere in which it circulates and from which it finally descends. Current estimates are that it spends an average of about ten years or perhaps somewhat less in the air. Thus, its radiations are much reduced in intensity when deposition finally does occur.

A rough rule is that hydrogen bombs are strong enough to push into the stratosphere while atomic bombs are not. Hydrogen bombs normally give energy releases in the range of the equivalent of millions of tons of ordinary chemical explosive while atomic bombs equate to thousands of tons—megatons for hydrogen bombs and kilotons for atomic bombs—thus stratospheric fallout for hydrogen bombs and tropospheric fallout for atomic bombs.

TROPOSPHERIC FALLOUT.—For atomic bombs of kiloton yields the bomb cloud stabilizes below the stratosphere in the lower atmosphere, that is, the troposphere; and thus the fallout from such explosions is different from the stratospheric in that conditions in the troposphere differ in the extreme from those in the stratosphere, the principal differences being in moisture content and temperature, though the wind velocities and directions probably are very different as well. In the ordinary sense, weather as we know it is a tropospheric phenomenon because it is connected with moisture and the formation of rain and snow.

It happens to be true that no fine particulate matter can remain in the troposphere for more than a month or so because the rain and snow continually wash it clean. The washing mechanism is interesting for it seems to be at least as effective on the smallest particles as it is on the larger ones. Apparently the smaller particles are kicked around rapidly in a zigzag path by collisions with the molecules of the air and as a result they have a good chance of hitting the droplets of water which make up clouds and of sticking to them. Thus the washing process really is more of a cloud air-cleaning mechanism. In a matter of a month or so essentially all tropospheric air spends a few hours in a cloud so the whole troposphere is washed clean in a month or less. In addition, of course, the fine particles can stick to leaves on trees and grass and other surfaces. Thus we see that tropospheric fallout is carried by rain or snow in the main, and we see why there is very little world-wide fallout in desert regions, the only fallout that occurs being by surface contact of the fine particles—a minor effect relative to the rain or snow deposition.

Because tropospheric fallout lasts only a month or so it is restricted latitudinally to the region of the test, a band something like 10 degrees wide around the earth being more or less uniformly covered if we neglect the effect of local variations in rainfall.

The stratospheric fallout most probably occurs because of gradual mixing of stratospheric air—something like 10 per cent per year—with the troposphere where the weather phenomena take control and the fine fallout particles are brought down by rain and snow and surface contact just as for tropospheric fallout.

Fallout Hazards

The principal hazards from the fallout are the gamma radiation from external fallout, particularly in local fallout, and the radiations from internally-assimilated fallout, principally of the world-wide varieties. At the present time the latter has been discussed much more widely than the former because the local fallout has been carefully controlled in the testing of nuclear weapons, whereas the world-wide fallout is less readily controlled. In nuclear warfare, however, the external radiation from local fallout probably would be the principal hazard.

The gamma radiation effects are twofold, the effects on an individual's health (somatic effect) and the genetic effects on future generations. The possible health effects range from disabilities noticeable within a few hours of intense exposure which may lead to death in a few days to the induction of leukemia and possibly cancer of the bone which may appear years later. These measurable health effects are first expected at doses of about 100 roentgen units of whole-body radiation. Death occurs for whole-body radiation in half the cases of exposure at about 450 roentgen units (a roentgen unit is an amount of radiation). The natural radiation from the ground, our own bodies, and the cosmic radiation amount to a total of 0.1 to 0.2 roentgen per year depending on locality and altitude.

The genetic effects which, of course, will develop only in later generations are not known for humans, but judging from experiments on animals and plants we can expect that about 10 per cent of the genetic mutations we have now are due to natural radiation and that the radiation genetic effects will be proportional to total and cumulative dosage; in other words, there appears to be no recovery from radiation-induced mutations. Of course, our present pool of human reproductive germ plasm has an enormous accumulation of mutations, presumably largely of chemical origin; but judging from the estimate of 10 per cent of the natural rate of generation of new mutations for 0.1 to 0.2 roentgen per year, we can estimate the genetic effects of world-wide fallout from nuclear weapons testing or from particular types of nuclear war campaigns. The irrevocability of such effects has caused much concern; although the present effects from nuclear testing are very small, the present world-wide dose rate from testing amounts to about 0.005 roentgen per year.

Perhaps the most serious world-wide hazard from fallout arises from strontium-90, one of the fission products produced in high yield which, with its very long average life of forty years and its chemical similarity to the essential element calcium, fixes itself in bone in a semipermanent fashion and gives radiation exposures to the bone owing to its electron radiation. It emits no gamma radiation and therefore is not a genetic hazard since bone structures are not near the reproductive organs. The irradiation of the bone structure can cause cancer of the bone, the irradiation of the bone marrow may even produce leukemia, and it is these deleterious health effects which constitute the hazard of strontium-90. The fallout is assimilated in milk and dairy products and in vegetables—the normal sources of dietary calcium— and the strontium-90 is taken in from these sources.

At the present, new human bone—as in children—receives 0.002 roentgen per year from this source (strontium-90) owing to past nuclear tests. This, of course, is very small in relation to natural background, but in the event of nuclear war it could become much larger over a major part of the world.

Another fission product, cesium-137, which is a high-yield, long-lived—forty-year average life—gamma emitter, is seriously watched in the world-wide fallout. Being like sodium chemically, it is not permanently fixed in the body but stays only six months or so before passing out again. Its effects are the same as for external gamma radiation.

The present level is about 0.0015 roentgen per year from this source (cesium-137) owing to past nuclear weapons tests. The external gamma radiation intensity in the Northern Hemisphere is about 0.003 roentgen per year.

Since the fallout in the Northern Hemisphere has been heavier than in the Southern, the Southern effects to be expected are proportionately smaller. Children's bone from the Southern Hemisphere has about 25 per cent of the strontium-90 content of that from the United States and from northern Europe.

TABLE I.—ESTIMATED INCIDENCE OR AVERAGE SEVERITY OF PRINCIPAL BIOLOGIC EFFECTS TO BE EXPECTED IN POPULATIONS OF NONCOMBATANT COUNTRIES OF NORTHERN HEMISPHERE AS A RESULT OF NUCLEAR WARFARE

	Total Energy Yield in Megatons of Fission				Normal Incidence in United States
	5,000	10,000	25,000	50,000	
Average reduction in life expectancy*	55 days	110 days	275 days	1.5 years	
Deaths in 60-year period:			*Per Cent*		
Bone cancer†	0.15	0.3	0.75	1.5	0.1
Leukemia**	0.24	0.48	1.2	2.4	0.7
Tangible genetic defects in live births:					2.0
First generation††	0.04	0.08	0.2	0.4	
Second generation	0.014	0.03	0.07	0.14	
Stillbirth and childhood deaths compared to number of live births:***					5.0
First generation	0.1	0.2	0.5	1.0	
Second generation	0.03	0.06	0.15	0.3	
Embryonic and neonatal deaths:†††					10.0
First generation	0.2	0.4	1.0	2.0	
Second generation	0.06	0.1	0.3	0.6	

Early debilitation with some fatalities in three to four weeks would occur only in nearby areas.

* Five days per roentgen of whole body radiation (Hardin Jones, page 1103) 11r = 55 days.

† $0.5 \times 10^{-2} \times 10^{-3} \times 100 = 5 \times 10^{-4}$ per cent per micromicrocurie of strontium-90 per gram of calcium in the skeleton (British Atomic Scientists Association page 1671).

300 micromicrocuries of strontium-90 per gram of calcium $\times\ 5 \times 10^{-4}$ per cent = 0.15 per cent.

** 2×10^{-4} per cent per roentgen to blood-form tissues (Lewis, page 970).

$2 \times 10^{-4} \times 20 = 0.004$ per cent per year.

60 years × 0.004 per cent per year = 0.24 per cent per 60 years.

†† A dose of 50 roentgens per generation would double the natural incidence of genetic defects. This is approximately 2 per cent of the number of live births. From a single dose of 50 r, 10 per cent of this number would occur in the first generation of offspring. $^1/_{10} \times 2$ per cent $\times\ ^{11}/_{50} = 0.004$ per cent (Crow, page 1023).

*** Crow, page 1023.

††† Crow, page 1023.

The above references are taken from the Hearings before the Special Subcommittee on Radiation of the Joint Committee on Atomic Energy, "The Nature of Radioactive Fallout and Its Effects on Man," May 27 to 29, June 3 to 7, 1957, Parts 1 and 2. U. S. Government Printing Office, Washington, D. C., 1957. Page references are to the published Hearings.

Medical Aspects of Radioactive Fallout

I would like to discuss some of the broad and important features which world-wide fallout would assume in the case of a nuclear war. Such a discussion rests on the knowledge of world-wide fallout which we have gained from weapons tests, augmented by our knowledge of the biologic effects of radiation. In some ways our knowledge of this latter subject is meager. On the basis of such information, Table I has been constructed. Since no local fallout is assumed, these estimates are for the effects of world-wide fallout only, but at much greater levels than any we have experienced. In noncombatant countries the only casualties would be those due to world-wide fallout. Although the casualties have been presented as percentages and may appear small, they are numerically large and serious; but they do not constitute an overwhelming medical problem. It does mean, though, that if the present estimates of the effects of radiation on the human body are correct, the medical profession would have a sizable task in addition to its normal not inconsiderable load. The data upon which these estimates are based depend in part on the vital statistics collected in the public interest. If we knew these statistics better, we could estimate the world-wide hazard from radioactive fallout from a nuclear war much closer and could exercise better control over the consequences. For example, we have to assign a large uncertainty to our estimates of the incidence of bone cancer which might be caused by radiation-associated strontium-90 deposited in human bone as a result of world-wide fallout from such a nuclear war. Because our knowledge of the effects is so limited, good statistics would greatly clarify the problem, and it appears that in this as well as in many other fields of public health, the collecting of good statistics is a vital element.

LOCAL RADIOACTIVE FALLOUT.—The principal fallout hazard from nuclear war, however, is not the world-wide fallout, but is the local fallout in the combatant countries resulting from any appreciable fraction of the detonations occurring in contact with the surface. As explained previously, local fallout is a phenomenon restricted to detonations which occur in contact with the surface, and in the case of soil it will give something like 80 per cent precipitation downwind and, in the case of a water surface, perhaps 20 to 50 per cent, depending on the depth of the water. Now, naturally, from the nature of the fallout phenomenon, the radioactivity will be distributed over an area determined by the winds in the atmosphere and by the diffusion rates for the fine particulate matter under the conditions of a cooling atomic cloud with all of its tremendous turbulence and temperature gradients. The length of the fallout pattern will be determined by the strength of the wind, so a cigar- or elliptic-shaped pattern is expected in which the part of the ellipse or cigar closest to ground zero is the most radioactive area, and the radioactivity fades out toward the lateral edges of the ellipse and toward the far end of the ellipse. Many thousands of square miles may be encompassed, that is, the width of the ellipse might be 40 miles, the length might be 300 miles in the case of reasonably strong winds. On the other hand, under conditions of unusually quiet air, the ellipse might be so short that the pattern would become essentially circular. In still a third case, if the high level winds were in a different direction from the lower atmosphere winds, so that there would be a shearing separation, something like two ellipses partly superimposed might be obtained. All the complexities of throwing a handful of dust up in the air in a wind can obviously result from the radioactive fallout. However, our experience with atmospheric phenomena is such that perhaps this is the most understandable aspect of radioactive fallout. It has been estimated that millions of people in this country or in any other country subjected to nuclear attack could lose their lives as the result of local radioactive fallout unless precautions were taken to protect them. Some of these precautions are matters of public health and medicine which I would like to mention briefly.

Shelter Program.—A national fallout shelter program is an absolute necessity for the defense posture of this country. These shelters in general can be improvised and frequently can be combined with structures which are used for other purposes. First, I think the average basement has good possibilities of being remodeled and altered to afford a considerable amount of shelter and adequate protection from most parts of the cigar-fallout area except perhaps the innermost and closest portion; and even here, if adequate alterations are made, home shelters would do.

During Operation Plumbbob, the 1957 series of nuclear tests at the Nevada Test Site, the Atomic Energy Commission tested a shelter of simple type of construction which proved very satisfactory. This shelter, the steel shell of which cost between $2,000 and $3,000, would have accommodated 120 people. It was tested within a very short distance of a multikiloton bomb and the fallout field overhead was very high, amounting to some 200 roentgens per hour just after the fallout occurred. The pressure loading was about 600 pounds per square foot, which was less than 20 per cent of the estimated resistance of the basic shelter. So we see that it is possible to develop community shelters which are not unreasonably expensive.

A very vital precaution, of course, is that new buildings should incorporate fallout shelter provisions in the design unless other shelters are reasonably conveniently available to the personnel of the new building.

Other Precautions.—It is well to realize that one can have warning of radioactive fallout. There is a matter of an hour or two, or perhaps a little more, during which people can take shelter. It is necessary to have a good communications system in order to distribute the people properly in the shelters. The best equipment for the purpose that I know of is a transistorized battery-powered radio. Furthermore, I think that we should try to see that most of the new transistorized radios have incorporated in them a cheap radiation meter, so that people would naturally be protected if they buy one of the new kinds of radios which are becoming so popular. This approach is being encouraged by the government and we hope that radio manufacturers will be especially interested in performing this service to our country. People with battery-powered radios would be able to keep in touch with the Civilian Defense authorities and learn of the likely locations of the fallout pattern. There are important proof tests that everyone needs to make in order to find out if the fallout has yet started. You will not be able to see it necessarily; the only way you would know for sure is from radiation meters. It is therefore absolutely necessary that a sufficient number of radiation meters be available. The best provision would be the general availability of radiation meters in the battery-powered transistorized radios which are now being sold throughout the world. It is to be hoped that meters can be devised cheap enough so that the addition of this feature would not be too expensive. In any case, a certain number of meters must be placed around the country. It is a matter of public health and safety that these meters be properly handled; I hope that medical doctors in the community would have meters for their own purposes including checking of probable exposures. I think this is the kind of planning for the future which we must all take seriously, for in case of nuclear war our lives are in danger if we do not.

During the attack phase and in the days immediately following, the doctors would be immobilized as would the rest of the population. The doctor has a very special responsibility, of course, and the question arises immediately whether doctors should not be provided with special vehicles so that they could travel through highly contaminated areas. As you know, automobiles will operate in a high radiation field, and if it were possible to shield an automobile with lead so that the driver were protected from radiation then the doctor would be mobilized. This is an illustration of the kind of consideration which the American Medical Association might well give to the problems of preparing for a national emergency. Doctors should have radiation meters which they know how to read, and they might well consider having special vehicles, or the public health authorities might consider supplying special vehicles for doctors so they could circulate around the countryside and tend their patients.

An extremely important question, of course, is the total dose received. This can be measured with meters which are kept on a person and read periodically. The limits of total dose which might be taken in an emergency are well known and can be utilized. Supposing that the medical associations should set some rules for emergency behavior, I think that the Office of Defense and Civilian Mobilization under Governor Hoegh's direction would be most interested in collaborating in these procedures.

IMMEDIATE POSTATTACK PHASE.—During the immediate postattack phase there would be no noticeable radiation effects from fallout for people who have managed to obtain shelter, but there would be large numbers of people who had not managed to get into the shelter in time or had not for one reason or another found adequate shelter. Consequently, in addition to the treatment of ordinary diseases, there would be a heavy medical load consisting of the people who had been exposed to radiation, so that doctors should be prepared to treat these people to give them the best possible chance of survival. Medical supplies should be conveniently available throughout the country. The exact nature of these and the makeup of them is important: For example, bandages would have no place, particularly in fallout treatment, as I understand fallout medicine; but blood for transfusions, glucose for intravenous injections, and antibiotics would all play very, very vital roles. It is possible that some of the drugs and treatments that are now being tested in our experimental laboratories for their ability to alleviate the effects of heavy radiation doses would be available and ready for use. These researches certainly should be followed and the medical profession kept up to date on the latest treatments for radiation injury.

LATER POSTATTACK PROBLEMS.—Following the first weeks after the attack, a different major public health and medical problem would replace those of the immediate postattack phase. An appreciable fraction, perhaps one quarter of the country, would be heavily radioactively contaminated with strontium-90. Various estimates are made, but all indicate an appreciable fraction of the country, possibly encompassing some of the richest and most populated areas, would be contaminated. With this strontium-90 would be associated cesium-137, which would give a gamma-ray dosage which, though insufficient to prevent people living in the area, still raises the general average dosage appreciably and constitutes a hazard in the same sense that fallout from nuclear testing has constituted a hazard, except that this dosage, of course, would be much larger. It is probable, however, that considering all of the alternatives and all of the factors involved, such areas will not be kept evacuated because of the cesium-137 in the soil, except possibly in certain extraordinarily intense fallout areas of limited size.

A more serious problem, however, is the strontium-90 in the food products and I would like to speak about this point briefly. Strontium-90-contaminated soil transmits the radiostrontium to the vegetables growing on the soil with an efficiency which is appreciably less on the average than the efficiency with which it transmits the chemically similar element, calcium, if the two are displaced physically from the same position and chemically in the same state. For a rough and conservative estimate one might say that the radiostrontium-contaminated calcium in the soil is transmitted without appreciable segregation into the plant, and then the plant is, of course, eaten by the animals or else directly by man, and thus it may find its way into the human body. But let us follow the food chain in a little more detail. If a cow eats a plant, then the strontium may reach the human body via the milk and milk product chain. If a steer eats the plant, however, the strontium-90 will not reach the human body to any appreciable degree. In other words, the steer eating strontium-90-contaminated grass puts the radiostrontium in his bones, which humans do not ordinarily eat. Therefore, we do see that by careful planning one might conceivably utilize the agricultural farm land, even though it was heavily contaminated with strontium-90, if it and its produce were carefully controlled by the Public Health Service and Food and Drug Administration so there would be no excessive intake of strontium-90 from the particular food products. In other words, a natural filtration process seems to exist in the meat chain. These contaminated farm areas might be used to grow grain which could be used to fatten cattle but for no other purpose. Dairy farming would be excluded from such regions unless another plan, namely the purification of milk for contained radiostrontium, proved to be practical. Some experiments have been done on this and are encouraging, but the question of whether it is economic and is practical remains unanswered; but it is clear that a contaminated countryside can be used for the culture not of vegetables, not of milk, but of beef cattle for food; and there may be other ways in other food chains in which the strontium-90 is naturally filtered down.

In any case, large concentrations of strontium 90 in soil would constitute a major public health problem and it is not too early to start thinking about it. In fact, this ought to be an integral part of civil defense planning and I hope that you gentlemen of the medical profession can devote the time which it deserves to this important and vital problem.

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Care to our coffin adds a nail, no doubt,
And every grin so merry draws one out.—JOHN WOLCOT

Onondaga County Medical Society Telephone Exchange

STEPHEN K. LEECH, SYRACUSE, NEW YORK

(*Executive Secretary, Onondaga County Medical Society*)

EDITOR'S NOTE—*Because many county medical societies in the State of New York are concerned with the problems of health communication, we felt that the following story of a county medical society's experiences in owning and operating its own round-the-clock telephone service would be of interest to our readers.*

THE Onondaga County Medical Society, located in Syracuse, New York, is the only county medical society in the State to own and operate its own twenty-four-hour telephone exchange.

As a reader, you may question: (1) Why should a county medical society want to own and operate its own telephone exchange, and (2) what sort of service does it provide?

Nine years ago the Onondaga County Medical Society, like most medical societies, had its office staff handle telephone communications during working hours and then employed a commercial answering service during nonoffice hours to handle its emergency medical service program. Following analysis of this working arrangement by the Public Relations Committee and the Comitia Minora of the Medical Society, it was felt that the entire telephone communications system might be improved were the Society to own and operate its own answering service.

The decision to take this step was based on the following precepts: (1) It was felt that the public should have a direct line of communication with the Medical Society and its officials twenty-four hours a day, and (2) the Society felt that the future public relations of the Medical Society dictated the fact that its emergency medical service program would be better handled by telephone operators in the employ of and responsible to the Medical Society.

The initial drive for customers for the telephone exchange netted only 36 applicants. Despite the disappointing response, the service was inaugurated on July 1, 1951, with one switchboard and four operators. Today, the service has grown to three telephone switchboards and 13 operators (Fig. 1). Another telephone switchboard and three additional operators will be added within the next year.

This growth occurred because doctors realized that having telephone operators responsible only to members of the Medical Society paid dividends. The operators are trained exclusively to handle the calls of physicians. They possess a knowledge of illness and symptoms not common to other telephone services.

As a rule, telephone operators between the ages of thirty-five and fifty-five are employed. It has been found that operators of this age have the best judgment. The average age of the operators is forty-eight years and the average length of service is three years and ten months. One has been with this service for seven years.

The Onondaga County Medical Society operators work a forty-hour week in airconditioned surroundings. Each employe gets a two weeks paid vacation every year and fringe benefits such as Blue Cross and group life insurance.

In the year 1957 the telephone exchange received and transmitted 242,759 incoming messages for physicians. In 1958 incoming calls for physicians averaged 30,000 a month, exclusive of business calls for the medical office, the collection department, and the emergency medical service.

Experience demonstrates that in order to give the type of service which is expected by a physician, an operator can be responsible for the phones of no more than 60 physicians. Maximum service efficiency is reached when an operator is responsible for only 50 phones. To provide service of this caliber costs money. The current monthly charge for unlimited service is $18 per month. During their first year of practice physicians are given a one-third discount from this rate.

As stated above, the emergency medical service system is handled by the telephone exchange. The telephone number is widely publicized, and in the year 1957 doctors were dispatched on 4,378 emergency calls.

The Medical Society regulations mandate that all physicians under the age of fifty be responsible for a twenty-four-hour period of duty on the

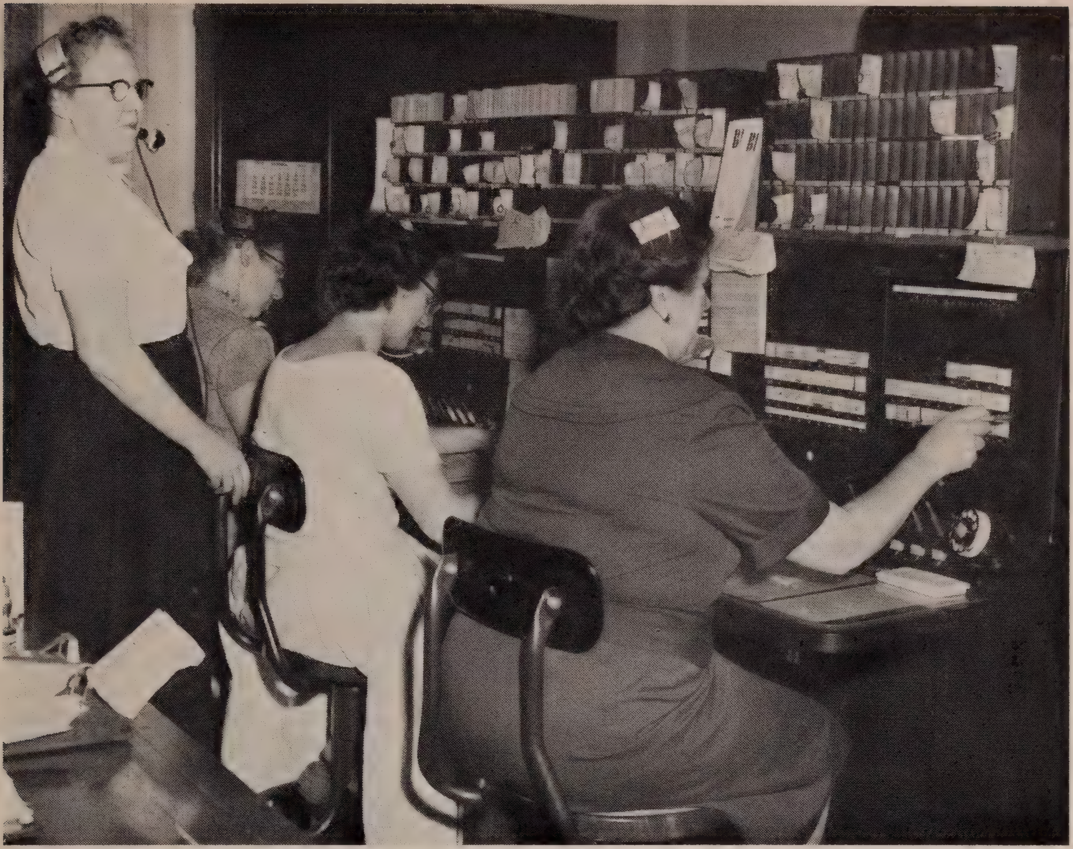


FIG. 1. Onondaga County Medical Society switchboards. Note message boxes on top of switchboards.

emergency medical service program with the exception of holidays, when four doctors take the duty in shifts of six hours each.

Ninety-five per cent of emergency calls, however, are taken by new physicians just starting in practice. Acceptance of these calls by the new physician enables him not only to build a practice but also to see tangible benefits in Medical Society membership.

One of the first emergency medical service calls received after the switchboard was instituted came from a man who was unable to reach his own physician. When a doctor responded to the call within twenty minutes, he discovered that the patient who had called was the city editor of a local newspaper. Needless to say, this prompt service did a lot to bolster Society press and public relations.

Demonstrating the caliber of judgment needed by operators, another call concerned the wife of a prominent Syracusan who collapsed at her open telephone after requesting that a physician be sent. Although she was unable to establish conversation, the operator could hear the patient breathing. She quickly traced the call and a physician was dispatched with a police escort. Unfortunately, the patient was found dead of a coronary thrombosis.

The emergency medical service has received the usual number of calls from narcotic addicts. A complete file on all suspected addicts is maintained and the names and addresses of these people are periodically turned over to the local narcotics officials.

In addition, the Medical Society exchange answers all requests for welfare physicians in the City of Syracuse during the hours when the welfare office is closed. These calls number about 2,000 a year.

The Medical Society maintains a close communications system with theaters, stadiums, and sports arenas in order that it will be possible to reach doctors at a moment's notice. All doctor-members are paged publicly by number. These numbers are assigned to them when they join the Medical Society.

Dr. William O. Kopel, president of the Onondaga County Medical Society, states, "We in Onondaga County feel that our County Medical Society switchboard has proved itself to be a tower of public relations strength and we have no hesitation in recommending that other county medical societies explore such a possibility for their own use."

Diabetic Blindness Related to Type, Length of Illness

Blindness as a complication of long-term diabetes may be prevented by early detection and adequate control of the disease, a new study has suggested.

The study, conducted at Joslin Clinic, Boston diabetes detection center, lends support to the "growing conviction" that complications of long-term diabetes are related to the degree of control maintained over the years.

Writing in the February 28 *Journal of the American Medical Association*, Drs. Howard F. Root, Stanley Mirsky, and Jorn Ditzel said the prevalence of blindness due to diabetes has been rising as more persons survive diabetes for long periods.

Diabetes is a disease in which the body's utilization of sugar is impaired. The usual treatment involves diet control and injection of insulin, a substance necessary for the breakdown of sugar in the body.

Diabetes appears to seriously disturb the body's whole metabolism (the physical and chemical changes in the body). This disturbance apparently plays a role in the development of a degenerative eye condition known as proliferative retinopathy in which there are changes in the retina and blood vessels. It may lead to blindness.

The doctors studied the records of 847 persons who developed proliferative retinopathy during the last thirty years. They found that none of the patients had good control of diabetes through diet or insulin therapy from the onset of the disease. All had severe diabetes of long duration, usually beginning at a relatively early age.

However, many other patients are known to have survived diabetes with onset in childhood for periods of twenty to thirty years without any evidence of retinopathy when their diabetic treatment had been adequate.

The authors feel that proliferative retinopathy can be prevented and postponed by early diagnosis and continuous control. They said physicians are "obligated to plan treatment and supervise management in such a way as to provide the best control attainable at the present time . . . ."

The study showed:

—That the 847 patients had diabetes for an average of seventeen years before developing proliferative retinopathy.

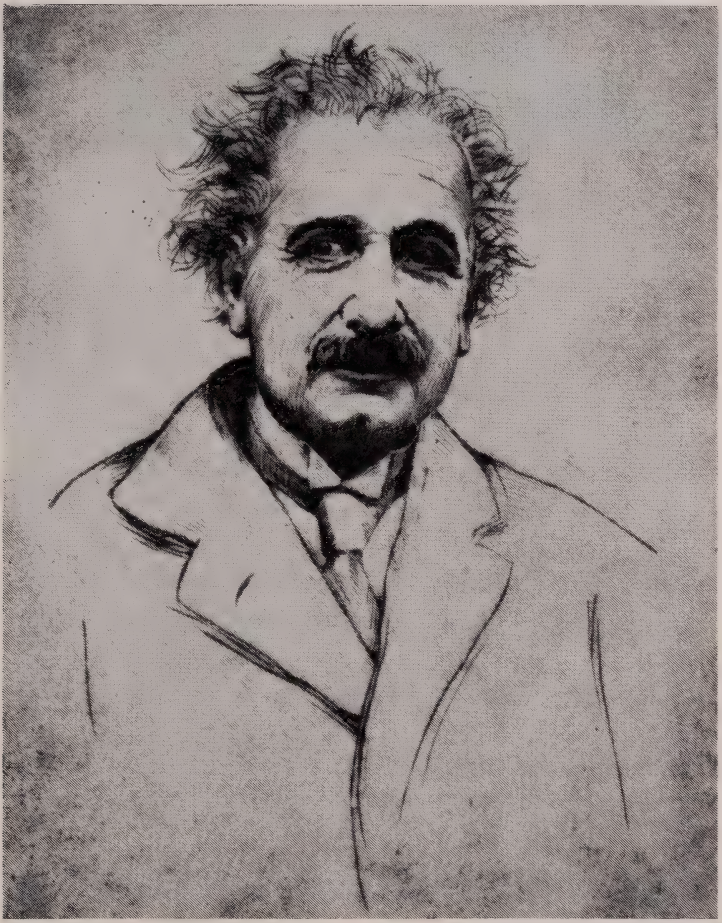
—That nearly half of them had diabetes before they were twenty years old and the rest before the age of forty. Most of them had difficulty in controlling the disease.

—That among the last 206 consecutive cases there was no case of blindness in a patient under twenty years of age, but that 25 per cent of those over twenty were blind.

In summary the doctors said that three factors appeared to influence the development of retinopathy in diabetics: They are long duration of the ailment; the inability to maintain adequate control over the disease; and most important, the early age of onset. Generally when diabetes begins early, it is severe, whereas diabetes developing late in life is generally mild. Thus early diagnosis and continuous control of diabetes is of "maximum importance in postponing and preventing" proliferative retinopathy.

the Gallery

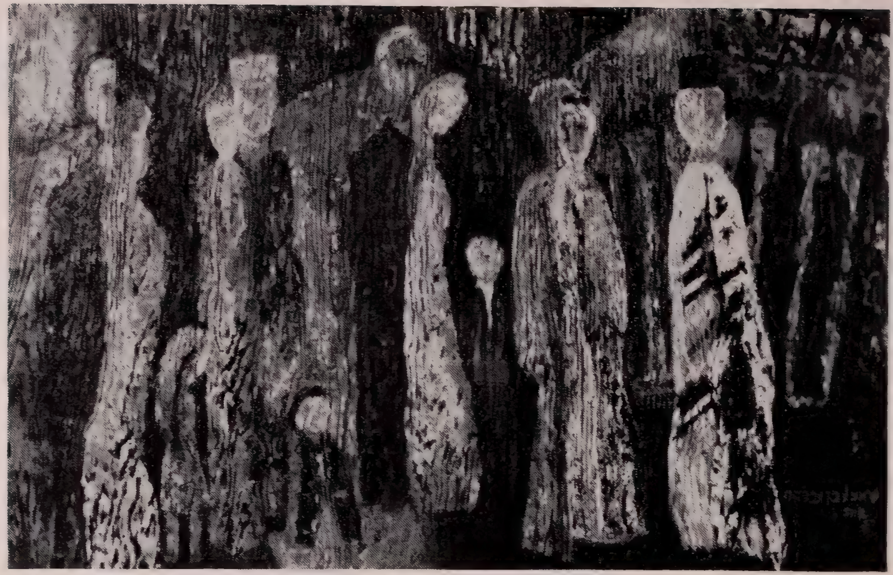
WALTER J. ALEXANDER, M.D., EDITOR



Albert Einstein, by I. J. TARTAKOW, M.D., of Hempstead, Long Island. Dr. Tartakow sent this etching to Albert Einstein on his seventy-sixth birthday. The etching had taken a prize at an exhibition of doctor's art sponsored by the American Physicians Art Association.

Albert Einstein's reply follows: (*reproduced by permission*)

"Kind regards for your letter of March 7 and for the portrait you made of me. I look there more respectable than in reality and also in some way somewhat like a physician."



High Holy Day, by Emerick Friedman, M.D., of Albany. This was painted by Dr. Friedman in Albany in 1958 and was exhibited recently in the Albany Artists Group at the Institute of History and Art, winning second price in oils. Done by applying heavy oils on surfwood, using both sponge and palette knife, the painting illustrates a moment of gathering together of the family for solemn worship in the Temple. Ritual symbols are shown of the Menorah, Hexagonal planes, and the Hebrew signature and date.

Dr. Friedman began his art studies with pottery and design in high school, taking up serious study of oil painting for the past four years under Fletcher Martin, Edward Millman, and Stanley Bate.

INFORMATION ABOUT "THE GALLERY"

On these pages, the Journal is presenting a series of reproductions of physician art work, and each member of the Medical Society of the State of New York is invited to contribute to this feature.

If you would like to participate, please furnish an 8 by 10 inch black and white glossy print of good quality suitable for reproduction. Prints of the art work are not returnable. This should be sent in a cardboard back manila envelope to the editor of "The Gallery":

Walter J. Alexander, M.D.
333 Main Street
Binghamton, New York

Please include the following information:

1. Your name and address
2. Title of picture
3. Where and when painted or sculpted
4. Where previously exhibited; any prizes received
5. Short interpretation of the work
6. How long you have painted; any instruction you have had.

ADDITIONAL ANNUAL REPORTS

Medical Society of the State of New York

1958—1959

Treasurer's Report

To the House of Delegates, Gentlemen:

Your treasurer presents herewith in Table I a comparison of General Fund income and expenditures for the years 1953 through 1958. The General Fund is used to carry on the usual and ordinary work of the Society and has no specific relation to the various special funds set up by the Board of Trustees. The year 1958 resulted in a net excess of income over expenditures of $9,578.83.

Some of the significant items are deserving of comment as follows:

Total dues received amounted to $574,108. This is an increase of approximately $2,000 over 1957. Before allocation of members dues for subscriptions, the JOURNAL sustained a loss of $21,338. However, after dues allocation of $92,062, there was a net income of $70,724. In 1957 the comparable figure was $78,984. The approximate $8,200 decrease in income was caused primarily by rising costs. Recent increases in advertising rates ought to offset future cost increases.

Administrative expense increased from $135,965 to $165,804, or $29,839. Among the increases in this category are salaries amounting to $18,000 and rent $8,400. Other items showing smaller increases are not listed here. It is sufficient to note that all along the line our costs are increasing.

The Public and Professional Relations Bureau had a moderate increase from $72,731 in 1957 to $76,060 in 1958. The additional amount of $3,329 last year was due primarily to increased rent and telephone charges with minor increases in other items.

Legislation Bureau expenses increased from $29,950 to $31,837, or $1,887. Increase in legal counsel's expense for the Bureau amounted to $2,083, while other items decreased.

The Workmen's Compensation and Industrial Health Bureau expenses decreased from $36,268 to $32,037, or $4,231. The reduction was connected with Dr. Kaliski's retirement. In 1957, when Dr. Mira became director, we paid salaries to both men for a short period of time.

Bureau of Medical Care Insurance expenses increased from $7,621 in 1957 to $14,461 in 1958. The difference of $6,840 lies mainly in increased expenses with a reduced credit for operating the Medicare Program.

Scientific activities expenses decreased from $21,819 to $18,454. Most of this was a result of income from handling the *What Goes On* publication.

Special traveling expenses increased from $23,769 to $42,029, or $18,260. This category includes expenses of American Medical Association delegates which alone increased approximately $4,000. The distance of the meetings from New York City has much to do with the cost increase.

Net costs of the annual convention increased approximately $7,200 in 1958 over 1957. It should be noted that in 1957 we had contributions amounting to more than $11,000. This item was nonexistent in 1958. Cost of exhibit space rental increased $1,700. Savings in other items make up the net cost increase of $7,200.

The cost of moving the Society's office, including the purchase of furniture and equipment, amounted to $63,312. These costs were met by applying income from other funds to be received in future years. This has been so recorded in the books of the General Fund.

Total General Fund surplus increased from $186,545 at December 31, 1957, to $196,124 at December 31, 1958. Your treasurer reiterates the statement made in previous years, namely, that our surplus ought to at least equal one year's dues received from members. In 1958, dues amounted to approximately $574,000. The addition to our surplus

TABLE I.—INCOME AND EXPENDITURES, 1953 THROUGH 1958

	1953	1954	1955	1956	1957	1958
INCOME						
Members' Dues	$439,010.00	$551,711.48	$559,514.67	$567,476.30	$572,886.30	$574,949.71
JOURNAL (before dues allocation)	_31,563.68_*	_37,234.09_*	_32,210.23_*	_17,965.55_*	_12,650.77_*	_21,337.48_*
Interest	881.05	869.25	590.52	2,645.46	1,627.86	3,337.03
Sundry	.....	.....	.....	.....	329.45	32.50
Transfers from other funds	.....	.....	.....	.....	.....	63,312.53
TOTAL INCOME	408,327.37	515,346.64	527,894.96	552,156.21	562,192.84	620,294.29
EXPENDITURES						
Administrative	109,220.70	124,058.70	129,698.05	134,845.40	135,965.68	165,804.51
Public and Professional Relations Bureau	93,479.05	73,132.78	71,657.56	69,521.64	72,731.42	76,060.05
Legislation Bureau—Albany	26,336.47	26,018.33	25,614.06	26,102.48	29,950.53	31,837.57
Workmen's Compensation Bureau	23,825.92	25,109.39	23,355.53	21,720.68	36,267.97	32,037.42
Bureau of Medical Care Insurance	19,328.92	19,330.80	18,919.04	20,252.03	7,621.43	14,461.59
Scientific Activities	20,177.92	22,513.56	22,251.22	20,890.76	21,704.83	18,454.90
District Branches	2,573.25	2,809.28	3,009.28	3,177.44	3,309.68	3,705.26
Planning Committee for Medical Policies	1,110.04	1,283.92	571.77	693.45	420.51	118.92
Woman's Auxiliary	10,067.13	7,913.82	9,048.61	6,515.22	9,173.36	8,903.46
Malpractice Insurance and Defense Board	3,420.32	2,962.64	2,949.47	2,439.38	2,154.83	2,081.34
Malpractice Audit	1,000.00	1,250.00	1,250.00	1,250.00	2,000.00	2,000.00
Malpractice Survey	.....	.....	.....	1,250.00	.....	.....
Counsel—Retainer and Expenses	30,000.00	30,000.00	32,500.01	35,000.00	35,000.00	35,000.00
Traveling Expenses	23,929.96	27,996.78	21,135.84	30,233.17	23,769.28	27,683.86
World Medical Association	1,000.00	1,000.00	.....	.....	1,000.00	1,000.00
A.M.A. Conference Room Expense	173.77	150.00	1,359.82	1,401.30	799.52	2,016.66
Societies for Medical Research	500.00	500.00	.....	75.00	.....	100.00
Conference of Presidents	75.00	150.00	.....	75.00	75.00	75.00
Veterans Medical Service Plan	14.42	88.86	115.70	284.51	98.77	2,126.38
Medical Directory	81,301.22	40,397.05	72,534.89	28,103.53	64,674.24	57,334.34
Annual Meeting	16,403.31	1,073.07	16,533.17	5,487.05	12,640.11	19,869.78
Moving Expense and Alterations	3,320.46	518.43	60.00	732.80	1,840.00	63,312.53
A.M.A. Convention—Students	712.77	.....	.....	.....	.....	.....
Middle Atlantic States Conference	_1.52_*	.....	.....	.....	.....	.....
Pensions	5,400.00	7,400.00	3,600.00	3,600.00	3,016.20	8,932.40
Citizens' Health Council	750.00	25.00	100.00	100.00	.....	.....
Blood Banks Commission	334.66	64.98	667.12	144.53	231.26	.....
American Medical Education Foundation	25,000.00	.....	.....	.....	.....	.....
American Medical Association Convention	5,313.55	.....	.....	.....	7,745.95	14,345.94
State Convention—Students	209.53	396.09	.....	.....	.....	.....
Blood Banks Association of New York State, Inc.	4,341.36	27,658.64	47,000.00	12,600.00	15,822.86	10,577.14
Rural Medical Service Committee	.....	.....	.....	850.00	.....	19.50
Cults, Committee to Combat	.....	.....	.....	2,883.49	1,867.79	598.48
Contribution—Refugee Hungarian Physicians	.....	.....	.....	5,000.00	.....	.....
Contribution—Blood Banks Association of New York State, Inc.	.....	.....	.....	1,400.00	2,400.00	.....
Medicare—Tentative Credits to Overhead	.....	.....	.....	_726.20_*	726.20	.....
Cameron Parish Medical Rehabilitation Fund	.....	.....	.....	.....	250.00	.....
Management Survey	.....	.....	.....	.....	2,721.62	10,784.90
Advisory Committee to Columbia University Study	.....	.....	.....	.....	.....	210.46
Staphylococcal Committee	.....	.....	.....	.....	.....	771.46
Electrical Survey	.....	.....	.....	.....	.....	150.00
Membership Drive	.....	.....	.....	.....	.....	341.61
TOTAL EXPENSE	509,318.21	443,802.12	503,931.14	435,902.66	495,979.04	610,715.46
NET INCOME	_$100,990.84_*	$ 71,544.52	$ 23,963.82	$116,253.55	$ 66,213.80	$ 9,578.83

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* Italics denote figures in red.

account in 1958 brings us a little closer to our goal.

Each month your treasurer submits a written financial report to the Board of Trustees. This statement includes details of all funds of the Society. The Board of Trustees gives attention to the financial matters and, at times, enters into lively discussion of the figures. This discussion brings about a keen awareness of our financial operations.

The treasurer expresses deep appreciation to our secretary and general manager, Dr. W. P. Anderton. His advice and suggestions have proved to be most valuable. The treasurer also expresses deep appreciation to the Board of Trustees who have contributed much in their discussions and suggestions. Mr. Thomas E. Alexander, our office manager and accountant, has cooperated fully in assisting the treasurer, and a word of thanks is extended to him as well as the entire staff of the accounting department.

Respectfully submitted,

Maurice J. Dattelbaum, M.D., *Treasurer*

ANNOUNCEMENT

Resolutions which have been submitted in advance for introduction in the 1959 House of Delegates, May 9 to 11, Hotel Statler Hilton, Buffalo, will be published in the May 1 issue of the Journal.

Budget Committee

To the House of Delegates, Gentlemen:

The Budget Committee consists of the following:

Maurice J. Dattelbaum, M.D., *Chairman*	Kings
Samuel Z. Freedman, M.D.	New York
Frederic W. Holcomb, M.D.	Ulster

The Budget Committee is responsible for the annual budget and its midyear revision. During 1958 there were three meetings. The first was devoted to revising the 1958 budget. The second and third were held for the preparation of the 1959 budget.

Budget preparation is an interesting and worthwhile task. A full knowledge of the Society as related to all bureaus and activities is required, if a reasonable and accurate report is to be presented. Awareness of over-all policy is a prerequisite since the committee does not attempt—nor does it have the power—to establish policy. The completed budget, therefore, represents what we believe is a combination of the necessary financial needs of each activity coupled with our over-all policy. Furthermore the work is approached with the desire to maintain a "pay as you go" policy. Sometimes this is almost impossible to accomplish. The Society is faced with rising wages and prices. An adequate staff must be maintained. We must pay salaries that will attract high caliber personnel. We must provide sufficient remuneration to continue this staff in our employ, thereby avoiding costly turnover. As to other rising prices, we know that everything we buy is costing more. Rent, telephone, stationery, and the like require higher budgetary provision each year. This condition is in no way different from that which the small business to the largest of organizations faces.

Each year as our projection is prepared, we find it necessary to discuss individual budgets with committee chairmen to determine that Society monies are being used in the most advantageous manner. At times it has been found necessary to reduce requested appropriations either because such expenditures do not fit in with our policy or because such expenditures are beyond our means.

The Budget Committee presents its recommendations to the Council. At this time, committee chairmen are privileged to take up any reductions made by the committee. After the final Council approval, the Board of Trustees is asked to appropriate the necessary monies.

At best, a budget is only a plan. Occasionally, estimates are not realistic. Many times unforeseen needs arise. This results in subsequent budgetary changes which are presented directly to the Council. It is our hope that as we continue our practice of budgetary control the need of extrabudgetary appropriations will substantially decrease.

TABLE I.—BUDGET FOR THE YEAR ENDED DECEMBER 31, 1959

INCOME	
Dues (net)	$483,000
JOURNAL	25,206
TOTAL INCOME	$508,206
EXPENDITURES	
Administration	$189,930
Public Relations Bureau	85,151
Legislation Bureau	32,926
Workmen's Compensation Bureau	34,116
Bureau of Medical Care Insurance	11,594
Scientific Activities	21,700
Women's Auxiliary	9,369
Travel	42,850
Annual Convention	24,245
District Branches	5,350
Planning Committee	300
Malpractice Insurance Board	2,500
Malpractice Audit	2,000
Legal Counsel	40,000
A.M.A. Delegates Expense Fund	2,500
Conference of Presidents	75
Veterans Medical Service Plan of New York	300
Pensions	8,933
Citizen's Health Council	100
Rural Medical Service Committee	500
Blood Banks Association of New York State	10,000
Committee to Combat Cults	800
New York State Society for Medical Research	100
Provision for salary increases	2,000
World Medical Association	1,000
Management Survey	...
Moving expense	...
Rent, 750 Third Avenue	...
Staphylococcus Committee	?
Advisory Committee to Columbia University Study	?
Medical Directory, 1957	...
Medical Directory, 1959	62,693
TOTAL EXPENDITURES	$591,032
Excess of Income over Expenditures	−82,826
Interest earned	3,400
NET EXCESS OF INCOME OVER EXPENDITURES	−79,426

The 1959 budget, as presented to the Council in October, 1958, is appended in Table I.

The chairman of the Budget Committee wishes to thank each committee member for his work during the past year. There has been excellent cooperation and much work has been put into this phase of the Society's work. The Council and the various committee chairmen responsible for Society activities also deserve a word of thanks for their advice and suggestions.

Respectfully submitted,

MAURICE J. DATTELBAUM, M.D., *Chairman*

Report of the Counsel

To the House of Delegates, Gentlemen:

This report of your Counsel is the sixteenth submitted by me to the House of Delegates and marks the thirty-first year of my service with the Society.

The expanding activities of the Society and the ever-increasing legal complexities of the practice of medicine again necessitated an increase in the number of attorneys serving you.

I am happy to report that all of the members of my staff have continued their excellent work of past years. Mr. Robert J. Bell has been associated with me for twenty-eight years and has during this time achieved a well-deserved reputation as one of the ablest trial attorneys in the State.

Mr. Harold Shapero, who joined my staff in 1955 after being associated for over twenty years with the late Lloyd Paul Stryker, has continued his superior work and has achieved great success in the trials of actions involving members of the Society and in the work of various county society malpractice committees.

The work of your Counsel has been helped beyond measure by these seniors and other members of my staff and I would like to express my sincere thanks to them for their efforts. My associates, with one exception, have continued with me. They include Mr. John J. DeLuca who joined my staff in 1942, Mr. William C. Richardson who has been associated with me for eight years, Mr. J. Richard Burns who became a member of my staff in 1952, Mr. Donald J. Fager who joined us in 1955, Mr. John H. Tovey, Jr., who came to work for us in 1956, and Mr. John P. Brosnan who joined my staff in 1958. Mr. Robert C. Heidell who had been with us since 1953 resigned in October, 1958, to join a corporate staff. We all wish him great success in his new endeavors. Before he left, we made two new additions to our staff, Mr. Frederick L. Flynn, a graduate of Fordham College and of Fordham Law School, and Mr. Barton L. Ingraham, a graduate of Harvard College and of Harvard Law School. Both Mr. Flynn and Mr. Ingraham served previously with us as summer assistants. Mr. Flynn was recently admitted to practice. Mr. Ingraham practiced in New Jersey for a year and recently passed his New York Bar examinations and is awaiting admission to the New York Bar.

Malpractice.— In 1851, when about thirty years of age, Gustave Flaubert wrote what some consider to be one of the greatest of all novels, *Madame Bovary.* It is the fictional life of Emma Bovary, wife of Charles, a physician in a small French town near Rouen and Neufchatel. By sheer coincidence while preparing my annual report I was reading Flaubert's masterpiece and was struck by the story told in chapter 20 headed, "The stableman's club-foot: Surgical Lore: Charles operates; Unfavorable prognosis: Monsieur Canivet's opinion; The second operation."

It describes in vivid detail the unsuccessful attempt of Dr. Bovary to correct a clubfoot by a new mode of treatment and the uproar which followed his failure to achieve the desired result and the complications which followed. When the patient's condition continued to deteriorate the patient's employer asked Dr. Bovary as a last resort to call Dr. Canivet of Neufchatel.

"Monsieur Canivet, a man of fifty, was a doctor of medicine and somewhat of a celebrity. He had a great deal of self-confidence and made no effort to restrain a scornful laugh when he laid bare the leg, a mass of gangrene right up to the knee. He declared straight away that it would have to come off, and then went around to the chemist's to say what he thought of the sort of asses who could have brought a man to such a pass. A lot of monstrous rubbish that ought to be forbidden by law. But they want to show how smart they are and chuck their remedies about all over the shop, never caring a damn about the harm they do. . . . Straighten a club foot. Why, you might as well try to iron the hump out of a hunchback!"

Poor Bovary was criticized. His extravagant fickle wife denounced him; she bought an artificial limb for the patient.

More than a century later an observer can still see well-meaning practitioners show poor diagnostic judgment, fail to recognize postoperative complication, suffer from the uncharitable comments of their fellows, and really not comprehend how they have to worry about a lawsuit. And some lack the fortitude to stay with their poor results.

We constantly read hospital records similar to two that we recently coped with. One had a note by a medical consultant called in postoperatively which read, "Now surgery ceases and science takes over."

The other case: "If the patient's story as to what happened at hospital is correct, she is entitled to a large sum in damages."

Fortunately we were successful in defending both of the law suits which involved the above records, but it may be concluded that from a time long before that of Flaubert's fictional characters right down to the present, doctors are pretty good at causing trouble for one another. In these times when discovery proceedings have been liberalized by the courts, careless, uncharitable remarks by one doctor can do enormous harm.

I am happy to report that the malpractice insurance and defense committees of the county societies have continued their excellent work during the past year. I and my associates have found that the activities of these committees are of inestimable help in the proper medical evaluation and defense of actions brought against members of the Society.

It is my firm opinion that these committees have in the past played an important role in stemming the rising tide of malpractice actions and will continue to do so in the future. The well-informed man is the least vulnerable man, and these committees by their unselfish efforts have done much to educate their brother physicians to the pitfalls present in the practice of medicine today. More county societies which have not as yet established such committees should give urgent consideration to doing so. Your Counsel, the indemnity representative, and the carrier for the Group Plan will do everything necessary to aid in their successful functioning. I or one of my associates attend every committee meeting and are anxious for and solicit the aid of these committees.

I cannot put too much stress on the importance of the doctor having high enough malpractice insurance limits to cover all contingencies. We are all aware of the effect that inflation has had on our national economy. The man who earned $5,000 in 1949 and was comfortable now needs an income of $6,050 just to purchase the basic necessities needed by his family today. The laymen who now make up the juries in our courts are aware of the effect of this all-devouring inflation and the awards they grant at this time reflect this awareness.

There is no such thing as a "safe" kind of practice in our modern society. The insurance limits which appeared more than adequate five years ago are no more valid today than the beguiling advertisements of yesterday which invited one to retire in luxurious ease on an insurance annuity of $150 per month. Let me be practical—what is worse than a doctor who has worked hard over the years to build an estate for himself and his family suddenly finding all or almost all of it imperiled because of a claim of malpractice which a jury may find is justified. No one, of course, can be an oracle, but I feel that it is safe to say that if any member of the Society is carrying the same limits of malpractice insurance today as he carried five years ago, then he is underinsured. The pediatrician, psychiatrist, internist, or general practitioner is just as likely now to be struck by the lightning of a malpractice claim as is the busy surgeon who operates every day. Recently a pediatrician had to pay $20,000 of his funds to supplement a $10,000 policy. As an example of a doctor being underinsured against another type of risk, there was recently returned in Bronx County, automobile verdicts in the sum of $102,000 arising out of one accident and the doctor had only $10,000 coverage though he was driving a brand new higher priced car. And in passing, may I note that the highest verdict in the history of New York State was recently rendered by a Poughkeepsie jury against the owner of a multiple dwelling for burns sustained by a child left under a hot water faucet by the mother. The amount was $375,000 for the child and $225,000 for the father's expense and loss of service. The contributory negligence, if any, of the mother was not imputable to the child.

Litigation. In 1958 your Counsel defended a total of 718 law suits against members of the Society insured with the current carrier for the Group Plan. There were 198 new actions brought against members of the Group Plan in 1958 or better than one new suit every other day. In addition there were 145 active claims of possible malpractice actions reported during the year as well as 141 events reported which might lead to law suits. Each of these claims and events had to be investigated and evaluated at the earliest opportunity. In 1958 your Counsel also undertook to defend on the average of three lawsuits or claims each month brought against uninsured members of the Society.

The members of the Society in 1958 continued in ever-increasing numbers to ask the opinion of your Counsel on a wide-ranging number of subjects affecting the practice of their profession, including such diverse subjects as the confidential relationship of physician and patient, the medical certification of applicants for driver's licenses, and the legal responsibility of physicians administering blood tests to allegedly drunken drivers.

The year 1958 produced an assortment of interesting and significant development in the area of medical malpractice. One of the most important and far-reaching decisions was handed down by the Court of Appeals of the State of New York in June, 1958. This was the so-called cancerophobia case—*Ferrara* v. *Galluchio, et al.*, 5 N. Y. (2d) 16. This was an action brought against radiologists by a woman who had a chronic dermatitis of the shoulder as a consequence of a claimed excessive application of x-rays during the course of treatment for bursitis. Approximately two years later she was sent to a dermatologist by her lawyer for examination of the affected area. After taking a history and making an examination, the dermatologist diagnosed a radiodermatitis and advised the woman to have her shoulder checked every six months inasmuch as the area of the x-ray burn might become cancerous. She described her grief at hearing this and a neurologist said she had a profound cancerophobia. The jury hearing the case awarded the woman damages for the malpractice of the radiologists in the sum of $25,000; $15,000 of this sum was awarded for the mental anguish flowing from her cancerophobia. The Appellate Division unanimously affirmed without opinion. The Court of Appeals granted leave to appeal for the sole purpose of passing on the propriety of the award of $15,000 for mental anguish. The Court of Appeals in a 4 to 3 decision affirmed the award and said in part:

> This case is somewhat novel, of course, in that it appears to be the first case in which a recovery has been allowed against the original wrongdoer for purely mental suffering arising from information the plaintiff received from a doctor to whom she went for treatment of the original injury.

The majority opinion cited the basic rule in this State that the original wrongdoer is liable for the ultimate result, although the mistake or negligence of a physician who later treated the injury may have increased the damage which would otherwise have followed from the original wrong (*Milks* v. *McIver*, 264 N. Y. 267). It then went on to hold that in this particular case the woman could recover damages from the original wrongdoers, i.e. the radiologists, for purely mental suffering arising from information she received from the dermatologist to whom she went for treatment of the x-ray burns.

The majority, recognizing the danger of vexatious suits and fictitious claims involved in allowing recovery for mental injury, took the position that the problem is one of adequate proof and found a "guarantee of genuineness in the circumstances of the case."

The dissenting judges accepted the quoted rule of *Milks* v. *McIver*, but could not, "on balance and as a matter of public policy," accept the rule that damages based on mental anguish, engendered by a physician's statement as to a possible development of another ailment, may be recovered; they considered such recovery dependent upon "the subjective mind of the litigating plaintiff and speculation by the physician."

In my opinion, this decision will unleash a torrent of claims for alleged mental suffering as the result of medical treatment and will in the words of the dissenting judges of the Court of Appeals introduce "a new field of damages for cultivation by plaintiffs and affording countless opportunities for fraudulent unverifiable claims."

Although the doctors involved in this law suit were not insured with the Group Plan and your Counsel did not participate in this suit, I did petition the Court of Appeals for permission to appear as *Amicus Curiae* when a motion was made to reargue the appeal. I did this because as Counsel for the Society I was extremely concerned with the effect of this decision on the practice of medicine in New York. The Court of Appeals granted reargument of the appeal and then affirmed their decision without opinion.

Although the *Ferrara* decision creates new problems for the doctors in this State, I am extremely happy to report that the Court of Appeals, in a decision which is so new at the time I am writing this that it has not even been published in the official report, has struck down a device commonly used by plaintiffs to circumvent the statutes of limitations applicable to malpractice and negligence actions.

Many attorneys, finding that their claims for malpractice and negligence are "stale" and barred by the statute of limitations, have attempted to make a claim for damages for the breach of an implied contract to use due and reasonable care in the treatment of patients. Since these actions purport to be for breach of contract they are governed by the longer statute of limitations for contract actions, (i.e. six years). The Court of Appeals in a unanimous affirmance, without opinion, upheld the decision of the Appellate Division, Second Department in the case of *Gautieri* v. *New Rochelle Hospital*, 4 App. Div. (2d) 874. The Appellate Division ruled that the common-law duty to use care and the implied contractual obligation to do so were one and the same, and that "the suit, however labeled, is one in negligence, at least for time limitation purposes."

It is my considered opinion that this decision will do much to discourage the commencement of vexatious law suits which are clearly barred by the malpractice statute of limitations.

In my last report, I called your attention, as I have in past years, to an attempt to change the statute of limitations applicable to malpractice actions. The present statute provides that actions for malpractice, among others, must be commenced within two years after the cause of action accrues.

On May 1, 1958, a majority of the Committee on Medical Jurisprudence of the Association of the Bar of the City of New York submitted a report containing the following resolution for adoption by the said bar association:

> Resolved that the Association of the Bar of the City of New York supports the amendment of Section 50, subdivision 1, of the Civil Practice Act, so that as amended such subdivision shall read as follows (with the introductory language thereof);
>
> The following actions must be commenced within two years after the cause of action has accrued:
>
> 1. An action to recover damages for assault, battery, false imprisonment, malicious prosecution or malpractice. *A cause of action for malpractice is not deemed to have accrued until the discovery by the plaintiff or the person under whom he claims of the facts constituting the malpractice, but in no event may such action be commenced more than four years after the commission of the malpractice.* (The matter in italics is new.)

As the committee pointed out in its report, the law is quite well settled in New York that an action for malpractice accrues and the statutory period of two years begins to run immediately upon the act of malpractice, except where there is "continuous treatment" perpetuating the tort, in which case the action accrues upon the termination of the physician-patient relationship—*Conklin* v. *Draper*, 254 N. Y. 620 (Court of Appeals 1930); *Ranalli* v. *Breed*, 277 N. Y. 630 (Court of Appeals 1938); *Tullock* v. *Haselo*, 218 App. Div. 313 (3rd Dept. 1926); *Budoff* v. *Kessler*, 284 App. Div. 1059 (2nd Dept. 1954).

Although plaintiffs' lawyers have in the past argued that the statute should begin to run on the commencement of a malpractice action only when the plaintiff has "discovered" his injury, the courts have rejected their proposals, even in cases where it was alleged that the "nondiscovery" of the condition was due to the physician's concealment of it.

In assessing the possible effect of the proposed change in the statute of limitations described above, California's experience might be helpful. There, in *Kimball* v. *Pacific Gas & Electric Co.*, 220 Cal. 203, 30 P. 2d 39 (1934), the California Supreme Court decided that in the case of fraudulent concealment the statute does not begin to run until the plaintiff has actual knowledge of all the facts, including the injury and how it occurred. Thus, the issue of whether the statute of limitations has run on an action for malpractice in California is virtually always a jury question, since the plaintiff will always allege that he did not "discover" his injury until long after it was inflicted through malpractice. The jury, then, is confronted with yet another difficult task of reading a claimant's mind. A California trial attorney recently, in discussing this problem, has commented:

> Then weeks later, perhaps, the judge solemnly reads an instruction to the jurors, that I am sure they don't understand, telling them it is up to them to decide whether Section so-and-so of the Code of Civil Procedure applies to this case or not.
>
> From numerous interviews with many jurors we know that they pay no attention to that issue. They automatically go ahead and decide the case on the merits.

The principal grievance mentioned in the committee's report seems to be those cases where the physician has willfully concealed a harmful condition in the patient of the physician's own making and which condition may not have adverse affects for many years, the typical case being one in which a surgeon leaves a sponge in the patient's body after an operation.

The whole purpose of a statute of limitations is to prevent the bringing of "stale" claims long after the date of the wrong complained of, when the evidence has evaporated, witnesses disappeared, and parties died. Every physician has the problem of keeping records, and the memory of every person is good only up to a certain point. Under the suggested change, it is admitted that a limitation is again imposed in a strict fashion after four years from the date of the malpractice. It is this writer's experience, however, that in fact it is a rare act of malpractice which is not quite soon manifested and that plaintiff's delay in bringing suit is occasioned more often by pure procrastination and hesitancy to resort to the courts than to a delayed awareness of the plaintiff's part of the act of malpractice itself. Moreover, the four-year limitation works an unfair prejudice against physicians. A suit for ordinary negligence may be brought within three years of the act of negligence; but, where the negligence is committed by a physician or dentist, a four-year period applies. I believe that this discrimination is manifestly unjust to the medical profession, and I again urge that the physicians of this State do all they can to defeat the proposed change in the law.

My remarks about malpractice cases started with excerpts from a French novel. It is appropriate that they close with a report of a French case which I read about in a recent A.M.A. bulletin.

> A French civil court ruled against an American plaintiff, Mrs. Gita L. Kassel, who sought 50-million francs damages ($119,000) from Dr. Jean Voisin, Paris plastic surgeon. Allegations were that Mrs. Kassel, age 56, asked Voisin to iron out certain facial wrinkles, smooth eye pouches, and give her bosom a more youthful line. Results, she said, were fine except for the latter procedure. The Court ruled that ". . . at a certain age, one should not ask the impossible," found for Dr. Voisin and assessed the costs against Mrs. Kassel.

Council Work.—Each meeting of the Council and Board of Trustees of the Society is attended by your Counsel or one or more of my associates. We attend each meeting of the Malpractice Insurance and Defense Board and most of the meetings of the subcommittee. I attended the meetings of the Judicial Council of the Society. I or one of my associates attended many of the meetings of the Society's committees throughout the year and furnished legal advice and counsel on their problems. We have continued our close liaison with Dr. Harold B. Smith, your executive officer, on the problems raised by legislation actions throughout the year.

All proposed amendments to the constitutions and bylaws of the component county societies and district branches are reviewed by your Counsel's office and suggestions made when necessary for changes in the proposals. I have been called upon to render numerous opinions to the officers, members of the Council, and trustees of the State Society and officers of the component county societies on medical-legal problems confronting them.

In 1958 I spoke before the following groups and organizations: The Brooklyn-Manhattan Trial Lawyers Association, of which I was president this year; a joint meeting of the Medical Society of the County of Schenectady and the Schenectady Bar Association; the Orange County Medical Society; the Albany Law School; the staff and students of the Bellevue Hospital Medical Center; the Bronx County Medical Society; the Chautauqua County Medical Society; the Westchester County Obstetrical Society; the staff of St. Vincent's Hospital in New York City; a joint meeting of the Medical Society of the County of Westchester and the Westchester Bar Association; the staff of Trafalgar Hospital; the Metropolitan Claims Managers Conference; and a meeting of the National League for Nursing in New York City.

My associate, Mr. Bell, participated in a symposium on medical malpractice at the Practicing Law Institute in New York City. He also addressed the anesthesia staff of St. Vincent's Hospital in New York City and the Saratoga County Medical Society.

Mr. Shapero, my associate, addressed the Queens County Medical Society, a meeting of the Blood Banks Association of the State of New York, the alumni of Mary Immaculate Hospital, and the staff of the Williamsburgh General Hospital.

Mr. Richardson, another of my associates, spoke to the staff of the Brookhaven Memorial Hospital.

My associate, Mr. Burns, together with Dr. Leo E. Gibson, president of the Society; Dr. W. P. Anderton, secretary of the Society; Dr. John C. McClintock, chairman of the Economics Committee, and Mr. George P. Farrell, director of the Society's Bureau of Medical Care Insurance, on July 17 and 18, 1958, renegotiated the current contract for Medicare with the Defense Department in Washington, D.C. In addition he participated in a panel discussion on medical-legal problems at the annual meeting of the Fourth District Branch at Amsterdam.

My former associate, Mr. Heidell, addressed a series of meetings of medical assistants and nurses of the Counties of Herkimer, Madison, and Oneida.

The Employers Mutual Liability Insurance Company of Wausau, Wisconsin, the insurance carrier for the Group Plan, has continued to provide us with extremely able investigation and claim management in all parts of the State. Mr. Dale Snure, resident vice-president of Employers Mutual in New York City, who addressed the 1957 annual meeting of the House of Delegates, together with his claims staff assistants, Messrs. Marvin H. Marx, W. F. Hanner, Richard E. Martens, Gerald M. Wilson, and Joseph Fallon, have been of great aid to us throughout the year. In addition the resident claims managers of Employers Mutual, Mr. Edward Halligan in Albany, Mr. Charles Bollman in Rochester, Mr. E. C. Lester in Buffalo, and Mr. William Duggan in Syracuse, have given us their most complete cooperation in handling the malpractice actions in their respective sections of the State.

In closing my report, may I express my everlasting gratitude to Dr. Walter P. Anderton, secretary of the Medical Society of the State of New York, whose sage advice and cooperation in the solution of many problems has been invaluable.

Respectfully submitted,
William F. Martin, *Counsel*

Report of the Council

PART VII

Public Medical Care

The Subcommittee on Public Medical Care consists of:

Earl C. Waterbury, M.D., *Chairman*	Orange
Philip J. Rafle, M.D.	Suffolk
Marcelle T. Bernard, M.D.	Bronx
Lyman C. Boynton, M.D.	Monroe
Robert J. Collins, M.D.	Onondaga
Peter F. Birkel, M.D., *Adviser*	Albany

Resolution 58–45, entitled "Public Medical Care Fee Schedule," was referred to the Public Medical Care Subcommittee of the Council Committee on Economics. Each member of the subcommittee was furnished with reports of House of Delegates actions and Council proceedings relating to public medical care prior to the meeting of the subcommittee held at the office of the Medical Society of the State of New York.

After full discussion by your subcommittee, it was agreed that the basic principles of public medical care first given in 1938 and again in 1946 be embodied in this report. These principles were accepted without dissenting vote by the House of Delegates in those years.

The resolution adopted by the 1938 House of Delegates is as follows:

> "*Resolved*, by the Medical Society of the State of New York, for the information and guidance both of its own representatives and of the State Department of Social Welfare, that it is the sense of this Society that any permanent program of medical welfare service, to be satisfactory and acceptable to the medical profession in this State, must conform with the following general stipulations:
>
> "(1) The medical aspects of medical welfare service should be placed under the effective control and supervision of the organized medical profession, in somewhat the same manner as the medical aspects of Workmen's Compensation service are controlled and supervised.
>
> "(2) The participation of the entire profession in medical welfare service should be encouraged by minimizing the red tape and onerous regulations and by a policy of reimbursing local welfare officers on the basis of local fee schedules in accordance with the prevailing fees recommended by the county society in their localities, as determined by conference between the local welfare officers and the local county medical society.
>
> "(3) The welfare patient should be given effective free choice of physician, under the same protective limitations as are provided for the injured workmen under the Workmen's Compensation Law.
>
> "(4) The provision of medical welfare service by local governments through county, city, or town physicians serving under contract should be actively discouraged and disapproved as a policy.
>
> "(5) Provision should be made and standards of eligibility established according to which needed medical care would be furnished for medical indigent families.
>
> "(6) The routine use of clinics by public welfare authorities, thus avoiding payment of fees to private physicians, should be stringently limited and made subject to medical considerations rather than economic considerations."

In 1946 representatives of the State Department of Social Welfare met with the Subcommittee on Public Medical Care, with Dr. Ralph T. B. Todd as chairman. A basis of reimbursement by the State of New York to welfare districts was agreed upon after a discussion. This basis was to be two thirds of the Workmen's Compensation minimum fees and to be known as the State rate of reimbursement to local welfare districts.

In subsequent months the State Department of Social Welfare, in collaboration with members of the Subcommittee on Public Medical Care and medical consultants of welfare districts, prepared a manual on medical care, to be used throughout the State of New York. This manual is known as Book V. Section 540–113 clearly covers the question of fee schedules:

> "The fees and rates appearing in these schedules are the maximums to which the State rate of reimbursement will be applied. Local welfare districts may negotiate fees that reflect the requirements of their own individual communities. However, the State does not reimburse on amounts paid in excess of the State schedules. In the event that a community adopts fees that are less than the State schedules, State reimbursement will be based on the fees actually paid."

In 1956 the Subcommittee on Public Medical Care reported to the Council that it recommended "that the present welfare program in New York State be endorsed. The subcommittee is aware that the present medical fee schedule of the Welfare Department is in general two thirds of the Workmen's Compensation fee schedule."

It is the consensus of this subcommittee that a fee schedule for public medical care has never been promulgated or authorized by the Medical Society of the State of New York. It has on the contrary stated that each county society can negotiate its own fee schedule with the commissioner of public welfare of the respective county. This is clearly stated in paragraph 2 of the basic principles of public medical care.

Senator Henry A. Wise, chairman of the Senate Committee on Public Relief and Welfare, in a communication to President Leo E. Gibson, asked that a spokesman representing the Medical Society present the Society's views and recommendations at the public hearing to be held February 18 and 19, 1959.

Dr. W. P. Anderton and your chairman appeared at the hearing on February 19, 1959, and the following statement was given by the chairman:

> "As chairman of the Subcommittee on Public Medical Care of the Council Committee on Economics, I am representing the Medical Society of the State of New York.
>
> "First, let me say this is not just a task delegated to a committee chairman. I was active in the private practice of medicine before the depression and have followed the evolution of the town doctor, commonly designated the poor doctor, then the city doctor and the panel doctor to the present day, when any physician is permitted to care for those people entitled to assistance under the Public Welfare Law. During most of this period of evolution, I have been secretary of a county medical society active in the field of public medical care. Since 1946 I have served as medical consultant to the Welfare Department of the City of Newburgh.
>
> "These experiences and responsibilities have given me a broad view of the scope of public medical care as well as an understanding of the many problems in the field of a medical care program.
>
> "Realizing that medical care can be given only by a physician, the State Department of Social Welfare, in joint meetings with committees from the Medical Society of the State of New York, evolved and adopted what is known as the 'Local Medical Care Program.'
>
> "The basic principles of this program were presented to the House of Delegates of the Medical Society of the State of New York in 1938 and unanimously accepted. The House of Delegates, in 1946, reaffirmed these principles, which are:
>
> "1. The medical aspects of medical relief should be supervised by the medical profession.
>
> "2. All physicians should be encouraged to participate in the service.
>
> "3. Utmost decentralization of control in medical matters.
>
> "4. Free choice of physician should be guaranteed subject to protective limitations.
>
> "5. Contract practice for medical relief should be disapproved.
>
> "6. Clinics should not be exploited to avoid payment of fees for service. They should be used when medically desirable.
>
> "7. Provisions should be made to enable needed medical care to be furnished for indigent and near indigent families not otherwise eligible for relief.
>
> "The Medical Society of the State of New York held the view that each county medical society would, through a designated committee and the commissioner of welfare, negotiate a fee schedule approximating the prevailing fee for that particular county. Because of disparity in "prevailing fees" throughout the State, a uniform basic schedule for reimbursement purposes was agreed upon. This was to be known as the State rate of reimbursement and roughly approximates two thirds of the Workmen's Compensation Fee Schedule. This was in 1946.
>
> "It also was agreed that this State rate of reimbursement would not prohibit any county medical society from negotiating a local fee schedule higher than the state rate but this difference between such schedule and the State rate of reimbursement would be a 100 per cent charge to the local welfare district.
>
> "Contrary to the thinking of many, when medical care expenditures are under discussion, it is not the physician rendering medical care who receives the larger part of the medical care dollar. The physician actually receives the smaller segment while hospital charges take the larger. This economic relationship is consistent with both philanthropic and voluntary medical care prepayment programs.
>
> "The responsibilities of a physician as a citizen of the State properly require that he participate in the taxation and public expenditures of the State. Further, as a citizen, the doctor of medicine volunteers his means and services in philanthropy. It is reasonable that for medical services to the Public Welfare program he should be paid a fee consistent with the public need and the ability of the public to pay.
>
> "I quote from the Constitution of the Medical Society of the State of New York a part of our purpose: 'To promote the betterment of public health and to enlighten and direct public opinion in regard to the problems of medicine and health for the best interests of the people of the State.'
>
> "The Medical Society of the State of New York, not unmindful of its function to the people of the State and to its membership, will welcome the opportunity to assist and coperate, through appropriate committees either now existing or

appointed, in further study of this problem of public medical care."

PART XII

Miscellaneous

Belated Bills

A statement covering expenses of the 1957 and 1958 annual meetings of the Seventh District Branch was received March 9, 1959, with a request that it be presented to the House of Delegates for approval. Details of the statement are:

1957	Expense of four speakers		$ 97.08
1958	Dinner	$625.00	
	Orchestra	25.00	
	Bus tour	165.89	
	Flowers	37.50	
	Speakers expense	110.67	
	Total 1958 expense	$964.06	
	1958 income	692.00	
	1958 deficit		272.06
Total requested from Medical Society of the State of New York			$369.14

Office Administration and Policies

The Committee on Office Administration and Policies consists of:

John J. Masterson, M.D., *Chairman*	Kings
W. P. Anderton, M.D.	New York
Maurice J. Dattelbaum, M.D.	Kings
Thurman B. Givan, M.D.	Kings
Henry I. Fineberg, M.D.	Queens
Leo E. Gibson, M.D., *ex officio*	Onondaga

Your committee meets monthly except in July and August. During this period, however, some committee members are always available should the need arise. It is believed that the makeup of the committee effectively represents those groups and individuals primarily concerned with the office functions. Representation from the Council is obtained through the president, president-elect, and past-president. One member of the Board of Trustees serves, as well as the secretary and general manager, and the treasurer. The office manager is an adviser attending all meetings.

The work of the general office with the related problems of peronnel, equipment, office procedures, and the like all fall within the purview of the committee.

One of the most important changes during the past year has been the move to a modern office building. With its facilities, adequate working space, lighting, and equipment, has come a general betterment of morale on the part of the staff. Sufficient storage space for the many records we must keep has proved a boon. Provision for a meeting room on the premises to accommodate the Council, Board of Trustees, and various committees is of immense value. Previously only the small committees could meet in our office.

We have long felt the need of equipment which could adequately reproduce printed copy of good quality. In the past, some of our printed material has been criticized. With this in mind, the Society purchased a small offset printing machine. We have found some savings to date, even though the equipment has been in our possession only a short time. Further savings of a substantial nature are anticipated.

We have also purchased a new high speed addressograph. This will increase our present capacity for addressing. We also expect to prepare payrolls and payroll tax returns with it. Our present machine is almost ten years old.

Each employe has for many years been given the opportunity of having an annual physical examination and chest x-ray. As this report is being prepared, we are planning to extend this to include pre-employment examinations.

During the year, one employe requested retirement, which was approved by the Council and Board of Trustees. This is the first staff member who received a pension from our pension fund.

The staff held its Christmas party on December 22 in the Council Chamber. This was the first time in many years we have not had to go outside the office. Food and beverages were served and an accordionist supplied music for dancing. Many expressed the thought that this was better than using facilities away from the office.

In addition, the annual outing was held last June at which most of the staff were present. This is one event which has the effect of bringing our employes closer together and helps to develop a mutual understanding.

Dr. Herbert T. Wagner began his association with the Society on December 1, 1958, as executive director. The committee takes this opportunity of welcoming him and wishing him many years of successful service, as well as assuring him of our desire to cooperate to the utmost for the betterment of all functions of the Society.

We were sorry to learn that our secretary, Dr. W. P. Anderton, will retire at the expiration of his term of office, a position he has filled so ably for many years. No one could be more faithful than he in fulfilling the duties of secretary. We are all acquainted with his loyalty to organized medicine, and the good and welfare of the Medical Society of the State of New York has been always uppermost in his mind. As secretary of our great Society he has served with honor and distinction and has been kindly, courteous, and a gentleman and scholar. We will miss the benefit of his wise counsel and understanding of our problems. Of Walter P. Anderton it can truly be said—"Well done, thou good and faithful servant." May he be blessed with many years of happiness and good health.

We are pleased to submit the names of our present staff with the years of employment at the end of this report.

The committee recommends to the House of Delegates that a committee of similar composition be appointed for the coming year.

1928—Miss Janet Loy
1935—Miss Alice Wheeler
1937—Miss Doris K. Dougherty
1938—Miss Grace I. West
1940—Dr. Laurance D. Redway
1943—Mr. Charles L. Baldwin
1944—Miss Mollie Pesikoff
Dr. W.P. Anderton
Mr. William Bonzer
1945—Mr. George P. Farrell
Mrs. Alice Arana
Mrs. Eunice Merriam Leonard
1946—Miss Frances E. Casey
Mrs. Evelyn DeMarco
Mr. Thomas E. Walsh
1947—Mr. Thomas E. Alexander
Miss Alvina Rich Lewis
Mrs. Evelyn Clark
Miss Mary McMahon
1948—Mr. Frederick W. Miebach
Miss Gretchen Wunsch
Miss Dorothy Hart
Miss Camille M. Marra
1949—Mr. Martin J. Tracey
Miss Susan V. Baker
Mr. James F. Kelly
Mr. Joseph A. Mullaney
1950—Miss Mary Singer
1951—Miss Lieselotte Benz
Mrs. Florence Gallagher
Dr. Harold B. Smith
1953—Mrs. Yvonne Chapman
Miss Marilyn McKenna
1954—Dr. John H. Iselin
Miss Lucille Leipziger
Mrs. Beatrice Moosa
Mrs. Dorothy Lotosky
Mr. Robert Miller
Mr. Ackley C. Schuyler
Mrs. Eleonore S. Solden
1955—Miss Ann Marie Marrinan
Mrs. Hilda Goller
1956—Mr. Charles Struzinski
1957—Miss Roslyn Feinberg
Dr. Anthony A. Mira
Mrs. Nan Boynton
Miss Nele Lape
Mr. Eugene Dombrowski
Mrs. Estelle Williams
Miss Fredda Slavin
Miss Anne-Marie Fanshaw
Mrs. Maxine Peckman
Mrs. Marcia N. Werbin
1958—Mr. Bernard Ascher
Miss Ita Kenrick
Dr. William Hammond
Mr. Wiley Tatum
Mr. Louis Fox
Miss Deborah Pritzker
Mr. Jack O'Brien
Miss Loretta Schmoll
Mr. Harold Kammerer
Miss Elizabeth C. Smith
Dr. Herbert T. Wagner
1959—Mrs. Alla Gutoff
Mr. Ernest Harris

Special Committee on Operating Room Mortality

To the House of Delegates, Gentlemen:

The members of the Special Committee on Operating Room Mortality are:

Richard Ament, M.D., *Chairman*	Erie
Henry T. Randall, M.D.	New York
Andrew A. Eggston, M.D.	Westchester
Martin E. Melamed, M.D.	Onondaga
W. Walter Street, M.D.	Onondaga

The Special Committee on Operating Room Mortality met on February 21, 1959, in Syracuse. The committee has reviewed the basic problems of lack of uniformity of the nomenclature, collection, and classification of operating room mortality which prompted the formation of this committee. Definitive steps were outlined to encourage a uniform program of review of operating room mortality throughout the State. The methods of operation of the existing anesthesia study committees in New York State are being surveyed. Representatives of these committees are being invited to meet with the Special Committee on Operating Room Mortality in Buffalo on May 11 to aid in the formation of a uniform method of reporting and classification. Representation is also being requested from the New York State Health Department for the May 11 meeting so that death certificate data can be integrated into the collection procedures of the existing anesthesia study committees.

Inasmuch as this committee will function in the review of operating room mortality in a manner similar to the maternal mortality subcommittee and since similar liaison will be necessary with the New York State Health Department, this committee wishes to recommend that, like the Maternal and Child Welfare Subcommittee, it be made a permanent subcommittee of the Committee on Public Health and Education.

Respectfully submitted,

RICHARD AMENT, M.D., *Chairman*

Medical Society of the State of New York

A.M.A. DELEGATES

The State Society's delegates to the A.M.A. will meet on Sunday, May 10, at 5 p.m. in the suite of Dr. Herbert T. Wagner, Hotel Statler Hilton, Buffalo.

Special Committee on Constitution and Bylaws

To the House of Delegates, Gentlemen:

Your Special Committee on Constitution and Bylaws consists of the following:

George J. Lawrence, Jr., M.D., *Chairman*	Queens
Alfred A. Hartmann, M.D.	Franklin
Ezra A. Wolff, M.D.	Queens

Transfer of Cayuga County Medical Society from Seventh to Fifth District Branch

Resolution 58–25 concerns the transfer of the Cayuga County Medical Society from the Seventh to the Fifth District Branch and reads as follows:

> WHEREAS, the Cayuga County Medical Society is located geographically close to the city of Syracuse, which is headquarters for the Fifth District Branch of the Medical Society of the State of New York; and
>
> WHEREAS, the primary medical business of the individual members of the Cayuga County Medical Society is more closely related to Syracuse than to other cities, and headquarters for the local area Blue Shield, Workmen's Compensation Board meetings, and various insurance groups are located at Syracuse; and
>
> WHEREAS, headquarters of the Seventh District Branch of the Medical Society of the State of New York are located in Rochester in Monroe County, which is further from Cayuga County than is Syracuse; and
>
> WHEREAS, practically no medical business such as insurance, Blue Shield, and Workmen's Compensation Board hearings from Cayuga County are handled in Rochester; and
>
> WHEREAS, the Syracuse University Medical Center for scientific information is much more closely related to Cayuga County geographically than is the University of Rochester Medical Center; now therefore be it hereby
>
> *Resolved*, that the Constitution of the Medical Society of the State of New York be amended as follows:
>
> > ARTICLE XI—DISTRICT BRANCHES—SECTION 1: The fifth paragraph which now reads: "The Fifth District Branch shall comprise the members of the Medical Societies of the Counties of Onondaga, Oneida, Herkimer, Oswego, Lewis, Madison, Jefferson, and St. Lawrence" shall be amended by the addition of Cayuga so that it will then read: "The Fifth District Branch shall comprise the members of the Medical Societies of the Counties of Onondaga, Oneida, Herkimer, Oswego, Lewis, Madison, Jefferson, St. Lawrence, and Cayuga";
> >
> > The eighth paragraph which now reads: "The Seventh District Branch shall comprise the members of the Medical Societies of the Counties of Monroe, Wayne, Cayuga, Seneca, Yates, Ontario, Steuben, and Livingston" shall be amended by the deletion of Cayuga so that it will then read: "The Seventh District Branch shall comprise the members of the Medical Societies of the Counties of Monroe, Wayne, Seneca, Yates, Ontario, Steuben, and Livingston."

Your committee recommends approval of this resolution.

Paid-up Life Membership

Resolution 58–56 would provide life memberships to paid-up active members for those who have paid dues for thirty-five years; it reads as follows:

> WHEREAS, at the present time the provisions of CHAPTER I, SECTION 6 of the Bylaws of the Medical Society of the State of New York provide that any member in good standing reaching the age of seventy years, or if permanently disabled, may apply for life (retired) membership; and
>
> WHEREAS, the present Bylaws do not provide for recognition of members who have paid dues for many years; now therefore be it hereby
>
> *Resolved*, that the Bylaws of the Medical Society of the State of New York be amended by the addition of the following sentence to CHAPTER I, SECTION 6:
>
> > "Any physician who has been an active member of the Society for more than thirty-five years, regardless of his age or state of health, shall become, automatically, an active, paid-up life member of the Society, with all the privileges and benefits of an active member."

The effect of this resolution would be to make relatively young men eligible for life membership and able to hold office without paying dues. It would also make two categories of life membership, which your committee feels would lead to confusion.

Your committee recommends disapproval of this resolution.

Delegates to American Medical Association

Resolution 58–55 reads as follows:

> *Resolved*, that the Bylaws of the Medical Society of the State of New York be amended as follows:
>
> > CHAPTER III, SECTION 6, add: "If a delegate is dropped from office due to a change in the number of delegates, he shall become the first

alternate delegate in his class in the proper order of sequence."

Resolution 58–61 reads as follows:

Resolved, that CHAPTER III, SECTION 6 of the Bylaws of the Medical Society of the State of New York shall be amended by the addition of the following: "A duly elected delegate to the American Medical Association who does not serve as such because of reduction in number of delegates to which the Society is entitled shall fill any vacancy which may occur in the delegation before alternate delegates are designated for that purpose."

Each of the above resolutions concerns the delegates to the American Medical Association, and the two resolutions are being considered together. The first refers to delegate "class" which is nowhere defined in the Constitution and Bylaws.

Your committee feels that an elected delegate remains a delegate whether or not he serves in that capacity.

Resolution 58–61 conforms with this reasoning and specifies that elected delegates should be used to fill vacancies before alternates are utilized.

We therefore recommend disapproval of resolution 58–55 and approval of resolution 58–61.

Increase in Committee Membership

Resolution 58–26 would increase the membership of the Council Committee on Public Health and Education and reads as follows:

WHEREAS, the present Council Committee on Public Health and Education consists of three members—one from Erie County, one from Onondaga County, and one from Tompkins County; and

WHEREAS, many of the activities of this committee are in cooperation with officials of the New York State Department of Health; and

WHEREAS, such activities should be extended to include the cooperation of representatives from other areas, notably Monroe County, Albany County, and Westchester County; now therefore be it hereby

Resolved, that the Bylaws of the Medical Society of the State of New York be amended as follows:

CHAPTER IV, SECTION 10, third sentence, which now reads: "The membership of committees shall not exceed three, including the chairman, except the committee or committees in charge of activities (a), (b), (d), (f), (i), (k), and (l), Chapter IV, Section 9, of the Bylaws" shall be amended by the addition of (h) so that it will then read: "The membership of committees shall not exceed three, including the chairman, except the committee or committees in charge of activities (a), (b), (d), (f), (h), (i), (k), and (l), Chapter IV, Section 9 of the Bylaws."

Your committee recommends that no action be taken on this resolution at this time since we feel that our recommendation on resolution 58–65 (concerning the Management Survey Report) will cover it.

Amendments to Implement Management Survey Report

Resolution 58–65 was introduced in the 1958 House of Delegates by Dr. Renato J. Azzari, Trustee, and contains many proposed amendments to the Constitution and Bylaws which amendments are intended to implement the Management Survey Report.

Your Special Committee on Constitution and Bylaws met twice with Dr. Azzari's committee to study these proposals.

The proposed amendments are all contained in the following resolution 58–65:

WHEREAS, a survey of the Medical Society of the State of New York has been made and distributed to all the delegates; and

WHEREAS, implementation of this survey would require certain changes in the Constitution, Bylaws, and Principles of Professional Conduct of this Society; and

WHEREAS, the Council has directed, in accordance with ARTICLE XIII of the Constitution and CHAPTER XVII of the Bylaws, that the following amendments be introduced; now therefore be it hereby

Resolved, that the following amendments are hereby introduced in the 1958 House of Delegates:

A. CONSTITUTION

(1) Amend ARTICLE I, second sentence to add, following the words "New York" the phrase: "and to serve and strengthen the work of the component county societies" and following the word "public health" on line 8 of the second sentence, add the phrase: "and to consider ways in which better medical care can be provided to all segments of the population of the State with least financial burden on the individual."

(2) Amend ARTICLE III to substitute words "Board of Trustees" for word "Council."

(3) Amend ARTICLE IV to change title to "Board of Trustees."

(4) Amend language of ARTICLE IV to read as follows: "There shall be a Board of Trustees composed of twelve members elected by the House of Delegates in accordance with the Bylaws, and the president, the president-elect, the secretary,

the treasurer, and the Speaker of the House of Delegates."

(5) Amend ARTICLE VI (TRUSTEES) so as to completely omit.

(6) Amend ARTICLE IX (FUNDS) second sentence to change word "Council" to "Board of Trustees" and to change second paragraph by eliminating word "Council."

(7) Amend ARTICLE IX (FUNDS) second paragraph to add following the word "Society" the phrase: "except that the said board may delegate, to such person or persons as it sees fit, the authority to expend funds of the Society in amounts and under conditions to be determined by said board."

(8) Amend ARTICLE X (REFERENDUM) last sentence so as to substitute words "Board of Trustees" for word "Council."

(9) Amend ARTICLE XIII (AMENDMENTS) first paragraph by substituting the words "to the Board of Trustees" for the words "at a previous annual meeting" and amend last sentence of last paragraph to substitute words "Board of Trustees" for the word "Council."

B. BYLAWS

(1) Amend CHAPTER II (HOUSE OF DELEGATES) to eliminate word "Council" wherever it appears.

(2) Amend SECTION 7 of CHAPTER II so as to eliminate subdivision 11 (Report of Council) and renumber remaining sections consecutively accordingly.

(3) Amend CHAPTER III (ELECTION OF OFFICERS, COUNCILLORS, TRUSTEES, AND DELEGATES) so as to eliminate word "Councillors" from title.

(4) Amend SECTION 1 of CHAPTER III so as to eliminate words "of the Council" in the first sentence.

(5) Amend SECTION 1 of CHAPTER III so as to eliminate words "member of the Council" in the second sentence.

(6) Amend SECTION 2 of CHAPTER III so as to completely eliminate the second paragraph beginning with the words "Four members of the Council, etc."

(7) Amend SECTION 2 of CHAPTER III so as to eliminate words "with the exception of the secretary" in the third paragraph.

(8) Amend SECTION 3 of CHAPTER III so as to eliminate completely the present language and substitute the following new language: "Four trustees shall be elected annually for a term of three years. In the event of a vacancy, a trustee shall be elected for the unexpired term. A person to be eligible for election as trustee shall have served at least two years as an officer, or at least five years as a member of the House of Delegates. In the year 1959, the House of Delegates shall elect twelve members to the Board of Trustees: four for a period of three years, four for a period of two years, and four for a period of one year. Thereafter, the House of Delegates shall elect four members as provided for."

(9) Amend title of CHAPTER IV (COUNCIL) to substitute words "Board of Trustees" for word "Council."

(10) Amend SECTION 1 (a) of CHAPTER IV to substitute following new language:

> SECTION 1. (a) The Board of Trustees shall be the executive and administrative body of the Society while the House of Delegates is not in session and shall control all arrangements for the annual meeting. Its resolutions and actions shall be decisive and final except that all resolutions and actions of the Board of Trustees are subject to review, reconsideration, and action by the House of Delegates. Its actions shall be governed by the Constitution and Bylaws of the Society and the rules and regulations of the House of Delegates. The Board of Trustees shall have power and authority to employ, discharge, and arrange duties and fix compensation for any employe whom it may find necessary for conducting the affairs of the Society, and may delegate the foregoing to such person or persons as it sees fit in the exercise of its discretion.
>
> (b) The Board of Trustees shall meet at the close of the annual meeting of the House of Delegates. The members of the Board of Trustees shall hold office until their successors are duly elected and qualified.
>
> (c) At the first meeting of the Board of Trustees immediately upon the close of the annual meeting of the House of Delegates, it shall organize under the chairmanship of the president and fix the time and place of its regular meetings. The Board of Trustees shall meet at least quarterly, at times and places that shall be fixed by the chairman. Any four members of the Board of Trustees may require the chairman to call a special meeting at the office of the State Society for such time as shall be designated by them in writing and of which the members of the Board shall have at least five days notice.
>
> (d) A quorum shall consist of nine members of the Board of Trustees.
>
> SECTION 2. (a) The Board of Trustees shall have charge of all property including trust funds and shall supervise the financial affairs of the Society and shall invest the surplus from time to time. It shall establish a Finance Committee which shall prepare an annual budget for submission to the Board of Trustees

for approval, and which shall perform such other fiscal duties as are assigned to it from time to time. All resolutions or recommendations of the House of Delegates pertaining to expenditures of money must be approved by the Board of Trustees before the same shall become effective. The Board of Trustees shall make and execute all contracts for the Society, but nothing herein contained shall limit the authority to such person or persons as it sees fit in the exercise of its discretion.

(b) All moneys of the Society received by the Board of Trustees, or any member or agent thereof, shall be paid to the treasurer of the Society. The Board of Trustees shall approve the bond of the treasurer and the assistant treasurer, and such other person or persons as it sees fit, as to amount, form, and surety, and shall employ a certified public accountant licensed by the State of New York to audit the accounts of the treasurer and secretary and other agents of the Society and present a statement of the same in its annual report to the House of Delegates. The chairman of the Board of Trustees shall make a report to the House of Delegates of its transactions for the year and of the amount of money belonging to the Society under its control.

Section 3. The Board of Trustees shall establish an executive committee to be composed of the president, the president-elect, the secretary, the treasurer, and five additional members of the Board of Trustees appointed by the president with the approval of the board. This committee shall be appointed by the president immediately upon his assumption of the office of president and to serve during his term as president only. The executive committee shall have the authority to take action in case of emergency arising in the interim between the meetings of the Board of Trustees in order to protect the interests and purposes of the Medical Society of the State of New York. In times of such emergency, the executive committee shall have all the powers and duties which are conferred upon the Board of Trustees, and it shall at all times assist the Board of Trustees. Any action taken by the executive committee shall be reported in full to the Board of Trustees at its next meeting.

Section 4. The Board of Trustees shall take such action as is necessary to carry out the Constitution and Bylaws and to give full effect to any resolution or vote of the House of Delegates, when the latter is not in session in all matters consistent with the Constitution and Bylaws.

Section 5. The Board of Trustees shall have power to fill any vacancy which may occur in any elective office not otherwise provided for, until the next meeting of the House of Delegates.

Section 6. The Board of Trustees shall have responsibility for all publications of the Society and their distribution. Any special committee of the Society shall report to the Board of Trustees and shall be subject in all ways to the Board of Trustees unless otherwise instructed by the House of Delegates. The Board of Trustees shall advise the legal counsel in actions brought against members for alleged malpractice. With the aid of legal counsel, it shall examine the constitution and bylaws of component county societies and district branches and all amendments thereto which may be submitted to the Board of Trustees for approval and shall approve or disapprove of said amendments.

Section 7. No officer or employe, board, commission, or committee shall inaugurate or initiate any policy or commit the Society to any policy unless the same has been expressly approved by the House of Delegates or by the Board of Trustees.

Section 8. The duties of the Board of Trustees shall also include the study and supervision of the following activities:

(a) All scientific work presented at each annual meeting.
(b) Scientific exhibits.
(c) Medical education.
(d) Journal management and publication.
(e) Medical and related research.
(f) Arrangements for annual meeting.
(g) Preventive medicine.
(h) Public health.
(i) Legislation.
(j) Economics.
(k) Workmen's compensation.
(l) Public relations.
(m) Cooperative relationships with Federal and State governments, foundations, and other lay groups.
(n) Medical care insurance.
(o) Malpractice defense and insurance.
(p) Any activities not otherwise provided for.
(q) The Board of Trustees shall also keep constantly advised of the activities of and collaborate with, the health and welfare departments of the State and with hospitals, clinics, and welfare agencies in furthering the health of the community.

Section 9. Amend Section 9 so to omit present section completely and substitute the following language: "Commissions and committees of the Board of Trustees shall be appointed by the president subject to the approval of the Board, in order to implement the intent of Section 8 of this chapter."

SECTION 10. The following shall be the order of business at meetings of the Board of Trustees:

1. Calling the meeting to order
2. Roll call
3. Reading of minutes
4. Communications
5. Report of the secretary
6. Report of the treasurer
7. Reports of commissions and committees
8. Unfinished business
9. New business
10. Adjournment

(11) CHAPTER V. (BOARD OF TRUSTEES) Amend CHAPTER V to omit completely.

(12) CHAPTER VI. (JUDICIAL COUNCIL)

(1) Amend SECTION 1 and 7 to substitute words "Board of Trustees" for word "Council" wherever it appears.

(13) CHAPTER VII (DUTIES OF OFFICERS)

(1) Amend SECTION 1 to eliminate words "and of the Council" and substitute words "and of Board of Trustees" in the first sentence.

(2) Amend SECTION 1 to substitute words "Board of Trustees" for word "Council" wherever it appears.

(3) Amend SECTION 3 to omit completely from Bylaws.

(4) Amend SECTION 6 to omit word "Council" in first sentence and to substitute words "Board of Trustees" for word "Council" wherever it appears.

(5) Amend SECTION 7 to replace the present language with the following: "The secretary shall be the custodian of the Seal of the Society, and of all books of records and papers belonging to the Society, except such as properly belong to the treasurer, and shall keep an account of and promptly turn over to the treasurer all funds of the Society which come into his hands. He shall provide for the registration of the members at all sessions of the Society. With the aid and cooperation of the secretaries of the county societies, he shall keep a proper register of all the registered physicians of the State by counties. He shall aid the officers of the district branches in the organization and improvement of the county societies and the extension of the power and influence of the Society. He shall conduct the official correspondence, notifying members of meetings; officers, trustees, and board members of their election, and commissions and committees of their appointments and duties. He shall affix the Seal of the Society to all credentials issued to members of the Society elected by the House of Delegates and to such other papers and documents as may require the same. He shall make an annual report to the House of Delegates. Acting in cooperation with the Board of Trustees, he shall prepare and issue all programs. He shall be a member of the Board of Trustees. He shall be ex officio a member of all boards, commissions, and committees with voice but without vote. He shall record the name and date of admission of each member of the Society. He shall be in complete charge of the administration of the headquarters of the State Society. He will at the direction of the Board of Trustees delegate to such person or persons as the Board of Trustees may designate, such of his powers and obligations as are consonant with the best interests and efficient conduct of the business of the Society."

(6) Amend SECTION 8 to omit words: "may countersign checks drawn by the treasurer on funds of the society, he. . ."

(7) Amend SECTION 9 to add the following phrase after the word "authorized" in the first sentence of said section: "except those disbursed in accordance with Article IX of the Constitution."

(8) Amend SECTION 9 to substitute the words "Board of Trustees" for the word "Council" in sentences 3 and 4 of said section.

(9) Amend SECTION 9 to substitute the words "Board of Trustees" for word "Council."

(10) Amend SECTION 10 to substitute words "Board of Trustees" for word "Council" in said section.

(11) Amend SECTION 13 to substitute words "Board of Trustees" for word "Council" wherever it appears in said section.

(14) CHAPTER VIII (MEETINGS)

(1) Amend SECTION 1 to omit word "Council" from said section.

(2) Amend SECTION 6 to substitute words "Board of Trustees" for word "Council" in said section.

(15) CHAPTER IX (EXPENSES)

(1) Amend SECTION 1 to omit the words "the Council," wherever they appear in said section.

(2) Amend Section 1 to add the words "commissions and" before the word "committees" in the 4th and 5th lines of said section; add the words "employes of the Society" following the word "committees" in the 5th line of said section, and add the words "and employes of the Society" in the 16th line of said section following the word "Society."

(16) CHAPTER X (REFERENCE COMMITTEES)

(1) Amend SECTION 2 to omit word "Council" in said section.

(17) CHAPTER XI (SPECIAL COMMITTEES)

(1) Amend SECTIONS 1, 2, 3 to substitute

words "Board of Trustees" for word "Council" in these sections.

(18) Chapter XII (Sections)

(1) Amend Sections 2, 4, and 5 to substitute words "Board of Trustees" for word "Council" in these sections.

(19) Chapter XIII (District Branches)

(1) Amend Section 4 to substitute words "Board of Trustees" for word "Council" in this section.

(20) Chapter XIV (Component County Medical Societies)

(1) Amend Sections 1 and 6 to substitute the words "Board of Trustees" for word "Council" in these sections.

(21) Chapter XV (Miscellaneous)

(1) Amend Section 5 to omit word "councillors" in this section.

(2) Amend Section 5 to substitute words "Board of Trustees" for word "Council" in this section.

(22) Chapter XVII (Amendments)

(1) Amend Section 1 to change words "at a previous annual meeting" to the following: "to the Board of Trustees."

(2) Amend Section 3 to substitute words "Board of Trustees" for word "Council."

(23) Principles of Professional Conduct—amend Chapter 3, Article VI, Section 3 to eliminate last three lines of said section in order to implement Suggestion XIV of Survey.

Committee's Recommendations on 58–65

A. Constitution

(1) Amend Article 1, second sentence to add, following the words "New York" the phrase: "and to serve and strengthen the work of the component county societies" and following the word "public health" on line 8 of the second sentence, add the phrase: "and to consider ways in which better medical care can be provided to all segments of the population of the state with least financial burden on the individual."

Your committee feels that the present language in Article 1 is sufficiently broad to encompass the purposes of these suggested changes. We also feel that the suggested changes embody policies which are already being carried out by your Society and are not necessary to include here. We therefore recommend disapproval.

(2) Amend Article III to substitute words "Board of Trustees" for word "Council."

Since the Council has recommended that no change be made in the present status of the Council and Board of Trustees and since your committee concurs with this view, **we recommend that all portions of this resolution which would affect this part of the Management Survey Report be disapproved. Disapproval would thus mean that the following parts of Dr. Azzari's resolution are hereby disapproved:**

Constitution (2), (3), (5), (6), (8).

Bylaws (1), (2), (3), (4), (5), (6), (8), (9), (11), (12), [13–(1), (2), (3), (4), (7), (8), (9), (10), (11)], (14), [15–(1)], (16), (17), (18), (19), (20), (21), [22–(2)].

A. Constitution

(4) Since, as mentioned above, the Council has recommended that no change be made in the present status of the Council and Board of Trustees, **we recommend that this portion of the resolution be disapproved.** However, since the Council has recommended that the executive director attend with voice but without vote all Council meetings, **we recommend that this section of the resolution be amended so as to provide that the second paragraph of Article IV of the Constitution shall read:**

"The executive director and the editor of the New York State Journal of Medicine shall attend all meetings of the Council with voice but without vote."

(7) Amend Article IX (Funds) second paragraph to add following the word "Society" the phrase: "except that the said board may delegate, to such person or persons as it sees fit, the authority to expend funds of the Society in amounts and under conditions to be determined by said Board."

Since it is desirable to allow certain fiscal powers to be delegated to the executive director, we recommend approval of this amendment.

(9) Amend Article XIII (Amendments) first paragraph by substituting the words "to the Board of Trustees" for the words "at a previous annual meeting" and amend last sentence of last paragraph to substitute words "Board of Trustees' for the word "Council."

This proposed amendment would make it easier to amend the Constitution. Your committee feels strongly that the Constitution should be a stable document, not subject to hasty amendment, **therefore we disapprove this amendment.**

B. Bylaws

(7) Amend Section 2 of Chapter III so as to eliminate words "with the exception of the secretary" in the third paragraph.

Since the secretary will no longer be salaried, the wording in the present Bylaws is unnecessary.

We recommend approval of this amendment.

(10) The subject matter of this portion of the

suggested amendments deals with the proposed consolidated Board of Trustees.

We therefore recommend disapproval of section 10 of the resolution, with the following amendments:

The proposed Section 2(a), Chapter IV, reads in part: "but nothing herein contained shall limit the authority of said board to delegate said power and authority to such person or persons as it sees fit in the exercise of its discretion." This would enable the proposed consolidated Board of Trustees to delegate control of personnel to the executive director. In order to accomplish this with respect to the present Council and Trustees, **we recommend that the following be added to the end of Chapter IV, Section 1 (a) of the present Bylaws:** "It may with the approval of the Board of Trustees engage an executive director and define his duties." So that Chapter IV, Section 1(a) will then read as follows:

> Section 1. (a) The Council shall be the executive and administrative body of the Society while the House of Delegates is not in session and shall control all arrangements for the annual meeting. Its resolutions and actions shall be decisive and final except that all resolutions and actions of the Council are subject to review, reconsideration, and action by the House of Delegates. Its actions shall be governed by the Constitution and Bylaws of the Society and the rules and regulations of the House of Delegates. The Council shall have power and authority to employ, discharge, and arrange duties and fix compensation for any employe whom it may find necessary for conducting the affairs of the Society, and may delegate the foregoing to such person or persons as it sees fit in the exercise of its discretion. *It may with the approval of the Board of Trustees engage an executive director and define his duties.*

(10) Section 9 of the proposed amendment to Chapter IV reads:

> Amend Section 9 so as to omit present section completely and substitute the following language: "Commissions and committees of the Board of Trustees shall be appointed by the president subject to the approval of the Board, in order to implement the intent of Section 8 of this chapter."

The Council has recommended that committee chairmen need not be members of the Council and that a Commission on Medical Services be established. **In order to implement these recommendations, your committee recommends that Chapter IV, Section 10 of the Bylaws, which reads as follows:**

> "Committees of the Council may include other members of the Society and shall be appointed by the president subject to the approval of the Council. Each committee shall include at least one member of the Council who shall be chairman, except that he need not be chairman for the committee or committees in charge of activities (a), (b), and (f), Chapter IV, Section 9 of the Bylaws. The membership of committees shall not exceed three, including the chairman, except the committees in charge of activities (a), (b), (d), (f), (i), (k), and (l), Chapter IV, Section 9, of the Bylaws. The Public Relations Committee shall consist of a chairman and nine other members."

be amended so as to read:

> "Section 10. Commissions and committees of the Council may include other members of the Society and shall be appointed by the president subject to the approval of the Council. The chairman of each commission shall be a member of the Council."

(10) (10) In order to further implement the Council's recommendation concerning commissions, **your committee recommends that section B, (10), subsection 10,** of the resolution, referring to Chapter IV, Section 11 of the Bylaws, **be amended** so as to retain the word "Council" instead of the words "Board of Trustees" in the first sentence.

This part of the resolution also recommends the insertion of the words "commissions and" in Chapter IV, Section 11, subdivision 7 of the Bylaws. This will then read "7. Reports of commissions and committees."

We recommend approval.

(13) (5). Chapter VII (Duties of Officers) Amend Section 7 to replace the present language with the following:

> "The secretary shall be the custodian of the Seal of the Society, and of all books of records and papers belonging to the Society, except such as properly belong to the treasurer, and shall keep an account of and promptly turn over to the treasurer all funds of the Society which come into his hands. He shall provide for the registration of the members at all sessions of the Society. With the aid and cooperation of the secretaries of the county societies, he shall keep a proper register of all the registered physicians of the State by counties. He shall aid the officers of the district branches in the organization and improvement of the county societies and the extension of the power and influence of the Society. He shall conduct the official correspondence, notifying members of meetings; officers, trustees, and board members of their election, and commissions and committees of their appointments and duties. He shall affix the seal of the Society to all credentials issued to members of the Society elected by the House of Delegates and to such other papers

and documents as may require the same. He shall make an annual report to the House of Delegates. Acting in cooperation with the Board of Trustees, he shall prepare and issue all programs. He shall be a member of the Board of Trustees. He shall be ex officio a member of all boards, commissions, and committees with voice but without vote. He shall record the name and date of admission of each member of the Society. He shall be in complete charge of the administration of the headquarters of the State Society. He will at the direction of the Board of Trustees delegate, to such person or persons as the Board of Trustees may designate, such of his powers and obligations as are consonant with the best interests and efficient conduct of the business of the Society."

This proposed amendment would have the effect of eliminating the secretary as a countersigner of Society checks and would make the executive director responsible to him. Since it is the opinion of this committee and of Dr. Azzari's committee that neither of these is desirable, we recommend disapproval.

Since we have already recommended that the executive director be responsible to the Council, and that the Council may transfer control of the administration of the headquarters of the Society to him, **we recommend that Section 7 of Chapter VII which deals with the duties of the secretary be amended so as to delete the last sentence** which reads: "He shall be in complete charge of the administration of the headquarters of the State Society."

(13) (6). Chapter VII (Duties of Officers)

Amend Section 8 to omit words: "may countersign checks drawn by the treasurer on funds of the Society, he. . ."

In conformity with the above noted changes, we recommend disapproval of this proposed amendment.

(15) (2). Chapter IX (Expenses)

In order to implement the recommendation of the Council concerning commissions and to correct an obvious oversight in the present Bylaws, which do not provide for the payment of expenses incurred by employes of the Society in the performance of their duties, **we recommend approval of this portion of the resolution amending it in the following way:**

Amend Section 1 to add the words "commissions and" before the word "committees" in the fourth and fifth lines of Chapter IX, Section 1; add the words "employes of the Society" following the word "committees" in the fifth line of said section; and add the words "commissions and" in the fourteenth line of the said section before the word "committees;" and delete the word "and" in line 15 and add a comma following the word "Council" and add the words "and employes" in the 15th line of said section following the word "committees." Chapter IX, Section 1 shall then read as follows:

> "Allowances for expenses incurred in the actual performance of official duties by officers, members of the Council, the Board of Trustees, of the Judicial Council and commissions and committees and employes of the Society, and delegates to the American Medical Association shall be made in conformity with the following conditions. The president shall be allowed a per diem and expenses when engaged upon official business. All other officers shall be allowed traveling expenses when engaged upon official business. Members of the Council, of the Board of Trustees, and of the Judicial Council shall be allowed traveling expenses. Members of commissions and committees of the Council, all special committees, and employes of the Society shall be allowed traveling expenses. Delegates of the district branches sitting in the House of Delegates shall be allowed necessary expenses by the Medical Society of the State of New York. There shall be no allowance made for the expenses, traveling or otherwise, for any committee appointed pursuant to Chapter X of these Bylaws. Proper vouchers must be filed with the secretary before any of above allowances are made. The delegates to the American Medical Association who have attended each session of the house of delegates of that Association, as certified by the secretary of the American Medical Association to the secretary of the Medical Society of the State of New York, shall be allowed traveling expenses. Each district branch shall be entitled to receive a sum not to exceed $400, exclusive of the work done by the secretary regarding notices, programs, etc., to defray the expenses of such district branch, provided a proper statement of such expense shall have been presented to the secretary. All bills, claims, or vouchers herein provided for shall be filed within thirty days after the date of the incurring of such expense. This time may be extended for any cause by the Board of Trustees and such extension shall not exceed ninety days. Payment of all these expenses shall be made under directions of the Board of Trustees.

(22) (1). Chapter XVII (Amendments)

Amend Section 1 to change words "at a previous annual meeting" to the following: "to the Board of Trustees" for word "Council."

This proposed amendment would make it possible for the Bylaws to be amended without action by the House of Delegates.

We therefore recommend its disapproval.

(23) *Principles of Professional Conduct*—amend Chapter 3, Article VI, Section 3 to eliminate last three lines of said section in order to implement Suggestion XIV of Survey.*

This proposed amendment to the *Principles of Professional Conduct* would negate an action which was overwhelmingly adopted by this House several years ago. Furthermore, Suggestion XIV of the Management Survey Report is compatible with this portion of the *Principles of Professional Conduct.*

We therefore recommend disapproval.

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* "Contract practice which allows diversion of fees for professional medical services to a hospital, organization, or political subdivision is unethical."

Reports of the District Branches

First District Branch

To the House of Delegates, Gentlemen:

The meeting of the First District Branch of the Medical Society of the State of New York was held on Sunday, May 11, 1958, at 4 P.M. at the Hotel Statler, New York City.

Dr. Herbert Berger, president, presided. There were 65 of the duly elected delegates present from the five counties of Greater New York to the Medical Society of the State of New York. Dr. Roscoe Kandle, Deputy Commissioner of Health of the City of New York, commended all those members of the five county medical societies who assisted in the polio inoculation compaign in the City of New York during 1957–1958.

The Health Department of the City of New York requested that a drive be made to induce more young adults to receive polio inoculations. The First District Branch approved this recommendation, with the suggestion that the inoculations be given by the patient's family doctor. The district branch referred the matter of inoculations of adults by the Department of Health to the Coordinating Council with power.

The following resolution, introduced by the Medical Society of the County of New York, was passed:

> "WHEREAS, it is the opinion of the Committee on Medical Economics that the policy of the Child Guidance Clinics of the Board of Education of the City of New York to offer psychiatric care to all children in the city regardless of the incomes of their families is not in harmony with the principle of the private practice of medicine, therefore be it
>
> "*Resolved,* that the Committee on Medical Economics recommends to the comitia minora that the Board of Education be requested to refer children, following diagnosis, back to the family physicians before any treatment is undertaken, and be it further
>
> "*Resolved,* that this resolution be submitted to the Coordinating Council of the Five County Medical Societies with a request that it be referred to the Medical Societies of the Counties of Bronx, Kings, Queens, and Richmond for their information, investigation, and if desired, action."

The following motion, recommended by the Economics Committee of the Coordinating Council, was passed:

> "That interns and residents of the Department of Hospitals of the City of New York be paid a just wage compatible with a decent standard of living for themselves and their families, and in some degree of harmony with the worth of their services to the City of New York as physicians."

The following resolution, submitted by the Medical Board of the Coney Island Hospital, was adopted by the First District Branch and referred to the Medical Society of the State of New York at its convention held May 12 to 14, 1958:

> "WHEREAS, the intern shortage has reached a critical stage at the Coney Island Hospital; and
>
> "WHEREAS, such shortage has occurred in other municipal hospitals and in many voluntary hospitals, and
>
> "WHEREAS, the one-year internship was adopted as a temporary war measure during the second World War; and
>
> "WHEREAS, the one-year internship is inadequate to prepare a physician for general practice; and
>
> "WHEREAS, a one-year internship is insufficient for a firm foundation on which to build a residency; therefore be it
>
> "*Resolved,* that it is the opinion of the Medical Board of Coney Island Hospital that a two-year internship be re-established; be it further
>
> "*Resolved,* that this resolution be sent to the First District Branch of the Medical Society of the State of New York, with a request that the delegates from that branch be instructed to offer a similar resolution in the House of Delegates of the Medical Society of the State of New York; be it further
>
> "*Resolved,* that the House of Delegates of the Medical Society of the State of New York introduce a similar resolution in the House of Delegates of the American Medical Association; be it further
>
> "*Resolved,* that this resolution be sent to the Committee on Accreditation of Hospitals for their favorable consideration."

The following resolution, submitted by the Medical Society of the County of New York, was approved:

"WHEREAS, the practice described in the operative part of this resolution is in effect in some hospitals in New York County, and is contemplated by others; and

"WHEREAS, if it were carried to its logical conclusion, the patient would be required to pay a double charge for every service rendered in hospitals; and

"WHEREAS, the practice would seem to violate the patient's rights under the Blue Cross contract to full coverage for semiprivate care; therefore be it

"*Resolved*, the medical Society of the County of New York disapproves the practice of a hospital charging the patient a fee for the taking of an electrocardiogram and another fee not covered by Blue Cross insurance, for the interpretation of the same electrocardiogram; and be it also

"*Resolved*, the Medical Society of the County of New York does not consider the routine interpretation of an electrocardiogram without the interpreter having examined the patient or studied his case as a valid cardiologic consultation; and be it also

"*Resolved*, the Medical Society of the County of New York believes the same principle to apply to other service normally rendered in a hospital, such as x-ray and laboratory examination, where no special examination and study is made of the patient by the interpreter of the various tests acting as a consultant; and also be it

"*Resolved*, a copy of this resolution be sent to Associated Hospital Service and to United Medical Service."

On motion, the members of the First District Branch went on record as opposing the payment to hospitals for services rendered to patients by interns and residents by voluntary health insurance plans, or other health insurance plans.

Dr. Gerald D. Dorman, chairman of the Workmen's Compensation Committee of the Medical Society of the State of New York, stated that the increase in the fee schedule for workmen's compensation, proposed by the Medical Society of the State of New York, had not been accepted by the Governor and asked the members of the First District Branch to personally urge the Governor and the Compensation Rating Board to look with favor on this proposed fee schedule.

The following officers were elected for the years 1958–1960:

President—Frederick A. Wurzbach, M.D., Bronx
Vice-President—Gerald D. Dorman, M.D., New York
Treasurer—Moses H. Krakow, M.D., Bronx
Secretary—Charles F. McCarty, M.D., Kings

Immediately following the adjournment of the meeting of the First District Branch, the Coordinating Council of the First District Branch convened, with Dr. Peter M. Murray, chairman, presiding.

The following officers were elected for the year 1958–1959:

Peter M. Murray, M.D., *Chairman*
George J. Lawrence, M.D., *Vice-Chairman*
Moses H. Krakow, M.D., treasurer, and Charles F. McCarty, M.D., secretary, of the First District Branch, are automatically treasurer and secretary of the Coordinating Council.

Upon the advice of the Economics Committee of the Coordinating Council, it was approved that the Coordinating Council cooperate with United Medical Service in organizing a medicine-labor-management forum on medical care to be held sometime during the fall. The following committee will serve with United Medical Service in organizing this forum: Dr. George J. Lawrence, vice-chairman, Coordinating Council, chairman: Dr. Carl R. Ackerman, chairman, Economics Committee of Coordinating Council; Dr. David Kershner, president-elect, Medical Society of the County of Kings; Dr. Samuel Wagreich, president-elect, Bronx County Medical Society; Dr. Norton S. Brown, president-elect, Medical Society of the County of New York; Dr. Harry Epstein, president, Queens County Medical Society; Dr. Charles F. McCarty, secretary, Coordinating Council.

The Coordinating Council met on September 9, 1958. Dr. Samuel Wagreich, Bronx, brought to the attention of the Council that there are a number of discrepancies between the old constitution and bylaws of the Coordinating Council and the constitution of the First District Branch. It was pointed out that the constitution of the First District Branch supersedes that of the Coordinating Council. The chairman, Dr. Peter M. Murray, was instructed to appoint a committee to study the constitution of the Coordinating Council and subsequently offer amendments in order to bring the constitution up to date. The following committee was appointed: Dr. Samuel Wagreich, Bronx, chairman; Dr. Norton S. Brown, New York; Dr. David Kershner, Kings; Dr. Harry Epstein, Queens; Dr. Edward H. Robitzek, Richmond; Dr. Charles F. McCarty, Kings.

With the approval of the Council, Dr. Murray appointed the following committee chairmen for 1958–1959: Dr. Joseph Golomb, Bronx public health, Dr. George Himler, New York, economics; Dr. Jerome L. Leon, Queens public relations; Dr. John G. Masterson, Kings, reappointed, legislation.

Dr. Roscoe Kandle discussed Salk vaccine and the incidence of polio in New York City during the summer of 1958. It was voted to request the Mayor to set aside one week in the year as "Polio Vaccine Week"—probably the last week in January—when all persons under the age of forty will be asked either to begin or complete their Salk inoculations in the offices of their private physicians, or through the various health centers for the indigent.

A committee to work out the details of this campaign against polio was appointed, as follows: Dr. Monroe Broad, Queens; Dr. Norton S. Brown, New York; Dr. Joseph Golomb, Bronx; Dr. George J. Lawrence, Jr., Queens, chairman; Dr. Charles F. McCarty, Kings; Dr. Edward H. Robitzek, Richmond.

It was suggested that efforts be made to have cards placed in the offices of physicians, requesting all persons under the age of forty either to begin or finish their Salk vaccine inoculations. It was recommended that a fourth inoculation, about one year after the third inoculation, might be of value in continuing immunization against paralytic polio.

Drs. Jerome L. Leon and Charles F. McCarty and Mr. Robert D. Potter were appointed as a committee to prepare a statement for the county society bulletins and the members, concerning this compaign.

It was suggested that a joint statement on the polio campaign be released by the Commissioner of Health, Dr. Leona Baumgartner, and Dr. Peter M. Murray, chairman of the Council.

It was decided to request each county society to publish a statement in its bulletin concerning the actions taken by its comitia minora and society on the fluoridation of water.

At the meeting of the Coordinating Council held on November 11, 1958, the following actions were taken:

It was voted by the Coordinating Council that a special dinner meeting be held at the Press Box, Tuesday, December 9, 1958.

The following resolution was approved by the Medical Society of the County of Queens:

> "*Resolved*, that physicians who work in the clinics and outpatient departments of municipal hospitals be remunerated for their services."

The Council voted to commend the Department of Hospitals in its initiation of paying stipends in the various outpatient departments and that the Department of Hospitals be requested to extend the number and amount of these payments to doctors working in their outpatient departments as soon as possible.

The resolution from the Bronx County Medical Society, objecting to the payment of a fee of $15 a year for the licensing of radiology laboratories, was not concurred in by a majority of the voting members of the Council.

The request of the comitia minora of the Medical Society of the County of Kings concerning the payment of physicians by an insurance company for laboratory examinations, when these examinations are done by a commercial laboratory under a fixed contract, was referred to the economics committee for report at the December, 1958, meeting.

The resolution from the Medical Society of the County of Queens, concerning the extended benefits rider in the payment of pathologic and radiologic examinations by patients insured by Blue Cross and/or Blue Shield, was referred to the economics committee for report and recommendation at the December, 1958, meeting.

The following, submitted by Queens County Medical Society, was also referred to the economics committee for report at the next meeting of the Coordinating Council:

That beginning September 1, 1958, voluntary and municipal hospitals will receive $5.00 for each visit to the outpatient department made by a welfare recipient. This program is on a matching fund basis and will cost New York State and New York City approximately $3,000,000 per year.

The matter of the Board of Hospitals establishing a pilot study in the Elmhurst General Hospital, for use of a limited number of semiprivate beds by physicians who are on the staff of that hospital for the treatment of their own patients, was disapproved in principle.

It was voted that before any matter affecting the practice of medicine in city hospitals be approved by either the Mayor or the Board of Hospitals, it should be referred to the Coordinating Council for their consultation and opinion.

At the request of Richmond County Medical Society, it was approved that a special subcommittee on legislation for New York City matters be appointed; one member to be nominated by the president of each of the five constituent county medical societies.

The following committee was appointed: Dr. Aaron Kottler, Kings, Chairman; Dr. Jerome Flynn, Bronx; Dr. Michael Armao, New York; Dr. Jerome L. Leon, Queens; Dr. Joseph Shanaphy, Richmond.

Dr. George J. Lawrence, chairman of the committee on polio vaccination, reported progress and made several suggestions. It was voted that the committee be continued to implement immediately the work of this drive for the Salk vaccine immunizations.

At the special meeting of the Coordinating Council held December 9, 1958, the following actions were taken:

Dr. McCarty reported for Dr. Lawrence for the committee on polio vaccination. The committee recommended that the Mayor be requested to proclaim the week of January 26, 1959, as "Polio Prevention Week." The anniversary of Franklin D. Roosevelt's birthday occurs during this week on Friday, January 30. The Mayor's proclamation should be released to the press, radio, and television. Every effort should be made to provide for a continuing "pitch" for polio inoculations during the proclaimed week. The committee recommended that the display of materials for the campaign against polio be placed in stores, offices, hospitals, health centers, etc., throughout the entire city. The Coordinating Council should prepare press releases before and during the week which would stress the importance of going to the doctor for polio inoculation. The indigent should be directed to report to the Department of Health, Board of Inoculations, if they cannot afford the reasonable fee which would be charged by the practicing physician. All physicians, regardless of specialty, should encourage every patient under forty years of age, to begin or complete the Salk inoculations. It should be stressed that it is the responsibility of the doctor to get his patients to accept the vaccination program.

There should be an editorial of this program in the January bulletin of each county society. Material for this editorial should be sent to the editors of each bulletin. Posters should be sent to each physician advising the physician's patients to be protected by inoculation. This material would be supplied by the National Foundation, which will pay for the posters and mailing expenses, including the postage.

The following letter was sent to the Hon. Robert F. Wagner, Mayor of the City of New York: "The Coordinating Council of the First District Branch of the Medical Society of the State of New York, consisting of representatives from the County Medical Societies of New York, Bronx, Kings, Queens, and Richmond, in conjunction with the New York City Department of Health, and with the assistance of the National Foundation, are inaugurating a drive so that each person who is not fully protected against poliomyelitis will receive Salk vaccine inoculations during the week beginning January 26, 1959. The National Foundation Mothers' Drive also takes place during this week.

"On January 28, mothers in all neighborhoods in the city, in conjunction with the National Foundation, will ring doorbells requesting all their neighbors, particularly those under forty, to become completely immunized against polio by receiving the necessary Salk inoculations. During this week the March of Dimes also occurs.

"The Coordinating Council is requesting you, as the Mayor of the City of New York, to proclaim the week beginning Monday, January 26, 1959, as 'Polio Prevention Week.' Sincerely yours, Charles F. McCarty, M.D., Secretary."

On January 19, 1959, the following proclamation was issued:

> "WHEREAS, for approximately fifty years the people of America have looked forward with dread to the polio season with its deaths and cripplings; and
>
> "WHEREAS, Salk vaccine in sufficient quantity has been proved to practically eliminate paralytic poliomyelitis; and
>
> "WHEREAS, there is a sufficient amount of Salk vaccine available at the present time to inoculate all persons; and
>
> "WHEREAS, thep hysicians of Greater New York, together with the Health Department, have agreed to administer Salk vaccine to all persons;
>
> "NOW, THEREFORE, I, Robert F. Wagner, Mayor of the City of New York, do hereby proclaim the week of January 26, 1959, as 'Polio Prevention Week,' during which time all persons are urged to visit either their physician or the Health Department in order to be inoculated with Salk Vaccine.

The following report from Dr. Roscoe Kandle, Deputy Commissioner of the Department of Health, was read: "The House of Delegates of the American Medical Association on December 4, 1958, unanimously recommended that the following steps be taken in the poliomyelitis inoculation program:

"(1) Each physician assume the responsibility for making certain whenever possible that all members of the families he serves receive protection against poliomyelitis by having the full three doses of polio vaccine;

"(2) State medical organizations arrange with state health departments for a joint effort to bring together county medical society representatives of county and city health departments for the purpose of discussing the need for joint study committees at the local level to survey the problems which may exist and to work jointly to solve them;

"(3) County medical societies meet with county and local health department representatives to create study committees to survey the problem of immunization as it may exist in the local area and develop and implement a satisfactory program to meet the local situation.

"I attended a big conference on polio vaccination in Washington December 5, 1958. The A.M.A. delegation distributed this action by the House of Delegates. The Academy of General Practice support this same action by the A.M.A.

"There were epidemics this year in Detroit, Newark, Bayonne, Jersey City, and mining counties of Virginia and West Virginia among unvaccinated people. Most of the patients came from poor families living in slums.

"The clear evidence, however, is that people who are not adequately vaccinated are now especially apt to get paralytic polio, and they are menaces to the entire population."

The entire program was approved. The committee was instructed to continue and a special committee consisting of Mr. Potter and Drs. Leon and McCarty, were appointed to draw up publicity for this campaign.

The request of Group Health Insurance, Inc., to the Medical Society of the County of Kings concerning information as to whether a physician who sends his work to a commercial laboratory under contract should be paid to the standard GHI fees for this work, was referred to the economics committee of the Coordinating Council for recommendation.

The Kings County Medical Society voted, at its October, 1958, comitia minora meeting, to recommend that indemnification for contract laboratory tests be provided in accordance with the average value of all tests performed for a period of time, probably about six months. The economics committee approved this recommendation of the Medical Society of the County of Kings.

The Coordinating Council added the amendment: "Physicians should receive no profit from work done under contract for their patients by commercial laboratories." This entire matter was approved.

The following resolution from the Queens County Medical Society was forwarded to the economics committee of the Coordinating Council for their opinion:

> "*Resolved*, that the Medical Society of the County of Queens approve the principle of an extended benefits rider under a combined Blue Shield-Blue Cross sponsorship; and be it further
>
> "*Resolved*, that the Medical Society of the County of Queens approve the provisions that the payment for services provided by doctors of medicine be covered in Blue Shield and *not* Blue Cross contracts and that the services performed by radiologists and pathologists are professional services performed by doctors of medicine and should be properly included in the Blue Shield contract; and be it further
>
> "*Resolved*, that since the proposals by Blue Shield regarding the extended benefits rider are inconclusive, we recommend that the rider be studied in consultation with the medical economics committee of the Coordinating Council; and be it further
>
> "*Resolved*, that when the study and consultation of the Coordinating Council's medical economics committee has been completed, that approval then be sought from the county medical societies."

The Coordinating Council voted that the medical economics committee be instructed to continue its study as to the possibility of making these changes in Blue Cross-Blue Shield contracts.

The following matter referred from the Queens County Medical Society to the Coordinating Council was also referred to the economics committee:

The following action by the medical economics committee was approved: "Through the medium of a newspaper release we are informed that beginning September 1, 1958, the voluntary and municipal hospitals will receive $5.00 for each visit to the outpatient department made by a welfare recipient. This program is on a matching fund basis and will cost New York State and New York City appproximately three million dollars each per year. After discussion, the committee unanimously *disapproved* of the program for the following reasons: (*a*) The payment to a hospital for a medical service is condoning the hospital practice of medicine; (*b*) The care of the indigent sick is the historic function of the voluntary and municipal hospitals. To pay a voluntary hospital for these services violates this fundamental and basic philosophy."

The Council did not take definite action on this matter, but asked the Coordinating Council to study the matter further and bring in a recommendation.

It was noted that the symposium on medical care by management-labor-medicine was held at the Hotel Commodore on Wednesday, November 12, and Wednesday, November 19, 1958. There were 59 physicians at the symposium and 118 representatives from management, labor, and some insurance companies.

Dr. Peter M. Murray, chairman of the Coordinating Council, gave the address of welcome and set the keynote for the meeting. There were formal addresses made by representatives from both management and labor, and some by representatives from the medical societies. There was a great deal of discussion concerning the plans for prepayment medical care, in addition to medical care for persons over sixty-five. It was the consensus of the members of this symposium that these discussions continue but with a smaller group, representing management-labor-medicine. It was voted that no minutes or transcripts of the material discussed at this symposium be published until acted upon by the Coordinating Council.

The following matter was referred from the comitia minora of the Medical Society of the County of New York:

"That the comitia minora petition the Coordinating Council to again make a concerted effort to interest the city administration in offering to city employes a free choice health insurance plan in addition to the Health Insurance Plan of Greater New York, with the understanding that the city would pay one half the cost of the premium for the free choice health insurance plan should the employe prefer that program to the one offered by HIP."

It was approved that a special committee be appointed to study and discuss this matter with Blue Cross and Blue Shield.

At the meeting of the Coordinating Council held on January 13, 1959, the following matters were discussed:

At the request of Dr. George J. Lawrence, chairman, Dr. McCarty reported on "Polio Prevention Week." He announced that at 11 A.M. on Monday, January 19, 1959, Mayor Wagner would proclaim the week beginning Monday, January 26, as "Polio Prevention Week." During this time every physician in New York City would be requested to make arrangements to have all patients coming to his office during that week either to begin or complete their inoculations with Salk vaccine.

Dr. McCarty further reported that the notices prepared for the doctors and pharmacists, together with placards for the doctors' offices and posters for the pharmacists, were mailed through the New York Chapter of The National Foundation to each doctor and each pharmacist in Greater New York. This is being done with the cooperation of each of the five county medical societies and the Pharmaceutical Council of Greater New York.

Dr. George Himler, chairman of the economics committee, reported on matters referred to his committee. He stated he had written to Blue Cross and Blue Shield concerning the principle of an extended benefits rider under Blue Cross-Blue Shield sponsorship. This proposal was made by the Queens County Medical Society. Dr. Himler stated he had been unable to have a meeting between his committee and representatives of Blue Cross-Blue Shield up to the present time.

It was voted that GHI be notified that the Coordinating Council recommends that physicians treating patients under the GHI contract be paid only the average cost of tests performed by commercial laboratories and that no profit should be received by physicians from work done under contract with commercial laboratories for their patients.

The transcript of the forum on health insurance held by labor-management-medicine, under the auspices of the Coordinating Council and Cornell University, was given to the members of the Council who were present at the meeting. It was voted that the committee should study the transcript of the meeting as soon as possible in order that they may prepare a report for the Council. The committee consists of: Dr. George J. Lawrence, Jr., chairman; Drs. Carl Ackerman, Norton S. Brown, Abraham Leikensohn, Jerome L. Leon, Charles F. McCarty, Louis J. Morse, Peter M. Murray, Edward H. Robitzek, Samuel Wagreich, and Mr. Robert Potter.

Dr. Himler discussed the hearing to be held before the New York State Insurance Department concerning persons who have more than one type of medical care insurance. At the present time the ruling is that a participating physician in any voluntary health insurance plan can only be paid the amount of money allowed by that insurance plan for a person of the income group effected. Several people are insured in two or more insurance plans and may collect many times the amount allowed a participating physician in any one of the plans.

Dr. Carl Ackerman, who will attend the hearing as a representative of the Medical Society of the State of New York, was asked to state before this hearing that the Coordinating Council believes that in a case where a person carries more than one type of medical care insurance, the physician should be paid his regular fee if the amounts allowed by the various insurance companies equal or exceed that fee.

The following representatives were appointed to meet with the Greater New York Pharmaceutical Council: Dr. Joseph Golomb, Bronx; Dr. Jerome Leon, Queens; Dr. Samuel Frant, New York; Dr. Warren Lapp, Kings; Dr. Wolfgang Caspar, Richmond.

It was voted to send a letter to Dr. Leona Baumgartner, Commissioner of Heath of the City of New York, congratulating her on the 50th Anniversary of Child Welfare in New York City.

Respectfully submitted,
FREDERICK A. WURZBACH, JR., M.D.,
President

Fifth District Branch

Supplementary Report

To the House of Delegates, Gentlemen:

A special meeting of the Fifth District Branch was held at the Pontiac Hotel, Oswego, February 26, 1959.

Dr. Olin J. Mowry, president, called the meeting to order at 8 P.M. The business for which the meeting was called was election of a delegate to the Medical Society of the State of New York. Dr. Arthur F. Gaffney was duly nominated and seconded. The nominations were voted closed and Dr. Gaffney was unanimously elected.

There followed an excellent talk on "Surgical Contributions to Cerebral Vascular Disease," by Dr. Robert King, neurosurgeon from Syracuse. The meeting adjourned after a lively question and answer period.

Respectfully submitted,
OLIN J. MOWRY, M.D., *President*

Do You Have Your Hotel Reservation for the Annual Convention?

If you do not now have a confirmed hotel reservation in Buffalo for the Annual Convention of the Medical Society of the State of New York, May 9 to May 15, 1959, at the Hotel Statler Hilton, please fill out and mail the form at the bottom of this page, and send it directly to the Hotel Statler Hilton.

Should your request be received after the five hundred rooms set aside for the Society at the Hotel Statler Hilton have been assigned, your reservation will be turned over to one of the hotels in the neighborhood. Confirmation will come to you direct from the hotel making the accommodation.

If you do not use the form below, please be sure to identify yourself as a physician when writing regarding reservations. This will insure proper attention to your request.

W. P. Anderton, M.D., *Secretary*

All Reservations Must Be Received by April 27

153rd Annual Convention of the Medical Society of the State of New York,
May 9 to May 15, 1959

Front Office Manager
Hotel Statler Hilton, Buffalo 5, New York
Please reserve accommodations as checked (√) below:

Name (*Please Print*)..

Address..

City.................................... Zone........ State...............

(Unless requested otherwise, we will hold your reservation only until 6 P.M. of the day of your arrival.)

Date arriving.................... Hour.............. A.M......... P.M........

Room and Bath for one— per day	$ 6.00☐	$ 7.50☐	$ 9.00☐	$10.50☐
	7.00☐	8.00☐	9.50☐	11.00☐
		8.50☐	10.00☐	12.50☐
Double-Bed Room with Bath for two— per day	9.00☐	10.50☐	12.00☐	13.50☐
	9.50☐	11.00☐	12.50☐	14.00☐
	10.00☐	11.50☐	13.00☐	15.50☐
Twin-Bed Room with Bath for two— per day	10.00☐	13.00☐	15.00☐	17.00☐
	11.00☐	14.00☐	15.50☐	18.00☐
	12.00☐	14.50☐	16.00☐	20.00☐
Suite—Living Room, Bed Room and Bath				
For One—Per Day			24.50☐	31.00☐
For Two—Double Bed			27.50☐	34.00☐
—Twin Beds			38.00☐	47.00☐

More Than Two Persons in One Room: For each additional person in Double- or Twin-Bed Room, the extra charge is $4.00 per day.

If a room at the rate requested is unavailable, reservation will be made at the next available rate.

NECROLOGY

Cornelia Chase Brant, M.D., of Bronxville, died on March 9 at the age of ninety-five. Dr. Brant graduated in 1903 from New York Medical College and Hospital for Women.

Annibale Carl Casagrande, M.D., of New York City, died on November 11, 1958, at the age of fifty-eight. Dr. Casagrande received his medical degree in 1923 from the University of Naples. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Cooper, M.D., of New York City, died on February 16 at the age of fifty. Dr. Cooper graduated in 1933 from Long Island College of Medicine. He was an associate in orthopedic surgery at New York Hospital, an attending in orthopedic surgery at the Hospital for Special Surgery, and a consultant in orthopedic surgery at Long Island Jewish Hospital. Dr. Cooper was a Diplomate of the American Board of Orthopedic Surgery, a Fellow of the American College of Surgeons, and a member of the American Academy of Orthopaedic Surgeons, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert C. Fisher, M.D., of New York City, died in James Ewing Hospital at the age of sixty-one. Dr. Fisher graduated from Columbia University College of Physicians and Surgeons in 1922 and interned at Bellevue Hospital. He was a senior attending physician at St. Vincent's Hospital, a former assistant medical examiner of the City of New York, a pos the had held for twenty-five years, and an assistant physician at Union Carbide Corporation. Dr. Fisher was a member of the Industrial Medical Association, the New York Pathological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William F. Gallivan, M.D., of Buffalo, died on February 20 in Emergency Hospital at the age of seventy-three. Dr. Gallivan graduated in 1909 from the University of Buffalo School of Medicine and interned at Bellevue Hospital. He was an honorary surgeon at Emergency Hospital and an associate consulting surgeon in gynecology at Edward J. Meyer Memorial Hospital. A former secretary of the Western New York Surgical Association, Dr. Gallivan was a Fellow of the American College of Surgeons and a member of the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Max Bernhard Gerson, M.D., of New York City, died at his home on March 8 at the age of seventy-seven. Dr. Gerson received his medical degrees in 1906 from the University of Freiburg and in 1938 from New York University Medical College.

Samuel Tobias Markoff, M.D., of Brooklyn, died at his home on March 6 at the age of fifty-six. Dr. Markoff graduated in 1926 from Yale University School of Medicine and interned at Jewish Hospital of Brooklyn. He was an associate in pediatrics at Brooklyn Women's Hospital. Dr. Markoff was a member of the American Academy of General Practice, the East New York Medical Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edwin Eugene McCarthy, M.D., of Sarasota, Florida, formerly of Auburn, died on February 16 at the age of forty-eight. Dr. McCarthy graduated in 1937 from Syracuse University College of Medicine. He was an attending in surgery at Mercy Hospital, Auburn. Dr. McCarthy was a member of the Cayuga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Erich Rosenhain, M.D., of Jackson Heights, died on March 2 at the age of seventy-one. Dr. Rosenhain received his medical degree in 1913 from the University of Berlin. He was a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frank David Rossomondo, M.D., of New York City, died on March 7 at the age of fifty-six. Dr. Rossomondo graduated in 1930 from Cornell

University Medical College and interned at Bellevue Hospital. He was an associate physician in chest diseases at Bellevue, an attending physician at French Hospital, medical director since 1932 of McGraw-Hill Publications, and director of the Hudson Guild Neighborhood House in New York as well as consulting physician to the New York Visiting Service. Dr. Rossomondo was a member of the American Trudeau Society, the Industrial Medical Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Meyer M. Rotkin, M.D., of the Bronx and Flushing, died on March 7 at the age of seventy-four. Dr. Rotkin graduated in 1916 from New York Homeopathic Medical College and Flower Hospital. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Samuel Schwimmer, M.D., of New York City, died in Beth Israel Hospital on March 3 at the age of fifty-three. Dr. Schwimmer graduated in 1930 from Long Island College Hospital Medical School. He was a member of the East Side Clinical Society, the New York County Medical Society, and the Medical Society of the State of New York.

Jacob Wachtel, M.D., of New York City, died on March 11 at the age of sixty-one. Dr. Wachtel graduated in 1921 from Fordham University School of Medicine. He was a consultant in dermatology and syphilology at Goldwater Memorial Hospital, an attending in dermatology and syphilology at Jewish Memorial Hospital, and an assistant attending in dermatology at University Hospital. Dr. Wachtel was a Diplomate of the American Board of Dermatology, Inc., and a member of the Society for Investigative Dermatology, the American Academy of Dermatology and Syphilology, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Early Detection of TB Important

For every known case of tuberculosis there is one unknown tuberculous person. The total number of known and unknown cases, both active and inactive, in the United States is now estimated at 800,000.

There is a need for more intensive drives to detect the disease. For the past five years the per cent of cases discovered in different stages of tuberculosis has remained approximately constant, with only about 22 per cent of newly reported active and probably active cases in the early stage. Yet to eradicate tuberculosis the disease must be detected and treated early while lesions are small and readily amenable to therapy.

In 1956, about 20 per cent of persons who died of TB had not been previously reported as having the disease.—*Patterns of Disease, Parke, Davis & Company*

MONTH IN WASHINGTON

If every member of Congress had his way, there would be anywhere from 10 to 15 institutes at the National Institutes of Health in Bethesda. The total now stands at seven, and there is a good possibility that an eighth will be in operation this year or next.

Fifty-eight senators of both parties joined in sponsoring a resolution that would do three things: (1) establish a National Institute for International Medical Research, (2) create a National Advisory Council for International Medical Research, and (3) authorize $50 million annually for international research programs. Senator Lister Hill (D., Ala.) a leader in health legislation and health welfare appropriations, has taken the lead in pushing this bill.

Four days of hearings brought almost unanimous support of the resolution with only two witnesses complaining it did not go far enough. The administration asked for three postponements to testify. This gave rise to speculation that it either may object on budgetary grounds or dissatisfaction over location of the institute.

Dr. Gunnar Gundersen, American Medical Association president, pledged full support and assistance of the A.M.A. for the project. "...we believe that the promotion of international health through research is one of the best means of promoting international cooperation and understanding." He noted, "a growing recognition that medicine, with its resources and influence fully mobilized, can perhaps do more for world peace than the billions of dollars being poured into armaments."

The A.M.A. president made several suggestions for the committee's consideration including (1) that the World Medical Association be included among the international groups to be cooperated with; (2) that due care be taken not to "rob" other countries of experts in medical care and scientific research through support grants not geared to salary differentials, (3) that the program should be primarily one of research itself rather than construction of research facilities, and (4) that the greatest care be exercised in setting up the research grants and research programs to avoid overlapping or duplicating.

Notes

The Forand bill for hospitalization and surgical services of retired social security recipients has been introduced in only slightly revised form. Its number is H. R. 4700. One change of interest is permitting surgical services to be performed by other than board-certified surgeons. The author says the program will be financed by increasing social security taxes (above increases already scheduled) by one fourth of 1 per cent for both employer and employe and three eighths of 1 per cent for the self-employed, both starting in 1960.

More significant than even the introduction of the bill was the statement Mr. Forand filed in the *Congressional Record* the same day. It was moderate in tone and seemed to be asking the support of all groups. He noted, for instance, that some of his strongest backers have questioned the inclusion at this time of surgical service. This, he commented, should be weighed by the committee when it takes up the bill.

On hearings, little is known. Neither the House Leadership nor Chairman Wilbur Mills of Ways and Means Committee have given any indication when hearings would be held.

While some committees of Congress have been moving rapidly ahead on health legislation, others like the House Interstate Committee only recently got around to organizing its health subcommittee. It was given the new name health and safety subcommittee, when Rep. Kenneth Roberts (D., Ala.), who headed a special highway safety committee, was tapped for the new post. Its area of interest includes public and quarantine, food and drugs, hospital construction, highway and air traffic safety, and air pollution. Mr. Roberts is a lawyer by profession and is now serving his fifth term.

The first woman physician to be honored in Statuary Hall is the late Dr. Florence Sabin of Colorado. She is the first person selected from Colorado. Each state is permitted two statues of distinguished persons. Dr. Sabin was a noted medical researcher and in her later years a public health leader in Colorado. At the unveiling ceremonies in the Capitol, Dr. George Fister of the A.M.A. board of trustees represented the association.

Three Republican members of the Senate Labor subcommittee on health would have a two-year study of health needs of all citizens, young and old. The 15-man commission would recommend to the President and Congress necessary legislation to supplement or stimulate broader health protection coverage by existing private and nonprofit plans. Senators Javits of New York, Case of New Jersey, and Cooper of Kentucky are the cosponsors.

Prepared by the Washington Office of the American Medical Association, Washington, D.C.

MEDICAL NEWS

Glaucoma Identification Card—A glaucoma identification card will be distributed by the National Medical Foundation for Eye Care. The card, similar in purpose to the diabetes identification card, will alert examining physicians that the patient has glaucoma and is using drugs.

The names of the patient and of the ophthalmologist who prescribed the drugs appear on the card, together with the prescription. This information alerts the examining physician to the patient's condition and the treatment he is undergoing and forestalls the use of any contraindicated medication by the examining physician

St. Barnabas Hospital Honors Dr. Cooper—Dr. Irving S. Cooper, director of the Department of Neurosurgery at St. Barnabas Hospital for Chronic Diseases, Bronx, was honored by the hospital's board of managers at their ninety-third annual meeting.

Dr. Cooper, who is also professor of research surgery and director of the Division of Neuromuscular Diseases at New York University Postgraduate Medical School, was awarded a citation by the hospital in recognition of "distinguished leadership and outstanding contributions to medical science and to the professional services of St. Barnabas Hospital in the field of neurosurgical research and the treatment and alleviation of extrapyramidal disorders."

Dr. Cooper is the creator of a new type of brain surgery, the chemopallidectomy, in which a chemical takes the place of the scalpel.

New Hospital Center in City for Treatment of Heart Disease—A program for the treatment and study of heart diseases is planned for the New York Medical College-Metropolitan Hospital Center.

The hospital center has developed in the last three years through the combination of the New York Medical College and Flower and Fifth Avenue Hospitals, at Fifth Avenue and 105th Street, with two new city hospitals, Metropolitan Hospital at 1901 First Avenue and 96th Street and the Bird S. Coler Hospital on Welfare Island.

The purpose of the heart program, according to its director, Dr. Leo M. Taran, is to bring together a team of specialists ranging from surgeons, psychiatrists, and heart specialists to chemists and physicists—to diagnose and treat afflictions of the heart and lungs, to do research, and to teach.

Trudeau School of Tuberculosis—The Trudeau School of Tuberculosis and Other Pulmonary Diseases will hold its forty-fourth session at Saranac Lake, June 8 through 26. This annual postgraduate course is conducted under the auspices of the Trudeau Foundation and supported by the Hyde Foundation. Attendance at the Trudeau School provides a thorough review for specialization in pulmonary disease or for work in public health involving tuberculosis.

Due to limited enrollment, early application is advised. Inquiries should be addressed to the secretary, Trudeau School of Tuberculosis and Other Pulmonary Diseases, Box 500, Saranac Lake, New York.

American Board of Obstetrics and Gynecology—The next scheduled examinations of the American Board of Obstetrics and Gynecology, part II, oral and clinical for all candidates will be conducted at the Edgewater Beach Hotel, Chicago, May 8 through 19. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates who participated in the part I examination will be notified of their eligibility for the part II examinations as soon as possible.

The deadline for the receipt of new and reopened applications for the 1960 examinations is August 1, 1959.

Markle Foundation Grants—The following physicians have been appointed Markle Scholars in Medical Science by the John and Mary R. Markle Foundation, New York City. Each appointment carries with it a $30,000 grant, appropriated to the medical school where the scholar will teach and do research, to be used toward his support and to aid his research. New appointees are:

Dr. Charles L. Christian, in the field of internal medicine, Columbia University College of Physicians and Surgeons, New York City, and Dr. Philip N. Sawyer, in the field of surgery, State University of New York Downstate Medical Center College of Medicine, Brooklyn.

Doctor's Symphony Orchestra—The Brooklyn Doctor's Symphony Orchestra presented a concert on February 20 for the benefit of the student nurses recruitment program of The Nurses Association of the Counties of Long Island.

Dr. Maurice P. Yuppa, president of the orchestra, invites physicians, dentists, nurses, and members of allied professions to become members of the organization. Rehearsals are held at 8:30 P.M. at the Clara Barton Vocational High School, 901 Classon Avenue, Brooklyn.

For further details contact: Dr. Benjamin A. Rosenberg, 909 President Street, Brooklyn 15, New York, telephone NEvins 8–2370.

Physicians Appointed to National Foundation—In order to meet the needs of its expanded program, which now includes arthritis and birth defects in addition to polio, the National Foundation has formed two new advisory committees, the Committee on Clinical Investigation and the Committee on Medical Care.

Physicians from the New York area appointed to the Committee on Clinical Investigation are: Dr. John E. Deitrick, dean, Cornell Medical Center; Dr. Ludwig W. Eichna, professor of medicine, New York University College of Medicine; Dr. H. Houston Merritt, professor and director of the Service of Neurology, Columbia University College of Physicians and Surgeons, Neurological Institute-Presbyterian Hospital; Dr. Robert F. Pitts, professor of physiology, Cornell University Medical College; Dr. J. Lawrence Pool, director of service, Neurological Institute, Columbia University; and Dr. Charles A. Ragan, Jr., associate attending physician and professor of clinical medicine, Columbia University College of Physicians and Surgeons.

Those appointed to the Committee on Medical Care are: Dr. John M. Cotton, attending psychiatrist and director of the Department of Psychiatry, St. Luke's Hospital, and associate clinical professor of psychiatry, Columbia University College of Physicians and Surgeons; Dr. John E. Deitrick; Dr. H. Houston Merritt; Dr. J. Lawrence Pool; Dr. John Romano, professor and chairman of the Department of Psychiatry, University of Rochester School of Medicine and Dentistry; and Dr. Howard A. Rusk, director, Institute of Physical Medicine and Rehabilitation, and professor and chairman, Department of Physical Medicine and Rehabilitation, New York University College of Medicine.

New York University Receives $300,000—New York University has received a $300,000 grant from the Fannie E. Rippel Foundation of Newark, New Jersey, toward the cost of the new University Hospital in the New York University-Bellevue Medical Center.

The contribution is designated for the area in the hospital to be devoted to clinical research laboratories for the study of cardiovascular diseases, malignancies, and degenerative processes which primarily affect the aging.

International College of Surgeons Plans Tour of Europe—The International College of Surgeons will conduct a midsummer postgraduate tour. Countries to be visited are The Netherlands, Denmark, Norway, Sweden, Finland, Russia, Austria, Germany, and France.

For further information write to: Dr. Ross T. McIntire, executive director, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois.

Bowen-Brooks Scholarship—The committee on medical education of The New York Academy of Medicine will award the Bowen-Brooks Scholarship for Advanced Study Abroad, in the amount of $4,500 for the academic year 1960–1961.

Candidates must be male interns or residents in voluntary, municipal, or Veterans Administration hospitals in New York City.

Applications for the scholarship must be submitted by September 1, 1959. Further information and application forms can be secured by writing to: Robert L. Craig, M.D., executive secretary, Committee on Medical Education, New York Academy of Medicine, 2 East 103rd Street, New York 29, New York.

Books About Doctors—An exhibit entitled "Books About Doctors—Literary Contributions by and About Physicians," is currently on view at The New York Academy of Medicine Library, 2 East 103rd Street.

The exhibit contains 157 items including 24 pictures. It is open to the pubilc Monday through Saturday from 9:00 A.M. to 5:30 P.M., through June 30. There is no charge for admission.

Beth Abraham Home Receives Grant—A $50,000 grant setting up a pilot program to help blind persons adjust and lead as full lives as possible in a nursing home has been received by Beth Abraham Home in the Bronx.

Donated by the Solomon and Blanche DeJonge Foundation of New York City, the funds will enable Beth Abraham Home to care for a minimum of 10 to 15 ambulatory blind patients. The new project will permit the blind to participate in a wide range of recreational, educational, and social activities as well as provide for their medical and nursing needs.

Personalities

Awarded

Dr. Leonard J. Goldwater, an award by the President's Committee on Employment of the Physically Handicapped and the New York State Governor's Committee on "Employ the Physically Handicapped" for his contributions in eliminating prejudice and misinformation regarding the rehabilitation of heart patients.

Retired

Dr. Walter C. Hausheer, associate medical director in the Newark, New Jersey, office of the Prudential Insurance Company. . .Dr. Edward G. Whipple, consultant in dust disease to the Workmen's Compensation Board.

Elected

Dr. Seymour Wimpfheimer, attending gynecologist at Montefiore Hospital, to serve on the board of trustees at Mills College of Education.

Appointed

Dr. Nadene Coyne, formerly of Cleveland, as coordinator of training for physicians in the department of physical medicine and rehabilitation, New York University-Bellevue Medical Center. . . Dr. Benjamin G. Dinin, medical superintendent of the New York City Department of Hospitals, as director of Grasslands Hospital. . .Dr. Arthur Gerard DeVoe, as professor of ophthalmology and chairman of the Department of Ophthalmology, Columbia University College of Physicians and Surgeons. . .Dr. Lawrence Wisham, as physiatrist to the Hospital and director of the Department of Physiatry, Mount Sinai Hospital.

Speakers

Dr. Paul A. Bunn, on the topic "Current Status of Chemotherapy in Tuberculosis" at the spring meeting of the Western New York Chest Conference, April 12. . .Dr. Emerson Day, chief attending surgeon, Memorial Center for Cancer and Allied Diseases, March 8, at a meeting of the Greater New York Association of Industrial Nurses. . .Dr. Samuel W. Dooley, executive director of Cancer Care, Inc., at a meeting of the organization's chapter chairmen, March 15. . .Dr. David Grob, professor of medicine, Downstate Medical Center, the annual Murray B. Gordon Memorial Lecture entitled "Disease of Muscle," March 9. . .Dr. C. Walton Lillehei, University of Minnesota Medical School, the eighth annual Adrian A. Ehler Memorial Lecture, March 11, at Albany Medical College. . . Dr. David Lyall, professor of clinical surgery, New York University Medical School, on "Surgical Aspects of Cancer Detection" at the twelfth annual Connecticut Cancer Conference, March 18. . .Dr. Walsh McDermott, chairman of the Department of Public Health and Preventive Medicine, Cornell University Medical College, before the New York Tuberculosis and Health Association, April 8. . .Dr. Herbert E. Schmitz, professor and chairman of the Department of Obstetrics and Gynecology, Stritch School of Medicine, Loyola University, Chicago, the annual George Birney Broad Lecture, Upstate Medical Center, March 10. . .Dr. Jay Tepperman, professor of experimental medicine, February 15, at the Upstate Medical Center.

Three faces wears the doctor: when first sought
An Angel's; and a god's the cure half-wrought;
But when, the cure complete, he seeks his fee,
The Devil looks less terrible than he.—ANON

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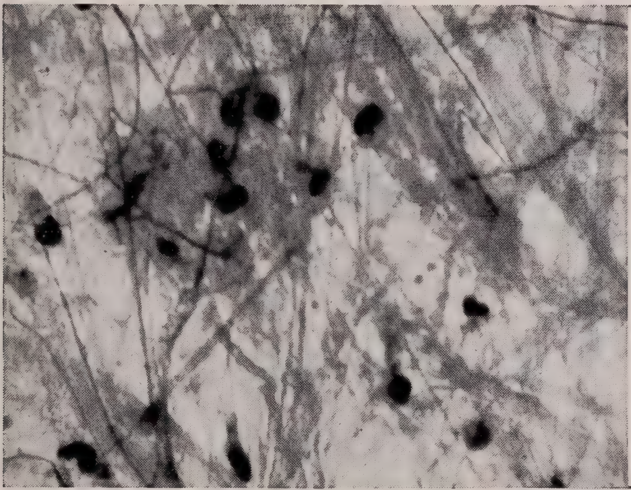

Indications: Mild cases of rheumatoid arthritis, tenosynovitis, synovitis, bursitis, mild spondylitis, myositis, fibrositis, neuritis and certain muscular strains.

Dosage: Average initial dosage: 2 capsules 3 or 4 times daily. Maintenance dosage to be adjusted according to response.

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MEDICAL MEETINGS

American College of Physicians

The American College of Physicians will hold its fortieth annual session April 20 through 24 at the Conrad Hilton Hotel in Chicago.

The meeting will include more than 100 papers, 23 panels, clinics at 13 hospitals, 6 clinical-basic science case conferences, 12 color television clinics, 31 clinical investigation reports, 18 scientific exhibits, and a technical exhibit.

For further information contact: Mr. E. R. Loveland, executive director, The American College of Physicians, 4200 Pine Street, Philadelphia 4, Pennsylvania.

Spring Meeting of Academy of Psychoanalysis

The Academy of Psychoanalysis will hold its spring meeting April 24 through 26 at the Bellevue-Stratford Hotel, Philadelphia. The theme of the meeting will be "Psychoanalysis Today—Critical Problems in the Therapeutic Process."

The following physicians from the New York area will participate in the scientific sessions: Dr. Meyer Maskin, Fellow, William Alanson White Psychoanalytic Institute; Dr. Gregory Zilboorg, clinical professor of psychiatry, Downstate Medical Center; Dr. Sandor Rado, president and professor of psychiatry, New York School of Psychiatry; Dr. Flanders Dunbar, psychoanalyst and editor; Dr. Robert Kahn and Dr. Max Pollack, research associates, Department of Experimental Psychiatry, Hillside Hospital; Dr. Florence Powdermaker, director of research, William Alanson White Institute; Dr. Rose Spiegel, Fellow, William Alanson White Institute; Dr. Lawrence Kolb, professor of psychiatry, College of Physicians and Surgeons, Columbia University; Dr. Frances Arkin, associate clinical professor, Department of Psychiatry, New York Medical College; Dr. Cornelia B. Wilbur, associate psychiatrist, New York Medical College; Dr. Joseph H. Merin, assistant clinical professor of psychiatry, New York University College of Medicine; and Dr. Alexander Gralnick, director, High Point Hospital.

Rehabilitation Teaching Day

"Peripheral Nerve Injuries and Neuropathies" will be the topic of a panel discussion at the afternoon session of a medical rehabilitation teaching day to be held April 29 at 2:00 P.M. at Rehabilitation Services, Inc., 204 Court Street, Binghamton.

The evening session of the teaching day will begin with a smorgasbord at 6:30 P.M. Dr. Harry Harlow, a member of the staff of the University of Wisconsin, will deliver the evening paper entitled, "Learning and Relearning after Extensive Brain Damage."

Among the other speakers will be Dr. Isadore M. Tarlov, professor and director, Department of Neurology and Neurosurgery, New York Medical College, Flower and Fifth Avenue Hospitals, Bird S. Coler Hospital, and Metropolitan Hospital, New York City, who will speak on "Surgical Approaches and Management of Peripheral Nerve Injuries"; and Dr. Bernard H. Smith, professor and chairman of the Department of Neurology, University of Buffalo Medical School, whose topic will be "Pathogensis, Diagnosis, and Management of Peripheral Neuropathies (Metabolic, Nutritional, Toxic, and Infectious)."

Moderator of the panel discussion will be Dr. Paul M. DeLuca. Dr. Leslie Balu will demonstrate electrodiagnosis with the use of the electromyograph.

Stamford-Darien-New Canaan Heart Association

The fifth annual medical symposium of the Stamford-Darien-New Canaan Heart Association will be held on Thursday, April 30, in the auditorium of St. Joseph's Hospital, Strawberry Hill Avenue, Stamford, Connecticut.

Physicians from the New York area who will participate are: Dr. Louis Leiter, chief, Medical Division, Montefiore Hospital, and clinical professor of medicine, College of Physicians and Surgeons, Columbia University; Dr. Charles K. Friedberg, cardiologist and attending physician, Mount Sinai Hospital, and associate clinical professor of medicine, Columbia University; Dr. George A. Perera, professor of medicine, College of Physicians and Surgeons, Columbia University; and Dr. George H. Humphries, II, Valentine Mott Professor of Surgery, College of Physicians and Surgeons, Columbia University, and director of surgical service, Presbyterian Hospital, New York City.

Dental Symposium on Cancer of the Mouth

A symposium on cancer of the mouth, sponsored jointly by the Second District Dental Society of the State of New York and the dental service of Veterans

[Continued on page 1678]

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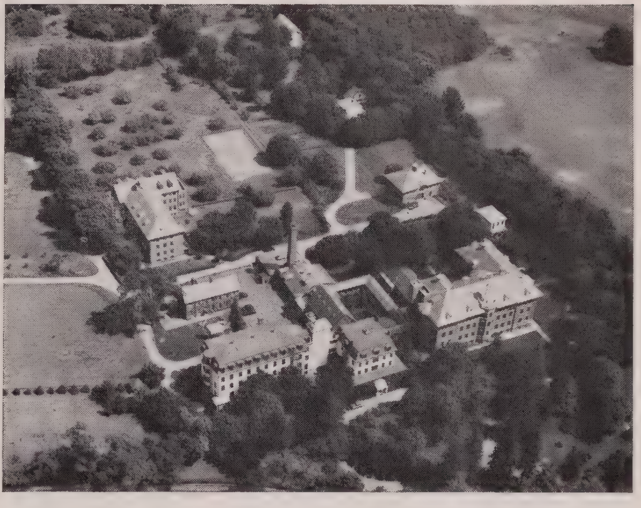

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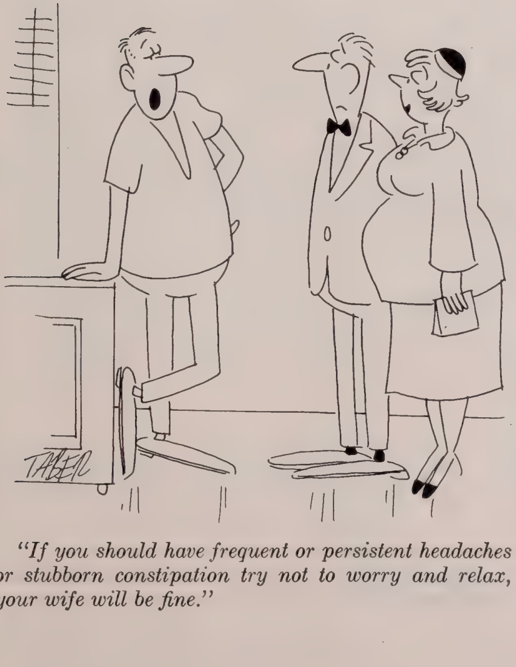

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[Continued from page 1676]

Administration Hospital, Brooklyn, will be held at the hospital, 800 Poly Place, Friday, May 1.

The session will be the eighth of an annual series devoted to a specific medico-dental problem. Dr. Andrew F. Catania, president of the society, invites all interested dentists and physicians to attend.

Conference on Retardation

Scientists from twenty major research centers throughout the United States will participate in a five-session conference dealing with research in mental retardation, to be held in Philadelphia, May 1 through 3, at the Bellevue-Stratford Hotel.

The conference is sponsored by The Woods Schools, Langhorne, Pennsylvania, and the Technical Planning Project of the American Association on Mental Deficiency. Cooperating are a number of governmental agencies—the National Institute of Mental Health, the Office of Vocational Rehabilitation, the Children's Bureau, the Office of Education, and the National Institute of Neurological Diseases and Blindness—as well as the American Psychiatric Association and the Children's Hospital, Philadelphia.

Annual Health Conference

Dr. Herman E. Hilleboe, State Health Commissioner, has announced that the fifty-fifth annual health conference will be held May 25 through 28 at the Olympic Arena, Lake Placid.

Among the organizations participating in this year's conference are the Conference of County, City and District Health Officers, County and City Health Department Public Health Nurse Administrators, Empire State Health Council, Harvard School of Public Health Alumni, New York State Association of School Physicians, New York State Health Officers Association, New York State Public Health Association, and the New York State School-Nurse Teachers Association.

First International Medical Conference on Mental Retardation

The first international medical conference on mental retardation will be held at the Eastland Hotel, Portland, Maine, July 27, through 31.

Among the speakers at the conference will be two New York City physicians, Dr. L. Stanley James, whose topic will be "Asphyxia of the Newborn"; and Dr. Lauretta Bender, who will discuss "Diagnostic and Therapeutic Aspects of Childhood Schizophrenia."

Second World Conference on Medical Education

The Second World Conference on Medical Education will be held August 29 through September 4, at the Palmer House, Chicago.

The conference will be sponsored by the World Medical Association, the World Health Organization, the Council for International Organizations of Medical Sciences, and the International Association of Universities.

Information may be obtained by writing to: Mrs. Clara Lewinter, World Medical Association, 10 Columbus Circle, New York 19, New York.

Third International Congress of Physical Medicine

The third international congress of physical medicine will be held in the Mayflower Hotel, Washington, D.C., August 21 through 26, 1960.

The objective of the congress is to further the development of professional and technical skills through the exchange of information concerning the advances made in the field of physical medicine and rehabilitation.

Further information may be had by writing to: Walter J. Zeiter, M.D., secretary-general, or Miss Dorothea C. Augustin, executive secretary, Third International Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

The author who speaks about his own books is almost as bad as a mother who talks about her own children.—DISRAELI

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1. Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958.

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BUSINESS WITH PLEASURE

When you come to the ANNUAL CONVENTION of the Medical Society of the State of New York this May plan to take in many of the world famous attractions that are to be found in and around Buffalo.

Obviously you must see Niagara Falls whether for the first time or for the tenth.

But there is more . . . much more.

Did you know that one of the world's finest chain of parks and gardens extends from Fort Erie on the Canadian side all the way to Lake Ontario? This can match anything Europe has to offer.

And, did you know that just across the Niagara Bridge in Ontario's Princess Elizabeth Building you can buy the finest imported woolens, china, perfumes, etc. at the same low prices you would pay in London or the Bahamas?

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...Cruise in a Maid of the Mist

...Spanish Aero Car

...Lilac, tulip and cherry blossom festivals

...University of Buffalo Medical School

...Visit to Old Fort Niagara

...Albright Art Gallery

...Topnotch restaurants in Buffalo and Canada

...Golf, tennis, boating

BOOKS RECEIVED

(*The following books were received during the month of February, 1959*)

The Ecology of Human Disease. By Jacques M. May, M.D. Octavo of 327 pages, illustrated. New York, MD Publications, 1958. Cloth, $7.50.

Communications Des Invités Étrangers. Bucarest, 5–11, Mai, 1957. Congrés National Des Sciences Médicales. Octavo of 908 pages, illustrated. Éditions de l'Académie de la République Populaire Roumaine.

Physical Diagnosis. The History and Examination of the Patient. By John A. Prior, M.D., and Jack S. Silberstein, M.D. Octavo of 388 pages, illustrated. St. Louis, The C. V. Mosby Co., 1959. Cloth, $7.50.

Childbearing Before and After 35. By Adrien Bleyer, M.D. Duodecimo of 119 pages, illustrated. New York, Vantage Press, 1958. Cloth, $2.95.

Sexual Pleasure in Marriage. By Jerome and Julia Rainer. Duodecimo of 251 pages. New York, J. Messner, 1959. Cloth, $4.95.

Maternity. A Guide to Prospective Motherhood. By F. W. Goodrich, Jr., M.D. Duodecimo of 130 pages, illustrated. Englewood Cliffs, N.J., Prentice-Hall, Inc. 1959. Cloth, $1.75.

Psychopharmacology Frontiers. Proceedings of the Psychopharmacology Symposium of the Second International Congress of Psychiatry. By Nathan S. Kline, M.D. Octavo of 533 pages, illustrated. Boston, Little, Brown & Co., 1959. Cloth, $10.

Current Therapy—1959. By Howard F. Conn, M.D. Octavo of 781 pages. Philadelphia, W. B. Saunders Co., 1959. Cloth, $12.

The Anatomy of the Nervous System. By Stephen W. Ranson, M.D. Octavo of 622 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $9.50.

Heredity Counseling. By Helen G. Hammons. Duodecimo of 112 pages. New York, Paul B. Hoeber, Inc., 1959. Cloth, $4.00.

Reminiscences and Adventures in Circulation

[Continued on page 1682]

TRANSPORTATION TO THE ANNUAL CONVENTION

By Air.....American Airlines
Capital Airlines
Mohawk Airlines (local)

By Rail....New York Central

If you Drive by Thruway or other quick routes to the Annual Convention in Buffalo this May, the following garages are comfortably close to the Statler Hilton Hotel:

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87 W. Mohawk Street

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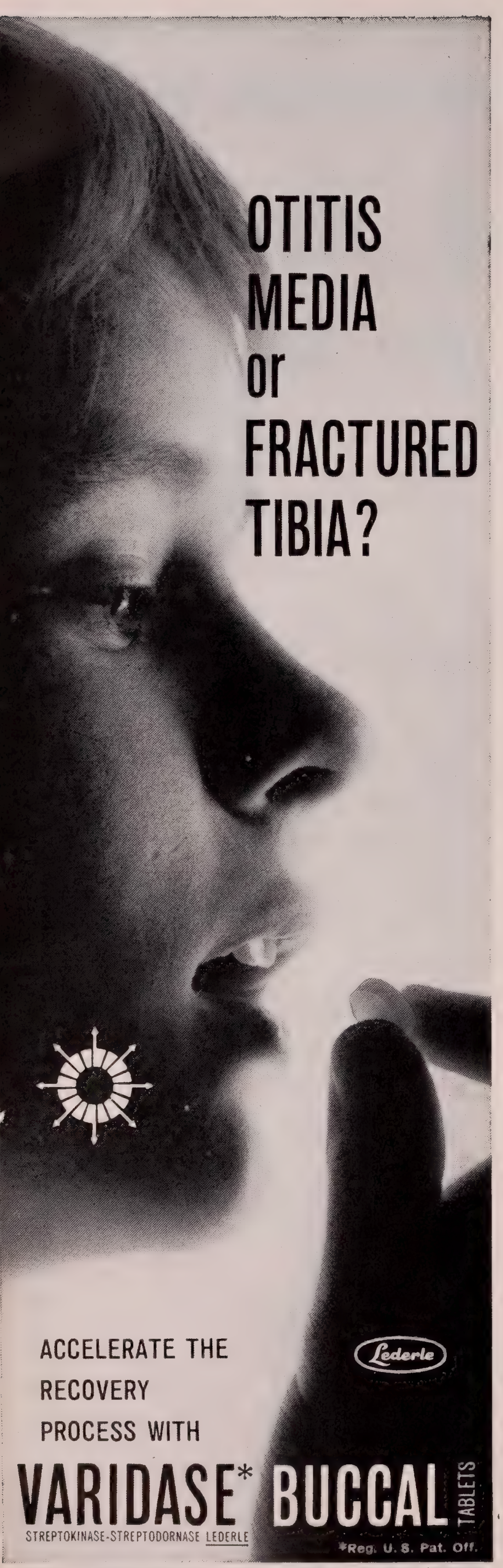
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BOOKS RECEIVED

[Continued from page 1681]

Research. By Carl J. Wiggers, M.D. Octavo of 404 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $9.75.

Industrial Carcinogens. By Robert E. Eckardt. Duodecimo of 164 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $6.50.

Emergency Surgery. Seventh edition. By Hamilton Bailey, M.D. Octavo of 1197 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $32.50.

The Plasma Proteins. Clinical Significance. By Paul G. Weil, M.D. Duodecimo of 133 pages. Philadelphia, J. B. Lippincott Co., 1959. Cloth, $3.50.

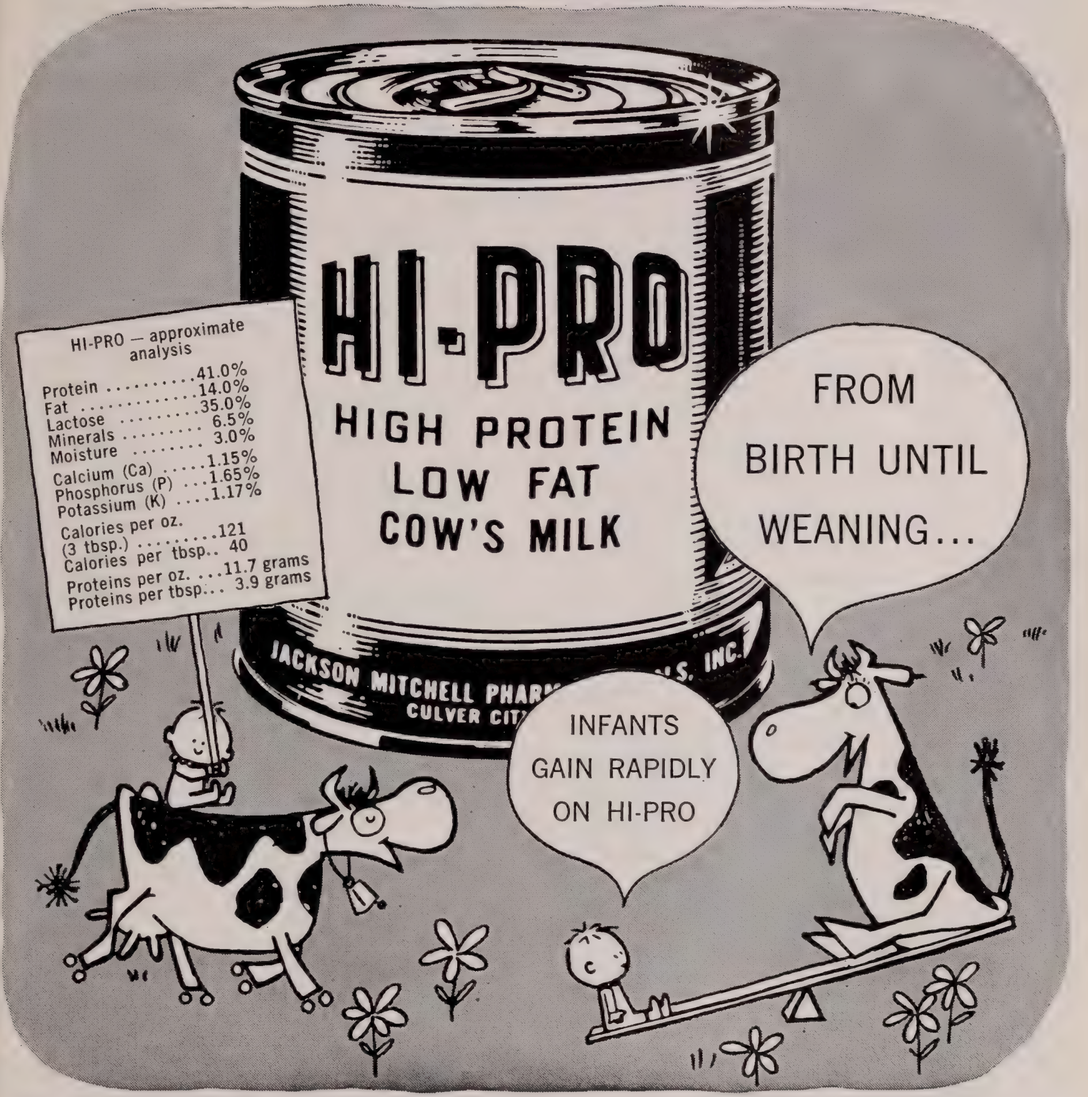
A History of Neurology. By Walther Riese, M.D. Duodecimo of 223 pages. New York, MD Publications, 1959. Cloth, $4.00.

A History of Ophthalmology. By George E. Arrington, Jr., M.D. Duodecimo of 174 pages, illustrated. New York, MD Publications, 1959. Cloth, $4.00.

Diseases of the Colon and Anorectum. Volumes I and II. By Robert Turell, M.D. Octavo. Volume I, pages 1 to 608. Volume II, pages 609 to 1238. Illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $35 per set.

Physiology and Biochemistry. Fourth edition. By George H. Bell, M.D., J. Norman Davidson, M.D., and Harold Scarborough, Ph.D. Octavo of 1065 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1959. Cloth, $12.50.

Ill habits gather by unseen degrees—As brooks make rivers, rivers run to seas.—JOHN DRYDEN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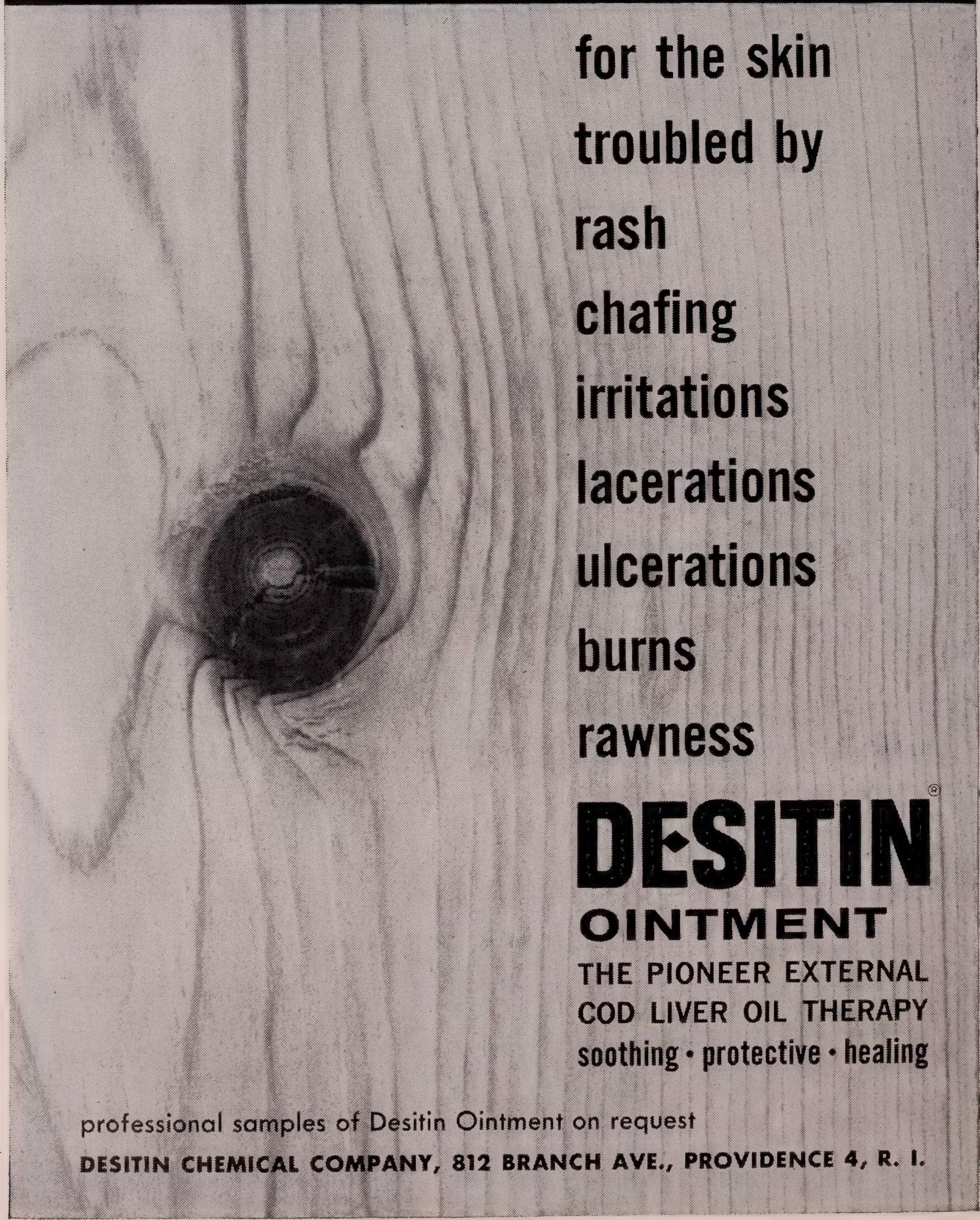

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BOOKS REVIEWED

Clinical Endocrinology. By K. E. Paschkis, M.D., A. E. Rakoff, M.D., and A. Cantarow, M.D. Second edition. Octavo of 941 pages, illustrated. New York, Paul B. Hoeber, Inc., 1958. Cloth, $18.

This edition is a scholarly presentation of classical endocrinologic syndromes. It is written by men skilled through years of presentation of this subject to medical colleagues. The involved basic sciences and endocrine interrelationships are well depicted. Basic early diagnostic clinical features of syndromes could be more lucidly defined. Certain hormonal tests need more detailed description. The section on commercial hormones as well as some therapeutic measures could be improved.

The captions, divisions, and format of this excellent reference book make easy reading.—Bernard Seligman

Obstetrical Practice. Seventh edition. By Alfred C. Beck, M.D. Octavo of 1,115 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $14.

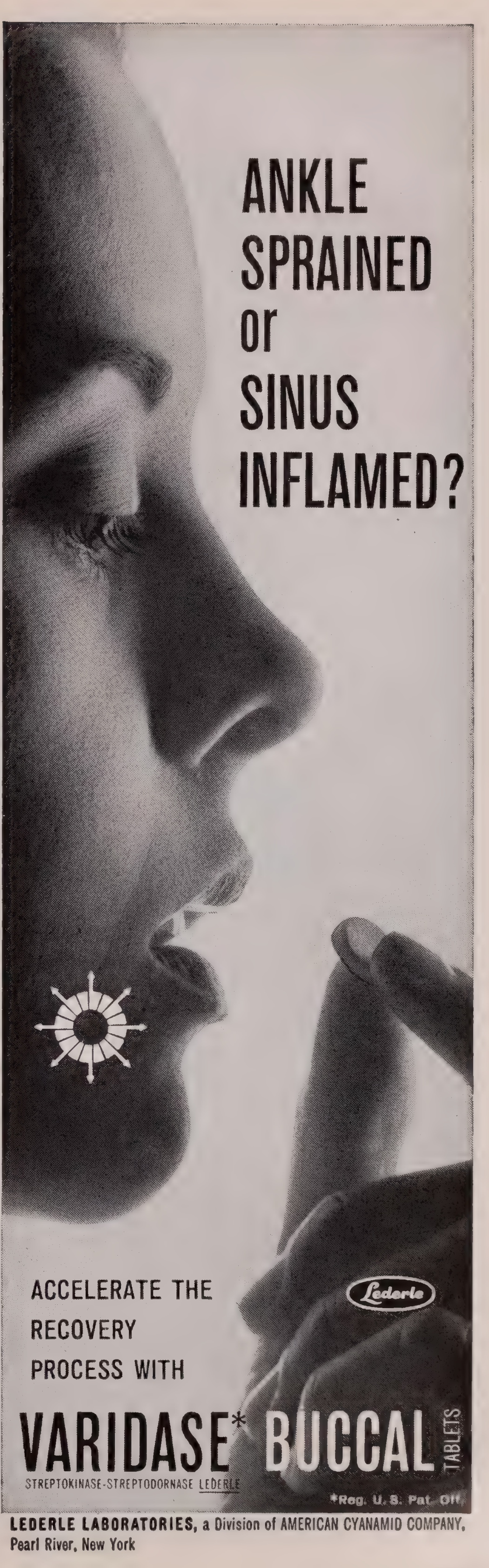
The essentials of obstetric practice are well presented in this basic textbook in a detailed, clear, and orderly manner. A large number of original drawings are included and amply complement the text. The book includes, in its more noteworthy chapters, step-by-step directions and illustrations for the application and use of forceps, a thorough discussion of artificial interruption of pregnancy, and a detailed description of cesarian section. Twenty-two x-rays are contained in the appendix for the purposes of pelvimetry and diagnosis of other prenatal conditions, and exact technics for obtaining these are suggested.

Of particular interest is the excellent section concerned with the development, structure, and physiology of the placenta and the mechanism of interchange of substances between the maternal and fetal circulation.

In all of the topics covered, the text is simplified and direct in its approach. It is a valuable work for the medical student, intern, resident, and general practitioner.—Toni Novick

Practical Leads to Puzzling Diagnosis. By

[Continued on page 1686]



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[Continued from page 1685]

Walter C. Alvarez, M.D. Octavo of 490 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1958. Cloth, $9.00.

The author needs no introduction. For many years he has been teaching physicians the importance of recognizing the psychotic patient. He has had a considerable experience in diagnosis and treatment.

Every physician meets many patients with functional disorders. A great number of these patients are psychotics. Once recognized, treatment can be instituted. Many illnesses cannot be recognized with laboratory tests and x-ray. The physician must be trained to recognize these psychotics by means of a careful history and examination.

There is no substitute for a good history. This may not be obtained in one visit and it may take several consultations. It must be complete. The author suggests how this should be done. He reveals the significance of the family history—especially a history of alcoholism, psychosis, or epilepsy in a family. The time spent in this manner will save the patient irreparable damage and considerable money. Often the patient must be divorced from the peg of an old x-ray diagnosis, especially a symptomless healed duodenal ulcer, diverticulum of the duodenum, etc.

The physician who heeds the lessons from this volume will resolve many a puzzling group of symptoms. The surgeon cannot help but be impressed with the facts presented. The mildly psychotic will tend to get operated on unless the real nature of the illness is recognized. They complain so much of abdominal pain and they become so desperate for help that they will accept surgery, often welcome it and ask for it.

Operations are not placebos. The relief given to the psychotic by surgery is only temporary. The results may be disastrous. These psychotic patients often have multiple operations.

This volume is replete with valuable suggestions. It should be carefully read by the internist and surgeon.—Alan A. Kane

Rehabilitation Medicine. By Howard A. Rusk, M.D. Octavo of 572 pages, illustrated. St. Louis, The C. V. Mosby Co., 1958. Cloth, $12.

It was merely a matter of time for Dr. Rusk and his associates in the Department of Physical Medicine and Rehabilitation at the New York University-Bellevue Medical Center to put in a text the philosophies, principles, and practices of the dynamic rehabilitation program which they have developed. It is indeed an accomplishment in itself worthy of commendation that they were able to confine such a volume to 572 pages, certainly they have enough material which could have been developed into an encyclopedia on medical rehabilitation.

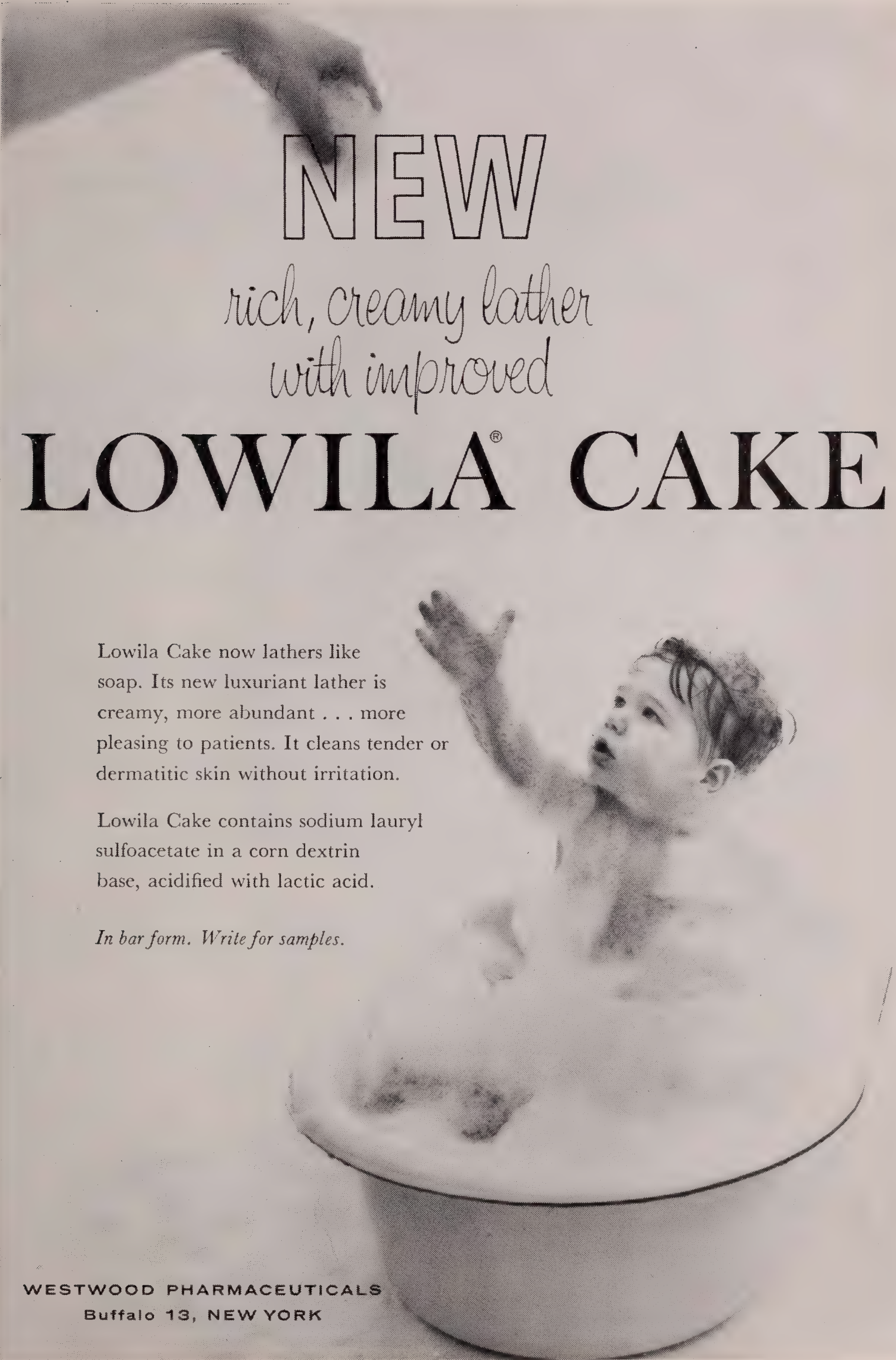
The book is divided into two distinct parts. Part 1 concerns itself with the philosophies, concepts, and principles of medical rehabilitation, commencing with the evaluation of the prospective patient to the final chapter on the proper methods of writing a medical rehabilitation prescription. Many useful charts, outlines, and photographs are in the chapters devoted to therapeutic exercises, muscle re-education, occupational therapy, activities of daily living, bracing, self-help devices, etc. Also in Part 1 are chapters dealing with the management of a handicapped patient with psychologic, social welfare, vocational, and speech problems. The second portion of the book is devoted to the methods employed in the actual medical rehabilitation of patients with various disabilities resulting from medical, neuromuscular, traumatic, infectious, cardiovascular and numerous musculoskeletal disorders. The final two chapters are concerned with the management of handicapped children and the disabilities commonly encountered in the geriatric patient suffering from degenerative diseases. With medical rehabilitation coming daily into "its own" more and more throughout the entire world, the professional person without some basic understanding or applicable knowledge of the subject is indeed quite lost. For all physicians, irrespective of whether a general practitioner or a specialist, and related ancillary personnel, this volume is definitely a "must." It is a volume which will be read and reread and referred to frequently, and if ever a medical "five foot shelf" is developed, this volume will certainly take its rightful place among some of the classical medical volumes.—Samuel G. Feuer

The Medical Clinics of North America. Symposium from Boston. Specific Methods of Treatment. September, 1958. By Chester S. Keefer, M.D. Philadelphia, W. B. Saunders Co., 1958. Published Bi-Monthly (6 numbers a year). Cloth, $18. net, paper $15. net.

This issue from Boston is a symposium on specific methods of treatment. The format makes no pretense of pattern or sequence, and the haphazard choice of subject matter is extremely diverse. Treatment is variably presented as management of a disease, or utilization of a medication or therapeutic agent.

Considered as an individual volume, this unrelated conglomeration would have little value as a reference. However, this is not the intent of the publishers, since it is the current issue of a periodical which features timely material. As such, it

[Continued on page 1688]



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[Continued from page 1686]

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Human Parturition. Normal and Abnormal Labor. By N. F. Miller, M.D., T. N. Evans, M.D., and R. L. Haas, M.D. Octavo of 248 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $7.50.

This is a good looking little statement of the bare essentials of obstetrics, memory pegs for the student are all there, but the practicing obstetrician will find little to help him. For postpartum hemorrhage the long defunct hot uterine douche is revived. Marginal sinus rupture receives more attention than it deserves, while heart disease gets less. Dilation (dilatation) and peritonealize (peritonize) are not good usage. As planned, it is a good book.—Charles A. Gordon

Ciba Foundation Symposium on the Chemistry and Biology of Purines. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., and Cecilia M. O'Connor, B.Sc. Octavo of 327 pages with 124 illustrations and structural formulae. Boston, Little, Brown and Company, 1957. Cloth, $9.00.

This collection of papers by leading authorities concerns itself chiefly with advances in the chemistry of purines. The biologic significance of this increase in knowledge is actually limited at present as evidenced by a paucity of biologic reports in the symposium. Only three topics of medical importance are discussed; puromycin, the azapurines, and mercapto purines with their effects on neoplasia. The biochemical problems involved in enzymatic synthesis and degradation of purines are well covered, but a physician interested in gout will find no reference to this disease of purine metabolism.

The present book includes a wealth of academic work which in the future may well give birth to important clinical achievements particularly in the cancer field. At present, chiefly chemists and biochemists will find it of value in their work.—Milton B. Handelsman

Progress in Psychotherapy. Volume III. Techniques of Psychotherapy. By Jules H. Masserman, M.D., and J. L. Moreno, M.D. Octavo of 323 pages, illustrated. New York, Grune & Stratton, Inc. 1958. Cloth, $6.50.

Forty contributors have presented material to this volume. The subject matter and the manner of presentation have followed along the general lines laid down by the recently formed Academy of Psychoanalysis which seeks to obtain "clear, free and integrative thoughts about the vicissitudes of human behavior which might enable the physician to help the patient grow happier and more culturally creative."

The various contributors are all well qualified to write about the subjects they have chosen to discuss. This has been done in a brief, concise, and succinct manner. Included in the group are internists, social workers, psychoanalysts, chemists, and research workers. The result is a volume which will be found of interest and value to psychiatrists, psychologists, social workers, and all others who care for the emotionally disturbed.

Of special interest are the chapters on Psychologic Pharmacodynamics, Social Aspects of Psychotherapy, the Family Group and Family Therapy and Psychiatry and the Ministry. For general information there are included chapters on the status of psychotherapy in Soviet Russia, Greece, Canada, and Latin America.—Joseph L. Abramson

Injuries and Surgical Diseases of the Ischium. By Henry Milch, M.D. Octavo of 163 pages, illustrated. New York, Paul B. Hoeber, Inc., 1958. Cloth, $10.50.

The author of this small volume presents in compact fashion all the pertinent information on his subject which includes the anatomy and physical roentgen examinations of the ischium. Separate chapters are devoted to fractures, infections, and tumors involving this structure. The final chapter is devoted to the surgical approaches to the ischium.

Although this book is interesting and of value, the reviewer was disappointed in the poor quality of the roentgenograms. Many of them are old and lack clarity.

The chapter on fractures of the ischium is somewhat disappointing. It is not based on personal experiences but rather on confusing reports from the literature.—Carmelo C. Vitale

Pioneer Surgeons of the Woman's Hospital. By James Pratt Marr, M.D. Octavo of 148 pages, illustrated. Philadelphia, F. A. Davis Co., 1957. Cloth, $5.50.

This is a handsome little volume which relates the life stories and achievements of the four great founders of gynecology—Sims, Emmet, Peaslee, and Thomas. It is a delightful tale engagingly told and a book not to be put down once it has been opened. The Woman's Hospital, justly proud of its great pioneers, should be proud of this book too.—Charles A. Gordon

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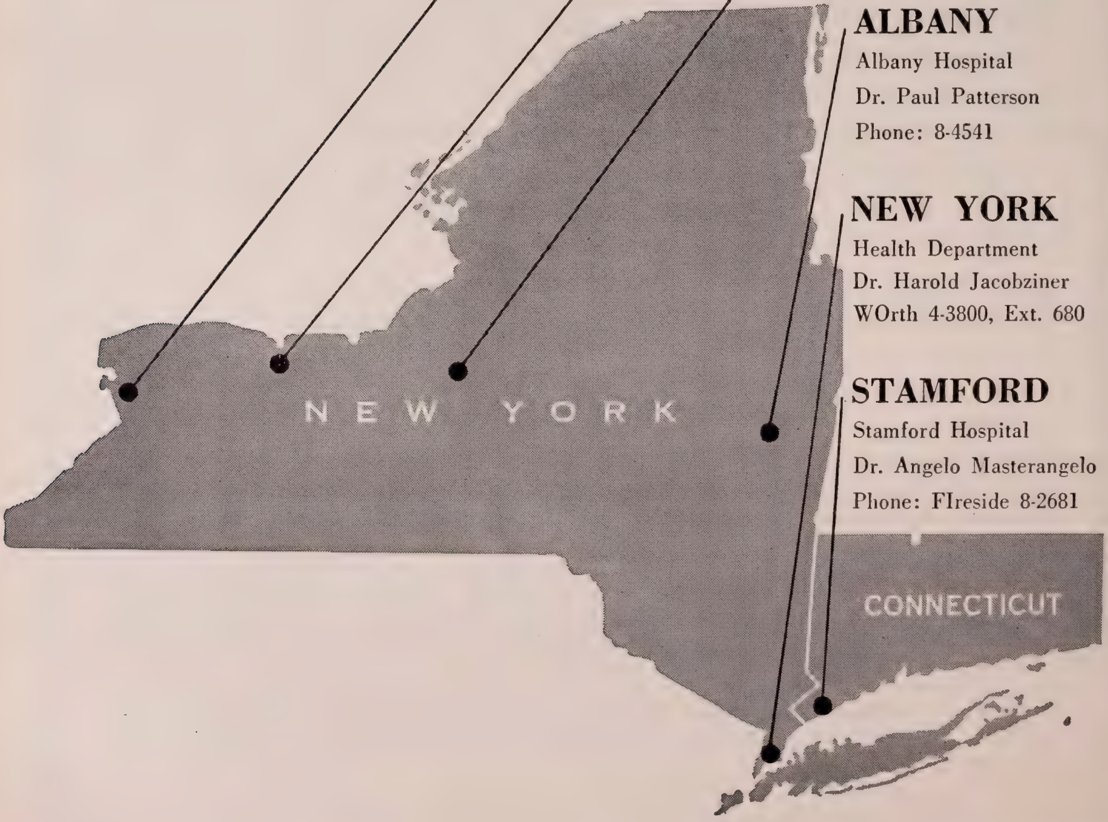

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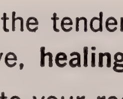
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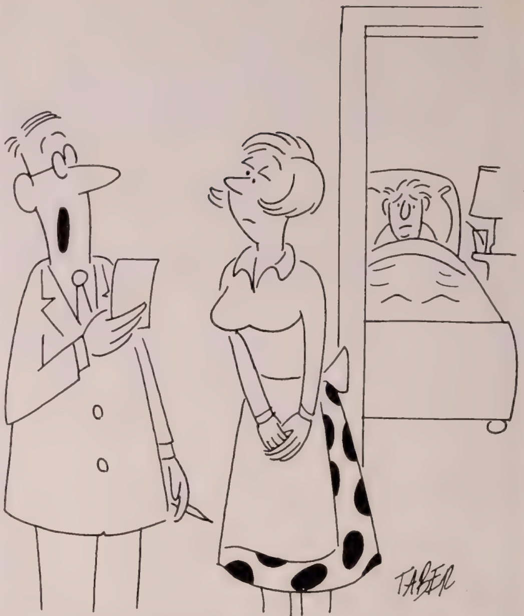

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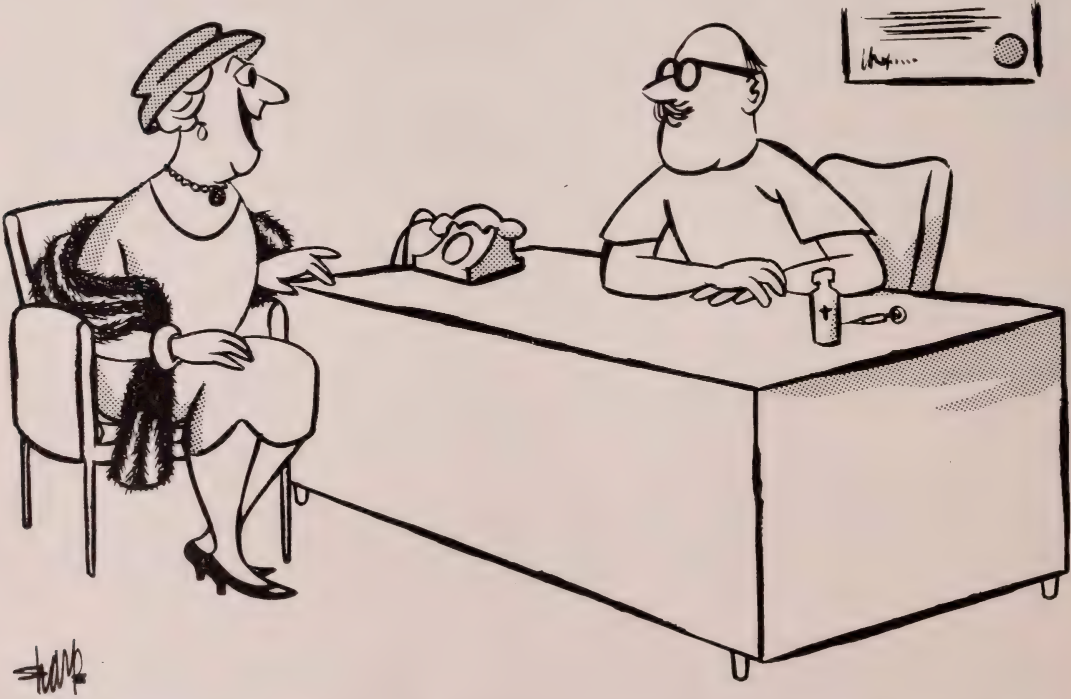

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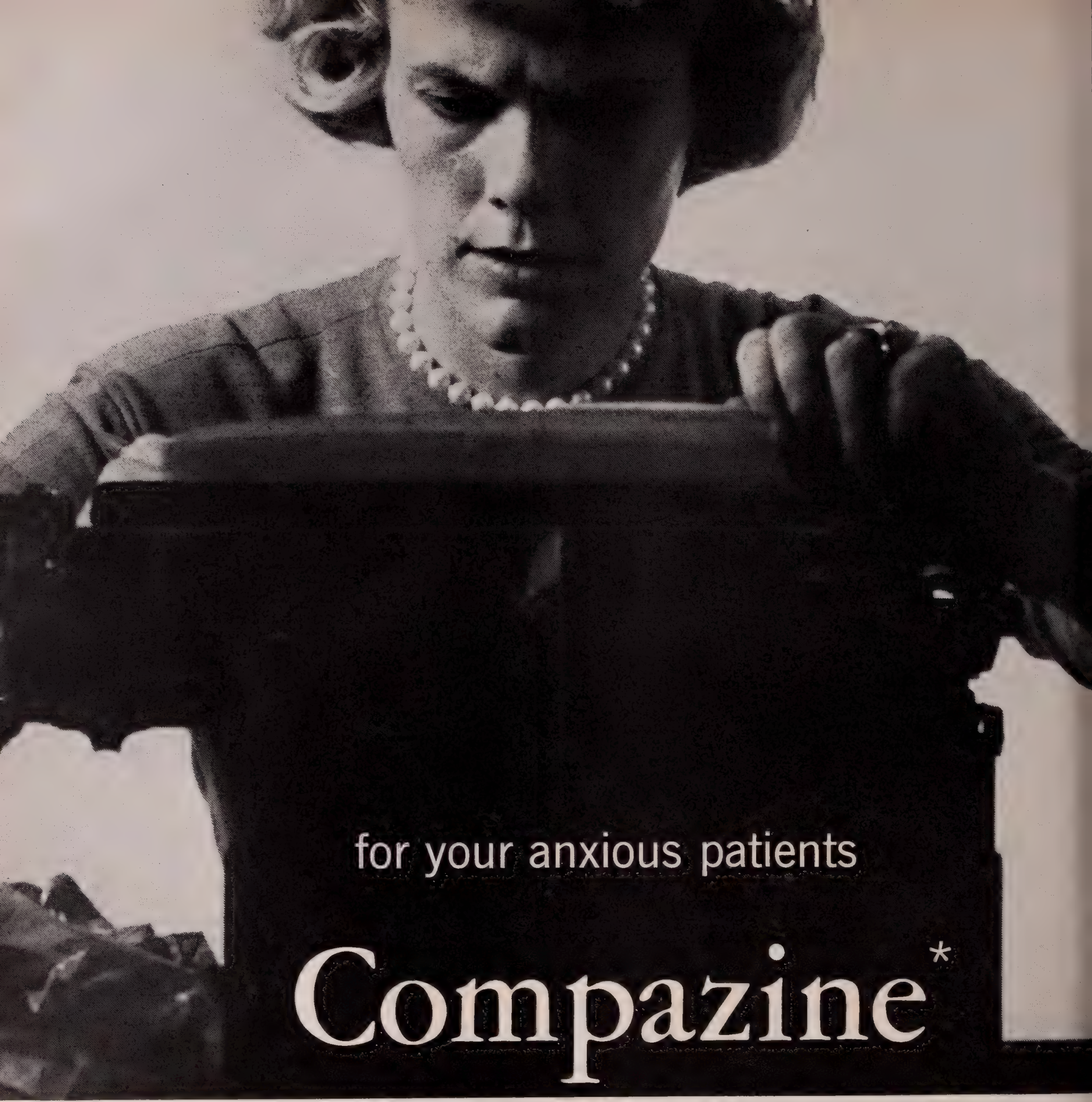

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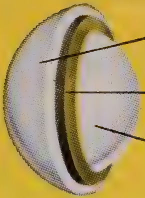
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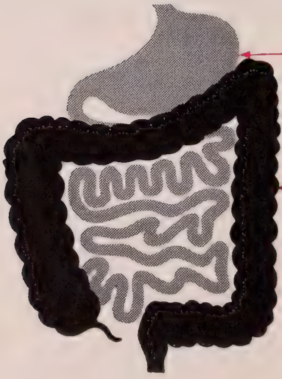
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(1) Rubin, A., and Babbott, D.: J.A.M.A. *168*:498, (Oct. 4) 1958. (2) Kinsey, A. C.; Pomeroy, W. B., and Martin, C. E.: Sexual Behavior in the Human Male, Philadelphia, W. B. Saunders Company, 1948.

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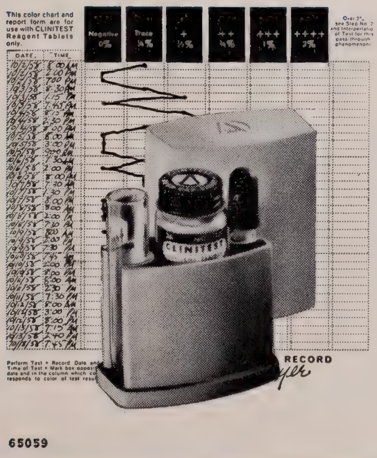
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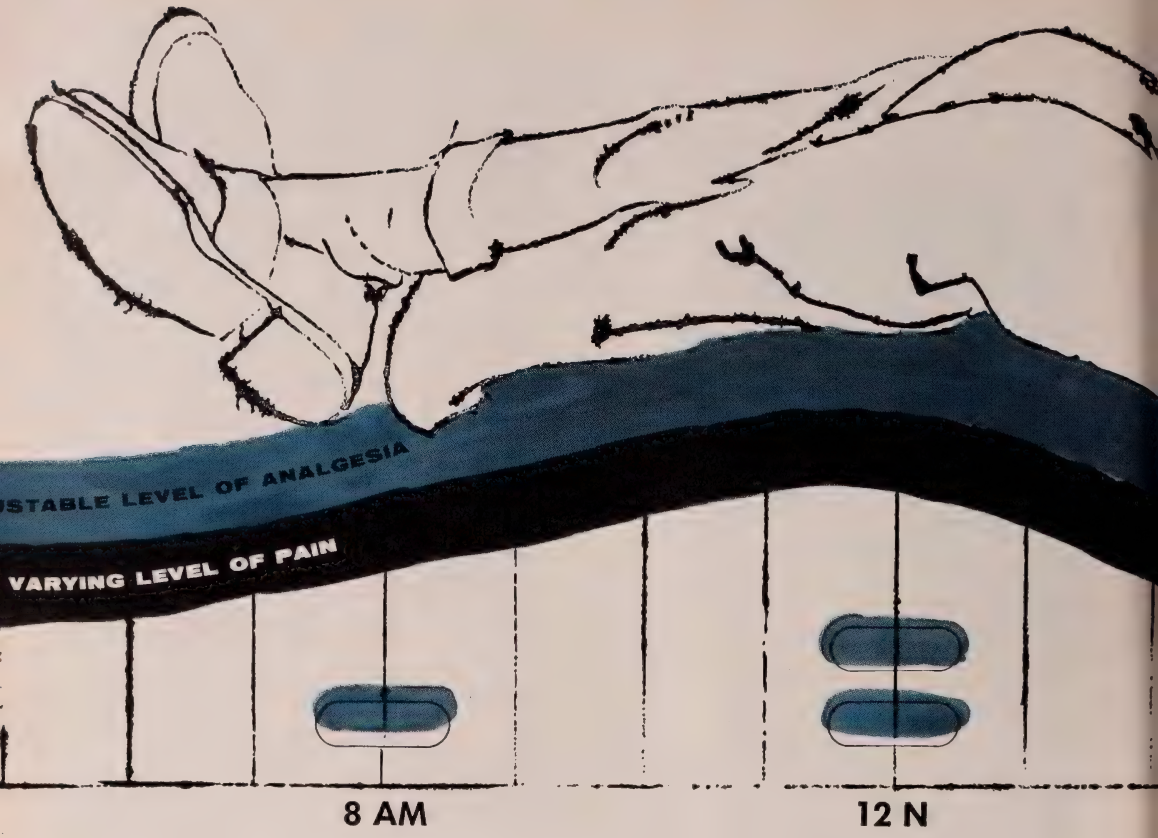
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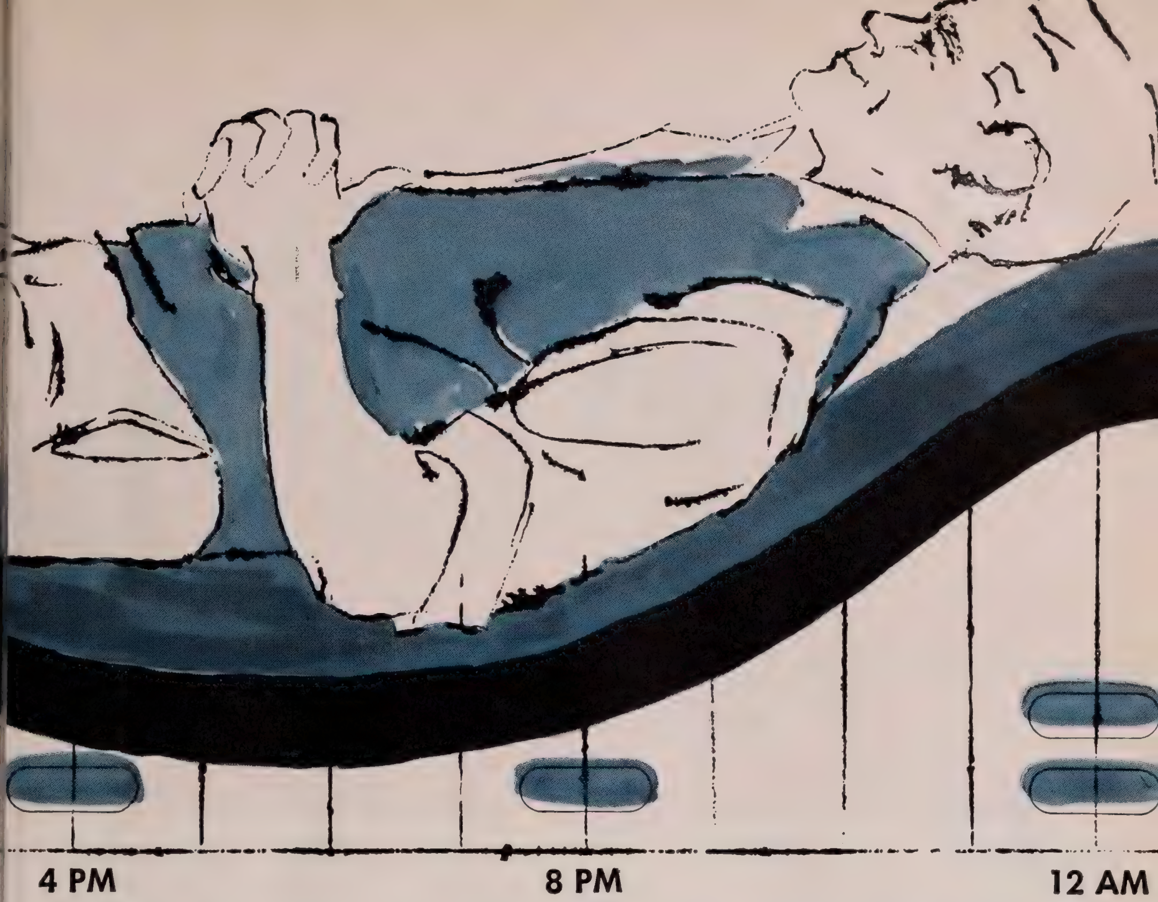

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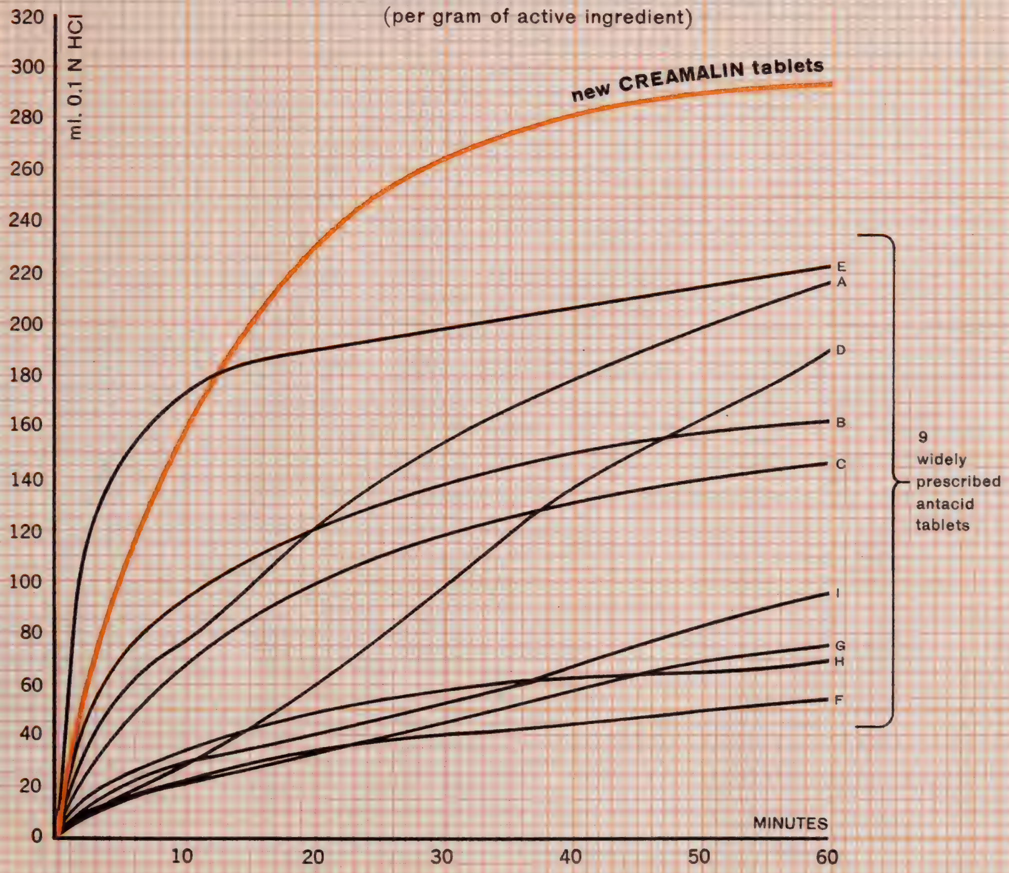

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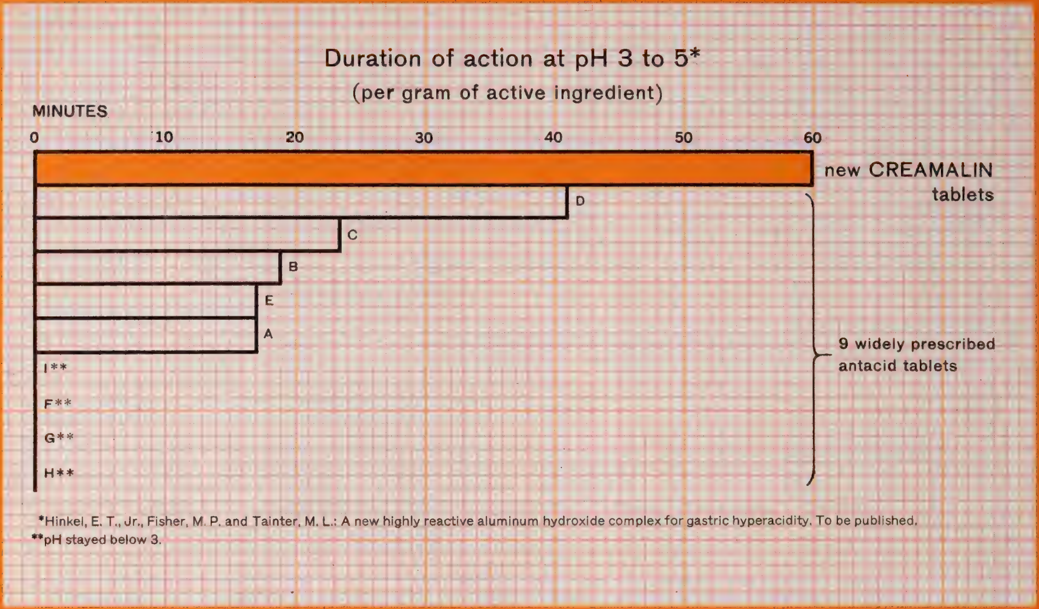

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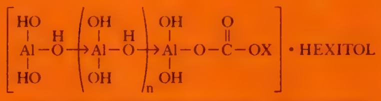

$$\left[\underset{HO}{\overset{HO}{Al}}-\overset{H}{O}\rightarrow\left(\underset{OH}{\overset{OH}{Al}}-\overset{H}{O}\rightarrow\right)_n\underset{OH}{\overset{OH}{Al}}-O-\overset{O}{\overset{\|}{C}}-OX\right]\cdot \text{HEXITOL}$$

n is at least 1 and averages less than 6. X is a cation.

• NO ACID REBOUND • NO CONSTIPATION • NO SYSTEMIC EFFECT

Composition: Each Creamalin Antacid Tablet contains 320 mg. specially processed, highly reactive, short polymer dried aluminum hydroxide gel, stabilized with hexitol, with 75 mg. magnesium hydroxide.

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Supplied: Bottles of 50, 100, 200 and 1000.

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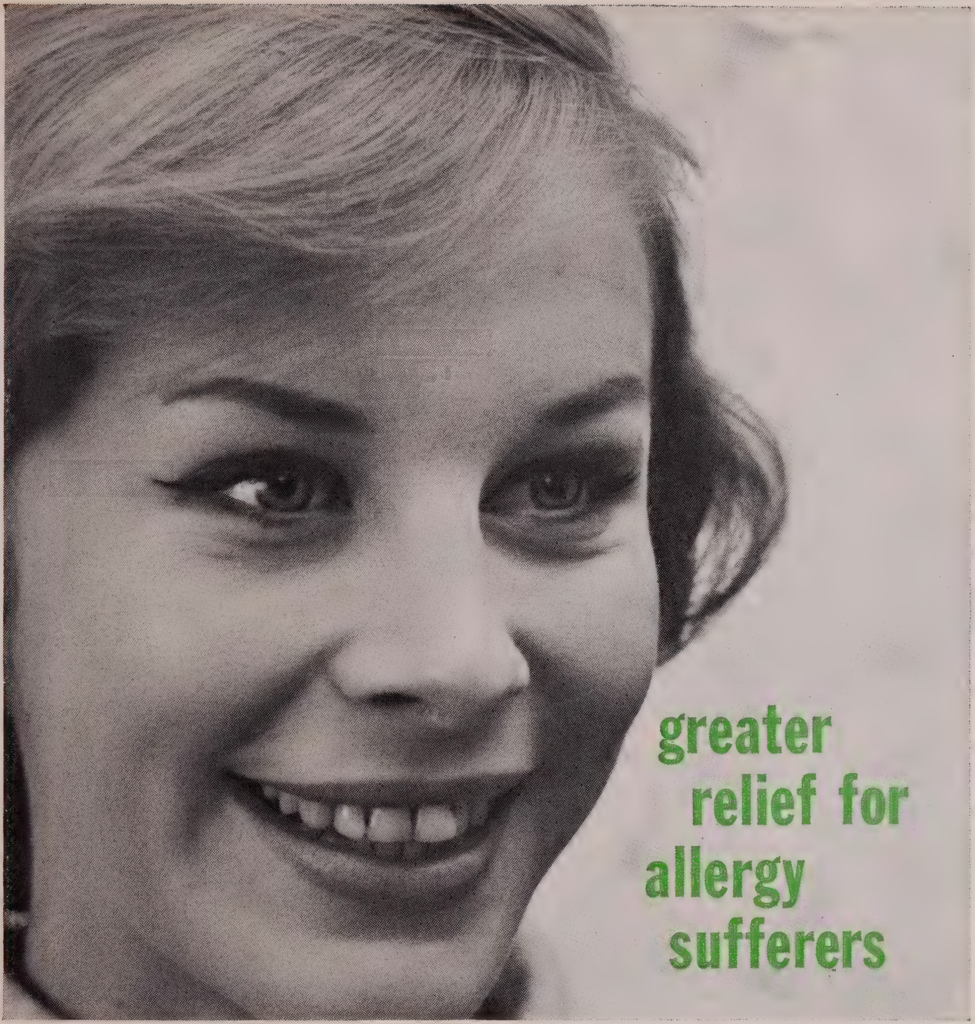
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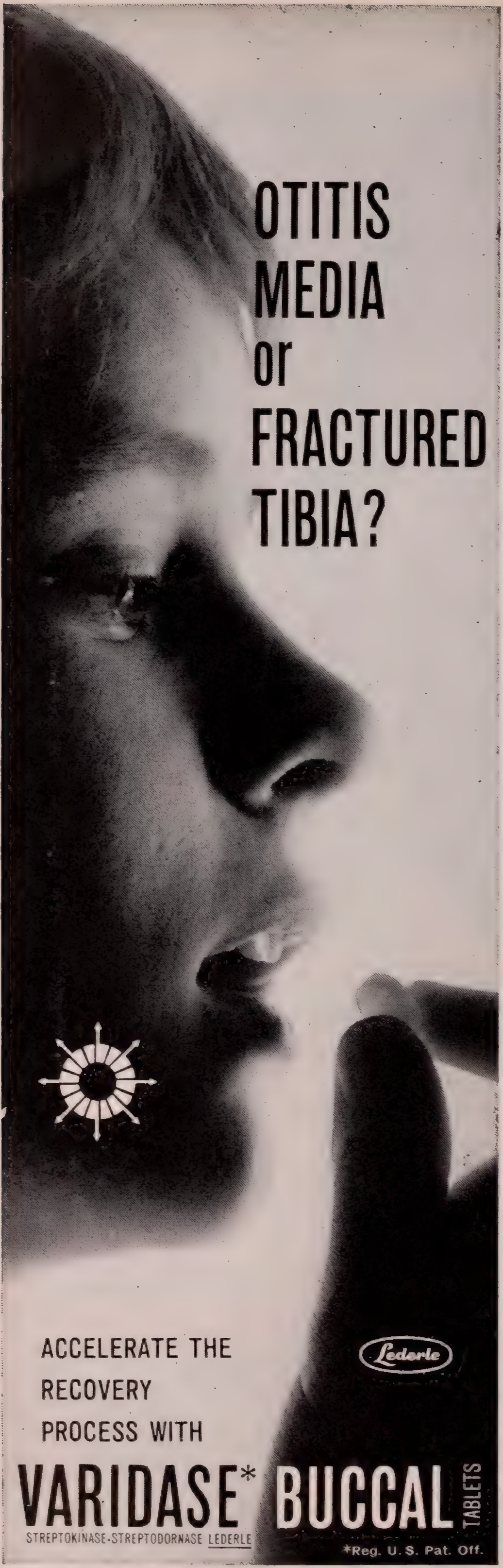

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yes, any rheumatic "itis" calls for
Sigmagen®
corticoid-salicylate compound
TABLETS
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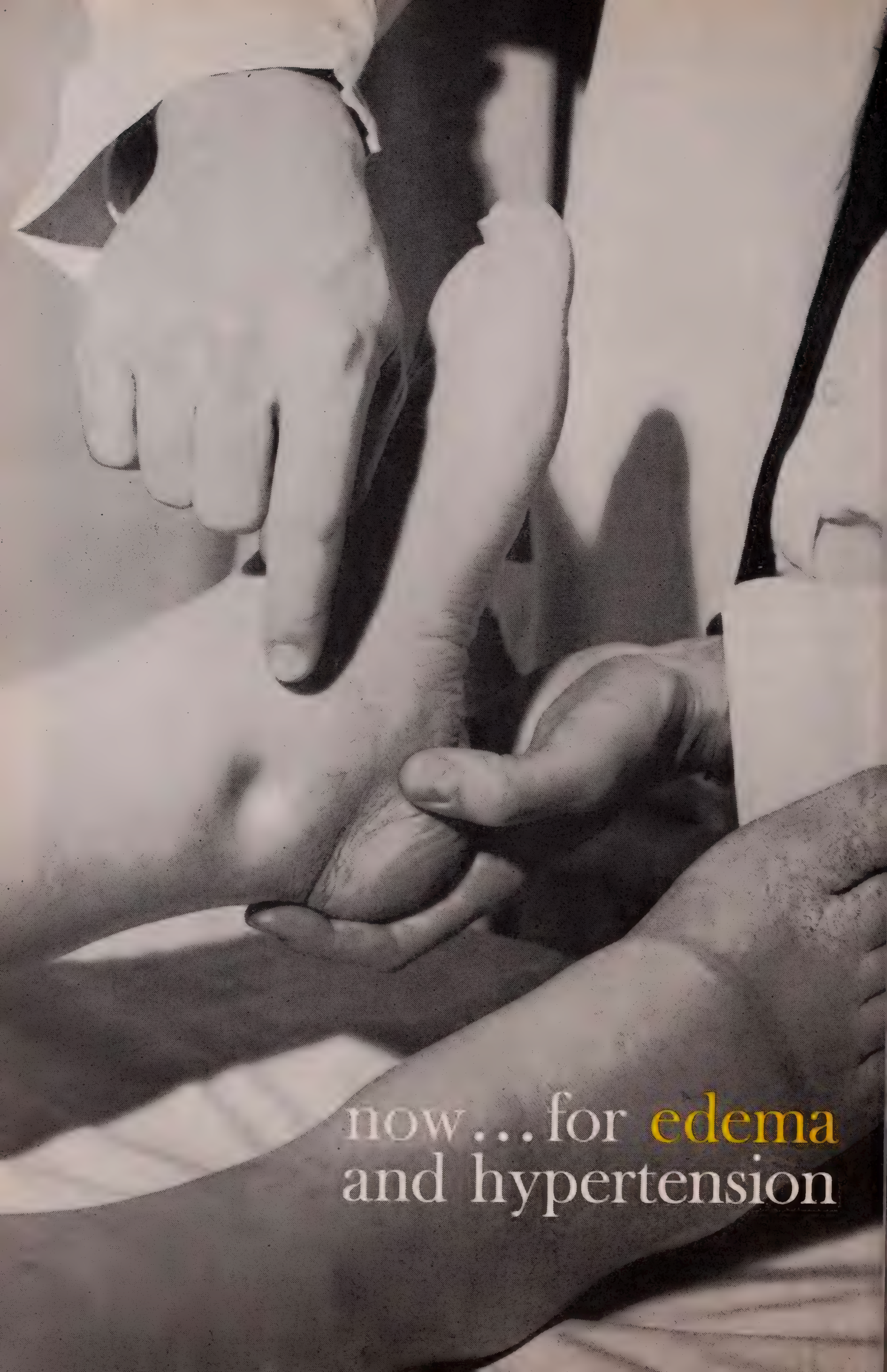
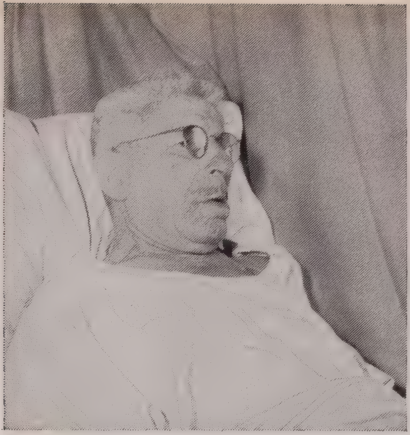
SG-J-258


now...for edema
and hypertension

See case history of this patient on following pages.



highest fluid yields,
lowest blood-pressure levels
yet achieved with oral
diuretic-antihypertensive
therapy...

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(hydrochlorothiazide CIBA)

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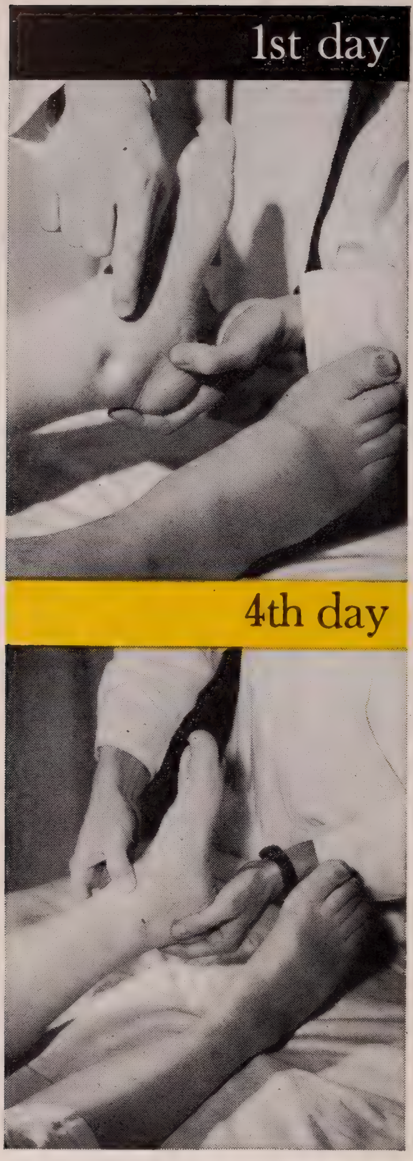


Record of patient with congestive failure, treated at a leading Philadelphia hospital. Photos used with permission of the patient.

marked pitting edema (4+) cleared in 4 days with Esidrix

ESIDRIX IS 10 TO 15 TIMES MORE ACTIVE THAN CHLOROTHIAZIDE

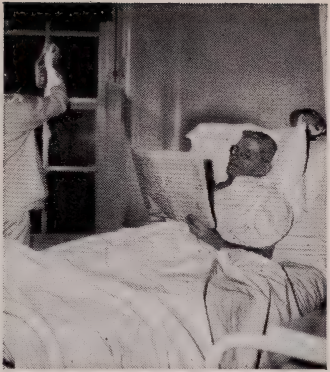
INDICATED IN . . . congestive heart failure • hypertension • hypertensive vascular disease • premenstrual edema • toxemia of pregnancy • edema of pregnancy • steroid-induced edema • nephrosis • nephritis

DOSAGE: Esidrix is administered orally in an average dose of 75 to 100 mg. daily, with a range of 25 to 200 mg. A single dose may be given in the morning or tablets may be administered 2 or 3 times a day.

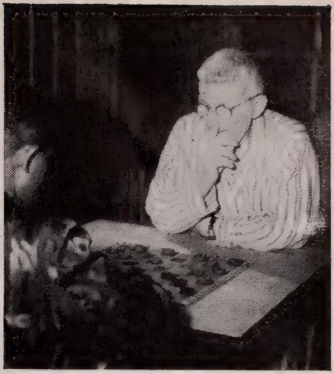
SUPPLIED: *Tablets*, 25 mg. (pink, scored); bottles of 100 and 1000. *Tablets*, 50 mg. (yellow, scored); bottles of 100 and 1000.

CIBA
SUMMIT, N. J.

L.S., 81-year-old patient with complaint of painless hematuria admitted to hospital on 3/3/59. Past history included congestive heart failure of 15 years' duration. **Clinically significant symptoms:** expiratory wheezes over entire chest; bilateral coarse rales of both bases; slight abdominal distention (without evidence of ascites); palpable liver 2-3 fingerbreadths below rib cage; bilateral pitting edema (4+) of pretibial and ankle area. **Admission diagnosis:** hematuria of unknown origin; arteriosclerotic cardiovascular disease; poorly compensated heart failure; chronic pulmonary fibrosis with pulmonary insufficiency.



Patient was put on regimen of bed rest, moderate salt restriction, digitalis and pulmonary decongestants. When ankle edema, hepatic congestion and rales failed to clear by 3/6, Esidrix 50 mg. b.i.d. was ordered. By 3/8 L.S. had lost 3 pounds. Rales decreased; there was 1+ pitting edema of ankle area only. He felt more comfortable, was able to enjoy reading newspapers and magazines in bed.



By 3/11, patient's weight had dropped 2 more pounds. Ankle edema and lung rales were gone. Patient tolerated cystoscopy and fulguration of a small bleeding polyp in his bladder on 3/12 very well. Ambulatory on the 4th day of Esidrix therapy, L.S. visited his neighbors down the hall, played checkers with another patient. On 3/14 he was discharged.

Patient L.S. Date	3/4	3/5	3/6	3/7	3/8	3/9	3/10	3/11	3/12	3/13
Urinary Output (ml.)	840	690	960	2140	1230	660	1220	1350	--	--
Weight (lbs.)	139	--	--	--	136	--	--	134	--	--
Esidrix Dosage (mg./day)	0	0	50	100	100	100	100	100	50	100

Esidrix T.M. (hydrochlorothiazide CIBA)

- **relieves edema in many patients refractory to other diuretics[1]**
- **often produces greater weight loss than parenteral mercurials or chlorothiazide[2]**
- **provides a greater average reduction in blood pressure than chlorothiazide[3]**
- **is exceptionally safe . . . reduces the likelihood of electrolyte imbalance**

1. Brest, A. N., and Likoff, W.: Am. J. Cardiol. 3:144 (Feb.) 1959. 2. Clark, G. M.: Clinical report to CIBA.
3. Dennis, E. W.: Clinical report to CIBA.

2/2684MK-2

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'CORTISPORIN'®
brand **OINTMENT**

Combines the anti-inflammatory effect of hydrocortisone with the comprehensive bactericidal action of the antibiotics.

Ointment: Tubes of ⅛ oz. and ½ oz. (with applicator tip) for ophthalmic or dermatologic application.
Otic Drops: Bottles of 5 cc. with sterile dropper.

Provides comprehensive bactericidal action effective against virtually all bacteria likely to be found topically.

'NEOSPORIN'®
brand **ANTIBIOTIC OINTMENT**

Ointment: Tubes of ½ and 1 oz. and tubes of ⅛ oz. with ophthalmic tip.
Ophthalmic Solution: Bottles of 10 cc. with sterile dropper.
NEW { **Lotion:** Plastic squeeze bottles of 20 cc.
Powder: Shaker-top bottles of 10 Gm.

'POLYSPORIN'®
brand **ANTIBIOTIC OINTMENT**

Offers combined antibiotic action for treating conditions due to susceptible organisms amenable to local medication.

Ointment: Tubes of ½ oz., 1 oz. and ⅛ oz. (ophthalmic tip).

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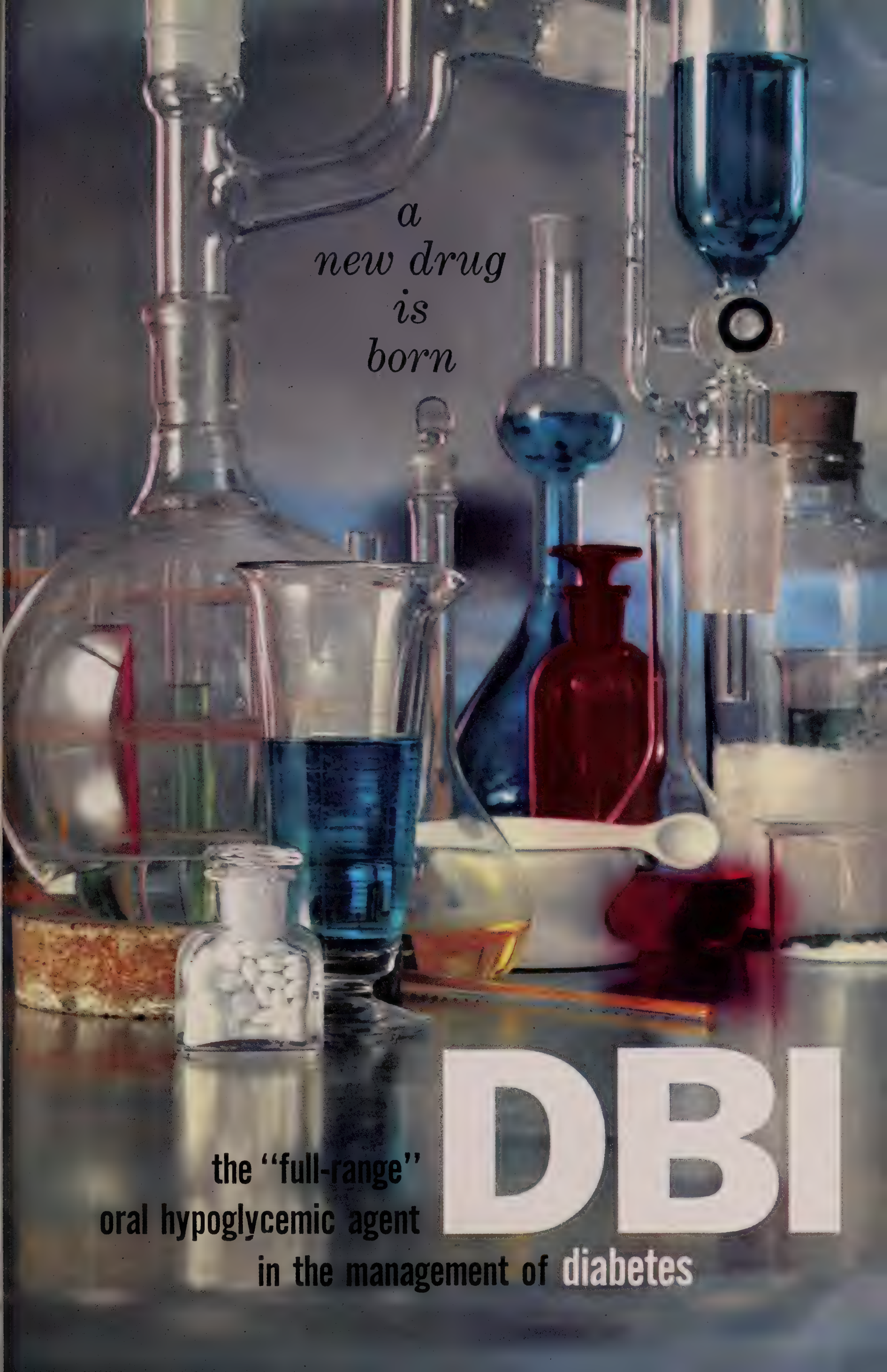
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is
born
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the "full-range"
oral hypoglycemic agent
in the management of diabetes

the "full-range"
oral hypoglycemic agent

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DBI (N^1-β-phenethylbiguanide HCl) is an entirely new oral hypoglycemic compound, different in chemical structure, mode of action, and in spectrum of activity from the sulfonylureas. DBI is usually effective in low dosage range (50 to 150 mg. per day).

"full-range" hypoglycemic action — DBI lowers elevated blood-sugar and eliminates glycosuria in *mild, moderate* and *severe* diabetes mellitus . . .

brittle diabetes, juvenile or adult — DBI combined with injected insulin improves regulation of the diabetes and helps prevent the wide excursions between hypoglycemic reactions and hyperglycemic ketoacidosis.

stable adult diabetes — satisfactory regulation of diabetes is often achieved with DBI alone without the necessity for insulin injections.

juvenile diabetes — DBI often permits a reduction as great as 50 per cent or more in the daily insulin requirement.

primary and secondary sulfonylurea failures — DBI alone, or in conjunction with a sulfonylurea, often permits satisfactory regulation of diabetes in patients who have failed to respond initially or who have become resistant to oral sulfonylurea therapy.

smooth onset — less likelihood of severe hypoglycemic reaction — DBI has a smooth, gradual blood-sugar lowering effect, reaching a maximum in from 5 to 6 hours, and a return to pre-treatment levels usually in 10 to 12 hours.

safety — daily use of DBI in therapeutic dosage for varying periods up to 2½ years has produced no form of clinical toxicity.

side reactions — side reactions produced by DBI are chiefly gastrointestinal and occur with increasing frequency at higher dosage levels (exceeding 150 mg. per day). Anorexia, nausea or vomiting may occur — but these symptoms abate promptly upon reduction in dose or withdrawal of DBI.

supplied — DBI, 25 mg. scored, white tablets — bottle of 100.

IMPORTANT — before prescribing DBI the physician should be thoroughly familiar with general directions for its use, indications, dosage, possible side effects, precautions and contraindications, etc. Write for complete detailed literature.

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Arlington-Funk Laboratories, division
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new for total management of itching,[1,2] inflamed,[3,4] infected[5,6] skin lesions

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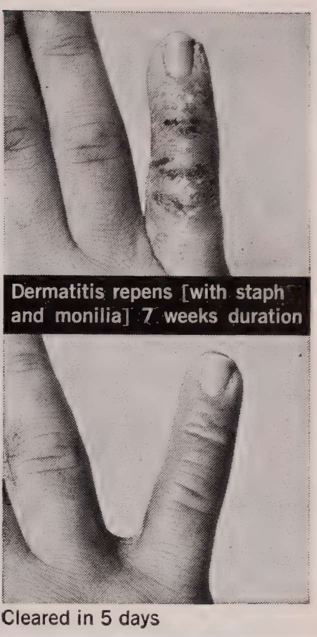
ointment

antipruritic/anti-inflammatory/antibacterial/antifungal

Mycolog Ointment – containing the new superior topical corticoid Kenalog – reduces inflammation,[3,4] relieves itching,[1,2] and combats or prevents bacterial, monilial and mixed infections.[5-7] It is extremely well tolerated, and assures a rapid, decisive clinical response for most infected dermatoses.

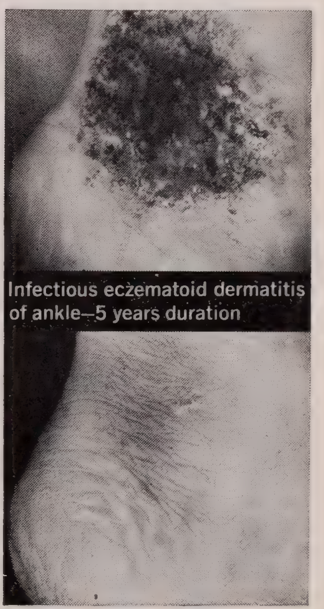
> "Thirty-one of 38 patients . . . obtained excellent or good control of dermatological lesions . . . [Mycolog] was highly effective, particularly in the management of mixed infections. Several recalcitrant eruptions which had not responded to previous therapy were remarkably responsive to the daily application of this preparation over periods of 2 to 3 weeks."[5]

For total management of itching, inflamed, infected skin lesions, Mycolog contains triamcinolone acetonide, an outstanding new topical corticoid for prompt, effective relief of itching, burning and inflammation[1-4] – neomycin and gramicidin for powerful antibacterial action[7] – and nystatin for treating or preventing Candida (Monilia) albicans infections.[8,9]



Dermatitis repens [with staph and monilia] 7 weeks duration

Cleared in 5 days



Infectious eczematoid dermatitis of ankle—5 years duration

Cleared in 20 days

Application: Apply 2 to 3 times daily. Supply: 5 Gm. and 15 Gm. tubes. Each gram supplies 1.0 mg. (0.1%) triamcinolone acetonide, 2.5 mg. neomycin base, 0.25 mg. gramicidin, and 100,000 units nystatin in PLASTIBASE.

References: 1. Shelmire, J.B., Jr.: Monographs on Therapy 3:164 (Nov.) 1958. • 2. Nix, T.E., Jr., and Derbes, V.J.: Monographs on Therapy 3:123 (Nov.) 1958. • 3. Robinson, R.C.V.: Bull. School of Med., U. Maryland 43:54 (July) 1958. • 4. Sternberg, T.H.: Newcomer, V.D., and Reisner, R.M.: Monographs on Therapy 3:115 (Nov.) 1958. • 5. Clark, R.F., and Hallett, J.J.: Monographs on Therapy, 3:153 (Nov.) 1958. • 6. Smith J.G., Jr.; Zawisza, R.J., and Blank, H.: Monographs on Therapy, 3:111 (Nov.) 1958. • 7. Monographs on Therapy, 3:137 (Nov.) 1958. • 8. Howell, C.M., Jr.: North Carolina M.J. 19:449 (Oct.) 1958. • 9. Bereston, E.S.: South. M.J. 50:547 (April) 1957.

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p-acetamidobenzoic acid salt of 2-dimethylaminoethanol

Deaner is a gentle, slow-acting antidepressant—a totally new molecule. It counteracts mild depression, thereby differing from tranquilizers or sedatives which may aggravate depression.

Deaner is unlike ordinary stimulant drugs in that it gradually leads to increased useful energy and alertness, clearer mentation and emotional normalization.

Deaner does not produce the undesirable side effects of amphetamine-like drugs...no hyperirritability or jitteriness, no excessive motor activity, no loss of appetite, no elevation of blood pressure or heart rate, no letdown on discontinuance.

Deaner is indicated in a wide variety of disturbances associated with or caused by mild depression. It is compatible with virtually all other medications.

Deaner also finds a broad area of usefulness in children with short attention span, behavior problems, and learning defects.

Contraindications: Grand mal epilepsy or mixed types of epilepsy with a grand mal component.

DOSAGE: Initially, 1 tablet (25 mg.) daily in the morning. Maintenance dose, 1 to 3 tablets; for children, ½ to 3 tablets. Full benefits may require two weeks or more of therapy.

'Deaner' is supplied in scored tablets containing 25 mg. of 2-dimethylaminoethanol as the *p*-acetamidobenzoic acid salt. In bottles of 100.

In Mild Depression

and many other emotional and behavioral problems

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yes, any rheumatic "itis" calls for
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corticoid-salicylate compound
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Supply: With ½% hydrocortisone in ½ oz. and 1 oz. tubes
With 1% hydrocortisone in ½ oz. tubes
Sig: Apply twice daily

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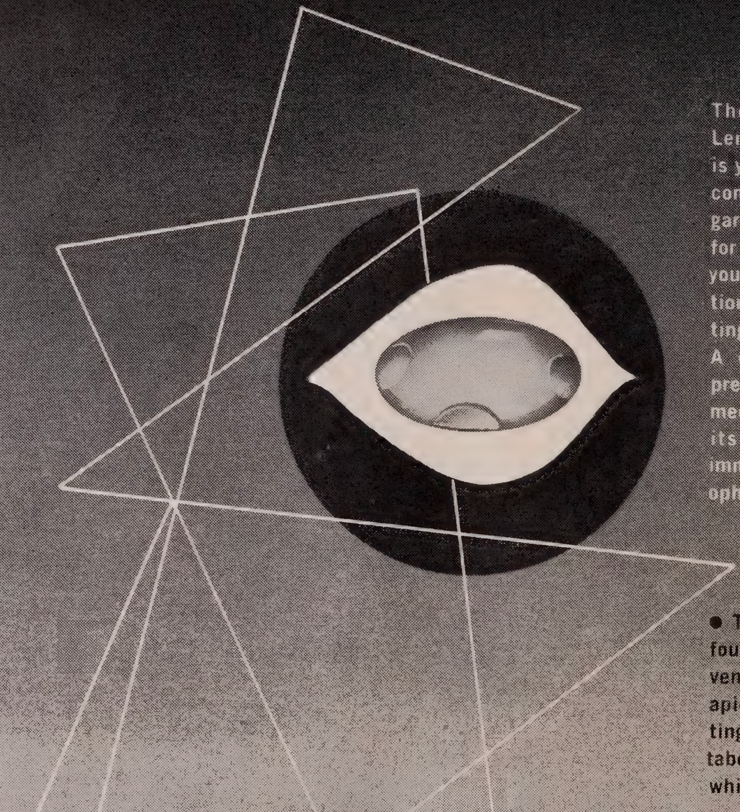

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pyelonephritis

"the most important concept is that it is a tubular disease"[1]

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brand of nitrofurantoin

a most important characteristic: effective at the tubular level

in each patient:
2 million reasons
for using
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In addition to simple glomerular filtration, FURADANTIN is actively excreted by the cells of the tubules. A significant and singular characteristic of FURADANTIN, it is but one reason why "the protracted administration of nitrofurantoin [FURADANTIN] to patients with ineradicable urinary tract infection, particularly chronic pyelonephritis without demonstrable obstruction, may usefully complement the medical management of this difficult problem."[2]

Available as Tablets, 50 and 100 mg.; Oral Suspension, 25 mg. per 5 cc. tsp.

References: 1. Smith, I. M., and Lenyo, L.: Am. Practitioner 9:78, 1958. 2. Jawetz, E., et al.: A.M.A. Arch. Int. M. 100:549, 1957.

NITROFURANS—a *unique* class of antimicrobials—neither antibiotics nor sulfonamides

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A NEW MEASURE OF ACTIVITY

IN EDEMA:

- shows greater oral effectiveness than any other class of diuretic agent
- each 25 mg. HYDRODIURIL orally is equivalent to 1.6 cc. merallluride I.M.
- has been reported to be effective even in patients who do not respond satisfactorily to other diuretics
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- low toxicity—extremely well tolerated
- often achieves the benefits of a low salt diet without the unpleasant restriction

indications: Hypertension, congestive heart failure of all degrees of severity, premenstrual syndrome (edema), edema and toxemia of pregnancy, renal edema—nephrosis, nephritis; cirrhosis with ascites, drug-induced edema, and as adjunctive therapy in the management of obesity complicated by edema.

dosage: In edema—one or two 50 mg. tablets of HYDRODIURIL once or twice a day.

In hypertension—one or two 25 mg. tablets or one 50 mg. tablet HYDRODIURIL once or twice a day.

supplied: 25 mg. and 50 mg. scored tablets HYDRODIURIL (Hydrochlorothiazide) in bottles of 100 and 1,000.

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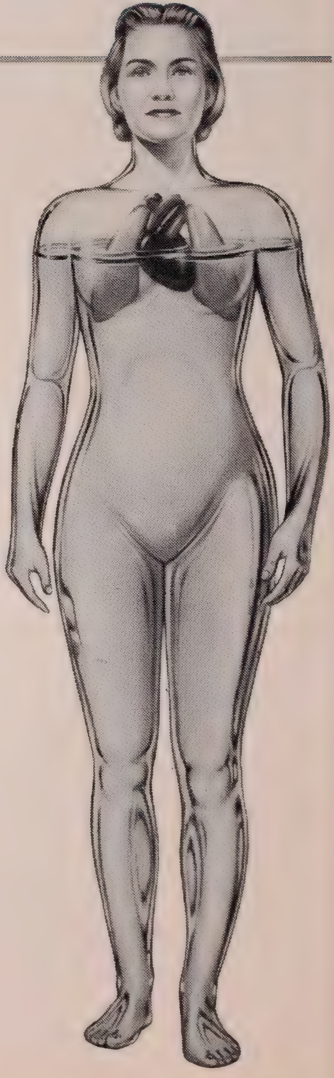
Additional information on HYDRODIURIL is available to the physician on request.

bibliography: 1. Esch, A. F., Wilson, I. M. and Freis, E. D.: 3,4-Dihydrochlorothiazide: Clinical Evaluation of a New Saluretic Agent. Preliminary Report; M. Ann. District of Columbia **28**:9, (Jan.) 1959. 2. Ford, R. V.: The Clinical Pharmacology of Hydrochlorothiazide; Southern Med. J. **52**:40, (Jan.) 1959. 3. Fuchs, M., Bodi, T., Irie, S. and Moyer, J. H.: Preliminary Evaluation of Hydrochlorothiazide ('HYDRODIURIL'); M. Rec. & Ann. **51**:872, (Dec.) 1958. 4. Moyer, J. H., Fuchs, M., Irie, S. and Bodi, T.: Some Observations on the Pharmacology of Hydrochlorothiazide; Am. J. Cardiol. **3**:113, (Jan.) 1959.



HYDRODIURIL (HYDROCHLOROTHIAZIDE)

- highly-active derivative of chlorothiazide
- qualitatively similar to DIURIL® but at least 10 to 12 times more potent by weight
- loss of potassium is clinically insignificant in the great majority of patients on normal diets

HYDRODIURIL*

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NEW RELEASE

IN HYPERTENSION:

- effective by itself in some patients—markedly potentiates other antihypertensive agents
- provides background therapy to improve and simplify the management of all grades of hypertension
- has been reported by some investigators to have a greater antihypertensive effect in some patients than chlorothiazide at equivalent dosage
- does not lower blood pressure in normotensives
- reduces dosage requirements for other antihypertensive agents, often with concomitant reduction in their distressing side effects
- smooths out blood pressure fluctuations

precautions: It is important that the dosage be adjusted as frequently as the needs of the individual patient demand. When HYDRODIURIL is used with a ganglion blocking agent, it is mandatory to reduce the dose of the latter by at least 50 per cent, immediately upon adding HYDRODIURIL to the regimen.

HYDRODIURIL has shown no adverse effects on renal function; for this reason it may be used with excellent results even in patients for whom the organomercurials are contraindicated because of renal damage.

The excretion of potassium is much lower than that of sodium or chloride and, as is the case with DIURIL®, the loss of potassium is clinically insignificant in the great majority of patients on normal diets. If indicated, potassium loss may easily be replaced by including potassium-rich foods in the diet (orange juice, bananas, etc.).

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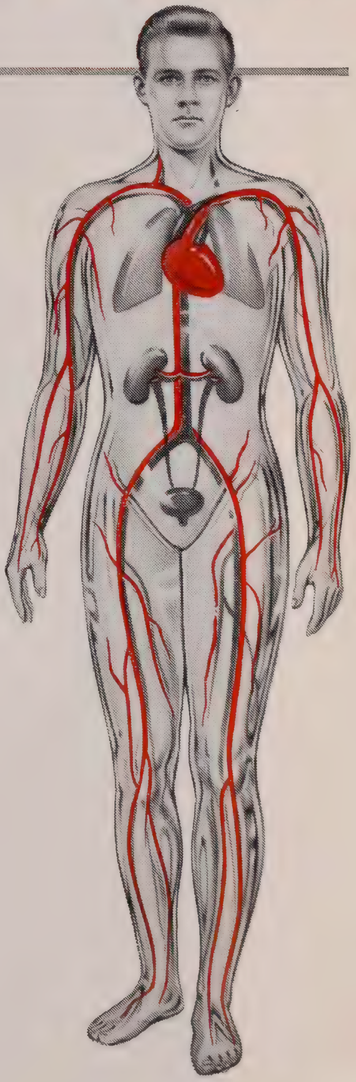

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A PROLONGED-ACTION DOSAGE FORM

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Each ENDURET prolonged-action tablet contains 75 mg. of active principle.
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WINE AIDS DIGESTION—Wine has been found to increase salivary flow,[1] stimulate gastric secretion[2] and facilitate the gastrocolic reflex.[3]

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Research information on wine is available on request. Just write for your copy of "Uses of Wine in Medical Practice." Wine Advisory Board, 717 Market Street, San Francisco 3, California.

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1. Winsor, A. L., and Strongin, E. I.: J. Exper. Psychol. *16*:589 (1933).
2. Ogden, E., and Southard, Jr., F. D.: Fed. Proceedings 5:77 (1946).
3. Adler, H. F.; Beazell, J. M.; Atkinson, A. J., and Ivy, A. C.: Quart. J. Studies on Alc. *1*:638 (1941).
4. Salter, W. T.: Geriatrics 7:317 (1952).
5. Wright, I. S., Arteriosclerosis, in Steiglitz, E. J.: Geriatric Medicine, Philadelphia, W. B. Saunders Co. (1949).

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Just one prescription for Engran "Term-Pak" (270 TABLETS)
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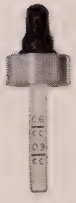

* *And when baby comes, specify* Engran baby drops—*full* vitamin support in *half the volume* of most similar preparations — lasts twice as long. Supplied in 15 cc. and 50 cc. bottles. Convenient 'Flexidose' Dropper assures accurate dosage.

Meat...

and its fat-protein calorie ratio*

For every calorie of fat provided by the average American dietary only 0.3 calorie of protein is provided. The quality of this protein ranges from poor to excellent.

On the other hand, cooked meat as usually eaten supplies from three to five times this number of protein calories in relation to the calories derived from its fat. The protein of meat is invariably of high biologic quality.

	Calories from Fat	Calories from Protein
in the average American dietary	1	0.3
in beef rump roast	1	1.27
in beef flank steak	1	1.42
in lamb leg roast	1	1.55
in pork loin chop (lean portion only)	1	1.36
in cured ham	1	1.04
in veal cutlet (lean portion only)	1	1.40

The high protein yield of meat exceeds that from any other main dish food in man's diet. The amino acid composition of meat protein closely approaches the quantitative proportions needed for effective biosynthesis of human tissue.

Meat—the chief source of top-quality protein, B vitamins, and minerals in the American diet—is also an excellent vehicle for nutritionally valuable fat, the amount of which is readily controlled by trimming and by selection of cuts.

*Leverton, R.: The Fat, Protein, and Calorie Value of Cooked Meats. Proc. 9th Research Conf. sponsored by the Council on Research of the American Meat Institute, University of Chicago, March 1957.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

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HIGHLIGHTS FROM THE A.M.A. COUNCIL ON DRUGS

REPORT ON TRIAMCINOLONE

J.A.M.A. 169:257 (January 17) 1959.

"It [triamcinolone] has an anti-inflammatory potency greater than an equal amount of prednisolone; i.e., comparable suppressive effects may usually be achieved with lower doses of triamcinolone than with prednisolone."

"Triamcinolone lacks the sodium-retaining and edema-producing effects of most other glucocorticoids. During the first several days of administration, it may cause a loss of sodium from the body; an initial mild diuretic action is frequently observed, whether the patient is frankly edematous or not. This is in contrast to the definite sodium-retaining and fluid-retaining properties of cortisone and hydrocortisone and to a much lesser extent with prednisone and prednisolone."

"Except in exceedingly large doses, triamcinolone apparently has no consistent effect on potassium excretion. Hence, neither sodium restriction nor potassium supplementation is ordinarily required during therapy with this agent."

"As with other glucocorticoids, the long-term administration of triamcinolone results in definite catabolic effects, as indicated by impairment of carbohydrate utilization and negative protein and calcium balance. This catabolic effect, coupled with a lack of appetite stimulation which is apparently peculiar to triamcinolone, may produce weight loss that might be undesirable in some patients treated for long periods of time."

"...the voracious appetite, with weight gain and euphoria, characteristic of other steroids, is not seen with administration of triamcinolone."

"Triamcinolone has been used for the management of a wide variety of clinical conditions usually considered amenable to systemic steroid therapy. These have included rheumatoid arthritis and other collagen diseases, allergic and dermatological disorders, certain leukemias and malignant lymphomas, the nephrotic syndrome, pulmonary emphysema and fibrosis, acute bursitis, rheumatic fever, and certain blood dyscrasias. Although clinical experience with the drug in some of the foregoing conditions is not extensive, the many similarities in action between triamcinolone and other potent glucocorticoids would indicate a usefulness for triamcinolone akin to that of other agents of this class."

"There is some evidence that triamcinolone is more effective at a smaller dosage than are other steroids in controlling both the skin and joint lesions in psoriasis, whether or not complicated by arthropathy."

"Triamcinolone appears to compare favorably with other steroids for use in those situations in which edema and sodium retention have been complicating problems."

"It [triamcinolone] may also be the steroid of choice for patients in whom psychic stimulation, euphoria, voracious appetite, and weight gain should be avoided."

"...the drug [triamcinolone] does produce the other side effects and untoward reactions common to the glucocorticoids. At therapeutically equivalent doses, the frequency and severity of clinical manifestations of hyperadrenalism — rounding of the face, fat deposition, and hirsutism — are essentially the same. Likewise, there is little indication that the relative incidence of osteoporosis is materially decreased after the long-term use of the drug."

"Triamcinolone apparently does not cause the euphoria sometimes seen with other steroids, and the occurrence of mental depressions is uncommon."

"Current evidence suggests that the drug [triamcinolone] may not produce as high an incidence of peptic ulcer as do other steroids."

"Cutaneous erythema seems to be a side effect peculiar to triamcinolone."

"The usual contraindications and precautions of glucocorticoid therapy should be followed in the use of triamcinolone, keeping in mind that prolonged therapy with this drug will suppress the function of the patient's own adrenals by interfering with the pituitary-adrenal axis."

Aristocort®

Triamcinolone LEDERLE

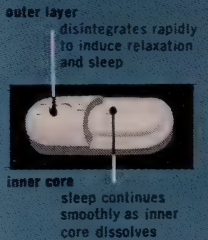
Supplied: 1 mg. scored tablets (yellow)
2 mg. scored tablets (pink)
4 mg. scored tablets (white)

Lederle

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

For those patients who complain

carries your patients through the middle of the night


outer layer
disintegrates rapidly to induce relaxation and sleep
inner core
sleep continues smoothly as inner core dissolves

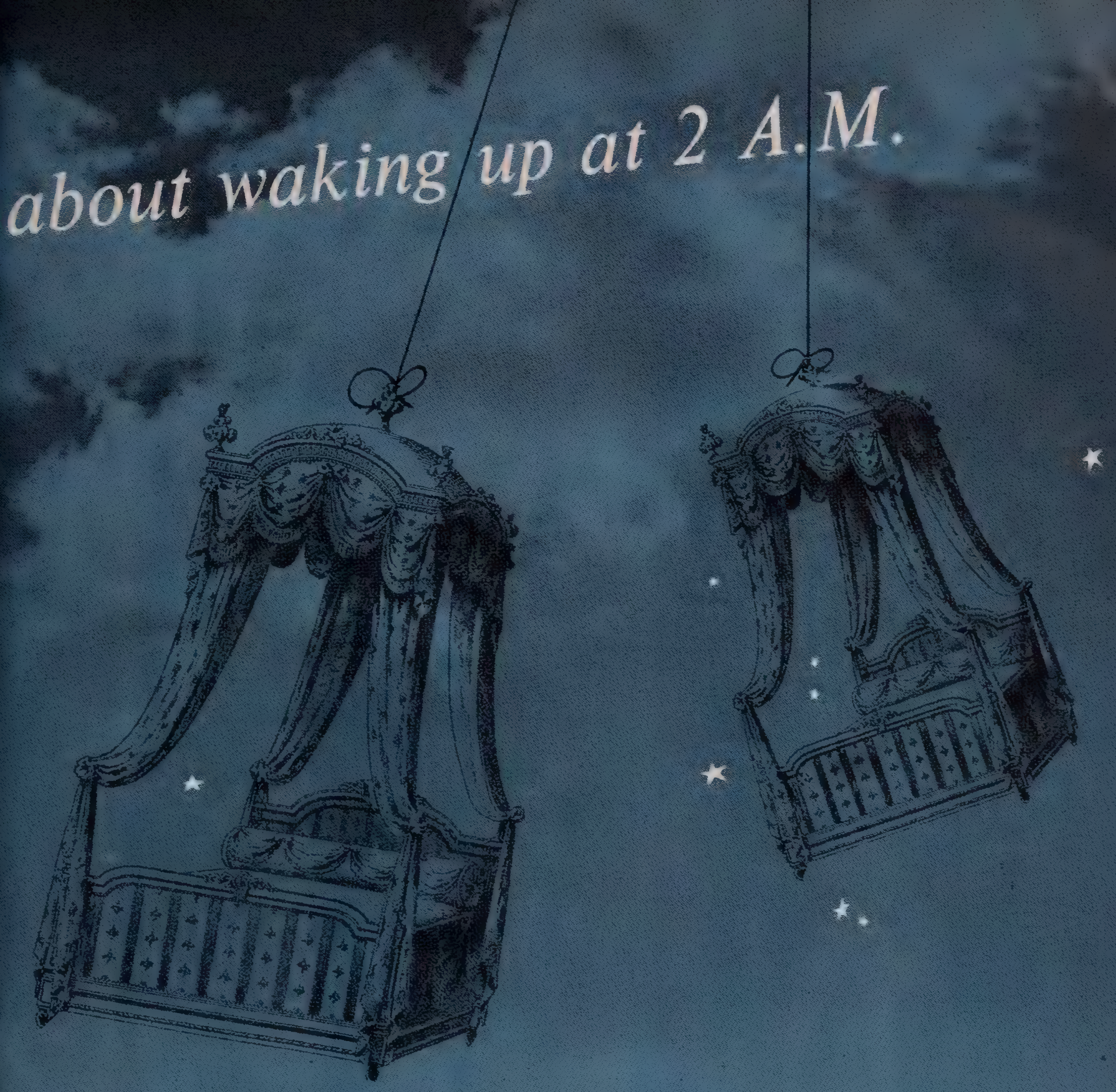
Each Nebralin timed-release tablet contains:

Dorsital* .... 90 mg.
Warning: May be habit forming

Mephenesin ....425 mg.
*Dorsey brand of pentobarbital

CAUTION: Federal law prohibits dispensing without prescription

Dosage: One or two tablets ½ hour before retiring.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1 Schlesinger, E. B.: Tr. New York Acad. Sc. 2:6, (Nov.) 1948.
2 Richards, R. K., and Taylor, J. D.: Anesthesiology 17:414, 1956.
3 Shideman, F. E.: Postgrad. Med. 24:207, 1958.
4 Berger, F.: Pharmacol. Rev. 1:243, 1949.

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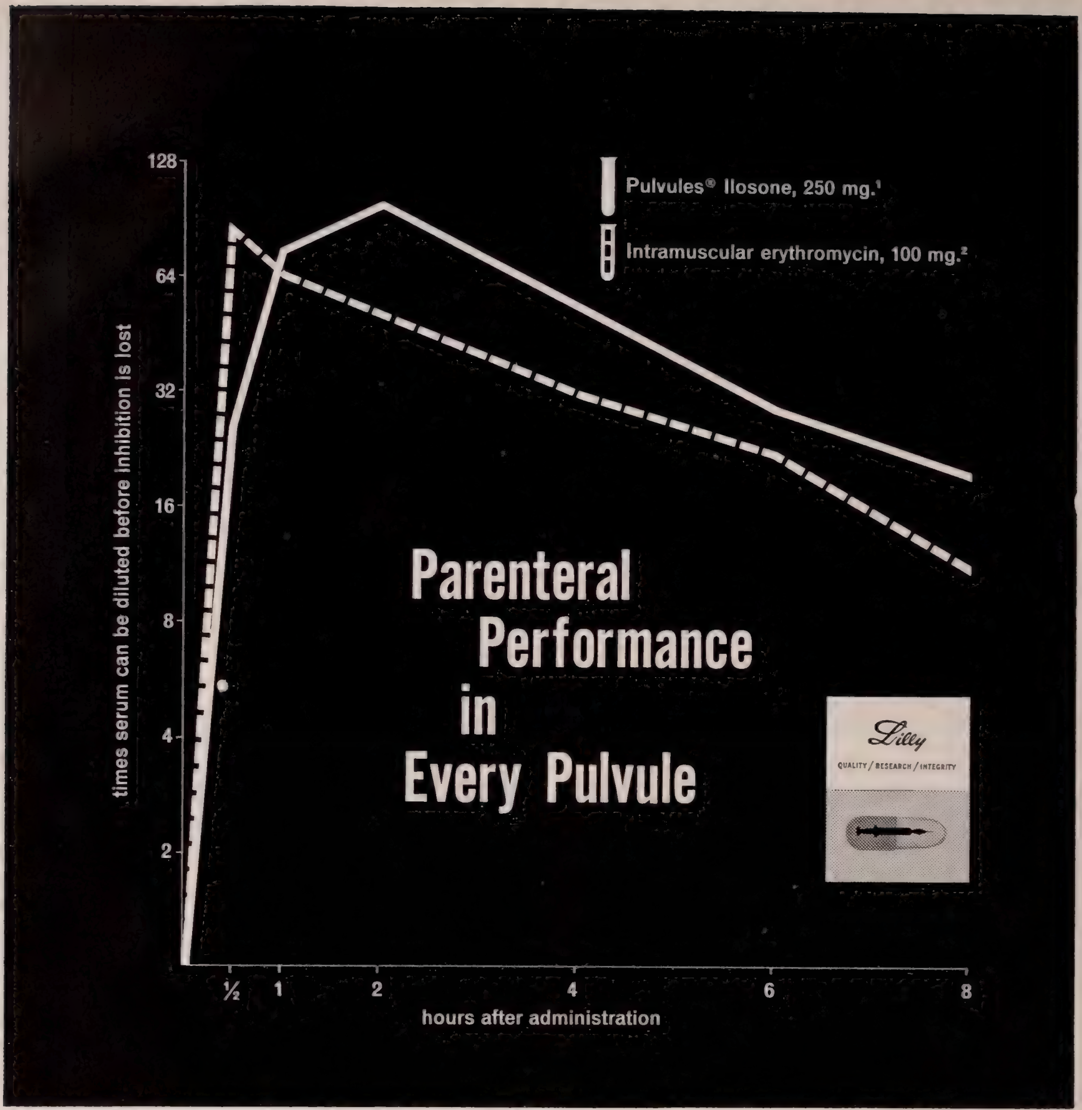

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1. Antibiotic Med. & Clin. Therapy, *5*:609, 1958.
2. Data from Antibiotics Annual, p. 269, 1954-1955.

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EDITORIALS

Controls in Medical Care Insurance

Since the time when Bismarck set up Compulsory Health Insurance, there has been an unsolved problem in sick care insurance. How is it possible to control excessive demands for services by some patients and restrain the provision of unnecessary services by some doctors?

In Germany before World War II and elsewhere, one and another scheme of police control has proved the futility of such efforts. Patients and doctors are antagonized and "gang up" against the control administration. Where medical benefits are supplemented by cash relief for incidental unemployment, the difficulties of rational controls are compounded. Even when there were as many policemen as doctors the abuses and excesses continued.

Here in North America those of our insurers who ventured early into the field of health insurance have undertaken controls by placing part of the costs on the insured—the so-called deductible or coinsurance plans. This method is not satisfactory for several reasons. It does not abate the abuses when there is a deliberate effort to cheat. It may fail to relieve the financial stress where most needed socially. It works to the advantage of both doctor and patient when the doctor is willing to falsify a claim to cover the patient's part of the cost—a premium on dishonesty, a leak in the dike of fidelity.

In recent years, the so-called diagnostic services (x-ray and pathology particularly) have added further complications because they are not adaptable to insured coverage: for example, when demand is made to satisfy curiosity. Here the coinsurance or deductible plan could serve as a reasonable restraint, then only justifiably for the purpose of holding demands to a clinical necessity for the expense.

Speaking on the topic of controls in medical care insurance:

> "As a general principle it is assumed that controls are needed for a small percentage of physicians and a small percentage of subscribers in any system of health insurance where there is a free choice of physicians who are paid fees for their services. Controls are intended to protect the majority of subscribers and physicians by preventing excessive demands for services by a few patients or the provision of unnecessary services by a few physicians."*

The modern electronic machines offer a possible solution. In the hands of the larger Blue Plans it will be possible to analyze experience as it has never before been scrutinized.

County by county, community by community, and doctor by doctor it will be possible to compare and identify the patient and doctor in that 5 per cent to 10 per cent who are responsible for demoralizing comprehensive medical care in a free-choice, fee-for-service program.

At a practical cost in time and money it will be possible to know how many patients were treated for any given condition or disease, how many visits at home or office, and the aggregate cost per individual case. This system admits of occasional and unusual variances without reflecting on either patient or physician. But in any given area, one or a small number do not have all the unusual cases while the majority of their colleagues treat only the ordinary or usual ones.

This takes problems of control of care rendered by physicians out of the lap of committees. Each doctor makes his own record and on that he is judged. The

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*Darsky, B. J., Sinai, N., and Axelrod, S. J.: Comprehensive Medical Service under Voluntary Health Insurance, Cambridge, Harvard University Press, 1958.

[Continued on page 1748]

PRESIDENT'S PAGE

LEO E. GIBSON, M.D.

The Medical Society of the State of New York has shown keen interest in the economics of medicine. As early as the Annual Meeting of the House of Delegates in April, 1915, it had the foresight to recognize how the socioeconomic changes in the practice of medicine would affect the doctor and the patient.

It was at this meeting that a committee known as "The Committee on Medical Economics" was appointed. As early as 1917 the chairman of this committee reported to the House of Delegates that the committee had two functions: (1) educational, to arouse the medical profession to an interest in compulsory health insurance, and (2) to make an intensive study of health insurance from the medical standpoint. Thus were laid down the principles regarding voluntary health insurance.

The first Blue Shield Plans were formed in the State of New York in 1939. At the end of 1940 these Plans had a membership of 4,100 and paid to the doctors for their services that year $10,700. The tremendous success of these Plans is indicated in the present membership of over 6,500,000 and benefits paid during 1957 were in excess of $65,000,000. The responsibility of the medical profession to the future success of these Plans is clearly indicated by these figures. This responsibility rests squarely on the profession because doctors are indispensable in providing for the care; also, the participating physicians become the underwriters of the Plans.

Blue Shield Plans have been unique in the prepayment field of medical care insurance because of the service feature and the community aspect of offering service to all types of groups.

In 1947 the House of Delegates of the Medical Society of the State of New York established standards for the approval of medical care insurance plans which offered among the basic provisions (1) local approval of the county society or societies in whose area the plan operates, and (2) professional control whereby a majority of the governing board shall be physicians who are acceptable to the local society or societies and the Medical Society of the State of New York.

In 1949 we saw the introduction of the Murray-Wagner-Dingell bill into Congress, and I am sure there are many physicians who recall the strenuous opposition the profession, again led by the American Medical Association, made against this bill. It became quite obvious that the Blue Shield Plans were the greatest bulwark against the socialization of medicine, therefore the profession should retain control of these Plans because Blue Shield Plans in cooperation with physicians offer the greatest protection to the entire community at the lowest possible cost for comprehensive quality care. The medical profession must be continuously alert to the demands of the consumer regarding more comprehensive care, particularly in the field of extended benefits for catastrophic illnesses. It becomes increasingly necessary that more doctors, particularly those who have the responsibility for operating the Plans, be more conscious of this responsibility to make certain that a third party does not obtain the direction or control of the "Doctors' Plans."

Now we are pestered with a succession of bills in the legislature which propose to extend the coverage of Blue Shield Plans to dental, podiatric, lay-operated laboratory, and now optometric services. The Blue Shield Plans are hardly recognized as the "Doctors' Plans' any more. The physicians may remain a majority on the Board of Directors and may assume all the liabilities while others receive all the benefits. The physician has agreed to accept the scheduled allowances as full payment for a patient entitled to service benefits and he, not the subscriber, sustains any loss incurred by the patient's inability to pay the allowances. The newcomers assume no such responsibility.

It appears that further responsibility will be placed on the physician. We have been repeatedly told by those in the government that unless the "Doctors' Plans" could assume the additional burdens of providing benefits for the increasing numbers of the aged in the low income groups the various governmental agencies would take on that function.

Blue Shield could assume this added responsibility but doctors must be realistic enough to know that the premiums might be so high as to price it out of the market. To accomplish what is proposed, to assume the medical expense benefits to the aged, may require some sacrifice by the doctor; his fees may be lower. In the future, unless we make some sacrifice now, the result may be that the doctors' fees may be set by the government and politicians.

Leo E. Gibson

LEO E. GIBSON, M.D., *President*

[Continued from page 1746]

ecord of a community is made by the community's doctors. The machine merely compiles and monitors the data.

It will then be up to the local county medical society to say at what level the conduct approaches excess and what to do about patients or doctors who habitually rate themselves in a bracket above par. Nothing dissipates and disciplines misconduct so certainly as exposure. Electronics can let the world know, whenever the medical society decides that such knowledge will serve the best interests of the profession and the public.

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SCIENTIFIC ARTICLES

Hypnosis, Diet, and Weight Reduction

L. B. WINKELSTEIN, M.D., MOUNT VERNON, NEW YORK

The management of obesity has become a major medical problem. Although most lay books on hypnosis mention the control of diet by this modality,[1-3] as far as can be determined to date no actual unbiased, scientific studies have been made. However, there are many interesting and well-controlled experiments that demonstrate the effects of hypnotic suggestion on various portions of the alimentary canal. Heyer[4,5] and Helig and Hoff[6] found that when individuals were given suggestions of mock feedings during a hypnotic trance, they reacted with increases in both the quality and quantity of the gastric juice similar to those of individuals given a real meal. Langheinrich,[7] Wittkower,[8] Luckhardt and Johnston,[9] and Delhaugne and Hansen[10] also have shown that hypnotic suggestion can simulate true feedings in modifying the secretion of bile, gastric juices, trypsin, lipase, and diastase, as well as increasing intestinal movements.

Deposition of fat occurs only when a positive caloric balance exists. This is true for all forms of obesity, whether due to dietary indiscretions or endocrine dysfunction. Much of modern eating is based not on the intrinsic need for alimentation but on habit patterns; visual appeal; demands of society; and, in a surprisingly large number of people, need for a substitution mechanism for deep psychologic stresses. Concentration and refinement of foods, preparation of foods with high visual appeal, along with decrease in bulk foods, all contribute toward an increase in positive caloric balance on the one hand; while on the other hand, caloric expenditure is lowered because of the increased use of the automobile, the elevator, the escalator, and the multitudinous automatic devices which are developed for increased comfort and ease of living.

It is the purpose of this study to evaluate, as objectively as possible, the phenomenon of hypnosis as a means of diet control, re-orientation of eating habits and, consequently, weight reduction. It must be understood that in and of itself the hypnotic state has no curative powers whatsoever.[11] The main therapeutic value of hypnosis lies in the fact that while in the trance state there is an increased susceptibility to receiving and holding acceptable suggestions. The patient expresses at least a superficial desire for help by the mere act of seeking advice and counsel. Thus, all suggestions should be theoretically acceptable, whether given under hypnosis or in a fully conscious state. We have attempted, therefore, to determine whether or not ideas relating to the control of diet could be more deeply implanted in the hypnotic state, and consequently, more completely accepted and followed. This work is a direct outgrowth of this author's study of hypnosis as an anesthetic and analgesic for obstetric delivery.[12]

Material

A group of 42 female patients were selected for this investigation. Selection was made on the basis of the following two factors: (1) the ability of the patient to enter a sufficiently deep trance state, and (2) normal histories and physical examinations. Ages ranged from sixteen to fifty-two years. All were in good health and presented no major medical problems except that of obesity. No definite endocrinopathies or overt psychoses were noted. The ideal weight for each individual was calculated by interpolation of the findings at physical examination with the average taken from height-age-weight tables. The amount of excess adiposity, using these criteria, varied from 10 to 60 pounds, with an average for the entire group of 32 pounds.

Methods

Complete physical examinations, including blood counts, urinalysis, basal metabolic rate, blood sugar, blood cholesterol, and superficial psychiatric evaluation were done on all patients. Each patient was treated on an individual basis. Thyroid, other metabolic stimulators, and anorexic agents were never suggested or used during the entire study period.

Positive and negative caloric balance was discussed with each patient, together with an explanation of the method to be employed. At no time was the experimental nature of the procedure mentioned, since this might have cast doubt on the outcome. Similarly, because of inherent fears of the word hypnosis, this term was seldom used. Substitution phrases, such as "relaxation and suggestion," "subconscious suggestion," or "psychokenesis" were employed during the initial training period and during the first few sessions. Moreover, even when the word hypnosis was not employed, after one or two sessions most patients inquired as to whether or not the method was not true hypnosis or a form of hypnosis. All these phrases became readily acceptable after the patient was told that the procedure could become a means of increasing and fortifying the will power in regard to the intake of food.

It is neither the purpose of this discussion, nor is it necessary to describe in detail the induction of the hypnotic state. Actual technics of hypnosis are simple, and any of the standard textbooks dealing with theory and practice give details of the many and varied procedures.[13–15] In our hands no single procedure for induction was satisfactory, so that the method depended in great part on the individual and her response to early suggestions. Usually good rapport was established at the first session, although occasionally a second was necessary. If a deep trance state could not be established after two attempts, this case was automatically eliminated from this study. After the trance state had been induced, it was deepened at subsequent sessions to a point where posthypnotic suggestions would be accepted and followed.[13] This was most necessary and desirable in order to achieve satisfactory modifications of the dietary regime and also to reinduce the trance state by means of a key phrase, which resulted in a great saving of time.

In our early experimentation with diet control by hypnosis, it was noted that suggestions offered usually lasted for less than twenty-four hours. With repeated sessions, however, the length of time was increased, so that after the second to fourth induction a large part of the implanted ideas would carry over for several days or even for weeks. Therefore, in the main, training by hypnotic suggestion was found to be most satisfactory when sessions were held approximately twice weekly for the first two weeks, once weekly thereafter for four to eight weeks, and at less frequent intervals up to fourteen weeks. Forel[16] has reported similar responses and stated that the effects of hypnotic suggestion increase with the frequency and number of hypnotic training periods up to a certain point, but that the effect is weakened if too many or too closely-spaced sessions were initiated. Group therapy in units of 2 to 4 patients was also attempted. However, since this introduced the additional factor of individual

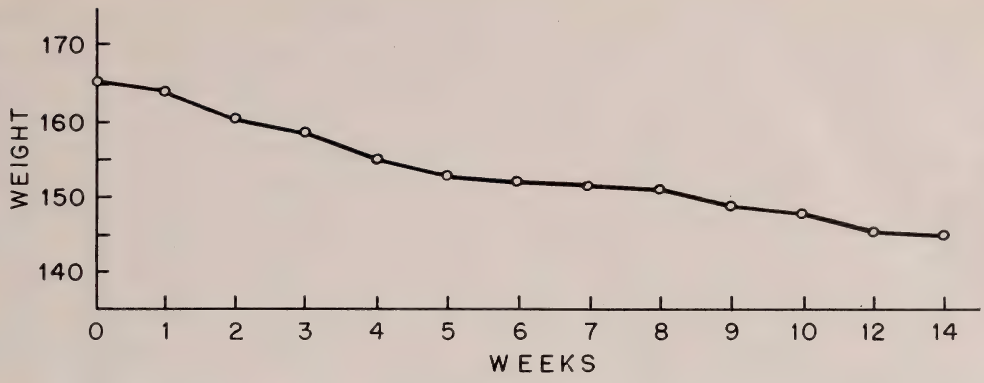

Fig. 1. Average weight loss per week with hypnotic suggestion in 42 cases.

rivalry, it was discontinued. The total amount of time spent with each patient also had to be considered. For the initial interview, and for the induction of the first hypnotic trance state, approximately one half to three quarters of an hour was necessary. Once rapport was well established, and once induction could be completed by means of a cue phrase, subsequent interviews averaged from ten to fifteen minutes each.

Once the trance state was well established, many different types of suggestion were offered. All were made with the aim of trying to break the patient's present dietary pattern by substitution of more rational eating habits, thus reducing total caloric intake. Following observation and experimentation with many different suggestions, it was noted that maximally best results were obtained when suggestions were aligned along these six different channels:

1. A fortification of the patient's desire for weight loss, stressing health, social, and vanity angles; a reinforcement of the patients' feelings as to her own specific reason for elimination of fat. An explanation of caloric balance, together with various caloric values of foods.
2. Suggestions as to the development of proper eating habits, including elimination of between-meal feedings; elimination of "coffee breaks," "television snacks," as well as increasing resistance to social demands for eating.
3. Suggestions as to the refusal of high caloric foods at meal times; also direct suggestions as to the actual type of diet, such as high protein, low fat, and carbohydrate to be followed.
4. Suggestions as to the decrease or absence of hunger. Included in this was also the suggestion as to proper intestinal function and proper elimination.
5. Special suggestions appropriate to the time or occasion. Among these was the implantation under hypnosis of huge mock feedings, with the idea of continuing sense of gastric fullness; suggestions of decreased sodium intake where desired; suggestions of poor or bad-tasting qualities of various high-caloric foods.
6. An attempt to assay, if possible the psychologic drive for the increased ingestion of food, either by age regression, dream projection, or direct questioning.

Results

Primarily, this is not, nor was it meant to be, a statistical study of weight loss. We feel that the number of cases treated was adequate to give an indication of the potentialities of the method as expressed by averages for the entire group. Again it has been stressed that all other factors were eliminated as far as possible (anorexic drugs, sedatives, metabolic stimulators, competition, and outside pressures) so that the true value of hypnotic suggestion could be evaluated.

Changes in weight were measured and recorded weekly. The average weight curve for the entire group over periods of fourteen weeks and six months is expressed graphically in Figures 1 and 2. The weekly

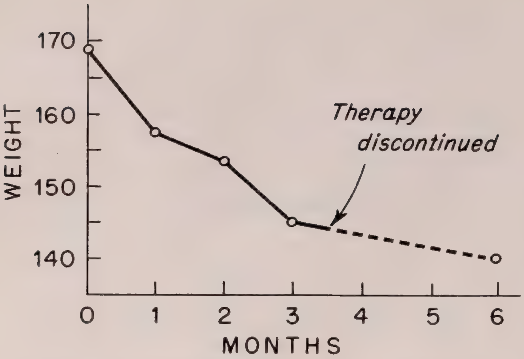

Fig. 2. Average weight loss of 42 patients over a period of six months with hypnotic suggestion.

weight variation, together with the maximal and minimal weight changes for a period of fourteen weeks is shown in Figure 3. The maximal weight loss was 58.5 pounds; the minimal, 9.25 pounds; and the six months average for the entire group was slightly under 27 pounds. The amazing total amount of weight lost for all patients was 1,124 pounds, well over half a ton. Loss in weight varied from week to week, the maximal amount in any one week by any one patient was 6.6 pounds (Fig. 3). In general, it will be noted also that although an allover reduction resulted, there were periods in certain individuals where the suggestions offered did not hold, and there was an actual gain in weight. This gain, however, usually was balanced by greater losses in subsequent weeks. The average weight loss per week during the fourteen weeks of active treatment was 1.66 pounds, and the average for the entire six months study was 1 pound per week. It is also interesting to note that none of the original group dropped out during the fourteen weeks of active hypnotherapy, and that in every single case the terminal weight at six months was below the original starting weight.

Comment

Popular conceptions of hypnosis carry connotations of mysticism, the psychic, and the supernatural. This in part stems from professional performers and charlatans. Williams[17,18] has demonstrated amply that the trance state in reality is most commonplace and ordinary, and has been experienced by most people, although usually it has not been recognized as a hypnotic or trance phenomenon. Hence its occurrence will pass unnoticed, and remain unrecorded. A few familiar examples of this phenomenon are the sleep-producing factors of night driving, the relaxation of listening to soft music, the soporific effects of fishing, and many others. The exact nature of both the inductive process and of the trance

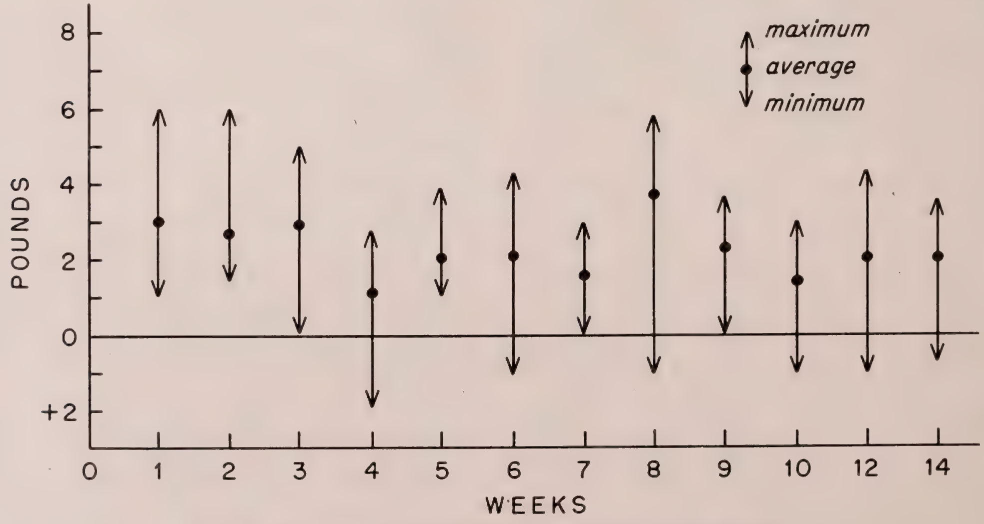

Fig. 3. Average weight loss in pounds per week in 42 cases.

state itself is as yet only very incompletely understood. It is not known why acceptable suggestions are better received, are more deeply implanted, and are followed longer and more easily when given with the patient in the "trance state," as compared with suggestions offered in the "awake state." But the fact that this does occur is known and can be utilized as a great and potent force for many disturbances where the psyche and will power are involved.

Even a superficial glance at the results of this study (as graphically expressed in Figs. 1 to 3) shows that hypnosis and hypnotic suggestion can be used as major therapeutic agents in the regulation of obesity. Although it may be claimed, from the results of studies previously described, that hypnotherapy may act through changes in the function of the endocrine glands or production of some modification in somatic or psychic metabolism, from our observations we feel that its main efficacy lies in the building up of new and more rational dietary habits. This seems to be demonstrated by the fact that, although early effects were ephemeral and short-lasting, repetition of the posthypnotic suggestions resulted in an increased resistance to dietary indiscretions and an increased will for proper alimentation. In other words, the initial result of hypnotic suggestion was notably temporary, lasting only a few hours or at most a day. However, repetition and reinforcement substantially increased both the degree and the effective time continuation of the suggestions. Moreover, because of the forced change in the habit pattern of eating, it was gratifying to note that the effective changes in the dietary regime were not lost even when the active trance therapy had been stopped.

At the onset of this study we found considerable difficulty in evaluating the effect of hypnotic suggestion. However, as proficiency and assuredness in both technic and effect increased, the tremendous value of hypnotic suggestion was repeatedly demonstrated. In order to illustrate the care in the choice of suggestion and the marked forcefulness of these suggestions the following two cases are cited, in part, for illustration.

Case 1.—The patient was a twenty-four-year-old woman, 5 feet, 3 inches tall, and weighing 176 pounds. The physical examination and the laboratory studies were within normal range. A diet had been attempted several times previously, using thyroid and anorexic drugs with minimal success, but there had always been a return to the original weight. Her estimated normal weight was between 125 and 130 pounds.

Hypnosis was easily induced in September, 1956, and was carried to a very deep stage. Hypnotic suggestions were given. The weight loss per week in the first five weeks was as follows: 5, 5, 3, 1, and 0 pounds. Following this there was a weight gain of 1 pound per week for two weeks. In order to reverse this trend, further hypnotic suggestions were offered, among them one that she would remain on a liquid diet for three days during which time she would reject all solid foods. On her return, she stated that "she had not felt good," that she had a continuous gastric distress, and that she was unable to keep any solid food in her stomach, because each time she ate solids she vomited. It was then realized that the word "reject" had been interpreted in an entirely different sense from the one originally intended when it had been offered. The suggestion was removed, other suggestions were offered, and the patient had no further complaints.

The second case, described in the part following, illustrated not only the effect of hypnotic suggestion on a diet, but also on somatic functions.

Case 2.—The patient was a twenty-nine-year-old woman, 5 feet, 4 inches tall, and weighing 185 pounds. Her estimated normal weight was 140 pounds. A physical examination showed her to be normal in every way except for her obesity. The patient gave a history of a severe dermatitis, probably of neurologic origin, during her first pregnancy, and a history of a severe hypoglycemia during her second pregnancy, a condition which had continued to the present time. The diagnosis of hypoglycemia, and probably of hyperinsulinism as the cause of repeated attacks of syncope, had been verified.

The patient accepted hypnosis and hypnotic suggestion readily in January, 1957. Suggestions including a low carbohydrate high-protein diet with additions of fruit juice partially to counteract the low blood sugar were offered. Weight loss during the first three weeks was 3 pounds, 1 pound, and 1 pound. However, the patient complained of repeated attacks of dizziness, tremors of the extremities, and weakness during this period. Suggestions under hypnosis were then offered, stating that the signs of lowered blood sugar would disappear, and that she would feel very well. Furthermore, she was told that her blood sugar mechanism would become normal, and that it would not be necessary or advisable for her to drink fruit juices in the future. After two weeks, during which time she had three hypnotic sessions, all symptoms of hyperinsulinism disappeared. She continued therapy and lost 39 pounds during a six-month period. She has felt well since that time, and has remained at a stationary weight of about 150 pounds.

Summary

1. Hypnosis and hypnotic suggestion were used as a method of diet control and weight reduction in 42 female patients for a study lasting six months.
2. Weight losses varying between 9.25 and 58.5 pounds were recorded, with an average for all case studies being just below 27 pounds.
3. No anorexic or metabolic stimulating drugs were used.
4. The types of suggestion and their posthypnotic carryover were demonstrated and evaluated.
5. It is felt that hypnotic suggestion probably acts through correction of diet and changes in the habit patterns of eating rather than through some unknown bodily change, although such changes cannot be excluded.

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TREATMENT OF LOW BACK PAIN AND SCIATIC SYNDROMES DURING PREGNANCY*

Moderator

JOSEPH A. EPSTEIN, M.D., HEMPSTEAD, *Assistant Clinical Professor of Neurologic Surgery, Albert Einstein College of Medicine; Staff Neurosurgeon, Long Island Jewish Hospital*

Panelists

JOSEPH BENTON, M.D., NEW YORK CITY, *Director, Department of Rehabilitation and Physical Medicine, Long Island Jewish Hospital*

JEFFERSON BROWDER, M.D., BROOKLYN, *Professor, Neurologic Surgery, State University of New York, Downstate Medical Center*

LEROY S. LAVINE, M.D., NEW HYDE PARK, *Attending Orthopedic Surgeon, Long Island Jewish Hospital; Assistant Professor of Orthopedic Surgery, State University of New York, Downstate Medical Center*

ALEXANDER H. ROSENTHAL, M.D., GREAT NECK, *Chief, Department of Obstetrics and Gynecology, Long Island Jewish Hospital; Clinical Associate Professor of Obstetrics and Gynecology, State University of New York, Downstate Medical Center*

ROBERT WARREN, M.D., BROOKLYN, *Director Orthopedic Surgery, Kings County Hospital; Associate Professor of Orthopedic Surgery, State University of New York, Downstate Medical Center*

Introduction

DR. JOSEPH A. EPSTEIN: I would like to welcome all of you to this symposium, organized by the Departments of Surgery and of Obstetrics and Gynecology of the Long Island Jewish Hospital, on the treatment of low back pain and sciatic syndromes during pregnancy.

Problems of this nature, although of general concern, are most often the responsibility of those most intimately associated with the practice of obstetrics. Minor distress is frequently accepted as a normal burden of pregnancy, to be tolerated primarily because complaining evokes little except sympathy. Disabling pain during the last trimester of pregnancy may force an otherwise productive individual to remain inactive and, at times, bedridden. Fear of anticipated disability may contribute to early invalidism in certain individuals.

As the situation approaches more serious proportions, consultation is sought. However, to whom should one turn? The obstetrician, the orthopedist, the neurosurgeon, and the physiatrist all have contributions to make, each in his specific field and, more important, in overlapping spheres of interest. It is both physically and economically impossible for one person to avail herself of the services of a group of this nature.

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Recent experience with this problem provided the motivation for the present program. With the advice and assistance of the members of this panel it was possible to organize this symposium in which the various disciplines in common consultation may possibly initiate a program of preventive care and supportive therapy.

This evening we have been fortunate in assembling a group of outstanding physicians familiar with this problem and all of its complexities. Their rapid and warm response to our invitation has been most gratifying and rewarding.

It gives me great pleasure to introduce Dr. Alexander H. Rosenthal.

Obstetric Changes

DR. ALEXANDER H. ROSENTHAL: For my part in this symposium on backache and sciatic syndrome in pregnancy I would like to confine myself principally to those changes occurring in the musculoskeletal system in pregnancy which tend to predispose the patient to backache. Presumably the pregnant woman can have any affliction that the nonpregnant patient may have, but what is there about pregnancy which alters conditions? There is a relationship, and I shall include three aspects of this relationship.

1. Anatomic and physiologic changes (there is x-ray evidence for certain of them).
2. Hormonal relationships.
3. Clinical manifestations.

According to Thoms,[1] relaxation of the pelvic joints during pregnancy was known as early as 1870, and since then this change has been repeatedly demonstrated to be a normal physiologic occurrence. This relaxation is demonstrable by x-ray examination so early in pregnancy that any clinical cause is rendered extremely unlikely. Many years ago DeLee, in his well-known textbook on obstetrics, emphasized that in the human the joints soften, thicken, and permit the bones to become more mobile on one another. He believed that the widening which occurs in the symphysis pubis and sacroiliac joints enlarges the cavity of the pelvis. It is curious that although a wealth of papers on the subject was published from the years 1928 to 1938, no less than 200, there have been relatively few reports in the past decade. Although all agree that widening in the symphysis pubis and a similar change to a lesser degree in the sacroiliac joints occur, there is little evidence to show that the enlargement of the diameters of the true pelvis is sufficient to convert a potentially difficult labor into an uncomplicated one. Furthermore, although alteration in the joints occurs during pregnancy, there apparently is no added change during labor. There also is some evidence to show that distention in the pelvic joints permits rotary movements in the sacroiliac joints. It is this latter change which is held to be more significant than the changes in the symphysis pubis in regard to the production of backache. There is also some evidence to indicate increased vascularization of the ligaments around the symphysis pubis and sacroiliac joints as well as some retrogressive bone changes, but I leave it to my better informed colleagues on this panel to discuss this aspect of the subject.

The reports on x-ray evidence for widening of the symphysis pubis and sacroiliac joints during pregnancy are conclusive. The actual increase in width in the symphysis pubis varies from 1 to 12 mm., the average being about 5 mm. Although expansion of the sacroiliac joints also occurs, there is less increase in width. Within two to three months after delivery these changes disappear. X-ray examination of women complaining of backache also has shown disk instability, vertebral retroposition, and reduction of the lumbosacral interspace in certain cases, but again I will leave the significance of such findings for discussion later on.

The changes which occur in the pelvic joints are believed to result from the action of two hormones, the follicle hormone estrogen and a hormone from the corpus luteum. In 1929 Hisaw[2] presented evidence to show that a hormone from the corpus luteum, which he called relaxin, was responsible for the relaxation of the pelvic ligaments in guinea pigs after the animal had been primed by the action of estrogen. He also investigated pregnant women during the last trimester of pregnancy but was unable to find relaxin and therefore concluded that either the mechanism in humans was different from that of guinea pigs or that if relaxin was actually elaborated in the human being, it occurred only early in pregnancy. There is experimental evidence by others to indicate that the estrin effect on the symphysis pubis is accentuated by a corpus luteum hormone. It has been shown that changes in the pelvis typical of pregnancy in guinea pigs and mice can be completely reproduced by giving estrogen plus corpus luteum hormone to the nonpregnant female and even to male experimental animals.[3]

There are other hormonal influences on the skeletal tissue which are complex and as yet not fully clarified but which may have a bearing on this subject. I call your attention to evidence of the favorable effect of pregnancy on chronic atrophic arthritis, the belief that loss of ovarian hormone in menopause may cause osteoporosis, and the experimental evidence in birds and mice that formation of new bone can be induced by the administration of estrogens.

In regard to the clinical syndromes produced, the report which has impressed me the most is that of Genell[3] who in 1948 published a comprehensive article on what he called "pelvic insufficiency." He describes it as a condition arising in the latter half of pregnancy which manifests itself as a deficient firmness in the pelvic joints causing the production of secondary muscular reactions in the form of contractions. As I have already stated, many individuals interested in this subject believe that the most significant change in pregnancy which predisposes the woman to backache is the rotation of the pelvis on the sacroiliac joint as a result of changes in this joint.

Before concluding my portion of the discussion I would also like to refer to the postural aspects of pregnancy. The change in the center of gravity in the pregnant female with the compensatory increase in the lumbosacral curve, producing the so-called proud posture of the pregnant female, is well known. Dr. Beck[4] is convinced that a properly fitted and applied corset along with low heels does much to alleviate the usual backache of pregnancy.

Dr. Epstein: Dr. Leroy S. Lavine will now consider the orthopedic aspects of this problem.

Orthopedic Causes

Dr. Leroy S. Lavine: I will discuss the orthopedic causes of backache in pregnancy, and Dr. Robert Warren the symptoms and treatment.

From an anthropologic point of view it is interesting to speculate at what stage in man's evolution he became upright. Students of anthropology feel that there is reason to believe that erectness has been a characteristic of man and his ancestors for ten million years or more. However, we as physicians are interested primarily in the pathologic changes that result from such a postural position.

Man's erectness is not a congenital characteristic. Each individual of the species must acquire anew the ability to stand upright. That this is a difficult feat of balance can be verified easily by watching an infant make his first attempts at walking.

An infant is born with a straight spine. After the infant learns to hold his head erect, at about three months, he develops curves in the cervical region. When he learns to walk erect, he develops curves in the lumbosacral region. The spine becomes hyperextended in these regions and the erect posture is possible only with these curves of the spine steadied by the powerful sacrospinalis muscle groups. These muscles have become powerful at the expense of the flexor group. In man's transition from the more primitive postures only the rectus abdominis muscles remain to flex the lumbar spine and counter those forces tending toward further extension.

Man's center of gravity of the trunk has been displaced backward, to the extent that weight is being carried on the posterior aspect of the intervertebral disks and apophyseal articulations of the spine in both the cervical and lumbar regions. The penalty paid for the erect posture is mechanical instability of the back.

Superimpose on this situation the postural changes of pregnancy! The pregnant woman throws her shoulders back and straightens her neck and head. The normal lumbar lordotic curve is exaggerated, further rotating the pelvis forward. This gives the patient a peculiar attitude and gait, "the pride of pregnancy," as Shakespeare called it.

The comparative rapidity of development of lordosis seems to cause a malarrangement of ligamentous and muscular attachments in the paravertebral areas, resulting in a departure from the normal stress and strain. Static stresses may be noticed as early as the fifth month, but more often the complaint becomes common during the sixth or seventh months.

This mechanical strain is heightened by hormonal factors, discussed by Dr. Rosenthal, which cause softening of the supporting and connective tissue. There is no wonder that mechanical backache is common or that a pre-existent disease becomes manifest during pregnancy.

What are some of the pre-existent diseases that can become manifest in pregnancy? Congenital anomalies can affect stability. To this group belong the different clefts and pseudarthroses, incomplete formation of the laminae in the lumbar and sacral regions, the so-called separate neural arch, and the forward displacement of the fifth lumbar vertebra on the sacrum (spondylolisthesis). These anomalies usually are not directly responsible for low back pain, as shown by the fact that one sees many cases of spondylolisthesis without either low back pain or radiation. Nevertheless, such a spine is potentially weak and susceptible to strain because the ligamentous apparatus at the junction is poorly developed.

There is another group of congenital anomalies that affect mobility of the spine. The arrangement of the lumbosacral articulations is considered here. They may deviate from normal, being arrested in the sagittal instead of the frontal plane on one or both sides (tropism); this deprives the lumbosacral junction of its normal rotary range, making it unable to absorb the rotary impulses coming from the upper body or through the pelvis.

An abnormally long transverse process, in its higher degrees, sacralization, is another variation which reduces mobility at the sacrolumbar junction. In this case the motion in the sacrolumbar region becomes transferred to the articulation between the fourth and fifth lumbar vertebrae. Since this articulation is usually arranged in the sagittal plane, lateral motion and especially rotation suffer a considerable restriction.

These conditions may exist without symptomatology until the strain of pregnancy is superimposed. In diagnosing these conditions the x-ray is of great importance.

In the preherniated disk era most backache was felt to be caused by instability at the sacroiliac joints. Dr. Rosenthal has covered some of the changes occurring here. This diagnosis has fallen into disrepute since the sacroiliac joints are among the most stable joints in the body. However, with hormonal relaxation of pelvic ligaments and occasional separation of the symphysis pubis, with its mechanical strain on the sacroiliac joints, this diagnosis must be strongly considered in the pregnant female.

Coccydynia usually occurs late in pregnancy or in the postpartum period. The most common cause is ligamentous strain during delivery. On digital examination, motion of the coccyx at the sacrococcygeal joint may cause pain or a tender area can be localized in the attachments of the muscle or ligaments. Or, we may see pain with no localizing signs; this is the most distressing type. Coccydynia so often occurs in neurotic subjects that the treatment of this condition is often colored by this fact. It might be worth while to mention here that in back pain which persists for any length of time there are almost always some psychologic implications.

In cases with sciatic radiation the most frequent cause of back pain is the herniated intervertebral disk. I will leave the main discussion of this problem to the neurosurgeons. However, I have seen on several occasions the development of symptoms of a herniated intervertebral disk after delivery, and this suggests to me that the reduced muscular tone present at such times may predispose the woman to intervertebral disk injury.

Another mechanical cause of pain in pregnancy, which has been in the literature recently, is meralgia paresthetica. It is suggested that the anatomic and physiologic concomitants of pregnancy may have some bearing on the cause of this condition. The nerve involved is the lateral femoral cutaneous nerve of the thigh, which is wholly sensory and arises from the posterior roots of the second and third lumbar nerves. It enters the thigh by passing medially to the anterosuperior iliac spine and deep to the inguinal ligament and supplies the lateral aspect of the thigh down to the knee. Again, lumbar lordosis, abdominal swelling, weight gain, and fluid retention by the tissues increase the tension on the abdominal wall, and thus the lateral femoral nerve becomes involved.

I have attempted to confine my remarks to mechanical causes of backache. There are other causes of backache in pregnancy, such as tumors involving the spinal cord and spinal column, infections, reflex pain from visceral disease, and metabolic disease, all of which, on occasion, must be considered.

Dr. Epstein: Dr. Robert Warren will concern himself with the orthopedic management of this problem.

Orthopedic Management

Dr. Robert Warren: There will be some repetition but it will not be excessive, so please bear with me.

In orthopedic surgery we recognize two types of strain, static and dynamic. Dynamic strain, of course, is the type of strain which occurs with an injury in which there is actual rupture of soft tissue structures. Static type strain can occur on the basis of posture or prolonged positioning. To dismiss this briefly, the best example (which everyone will recognize) is "World's Fair feet."

In the pregnant female the posture changes as the uterus enlarges during the last trimester. There is gradual increase in lumbar lordosis and backward thrust of the shoulders. This posture is adopted for purposes of balance. The muscles of the trunk, in addition to taking on an unusual alignment, are also forced to remain in this position, assuming the status of a static strain with the associated symptom of low back pain. Most of you are in a better position to know what percentage of women have various degrees of low back pain of this type during pregnancy, but in my experience, as nearly as I can ascertain, it occurs in about 100 per cent of patients, ranging from discomfort to severe pain. This type of pain, based on chronic altered and prolonged positioning can be relieved temporarily by the exercises of natural childbirth, as outlined in the monographs by Heardman[5] and Thoms.[6] No matter what the attitude toward natural childbirth, all will agree that the exercise of flattening the back and thereby correcting the exaggerated lumbar lordosis will relieve the tension pain of static strain associated with posture. The exercise can be done standing by flattening the back against a wall and tilting the anterior pelvis upward, thereby shortening the distance between the zyphoid and symphysis pubis. The same exercise can be done when leaning over a table or when on hands and knees by humping the back. This will cause only temporary relief of symptoms, but the exercises can be performed as indicated until the termination of pregnancy.

The next cause of low back pain which is peculiar to pregnancy or the postpartum period is that associated with hormonal relaxation of the structures of the pelvis. The symphysis pubis becomes relaxed and an unusual strain is thrown on the sacroiliac joints. There may or may not be spontaneous pain over the symphysis, but there is pain in the low back. On physical examination the patient usually has tenderness to pressure over the symphysis. The separation may or may not be palpable. The pain is aggravated when the iliac crests are compressed or separated. With the patient on her side, rotary strain is placed on the symphysis by backward pressure at the anterosuperior iliac spine against forward pressure over the ischial tuberosity. This test for pain is more probing and is only performed if the first two give negative results. It may be that the patient's pain is so severely aggravated by any motion that turning on the side is an unnecessary hardship, particularly if the test is only to confirm what is already known. On occasion the symphysis may be so relaxed that on attempted straight leg raising on either side subluxation of the symphysis may be felt by the examiner and the patient as well.

X-ray films may give negative results or may show a widening of the symphysis with or without loss of transverse alignment. According to the geneticists, x-rays may be taken after the beginning of the third trimester without fear of injury to the fetus. However, they are of little value in this instance because even if they give negative results, treatment must proceed. It may not seem credible, but I have seen cases, in connection with malpractice evaluation, in which treatment on the basis of negative x-rays was denied in spite of vigorous and repetitious subjective complaint, which only served to get the patient labeled as a psychoneurotic. Because of the general instability of the relaxed pelvis great care in getting the mother on and off the delivery table and into stirrups must be exercised, as everyone performing deliveries is well aware. Because of instability and the ready possibility of subluxations following delivery, the patient, in my opinion, should receive a test of manipulation if she complains of pain in the low back or symphysis aggravated by any motion. The type of manipulation which I use is the one described in a monograph by the British author Mennell.[7] Whether or not the patient has received a salutary effect from the manipulation, the relaxation persists.

The treatment for relaxation of the pelvis during pregnancy and the postpartum period consists in the use of a garment which will be a vehicle for a strong pelvic band. I have not seen a patient who did not recover by this treatment alone. In the presence of a wide separation I have seen traction harnesses and slings, in conjunction with prolonged hospitalization, employed, this type of treatment being given particularly when there is separation of the symphysis with loss of horizontal alignment. In my opinion this is overtreatment since the patient becomes asymptomatic as the pelvis firms up, whether or not there is restoration of anatomic alignment.

If we accept the usual theory that low back pain is produced by ligamentous and capsular strain of enough severity to cause excessive motion in the adjacent joints, we can predicate that with relaxation of the pelvis, as in pregnancy, there would be referred pain to other supporting ligamentous structures. This would account for the pain in the area of the perineum and coccyx from referred pain from the sacrotuberous and sacrospinous ligaments. It would also account for the pain in the buttocks in the area of the pyriformis muscle. Although theoretically it may seem unwise to increase abdominal pressure, a garment with a firm pelvic band is again indicated since the basic cause for the pain is still the presence of relaxation of the pelvis.

Meralgia paresthetica was mentioned by Dr. Lavine as one of the anatomic and psychologic concomitants of pregnancy. He mentioned the mechanical setup but failed to mention that in most series the condition occurs three times more frequently in men than in women. The condition is associated with numbness, tingling, burning, and pins-and-needles sensations on the anterolateral aspect of the thigh. The pain may be so severe that the patient complains of excessive fatigue, tension, and irritability. Dr. Lavine mentioned the usual supportive treatment which is designed to prevent increased irritation of the lateral femoral cutaneous nerve by relieving angulation and tension below the inguinal ligament caused by the sagging and protuberant abdomen. It has been stated that this condition may be of enough severity to warrant the termination of pregnancy or division of the nerve. I cannot see that the latter is a feasible solution since the site of trauma has been described as possibly existing retroperitoneally and there is still discussion whether the condition exists primarily on a toxic basis, with the mechanical aspects incidental.

Various causes of pain in routine orthopedic situations have been mentioned. The only comment which I can make is that low back pain is a serious enough problem at best and that pregnancy renders the management more difficult. Beginning in the third trimester the usual treatment of placing the patient flat on a bed board is unsatisfactory because it cannot be tolerated. I have tried placing the patient in a low-angled "V" position. This is no better. The patient is definitely unable in the third trimester to tolerate traction since the anterior thigh pain referred from taut hip flexors actually exaggerates lumbar lordosis and increases the distress rather than relieving it. All traction carries some degree of complication. I am sure that in a large enough series to be statistically valid, the incidents of thrombophlebitis would be excessive. I consider this treatment unfeasible.

I have tried to outline what I have found helpful and also given some of the limitations and restrictions of orthopedic management during the pregnancy period.

Dr. Epstein: The neurosurgical and neurologic complications of pregnancy will now be discussed by Dr. Browder.

Neurosurgical and Neurologic Complications

Dr. Jefferson Browder: As has been related by the members of this panel who preceded me, pain of a dull, aching character located in the lower lumbar region appears to be a frequent accompaniment of pregnancy, particularly during the latter months. In most women the pain remains localized in the lumbosacral region. In some there is overflow pain into the posterior aspect of both thighs, and in a few there is radicular pain or so-called sciatica, that is, pain arising in the lower lumbar area with unilateral extension along the posterolateral aspect of one thigh, into the calf, and, in some patients, into the lateral part of the foot (first sacral distribution) or across the dorsum of the foot into the great toe (fifth lumbar dermatomic zone).

The pathophysiologic mechanism of much of this remains obscure, at least obscure to me. Is the condition wholly postural? Are the sacroiliac joints at fault, or is the pain precipitated by abnormal anatomic relationships at the lumbosacral level of the vertebral column. I am sure I cannot provide the answer, but I continue to have misgivings regarding the current explanations. At all events, most patients should be treated conservatively, and usually the discomfort spontaneously disappears after delivery.

In my series of patients with herniated intervertebral disks in the distal lumbar region treated by surgical therapy, there were 4 who were pregnant at the time of operation. These had pains in the lower lumbar region, associated with sciatica, sufficiently severe to completely incapacitate them. I will recite this experience briefly. An operation was performed on the first patient at the fifth month of gestation, and miscarriage ensued about eight hours later. She was in good health, a multipara, age forty-five, but bedridden for one month because of pain. The operation was carried out with the patient in the lateral recumbent position, and the duration of anesthesia was one hour. The other 3 were successfully treated without interruption of the pregnancy. An operation on each of 2 of these 3 was performed during the fourth month, and on the remaining one during the sixth month of pregnancy.

It seems to me that there are four therapeutic approaches to the problem of pain in the lower lumbar region and/or sciatica. The first comprises limitation of physical activities, rest as much as possible, a firm bed, and so forth, but no specific treatment. The second consists in a 14-inch corset with stays (not a cumbersome steel brace), limitation of physical exertion, and so forth. The third includes absolute rest in bed (with or without traction) and maintenance of slightly flexed posture of thighs and legs. The fourth approach, surgical therapy, should be carried out only when incapacitation becomes continuous and the clinical evidence of a herniated disk is unequivocal. Myelography should be reserved for those with clinical evidence suggesting neoplasm.

The therapy for patients with meralgia paresthetica has been discussed. As stated, this disorder occurs much more frequently in men than in women. The results following neurectomy are not good. Numbness following surgical section of the involved nerve is about as annoying as the disease itself.

Dr. Epstein: Dr. Benton will make the concluding remarks concerning the role of the physiatrist in the care of these patients.

Physiatric Measures

Dr. Joseph Benton: Low back pain, with or without sciatic radiation, is quite common, especially in the third trimester of pregnancy. Mechanical contributory factors to this syndrome relate primarily to the increase in forward pelvic tilt as a result of fetal weight, producing anterior displacement of the body's center of gravity. This results in increase of the lordotic curve of the lumbar spine which in turn produces compression on posterior vertebral structures.

As a consequence of forward pelvic tilt, the hamstring musculature is placed on stretch. This limits forward trunk bending before pull on the ischii ensues. The relationship of hamstring traction of the ischii with resultant sacroiliac strain is a well-recognized causative factor in the low back syndrome. Another mechanical factor which may contribute to the clinical picture is fetal pressure on the lumbosacral plexus.

Hormonal factors contributing to the clinical picture relate primarily to the increase in the titer of relaxin, which is said to increase the elasticity of the pelvic ligaments. In this fashion, the anterior and posterior sacroiliac ligaments lose their supportive function and allow greater excursions of the articular surfaces of the sacroiliac joints.

Such increased motion may also contribute to local synovitis.

Clinically, the patient presents (1) pain, (2) spasm of the spinal, hamstring, and calf musculature, (3) increase of pain on stretching these muscles, and (4) weight bearing on the unaffected side (if unilateral).

Careful neurologic examination should be performed as well as other diagnostic procedures in an attempt to clarify the diagnostic picture. I am glad to note that the panel believes that a fair trial of conservative management is indicated in instances in which no significant organic surgical problem exists.

Since the patient comes primarily for the relief of pain, therapeutic measures directed toward this end are employed. One of these measures is procaine iontophoresis applied to the low back for analgesia. Ultrasound has been suggested as a means of inducing analgesia, however, until more is known about the effect of this agent on tissues, it would be wise to defer its use.

For reduction in muscle spasm the following procedures are of value:

1. Thermotherapy (either the dry or wet type).
2. Ethyl chloride spray over the affected areas.
3. Electrostimulation.
4. Sedative massage.
5. Rest.
6. Reflex relaxation of muscles in spasm by active movement.
7. Judicious restriction of activities designed to reduce provoking factors.
8. Postural training to avoid strain.
9. Firm supports for the bed, flat shoes, and abdominal supports.
10. Active exercises to increase support of the spine and to restore alignment.
11. Careful passive stretching to prevent contractures.

However, in any program treating low back syndromes in which there is decreased stability of supportive structures, a sustained program of strengthening exercises and flexibility maneuvers is basic. This applies to pregnancy as well. The conventional exercises for this purpose utilize the abdominal weight-bearing position. These are difficult for the pregnant woman to perform and as a consequence a modified system, as elucidated in Figures 1A and 1B, has been developed. This system has proved to be effective for most patients in the home care aspects of their program.

In conclusion, I would like to reaffirm the strong case for a trial of conservative management made by the panel.

Discussion

Dr. Epstein: I would like to direct one question to Dr. Browder. What do you regard as the primary indications for surgery in patients with a herniated disk during the first and second trimesters of pregnancy?

Dr. Browder: Disabling pain was the reason for operating on the 4 women subjected to surgery. If pain is unrelieved by bed rest, corsets, and other conservative therapeutic measures, surgical therapy is indicated.

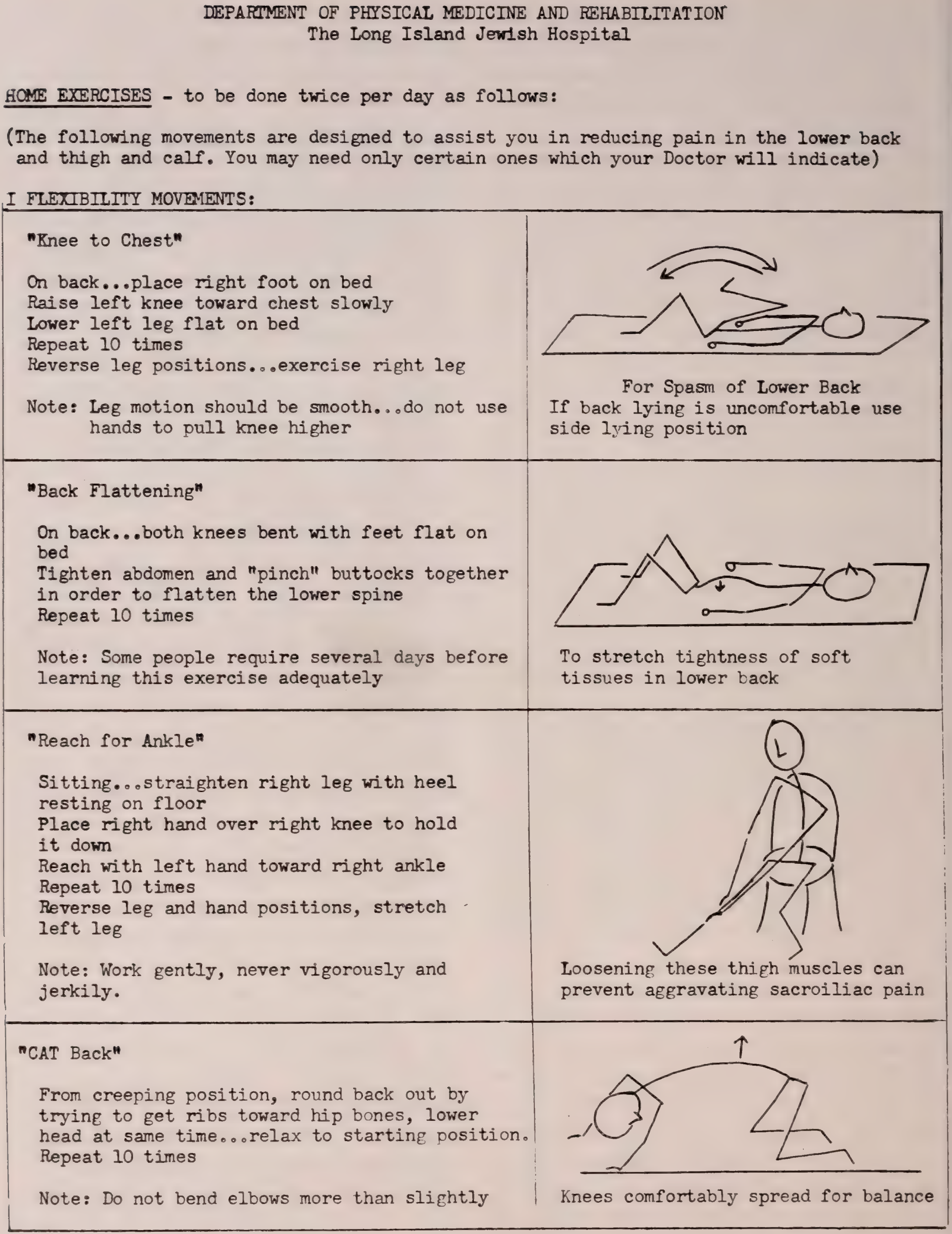
Dr. Epstein: Was therapeutic abortion considered necessary in this group?

Dr. Browder: No.

Dr. Epstein: When patients complain of sciatic pain during pregnancy and demonstrate an absence or alteration in patellar or ankle reflexes with specific sensory changes of a radicular nature, the diagnosis of a herniated disk must be considered. Surgical therapy may not be necessary to provide relief. However, in the presence of sphincteric disturbances with incontinence, surgical exploration may be mandatory. The use of the lateral recumbent position facilitates surgical exploration and avoids abdominal compression, minimizing the risk to the patient and the fetus.

Dr. Lavine: I would like to make one point regarding meralgia paresthetica. It occurs more often in men and practically never in women except during pregnancy and in association with some mechanical defect. Postural exercises and abdominal supports are quite helpful. Surgical relief is rarely necessary since symptoms usually cease after termination of pregnancy.

Dr. Warren: I would like to make one remark. One frequently hears "A pregnant woman should wear low shoes." The position of relaxation of the back that I have found to be satisfactory is the position I mentioned previously. One should achieve flattening of the back by narrowing the space between xyphoid and symphysis and tilting



DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION
The Long Island Jewish Hospital

HOME EXERCISES - to be done twice per day as follows:

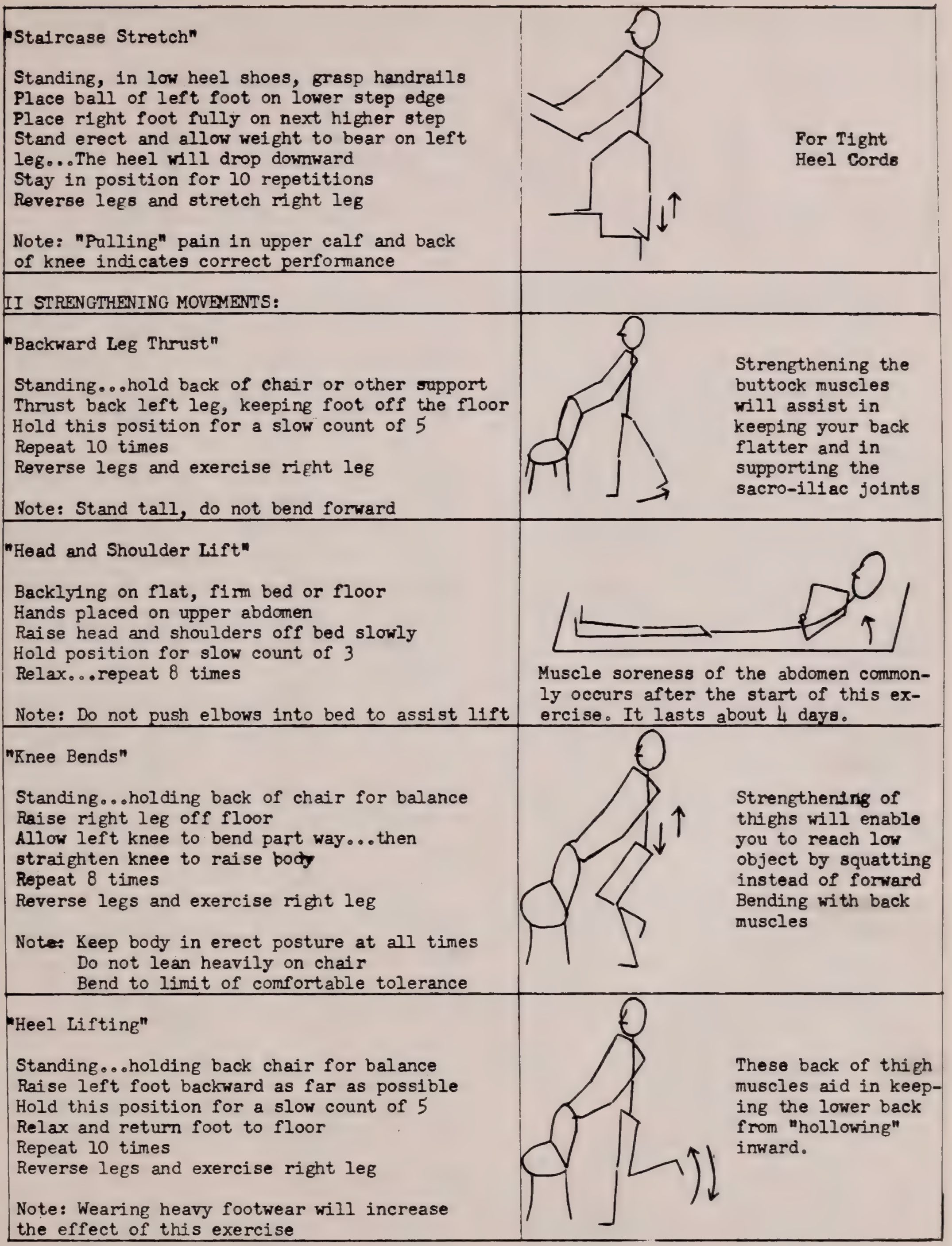
(The following movements are designed to assist you in reducing pain in the lower back and thigh and calf. You may need only certain ones which your Doctor will indicate)

I FLEXIBILITY MOVEMENTS:

"Knee to Chest" On back...place right foot on bed Raise left knee toward chest slowly Lower left leg flat on bed Repeat 10 times Reverse leg positions...exercise right leg Note: Leg motion should be smooth...do not use hands to pull knee higher	For Spasm of Lower Back If back lying is uncomfortable use side lying position
"Back Flattening" On back...both knees bent with feet flat on bed Tighten abdomen and "pinch" buttocks together in order to flatten the lower spine Repeat 10 times Note: Some people require several days before learning this exercise adequately	To stretch tightness of soft tissues in lower back
"Reach for Ankle" Sitting...straighten right leg with heel resting on floor Place right hand over right knee to hold it down Reach with left hand toward right ankle Repeat 10 times Reverse leg and hand positions, stretch left leg Note: Work gently, never vigorously and jerkily.	Loosening these thigh muscles can prevent aggravating sacroiliac pain
"CAT Back" From creeping position, round back out by trying to get ribs toward hip bones, lower head at same time...relax to starting position. Repeat 10 times Note: Do not bend elbows more than slightly	Knees comfortably spread for balance

FIG. 1A. Front of two-page illustrated exercise instruction sheet issued to pregnant women with low back pain.

the pelvis anteriorly. This is most easily accomplished with a slight bend of the knee forward. If this is done, the patient may wear high heels in comfort. You all have seen more pregnant women than I have, but I think that the majority of patients are perfectly com-



"Staircase Stretch" Standing, in low heel shoes, grasp handrails Place ball of left foot on lower step edge Place right foot fully on next higher step Stand erect and allow weight to bear on left leg...The heel will drop downward Stay in position for 10 repetitions Reverse legs and stretch right leg Note: "Pulling" pain in upper calf and back of knee indicates correct performance	For Tight Heel Cords
II STRENGTHENING MOVEMENTS:	
"Backward Leg Thrust" Standing...hold back of chair or other support Thrust back left leg, keeping foot off the floor Hold this position for a slow count of 5 Repeat 10 times Reverse legs and exercise right leg Note: Stand tall, do not bend forward	Strengthening the buttock muscles will assist in keeping your back flatter and in supporting the sacro-iliac joints
"Head and Shoulder Lift" Backlying on flat, firm bed or floor Hands placed on upper abdomen Raise head and shoulders off bed slowly Hold position for slow count of 3 Relax...repeat 8 times Note: Do not push elbows into bed to assist lift	Muscle soreness of the abdomen commonly occurs after the start of this exercise. It lasts about 4 days.
"Knee Bends" Standing...holding back of chair for balance Raise right leg off floor Allow left knee to bend part way...then straighten knee to raise body Repeat 8 times Reverse legs and exercise right leg Note: Keep body in erect posture at all times Do not lean heavily on chair Bend to limit of comfortable tolerance	Strengthening of thighs will enable you to reach low object by squatting instead of forward Bending with back muscles
"Heel Lifting" Standing...holding back chair for balance Raise left foot backward as far as possible Hold this position for a slow count of 5 Relax and return foot to floor Repeat 10 times Reverse legs and exercise right leg Note: Wearing heavy footwear will increase the effect of this exercise	These back of thigh muscles aid in keeping the lower back from "hollowing" inward.

FIG. 1B. Back of two-page illustrated exercise instruction sheet issued to pregnant women with low back pain.

fortable in high heels, even more so than they are in low shoes.

QUESTION: Is that just because they have been wearing them?

DR. WARREN: It may be partly that. They may even have Achilles tendons. I have never examined them for this specific purpose but I am just repeating what patients tell me.

QUESTION: Dr. Browder, in the disk operations that you performed in the pregnant women what sort of disk was it and was there a large amount of epidural bleeding during surgery?

DR. BROWDER: There were no remarkable changes other than those encountered in the average disk; dorsolateral herniation was the rule.

QUESTION: What are your feelings about myelography in these patients?

DR. BROWDER: Arachnoiditis may follow myelography. I would say that one may be successful in about 50 to 60 per cent of cases, but rarely 100 per cent successful, in removing the contrast medium after the study has been completed.

In those instances in which the removal was not successful, and there are some, it is most annoying to see demonstrated by x-ray at a later date contrast medium smeared from one end of the spinal axis to the other.

QUESTION: Dr. Browder, if you feel that removal of a herniated intervertebral disk is necessary, do you do a simple removal only or do you perform a stabilization operation after that?

DR. BROWDER: The herniated part of the disk is removed and the nucleus pulposis of the involved disk curretted. Internal splinting or fusion operation is not performed.

QUESTION: If on x-ray you saw a severe narrowing of the interspace in addition to a herniated disk with neurologic findings, would you just remove the disk or would you proceed with spine fusion?

DR. BROWDER: Not at this time. I did this in the late '30's. At that time I merely removed fragments. At that time we were also carrying out modified fusion by breaking down the spinous process and joining the fragments at successive levels. Since 1940 I have made no attempt to do any sort of internal fixation. It seems possible that some may be benefited by a fusion procedure.

QUESTION: I would like to ask Dr. Browder and other members of the panel if they feel that pregnancy possibly may aggravate a preexisting herniated disk syndrome?

DR. BROWDER: I think women who have had difficulty occurring over the years frequently have increased difficulty during the latter stage of pregnancy. Seven such patients in our series had operations for herniated disk. Most of these had some discomfort in the lower lumbar region during pregnancies subsequent to the operation. I think that if one takes out a substantial amount of the disk by curettage, a sufficient healing takes place by fibrous union to minimize or prevent difficulty in future years with or without pregnancy.

DR. EPSTEIN: I think many of us realize that the sciatic syndrome is most acute during the last trimester. If these patients stay in bed they can deliver normally under most circumstances. Elevation of the foot of the bed, allowing the head to slip out of the pelvis and the uterus to fall back and upwards, may relieve local compression of the lumbosacral plexus and reduce venous congestion. After pregnancy, should classical signs of a herniated disk persist, an operation may enable many of these patients to tolerate future pregnancies without difficulty.

Although a complete solution to this problem cannot be hoped for, we trust that what we have presented will stimulate the thinking of all of us and catalyze the formation of better plans for the care of these patients.

I would like to express my gratitude and the gratitude of the audience to the panel members who appeared here tonight.

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Clinical Experience with Chlorothiazide in the Treatment of Congestive Heart Failure

SIDNEY D. HARVEY, M.D., BRIARCLIFF MANOR, NEW YORK, AND ARTHUR C. DeGRAFF, M.D.,
NEW YORK CITY

(From the Medical Service, Veterans Administration Hospital, Bronx, New York)

THE discovery of sulfanilamide as a carbonic anhydrase inhibitor led to the development of a new type of oral diuretic of which acetazolamide and chlorothiazide are representative. Whereas chlorothiazide has only moderate carbonic anhydrase inhibitor activity, preclinical studies have demonstrated its potent natruretic and chloruretic properties.[1–3] Chlorothiazide is well tolerated orally and has given rise to a clinical response within two hours of oral administration.[4,5]

The present study was designed to evaluate the clinical response of chlorothiazide in chronic congestive heart failure.

Method

Chlorothiazide was administered to patients on the cardiac service who were in chronic congestive heart failure. The regimen was instituted only after maximum diuresis was obtained with bed rest, a low-salt diet, maximum digitalization, and parenterally administered mercurials. The drug was given daily without added potassium in a divided dosage of 1 to 1.5 Gm. Measure of diuresis was made on morning weights in the fasting state. Repeated checks were made on the blood count, urine, blood urea nitrogen, liver function, serum electrolytes, and the electrocardiogram. In 3 patients the drug was deliberately discontinued when a stable weight was obtained and reinstituted when a regain to the original weight resulted, thereby determining the rate of reaccumulation of fluid.

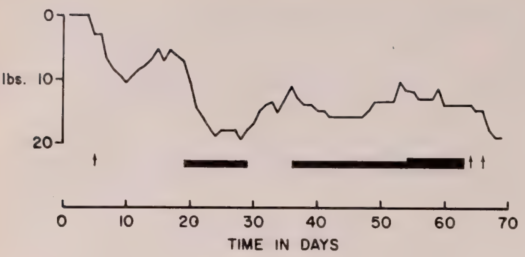
Results

Chlorothiazide was given to 16 patients for a total of 295 patient-treatment days.

TABLE I.—WEIGHT CHANGES ON DIFFERENT REGIMENS

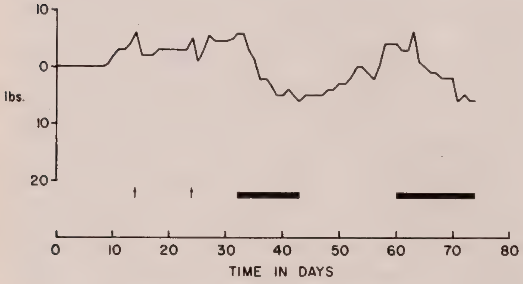
	Weight Changes (Pounds)*						
		Mercurial Administrations (Parenterally)				Chlorothiazide Administrations (Orally)	
Case	Bed Rest, Low-Salt Diet	1st	2nd	3rd	4th	1st	2nd
1	−3	−7.5				−12.5	−5
2	0	−4	−4			−12	−12
3		−2	−5	−6†	0	−16.5	−8.5
4		−3	−1†	−4		−14	
5	+1	−2.5†	−1†			−9.5	
6	+1	−3	0			−6	
7	−3	−1	0†	−3†		−22	
8	+3	−1	−5†			−5	
9	−2					−1.5	
10		−10	−9.5	−4	−7	−5	
11	0	−7				−7	
12		−6†	−6†			+2	
13		−2	+1	0	−5.5†	+5	
14		−4	−8			+2.5	
15	+7	−3	−5†			+9	
16		−10.5	−1.5			+2	

* "Plus" sign (+) preceding number represents weight gain; "minus" signs (−) weight loss.
† Priming (oral) prior to parenteral administration.



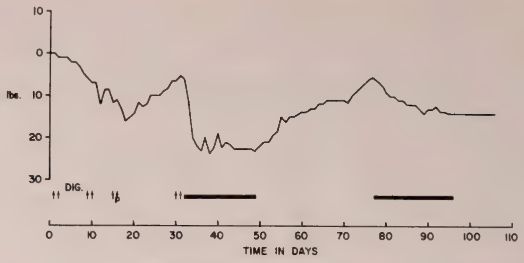
↑ = Parenteral mercurial
▬ = Chlorothiazide

FIG. 1. *Case 1.*—Effect of various regimens on the weight of a thirty-four-year-old white male with rheumatic heart disease who was in progressive congestive heart failure.



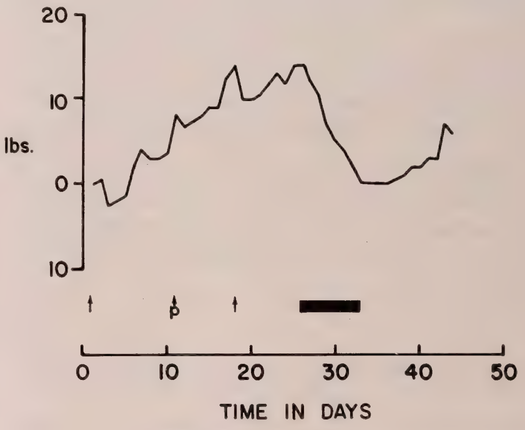
↑ = Parenteral mercurial
▬ = Chlorothiazide

FIG. 2. *Case 2.*—Effect of various regimens on the weight of a sixty-five-year-old Negro male with hypertensive heart disease who was in congestive heart failure.



↑ = Parenteral mercurial
↑p = Parenteral mercurial with priming
▬ = Chlorothiazide
DIG. = Digitalis increased

FIG. 3. *Case 3.*—Effect of various regimens on the weight of a sixty-eight-year-old white male with rheumatic heart disease and polycythemia who had marked right- and left-sided failure.



↑ = Parenteral mercurial
↑p = Parenteral mercurial with priming
▬ = Chlorothiazide

FIG. 4. *Case 4.*—Effect of various regimens on a sixty-eight-year-old white male with hypertensive and arteriosclerotic heart disease who was in congestive heart failure.

The results are listed in Table I. A loss in weight is preceded by a "minus" sign; a gain by a "plus" sign. The weight loss indicated is that following each successive administration of the diuretic regimen or agent—bed rest and low-salt diet, parenteral mercurials, chlorothiazide. The diuresis obtained with parenteral mercurials primed with ammonium chloride, acetazolamide, or both is indicated after the weight change. No attempt is made to indicate the time involved for the diuresis. This information can be obtained from the graphic summaries. (Figs. 1 to 6).

The clinical results are divided into four major groupings in Table II. Group A (responsive to parenteral mercurial; greater responsiveness to chlorothiazide) constitutes the first 7 patients in Table I. The weight loss indicated under the first chlorothiazide column is in addition to the diuresis achieved by the other regimens.

The first 3 patients in Table I were permitted to regain their initial weight before chlorothiazide therapy was instituted. The weight loss on the second course of chlorothiazide is indicated in the second chlorothiazide column.

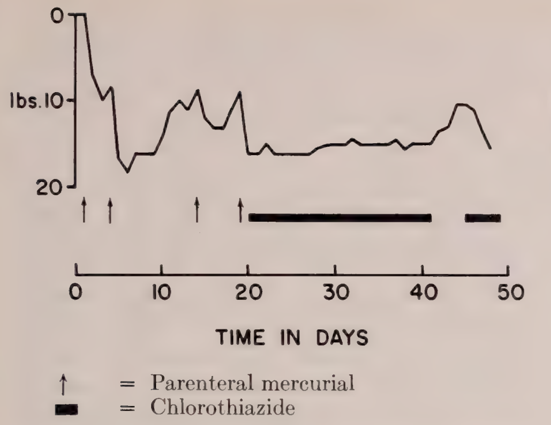


FIG. 5. *Case 10.*—Effect of various regimens on the weight of a sixty-five-year-old white male with arteriosclerotic heart disease who was in congestive failure.

Patient 1 achieved a 5-pound diuresis on his second trial of chlorothiazide but then began to regain the weight lost despite increased dosage. Parenteral mercurials, however, were successful in achieving a 4-pound diuresis at this time. Therefore, this patient fits into both Group A and Group C.

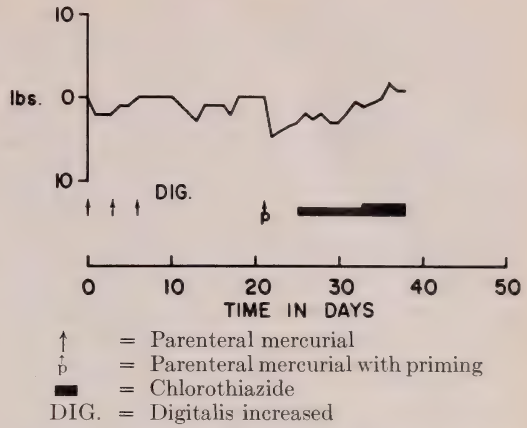


FIG. 6. *Case 13.*—Effect of various regimens on a sixty-four-year-old white male with arteriosclerotic heart disease secondary to repeated myocardial infarction who was in congestive heart failure.

TABLE II.—COMPARISON OF RESPONSIVENESS TO MERCURIAL AND CHLOROTHIAZIDE ADMINISTRATIONS

Group	Responsiveness to Mercurial	Responsiveness to Chlorothiazide	Number of Patients
A	Responsive	Greater	7
B	Responsive	Same	4
C	Responsive	No response	5
D	No response	Responsive	0
			16

Comment

Any attempt to compare the diuretic responses of the same patient on the same drug or different drugs is difficult because of the daily changes in the clinical condition and dietary allowances. In this study, however, the parameters of digitalis, salt intake, and activity were kept as constant as possible. A change in diuretic regimen was undertaken only after maximum response was obtained with other diuretic agents.

In 6 patients an additional diuresis of 6 to 22 pounds was obtained on chlorothiazide therapy after maximum response had been obtained with other diuretic regimens. Although all these patients had responded to parenteral mercurials, the degree of response was either small or of short duration, with rapid reaccumulation of fluid being the rule. The effect of chlorothiazide was profound, producing dry weight in some of the patients. There was no way of predicting the response to chlorothiazide from the prior response to parenteral mercurials. It is of interest that in 2 of the 3 patients permitted to regain weight by discontinuing chlorothiazide, the second phase of diuresis was not as great as the first on reinstitution of the drug. One patient (Case 1) began to gain weight even with increased dosage. The drug was discontinued, and parenteral mercurials were utilized with good response (Fig. 1). Another patient did not return to dry weight on his second course of chlorothiazide but leveled off at a weight plateau about 10 pounds above dry weight but 15 pounds below his admission weight. He was free of dyspnea and any signs of congestive heart failure and maintained this stable weight for ten days to time of discharge, even off chlorothiazide.

In 3 patients (Cases 3, 4, and 7), a rapid diuresis of approximately 2 pounds a day, for a total of 14, 16.5, and 22 pounds respectively, resulted in clinical signs and symptoms of hypokalemia. In such cases it is advisable to supplement the treatment with potassium. Otherwise, the problem of hypokalemia did not result, even on continuous daily administration of the drug for as long as twenty-two days, in this series.

Case 10 (Fig. 5) presented a problem which is frequently encountered. The patient could be kept edema-free for several days, requiring only 2 to 3 mercurials a month if he adhered to a low-salt diet. However, his taste for salted delicacies far exceeded his concern for his heart disease. His rapid gain in fluid weight was a barometer to his salt intake, and the frequency of parenterally administered mercurials increased. On chlorothiazide he maintained a stable weight despite dietary indiscretion. The application to clinical use is clear. Chlorothiazide can be given to those patients who find it difficult to obtain a satisfactory low-salt diet, as is frequently the case outside of medical institutions.

Those in Group C were extremely ill patients who were difficult to manage under any regimen. Chlorothiazide was ineffective for reasons not evaluated by this study, but again it is evident that no prediction can be made for responsiveness to this drug by prior responsiveness to parenteral mercurial.

Cases 4, 5, and 6 in Group A were also considered to be near terminal but responded satisfactorily to chlorothiazide for variable periods of time. Therefore, the drug is worth a trial even in extreme circumstances.

It is noteworthy that no cases of response to chlorothiazide without prior response to parenteral mercurials were encountered (Group D).

No signs of blood, kidney, or liver toxicity were detected within the time limits of this study. The problem of hypokalemia, as already mentioned, occurred only during rapid diuresis. However, the longest continuous period of drug administration was twenty-seven days. It is conceivable that potassium loss may become a problem if the drug is continued extensively for daily periods without supplementing it with potassium.

Case Reports

Representative case reports from the different groups have been chosen to demonstrate different points which have been made.

Case 1 (*Groups A and C, Fig. 1*).—A thirty-four-year-old white male with rheumatic heart disease who had been on digitalis, a low-salt diet, acetazolamide, and weekly parenteral mercurials was treated. Other diuretics were ineffectual in correcting progressive congestive heart failure, and he was hospitalized. On bed rest and salt restriction, he lost 3 pounds. A parenteral mercurial produced another 7.5-pound diuresis, but reaccumulation of 6 pounds in five days prompted chlorothiazide therapy. On this drug he lost 12.5 pounds and became clinically free of the signs of congestive heart failure. The drug was discontinued and reinstituted after a 7-pound weight gain. He lost 5 pounds in edema fluid, but even on continued maintenance and increased dosage to 0.5 Gm. three times daily, he slowly reaccumulated fluid. Parenteral mercurials were effective in producing a diuretic effect after discontinuance of chlorothiazide, but only for a short period of time. The patient became intractable in spite of all measures and expired.

Case 2 (*Group A, Fig. 2*).—A sixty-five year-old Negro male with hypertensive heart disease and polycythemia could not maintain dietary discretion and required parenteral mercurials periodically. In spite of diuretics he still maintained signs of congestive heart failure. On chlorothiazide he lost 11 pounds in seven days, achieving a dry weight that was previously unobtainable with parenteral mercurial. On discontinuing the drug, he slowly reaccumulated 10 pounds in fifteen days, but this fluid retention was rapidly eliminated on chlorothiazide therapy.

Case 3 (*Group A, Fig. 3*).—A sixty-eight-year-old white male with rheumatic heart disease who entered the hospital in marked right- and left-sided failure was treated. On bed rest, salt restriction, parenteral mercurials, and full digitalization a diuresis of 17 pounds was achieved, but reaccumulation of fluid occurred rapidly, with a weight gain of 8 pounds in ten days despite parenteral mercurials. When the patient was placed on chlorothiazide 0.5 Gm. twice daily, a profound diuresis of 16 pounds in four days resulted, with subjective and electrocardiographic evidence of hypokalemia. The patient was maintained at a stable weight as long as chlorothiazide was administered.

On cessation of the oral diuretic, a gradual, progressive weight gain occurred over a twenty-seven-day period, until the weight at time of institution of chlorothiazide was achieved. Reinstitution of chlorothiazide only produced an 8-pound weight loss in twelve days (less dramatic than the first time). This second level of stable weight was maintained for ten days off chlorothiazide to time of discharge.

Case 4 (*Group A, Fig. 4*).—A sixty-eight-year-old white male with hypertensive and arteriosclerotic heart disease in chronic congestive heart failure obtained a 1- to 4-pound diuresis with parenteral mercurials but reaccumulated fluid very rapidly. On chlorothiazide 0.5 Gm. three times daily the patient lost 14 pounds in seven days, with development of clinical and laboratory signs of hypokalemia. The drug was discontinued for this reason, and supplemented with potassium. Rapid regain of fluid resulted, and the patient died of a coronary occlusion before any further therapy was utilized.

Case 10 (*Group B, Fig. 5*).—The congestive failure of a sixty-five-year-old white male with arteriosclerotic heart disease was extremely difficult to manage only because the patient would not adhere to a low-salt regimen. He responded to parenteral mercurials with a 4- to 8-pound diuresis on the average of once weekly. After maximum diuresis was obtained, the patient was placed on chlorothiazide 0.5 Gm. twice daily. His weight remained stable for twenty-one days in spite of dietary indiscretion. As soon as chlorothiazide was discontinued he regained 6 pounds in three days with prompt diuresis on reinstitution of the drug.

Case 13 (*Group C, Fig. 6*).—A sixty-four-year-old white male with arteriosclerotic heart disease secondary to repeated myocardial infarction was admitted to the hospital because of difficulty in the management of his congestive heart failure. Under a strict hospital regimen, small but short progress could be obtained with priming and parenteral mercurials. Chlorothiazide was completely ineffectual either in producing a diuresis or maintaining a stable weight.

Summary and Conclusions

1. Chlorothiazide was given to 16 patients for a total of 295 patient-treatment days.
2. Chlorothiazide is a safe, oral diuretic with a clinical effect equal to or greater than a parenteral mercurial in most cases.
3. The effect of chlorothiazide cannot be predicted by the prior response to a parenteral mercurial.
4. No cases of response to chlorothiazide without response to a parenteral mercurial were found in this study.
5. Hypokalemia occurred in 3 cases in which there was a rapid and profound diuresis.

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For how many things which for our own sake we should never do, do we perform for the sake of our friends.—Cicero

Clinical Experience with Deserpidine in the Management of Hypertension and Anxiety Neurosis

WILLIAM B. RAWLS, M.D., NEW YORK CITY, AND WALTER L. EVANS, JR., M.D., WHITE PLAINS, NEW YORK

DESERPIDINE* is an alkaloid which was isolated from Rauwolfia serpentina in 1955.[1] It has been found to be similar, both pharmacologically[2,3] and clinically,[4,5] to reserpine. Chemical studies have identified it as 11-desmethoxyreserpine.[6] Structurally it differs from reserpine by the absence of a methoxy group at the 11 position (Fig. 1).

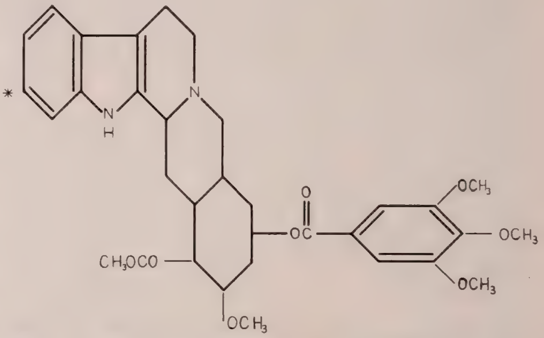

FIG. 1. Structural formula for deserpidine (11-desmethoxyresperine).

Animal studies have shown that deserpidine as well as reserpine alseroxylon (a fraction of Rauwolfia serpentina containing at least nine alkaloids) and rescinnamine are capable of depressing central cardiovascular reflexes. The carotid sinus pressor reflex is inhibited, the hypoxia pressor response is reversed, and the pressor response which ordinarily follows electrical stimulation of the afferent vagus nerve is lessened. It has been stated that these agents possess an anti-adrenal corticoid action in that the hypertension produced by cortisone, desoxycorticosterone, acetate, and salt is reduced. There is apparently no change in renal plasma flow or renal function.

The action of the various psychotropic drugs has been classified by Brodie[7] according to their ability to shift the balance of the subcortical integrative layers of the brain either toward an ergotropic or somatotropic predominance. In this concept Brodie has extended the work of Hess[8] who concluded that the subcortical layers of the brain coordinate visceral, somatic, and psychic functions and, like the peripheral autonomic system, could be divided into the ergotropic and trophotropic divisions. The ergotropic division was found to mobilize the sympathetic and somatic functions for appropriate positive action, while the trophotropic division governs the somatic and parasympathetic systems, resulting in passive recuperative behavior. The natural response to some challenging stimulus would be mobilization of the ergotropic system, and once the stress period is over, the trophotropic system would coordinate the recuperative mechanism, resulting in drowsiness, increased parasympathetic activity, and reduced skeletal muscle tone.

Brodie believes that serotonin is the neurohormone responsible for transmission of impulses across the synaptic junctions of the trophotropic system, with norepinephrine occupying a similar position in the ergotropic system of the subcortical layers. The synaptic junction is the most sensitive point in the neuron for drug action, and probably it is here that reserpine and its analogues exert their effect. Brodie also believes that the Rauwolfia alkaloids impair the nerve cells' ability to store serotonin without reducing the rate of synthesis. The result is a continuous outpouring of serotonin at the synaptic junctions of the trophotropic system, which is responsible for the observed effects of the drug—decreased psychic reactivity, reduced muscle tone, bradycardia, and lowered arterial tension. It has been found that reserpine also reduces the storage capacity for norepinephrine in the central ergotropic division, but this effect is far overshadowed by the effect on the trophotropic division.

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* The deserpidine used in this study (Harmonyl) was provided by Abbott Laboratories, North Chicago, Illinois. This study was supported in part by a grant-in-aid from Abbott Laboratories.

In the peripheral autonomic system, however, reserpine and its related alkaloids have been found to deplete the norepinephrine at nerve endings by direct action on norepinephrine binding sites, thus rendering the outflow of impulses over the sympathetic nervous system ineffective. Neurogenic hypertensive response would thus be sharply impaired, which may explain the profound surgical shock sometimes encountered in patients on reserpine who require emergency surgery.

Materials and Methods

The present study is based on clinical observation of 130 ambulatory office patients treated with deserpidine, although the results obtained in only 40 are being reported in detail. Periodic observations, weekly at first and then every two to four weeks, were made, and subjective symptoms, including the emotional state and resting blood pressure, were reported at each visit. Patients were not told that they were being given a new medication, and the only comment made at the time it was dispensed was that we felt it might help.

There were 13 males and 21 females in this series, ranging in age from twenty-two to eighty-one years, with an average of sixty-three years. Out of the 40 patients selected for detailed analysis, 30 were hypertensive, the condition varying in severity from mild to moderately severe. Nineteen of the 30 hypertensive patients presented additional symptoms, such as tenseness, emotional lability, insomnia, anorexia, dizziness, nausea, flatulence, profuse perspiration, loss of weight, irritability, and depression. In addition, 13 patients in this same group had osteoarthritis, 4 had generalized arteriosclerosis, 4 had rheumatoid arthritis, 1 had sciatic neuritis, and 1 had subdeltoid bursitis. This made a total of 23 patients in the hypertensive group who had some other disease process in addition to the hypertension.

The 10 nonhypertensive patients presented symptoms of nervousness, arthralgia, insomnia, emotional lability, anorexia, dizziness, etc. In addition 2 of the 10 patients had diabetes, 3 had rheumatoid arthritis, 1 had arteriosclerosis and obesity, 1 had a healed myocardial infarction, and 3 had no organic disease process and came under treatment because of vague somatic pains, emotional tension, and a constellation of other symptoms associated with an anxiety neurosis.

Twenty patients out of the entire group had received previous medication for hypertension and nervous tension, and these medications were discontinued in each instance before the administration of the deserpidine. These agents included meprobamate, reserpine, the powdered whole root of Rauwolfia, and a combination of theobromine and phenobarbital. The 3 patients with rheumatoid arthritis in this group were receiving 7.5 mg. of prednisone daily, and this was continued during the period of study.

Eleven of the 20 hypertensive patients who had received previous medication had received some form of Rauwolfia preparation and were selected because they had experienced undesirable side-effects, such as dizziness, drowsiness, nasal congestion, depression, and bizarre dreams.

The duration of the deserpidine therapy varied from three weeks to ten months, with an average of five months. Twenty-four of the entire group of 30 patients with

TABLE I.—DECREASE IN BLOOD PRESSURE OF 30 HYPERTENSIVE PATIENTS DURING TREATMENT WITH DESERPIDINE

Age (Years)	Sex	Dosage (Mg.)	Duration of Treatment (Months)	Blood Pressure		Total Fall in Blood Pressure
				Beginning of Treatment	End of Treatment	
74	F	0.1*	4.5	240/120	198/96	42/24
		0.25*	1	198/96	158/90	40/6
69	M	0.1*	2	200/110	160/90	40/20
81	F	0.1*	6	200/100	130/80	70/20
62	F	0.1†	1	194/140	160/90	34/50
65	F	0.1*	5	190/100	140/80	50/20
68	M	0.1*	8	180/100	140/86	40/14
62	F	0.1*	0.75	180/100	168/96	12/4
		0.25†	2	168/96	148/86	20/10
50	F	0.1*	4	180/100	160/80	20/20
46	M	0.1†	3	180/90	130/80	50/10
57	F	0.1†	7	180/90	135/80	40/45
78	F	0.1*	1.5	180/90	140/80	40/10
68	F	0.1*	9	178/100	160/90	18/10
76	F	0.1*	4	174/90	140/90	34/10
60	M	0.1*	1.5	174/94	142/82	32/10
71	F	0.25**	0.75	170/104	138/78	32/26
		0.1*	8	138/78	140/82	30/22
61	F	0.25**	1	170/104	146/80	24/24
		0.1*	3	146/80	138/76	32/28
64	F	0.1†	0.75	170/100	144/86	26/14
80	F	0.25†	7	170/100	148/80	22/20
69	F	0.1*	2	170/98	120/80	50/18
65	M	0.1†	6	170/94	150/90	20/4
54	M	0.1†	7	170/90	130/80	40/10
64	M	0.25**	3	170/90	140/80	30/10
		0.1*	5			
65	F	0.1†	8	170/90	150/84	20/6
64	F	0.1†	3	170/90	150/90	20/0
70	F	0.1†	4	170/90	160/90	10/0
58	M	0.1††	2	170/90	144/82	26/16
58	M	0.1***	3.5	168/92	134/98	34/14
58	M	0.1**	9	164/90	150/90	14/0
59	M	0.1**	2.5	160/84	136/70	24/14

* Three times daily after meals and at bedtime.
† Three times daily after meals.
** Twice daily.
†† Twice daily after meals.
*** Three times daily.

hypertension took the medication regularly over the entire ten-month period. In 6 patients the medication was given intermittently. The initial dose of deserpidine usually was 0.1 mg. three times a day after meals, but a few patients were given an extra milligram at bedtime. The maintenance dose varied in most instances from 0.2 to 0.3 mg. daily.

Results

All of the 30 patients with hypertension experienced a reduction of blood pressure. The greatest fall was 82 mm. Hg systolic and 50 mm. Hg diastolic. The smallest reduction was 10 mm. Hg systolic and 0 mm. Hg diastolic. The average fall was 33 mm. Hg systolic and 14 mm. Hg diastolic. The median fall was 32 mm. Hg systolic and 14 mm. Hg diastolic (Table I).

Among the 19 patients with hypertension who also complained of anxiety symptoms, 6 experienced partial relief and 8 complete relief. Four of these 19 patients had been unable to work prior to therapy but were able to return to a gainful occupation under therapy. Among the 10 normotensive patients with anxiety symptoms, 4 reported partial and 3 complete relief.

Figures 2 and 3 show the blood pressure response in 2 patients who received deserpidine intermittently. These 2 patients are

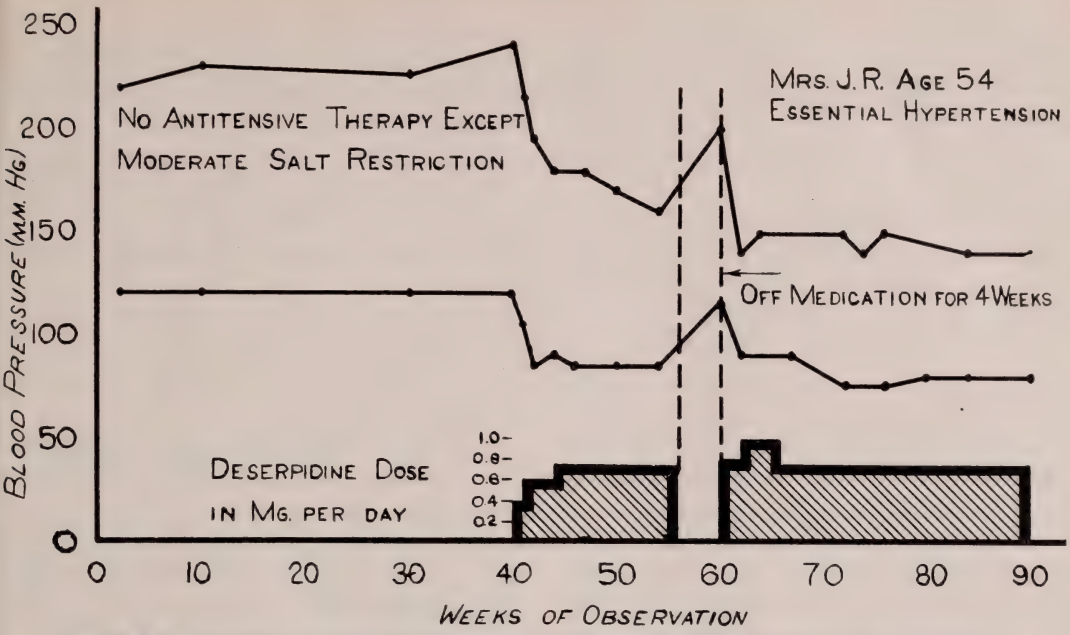

FIG. 2. Effect on blood pressure of deserpidine administration and withdrawal in 1 patient.

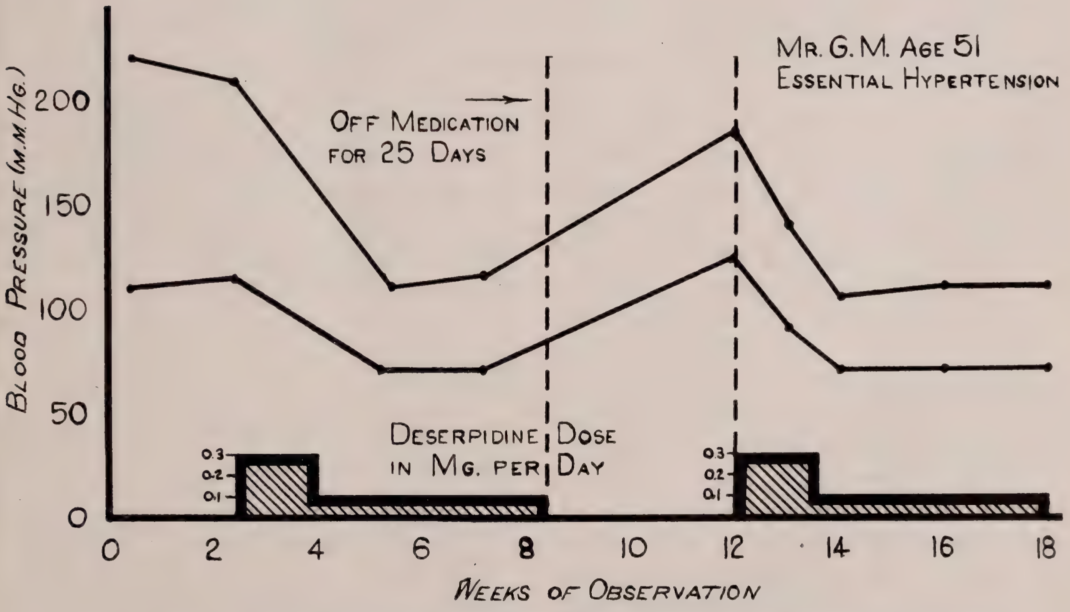

FIG. 3. Effect on blood pressure of deserpidine administration and withdrawal in 1 patient.

not included in Table I because of the rather wide hiatus in therapy. The blood pressure was reduced in each instance when deserpidine was administered but returned to its initial level when the drug was omitted. The same pattern was observed among 4 other hypertensive patients who received deserpidine intermittently.

Side-Effects

During deserpidine therapy patients were specifically questioned at each visit about any collateral symptoms, including drowsiness, nasal congestion, weird dreams, dizziness, and allergy reactions. In our total experience with this drug, no significant side-effects were observed requiring discontinuation of the medication.

There was 1 patient who experienced mild nasal congestion while taking 0.4 mg. a day but who was able to tolerate 0.2 mg. daily without this effect. In addition, there were 2 other patients who complained of mild drowsiness, but this was not severe enough to interfere with their normal routine. Except for these 3 patients who exhibited minimal side-effects, no other collateral symptoms were encountered.

Among the 11 patients who were unable to tolerate other alkaloids of Rauwolfia, there were 10 who could take 0.3 mg. daily of deserpidine without any side-effects. One additional patient, who had been particularly troubled by nasal congestion with reserpine, was able to take 0.2 mg. daily of deserpidine without any collateral symptoms.

Comment

Since the Rauwolfia alkaloids appear to have such a varied action, it is possible that one or more analogues may prove superior to others in controlling hypertension or anxiety without some of the disabling collateral ergotropic effects seen with the whole powdered root or reserpine. From our own clinical observations it would appear that deserpidine is the most desirable compound among those presently available. It apparently induces a satisfactory reduction of anxiety, psychic reactivity, and arterial hypertension without burdening the patient with intolerable side-effects often seen with the other alkaloids.

Summary and Conclusions

1. A study of 40 patients (average age sixty-three years) treated with deserpidine is reported.
2. Diagnoses include hypertension in 30 cases, 19 with and 11 without symptoms of anxiety neurosis.
3. The usual dosage of deserpidine was 0.1 mg. three times daily after meals sometimes with an additional dose at bedtime. The average duration of treatment was five months.
4. All of the 30 hypertensive patients experienced a reduction in blood pressure, the average fall being 33 mm. Hg systolic and 14 mm. Hg diastolic.
5. Of the 29 patients having symptoms of anxiety neurosis, 11 experienced complete relief and 10 partial relief.
6. Ten of the 11 patients who had previously experienced undesirable side-effects while under treatment with reserpine tolerated 0.3 mg. or more daily, but 1 tolerated only 0.2 mg. daily. Two patients on 0.3 mg. daily experienced a mild drowsiness, but this did not require stopping or reducing the dose.
7. It is concluded that deserpidine is an effective agent for the management of essential hypertension and anxiety neurosis. Benefit appears comparable to that obtained by equal doses of reserpine, but there is a significant and worth-while reduction in the incidence of side-effects.

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The Critical Problem of Obtaining House Staff and Visiting Staff in the Nonuniversity Municipal Hospital*

NATHAN SMITH, M.D., F.A.C.H.A.† AND HARRIS BLINDER, M.D., NEW YORK CITY**

(From Morrisania City Hospital)

One of the most serious problems presently confronting the nonuniversity-affiliated municipal hospital is the difficulty in obtaining American or other qualified interns and residents for its house staff. There is the additional problem of the decrease in the number of visiting staff physicians. This is due to the retirement and resignations of the existing staff and the failure of young physicians to apply for staff appointments to replace them.

The shortage of interns was initiated with the changing of the internship from two years to one year during World War II. While the number of medical school graduates each year has remained relatively fixed, there has been a marked increase in the number of hospitals, thus expanding the available internships and residencies. In the past ten years the number of hospitals offering approved intern training programs has increased about 6 per cent and the number of internships offered has increased 31 per cent.

For the year beginning July 1, 1956, 852 hospitals in the United States offered a total of 11,895 intern positions and there were 6,845 graduates of approved American medical schools. Therefore, there were approximately 5,000 positions available during 1956–1957 which could not be filled by American graduates. An estimated 2,500 of this number were filled by graduates of foreign medical schools, leaving a deficit of 2,500 positions unfilled.[1]

This disparity between available interns and the number of internships has also been made more acute by the practice of some hospitals of using more interns and residents than they actually require. During the past ten years the average number of interns per hospital has increased from 11.3 to 14.2.[2]

The American medical school graduate prefers and seeks internships in university-affiliated hospitals or large well-endowed voluntary hospitals with extensive research facilities. The shortage of interns thus falls most heavily on the municipal hospitals and others without medical school affiliation.

At the present time, the utilization of foreign medical school graduates has been necessary to fill this deficit and properly staff the nonuniversity municipal hospitals. In the fall of 1958, the 18 municipal hospitals of New York City (this includes university-affiliated hospitals) had on their staffs a total of 693 foreign physicians—528 residents and 165 interns.[3] Even this source will be considerably reduced by the recent introduction of qualifying centers for foreign graduates seeking internships in the United States. On January 1, 1960, the Education Council for Foreign Medical Graduates will give examinations and evaluate these foreign graduates for certification for ap-

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Presented to the Hospital Administrators Club of New York at the Columbia University Club in New York City, October 13, 1958.

* This paper applies specifically to the municipal hospital conditions in the City of New York, but it may also apply to other cities and other communities.

† Senior medical superintendent.

** Visiting physician-director of house staff education.

pointment to the house staffs of American hospitals. Early experience indicates that there will be a reduction of about 50 per cent in the number of foreign graduates heretofore available because of failure to qualify. This will create an additional shortage of foreign graduates on whom the nonuniversity municipal hospitals have been mainly depending for their house staffs.

Possible Solutions to Intern and Resident Problem

Student Intern Plan.—The student intern plan as adopted by the New York Medical College is an excellent means for the alleviation of some of the intern shortage. This plan is presently being carried on at the New York Medical College and is now being considered in other medical schools. Fourth-year students serve a twelve-month clinical clerkship at the medical school-affiliated hospitals and completely replace the regular intern at these institutions. The New York Medical College has found that this program provides excellent training to the fourth-year medical student. This plan has removed these university-affiliated hospitals from competition for the pool of available interns. If this practice were adopted by all medical schools throughout the country, it would reduce the available internships by a considerable number bringing into more equal balance the number of American medical school graduates and available internships.[4]

The Two-Year Internship Plan.—The two-year internship plan may be considered as a partial solution to the intern shortage problem. The young physician intending to enter general practice is inadequately prepared for this field by the present one-year internship. In the two-year internship arrangements could be made for the individual who intends to specialize, allowing him to devote more time to his specialty in the second year of his internship. It would then be necessary for specialty boards to credit the second year of the internship toward the residency requirement.

Standards to Limit Hospitals Using More Interns and Residents than They Actually Require.—The intern and resident shortage is made more acute by hospitals that use more interns and residents than they actually require. The Council on Medical Education and Hospitals of the American Medical Association could be of greater help in this situation by setting up more practical standards on the number of interns and residents a hospital may properly utilize. This should be determined by the number of ward or private patients, number of admissions, number of types of services, and number of operations and outpatient facilities.

Discontinuation of the Internship Program in the Nonuniversity-Affiliated Municipal Hospital.—Until such time as the measures described can be put into operation or other solutions to the intern shortage are devised, it may be necessary to discontinue the internship program in the nonuniversity municipal hospital. It may be advisable to consider only a residency program similar to that of the veterans hospitals. The history and physical examination which were performed by the intern would now be done by the first-year assistant resident. Secretaries and dictaphones could be utilized by these residents for the time-consuming clerical work heretofore performed by the intern. Much of the intern's nonmedical work could be assigned to laboratory technicians, clerical workers, and specialty-trained nursing personnel.[5] In order to make these residencies more desirable, without interns it would be necessary to employ full-time coordinators of house staff education and full-time directors in all the major services of the hospital. These directors should possess a high level of clinical competence with previous teaching and administrative experience and a background in research.

Under these circumstances the residency program could be made more attractive by offering more realistic salaries. The veterans, federal, and state hospital salary plan could be used as a yardstick. Adequate quarters for married couples should be provided.

The nonuniversity-affiliated municipal hospital is finding it increasingly difficult to obtain approval for residency programs by the accreditation boards. The utilization of full-time directors and educational coordinators would not only improve patient care but also would provide the necessary teaching programs required by the Commission on Accreditation for residency approval.

Suggestions for Relieving Visiting Staff Shortages

A shortage of visiting staff, especially at junior and associate level, has developed in the nonuniversity-affiliated hospital. This is due in part to the fact that fewer young physicians start their practice in the large cities. Some of the reasons for this are the shifting population pattern and the greater desirability of living conditions and practice of medicine in suburban and other areas. Staff positions in municipal hospitals that were formerly coveted now go begging for applicants. The junior visiting staff position in previous years was the means by which young physicians obtained advanced or specialty training. Today, many young physicians have already received this training through residency programs and are therefor reluctant to accept junior staff positions in municipal hospitals where they merely supervise the resident staff who do the actual work. They prefer to affiliate themselves with university or voluntary hospitals which offer them the advantage of combining ward work with the care of their private patients. In addition, industry, insurance, and public health agencies offer part-time paid positions to these young physicians so that they have less time to devote to the free services of the municipal hospital.

REMUNERATION.—A similar problem formerly existed in obtaining physicians for the clinics in municipal hospitals. Providing remuneration for clinic physicians resulted in adequate staffing of the outpatient department and marked improvement in services rendered. This would suggest that an extension of this practice to the inpatient department would result in attracting young qualified physicians to the junior attending staff. This would also offer an incentive to existing staff members to continue their affiliation with the municipal hospital. Per session or part-time payment for the visiting staff at the veterans hospital has demonstrated the feasibility of this plan.

PRIVATE AND SEMIPRIVATE FACILITIES.—The establishment of private and semiprivate facilities in municipal hospitals would aid in obtaining and maintaining the visiting staff in these institutions. There is a reluctance on the part of some physicians to accept positions in municipal hospitals because of the time consumed in visiting institutions for the treatment of their private patients and then having to travel to the municipal hospitals for the care of service cases and teaching. Interns and residents would likewise be attracted to serve in a municipal institution with a combination of ward and private facilities where a future affiliation would enable them to treat their private patients. The establishment of private facilities in municipal hospitals would not encroach on the work of the voluntary hospitals since the latter are at present unable to provide sufficient private accommodations for the needs of the city.

The realization of the serious problem of house staff and visiting staff shortages in municipal hospitals and a realistic approach to their solution would result in better patient care which is the ultimate purpose of the municipal hospital.

Summary

The changing of the internship from two years to one year, and the increase in the number of hospitals in the past ten years has made approximately 12,000 internships available in the United States each year. The number of American medical school graduates has remained relatively fixed at about 7,000, resulting in a deficit of about 5,000 unfilled internships each year. The tendency of the American medical school graduate to seek positions in university or teaching hospitals has created a critical shortage of house staff in the nonuniversity municipal hospitals. In the past, this deficit has been filled in part by foreign medical school graduates (896 such interns and residents in the 18 municipal hospitals of New York City in 1958). This critical shortage of house staff in the nonuniversity municipal hospital will become more acute because the number of available foreign graduates will be reduced as a result of the inability of about 50 per cent of them to pass a newly required qualifying examination given by the Educational Council of Foreign Medical Graduates.

The intern shortage might be alleviated by utilizing fourth-year medical students as interns in university-affiliated hospitals, by increasing the internship to two years, and by crediting the second year toward residency requirements.

The possibility has been presented that the internship in the nonuniversity-affiliated municipal hospital may have to be discontinued. Fulfillment of the interns' duties by junior residents, trained technicians, and clerical personnel has been discussed. Full-time directors of the various services and coordinators of house staff education would make these residencies more attractive. Under these circumstances, it is recommended that more realistic salaries should be paid to the resident staff. The salary plan of the Federal and State institutions should be used as a yardstick.

A shortage of visiting staff, especially at adjunct and associate levels, has developed in municipal hospitals owing to a failure of younger physicians to apply for these positions. Possible solutions to this problem have been presented such as per session or part payment of visiting staff and the providing of facilities for the care of their private patients in the municipal hospital.

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Spring Again

When coughs and colds are all around
   And Income Tax demands abound;
When coiled in bed with icy toes
   You cannot bear to don your clothes;
Then is the time to rise and sing
   A welcome to returning Spring.
Unhitch yourself from counterpane,
   Pour bronchial mixtures down the drain,
Discuss no more insipid diet—
   "Here's a beefsteak, woman, fry it!"
Gulp a glass of vintage brew
   Forget that you have had the 'flu.
Come forth into the sun and see
   The green buds bursting on the tree,
The flowers bloom, the grasses blow,
   A nesting bird in each hedgerow—
Busy as a bee or beaver—
   Atishoo! O, my God, hay-fever!

—*The Lancet, March 7, 1959*

Poliomyelitis Vaccine Injection Levels and Sources

WALTER E. BOEK, PH.D., ALBANY, NEW YORK, LEWIS E. PATRIE, M.D., JOHNSTOWN, NEW YORK,* AND VIOLET M. HUNTLEY, P.H.N., ADAMS, NEW YORK

(*From the New York State Department of Health and the Jefferson County Public Health Nursing Service*)

EDITOR'S NOTE: *During 1958 two interview surveys were carried on by citizen groups in cooperation with local health officers and the State Health Department. One of these was in Montgomery County and the other in Southern Jefferson County. This is the first of a series of short articles on the findings.*

THE effectiveness of a vaccine can be measured by comparing the proportion of people receiving the vaccine who contract the disease with the proportion without any vaccine who become afflicted. The field trials showed quite conclusively that the poliomyelitis vaccine was effective although it did not protect everyone. The reduction in numbers of victims since the vaccine began to be used is a continued measure of its success. For example, in New York State, exclusive of New York City, the annual average number of cases for a three-year prevaccine period (1951 to 1953) was 1,676. In 1956 there were 606, in 1957 there were 139, and in this past year, 1958, there were 178. Paralytic cases numbered 311 in 1956, 68 in 1957, and 115 in 1958.

Determining Who Has Been Vaccinated

The very significant reduction in this disease came through the use of vaccine on a voluntary basis. More widespread use would, undoubtedly, bring the number of afflicted persons down even further. This is the wish of all physicians. Determining how many people have not obtained injections is difficult when the distribution of vaccine takes place through several channels. One way that this can be done is to interview a representative sample of people concerning their vaccination experience.

This was done for a randomly selected cross-section of the population of Montgomery County and of Southern Jefferson County which includes the towns of Adams, Ellisburg, Henderson, Hounsfield, Worth, Rodman, and Lorraine. Citizens in these areas, who went through some training for the work, visited 312 homes in Montgomery County and 355 in Jefferson County on their own time and expense. In addition to determining how many injections were obtained, they found out something about the people as well. Some of these data will be presented in this paper.

TABLE I.—INDIVIDUALS IN MONTGOMERY AND JEFFERSON COUNTY HOUSEHOLDS WHO RECEIVED FIRST, SECOND, AND THIRD INJECTIONS OF POLIOMYELITIS VACCINE COMPARED BY AGE

	Percentage Distribution								
	First Injection			Second Injection			Third Injection		
Age (years)	Montgomery	Jefferson	Total	Montgomery	Jefferson	Total	Montgomery	Jefferson	Total
0 to 4	73	81	78	62	76	70	56	56	56
5 to 19	83	94	90	80	94	88	68	91	82
20 to 39	32	85	60	26	82	55	14	65	41
40 to 49	7	68	38	5	64	36	5	52	28
50 and over	3	16	9	2	15	8	1	13	7
Total	53	72	63	51	69	61	44	61	53

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* Present address: United States Public Health Service, Pine Ridge, South Dakota.

Age and Vaccine Injections

There were 1,046 people in the Montgomery families and 1,313 in Jefferson County. Table I contains injection data by age grouped in categories relative to the goals of the vaccination program (vaccination of everyone up to forty). Probably the best measure of the distribution of vaccine is the proportions having vaccine who are five to nineteen and twenty to thirty-nine years of age. Some of those under four would not yet have had time to complete the three injections and those forty or more have a smaller risk in getting poliomyelitis and thus have not been given as much encouragement to be vaccinated.

Taking three injections as the goal, it can be seen that 56 per cent of those up to four years of age have achieved this level of protection in each area surveyed. This increases to 68 per cent in Montgomery and 91 per cent in Jefferson for those five to nineteen, most of whom are under school vaccination programs. In Montgomery County only 14 per cent of persons aged twenty to thirty-nine years had three doses as opposed to 65 per cent in Jefferson County. A similar contrast was seen in the age group forty to forty-nine. When comparisons were made by sex, it was found that more women than men and more school and teenage girls than boys had been vaccinated.

Jefferson County had a higher proportion of those immunized because adult clinics were carried on by the Medical Society in cooperation with the Health Department and many community organizations. The survey in Jefferson County was carried out three months later but this probably had little effect on results. The occurrence of poliomyelitis in a working man helped stimulate a more active vaccination program in Jefferson County in which men's organizations participated in arranging clinics and getting people to attend.

These findings indicate a marked difference between these two counties in the proportion of school age children and young adults vaccinated. If one attempts to draw a composite picture, nearly half of young children are not adequately protected, about one of five of school children need more vaccine, and six out of ten young adults have not had three injections. Constant effort on the part of practicing physicians, health workers, and community organizations seems necessary.

TABLE II.—POLIOMYELITIS INJECTIONS AND SOCIAL CLASS IN MONTGOMERY COUNTY AND SOUTHERN JEFFERSON COUNTY

Social Class	Total Number	Per cent Receiving Injection First Injection	Second Injection	Third Injection
I (High)	22	45	41	32
II	99	51	48	41
III	404	65	63	53
IV	986	53	55	47
V (Low)	401	35	33	26
Total	1912*	54	52	44

* Social class level data were not obtained from families containing 447 individuals. Thus total percentages will vary from those in Table I.

Social Class Levels and Vaccine Injections

To determine how those obtaining vaccine differed other than by age from those neglecting to receive it, a socioeconomic class scale was used. It gives a fairly reliable indication of social stratification because it combines education and occupation in a previously determined manner. Generally, high education and high positions go together, along with other characteristics such as type of living arrangements, resulting in a high social class score. However, sometimes people with little schooling have fine jobs and a good community standing and vice versa. This scale takes this into consideration.

The proportion of all people in each of five social classes who received first, second, and third injections is given in Table II. The outstanding findings concern the lowest socioeconomic group. Not as many of them as of the others have been immunized. The middle group has made the best showing. Thus the poorest families who would be least able to handle the financial aspects of the disease are at the greatest risk.

Source of Injections

In Montgomery County private physicians gave 44 per cent, 41 per cent, and 35 per cent of all first, second, and third doses respectively. This emphasizes the key contribution of the private physician to vaccination programs. School clinics were the second most common source of vaccine with an over-all percentage of 34, 34, and 37 for first, second, and third doses; while health officers or health department clinics contributed 18, 20, and 23 per cent. In this county some health officers are also school physicians. Some health department clinics are also school clinics and vice versa. Other sources such as places of employment or military service accounted for a consistent 5 per cent of each injection.

Such detailed information was not obtained in Jefferson County but it was found that 20 per cent of patients received at least one injection from private physicians, 86 per cent from clinics and one per cent from other sources. Private physicians played a more important role in the proportion of injections given in the rural parts of Montgomery County than in Amsterdam. School children tended to receive injections in school clinics, while more of the older people obtained them from their physicians, as would be expected. An analysis of attrition rate showed that about the same proportion went on to complete three injections whether they started the series with their physician, with a clinic, or in school clinics.

In Jefferson County there was a direct correlation between social class and source of injection. The higher the level, the larger the proportion of individuals obtaining injections from private physicians. This was not generally true for Montgomery County, although all those in the top class went to their own physicians.

Summary

The distribution of poliomyelitis vaccine in two samples of families, one in Montgomery County and one in Southern Jefferson County, was presented. A considerable proportion of people up to forty years of age still need this protection. Private physicians have played a significant role along with clinics in giving injections. Lower socioeconomic level families are at greater risk than others since a smaller proportion of them have received the vaccine.

Latest Physician's Handbook

The latest issue of the Physician's Handbook on Birth and Death Registration is now available. This booklet, published by the U.S. Public Health Service, contains information on proper completion of birth and death records. Since the volume is written for general usage in the United States, it does not reflect precisely the New York City forms and practices. However, it is a useful reference for practicing physicians, especially with regard to specific problems in reporting cause of death. Copies are available on request from Mr. Carl L. Erhardt, Director, Bureau of Records and Statistics, Department of Health, 125 Worth Street, New York 13, New York.

—*Bulletin, Medical Society of the County of Kings, March, 1959*

Causes of Chronic Urticaria Including Infection

ALEXANDER CHESTER, M.D., HARRY LEIBOWITZ, M.D., AND HARRY MARKOW, M.D.,
BROOKLYN, NEW YORK

(*From the Department of Allergy, Beth-El Hospital*)

Chronic urticaria is one of the most troublesome problems that confronts the practitioner as well as the allergy specialist. Most of the cases of chronic urticaria are refractory to all types of medication, and the management of these cases is generally without much success. Acute urticaria may appear suddenly and last for several hours or days or weeks. Chronic urticaria, on the other hand, has a gradual onset, may recur frequently, and may last for months or years. The line of demarcation may consist in the period of time involved. Arbitrarily one may say that urticaria is chronic if it recurs for more than about one month.

Although the cause of acute urticaria is usually obvious, the urticaria arising after the ingestion of a specific food such as fish, nuts, or strawberries, or drugs or after the injection of a therapeutic agent such as penicillin, is often a vexing problem. One may compare the difficulty in discovering the causative agent of chronic urticaria to that of intrinsic asthma or chronic vasomotor rhinitis. Yet it would be foolhardy to resign oneself to failure immediately and to resort to drug therapy alone. Many cases of chronic urticaria may be solved if one devotes himself to the task of taking a careful, intensive history of the case from the period of onset up to the time of examination. Careful and repeated questioning of the patient at each visit may bring out facts which the patient overlooked or did not think important previously. For instance, in a young adult with urticaria of nine months duration, orange was finally discovered to be the etiologic factor. Yet the patient insisted that the hives appeared each morning about 6:00 A.M., two hours before breakfast, which included orange juice. But after two months of study he finally revealed the fact that he generally peeled and ate an orange before retiring at night. In another case, that of a man who had a printing plant, a reaction to karaya gum directed our attention to the situation that every time he entered a room in which a vegetable gum was sprayed on freshly printed material, he sneezed, had running eyes, and itched all over. This information was obtained only after the appearance of a positive skin reaction to karaya gum. Since the time he was advised to keep out of such a room or to go in momentarily with his face and nose covered with a kerchief, his urticaria cleared up. There is no doubt that many unsolved cases which have been attributed to psychosomatic factors or labeled "cause unknown" could be solved if thoroughly studied and if the investigation is carried out over a period of trial-and-error study. Since drugs may cause urticaria, a complete list of all medications should be available to the physician.

Chronic urticaria occurs most often in women between the ages of twenty and fifty, although men may also be afflicted. Although skin tests with food extracts may fail to reveal the offending agent, it is necessary to test the patient thoroughly, if only to arrive at a diet of negative-reacting foods. It is, or course, essential that the history be considered in relation to the food tests since it is obvious that a food never eaten will not be the cause of symptoms. Similarly, symptoms recurring daily if due to a food will not be caused by a food eaten only occasionally, and occasional symptoms are usually associated with foods eaten occasionally. It is our distinct impression that many cases of chronic urticaria are due to foods, and this cause-and-effect relationship becomes evident only during the period of trial-and-error diets.

Inhalants may be a factor in some cases. Symptoms of pollen sensitivity will appear seasonally with the pollinating seasons. A careful history of contacts and the environmental presence of certain inhalants, such as animal danders, feathers, insecticides, paints, and varnishes, will aid in the diagnosis. Many cases of chronic urticaria will respond to systemic hyposensitization with pollens or an occasional inhalant extract in situations in which there is a history of environmental contact and in which avoidance is difficult.

Chronic urticaria may also be associated with parasitic infestation of the intestinal tract. A high eosinophil count in the peripheral blood stream in a patient residing in or coming from an area where parasitic infestation is common should make one suspicious of that agent. Urticaria may also be a manifestation of a systemic disease, as in Hodgkin's disease, malignant neoplasms, and lymphomas. A thorough physical examination is as important as a thorough history.

Such examinations also have been extremely useful in the discovery of foci of infection. Often a nasal smear will reveal a 4-plus neutrophilic secretion, indicative of infection even in the absence of symptoms. Tonsils, adenoids, teeth, and even the gallbladder and appendix may be sources of such foci of infection. Accordingly the patient should be questioned regarding all previous medical and surgical illnesses in relation to his present symptoms. Sore throat, teeth infections, abdominal symptoms, and urinary symptoms are important clues.

Dutton[1] found that infection was the most important factor in most of the cases he studied. When all other causes could be excluded, a search for infection should be as thorough as for other etiologic factors. The following 2 cases of chronic urticaria associated with diseases of the gastrointestinal tract are illustrative of the importance of infection as a focus or as a trigger mechanism.

Case Reports

CASE 1.—A middle-aged female patient had two severe attacks of urticaria prior to coming under our observation. The urticaria was generalized and associated with angioedema of the face and body. The first attack lasted three weeks, during which time she was hospitalized. She improved with Meticorten therapy. Two weeks later she had a second attack, more severe and more generalized than the first, and she was again hospitalized. She had fever and swellings of the body. No history of penicillin therapy was obtained. After one week on Achromycin, Meticorten, and Phenergan the patient improved and was discharged. All examinations gave negative results. There was a history of asthma in a sister, in an aunt and uncle in California, and in a first cousin who died of it in Russia.

She was first seen by one of us on July 25, 1957, complaining of generalized urticaria which was not controlled by Meticorten. She remained under study and treatment until January 13, 1958, with continuous urticaria throughout the entire period. All skin tests gave essentially negative results, food tests giving only slight reactions. However, she was placed on a diet in which she avoided the reacting foods as well as fish, nuts, and chocolate. She failed to respond to all medications, food eliminations and therapy, including injections of Acthar gel, dust, and fungus extracts.

During the six months of treatment she related a story of antagonism toward a supervisor in her office and repeatedly showed emotional reactions when discussing this situation. Finally the supervisor was given a desk next to hers and the bad relationship worsened. But she could not give up her position for financial reasons. It was not difficult to assume that this was a case of urticaria due to psychosomatic influences.

Finally, after a period of four weeks of continuous urticaria which was particularly worse after her treatments, she discontinued treatment on January 13, 1958. About three months later she called to say that about two days after the last office visit she suffered severe abdominal pain, was hospitalized, and underwent surgery for the removal of a gangrenous gallbladder and appendix and that she was free of all hives since then, although she was eating all foods and the situation in her office was the same as before the operation. There has not been any recurrence of symptoms in the nine months following surgery.

Case 2.—An eleven-year-old girl complained of urticaria during July and August of 1955. Medication was given, but she improved only after avoiding summer fruits. In the fall of 1957, after taking aspirin for a sore throat, there was a recurrence of urticaria and angioedema for three days. Since then aspirin always caused hives for which she took antihistaminic drugs.

In November, 1957, she took aspirin for a sore throat and developed urticaria with abdominal pain. This cleared after an adrenalin injection but recurred daily for two weeks. There was no relief with steroid therapy, and adrenalin was the only therapy that afforded any relief for the abdominal pains which were localized in the right lower quadrant. Presumably, during this time the physician considered the abdominal pain the result of internal hives or angioedema. The blood count showed 11.5 Gm. hemogloglobin, 4,600,000 red blood cells, and 10,500 white blood cells with 62 per cent polymorphonuclears, 27 per cent lymphocytes, 1 per cent monocytes, and 1 per cent eosinophils. The stools were negative for ova and parasites. During the period of skin testing she had repeated attacks of hives with right quadrant pains for which she received adrenalin, but this therapy now failed to give relief. Surgical consultation revealed spasticity and tenderness in the right lower quadrant and resulted in the decision to remove the appendix. This was done, and the pathologist reported that there were areas of hyperemic reaction. The hives cleared immediately, and the patient has remained well since she left the hospital. Aspirin no longer causes any outbreak of urticarial wheals. There has not been any recurrence of symptoms in the nine months after surgery.

Comment

Although infection may act as a trigger mechanism in setting off acute allergy episodes, bacterial allergy as an immunologic process has not been generally accepted. However, infections have preceded the onset of allergy in many instances, and acute infections have precipitated symptoms in chronic allergy. The fact that the allergy disappeared after surgery, with the infected tissues removed, is not absolute evidence that infection is the cause of symptoms. In these cases, however, in which the symptoms were chronic and resisted all other forms of therapy, one may conclude that it played an important part in its cause and chronicity.

Summary

The allergic nature of chronic urticaria has been discussed. Two cases of chronic urticaria which illustrate the relation of infection to its onset and to its chronicity are presented. Relief of symptoms followed the surgical removal of a gangrenous gallbladder and appendix in one case and of an inflamed appendix in another. The relief of all urticarial symptoms has continued for months after surgery.

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Incidence of Multiple Births

How often do multiple births occur? Twins occur once in 92 confinements, triplets once in 9,600, and quadruplets once in 657,000, according to *Patterns of Disease*, published by Parke, Davis & Company.

The Use of a New Rauwolfia Derivative, Deserpidine, in Mild Functional Disturbances and Office Psychiatry

BENNETT W. BILLOW, M.D.,* MIGUEL STEINBERG, M.D., FRANK MARTORELLA, M.D., SAMUEL S. PALEY, M.D., SAMUEL B. HARRIS, M.D., AND SOLOMON LEDERMAN, M.D., NEW YORK CITY

(From the Department of Medicine of Harlem Hospital)

EMOTIONAL disturbances have in the past, as well as in the present, played an important role in the everyday practice of medicine. We have all felt, intuitively perhaps, that disturbances of the psyche were often the crux of the medical problem confronting us. Recently great advances have been made in the chemotherapeutic approach to psychotherapy and functional conditions of the body. We have had occasion recently to study and evaluate a new alkaloid from Rauwolfia canescens, deserpidine in hypertension.[1] We found the therapeutic effects of this drug similar to those of reserpine. In contrast to our experience with reserpine, we observed fewer side-effects and a greater degree of safety with deserpidine. We therefore decided to employ and study this drug as an adjuvant or therapeutic agent in the management of several medical diseases where a functional aspect appeared. Accordingly, deserpidine was used in the private practice of internal medicine and in the nonpsychiatric (medical) outpatient hospital clinics. In addition, we felt an investigation of its value in psychiatric patients would be informative. Therefore, two of us (M.S. and S.L.) who are psychiatrists, used this drug among our private psychiatric office patients.

TABLE I.—DIAGNOSTIC CATEGORIES OF 213 NONPSYCHIATRIC (MEDICAL) CASES

Diagnostic Category	Number of Patients
Hypertensive state	93
Thyroid toxicosis (Graves disease—Toxic goiter)	35
Hypothyroidism	20
Cardiac conditions Premature beats Paroxysmal tachycardia Coronary occlusions Cardiac neuroses	20
Upper and lower gastrointestinal condition (Colitis, cardiospasm, nausea, gas)	15
Rheumatic states and arthritis (Back pain, muscle spasm, fibrositis)	10
Geriatric patients with associated general and functional diseases	20
TOTAL	213

Methods and Materials

Two hundred thirteen adult nonpsychiatric medical patients, and 70 adult private psychiatric patients were treated with this medication. One hundred of the nonpsychiatric patients were followed in the hospital outpatient clinic, and the rest, 113, were among our own private patients. There was 93 hypertensive patients among the 213 nonpsychiatric cases; the effects of deserpidine in this group were reported elsewhere.[1]

These patients were studied for periods varying from three to twelve months. Each patient was examined personally by one of the authors. Laboratory studies during therapy included blood counts and blood chemistry determinations (urea nitro-

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* Present address: 11 East 93rd Street, New York 28.

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Part of this work was done with the cooperation of the members and officers of the Restaurant, Dining Room, and Luncheonette Employees Union, Local 1115.

TABLE II.—COMPLAINTS MOST FREQUENTLY PRESENTED BY 213 NONPSYCHIATRIC (MEDICAL) PATIENTS

Complaints	Frequency
Nervousness, tenseness, irascibility	185
Weakness, fatigue, lack of energy	160
Inability to sleep	146
Headaches, dizziness	104
Palpitation	60
Sticking pain in heart, in chest (synonymous)	58
Lump or pressure in chest and throat	40
Restlessness	35
Joint and vague muscle and body pain	32
Nausea and gassy feeling	25

TABLE III.—DIAGNOSTIC CATEGORIES OF 70 PRIVATE PSYCHIATRIC PATIENTS

Diagnostic Category	Number of Patients
Anxiety state with depression	26
Tension states	20
Anxiety state without depression	14
Conversion hysterias	10
TOTAL	70

gen, creatinine, sugar, and cholesterol). Additional electrolyte studies for sodium potassium, calcium, proteins, and so forth were done when indicated for therapeutic and diagnostic purposes. Routine urine analyses, chest x-ray films, and electrocardiograms were done. After several months of careful laboratory study and with resultant minimal side-effects among our nonpsychiatric patients, the medication was given to the psychiatrists for their evaluation. We deemed it unnecessary to have laboratory studies done among our private patients. Patients were instructed to report immediately any untoward reactions. The psychiatrists also used deserpidine to augment the conventional psychiatric therapies, especially psychotherapy.

The various diagnostic categories of nonpsychiatric medical patients are listed in Table I. A perusal of Table II revealed that the most frequent subjective complaints were nervousness, tenseness, irascibility, weakness, lack of pep, lack of energy, headaches, dizziness, insomnia, sticking pain in heart, and sticking pain in the chest (synonymous). A glance at Table III shows the psychiatric diagnostic criteria. The most common are: anxiety states with or without depression, tension states, conversion hysterias, and psychoneurotic tendencies due to unresolved eternal conflicts.

TABLE IV.—RESULTS OF THERAPY

Category of Patients	Total patients	Subjective Improvement	No Improvement
Nonpsychiatric (medical group)	213	206	7
Private psychiatric (office group)	70	70	0
TOTAL	283	276	7

Treatment was initiated with an 0.1 mg. tablet of deserpidine three times daily, or an 0.25 mg. tablet three times daily. In some the dosage was gradually increased to 6 mg. daily.

Results

The results of treatment in these patients are summarized in Table IV. Deserpidine produced subjective improvement among 89 patients in a total of 93 cases of hypertension. The remaining 120 nonpsychiatric patients showed from mild to marked improvement in controlling their psychosomatic complaints. They were less restless, became more cheerful, seemed to be more calm, and in general had fewer complaints. Nevertheless there were 3 who insisted they felt no improvement at all. All private psychiatric patients showed marked symptomatic relief with subjective feeling of well-being and relaxation and reduction of fear, irritability, and insomnia. They became more optimistic, cooperative, self-confident, and expressed a feeling of physical and mental well-being. The results of diminished tension and anxiety made these patients more accessible to psychotherapy.

We found deserpidine to be a drug of low toxicity and well-tolerated by practically all of our patients. The incidence of side-

TABLE V.—TOXICITY OR UNTOWARD REACTIONS WITH THE USE OF DESERPIDINE AMONG 283 PATIENTS

Complaints	Number of Patients
Drowsiness and lethargy (mild)	20
Depression (mild)	8
Nasal congestion (slight)	4
Diarrhea—questionable	1?
TOTAL	33

effects or untoward reactions is shown in Table V. Laboratory tests, as well as repeated personal examination of our patients during this study, revealed no evidence of blood dyscrasia or liver or kidney damage. There was no evidence of electrolyte or cardiographic changes among our patients while under treatment.

In our previous study of the effect of deserpidine upon 93 hypertensive patients, we commented on the relative paucity of side-effects.[1] Continued investigation among 190 additional patients again revealed exceedingly mild and minimal toxic reactions none severe enough to interrupt treatment. Nevertheless, at the risk of repetition, we wish to stress, as with the use of reserpine, increased gastric secretion and acidity may result from the use of the drug.[2,3] One must also be aware of the fact that drowsiness, depression, and nasal congestion, which have been the common complications with reserpine therapy,[2] may still be encountered, although infrequently, with deserpidine. We found no evidence of parkinsonism or addiction to the drug.

Conclusion

Deserpidine was administered for periods varying from three to twelve months to 283 patients in the outpatient hospital clinic, as well as under private care. Two hundred and thirteen patients of this number were nonpsychiatric (medical) private and clinic patients, and were observed by internists; the remaining 70 patients were treated by psychiatrists as private psychiatric office patients. The average initial dose was 0.1 mg. to 0.25 mg. three or four times daily. No patient received more than 6 mg. daily in this study.

The best results were obtained in relieving anxiety and tension states. Patients were less restless, became more cheerful, and, in general, had fewer complaints.

All private psychiatric patients showed marked symptomatic relief. They became more cooperative and self-confident, with a reduction of fear, irritability, and insomnia. The results of diminished tension and anxiety made these patients more accessible to psychotherapy.

While the results were qualitatively similar to those seen with reserpine in similar dosage ranges, side-effects were much less frequent, very mild, and none severe enough to interrupt treatment. Laboratory studies during medication revealed no blood or urinary abnormalities or evidence of systemic damage.

We feel, on the basis of our investigation, that deserpidine has a definite place in the treatment of emotional disturbances seen in the everyday practice of medicine. It is most effective in allaying the associated functional symptoms in many organic diseases. It is another excellent drug to be added to the armamentarium of the psychiatrist when there is need for a relaxing agent. The results of diminished tension and increased cooperation made many of these patients more readily accessible to psychotherapy.

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A Practical, Effective Treatment for Surface Ulcers in Institutional Practice

OSCAR K. DIAMOND, M.D., QUEENS VILLAGE, NEW YORK

(From the Creedmoor State Hospital, Queens Village, New York)

Surface ulcers among institutional patients constitute a major deterrent to treatment of the primary condition for which the patients are hospitalized. For example, it was recently reported that in one rehabilitation hospital 30 patients with decubitus ulcers lost 4,874 patient days, or 13.3 patient years, of active rehabilitation therapy because of their ulcers.[1] So too in the mental hospital, infected or necrotic ulcers have a depressing, even debilitating, effect on patients which retards the psychotherapy on which so much effort and money is expended. An effective program for the prevention and treatment of surface ulcers, therefore, is a "must" for any institution whose objectives include successful rehabilitation of its patients.

After many years of deep concern about this problem in two large mental hospitals, we have evolved a treatment regimen which is the most effective of any with which we have had experience. It has the additional virtue of being a practical treatment within the means of and suitable for the personnel of almost any institution.

In common with others who have written about the treatment of ulcers, we believe that protection of the ulcer from pressure and contamination is essential. Maintenance of good nutritional status is likewise important. But we do not agree with the notion held by some that a wide variety of local agents will produce essentially the same results. Our local treatment is based on the principle that necrotic tissue and debris must first be meticulously removed from the wound before healthy granulation can be expected and that granulation should then be aided by a medication designed to support the physiologic healing processes. Antisepsis results from this approach but is not the primary objective. The agent we employ initially, and until a healthy granulating surface is evident, is papain-urea-chlorophyllin ointment (Panafil). From this point to ultimate healing we employ the plain chlorophyllin ointment (Chloresium).

Papain-urea-chlorophyllin ointment is an established enzymatic debriding agent, recently the subject of numerous favorable clinical reports.[2–6] The combination has a logical and interesting rationale. Papain is a proteolytic enzyme which digests necrotic tissue and liquefies viscous exudate. However, it is the combination with urea which enables papain to provide thorough debridement of all types of devitalized protein matter in the wound. Papain is unique in that it must find its activators in the wound. Urea, a protein solvent and denaturant, exposes the reactive groups in protein matter, thereby rendering this matter more susceptible to digestion and at the same time providing activation for the enzyme. The presence of chlorophyllin controls inflammation and thereby allows continuous use of the proteolytic agents. Specifically, it is said to inhibit capillary and lymphatic blockage by the protein breakdown products.[7]

Chlorophyllin ointment has been employed for many years to promote the healing of resistant wounds. A great number of clinical reports on it have been published, perhaps the most significant to those concerned with surface ulcers being that of Pollock *et al.*[8] This article discusses a two-year study of 11 agents commonly used for the conservative treatment of decubitus ulcers and concludes that chlorophyllin ointment and solution are the most effective. Chlorophyllin ointment is unusually bland and soothing; in fact, in some nine years experience with many hundreds of cases we have yet to encounter a single case of irritation or sensitivity traceable to the active ingredient. Yet the preparation is far from inert. It promotes granulation more rapidly and of better quality than any other topical preparation we have used.

The types of cases on which our experience with this treatment is based are decubitus ulcers (about 50 per cent), varicose, arteriosclerotic, and diabetic ulcers, and, occasionally, gangrenous lesions. Our patients are largely in the older age groups, up to and including ninety years of age. Ulcers in which there is any necrosis or infection are treated initially with daily dressings of Panafil ointment. These dressings are continued until a healthy pink granulating surface with no residue of necrotic tissue is obtained. This stage may take from a few days to three weeks, depending on the type and severity of the ulcer. At this point, treatment is changed to dressings of Chloresium ointment, changed every forty-eight hours. Chloresium dressings are continued until complete healing is achieved. In addition to the local therapy, necessary adjunctive therapy is employed. This includes relief of any pressure to the areas involved, control of diabetic conditions should they exist, and supportive or systemic measures as may be necessary to increase circulation.

Satisfactory healing was obtained in every case treated, and in many cases progress was remarkably rapid. Although the length of time required for treatment varies, we have come to expect healing of most decubitus ulcers within six weeks and of varicose ulcers of approximately "quarter" size within three weeks. No irritation or sensitivity has been encountered. A minor amount of initial discomfort from the proteolytic ointment was anticipated but did not occur. Local infection presented no problem in these cases. In cases in which infection was present initially, it was promptly eliminated by the debriding action of the proteolytic ointment. Removal of the substrates on which the infecting organisms feed appears to be a more effective means of overcoming local infection than the use of specific antibacterial agents.

In 20 patients with decubitus or varicose ulcers the treatment procedure was modified by employing daily dressings of the proteolytic ointment, Panafil, from start of treatment straight through to complete healing. Results in this series were excellent, but it was our impression that healing was somewhat more rapid in 20 similiar cases treated in the usual manner, that is, with chlorophyllin ointment substituted for the proteolytic one after a healthy granulating surface had been achieved.

In almost two years experience with this treatment we have found it not only effective but also highly satisfactory from the practical standpoint. Both preparations are topically applied under standard dressings and require no special precautions. Minimally-trained personnel can carry out this treatment. The advantages of this simplicity of application, in comparison, for example, with proteolytic agents which must be injected frequently, are obvious. Significant economies in nursing time and in the time of supervisory medical personnel are achieved without subtracting from the patients' welfare. The cost of the medications themselves compares favorably with that of other agents used for similar purposes.

Summary

Surface ulcers seriously interfere with treatment of the primary condition for which institutional patients are hospitalized. Establishment of a treatment regimen which will produce rapid healing of such ulcers is therefore essential to the rehabilitation program.

A regimen is described which over a two-year period has produced uniformly excellent results in the treatment of decubitus, varicose, arteriosclerotic, and diabetic ulcers. The enzymatic debriding agent papain-urea-

chlorophyllin ointment (Panafil) is employed initially to remove necrotic tissue and debris and to produce a clean granulating base. From this stage to ultimate healing, chlorophyllin ointment (Chloresium) is used to promote granulation and epithelization. Local infection is effectively controlled by the enzymatic removal from the lesion of the substrates on which infecting organisms feed and by subsequent maintenance of healthy granulations.

The primary advantage of this treatment method, accompanied by established supportive measures, is the rapid healing which it produces. In addition, the local agents used are well suited to institutional practice. Dressing changes are infrequent, and treatment may be administered by even minimally-trained personnel.

80-45 Winchester Boulevard
Queens Village 27

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Treatment of Impacted Cerumen: Clinical Effectiveness of a New Cerumenolytic

MEYER BERGER, M.D., AND HARRY S. BIKOFF, M.D., BROOKLYN, NEW YORK

(*From the Jewish Hospital of Brooklyn*)

Ceruminal impaction, estimated to occur in 18 per cent of all adult males with normal ears,[1] can have far-reaching and serious sequelae[2–6] despite the fact that it is usually considered more of a nuisance than a clinical entity. The factors that control cerumenogenesis and cerumenolysis are not completely known, but among those which contribute directly to impaction are anatomic abnormalities of the external auditory canal, areas of inflammation on the surface epithelium of the canal, and disproportions in the components of cerumen.[1,7,8]

The amount of cerumen retained within the canal varies greatly according to individual and race.[1] It is possible for the retained cerumen to become impacted and lead to keratosis obturans,[9] where layers of cerumen, desquamated epithelium, and shed hairs are actually attached to the wall of the canal.[6] Removal of this mass without damage to the underlying tissue is often a difficult procedure. Instrumentation, even in skilled hands, can be painful and traumatizing unless the wax is sufficiently softened with a cerumenolytic agent.

Among these agents, hydrogen peroxide, olive oil, saline, and sodium carbonate are most frequently used, but none of these is completely effective and entirely safe.[10,11] Hydrogen peroxide, because of its foaming action, can form occluded pockets of vapor and cause pain, irritation, or even ruptured tympanums. Olive oil, although it has been

TABLE I.—Results of Clinical Treatment with Cerumenex

	Number of Patients	Amount of Cerumen		State of Cerumen		Bilateral Involvement	Results		
		Excessive	Moderate	Hard	Soft		Excellent	Fair	Poor
Pediatric	47	42	5	43	4	31	37	9	1
Adult	23	19	4	20	3	14	19	3	1
Total	70	61	9	63	7	45	56	12	2

held to be an effective agent, is not miscible with water, and saline and sodium carbonate are both of doubtful efficacy.[12]

A new cerumenolytic preparation,* combining an effective surface-acting agent with a viscous, nonvolatile, aqueous-miscible carrier showed promise in preliminary trials of good dispersing and emulsifying qualities.[13,14] It was therefore decided to evaluate it in clinical practice.

Methods

The patients in this study were a selected series, all with unusual amounts of ear wax. They were divided into two categories, a pediatric group of 47 patients and an adult group of 23 patients. The pediatric group ranged in age from three years to thirteen years. They all had excessive deposits of hard cerumen: in 31 patients both ears were involved, and in 16 patients only one ear was involved.

The external canals of 12 of these children were filled with from 5 to 10 drops of the cerumenolytic preparation. The ear was plugged with cotton, and after fifteen to twenty minutes the ear was gently irrigated with lukewarm water. In the remaining 35 children the cerumenolytic agent was allowed to remain overnight in the ear canal. The following day the canal was irrigated with lukewarm water.

The adult group of 23 patients ranged in age from twenty-seven years to seventy-two years. In all of them the amount of ear wax was excessive: in 20 patients the cerumen was hard and dry, and in 3 patients it was soft. Fourteen patients had bilateral involvement and 9 patients had wax in only one ear. Five to 10 drops of the cerumenolytic agent were placed in each affected ear and allowed to remain there from ten to twenty minutes, depending on the degree and consistency of the wax. After this interval the ears were irrigated with lukewarm water.

Except for the aberrant ceruminogenesis, there were no signs of aural pathologic conditions and no ruptured tympanun in any patient.

Results

When all the wax was removed and the ear canal was left clean with the tympanic membrane clearly visible, the result was considered excellent. When most of the wax was removed and the tympanic membrane could be examined, but some wax still clung to the surface of the canal, the result was considered fair. When the wax was not removed at all or only an insignificant amount was removed, the result was considered poor.

In the pediatric group of 47 patients, 37 were excellent in their response, 9 were fair, and 1 was poor. In the adult group of 23 patients, there were 19 excellent results, 3 fair results, and 1 poor result, this in a sixty-year-old male patient with bilateral involvement. In one adult case curettage was necessary for complete removal of the impacted cerumen. In no cases, not even those in which the agent was allowed to remain in the ear overnight, were there any signs of irritation or of patient sensitivity to the drug. There were no apparent side-effects or adverse reactions. In the overall group there were excellent results in 80 per cent, fair in 17.1 per cent, and poor in 2.9 per cent.

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* Cerumenex, supplied by The Purdue Frederick Company, New York City.,

Patient acceptance of the cerumenolytic agent was excellent. In many cases ceruminosis was a recurring problem, and wax removal was regarded with apprehension. The simplicity of this method, the lack of instrumentation, and the time saved were factors appreciated by both physician and patient (Table I).

Comment

One of the most troublesome aspects of ceruminosis from the physician's point of view is the inordinate length of time the usual methods take to clean the external auditory canal. It is not at all uncommon to spend up to thirty minutes on one ear alone. When this is further complicated by a busy practice and a squirming child, the result is often a physician with trauma as well as a traumatized ear canal.

Syringing without a really effective cerumenolytic agent presents a variety of problems and dangers. Cerumen can often be removed only after repeated syringing with persistent high pressure. For the syringing to be effective the pressure must be exerted outward from the tympanic membrane; otherwise the cerumen is driven farther into the canal. The liquid must strike the tympanum and rebound against the wax, propelling it toward the external orifice.

There are inherent dangers in this procedure, as well as the possibility of severe pain. The pressure needed to remove the wax may also be sufficient to rupture the tympanum. Bleeding is common with this type of syringing since there is usually some degree of dermatitis from the impacted wax.

When the patient is a frightened, squirming child, delicate manipulation is almost impossible, and there is the additional hazard of the nozzle of the syringe pushing the wax back into the ear canal. The advantages, therefore, of a safe and efficient cerumenolytic agent are evident or many levels—from time saved to actua danger averted.

Summary and Conclusion

The removal of cerumen by the accepted methods is a time-consuming and generally ineffective process. In a clinical test of a new cerumenolytic agent in two groups of patients, 47 pediatric and 23 adult, excellent results were obtained in 56 patients, (80 per cent), fair results in 12 (17.1 per cent) and poor results in 2 (2.9 per cent).

In the entire group of 70 patients, including those in whom the preparation was left overnight, there were no signs of irritation or sensitization and no untoward side reactions.

From this study we would conclude that the unusually high percentage of efficacy shown by this cerumenolytic agent and the ease of administration, as well as the total lack of adverse reactions, warrant its use in all cases of excessive and impacted ear wax.

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RECENT ADVANCES IN MEDICINE AND SURGERY

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ROBERT TURELL, M.D., *Editor*

Myasthenia Gravis: Specific Drug Treatment

KERMIT E. OSSERMAN, M.D., NEW YORK CITY

(*From The Myasthenia Gravis Clinic and Department of Medicine, Mount Sinai Hospital*)

IN TREATING the myasthenic patient, the most important concerns are early diagnosis and treatment tailored to fit the individual. Drugs used are anticholinesterases. They reduce the activity of acetylcholinesterase, thereby decreasing the destruction of acetylcholine and thus reducing the block at the neuromuscular junction.

There are three drugs currently used in treatment: Prostigmin bromide, Mestinon bromide, and Mytelase chloride. They greatly help to correct the defect at the neuromuscular junction, but they do not improve the patient to the extent attainable in a spontaneous remission. The dosage of each of these drugs varies markedly from one individual to another and may change from time to time in the same patient.

Current Drug Therapy

PROSTIGMIN (NEOSTIGMINE) BROMIDE.—Prostigmin (neostigmine) is a demethylcarbamic ester of 3-hydroxyphenyltrimethylammonium bromide. Since its introduction over twenty years ago the entire prognosis for this disorder has changed.[1-3] The drug is not habit-forming, since tolerance diminishes as patients go into remission. Neither normal individuals nor patients with any other disease can take Prostigmin in anything except small doses.[4] Prostigmin is said to have both an anticholinesterase and an anticurare action at the neuromuscular junction.[5] Because of this dual action, Prostigmin has been effective in the treatment of the majority of patients with this disorder, especially for those with the milder types for whom relatively small doses of medication are necessary.

In the more severe types of myasthenia, Prostigmin has distinct disadvantages because of its short duration of action. Because of the increased amounts and frequency of dosage, cholinergic side-effects, such as epigastric distress, sweating, salivation, lacrimation, nausea, abdominal cramps, and diarrhea become pronounced and at times difficult to control despite the use of atropine. Muscle fasciculations may occur.

From as little as one half of a 15 mg. tablet of Prostigmin bromide three times a day in mild cases to over 100 tablets per day in severe cases may be needed. Many factors such as menstrual periods, pregnancy, infection, or emotional stress can alter the

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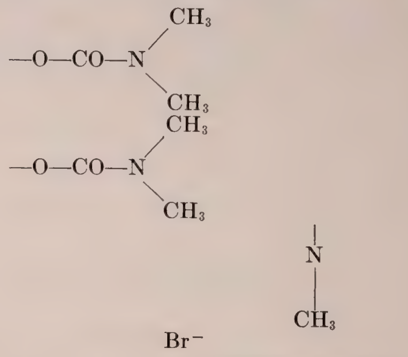
daily requirement. Each patient with the help of his physician must learn to adjust the dose of medicine to his immediate needs. This adjustment is based both on the degree of relief of myasthenic symptoms and on the appearance of side-reactions which indicate that an overdosage is being approached that may give rise to cholinergic reactions. The dosage of any anticholinesterase drug should be increased only slowly.

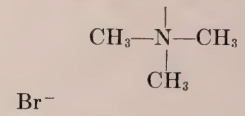
When the patient cannot swallow, Prostigmin may be given parenterally. An intravenous dose of 0.5 mg. is equivalent to 1.5 mg. intramuscularly or 15 mg. (1 tablet) orally.

Timespan Tablets. In recent years new dosage forms of various drugs have been devised that permit slow release of the medication over a longer period of time. The testing in clinics of tablets of Prostigmin especially designed to maintain a slow and prolonged release of the drug has been carried out. Timespan tablets of 22.5 and 45 mg. were used. About one third of the drug is released for immediate therapy, giving the effect of one-half or a whole regular tablet dose. The remaining drug is released slowly. Schwab, Osserman, and Tether,[6] testing these Timespan tablets, tried them in a total of 85 patients, of whom 54 found them to be of such value that they wished to continue using them. The duration of effectiveness varied from a minimum of three hours to a maximum of twelve hours, averaging six to seven hours. In some patients the total amount of drug taken exceeded that taken in dosages of the regular tablets by 33 per cent without evidence either of overdosage or of better control. In such cases, some portion of the dosage may escape absorption for reasons that are not clear. Occasionally, the large size of the tablet bothers patients with dysphagia. The greatest value of the Timespan tablet is in eliminating the need for medication during the sleeping hours. It is hoped that this dosage form of the drug will be available commercially in the near future.

A most important disadvantage of Prostigmin is that resistance to it may develop in severe myasthenia, so that even increased dosages cannot completely reverse the marked weakness of the patient and may perhaps lead to cholinergic crises.



Mestinon bromide



Prostigmin bromide

Mestinon.—In the past few years many new anticholinesterase drugs have become available for research in the treatment of myasthenia gravis. One of these, Mestinon bromide (pyridostigmine bromide),[5] which is a dimethyl carbamate of 3-hydroxy-1-methylpyridinium bromide, has been used and reported on by clinics throughout the world. Unpublished observations of Randall and Lehmann[7] indicate that Mestinon has about one-sixth the acute toxicity of Prostigmin in mice by the intravenous, subcutaneous, and oral routes, and about one eighth of the intestinal-stimulating effects of Prostigmin on isolated rabbit intestine. The anticurare activity on the sciatic-tibial preparation in the cat is one-eighth that of Prostigmin. The anticholinesterase activity on purified eel esterase is about one-hundredth that of Prostigmin. Studies of Blaschko, Bülbring, and Chou[8] indicate that Mestinon has one-twentieth the anticurare activity of Prostigmin on phrenic-diaphragm preparations of the rat and about one tenth of the anticholinesterase activity of Prostigmin on serum and red cell cholinesterase. At the present time, many hundreds of patients have received this drug.

In evaluating any drug therapy for myasthenia gravis, the following criteria should be considered: (1) What is the duration of action of the drug? (2) What relief of myasthenic symptoms does it afford? (3) Is the drug relatively nontoxic? (4) Can the drug be helpful when the patient is resistant to Prostigmin?

Reports from Europe and from the major centers in this country show that Mestinon fulfills most of these requirements.[9–20] The technic of serial tensilon testing[10] was used to secure a quantitative comparison between Mestinon and Prostigmin in the same subject. Patients were stabilized on the most effective dose of Prostigmin, and serial tensilon tests were performed at hourly intervals. The width of the palpebral fissures was measured. Dynamometer readings were made. Any improvement in extraocular movement was recorded. Changes in diplopia, dysarthria, dysphagia, and general muscle weakness were estimated. Attention was paid to side-reactions such as abdominal cramps, epigastric distress, diarrhea, and skeletal muscle cramps. The need for atropine to control the muscarinic side-reactions of Prostigmin was noted. Subsequently these patients were given Mestinon and the entire examination was repeated with the same technic being used.

The duration of action of Mestinon is slightly longer than that of Prostigmin, approximately one-half hour. However, many patients, particularly those in the group with severe symptoms, were most gratified in that they could arise in the morning without severe myasthenic symptoms. This was particularly important to those patients who, on Prostigmin therapy, could not swallow the first morning dose because of dysphagia and therefore had to receive an injection of Prostigmin methylsulfate to start the day. This nocturnal relief with Mestinon has become increasingly apparent with further transfer of patients to the drug. Mestinon is rarely needed during the sleeping hours.

Mestinon gives marked relief from myasthenic symptoms. It is more effective than Prostigmin in the relief of myasthenia affecting the small muscles innervated by the cranial nerves.[9] Particular relief has been noted in the muscles involved in ptosis, diplopia, and dysarthria. A few patients commented that they did not get the "lift" that they obtained from Prostigmin. However, most of the patients receiving Mestinon were satisfied with the general feeling of well-being which persisted throughout the day. Various clinics report up to 70 to 75 per cent increased clinical improvement as compared to Prostigmin.[10–14]

An example of an excellent result is the case of a forty-six-year-old-man, with manifestations of severe myasthenia gravis, with a malignant thymoma which had been excised. He had been treated with Prostigmin, 30 mg. every two hours for two years without being fully controlled in the last six months. He had to be helped in walking, could not go to the bathroom by himself, and spent most of the day lying or sitting in bed. His speech was slurred, and ocular movement was limited both on upward and lateral gaze. He was unable to raise his arms. Side-reactions, including diarrhea and abdominal and skeletal muscle cramps, were present. These were largely counteracted by the use of atropine, but he felt that the use of atropine further reduced the effectiveness of Prostigmin. Prostigmin was withdrawn, and the patient was given 120 mg. of Mestinon every two hours. Approximately twenty-four hours later he ate breakfast, got out of bed, and walked about the ward without assistance. In fact, he made his own bed, which he had been unable to do for months. Long-standing bilateral ptosis disappeared and there was a full range of ocular movement. His limbs were strong and he lifted weights. He had no side-reactions from the use of Mestinon.

For purposes of estimating the effectiveness of Mestinon, the severity of myasthenia gravis in a patient was graded on the basis of his economic usefulness to the community. Severe cases were considered to be those patients so affected by myasthenia gravis that, despite therapy, they were bedridden or so weakened that they were unable to work; moderate cases were those patients who took relatively large doses of anticholinesterase medication in order to function and required frequent periods of rest during the day; and mild cases were those patients who maintained their economic place in society, were fully employable, attended school, or performed housework regardless of dosage of medication, which was usually comparatively small.

A group of 81 patients before treatment with Mestinon fell into the following categories: severe, 24; moderate, 21; mild, 36. Upon transfer to Mestinon the 24 patients who were considered severely incapacitated while under treatment with Prostigmin showed such an improvement that 14 of them could be reclassified in the moderate or mild group. Of 21 patients who were originally in the moderate group, 6 were so improved that they were considered mild. Forty-five per cent were improved enough to overcome their economic liability to their families and to the community.

A striking advantage of Mestinon over Prostigmin is in the marked reduction in the incidence of muscarinic side-effects. This reduction in side-reactions was so pronounced that atropine could be discontinued in 75 per cent of the patients who had taken atropine with Prostigmin.

Comment was made[11] on the possibility that the early warning symptoms of overdosage might be absent, and special attention would be necessary to avoid cholinergic effects. No difficulty on this account has been found, however, because the usual muscarine side-reactions occur as soon as overdosage of Mestinon is reached. In fact, it is easier to avoid over-dosage with Mestinon than with Prostigmin because of the wider range between therapeutic and toxic effect.[10] Of course, if there is any doubt, a tensilon test quickly resolves the problem.

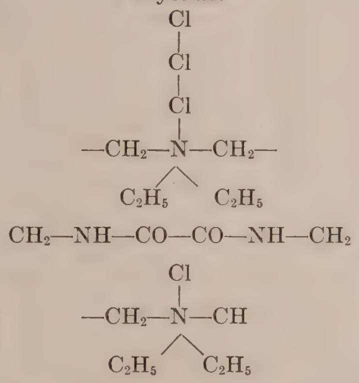
Dosage. Regular Mestinon is available as a 60 mg. double-scored tablet, so that dosages as small as 15 mg. may be given. One 60 mg. tablet of Mestinon is equivalent in effect to one 15 mg. tablet of Prostigmin. It may generally be substituted tablet for tablet for Prostigmin and is prescribed to be taken every three to four hours in most cases. Mestinon is also available from the manufacturer in 5 ml. ampules containing 2 mg. per ml. for parenteral use. Whether given intravenously or intramuscularly the dose of 2 mg. (1 ml.) is equivalent to one 60 mg. tablet of regular Mestinon.

Timespan Tablets. Since the myasthenic patient requires frequent doses of Mestinon during the daytime hours, it was suggested to the pharmaceutical concern that some form of a prolonged-action tablet be prepared. Two forms of Timespan tablets were made available: a 180 mg. tablet which has the immediate effect of one 60 mg. tablet of the regular Mestinon and a 90 mg. tablet which has one-half the immediate effect of a regular 60 mg. tablet. Schwab, Osserman, and Tether[6] tried these tablets in a total of 109 patients, of which 82 found them to be of such value that they wish to continue using them, a favorable 75 per cent. The duration of effectiveness varied from a minimum of four hours to a maximum of twelve hours, averaging approximately six hours. As with Prostigmin Timespan tablets in some patients the total drug taken during the day exceeded that taken in regular tablet doses by 33 per cent without evidence either of overdosage or better control. Occasionally patients complained of feeling weak at the time the immediately available drug would be expected to wear off, but there was a return of strength in fifteen to twenty minutes without further medication.

In general, the Timespan tablet can be expected to last about two and one-half times as long as the regular tablet. A few patients were satisfied with the action of regular Mestinon during the daytime hours and preferred taking the long-acting tablet only at bedtime. Occasionally, because of its prolonged action, it is not possible to space dosage properly over the twenty-four hours, so that one dose of regular Mestinon may be required in the late afternoon or early evening to fill in the hiatus between the awakening and bedtime doses.

Twenty patients used combinations of regular and prolonged-action Mestinon. The largest dose of prolonged-action tablet prescribed was six tablets every six hours for a total of 24 per day; the smallest dose was one tablet morning and night. Some cases were completely controlled on a six-hour basis, but later had to be reduced to a four-hour schedule. This new dosage form of the drug may eventually replace, to a great extent, the use of regular Mestinon.

Mytelase



MYTELASE (AMBENONIUM) CHLORIDE.—Papers[21–26] have been published on the use of ambenonium chloride, formerly known as Mysuran (WIN-8077) chloride. This drug, now known as Mytelase, is N, N^1-bis (2-diethylaminoethyl) oxamide bis-2-chlorobenzyl chloride. In animal experiments this drug was two to four times as active in antagonizing d-tubocurarine paralysis and the effect was of much longer duration than that of Prostigmin.

Schwab[21,22] reports that of 75 patients transferred to the drug, 59 were still taking Mytelase, of which 17 were using it in combination with Prostigmin or Mestinon. His patients found it preferable to Prostigmin because there were decreased side-reactions and more prolonged effectiveness.

In Westerberg's[23] series of 33 patients, 26 found Mytelase to be an effective agent in increasing muscle strength and seven found it ineffective. Thirteen patients preferred Mytelase to any anticholinesterase and continued to take it alone. Nine patients considered Mytelase equal in effect to their other medication and 6 of these continued to use it regularly. Twelve patients had unsatisfactory results with the medication. Westerberg concludes that Mytelase is an effective drug in the treatment of myasthenia gravis and that for some patients it is the most effective therapy available. Desmedt[24] treated 10 patients and found the drug especially effective in the more seriously affected patient. In others he found that cholinergic intoxication occurred unless extreme precautions were observed. Oftedal[25] prescribed Mytelase for 7 patients, all of whom refused to continue its use, either alone or in combination with Mestinon or Prostigmin. These patients did not achieve sufficient muscular strength and found that side-reactions, especially diarrhea, were severe.

Eighty-two patients in The Mount Sinai Hospital series were transferred to Mytelase. The initial dose was 5 mg. or, at times, $2^1/_2$ mg., and the dose was then gradually built up to therapeutic levels. In their reports Westerberg[23] and Schwab[21,22] have also cautioned about the necessity of starting with small dosages. Of the 82 patients, 23 found Mytelase superior to Mestinon and Prostigmin. Ten preferred Mytelase in combination with Mestinon. Forty-nine of our patients requested to be returned to Mestinon because of lack of relief of myasthenic symptoms.

A patient who preferred Mytelase to other drugs stated that it was the most effective drug he had taken. He can chew and swallow better with Mytelase, and although his hands tire, they are better than they were before on Mestinon.

One patient who was transferred from Mestinon to Mytelase made the following comments: "(1) Mestinon gives greater strength on arising. (2) Mytelase makes the hands and legs quite a bit stronger, but seems to lose effectiveness as the day wears on. (3) Mytelase and Mestinon have an equal effect on the muscles involved in speaking and eating. (4) There is not as much perspiration with Mytelase as with Mestinon. I prefer Mestinon, however, because it doesn't bother me. With Mytelase I feel as though I were falling apart."

Mytelase has a distinct advantage for the patient in crisis in a respirator since it causes less bronchial secretion than other anticholinesterase drugs. For the less than one per cent of patients who are sensitive to the bromide in Prostigmin and Mestinon, Mytelase chloride may be prescribed.

Mytelase is effective in the treatment of myasthenia gravis in many of the patients who have taken it. It has a prolonged action as compared to Prostigmin and possibly longer than that of Mestinon, although Grob[27] found that Mestinon was equal, if not longer, in action to Mytelase. It has fewer toxic side-reactions than Prostigmin, but more than Mestinon. These side-reactions differ from those of Mestinon in that central nervous system side-reactions are more evident, particularly headaches, than with either Prostigmin or Mestinon. Although gastrointestinal side-reactions are not nearly so common as with the other two drugs, they do occur when overdosage is approached. Since they are late in appearance, muscle fasciculations and weakness are the early signs of overdosage with Mytelase. This is pointed out by Tether.[28]

Dosage. Mytelase is available in one-half scored 10 and 25 mg. tablets. Five to 7.5 mg. of Mytelase chloride are equivalent to 15 mg. Prostigmin bromide or 60 mg. Mestinon bromide. Mytelase should be started cautiously with a 5 mg. dose and gradually increased to therapeutic levels. It is usually given every four hours, although not during the sleeping period. A syrup containing 15 mg. to 5 ml. can be obtained for patients in the respirator being fed through a nasogastric tube.

TABLE I.—ANTICHOLINESTERASE DRUG TREATMENT

	Original Drug	
	Prostigmin	Mestinon
Patients	238	82

	Transferred				
	Mestinon	Time-span Mestinon	Time-span Prostigmin	Mytelase	Combinations
Patients	163	56	28	82	41

Current Drug	Number of Patients	Patient Preference (Per Cent)	Current Drug* (Per Cent)
Remission	43	. . .	. . .
Prostigmin	46	. . .	17
Timespan Prostigmin	8	30	3
Mestinon	144	59	52
Timespan Mestinon	40	70	14
Mytelase	23	30	9
Combinations	16	40	5

* Percentage of 320 patients using each drug.

In regard to whether any drug can be effective when Prostigmin is not, the answer at the present time is that it is unlikely that Mestinon or Mytelase will help the patient who is resistant. There are a few cases in which Mestinon or Mytelase have been helpful because decreased side-reactions permitted higher dosages of these drugs than could be used with Prostigmin. We are still searching for the drug that will be effective if the patient becomes resistant to anticholinesterase drugs (See Table I).

Experimental Drugs

BC DRUGS.—From Vienna there is report of further alteration of the Prostigmin and Mestinon molecules in which polymethylene chains of various lengths, from four to ten, are attached to the carbamic acid nitrogens of two rings, creating a bis form. The pharmacologic character of these new substances is changed so that they are qualitatively identical to the parent drug but are cholinesterase inhibitors of extremely strong and long-lasting action. Five drugs of this type are being studied; BC-40[29,30] (bis-Prostigmin) and BC-51[30,31] (bis-Mestinon) are apparently the most promising. These two drugs are distinguished from one another in that BC-40's action occurs more quickly but lasts a somewhat shorter time than BC-51, which develops its optimum effect only after six to twelve hours but then lasts much longer than does the effect of BC-40. Pharmacologic investigations reveal that BC-40 is about one-third and BC-51 is about one-twentieth as toxic as Prostigmin in cats. The anticurare activity of BC-51 is about one-fifth that of Prostigmin and has an equal duration of action. BC-40 is of equal potency and its duration of action is twice as long as that of Prostigmin. Kraupp, *et al.*[29] reported that BC-40 was equal to Prostigmin in potency in rats but had ten times the duration of action. Both Kraupp[29] and Randall[32] report that in anticholinesterase activity, BC-40 is equal to Prostigmin in inhibiting the red cell esterase. For BC-51, Randall[32] reports an anticholinesterase activity only one-tenth as active as Prostigmin. At present, we do not know if the molecules are split, or, if split, at what point. They may act as a complete unit.

Pateisky and his group[30] have studied the effects of the BC drugs on patients suffering from myasthenia gravis. BC-40 has been given to 11 patients and 10 normal controls. The undesirable side-effects were counteracted by atropine. The optimal intramuscular dose varied from 0.3 to 0.5 mg. in combination with 0.5 mg. atropine sulfate. With this dose no unpleasant side-effects were noted. Twenty minutes after intramuscular injection the drug action starts and reaches its maximal effect at six hours. It retains a full effect for twenty-six hours and then reduced doses of Prostigmin will suffice for an additional three-day period after the original injection of BC drugs. When optimal dosage is used, treatment can be given at four-day intervals. The patient feels well, the appetite is increased, and weight is gained.

At our clinic we were interested in establishing oral dosage forms of the BC drugs. At first we tried intravenous titration in an attempt to establish effective oral dosage. With BC-40 this was unsuccessful because the usual 30 to 1 ratio existing between oral and intravenous Prostigmin and Mestinon did not hold true. The ratio with BC-40 was somewhere between 60 and 100 to 1, depending on the emptiness of the stomach at the time of taking BC-40. With BC-51 the ratio varied from 10 to 30 to 1. Therefore, we discontinued this approach. Five milligram scored tablets were made available for study. Patients were started with one tablet on arising, with reduced dosage of their previous drug continued. After one to two days a second dose of the BC drug was given at night. Gradually the BC drugs were increased, the others withdrawn until the patient was maintained on either BC-40 or BC-51 on a twice-a-day basis. We found that these drugs are more active and have a much longer duration of action than do the parent drugs. Most mild cases require no more than 15 mg. twice a day and severe cases 22.5 mg. twice a day. Pateisky's recommendation that these drugs be taken on an empty stomach to avoid unpredictable absorption with unevenness in control is followed.

An accumulative action similar to that of octamethyl pyrophosphoramide (OMPA) (described below) caused difficulty for our group and the Johns Hopkins investigators[33] in that severe cholinergic reactions occurred on the second or third day of treatment. Even with extreme care a patient became cholinergic on the thirtieth day of treatment, the third day after an increase in the morning dose from 20 to 22.5 mg. of BC-51. These drugs are still in the investigative stage, and much more information is required to determine whether they will prove to be of value in the treatment of myasthenia gravis.

Oximes.—Wilson, *et al.*[34,35] have studied PAM (pyridine-2-aldoxime methiodide) which has the ability to reactivate an inhibited cholinesterase enzyme, thereby giving rise to the active enzyme, with a postulated phosphorylated oxime as its final result. This has been of extreme value in the overcoming of nerve-gas poisoning due to inhibition of the cholinesterase enzyme. This report will certainly reopen avenues of study on the use of the alkyl phosphates in the treatment of myasthenia since one of the great difficulties in using these substances is their tremendous toxic effect.[36] DAM (diacetyl manoxime)[37] is another oxime which has proved effective in reactivating inhibited cholinesterase enzyme.

Discontinued Drugs

Alkyl Phosphates.—In recent years potent anticholinesterase drugs, the alkyl phosphates, have been introduced for the treatment of myasthenia gravis. These include di-isopropylfluorophosphate (DFP),[38] tetraethylpyrophosphate (TEPP),[39] and hexaethyltetraphosphate (HETP).[40] DFP was found to be a very effective anticholinesterase agent, but toxic and not effective therapeutically. HETP and TEPP were found to be more effective in treatment, but were unstable and therefore created difficulties in manufacture.

In 1951, Rider, *et al.*[41] introduced the most recent of these alkyl phosphates, octamethyl pyrophosphoramide (OMPA). Gregory, Furtch, and Stone[42] have compared the clinical responses of the patient with myasthenia gravis to OMPA and TEPP. Wilson, *et al.*[43] reported on a case that did favorably with OMPA. Schulman, *et al.*[44] reported their experience with 15 cases. Our experience with OMPA is described briefly below.[45]

In the course of a year and a half, 12 severely ill patients were admitted to the wards for transfer to OMPA therapy in order to reduce the frequency of dosage of Prostigmin or to achieve greater smoothness of therapy.[45] The daily dose of Prostigmin for each patient varied from a low of 90 mg. per day to a high of 480 mg. per day, averaging between 225 and 270 mg. in most instances.

Of the 12 patients transferred to OMPA, 5 died. Two deaths in this group of 5 were due to cholinergic crisis, probably because of drug intoxication with OMPA. Two deaths occurred from malignant thymomas with metastases. One death occurred in a "brittle," uncontrollable myasthenic patient who developed terminal bronchopneumonia. Six patients had to receive respirator care; these included the 5 mentioned above who died. One other patient developed an atypical pneumonia while on the ward but recovered.

Of the 7 patients who are living, 6 discontinued OMPA therapy because of uncomfortable side-effects despite the use of atropine sulfate and inadequate antimyasthenic action. One case developed a gastric ulcer. In one case good results with OMPA were manifested by the patient's resumption of normal activities.

We conclude from our experience that the range between toxic and therapeutic dosage levels of OMPA is too narrow to warrant its continued use in the treatment of myasthenia gravis. Because of the great difficulty attendant on its manufacture, the drug was withdrawn from experimental study.

Adjuvant Drugs

Ephedrine Sulfate.—Ephedrine sulfate was first used by Dr. Harriet Edgeworth[46] in 1930 before the advent of Prostigmin. She was a myasthenic patient who also had pollinosis and took ephedrine for the latter condition. The ephedrine helped her myasthenia. For the next few years ephedrine was the best drug for therapy, but since 1935 it has been used only as an adjunct to treatment. In this capacity ephedrine is said to increase the effect of the specific anticholinesterase drugs by about 15 per cent in many myasthenic patients. During quantitative tests of Mestinon, ephedrine was added to the regimen, but it was found that this did not increase strength. In fact ephedrine was a great disappointment until a patient whose ptosis was unrelieved by any of the anticholinesterase drugs obtained relief from the addition of ephedrine. Ephedrine is prescribed when one cannot obtain optimal results with routine therapy. If it helps the patient, it is continued. If there is not better relief of myasthenic symptoms with ephedrine, it is discontinued. Ephedrine sulfate is given as a 25 mg. ($^3/_8$ gr.) tablet three times a day.

GUANIDINE HYDROCHLORIDE.—Guanidine hydrochloride was introduced in 1938. Minot, Dodd, and Riven[47] observed that it had a positive decurarizing action in the treatment of myasthenia gravis. Viets and Schwab,[48] in testing 25 patients, obtained little benefit, with only 4 patients showing any results. Later observation by Dodd, *et al.*[49] affirmed improvements, using amounts of 20 mg. to 50 mg. of the drug per kilogram body weight divided into three doses daily. Reaction to the drug is the same as to Prostigmin in that the patient may develop an increased tolerance for guanidine, with side-reactions of gastrointestinal disturbances which can be controlled by the use of atropine.

Dodd, *et al.* believe that even though patients do not get the "lift" they achieve with Prostigmin, the action of guanidine is more sustained and does not leave a sensation of weakness when it ceases. There are very few further reports on this drug. In our experience guanidine has been used as an adjunctive drug without any beneficial effect. Only one of our patients is on a combination of Mestinon and guanidine.

POTASSIUM.—In 1935, Laurent and Walther[50] recommended the use of 10 to 40 gr. of potassium in divided doses of 4 to 6 gr. for the treatment of myasthenia gravis. They stated that good results with very few side-reactions were obtained. These side-reactions were diarrhea, nausea, and diuresis. The beneficial effect of potassium was stated by Wilson[51] to be due to the fact that the potassium ion possesses a decurarizing action. Goni[52] reported pronounced success with some of his patients, using 10 to 15 gr. daily. He felt that it should be used systematically since "its efficacy is indisputable." As with all the adjunctive treatments, potassium has a very small role in the therapeutic armamentariums of the physician treating myasthenia gravis today. With proper understanding and management of anticholinesterase drug dosage, it is only the rare case which is benefited by ephedrine, guanidine, potassium, and others.

TABLE II.—RESULTS OF TREATMENT (CURRENT EVALUATION)

		Per Cent	
Better			
A	Complete remission	15	
B	Marked clinical improvement, with reduction in anticholinesterase medication	30	
C	Clinical improvement, but no reduction in anticholinesterase medication	17 17	62
No Change or Worse			
D	No improvement, but reduction in anticholinesterase medication	4	
E	No change	8	
F	Worse, either with or without increase in anticholinesterase medication	8	20
Dead			
G	Dead	18	18*
	TOTAL		100

* 3 per cent nonmyasthenic deaths.

URECHOLINE.—Urecholine has been advocated[53] for the therapy of myasthenia gravis. Its value is only that of an adjunct to treatment with any of the other anticholinesterase drugs. More information about this compound is required before full evaluation can be established.

ACETYLCHOLINE.—Accornero[54] reports favorably on the combination of Prostigmin and acetylcholine in the treatment of myasthenia gravis. In all experiments acetylcholine is so short-acting that it is difficult to understand how this particular combination could be as effective as the author states.

TABLE III.—RESULTS OF DRUG TREATMENT (OCCUPATIONAL REHABILITATION)

	Before		After	
Employability	Number of Cases	Per Cent	Number of Cases	Per Cent
Full-time	98	34	198	68*
Part-time	110	38	23	8
None	83	28	70	24†

* Including current remissions.
† Including deaths.

GLUTAMIC ACID.—Dulce[55] reports on the use of glutamic acid in the treatment of myasthenia gravis and claims its action is on the central nervous system plus an uncertain effect on the neuromuscular system that seems to have some results for no known reason.

GLYCOCYAMINE.—Billig[56] reports metabolic alterations during betain and glycocyamine feeding in myasthenia gravis. There are precursors of phosphocreatine. He found that giving betain and glycocyamine was better than giving creatine in the diet and that it was made available slowly over a long period of time. It is highly questionable whether there is a true creatine defect in myasthenia gravis.

Contraindicated Drugs

Certain drugs are contraindicated in myasthenia gravis or should be used with caution. They are as follows: (1) Drugs contraindicated: curare, quinine, quinidine, chloroform, morphine, and ether; (2) Drugs to be used with great caution: ACTH, corticosteroids, thyroid compounds, and respiratory depressants; and (3) Drugs to be used in small doses: sedatives.

Results of Treatment

An analysis of the results of drug treatment in The Mount Sinai Hospital series[57] is presented in Table II.

Results of drug therapy were also tabulated according to the economic usefulness of the patient to the community. Table III shows that the number of employable patients increased from 76 to 171 as a consequence of successful drug therapy.

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(*Number fifty-eight of a series on Recent Advances in Medicine and Surgery*)

The greatest of faults, I should say, is to be conscious of none.—THOMAS CARLYLE

CLINICAL CONFERENCE

JEWISH CHRONIC DISEASE HOSPITAL

BROOKLYN, NEW YORK

Conducted by MARTIN G. GOLDNER, M.D. OCTOBER 23, 1957

Edited by MARTIN G. GOLDNER, M.D. *and*
IRVING G. KROOP, M.D.

A Case of Congenital Aortic Aneurysm with Atypical Coarctation and Aortic Stenosis

Case History

A twenty-nine-year-old white female was admitted to this hospital for the second time on July 29, 1957, for vascular surgery of a congenital aortic aneurysm.

Approximately seven months before admission, while she was applying for a position as a nurse's aide, an abnormal finding was discovered on her pre-employment chest film. She was admitted to the hospital and an extensive work-up was done, including a series of chest x-rays, bronchoscopy, cardiac catheterization, and angiography. The studies established the presence of an aortic aneurysm, possibly with an atypical coarctation of the aorta. Since the patient was asymptomatic, she was discharged for further follow-up.

Because of apparent progression of the lesion she was readmitted four months later. On August 8, 1957, a left thoracotomy was performed and a 4-inch, thin-walled aneurysm of the aorta was resected and replaced by a Tapp-Edwards graft of 1-inch length. During the operation, the aorta was clamped for about one hour. The postoperative course was rather stormy. The patient developed paraplegia and urinary and fecal incontinence. Fever was controlled by massive doses of antibiotics. Tidal drainage was instituted for the paretic bladder. After about three weeks the patient regained control of the rectum and bladder. The muscle power in both lower extremities is slowly returning. Arterial pulsations in both lower extremities are barely palpable. A low-pitched systolic murmur is still heard over the base of the heart. The left carotid pulse is not palpable.

Past History.—The patient had had a cardiac murmur since birth without cyanosis and without symptoms. She had had a tonsillectomy in her early childhood and scarlet fever at the age of eight. In 1948 she was hospitalized for three months supposedly because of rheumatic fever. In 1951 a routine chest x-ray was said to have given a negative result. Neither previous hospital records nor these films could be located.

Family History.—Irrelevant.

Physical Findings.—On admission

physical examination revealed a well-developed, fairly nourished white female. The pupils were equal and reacted to light and accommodation. The lungs were clear to percussion and auscultation. The heart was not enlarged. A harsh, low-pitched systolic murmur was heard at the apex, pulmonic area, and aortic area; the murmur was transmitted to both supraclavicular areas, the neck, and the left parascapular area. The left carotid pulse was absent, the left radial pulse was markedly diminished, and the femoral and dorsalis pedis pulsations were of low amplitude bilaterally. The neurologic findings were normal.

Laboratory Findings.—Blood chemistries and urinalysis findings were normal. The Mazzini test gave a negative result. The electrocardiogram showed left axis deviation but no evidence of left ventricular hypertrophy. X-ray films of the chest showed the heart and lungs to be normal. A superior paramediastinal density extended into the apex of the left lung.

Course.—The patient feels fine since surgery and has made good progress with rehabilitative therapy in regaining the function of the lower extremities.

Reports

Dr. Louis Nathanson (*Radiologist*): This patient was first studied when she reported here for employment. The original x-ray films with the purely incidental findings showed widening of the superior mediastinum to the left with apparently some displacement of the mediastinal structures to the right (Fig. 1). The trachea was displaced, and there was localized calcification within an apparent mass lesion. The oblique and lateral views showed the mass to be within the posterior mediastinum and extending somewhat anteriorly. This mass could not be separated from the superior portion of the arch of the aorta. The esophagus was deviated posteriorly. Whether it was displaced or drawn posteriorly could not be determined. The rib structures were intact and the lung fields were otherwise normal. The heart shadow had a somewhat transverse configuration but otherwise was not abnormal.

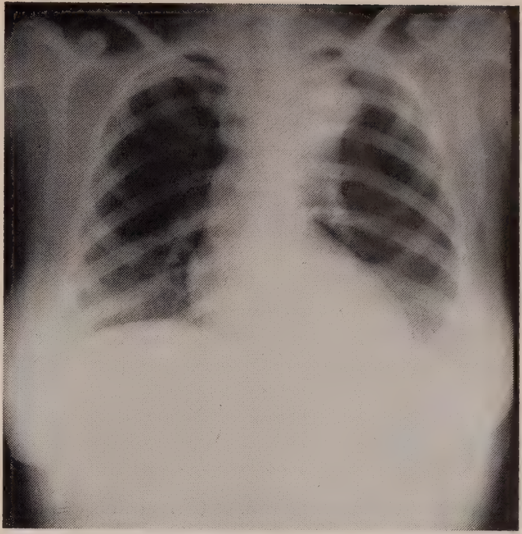

Fig. 1. Posteroanterior view of the chest showing left superior mediastinal shadow and calcification.

The findings indicated the presence of a superior mediastinal mass. Whether this was a tumor of the lung or an aneurysm could not be determined from the routine studies.

Dr. Irving G. Kroop (*Cardiopulmonary Specialist*): When I saw the patient, the suggestion was made that the mass might represent a tuberculous process. This appeared likely because of its paramediastinal location in the left upper lobe region. In fact, antituberculous therapy preparatory to either segmental resection or lobectomy had been considered. However, when fluoroscopy indicated that the mass pulsated and was in the region of the aorta, an angiocardiogram was performed. Angiocardiography should be a routine procedure in such problems for it can lead to an accurate anatomic diagnosis.

About two seconds after the injection of the contrast medium the normal right atrium, right ventricle, pulmonary artery, and the two main branches were visualized. Because of the scoliosis of the spine to the left, the pulmonary artery is rotated to the right, as though the entire heart were in an

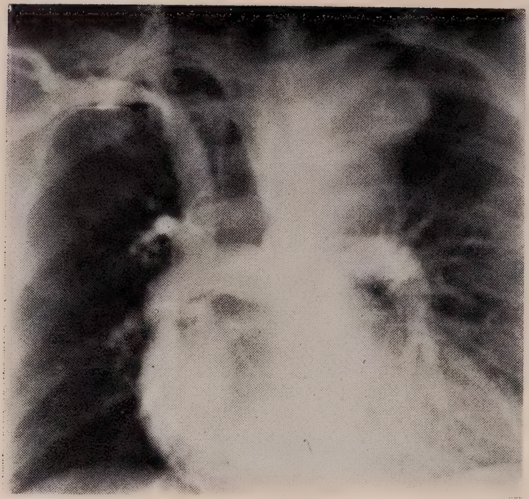

Fig. 2. Angiocardiogram at two seconds showing normal right side with pulmonary artery rotated to the right due to scoliosis of the spine.

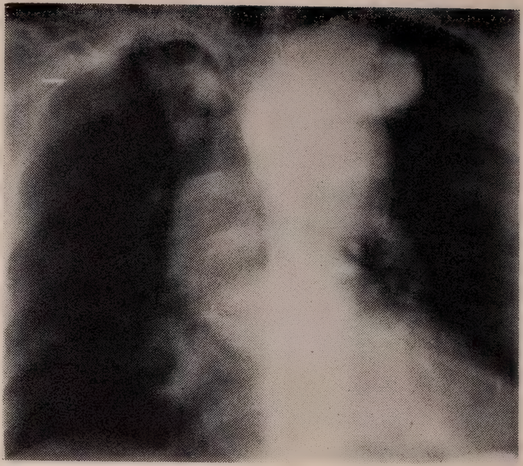

Fig. 3. Angiocardiogram at six seconds showing dilatation of ascending aorta and the aneurysmal mass.

oblique position (Fig. 2). At six seconds, the left side of the heart was visualized. The ascending aorta is dilated. In the region of arch there seems to be opacification of the mass in question which is coincidental with the filling of the aorta. Therefore, this mass is an aneurysm, probably originating in the region of the left subclavian artery and then continuing into the descending aorta (Fig. 3). It is an aneurysm which overlies the arch of the aorta and a portion of the descending aorta. The points of entrance and exit of this aneurysm are visualized as two circular areas of intense opacification.

In the left oblique view the ascending aorta is slightly dilated in the region of the left common carotid and possibly in the region of the left subclavian artery. There is this large aneurysmal mass which seems to overlie the arch and the initial descending portion of the aorta. A circular opacification in the region of the arch close to the isthmus is noted which corresponds to a similar opacification seen in a frontal view (Fig. 4).

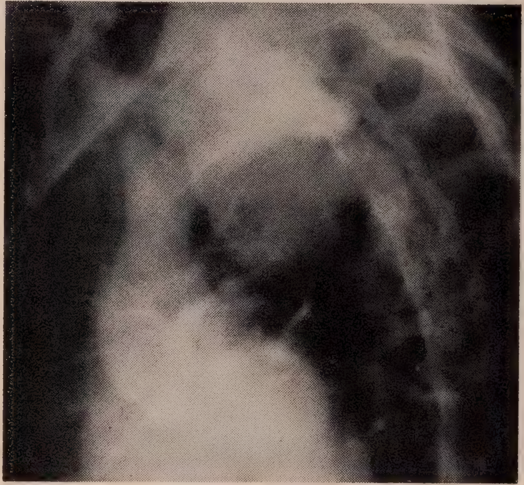

Fig. 4. Left oblique angiocardiogram showing the aneurysmal mass in region of left carotid and left subclavian to be overlying the arch of the aorta.

The patient demonstrated a left absent carotid artery pulsation, a very weak left radial pulsation, diminished amplitude of both femoral pulsations, and a normal blood pressure in the right arm. This is a young woman. There is no history of trauma or syphilis. The possibility of arteriosclerosis is remote. There is no history of a mycotic infection, diabetes, or ingestion of lead. Therefore, we considered the lesion to be a congenital anomaly in the region of the distal arch and descending aorta. With the absence of the left carotid pulse and with the diminished pulsations of the femorals, a partial coarctation or atypical coarctation of the aorta with

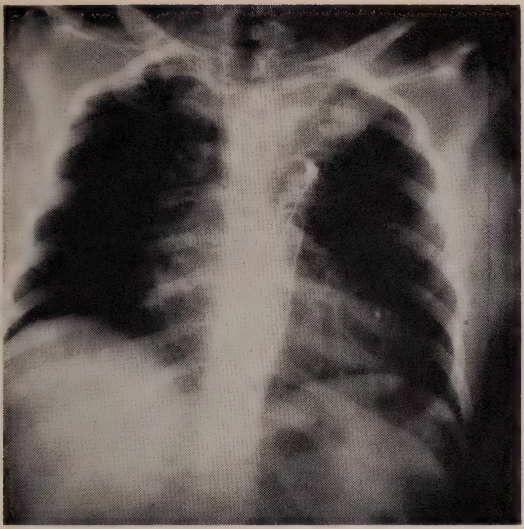

FIG. 5. Retrograde aortogram showing catheter meeting obstruction in descending aorta just below the mass.

aneurysm formation were considered as diagnoses of the anomaly. In atypical coarctation there may be some narrowing of the lumen of the aorta but the basic lesion is a defect in a part of the wall, which usually includes the left subclavian artery orifice in the fibrotic process. Thus, in a patient with partial coarctation one may get a delay in pulse wave transmission to the femorals but the femoral pulse will be present and there will be no hypertension in the upper extremities.

Whether one calls this aneurysmal mass an atypical coarctation or a congenital aneurysm of the aorta is a matter of semantics. If the wall is congenitally defective, one can get all forms of irregularities of the lumen. Therefore, we concluded clinically that there was a congenital abnormality of the aorta with aneurysm formation and some narrowing.

The other differential diagnosis we considered was kinking of the aorta without a coarctation. This particular lesion is caused by a very short ligamentum arteriosum and some redundancy of the ascending aorta and the arch. In those circumstances the aortic knob is elevated by the kinked aorta and one gets what sometimes looks like a paramediastinal tumor mass. This lesion is not really a coarctation. It has been called an atypical coarctation which it is not and more recently has been correctly named "kinking of the aorta."

Our patient also had a systolic murmur maximally heard at the left sternal border and transmitted over the carotids. Because of the frequent association of the aortic valve lesions with coarctation of the aorta, the presence of the murmur was further evidence that the aortic lesion was probably a congenital defect.

A retrograde aortogram was done in an effort to get into the aneurysmal sac and to see where it began and where it ended. A polyethylene catheter was introduced through the femoral artery on the right through a number 12 needle. An obstruction was encountered just below the aneurysm in the descending aorta (Fig. 5).

The patient was subjected to surgery, and an aneurysm was found and resected. There were two openings in this aneurysm, at the sites of entrance and egress from the healthy part of the aorta.

Postoperatively the left carotid pulse is still not obtainable. The radial pulse is still weak, and the pulses to the lower extremities are markedly diminished, as they were previously. The oscillometric readings in the lower extremities taken recently are slightly diminished. However, there is a pulsatile flow in each of the lower extremities.

A second angiocardiogram was performed postoperatively in order to re-evaluate a residual density which was still seen in the region of the original aneurysmal mass. The large mass which was present previously was no longer present, but a small density with a rim of calcification was still present.

The posteroanterior view of the right side of the heart demonstrates the same rotation as noted previously, namely that the pulmonary artery and outflow tract are slightly to the right of the spine due to the scoliosis of the spine to the left (Fig. 6). In the recent films one can see that there is

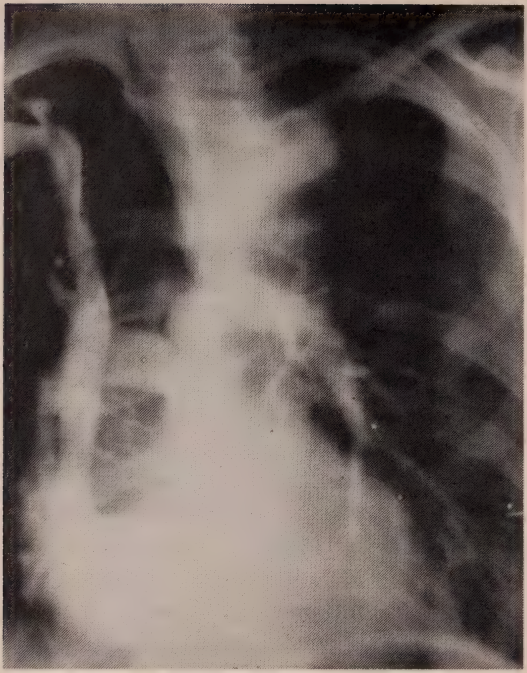

FIG. 6. An early postoperative angiocardiogram showing the normal right side of the heart with rotation due to scoliosis of the spine.

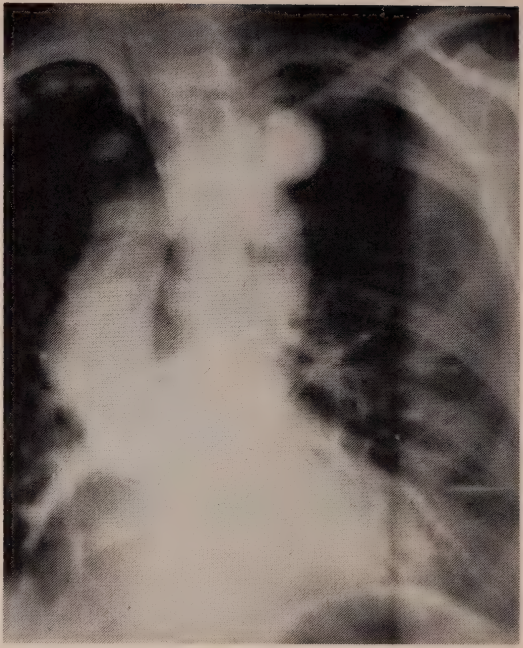

FIG. 7. A later postoperative angiocardiogram showing regular opacification of the functioning graft with a residual aneurysmal dilatation in the region of the left subclavian artery.

intense opacification of the residual circular calcified shadow with the aorta also opacified (Fig. 7). Thus, this particular opacified density in the region of the left subclavian artery must be considered aneurysmal. The continuity of the aorta in the region of the graft is completely and excellently visualized and shows a very regular lumen.

DR. MARTIN G. GOLDNER: Dr. Kroop has clearly demonstrated the extent to which cardiac catheterization and angiography have contributed to the study of vascular lesions, in general as well as in this case.

Clinical examination showed the absence of the left carotid pulsation and diminished pulsation in both lower extremities. Pulsation of the mass on fluoroscopy went far to establish the diagnosis of aortic aneurysm. Yet, in this day of cardiac surgery the clinical impression and diagnosis are not enough. They need to be confirmed and complemented by angiography and cardiac catheterization. Only these procedures provide the essential details for determining whether surgery is indicated, what procedure to choose, and what results to expect. Dr. Kroop and his group deserve our thanks for work well done, the same is due to the thoracic surgeon who performed the operation.

DR. PHILIP CRASTNOPOL (*Cardiac Surgeon*): The history of thoracic aortic aneurysms shows that they tend to rupture, much as do the aneurysms of the abdominal aorta. After considerable deliberation we therefore decided that resection of the aneurysm was indicated.

We performed a left-sided thoracotomy. The aneurysm was approximately the size of a lemon and very thin-walled superiorly. Arising from the beginning of the descending aorta, it displaced the arch, which was somewhat diminutive, into the extreme apex of the chest. The aneurysm lay immediately beneath and behind the arch and had pushed it markedly upwards.

We dissected the aneurysm as well as the ascending and descending aorta. As we dissected the aneurysm at the apex of the chest, it ruptured and the field was rapidly inundated with blood. Clamps across the aorta above and below the arch controlled the bleeding promptly. We then removed the aneurysm.

The problems in resecting thoracic aortic aneurysms are mainly twofold:

1. We must try to maintain continuity of blood flow to the tissues beyond the site of occlusion. The tissue most vitally concerned is that of the spinal cord. To achieve this we can set up so-called external or internal shunts which provide a continuity of blood flow at the site of obstruction. A temporary aorta or any other substance may act as a vascular channel proximally and connect it to the aorta below the site of occlusion.

In this patient we felt that there probably was a "low-grade" obstruction, or a coarctation, and that a collateral blood supply had been formed already. Therefore, we did not use a temporary shunt.

2. The next problem concerns the type of material suitable for replacement. We replaced the aneurysm in this patient with a crimped nylon graft, popularized by Sterling Edwards in Alabama and known as the Tapp-Edwards graft.

Our experience in resection of thoracic aneurysms comprises 3 cases. In the first 2 we used a preserved frozen homograft to replace a segment of resected aorta, and both of these patients later died of exsanguination. One died sixteen days and the other twenty-six days after the graft was placed because of disruption at the site of the anastomosis.

We, therefore, elected to use a nylon graft in this patient and have been satisfied with the course to date despite the development of a spinal cord syndrome attributable to occlusion of the aorta for over an hour, a rather long period. The graft has to be specially prepared, and this accounts for the length of time for which the aorta had to be occluded.

Dr. Sydney S. Lazarus (*Pathologist*): The specimen consisted of a thin-walled sac-like structure 6 cm. in diameter with two ostia, one of which measured 2.5 cm. in diameter, the other 1.3 cm. The wall was markedly thin and in areas transparent. There were numerous intimal plaques, some of which were hard and white, others yellowish. There also were areas of calcification. Microscopically almost complete destruction of the media was apparent. There was some increased vascularity in the adventitia extending to what was left of the media. In addition, collections of plasma cells were seen streaming along the adventitial vessels, and there was also some endarteritis.

Although the histologic picture is not diagnostic, it is suggestive of luetic aortitis. It also is possible for this type of microscopic picture to appear on a nonspecific basis.

Dr. Joseph B. Rogoff (*Physiatrist*): At the present time the patient presents a flaccid paraparesis. Motor power is below functional level in almost every area. The hip flexors are almost within functional grade.

Electromyography showed extensive fibrillations in every muscle tested (anterior tibials, gastrocnemei, rectus femoris). In the left gastrocnemius and the left anterior tibial no active potentials could be obtained by attempted voluntary contraction. In the other muscles some voluntary motor units were seen. There were isolated potentials in the right anterior tibial muscle and the quadriceps. Since the pathogenesis is most probably anterior horn-cell destruction due to lack of circulation during the operation, I would consider the possibility for recovery very remote in those muscles showing lower motor neuron damage.

However, inasmuch as some muscles do show some active potentials, there is a possibility of some future recovery. In other words, the condition of this patient in many ways resembles early postpoliomyelitic paralysis, with severe involvement two and one-half months after onset and for which the possibility of considerable functional recovery is remote. Extensive rehabilitation training is necessary. The use of bracing may also be necessary.

Dr. Goldner: Did we help or did we harm this patient? On the one hand, we have the evidence of a paper-thin aneurysm which might have ruptured very soon and terminated the patient's life. On the other hand, the patient is now a paraplegic, possibly permanently so. Dr. Slater will open the discussion.

Discussion

Dr. Solomon R. Slater (*Cardiologist*): The question of differential diagnosis of the mass has been gone into quite extensively. The necessity for angiographic and other special investigations in order to establish the vascular nature of the mass has been excellently demonstrated.

The problem of causation certainly raises many interesting points. It is hard to believe that this was a syphilitic aneurysm. First, there was no history of syphilis, and second, this patient is young. Vascular syphilis generally occurs at an older age, although there are exceptions.

I am pretty well convinced that this case represents a congenital defect of the medial structure of the aorta. This, I think, is verified by the fact that there also is involvement of the aortic valve.

When this patient came to us, she had no complaints whatsoever. The finding was purely accidental. We asked ourselves at that time whether this patient should be operated on immediately or whether it would be better to keep her under observation. Because of the seriousness and technical difficulty of an operation some of us were inclined to wait and see what would happen. On the other hand, it is a fact that such lesions rupture very easily and quickly. We do not know what would have happened.

The patient is now an invalid. Perhaps we should have waited longer before resorting to surgery.

Dr. Nathaniel E. Reich (*Cardiologist*): In my opinion the x-ray results are very characteristic of congenital segmental hypoplasia of the thoracic aorta. This is not an uncommon congenital cardiovascular disease which affects either the entire course or a segment of the aorta, as in the present instance. The inherent weakness of the wall has produced an aneurysmal dilatation of the most central area, but a narrowed hypoplastic segment persists on either side. Hypoplasia of the aorta throughout its entire course is one of the commonest of the congenital aortic anomalies but its incidence is relatively rare.

It is apparent that the remaining segment of the hypoplastic aorta, not excised at operation, is susceptible to rupture or aneurysmal dilatation at any time in the future. Thus, a second operation may be necessary. However, it is questionable whether this should be performed in view of the previous postoperative neurologic complications.

I would also like to mention the possibility of rheumatic causation. There was scarlet fever during childhood and a hospitalization for rheumatic fever for several months in 1948. It is possible that rheumatic aortitis developed with weakening of the wall and aneurysmal dilatation, although it is a rare condition.

Dr. Lazarus: Concerning the problem of causation, I would want to be very sure there was not evidence of any other process in the aorta before labelling the lesion a congenital aneurysm. On the other hand, the indication for surgery would seem to have been definite. The wall of this aneurysm was in areas tissue paper thin and would almost without doubt have ruptured within a short time.

Dr. Kroop: It is necessary to see this aneurysm to really appreciate that it is not a true saccular aneurysm. It does not have one opening. This aneurysm is a dilatation and a folding-over of a segment of the aorta.

When you see the aneurysm, you will see the aorta entering and coming out, narrowed as compared with the rest of the vessel but still not coarcted. This aneurysmal lesion is in a segment of the aorta and does not arise from just one weak area.

Dr. Goldner: In closing, I would like to say that patients with congenital aneurysms may do well for some time but will succumb early in the third or fourth decade because of rupture. Surgery is the only means to protect them against this catastrophe. Therefore, surgery was decided on when we had suggestive evidence of progression. One might say that she carried in her chest a bomb which could have exploded at any time. Of this danger she is relieved because of the operation although the remaining small aneurysm may still be a threat.

She is now afflicted with a condition which is chronic and seriously debilitating, but which I hesitate to describe as hopeless. The paraplegia will affect her life expectancy less than the aneurysm would have done.

It is the tragedy of medicine of today that although we often are able to add days to life we may fall short in adding life to these days. This is a serious public health problem of our times which is illustrated by the course of this patient.

New Drug for Treatment of Gout

Surgeon General Leroy E. Burney of the U.S. Public Health Service has announced that a "happy accident" of medical research has led to the discovery of a powerful new drug for the treatment of gout which is now undergoing clinical trial by scientists at the National Institute of Arthritis and Metabolic Diseases.

The drug itself, zoxazolamine, is not new.

It has been widely used for several years as a muscle relaxant, but its possibilities in the treatment of gout are the result of a chance observation made during studies of the drug's metabolic breakdown in the body.

Dr. J. J. Burns of the National Heart Institute and researchers at the Mount Sinai and Goldwater Memorial Hospitals in New York City, under a grant from the National Institute of Arthritis and Metabolic Diseases, were studying the biochemical fate of zoxazolamine in the body when they noticed large amounts of a white crystalline compound accumulating in the urine of patients receiving zoxazolamine as a muscle relaxant.

At first the crystals were thought to be a breakdown product of zoxazolamine but chemical analysis showed that they were actually crystals of uric acid. It was this observation, made by Dr. Burns and his associates, Drs. T. F. Yu, Lawrence Berger, and Alexander Gutman, that gave the first clue to zoxazolamine's powerful antigout properties.

The treatment of gout has centered around the use of colchicine for relieving the sporadic, painful attacks of acute gouty arthritis, and the long-term administration of uricosuric drugs, those which cause increased elimination of uric acid in the urine. Thus, when the investigators noticed large amounts of uric acid in the urine of zoxazolamine-treated patients they decided to test the drug in gout patients. Their preliminary tests in several patients indicated that zoxazolamine was significantly more potent than any uricosuric drug now in use.

proceedings

NEW YORK ALLERGY SOCIETY

MURRAY DWORETZKY, M.D., AND SHEPPARD SIEGAL, M.D., *Editors*

Held at the BEEKMAN TOWER HOTEL NOVEMBER 17, 1958

PANEL DISCUSSION

Single Repository Injection Treatment of Hay Fever

Moderator

ROBERT A. COOKE, M.D., NEW YORK CITY, *Chief, Institute of Allergy, Roosevelt Hospital*

Participants

WILLIAM F. MITCHELL, M.D., COLUMBUS, OHIO, *Clinical Assistant Professor of Medicine, Ohio State University Medical College*
ETHAN ALLAN BROWN, M.D., BOSTON, *Editor*, **Annals of Allergy**
WILLIAM B. SHERMAN, M.D., NEW YORK CITY, *Chief of Allergy, Presbyterian Hospital*
MERRILL CHASE, PH.D., NEW YORK CITY, *Associate Professor, Rockefeller Institute*

DR. LEONI N. CLAMAN (*President*): Ladies and Gentlemen, I take particular pleasure in greeting our guests, Dr. Cooke, the other gentlemen of the panel, and the many friends from neighboring states. I'm sure you will be very much interested in the following program.

The New York Allergy Society has just come to the end of a most interesting year. Certain projects which had been initiated before this year came to fruition. These include the course for the members of the Academy of General Practice and the series on Fundamentals of Modern Allergy, written by members of this Society, and conceived and edited by Dr. Samuel Prigal, with the assistance of Dr. William Sherman, Dr. Murray Albert, and Dr. Joseph Fries. The collected articles, with some additions, are being published by Blakiston under the same editorship and will be available some time this year.

During the past year, the Society has begun to publish its proceedings in the NEW YORK STATE JOURNAL OF MEDICINE. This activity was initiated by Dr. Murray Dworetzky and he and Dr. Sheppard Siegal are the editors. This project has been made possible by the generosity of the Schering Corporation.

Another innovation during this past year, has been to have the scientific sessions preceded by a dinner for the members and guests. This has been received enthusiastically by the members.

This evening we have a topic that is lively and timely, as attested by the presence here tonight of more than 200 members and guests. Our program is in very able hands with Dr. Cooke as Moderator, and Dr. William Mitchell, Dr. William Sherman, Dr. Merrill Chase, and Dr. Ethan Allan Brown on the panel. We expect a good many questions from the floor.

It is now my privilege to turn the meeting over to Dr. Cooke.

Introduction

Dr. Robert A. Cooke: Madam President, guests of honor, members of the New York Allergy Society, and neighboring societies from Connecticut, Pennsylvania, and New Jersey. We have tonight a topic apparently of great interest to members of the allergy fraternity, a subject that is of foremost importance to the clinical allergist.

If we look back over the years to note evidences of progress in the use of allergen extracts in the treatment of hay fever, we find that relatively little advance has been made. Surely we have improved in the empirical use of our extracts; for the most part they are now standardized more accurately, but the basis of standardization is not entirely satisfactory on account of the instability of extracts, and, as I have said, it is largely a matter of trial and error in the management and dosage of each individual patient.

In the field of immunology there has always been an effort to produce the maximum amount of response in the way of experimental sensitization and in the treatment of hay fever through protection by pollen injections. We still do not know exactly how protection is brought about, whether there is an immunity or whether there is, so to speak, a hyposensitization.

In the field of immunology, efforts were made for years to produce sensitization to tuberculin in animals without producing the disease, tuberculosis. This was first accomplished by Hans Zinsser and his associate who showed that the intraperitoneal injection of massive amounts of dead tubercle bacilli would in time produce a sensitization of the delayed tuberculin type as well as the immediate anaphylactic reaction.

Following this work in 1924, ten years elapsed before Couland started using solid paraffin with embedded tubercle bacilli as a method of stimulating sensitization of the delayed type; and shortly after this Saenz used not the solid but liquid paraffin oil, and found that tubercle bacilli emulsified in the oil produced a more rapid and intense sensitization response.

And so the idea has gradually grown that in the attempt to produce sensitization or immunization through parenteral injection, the ideal method was that in which the antigen was slowly and gradually absorbed over a relatively long period of time; and today Freund's adjuvant based on these findings is an accepted method of producing both immediate and delayed types of sensitivity in experimental sensitization.

This reminds me of the work by Swift. In his studies of rheumatic fever he found that he could induce delayed sensitivity to streptococci when they are introduced in capsule form to delay absorption.

In a rather different way it was earlier found that the toxin of diphtheria could be made into a nontoxic type of toxoid that would safely produce immunity to diphtheria toxin, and in a similar way we use tetanus toxoid where the toxic properties are destroyed through the agency of formalin. Now all these several means and measures were attempted with the idea of delaying the rate of absorption or avoiding the toxicity while the maximum desired immune effect was produced.

To come down to our present problem, I believe that Dr. Mary Loveless says it was seventeen years ago that she first began to use ragweed antigens emulsified in oil with two purposes in view: to increase the protection and to lessen the number of injections necessary for protection.

Her latest article appeared in the *Journal of Immunology* for July, 1957, in which she presents her methods and gives a most conservative estimate of their value. Now, this method of giving adequate protection with fewer injections, at the same time with the hope that constitutional reactions will be lessened, is very appealing; although the technics may not have been completely worked out, there seems little question but that it may open a field that will benefit the patient as well as the physician.

It was most unfortunate that Dr. Loveless was delayed in her arrival from abroad and will not be with us tonight, for we looked forward to greeting her and listening to her interesting talk about her work. However, we do have with us two allergists who have applied her technics in a reasonably extensive way, and both Dr. Mitchell and Dr. Brown are going to talk to us tonight.

I felt that it would be of some advantage if we divided the subject, and first of all I am going to suggest that the talks will be on technics—how the allergen material is prepared; what is the method of injection, subcutaneous or intramuscular; and how does one gauge the size of the dose. I am going to call first on Dr. Mitchell to tell us his experiences with the methods.

After Dr. Mitchell's talk, we will then come to the question of results—the question of reactions, local or general, and the dangers that may be inherent in highly sensitive individuals. And so it is my pleasure to introduce now Dr. Mitchell who will take over, and for fifteen or twenty minutes will discuss this first phase of the question that is before us tonight.

Materials and Methods

DR. WILLIAM F. MITCHELL: Dr. Cooke, Dr. Claman, Ladies and Gentlemen. I am grateful for the opportunity to speak to you in such distinguished company about this subject which has aroused so much interest. Dr. Cooke has given a concise review of the past efforts which have brought us to the present situation so far as slowly absorbable allergen mixtures are concerned. My purpose here is to discuss our methods and results in the treatment of 204 cases of pollenosis by injections of emulsions containing mineral oil, Falba (an emulsion stabilizer), and pollen extract. The method described by Dr. Loveless in 1957 was followed with these few exceptions:

1. Total dose was given in one, two, or three office visits depending on conjunctival and estimated clinical sensitivity.
2. The several injections were not made into a single site but were scattered in one arm at one visit and the opposite arm at a subsequent visit.
3. In a few cases where the initial doses were well tolerated, the emulsion was increased in strength from 10,000 protein nitrogen units per cc. to 20,000 protein nitrogen units per cc., and some of these cases received total doses as high as 20,000 protein nitrogen units. (Dr. Loveless' maximum dose was 10,000 protein nitrogen units per cc.)

A general invitation was offered to most of our previously treated cases who had clear-cut histories of seasonal pollenosis to receive their treatment this year by this new and shorter method. Each patient was told that this method offered no advantage over the orthodox method except that the number of visits was drastically reduced. A few of the patients had received no previous pollen therapy.

Previous to the first injection of repository pollen extract, the conjunctival sensitivity was determined by testing with a series of extracts beginning with 10 protein nitrogen units per cc. and increasing two-fold to a strength of 10,204 protein nitrogen units per cc. Those cases giving a positive eye test consisting of beginning redness of the caruncle at a strength of 40 units or less were called highly sensitive and their total dose of respository pollen extract was 5,000 protein nitrogen units. Those which gave positive reactions between 80 and 320 protein nitrogen units per cc. were called moderately sensitive and their total dose was 7,500 protein nitrogen units. Those which showed a positive reaction at 640 protein nitrogen units per cc. or stronger were called mildly sensitive and their total dose was 10,000 protein nitrogen units. As mentioned above, some of our cases received a larger total dose than this scale would call for. It should also be mentioned here that in those cases where the eye test elicited rhinitis before the appearance of conjunctivitis, the point at which the rhinitis occurred was considered positive. The usual initial dose was 0.05 cc. (500 protein nitrogen units) in the highly sensitive patient, 0.1 cc. (1,000 protein nitrogen units) in the moderately sensitive patient, and 0.2 cc. (2,000 protein nitrogen units) in the mildly sensitive patient.

A typical course of treatment in a moderately sensitive patient would include two doses on the first visit at intervals of forty minutes, the first containing 1,000 units and the second one containing 2,000 units. The patient would remain in the office for forty minutes after the last injection. A week later he would receive 3,000 units followed in forty minutes by 4,000 units. In some cases the appearance of large local reactions or systemic reactions of varied degrees made it necessary to use a more slowly graduated scale and more numerous visits and injections to reach the desired total dose. In a few cases where there were no reactions, much higher total doses were attained. All injections were made with 26 gauge, $^3/_8$-inch needles injected to the hilt, perpendicular to the surface of the skin. No medication was given with these injections or previous to them for the prevention of reactions.

Dr. Cooke: Thank you very much, Dr. Mitchell. There is another member of our allergy fraternity who has had experience with this method of Dr. Loveless, and I'm going to ask Dr. Brown from Boston to say a few words on this particular phase. We're not going as yet into the question of results, difficulties, dangers, and so forth, but on questions of technic, and I wonder if Dr. Brown would speak to us a little bit about his experience of this phase of the preparation and the technics as far as the material itself is concerned.

Dr. Ethan Allan Brown: Thank you, Dr. Cooke. Good evening, Ladies and Gentlemen. As regards the extract, it is prepared in the same manner that Dr. Cooke and his colleagues have prepared it for many years, excepting that four to five times as much pollen is used, so that one has an extract the strength of 60,000 protein nitrogen units per ml. This is as good as the 120,000- or 240,000-unit extract previously described. The extract need not be any stronger, thereby obviating the preparation of a muddy solution, that is, one which may not be clear.

For the conjunctival tests, we use concentrations of 5, 10, 20, 40, 75, 150, 300, 600, 1,200, 2,500, 5,000, 7,500, 10,000, 15,000, and 20,000 protein nitrogen units per ml.

Dr. Loveless grouped her patients according to the conjunctival tests as Dr. Mitchell described them. She gave 5,000 units to patients who reacted to 10 to 30 units per ml. I was more conservative and administered 2,500 units to patients reacting to tests up to the 80 protein nitrogen units per ml. level. To the patients reacting from 40 to 240 protein nitrogen units per ml., Dr. Loveless gave an injection totaling 7,500 units. I gave the same dose, but insisted that the patient react to the 600 protein nitrogen units per ml. level or less. The patients in Dr. Loveless' group reacting between 320 and 10,240 protein nitrogen units per ml. level received 10,000 units. Those of our patients who reacted to 1,200, 2,500, or 5,000 protein nitrogen units per ml. received 7,500 units, and only those responsive at more concentrated solution levels received 10,000 units.

Our equivalent for skin tests are 2,500 units for the pressure puncture-positive patient, with 5,000 units as a dose for the patient who reacts positively at the 10 or 100 protein nitrogen units per ml. level; 5,000 units for the 1,000 protein nitrogen units per ml. positive test-reactive patient, and 10,000 units for the patient positively reactive to 2,000 protein nitrogen units per ml. intracutaneous tests.

As to the injection technic, I find myself differing with Dr. Mitchell. I think we will all agree that giving the injections in different sites actually increases the absorption time. We have found it simple to take an instrument that looks like a retractable ballpoint pen with the pen portion retracted and to press it on the skin to make a tiny circle. The spot on the skin may be marked with any dye, such as zephiran chloride or mercurochrome. The needle of the syringe goes into the center of the circle, placing the first 2,500 units of a, say, 10,000-unit total dose. The patient places his finger on the spot and holds it there for a minute or so. This prevents leakage to the surface and also occludes the local vessels, preventing blood stream injection.

The second part of the injection is given from ten to thirty minutes later and by going right back to the same site, at the same angle, and into the center of the same globule. When the injection is given subcutaneously, this globule can be palpated. The second globule goes into the center of the first, the third into the second, and the fourth into the third. If the site is palpated with the finger, it will be found that all of the emulsified extract has been placed into a single site.

There is another point worth considering. We have used epinephrine 1:100 and ethylnorepinephrine 1:50, 0.3 to 0.6 ml., and the 120,000 protein nitrogen units per ml. extracts in a 4.0 ml. lot. This enables us to make certain that the liquid phase of the emulsion contains epinephrine or ethylnorepinephrine, so that should the emulsion by chance not be complete, the extract outside the globules, that is, the liquid phase, if any, contains an equal amount, that is, 50 per cent of ethylnorepinephrine. (Although present in the amount of 0.15 ml. of the 1:100, that is, the equivalent of 1.5 ml. of 1:1,000 in emulsion form, there are no apparent epinephrine effects.)

There are methods of making the emulsion other than that described by Dr. Loveless. Dr. Chase uses polyethylene tubing attached to two syringes by means of Clay-Adams adapters. We have changed to what looks like a hypodermic syringe with a hub at both ends, each screwed into a Luer-Lok syringe. Pumping back and forth using Arlacel S instead of Falba, and bayoil instead of mineral oil gives you an excellent emulsion. Thank you.

Dr. Cooke: I think at this point it would be very interesting if we had a few words from Dr. Chase. He's had a great deal of experience on this question of emulsions and apparently, after all, the secret of success in this is getting a proper emulsification of the material. I wish Dr. Chase would give us a word on this problem of proper emulsification and how it's best accomplished. Dr. Chase.

Dr. Merrill Chase: The making of a stable emulsion demands that the aqueous phase be very slightly alkaline, for example, pH 7.1 to 7.3. By "aqueous" one understands, naturally, that isotonic solutions are included. Dr. Loveless once used mildly acidic solutions of pollen extract and found, as predicted, that her emulsions broke down. The ratio between paraffin oil, the water-in-oil (W/O) emulsifier, and the mildly alkaline aqueous phase can be varied within limits, but not over one half of the total volume can be aqueous phase. The aqueous droplets in the emulsions have, of course, to be divided very finely in order to secure stability.

Over the years we have employed at least five different methods of preparing emulsions. All of them employ the procedure of tearing the water droplets asunder physically in the presence of emulsifier. Most commonly, one dissolves the emulsifier in the paraffin oil and then subjects the oily phase to shearing stresses that disrupt the water droplets being introduced into the system. The microdroplets of water, with their contained salts and solutes or suspended materials, are stabilized at once by the emulsifier that comes to coat the surface of the water droplets. With the special emulsifiers employed, which give water-in-oil emulsions, phase reversal as such does not occur (for example, we do not fear the formation of oil-in-water emulsions); but badly prepared emulsions will break, to yield some proportions of two separate phases. Breaking will occur (1) when large water droplets exist, since these lack the mechanical stability that very small droplets possess; (2) when the concentration of emulsifier is too low; or (3) when the aqueous phase is acidic, as stated previously. It is obviously necessary to have the aqueous phase sterile, for with many solutes microbial growth within the water droplets can shift the internal pH to the acidic side. Under condition (1), mechanical pressure, even that exerted by the compressive force of the hypodermic plunger, can cause water droplets to coalesce and by aggrandizement in size to become free.

The emulsifiers belong to two chief types, namely, derivatives of lanolin (aquaphor, Falba, Protegin-X) and an organic ether (Arlacel S). Owing to the possibility of sensitization to the lanolin derivatives, Arlacel S is to be preferred for human injection. Special preparations of Arlacel S have been prepared for use with human beings. All true emulsifiers contain some chemical groups that are lyophobic and other groupings that are lyophilic, hence there is orientation of the molecules of emulsifier with respect to the two phases. The lyophilic portions of the emulsifying molecule dissolve in the surface of the water droplet, while the lyophobic portions are dissolved, or dispersed, in the hydrocarbon phase.

Methods of emulsification have been discussed by Freund;[1] we have secured effective shearing action in the oily phase by mechanical stirring during slow addition of aqueous phase, sometimes while the latter is being extruded from a hypodermic needle shaft directly into the spinning oily phase.[2] For quick preparations of emulsions containing penicillin, Freund has described forcible ejection of the aqueous phase into the emulsifying oil by the use of two syringes, ejections being continued between these until the resulting emulsion is satisfactory. We have had experience with this method, as Dr. Brown mentioned, the two syringes being connected by means of a short length of narrow-bore polyethylene tubing held in special syringe adapters.* By this method, no part of the aqueous phase can escape being exposed to the emulsifier. The same assurance can never be guaranteed in the procedure suggested for the use of allergists, namely, taking materials from the floor of a glass tube through the hub of a 1.0 ml. hypodermic syringe and ejecting them repeatedly into the same tube.

There are two ways to assure oneself, as well as can be done, that syneresis (breakdown of the emulsion, with the liberation of the aqueous phase containing allergen) has not taken place. One method consists of examining the preparation under a microscope, an exceedingly tiny droplet being placed on a slide and a cover slip dropped on it; and then, lest sufficient pressure break the emulsion mechanically, one simply taps the cover slip down with the point of a pencil to present thin areas for examination. If an uneven emulsion is found, with some droplets larger than others, it is certainly not suitable for use: attempts should be made to re-emulsify, perhaps with addition of more of the emulsifier, or one should start afresh.

Another method of detecting syneresis is to mix 0.5 to 1.0 ml. of the emulsion with 2.0 to 4.0 ml. of paraffin oil. The mixture is stirred and centrifuged. If free water phase is present, it will collect at the bottom and you will be able to see it beneath the layer of paraffin oil. The reason for adding more paraffin oil to the emulsion rests in the fact that the emulsion itself has paraffin oil as its continuous phase; if the amount of paraffin oil is increased, the already emulsified aqueous phase droplets are simply distributed throughout a greater volume of continuous phase. On thinning the concentration of emulsified particles with paraffin oil and thereby reducing the viscosity of the original emulsion, centrifugation will allow visual detection of water phase that may have escaped emulsification or broken free from some poor state of emulsification.

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* Clay-Adams plastic tubing adapters, size C. The polyethylene medical tubing (PE 200), with an internal diameter of 0.055 inch, is sterilized for some days in zephiran 1:1,000, rinsed in sterile saline, then (with sterile gloves) flared at each end by being held near a microburner and the flared ends finally secured in the autoclaved adapters that fit Luer hypodermic syringes.

A few words may be said about the components of the emulsion. Paraffin oil, as we buy it, is a solvent and it contains various solutes. No one has been able to remove them all because distillation is not feasible. As you may recall, the best preparations of paraffin oils are said to be made by "scrubbing" with various materials that are designed to oxidize or alter the impurities and render them soluble in water, acid, or base. Sulfuric acid, water, alkali, and so on are used in succession.

Certain paraffin oils are superior to others. The late Dr. H. D. Pease, head of the State laboratories prior to Dr. Augustus Wadsworth and later head of a private testing laboratory in New York City, developed a special technic for testing the relative toxicity of paraffin oils. This consists in making intracutaneous injections into the skin of rabbits and also in applying each specimen of paraffin oil to two of three scratches made parallel on the skin, the third one serving as a control. On the following day the skin is removed, transilluminated, and photographed. By examining for hyperemia by these procedures, almost all samples of paraffin oil are revealed to be irritating to some degree, varying with the source of the particular specimen. Few specimens indeed are banal. Paraffin oil is an organic solvent and some solutes remain in it.

With regard to sterilization of paraffin oil, it cannot be autoclaved in the common sense of the word, of course, because steam does not penetrate it, and it cannot be freed of organisms by means of bacterial filters. In a practical sense, one conceives of the autoclave as an oven that is capable of operating at only the temperature attained by live steam under fifteen pounds of pressure (121C. or approximately 250F.). Therefore, the period of autoclaving is increased to sixty minutes or longer. Thus one can insure having a sterile paraffin oil. Some condensation of water droplets occurs during cooling, and these finally fall to the base of the flask and coalesce.

It should also be realized that rubber stoppers should not be used. Paraffin oil attacks and dissolves rubber, and so one should employ neoprene stoppers which are inert to paraffin oil. Needless to say, such stoppers should be autoclaved and kept sterile, ready for use.

How long does absorption of aqueous phase continue after such an injection? The popular concept of a "durable depot" is probably rather exaggerated. After injections of emulsions intramuscularly into guinea pigs, sites extirpated ten to twenty-five days later show little or no free-floating oil when they are ground up in a mortar with addition of water. Evidently cellular attack on the site that is laid down (if the site is not too large, 0.2 to 0.3 ml. in the case referred to) is efficient, and the bulk of the continuous phase of the emulsion is removed in a rather short time. As cellular attack proceeds, the aqueous phase is liberated.

Perhaps we may picture the depot as functioning not as a "durable depot" with a long period for the supply of antigen or allergen to the body, but as a method for introducing material slowly enough to invoke a sort of temporary desensitization. Please understand that this is offered as an hypothesis, not as proved fact. As an analogy, one can think of the process of desensitizing a guinea pig that is anaphylactically sensitive by means of a series of injections of very small amounts of the antigen to which the animal is sensitive. Like instances have been seen in man, but danger remains ever present. Once it was necessary to inject horse antipneumococcal serum for the treatment of pneumonia. In one instance that came to my attention, a patient who was too sensitive to horse serum to accept an injection directly was prepared successfully to accept therapeutic doses by means of a preliminary infusion of traces of horse serum. The serum, at first in very high dilution, was introduced into the supply tubing of the apparatus used for venoclysis. The story is not recounted to commend the method but as an example of a process that can be studied in animals. Whatever the mechanism of such desensitization may be (and there seems to be no adequate explanation on immunochemical grounds at the present time), perhaps we invoke a similar physiologic mechanism by means of depot emulsions. If so, the sites would not need to retain the antigen for a long period of time, and the tissues could perhaps tolerate a rather rapid liberation of allergen.

The other question that Dr. Cooke has raised is whether or not we could consider this solely a delayed depot. Whatever the period of effective delay may be, the paraffin oil surely provides a special type of material for cellular attack. Hydrocarbon depots attract monocytes and lymphocytes primarily, not polymorphonuclear leukocytes such as accumulate in areas that are directly irritated, as by aqueous solutions. Future studies will doubtless provide answers to many questions that plague at present.

Dr. Cooke: Thank you, Dr. Chase. I will now ask Dr. Sherman if he has anything to say. He protested that he was on the panel at all. Nevertheless, I'm sure that he has something which will be worth while for you to hear. Dr. Sherman.

Dr. William B. Sherman: Thank you, Dr. Cooke. I did protest very definitely at being on this panel because I have never used this treatment. I was given to understand that my function perhaps was to open the discussion, and I don't think we want to open the discussion until we hear the rest of the presentations, the clinical results, and reactions. However, I do think that in order to think clearly about this problem we must break it down into two different aspects: one is the nature of the material used, the advantages and disadvantages of an oily suspension as opposed to saline extract; the other is the advisability, having this more slowly absorbed type of extract, of trying to give the whole season's treatment at one time, in one day, as opposed to carrying it out over several days. The use of the oily extracts is not, after all, very new. It is a type of extract which may well represent an improvement.

It was Dr. Brown who dug up the fact that Sutton, in 1923, prepared a suspension of pollen in a vegetable oil and reported very good results in treating hay fever with this material. I looked up this article and it does not state clearly how many injections he gave, but he does state that because of the slower absorption of material in oils, as compared to the saline extract, it was possible to give bigger doses and fewer doses. There was no indication that he attempted to cut the course down to one or two days of treatment.

More recently, in 1938 Naterman wrote a good deal on pollen extracts made up in vegetable oils and presented them as enabling one to give bigger doses with fewer reactions and as shortening the course of treatment.

Since the work of Freund, it is generally recognized that paraffin oil has a very distinct advantage over the vegetable oils used previously, and so what we really want to discuss now is the use of pollen antigens in paraffin oil. I think that while a great deal of evidence is going to be brought out to indicate that this is a type of extract which produces a greater antibody response by gradual release of the antigens, we may still properly ask the question whether or not, having this better extract, it is necessary to try to complete the whole treatment in the course of a few hours. We can discuss this in more detail later.

One thing that rather surprises me is that after very careful classification of the patients with the eye test, they all end up with very nearly the same dosage. For instance, to the most sensitive group Dr. Loveless gave 5,000 units, Dr. Brown 2,500, and to the least sensitive group they gave 10,000 units. From use of saline extracts, it seems to me surprising that the largest dose for the least sensitive patient should be only four times the smallest dose given to the most sensitive patient. When we discuss the results, I would like to hear whether most of the general reactions were in this most sensitive group who were getting one-quarter to one-half the dose given to the least sensitive group. Offhand, it would seem to me unnecessary to do a series of twelve eye tests on the patient if by just giving the treatment over a period of four visits instead of one you could give them all the same first dose. However, my opinion on this point is based on theory rather than practice.

Anything further that I may have to say should wait until presentation of the facts on results and constitutional reactions.

Dr. Cooke: Thank you, Dr. Sherman. Now we come to the second phase of the discussion, which is about dosage, time involved, and the dangers that are inherent in the method. This will be followed by discussion and questions from the audience. Dr. Mitchell, will you open the discussion of these matters.

Results

Dr. Mitchell: Preliminary analysis of the allergic reactions following these injections disclosed the following information. Moderate to severe systemic reactions occurred in 23 (11 per cent) of the 204 individuals treated. In eight instances there were local reactions worthy of comment.

The systemic reactions consisted of various combinations of urticaria, coryza, and bronchospasm. The severe reactions were more prolonged than the same type of reactions following aqueous pollen extract and often required personal care by a physician for several hours. A few of the severe urticarial reactions recurred for forty-eight hours. Two patients reported rhinitis beginning the day following the injection and continuing for approximately forty-eight hours. One patient had an immediate and alarming generalized reaction which indicated intravenous absorption. This patient finished the full course without subsequent reactions.

The eight local reactions mentioned above consisted of three very large but orthodox local reactions; two instances of unusually large, discrete, indurated lumps which did not diminish in size after three months; and three abscesses. These abscesses occurred in 3 different individuals who received injections from three different batches of treatment material. Each case had other injection sites which did not form abscesses. Two occurred within a few days of the injection, became fluctuant within ten days, opened spontaneously, drained large quantities of purulent material, and dried up within a week of the first sign of drainage. One of these showed coagulase-positive staphylococcus on culture. The other was not examined because it drained while the patient was out of the city. The third abscess did not occur until the height of the ragweed season and approximately two months after the injection was made. This also opened spontaneously and contained staphylococcus. It also was dry within a week of the first sign of drainage.

At least two of the severe constitutional reactions mentioned were attributable to a poorly emulsified mixture as shown by scattered large globules under the microscope. Examination under the microscope of emulsions before use will prevent a recurrence of this type of reaction. The abscesses appear to be due to bacteria carried through the skin rather than from contaminated materials. This may be prevented by a more thorough sterilization of the injection site. We would anticipate a general reduction in the occurrence of both reactions and abscesses as our technic improves. In general, the more severe constitutional reactions occurred in the more sensitive individuals.

In this series, 180 persons were treated with ragweed extract and 33 persons with grass extract. Some of these patients received both. Reports from 188 of the treated cases are the basis for the following analysis of our results. Sixteen cases failed to report.

Satisfactory results, that is, improvement of at least 75 per cent, were obtained in approximately 80 per cent of the cases. Slightly more than 80 per cent of the cases preferred the repository method of treatment to the orthodox method with aqueous extracts. Eight per cent of the people had no choice between the two methods. Four of the cases who showed good results on repository treatment had been treated several years previously with aqueous extracts with poor results. Two patients who had experienced excellent results with aqueous treatment in previous years had poor results following the repository treatment.

In summary, we consider this method of administering allergenic extracts at least as effective clinically as the orthodox aqueous treatment. Whether it is a step forward in our effort to treat pollenosis effectively but more simply is a question which will be answered in the future. Until stable emulsified extracts become commercially available, this method is not applicable to general usage. We would suggest that this method be used with caution and respect by those who have the facilities for this type of work.

We are indebted to Dr. Loveless for her patience in answering our numerous questions regarding the details of the materials and methods and for supplying us with much of the material which was used in our work. We regret that Dr. Loveless could not be with us tonight to lead in the discussion of this problem, since she is truly the mother of this technic, having labored over it for the past twelve or fifteen years.

Dr. Cooke: Thank you, Dr. Mitchell. I think we'd like to have a word from Dr. Brown covering this phase of the subject on the questions of results, dangers, difficulties, and so forth.

Dr. Brown: Thank you, Dr. Cooke. We have been familiar with Dr. Loveless' work from its very beginning, and we were not at all attracted to it because it seemed to be dangerous in every sense of the word. Dr. Loveless refused to protect her patients, no matter how much we discussed the necessity of this with her. It was only after Dr. Loveless finished with her experimental group that we were interested in testing her thesis in accordance with what are known as Mill's postulates.

Was hers a logical, acceptable hypothesis? It was, because patients responded to treatment with pollen extracts. Was it physically possible? It was, because the extracts were there to use. Could it be tested? Of course it could. And did the assumption require any presuppositions or additional suppositions? It did not. So therefore this was an hypothesis which could be tested.

The slow absorption that Dr. Chase talked of concerned quantities of 0.2 to 0.3 ml. of oil. We give our human patients 1.0 ml. Actually we know from the fact that the local reaction usually appears in six days that absorption from the globules due to their being eaten away by the macrophage cells floating around them is about that long or longer. This may not sound very important, but the ordinary everyday injection is absorbed within seconds and six days or more of continuous absorption is the equivalent of many saline injections.

The reaction rate in our hands is very low because we set out to protect the patients. We give them short-acting and long-acting antihistaminic agents, and we also give an injection of epinephrine, 0.2 ml., proximal to the site of the injection. We have had altogether 11 reactions.

We had two of these reactions in unprotected patients. One occurred in a woman who, in the peak of the grass pollen season, had a ragweed pollen repository, drove home 35 miles, and had an attack of asthma that night at 8:00 P.M. She had

had previous attacks of asthma that season. The other was a professor at Boston University who had a reaction consisting of a nonpruritic rash which occurred during the following afternoon. A doubtful reaction occurred in one patient, consisting of rhinorrhea for ten days after the injection.

Of the other eight, we had five in the first 1,000 repository injections and three in the second thousand, and we have had none since.

To answer in part one of Dr. Sherman's criticisms, Dr. Mitchell and I were talking generally when we gave the dose as 2,500, 5,000, 7,500, and 10,000 units. As a matter of fact, our lowest dose was 600 units, and the highest, 10,000, and our range for protection is approximately the same as it would be with the lowest and highest doses in aqueous injections given to the same patients.

One hundred sixty-four patients were given repository injections of tree pollen extract. All were told they could come to the office and be given medicine free of charge during the season. Only 19, or about 10 per cent, as a result of inquiries by means of telephone calls and letters, reported any symptoms. Fifteen of these patients were sensitive to grass pollens. These had symptoms during the last week in May and the first week in June, and this was during the overlapping tree and grass pollen seasons.

Another 383 patients were given grass repository injections. Of these only 50 reported symptoms. The others did not notice the pollen season.

For the ragweed pollen season, we treated 722 patients. Of these, 100, or approximately 14 per cent, reported symptoms. Forty-five of these 100 had symptoms due to sensitivity not to ragweed pollen but to cat or dog danders, perfumes, paint, or other substances. Only 55 were proved ragweed-sensitive patients responding only to ragweed because they responded on the same day or for the same number of days although in different localities. So, of 1,909 patients, counting those 1,207 in the three groups listed, and with them the groups treated the previous year, approximately 10 to 20 per cent can be expected to have symptoms.

Some of those under aqueous treatment will do worse, and some better, but we had only 6 patients change over from the emulsified injection treatment to the aqueous injections and 1 later change back again from the aqueous to the emulsion extract type of treatment. The patient acceptance is very high. The numbers given are relative, since the approximately 2,000 patients have had from one to six repository injections each.

Now, about the "lumps." These are a very strange phenomenon. A paper that concerns them has been submitted to the *Journal of Immunology*. In our pollen patients we had exactly four, and not from a single one of these did we isolate bacteria. All of the lumps contained only fluid, that is, plasma and eosinophil cells. We had no infectious cases. But we did observe one very curious phenomenon which, I hope, Dr. Cooke will let me discuss for five minutes.

Of 365 patients treated with single annual and 129 others treated with semiannual injections of house dust, 66, or almost 10 per cent, developed lumps which appeared in two to six months after the injection, except for one which appeared after two hundred four days. In 33 of these patients, the site broke down and discharged for as long as four to six or more weeks.

Eleven of these patients permitted us to give a second injection. In each patient in whom the first injection had broken down, the second also broke down, but this time within two or three days. The cysts healed within a period of two or three weeks.

In every one of these patients, we had, of course, elicited a positive skin test of the immediate type that is seen with the 1:2,000 or 1:4,000 dilution of Endo house dust extract. In every one of the patients who got a lump, and who when first tested gave a typical wheal which went down and left no residual delayed test of the Koch type, we could again elicit the same type of response. In those with positive eye tests, the eye test was of the type we see with pollenosis. Those who gave negative eye tests did not, of course, react when retested.

After the patient presented a lump or local reaction, the test changed in that the immediate skin test remained the same, but in six or eight hours the patient showed a Koch type or delayed reaction resembling a tuberculin test. This persisted from two to ten days, and in 1 patient for twenty-two days. A similar reaction which remained from two to twenty days occurred following the eye test although the original test, immediate in type, had not been noted and no delayed reaction had been seen. These reactions occur only in those patients who get lumps, and in every case where this phenomenon appears if the patient is given a second injection the lump breaks down immediately. Not only that, but in 5 of these 11 patients who permitted us to give them a second injection, there was reactivation of the first lump although it had apparently healed. This type of reaction has, as far as I know, not before been described, and most surprising of all is the fact that these patients have an incredible immunity. These patients are completely free of symptoms practically under all circumstances of exposure to house dust, excepting during infections.

In other words, of our dust group of the type first described by Dr. Cooke in 1922, we were able to separate a second special group who respond to this type of injection with a lump (let us call it that) which in most cases breaks down and which is associated with the development of a delayed or Koch type of reaction in the skin and in the eye. In most cases this is accompanied not only with a high immunity but also with a rapid breakdown of the injection site if the patient gets a second injection, and reactivation of the first injection site. These patients have taken repository injections for the pollen with no breakdown. Such pollen repository injections were given before the first lump appeared, after the lump appeared, between lumps, and after the second breakdown. In no case has a similar reaction to pollen emulsion injections been seen.

I have one last point to make. The reactions in our groups were mild because we gave the patient an antihistaminic agent and epinephrine. In our new series of patients, using bayoil and Arlacel A, we have an emulsion in which Bronchephrine hydrochloride, that is, ethylnorepinephrine, or epinephrine itself, will be a part of the emulsion. The liquid phase as noted contains either some epinephrine or some ethylnorepinephrine, and since in the last 1,300 patients we have had no reactions with this mixture, we do not anticipate having any more. We think that this preparation has possibly stopped the systemic reactivity of the immediate type noted with the Falba-Atreol type of emulsion.

DR. COOKE: Thank you, Dr. Brown. I want to ask Dr. Chase if he has any remarks he would like to make at this point.

Comments

DR. CHASE: There are a few remaining points, Dr. Cooke. First, it might be well to consider preparing emulsions that should be more durable than those made with bayoil. The latter is a light oil, below the viscosity and specific gravity specified in the pharmacopeia. There are other paraffin oils available of heavier types, both straight-chain hydrocarbons and cyclic hydrocarbons. The latter possess the highest viscosity. I would suggest that some experiments could well be made with paraffin oils of moderately heavy viscosity instead of this very thin oil that is taken up so readily by phagocytic white cells.

With regard to the injection itself, I would have a positive preference for single syringes for each patient rather than practicing transfer of needles. There is no need to load syringes with more material than a single patient will receive. As Dr. Brown mentioned earlier, I have found that by means of ganging two oversized syringes together by a narrow-bore tubing of plastic or metal, an excellent and stable emulsion can be prepared rapidly. I have used this device for several years, as I told Dr. Brown. The aqueous phase cannot escape from full exposure to the process of emulsification. In this procedure, the oil and the aqueous phases are introduced into separate syringes. By first injecting the aqueous phase rapidly into the oil, and then forcing the material back and forth between the two syringes, shearing action is set up in the viscous oil, and this force breaks the water droplets apart physically. Now, having this device at one hand, one removes one of the oversized syringes and attaches in its place the syringe of choice, be it a 1.0 or 2.0 ml. syringe from which the injection will be made. Thus one can load syringes without wastage and provide an individual syringe for each person.

I think some of these principles may well find their place in the field in which you work.

Dr. Cooke: Thank you, Dr. Chase. Now I'm going to ask Dr. Sherman if he has another word to say.

Dr. Sherman: I was very much interested in the comparison of Dr. Mitchell's results as regards general reactions and Dr. Brown's. It is apparent that Dr. Brown, by giving doses of adrenergic compounds and antihistamines before and after treatment has avoided a great many reactions. When we compare this type of treatment with the routine treatment with saline extracts, we have to take this into account. Ordinarily when we give aqueous extracts, we don't give these premedications and I am sure that if one omits this medication, the eight moderate and six severe reactions in 40 cases reported by Dr. Mitchell is really a high incidence of reactions. This will perhaps make us a little slower to adopt this new type of treatment. I'm sure if we do adopt it, that it will be very wise to use the premedication and postmedication that Dr. Brown has suggested.

The problem of lumps and abscesses is apparently a more difficult one. As to this, I'd personally feel that we must have more experience in order to see what comes of it.

I should think that to minimize reactions, anyone who is inclined to start this treatment might well follow Dr. Mitchell's example and try it first on patients who have had several years of the ordinary treatment, particularly on those who had never had any reactions with the ordinary treatment. It may prove satisfactory in these cases. It would then be logical to extend it to cases who have had less treatment or who have had some reactions in the past.

I would think that the success of the treatment, that is, the adoption of it by the great bulk of physicians, is going to depend on the way in which it is tried out. If it is tried out cautiously at first, there's a much greater chance that it will be found acceptable than if it is used recklessly by people who do not screen their cases as carefully as have Dr. Mitchell and Dr. Brown.

There is one theoretical objection that occurs to me, and possibly Dr. Mitchell or Dr. Brown has information on it. Dr. Brown's discussion of reactions to the treatment of the dust allergies seems to have some bearing on it. This has to do with the fact that neither ragweed extract nor other pollen extracts are pure antigens. They may contain a considerable number of different antigens—I think six to eight are the numbers usually estimated in recent years. There is good evidence that the average hay fever patient is not sensitive to all of these antigens. There is a serious possibility that introducing this mixture with mineral oil might induce sensitization to some of the antigens to which the patient was not sensitive at the start. This is certainly worth thinking about in the case of ragweed; but when it comes to house dust, the problem is infinitely greater because no one has any idea how many antigens there may be in dust, and there is the tremendous possibility of perhaps inducing sensitivity to different factors in the house dust to which the patient was not originally sensitive. It is conceivable that this may have something to do with the cases that Dr. Brown has described as having reacted after they developed lumps.

Questions

Dr. Cooke: Now, Ladies and Gentlemen, the hour has come to read some of the questions that you have submitted to members of the panel. Unfortunately we will not have time to read them all.

The first question I have is for Dr. Mitchell: "When was the treatment given in relation to the beginning of the pollen season?"

Dr. Mitchell: As a rule, it was given two months before the season. Just to try it out, we started a few patients within a couple of weeks of the season and they seemed to get along pretty well that way too. Dr. Loveless did most of hers two months before the season.

Dr. Cooke: Another question: "What are the liability insurance rates for this type of therapy as compared to the other?" I think that it a very pertinent question. I doubt if any of the members are ready to answer it. Dr. Brown, have you any thoughts on the liabilities?

Dr. Brown: I spoke to my insurance carrier about this and he felt that as long as we were giving a new treatment, all we had to do was increase the face value of the policy!

Dr. Mitchell: I don't know any answer for it, but I want to repeat the timely warning (in this case I didn't listen to it): "be not the first by whom the new is tried, nor yet the last to set the old aside."

Dr. Cooke: Forty per cent or more of Dr. Loveless' controls reported satisfactory results with a placebo, as much as with active emulsion. Is there any explanation for this?

Dr. Mitchell: There isn't any answer for that at the present time except perhaps for those who believe in psychiatric therapy in hay fever. They might find this was a very good way of handling the situation.

Dr. Cooke: Now, a question I have here from Dr. Rosenberg: "What has happened in dermatology patients where paraffin was injected, that is, patients with paraffinomas?" In years gone by I saw patients with these paraffinomas and they were very serious things. We'll just ask Dr. Mitchell, have you seen any suggestion of paraffinomas?

Dr. Mitchell: I haven't seen any, but I've worried about them.

Dr. Cooke: Dr. Brown, have you seen any?

Dr. Brown: No.

Dr. Cooke: Did those patients who had moderate to severe reactions in treatment obtain better results than those who had no reactions?

Dr. Mitchell: I don't think so.

Dr. Cooke: I'm going to ask a question of Dr. Mitchell because it isn't quite clear in my mind whether the most severe reactions occurred in the more highly sensitized group or were scattered throughout the general run of cases.

Dr. Mitchell: Most of them occurred in the highly sensitive group, but some occurred in those in which the eye tests at least did not indicate a high degree of sensitivity.

Dr. Cooke: Did any of these patients treated with oily emulsions of ragweed antigens develop delayed-contact type of allergy or dermatitis lesions? Are they ever seen as an end result?

Dr. Mitchell: The only dermatitic lesions which we encountered were the immediate urticaric reactions, some of which were very severe. They lasted all night and were awful. Otherwise the only skin reactions were the ordinary local reactions.

Dr. Cooke: "If the conjunctival test is negative, how does one determine the sensitivity? Does the conjunctival lesion entirely disappear after treatment?"

Dr. Mitchell: In some people the conjunctival test was negative all the way up to the strongest solution. All but one of those people got sniffles and sneezes long before we got to the top dose, and there was one who gave no positive eye reaction and no nose reaction, and I can hardly say that she was still sensitive; she probably didn't need any treatment. She'd been treated several years before.

Dr. Cooke: "Have any of the technics as yet been used on children aged five to fifteen years and what was the situation there with regard to reaction?"

Dr. Mitchell: I think I had only 1 patient under fifteen. He had no local or general reactions and 100 per cent relief, and he was one who had previously had bad hay fever.

Among John Mitchell's patients, there were, I think, about 5 children. Among those we had one severe reaction from an overdose and the rest of them took it well; I don't know where they fell as far as relief was concerned.

Dr. Cooke: I have another question here from Dr. Ely Perlman. There are two questions involved. "Why not test with 1,080 and 320 units only and let it go at that? Were any patients treated with single large aqueous injections of equal strength?"

Dr. Mitchell: The answer to the first is repetition of the question: why not? I think if I keep on with this technic, I will simplify our testing a great deal.

About the aqueous injections: we didn't do that. I think that Dr. Loveless in July, 1957, reported treating some patients with 10,000 units, 1,000 at a time over ten doses, or some roughly comparable amount.

Dr. Cooke: I have a question here from Dr. Murray Dworetzky asking Dr. Chase if there is any danger that the vehicle used is carcinogenic.

Dr. Chase: I would have no opinion on this. Paraffin oil is not pure, as I stated, and the answer has to be the result of experience.

Dr. Cooke: I'm afraid that we will be unable to deal with any more questions. I think we must close the meeting because the hour is late.

I hope you go away with the idea that this technic is not something that anybody and everybody should try. It is still something that has to be worked out. It is something that deserves a great deal of care, and it is something that most of us without very special preparation and precaution should not attempt to use. Until it has been perfected, you would do well to stick for the time being to the old and tried method.

I would like to close the meeting by thanking the members of the panel for a most stimulating discussion.

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Chiropractors Not Licensed to Administer Drugs

A pharmaceutical manufacturing firm was recently convicted of illegally selling certain prescription-legend drugs, specifically reserpine tablets, to a chiropractor. These practitioners are not licensed in any state to administer drugs—and justifiably so. The order came to the manufacturer on the letterhead of the chiropractor, in which his name was prefixed by "Dr."—but his name was suffixed with "D.C.". Everyone connected with the pharmaceutical industry—except perhaps the most ill-informed—is, or should be aware that D.C. represents a chiropractor.

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NUTRITION EXCERPTS

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J. H. FRYER, M.B., B.S., *Editor*

Food Enrichment

LEONARD A. MAYNARD, PH.D., ITHACA, NEW YORK

In 1939 the Council on Foods (now the Council on Foods and Nutrition) of the American Medical Association issued a statement advocating "the restorative addition of vitamins or minerals or other dietary essentials of general purpose foods to recognized high natural levels; with the provision that such additions are to be limited to vitamins or minerals or other dietary essentials for which a wider distribution is considered by the Council to be in the interest of public health."[1] In 1941 the Food and Nutrition Board of the National Research Council also adopted certain policies regarding food fortification.

In accordance with these policy statements by the Council and the Board, the addition of certain nutrients to specific foods was approved. As a result of the flour and bread hearings held by the Food and Drug Administration, which began in 1940, standards for enriched flour were issued in 1941 and for enriched bread in 1952. These standards provided for the addition of prescribed amounts of thiamin, riboflavin, niacin, and iron as required ingredients, with calcium and vitamin D as optional additives. The definition of enriched bread is such that the exclusive use of enriched flour in its manufacture will fulfill the requirements for the enriching ingredients.

From this beginning there developed the present-day federal requirements, supported by corresponding legislation in most of the states. It was provided that flour, bread, and certain other cereal products bearing the term "enriched" must contain prescribed amounts of these nutrients and must carry a statement to that effect on the package. It is estimated that today 80 to 90 per cent of all white bread and white family flour consumed in the United States is enriched. Nutrition scientists are in general agreement that this development has made a significant contribution to the improvement of nutrition and health. There also are federal standards for the enrichment of rice and corn grits which are followed by some manufacturers in the southern states.

Long before these developments occurred, iodized salt came into use as a fortified food. It was first made available in grocery stores in 1924 on recommendations which grew out of the studies of Marine and Kimball and others.[2] Although there is no federal law requiring the iodization of salt and such laws exist in only a few states, it is estimated that some 50 per cent of the table salt sold is iodized. Authorities generally agree that its use should be much more widespread in the interest of goiter prevention.

Vitamin D milk, another fortified product in general use, dates from about 1930 when the ultraviolet irradiation of the product began. Today vitamin D-activated concentrates are used. Figures are not available to estimate how much of the fluid milk marketed is fortified with vitamin D, but practically all of the evaporated milk is thus enriched. The great benefit to health, particularly in the cases of infants and children, is well recognized.

The recognition of the value of the fortification of margarine with vitamin A grew out of experience in World War I in Denmark where dire results from its substitution for butter led to its fortification with concentrates of the vitamin. The margarine industry in the United States adopted the practice, and today almost all of the margarine sold is fortified up to or exceeding the standard level of 15,000 I.U. of vitamin A per pound, a level which corresponds to the year-round average for butter. This fortification has made margarine practically equal in nutritive value to butter, a fact that has become increasingly important as the consumption of butter has dropped and that of margarine risen.

In 1953 the Council on Foods and Nutrition and the Food and Nutrition Board jointly reviewed, in the light of experience and current developments, their actions of previous years in endorsing the enrichment of specific foods. As a result they issued a "Joint Statement of General Policy in Regard to the Addition of Specific Nutrients to Foods" containing the following:

> Within carefully defined limitations, the principle of the addition of specific nutrients to certain staple foods is endorsed for the purpose of maintaining good nutrition as well as for correcting deficiencies in the diet of the general population or significant segments of the population. The requirements for endorsement of the addition of a particular nutrient to a particular food include (a) clear indications of probable advantage from increased intake of the nutrient, (b) assurance that the food item concerned would be an effective vehicle of distribution for the nutrient to be added, and (c) evidence that such addition would not be prejudicial to the achievement of a diet good in other respects.[3]

The statement emphasizes the desirability of meeting the nutritional needs of people by the use of natural foods as far as practicable. It closes with a reaffirmation of its endorsement of the enrichment of flour, bread, degerminated corn meal, and corn grits; the nutritive improvement of whole grain corn meal and white rice; the retention or restoration of thiamin, niacin, and iron in processed cereals; and the addition of vitamin D to milk, vitamin A to table fats, and iodine to table salt.

Failure to win endorsement by the Board or Council does not prohibit in any way the marketing of fortified products. Only federal or state laws can do that. The statement of the Board and Council, however, does provide a basis for questioning the nutritional justification for the extensive fortifications now being practiced by food manufacturers in promoting the sales of their products. Such products include milk and bread fortified with various vitamins besides those specifically approved, fruit juices and carbonated beverages to which ascorbic acid has been added, and many others. A development which seems definitely inappropriate in terms of the principles laid down by the Council and Board is the multifortification of milk with a mixture of several vitamins and minerals. On the other hand, a much better case can be made for the fortification of fluid skim milk and nonfat dry milk with vitamins A and D in view of the use of this food in place of whole milk.

With the discovery of the requirement for essential amino acids and with the development of their commercial production, various foods fortified with one or more of these nutrients are being marketed or proposed for market. The fortification of bread with lysine is an example. Rat experiments have shown that the proteins of white flour and, to a lesser extent, of bread are deficient in this amino acid and that the growth-promoting properties of these proteins can be improved by its addition. The fortification makes bread a more complete food nutritionally, but it is completeness of the diet as a whole which counts. Bread furnishes approximately 25 per cent of the protein in our national average food supply, while over 60 per cent comes from animal products. These products contain three to four times as much lysine per 100 Gm. of protein as does white wheat flour. There is no evidence and no basis for believing that lysine deficiencies occur in any significant segment of our population. Food fortification with it would appear to serve no useful purpose for the average individual eating a mixed diet in the United States.

Summary

Certain enrichment practices have clearly been of great value in improving nutrition and health, but this does not hold for many of the fortified products which today's consumer is urged by sales and advertising programs to buy. The principles set forth by the Council on Foods and Nutrition and the Food and Nutrition Board remain sound guides in determining which fortifications are in accord with good nutritional policy.

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(*Number three in a new series of Nutrition Excerpts*)

Sea Gulls and Diuresis

Sea gulls and other marine birds ingest large quantities of salt from sea water. The salt load would be far too great for the kidneys to handle. But salt-retention edema is prevented by unusual functioning of the nasal (supraorbital) gland, which secretes sodium chloride at higher rates and concentration than the kidney. A cholinergic innervation mechanism similar to that of salivary glands is believed responsible. The nerve reflex is thought to depend on a central osmoreceptor, sensitive to the osmotic concentration of the blood. Researches have found this unusual extrarenal salt excretion in petrels, gulls, penguins, marine ducks and other birds, and marine reptiles.—*Diuretic Review*

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ELIZABETH J. CRAWFORD, M.D.
VALENTINO D. B. MAZZIA, M.D.
JAMES MARIN, M.D.
GEORGE WALLACE, M.D.

Cardiovascular Collapse from Multiple Thrombi

The axiom that the primary cause of failure in cardiac resuscitation during surgical anesthesia is delay in diagnosis generally applies. However, there are times when undelayed diagnosis and resuscitation will fail because of existing physiopathologic changes in the patient that unfavorably influence the operative and anesthetic course. Efforts will fail in such cases, but almost everyone is agreed that resuscitation nevertheless should be attempted, without delay, when cardiovascular collapse occurs in such patients. The following case report illustrates such a situation.

Case Report

A fifty-two-year-old male was admitted for surgery because of severe abdominal pain in the right upper quadrant with a possible diagnosis of liver abscess. During the past month he had been treated for bilateral pyelonephritis and a nonfunctioning left kidney. His history revealed considerable weight loss. His liver was 3 to 4 fingerbreadths below the costal margin. His hemoglobin was 14 Gm. per 100 cc. of blood, chlorides 94, and blood urea nitrogen 100 mg. per cent. His electrocardiogram was within normal limits.

Premedication consisted of morphine 10 mg. and scopolamine 0.4 mg. one hour before surgery. On the patient's arrival in the operating room, his blood pressure was 100/60, pulse 90, respirations 28. He appeared slightly cyanotic. An infusion of 5 per cent dextrose in water with 80 mg. of potassium chloride in 1,000 cc. of water was administered. Anesthesia was induced with cyclopropane and oxygen, and an endotracheal tube was inserted with ease.

Surgery was started twenty minutes later. His blood pressure at that time was 120/70, pulse 90, respirations 24. The patient still appeared

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Discussed at a conference held at Bellevue Hospital, New York City, January 5, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

slightly cyanotic. Twenty minutes after start of surgery, his blood pressure became unobtainable, and his pulse was 90 but weak and then disappeared. Manual cardiac contractions were started through the abdominal approach after incising the diaphragm. The heart was found to be large, flabby, and fibrillating. Despite immediate manual cardiac contractions, supplemented by intracardiac administration of procaine, Pronestyl, and vasopressors plus rapid blood transfusions during cardiac massage, the patient was pronounced dead after one hour. At no time during resuscitation did the patient's cyanosis improve.

Postmortem examination revealed the following conditions:

1. Thrombosis of the inferior vena cava.
2. Thrombosis of the renal and adrenal veins and tributaries, a propagation from thrombosis of the inferior vena cava.
3. Embolus to the right lower lobe pulmonary artery secondary to thrombosis of the inferior vena cava.
4. Massive atelectasis of both lungs.
5. Infarction of the left kidney.
6. Infarction, healed, of the posterior wall of the left ventricle.
7. Infarction of the spleen.
8. Adenoma of the left adrenal gland.
9. Multiple nonspecific ulcerations of the ascending colon.

Comment

Presumably the patient's sudden abdominal pain in the right upper quadrant with cyanosis may be explained by the embolus found in his right lower pulmonary artery secondary to thrombosis of his inferior vena cava. Not only was the diagnosis for upper abdominal surgical exploration wrong, but the essential pathologic condition had been missed. Present-day diagnostic roentgen technics could have discovered the various areas of venous thrombosis and embolization, but it would have been a formidable task to attempt surgical clearance of affected blood vessels.

Respiration and circulation must function continuously in order to maintain an oxygen supply essential to life. In recent years these functions have been transferred to mechanical devices, such as extracorporeal pump oxygenators, in order to perform certain operative procedures. Trial and error may improve other mechanical means of aiding patients with disorders of this type to perform these functions.

In the case presented, preoperative cyanosis was evidence of poor diffusion of oxygen into the blood. Multiple thrombi and emboli not only interfered with poor oxygen uptake but also impeded the circulation. Apparently the existing cyanosis could not be corrected by administering 100 per cent oxygen. The numerous organs affected could not perform properly their normal physiologic functions, as evidenced by disturbed blood chemistries. Since hypoxia increases cardiac irritability, one can question the choice of cyclopropane in such a case for it further enhances such irritability in the presence of oxygen-lack. However, the outcome in the presence of such persistent cyanosis may have been the same with any anesthetic agent. Prolonged, uncorrected hypoxia most often results in failure of resuscitation efforts when cardiac arrest does occur. The possibilities for successful resuscitation are greatest in patients without primary disease of the respiratory or circulatory systems.[1] Seriously ill patients are bound to be candidates for anesthesia, and death on the operating table may not be completely avoidable. Nevertheless, the importance of a thorough and accurate preoperative evaluation, especially in patients for emergency operation, cannot be overemphasized.[2]

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(*Number sixty-three of a series of Clinical Anesthesia Conferences*)

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Ingestion Accidents and Their Mode of Occurrence

The following incidents were recently reported to the New York City Poison Control Center.

Incident 1

Toxic Agent	*Age*	*Sex*
Barbiturate	22 months	Male

The maternal grandfather had just arrived from Florida and placed his traveling bag on a dresser. The patient obtained the traveling bag, opened it, and, thinking that the medication was candy, ingested approximately 11 tablets of pentobarbital sodium.

The parent immediately induced vomiting by inserting a finger into the child's throat, and the child was rushed to the hospital, where his stomach was lavaged. He made a complete recovery.

The happy outcome is undoubtedly due to the fact that the father induced vomiting immediately and the stomach was lavaged practically immediately after ingestion.

Incident 2

Toxic Agent	*Age*	*Sex*
Griffin Shoe Polish	20 months	Male

The child climbed on a chair and obtained from a shelf on an open cabinet in the kitchen a bottle of shoe polish which was uncapped. While he was reaching for the bottle, it slipped and fell on his head, with some of the shoe polish spilling into his mouth. The child experienced burning in the mouth and throat and was rushed to an emergency room of a nearby hospital, where his stomach was lavaged with water. After an hour of observation he was sent home.

Although this was an accidental ingestion, we have had numerous instances of intentional ingestion of all flavors and colors of shoe polish. The free access of shoe polish to children makes one believe that parents do not think of this agent as a source of possible poisoning to children. Because of the numerous incidents reported to the Center, we believe that greater caution should be exercised in the storage of this and similar unpalatable beverages.

Fortunately all the cases reported thus far did not present alarming symptoms and all victims made complete recoveries without necessitating any complex treatment.

Incident 3

Toxic Agent	*Age*	*Sex*
Wine	2 years	Female

The family lives in a very crowded three-room apartment. There are 11 individuals in the household (2 adults and 9 children). All the children are of school age except the patient and another sibling. While the mother was in another room, believing the child to be outside, the child was rambling under the bed, where she found a hidden wine bottle. She drank a portion of its contents, fell asleep, and was finally discovered about a half hour later by the mother, who took her to a nearby hospital.

On admission to the hospital the child vomited spontaneously. She was given caffeine sodium benzoate. She remained in the hospital for twenty-four hours and was discharged home as recovered. The mother states that the child has been well except for headaches and diarrhea, which lasted for several weeks.

It is again emphasized that alcoholic beverages may present alarming symptoms and serious complications and may also end fatally, as we have previously reported.

The inquisitive and exploratory nature of young children must always be kept in mind by families and dangerous products should be kept away from children.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Liquid Reserpine Preparation	20 months	Male

The following episode is related because of the unexpected ingenuity displayed by the victim. The medication was in the medicine cabinet in the bathroom. The explorer put a pail on the rim of the bathtub, climbed on it and onto the sink, obtained the medication from the cabinet, and then ingested some of its contents. He was taken to an emergency room of a hospital, where his stomach was lavaged with tap water. The child remained in the hospital for two days, where he was treated symptomatically, and was discharged as recovered.

The symptoms encountered in reserpine intoxications which have been reported to us have been primarily those of lethargy and flushing of the face.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Kerosene	15 months	Male

The family was visiting the maternal grandmother, who had an oil-burning stove in the kitchen which was used for heating purposes. While the mother was in the bathroom, the patient moved down a flexible drip pipe and sucked up some of the kerosene from the tube. On returning to the kitchen, the mother observed that the child was spitting kerosene out of his mouth.

Presenting symptoms were burning in the mouth and throat, vomiting, diarrhea, nausea, and a temperature of 102 F. The child vomited within five minutes after ingestion. He was taken to the hospital where, fortunately, gastric lavage was *not* done.

The child was admitted to the hospital for inpatient care, but, since he was asymptomatic, he was sent home within twenty-four hours after admission.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Chlorpromazine capsules	16 years	Male

This incident concerns a sixteen-year-old child who is apparently emotionally disturbed and who is attending a residential training school for boys in upstate New York. The physician prescribed 150 mg. chlorpromazine daily. The patient, however, managed to save up a total of 10 capsules (1,500 mg.) and took them all in one dose with a suicidal intent. The patient became stuporous, and diaphoresis was also noted. Gastric lavage was performed soon after ingestion. The patient was also treated with Dexedrine and forced fluids. The patient was drowsy and stuporous for twenty-four hours, after which time he was transferred to a mental institution because of the suicidal attempt and a previous history of schizophrenia.

The obvious lesson in this case is the necessity of preventing hoarding of medications and drugs by institutionalized patients, potential ones, and inmates. When drugs are prescribed to potentially unstable individuals, they should be administered under observation, that is, the person who dispenses the drug or medication should actually wait until the patient takes the prescribed medication.

Incident 7

Toxic Agent	*Age*	*Sex*
Kerosene	18 months	Male

The mother used a kerosene lamp because the lights were off in the apartment. She left the unused kerosene in an open can in the back yard. The child obtained the can and drank a portion of its contents. He experienced burning in the mouth and throat and coughing. He was taken to the hospital, where his stomach was lavaged and where he was observed for twenty-four hours and sent home as asymptomatic and, presumably, well.

Since patients with kerosene poisoning may be asymptomatic in the beginning but later may develop severe pneumonitis, it is regrettable that these patients were not observed in the hospital for a longer period.

Incident 8

Toxic Agent	*Age*	*Sex*
Lye	5 years	Female

The following case is reported by Dr. D. Gribetz, the Poison Control Officer of Mount Sinai Hospital.

The patient obtained the lye from a neighbor's house, where it was kept in a beer can on the floor and used for cleaning purposes. She was hospitalized at a nearby hospital for several months, where esophageal dilatations were performed.

She was then transferred to Mount Sinai Hospital in December, 1957, where esophageal dilatations were continued. Unfortunately the esophagus was perforated.

A gastrostomy was performed in March, 1958, and the child regained much of the initial weight loss. Four months later definitive surgery was performed. A segment of colon was removed and brought up to replace the injured esophagus. The child now has an esophagocologastrostomy and is doing very well.

This case is cited to illustrate the possible complications and the extended treatment necessary for a stricture of the esophagus after a lye poisoning. This case also illustrates the horrendous possibilities associated with the unnecessary use of lye as a household chemical and its careless handling and storage. With the present availability of safer and more effective detergent materials, the use of lye as a household chemical is generally unwarranted.

Incident 9

Toxic Agent	*Age*	*Sex*
Tetrahydrozoline nose drops	11 months	Male

The mother gave the child a bottle of nose drops with which to play, thinking that he would be unable to open it. The child, however, was able to suck some of the contents into his mouth from the rubber bulb of the dropper which projects into the bottle.

The patient became restless and drowsy and cried. His eyes were crossed. The mother immediately called the family physician, who advised her "not to worry." Since the patient's condition became worse with drowsiness, restlessness, and cold and clammy skin, the mother called the doctor again about an hour following ingestion. He advised her to take child to the hospital emergency room. On admission to the hospital, two hours after ingestion, the patient still appeared drowsy, restless, and pale, and his eyes still appeared crossed. The skin was cold and clammy. His stomach was lavaged with warm saline, and after several hours of observation in the emergency room the patient improved and was sent home.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Pentaerythritol and Phenobarbital, Digitalis, Quinidine	2 years 2 years	Male Female

These twins obtained the medication from a low shelf in the bedroom and ingested an unknown number of tablets. The chief symptom was vomiting. They were taken to a nearby hospital emergency room, where their stomachs were lavaged about an hour and a half after ingestion. After several hours of observation they were sent home in good condition.

These incidents again illustrate the multiple hazard associated with a patient who is chronically ill and taking medication. It also emphasizes the fact that accident prevention is not solely within the province of the pediatrician, while interviewing the mother or during his home and office visits; the general practitioner, because of his service to individuals of all ages, has an even greater stake and part to play in the prevention of accidents. A routine caution when prescribing any medication at any age level is definitely indicated and should be part of the practitioner's daily practice armamentarium.

A careful analysis of over 20,000 accidental chemical poisonings clearly indicates that a majority of poisonings are due to medications prescribed for adults which, because of careless handling, were obtained by children who ingested these products.

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Iron Sulphate	2 years	Females

These twins reached into a bureau drawer, which was left partly open, and obtained a container of pills. This medication was the remainder of the supply which was prescribed for the mother's last pregnancy. Both children ingested several of these pills (the exact quantity is unknown). One child ate more than the other. The mother, who works at night, was asleep at the time of the occurrence.

One child began to vomit and also developed convulsions. The grandmother and mother discovered the practically empty medicine container. They immediately rushed the children to a hospital emergency room. Both children were nauseated, vomited, and had abdominal pains, and one also had convulsions.

The patients were admitted to the hospital about an hour after ingestion and their stomachs were lavaged within fifteen minutes after admission, or one and one-quarter hours after ingestion. It is believed that each patient took approximately 10 tablets.

The laboratory findings were as follows: hematocrit 35, white blood cells 8,500; polymorphonuclears 60 per cent, leukocytes 33 per cent, mononuclear cells 4, and eosinophils 3. The urine was cloudy but otherwise negative.

The patients were treated with Amphojel, milk, and fluids intravenously. After four days in the hospital they were symptom-free and were discharged home as recovered.

There has been an alarming number of incidents due to the ingestion of iron originally intended for mothers under prenatal care. Obviously the obstetrician as well as the pediatrician and the general practitioner are part of the same team in accident prevention, and when prescribing iron therapy during prenatal care, the obstetrician should warn the patient about the possible hazards associated with accidental iron ingestion by young children and about the need for safe handling and storage of this medication. Some of these preparations are frequently considered to be vitamins (because of some vitamin content), and the lurking iron poisoning hazard is obscured.

The frequency of accidents among children, both fatal and nonfatal, motivated the

American Academy of Pediatrics to become very vitally concerned about the problem, and it thus instituted an Accident Prevention Committee as one of its main standing committees. It would appear that the Academy of General Practice and the Academy of Obstetrics and Gynecology should emulate this example and thus help considerably in the over-all reduction of accident morbidity and mortality.

INCIDENT 12

Toxic Agent	*Age*	*Sex*
Lemon Oil Furniture Polish	16 months	Male
Lemon Oil Furniture Polish	16 months	Male

The mother was polishing the furniture in the living room, where the children were playing. She placed the bottle on the top ledge of the lower window, where the window locks, and left the room for a while. Soon a three-year-old sibling came in and informed her that the other children (sixteen-month-old twins) were drinking the furniture polish. She immediately called the family physician, who came within five minutes and took the children to the hospital emergency room. On admission to the hospital the twins were coughing and were stuporous. Their stomachs were immediately lavaged, they were placed in oxygen tents, and antibiotics and supportive therapy were administered.

This was a very severe case of poisoning, and during the first two weeks of hospitalization the outcome was uncertain and the prognosis grave. After the third week of hospitalization the children began to improve and after one month were discharged.

As mentioned previously, lemon oil furniture polish is one of the so-called harmless household preparations, the ingestion of which has resulted in some of the most severe illnesses and prolonged complications.

It may be pertinent to note that there is no specific antidote for the treatment of furniture polish poisoning. At the present time the treatment consists of oxygen administration, antibiotics and supportive therapy, and prolonged hospitalization and observation. In this case, antibiotics were varied in the hope of achieving effective results. It may also be pointed out that the pneumonitis due to ingestion of furniture polish is not of bacterial origin and therefore perhaps not amenable to the action of chemotherapy and antibiotics. We do not feel that lavage is advisable in the case of most furniture polish ingestions because of the possibility of aspiration. This represents a good application of the "scientific neglect" approach.

INCIDENT 13

Toxic Agent	*Age*	*Sex*
Cough Syrup and Sulfa Syrup	3 years	Female

An eight-year-old sibling took the bottles of medicine and placed them on a kitchen table. While this eight-year-old was busy fixing lunch, the three-year-old took the bottles and drank some of the contents of both bottles. The mother noted that the child was drowsy. The eight-year-old, under whose care the patient had been at the time of the accident, then told the mother that the sister drank the medicine. The patient was taken to the hospital, where her stomach was lavaged two hours after ingestion.

On admission to the hospital the patient appeared stuporous but responded to questions and commands. Her respiration rate and urine output were normal. She was treated with caffeine, sodium benzoate, and supportive therapy and after two weeks in the hospital was discharged as improved.

This case is cited because of the mode of occurrence—the child under the supervision of an eight-year-old and the accessibility of potentially dangerous drugs.

INCIDENT 14

Toxic Agent	*Age*	*Sex*
Antispasmodic Drug	13 days	Female

This medication, which contains $^1/_{50}$ grain of an atropine-like drug and phenobarbital, 1/4 grain per cc. was prescribed for the thirteen-day-old infant because she was hypertensive. It was to be given before each feeding. The exact dosage prescribed is unknown, but the mother stated that she gave 1 cc. at every feeding for three days prior to admission of the infant to the hospital. The patient was brought to the hospital emergency room because of stupor, nausea, and hypotonia. She was observed at the hospital emergency room for a while and then taken to another hospital where she was admitted to the inpatient service. She was put in an oxygen tent, fluids were administered intravenously, and antibiotics were also given. The patient remained in the hospital for twenty-five days after which time she was discharged as improved.

This case illustrates the cumulative effect of drugs of this type and the need for giving parents specific and, preferably, written instructions with regard to the dosage and interval of administration, particularly when prescribing potent medications for infants and young children. The possibility of such cumulative effects and other side-effects should always be kept in mind by the prescribing physician, and parents should be warned about these possibilities.

(Number twenty-nine in a series of Briefs on Accidental Chemical Poisonings)

Venereal Disease Strain May Be Staging Comeback

Acute venereal disease may not be a medical chapter of the past, according to a Wisconsin physician. His conclusion is based on a study which indicates that the bacterium causing one form of venereal disease—gonorrhea—is developing a resistance to therapeutic penicillin injections.

Dr. Ernst Epstein pointed out that it previously had been assumed that acute gonorrhea had largely been banished by penicillin. As a result of this study the situation is now changed. "No longer can acute gonorrhea be considered lightheartedly as a disease with certain cure and less disability than a common cold," he said.

His opinions are based on a study conducted in 1958 while he was serving as a captain in the Army medical corps in Korea and are reported in the March 7 *Journal of the American Medical Association.*

The study included the examination and treatment of 146 servicemen infected with gonorrhea. They were given a series of five daily injections of penicillin. Results indicate a 20 per cent failure to cure the disease.

Commenting on this fact, Dr. Epstein said, "A 20 per cent treatment failure rate is both unusual and unsatisfactory." Previous studies cited by the physician indicate a treatment failure between 1 and 5 per cent.

The doctor discarded reinfection as a factor in the high percentage of failure. He said, "All patients were restricted to Army compounds for two weeks and carefully questioned regarding further sexual contacts. These considerations do not rule out the possibility that an occasional treatment failure was the result of reinfection. However, they do eliminate reinfection as an explanation for the 20 per cent failure rate."

Dr. Epstein attached "grave significance" to the study. "It is probably only a matter of time until penicillin resistance will be met on an increasing scale all over the world." To combat this new immunity, he called for more careful and prolonged follow-up studies coupled with other exhaustive tests to find a cure.

CANCER ALERTS

A series of radio talks for the practitioner
presented over Station WNYC-FM under the sponsorship of the

New York Academy of Medicine
with the cooperation of the
New York City Cancer Committee

Cancer in Industry

HARRY D. LIENOFF, M.D., NEW YORK CITY

(*From the Department of Medicine, Flower and Fifth Avenue Hospitals*)

Any discussion of the subject of cancer in industry must enter into the general field of neoplastic disease, presenting theories, speculations, and the results of experimental work. Therefore, even a limited review of cancer in industry will be speculative, incomplete, and highly unsatisfactory, but a beginning must be made in separating the known facts from fancy and alerting the profession to this phase of cancer study.

Industry, with its ever-widening horizons, employs all forms of chemical and physical materials, producing a vast number of known and unknown products. In the center of this continuous activity stands man, directing, creating, and administering, constantly exposed to this industrial environment. It is therefore natural to ask if all these countless products are harmless to man or if some are carcinogenic, that is, capable of producing cancer. If this vast industrial activity does produce carcinogens, these substances must be identified and proper protective measures taken to prevent harm to the exposed workers. In addition to the problem of carcinogens, the profession is often called on to evaluate the etiologic role of the ordinary industrial hazards, such as trauma, burns, infection, chronic irritation, and exposure to the elements, in causing or aggravating cancer. The latter group is of particular importance, especially in relation to the present compensation laws which provide financial benefits to the injured worker. This rather sketchy and incomplete introduction illustrates the complexity and extent of this aspect of cancer study.

The medical profession in trying to solve these problems makes use of certain well-tried methods which, although inadequate, in skilled hands already have created a well-defined path of medical reasoning which eventually may supply the final answer. These avenues of investigation are laboratory experimentation, bedside experience, and statistical study.

Do carcinogens really exist or are they only theoretic considerations of the medical mind? The laboratory, with all its limitations, offers abundant proof that many products are capable of producing cancer in animals. A simple method of producing a new growth in rabbits is the application of coal tar products to the skin or the subcutaneous injection of the same material. The inhalation or injection of betanaphthylamine, a by-product of the dye industry, results in cancer of the bladder in dogs. The recent furor over the relationship between lung cancers and smoking is the result of experimental work showing skin cancers in mice after the application of fumes of tobacco smoke. If the same animals are made cirrhotic, the feeding of some azo dyes, substances used extensively in industry, results in liver tumors, or hepatomas. There are well over 300 substances which are known to be carcinogenic to many animals, and this is only the beginning of a potential list. In addition to these carcinogens, it is well known that the rays of the sun, the x-ray machine, and radioactive material can burn and then result in cancers. In view of the recently man-created atomic age, this latter group will undoubtedly play an important role in future cancers, especially as more and more people come in contact with radioactive materials. Laboratory experiments constantly illustrate that a considerable period of time must elapse between the application of a carcinogen and the appearance of a tumor, and, depending on the animal, this may vary from a few months to several years. If it is at all possible to apply this fact to man, then a fair number of years must elapse before a carcinogen can result in a cancer. This concept is supported by clinical experience in bladder cancers after the individual was exposed to aniline dyes. In summarizing the laboratory findings and applying the results to man, it is necessary to remember that all animals do not react in the same way to a given carcinogen, that carcinogens for man and animals do exist, and that a considerable amount of time must pass before carcinogens can produce tumors. It is also important to stress that there are many other factors in cancer besides the carcinogens.

Clinical observations have always played an important role in the study of cancer, often antedating the laboratory by many years. As early as 1775, Pott, an English physician, described scrotal cancer in chimney sweepers as an outcome of an industrial hazard, attributing the lesion to the soot coming in contact with the skin. In 1918 it was proved in the laboratory that painting the ear of the rabbit with coal tar, an active ingredient of soot, produces cancer. It was common clinical and statistical knowledge that there is a very high incidence of bladder cancers in aniline dye workers before it was discovered that the same tumors could be produced in rabbits and dogs by inhalation and injection of betanaphthylamine. In the early days of the x-ray machine it was quickly discovered that the operators of this equipment developed skin cancers and blood dyscrasias. These clinical observations were confirmed in experimental animals, and adequate protective measures were instituted. At present, cancer due to overexposure to x-rays is almost a medical curiosity, yet a recent case of cancer was seen in a dentist who always held the x-ray plate with his own hand while making the exposure, a procedure which finally resulted in skin cancer of the holding fingers.

It is common medical knowledge that about 75 per cent of the miners who worked in the Schneeberg cobalt mines developed lung cancers, a frightening incidence of this disease in a highly selective segment of the population. A careful investigation of this problem revealed that the mined material was radioactive. Similar clinical and laboratory studies revealed the same picture in the workers in the uranium mines of Sudetenland. The carcinogenic danger of radioactive material was highlighted in this country not too many years ago when it was found that a number of workers who had used a special paint on luminous watch dials developed osteogenic sarcomas about the mouth and jaw, since in this process a fine brush was pointed by wetting it on the tongue and lips. The investigation of this problem revealed that the paint contained radioactive material and that many years were necessary for the tumor to appear. The explosion of the first atomic bomb ushered in the atomic age and has created a vast new problem in cancer, since it is well known that radioactive material can be carcinogenic. The increasing use of radioactive substances in medicine and industry will pose many problems which will tax the bedside clinician and the experimental laboratory worker. It has been known for many years that human skin exposed to sun and wind results in a rather high incidence of cancer, especially in farmers and sailors. This observation has been duplicated in rabbits by exposing them to ultraviolet rays.

The New York State Occupational Cancer Committee, after a rather extensive study, has come to the conclusion that over 30 substances used in industry are capable of producing cancer and that the etiologic role in cancer of about an equal number is undetermined. It must be realized that this is only the beginning of this study and that many future revisions will be necessary, but it is pertinent to mention a few of the Committee's findings. Cancers of the skin were found to result from crude anthracene, arsenic, asphalt, thermic burns, creosote, mineral oil, paraffin, pitch, radioactive substances, roentgen and ultraviolet rays, various oils, and soot. The blood-forming organs were influenced adversely by benzol, radioactive materials, and ultraviolet and roentgen rays. An increased incidence of bladder tumors was noticed in workers handling betanaphthylamine. Bone tumors occurred after contact with radioactive materials. The lungs were involved after contact with chromates and radioactive-substances. This report thus again emphasizes the role of carcinogens in industry.

A complete discussion of the etiologic role of the ordinary hazards, such as trauma, infection, burns, and chronic irritation, is beyond the scope of this limited presentation, but a few well-known points should be mentioned. Single and repeated traumata in animals have failed to produce cancer, influence existing growths, or cause metastases. The New York State Department of Labor in processing a large number of cases involving trauma has not noticed any increase in the number of cancers at the site of injury. No increase in the number of tumors was noted during the past war with all its reported casualties. There certainly has not been any increased number of cancers at the sites of surgical scars. A biopsy should be performed after trauma on sites suspected of cancer to determine whether local lesions are metastatic or primary, and a complete check should be made for a possible primary focus.

Cancer tissue, as well as normal tissue, may be injured by a trauma, thus calling the attention of the patient to an existing tumor. If a tumor is discovered immediately after an injury, it must have been present at the time of injury and not caused by the trauma. Since cancerous tissues do not have the healing power or resistance of normal tissue, a slight trauma may result in severe disability, as when a twist may fracture a femur which already is the site of a new growth. It is the consensus of considered medical thought at this time that a trauma may injure an existing tumor but cannot cause, aggravate, or disseminate the cancer.

There have been isolated clinical reports of cancers following thermal burns and chronic infection. These reports have not been supported by experimental work or general medical experience, considering the extremely large number of burns and infections not associated with any tumor formation.

Conclusion

Many industrial materials are carcinogenic to animals and man. These carcinogens take a great deal of time to give rise to tumors. The ordinary industrial hazards, such as trauma, burns, and infections, play little or no role in causing or aggravating cancers but serve to call attention to an existing tumor. The industrial specialist, the general practitioner, and the laboratory physician all have important roles to play in the solution of this important and pressing phase of cancer study.

(Number twenty-two in a series of Cancer Alerts)

Values of Autopsy Should Be Stressed

Autopsy, "the operation no one talks about," should be talked about—long before there is any need for it. Every family should discuss the question of autopsy and decide how it feels about the operation, thus simplifying the decision when a family member dies.

Many persons object to postmortem examinations. Their objections are often based on misconceptions. One is that the body will be disfigured. However, nothing in the process alters the countenance of the deceased. Unless the case is very unusual, only a single midline incision is made in the torso, and the vital organs removed for further study. The brain is examined by an opening across the scalp, afterward hidden by the hair. The doctor uses the same skill in performing an autopsy that he uses in the operating room.

There is no fee for performing an autopsy. It can be performed in less than two hours, and will not, as many persons think, delay the funeral.

There is little fact to substantiate the statement that autopsy is against a person's religion. Protestant and Roman Catholic leaders say there is no objection to autopsy in their churches. While Orthodox Judaism forbids autopsy, Reform Judaism does not.

Another objection is "The patient has suffered too much already." This attitude expresses the feeling that the patient still exists and is capable of feeling pain.

Three reasons why postmortem examinations are important are:

—Some diagnoses cannot be made by observation. Tumors of the brain, for example, may spread to the lung but the location of the primary lesion can't be demonstrated without autopsy.

—For research purposes. Correct diagnosis still remains the most difficult and fundamental part of a doctor's job. Whatever his field of specialization, there is perpetual interest in research, and autopsy is one of the most valuable aids.

—To find an explanation for symptoms (often coincidental) which do not fit in with the patient's primary disease.

Through autopsy, a doctor may learn how to prevent certain diseases from recurring within a family, thus prolonging life expectancy. Autopsy may also explain why a person died and thus relieve a family member's mind. And finally it may provide information of value in the advancement of general medical knowledge.

—Today's Health, February, 1959

CASE REPORTS

Multiple Myeloma with Recurrent Pneumonitis

LOUIS SHEIMAN, M.D., BRONX, NEW YORK

(*From the Medical Service, The Bronx Hospital*)

The presence of abnormal globulins has been reported often in cases of multiple myeloma.[1] These abnormalities have been both quantitative and qualitative, but in most cases they were presented as detectable only by laboratory procedures. There have been relatively few instances reported in which such abnormalities have resulted in clinical syndromes. For this reason and because of the remarkable frequency of pneumonitis in this patient, the following case is deemed worthy of reporting together with a review of other experiences with myeloma and infection.

Case Report

A fifty-eight-year-old male was admitted to The Bronx Hospital on October 19, 1956, with his fourth episode of fever, cough, and blood-tinged sputum of two days duration. The initial episode dated back to July, 1955, and subsided with treatment at home. He was then symptom-free until August, 1956, when he was admitted to a hospital in another state. He was found to have bilateral lower lobe pneumonia due to a pneumococcus; penicillin was given and he recovered. At that time his hematocrit was 32, and the red blood cells were normocytic and normochromic. The urine contained 3 plus albumin, the serum albumin was 1.66 Gm., and the globulin 9.54 Gm. Serum electrophoresis revealed a high peak in the gamma globulin fraction (49.4 per cent of total). An osteolytic lesion was discovered in the first lumbar vertebra, and bone marrow biopsy confirmed the diagnosis of multiple myeloma. On kidney biopsy there was no evidence of myeloma or other lesions. He received 1,000 cc. of whole blood and was discharged after ten days. Two weeks later, however, he was readmitted with acute bilateral lower lobe pneumonia, and a pneumococcus was recovered from the sputum and blood by culture. He again received penicillin and promptly improved; follow-up x-ray films showed clearing. The findings on serum electrophoresis were unchanged; urine electrophoresis showed a peak in the beta globulin fraction. The hematocrit was 26. He again received 1,000 cc. of whole blood as well as 5 cc. of immune globulin intramuscularly and was discharged on September 27, 1956. Fever, cough, and blood-tinged sputum occurred three weeks later and resulted in his admission to The Bronx Hospital.

On physical examination he appeared pale and chronically ill. His temperature was 101.2 F., and his blood pressure was 120/65. Bilateral fine moist basal rales were heard, but the percussion note was normal. Examinations of the heart and abdomen gave negative findings. Tenderness was elicited over the lumbar spine.

Laboratory studies revealed the hemoglobin to be 48 per cent (7.0 Gm.), there were 2.3 million erythrocytes per cubic millimeter, and leukocytes numbered 3,500 with a normal differential count. Platelets were 100,000 per cubic millimeter. The urine had a specific gravity of 1.011 but showed no abnormalities. It was negative for Bence-Jones protein. The sedimentation rate was 145 mm. after one hour (Westergren). The blood sugar was 104 mg. per 100 cc., blood urea nitrogen 14 mg. per 100 cc., serum albumin 1.6 Gm., and globulin 8.3 Gm. Kolmer and VDRL tests were negative. Sternal puncture showed 82 per cent plasma cells. The electrocardiogram was within normal limits. Chest x-ray films showed a density adjacent to the left hilum, pleural thickening at the left base, and destruction of the left seventh rib. The hilar density subsequently cleared. Lesions typical of myeloma were noted in the right acromion, clavicle, and first lumbar vertebra.

He was treated with penicillin and, except for a mild relapse on his twenty-first hospital day, improved clinically and according to chest x-ray film findings. Urethane was also administered. After discharge he was instructed to take oral penicillin as a prophylactic measure.

On December 5, 1956, he was readmitted to The Bronx Hospital with a three-day history of chills, fever, cough, and weakness. Temperature was 102.8 F. and the physical findings were the same as on the previous admission. He was quite anemic (his hematocrit was 26), and the leukocyte count had fallen to 1,900 with a normal differential; platelets were 170,000. Urine was again negative; sputum showed no typical pathogens. The chest x-ray film again showed an increase of the bronchovascular markings.

He again improved promptly after antibiotics were given, and the leukocytes rose to 5,500. On December 23, 1956, after transfusion, he was discharged on oral penicillin maintenance therapy.

Four days later readmission was necessary because of low back pain. Orthopedic measures were undertaken for support, and radiotherapy was given over the upper lumbar spine. Despite the fact that he was afebrile, persistent cough and purulent sputum continued, even as various antibiotics were used. On his twenty-fourth hospital day, however, temperature rose to 101 F. and subsequently to 103 F. At that time rales became more prominent at the bases. Improvement again followed the use of antibiotics, and one week later there was a recurrence which in turn subsided after treatment. On February 16, 1957, he was transferred to another institution for the purpose of chronic care. Contact with the latter hospital revealed that during his stay there he had three further bouts of pneumonitis despite maintenance of antibiotic therapy as well as repeated adequate intramuscular doses of immune globulin. During this hospitalization, adequate anti-A and anti-B titers were demonstrated in his serum. Hypercalcemia then became a problem and levels up to 18 mg. per 100 cc. were obtained. Despite the usual supportive therapy he expired with pneumonitis and hypercalcemia.

Comment

Twenty-three cases of multiple myeloma which were treated at The Bronx Hospital were reviewed, and 14 were found to have had hyperglobulinemia, using 3.5 Gm. per 100 cc. as the upper limit of normal for serum globulin. Only 2 of these patients presented with pneumonitis, and 1 additional case developed during the course of hospitalization. In no instance was the pneumonitis a recurrent problem. This is entirely consistent with the impression obtained from the literature, namely, that despite the frequency of laboratory abnormalities in respect to serum globulins, clinical manifestations due to this defect are rather infrequent. Reiner and Stern[2] did electrophoretic studies on 91 patients with multiple myeloma and found that 78 per cent of these showed a major abnormality of the pattern, most often in the gamma fraction. Yet only a small minority of such individuals will demonstrate a clinical defect because of the protein changes.

Any disease entity which interferes with normal function of plasma cells could result in a deficiency of circulating antibodies, since these cells are intimately associated with antibody production. The patient presented had marked evidence of quantitative disturbance in his serum globulins and undoubtedly had qualitative abnormalities which resulted in an inability to prevent recurrent pulmonary infections. Through personal observation and correspondence with other institutions, at least 10 bouts of pneumonitis were clinically recognizable; 9 of these occurred within a seven-month period despite vigorous supportive, antibiotic, and attempted globulin replacement therapy. Paradoxically, patients of this type often have hyperglobulinemia as well as an increase in the gamma globulin fraction. The gamma globulin component, however, is an abnormal one, so that it is functionally deficient, and such cases may run a clinical course similar to those having agammaglobulinemia. In a case reported by Barrett and Volwiler,[3] anti-A and anti-B titers were higher than anticipated and could be raised, although the patient had myeloma with recurrent infections. These authors imply that the deficiency in antibody production may be a selective one, and in certain respects proper immunologic response can be elicited.

In many conditions which produce hyperglobulinemia one finds no laboratory or clinical evidence of antibody deficiency. Larson and Tomlinson[4] found normal or enhanced antibody response in hyperglobulinemias due to cirrhosis, Hodgkin's disease, lupus disseminatus, diabetes mellitus, and bronchiectasis. In myelomatosis the globulin is not only elevated, but also is of an abnormal type. Marks[5] concluded from a study of circulating levels of staphylococcal antitoxin and antistreptolysin O in 17 patients with multiple myeloma that this disease is often associated with depressed antibody formation not found in other hyperglobulinemias. Porges[6] demonstrated that an absence of normal gamma globulin can occur in multiple myeloma even when chemical fractionation, immunochemical determinations, or routine electrophoresis show abnormally high amounts of gamma globulin to be present. This globulin is, in fact, the abnormal myeloma-type globulin and can be demonstrated to be such by a special electrophoretic technic which this author described.

In 1945 Bøe[7] reported 10 cases of multiple myeloma of which 2 had recurrent pneumonitis. These 2 cases showed no difference from the others in respect to titers of selected circulating antibodies, electrophoresis, serum globulins, and gamma globulin levels. Nevertheless, the author felt that the defect was on an antibody basis.

Zinneman and Hall[8] reported 64 patients with multiple myeloma of whom 13 had bacterial pneumonia of a nonterminal type. Ten patients had altogether 44 recurrent episodes. A pneumococcus was very often isolated in both sputum and blood, and recurrences usually involved the same type of pneumococcus. Response to antibiotics was characteristically good, but apparently the immunologic defect prevented complete elimination of the offending organism and permitted recurrence at a later date, at which time the same type of pneumococcus could again be identified. These authors found poor antibody response in the patients having recurrent pneumonitis when challenged with pneumococcus and Brucella polysaccharides as well as typhoid-paratyphoid antigens.

In the patient reported here, as well as in others who have been reported in the literature, treatment with antibiotics between episodes of pneumonitis was unsuccessful prophylactically. In addition, numerous doses of immune globulin were given on recurrence without apparent effect. Savacool and Landes,[9] in discussing agammaglobulinemia, state that treatment is unsatisfactory. They found that the level of gamma globulin may be raised slightly by the injection of pooled immune globulin, but that this slight rise is insignificant in the prevention of infection. Prohibitive amounts would be necessary to give any assurance of success.

Summary

A case of multiple myeloma with ten episodes of recurrent pneumonitis within a short period of time is reported. The relationship of this complication to abnormalities in plasma proteins and antibody formation is discussed, and the difficulties in prevention of recurrences emphasized.

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Laughter is not at all a bad beginning for a friendship, and it is far the best ending for one.—Oscar Wilde

Adrenocortical Adenoma, Clinically Simulating Pheochromocytoma

NIHAT BURAK, M.D., JOHN LOESCH, M.D., AND JOSEPH COSTA, M.D.,* ONEONTA, NEW YORK

(*From the Homer Folks Tuberculosis Hospital*)

PHEOCHROMOCYTOMA is a rare tumor of the suprarenal medulla. It usually runs a fatal course if not diagnosed early. The patient with a pheochromocytoma has an intermittent crisis of hypertension associated with chest pain, headache, nervousness, tachycardia, nausea, and profuse sweating, and he may expire as a result of a cerebral vascular accident. The diagnosis is made by clinical manifestations and by laboratory procedures.[1] In recent years several excellent articles have been published concerning clinical and laboratory findings of adrenocortical adenoma, but we have not been able to find any article describing the latter tumor simulating clinical manifestations of pheochromocytoma. The following case will be presented because of the interesting autopsy findings.

Case Report

A fifty-year-old white male was admitted to the Homer Folks Tuberculosis Hospital on June 26, 1956, with a diagnosis of pulmonary tuberculosis, far advanced and active. On admission his physical examination showed a well-developed blind male in no acute distress. The chest was emphysematous and a few expiratory wheezes were audible throughout the lungs. An examination of the heart revealed no murmur, the heart sounds were distant, the pulse was regular—rate 100—and the blood pressure was 150 systolic, 90 diastolic. The abdomen was not remarkable and the liver and spleen were not enlarged. There was no ankle edema. Urinalysis showed reaction acid, specific gravity 1.008 to 1.023, a faint trace of albumin, no sugar, 1 to 2 pus cells, and 1 to 2 red blood count per high-power field. Serology gave negative findings. Sputum was positive for tubercle bacilli. On admission the roentgenogram revealed bilateral, far-advanced pulmonary tuberculosis. The cardiac silhouette was within normal limits. Triple drug therapy was started consisting of streptomycin 1 Gm. two times weekly, INH 300 mg., and 12 Gm. PAS daily. However, eight weeks after drug therapy was started, tubercle bacilli were found resistant to all three drugs because of prior therapy and the patient was placed on para-amino salicylic salt of isoniazid (diphasic) 24 tablets daily with 50 mg. pyridoxine four times daily. Because of back pain, anteroposterior and lateral roentgenograms of his lumbar dorsal area of the spine were obtained on July 9, 1956. They showed, except for some osteoarthritic change, no definite abnormality. There was, however, a cluster of opaque deposits several centimeters to the right of the lower right border of L-1 (Fig. 1). During his hospitalization the patient has no unusual complaints except occasional frontal headache and insomnia which required sedatives and hypnotics.

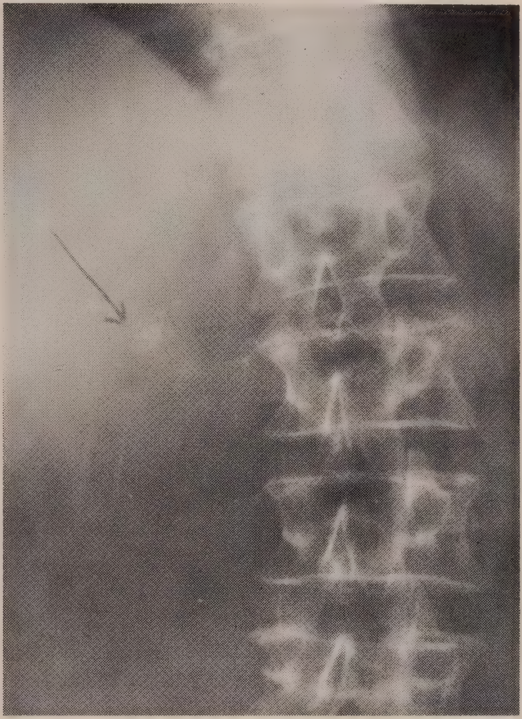

FIG. 1. Roentgen showing clusters of opaque deposits to the right of L-1.

On June 20, 1957, the patient suddenly developed severe chest pain. Physical examination disclosed that he was acutely ill, complaining of grasping substernal pain, nervousness, and profuse sweating with shortness of breath. Jugular veins were slightly engorged in a sitting-up posi-

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* Deceased.

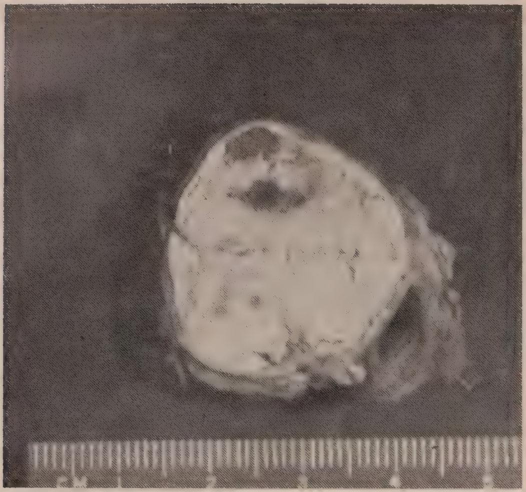

FIG. 2. Cross-section of tumor.

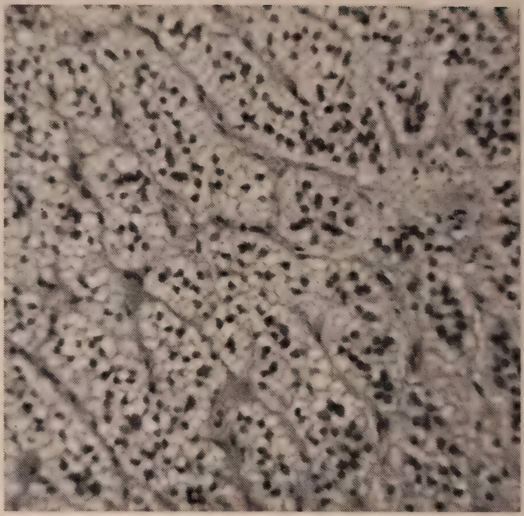

FIG. 3. Cellular structure of tumor.

tion. Examination of the lungs revealed basal rales bilaterally. Heart sounds were distant. Gallop rhythm and short systolic murmurs were heard at the apex. Temperature was 98 F., pulse 110, blood pressure 240 systolic and 140 diastolic, and the liver and spleen were not enlarged. There was 2 plus ankle edema. On the same day an electrocardiogram showed sinus rhythm, and the point of accommodation and QRS interval were 0.16 and 0.08 seconds respectively. T-waves were inverted in leads L_1, AVL, V_1 through V_6, and QS deflection with elevation of ST segment in leads V_1 and V_2. Because of chest pain and electrocardiographic change, the patient was confined to bed and Demerol hydrochloride and sedatives were given. About two hours later his blood pressure returned to 160 systolic and 90 diastolic. Chest pain and sweating subsided and the patient felt better.

The following day the patient had another bout of crisis. The blood pressure rose to 230 systolic and 130 diastolic, and the pulse rate was 120. There was profuse sweating, increased ankle edema, and purple mottling of his skin was noted. Temperature was 98 F. Urinalysis showed reaction neutral, specific gravity 1.018, albumin 2 plus, sugar slight trace, 2 to 3 white blood count, 1 to 2 red blood count per high-power field. The white blood count was 17,700 with 78 per cent neutrophilic leukocytes, 15 per cent lymphocytes, and 6 per cent monocytes. Another electrocardiogram was taken showing no change from the one taken the day before. A roentgenogram of the chest taken on June 7, 1957, revealed an increase in the prominence of vascular markings and an over-all increase in the size of the cardiac silhouette. One taken of the abdomen revealed the same cluster of opacities overlying the right suprarenal area as observed previously. Overlying the region of the left suprarenal, there was an area of rather markedly increased density, oval in shape, and measuring at least 5 × 7 cm. During his hypertensive crisis the blood sugar determination showed 140 mg. per ml. Nonprotein nitrogen was 56 mg. per 100 cc. Serum transaminase was 25 units and 35 units respectively. When the patient's blood pressure returned to the normal level, another blood sample was taken, and the blood sugar was 98 mg. per 100 cc. Percussion of the lumbodorsal region on the right and left gave a sudden rise of blood pressure up to 250/140. A pheochromocytoma of adrenal gland was suspected. After withholding all sedatives for forty-eight hours, an intravenous adrenolytic phentolamine methanesulfonate (Regitine) test was performed. Five mg. of Regitine were given intravenously. Maximum decline of blood pressure in two minutes after intravenous Regitine was 45 mm. of systolic and 25 mm. for diastolic. These attacks were followed by profuse sweating, nervousness, and purple mottling on the skin which lasted for several hours. During another hypertensive crisis the patient went to the bathroom and was found lying unconscious with a right-sided hemiplegia. He died shortly thereafter.

Autopsy was performed and showed no evidences of myocardial infarction. The right suprarenal gland, however, was definitely enlarged. At the lateral pole there was a globular mass

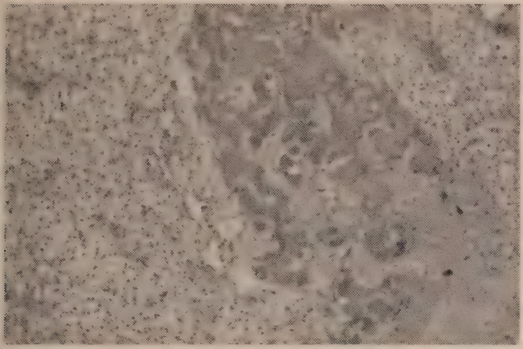

FIG 4. Bone formation embedded in tumor.

measuring 2.5 × 2.5 × 2 cm. It was firm in consistency and well encapsulated (Fig. 2). On halving, it consisted of an orange-brownish material with two hemorrhagic areas at the periphery. Microscopically the tumor was composed of cells of various sizes with clear and finely reticular cytoplasm. The nuclei were, in general, of uniform structure occasionally varying in size. The cells were arranged in nests or columns, and they were separated from each other by delicate connective tissue septa with blood vessels in the center (Fig. 3). In the hemorrhagic areas described previously they were much wider and showed various progressive phases of metaplastic bone formation from osteoid tissue to fully developed bone (Fig. 4). There were small foci of atrophic or normal cortical cells scattered throughout the tumor. The left suprarenal was normal in size and at variance with x-ray film findings; no tumor was found. The diagnosis was adrenocortical adenoma, so-called aldosteroma, and not pheochromocytoma as had been considered clinically.

Comment

The case presented was diagnosed on the basis of symptoms manifesting themselves as a hypertensive crisis, profuse sweating, chest pain, purple mottling of the skin, nausea, and terminating by cerebral vascular accident as a pheochromocytoma. This diagnosis was strengthened by a positive Regitine test. On anatomic and microscopic examination, however, it did not prove to be the latter but an adrenocortical adenoma resembling an aldosterone-producing tumor, the so-called aldosteroma. Thus, this case is of great interest owing to the fact that except for the symptoms compatible with pheochromocytoma, all other manifestations and evidences suggesting the diagnosis of aldosteroma were lacking. There was no muscular weakness, tetany, or polyuria, or the inability of the kidneys to concentrate urine, and further electrocardiograms taken during the crisis were not compatible with the presence of hypopotassemia.[2] Review of the literature showed no instance in which a cortical adenoma produced symptoms resembling those of pheochromocytoma. There was, however, a case with a hypernephroma reported in which the symptoms simulated those of a pheochromocytoma.[3] The Regitine, which was given intravenously after withdrawal of all sedatives for forty-eight hours and interpreted as a positive finding, was probably a false positive reaction because recently Ciba laboratory has shown that in animal experiments phenobarbital was still present as long as a month after withdrawal of the drug.[4] On the basis of this statement the Regitine test in our case possibly was a false positive reaction. Further false positive results are said to occur more often when the test is given by the intravenous route than by the intramuscular route.[5] The urine cathecol test was not performed because it was not considered pathognomonic for pheochromocytoma, since high titer is found in many cases of anxiety with a fluctuating high blood pressure.[4] Unfortunately, tests for sodium, potassium, and chlorides were not done.

Summary

A case of adrenocortical adenoma simulating clinically a pheochromocytoma, but showing on histologic examination all the features of the so-called aldosteroma, has been presented.

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New York, the nation's thyroid gland.—CHRISTOPHER MORLEY

SPECIAL ARTICLES

Urgent Problems and Challenging Answers Facing Voluntary Health Insurance

J. ALBERT DURGOM, NEWARK, NEW JERSEY

(*Executive Vice-President, Hospital Service Plan of New Jersey* [*New Jersey Blue Cross Plan*])

To KNOW our business, we also must know our problems; and to keep pace with our business, we must know the answers to our problems. Problems are liabilities and answers are assets. Our success in the administration of our business is measured by the extent of a balanced statement of our performance—the extent of our success in finding and using the right answers to solve our problems at the right time.

My analysis deals with urgent problems confronting the entire voluntary health insurance industry. My answers to these problems are characterized as challenging answers, as suggestive views to stimulate opinions with an urgency for decisive action. Indeed, the urgency of the problems and the challenge for the answers are vital to the survival of our voluntary health insurance movement lest all-out government regulations need to step in!

Too much time can be spent on review of already obvious problems and thus too little time is left to spend on the answers. In other words, we must shift from prolonged deliberations to concentrated action to settle first things first, because the appraisal of our problems and determination of our answers must be speeded up if we want to preserve the voluntary system of free enterprise. There are those who object to being threatened that government will step in if we cannot do the job ourselves, but such procrastination can seriously impair our system of voluntary health care.

These are not high-sounding words of threat, and these are not scare words of a prophecy of doom. We are engaged in a business that hits headline news almost daily because the voluntary health insurance movement now protects about 70 per cent of our nation's population, or two out of every three persons in America, who are paying a price tag of over five billion dollars a year for health care.

A health-conscious America has grasped the idea of a voluntary method of budgeting toward health care through various forms of the voluntary, health insurance industry, as offered by nonprofit community plans known as Blue Cross and Blue Shield in providing benefits in terms of the basic concept of *services* as compared to commercial insurance companies which offer benefits in terms of *dollar limitations*. Such a magnitude of business dealing with the welfare of people obviously becomes the business of government if the economics of voluntary health care goes out of hand, not by threat or dictum of government but actually by a breakdown of the voluntary health insurance industry within its own self. Such is the challenge, rather than a threat, facing the voluntary health insurance movement today.

Let us take an impartial, objective look at the picture for a clear focus of our problems. We see the cold fact that the economics of the distribution of health care is getting out of balance as evidenced by the continually rising cost for health care. Premiums continue to rise to levels of burden to the average insured breadwinner because he is faced with two major economic forces at work—high cost of living through the basic essentials of food, shelter, and clothing plus the high cost of illness in this spiral of our inflationary economy. Ironically, the total premium income continues to be too low to cover the cost for all kinds of benefits because here also are two costly economic forces at work—high cost per unit of health services plus an abnormally high incidence rate of claims.

This twist in economic forces at work was inevitable, as we see a health-conscious America demanding a scope of uninsurable benefits while riding high on the tidal wave of a record inflationary economy. To some this picture is dismissed with the observation that we are simply living in an age of relative economic values where increased dollars spent are just in proportion to increased dollars earned. That is fallacious reasoning, as we look again at what has happened to the mushroom growth of our social insurance health movement.

The pendulum has swung out of balance over the past twenty-five years in this voluntary concept of social insurance for health care—from empty hospital beds to an all-time overuse of hospitals (due to demands for hospital services at the rate of double the proportion over our increased population), from generally limited use of hospitals for serious illness to an avalanche of admissions to hospital beds for minor illnesses or indeed just "check-ups" and "bed rest," and from basic benefits essential to recovery to endless areas of some extended benefits which encourage unnecessary utilization.

These extremes in the swing of the pendulum have shifted the concept of health care from social insurance to what is actually mass production out of balance with the law of averages. There is no insurance element in a noninsurable benefit as evidenced when one can be admitted to hospitals by sheer choice rather than by necessity. Such claim volume is beyond the capacity of a marketably reasonable premium to support the risk, hence we are faced with artificial high costs for health care. The result of this picture is the cold fact that the financially indigent of twenty-five years ago are rapidly becoming the medically indigent now because the high cost of living in our inflationary economy leaves very little money to meet the further inflated, runaway high cost for health care when illness strikes.

If health-conscious America, sparked by revolutionary contributions of wonder drugs and the greatest advances ever known in the technics of medical science, wants every conceivable kind of service by choice rather than by necessity, then the price tag for health protection must support the seemingly endless innovations of modern hospital facilities and equipment and technically trained personnel. But such a price tag will inevitably rise until the economics of the voluntary health system will be so much out of hand that government regulations will necessarily follow in the interest of the public welfare, and that could be the beginning of the end of our voluntary health system.

What can we do about it while demands continue for more and more benefits by subscribers and more and more money by hospitals? Obviously, premiums will continue to increase across the country or there will be need to reduce benefits; or else we must curtail hospital facilities and thus impair the plausible advances in the highest standards of medical practice in history. Actually, leadership must be established at the voluntary health field level among the nonprofit community health plans (Blue Cross and Blue Shield)—a cooperative leadership which will enlist action of participating physicians and contracting hospitals—to rationalize the problems and agree on the answers with management and labor through a coordinated understanding of mutual obligations in order to protect the subscribing public and thus protect our voluntary health system.

Let us see how this can be done as we pinpoint each problem and explore the answers to the problems embracing 10 major areas.

Basic Benefits

Problem.—The words "comprehensive benefits" have become universal—a sky's-the-limit demand for inclusive services at basic benefit level so that there is no extra charge to the patient when services are rendered. This is a problem to the subscriber who pays a higher premium for services not ordinarily needed. Thus he is either penalized or else orders up the "works" to get his money's worth, and the result is that no reasonably marketable premium can keep pace with the full extent of such risk incurred. This problem faces the entire voluntary health insurance industry—Blue Cross, Blue Shield, and the commercial companies.

Answer.—1. Preserve "comprehensive benefits" at basic level to essentially needed services for hospital confinement for any acute illness—medically and surgically required in a short-term hospital known as a voluntary general hospital in a community—for a normal short-term period of hospital stay. This will help stabilize premium rates because the benefits would be limited to the basically essential inclusive services.

2. Enlarge use of outpatient hospital facilities for border-line conditions which require use of hospital facilities and personnel but do not urgently require hospital bed confinement, thus avoiding use of a hospital bed or at least postponing occupancy of a hospital bed. This can be done in areas of necessary make-ready hospital tests preliminary to actual treatment,

particularly in preoperative cases where several days of hospital bed occupancy are often used up for tests before operation. Developing an outpatient program can reduce the load of unnecessary bed occupancy to lower inpatient claim costs and, moreover, save beds for more urgent admissions while still rendering essential service.

Extended Benefits

Problem.—There appears to be no limit to the extent to which benefits of an optional nature are creeping into the basic essential level of benefits. Thus, the overuse of hospitals is encouraged, such as benefit days and ordinarily nonessential use of hospital facilities and supplies, and all of this is added to the basic premium charged to all subscribers.

Answer.—1. Extend hospital benefits under a rider for such areas of complicated illness or other borderline circumstances in which an optional use of the short-term voluntary general hospital may be medically desired for the welfare of the patient, such as additional benefit days for desired postoperative or other extended medical care, diagnostic tests of an evaluation nature for prognostic purposes, and others. This will place the added premium cost on only such subscribers as choose and qualify for this extended hospital coverage and thus remove this extra premium cost burden from the subscriber who wants only limited basic coverage.

2. Establish a rider for services of physicians to cover minor conditions and chronic care outside of hospital when there is no acute condition requiring confinement in a short-term general hospital, such as minor surgery in the outpatient facilities of a hospital or out-of-hospital in a doctor's office, and so forth. This also relieves the load on essential, basic coverage.

3. Establish an additional rider for services of a physician to cover conditions which do not essentially require hospital facilities but are short in period of treatment that can be rendered at home, or long in period of treatment which should be preferably treated in licensed convalescent institutions or government hospitals. This spreads the load among such covered persons at an additional premium for this extended type of coverage which otherwise would not be included in basic benefits. With the tremendous decline in the incidence of tuberculosis and contagious diseases, due to the advance of medical science, there is a rapidly-increasing volume of empty beds in many such institutions which are virtually idle with a fixed overhead going to waste.

Partial Benefits

Problem.—There is no justification for compelling all subscribers to buy full benefits, without the optional level of partial benefits, when such subscribers cannot afford the higher premiums for full inclusive services. Furthermore, there is no sound basis for covering all individual applicants through full benefits of inclusive services because there is generally an adverse selection by the insured against the insurer as a class. Moreover, many individual applicants are denied enrollment because they have some pronounced form of physical impairment which may likely require hospitalization beyond the capacity of the premium promulgated to provide full coverage for normal risks.

Answer.—A partial benefit coverage with the insured bearing a proportion of the claim cost could be the answer to any individual applicant or group of employees who want to secure protection at less premium, and thus share in the claim cost if and when illness requires services. This is co-insurance from the outset of performance of services, and for a reasonable period of benefit days for rendition of average essential services, and thereafter the insured bears the full cost of his health care. The extent of this cooperative arrangement on a prorated share of service benefits can be measured by the extent of premium rate which our economy will support and thus a greater area of people can be served because the underwriting would be liberalized.

Utilization

Problem.—The high incidence rate of admissions to hospitals plus the extensive use of units of hospital service pose dangers of pricing the voluntary health insurance movement off the market. Hospital facilities are overtaxed in serving such abnormally high claim loads, and there is a limit to the availability of funds for further expansion of hospital buildings, equipment, and facilities to meet this excessive demand. In fact, to meet this pace of demand is almost suicidal. Hospitals are actually overused, and an economic recession in time could find them overbuilt unless medical practice in hospitals is decentralized by out-of-hospital benefits for certain conditions. There is evidence that excessive utilization can load claim cost higher than basic increases in hospital costs because a substantial increase in claim volume and units of services within each claim can cost more than the normal per diem rise in hospital costs.

ANSWER.—The key to the answer is not new but progressively becomes more urgent. The answer lies basically in the hands of the medical profession. Leadership must come from the medical profession, coordinated with hospital administration, in determining the need for each use of the hospital facilities. Such an authority of determination must remain within the professional judgment of the physician who bears the responsibility for the care of his patient; but such a decision must extend beyond sheer convenience of the patient and/or physician, with a disciplinary set of standards by the medical staff of a hospital, coordinated with a line of communication between the attending physician and the lay staff of hospital administration, through the screening of applicants for hospital admission.

Obviously, an emergency arising from an accident or an acute onset of an ailment would not delay an admission to a hospital under such a system. The test lies in screening conditions which unnecessarily use up hospital beds, while bona fide cases in urgent need of hospitalization are unduly delayed at the expense of the health of the patient and thus possibly reflect on medical practice. In effect, a patient can be educated to understand the economic importance of using outpatient hospital facilities when a hospital bed is not needed. Indeed, today's high standards of medical practice would tend to require a conservation of hospital beds for necessary hospital confinement after an organized determination has been made to show that treatment cannot be properly rendered outside of a hospital or in the outpatient department.

The medical profession has a tremendous stake at hand in facing the risk of the control of medicine under government regulations because any failure to take the initiative can seriously impair the financial soundness of the voluntary health movement, and the resultant government intervention could virtually destroy the free practice of medicine. Doctors have a vital stake at hand. We are reminded that the bulk of patients are insured patients today, and unless this challenge is met, destruction of Blue Shield is inevitable. That would be catastrophic, because Blue Shield is the greatest step forward in the answer of medicine to the challenge of further government regulation. Here is an area in which such standards can be determined by the medical profession and coordinated into action through an understanding program with hospitals, management, and labor, as all are organized, affected, and interested parties.

Protection of the Aged

PROBLEM.—Much is being heralded in headline news over the failure of the voluntary health movement to provide adequate health care for the aged. Again such publicity is news because there are about 15 million persons over age sixty-five in America today, and they will increase to nearly 25 million by 1980. Moreover, this is news because the limited income of the aged cannot afford the essential health care for the inevitable infirmities associated with advancing age, requiring hospitalization at about double the frequency and triple the duration of care rendered younger persons. The problem becomes more acute over the issue of government subsidy as it is evident that a fully necessary premium for full care would be beyond the financial ability of such aged persons; hence, the aged are either financially indigent or else medically indigent. Regardless of the nature of indigency, the blunt fact is that this is a growing problem which brings the issue to a showdown between government and the voluntary health movement, and this can become an increasingly critical political football.

ANSWER.—Only 39 per cent of the aged, meaning over age sixty-five, are covered by voluntary insurance. The answer lies in the approach to the remaining 61 per cent. Government can make a political case of the health needs of the aged—a vulnerable situation facing voluntary health insurance. Actually, nonprofit community health plans can do the job on a full-care basis through Blue Shield because doctors can underwrite this service, as is already being explored in New Jersey. Commercial insurance has not provided enough in health benefits for economic relief for the aged because the extent of coverage has been too limited in the number of dollars of indemnity allowance against hospital and doctor bills, and too limited in area and extent of benefits such as the exclusion of medical care (meaning nonsurgical) which is more frequently needed. The approach can be analyzed for solution as follows:

1. All aged who are still employed in groups could have the full benefits of all in the group through a level premium for the entire group.
2. The aged on retirement could be carried for full benefits by further loading the group premium to absorb the added risk as each of the aged among the group goes on retirement from work, but it would be continued as part of the group risk.
3. Since many Blue Cross and Blue Shield plans continue coverage for enrolled persons after they attain age sixty-five years, there remains only the job of enrolling those beyond age sixty-five; but since the premium cost may be too great for the individuals among the aged, it is a matter of underwriting the risk through the medical profession and hospitals.
4. If the risk becomes too great to be absorbed fully by the voluntary plans, then attention should be turned to government subsidy, but with control of the distribution of services should be included free choice of physician. A realistic, constructive approach to the Forand Bill should be made with this objective in mind because the increasing economic and health problem of the aged poses a challenge as we face up to the money-poor and health-poor segment of our aging population.

Here is the acid test for Blue Shield and Blue Cross plans: to meet this challenge to deliver the best therapeutic treatment to those in the twilight of life, or else the problem will need to be solved at Federal or State government level.

Financing Hospital Care

PROBLEM.—Hospitals also feel the financial strain of these forces at work—inflationary demands on the cost of payrolls of their personnel, food and supplies, plus the impact of demands for improved and enlarged facilities and equipment to keep pace with advanced standards of health care—as so dramatically revolutionized by the advances in medical practice, and all of these demands are accelerated in severity by the fact that a hospital has become the health center of a community. With income to hospitals limited practically to the increasing area of insured persons and the relatively declining number of private paying patients, and with lesser community contribution and practically no bequests, we find the typical nonprofit community hospital dependent basically on operating revenue from the voluntary health insurance movement.

ANSWER.—Blue Cross and hospitals have a mutual responsibility in serving the community as they are contractual partners. Hence, the financial solution for hospitals must depend on underwriting results out of the experience of risk incurred. Blue Cross must continue to employ vigilance in operating at lowest possible overhead expense through efficient management. A nominal reserve position of Blue Cross must be maintained to hold the line on financial obligations in the event of any abnormal contingencies. The balance of Blue Cross income will determine the extent that hospital costs can be met. This approach cannot be an open check book because the subscribing public will continue to be sensitive to increasing premium rates. On the other hand, the Blue Cross net income to meet hospital costs must not be so inadequate as to impair hospital standards of service. The answer to this problem lies in constant vigilance on the part of the hospital to curb any waste, establish every possible economy, strive for every possible efficiency, and above all join in an all-out campaign against unnecessary use of hospital facilities and supplies. The most effective, direct approach to the problem of unnecessary use of hospitals lies in this solution to the problem of hospital finances. In order to meet the hospital's needs for their cost, the public must be convinced that such costs are rock-bottom costs; with that evidence, the subscribing public can be educated to understand the basic cost for health care insurance as compared with added cost for unnecessary use of hospitals, and such public education can strengthen the campaign against excessive utilization by the enlistment of the subscribers to protect their own pocketbook.

Financing Medical Care

PROBLEM.—Payment for services of physicians is basically a matter between the patient and the physician. A physician is in effect an individual contractor, dedicated to the care of the sick. Under our free enterprise, nothing is more pronounced than the private relationship between the physician and the patient. Financial ability of a patient to pay a doctor is secondary to urgency for professional services for treatment of the patient's illness. The continued private relationship between the patient and the physician is in jeopardy if the voluntary system of health care should break down.

Answer.—A realistic approach to reasonable fees and curtailment of abuses of health insurance benefits are vital to the financial soundness of voluntary health insurance. The spread of risk is in substantial volume, as we see the broad area of people insured in the nation—over 121 million covered for hospitalization, 108 million covered for surgical care, while some 71 million are insured for medical treatment. Through such broad spread of risk, the law of averages produces substantially reasonable compensation compared to individual cases where little or nothing could be paid, but costs are actually offset by the participation of higher income persons plus all insured who pay premiums but have not used benefits. Hence, the solution could well be found in a realistic approach to raising income levels geared to our rising economy and conversely adjusting income levels downward in a declining economy, keeping the inclusive system of services in line with the trend of payrolls, and also in making corresponding adjustment in fee schedule of payments to physicians, and thus such adjustments would be consistently in line with our economy.

Major Medical Coverage

Problem.—Commercial insurance companies have been offering major medical coverage benefit in the form of astronomic amounts of dollars to meet extended illness of supposed financially catastrophic proportions. That type of supplementary coverage intrigues the average executive in the relatively high income level, but such a program in present form tends to encourage abuse and thus further inflate the high cost for health care. The construction of such programs to date shows trends of unsound underwriting as evidenced by abuses in extent of services utilized and extent of eqiupment and supplies ordered up, frequent instances of unusually big bills rendered in an effort to reach the millennium of dollars of benefit payments, plus the overlapping coverage often carried by the insured to make money in pocket; and this all adds up to destroying the economics of distribution of health care.

Answer.—Let us examine developments: At first, insurance companies tried to replace basic benefits of Blue Cross and Blue Shield by competing with increased dollars for basic benefits. Limited in this venture, Major Medical was conceived as an added attraction to commercial insurance basic coverage as an overall package. Then increased underwriting losses in their basic coverage led commercial companies to shift emphasis from their basic coverage to concentrate on Major Medical as a supplement to basic Blue Cross and Blue Shield benefits, and therein lies the underwriting waste due to some overlapping area in benefits. The answer to this problem lies in a coordinated program of Blue Cross and Blue Shield to offer further extended benefits toward hospital bills and doctor bills and further extension of benefits to out-of-hospital conditions requiring long-term treatment and all of this on a service basis rather than dollar indemnities.

Blue Cross can do this job—as evidenced by a broad, comprehensive program of basic coverage which covers about 90 out of 100 hospital bills in full—and meet the partial balance of the other 10 bills by an extended benefit rider. Actually, scarcely more than 4 out of 100 claims usually reach the extended area for any benefit under Major Medical coverage of insurance companies.

Blue Shield holds the key to finishing the job of an all-out program of complete medical care by first increasing the income level for inclusive services in a hospital, inaugurating a program for out-of-hospital benefits through organized services of physicians and care by visiting nurses at home, and prolonged medical care in long-term licensed convalescent institutions.

Service Benefits vs. Dollar Benefits

Problem.—This often-discussed issue arises when subscriber rates of Blue Cross and/or Blue Shield are increased. The reaction of resistance to increased rates leads some subscribers to shift to commercial insurance, and after a period of experience, the shift swings back to Blue Cross and Blue Shield among many such subscribers. Even though it is gratifying to recover lost business, there is an element of waste through increased expense incurred in the competition, all due to these two ideologies: service benefits vs. dollar benefits.

Answer.—Blue Cross and Blue Shield hold the advantage over commercial insurance under present basic comprehensive coverages in our inflationary economy because Blue Cross and Blue Shield can deliver more economically the extent of coverage for health care to subscribers through benefits measured in terms of *services*, while commercial insurance programs provide benefits in terms of declining purchasing power of the *dollar*. If commercial insurance increases the number of benefit dollars to offset the declining purchasing power of a dollar, then the premiums must be increased to produce those extra dollars, and that would outprice commercial coverage in comparison to Blue Cross and Blue Shield Plans, so long as there is no runaway pricing of premium by Blue Cross and Blue Shield. In fact, the morbidity experience, peculiar to health insurance, is so fluid that a premium can no longer be promulgated to underwrite future years because any premium charged in one year to underwrite two or more additional years is bound to carry an excess loading in the first year, and thus the health insurance field is rapidly facing a year-to-year basis of premium change.

If Blue Cross and Blue Shield were never conceived on a service basis for benefits, and, in other words, benefits were available only on a dollar basis as allowances toward hospital and doctor bills, it is conceivable that the voluntary health insurance industry would have already priced itself off the market because the higher and higher dollar benefits alone would have been further accelerated by the inflationary spiral in an attempt to cover artificially-encouraged charges of a full health bill. Blue Cross and Blue Shield are dedicated to the service benefit principle and can only be useful to a community so long as the service benefit concept is preserved as a basic program for health care, thus helping to hold the line on our health economy.

National Enrollment

Problem.—An employer with two or more business locations across the country is led to want a uniform program of benefits for his employees, and he stands ready to pay the premium in total or at least share in the cost. Commercial insurance companies offer a uniform program in terms of only fixed dollar benefits, but this is not true uniformity in benefits because the purchasing value of such fixed dollars varies among the locations of such a national employer.

Blue Cross and Blue Shield Plans are geared to a local level of community services, consistent with local standards of medical practice and hospital services, and there remains the development of a national pattern.

Answer.—Blue Cross plans are devising a new national program for uniform service benefits to be offered to a national employer through Blue Cross plans serving the areas of the respective locations of that employer, whereby each Blue Cross plan could simply add a rider for benefits beyond that plan's local benefits. Moreover, that Blue Cross program of national benefits would be geared to meet the Major Medical area of benefits for hospital care.

There is merit in the logic for service benefits rather than indemnity dollars for each location of a national employer on the basis of the local level of benefits established in that community, consistent with the local standards of medical practice and hospital services, and at the local subscription rates for such respective benefits. The logic is sound and consistent with any standard of economy, high or low, because the subscription rate would be geared to the local economy in relation to local medical practice and hospital administration, and would be consistent with such economy of that community as reflected in the payroll of that employer; and thus the entire program could be wrapped up into a uniform national package of benefits through a coordinated pattern among the plans.

Conclusion

Voluntary health insurance can work only as efficiently as the component parts of our free society will make it work, and that means doctors, hospitals, management, labor, and subscribers at large. To mold thoughts into action will require more coordination between Blue Cross and Blue Shield plans entrusted with the job of delivering an efficient program of benefits to subscribers through the medical profession and hospitals.

The year 1958 was a year of challenge with an early economic decline which was sharper than experts had predicted and which produced a dangerous level of unemployment. But New Jersey Blue Cross and Blue Shield went forward with determined vigor to end the year 1958 with a gain in the enrollment growth in New Jersey, an outstanding performance among the plans in the country.

The year 1959 offers a year of the sharpest challenge in the history of voluntary health insurance. Yes, recovery is predicted to go forward—increased production, increased employment, and increased sales of consumer goods—but all of that adds up to tremendous responsibilities at hand as we strive to meet the tidal waves of higher and higher levels in our economy.

If the voluntary health movement engages in any unsound competitive practices, at underwriting level or in the professional aspects of the distribution of health care, then there is no choice left except for government to impose more regulations in the best interests of the public welfare; and that would be the decisive beginning of a disastrous end to our voluntary health movement. Actually, our form of government, symbolic of a free society which has shown progress to the world through the accomplishments of private individual initiative, would have no cause or desire to impose more regulations so long as the job is done efficiently at the voluntary level. That is the challenge!

Functional Fashions for the Physically Handicapped

HOWARD A. RUSK, M.D., NEW YORK CITY

(*Director, Institute of Physical Medicine and Rehabilitation, New York University–Bellevue Medical Center*)

New York City, the world's leading center for both fashion and medicine, has combined these two of its resources to develop a new and unique project to provide specially designed clothing for persons with physical disabilities. The project, "Functional Fashions for the Physically Handicapped," is being sponsored by the Institute of Physical Medicine and Rehabilitation, New York University–Bellevue Medical Center, and Clothing Research, Inc. The latter is a new nonprofit organization developed to handle the manufacturing and distribution of the new garments.

For a number of years the staff of the Institute of Physical Medicine and Rehabilitation had been concerned with the lack of specifically designed clothing for the physically handicapped as a part of its long-term activities in the design, testing, and dissemination of information on self-help devices for the handicapped. The latter program is conducted with the aid of a March of Dimes grant from The National Foundation.

Research had shown that the clothing problems of physically handicapped persons centered around:

1. Design to permit greater ease in putting on and removing garments by individuals with limited muscle strength and limited range of motion in the various joints and by individuals who rely on braces, crutches, wheelchairs, and other mechanical aids;
2. Design to permit greater social acceptance and increased self-esteem by severely disabled persons;
3. Fabric choice to resist the undue wear caused by greater tension on the cloth as a result of the more strenuous physical activities required by certain disabled persons in dressing and undressing; undue wear caused by the friction of braces, crutches, wheelchairs, and other appliances and devices; and laundering and related care of clothing.

Three years ago Mrs. Helen Cookman, a top "name" designer in fashion circles, was invited to become the consultant to the Institute of Physical Medicine and Rehabilitation to work on the project. The results of her three years of collaboration with the Institute's staff were first presented at a press showing in New York last October and at another showing later that month before the annual meeting of the American Occupational Therapy Association. There were seventeen models presented at these showings—

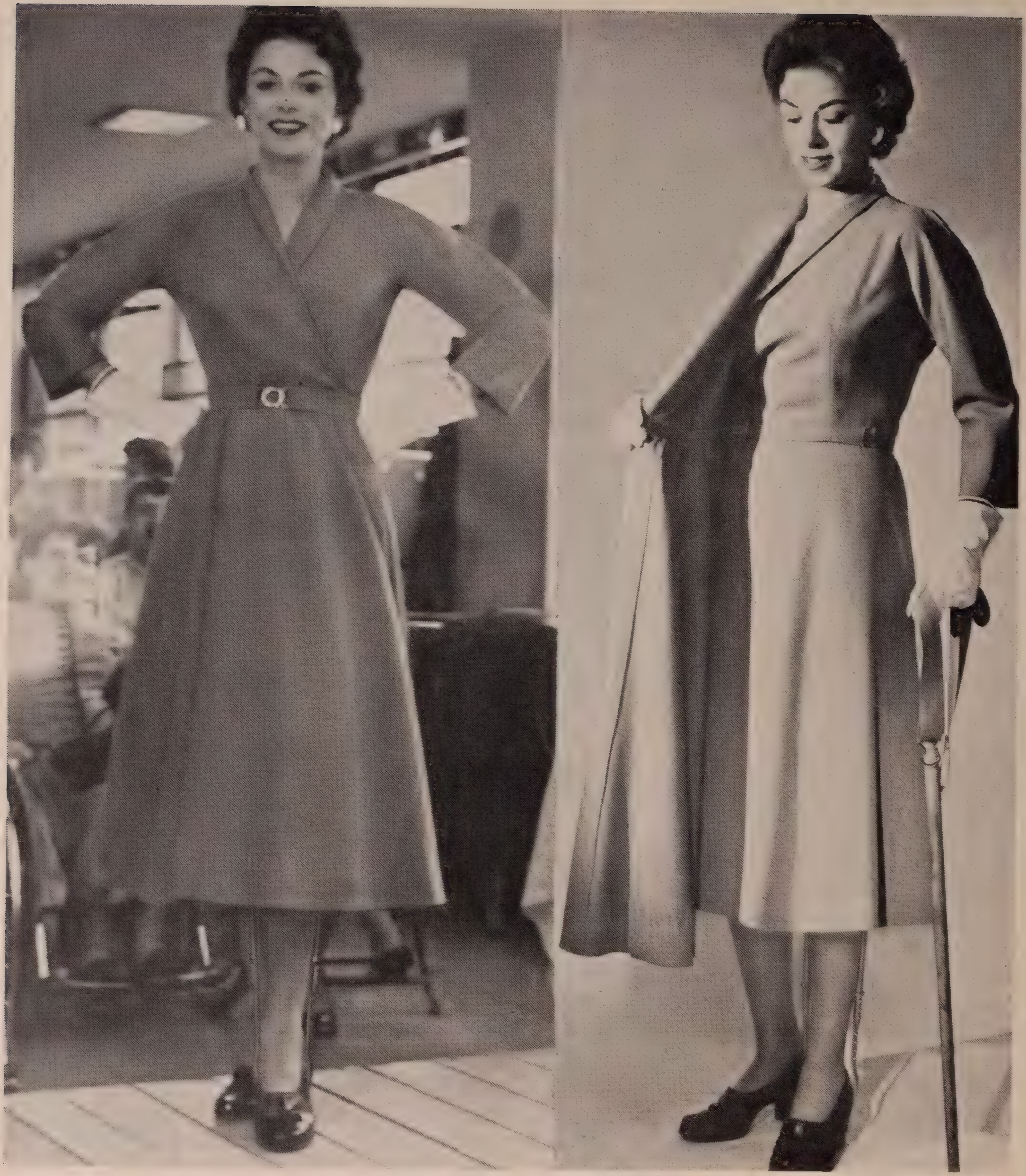

FIG. 1. The coat-dress.

tailored suits, slacks, blouses, dresses, dinner skirts, and gloves for women; vests, shoes, ties, and suits for men.

Each of the models had been thoroughly trial-tested prior to manufacture. Testing based on function, utility, and fabric choice was conducted over a six-month period by disabled patients and staff members of the Institute of Physical Medicine and Rehabilitation, a number of whom wore each of the various models. Their suggestions were incorporated into redesigns, and then the models were retested.

Fabrics were chosen with deliberation after many months of checking with the DuPont Laboratories. They are mostly wash-and-wear nylons and dacrons stitched with the strongest possible threads available, but care has been taken that the fibers do not generate too much electrostatic and do not cause wheelchair problems by sticking instead of sliding. Emphasis was also given to the use of closures which could be easily managed.

Currently six of the items in the collection have been produced by a new, nonprofit organization, Clothing Research, Inc., which is conducting a market test through the direct mail selling of these items. A large number of organizations contributed materials, skills, and time to the production of the current inventory of Clothing Research, Inc. Proceeds from the sale of these garments will be used for the further testing and development of new garments. Catalogues of the six items now available can be secured from Clothing Research, Inc., 307 West 38th Street, New York 1, New York.

The Coat-Dress

Among the six items now available is the coat-dress (Fig. 1). This garment was especially designed to counteract the destructive effect on clothes of crutch-walking—the pull across the shoulder blades, wear under the arms; to give greater ease in putting the garment on and taking it off; and to give greater comfort in wearing. The coat-dress is cut with extra width across the shoulders to provide more room for crutch walking. Material is double under the arms at the side seams, so that when the fabric wears from the crutches, the top fabric may be turned in for additional service from the fabric underneath.

The bodice is styled to hug the neck close; it is cut wide across the chest so that crutch walking motions will not pull it open. Sleeves are roomy enough to allow for well-developed arm muscles. The garment is buttonless and utilizes a single extra-large hook and bar closing at the waistline, thereby making dressing and undressing simple. The generous overlap at the skirt insures that the dress will not come open regardless of how active the wearer may be. The coat-dress is available in three colors in a range of sizes in crisp, crease-resistant fabric of 50 per cent viscose rayon and 50 per cent Acrilan (Chemstrand Corp. trademark for acrylic fiber).

Other garments now available include a suit-dress, slacks, a belt-pocket unit, and a wheelchair cape. The only item for men now available is men's slacks.

Definitive statistics are not available on the numbers of persons with varying types of physical disabilities who might profit from the availability of specially designed clothing. Some indication of the number, however, is indicated by the estimate that over 1,800,000 persons in the United States have suffered from strokes. The need for such clothing had made itself evident not only through the needs of the patients at the Institute of Physical Medicine and Rehabilitation but also through numerous letters received regularly requesting information on the possible availability of such clothing.

If the current market test being conducted by Clothing Research, Inc., indicates a sufficient market for the specialized line, "Functional Fashions for the Physically Handicapped," additional garments will be produced as the designs become available and will be marketed through normal commercial channels.

In the meantime, while the market test is under way, research, development, and testing of new garments by the Institute of Physical Medicine and Rehabilitation will continue with the aid of a grant from the Office of Vocational Rehabilitation, Department of Health, Education, and Welfare. It is hoped that the project will eventually be extended to cover all basic garments for children of all ages, winter outerwear, rain wear, sleeping garments, underclothing, and other garments for handicapped men, women, and children.

Homicides Higher Among Divorced

Divorced and widowed men are the most likely victims of homicide, according to statistics on marriage and the family in the publication, *Patterns of Disease*.

There are nearly six times more homicides among divorced men and four times more among widowers than among married men. Divorced women, too, appear to be in greater danger of being slain than their married sisters, the proportion being more than three to one, according to the report. Single women, however, have the lowest homicide rate.

RESOLUTIONS

1959 House of Delegates

Medical Society of the State of New York

The following resolutions will be presented to the House of Delegates of the Medical Society of the State of New York at its annual meeting May 9 to 11, 1959, Hotel Statler Hilton, Buffalo, and are published here for information.

Additional resolutions received too late for publication will appear in the delegates' folders.

Simplified Insurance Report Forms 59-1

Introduced by: Nassau County Medical Society

Whereas, at the 1958 meeting of the House of Delegates of the Medical Society of the State of New York it was recognized by resolution 58-16 that the paper work required of physicians for the completion of insurance report forms has become burdensome; and

Whereas, in this same resolution the House of Delegates approved the policy of physicians requiring fees from insurance companies for the preparation of these reports; now therefore be it hereby

Resolved, that this House of Delegates request an appropriate committee of the Medical Society of the State of New York to negotiate with representatives of typical insurance carriers to the end that a simplified report form may be prepared and an appropriate fee may be agreed on, so that it may become standard practice for a physician to be reimbursed by the insurance carrier for these services, without further burdening the patient.

Medical Care Insurance for Persons Over Sixty-five 59-2

Introduced by: Nassau County Medical Society

Whereas, the American Medical Association is on record as approving the development of an effective voluntary health insurance program for persons over sixty-five years of age with modest resources or low family income; and

Whereas, the members of the Nassau County Medical Society recognize this need and have voted to approve the recommendation of the American Medical Association; now therefore be it hereby

Resolved, that the Medical Society of the State of New York through its appropriate committees urge the Blue Shield Plans of the State to develop a program of medical care insurance coverage, consistent with the proposal of the American Medical Association, for persons over sixty-five who, *after adequate income investigation*, are found to be with modest resources or low family income.

Proposed Legislation To Suspend Licenses of Mentally Ill Professional Persons 59-3

Introduced by: Nassau County Medical Society

Whereas, legislation has been introduced into the Legislature of the State of New York which would result in the suspension of license to practice by members of certain professional groups if they became mentally ill and received treatment for such illness in a mental hospital; and

Whereas, this proposed legislation would put the burden of proof on the professional person involved when he sought the restoration of such license; and

Whereas, there is no provision in the bill guaranteeing to such professional person a rapid review and decision on such application; and

Whereas, the present provisions of the State Education Law and the State Mental Hygiene Law include ample machinery for caring for such situations; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York hereby records itself as being opposed to this type of legislation, and be it further

Resolved, that the Medical Society of the State of New York urge similar opposition by other professional groups involved.

Amendment to Bylaws to Provide Remission of Dues during Residency Training 59–4

Introduced by: MEDICAL SOCIETY OF THE COUNTY OF SARATOGA

WHEREAS, Article I of the Constitution of the Medical Society of the State of New York states that one of the purposes of the Medical Society of the State of New York is "to extend medical knowledge and advance the science and art of medicine"; and

WHEREAS, there are no provisions in the Constitution and Bylaws of the Medical Society of the State of New York for the remission of dues for members embarking on residency training; and

WHEREAS, Chapter XIV, Section 2, paragraph 3 of the Bylaws states: "The dues of any active or junior member of the Medical Society of the State of New York may be remitted for the current year on account of illness, financial hardship, or temporary service in the armed forces or in the United States Public Health Service, when the request is made by the member's component county medical society"; now therefore be it hereby

Resolved, that Chapter XIV, Section 2, paragraph 3 of the Bylaws be amended by the addition of the following: "or when the member is engaged in a residency training program approved by the Council on Medical Education of the American Medical Association," so that Chapter XIV, Section 2, paragraph 3 of the Bylaws will then read:

> "The dues of any active or junior member of the Medical Society of the State of New York may be remitted for the current year on account of illness, financial hardship, temporary service in the armed forces or in the United States Public Health Service, or when the member is engaged in a residency training program approved by the Council on Medical Education of the American Medical Association, when the request is made by the member's component county medical society."

Revision of Workmen's Compensation Fee Schedule 59–5

Introduced by: MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, physicians' fees under the Workmen's Compensation Act are a recurring problem for the doctor; and

WHEREAS, it has been the experience of the medical profession of the State of New York that revision of the Workmen's Compensation Minimum Fee Schedule is an arduous task for the Workmen's Compensation Board and for organized medicine; now therefore be it hereby

Resolved, that the Workmen's Compensation Minimum Fee Schedule be revised annually to reflect changes in the Cost of Living Index by adding or subtracting an amount to such fees in accordance with variations in the Cost of Living Index as published by the U.S. Department of Labor; and be it further

Resolved, that the Chairman of the Workmen's Compensation Board be requested to implement this resolution.

Workmen's Compensation Fees for Osteopaths 59–6

Introduced by: MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, the president of the Medical Society of the State of New York, on August 15, 1958, in a letter to the Chairman of the Workmen's Compensation Board, urged "that osteopaths in no instance be granted fees higher than those granted to doctors of medicine"; and

WHEREAS, a supplemental medical fee schedule of the Workmen's Compensation Board, dated February 24, 1959, reveals that osteopaths will be granted higher fees than doctors of medicine in general practice; now therefore be it hereby

Resolved, that this House of Delegates of the Medical Society of the State of New York recommend that a communication be sent to the Chairman of the Workmen's Compensation Board protesting the fact that the schedule of fees for doctors of medicine in general practice is lower than the schedule of fees for osteopaths; and be it further

Resolved, that the Chairman of the Workmen's Compensation Board be requested to raise the fees paid to doctors of medicine in general practice so that they shall at least equal those paid to osteopaths.

To Rescind Action Permitting Podiatrists to Use "Foot Specialist" Designation 59–7

Introduced by: MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, a regulation of the Board of Regents of the University of the State of New York permits podiatrists to affix the words "Foot Specialist" to professional signs; and

WHEREAS, the practice of podiatry has distinct limitations, and podiatrists are not "specialists" on all conditions involving the feet; and

WHEREAS, other groups may request similar designations as "specialists" in their own restricted fields; now therefore be it hereby

Resolved, that the Board of Regents of the University of the State of New York be requested to rescind the action whereby podiatrists are permitted to use the designation of "Foot Specialist."

Study and Recodification of the Laws Dealing with the Dead Human Body 59–8

Introduced by: MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, ambiguities in the statutes dealing with autopsies promote misconceptions in the mind of the lay public; and

WHEREAS, such misconceptions create obstacles for medical examiners, coroners, and pathologists in the performance of their tasks; and

WHEREAS, these ambiguities and misconceptions have created prejudice against autopsies and hinder the advancement of medical knowledge, in conflict with the general welfare; now therefore be it hereby

Resolved, that the president of the Medical Society of the State of New York explore the possibility of obtaining the support of a foundation or foundations to make possible a study by local and state bar associations, in cooperation with academies of medicine and other interested agencies and/or the American Law Institute, of the entire body of law dealing with the dead human body, including administrative and legal procedures dealing with the autopsy, the cadaver, disposal, definition of death, definition of cause of death, authority of coroners and medical examiners, legalizing of tissue banks and transplantation, cemetery laws, etc., with the view of codifying law dealing with the dead human body and the development of a model group of statutes to deal with this problem as it confronts the needs of a modern society; and be it further

Resolved, that a copy of this resolution be forwarded to all interested organizations and agencies, including appropriate bar associations, state medical societies, academies of medicine, hospital associations, state and national societies of pathologists, public health associations, specialty boards, and the American Academy of General Practice, to enlist their endorsement, cooperation, and support of such an endeavor; and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association be instructed to introduce a similar resolution at the June, 1959, meeting of the American Medical Association.

Social Security for Self-Employed Physicians 59–9

Introduced by: MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, self-employed physicians are not covered by the provisions of the Social Security Law (O.A.S.I.); and

WHEREAS, it is desirable that self-employed doctors of medicine be included in the Social Security System (O.A.S.I.) on a compulsory basis; now therefore be it hereby

Resolved, that this House of Delegates of the Medical Society of the State of New York reaffirm its endorsement of Social Security for self-employed physicians on a compulsory basis; and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the American Medical Association be instructed to introduce a resolution at the June, 1959, meeting of the House of Delegates of the American Medical Association, endorsing compulsory Social Security (O.A.S.I.) for self-employed physicians; and be it further

Resolved, that these delegates be instructed to work militantly for favorable consideration of this resolution by the House of Delegates of the American Medical Association.

Reaffirmation of the Concept of Free Choice of Physician 59–10

Introduced by: MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, the Reference Committee on Insurance and Medical Service of the American Medical Association will report on its study of the work done by the Commission on Medical Care Plans of the American Medical Association at the Meeting of the House of Delegates of the American Medical Association in June, 1959; and

WHEREAS, this Reference Committee has requested the constituent associations to express their attitude regarding the report; and

WHEREAS, one of the questions posed concerns our attitude toward free choice of physician; and

WHEREAS, another question posed concerns our attitude toward closed panel systems; and

WHEREAS, there is no clamor from the public for lessening of free choice; and

WHEREAS, the arbitrary assignment of a patient to a doctor as practiced in closed panel systems represents a regression in relationships between human beings; and

Whereas, there are indications that subscribers to closed panel systems find the restriction of free choice a disadvantage; and

Whereas, free choice of physician has been shown to be the best way to provide the best medical care for the public; and

Whereas, free choice should be expanded in all medical areas; now therefore be it hereby

Resolved, that free choice of physician is a fundamental principle, incontrovertible, unalterable, and essential to good medical care; and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association be instructed to reaffirm the concept of free choice of physician; and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association be instructed militantly to oppose any change in policy which affects the free choice of physician.

Modernization of the Law Dealing with the Dead Human Body 59–11

Introduced by: Medical Society of the County of Queens

Whereas, litigation has arisen against the Coroner in Los Angeles, California, as a result of the performance of his duties; and

Whereas, this litigation is the result of ambiguous, contradictory, and outmoded and inapplicable laws dealing with the dead human body; and

Whereas, this litigation has a distinct bearing on the practice of pathology and the work of medical examiners and coroners throughout the nation; and

Whereas, the House of Delegates of the Medical Society of the State of New York recognizes the need for autopsies as essential to proper medical practice, to the study of disease, and to the welfare of the public; now therefore be it hereby

Resolved, that the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association at its meeting in June, 1959, be instructed to introduce a resolution that the American Medical Association

(1) inform the public in general of the necessity and advantages of properly performed autopsies and further inform the public that autopsies are essential to the acquisition of medical knowledge; and

(2) initiate and implement efforts to modernize the body of law dealing with the dead human body and advocate changes in the law so that pathologists, coroners, and medical examiners will not be in conflict with the law in the several states when conscientiously performing their duties in the interest of knowledge, public health, and general welfare.

Group Life Insurance 59–12

Introduced by: Medical Society of the County of Erie

Whereas, the 1957 House of Delegates of the Medical Society of the State of New York mandated the State Medical Society through its Committee on Legislation to support or initiate legislation legalizing group life insurance for self-employed professional men; and

Whereas, a careful study of group life coverage will show that it is impractical and unsound for individuals not having a common employer but who are bound together only in a professional association; and

Whereas, the policy of the State Medical Society with respect to group life insurance coverage for physicians is not supported by many county medical societies because they are convinced such insurance is basically unsound; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York reconsider its action of 1957 approving group life insurance coverage for self-employed professional men; and be it further

Resolved, that the House of Delegates instruct the Committee on Legislation of the Medical Society of the State of New York to cease and desist from sponsoring group life insurance legislation for professional men and to oppose actively any such legislation initiated by others.

Fitting of Contact Lenses 59–13

Introduced by: Medical Society of the County of Erie

Whereas, the fitting of contact lenses necessitates the introduction of a foreign object under the eyelids and on the eyeball by manual and digital means; and

Whereas, the use of local anesthetics and chemical dyes is often required in the proper fitting of contact lenses; and

Whereas, the medical knowledge and understanding of the various pathologic conditions pertaining to ophthalmology are absolutely essential in deciding whether or not to use contact lenses, as well as in deciding the type thereof to be used in each individual case; and

Whereas, in recent times considerable advertising and publicity, much of a misleading nature, has been indulged in on a commercial basis by some optometrists for the purpose of increasing the sale of such lenses; and

Whereas, numerous cases of eye injuries have been occasioned by the promiscuous sale and improper use of contact lenses, to the detriment of an inadequately informed public; and

Whereas, a complete study of this problem can lead only to the conclusion that the prescribing and fitting of contact lenses is a medical procedure; now therefore be it hereby

Resolved, that the Medical Society of the State of New York request the introduction of legislation in the 1960 New York State Legislature whereby Section 7101 of Article 143 of the Education Law would be amended to provide that a licensed optometrist may fit contact lenses only under the personal supervision of a physician.

Treatment of Narcotic Addicts 59–14

Introduced by: Medical Society of the County of Richmond

Whereas, the Joint Legislative Committee on Narcotics Study of the State of New York in its report to the Governor states that the medical profession has been remiss in not accurately defining the area of activity wherein physicians may treat narcotic addicts; and

Whereas, this criticism has also been directed at our profession by the Chief Magistrate of the City of New York; and

Whereas, present New York State law states that a physician may treat an addict only if "good faith" be established; and

Whereas, "good faith" has never been properly defined by the medical profession or by the courts of New York State; and

Whereas, physicians are reluctant to treat these sick people because the Federal and State Bureaus of Narcotics demand that each case must be decided on its own merits and may demand court hearings where censure and/or loss of license might be imposed should the courts decide that "good faith" has not been exercised by the attending physician; now therefore be it hereby

Resolved, that licensed physicians should be permitted to treat narcotic addicts as they do all other patients (the alcoholic addict, for example), attempting withdrawal of drugs in or out of a hospital, and prsecribing such materials, narcotic or otherwise, that the physician believes the patient needs according to the best interests of the patient and the community; and be it further

Resolved, that where a physician feels that the patient cannot be maintained without drugs a certificate testifying to this fact be signed by the physician and be countersigned by another practicing physician after appropriate examination, such certificate to be deposited with the Department of Health of the State of New York; and be it further

Resolved, that general hospitals be persuaded to admit such patients on the written order of a licensed physician; and be it further

Resolved, that a similar resolution be introduced by the delegates from the Medical Society of the State of New York in the House of Delegates of the American Medical Association in June and that the New York State delegates work actively for its passage.

Enforcement of Regulation 19, Chapter 16 of the New York State Sanitary Code, re Ionizing Radiation 59–15

Introduced by: Medical Society of the County of New York

Whereas, Regulation 19, Chapter 16 of the Sanitary Code of the State of New York prohibits the use of ionizing radiation on humans by unlicensed practitioners of the healing arts; and

Whereas, said regulation is a means of safeguarding the public health; and

Whereas, the Medical Society of the County of New York and other county medical societies in New York State have recorded their approval of Regulation 19, Chapter 16 of the New York State Sanitary Code and have urged its strict enforcement; now therefore be it hereby

Resolved, that this House of Delegates of the Medical Society of the State of New York heartily approve Regulation 19, Chapter 16 of the New York State Sanitary Code and urge its rigid application and strict enforcement by the New York State Department of Health; and be it further

Resolved, that a copy of this resolution be sent to the Commissioner of Health of the State of New York and to the Commissioner of Health of the City of New York.

Social Security for Doctors of Medicine 59–16

Introduced by: Medical Society of the County of New York

Whereas, the Medical Society of the County of New York for five consecutive years, including March 23, 1959, has stated its position favoring inclusion of doctors of medicine in the Social Security system of the United States of America; and

Whereas, the Medical Society of the State of New York has similarly approved such legislation; and

Whereas, it is increasingly evident, in every poll of doctors of medicine throughout the nation, that former disapproval is waning; now therefore be it hereby

Resolved, that the Medical Society of the State of New York reaffirm its desire that doctors of medicine be included under the laws of Old Age and Survivors Insurance (Social Security); and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the American Medical Association introduce a similar resolution at the June, 1959, meeting of the House of Delegates of the American Medical Association.

Reserve the Dates . . .

153rd Annual Convention

Medical Society of the State of New York

May 9 to 15, 1959

Hotel Statler Hilton **Buffalo**

MEDICAL SOCIETY
OF THE
STATE OF NEW YORK

153rd

ANNUAL CONVENTION

- **House of Delegates**
- **Annual Meeting and Banquet**
- **Scientific Program**
- **Scientific Exhibits**
- **Scientific Motion Pictures**
- **Special Events**
- **Industrial Exhibits**
- **Woman's Auxiliary**

May 9 to 15, 1959

HOTEL STATLER HILTON, BUFFALO

LETTERS TO THE EDITOR

New York City Excise Tax on Gross Receipts

To the Editor:

It is called to your attention for the information of your subscribers that the New York City Excise Tax on Gross Receipts imposed pursuant to the General Business and Financial Tax Law is due May 15, 1959. The tax is levied for the privilege of carrying on or exercising for gain or profit within the City of New York any trade, business, profession, vocation, or commercial activity during the period commencing July 1, 1958, and ending June 30, 1959, or any part thereof. The tax is computed on the gross receipts for the base period (measuring period) set forth in the law. The base period may vary according to the circumstances of the case. The calendar year 1958, however, constitutes the base period in which the taxpayer was engaged in business or in the practice of his profession during the whole of such calendar year.

In filing General Business Tax returns on Form B, physicians are required to report thereon as Item 4 the gross receipts (gross fees) from the practice of their profession. Dividends and interest received from investments and profits derived from stock and bond transactions should not be included in the measure of the tax when filing General Business Tax returns if such transactions are occasional transactions of a nature extraneous to the taxpayer's regular activities. In reporting gross receipts no deduction may be taken for salaries, rent, and other office expenses. The current tax rate is $^1/_4$ of 1 per cent.

Where a physician is also a member of a medical group associated with the Health Insurance Plan of Greater New York, the distributive share of the income he receives from the group is not to be included in his gross receipts, since the various medical groups associated with H.I.P. are generally regarded as partnerships and are required to file returns on the basis of their total gross receipts.

No tax is imposed when the gross receipts do not exceed $10,000 and no return need be filed in such cases. There is, however, no specific exemption of $10,000 provided by law, and all persons having gross receipts in excess of $10,000 must report the full amount of their receipts.

The return must be filed on or before May 15, 1959, with the City Collector in the borough in which the taxpayer maintains his office. A remittance for the total amount of tax due, drawn to the order of the City Collector, must accompany the return when filed. Form B for filing this return will be mailed to all taxpayers who have filed returns in prior years. This office will be pleased to furnish further information or assistance in the preparation of returns.

MORRIS W. WEINER
Special Deputy Comptroller

Bureau of Excise Taxes
City of New York
120 West 32nd Street
New York 1, New York

Another Narcotic Antidote

To the Editor:

Dr. Berger's paper, "Nalorphine in the Prevention of Narcotic Deaths," in the March 15, 1959, issue of the JOURNAL is timely and summarizes our knowledge on the subject very well.

May I add that in addition to the N-allyl compounds of the morphine series (such as nalorphine, or Nalline), similar compounds of the morphinan series are of importance and value. Levallorphan tartrate is commercially available as Lorfan. No narcotic prescription is necessary for it. Its use in anesthesiology, where it is administered in definite proportions with the narcotic (see manufacturer's suggestions), has had a fair trial. Although its pharmacologic properties and uses are similar to those of nalorphine and its potency allegedly ten times greater, experience with it in the treatment of overdosage has been less extensive.

For those who would like to know more on this subject, Wikler's monograph (Mechanisms of Action of Opiates and Opiate Antagonists, Public Health Monograph Number 52, 1958, U. S. Government Printing Office, Washington 25, D.C., price 30 cents) is highly recommended.

PERCY MASON, M.D.

122 East 82nd Street
New York 28, New York

Additional Procedure in Chronic Ulcerative Colitis

To the Editor:

With reference to my article, "Beneficial Effect of Gold Salts and Butazolidin in Chronic Ulcerative Colitis with Arthritis," in the November 1, 1958, issue of the JOURNAL, I would like to report that the addition of 50 mcg. of vitamin B_{12} parenterally concomitant with the gold injections appears to accelerate clinical improvement. This additional procedure is now used routinely in colitis patients. An interesting feature is that a few of the patients had low B_{12} values.

LOUIS W. GRANIRER, M.D.

90-36 149th Street
Jamaica, New York

Curtailing Hospital Overutilization

To the Editor:

The following letter was sent to all member hospitals of Associated Hospital Service, New York's Blue Cross. We urge that the members of the Medical Society of the State of New York lend their full support to the program of curtailing overutilization and reducing unnecessary stays in hospitals:

At a joint meeting of our Medical Advisory and Hospital Advisory Committees held on February 17, 1959, it was unanimously decided that we seek the cooperation of our member hospitals and their medical staffs in curtailing unnecessary hospital admissions and unduly prolonged hospital stays as one important step in the goal toward reducing the over-all cost of hospital care.

The Committees were concerned with wide variations in the lengths of hospital stays and particular diagnoses in hospitals which were generally similar with respect to the type of service rendered and the variety of illnesses treated. Questions have been raised with respect to these variations by the public, newspapers, and Insurance Department and other public officials charged with passing on rates of Blue Cross Plans.

The Committees recommended that machinery be established in each member hospital for consultation between the administrator and the medical Board and for the consideration and dissemination of information supplied to the hospital by AHS concerning over-all lengths of stays and facts in individual cases.

On April 30, 1958, we distributed the opinion of Insurance Commissioner Smith of Pennsylvania which dealt most comprehensively with the question of overutilization in hospitals. More recently, the Superintendent of Insurance of the State of New York authorized a study of the nonprofit plans in the State to be made by Columbia University School of Public Health and Administrative Medicine, which is now in progress. One of the important areas of this study deals with the question of utilization in hospitals, and the Superintendent directed the study staff of the University to look into the following matters:

1. Is there any present evidence of excess utilization of facilities at the hospital or medical level?
2. If so, what are the underlying causes?
3. Should hospitals and physicians be subject to periodic inspections by a specially constituted body to guard against excess utilization?
4. Should hospitals and physicians be required to submit reports to a specially constituted body in respect to utilization?
5. What is the average length of stay? Can time be shortened by home nursing programs or other type of care?

In PennysIvania Commissioner Smith required that quarterly reports be submitted to him indicating the progress made. Since the Columbia Study has not been completed, we cannot say what follow-up action will be recommended in New York. However, presumably some such follow-up program will be urged. Under the circumstances, the Medical Advisory and Hospital Advisory Committees were of the opinion that member hospitals and their medical boards should, independently of the Columbia Study, take whatever steps are proper and necessary to control utilization and prevent overutilization in their own hospitals.

It has been generally asserted that too many people are admitted to hospitals for diagnostic studies which could be performed on an ambulatory basis in the Outpatient Departments or in the physicians' offices. It behooves both administrators and physicians to deter any such unnecessary admissions. The question of convenience or financial considerations does not justify the use of a hospital bed when the patient may be handled just as well on an ambulatory basis. It is difficult for the administrator to question the attending physician as to the need for the patient's admission, and therefore it is suggested that a committee of the medical board be appointed to look into such matters. AHS would be glad to furnish data regarding individual cases to the administrator for presentation to such a committee.

Your cooperation in implementing this program will indicate to our subscribers and the Superintendent of Insurance that we are concerned with the problems of overutilization and extended stays and have recognized our responsibilities by doing something about it. Therefore, we shall appreciate it if you would advise us of the steps that will be taken by your hospital to deal with these important problems so that we may follow through on the program which has been recommended by our Medical Advisory and Hospital Advisory Committees.

MILTON J. GOODFRIEND, M.D.
Chairman, Medical Advisory Committee

80 Lexington Avenue
New York 16, New York

Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

The 1959 State Convention at Buffalo

A CORDIAL invitation is extended to every doctor's wife in New York State to join the members of the Woman's Auxiliary to the Medical Society of the State of New York in attending the business meetings and social events of the 1959 convention. The convention will be held at the Hotel Statler Hilton in Buffalo, from Sunday night, May 10, through Wednesday, May 13.

A special reception for out-of-town arrivals will be held in the Ballroom on Sunday night from 8 to 10 P.M. This presents an excellent opportunity for all doctors' wives to renew old acquaintances and to make new friends. On Tuesday at 12:45 P.M. a gala luncheon will be held at the Chez Ami on Delaware Avenue to honor Mrs. Maurice G. Sheldon, Olean, State Auxiliary president. On Tuesday night at 7 P.M. a buffet supper will be held at the Statler Hilton in the Empire State Room, honoring past State presidents.

Mrs. E. Arthur Underwood, president of the Woman's Auxiliary to the American Medical Association, will attend our State convention as a special guest.

Final plans for the program, which was published in the April 1 issue of the NEW YORK STATE JOURNAL OF MEDICINE, are now being completed, and the Convention Committee hopes that the subjects to be discussed will prove of interest to all doctors' wives, whether or not they are Auxiliary members. Each year our Auxiliary president renews the invitation to all doctors' wives who are in Buffalo during the meeting to attend one or more of the sessions. The response to this invitation has always been good. We who plan the program are always interested in comments from members and guests concerning these sessions and topics. Although our plans are centered primarily around the Auxiliary, its delegates, and the general membership, past experiences indicate that any doctor's wife who attends finds the program both stimulating and interesting.

Our Convention Committee is anxious to make this twenty-third annual Auxiliary convention a success. We hereby request each doctor to pass along to his wife our sincere invitation to join us in Buffalo.

Mrs. Herbert J. Ulrich, *Chairman*
Mrs. Walter T. Zimdahl, *Cochairman*
Convention Committee

33 Parkside Avenue, Buffalo
Williamsville

NECROLOGY

Apology to Dr. William Cooper

Owing to an inadvertent error, Dr. William Cooper, Hospital for Special Surgery, New York City, was erroneously listed in this Department in the issue of April 15, 1959, page 1667. The JOURNAL regrets this error and apologizes herewith to Dr. Cooper.

George Everett Beilby, M.D., retired of Slingerlands, died on March 12 in Pasadena, California, at the age of eighty-three. Dr. Beilby graduated in 1899 from Albany Medical College. He was a former associate professor of surgery at Albany Medical College and a pioneer in the field of thyroid surgery. Dr. Beilby was a Fellow of the American College of Surgeons and a member of the American Goiter Association, the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leonard Blumgart, M.D., of New York City, died on March 20 at his home at the age of seventy-eight. Dr. Blumgart graduated in 1903 from Columbia University College of Physicians and Surgeons and interned at Lenox Hill Hospital. From 1915 to 1920 he served as a volunteer at the New York State Psychiatric Institute and was formerly on the board of visitors of Westfield State Farm, Bedford Hills. President of the New York Psychoanalytic Society from 1942 to 1945, Dr. Blumgart was a member of the American Psychoanalytic Association, the American Association for Research in Psychosomatic Problems, the New York Academy of Medicine, the New York Psychoanalytic Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Albert Britton, M.D., of Ithaca, died on February 17 in Tompkins County Hospital at the age of seventy-seven. Dr. Britton graduated in 1913 from the Medico-Chirurgical College of Philadelphia. He was an assistant professor of clinical medicine and attending physician at the Cornell University Clinic and retired in 1950 with the title of attending physician emeritus. Dr. Britton was a member of the American Congress of Physical Medicine and Rehabilitation, the Tompkins County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

DeWitt Brougham, M.D., of Syracuse, died on April 13, 1957, at the age of sixty-five. Dr. Brougham graduated in 1917 from Syracuse University College of Medicine. He was a member of the Syracuse Academy of Medicine, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Paul William Casson, M.D., of the Bronx, died on March 21 at the age of sixty-three. Dr. Casson graduated in 1921 from Fordham University School of Medicine. He was an attending in surgery at Mother Cabrini Memorial Hospital. Dr. Casson was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frank Samuel Child, M.D., of Port Jefferson, died on March 24 at the age of seventy-seven. Dr. Child graduated from Columbia University College of Physicians and Surgeons in 1909 and interned at the Hospital for Special Surgery. He was an attending in orthopedic surgery at St. Charles Hospital, a consultant in orthopedics at Southside Hospital, Bay Shore, a consultant in orthopedic surgery at Central Islip State Hospital, Central Islip, and Eastern Long Island Hospital Association, Greenport, and chief of surgery at John T. Mather Memorial Hospital. He was president of the Suffolk County Tuberculosis and Public Health Association and in 1958 he received the Theodore Roosevelt Award for the Nassau-Suffolk Hospital Council for outstanding service. Dr. Child was a Fellow of the American College of Surgeons and a member of the American Therapeutic Society, the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

T. Frederick Doescher, M.D., of Albany, died at his home on March 18 at the age of seventy-six. Dr. Doescher graduated in 1906 from Albany

Medical College. He had at one time been associated with Dr. Leo Neuman at the Bender Laboratory and during World War I he served as a medical officer. Dr. Doescher was a member of the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Daniel Fallis, M.D., of West Hempstead, died on March 17 at the age of fifty-five. Dr. Fallis graduated in 1928 from the Medical College of Virginia. He was a member of the American Academy of General Practice, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alfred Taylor Fisher, M.D., of Brooklyn, died at his home on March 27 at the age of eighty. Dr. Fisher graduated in 1901 from the Medico-Chirurgical College of Philadelphia.

Henry Friedland, M.D., of the Bronx, died on March 30 in his office at the age of seventy. Dr. Friedland graduated from New York University and Bellevue Hospital Medical College in 1911. He was director of roentgenology at the Home and Hospital for the Daughters of Jacob and a consultant in roentgenology at the Hebrew Home and Hospital for Chronic Sick. Dr. Friedland was a Diplomate of the American Board of Radiology, a Member of the American College of Radiology, and a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Erwin Fudell, M.D., of Brooklyn, died on March 5 at the age of fifty-two. Dr. Fudell graduated from St. Louis Medical College in 1932. He was a member of the American Trudeau Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James L. Gallagher, M.D., of Buffalo, died on March 10 in Sisters' Hospital at the age of eighty-one. Dr. Gallagher graduated in 1902 from the University of Maryland School of Medicine. He was an honorary physician at Emergency Hospital. Dr. Gallagher was a former president of the Physician's Protective Association of Erie County and former chairman of the legislation committee of the Erie County Medical Society, and a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Roland Gettings, M.D., of Buffalo, died on December 15, 1958, at the age of fifty-eight. Dr. Gettings graduated in 1925 from the University of Buffalo School of Medicine. He was an honorary attending in surgery at Emergency Hospital.

Louis Hutner, M.D., of Jamaica, died on December 15, 1958, at the age of fifty-seven. Dr. Hutner graduated from New York Homeopathic Medical College and Flower Hospital in 1934. He was an attending in dermatology at Queens General Hospital and an associate in dermatology at Jamaica Hospital. Dr. Hutner was a Diplomate of the American Board of Dermatology, Inc., and a member of the Long Island Dermatological Society, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Liburt, M.D., of Huntington, died on March 27 at his home at the age of sixty. Dr. Liburt graduated in 1925 from Detroit Medical College. He was an attending in proctologic surgery at Huntington Hospital and at Central Islip State Hospital, and a consultant in proctology at the Southside Hospital, Bay Shore. Dr. Liburt was a Diplomate of the American Board of Proctology (Anorectal Surgery) and a member of the American Proctologic Society, the New York Proctological Society, the Southside Clinical Society, the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Moses Lobsenz, M.D., of New York City, died in the Lenox Hill Hospital on March 29 at the age of seventy-two. Dr. Lobsenz graduated in 1911 from New York University and Bellevue Hospital Medical College and interned at Mount Sinai and Harlem Hospitals. He was an associate in obstetrics at Jewish Memorial Hospital. Dr. Lobsenz was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, and a member of New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alexander L. Moshinsky, M.D., of Crugers and New York City, died on March 25 at Phelps Memorial Hospital at the age of sixty-two. Dr. Moshinsky received his medical degree from the University of Kiev in 1921. He was an associate in otolaryngology at Beth David Hospital. Dr. Moshinsky was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, the New York County

Medical Society, and the Medical Society of the State of New York.

Kennedy William O'Brien, M.D., of Lynbrook' died on March 20 at the age of forty-five. Dr. O'Brien graduated in 1941 from Loyola University Medical Department. He was an associate physician in general practice at Mercy Hospital, Rockville Centre. Dr. O'Brien was a member of the American Academy of General Practice, the Associated Physicians of Long Island, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Paul Martin Parker, M.D., of Moravia, died on November 30, 1958, at the age of seventy-four. Dr. Martin graduated from New York Homeopathic Medical College and Flower Hospital in 1915.

Milton Benjamin Rosenbluth, M.D., of New York City, died on March 24 at the age of sixty-eight. Dr. Rosenbluth graduated in 1914 from Columbia University College of Physicians and Surgeons. He was an attending physician at Bellevue and University Hospitals and director of medicine at Goldwater Memorial Hospital. Since 1947 he had been professor of clinical medicine at the New York University Medical School and from 1916 to 1919 was an instructor at the Fordham University School of Medicine. Dr. Rosenbluth was a Diplomate of the American Board of Internal Medicine and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Nicholas Henry Ryan, M.D., of Brooklyn, died on March 27 at the age of seventy-two. Dr. Ryan graduated in 1912 from Fordham University School of Medicine. He was a consultant in surgery at Kings County Hospital Center and the Hospital of the Holy Family. Dr. Ryan was a Fellow of the American College of Surgeons and a member of the Brooklyn Surgical Society, the New York Academy of Medicine, the Kings County Medical Society, and the Medical Society of the State of New York.

Kenneth Fillman Sands, M.D., of Boston. Massachusetts, formerly of Rochester, died on March 11 at the age of forty-one. Dr. Sands graduated in 1943 from Johns Hopkins University School of Medicine. He was a former member of the staff at Strong Memorial Hospital and Rochester General Hospital. Dr. Sands was a former member of the Rochester Academy of Medicine.

Alfred Sorter, M.D., of New York City, died at his home on March 31 at the age of sixty-three. Dr. Sorter received his medical degree from the University of Vienna in 1922. He was a senior clinical assistant physician at Mount Sinai Hospital. Dr. Sorter was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

E. Frank Weiswasser, M.D., of Rego Park, died on March 9 at the age of forty-five. Dr. Weiswasser graduated in 1947 from St. Mungo's College Medical School, Glasgow, Scotland, and interned at Lebanon Hospital. He was a junior adjunct in electrocardiology at Lebanon Hospital, an assistant attending physician at Jamaica and Queens General Hospitals, an assistant in cardiology at Queens General Hospital Outpatient Department, and an assistant in cardiology at Triboro Hospital. Dr. Weiswasser was a member of the New York Cardiological Society, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Serum Neuropathy Following Routine Use of Tetanus Antitoxin

Over a period of two years, 5 cases of postserum neuropathy were seen, tending to put some doubt on the common impression that neuropathy following administration of tetanus antitoxin is a rare and benign disorder. In 4 of these cases the original injuries were trivial and healed at the time of onset of the reaction. Regardless of therapy, the authors, Drs. S. M. Albert, M. A. Wohl, and A. M. Rechtman, Philadelphia, Pennsylvania, say significant residual disability is to be anticipated in many of these patients. Reaction to tetanus antitoxin is the most frequent among the various types of horse serum antitoxic injections. Because of this, the authors emphasize the advisability of routine tetanus immunization, which affords almost complete protection and is virtually without hazard.

—*American Practitioner and Digest of Treatment, August, 1958*

MEDICAL NEWS

Doctor Cited by Veterans—Dr. Benedict V. Favata, Rochester, has received a citation from the Monroe County Council, Veterans of Foreign Wars. The Council, which represents 36 posts and 3,500 veterans, cited Dr. Favata for "his sympathy, understanding, and humane treatment of area veterans."

Writing Prize Offered—The American Academy of Arts and Sciences has announced its annual competition for unpublished monographs in the field of physical and biologic sciences. First prize in the competition is an award of $1,000.

A monograph is defined for the purposes of these awards as a "scholarly contribution to knowledge, too long for an article in a learned journal and too specialized or too short for a general book." Final date for receipt of manuscripts is October 1.

Full details concerning these prizes may be secured by writing to: Committee on Monograph Prizes, American Academy of Arts and Sciences, 280 Newton Street, Brookline Station, Boston 46, Massachusetts.

Physician-Authors—Charles Scribner's Sons have announced they will publish the suspense novel, *Just Murder, Darling,* by Dr. James A. Brussel, Assistant Commissioner, New York State Department of Mental Hygiene. July release is anticipated. Dr. Brussel is also completing *Psychiatry for the Layman* for Barnes and Noble. This volume will be available in September or October.

It has also been announced that the Spanish translation of Dr. Jacob Buckstein's two-volume book, *The Digestive Tract in Roentgenology,* has recently been published by Editorial Labor in Barcelona, Spain.

Symposium for General Practitioners—A five-day symposium for general practitioners on tuberculosis and other chronic pulmonary diseases will be held at Saranac Lake, July 6 through 10, sponsored by the American Trudeau Society, the Saranac Lake Medical Society, and the Adirondack Counties Chapter of the New York State Academy of General Practice. Sessions will be held in various sanatoria and laboratories in the Saranac Lake area. The symposium is acceptable for twenty-six hours of category I credit by the American Academy of General Practice.

For further information write to: Registrar, Chest Disease Symposium for General Practitioners, Post Office Box 627, Saranac Lake, New York.

Competition for Medical Writing Awards—Dr. Irving S. Wright, editor-in-chief of *Modern Medical Monographs,* has announced the opening of the 1959 competition for unpublished manuscripts on clinical subjects in the field of internal medicine. The purpose of the awards is to stimulate young physicians to communicate their work in the classical form of the monograph and to achieve high standards of medical writing.

Competition is open to graduate physicians of less than forty years of age. Manuscripts and illustrations should be submitted in duplicate and should consist of not less than 130 or more than 200 double-spaced typewritten pages including bibliography. No more than 30 illustrations should be submitted. Manuscripts should be sent by registered mail, postmarked no later than October 1, 1959, to: Richard H. Orr, M.D., 33 East 68th Street, New York 21, New York.

Public Health Service Gives Grant—The United States Public Health Service has awarded a grant of $252,556 to Dr. George E. Moore, director of the State Health Department's Roswell Park Memorial Institute in Buffalo. The grant will be used for a cooperative study of surgical adjuvant chemotherapy for breast cancer.

Cancerous Mice Flown to Holland—Three tumor-bearing mice will be flown from Albany Medical College to the R. K. Universiteit, Nijmegen, Holland, to aid in the fight against cancer. The mice bear a rare form of brain cancer known as glioblastoma 8100, which the Dutch scientists want to study. The tumor has been passed through several generations of mice by doctors, technicians, and students on summer fellowships at Albany Medical College.

Postgraduate Courses in Ophthalmology—The Institute of Ophthalmology of the Americas announces that the second series of postgraduate courses for ophthalmologists will be given September 14 through November 25.

Courses will be offered in the following subjects: Advances in ocular prosthesis; Anomalies of extraocular muscles, including ptosis; Biomicroscopy; Biomicroscopy using near ultraviolet, cobalt blue and polarized light: Clinical bacteriology; Complications of ophthalmologic surgery; Contact lenses; Electrophysiology and applied physiology of the eye; Enucleation and evisceration; Fundamental principles of orthoptics; Glaucoma; Gonioscopy and tonography; Keratectomies and keratoplasties; Lacrimal sac surgery; Low vision aids; Ocular biochemistry; Ocular geriatrics; Ocular microbiology; Ocular neuro-ophthalmology; Ocular photography; Ocular radiology; Ocular therapeutics; Ophthalmoscopy; Pathology; Perimetry; Physiologic optics; Plastic eye surgery; Pleoptics and macular function testing; Psychosomatic factors in ophthalmology; Radioisotopes in ophthalmology; Recent advances in cataract surgery; Refraction; Retinal detachment; and Surgery of the orbit.

For further information write to: Mrs. Tamar Weber, registrar, Institute of Ophthalmology of the Americas, New York Eye & Ear Infirmary, 218 Second Avenue, New York 3, New York.

Courses Offered at New York University—The following full-time courses are being offered at the Post-Graduate Medical School of the New York University-Bellevue Medical Center during the month of June: "The Physiologic Basis of Clinical Electrocardiography," given under the direction of Dr. J. Marion Bryant, June 1 through 5, Symposium on Modern Therapeutics in Internal Medicine," under the direction of Dr. Charles F. Wilkinson, Jr., June 8 through 19, Clinical Gastroenterology, under the direction of Dr. James Tesler, June 22 through 26, "The Management of Chronic Kidney Disease," under the direction of Dr. Laurence G. Wesson, June 22 and 23, "The Management of Hypertension," under the direction of Dr. J. Marion Bryant, June 4 and 25.

For additional information contact: Office of the Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

Fellowships Available—The National Foundation has announced the availability of fellowships for postdoctoral study in research, preventive medicine, rehabilitation, and orthopedics.

For information concerning the fellowships write to: Chief, Division of Scholarships and Fellowships, Department of Professional Education, The National Foundation, 800 Second Avenue, New York 17, New York.

Principles of Practice Adopted—During the 36th annual session of the American Congress of Physical Medicine and Rehabilitation on August 28, 1958, the principles of practice of the organization were adopted.

Copies of the principles of practice may be obtained by writing to: American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois.

Symposium on Dreams—On March 14 and 15 the Society of Medical Psychoanalysts held a symposium on dreams.

Some of the topics discussed during the symposium were: "The Physiology of Dreaming," by Dr. Nathaniel Kleitman, "Symbol Organization in Altered Brain Function," by Dr. Edwin A. Weinstein; "Dream Interpretation in Psychoanalytic Therapy: Basic Principles and Some Technical Aspects," by Dr. William V. Silverberg; "Therapeutic Analysis of Dreams," by Dr. Sandor Rado; and "The Dream as an Instrument in a Rational Therapy," by Dr. Bernard S. Robbins.

Syracuse Research Club—The following physicians spoke at the winter meeting of the Syracuse Research Club on March 24: Dr. Robert Gilbert, Dr. John H. Sipple, and Dr. J. Howland Auchincloss, Jr., "Respiratory Control in Obesity"; Dr. Earle L. Lipton, Dr. Alfred Steinschneider, and Dr. Julius B. Richmond, "Physiologic Effects of Swaddling"; Dr. John T. Prior, "Effect of Cortisone in Experimentally Produced Atherosclerosis in the Rabbit"; and Dr. Thomas W. Mou and Dr. Harry A. Feldman, "Prevalence of Various Illnesses in a 'Normal' Population Sample."

American College of Physicians Presents Courses—The following is a list of postgraduate courses to be presented this spring by the American College of Physicians: Cardiac Arrhythmias, May 22 through 24, at Philadelphia General Hospital, Philadelphia; Psychiatry for the Internist, June 1 through 5, at the Psychiatric Institute, University of Maryland Hospital, Baltimore; Special Topics in Internal Medicine, June 15 through 19, at the University of Colorado School of Medicine, Denver; Internal Medicine: Selected Topics, June 22 through 26, at the University of Cincinnati College of Medicine, Cincinnati.

For further information and registration forms write to: Mr. E. R. Loveland, executive secretary, The American College of Physicians, 4200 Pine Street, Philadelphia 4, Pennsylvania.

Conference on Rehabilitation of Psychiatric Patient—A work conference on "The Rehabilitation of the Psychiatric Patient—an Interdisciplinary Approach to His Posthospital Adjustment," will be held July 6 to 24.

The conference will take place at Teachers College, Columbia University, Department of Psychological Foundations and Services, 525 West 120th Street, New York, 27, New York and at Fountain House Foundation, Inc., 412 West 47th Street, New York 36, New York.

For further information contact: Dr. Abraham Jacobs, Box 35, Teachers College, Columbia University, New York 27, New York.

Postgraduate Course in St. Louis—Washington University School of Medicine, Division of Gerontology, will conduct its third annual postgraduate course in geriatric medicine, in St. Louis, Missouri, May 21 through 23. Clinical application of the basic principles of disease in later life will be stressed. The course is tuition free and category I credit will be granted to members of the American Academy of General Practice.

For further information address: Division of Gerontology, Washington University School of Medicine, 5600 Arsenal Street, St. Louis 9, Missouri.

Postgraduate Course in Honolulu—The University of Southern California School of Medicine will hold a postgraduate refresher course in Honolulu and on board the *S.S.Lurline*, July 29 through August 15.

The course, which is open only to those with an M.D. degree, offers a varied program so that each physician may choose the topics which best meet his needs.

For further information write to: Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33, California.

Leaflets on Blindness Available—The Prevention of Blindness Department of the Philadelphia Association for the Blind, Inc., has announced the revision and republication of three of its most popular leaflets:

"Why Glasses?"; "Danger Ahead—Glaucoma"; and "Check Your Child's Eyes."

Free samples of these leaflets may be obtained by writing to: Philadelphia Association for the Blind, Inc., 100 East Price Street, Philadelphia, Pennsylvania, Attention: Prevention of Blindness Department.

Personalities

Retired

Dr. Benjamin Morgan Vance, New York City, as deputy chief medical examiner.

Elected

Dr. Charles M. Brane, Yonkers, to the board of directors of United Medical Service, Inc.

Appointed

Dr. William R. Carson, Potsdam, as a member of The National Foundation's health scholarship committee for New York.

Awarded

Dr. Ponciano Manalo, Manila, Philippine Islands, the $500 travel fellowship of the Department of Plastic Surgery, Mount Sinai Hospital.

Speakers

Dr. Morris B. Bender, New York City, the S. Eugene Barrera Memorial Lectures at Albany Medical College, April 13. . .Dr. John Fleming Brock, Cape Town, Africa, the Squibb Centennial Lecture at Cornell Medical College, April 15. . .Dr. Roy R. Grinker, Chicago, at the State University Upstate Medical Center, March 26. . .Dr. A. McGehee Harvey, Baltimore, the seventh annual Emanuel B. Schoenbach Memorial Lecture, at Maimonides Hospital, Brooklyn, April 16. . .Dr. Joe W. Howland, Rochester, at the monthly meeting of the Medical Society of Jefferson County, March 17. . .Dr. Henry W. Kumm, before the March 17 meeting of the National Foundation. . .Dr. H. Houston Merritt, before the fund-raising meeting of the United Epilepsy Association, March 24. . .Dr. C. P. Rhoads, director of Sloan-Kettering Institute, New York City, at an informal luncheon meeting on March 24 of the Society's Group Affiliates Committee. . .Dr. Jerome M. Schneck, New York City, before the Psychiatry Society of the State University of New York College of Medicine, March 16.

The world cannot continue to wage war like physical giants and to seek peace like intellectual pygmies.—Basil O'Connor

MEDICAL MEETINGS

Seminar on Hypnosis

A medical-dental seminar on hypnosis, sponsored by the New York State Academy of General Practice and The Niagara County Medical Society, will be held May 1 through 3 at the Statler Hilton Hotel, Buffalo. Attendance is restricted to physicians, dentists, and psychologists.

Ira I. Kaplan Lecture

The Radiation Therapy Alumni Association of Bellevue Hospital has announced that the eighth annual Ira I. Kaplan lecture, entitled "Megavoltage X-Ray Therapy," will be presented on May 7 by Dr. John Boland, director of radiotherapy, Mount Sinai Hospital.

The lecture will be held at 5:30 P.M. in Founders Hall, at the New York University-Bellevue Medical Center, 31st Street and First Avenue, New York City.

New Jersey Diabetes Association

The New Jersey Diabetes Association, in cooperation with the New Jersey State Department of Health, will present a spring symposium on neurovascular complications of diabetes mellitus on Wednesday, May 13, from 2:00 P.M. to 5:00 P.M. at St. Peter's General Hospital, Easton Avenue, New Brunswick, New Jersey.

National Tuberculosis Association

The annual meeting of the National Tuberculosis Association and its medical section, the American Trudeau Society, will be held May 25 through 28 at the Palmer House in Chicago.

For further information concerning this meeting contact the National Tuberculosis Association, 1790 Broadway, New York 19, New York.

National Conference on Legal Environment of Medical Science

The National Society for Medical Research and the University of Chicago School of Medicine will sponsor a conference on the legal environment of medical science, May 27 and 28, on the University of Chicago campus.

The conference has been called in an attempt to clarify the confusion existing concerning laws and regulations now governing medical research.

For further information address inquiries to: National Society for Medical Research, 920 South Michigan Avenue, Chicago 5, Illinois.

Convention of Alcoholics Anonymous

Psychiatrists and other physicians; Catholic, Jewish, and Protestant clergymen; social workers; industrial health experts; and institution and government representatives will speak at the New York convention of Alcoholics Anonymous, Saturday, June 6, at Washington Irving High School.

Sessions are open to interested professionals as well as to members of Alcoholics Anonymous. For further information write to: General Service Committee, 334$^1/_2$ West 24th Street, New York 11, New York.

Society for the Scientific Study of Sex

The Society for the Scientific Study of Sex will hold its second annual meeting on November 7, at the Barbizon Plaza Hotel, New York City. There will be two symposia on the topics "What Is Sexually Normal?" and "Psychologic Factors in Infertility."

For further information write to: Mr. Robert V. Sherwin, Executive Secretary, Suite 704, 1 East 42nd Street, New York 17, New York.

New York Heart Association

A two-day scientific session of the New York Heart Association will be held December 11 and 12 at the Hotel Biltmore, New York City. The general subject of the meeting will be "Salt and Water."

Accommodations are limited and advance registration is urged. For further information and registration write to: Medical Director, New York Heart Association, Inc., 10 Columbus Circle, New York 19, New York.

Pan-Pacific Surgical Association

The eighth congress of the Pan-Pacific Surgical Association will be held in Honolulu, Hawaii, September 28 through October 5, 1960.

All members of the medical profession are invited to attend and are urged to make early arrangements if they wish to be assured of adequate facilities.

Further information and brochures may be obtained by writing to: Dr. F. J. Pinkerton, Director General, Pan-Pacific Surgical Association, Suite 230, Alexander Young Building, Honolulu 13, Hawaii.

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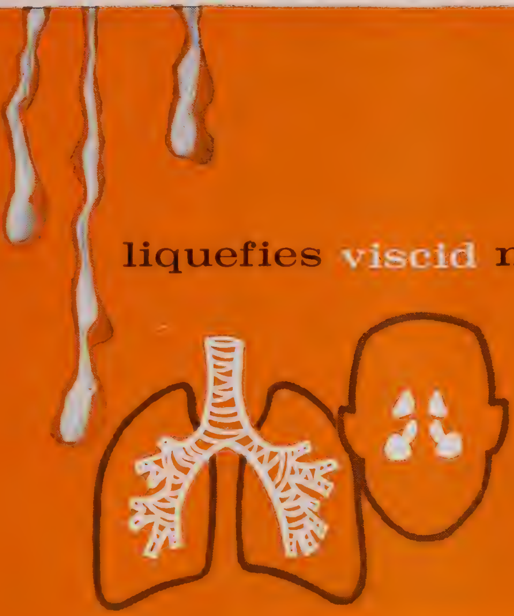

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NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Lecturers—Dr. Morris B. Bender, of New York City, delivered the annual S. Eugene Barrera Memorial Lectures on April 13. Dr. Bender is professor of clinical neurology at New York University College of Medicine and director, Neurologic Service, Mount Sinai Hospital. These lectures honor the former professor and chairman of neurology and psychiatry at the College.

The Otto A. Faust Lecture was delivered by Dr. Maurice W. Laufer, director, Emma Pendleton Bradley Hospital, Riverside, Rhode Island, on April 16.

Dr. Thomas P. Singer, Henry Ford Hospital, Detroit, lectured on April 21.

The annual Alpha Omega Alpha Lecture was given by Commander George Bond, U.S. Naval Medical Research Laboratory, New London, Connecticut, on April 23.

On April 24, Dr. Arthur Purdy Stout, Columbia University, lectured at the College.

Albert Einstein College of Medicine

Grants—Department of Anatomy, $11,000 from the National Institutes of Health for "Differentiation in the Central Nervous System" and from the State of New York to the Department of Pediatrics $8,000 for "Diagnostic and Treatment Services for Patients with Cerebral Palsy."

Visiting Lectures—Dr. Viktor Hamburger, Department of Zoology, Washington University, St. Louis; Dr. Carl Hartman, director of research, Ortho Pharmaceutical Company; Dr. Vernon M. Ingram, University of Cambridge, England; Dr. Kenneth W. McKerns, American Cyanamid Company, Pearl River, New York; Dr. Henry C. Falk, director, Obstetrics and Gynecology, French Hospital, New York City; Dr. Mary Calderone, medical director of the Planned Parenthood Federation of America; Dr. Seymour Kety, Science Director, National Institute of Mental Health; Dr. Arthur T. Hertig, professor of pathology, Harvard Medical School; Dr. Michael J. Davis, Major, U.S. Medical Corps, Walter Reed Army Medical Center; Dr. Donald Tapley and Dr. Sidney Warner, Columbia University; Dr. J. P. Scott, Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine; Dr. George C. Cotzias, head, Physiology Division, Brookhaven National Laboratory; and Dr. Francoris Lomy, University of Pittsburgh School of Medicine.

College of Physicians, Columbia University

To Retire—Dr. Robert F. Loeb will retire June 30 as chairman, Department of Medicine, and director of Medical Service, Presbyterian Hospital. He will remain Bard Professor of Medicine for another year.

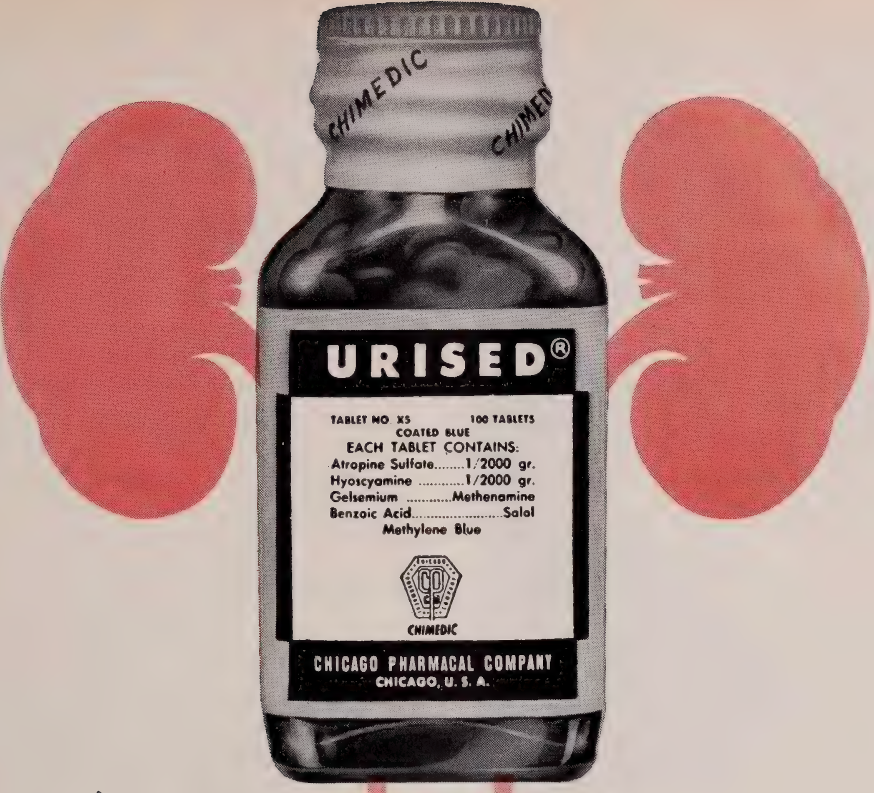
New York Medical College

Honored—An annual lecture has been established at the College in honor of Dr. B. M. Fried by his patients. The first was given on March 13 by Dr. Wendell J. S. Krieg, professor of anatomy, Northwestern University Medical School and former director of the Institute of Neurology there. Dr. Fried is a clinical associate, Department of Medicine.

State University of New York Downstate Medical Center

Grants—The National Institutes of Health awarded eight grants to the College in March. Recipients are: $98,047 to Dr. John G. Masterson, Department of Obstetrics and Gynecology, and $31,456 to Dr. Edward Eckert, Department of

[Continued on page 1882]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[Continued from page 1880]

Microbiology, for cancer research; three grants totaling $40,169 to the Department of Pathology to Drs. Patrick J. Fitzgerald, Walton H. Marsh, and Lewis H. Lipkin; $11,500 to Dr. Louis M. Hellman, Department of Obstetrics and Gynecology, and the remaining grants, $7,513 and $5,836, to Drs. Edward Muntwyler, Department of Biochemistry, and Felix Siegman, Department of Surgery.

The Life Insurance Medical Research Fund awarded $24,750 to Dr. Robert Furchgott, Department of Pharmacology.

Anniversary—The tenth anniversary of teaching psychoanalysis at the Downstate Medical Center was celebrated on April 4. Dr. Sandor Lorand, clinical professor of psychiatry, and founder and director, Division of Psychoanalytic Education, was honored. The establishment of an annual Sandor Lorand Essay Award was announced. This award will go to the candidate who during the year presents the best paper before the Psychoanalytic Association of New York.

Markle Scholarship—Dr. Philip N. Sawyer, instructor in surgery, and assistant attending surgeon, Kings County Hospital, also cochief, Vascular Service on the University Division of the Hospital, has been named one of 25 Markle Scholars for 1959.

Lecture—The Annual Adam M. Miller Memorial Lecture was delivered by Dr. Charles S. Davidson, associate professor of medicine, Harvard Medical School, on April 20.

State University of New York Upstate Medical Center

Convocation—Dr. Kenneth W. Kindelsperger, executive officer, Youth Development Center of Syracuse University, spoke before the convocation of the Public Health Nursing Department on March 18.

Alpha Omega Alpha Lecture—The annual Alpha Omega Alpha lecture was given by Dr. Joseph J. Bunim on March 31. Dr. Bunim is chief, clinical investigations, National Institute of Arthritis and Metabolic Diseases. The lecture followed the annual initiation banquet at which four third-year medical students, Daniel L. Dombroski, Syracuse; Robert E. Alessi, Rome; Samuel D. McFadden, Jr., Winchester, Virginia; and Samuel O. Thier, Brooklyn, were initiated.

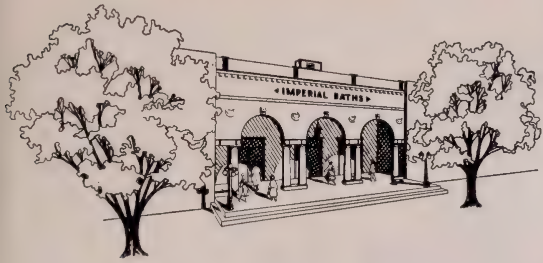
University of Rochester School of Medicine and Dentistry

To Retire—Dr. Wallace O. Fenn, chairman, Department of Physiology, and last of the original department heads of the School, will retire as department chairman on June 30. He has been a member of the faculty since 1924. In October, 1958, he was awarded the Gold Medal of the Medical Alumni Association in recognition of his inspiring teaching and devotion to the medical students.

Appointed—Dr. William D. Lotspeich, chairman of the physiology department, University of Cincinnati College of Medicine since 1951, will succeed Dr. Wallace O. Fenn as chairman, Department of Physiology.

What is a cynic? A man who knows the price of everything, and the value of nothing.—OSCAR WILDE

DOORWAY to HEALTH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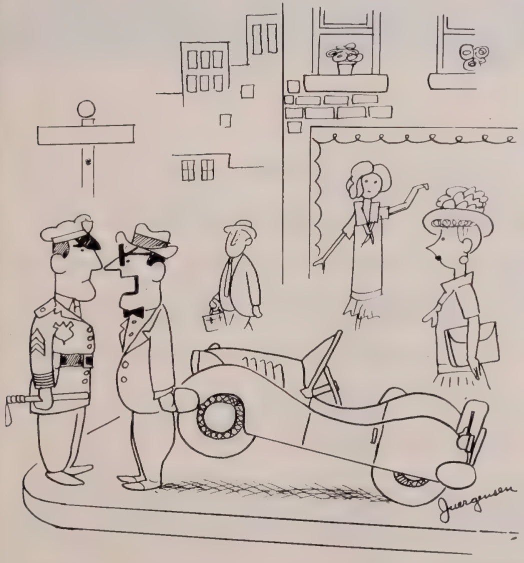
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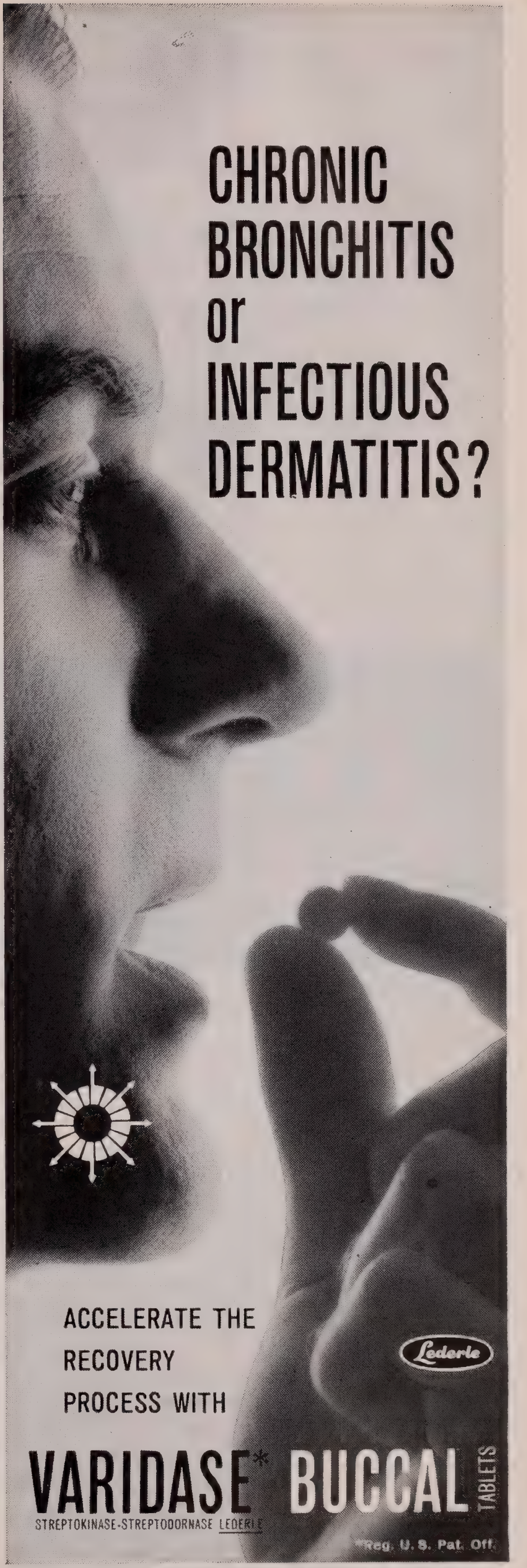
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Dr. Donal Dunphy
Phone: SUmmer 5100

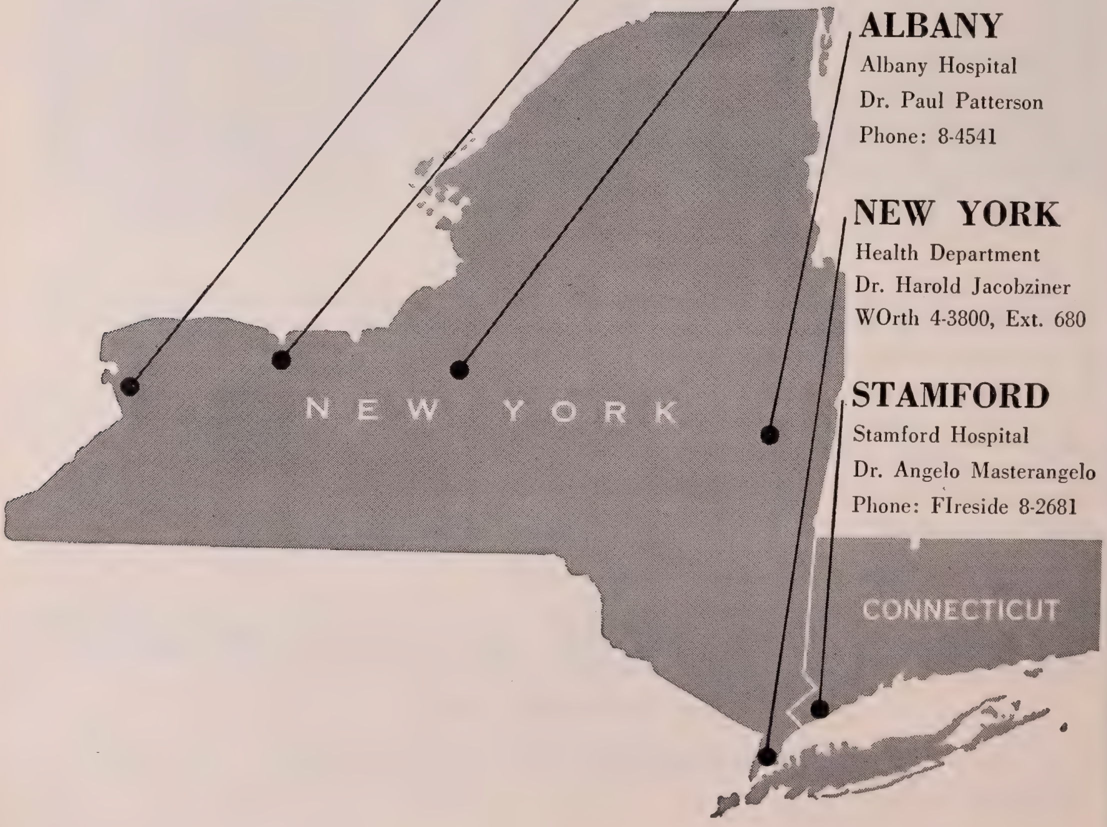
ROCHESTER
Strong Memorial Hospital
Dr. Charles Lobeck
Phone: GReenfield 3-4400

SYRACUSE
City Hospital
Dr. Paul Wehrle
Phone: GRanite 6-3166

ALBANY
Albany Hospital
Dr. Paul Patterson
Phone: 8-4541

NEW YORK
Health Department
Dr. Harold Jacobziner
WOrth 4-3800, Ext. 680

STAMFORD
Stamford Hospital
Dr. Angelo Masterangelo
Phone: FIreside 8-2681



when pollen allergens attack the nose...

Triaminic provides more effective therapy in respiratory allergies because it combines two antihistamines[1,2] with a decongestant.

These antihistamines block the effect of histamine on the nasal and paranasal capillaries, preventing dilation and exudation.[3] *This is not enough;* by the time the physician is called on to provide relief, histamine damage is usually present and should be counteracted.

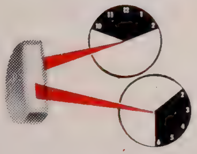
The decongestive action of orally active phenylpropanolamine helps contract the engorged capillaries, reducing congestion and bringing prompt relief from nasal stuffiness, rhinorrhea, sneezing and sinusitis.[4,5]

TRIAMINIC is orally administered, systemically distributed and reaches *all* respiratory membranes, avoiding nose drop addiction and rebound congestion.[6,7] TRIAMINIC can be prescribed for prompt relief in summer allergies, including hay fever.

References: 1. Sheldon, J. M.: Postgrad. Med. **14**:465 (Dec.) 1953. 2. Hubbard, T. F. and Berger, A. J.: Annals Allergy p. 350 (May-June) 1950. 3. Kline, B. S.: J. Allergy **19**:19 (Jan.) 1948. 4. Goodman, L. S. and Gilman, A.: Pharmacol. Basis Ther., Macmillan, New York, 1956, p. 532. 5. Fabricant, N. D.: E.E.N.T. Monthly **37**:460 (July) 1958. 6. Lhotka, F. M.: Illinois M.J. **112**:259 (Dec.) 1957. 7. Farmer, D. F.: Clin. Med. **5**:1183 (Sept.) 1958.

Triaminic®

TRIAMINIC provides around-the-clock freedom from hay fever and other allergic respiratory symptoms with just one tablet q. 6-8 h. because of the special timed-release design.



Each TRIAMINIC timed-release tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
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Also available: TRIAMINIC SYRUP for those patients of all ages who prefer a liquid medication. Each 5 ml. teaspoonful is equivalent to ¼ Triaminic Tablet or ½ Triaminic Juvelet. TRIAMINIC JUVELETS provide half the dosage of the Triaminic Tablet with the same timed-release action for prompt and prolonged relief.

STOP *running noses* *and open stuffed noses orally*

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SUMMARY OF COUNCIL MINUTES

January 8, 1959

THE Council of the Medical Society of the State of New York met at the Society's headquarters, 750 Third Avenue, New York City, Dr. Leo E. Gibson, president, presiding.

Executive Committee

Communications.—Dr. W. P. Anderton, secretary, reported on communications acted upon by the Executive Committee, including the resignation of Dr. Melvin N. Newquist from the Industrial Health Committee and allowing a member of the Broome County Medical Society to retain membership therein after moving his practice to Tioga County.

The Council *approved* the actions of the Executive Committee.

Dues Remissions.—The Council *voted* to remit annual State dues of three members for 1958 because of illness; one member for 1958 and one member for 1959 because of military service; and one member for 1958 because of financial hardship.

Secretary's Report

The Council *approved* this report, which detailed the meetings and conferences in which he had participated, and the condition of Miss Elizabeth Wheeler, a former employe, who had fractured a femur.

He also reported the following: (1) the resignation of Dr. Seymour Goldenberg, New York City, from the Special Committee on Operating Room Mortality and the appointment of Dr. Richard Ament, Buffalo, to take his place; (2) the invitation of the Medical Society of the County of Monroe to the Society to hold its annual convention in Rochester in 1961; (3) that the Speaker of the House of Delegates of the American Medical Association had approved of our Society inviting Governor Rockefeller to address the American Medical Association House of Delegates in New York City in 1961; (4) the appointment of Dr. James F. Gardner, Rochester, to take the place of Dr. Robert J. Calihan who had resigned from the Legislation Committee.

Treasurer's Report

Dr. Maurice J. Dattelbaum presented the Treasurer's Report and the budget additions and reductions which *were approved* by the Council.

Executive Director's Report

Dr. Herbert T. Wagner, executive director, reported his activities during the preceding month. The Council *approved* his attendance at the Blue Shield convention in Chicago in February.

Reports of Committees

Blood Banks Commission.—Dr. Henry I. Fineberg, chairman, reported that the Blood Banks Commission was planning its annual meeting in conjunction with the State Society's annual convention in May and that Dr. J. Stanley Kenney, Dr. Dorothea Worcester, and Miss Evelyn Clarke, executive director, had represented the Blood Banks Association at the annual meeting of the American Association of Blood Banks in Cincinnati in November. He detailed the financial status of the Blood Banks Association and the North East District Clearing House and recommended an appropriation of $8,500 for the Association and the Clearing House for 1959.

The Council *approved* the report.

Constitution and Bylaws.—Dr. Ezra A. Wolff, chairman, reported amendments to the constitutions of the Allegany and Nassau County Medical Societies and a proposed revision of the constitution and bylaws of the Woman's Auxiliary to the Medical Society of the State of New York.

The Council *approved.*

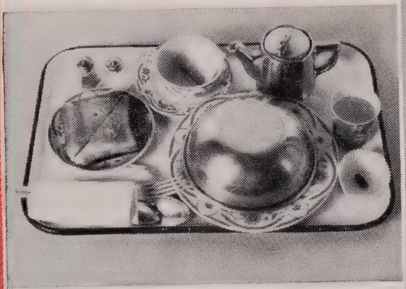
Economics.—Dr. John C. McClintock, chairman, reported that the committee recommended that the State Society not undertake a master plan of group life insurance or of group major insurance coverage for members of the State Society and that these matters be left to the county societies and the district branches.

The Council *adopted* this recommendation.

Medical Expense Insurance Subcommittee.—The Council *approved* the proposal of the Subcommittee on Medical Expense Insurance to sponsor a meeting

[Continued on page 1890]

CORN FLAKES



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ready to recover
ready to rebuild
ready to resist

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Science for the World's Well-Being

[Continued from page 1888]

of New York State Blue Shield Plans to discuss matters of mutual interest to be held in New York City January 31.

Hospital and Professional Relations.—Dr. Raymond S. McKeeby, chairman, reported that the committee had met on January 7 to discuss Resolution 58-51 having to do with the disapproval "of the practice of a hospital charging the patient a fee for taking of an electrocardiogram and the hospital charging another fee not covered by Blue Cross insurance for the interpretation of the same electrocardiogram," and that this matter would be discussed at a meeting with the Hospital Association.

The Council *approved* the report.

Labor Union and Industrial Health Clinics.—Dr. Joseph A. Lane, chairman, reported that a meeting was planned for February 11 in New York City with leaders of the AFL-CIO.

The Council *approved.*

Legislation.—Dr. James M. Blake, chairman, reported activities pertaining to the opening of the New York State Legislature and that a meeting of the Legislation Committee was scheduled for January 28 in Albany. He detailed the various bills in which the State Society is interested, including the bills concerning abolishing of Medical Practice Committees, injunctions, chiropractic licensure, autopsy law, and licensing of clinical laboratories.

The Council *approved* the report.

Federal Legislation Subcommittee.—Dr. John F. Rogers, chairman, reported a conference with Mr. Charles Johnson of the American Medical Association Field Service to discuss the Forand Bill and the possible activities of the State Society.

The Council *approved* this report.

Cults.—Dr. James M. Blake, chairman, reported the activities of the committee.

The Council *approved* the report.

Special Committee to Study the 1958 Management Survey Report.—Dr. Renato J. Azzari, chairman, announced that his committee would have a report for the February meeting of the Council.

Office Administration and Policies.—On behalf of the chairman, Dr. John J. Masterson, Dr. Anderton reported that the committee had authorized Dr. Wagner to investigate the establishing of a uniform letterhead to be used when present supplies are exhausted and detailed other personnel matters which had come before the committee.

The Council *approved.*

Publication.—Dr. Alfred P. Ingegno, chairman, reported that Dr. John J. Butler had resigned from the Associate Editorial Board and that the committee planned to review the curricula vitae of all proposed members before recommending appointments to the Council.

The Council *approved* the report.

Public Health and Education.—Dr. Norman S. Moore, chairman, reported that ten postgraduate education meetings had been arranged since his previous report to the Council and described the activities of the following subcommittees:

Subcommittee on Geriatrics—Dr. Joseph J. Witt, chairman, recommended: (1) that the State Society favor reducing Blue Shield schedules for persons over sixty-five years of age with reduced income and very modest resources; (2) that the title of the subcommittee be changed to Subcommittee on Aging; (3) that a State-wide conference on problems of the aging be held in Utica on March 7 cosponsored by the State Medical Society and the State Department of Health.

Subcommittee on General Practice.—Dr. Floyd C. Bratt, chairman, recommended that the Council do everything possible to draw attention of physicians in the State to the necessity of having everyone under the age of forty immunized with Salk vaccine.

Dr. Moore requested approval of his attendance at the meeting on postgraduate education to be held in Chicago in February.

The Council *approved* the report as a whole.

Staphylococcal Infections.—Dr. James Greenough, chairman, reported the distribution of copies of the "Guide for Prevention of Infections in Hospitals."

Public Relations.—Dr. John F. Rogers, chairman, reported the following activities of the Public and Professional Relations Bureau: (1) that a tape recording on "Medical Legislation in New York State" was available for use at county society meetings; (2) that the proceedings of the Public Relations Conference would be published in the NEW YORK STATE JOURNAL OF MEDICINE; (3) that a briefing session for physicians interested in public speaking on the chiropractic issue would be held January 14; (4) that Dr. Thurman B. Givan, past-president, had appeared on the "Hi Mom" television show and that other local physicians were to be invited to participate; (5) that a meeting with representatives of press, radio, and television to renew and review the "Guide for Cooperation for Doctors, Hospitals, and Reporters" would be held on January 8; and (6) that routine press releases and the services of the bureau to the Woman's Auxiliary and other groups had been carried on.

Scientific and Educational Trust.—Dr. Henry I. Fineberg, chairman, reported that the committee

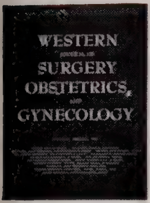
[Continued on page 1894]

QUESTION:

Why is Bellergal an unusually effective adjunct in functional gynecologic disorders?

ANSWERS:

Quoted from published reports of leading clinicians.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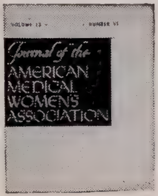
SURGERY
OBSTETRICS,
GYNECOLOGY

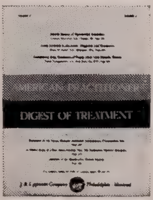
"Remarkable improvement . . . obtained in relatively all major complaints [associated with dysmenorrhea, pelvic congestive symptoms, menopausal distress]. . . . A more uniform and prolonged relief of tension may now be obtained by use of Bellergal Spacetabs." *(Stewart, R. H.: West. J. Surg. 64:650, Dec. 1956.)*


Journal of the
AMERICAN
MEDICAL
WOMENS
ASSOCIATION

". . . of 125 women who presented climacteric symptoms: flushes, flashes, sweats, palpitation, tension, fatigue, bloating, insomnia, and headaches . . . 73 responded [to a 2 to 4 week course of Bellergal therapy] so well that the dose was reduced...or the drug was completely discontinued. Some now only take a few tablets to help them through critical situations. . . ." *(Kavinoky, N. R.: J. Am. M. Women's A. 7:294, Aug. 1952.)*

Medical
TIMES

". . . based on the concept that a labile nervous system is a major factor in [premenstrual tension and disturbances of the menopause] . . . the combination of drugs present in Bellergal served admirably in the reduction of symptoms, both as to degree and number. The improved sense of well-being offers satisfactory evidence that such patients may derive considerable benefit from this simple method of treatment." *(Craig, P. E.: M. Times 81:485, July 1953.)*


AMERICAN PRACTITIONER
DIGEST OF TREATMENT

". . . of 303 gynecologic patients [premenstrual tension, dysmenorrhea, menstrual irregularity, postmenstrual tension] . . . a total of 90 per cent of the cases were benefited by the use of this drug [Bellergal]." *(MacFadyen, B. V.: Am. Pract. & Digest. Treat. 2:1028, Dec. 1951.)*

for functional disorders
of
menstruation and menopause

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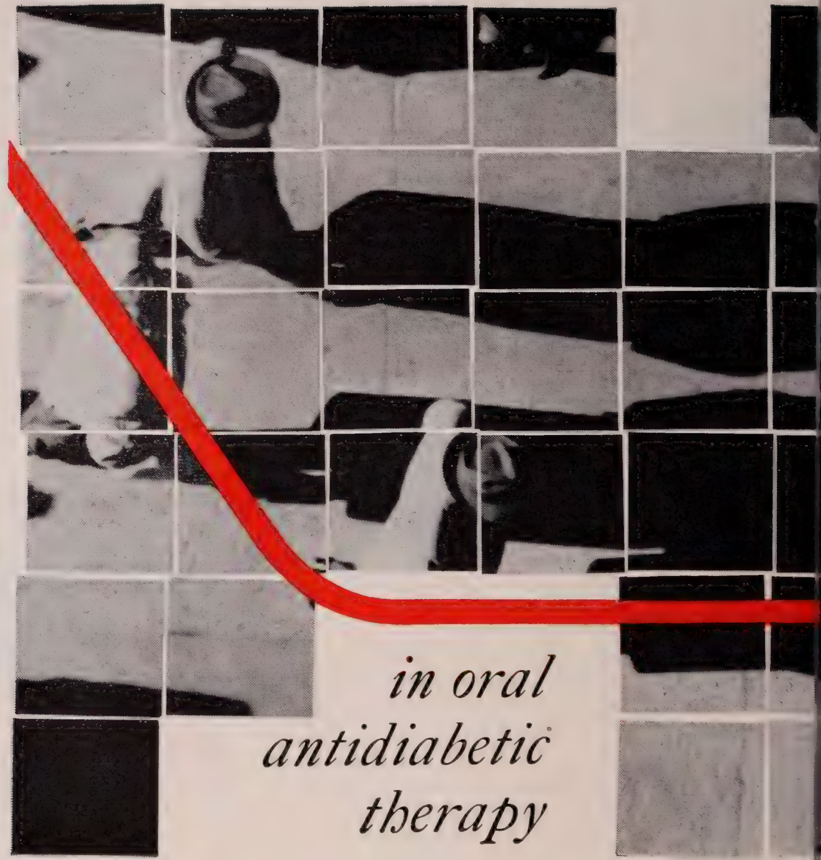
effectively relieve distress of
hot flashes . . . sweating . . .
headache . . . fatigue . . . irritability . . .
palpitation . . . insomnia

BELLERGAL SPACETABS
Bellafoline 0.2 mg., ergotamine tartrate 0.6 mg., phenobarbital 40.0 mg. *Dosage:* 1 in the morning, and 1 in the evening.

BELLERGAL TABLETS
Bellafoline 0.1 mg., ergotamine tartrate 0.3 mg., phenobarbital 20.0 mg. *Dosage:* 3 to 4 daily. In more resistant cases, dosage begins with 6 tablets daily and is slowly reduced.

SANDOZ



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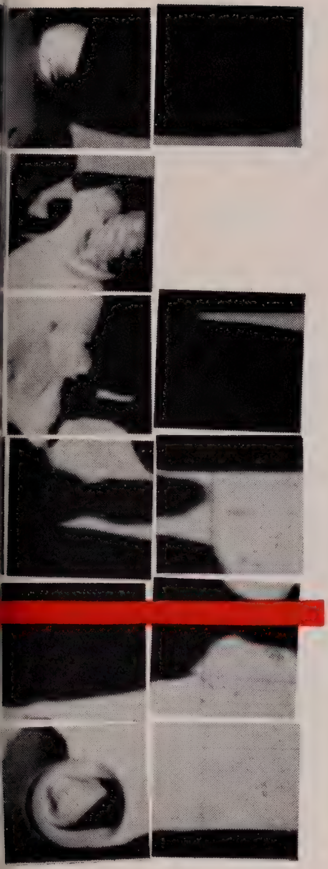

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Diabinese increases the opportunity of success and minimizes the danger of therapeutic failure. It has the necessary *potency* to assure effective reduction of blood sugar in most maturity-onset diabetics—even in patients who have failed to respond to other oral therapy.[1]

Diabinese is eliminated *gradually* as the active substance, thus permitting "more even reduction of the blood sugar..."[2] Its effect is "devoid of marked blood sugar fluctuations and wide metabolic excursions"[3] observed with less potent, readily metabolized medication requiring multiple dosage.

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Diabinese is "well tolerated with minimal side effects in the therapeutic range of 100 to 500 mg."[3] Its striking effectiveness and "almost complete absence of unfavorable side effects" have led to the prediction that "Diabinese will eventually prove to be the drug of choice in the sulfonylurea group."[4]

ECONOMY AND CONVENIENCE

Diabinese has the necessary *duration* of effect to permit convenient once-a-day dosage. Moreover, the average dose of Diabinese (285 mg. per day)[5] means a substantial reduction in cost to your patients.

Economical once-a-day dosage

Supplied: Tablets, white, scored, 250 mg., bottles of 60 and 250; 100 mg. bottles of 100.

1. Sugar, S., et al.: M. Ann. District of Columbia 27:445, 1958. 2. O'Driscoll, B. J.: J. Irish M. A. 43:323, 1958. 3. Greenhouse, B.: In Conference on Diabinese and Diabetes Mellitus, New York Acad. Sc., Sept. 25-27, 1958, New York, N. Y. 4. Sheppe, W. M.: West Virginia M. J. 54:467, 1958. 5. Schumacher, O. P., et al.: Cleveland Clinic Quart. 26:12, Jan., 1959.

PFIZER LABORATORIES
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DIABINESE®

[Continued from page 1890]

to study the possible establishment of a scientific and educational trust had reviewed the organization of the educational and scientific trust of the Medical Society of the State of Pennsylvania and recommended that one or more representatives from the State Society visit the headquarters of the Pennsylvania Trust in Harrisburg to observe its operation, and that a meeting of the committee was to be held on January 22.

The Council *approved* this report.

Workmen's Compensation.—Dr. Gerald D. Dorman, chairman, reported that the new Workmen's Compensation minimum fee schedule which would be effective March 1, 1959, was now available; that several minor inconsistencies in the new fee schedule were to be ironed out at an early date; and that individual copies of the new schedules were to be mailed to every authorized physician in the State by the Workmen's Compensation Board.

The Council *approved* the report.

Unfinished Business

Interprofessional Association.—Dr. Henry I. Fineberg reported that a meeting of the Interprofessional Association of New York State had been held to elect officers for 1959; that Dr. Anderton had been elected secretary of the new organization and Dr. Waring Willis of Westchester had been appointed to the economics committee of the group.

The Interprofessional Association includes representatives of the State Society and the State dental, and veterinary medical organizations.

The Council *approved* the report.

The meeting was adjourned at 11:40 A.M.

BOOKS REVIEWED

Infectious Diseases of Children. By Saul Krugman, M.D., and Robert Ward, M.D. Octavo of 340 pages, illustrated. St. Louis, The C. V. Mosby Co., 1958. Cloth, $10.

The authors of this book include a number of important variations of infectious diseases of children as they occur in the adult. All of the infectious diseases are not described, just the majority of the common ones.

The alphabetic arrangement of subjects makes simple reference to them. Each is discussed in detail under outstanding titles and subtitles. Under the title "Differential Diagnosis" the diseases are discussed elaborately and very instructively. The description of each is followed by a complete list of references.

The final chapter is significant and enlightening. It is titled "Control of Communicable Diseases" and it is written by an outstanding authority, Dr. Morris Greenberg, the Director of the Bureau of Preventable Diseases, Health Department, New York City.

This book should prove of interest to pediatricians, general practitioners, medical students, and all specialists who have any association with children.—SAMUEL K. LEVY

Emotional Problems of Childhood. By Samuel Liebman, M.D. Octavo of 176 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1958. Cloth, $5.00.

This is the fourth in a series of volumes for the medical practitioner related to the handling of emotional problems in daily practice. This work deals with the emotional problems of childhood and is based on lectures given by each of the nine authors at the North Shore Hospital in Winnetka, Illinois.

The initial chapter deals with the psychologic aspects of parent-child relationships and shows how each of the three, through their ability to give and receive from one another, may achieve happiness.

Other chapters include observations on feeding, sleep, and motility patterns in infants, management

[Continued on page 1896]

NEW AND EXCLUSIVE . . . the only 5-action, one-tablet treatment...for comprehensive control of your asthma patients, prescribe

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THESE DISTURBING PHENOMENA	APPROPRIATELY CONTROLLED	BY A ONE TABLET FORMULA:
1. Bronchospasm	Bronchodilator	Ephedrine sulfate, 24 mg.
2. Local bronchial edema	Diuretic	Theophylline, 100 mg.
3. Allergic complications	Antihistaminic	Thenyldiamine HCl, 10 mg.
4. Tenacious mucus	Expectorant	Glyceryl guaiacolate, 100 mg.
5. Anxiety-tension	Sedative	Phenobarbital, 8 mg.

CLINICALLY PROVEN—good to excellent results in 91% of 593 patients.[1]

WELL TOLERATED—side effects in these studies mild and temporary—incidence only 4.7%.[1]

INDICATIONS—For prevention or relief of the symptoms of allergic asthma, asthmatic bronchitis, chronic bronchitis with emphysema, emphysematous bronchospasm. Also for the relief of bronchial asthma associated with hay fever, allergic rhinitis and nonseasonal upper respiratory allergies.

DOSAGE: Adults: one tablet every 3 or 4 hours, four to five times daily. Children over six: one half the adult dosage.

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FOR PROMPT EMERGENCY RELIEF **BRONKEPHRINE®** hydrochloride

(ethylnorepinephrine-Breon—10 cc. vials 2 mg./cc.)

"... far more than a substitute for epinephrine ..."[2]

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1. Personal communication. 2. Foland, J. P.: Postgrad. Med. 18:397 (Nov.) 1955.

[Continued from page 1894]

of speech disorders and the resultant learning difficulties, social maladjustment, and juvenile delinquency. In the last, the emphasis is on a specific type of persistent delinquent who has an impulsive, psychopathic character. The delinquent should be viewed as a bio-psycho-social entity.

The management of puberty and sex, behavior problems and neuroses of adolescence, and the emotional problems of physically handicapped children are also discussed. Most of the authors have included some bibliography.

The approach of the majority of the writers is psychoanalytically oriented. The general practitioner will gain a good insight into the emotional problems of childhood through reading this book and should find some specific valuable suggestions for his personal use.—Stanley S. Lamm

Diseases of the Esophagus. By J. Terracol, M.D., and Richard H. Sweet, M.D. Quarto of 682 pages, illustrated. Philadelphia. W. B. Saunders Co., 1958. Cloth, $20.

This textbook is an English translation of Professor Terracol's volume originally published in the French language. The present American edition represents a revision as well as an inclusion of newer knowledge particularly regarding surgical treatment of esophageal diseases.

There are 29 chapters, an appendix with diets and tube feedings, an extensive bibliography, and more than 400 excellent illustrations. It is a comprehensive volume on diseases of the esophagus fully discussing diagnosis, medical, irradiation, and surgical treatment. The combined viewpoints and experiences of an outstanding endoscopist and thoracic surgeon are presented. There is an excellent chapter on esophagoscopy. However, it contains no reference to the flexible esophagoscope which has been finding increased application in medical diagnostic problems of the esophagus.

This authoritative publication is one which can be highly recommended to all physicians.—Milton J. Matzner

Pathophysiology in Surgery. By James D. Hardy, M.D. Octavo of 704 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $19.

Surgery has grown beyond the realm of anatomy and is now concerned with alteration of function. This embodies the physiologic changes from derangements which are due to trauma and disease. The surgeon is concerned with the alterations in the chemical and physiologic processes of his patient. Good pre- and postoperative care based on sound principles of physiology have become as important as the technic of doing the operation.

The author is qualified to write such a book. In his capacity as Director of Surgical Research as well as a clinical surgeon, he is in constant contact with the surgeons' problems from both the laboratory and the bedside. He fulfills a definite need in this volume by bringing the material to the level of the care of the patient.

The material is organized to represent correlation of all the physiologic activities. There are many excellent diagrams. They represent a framework for the text. The single authorship is an excellent idea especially when written by such a capable author. The detail is such that it gives the general surgeon an excellent background for the practice of surgery. Subjects are viewed in the proper prospective. Single authorship prevents overlap of material.

The first ten chapters deal with general principles of physiology in relation to trauma, burns, nutrition, wound healing, cancer, enzymology, etc. They serve as an introduction to the chapters dealing with considerations of diseases of the various organs.

A section on chemical and physiologic tests currently in use would have been a distinct asset. The changes of normal values resulting from specific lesions should have been recorded.

There is a list of very fine references at the end of each chapter. Each reference is authoritative and a source of information.

There is a distinct need for this volume especially for the young surgeon, the resident who is a candidate for the Boards, and the older surgeon who needs refreshers on the newer advances in management of surgical disease. The book is recommended very highly.—Alan A. Kane

Schizophrenia. By Manfred Sakel, M.D. Octavo of 335 pages. New York, Philosophical Library, 1958. Cloth, $5.00.

The author is credited with originating the insulin shock treatment for schizophrenia. This book represents his conclusions about the etiology, course, and treatment of the disease.

He rejects the psychoanalytic hypotheses and offers his own ideas about physiologic and anatomic changes. His conclusions are backed up by his experience and theories. Statistical data is meager and the index covers only one page. There is no bibliography.

The author's place in the history of psychiatry is secure on the basis of his innovation in proposing and carrying out one of the first worth-while treatments for schizophrenia. This book is an interesting historical document.—Edward L. Pinney, Jr.

[Continued on page 1900]

Constructive Therapy for the Handicapped or
Infirm Older Person

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For over thirty years, the parent institution has pioneered in developing progressive attitudes and active treatment programs for older men and women, with emphasis on both physical and mental needs.

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125 mg. 250 mg.	peach flavored, 125 mg. per teaspoonful (5 cc.), 2 oz. bottle	peach flavored, 100 mg. per cc. (5 mg. per drop), 10 cc. bottle (with calibrated dropper)

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New hope for fetal salvage
Delalutin
SQUIBB HYDROXYPROGESTERONE CAPROATE
improved progestational therapy

The results of administering Delalutin before the 12th week of gestation to 82 women with habitual abortion were reported recently by Reifenstein.[1] Every patient had experienced at least three consecutive abortions immediately preceding the treated pregnancy. More than 68% of these women were delivered successfully and uneventfully following Delalutin therapy.

Boschann,[2] in a study of pregnancies with threatened abortion, found that:

37% of 73 pregnancies were carried to term without progestational therapy
64% of 42 pregnancies were salvaged by progesterone
83% of 73 pregnancies were salvaged by Delalutin

Eichner,[3] found that with Delalutin fetal salvage of infants below term weight (1000 to 2000 gm.) was significantly improved.
108 (76%) of 142 babies of this birth weight survived without progestational therapy.
16 (100%) of 16 babies of this birth weight survived with Delalutin therapy.
A comparison study was made of a group of repeated aborters treated with Delalutin, and a group with a similar history treated with bed rest and sedation.[4] Pregnancy salvage with Delalutin was twice that of the control group. Delalutin was found to be "highly active," well-tolerated and long-acting.

Delalutin offers these advantages over other progestational agents:

- longer-acting and more sustained therapy
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References: 1. Reifenstein, E. C., Jr.: *Annals N. Y. Acad. Sci.* 71:762 (July 30) 1958. 2. Boschann, H-W.: *ibid.*, p. 727. 3. Eichner, E.: *ibid.*, p. 787. 4. Hodgkinson, C. P.; Igna, E. J., and Bukeavich, A. P.: *Am. J. Obst. and Gyn.* 76:279, 1958.

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[Continued from page 1896]

Pediatric Surgery. By Orvar Swenson, M.D. Octavo of 740 pages, illustrated. New York, Appleton-Century-Crofts, Inc., 1958. Cloth.

The name of the author has become a household word in pediatrics. As one of the immortals of "Pediatric Surgery," he has made important contributions by proving the cause and popularizing the surgical cure of Hirschsprung's Disease in infants and children.

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Advances in Pediatrics. Volume 10. By S. Z. Levine. Octavo of 362 pages. Chicago, The Year Book Publishers, 1958. Cloth, $9.00.

This volume consists of seven chapters covering interesting and important subjects, each subject being timely and followed by an adequate bibliography.

Space does not permit a detailed review of each part. Among the many fascinating articles, the monograph on "Convulsive Disorders in Infants and Children," by Samuel Livingston of the Johns Hopkins Hospital, with the subject of "Hereditary Factors" discussed by Dr. Victor Eisner, beautifully demonstrates the comprehensive and complete way that the many subjects are treated.

Another monograph worthy of note is the one on "Muscular Disorders of Childhood" by Dr. Frank H. Tyler of the University of Utah. He reviews the subject in considerable detail and the article contains several interesting and instructive charts.

Further elaboration is not essential. Suffice it to say that all the parts are written exceedingly well by well-known authorities.—SAMUEL K. LEVY

Emergency Treatment and Management. By Thos. Flint, Jr., M.D. Second edition. Duodecimo of 539 pages. Philadelphia, W. B. Saunders Co., 1958. Cloth, $8.00.

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Bailey's Textbook of Histology. Fourteenth edition. By W. M. Copenhaver, Ph.D., and Dorothy D. Johnson, Ph.D. Octavo of 633 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $11.

The authors have successfully revised their 14th edition to keep abreast of the ever-growing knowledge of microscopy, cell chemistry, and physiology. They have added their own findings and painstaking readings to this edition and it is just what the first year student should read. Its simplicity of words and illustrations should make this volume a great aid for the student whose time is ever burdened with modern discoveries and articles.—NATHAN REIBSTEIN

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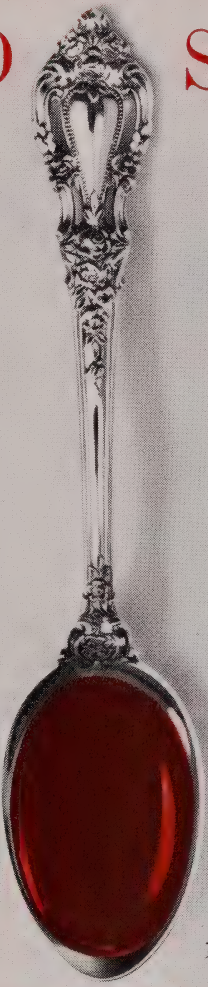

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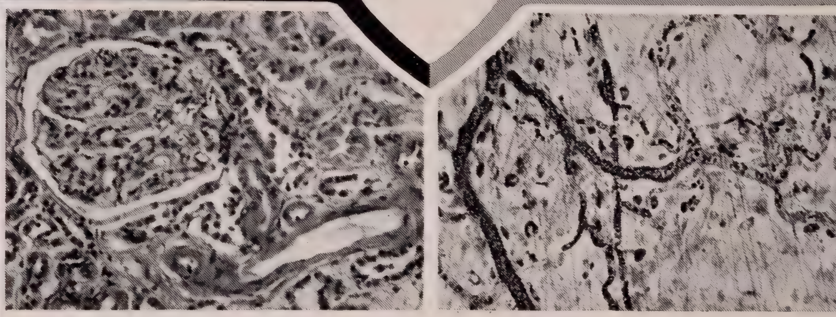

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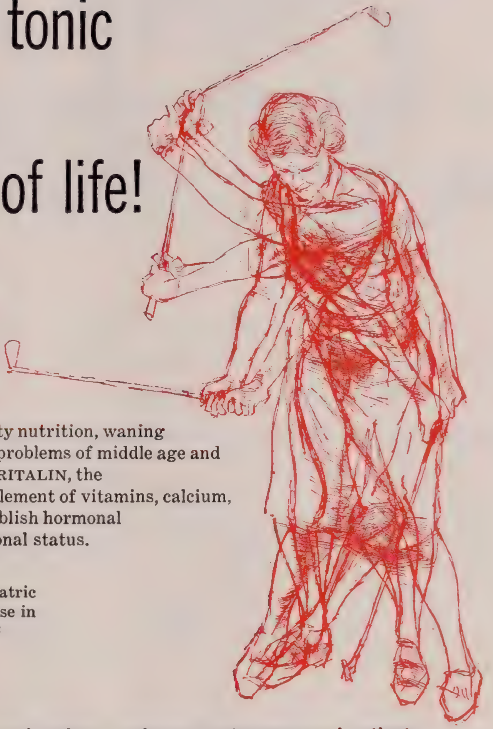

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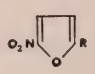
NITROFURANS—a unique class of antimicrobials—neither antibiotics nor sulfonamides 

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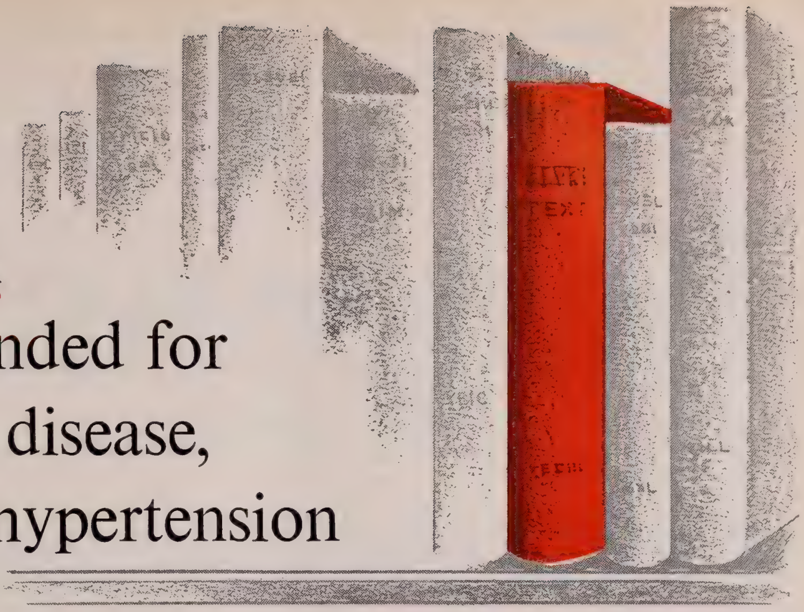

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*Paul Dudley White, "Heart Disease" 1951 (Macmillan) page 480; William D. Straud, "Current Therapy," 1955 (W. B. Saunders) page 102; Cecil & Loeb's Textbook of Medicine, 1955 (W. B. Saunders) page 1,326; Wilson & Gisvold, "Textbook of Organic Medicinal and Pharmaceutical Chemistry," 1956 (Lippincott) page 262; Goodman & Gilman, "The Pharmacological Basis of Therapeutics," 1941 (The Macmillan Co.) page 281; Albrecht, "Modern Management in Clinical Medicine," 1946 (Williams & Wilkins) page 254; Friedberg, "Diseases of the Heart," 1956 (Saunders) page 285; Walter Modell, "Drugs of Choice," 1958-1959 (C. V. Mosby) pages 100, 475, 615.

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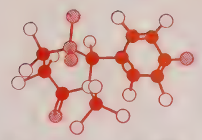

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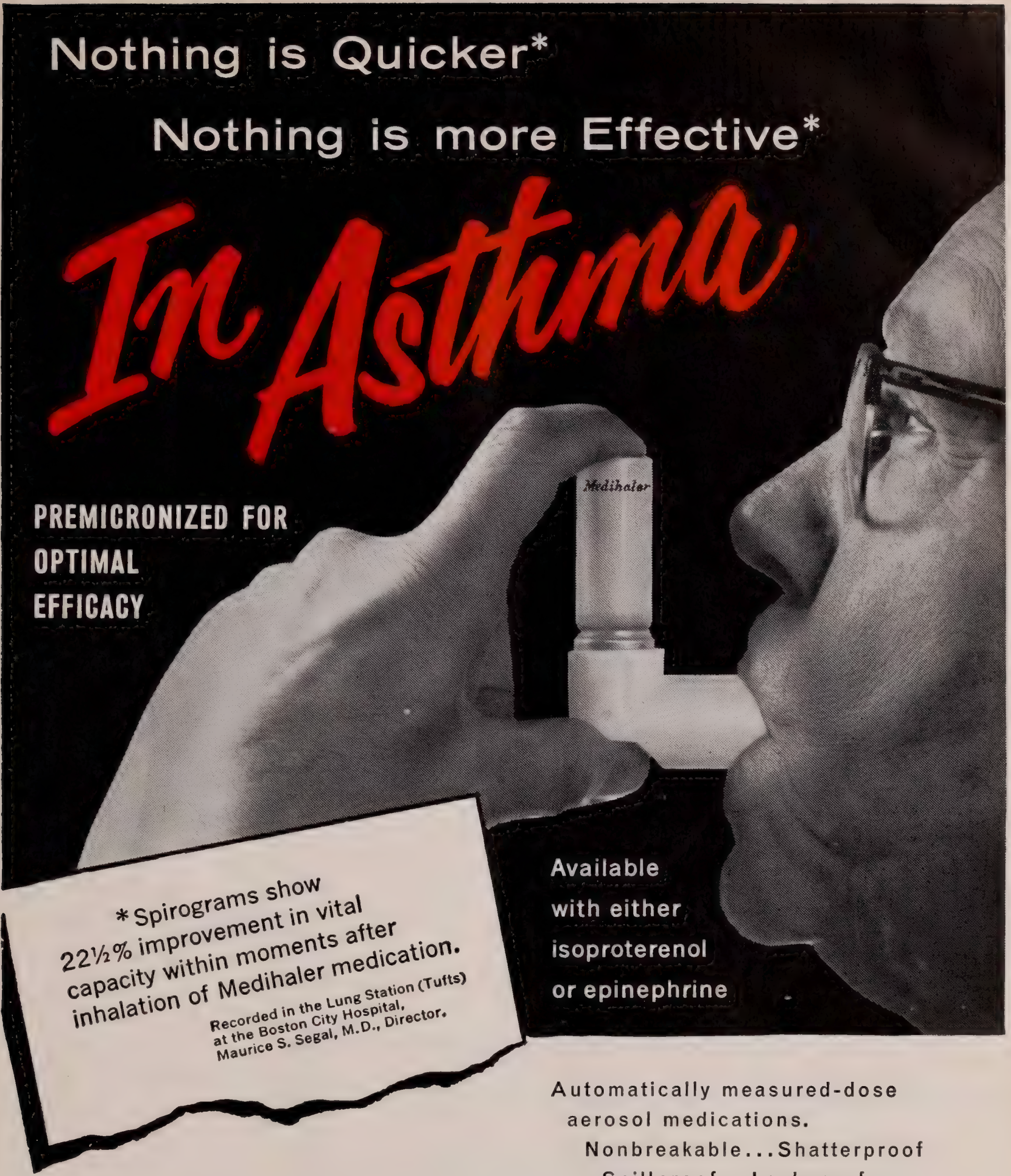
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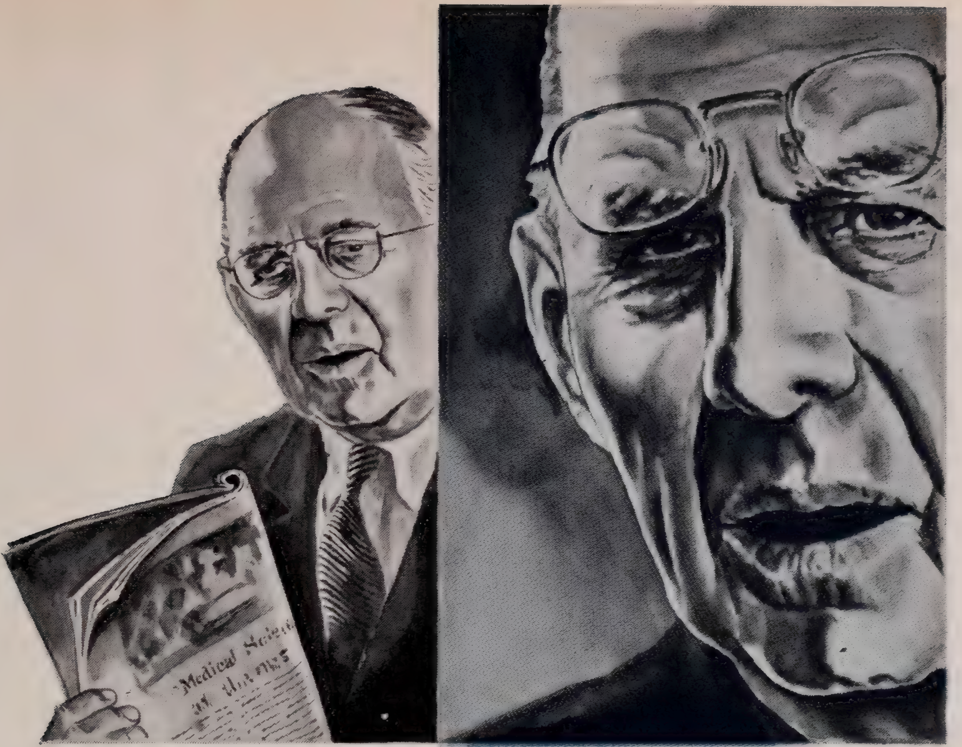

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If one . . . or all . . . needs nutritional support . . .

they
deserve

GEVRAL® capsules—14 VITAMINS AND 11 MINERAL

Vitamin-Mineral Supplement Lederle

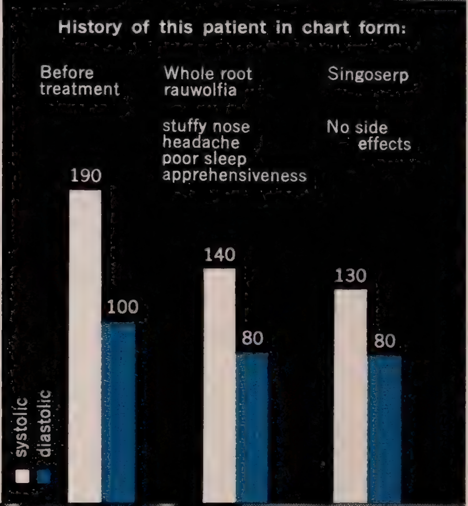
For Complete Formula see PDR (Physicians' Desk Reference), page 68

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

With Singoserp this patient's blood pressure was controlled for the first time without side effects

FROM THE FILES OF A PHILADELPHIA CARDIOLOGIST.
PHOTOS USED WITH PERMISSION OF THE PATIENT.

Tombstone salesman had known hypertension for 16 years; rejected by U.S. Army because of high blood pressure. Whole root rauwolfia lowered pressure satisfactorily, but patient could not tolerate side effects.



Singoserp in a dosage of 0.5 mg. daily lowered his blood pressure to 130/80, produced no side effects. Patient feels well, works well, speaks of marked improvement in outlook and function.

Clinical findings in 900 patients show the selective antihypertensive action of Singoserp

IN 735 PATIENTS, BLOOD PRESSURE FELL AN AVERAGE OF 30.7 mm. Hg:

- more than half of these patients suffered from **moderate to severe hypertension**
- more than half of the cases involved hypertension of at least 6 years' standing, with **many histories of up to 20 years' duration**

THE SIDE-EFFECTS PROBLEM WAS MINIMIZED IN MOST PATIENTS:

Chart shows gratifyingly low incidence of side effects in 233 patients given Singoserp with no other antihypertensive medication

Side Effect	Number	Per Cent
Lethargy	7	2.9
Headache	6	2.5
Gastrointestinal upset	3	1.2
Vertigo	2	0.8
Nasal congestion	1	0.4

a major improvement in rauwolfia

a major advance in antihypertensive therapy

DOSAGE:
In new patients: Average initial dose, 1 to 2 tablets (1 to 2 mg.) daily. Some patients may require and will tolerate 3 or more tablets daily. Maintenance dose will range from ½ to 3 tablets (0.5 to 3 mg.) daily.

In patients taking other antihypertensive medication: Add 1 to 2 Singoserp tablets (1 to 2 mg.) daily. Dosage of other agents should be revised downward to a level affording maximal control of blood pressure and minimal side effects.

Singoserp®
(syrosingopine CIBA)

CIBA
SUMMIT, N. J.

2/2658MK

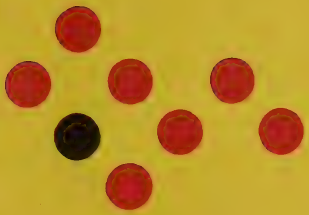
"It is concluded that the addition of buffering agents to acetylsalicylic acid in the concentrations used serves no clinically detectable useful purpose."[1]

[1] Sadove, Max S. and Schwartz, Lester: An Evaluation of Buffered Versus Nonbuffered Acetylsalicylic Acid, Postgraduate Medicine; 24:183, August, 1958

Nonbuffered Material Used—Bayer® Aspirin.

Fostex®

treats their acne while they wash



Fostex provides essential actions necessary in treating acne. It degreases, dries and peels, and degerms the skin while the patient washes.

Fostex is well-tolerated and easy to use. Instead of using soap, patients wash with Fostex Cream or Cake, following this simple routine two or four times a day—

> Wet face and other affected areas with warm water. Massage Fostex lather into the skin for 5 minutes. Rinse and dry.

FOSTEX CREAM . . . for therapeutic washing in the initial phase of oily acne treatment. In 4.5 oz. jars.

FOSTEX CAKE . . . for therapeutic washing to keep the skin dry and free of blackheads during maintenance therapy. Also used in relatively less oily acne. In bar form.

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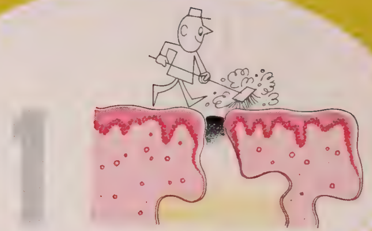
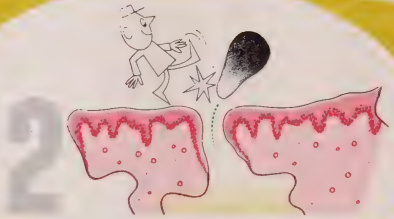
P.O. Box 31, Station G, Buffalo, New York

Makers of Lowila® Cake, Lowila Emollient, Sebulex,® Alpha-KERI,ᵀ Gentia-Jel®.

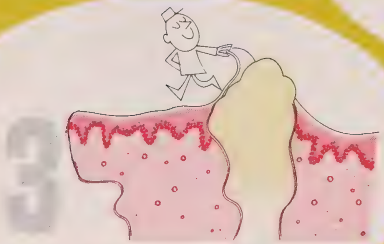
this is how Fostex works IN ACNE



Degreases the skin



Helps remove blackheads



Dries and peels the skin

Fostex completely emulsifies and washes off excess oil from the skin. It unblocks pores by penetrating and softening blackheads and sebum plugs. Keratolytic action dries and peels the skin, removing papule coverings, thus permitting proper drainage of sebaceous glands.

Fostex effectiveness is provided by Sebulytic®, a combination of surface-active cleansing and wetting agents (sodium lauryl sulfoacetate, sodium alkyl aryl polyether sulfonate, and sodium dioctyl sulfosuccinate). These agents have remarkable antiseborrheic, keratolytic and antibacterial actions which are enhanced by sulfur 2%, salicylic acid 2% and hexachlorophene 1%.

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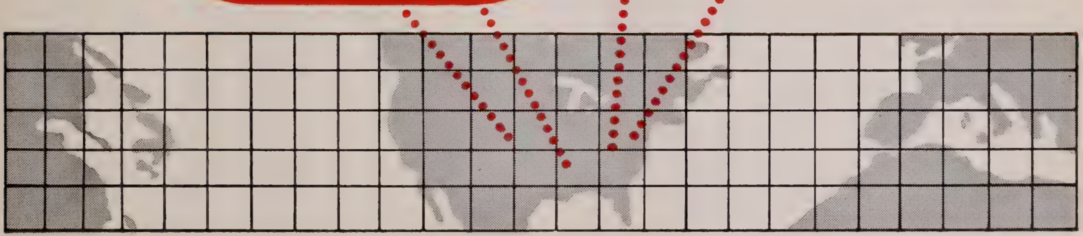
(brand of hydroxyzine)

IN GERIATRICS
"ability to decide correctly has increased, while the illogical response to anxiety has diminished."[1]

IN WORKING ADULTS
"especially well suited for ambulatory patients who must work, drive a car, or operate machinery."[3]

IN PEDIATRICS
"ATARAX appeared to reduce anxiety and restlessness, improve sleep patterns and make the child more amenable to the development of new patterns of behavior . . . ."[2]

IN GENERAL
ATARAX is "effective in controlling tension and anxiety . . . . Its safety makes it an excellent drug for out-patient use in office practice."[4]



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For childhood behavior disorders	10 mg. tablets Syrup	3-6 years, one tablet t.i.d. over 6 years, two tablets t.i.d. 3-6 years, one tsp. t.i.d. over 6 years, two tsp. t.i.d.
For adult tension and anxiety	25 mg. tablets Syrup	one tablet q.i.d. one tbsp. q.i.d.
For severe emotional disturbances	100 mg. tablets	one tablet t.i.d.
For adult psychiatric and emotional emergencies	Parenteral Solution	25-50 mg. (1-2 cc.) intramuscularly, 3-4 times daily, at 4-hour intervals. Dosage for children under 12 not established.

Supplied: Tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution, 10 cc. multiple-dose vials.

References: 1. Smigel, J. O., et al.: J. Am. Ger. Soc., in press. 2. Freedman, A. M.: Pediat. Clin. North America 5:573 (Aug.) 1958. 3. Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957. 4. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. 5. Coirault, M., et al.: Presse méd. **64**:2239 (Dec. 26) 1956. 6. Bayart, J.: Presented at the International Congress of Pediatrics, Copenhagen, Denmark, July 22-27, 1956.

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the NEW CONTRACEPTIVE
that offers
MAXIMUM
simplicity with security

Koromex a
VAGINAL JELLY
WHEN JELLY ALONE IS ADVISED

when the "jelly-alone" method is advised, **NEW** Koromex a the outstandingly competent spermatocidic agent... is now available to physicians.

ACTIVE INGREDIENTS: IN A SPECIAL BARRIER TYPE BASE

Boric Acid	2.0%
Polyoxyethylenenonylphenol	0.5%
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Large tube Vaginal Jelly, 125 gms. with patented measured dose applicator in a SANITARY PLASTIC ZIPPERED KIT for home storage (supplied at no cost)

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BONAMINE (not a phenothiazine derivative)
prevents symptoms up to 24 hours
with a single dose
without incidence of serious side effects
according to all published reports.

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brand of meclizine hydrochloride

DRUG OF CHOICE
in
nausea vertigo vomiting

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Nausea and vomiting of pregnancy or hyperemesis gravidarum • Cerebral arteriosclerosis and other geriatric indications • Emesis or dizziness associated with Menière's syndrome, radiation therapy, fenestration procedures, labyrinthitis • Motion sickness from any kind of travel.

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BONADETTES® *Tablets,* raspberry flavored, 25 mg. Boxes of 6 and 10. An excellent pediatric form—melts in the mouth, no water needed for swallowing.

DOSAGE: Usually 25 to 50 mg. once a day.

REFERENCES: 1. Seidner, H. M.: Illinois M. J. 109:20, 1956. 2. Weil, L. L.: J. Florida Acad. Gen. Practice 4:9, No. 3, 1954. 3. Moyer, J. H.: M. Clin. North America, March, 1957, p. 405. 4. Kinney, J. J.: J. M. Soc. New Jersey 53:128, 1956. 5. McClure, C. C.: Personal communication. 6. Charles, C. M.: Geriatrics 11:110, 1956.

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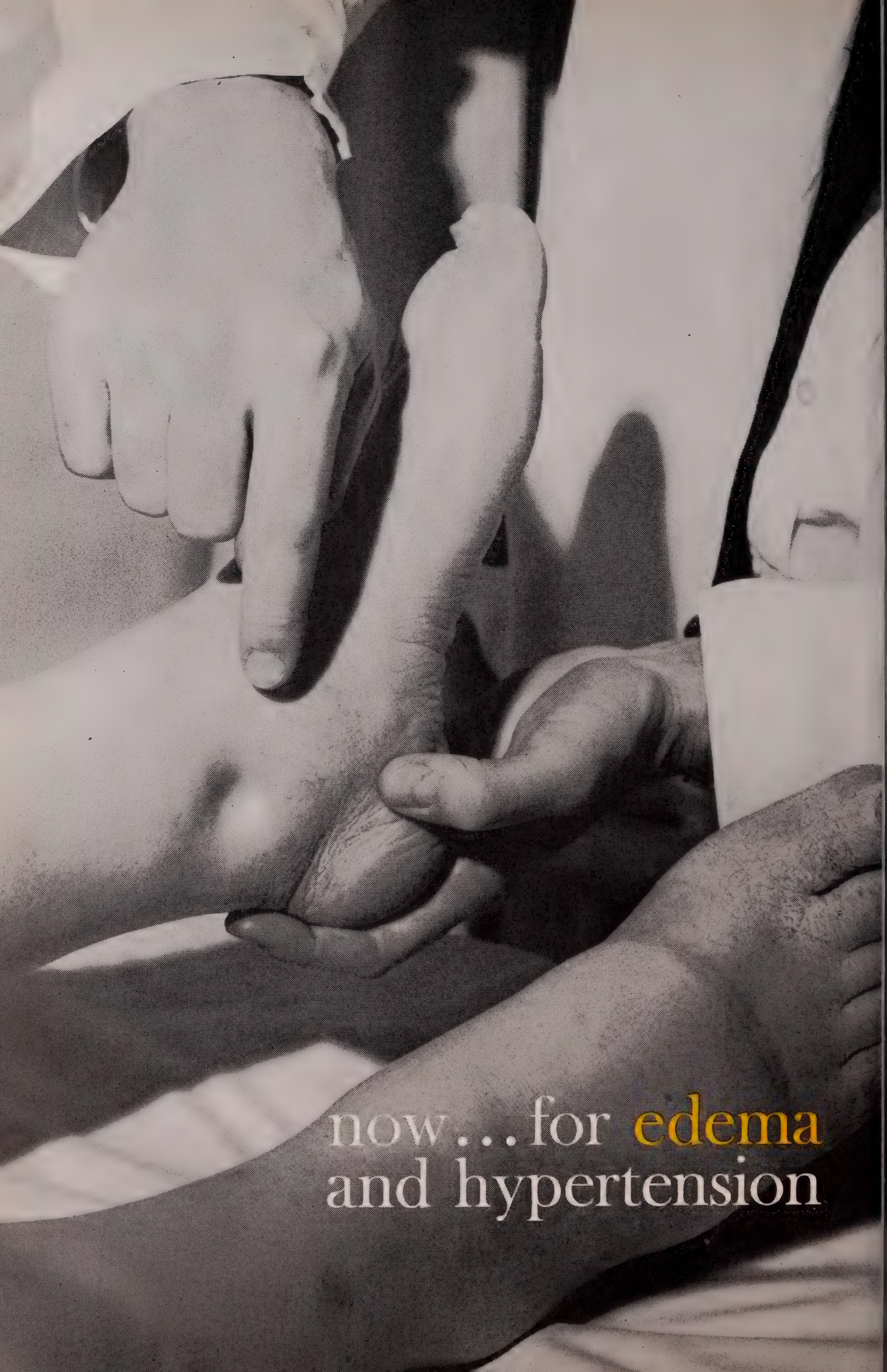

now...for edema
and hypertension

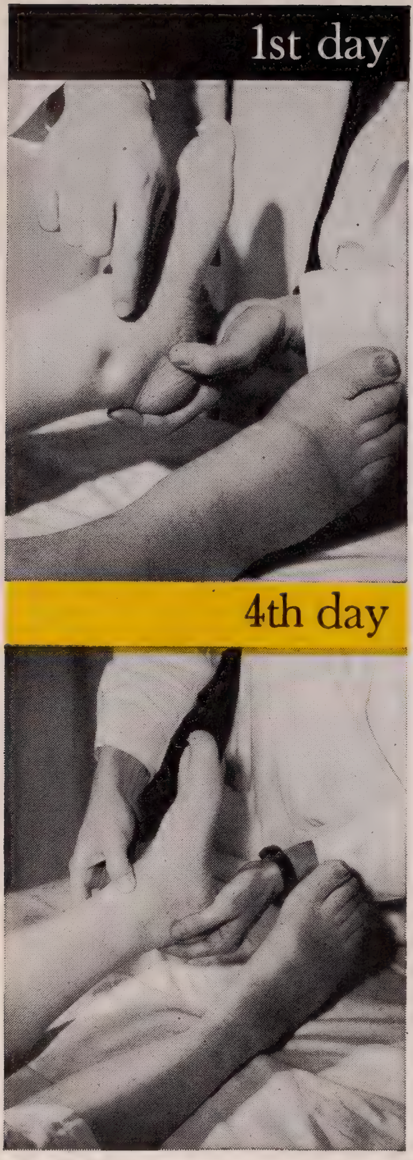
See case history of this patient on following pages.

highest fluid yields, lowest blood-pressure levels yet achieved with oral diuretic-antihypertensive therapy...

Esidrix T.M.

(hydrochlorothiazide CIBA)

2/2683MK-1



Record of patient with congestive failure, treated at a leading Philadelphia hospital. Photos used with permission of the patient.

marked pitting edema (4+) cleared in 4 days with Esidrix

ESIDRIX IS 10 TO 15 TIMES MORE ACTIVE THAN CHLOROTHIAZIDE

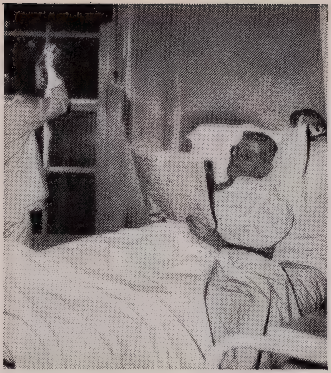
INDICATED IN . . . congestive heart failure • hypertension • hypertensive vascular disease • premenstrual edema • toxemia of pregnancy • edema of pregnancy • steroid-induced edema • nephrosis • nephritis

DOSAGE: Esidrix is administered orally in an average dose of 75 to 100 mg. daily, with a range of 25 to 200 mg. A single dose may be given in the morning or tablets may be administered 2 or 3 times a day.

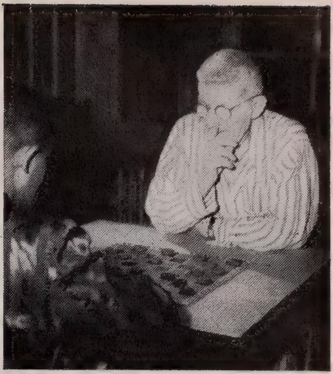
SUPPLIED: *Tablets,* 25 mg. (pink, scored); bottles of 100 and 1000. *Tablets,* 50 mg. (yellow, scored); bottles of 100 and 1000.

CIBA
SUMMIT, N. J.

L.S., 81-year-old patient with complaint of painless hematuria admitted to hospital on 3/3/59. Past history included congestive heart failure of 15 years' duration. **Clinically significant symptoms:** expiratory wheezes over entire chest; bilateral coarse rales of both bases; slight abdominal distention (without evidence of ascites); palpable liver 2-3 fingerbreadths below rib cage; bilateral pitting edema (4+) of pretibial and ankle area. **Admission diagnosis:** hematuria of unknown origin; arteriosclerotic cardiovascular disease; poorly compensated heart failure; chronic pulmonary fibrosis with pulmonary insufficiency.



Patient was put on regimen of bed rest, moderate salt restriction, digitalis and pulmonary decongestants. When ankle edema, hepatic congestion and rales failed to clear by 3/6, Esidrix 50 mg. b.i.d. was ordered. By 3/8 L.S. had lost 3 pounds. Rales decreased; there was 1+ pitting edema of ankle area only. He felt more comfortable, was able to enjoy reading newspapers and magazines in bed.



By 3/11, patient's weight had dropped 2 more pounds. Ankle edema and lung rales were gone. Patient tolerated cystoscopy and fulguration of a small bleeding polyp in his bladder on 3/12 very well. Ambulatory on the 4th day of Esidrix therapy, L.S. visited his neighbors down the hall, played checkers with another patient. On 3/14 he was discharged.

Patient L.S. Date	3/4	3/5	3/6	3/7	3/8	3/9	3/10	3/11	3/12	3/13
Urinary Output (ml.)	840	690	960	2140	1230	660	1220	1350	--	--
Weight (lbs.)	139	--	--	--	136	--	--	134	--	--
Esidrix Dosage (mg./day)	0	0	50	100	100	100	100	100	50	100

Esidrix T.M. (hydrochlorothiazide CIBA)

- **relieves edema in many patients refractory to other diuretics[1]**
- **often produces greater weight loss than parenteral mercurials or chlorothiazide[2]**
- **provides a greater average reduction in blood pressure than chlorothiazide[3]**
- **is exceptionally safe . . . reduces the likelihood of electrolyte imbalance**

1. Brest, A. N., and Likoff, W.: Am. J. Cardiol. 3:144 (Feb.) 1959. 2. Clark, G. M.: Clinical report to CIBA.
3. Dennis, E. W.: Clinical report to CIBA.

2/2684MK-2

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the pattern of

GLUCOSAMINE-POTENTIATED TETRACYCLINE

therapy

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capsules
125 mg., 250 mg.

oral suspension
orange flavored, 2 oz. bottle, 125 mg. per teaspoonful (5 cc.)

pediatric drops
orange flavored, 10 cc. bottle (with calibrated dropper), 5 mg. per drop (100 mg. per cc.)

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*Trademark for glucosamine-potentiated tetracycline

Note: Rapid and high initial antibiotic blood levels are an important factor in uneventful recoveries. Glucosamine potentiation provides fast, high tetracycline levels with oral therapy. Bibliography and professional information booklet available on request.

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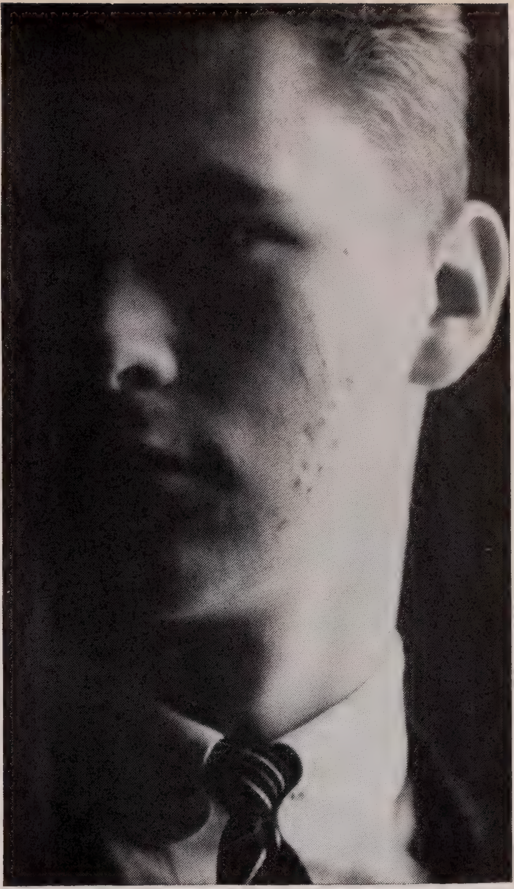

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1. Hodges, F.T.: GP 14:86, Nov., 1956.

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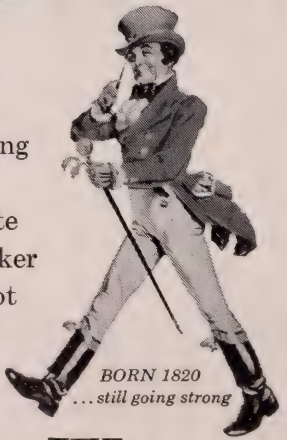

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Clinical use[1] of **Sardo** as a therapeutic adjuvant proved uniformly successful in relieving almost every case of chronic itchy, dry, scaly dermatitis treated.

Sardo* releases millions of microfine water-dispersible oil globules to (1) add emollient, lubricating effects to the antipruritic bath, (2) help increase natural emollient skin oil, (3) minimize excessive evaporation of moisture. Relief is prompt as the patient bathes . . . and sustained by an invisible, unobtrusive film that stays on the skin for hours.

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bathe away dry skin
bathe away dry skin

Sardo is pleasant, convenient, easy to use; leaves no sticky, greasy feeling, is agreeably pine-scented; non-sensitizing. Very economical. Bottles of 4, 8 and 16 oz.

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1. Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958.

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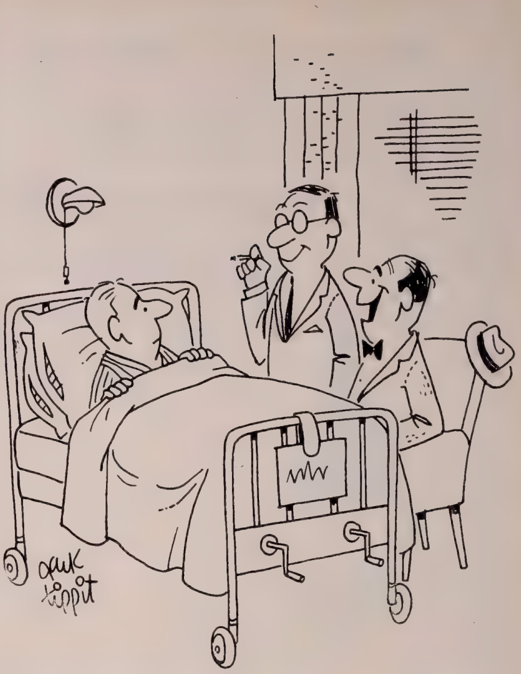

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I can't sleep..."

in the depressed, unhappy patient

PROMPTLY IMPROVES MOOD

without excitation

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Composition: Each light-pink, scored tablet contains 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate.

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1. Alexander, L.: J.A.M.A. 166:1019, March 1, 1958.
2. Current personal communications; in the files of Wallace Laboratories.
3. Pennington, V.M.: Am. J. Psychiat. 115:250, Sept. 1958.

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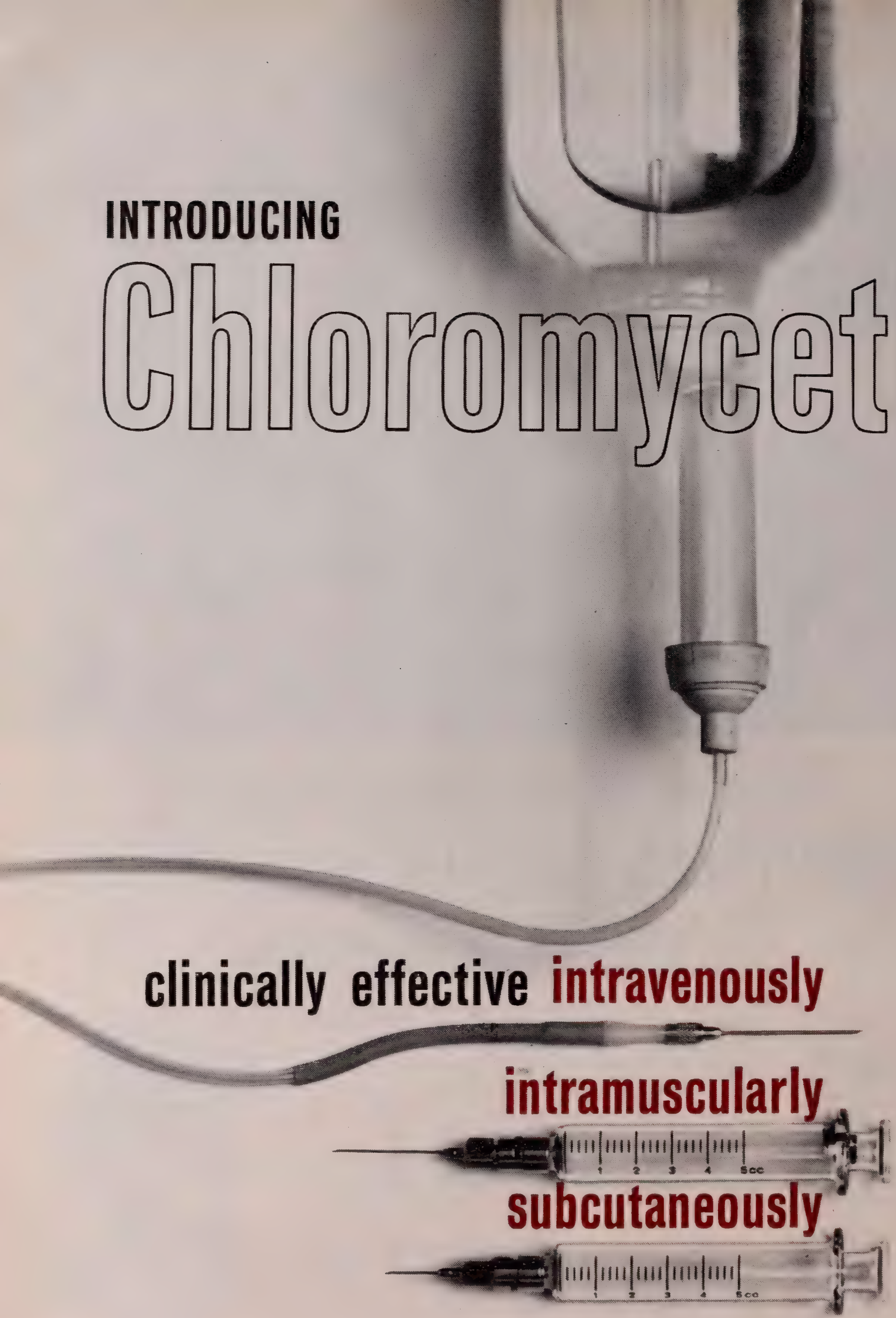
Chloromycetin®



clinically effective intravenously

intramuscularly

subcutaneously

Succinate

..a distinct advance in parenteral chloramphenicol therapy,"[1] CHLOROMYCETIN SUCCINATE is a soluble ester of CHLOROMYCETIN that can be administered intramuscularly, intravenously, or subcutaneously. CHLOROMYCETIN SUCCINATE is rapidly hydrolyzed by body esterases and produces effective blood and tissue concentrations of CHLOROMYCETIN within a short time.[2] Tissue reaction at the site of injection is minimal,[2] permitting continuous daily dosage, even in pediatric patients.[1]

WIDE-SPECTRUM ANTIMICROBIAL EFFECTIVENESS CHLOROMYCETIN SUCCINATE, providing broad-spectrum antimicrobial effectiveness, may be used whenever CHLOROMYCETIN is indicated. It has produced effective response in respiratory, gastrointestinal, and rickettsial infections.[1,3,4] Because of the rapid, effective blood levels of CHLOROMYCETIN provided, it is especially useful in *Hemophilus influenzae* meningitis, in certain septicemias, typhoid fever, and other *Salmonella* infections.[1,4]

TYPICAL CLINICAL EXPERIENCE WITH CHLOROMYCETIN SUCCINATE

		RESULTS		
Type of infection	Number of Patients	Excellent to Good	Fair	Poor
Respiratory[1,3]*	32	32		
Shigella dysentery[1]	14	14		
Enteritis[1]	10	6	2	2
Bacteremia[1,4]	5	5		
Meningitis[1,4]	4	3		1**
Rocky Mountain spotted fever[1,4]	2	2		
Ear abscess with cellulitis[3]	1	1		
Lung abscess[3]	1			1
Typhoid fever[4]	1	1		
TOTALS	70	64	2	4

Includes 15 patients who were administered CHLOROMYCETIN SUCCINATE by nebulization under intermittent positive pressure breathing.

Patient was hydrocephalic at birth; cerebrospinal fluid was sterile at time of death.

WELL TOLERATED
CHLOROMYCETIN SUCCINATE is well tolerated, even by small children. Signs of irritation at injection sites have been few.[1-4]

DOSAGE AND ADMINISTRATION—*Adults:* 1 Gm. every six to eight hours. *Children:* 100 mg. per Kg. of body weight per day in divided doses at six- to eight-hour intervals. The total dose in children should not exceed the adult dose of 1 Gm. given at any single injection, with exception of treatment of *Hemophilus influenzae* meningitis in which higher doses are employed.
In all cases, severity of infection and clinical response to therapy should be the guiding factors determining the proper dosage schedule. Premature and full-term newborn infants require special dosage supervision. For details see literature.

SUPPLY—CHLOROMYCETIN SUCCINATE (chloramphenicol sodium succinate, Parke-Davis) is supplied in Steri-Vials,® each containing the equivalent of 1 Gm. chloramphenicol; packages of 10.

CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately, or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

REFERENCES—(1) Ross, S.; Puig, J. R., & Zaremba, E. A., in Welch, H., & Marti-Ibañez, F.: Antibiotics Annual 1957-1958, New York, Medical Encyclopedia, Inc., 1958, p. 803. (2) Glazko, A. J., *et al.*: *ibid.*, p. 792. (3) Payne, H. M., & Hackney, R. L., Jr., in Welch, H., & Marti-Ibañez, F.: Antibiotics Annual 1957-1958, New York, Medical Encyclopedia, Inc., 1958, p. 821. (4) McCrumb, F. R., Jr.; Snyder, M. J., & Hicken, W. J.: *ibid.*, p. 837.

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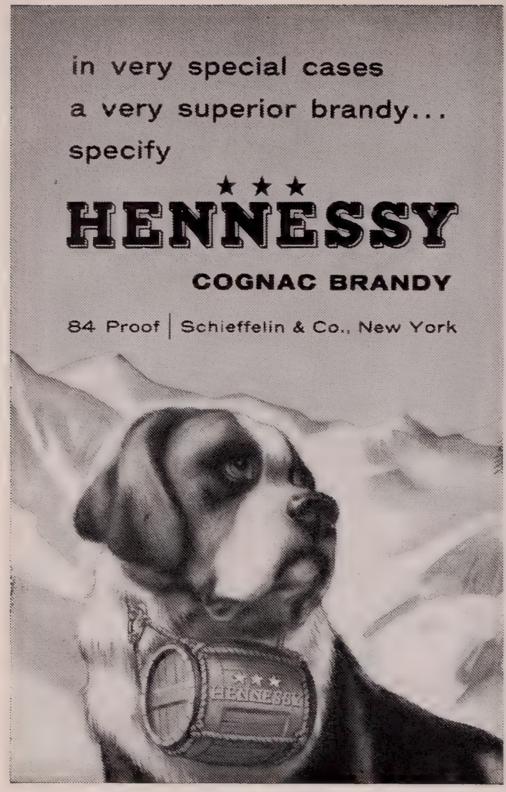

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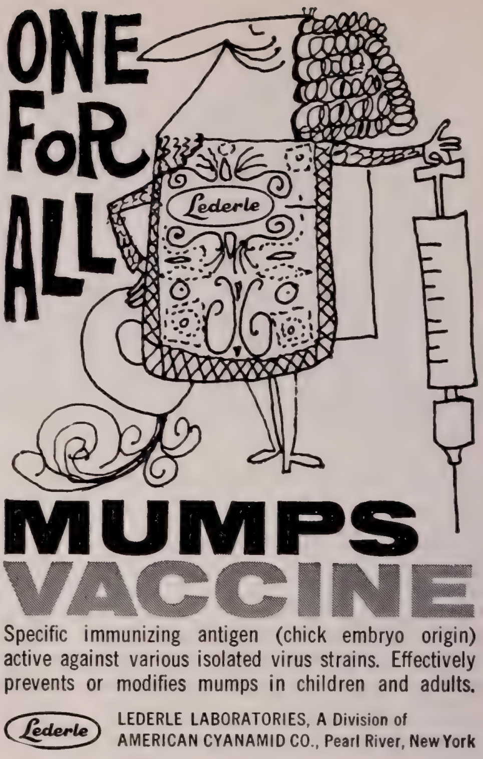

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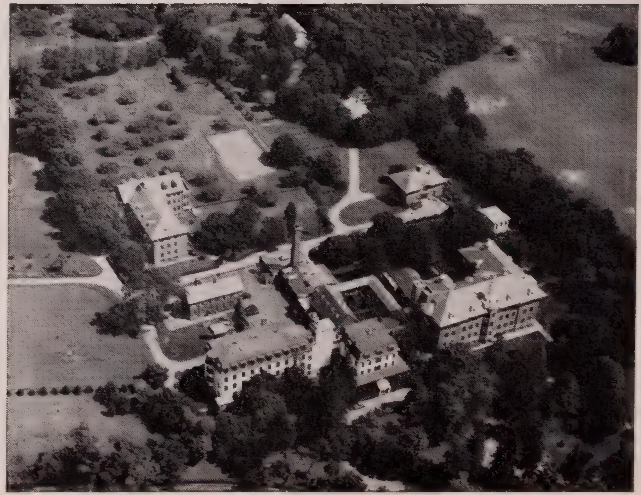

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potentiated effect

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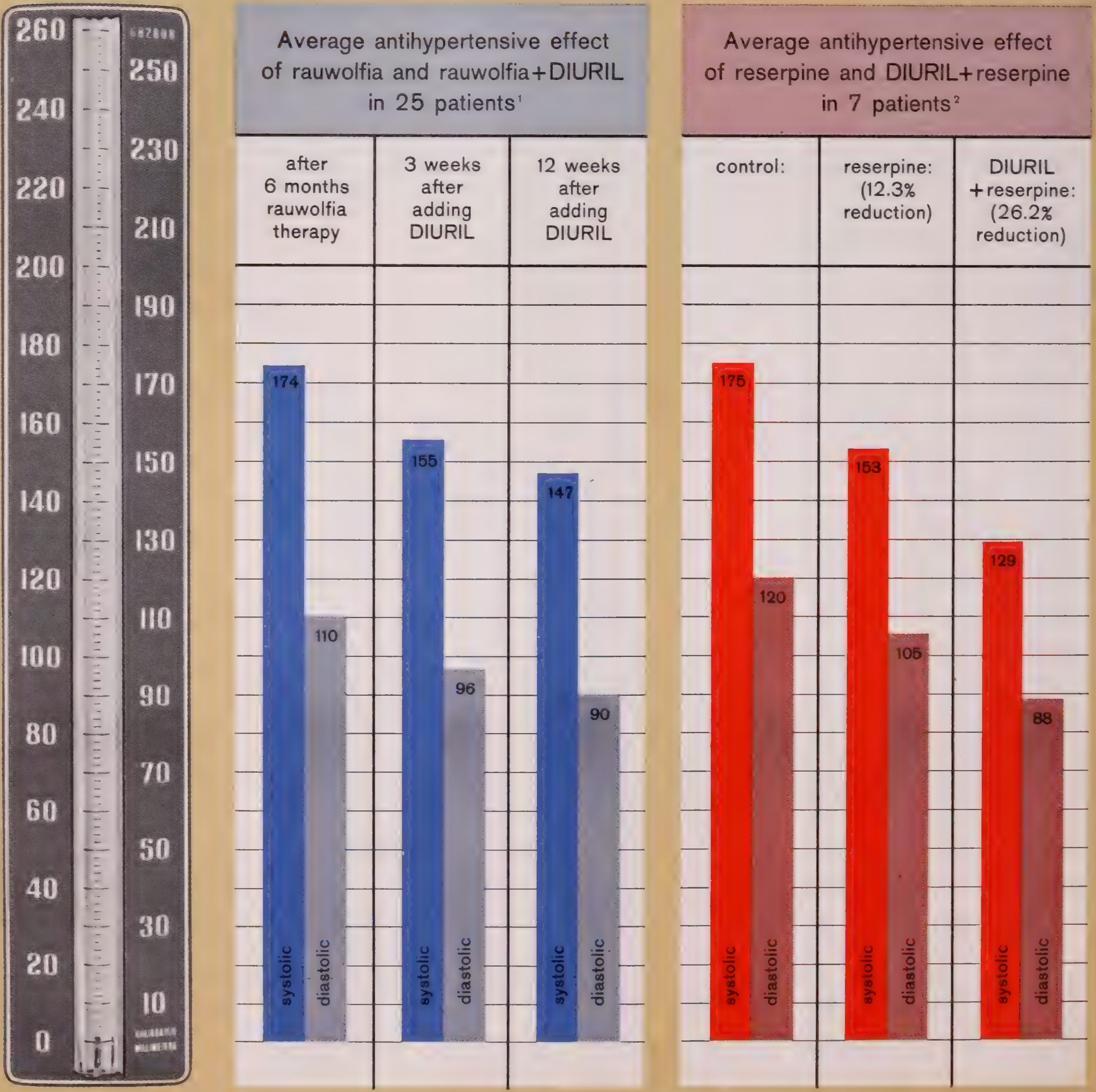


DIUPRES

DIURIL® WITH RESERPINE

effective therapy for most patients

DIUPRES by itself usually provides effective therapy for a majority of patients with mild or moderate hypertension, and even for many patients with severe hypertension. Many patients now treated with other agents which frequently cause distressing side effects can be adequately managed with well tolerated DIUPRES.

provides basic therapy

Should other drugs need to be added to DIUPRES, they can be given in much lower than usual dosage so that their side effects are often strikingly reduced.

rapid onset of effect

The antihypertensive action of DIUPRES is rapidly evident. (Considerable time may elapse before the antihypertensive effect of reserpine alone is observed.)

fewer and less severe side effects

DIUPRES may be expected to cause fewer and less severe side effects than are encountered with other antihypertensive therapy. (Since DIURIL and reserpine potentiate each other, the required dosage of each is usually less when given together as DIUPRES than when given alone. Such reduction in dosage makes side effects less likely to occur.)

often obviates weight gain

DIUPRES minimizes the problem of weight gain seen with reserpine (reserpine alone has been reported to produce weight gain in 50 per cent of patients).[1,4]

virtually eliminates fluid retention

DIUPRES is not likely to cause either clinical or subclinical retention of sodium and water. (Hypotensive drugs, particularly rauwolfia[5] and hydralazine,[6] may cause fluid retention. Even when such retention is subclinical, their antihypertensive effectiveness is diminished.[6])

diet more palatable

With DIUPRES, there is less need for rigid restriction of dietary salt, which patients find so burdensome.

> "*It may well be that the drug* [DIURIL] *produces the benefits of a markedly restricted low sodium diet but without its hardships.*"[3]

subjective and objective improvement

DIUPRES allays anxiety and tension, thus reducing the emotional component of hypertension. Organic changes of hypertension may be arrested and reversed. Headache, dizziness, palpitations and tachycardia are usually promptly relieved by DIUPRES. When the *anginal syndrome* accompanies hypertension, the administration of DIUPRES may also cause diminution or even disappearance of this syndrome concurrent with control of the hypertension.

convenient, controlled dosage

Instead of two separate prescriptions, you write one prescription . . . the patient takes one tablet, rather than two different tablets . . . and the dosage schedule is easier for the patient to remember and follow.

> "*patients have fewer lapses and make fewer mistakes in dosage, the simpler the regimen can be made. Therefore I do not hesitate to use more than one medicament combined in one tablet, provided this gives approximately the correct dosage of each.*"[6]

economical

DIUPRES will cost the patient less than if he were given two separate prescriptions for its components.

Indications:

DIUPRES is indicated in hypertension of all degrees of severity. It can be used in the following ways:

- as total therapy
- as primary therapy, adding other drugs if necessary
- as replacement or adjunctive therapy in patients now treated with other agents

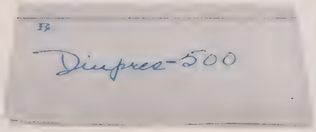
Precautions:

The precautions normally observed with DIURIL or reserpine apply to DIUPRES. Additional information on DIUPRES is available to physicians on request.

Recommended dosage range:

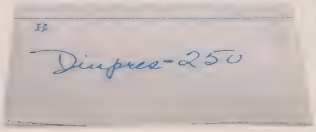
DIUPRES-500 – one tablet one to three times a day.
DIUPRES-250 – one tablet one to four times a day.

If necessary, other agents may be added. If the patient is receiving ganglion blocking agents or hydralazine, their dosage should be cut by 50 per cent when DIUPRES is added.



DIUPRES-500

500 mg. DIURIL (chlorothiazide), 0.125 mg. reserpine. Bottles of 100, 1000.



DIUPRES-250

250 mg. DIURIL (chlorothiazide), 0.125 mg. reserpine. Bottles of 100, 1000.

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1. Rochelle, J. B., III, Bullock, A. C., and Ford, R. V.: Potentiation of antihypertensive therapy by use of chlorothiazide, *J.A.M.A.* 168:410, Sept. 27, 1958. 2. Freis, E. D., Wanko, A., Wilson, I. M., and Parrish, A. E.: Treatment of essential hypertension with chlorothiazide (Diuril), *J.A.M.A.* 166:137, Jan. 11, 1958. 3. Freis, E. D.: Treatment of hypertension. (Presented at the Annual Meeting of Southern Medical Association, Nov. 13, 1957.) 4. Moyer, J. H., Dennis, E., and Ford, R.: Drug therapy (Rauwolfia) of hypertension, *A.M.A. Arch. Int. Med.* 96:530, Oct. 1955. 5. Perera, G. A.: Edema and congestive failure related to administration of rauwolfia serpentina, *J.A.M.A.* 159:439, Oct. 1, 1955. 6. Wilkins, R. W.: Precautions in use of antihypertensive drugs, including chlorothiazide, *J.A.M.A.* 167:801, June 14, 1958.

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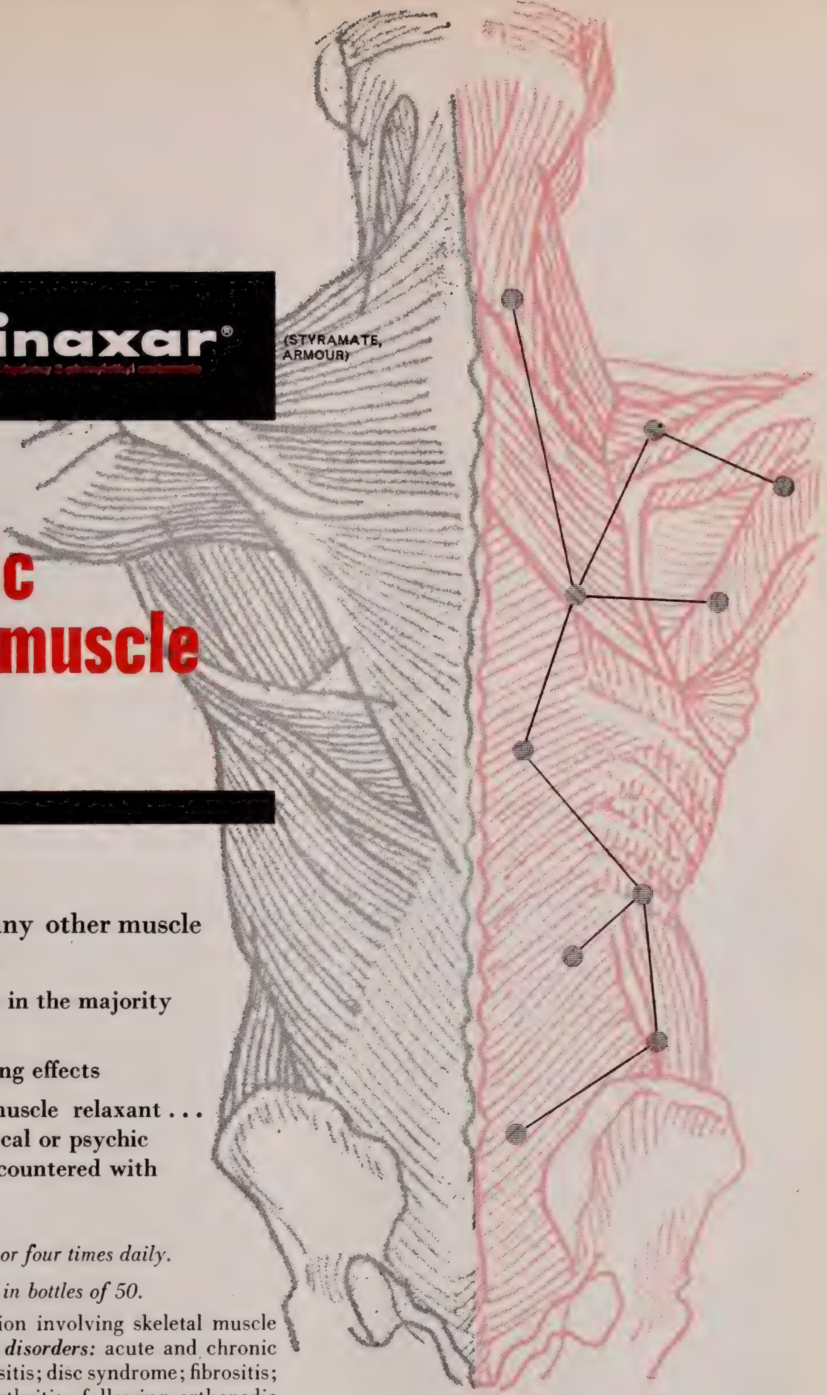
(STYRAMATE, ARMOUR)



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- **consistently effective in the majority of cases**
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- **purely a skeletal muscle relaxant . . . free of adverse physical or psychic effects frequently encountered with tranquilizers**

DOSAGE: *Two tablets three or four times daily.*

SUPPLIED: *200 mg. tablets in bottles of 50.*

INDICATIONS: Any condition involving skeletal muscle spasm, as *musculoskeletal disorders:* acute and chronic back ache; arthritides; bursitis; disc syndrome; fibrositis; myalgia; myositis; osteoarthritis; following orthopedic procedures; rheumatoid arthritis; spondylitis; sprains and strains; torticollis; *neurologic disorders:* cerebral palsy; cerebrovascular accidents; cervical root syndrome: multiple sclerosis.

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1. Kety, S. S.: A medical regimen for benign rectal disorders, *GP* 10:75, Nov., 1954.

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— Rein, C. R., and Fleischmajer, R.: Personal Communication.

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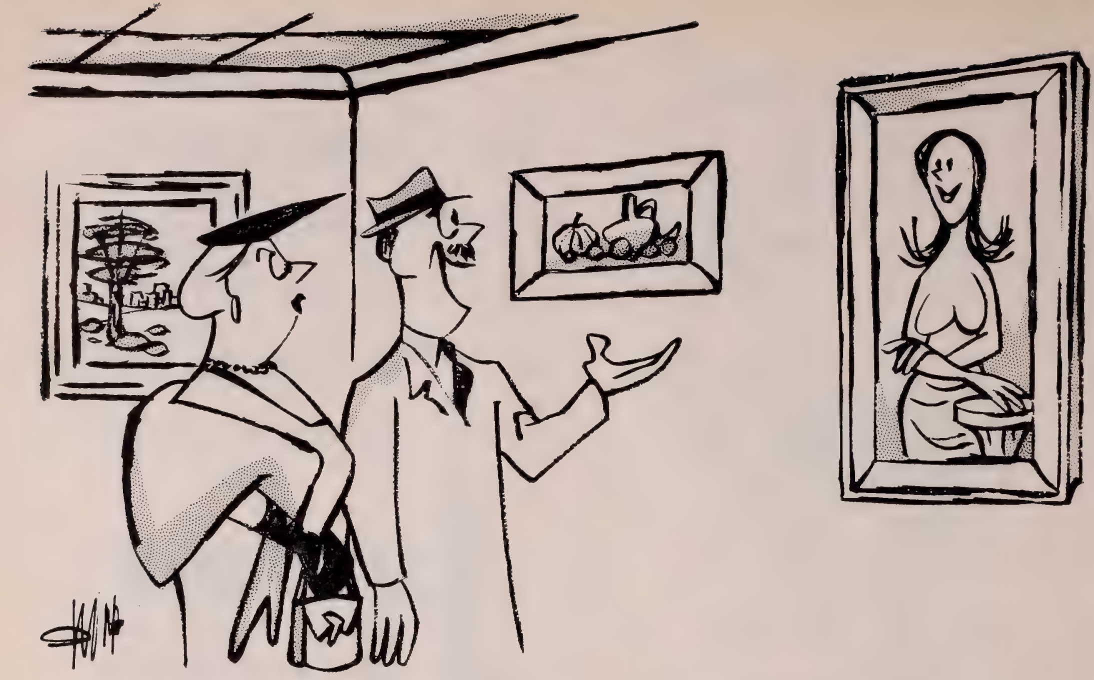

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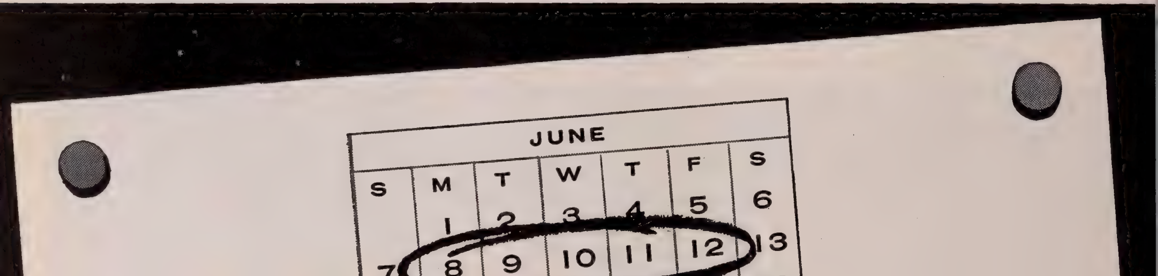
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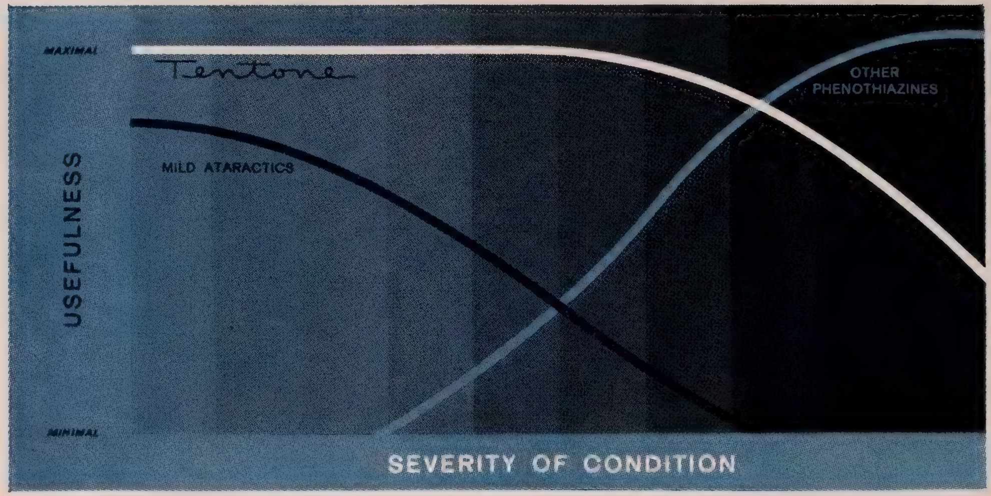

POSITIVE CALMING ACTION ADAPTED FOR LOWER RANGE OF EMOTIONAL DISORDERS

The development of TENTONE® Methoxypromazine Maleate *Lederle* does not duplicate primary function of existing tranquilizers. TENTONE fills the need for a practical, potent agent for extended use in everyday practice (as illustrated above).

Action of TENTONE Methoxypromazine Maleate approaches that of the strong phenothiazines without their drawbacks. Calming response is positive and rapidly apparent to both patient and physician. However, as a basic phenothiazine modification, TENTONE allows full therapeutic application in the mild and moderate range of anxiety-tension and somapsychic disorders most usually seen in general practice.

EXCELLENT TOLERATION—MARKED REDUCTION IN COMPLICATIONS

Incidence of untoward reactions is exceptionally low and approximates the mild ataractic drugs. Reduction in sensitivity reaction, intestinal distress, blood, brain or liver toxicity is striking, particularly in the low dosage range. TENTONE exhibits greater freedom from depression and drug habituation. Physical and psychic orientation is usually preserved. Occasional drowsiness may be encountered, particularly in higher dosages. In moderate to more severe cases, this sedative effect may be desired.

TENTONE has thus been described as one of the easiest tranquilizers to handle in office practice. In indicated cases, the physician may be relieved of the patient's unnecessary concern over his own illness. In contrast to the previous types of drugs, complaints over induced distress or inadequate benefit are rare.

WHEN MORE THAN MILD SEDATIVE EFFECT IS DESIRED

Consequently, TENTONE is more useful than other ataractic drugs in two areas: (1) mild to moderate conditions—when more than mild sedative effect is sought, (2) middle range of moderate to severe cases—when less than psychopathology is involved.

Indications include:

- common anxiety-tension states
- obsessive-compulsive behavior
- neurosis
- depression
- situational anxiety and hysteria

and the emotional components of:

- agitation
- restlessness
- tremors
- insomnia
- alcohol- and drug-withdrawal syndrome
- hyperkinesis
- prenatal anxiety
- rheumatic disorders
- dermatoses
- menopausal syndrome
- premenstrual tension
- peptic ulcer, other g.i. disorders
- asthma, other allergy
- multiple sclerosis, arteriosclerosis
- malignancy, other progressive diseases

POSSIBLE POTENTIATION OF ANALGESICS AND NARCOTICS

Since tranquilizing drugs may potentiate the action of pain-relievers, sedatives, and barbiturates, they should be used with caution in conjunction with them, or to achieve a greater response to these drugs in various conditions when desired. They may also be useful in reduction of effective dosage to better tolerated, or non-habituating levels.

ADAPTABLE LOWER DOSAGE RANGES

Dosage must be individualized to severity of condition and response desired.

In mild to moderate cases: varies from 30 to 100 mg. daily.

In moderate to severe cases: from 75 to 500 mg. daily.

In psychotic or institutionalized patients, TENTONE may be useful as a substitute when toxicity precludes effective dosage of other phenothiazines, or as maintenance after hospitalization. Dosage may range from 100 to 1500 mg. daily in divided doses.

Supplied: 10 mg., 25 mg. and 50 mg. tablets

Tentone®

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Lederle

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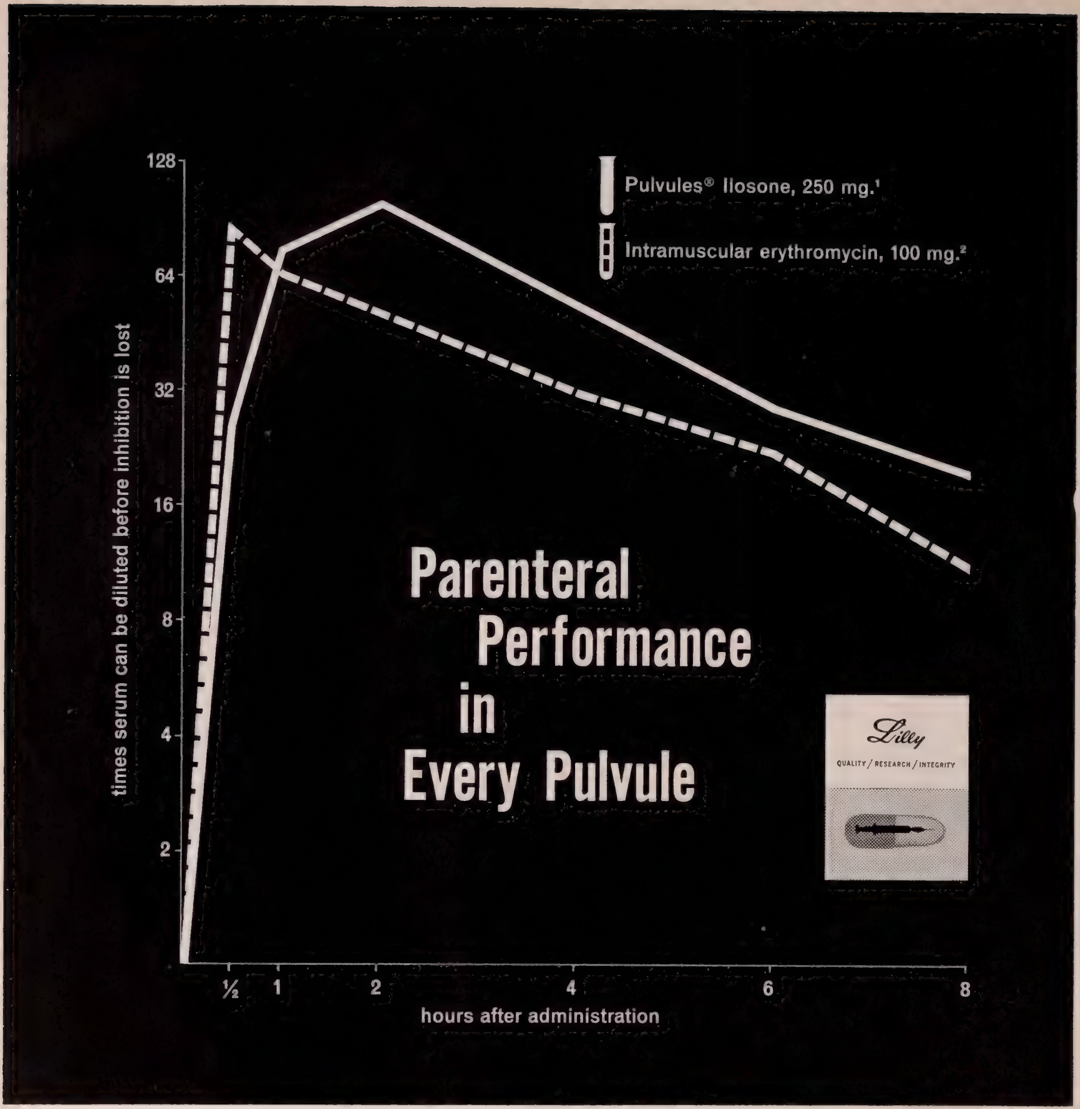

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The usual dosage for adults and children over fifty pounds is 250 mg. every six hours, but doses of 500 mg. or more may be administered safely every six hours in more severe infections. For optimum effect, administer on an empty stomach. Supplied in Pulvules of 250 mg. (For children under fifty pounds, a 125-mg. Pulvule is also available.)

1. Antibiotic Med. & Clin. Therapy, *5*:609, 1958.
2. Data from Antibiotics Annual, p. 269, 1954-1955.

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EDITORIALS

Conference of Blue Shield Plans

As this editorial is written the Conference of Blue Shield Plans is in session at one of the most critical periods in the history of the medical profession in this country. The Blue Shield Plans created by doctors to serve the public interest through service benefits to low-income groups are laboring mightily to overcome commercial competition, rising operating costs, and a certain seeming indifference by some of the profession to what is happening to the Plans and what will happen to the profession itself if control by physicians is lost.

So urgent is the matter that the JOURNAL devotes most of its editorial section in this issue to the presentation, in part, of the addresses of Dr. Carlton E. Wertz and Dr. Donald Stubbs at Miami Beach, Florida, April 12, 1959.

Dr. Carlton E. Wertz: First, I wish to appeal to you to remember that Blue Shield has an identity entirely its own. It represents medicine's own answer to the problem of financing medical care. The profession founded Blue Shield and has fostered its development as a fiscal arm of medicine to serve the patient's need for a means of paying the cost of his medical care. As such, Blue Shield occupies a unique and responsible place in our present-day medical care system. We must, therefore, keep in mind that Blue Shield must look to medicine for leadership and aggressively seek medicine's guidance in developing extensions and refinements of its program.

To be perfectly candid, I do not believe that our Plans have actively sought the guidance of the profession at large in shaping new developments in Blue Shield. I think this can be interpreted as a passive resistance to change—a desire to leave well enough alone and trust to luck that Blue Shield will continue to progress on the strength of the momentum acquired in its rise to national leadership. Painful though it may be, we must face this fact: Blue Shield can neither trust to luck nor rely on past attainments in shaping its future. In plainer language, Blue Shield Plans must mount a powerful offensive in seeking new and imaginative solutions for the problems facing the nation in its search for continuingly improved methods of financing the cost of medical care.

The reasons should be obvious. It is well known that special interest groups are engaged in a variety of efforts to change our present system of medical care. The closed-panel plans are but one example of the direction these efforts are taking.

In addition, there are political forces at work which seek to put medical care under the control of government. The Forand Bill is a manifestation of this and should serve as a warning that the voluntary programs such as Blue Shield must realize that the amount of time available to us to meet these and other threats to our present system of medical care is constantly diminishing. We must, therefore, make every hour and every day count heavily in the attainment of the goals we set out to accomplish.

Thus far I have confined my remarks to Blue Shield. But to be perfectly candid we must realize that the medical profession has a measure of responsibility to shoulder in behalf of Blue Shield. Furthermore, it seems perfectly clear that the profession must recognize Blue Shield for what it is and identify its role properly in relation to the function it performs in behalf of medicine. I believe, for example, that we should abandon as fruitless the argument over whether Blue Shield was created exclusively to combat federal health in-

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Presented at the Annual Conference of Blue Shield Plans, Miami Beach, Florida, April 12, 1959.

surance. I think it is time we cease debating on whether or not Blue Shield was created to provide coverage exclusively for the medical indigent or the patient of limited means. Such argument creates a smoke screen and obscures the fact that the Blue Shield program was developed to meet a larger and more universal economic need. Indeed, Blue Shield is a program designed to serve the people's need for a means of budgeting the cost of medical care—a "commodity" that has grown more costly as its frontiers have been broadened through research and the development of newer and more effective technics of treatment. Seen in this light, Blue Shield is seen to have a place in our present credit economy as well as in the structure of private medical practice. On the one hand it conforms to accepted patterns of family budgeting; on the other it has materially strengthened our system of private medical care by providing it with sound economic moorings without disturbing any of the traditional concepts of the private practice of medicine.

I am convinced beyond a shadow of doubt that a progressive Blue Shield program sensitive to public need and to professional control and guidance is the one best way to secure for future generations the unparallelled advantages of our American medical system. I am equally convinced that to serve the nation fully the profession must take a direct and active part in all future developments in Blue Shield. Medicine must extend the benefits of Blue Shield to an ever greater segment of the people. It must keep its sights high in developing newer and better forms of coverage. It must gear its program to the needs of an aging population. It must meet competition squarely and effectively in the national as well as in the local market place. It must communicate effectively with the profession to keep medicine informed of new goals to be attained in extending and preserving the principle of voluntary prepayment in the face of whatever pressures may develop to change our present system of private medical care.

Let us resolve to call on the best and highest order of performance we are capable of and apply our energies to the development of a new era in Blue Shield. Let us provide a workable program of coverage for the aged. Let us prepare to market a national program of coverage for employers seeking such coverage. Let us undertake to coordinate our individual enrollment efforts so that Blue Shield coverage can be offered as a simultaneous nation-wide effort.

Let us seek new forms of coverage and refinements in our existing programs so that Blue Shield will be the pace-setter in its field.

Excerpts from the report of Donald Stubbs, M.D., Washington, D. C., Chairman of the Board of Directors of Blue Shield Medical Care Plans.

This has been a year of achievement and progress in Blue Shield. Ours is a more solid organization with a more definite understanding and resolution to do the job.

We have long been able to define Blue Shield as the medically sponsored organization which deals largely in medical care rather than simply with the dollars to help buy it.

Blue Shield is acquiring personality and a cohesive national status. Our normal elements of uniformity and similarity among Plans are now greatly outweighing individual differences at the local level, which so often are not substantial. This year has clarified our relations with the public and the physicians who serve them. We have more unification of concept. We have a better realization of our mission. All this leads to and justifies our rededication to the duties which grow bigger but also more important.

We look on Blue Shield as the keystone in a cooperative program between physicians and their patients all over the country.

Thus, relations within Blue Shield and between Blue Shield and the outside world are the outstanding factor to be understood and influenced by this conference. We have come to know better than ever before that physician relations are essential for Blue

Shield to do any significant part of the job that must be done. Therefore, it is gratifying to be able to report that at all levels of operation our physician relations are better than ever before.

The National Blue Shield organization headed by your Board of Directors has enjoyed the finest year in history in its relations with the American Medical Association. This relationship has spread outward all the way to the grass roots of medicine and the functioning of the individual local Plans. It has shown itself in the furthering of already established programs of Blue Shield operation, but particularly in the development of such new programs as providing health care for the aged. This problem and the solutions to it, suggested from so many quarters, is very much in the public eye as a multifaceted if not a many-splendored thing. Perhaps no issue has every brought physicians and the Plans by which they aid the economic achievement of medical care for their patients into closer relationship than this one. It is clear that the program we support must be honestly valuable to the patient.

It is plain that the ultimate unit in all this activity is the individual doctor and his patient. Therefore, the participating physician in Blue Shield must be recognized as having a special status a little above that of the nonparticipating physician in Blue Shield affairs. Our relations with the government have enjoyed important status during the past year not so much because of direct activity as because of such developments as the national account agreement which lend real substance to positions which formerly were often theoretical

Our technical relations with Blue Cross and the insurance industry are good and are well understood by our people and theirs. It is plain that Blue Shield is the counterpart of Blue Cross and that just as Blue Shield must depend on its relations with doctors for effective aid to the public, so Blue Cross must continue to depend on its special relations with hospitals to achieve this same result. In the eyes of the public, there is hardly a real separation between providing the care of a doctor for his patient and furnishing the physical aids to that care such as hospitalization and related aids to health care.

All must recognize that Blue Shield is more than simple insurance to the extent that it provides doctor care rather than health dollars. This distinction is real whether the service is guaranteed by contract with income limitations or is provided by the concerted action of the medical community under an adequate pattern of indemnity. The point is that the buyers of the services, at least for the lower-income group must know what the bill is going to be.

This difference is the basis for the firm contention of Blue Shield to the A.M.A. Council on Medical Services that we are not a third party in the ordinarily objectionable meaning of that term.

The Blue Shield Board recommends to the Conference that the effort be made to join with Blue Cross to declare an open enrollment program at some stated time this year.

The truly important long-range objectives before this Conference of Blue Shield Plans and before Blue Shield generally are few in number. I would list them as follows:

1. Cultivation of our leadership and rededication to the crusade in which they must lead. We must get many more doctors actively into the act.
2. Further development of our uniformity of product with broader coverage for more people under community rates and acceptance.
3. Solidification of relations with the American Medical Association and with medicine all the way to the grass roots.
4. Preservation of our close-working relations with Blue Cross as essential to both of us.
5. Continued development of our National Organization as the basic essential to the next steps in the growth of Blue Shield.

Dealing as we do with the illnesses and misery of people and the efforts of our doctors to relieve these sufferings, and dealing with the provision of medical care services rather than simply with money, it is a part of the function of Blue Shield to play upon the heartstrings of the American people. Let us be sure that the music we make is not a selfish, siren song, but instead is the fabled celestial air of the spheres, able to lift and ennoble our people and thus ourselves.

Editorial Comment

Alcohol in Motor Vehicle Accidents. The probability that the use of alcohol was a causal factor in the deaths of one half of the drivers killed in single vehicle accidents which occurred in Westchester County, New York, over an eight-year period was reported last year at the meeting of the American Medical Association in San Francisco.

This finding was presented by Dr. William Haddon, Jr., director of the Driver Research Center of the New York State Health Department and Bureau of Motor Vehicles, and Dr. Victoria A. Bradess, Westchester County Medical Examiner.

The paper, entitled "Alcohol in the Single Vehicle Accident: The Experience of Westchester County," suggests that the high alcohol levels observed in single vehicle driver fatalities in Westchester County may exist in other sections of the United States. The authors explained that the purpose of the paper was to report the findings of an exploratory investigation designed to determine the extent to which such accidents involved individuals with dangerous concentrations of alcohol in the blood.

For this purpose, the study was concerned primarily with those drivers whose fatal accidents had involved neither pedestrians nor vehicles other than their own, and who had died no later than four hours after the accident. The paper deals with 83 of the 87 such fatalities which occurred in Westchester County between January 1, 1950, and December 31, 1957.

Dr. Haddon and Dr. Bradess explained that "the results . . . show that 41 of the 83 'single vehicle' drivers examined possessed blood alcohol levels at the time of death of 0.15 per cent or more. These constituted 49 per cent of the group. The levels of an additional 17 of this group (20 per cent) fell between 0.05 and 0.15 per cent. In comparison, only 22 (27 per cent) were negative."

The authors explained that in order to obtain a blood alcohol level of 0.05 per cent, a 150-pound person would have to accumulate one fluid ounce of pure (200 proof) alcohol in his body. To do this he would have to drink at least the equivalent of two ounces of 100 proof liquor. This same person would have to accumulate three ounces of pure (200 proof) alcohol to reach a blood alcohol level of 0.15 per cent.

The paper cited many previous studies which demonstrated that all drivers with levels of 0.15 show serious loss of driving skill; 50 per cent of drivers with levels of 0.08 show such loss, and that some persons with levels as low as 0.05 also show loss of driving skill.

The authors also pointed to previous studies which show that drivers involved in accidents have such levels far more frequently than do those drivers who are not involved in accidents.

The two physicians cited the Uniform Traffic Code, Model Chemical Test Law, which states that "if there was at the time 0.15 per cent or more by weight of alcohol in the defendant's blood, it shall be presumed that the defendant was under the influence of intoxicating liquor."

It was noted that the 83 drivers in the Westchester County study included 7 truck operators, all men, and 6 women operators of passenger vehicles. Of these, one of the former and three of the latter had alcohol levels above 0.15 per cent.

Dr. Haddon and Dr. Bradess said that in their paper they did not "intend to imply by its title and content that they regard the presence of alcohol as the only pertinent characteristic of the individuals described."

They added that authorities in the State of Delaware had made available statistics for a similar group of drivers killed in single vehicle accidents. "These data suggest that the high alcohol levels observed among 'single vehicle' driver fatalities in Westchester County may exist in other sections of the United States," they said.

Latest Report of Health Insurance Survey. The Health Insurance Council reports encouragingly that

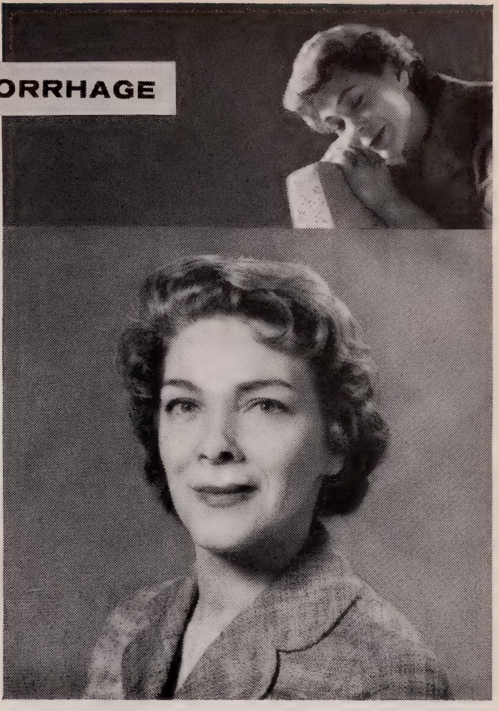
> Americans and their families, through voluntary health insurance, were more adequately protected in 1957 against the cost of hospital and medical care and the loss of earnings due to illness or injury than in any other previous year. Each year, benefit payments under health insurance programs are increasing at a much more rapid rate than the number of persons with health insurance, and medical care benefits are keeping well ahead of rising hospital and medical care costs.
>
> In 1957, there was a 16.7 per cent increase in total health insurance benfit payments over the year before, as compared to a 4.7 per cent increase in the number of persons with health insurance over 1956. From 1952 to the end of 1957, total health insurance benefit payments rose 103.9 per cent in contrast to a 33.5 per cent rise in the number of persons with health insurance during the same period. These total benefit payments apply to hospital, surgical, and medical bills, as well as toward the replacement of income lost due to disability.
>
> Hospital, surgical, and medical benefit payments alone, in 1957, rose 19.1 per cent over 1956, as compared to an increase of 4.1 per cent in hospital and medical care costs during the same period. Over the six-year period from 1952 to 1957, these hospital, surgical, and medical benefit payments increased 118.0 per cent, whereas hospital and medical care costs rose 17.7 per cent.

Help toward paying especially heavy medical bills from a major or prolonged illness is afforded by major medical expense protection.

> There were 13,262,000 persons protected by major medical expense insurance in 1957, representing a 49.4 per cent increase over the number of persons with this type of protection in 1956.
>
> In cases of major or prolonged illness, this type of health insurance protection helps take care of all types of reasonable medical expenses while under the treatment of a physician. It covers expenses incurred in or out of the hospital, x-rays, drugs, special medications, etc. These policies are distinguished by large benefit limits, usually as high as $5,000 or $10,000, a "deductible" amount (as in automobile collision insurance), and a "coinsurance" feature, whereby the protected person pays a certain percentage of the total expenses above the "deductible" amount.

There has been a phenomenal rise in the number of people covered for major medical expense. Since 1954, the number has risen from about 2,000,000 to 13,262,000. Here is where insurance really counts. It is to be hoped that actuarial experience will be so favorable that the base can be increasingly broadened.

Statistics are like alienists—they will testify for either side.—F. H. La Guardia



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*Schneeberg, N. G.; Perczek, L.; Nodine, J. H., and Perloff, W. H.: Methallenestril, a New Synthetic Estrogen, J.A.M.A. *161*:1062 (July 14) 1956.

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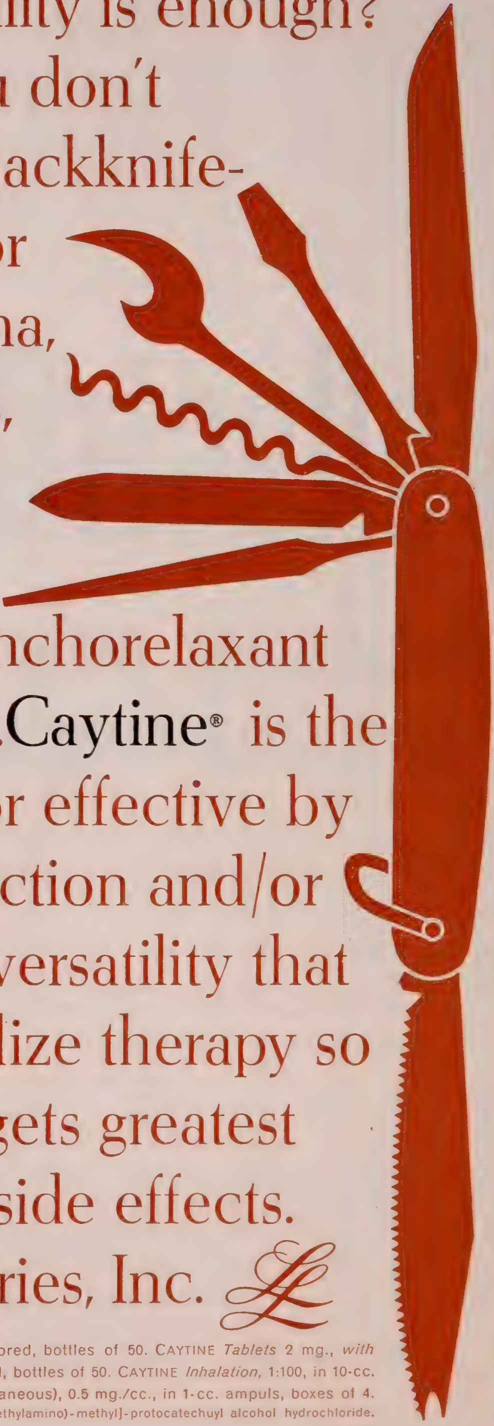

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SCIENTIFIC ARTICLES

Specific Syndromes of Coronary Insufficiency and Allied Cardiopathy

HAROLD L. RAKOV, M.D., F.A.C.P., KINGSTON, NEW YORK

(*From the Department of Cardiology, Kingston Hospital*)

CORONARY artery disease and ischemic myocardial disease are not equivalent. Enos, Holmes, and Beyer[1] dissected the coronary arteries of 300 healthy soldiers killed in Korean action with an average age of 22.1 years and found in 77.3 per cent gross evidence of disease as disclosed by fibrous thickening to complete occlusion in one or more branches. White, Edwards, and Dry[2] revealed atherosclerotic lesions in 75 per cent of all people over forty-nine years of age. Blumgart[3] demonstrated complete occlusions or considerable narrowing of one or more coronary arteries in 40 per cent of patients over forty years of age who died of noncardiac causes, but despite these lesions the myocardium was usually normal on gross and microscopic examination. Contrariwise Master *et al.*[4] have noted profound myocardial necrosis with diminished coronary circulation in the absence of significant coronary atherosclerosis, and Currens and Barnes[5] describe myocardial alterations simulating transmural infarction in a series of cases of myocardial infarction without coronary occlusion or overt coronary atherosclerosis.

The clinical manifestations of coronary artery disease are invariably due to coronary artery insufficiency but the clinical manifestations of coronary artery insufficiency exist in the absence of significant coronary artery disease. Thus ischemic necrosis appears without coronary occlusion, and coronary occlusion occurs without ischemic necrosis Hence, since anatomic coronary artery disease is not synonymous with clinical coronary disease, taxonomic terminology should qualify the pathologic physiology of the coronary circulation and resultant specific myocardial alterations. The latter are intimately related to the extent of obstructive coronary disease plus extracardiac factors which directly increase the work of the heart, precipitate acute coronary occlusion, or indirectly diminish coronary flow.

The syndromes of a compromised coronary circulation have been diversely designated as angina pectoris, acute coronary artery insufficiency, chronic coronary artery insufficiency, coronary failure, atypical myocardial infarction, subendocardial necrosis, coronary occlusion, coronary thrombosis, and myocardial infarction. The associated ischemic myocardial alterations have been variously reported as myocardial infarction, myocardial necrosis, ischemic myocarditis, focal myocardial necrosis, diffuse myocardial necrosis, subendocardial necrosis, transmural myocardial infarction, and myomalacia. For many of these syndromes concise anatomic myocardial lesions have been depicted and the pathologic physiology delineated. Yet "coronary insufficiency" on many hospital records denotes sundry anterior chest pains unattended by objective signs of myocardial ischemia.

The term "coronary artery insufficiency" seems appropriate when employed in a generic sense for an inadequate coronary circulation. This implies dynamic physiologic disturbances usually superimposed on a pathologic process of the coronary arteries. Any disproportion between the metabolic needs of the myocardium and the available blood supply will result in coronary artery insufficiency. Thus any factor or group of factors that increases the myocardial demands or diminishes the coronary flow may effect coronary artery insufficiency. The character of the ensuing syndrome will depend on the (1) abruptness and nature of the coronary insufficiency, (2) duration of the coronary insufficiency, (3) extent of the coronary insufficiency (the size and number of vessels involved), (4) degree of existing coronary artery stenosis, (5) fundamental state of the myocardium (cardiac hypertrophy, etc.), and (6) qualitative integrity of the blood as affected by anoxic anoxia, anemic anoxia, etc. The ischemic pain is one of the clinical expressions of these syndromes and the compass of myocardial damage the morbid sequel. The ultimate prognosis will depend on resultant myocardial alterations which in turn are the product of compromised coronary circulation and development of compensatory collateral circulation.

Classification

Because many syndromes of coronary artery insufficiency have been nosologically based on the duration of ischemic pain without regard for the attendant vascular lesion or myocardial alterations, the following schematic classification is proposed:

1. Potential coronary artery insufficiency: coronary artery disease unaccompanied by ischemic phenomena.
2. Provisional coronary artery insufficiency: coronary artery disease with ischemic symptoms and alterations prevented by provisional collateral circulation.
3. Paroxysmal acute coronary artery insufficiency: coronary artery disease with brusque, transient, insufficient coronary circulation and variable focal ischemic myocardial lesions.
4. Prolonged acute physiologic nonocclusive coronary artery insufficiency: negligible coronary artery disease with extrinsically provoked, abrupt in onset, prolonged, coronary insufficiency and focal myocardial ischemic subendocardial necrosis.
5. Prolonged acute partial occlusive coronary artery insufficiency: patent stenotic lesions of the coronary arteries with diminished total coronary blood flow and myocardial ischemic lesions which usually result in confluent, circumferential subendocardial necrosis.
6. Prolonged acute occlusive coronary insufficiency: coronary artery disease with acute occlusive lesions and massive ischemic myocardial necrosis.
7. Permanent coronary artery insufficiency: marked stenotic coronary artery disease with multiple old occlusions and extensive myocardial fibrosis.

Comment

Potential Coronary Artery Insufficiency.—The terms "coronary artery disease" and "coronary heart disease" are not interchangeable. Severe atherosclerotic disease of the coronary arteries may be present without compromising the coronary circulation and producing myocardial ischemia. Profound calcification of the coronary arteries has been demonstrated in individuals free from any symptoms of coronary insufficiency. Atherosclerotic changes occur at birth and may gradually progress until death without impairing the circulation to the myocardium.[6] Here the intimal thickening is uniform and concentric with no encroachment on the lumen. The calcific, capacious vessels are physiologically competent. Atherosclerosis of the coronary artery produces clinical disease only when the blood flow is impaired by overt stenosis, thrombus formation, or rupture of an atheromatous ulcer to effect myocardial ischemia. Furthermore, Mann and his associates[7] have seen 50 per cent diminution of the caliber of arteries for a distance of 1 cm. without any diminution of blood flow. Because the coronary circulation is adequate even under stress states, the patient is symptomless and free from electrocardiographic and other evidences of coronary insufficiency. Yet the potentialities for thrombus formation with obstruction and lethal myocardial ischemic consequences exist.

PROVISIONAL (COMPENSATED) CORONARY ARTERY INSUFFICIENCY.—The inconsistency between the presence of obstructive vascular lesions and the absence of clinical or histologic evidence of myocardial damage is accounted for by the presence of abundant collateral circulation. The coronary arteries are normally physiologic end arteries but they have anatomic facultative intercommunications. Paradoxically the development of a functioning collateral circulation is dependent on the extent of obstructive vascular disease. This obstruction to normal arterial flow is the actual stimulus to anastomotic development. If occlusive processes are gradual, differential pressure gradients dilate previously impervious arterioles to effect an adequate circulation to a potentially ischemic myocardium. Blumgart[3] ligated either of the main coronary arteries in a pig with prompt death resulting. However, when 75 per cent narrowing was produced for twelve days or more, postmortem studies demonstrated a rich anastomotic circulation. Furthermore, after five to twelve days, sudden acute occlusion of the narrowed artery was performed with survival and in some hearts not even microscopic necrosis was found. Burchell[8] demonstrated experimentally that it was possible to occlude the three main coronary branches in the dog without the production of an infarct or even demonstrable cardiac disability. Blumgart and his collaborators[9] point out that in man even though all three main coronary arteries were occluded, no infarctions resulted because of the development of a compensatory anastomotic circulation. Thus, in the presence of overt coronary obstruction, the potentially ischemic myocardium may be provided sufficient blood flow to prevent ischemic phenomena.

ACUTE PAROXYSMAL (TRANSITORY) CORONARY ARTERY INSUFFICIENCY (ANGINA PECTORIS).—A consistent clinical expression of coronary artery insufficiency is ischemic myocardial pain. The syndrome angina pectoris was initially described by Herbeden, who based his description almost solely on the duration of this pain without implying the extent of existing coronary artery disease and provoked myocardial alterations. This description was subsequently habitually accepted. Ostensibly the syndrome is due to an acute transitory coronary artery insufficiency and has been universally defined as an episodic, oppressive, retrosternal pain of limited duration, more often less than three minutes, radiating into the shoulder and inner aspects of the arms, usually provoked by increased myocardial demands for coronary blood flow, such as exertion, excitement, exposure, and eating, and alleviated by rest and sublingual nitroglycerin. Occasionally the pain is only peripheral in the jaws and wrist. Fever, leukocytosis, accelerated rate of erythrocyte sedimentation, and other accepted signs of myocardial necrosis are absent, electrocardiographically transient RS-T segment and T-wave alterations may be of five to thirty minutes duration.

It is popularly believed that because of the brevity of the ischemic pain both the diminished coronary flow and ischemic myocardial alterations are reversible and therefore not only minimal coronary artery disease exists but also no myocardial damage ensues. This perhaps may be true in the few instances of acute transitory coronary insufficiency associated with aortic or mitral valvular disease and systemic or pulmonary hypertension. But the monumental studies of Blumgart, Schlesinger, and Zoll[10] have revealed that in the absence of the latter conditions every patient manifesting this syndrome showed at autopsy at least one old complete occlusion of a major artery (an average of 2.9 occlusions) plus severe atherosclerotic narrowing. However, although the episode is associated with a compromised coronary circulation, either by multiple old occlusions or diffuse extensive stenosis, the transient acute coronary artery insufficiency per se is not caused by a concomitant acute obstructive lesion but rather by a temporary acute reversible discrepancy between the current supply and momentarily increased demands for coronary blood flow.

Thus, in the absence of valvular disease, hypertension, or anemia, extensive obstructive coronary disease is fundamental to this syndrome; but the degree of myocardial necrosis seems nebulous and equivocal in the minds of many. A common belief is that no permanent destructive myocardial lesion occurs in angina pectoris. The discrepancy between marked obstructive coronary artery disease and clinical absence of appreciable myocardial necrosis can be attributed in many instances to a compensatory collateral circulation. However, it is conceivable that the reserve of the adjusted coronary irrigation may be inadequate for stress states, and ischemic necrosis may follow. Frequent episodes probably eventuate in subclinical diffuse foci of necrosis and subsequent fibrosis. Sprague[11] states that if ischemic pain persists longer than three minutes, the myocardial anoxia is presumed to have progressed to a destructive, if only cytologic, level. Roessler and Dressler[12] found transient electrocardiographic changes identical with those of acute myocardial infarction accompanying attacks of angina pectoris and noted "that transient coronary artery insufficiency, if it is of great magnitude, may in rare cases produce not only temporary elevation of the S-T segment but also reversible changes of the QRS complex, such as usually accompany extensive myocardial infarction, and although the latter did not occur in the reported cases, judging from the increase in sedimentation rate and transient low-grade fever, scattered areas of myocardial necrosis may have been present." More conclusively, Zoll, Wessler, and Blumgart[13] detected myocardial fibrosis in 90 per cent of autopsied anginal patients.

PROLONGED ACUTE PHYSIOLOGIC NONOCCLUSIVE CORONARY INSUFFICIENCY.—Myocardial infarction literally comprises any ischemic myocardial necrosis irrespective of extent, location, or origin and therefore pertains to the variegated ischemic lesions: subendocardial necrosis, scattered foci of myocardial necrosis, diffuse myocardial necrosis, and atypical myocardial infarction. Experimentally, no gross or microscopic evidence of myocardial necrosis was found after temporary coronary occlusion of five to twenty minutes duration, but when the occlusion was maintained for longer periods, areas of necrosis were evident.[14] Among the syndromes of acute coronary artery insufficiency belong a group of entities interposed between paroxysmal transient coronary artery insufficiency and classic transmural myocardial infarction.

One type seems characterized by an acute prolonged but reversible nonocclusive coronary artery insufficiency with deficient irrigation of the entire coronary system. The inadequacy of the coronary circulation is primarily physiologic, occurring in the presence of patent coronary arteries and provoked by acute heart failure, paroxysmal tachycardia, pulmonary embolism, severe hemorrhage, severe infection, and shock. Although the acute deficiency of the coronary flow is reversible, the ischemic myocardial alterations are permanent and vary from subendocardial necrosis to classic transmural infarction.

Blumgart[3] limits the term "coronary failure" to attacks of cardiac pain more prolonged than those of angina pectoris but unattended by evidence of myocardial infarction, such as fever, leukocytosis, progressive electrocardiographic changes, etc. The hearts of such patients did not show myocardial infarction on the occasions postmortem examinations were performed. "In accordance with the concept that the cardiac pain is due to relative ischemia these attacks were considered coincident with increased demands on the heart, as sustained exertion, paroxysmal tachycardia, etc., whereas in other instances reduced coronary blood flow following fall in blood pressure in shock was responsible."

Master *et al.*[4] describe acute coronary artery insufficiency as a distinct disease entity characterized by more prolonged or more severe myocardial ischemia than occurs in angina pectoris but in the absence of acute coronary occlusion and usually caused by definitive provocative factors. The clinical picture purportedly may simulate coronary occlusion, but the electrocardiogram and pathologic changes are specific. "The necrosis following acute coronary artery insufficiency is focal, disseminated, and usually localized to the subendocardial region of the left ventricle, especially within the papillary muscle. The electrocardiogram is characterized by the presence of RS-T segment depression and T-wave inversion in one or more leads and often all leads. These changes are usually transient and disappear rapidly following subsidence of the ischemia. Deep Q waves and elevation of the RS-T segment almost never occur, thus differentiating this condition from massive infarction due to acute coronary artery occlusion."

Horn *et al.*[15] specifically restrict acute coronary artery insufficiency to indicate generally transient and reversible insufficiency of coronary blood flow, although the deleterious effects on the myocardium may be permanent. In a study of 25 hearts which disclosed evidence of recent myocardial changes in the absence of acute coronary occlusion they described characteristic subendocardial ischemic necrosis: "Although the subendocardial musculature was characteristically involved, it should be pointed out that interposed between the endocardium and the affected portion there was often an apparently normal thin strip of muscle. It is because of lack of change here, probably, that mural thrombi have been found so infrequently and when present usually could be ascribed to antecedent myocardial disease. It is significant that the ischemic myocardial foci have been irregularly disseminated."

After a critical review of these syndromes it becomes apparent that they constitute varying manifestations of the same pathologic physiology and have the following in common:

1. Abrupt onset without coronary occlusion or pertinent stenosis.
2. Duration of ischemic pain of twenty minutes or longer, not relieved by nitroglycerin.
3. Absence of clinical signs and symptoms of extensive myocardial necrosis (significant fever, leukocytosis, rapid erythrocyte sedimentation rate, or transaminase activity).
4. Myocardial necrosis, patchy, confined to the subendocardium of the left ventricle and left papillary muscle.
5. Absence of mural thrombi and peripheral embolization.
6. Characteristic electrocardiographic alterations.
7. Provocative factors, such as pulmonary embolism, paroxysmal tachycardia, congestive heart failure, hypoglycemia, and shock of any cause.
8. Reversibility of coronary insufficiency.

PROLONGED ACUTE PARTIALLY OCCLUSIVE CORONARY ARTERY INSUFFICIENCY.—In contrast to the preceding category this type of coronary insufficiency is hallmarked by extensive but subtotal coronary artery occlusive disease. The structural anomaly is usually abetted by a secondary physiologic disturbance in effecting inadequate total coronary blood flow.

Littman and Barr[16] apply the term "acute atypical coronary artery insufficiency" to patients with manifestations of coronary insufficiency which are more severe than those of angina pectoris but which fail to satisfy the criteria for classic myocardial infarction. Included are cases of coronary failure, subendocardial necrosis, and atypical myocardial infarction. Nineteen cases of subendocardial necrosis with 2 fatalities disclosed no thromboembolic phenomena and were purportedly associated with considerable widespread coronary artery disease. Atypical myocardial infarction was associated with fever, slight leukocytosis, and slightly accelerated sedimentation rate but showed no evidence of heart failure or peripheral shock. "The pain lasts longer than fifteen minutes and makes its initial appearance without relation to physical effort. The electrocardiogram tends to run a curious course. Often it is normal on admission; then slowly over a period of days or weeks when a patient is asymptomatic, symmetric T-wave inversions occur which remain without significant change. There are no S-T segment deviations. These patients are believed to have experienced small and obscurely located myocardial infarctions which are impossible to demonstrate." Differentiation of atypical myocardial infarction from the classic one was done by electrocardiographic interpretation since histologic studies of the coronary arteries and myocardium were precluded by the benign course of the syndrome with no fatalities in 11 diagnosed patients. But Cutts *et al.*[17] in a series of 69 patients who gave a history of coronary-type pain appearing at rest and lasting at least fifteen minutes and whose electrocardiographic changes were limited to deeply inverted T waves, predominantly in the precordial leads, demonstrated extensive sclerosis with narrowing of the coronary arteries without complete occlusion and variable myocardial lesions in all 11 autopsied cases of 24 deaths during a four-year follow-up survey.

Levine and Ford[18] by means of the term "subendocardial infarction" described a group of 6 cases of fatal myocardial infarction with electrocardiograms resembling those seen in stress tests for coronary insufficiency and showing rimlike circumferential subendocardial infarcts at postmortem examination. Microscopic examination revealed a zone of relatively intact myocardium, 0.5 mm. thick, immediately beneath the endocardium, separating it from the infarcted myocardium. In every instance there was partial stenosis of the coronary arteries, in 5 cases by atherosclerotic processes and in 1 by luetic ostial involvement, and in all but 1 was attended by a recent thrombotic occlusive process. A superimposed secondary physiologic process is postulated—shock, however produced, or any condition producing systemic hypotension and consequent diminution of coronary blood flow. Electrocardiograms were strikingly free of accepted evidence of infarction. "The failure of QRS changes to appear early in the course of a clinical episode may be due to the fact that infarction is not present, that infarction is limited to the subendocardium, or that evidence of transmural infarction has not yet developed but will with the passage of time. Indeed, the patient may die before these changes have become apparent. However, the persistent absence of QRS changes over a prolonged period in the face of RS-T displacement and corroborative clinical evidence of infarction would be more suggestive of a process limited to the subendocardium."

Cook *et al.*[19] mention that in 1 to 5 autopsied cases of large circumferential subendocardial infarction there was partial occlusion of the coronary ostia by granulomatous arteritis and, although not specifically recorded, partial, occlusive coronary artery disease can be implicated by antecedent symptoms of angina in the others. The electrocardiograms were identified by low-amplitude R waves in the precordial leads V_1 to V_4. Q deflections appeared in only 1 case; these deflections were 1 mm. deep and were present in leads V_2 and V_3. Depression of the S-T segment in at least the left precordial leads was present in all instances, ranging from 2 to 7 mm. Elevation of this segment in lead aVR was also present. Although some peculiarities of QRS and segmental configuration occurred in standard limb leads and extremital leads other than aVR, these changes were of lesser degree than in the precordial leads and varied in nature and in distribution from case to case. Twenty-four cases of small subendocardial infarctions were electrocardiographically classified into three types: (1) depression of the RS-T segments in all precordial or in the left precordial leads, (2) deeply inverted T waves in some or all of the precordial leads, and (3) diminished height of R waves, sometimes associated with the appearance of small Q waves in certain precordial leads. Noteworthy is the emphatic denial of the specificity of electrocardiographic determination of subendocardial infarction as to occurrence, extent, and configuration of lesion.

This group is differentiated from prolonged physiologic nonocclusive coronary artery insufficiency by pertinent anatomic stenotic lesions of the coronary arteries and circumferential subendocardial necrosis.

PROLONGED ACUTE OCCLUSIVE CORONARY ARTERY INSUFFICIENCY (ACUTE MYOCARDIAL INFARCTION).—Traditionally, acute myocardial infarction has been clinically limited to ischemic massive transmural myocardial necrosis originating from an acute occlusive process of a major coronary artery. In this syndrome, frequently mistakenly termed "acute coronary occlusion" or "thrombosis," the occlusive process may be (1) thrombosis initiated by intimal hemorrhage, perhaps associated with activity and increased capillary pressure, (2) intimal hematoma per se, (3) rupture of the atheromatous plaque, or (4) thrombus formation in the atheromatous ulcer accompanying slowing of the coronary circulation with nocturnal rest and hypotensive states. When the prolonged occlusive process is abrupt and swift in onset, time is not available to develop a compensatory collateral circulation, and extensive myocardial ischemic coagulation necrosis, conventionally labeled "myocardial infarction," results. This lesion is almost uniformly transmural, roughly wedge-shaped with its base toward the endocardium, and usually corresponds to the distribution of the involved vessels, although infarction at a distance does occur.

The diagnosis is based on refractory pain indicative of prolonged ischemia plus pathognomonic serial electrocardiograms, appreciably increased serum transaminase activity, and other clinical expressions of extensive myocardial necrosis. The latter are too well known to bear repetition other than to emphasize that the incidence of painless myocardial infarction and so-called myocardial infarction equivalents is 5 to 20 per cent and that the change from a large subendocardial to a transmural type of electrocardiographic pattern occurs when an infarct involves more than the inner half of the thickness of the ventricular wall.[19]

PERMANENT (CHRONIC) CORONARY ARTERY INSUFFICIENCY.—This syndrome is characterized by progressive stenotic coronary atherosclerosis and multiple infarctions with diffuse myocardial fibrosis. Frequent episodes of transitory myocardial ischemia with minimal exertion or even with the individual at rest enhance further myocardial necrosis. The replacement by connective tissue leads to cardiac hypertrophy, myocardial weakness, chronic congestive heart failure, and repeated bouts of left ventricular failure. With massive hearts, weighing 700 to 800 Gm., the clinical picture often simulates idiopathic cardiac hypertrophy.

Summary

A classification of morbid conditions giving rise to the syndromes of coronary artery insufficiency is presented in the hope of promoting consistency in the connotations of coronary insufficiency.

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Shoulder Exercise Needed in Forearm Fractures

Even though a person has his elbow, forearm, or hand in a cast, he must raise the arm above his head several times a day, otherwise, he may end up with a stiff and painful shoulder.

Most patients with fractures of the forearm or hand are afraid to do "what may appear to them to be unnecessary movements," two Chicago orthopedists said in the February 28 *Journal of the American Medical Association.*

Lack of exercise, even for as brief a period as two or three weeks, may cause a shoulder to become stiff. Dr. Robert G. Thompson and Dr. Edward L. Compere said physicians must repeatedly tell their patients to raise their injured arms above their heads several times a day.

This advice applies to any patient with a fracture involving the fingers, hands, forearms, or elbows, and who is wearing a short or long arm cast, with or without a sling.

If the patient raises the arm above his head several times each day, "much future suffering and disability can be prevented." In addition, patients should be shown how to move their hands when they have injuries of the elbow and forearm. It is not enough to simply wiggle the fingers; a complete fist should be made.

Trypsin in Peripheral Vascular Diseases

Review and Report on Treatment of 210 Patients

HUGH MURPHY, M.D., F.A.C.S., F.A.C.A., BROOKLYN, NEW YORK

THE proteolytic enzyme trypsin has been studied sporadically for over fifty years as an agent in dissolving neoplastic growth, inflammatory tissue,[1] and thromboembolic formations. The earlier literature suggests some of the pharmacologic actions which have led to the present clinical uses of this drug. Work prior to 1952, however, is not germane to this presentation and, therefore, is not included in it.

In 1952 Innerfield and associates[2] reported that clots were lysed when trypsin was given intravenously and that the signs and symptoms of inflammation attending a clot disappeared before the clot itself. A single case of thrombosis of the aorta was treated with very large doses of trypsin intravenously by Niermann and Bradley[3] with return of the brachial pulse by the fourth day. Villamil and Beheran[4] administered typsin intra-arterially to patients with severe thrombophlebitis and reported that all symptoms disappeared in a little over twenty-four hours. On the other hand, Laufman and Roach[5] stated that thrombi were not influenced by trypsin administered intravenously, although inflammation cleared rapidly in trypsin-treated patients as compared to a parallel series of patients on anticoagulants. Other clinical studies[6] confirmed the findings of Laufman and Roach.

Its salutary effect on inflammation was explored more fully and was found to occur with much lower doses than those originally used. It was also found that the enzyme could be given intramuscularly. The literature showing the development in the usage of this enzyme in acute and chronic thrombophlebitis is reviewed.

Review of Literature

ACUTE THROMBOPHLEBITIS.—Trypsin was shown to have an ameliorating effect on the acute signs of thrombophlebitis. Innerfield and associates[7] reported subsidence of pain, tenderness, and other symptoms in 71 of 74 patients, 11 of whom received intragluteal injections. Innerfield[8] then compared the course of 55 trypsin-treated patients with that of a similar number treated previously with anticoagulants. He concluded that the enzyme brought about subsidence of symptoms in one-half to one-quarter the time required for the control group.

A similar finding in reduction of pain, swelling, and redness was reported by Kryle and associates.[9] Thrombus resolution in all cases was found to be much slower than symptomatic relief. These authors stress that trypsin affects inflammation rather than the clot and that, therefore, other methods of treatment, such as anticoagulants, antibiotics, hot soaks, and bed rest, be employed as well. A double-blind study using placebo medication was carried out by Kryle and associates[10] in 82 patients with thrombophlebitis; these patients received conventional treatment plus either trypsin in oil or oil alone. When evaluated according to speed of response, total duration of the disease, and presence of complications, 72 per cent of the trypsin-treated patients were graded excellent as compared to 11 per cent in the placebo group. From the first injection of trypsin Golden[11] observed disappearance of pain and fever within twelve to twenty-four hours and of vascular induration within four to twelve days and felt that the clots were reduced in size by the trypsin. Comparison of hospitalization time was made by Seligman,[12] who found that nineteen days were required for anticoagulant-treated cases of deep thrombophlebitis compared to nine days for trypsin-treated cases. Reid and Wilkinson,[13] comparing alternate patients, found that on the average trypsin-treated cases were symptom-free 1.3 days sooner and discharged 3.9 days sooner than anticoagulant ones.

In a follow-up to a preliminary paper Fisher and Wilensky[14] attempted to correlate the rate of subsidence of symptoms under trypsin treatment with the duration of symptoms prior to treatment. Pain was relieved within twenty-four hours in 50 per cent of patients with thrombophlebitis of less than four days duration, in 46 per cent of those with thrombophlebitis of four to seven days duration, and in 35 per cent of those with thrombophlebitis of eight to twenty-one days duration. They gave trypsin intramuscularly to 7 patients who had developed thrombophlebitis while receiving infusions of pressor drugs. Pain was relieved in all patients, and the palpable clots were reduced in size while the infusion was being continued.

A pilot study of 22 cases of acute thrombophlebitis was recently reported by Moser.[15,16] In superficial vein involvement, heat and tenderness disappeared in approximately forty-eight hours while resolution of edema required an average of 4.4 days. In deep thrombophlebitis, heat and tenderness lasted 4.2 and edema 4.4 days.

Trypsin was administered both intravenously and intramuscularly by Puglisi and associates,[17] who reported that responses were very favorable and rapid compared with those of other series. Intramuscular injections were preferred to intravenous infusions. Serrano[18] experimented with doses of trypsin and concluded that more severe cases needed higher doses to obtain reversal of inflammation. His clinical data suggest that trypsin improves the action of anticoagulants.

Chronic Thrombophlebitis. — Laufman and Roach[5] administered trypsin intravenously to patients with chronic thrombophlebitis of ten weeks to twenty-two years duration and noted a palpable softening of edema, a decrease of thigh circumference within three days, and healing of ulcers. On discontinuance, however, swelling recurred although pain and tenderness did not. Of 8 patients treated for five days by Fisher and Wilensky[19] with trypsin intravenously, 3 had relief of pain and a measurable decrease of edema but in each case symptoms returned shortly after the course of trypsin therapy was completed. In a later paper these authors stated that trypsin administered intramuscularly did not exert a significant effect in the same five-day period.[14] Large doses were given intravenously by Peck,[20] who observed a reduction of edema, healing of skin excoriations, and improved color of the extremities but stressed that there was no influence on the basic anatomic defect.

The temporary nature of improvement from trypsin treatment of chronic thrombophlebitis was pointed out by Wildman.[21] After treatment of two weeks or more in patients with unilateral involvement, ulcers healed and edema was reduced to about half the dimensions of the other leg. When trypsin was discontinued, edema and pain returned in two to three weeks unless maintenance doses were given.

A group of patients with chronic recurrent thrombophlebitis reported to have had palpable thrombi continuously for two to nine years, even during courses of anticoagulant therapy, were treated with trypsin intramuscularly by Innerfield[22] for prolonged periods. In each case the thrombi gradually disappeared, but on withdrawal of trypsin there was a flare-up in most patients which was preventable by maintenance therapy. A similar case was reported by Moser.[15]

Chronic venous insufficiency from postphlebitic syndrome and old varicose veins were grouped together by Seligman.[23] Evaluated by subsidence of pain, reduction of

TABLE I.—Diagnoses of 210 Cases of Peripheral Vascular Diseases Treated with Trypsin

Diagnosis		Number of Patients
Varicose ulcers		42
Segmental venous thrombosis		33
Thrombophlebitis		129
Chronic with lymphedema	47	
Subacute and chronic with ulcers, dermatitis, and/or cellulitis	67	
Subacute superficial with venospasm	15	
Miscellaneous cases		6
Leg ulcers of unknown cause	2	
Arteriosclerotic ulcers	2	
Diabetic infected ulcers	2	
Total		210

edema, softening of induration, perceptible lightening of pigmentation, remission of dermatitis of the leg, and partial or complete healing of ulcers, the response of 42 patients was graded excellent in 22, good in 10, fair in 4, and poor in 6.

The literature reveals extensive use of trypsin in peripheral vascular disease, but no survey is available of a large number of patients treated in office practice. In this paper such a series is reported.

Material and Method

The series consisted of 210 patients with peripheral vascular diseases, mostly of the lower limbs. All patients were ambulatory and all were treated in the office. The diagnoses and pertinent information about the patients in each group are shown in Tables I and II respectively.

Crystalline trypsin and a 5 per cent aqueous gelatin menstruum, Parenzyme Aqueous,* each vial containing 5 ml., was made up and used immediately. Any residual was stored under refrigeration and first used at the next office visit. Injections of 0.5 ml., containing 2.5 mg. of trypsin, were given into the deltoid muscle in all but a few patients who required a great many injections, in which case the gluteal muscle was used. The arm was alternated, and care was taken to avoid an area showing signs of a previous injection. During the acute phase of each of the diagnosed diseases, trypsin was given once daily. When acute inflammation subsided, the dose was cut to 2.5 mg. three times a week and continued until the patient was discharged. The number of injections varied for the different disorders.

Other therapeutic measures were used when indicated; included were antibiotics, hot compresses, supportive elastic bandages, and whirlpool baths.

Results

The results in each disease entity are discussed separately and are summarized in Table II. They are classified as excellent, good, and poor, with each classification defined in relation to the particular disease.

Varicose Ulcers.—There were 42 patients with uncomplicated varicose ulcers. Results were classified "excellent" in 41 and "good" in 1.

In these patients, excellent indicated complete healing of ulcers and relief of pain and good indicated progress but not complete healing. The single patient graded good responded well, but trypsin was withdrawn after the eighth injection because of local induration at the site of injection. The ulcer condition continued to improve and had healed by the time of discharge two weeks later. Most patients previously had been treated elsewhere unsuccessfully.

Superficial (Segmental) Venous Thrombosis.—In this group are included 33 patients who evidenced cordlike superficial veins. Some veins occurred spontaneously; others were traumatic in origin. The involvement varied from a local cluster of veins to the entire long saphenous vein. In none was there an acute febrile manifestation. All patients responded well and were graded excellent.

The excellent result indicated complete dissolution of the thrombus and recanaliza-

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* The Parenzyme Aqueous used in this study was supplied through the courtesy of the Research Department, The National Drug Company, Philadelphia, Pa.

TABLE II.—Results of Trypsin Administration in Peripheral Vascular Diseases and Pertinent Information About the 210 Patients Treated

Diagnosis		Number of Patients	Sex (Per Cent)		Age (Years)		Duration Prior to Treatment		Number of Treatments		Results			Side-Effects	
			Male	Female	Range	Average	Range	Average	Range	Average	Excellent	Good	Poor	Number of Patients	Percentage of Patients
Varicose ulcers		42	62	38	29–77	57	2 weeks–10 years	9 months	2–44	12	41	1	. . .	5	12
Segmental venous thrombosis		33	55	45	30–77	54	1 day–5 years	6 months	5–30	11	33	. .	. . .	3	9
Thrombophlebitis		129													
Chronic with lymphedema	47		83	17	33–82	57	2 weeks–25 years	1 year	3–37	11	17	29	1	5	11
Subacute and chronic with ulcer, dermatitis, and/or cellulitis	67		67	33	36–81	57	3 weeks–14 years	2.7 years	3–74	14	52	10	5	13	20
Subacute superficial with venospasm	15		87	13	26–74	47	2 weeks–2 years	6 months	3–16	8	12	3	. . .	2	13
Miscellaneous		6	50	50	43–80	62	2–8 months	4 months	4–34	13	5	1	. . .	2	33
TOTAL		210	69	31	29–82	56	1 day–25 years	16 months	2–74	12	160	44	6	30	14

tion of the veins or vein. Subsequent surgical ligations and excisions were performed on these patients after a period of from three to six months following recanalization of varicose veins.

THROMBOPHLEBITIS.—Of the total of 210 patients, 60 per cent had thrombophlebitis. The cases have been broken down into three subgroups:

1. Chronic deep thrombophlebitis complicated with lymphedema.
2. Subacute or chronic thrombophlebitis complicated with acute ulceration, dermatitis, or cellulitis singly or in combination.
3. Subacute superficial thrombophlebitis with venospasm but without any of the complicating factors included in the second subgroup.

Chronic Thrombophlebitis with Lymphedema.—There were 47 patients with definite evidence of lymphedema. Response was classified excellent in 17, good in 29, and poor in 1.

In this group a result was considered excellent if pain, swelling, and the feeling of heaviness completely disappeared. Improvement but not complete relief of symptoms was classified as good. The single patient with a poor response was a man with lymphedema resulting from recurrent bilateral thrombophlebitis of twenty-five years duration who was improving over a course of 30 treatments but who suddenly developed an acute deep thrombophlebitis and a pulmonary embolus necessitating hospitalization. In 3 patients venous ligations were done at a later date.

Thrombophlebitis with Ulcers, Dermatitis, and/or Cellulitis.—In these 67 patients, there were 11 who showed two of the complications. Many also had some evidence of lymphedema but not of sufficient degree to be included in the previous group. The response in 52 was classified excellent, in 10 good, and in 5 poor.

Results were graded excellent if complete healing of skin lesions and disappearance of inflammatory components resulted. If skin lesions were healed or partly healed but with residual tenderness or edema, the response was graded good. Of the 5 patients who did not respond, 2 showed only minor improvement and 1 was withdrawn from the series because of local reaction to trypsin. One obese patient with an ankylosed hip joint following deep thrombophlebitis and hemarthrosis developed severe ulceration and edema, but he refused hospital care. He did not respond and an acute flare-up of the deep veins made hospitalization mandatory. The other patient was a woman with terminal carcinoma who had slight relief of pain and edema but, because of her progressive downhill course, no effect attributable to trypsin could be seen.

Eight of these patients were later subjected to ligations.

Subacute Thrombophlebitis with Venospasm.—The 15 patients in this subgroup presented acute symptoms of recent origin manifested by redness, heat, and local thrombosis with cordlike veins of the superficial saphenous system. In 12, response was excellent and in 3 good.

Results were considered excellent if there was complete disappearance of inflammatory signs, including pain, swelling, redness, and heat. There was resorption of the local thrombosis within two to three weeks. If there was marked but not complete subsidence of signs and symptoms, the result was classified as good.

MISCELLANEOUS ULCERS AND PHLEBITIS.—Six patients with leg ulcers that were not on a venous basis were treated. Five responded satisfactorily (excellent), and 1 partially responded (good).

In this group, excellent indicated complete healing of ulcers and good less pain and partial healing. Both patients with leg ulcers without venous involvement responded with complete healing as did the 2 with arteriosclerotic ulcers. In one of the patients with diabetes the ulcers healed, but in the other there was only partial healing. Treatment had to be interrupted because of the appearance of an urticarial rash.

Comment

In the entire series, results were classified excellent in 75 per cent and good in 22 per cent of the patients. This high percentage of beneficial results probably is due to persistence with trypsin treatment. One sixty-year-old man with recurrent phlebitic ulcers has had 74 injections at the time of writing. If the trypsin is withdrawn, the ulcer worsens. At the moment the ulcer is healing and pain is gone (good result). This patient and many others, particularly those with lymphedema and varicose veins, had been treated extensively elsewhere by many different methods with unsatisfactory results.

These findings can be contrasted with those of Fisher and Wilensky,[19] who judged their results after five days of treatment. They considered trypsin valueless in chronic thrombophlebitis. Our results are more in keeping with those reported by Wildman[21] and Seligman,[23] both of whom continued treatment for long periods of time and recommend maintenance dosage to prevent breakdown. In the present series the status of the patient on continued treatment was determined at discharge or at the time of writing. From observing these 210 patients with common peripheral vascular complaints, a clinical impression was formed that trypsin has a lytic effect on the thrombus as well as an antiphlogistic effect on the local inflammatory or irritative components.

Side-reactions occurred after the second to the thirty-seventh injection and necessitated withdrawal of trypsin in 30 patients. The criteria for withdrawal were the appearance of an indurated area and pain at the site of injection, which occurred in 28 patients, or the appearance of a rash, which was seen in 2 patients. The rash in one may have been due to an antibiotic which was withdrawn at the same time. Withdrawal of trypsin in 15 patients was not indicated until results were classified as excellent and in 13 good. In many of the latter patients, progress was such that an excellent response would have been expected if treatment could have been continued. Of the 2 who did not respond, 1 developed induration after 20 injections, which were giving no improvement, and the other, the patient with the ankylosed hip, finally acceded to hospitalization with a progressively worsening deep thrombophlebitis after seven injections.

Although not within the scope of this paper, two observations on hospitalized patients seem worth mentioning.

1. During the past year, Parenzyme Aqueous has been given to all patients undergoing varicose vein ligation and stripping. Injections of 2.5 mg. have been given pre- and postoperatively twice daily, starting the day before surgery and continuing during the hospital stay. In over 100 cases, postoperative pain and ecchymosis have been minimal and have disappeared quickly.

2. Patients with deep vein thrombosis with or without embolism seemed to have responded better and more quickly to heparin and Dicumarol when trypsin was also used. The dose of anticoagulant required to obtain the desired changes in bleeding characteristics seemed lower than usual, and the rate of recovery was such that the anticoagulants could be discontinued sooner.

The first observation is in accord with that of Jackson[24] who reported reduced edema in neurosurgery and that of Thompson[25] who had similar findings in plastic urologic procedures. A parallel finding in traumatic athletic injuries was reported by Lichtman.[26] The second observation bears out the comments of Serrano,[18] who suggests the use of trypsin in all traumatic surgery, such as extensive orthopedic procedures, and in soft tissue injuries, such as those sustained in auto accidents.

The mechanism by which trypsin works has never been demonstrated. A theory of plasminogen activation by trypsin has been proposed and it presents a tenable explanation for the gradual thrombolytic action.[27] Another theory is that trypsin enters into or stimulates an enzyme-protein interaction at the site of inflammation, which gives rise to a decrease of tissue fluid viscosity and a lysis of interstitial, lymphatic, and capillary fibrin barriers. These factors, it is postulated, restore tissue permeability and blood flow with resultant resolution of local inflammation.[28] Still another suggested mechanism is similar to the last, but in this theory trypsin acts directly as a depolymerase to destroy the fibrin barriers.[29]

In contrast to these explanations there is the suggestion that trypsin acts on the inhibitor systems. The serum antiproteolytic activity is increased, indirectly inhibiting polypeptide production, an important result since the polypeptides are intimately associated with local inflammatory reactions. Increased trypsin inhibition has been demonstrated in the albumin fraction of patients with diseases involving tissue destruction.[30] The antiphlogtisic potential of increased serum antiprotease locally would be governed by the vascularity to the area. Thus, inflammation in an avascular area could be expected to respond less readily than inflammation in an area with good blood supply. This factor may account for the reported failures in stubborn cases.

The preceding reasoning can apply to any of the theoretic mechanisms of trypsin action, providing the active factor is blood borne. It can explain why chronic cases require long-term treatment and acute traumatic injuries respond so rapidly. Total resolution should not be expected in patients with chronic lymphedematous conditions in whom irreversible fibrous tissue has developed.

Summary

The literature on the use of trypsin in thrombophlebitis is reviewed. A series of 210 cases of vascular diseases treated with intramuscular injections of 2.5 mg. of trypsin (Aqueous Parenzyme) are presented for clinical analysis. The series includes the common venous diseases met in office practice which are treated on an ambulatory basis without the use of anticoagulants. Sufficiently large numbers are included in each group to afford enough information for comparative analyses as to age and sex distribution, number of treatments required, and results (Table II). Encouraging results were obtained in patients with chronic varicose ulcers, superficial venous thrombosis, acute phlebitis with ulcers, dermatitis and/or cellulitis, and acute superficial thrombophlebitis. Fair results were obtained in cases of chronic deep thrombophlebitis with lymphedema, but this group still presents a challenge. Probably irreversible tissue changes inhibit the accessibility of the thrombolytic and antiphlogistic actions of trypsin. Two patients manifested generalized urticarial reactions, and there were local reactions in approximately 14 per cent of patients, necessitating discontinuation of trypsin injections.

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Tietze's Syndrome

Although only four papers citing 8 cases of Tietze's syndrome have appeared in the American literature, this disorder (first reported in 1921 in Germany) probably is not so rare as the poverty of reports would indicate. In presenting three cases from his own experience, Dr. A. Eaton Roberts, Malvern, Pennsylvania, reviews the clinical description, etiology, differentiation, and treatment.

Treatment appears to consist largely of reassurance, analgesics, and time. Tietze's syndrome, which occurs from puberty on in both sexes (all three of the author's cases were over forty), is a painful, nonsuppurative swelling of the sternoclavicular or costochondral joints, with the second costochondral junction most frequently involved.

Mild trauma resulting from sudden movement—coughing, vomiting, etc.—appears to be a frequent precipitating factor; nonspecific respiratory disease, rheumatoid arthritis, or dystrophy of the costal cartilage secondary to malnutrition, tuberculosis, or injury may be involved.

The syndrome has been reported in association with Hodgkin's disease.—*Pennsylvania Medical Journal, November, 1958*

Peritoneal Dialysis

SALAH ASKARI, M.B., PABLO MORALES, M.D., AND ROBERT S. HOTCHKISS, M.D., NEW YORK CITY

(*From the Urology Service, Fourth Division, Bellevue Hospital, and the Department of Urology, New York University Medical Center*)

A SIGNIFICANT number of patients with acute renal failure or exacerbation of a chronic intrinsic kidney disease still succumb to the effects of their disease despite strict adherence to present-day conservative medical regimens. Various workers are of the opinion that some of the patients who failed to survive over the period necessary for a return of normal renal function might have been saved had an artificial kidney dialyzer been employed. Unfortunately, however, the artificial kidney is available only in a limited number of medical centers. Moreover, at times there are definite contraindications to its use. Other forms of dialysis, therefore, have been employed, and of these, peritoneal dialysis seems to be the most applicable and merits wider clinical application.

Although we have an artificial kidney at the New York University Medical Center, we have used peritoneal dialysis in the treatment of selected patients and have performed experimental investigations in dogs to evaluate the efficacy of the procedure in greater detail. The experience thus gained has convinced us that peritoneal dialysis, although admittedly not as efficacious as the artificial kidney, is a procedure that can be of value as a supplement to the conservative medical management of acute renal failure, particularly when an artificial kidney is not readily available.

Clinical Studies

A series of 20 peritoneal dialyses was carried out in 3 children and 5 adults. The number of dialyses for each patient varied from one to five (Table I). Except in 1 patient (Case 4), the indication for dialysis was acute renal failure or acute exacerbation of a chronic intrinsic kidney disease. In Case 4 the indication was chronic pyelonephritis associated with sarcoidosis and stag-horn calculus; the patient was dialyzed to improve her biochemical state in preparation for a nephrolithotomy. Two patients (Cases 3 and 5) were dialyzed initially but subsequently were subjected to hemodialysis with the artificial kidney because it appeared that more drastic measures were necessary to effectively retard their rapidly downhill course.

TABLE I.—CASES OF PERITONEAL DIALYSIS

Case	Age (Years)	Diagnosis	Number of Dialyses
1	4	Acute renal failure	1
2	11	Acute glomerulonephritis	2
3	11	Chronic glomerulonephritis with acute exacerbation	5
4	34	Chronic pyelonephritis with nephrolithiasis	1
5	44	Acute renal failure secondary to sulfonamide intoxication	3
6	48	Polycystic kidneys	5
7	63	Chronic pyelonephritis with acute exacerbation	1
8	61	Necrotizing papillitis	2

TECHNIC.—Polyethylene tubes from commercially available intravenous administration sets were used. Two tubes were required for a dialysis; six to eight holes were cut at the distal end of each tube. Sterilization was accomplished by storing the tubes in a 1:1,000 solution of Zephiran chloride.

Ringer's lactate solution was used as the dialyzing fluid. The solution approximates in composition normal extracellular fluid (Table II). The same solution was employed for patients with elevated serum potassium levels. In these patients, therapy

TABLE II.—Composition of Ringer's Lactate Solution

Ingredient	Amount (Gm./L.)	Ingredient	Amount (mEq./L.)
Sodium chloride	0.6	Sodium Chloride	130 109
Potassium chloride	0.03	Potassium	4
Calcium chloride	0.02	Calcium	3
Sodium lactate	0.31	Bicarbonate radical	28

with cation-exchange resins was included among the other medical measures. For patients with evidence of peripheral edema the concentration of the irrigation fluid was further increased by the addition of 100 cc. of 50 per cent glucose to each liter of Ringer's lactate solution. When serious acidosis was present, 100 cc. of 5 per cent sodium bicarbonate solution was added to each liter of dialyzing fluid. Regardless of its composition, to each liter of Ringer's lactate solution were added 100,000 units of penicillin.

The insertion of the polyethylene tubes into the peritoneal cavity was carried out in the operating room. A 1-inch incision was made at McBurney's point under local Novocain infiltration, and the peritoneal cavity was then entered as in a "buttonhole" appendectomy. The perforated distal segment of the polyethylene tube was then inserted for a distance of 10 to 20 cm., and the wound was closed about the tube. A similar procedure was done at a corresponding point in the left lower abdominal quadrant. The patient was then returned to the ward. Insertion of the tubes under vision was preferred to the blind use of a metal trocar because of the attendant dangers in the latter method.

On the patient's return to the ward, one tube was connected to a bottle of Ringer's lactate solution which was hanging from an infusion stand, and the other tube was allowed to drain into a clean collecting bottle below the bed level (Fig. 1). The dialyzing fluid was instilled into the peritoneal cavity at the rate of 1 L. per hour in children and 2 L. per hour in adults. A careful record was kept of the inflowing and outflowing fluid volumes. Any significant discrepancy usually was corrected by gentle manipulation of the outlet tube to effect a change in position. At the end of the procedure both tubes were allowed to drain freely for thirty minutes. A residual of 1,000 to 1,500 cc. usually remained in the abdomen and was taken into account during estimation of fluid requirements. As many as five successive dialyses were employed in some patients over a two-week period without ill effects.

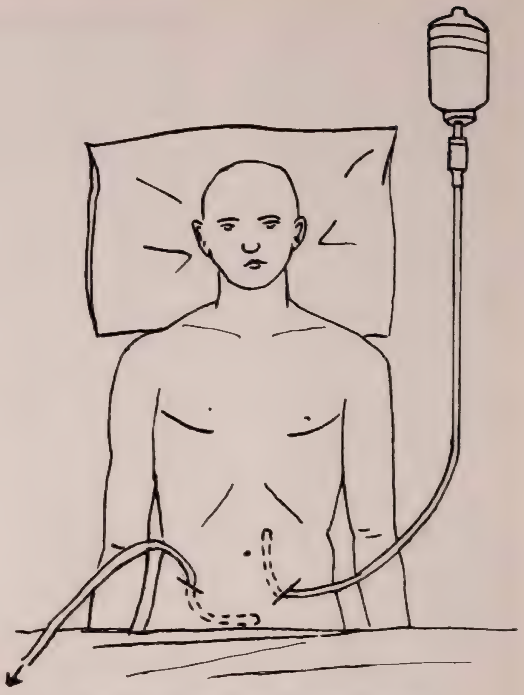

Fig. 1. Peritoneal dialysis setup.

Clinical Response.—Varying degrees of subjective improvement were observed in 6 patients (Cases 1 to 6). Three patients (Cases 1, 2, and 6) were comatous and moribund prior to dialysis; they regained consciousness and became responsive at the conclusion of the procedure or shortly thereafter. The improvements, however, were only temporary, except in Case 2 where the patient proceeded to eventual recovery. Three patients (Cases 3, 4, and 5) were

TABLE III.—Changes in Potassium and Nonprotein Nitrogen Levels After Peritoneal Dialysis

		Potassium (mEq./L.)		NPN (mg./100 cc.)	
Case	Dialysis Number	Initial	Final	Initial	Final
2	1	6.7	5.4	242	236
	2	5.4	5.2	236	196
3	1	7.65	6.09	368	328
	2	6.79	5.94	324	316
	4	7.5	6.4	368	316
4	1	6	5.1	130	99
5	1	8.1	7	132	122
6	1	7.9	6.7	170	138
	2	7.1	6.5	112	100
	3	6.7	4.4	100	100
7	1	8.5	6.4	145	118
8	1	8.3	6.4	115	109

drowsy before dialysis but appeared definitely improved after each procedure. Two patients (Cases 3 and 5), however, again deteriorated, both from the clinical and biochemical standpoints, and were subsequently treated by hemodialysis. The other patient (Case 4) developed such an improved sense of well-being that she readily consented to undergo a nephrolithotomy which she had persistently declined to do in the past. There were 2 patients (Cases 7 and 8) in extremis at the time of dialysis who did not exhibit any improvement.

Chemical Response.—Alterations in the potassium and nonprotein nitrogen levels are shown in Table III. A decrease in potassium concentration was obtained in virtually all patients; a similar decrease was observed in the nonprotein nitrogen level.

Complications and Difficulties.—The dangers of the procedure are minimal and the technical difficulties are easily resolved. None of the patients who were dialyzed manifested signs suggestive of peritonitis. The routine addition of antibiotics to the irrigating fluid may have accounted for the absence of peritoneal infection. Leakage around the tube occasionally occurred during overfilling of the peritoneal cavity. This difficulty was usually prevented by decreasing the inflow rate, changing the position of the tubes, or reversing the flow through the inlet and outlet tubes. Complete blockage of the tube by omentum may occur and necessitate reinsertion in the operating room. The efficiency of the peritoneal dialysis appeared impaired after prolonged utilization, probably as the result of channelling of the intraperitoneal fluid flow and consequent reduction of the peritoneal surface available for dialysis.

Contraindications.—It is obvious that patients who recently have had abdominal operations should not be subjected to peritoneal dialysis. The presence of intra-abdominal adhesions as a consequence of multiple laparotomies may diminish the efficacy of dialysis but is not a contraindication provided the tubes are inserted under vision.

Experimental Studies

Peritoneal dialyses were carried out in 5 dogs three to four days after induction of anuria by bilateral ureteral ligation. With the dog under light veterinary Nembutal anesthesia, a small skin incision was made in each of the lateral lower quadrants of the abdomen. A trocar was inserted through one incision, and the peritoneal cavity was entered with a sharp thrust. The plastic tube was then inserted through the trocar into the peritoneal cavity for a distance of 5 inches. The trocar was removed, and the catheter was fixed to the abdominal wall. The same procedure was repeated on the other side. Peritoneal irrigation, as described for patients, then was carried out.

Ringer's lactate solution was employed as the irrigation fluid. In some of the dialyses, 100 cc. of 5 per cent sodium bicarbonate solution was added to each liter of Ringer's lactate solution. The flow of fluid into the peritoneal cavity was regulated at about 1 L. per hour. Dialysis was repeated in some of the dogs, although no serious efforts were made to prolong their lives. In this phase of our study, we were primarily concerned with evaluating the chemical efficacy of the procedure in re-

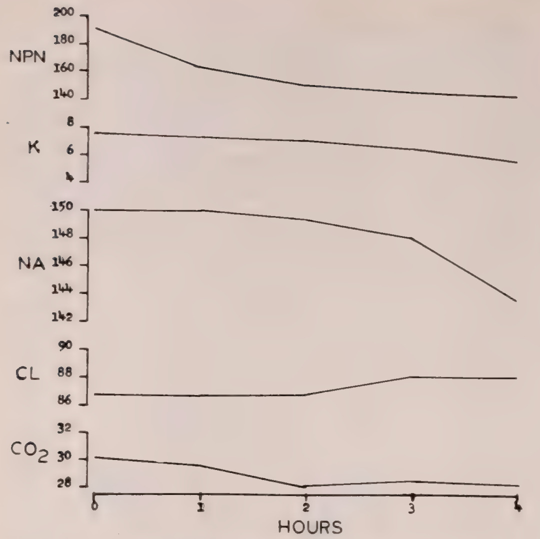

FIG. 2. Hourly changes in the blood chemistry of a dog during peritoneal dialysis.

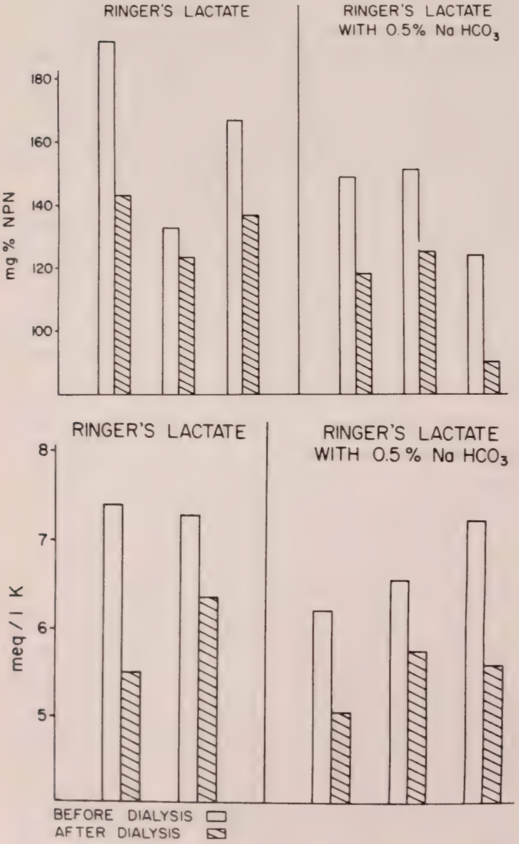

FIG. 3. Alterations in nonprotein nitrogen and potassium concentrations of a dog during peritoneal dialysis.

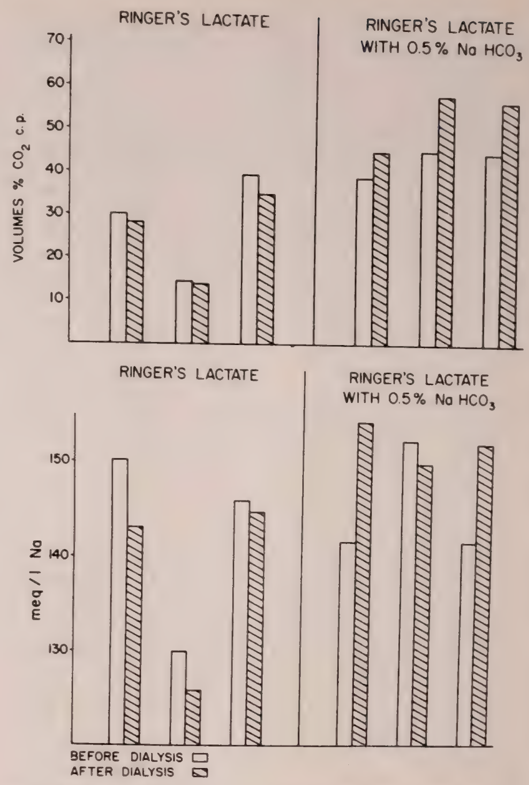

FIG. 4. Alterations in carbon dioxide and sodium concentrations of a dog during peritoneal dialysis.

lation to the duration of dialysis and solutions employed.

Improvements in the general condition of the dogs were noted after dialysis. The dogs invariably seemed to be eating better and appeared more alert the morning after dialysis. However, in a day or two they usually reverted to the state of apathy that was present prior to dialysis.

The hourly change in the blood chemistry of a dog dialyzed for four hours is illustrated in Figure 2. The biochemical response to dialysis shown in this dog is typical; such changes have been observed in the other studies.

The alterations in nonprotein nitrogen and electrolyte concentration are shown in Figures 3 and 4. There was an appreciable reduction in the nonprotein nitrogen levels after dialysis in all the experiments. A similar decrease in potassium values was noted. The carbon dioxide concentrations were slightly reduced when Ringer's lactate solution was used alone as the irrigation fluid. However, when sodium bicarbonate was added, an increase in carbon dioxide levels was manifested. Sodium levels showed some decrease when Ringer's lactate solution was used alone and demonstrated an increase toward normal levels when sodium bicarbonate was added to the dialyzing fluid. In one dog, sodium was within normal limits and was maintained as such. The chloride values remained in the region of 86 to 95 mEq. in all the experiments.

Comment

The peritoneal membrane long has been recognized as an excellent dialyzing membrane, readily permeable to water and crystalloids. It has 20,000 sq. cm. of semipermeable membrane which is comparable to that of the renal glomeruli. Experimental investigation by others have shown that the blood can be cleared of urea by the peritoneum with about 50 per cent of the efficiency of the kidneys.[1] However, in spite of the encouraging clinical results reported by some workers,[2,3] peritoneal dialysis has not yet been generally accepted.

Peritoneal dialysis has several advantages: only materials which are easily available are employed and the technic is one which can be easily carried out and involves little risk to the patient. The artificial kidney, on the other hand, requires expensive equipment, necessitates personnel specially trained for the procedure, and is not without risk.

The superior dialytic efficiency of the artificial kidney is unquestioned, and in some cases the artificial kidney is probably necessary for survival. The procedure, however, is contraindicated when there is bleeding, because of the necessity for heparinization. An unavoidable delay in its prompt application may also arise and prove fatal. In such circumstances, one should resort to the use of other artificial measures, such as peritoneal dialysis.

There are no definite guides to when external hemodialysis or peritoneal dialysis should be employed. However, when there is clinical deterioration in a patient's condition despite adequate conservative management, one may resort to dialytic methods. If the degree of uremic symptoms is such that a heroic lowering of the metabolites and certain crystalloids by external hemodialysis is not necessary, a simpler procedure, such as peritoneal dialysis, may suffice and prove to be life-saving.

Summary

Peritoneal dialysis offers a simple, inexpensive, and safe method for removing noxious metabolites and crystalloids from the uremic patient and may be a useful adjunct to treatment when conservative measures have not proved adequate. In some patients, however, the severity of uremic symptoms may be such that the use of external hemodialysis is probably still necessary for survival.

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One big vice in a man is apt to keep out a great many smaller ones.—BRET HARTE

Endoscopic Removal of Retained Biliary Calculi

JOHN H. GABLER, M.D., ROME, NEW YORK

(*From the Department of Surgery, Rome Hospital and Murphy Memorial Hospital*)

CALCULI retained in the biliary ducts after surgical exploration of the ducts is a problem which has confronted nearly every surgeon at some time. The many technics employed during surgical exploration of the bile ducts attest to the difficulty of being certain that all calculi were removed. In addition to meticulous instrumental exploration, these technics include operative cholangiograms, manometric tests, use of the Cholelithophone, endoscopy of the ducts during surgery, and other methods. Despite these refinements in surgical technics, stones occasionally are overlooked, only to be discovered later on the postoperative T-tube cholangiogram.

Short of a second operation, few methods of dealing with this complication are in use. An increased incidence of retained stones is found in obese or poor-risk patients, which is another reason for employing a conservative method of ridding the ducts of calculi. Until the present, the only conservative procedure has been the instillation of ether or chloroform through a T tube in combination with the use of choleretics and sphincter relaxants (biliary flush), as employed by Pribram,[1,2] Best and Hicken,[3] and others. This procedure can try the patience of both doctor and patient and is not without complications.[4] When this method fails or when the patient will not tolerate the continuance of treatment another method would be most welcome.

Such a case of failure to remove retained calculi by the usual technics led to the author's proposal that endoscopic removal of retained calculi be attempted. This seemed worthy of consideration since a T tube or catheter leading into the common duct provides a suitable external fistulous communication through which an instrument might be introduced down to the duct. The endoscope selected was the straight McCarthy panendoscope, which provides facilities for illumination, visualization, irrigation, and a passage large enough for the introduction of instruments. The instrument used for exploring the ducts and engaging the calculus was a urologic stone basket designed by Dr. Benjamin Levant of Pittsburgh.[5] This device is made of flexible nylon and carries less danger of injury than the older type wire stone baskets.

The feasibility of endoscopic removal of retained common duct stones through the T-tube fistula tract is demonstrated by the following case.

Case Report

FIRST ADMISSION.—A sixty-five-year-old white female was admitted to the Rome Hospital and Murphy Memorial Hospital on September 21, 1957. Two days prior to admission the patient was taken ill at home with epigastric and substernal pain radiating down the left arm and associated with nausea. She was known to have had gallstones for many years, but because of auricular fibrillation and episodes of cardiac decompensation she had been advised many years ago not to undergo surgery. She had never been jaundiced. Thyroidectomy, appendectomy, and pelvic surgery had been done in the past. She was now on a maintenance dosage of digitalis leaf.

Examination.—Physical examination revealed a pulse rate of 110 apically and 90 radially; with an irregular rhythm. Her temperature was 37 C. and blood pressure 150/90. There was an orange-sized, tender mass in the midabdomen on the right side. Initial laboratory examination revealed an acid, cloudy, dark urine with a specific gravity of 1.016, sugar 2 plus, and negative albumin. Microscopic examination of a specimen of urine showed 10 to 15 white blood cells per high power field. Blood count revealed erythrocytes

4.3 million, hemoglobin 12.3 Gm. per 100 cc., and hematocrit 41. There were 12,250 white blood cells, with 70 per cent segmented neutrophils, 11 per cent stab cells, and 19 per cent lymphocytes. The sedimentation rate was 48 mm. per hour (corrected to 45 mm. per hour). A chest x-ray on September 21, showed the transverse cardiac diameter at the upper limits of normal, aortic arteriosclerosis, and a small pleural effusion on the right side. A plain x-ray of the abdomen showed numerous small radio-opaque densities in the right portion of the midabdomen, suggesting calcific gallstones.

Electrocardiograms on September 22 and September 27 were interpreted as showing auricular fibrillation, digitalis effect, and suggestions of myocardial ischemia. No evidence of acute coronary occlusion or infarction was noted.

Operation and Course.—On September 22 the patient's temperature rose to 39 C., and the following day she developed generalized pruritus and a slight icterus. The serum bilirubin was 6.8 mg. After three days, on September 26, her temperature was normal, the bilirubin was 1.8 mg., serum amylase 20 Somogyi units, and nonprotein nitrogen 27 mg.

On October 1 an operation was performed through a Kocher subcostal incision. A large, thickened gallbladder with innumerable small calculi was removed. An anomalous cystic duct, coursing parallel to the common duct and containing a large obstructing stone, was excised. The common bile duct was opened and explored with forceps, scoops, and catheter irrigations. A 4-mm. Bake's dilator readily passed into the duodenum. No stones were recovered from the common duct. The duct was drained by means of a number 14 French T tube. A Penrose drain was brought out through a lateral stab wound, and the abdomen was closed.

The postoperative course was uneventful, although it was noted that the patient's stool remained light-colored and that there still was a large amount of bile drainage from the T tube after one week. A T-tube cholangiogram on October 8 showed a movable solitary stone in the distal portion of the common duct. The patient was started on a regimen of choleretics and antispasmodics daily and ether instillations biweekly. (Later, chloroform instillations were attempted, when her gallstones were found to be rapidly soluble in chloroform but practically insoluble in ether.) This program was continued at home following her discharge from the hospital on October 15.

SECOND ADMISSION.—The patient was readmitted to the hospital on October 28, and T-tube cholangiograms were repeated on October 29. These films revealed a second calculus in addition to the one seen on the films of October 8. After the cholangiogram preparations were made for endoscopy.

Endoscopic Technic.—The patient was placed on the cystoscopy table for the purpose of x-ray control. Light Pentothal sodium anesthesia was induced. Xylocaine 2 per cent was infiltrated into the skin around the T tube. A suture was placed in the end of the T tube and led up the straight panendoscope sheath in order to draw the T tube out through the instrument. With gentle traction on the T tube the panendoscope sheath was carefully introduced into the T-tube tract. A rotating motion was used to dilate the fascial opening and fistula tract. When sufficient length of the T tube protruded from the instrument to indicate that the common duct has been reached, the position was checked by x-ray. The T tube was then withdrawn through the panendoscope. The forward oblique telescope assembly was then inserted and some irrigation water allowed to run in. As the water became cloudy during the examination, the field was cleansed with a bronchoscopic suction tip and fresh water was admitted. The McCarthy forward oblique lens system gave a good view of the end of the fistula tract, the opening into the common duct, and part of the interior of the duct. The flexible Levant stone basket was introduced under direct vision, and it was found to enter the proximal (common hepatic) duct because the panendoscope was directed cephalad. (A deflecting endoscope may have helped at this point.) However, with a little practice and by bending the tip of the Levant stone basket, it could be directed into the distal common bile duct. After several passes of the stone basket, a stone was engaged and brought out of the duct, where it could be visualized at the end of the endoscope sheath. It then became apparent that the stone was too large to pass through the sheath even with the telescope assembly removed. The stone was then grasped and cracked with a cystoscopic rongeur forceps. A single large fragment measuring 4 by 5 mm. was removed with the forceps, and the remaining particles were flushed out by irrigation and suction. The Levant stone basket was introduced again, but the small stone near the duodenal papilla could not be engaged, and the procedure was terminated. Before removing the panendoscope, a number 12 French catheter was inserted into the common duct. The sheath was then removed and final cholangiograms made through the catheter.

Course.—The patient recovered quickly and uneventfully from the procedure and was discharged on the following day, October 30.

The catheter continued to drain variable amounts of bile until mid-November when a cholangiogram, on November 16, revealed the second stone to be still present near the papilla. On November 19 the catheter was spontaneously extruded. The fistula closed promptly. For several days the patient experienced sharp attacks of colic pain, for which she was given nitroglycerine tablets in the hope of relaxing the sphincter. Within a week the attacks abruptly ceased, her stools resumed a normal dark color, and it was assumed that the remaining calculus had passed spontaneously into the duodenum. In over ten months, until the submission of this report, she has had no further pain, jaundice, acholic stools, or other evidence of biliary tract obstruction.

History

Endoscopy of the gallbladder and biliary ducts is not a new procedure. Cholecystoscopy, reviewed by DeWeese, Eikner, and Price[6] in 1952, has been done in the past by many surgeons through the cholecystostomy stoma (to insure removal of all stones from the gallbladder). In 1941 McIver[7] developed and used a right-angled endoscope to examine the biliary ducts at the time of surgery. Wildegans[8] reported from Germany on the use of a similar instrument in 1953. As far as the author can determine, however, this is the first reported case of endoscopic removal of a retained common duct stone through a drain-fistula tract and without open laparotomy.

Summary

The technic of endoscopic removal is suggested as an additional method of dealing with retained common duct stones. A case is reported in which a common duct stone was removed by this method. Instruments are described which were found useful. Several weeks should elapse between the original surgery and the endoscopy in order to allow a secure drain-fistula tract to form, dilatation of the common bile duct to occur, and solvents and biliary flush to be tried.

509 North Madison Street

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Youth is a blunder; manhood a struggle; old age a regret.—Disraeli

Decline of the Manic-Depressive Psychoses

IRVING J. FARBER, M.D., FOREST HILLS, NEW YORK

In 1896 Kraepelin[1] published his historic work on the manic-depressive reactions, differentiating them from dementia praecox by the nondeteriorative, recoverable, and recurrent patterns of the disease. His conclusion that the seemingly opposite states of the disordered affect were variations of a single morbid process and his delineation of its syndromes into "manic states," "melancholia or depressive states," and "mixed forms" have been the guidepost for many subsequent studies of this illness.

Kraepelin considered the manic-depressive psychosis to be a frequently encountered disease. He wrote:

> The frequency with which the different clinical forms of manic-depressive insanity here described occur in a fairly large series of observations is naturally very various. The slight forms are excluded from such a view, as they only rarely come to institutions but are usually treated in the family or in all possible sanitoria. Their number is extraordinarily large. There is no "Nursing Home for Nervous Cases" which has not constantly had a whole series of them as inmates, certainly for the most part under the terms overwork, nervousness, neurasthenia, hysteria, and so on.

A study of first admissions of manic-depressive patients to hospitals in the United States providing permanent care for psychiatric patients shows a fairly steady decline in the percentage of patients with this illness. Thus, in 1937 this group comprised 13.5 per cent of the total, whereas in 1946 it was 10 per cent.[2] New York State mental hospitals show an even more marked decrease in first admission manic-depressive patients (Table I). In 1933 New York Civil State Hospitals had 1,410 first admissions of manic-depressive patients. In 1956 there were only 300 such admissions.[3]

TABLE I.—FIRST ADMISSIONS TO NEW YORK CIVIL STATE HOSPITALS OF PATIENTS WITH MANIC-DEPRESSIVE AND INVOLUTIONAL PSYCHOSES*

Year	Manic-Depressive Psychoses (Percentage of Total Admissions)	Involutional Reactions (Percentage of Total Admissions)
1920	13.4	3.7
1923	14.2	3.7
1926	13.6	3.1
1929	14.1	2.8
1932	12.1	2.9
1935	9	3.6
1938	7.3	5.5
1941	5.4	5.9
1944	4.7	6.4
1947	3.8	7
1950	2.3	6.8
1953	1.7	6.6
1956	1.9	7

* Source: 68th Annual Report of the Department of Mental Hygiene of the State of New York.[3]

That there is an actual lessening in the relative frequency of manic-depressive psychoses is not accepted by all psychiatrists in the United States and in other countries.

Arieti[4] contends that there has been an actual lessening of the frequency of this illness, the decline perhaps being due to the decrease of the "inner directed" society. With the disappearance of this type of culture and personality, there is a corresponding decline in the number of cases of manic-depressive psychoses. Arieti sought to indicate that "sociocultural factors may integrate with individual psychodynamic mechanisms and organismic potentialities in the structuring of psychopathologic entities." Psychiatrists who do not accept this hypothesis generally subscribe to the idea that the milder cases of manic-depressive psychoses are not hospitalized because the present-day public is more tolerant and enlightened or because there has been a change in diagnostic trends. It is the latter point which I wish to elaborate.

Examination of the classifications of admissions to some of the psychiatric hospitals in the United States show that the number of patients with manic-depressive psychoses is considerably above the average for nationwide psychiatric hospital incidence of the disease. Hillside Hospital,[5] a hospital which admits patients with potential for recovery or significant improvement, in 1957 had a population of which 24 per cent were suffering from manic-depressive psychoses. Rees[6] in England comments on the rarity of the illness and tells of the difficulty in finding a case for teaching purposes, while Campbell[7] mentions his study of 522 manic-depressive patients carefully selected from approximately 2,000 such patients observed in private practice. Cassidy *et al.*[8] conclude in their report that manic-depressive disease is one of the commonest of psychiatric diseases.

Pichot[9] in France and Ernst[10] in Germany doubt any decline in its occurrence. Bleuler[11] and Müller[12] report that there has not been any decrease of this illness in Switzerland. Stenstedt[13] in Sweden and Govindaswamy[14] in India likewise write of no decline of the disease incidence in their respective countries.

DeSanctis[15] mentions that in Italy the majority of psychiatrists follow the Kraepelin nosography. He believes that the decrease in the number of persons in Italy diagnosed as suffering from manic-depressive psychoses is not a valid appraisal of the disease incidence inasmuch as Italian mental health laws permit outpatient treatment of manic-depressive psychoses without this appearing in the statistics.

Stainbrook,[16] in an interesting paper, discusses the unsatisfactory status of the present-day diagnostic methods. He cites the work of Lewin[17] on the psychodynamics of manic excitement and of how the dynamics, once understood, should make for a more definitive differentiation of manic excitement from other excited behavior. However, Stainbrook calls attention to the fact that periodicity and affectivity are still utilized as major criteria for the diagnosis of manic-depressive disorders.

Psychiatrists with extensive experience in the somatic and psychopharmacologic treatment of manic-depressive psychoses do not believe that the incidence of these diseases has declined.[18–21] These men consider the nomenclature to be related to the psychiatrist's orientation, with the resulting increase of schizo-affective diagnosis, "anxiety neurosis," psychosomatic reaction, etc. as diagnoses. Alexander[18] cites a study that he and the late Dr. Myerson did in which it was found that hospitals either had more patients with manic-depressive psychoses than patients with schizophrenic reactions or vice versa, a situation suggesting that the total number of persons with manic-depressive or schizophrenic disorders is constant, with only the diagnostic preferences varying.

The most difficult problem in the differential diagnosis of manic-depressive psychoses is distinguishing them from schizophrenic behavior. I do not intend to discuss the differences at this time but will limit myself to reporting several observations that I consider pertinent to the changing diagnostic trends in the United States concerning the manic-depressive psychoses.

In the eighteen-month period from January 1, 1957, to June 30, 1958, there were 15,162 persons hospitalized in the Division of Psychiatry, Kings County Hospital Center, Brooklyn, New York. Of this number, 59 were diagnosed as having a manic-depressive psychosis.[22] This constituted 0.39 per cent of the total number of patients. During a twelve-month period, January 1, 1957, to December 31, 1957, Bellevue Medical Center Psychiatric Hospital, New York City, had a population of 18,100 patients. There were 51 patients diagnosed as having a manic-depressive psychosis, a percentage of 0.28 per cent (Tables II and III).[23]

There was only 1 among the 59 patients in the Kings County Hospital manic-depressive psychoses group who had a thought disorder. Subsequent reevaluation of this patient indicated that he was suffering from a schizophrenic condition.

The deteriorated thought processes of

TABLE II.—Number of Patients with Specific Psychiatric Illnesses Hospitalized in Bellevue Medical Center Psychiatric Hospital, January 1, 1957, to December 31, 1957*

Illness	Number of Patients		
	Male	Female	Total
Hospital population	10,383	7,717	18,100
Manic-Depressive reactions	11	40	51
Manic type	8	8	16
Depressed type	3	28	31
Other	0	4	4
Involutional psychotic reactions	90	145	235
Psychotic depressive reactions	89	148	237
Schizophrenic reactions (Schizoaffective type)	46	97	143

* Source: Annual Diagnostic Report of Mental Disorders for 1957, Bellevue Medical Center.[23]

TABLE III.—Number of Patients with Specific Psychiatric Illnesses Hospitalized in Kings County Hospital Center, Division of Psychiatry, January 1, 1957, to June 30, 1958*

Illness	Number of Patients		
	Male	Female	Total
Hospital Population	8,490	6,672	15,162
Manic-Depressive reactions	21	38	59
Manic Type	11	6	17
Depressed Type	7	28	35
Other	3	4	7
Involutional psychotic reactions	334	756	1,090
Psychotic depressive reactions	92	136	228
Schizophrenic reactions (Schizoaffective Type)	43	90	133

* Source: Diagnostic Report of Mental Disorders, Kings County Hospital Center.[22]

those with schizophrenic reactions, as described by Bleuler,[24] generally show gross loosening of associations. A more subtle thinking disorder is found in those persons who are unable to selectively control reality testing in terms of objectivity. Such a thinking disorder reveals the primitive archaic forms of inner experiences and thoughts peculiar to the schizophrenic condition.[25] Thinking of this kind is defective in the higher functions of conceptualization and abstraction. This primitive thinking is found in small children. The dream would also be such a process, with its condensation, displacement, time-space confusion, and illogical principles.

Only 3 of the 59 patients had hallucinations. One was the patient who was rediagnosed as having a schizophrenic condition, and another was a seventy-five-year-old woman whose symptomatology was indicative of a concomitant chronic brain syndrome. Delusions were present in 9 of the patients. Three of these patients had nihilistic and persecutory delusions, and the differentiation from an involutional psychotic reaction was a difficult one. Only 5 patients did not have a past history of severe manic or depressive episodes. Females outnumbered males almost 2 to 1 for all types of the illness, while they outnumbered men 4 to 1 in the depressive type (Table III).

I consider the decline in the reported incidence of the manic-depressive psychoses to be primarily due to two circumstances: the changing diagnostic trends and the ambulatory (predominantly office) treatment of the illness. Many patients who in past years would be diagnosed as having a manic-depressive psychosis are diagnosed at the present time as having an involutional psychosis, psychotic depressive reactions, and schizophrenic reactions, particularly the schizoaffective type. In conformity with this is the gradual increase of the percentage of psychiatric patients in New York State psychiatric hospitals who are diagnosed as suffering from involutional psychoses and the marked decline in diagnosed manic-depressive psychoses (Table I).

The 1956 Annual Report of the Department of Mental Hygiene, State of New York does not list the psychotic depressive reactions and the schizoaffective type of schizophrenia as separate disease categories.[3] However, as seen in Tables II and III, they are diagnosed with greater frequency than are the manic-depressive psychoses.

There is little doubt that the introduction of electric shock therapy as a therapeutic procedure twenty years ago and the psychic energizers more recently introduced have resulted in a formidable decline in the number of manic-depressive patients admitted to mental hospitals. McCartney[21] reports: "In a period of thirteen years, I have not found it necessary to commit a manic-depressive. My commitment rate for all cases is less than 3 per cent, and in every commitment the case has been diagnosed as schizophrenia."

The role of alcohol in masking the manic-depressive psychosis is an intriguing one. However, the psychiatrist in his evaluation of his patient should be able to assign excessive alcohol indulgence its proper symptomatic role, for alcoholism is a defensive maneuver that is employed by persons suffering from other forms of mental illness as well as from the manic-depressive psychoses. Alcoholism, therefore, should not blind the psychiatrist to the manic-depressive psychoses; Alexander[18] calls attention to this occurring, and Kline[20] noted that the mildly depressed individuals may resort to alcohol, thus making diagnosis difficult. He found that "by treating a number of such patients with psychic energizers when the depression was obvious, that the alcoholism also was relieved. Subsequently we treated a series of alcoholics without overt signs of depression who also were provided relief in a high percentage of cases."

Summary

The manic-depressive psychoses are infrequently diagnosed in New York City and State psychiatric hospitals. This is because of two major factors. One is the change in diagnostic methods, which results in an increasing number of conditions being diagnosed as involutional psychoses, psychotic depressive reactions, and schizpohrenic reactions, especially the schizoaffective type. In former years many of these patients would have been considered to be suffering from a manic-depressive psychosis. This trend in diagnosis is not as marked in other countries, particularly European ones, perhaps because of the greater indoctrination of Kraepelinian teachings than is to be found in the United States. The second important reason for the decline in the number of patients with manic-depressive psychoses who are hospitalized has been the advent of electric shock therapy and the psychic energizers, permitting office treatment of the patient.

Alcoholism masking the diagnosis may occur, but to the observant psychiatrist this should not be an insurmountable problem in diagnosis.

This study confirmed previously described phenomena encountered in the manic-depressive psychoses, including the absence of a thought disorder, the past history of manic or depressive episodes, rarity of hallucinations and delusions, and the predominance of females with the disease, especially the depressive type of manic-depressive psychoses.

109-23 71st Road, Forest Hills 75

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Cytologic Detection of Uterine Cancer

EDGAR R. MAILLARD, M.D., HEMPSTEAD, NEW YORK

(*Director, Division of Laboratories and Research, Nassau County Department of Health*)

There has been a continuous increase in the number of cases of uterine cancer reported in the State, exclusive of New York City, in the eleven years between 1945 to 1955. Regardless of whether this increase in uterine cancer is due to better diagnosis, to an increased population group at risk, or to a combination of these factors, it is a challenge to the profession to use every facility available for the early detection of malignant lesions of this type. Early detection means greater chance of cure.

Since the cytologic examination of uterine material for the detection of malignant disease has become an acceptable diagnostic procedure, it is desirable that it be made an essential part of the pelvic examination.[1] Equally important, however, is the manner in which the specimen is collected. There are two essential specimen requirements for providing a good medium for cytologic study: the cellular material must be well preserved and representative of the area to be examined.

With these requirements as a guide, an outfit was devised for the submission of specimens by mail. The outfit consists of four clean slides in a cardboard holder, a wooden spatulum, a cotton swab, a history form, and mimeographed instructions for the collection and preparation of the specimen. They are all enclosed in a self-addressed manila envelope to be used in

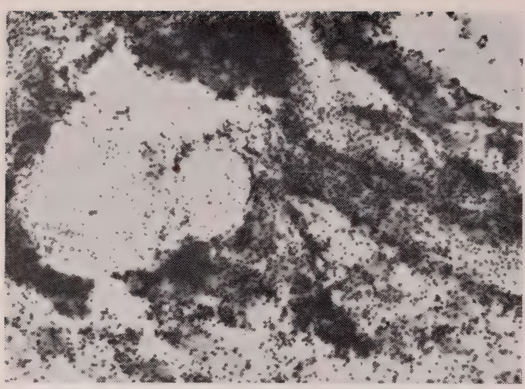

FIG. 1. Microscopic view of cellular debris, including purulent exudate and blood, which makes the cytologic examination for malignant cells unsatisfactory.

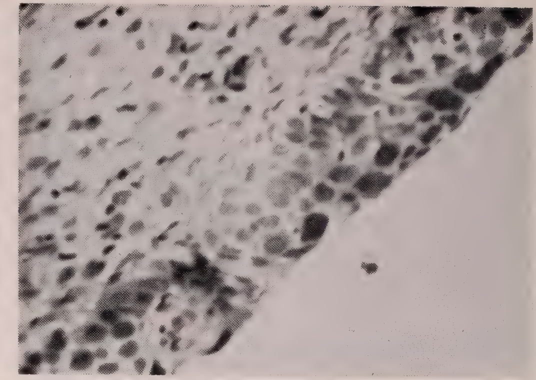

FIG. 3. Microscopic view of section of the cervix showing intraepithelial epidermoid carcinoma (carcinoma in situ) with the malignant changes involving the surface epithelium.

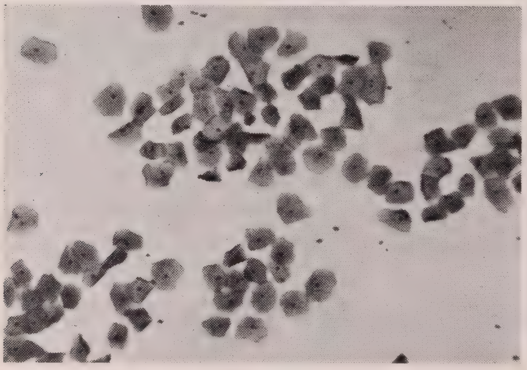

FIG. 2. Microscopic view of satisfactory cellular material taken from the cervix with a wooden spatulum.

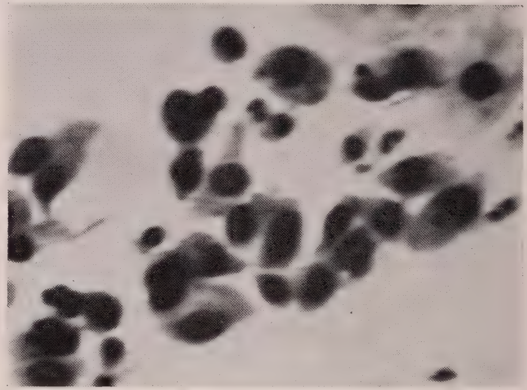

FIG. 4. Microscopic view of tumor cells in groups, which occur quite frequently when specimen is collected with a wooden spatulum.

returning the slide preparations to the laboratory. These outfits are available to all practicing physicians in Nassau County.

The first slide preparation is made with material collected with the swab from within the cervical canal. This material should consist principally of cells from the endocervix and exfoliated cells, if present, from the endometrium. Following this, any excess of blood and mucus should be gently removed since they may obscure malignant cells and make their detection more difficult (Fig. 1). The second slide preparation is then collected from the surface of the cervix with the wooden spatulum (Fig. 2).[2] The material collected in this manner should consist of well-preserved cells and cell groups from the epithelium covering the cervix, including the squamocolumnar junction where epidermoid carcinoma of the uterus usually begins. The cervix is the site most frequently involved in carcinoma of the uterus. The earliest malignant changes are intraepithelial and involve all the layers of the epithelium (Fig. 3). Consequently any cells which are removed from the surface will indicate the presence of the earliest malignant changes, or carcinoma in situ (Fig. 4). This specimen is similar to that of a tissue biopsy in that not only single cells but also groups of cells are present, but it is a more representative specimen since it may contain cells from the entire surface of the cervix, as compared with small bits of tissue representing only small surface areas. It should be obvious that biopsies consisting of bits of tissue from a grossly appearing normal cervix have very little diagnostic significance since they represent too small a surface area. It is advisable, therefore, that cellular material be collected with a wooden spatulum. Tissue biopsies would be indicated only when there is a visible lesion and when the result of a cytologic examination is to be confirmed. Coning of the whole organ is advisable when tissue biopsy fails to confirm cytologic findings of tumor cells.

It should be possible in most instances to detect or exclude a malignant lesion of the cervix on the cytologic examination of cellular material collected in this manner. Malignant tumors of the endometrium may not be detected if exfoliated cells are not present in the endocervical plug collected with the swab. However, any history of abnormal uterine bleeding, particularly when it is postmenopausal, should indicate the need for a histologic examination of tissue from the endometrium.

Collection of Cervical Material

Patients should be instructed not to douche or take a tub bath for at least forty-eight hours before examination. Specimens should be collected before manual examination is done. The speculum should be inserted without any lubricant.

Two cervical specimens should be submitted. The first should consist of the cervical plug and may be collected with a swab inserted into the cervical canal. The surface of the cervix should be gently wiped to remove any excessive mucus and blood. The second specimen should be collected with the wooden spatulum by inserting the smaller end into the cervical canal and rotating.

When the cervix is eroded or ulcerated, the specimen should be collected from the border of the lesion with the broader end of the spatulum. This should provide a specimen containing epithelium rather than blood.

Making the Slide Preparations.—Material should be spread gently, uniformly, and rapidly to prevent drying, injury to cell clusters, and excessive thickness of the film preparation. The spatulum is held so that the handle makes a 45-degree angle with the plane of the slide. With a smooth, sweeping motion, a large letter "U" is made by pushing the top of the spatulum down near the edge, circling it toward the opposite side, and drawing it back along the far side. Thus, secretion and cells are transferred to the glass slide. Excessive to-and-fro motion should be avoided since the cell picture may be impaired by breaking up cell clusters.

Fixing the Slide Preparations.—It is extremely important that the material on the slide be fixed *immediately* before drying has occurred; otherwise there is a loss of cell definition. Preparations should be fixed in equal parts of ether and 95 per cent alcohol for at least twenty minutes. Before the fixing solution has dried one to two drops of glycerin should be placed on the slide, and the slide should be covered immediately with another clean glass slide.

Specimen Requirements.—In the collection of a cervical specimen for cytologic study one must be sure that the material is adequate in amount, that it is well preserved, and that it does not consist chiefly of blood, mucus, or cellular debris. In other words, the specimen should consist of freshly removed and well-preserved cells from the surface of the organ. This can be best accomplished by using the wooden spatulum after the surface of the uterus has been cleansed from any superfluous blood or mucopurulent exudate or both.

Laboratory Study

Personnel.—Of equal importance is the selection of personnel to perform the cytologic examination. The person best equipped for such studies is the pathologist; however, it may be physically impossible for him to cope with all the demands. In this event a staff of nonmedical laboratory assistants can be satisfactorily trained to separate the normal from the abnormal specimens. The abnormal material is further studied by the pathologist, who makes the final report.

Reporting of Results.—Reporting of laboratory results should be factual. The findings may be reported in one of four ways, provided the specimen is satisfactory:

1. Tumor cells consistent with a malignant tumor of the cervix or endometrium.
2. Abnormal cells suggestive of a malignant tumor of the uterus.
3. Atypical cells probably associated with an inflammatory lesion.
4. No abnormal cells.

Further Study

When tumor cells or cells suggestive of the presence of a malignant lesion are found, it is advisable that tissue be removed from the uterus for histologic confirmation. If there is a visible lesion, a biopsy may be sufficient to confirm the cytologic findings. However, in the absence of a visible lesion a coning of the cervix would be indicated. When atypical cells are noted and are not considered to be malignant cells, it is advisable that additional specimens be collected at stated intervals for further study.

Specimens consisting largely of mucopurulent material, blood, or cellular debris are not considered particularly satisfactory for cytologic study. Also, markedly dehydrated cellular material is not desirable since distortion of cell morphology will not make for a satisfactory microscopic examination. In these instances additional cellular material which is properly collected and well preserved is requested for further examination. One cannot emphasize too strongly the need for a satisfactory medium for cytologic study since the significance and value of the microscopic study is dependent to a large degree on the character of the material which is received.

Specimens Examined in 1955, 1956, and 1957

During the years 1955, 1956, and 1957 a total of 44,847 specimens were examined from approximately 44,700 patients. Two slide preparations were made of each specimen. In 44,361 specimens no tumor cells were found. Tumor cells consistent with malignant disease of the cervix or endometrium were found in 165 specimens. Forty-one specimens showed abnormal cells suggesting the presence of a malignant or atypical nonmalignant lesion. Atypical cells probably related to an inflammatory process were found in 180 specimens. Examination of tissue from 131 of the 148 patients whose specimens showed tumor cells confirmed the diagnosis of malignant disease. For various reasons the disposition of the remaining cases could not be determined. Of the 41 patients in whom abnormal cells suggestive of a malignant tumor were reported, 14 had malignant lesions. In only 1 of the 180 patients in whom atypical cells were noted did histologic study reveal evidence of a malignant lesion.

On the basis of these cytologic findings it may be assumed that in Nassau County the rate of detection of cancer of the cervix is approximately 4 cases per 1,000 of the female population for all ages.

Fifty per cent of the malignant tumors of the cervix were carcinoma-in-situ. Sixty-five per cent of the patients were between the ages of twenty to forty. Ten per cent of the confirmed malignant lesions of the uterus were of the endometrium.

One of the most valuable and significant observations has been the lack of subjective or objective clinical findings in the patients in whom intraepithelial carcinoma (carcinoma in situ) was detected. It is reasonable to assume that, because of the availability to the physician of cytologic studies on cervical material, many more pelvic examinations are being performed and many more specimens are being collected. This has been very rewarding in detecting cancer of the cervix in its earliest preclinical stage as well as in giving added assurance to the physician and the patient of the absence of any malignant changes.

Thus, properly collected and well-preserved cellular material from the cervix offers a far better and representative medium for the detection of malignant disease except when there is a visible lesion which may be biopsied.

Conclusions

The use of a wooden spatulum for the collection of the cellular material has proved to be very satisfactory. It provides well-preserved cells and cell groups simulating those of a tissue biopsy. Cellular material collected in this manner provides a concentrated and representative specimen of the cervix and endocervix. In some instances the first specimen collected with the swab may contain endometrial cells enmeshed in the cervical plug. Collection with a spatulum has many advantages over the biopsy. For instance, the amount of tissue collected in a biopsy represents a relatively small area of the cervix. In early lesions the area involved is usually so small that not infrequently the lesion may not be included in the biopsied specimen. This does not happen as a rule when the cervical material is collected with a wooden spatulum. Consequently, any difference that may occur between the results of the cytologic studies and histologic examination must be carefully evaluated. If tumor cells are present, the clinical findings will be of little value since in the early malignant lesions the changes may be intraepithelial (carcinoma in situ) and not grossly visible. The tissue biopsy may have missed the lesion so that a coning of the cervix would be indicated and the specimen submitted for multiple sectioning. One may conclude that the microscopic findings of a small portion of cervical tissue may not represent all of the changes occurring in the cervix at the time of a tissue biopsy.

Summary

The cytologic examination of cellular material from the cervix has been proved to be an effective method in the detection of cancer of the uterus. By means of this method cancer can be detected in its preclinical form and at an earlier age; consequently, it offers greater opportunity for complete excision of the lesion. It also calls attention to atypical nonmalignant lesions and makes the study of the progress of these lesions possible. In addition, it makes available a procedure for following postirradiated malignant lesions.

The collection of cervical material is a simple procedure which can be performed by any practitioner of medicine in his office. If adopted as part of a pelvic examination, it could make every doctor's office a cancer detection center. The absence of tumor cells in a properly collected and well-preserved specimen is a very significant and worth-while health finding.

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A human being: an ingenious assembly of portable plumbing.—CHRISTOPHER MORLEY

Effect of Dietary Supplementation with L-lysine in Poorly Thriving Infants

ALFRED J. VIGNEC, M.D., AND MARY Z. GASPARIK, M.D., NEW YORK CITY

(From the Department of Pediatrics, New York Foundling Hospital)

THE use of supplemental L-lysine in the dietary management of infants who failed to obtain adequate nourishment from their food has been reported by Albanese and coworkers.[1-3] According to these investigators the nutrition of such infants often was demonstrably improved by supplementing their cow's milk formulas with lysine so that the amino acid pattern of the dietary protein more closely approximated the pattern of muscle protein. Flodin[4] has pointed out the possibility that lysine deficiency may be a consequence of individual inefficiency of the digestive transport system for amino acids. He suggests that the growth-retarded infants studied by the Albanese group may have had such a deficiency and that the use of supplemental lysine served to correct the deficiency state.

More recently Gomez and associates[5] published a preliminary report of nitrogen balance studied in 5 young children suffering from chronic severe malnutrition who were fed cow's milk diets with and without lysine supplements. The authors concluded that their findings were in disagreement with the results observed by Albanese and coworkers. Examination of the data reported by Gomez and associates shows that in 3 of the 5 malnourished children lysine supplementation did not affect the high retention of nitrogen which the children obtained from the unsupplemented milk diet. However, in the 2 children who retained insufficient nitrogen from the diet itself, addition of supplemental lysine was accompanied by definitely improved nitrogen balance. Thus, the results described by Gomez *et al.* seem to agree rather than disagree with the findings reported by the Albanese group.

The present study was undertaken in an effort to determine whether the use of supplemental lysine promotes a better rate of growth in young infants not thriving on conventional cow's milk formulas. The evaluation was carried out at the New York Foundling Hospital. Infants incorporated in this study were those whose admissions were based on social need rather than disease, since a large part of the work of this institution is devoted to the care of abandoned, dependent, and neglected infants. Accordingly these infants present nutritional and emotional problems of greater severity, and, since they are institutionalized, their weight and growth curves cannot be compared to those of infants receving individual home care. Comparative nutritional data are therefore valid only when interpreted between groups within the institution.

Material and Method

Observations were confined to infants who were approximately six to eight weeks of age at the outset and whose diet consisted chiefly of an evaporated milk and carbohydrate mixture calculated to provide a daily intake of 100 to 120 calories and 3.5 to 4 Gm. of protein per kilogram of body weight. The plan of study provided that each infant be observed over a nine-week span and, during this time remain free of complicating febrile episodes and digestive upsets. Throughout the total period of observation, accurate measurements of body weight were made once a week, intakes of milk formulas were closely approximated each day, and hemoglobin levels were estimated at triweekly intervals.

This study was supported in part by a grant from White Laboratories, Inc., Kenilworth, New Jersey.

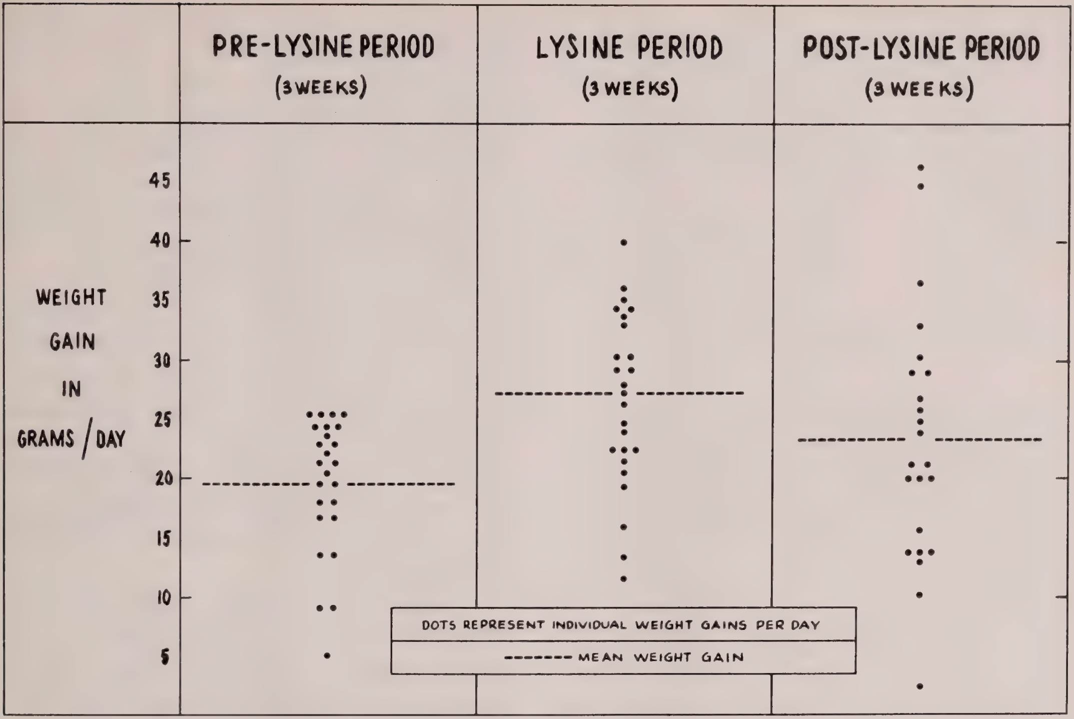

FIG. 1. Body weight increments in 25 test cases before, during, and after lysine supplementation.

For the first three weeks the diet was supplemented with a vitamin mixture. During the second three weeks, in addition to the vitamin mixture, supplemental lysine* also was added to the daily formula in doses suggested by the Albanese group (250 mg. for infants weighing 10 pounds, or 4.5 Kg., or less and 500 mg. for infants over ten pounds).[2] During the final three weeks of the total nine-week period of observation, the vitamin mixture without supplemental lysine was added to the daily feeding formula. This, of course, is the familiar experimental plan of internal control.

Of the case records compiled over the course of a year, there were 54 which provided complete data for infants who had not developed infections or metabolic complications during the requisite nine-week period of observation. The rate of weight gain in the first three weeks (prelysine control period) was used as a measure for differentiating poorly thriving cases from thriving cases. During this initial control period the mean weight gain for the aggregate of 54 cases was 26.2 Gm. per day. Those infants whose weight gain in the first three weeks was less than the aggregate mean were selected as a poorly thriving group, eligible for evaluation of the use of supplemental lysine in infants. The thriving group, whose rate of weight gain exceeded the aggregate mean, were not evaluated statistically in detail since it was not anticipated that they would demonstrate any effect from lysine supplementation.

Results

There were 25 infants who were classified as poorly thriving, according to the foregoing criterion. Their average age and body weight at the outset were 7.1 weeks and 3.8 Kg. (8.3 pounds). Classification by means of the Stuart anthropometric age-weight

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* The supplemental lysine was supplied by White Laboratories, Inc., in the form of Lactofort, a preparation containing essential vitamins in addition to synthetic L-lysine. The supplemental vitamin mixture, used in the control periods, had an identical composition except that it did not contain lysine.

TABLE I.—Statistical Comparison of Body Weight Increments in Test Cases Before, During, and After Lysine Supplementation

Weight Gain (Gm. per day)	Period (Three Weeks) Prelysine	Test (Lysine)	Postlysine
Mean ± Standard Error	18.9 ± 1.1	25.8 ± 1.2	22.3 ± 2.2
Difference (Between Successive Periods) + Standard Error		6.9 ± 1.7	3.5 ± 2.5

curves placed the average infant of this group approximately in the third percentile. Thus, in the general population, about 98 of 100 infants of similar age would weigh more.

The individual increments in body weight during each of the three consecutive periods of observation are plotted in Figure 1. During the initial control (prelysine) period these infants gained weight at a mean rate of only 18.9 Gm. per day. In the second three weeks (test period), during which time the infants received supplemental lysine, the level of weight gain rose to 25.8 Gm. per day. Statistically the difference of 6.9 Gm. per day was calculated to be four times greater than its standard error and, thus, was highly significant (Table I). During the final three weeks of observation (postlysine period) the mean daily weight increment declined to a level of 22.3 Gm. per day. The difference between this and the rate of weight gain in the test period, however, was not significant. In this regard Albanese and coworkers[1,2] noted that an improved growth rate associated with the use of supplemental lysine is sometimes carried over into the postlysine control period.

The comparatively poor level of weight gain in the prelysine period was not attributable to low intake of food. In fact, as reflected by measurements of the amount of milk formula ingested each day, food consumption was not a problem in the feeding of these infants. The mean daily intake of formula during the prelysine period was approximately 24.8 ounces, or about 6.2 ounces per mean kilogram of body weight, an ordinarily adequate level of intake. During both the test period and the postlysine period the daily intake of formula remained at a similar level, approximating 6 ounces per mean kilogram of body weight. These data suggest that the increased rate of weight gain, which occurred after the use of supplemental lysine was begun, resulted from an improved utilization of dietary protein.

Hemoglobin concentrations in this group of infants varied, but only within normal range. Since neither plasma protein nor hemoglobin levels offer a reliable biochemical index of protein nutrition, it was not surprising that the mean hemoglobin concentrations initially and at the end of each of the three-week observation periods did not differ significantly.

A possibility requiring consideration was that the significantly greater weight increment during the test period, as compared with the prelysine period, might have been an expression of delayed adjustment by the infants to their institutional environment rather than a consequence of dietary supplementation with lysine. To examine this possibility, case records for an additional 34 infants were accumulated. As in the original group, these infants were approximately six to eight weeks old on admission. Their diet was entirely similar to that of the original group, consisting chiefly of an evaporated milk and carbohydrate formula which was supplemented, however, only with vitamins. Their clinical course for two consecutive three-week periods following admission was not marked by intervention of febrile or digestive complications.

The mean daily weight gain for the group in the first three weeks was 22.4 Gm. In 18 of the 34 infants, increments in body weight during this initial period were less than the group mean. These 18 infants were therefore classified as poorly thriving cases. Their average age and body weight at the start were 7.4 weeks and 3.7 Kg. (8.2 pounds), thus, almost identical with the average initial age and body weight of the poorly thriving test cases.

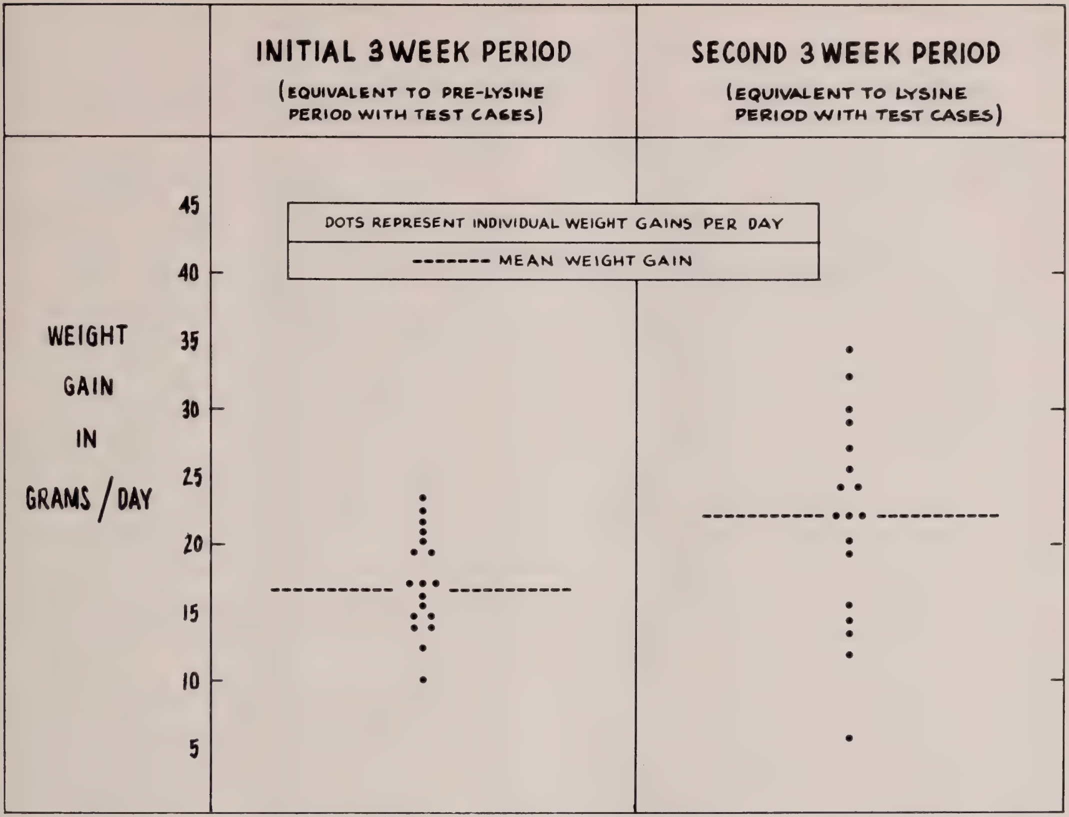

FIG. 2. Body weight increments in 18 control cases during initial and second three-week periods.

TABLE II.—STATISTICAL COMPARISON OF BODY WEIGHT INCREMENTS IN CONTROL CASES DURING INITIAL AND SUBSEQUENT THREE-WEEK PERIODS

Weight Gain (Gm. per day)	Period	
	First	Second
Mean ± Standard Error	16.07 ± 0.7	20.5 ± 1.7
Difference (Between Periods) ± Standard Error		3.8 ± 1.9

In Figure 2 the individual rates at which the 18 control infants gained weight during the first three weeks after admission are compared with their rates of gain during the second three weeks. The mean daily weight increment for the group in the first three weeks was 16.7 Gm. and in the second three weeks 20.5 Gm. Since the difference between these means is but twice as great as its standard error (Table II), its statistical significance may be considered to be questionable. This is interpreted to mean that in the test infants who had made slow progress during the first three weeks after admission a delayed adjustment to the institutional environment is not a likely explanation for the highly significant rise in their weight increment during the subsequent three weeks. Thus, comparison of the data in Tables I and II, especially the mean weight gains of the first two periods, indicates that there was a cause-and-effect relation between the use of supplemental lysine and the increased rate of weight gain in the test group of poorly thriving cases.

Comment

The use of supplemental lysine in infants has been questioned on the ground that it might produce amino acid imbalance with possible consequent impairment of protein nutrition.[6] However, Dubow, and coworkers[7] recently reported the ability of infants to tolerate supplements of lysine over a wide dosage range. According to the latter investigators, supplementation of a whole milk formula with as much as 5 Gm. of lysine per day did not produce adverse clinical effects or abnormalities in fasting plasma amino acid values. In the present study evaporated milk and carbohydrate formulas were supplemented with amounts of lysine (250 to 500 mg per day) sufficient only for raising the total dietary level of this amino acid approximately to the level found in muscle protein. Lysine supplementation of this order, therefore, would not be expected to cause a dietary imbalance of amino acids in young infants any more than would the feeding of muscle meat products.

It is of parenthetic interest that in the thriving group from the original aggregate of 54 cases the rate of weight increment did not change significantly when the diet was supplemented with lysine. In the 29 thriving cases gains in body weight per day averaged 29.5 Gm. during the prelysine and postlysine control periods and 30.7 Gm. during the period of lysine supplementation.

Summary

1. The use of supplemental L-lysine to promote a better growth rate in infants not thriving on a conventional pediatric diet was studied in an institutionalized group of 25 poorly thriving babies. Their average age and body weight at the outset were 7.1 weeks and 3.8 Kg. (8.3 pounds), and their diet consisted chiefly of an evaporated milk and carbohydrate mixture calculated to provide 100 to 120 calories and 3.5 to 4.0 Gm. of protein per kilogram.

2. Observations were made over a nine-week span, uncomplicated by febrile or gastrointestinal episodes, and divided into three-week prelysine, lysine, and postlysine periods. The mean daily weight gain for the group was 18.9 Gm. in the prelysine period, rose very significantly to 25.8 Gm. in the lysine period (during which time a daily supplement of 250 to 500 mg. of lysine was added to feeding formula), and declined insignificantly to 22.3 Gm. in the postlysine period.

3. Food consumption, as reflected by measurements of the amount of formula ingested each day, was uniformly adequate in both control and test periods. This suggests that the highly significant increase in rate of weight gain associated with the period of lysine supplementation resulted from an improved utilization of dietary proteins.

4. In a fully comparable control group of 18 poorly thriving infants who did not receive supplemental lysine, the mean rate of weight increment for the first three weeks after admission was compared with the rate of gain during the second three weeks. The statistical significance of the difference was questionable.

5. The reported data indicate a cause-and-effect relation between the use of supplemental lysine and the significantly increased rate of weight gain in the test group of poorly thriving cases.

The authors were assisted in the statistical interpretation by Dr. George M. Naimark.

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RECENT ADVANCES IN MEDICINE AND SURGERY

A series of articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Recent Advances in Radiotherapy

JOHN C. EVANS, M.D., NEW YORK CITY

(From the Department of Radiotherapy, Albert Einstein College of Medicine)

An evaluation of recent advances in the radiotherapy of malignant disease requires the talents of a prophet rather than those of an observer. Technics can be evaluated only by the survival percentages in large groups of patients with malignant disease of apparently similar type and extent after years of observation. In some instances prolongation of mean survival time or histologic evidence of local destruction of a cancer can be substituted as a criterion. Since technics of radiotherapy vary widely throughout the world, particularly in the United States where cancer cases are not treated in centralized institutions so that accumulation of a significant number of cases is difficult, no standardized treatment is available as a basis of comparison.

In spite of these limitations certain observations may be ventured on the influence of the recent trends in clinical radiotherapy to apply radiation physics and radiobiology to patient care.

Radiation Physics

The measurement of dosage and the consistent projection of a given quantity of radiation through a volume of tissue thought to contain the entirety of a human cancer has become more of an exact science. Unfortunately, although this has made results more reproducible and the training of radiotherapists easier, the results obtained by the empiric radiotherapists of the early decades of this century have been equalled but not surpassed. In a group of cases treated with x-ray therapy before 1926, cancer of the larynx was controlled in 28 per cent of 77 cases.[1] A similar series of 109 cases reported in 1956 showed an absolute cure rate of 27.5 per cent.[2] If precise dosimetry were more generally applied, however, the overall survival of cancer patients probably could be measurably increased.

There has been increasing enthusiasm recently for more penetrating beams of radiation from million-volt x-ray units or teletherapy units containing cobalt^{60}. It already has been demonstrated, by two decades of use, that supervoltage radiation may promote ease of treatment and patient comfort if it is properly applied, but survival rates higher than those from 200-kilovolt x-ray therapy are obtained only in cases of rare, deep-seated neoplasms, such as those in the esophagus and urinary bladder.[3] It is of interest that with adequate irradiation of esophageal cancer by this means, over 20 per cent of adequately treated patients survive over ten years. This compares quite favorably with recent reports of surgical treatment of this disease, with 16 per cent of resected cases surviving over five years (17 of 106 "curative" resections for carcinoma of the thoracic esophagus and cardia).[4] In the light of these statistics it is difficult to rationalize the reservation of radiotherapy in cancer of the esophagus to the most advanced and hopeless cases. Similarly, anaplastic carcinoma of the bladder which has not penetrated beyond the muscular layer can be controlled in 15 per cent of cases treated with an adequate dose of supervoltage x-ray therapy (9 of 61 over five years).[3] As judged by short-term follow-up of bladder cancer treated with a cobalt bomb, a similar control rate can be achieved, since 2 of 14 cases adequately treated showed no evidence of disease after two years.[5]

Radiobiologic Applications

The most interesting and possibly the most promising recent advances in radiotherapy are those in the application of radiobiologic observations to treatment of human cancer, particularly in regard to substances which might protect the irradiated normal tissues or sensitize the cancer cell selectively to radiation damage.

Oxygenation of Tissues.—The first factor observed to alter tissue sensitivity is the degree of vascularity, presumably by alteration of the tissue oxygen. The diminished sensitivity of skin when the vascular supply is impaired by compression, cooling, or adrenalin injection was observed as early as 1904.[6] This also was observed in deep organs, such as the ovary,[7] and in tumor transplants.[8] This observation has been utilized clinically to protect skin in the treatment field, by means of compression cones, but not to protect deep organs in the field of irradiation. It is not known if the normal tissues would be protected selectively or if the cancerous tissues would be protected to an equal degree. Also, the technical difficulties of applying a brief interval of anoxia during irradiation are considerable.

The converse of this observation, that tissues are more sensitive to irradiation with greater than normal oxygenation, is being applied clinically in spite of even greater technical difficulties.[9] Cancers of the lung and a few of the breast, pharynx, and larynx have been irradiated with patients breathing pure oxygen at 3 atmospheres of pressure. This requires anesthesia to prevent convulsion and bilateral myringotomy to protect the tympanic membrane from pressure change. The effect on the tumor cells is greater than for a comparable dose with the patient breathing air, but normal tissue sensitivity may be comparably increased, as shown by a high incidence of early cartilage necrosis in these patients.

A simpler and often neglected method of obtaining adequate oxygenation of tumor cells is to restore and maintain normal hemoglobin values during radiotherapy. Likewise, the treatment of secondary infection in and around a cancer before irradiation has been shown to increase the available oxygen in the capillary bed by preventing stasis. Attention to these simple measures has resulted in the cure of over 50 per cent of cancer of the uterine cervix in all stages. When the disease was limited to the cervix, 80 per cent were controlled.[10]

Other Protective Agents.—Numerous other substances which protect normal tissues from irradiation have been uncovered with the impetus of the atomic age. Some protect the tissues only from radiation of the entire body, such as transplants of bone marrow and spleen homogenates. Others, such as alcohol and myriad compounds containing free sulfhydryl and amino groups, like cysteamine and glutathione, may act at a cellular level and be useful in protecting normal tissues surrounding an irradiated cancer.[11] They do not seem to diminish tumor reactions by gross observation,[12] but influence on long-term survival has not yet been reported.

Radiation Sensitizers.—A converse of chemical protectors would be substances which might sensitize the cancer cell to the destructive effect of radiation. Some are known to sensitize the skin to ultraviolet radiation (porphyrins), and artificial vitamin K (Synkayvite) has been shown to increase nuclear damage from x-ray.[13] A prolonged trial of this drug in human cancer has given only a suggestive increase in survival time in irradiated lung cancer.[14]

Hormonal substances known to influence the tumor stroma and even the growth potential of certain cancers, such as those of the breast, uterine cervix, ovary, and prostate, have been given limited trial as sensitizers to radiation. In cancer of the breast, radiation response did not appear to be enhanced.[15] Alteration of diet, particularly in vitamins which influence connective tissue characteristics, might affect radiation response. A diet deficient in vitamin C has been reported to increase radiation response in human cancer, particularly of malignant lymphoma.[16]

A last group of substances which might be considered as radiation sensitizers are the cancer chemotherapeutic agents, both antimetabolites and the alkylating drugs, whose cellular action simulates radiation effect. Such a combined assault on the cancer cell has given promising results on transplanted animal malignant conditions.[17] The field of chemical sensitizers may still be virgin ground for a real advance in the radiotherapy of cancer.

Summary

The most promising advances in radiotherapy appear to be in the field of applied radiobiology. The foundation of roentgen therapy of deep cancer was due to a radiobiologic observation of increased sensitivity of rapidly reproducing cells by extending the radiation in time.[18] If some of the other modalities mentioned here prove to have a fraction of the influence of this observation on the cure of cancer, radiotherapy will play an increasing role in cancer therapy until the ultimate prevention and control of these maladies is found.

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CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and*
WILLIAM B. OBER, M.D.

SEPTEMBER 17, 1958

Discussed by MAURICE F. DERANEY, M.D., NEW YORK CITY

Case History

DR. HENRY H. MURPHY: On June 25, 1958, a sixty-two-year-old Japanese-born mechanical engineer was admitted to Knickerbocker Hospital complaining of jaundice, fatigue, and abdominal distention of several weeks duration.

The patient stated on admission that he had been in good health until approximately 1935. At that time he began to experience discomforting eructation and flatus, and he underwent a gastrointestinal series and other tests which led to the conclusion that his symptoms were the result of a mild fat intolerance combined with a tendency toward aerophagia. He was advised how to minimize these complaints but apparently developed an overly particular attitude toward food and a worrisome preoccupation with his digestive system in general. Several years later he sought re-evaluation of the same complaints and again was told that he was free from specific organic pathology.

In 1942 the patient was interned on Ellis Island where he remained until the conclusion of World War II. During this three-year period his diet contained very little protein or fresh vegetables and was associated with a 40-pound weight loss. The patient tended to attribute this to the poor quality of his diet, but an assessment of this claim must take cognizance of his known gastrointestinal instability.

On returning to civilian status in 1945, the patient regained his lost weight and his usual state of health until 1955. Then, because of recurrence of fatigue and anorexia of moderate degree, he attended a clinic abroad and was told that he had liver disease. Treatment with liver extract and a high-protein diet resulted in a marked subjective improvement which lasted until the end of 1956. He then had an exacerbation of all his previous complaints and was hospitalized in Hamburg, Germany. Physical examination is reported to have revealed a slightly icteric but youthful-appearing male in good general condition. No other changes in his physical examination were noted. An extensive laboratory work-up established the presence of a leukopenia of 3,800, thrombocytopenia of 38,000, serum bilirubin of 1.6 mg. per 100 ml., 3 plus thymol turbidity, and 28 per cent retention of bromsulphalein at forty-five minutes. Electrophoresis demonstrated that 32 per cent of the patient's 7.3 Gm. per 100 ml. serum protein was in the gamma globulin fraction. Barium swallow demonstrated the presence of varices in the middle and lower third of his esophagus. At peritoneoscopy, only the left lobe of the liver could be visualized because of adhesions and revealed what appeared to be an atrophic cirrhotic liver. A biopsy was not performed. The presence of moderate splenomegaly and dilated mesenteric veins was also noted. No ascites was present. The patient was treated as previously and again felt subjectively improved. Laboratory studies six months later showed no essential change.

During the year between the above laboratory studies and his admission to Knickerbocker Hospital, the patient continued on his high-protein diet, supplemented with various vitamin preparations. His course was static and his subjective complaints minimal until two weeks prior to admission. He then observed that his urine was becoming very dark brown and he began to have frequent loose stools which grew lighter in color. Coincident therewith he noted minimal icterus for the first time. Shortly thereafter his abdomen grew larger, and he became dyspneic on effort and began to have intermittent episodes of quick stabbing pain in the right upper quadrant which radiated toward his left side. There was no history of exposure to hepatotoxins, hepatitis, blood transfusions, or drug ingestion other than vitamins. He had consumed only small quantities of alcohol prior to 1955 and had totally abstained since that time.

Physical examination revealed an apprehensive, well-developed, well-nourished icteric male. His blood pressure was 140/60, and his pulse, respiratory rate, and temperature were within normal limits. There were no abnormal findings of the head, eyes, ears, nose, mouth, throat, or neck with the exception of icteric sclerae. The chest showed a slightly increased anteroposterior diameter with scattered rales at both posterior lung bases. The heart did not appear enlarged and produced sounds of good quality. There was a loud high-pitched blowing systolic murmur at the apex but no thrills, rubs, or gallop. The abdomen was protuberant, and both shifting dullness and a fluid wave could be elicited. A firm to hard liver edge could be felt 3 fingerbreadths below the right costal margin, and a nontender, firm spleen was palpable 2 fingerbreadths below the left costal margin. The genitalia were normal. Rectal examination demonstrated no hemorrhoids, and the prostate was smooth and slightly but symmetrically enlarged. There was no cyanosis or clubbing. The peripheral pulses were good, and minimal pretibial edema was present. The skin was dark yellow with somewhat scanty axillary hair and one small spider angioma. There was no generalized lymph node enlargement, and the neurologic examination was within normal limits.

Laboratory study reported a urine with a concentration of 1.022, 1 plus albumin, 1 plus bile, and urobilinogen in a dilution of 1:20. The hemoglobin was 13 Gm., white blood count 9,600, and differential count normal. There were 112,000 platelets and a reticulocyte count of 2.4 per cent. The stool contained from a trace to 1 plus occult blood. No ova or parasites were seen. The total protein was 5.8 Gm. per 100 ml. with 2.2 Gm. albumin and 3.6 Gm. globulin. The bilirubin was 13.5 mg. per 100 ml., alkaline phosphatase 5.6 Bodansky units, cephalin flocculation 4 plus, prothrombin time twenty seconds, and total cholesterol 340 mg. per 100 ml. with an esterified fraction of 255 mg. Repeat studies confirmed an esterification of 60 to 75 per cent, although the total cholesterol did not again exceed normal limits. Diuresis was not obtained on a low-salt diet and mercurial diuretics. An abdominal tap was performed with removal of 3,300 cc. of dark amber fluid to relieve the increasing discomfort which had developed. The fluid had a specific gravity of 1.004, a protein content of 0.8 Gm. per 100 ml., and 5 white blood cells per cubic millimeter. A Papanicolaou smear revealed no atypical cells.

Several days after admission the patient experienced the first of a series of attacks of severe crampy pain in one or more peripheral muscle groups. He was never observed in carpopedal spasm but was found on one occasion to have a left Chvostek I. Calcium determinations revealed 8 and 7.6 mg. per 100 ml. phosphorus was 2.3 mg. per 100 ml.

In addition, the patient's clinical course was troublesome. Although he felt considerably better following paracentesis, this improvement was short-lived for he rapidly reaccumulated fluid. He also continued to manifest all of his entering complaints and some of his past problems, such as gaseous distention and anorexia, and, in addition, developed pruritus, easy satiation, and epigastric burning. The aggregate rendered him extremely apprehensive, and he began to voice a fear of death.

Meanwhile, his general condition was observed to be deteriorating. He ate poorly while maintaining a steady weight, and clearly was replacing tissue with fluid. The number and severity of his pains grew day by day while his affect lost its former luster and he became somewhat somnolent. Although varices were again demonstrated on barium swallow, the remainder of the findings of the patient's upper gastrointestinal series were within normal limits. His liver chemistries showed no substantial change ten days after admission. In view of this and his otherwise worsening condition, he was started on steroid therapy with Aristocort 8 mg. four times daily.

On the fifteenth hospital day he complained of severe nausea, weakness, irritability, and abdominal distention. He was given calcium gluconate and promazine, with some improvement resulting. Several hours later he was found to have suddenly and rather unexpectantly expired.

Discussion

Dr. Maurice F. Deraney: Obviously, in this discussion the basic diagnosis is not the main subject of interest. The history and laboratory findings, including the radiologic demonstration of esophageal varices, are meager data compared to the revelation via peritoneoscopy of the presence of an atrophic cirrhotic liver. We also are given further evidence of complications of this disease in the splenomegaly, portal hypertension, and hypersplenic depression of thrombocytes and white blood cells on the first count prior to clinical and laboratory improvement on adequate management.

If the primary diagnosis is not our central topic, we must shift our attention to the precirrhotic phase (causation and pathogenesis) as well to the complications of cirrhosis leading to a rather rapid and quite unexpected demise.

The Japanese birth of our patient more or less imposes the introduction of the idea of liver flukes. We do not know his age at his departure from Japan, but illness and death have been caused by flukes twenty-five and thirty years after the individual has left the Far East, where anywhere from 50 to 75 per cent of the population is infested.

Clonorchis sinensis, Fasciola hepatica, and Opisthorchis felineus are the most common pathogens. The appearance of the patient's liver at peritoneoscopy does not substantiate this possibility; liver infested by flukes shows a brownish surface studded with whitish vesicular lesions which are distended biliary canals plugged by the flukes. Also absent are eosinophilia and the demonstration of ova in stools. Sufficient information to accept another cause shall be propounded below.

Let us now return to the material presented by Dr. Murphy and follow the case step by step. Discomforting eructation and flatus were the first complaints, in 1935, offered during the medical lifetime of this educated man. He underwent various studies, and organic disease was ruled out, at least, so he was told. We wonder whether cholecystography was performed at that time or at any later date since we have evidence of pathology in the region of the gallbladder, to wit, the adhesions which prevented visualization of the right lobe of the liver in 1955.

If, then, there was recurrent or chronic low-grade gallbladder inflammation manifested by repeated episodes of dyspepsia, we can postulate another cause for the cirrhosis. We shall refer to this later.

Further on in our narrative, we note that our engineer developed an overly particular attitude toward food and worrisome preoccupation with his digestive system. Later, there is mention of a three-year period of dietary deficiency associated with a 40-pound weight loss. In this lies a third and the most possible precirrhotic state: protein and essential lipotropic amino acid deficiency could lead to an increase in central and periportal fat. General fatty metamorphosis might then follow and from there develop into fatty cyst formation, rupture, fibrosis, and, finally, cirrhosis. The condition is akin to kwashiorkor, the African deficiency disease which has been extensively studied of late and is related to dietary protein deficiency.

Restoration of a normal diet resulted in well-being until 1955, when fatigue and anorexia developed. Liver disease was said to be the cause of his symptoms after study in a clinic abroad. He again responded well to a high-protein diet until the end of 1956, when he entered a clinic in Hamburg. Here, the diagnosis is handed us in a silver rice bowl. He is described as being slightly icteric; this is not compatible with the serum bilirubin reported at only 1.6 mg. per 100 ml. The remainder of the studies indicate quite advanced liver dysfunction. The marked increase in gamma globulin is a typical finding. Temporary respite occurred for about eighteen months while the patient adhered to the prescribed regimen. The situation changed rather drastically two weeks prior to admission, with the appearance of brownish discoloration of the urine, lightening of the color of the stools, obvious icterus, abdominal swelling, dyspnea on effort, and sharp pains in the right upper quadrant of the abdomen. These changes clearly point to obstruction in the biliary drainage system.

Diagnosis	*No. cases*	*Mean, %*	*Range, %*	*% abnormal*
Normal	170	71.2	41.7–81.8	3.9
Acute hepatitis	527	42.3	9.0–64.0	67.6
Cirrhosis with jaundice	366	52.1	10.0–78.0	39.5
Cirrhosis without jaundice	137	64.2	38.0–81.0	11.9
Malignant biliary obstruction	227	38.8	8.0–61.0	75.0
Benign biliary obstruction	126	55.0	15.0–74.0	28.2
Xanthomatous biliary cirrhosis	15	44.5	18.0–72.5	53.9
Hepatic tumor metastases	48	65.0	49.0–72.0	56.3
Chronic passive congestion	138	60.2	31.0–70.0	38.6

FIG. 1. Results of cholesterol-ester ratio determinations in hepatobiliary disease. (*Compiled by Popper from various sources and reprinted, with permission, from Popper, H., and Schaffner, F.: Liver: Structure and Function, New York City, Blakiston Div., McGraw-Hill, 1957.*[1])

At this point in the protocol, our generous historian stops in order to eliminate other etiologic factors in the pathogenesis of the cirrhosis, namely, hepatotoxins, infectious and serum hepatitis, drugs, and even alcohol. No information is given for us to suspect lues or a metabolic disturbance in the handling of iron, copper, glycogen, lipids, or amyloid.

The classical findings of liver failure, highlighted by the marked ascites, are described. Atelectasis secondary to pressure from below probably explains the basal pulmonary rales. Of academic interest is the loud, high-pitched, apical systolic murmur. Several explanations can be offered for this murmur: (1) functional alteration, possibly related to the physical state of the blood, (2) the presence of a calcified annulus fibrosus, (3) mitral insufficiency due to old rheumatic disease, or to dilatation of the mitral ring (unlikely, since it would occur only in grossly enlarged hearts), and (4) congenital valvular or chamber wall defect.

The laboratory data present several interesting features. Bilirubinuria, bilirubinemia, and elevation of the alkaline phosphatase and cholesterol all point to the previously mentioned obstructive phenomenon. Other data also stress the severity of the liver disease except for the repeatedly verified esterification of cholesterol to levels of 60 to 75 per cent. This disturbed me until I encountered an enlightening table which Popper,[1] in his excellent book on diseases of the liver, compiled from several studies (Fig. 1). One notes at a glance that despite the low mean values in most of the diseases listed, the upper range figures consistently exceed 60 per cent.

Abdominal paracentesis yielded 3,300 cc. of dark amber transudate. The time relation between the abdominal tap and the appearance of muscle cramping and left Chvostek I is not clear. We note that serum calcium values of 7.6 and 8.0 mg. per 100 ml. with normal or low phosphorus levels were obtained. These values are not surprising in view of the low serum albumin and the concomitant fall in nondiffusible calcium. Neuromuscular irritability and tetany are related to diffusible ionized calcium, and these manifestations do not occur when the total calcium value exceeds 7.0 mg. per 100 ml. The Chvostek I remains problematic. This physical sign is elicited by tapping over the facial nerve in front of the ear, and a positive Chvostek I consists of twitching of the muscles of the eyelids, alae nasi, and corner of the mouth. According to Albright, Chvostek I is rarely seen except in untreated hypoparathyroidism.

It is conceivable that an already low total calcium fell below critical levels when sufficient diffusible calcium was lost in the ascitic fluid. We also note that our patient was becoming increasingly apprehensive and fearful of death. Alkalosis secondary to hyperventilation can then be introduced as a likely basis for the neuromuscular irritability. We have no carbon dioxide combining power or Sulkowitch urine reports to affirm or negate these theories. Furthermore, sodium restriction, mercurial diuretics, and paracentesis followed by rapid reaccumulation of fluid will result in hyponatremia, another satisfactory explanation for the muscular cramps as well as several other of the terminal signs, except for the Chvostek I.

Coming to the last hospital days, we see our patient failing rapidly. On the tenth day of admission he was placed on Aristocort 8 mg. four times daily. On the fifteenth day he experienced severe nausea, weakness, irritability, and abdominal distention. Some improvement followed calcium gluconate and promazine administration, but a few hours later a surprising and unexpected demise occurred, only one month after the onset of his most recent symptomatology. There is, therefore, a rather sudden change in the course of the illness of this patient, whose condition by this time is accepted as cirrhosis.

A few possibilities should be considered:

1. Hepatic coma. The patient's somewhat somnolent appearance suggests this change, but none of the other numerous features of terminal liver failure are described, such as flapping tremor, neurologic signs, fetor hepaticus, or frank coma.

2. Hemorrhage. Massive bleeding of sufficient degree to cause death would be unlikely to have manifested itself without hematemesis or melena.

3. Overwhelming infection in the lungs (pneumonia), peritoneum (especially following paracentesis), or liver. No evidence exists for any of these. The liver could have been subject to cholangiohepatitis or cholangiolitis, but we have no clinical evidence of sepsis, such as chills, spiking temperature, or leukocytosis.

The most likely possibility is primary carcinoma of the liver. It is reported that anywhere from 35 to 90 per cent of the cases of hepatoma arise in a pre-existing cirrhosis. Approximately 5 per cent of patients with Laennec's cirrhosis develop primary liver cancer, 20 times the incidence in noncirrhotics. The rather sudden and rapidly downhill progression in the course

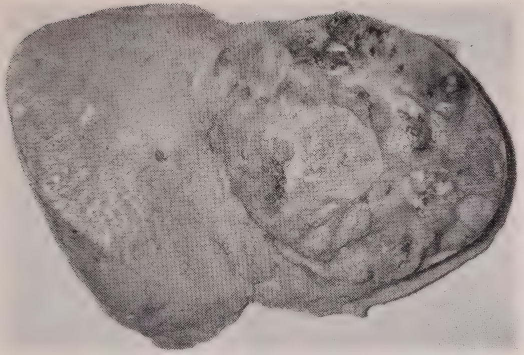

FIG. 2. Frontal section of liver showing a large variegated mass in the left lobe.

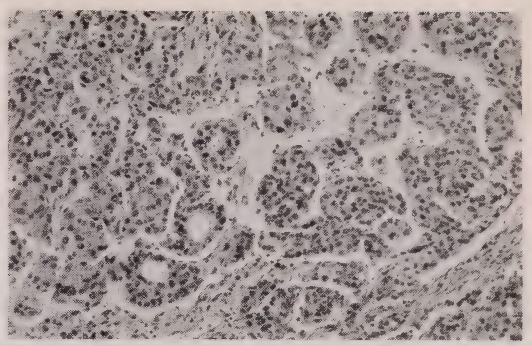

FIG. 3. Microscopic view of portion of liver showing a primary liver cell carcinoma.

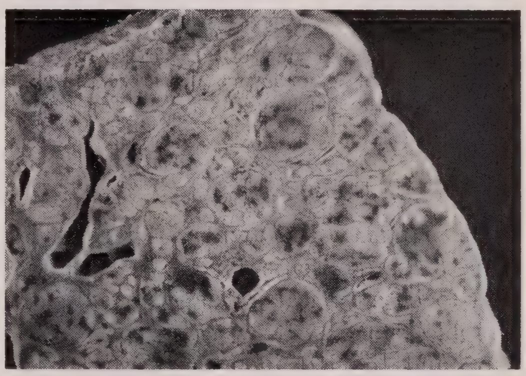

FIG. 4. Close-up view of cut surface of liver showing typical portal cirrhosis (hobnail liver).

of cirrhosis is very suggestive of the entity. The appearance of biliary obstructive signs, the onset of quick stabbing pain, and the steady deterioration despite therapy add convincing points. A much higher alkaline phosphatase would have been a welcome addition, but we have only one reading, a day or two after admission.

As possible causes for the rapid exitus one can propose: (1) a chemical death, due to combined sodium, potassium, and calcium loss, (2) a physical death, due to loss of blood, which seems improbable, (3) a cardiac death, which cannot be proved, and (4) a pulmonary death, resulting from possible embolism due to an occult thrombophlebitic process.

DR. MARCEL TUCHMAN: A possible explanation for the loose stools and for the hypocalcemia leading to tetany might lie in the concomitant presence of a mild degree of pancreatic disease, not uncommonly seen in association with nutritional hepatic cirrhosis. Also to be considered is the possibility of thrombosis of either the portal vein or the hepatic vein, either of which might account for the rapid reaccumulation of ascitic fluid.

DR. MAXWELL S. GELFAND: In my experience the administration of corticoids to a patient with advanced cirrhosis usually makes him worse, although the sense of euphoria which the steroids produce may make the patient feel better subjectively. It is difficult to demonstrate a positive advantage for steroids. An alternative mechanism to explain the remorseless downhill course and the sudden exitus might be replacement of both adrenals by metastatic tumor, more commonly seen in lung cancers but conceivable in a situation of this sort.

Diagnoses

Clinical.—(1) *Portal cirrhosis with primary liver cell carcinoma.* (2) *Esophageal varices.* (3) *Ascites.*

Dr. Deraney.—(1) *Primary carcinoma of the liver arising in portal cirrhosis (nutritional).* (2) *Portal hypertension.* (3) *Ascites.* (4) *Fibrocongestive splenomegaly.* (5) *Pulmonary atelectasis and edema.*

Anatomic.—(1) *Primary carcinoma of the liver, left lobe, liver cell type, arising in portal cirrhosis.* (2) *Esophageal varices.* (3) *Ascites.*

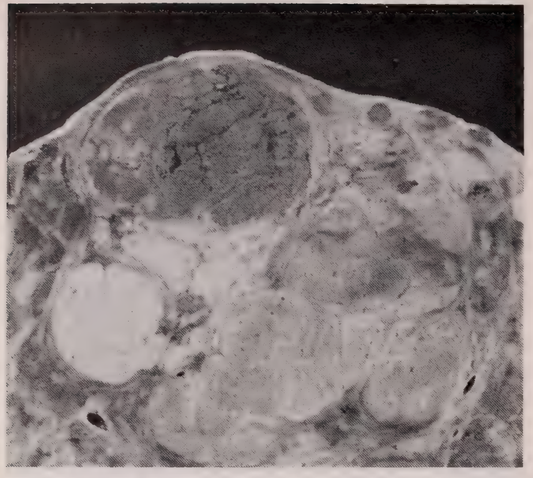

FIG. 5. Close-up view of cut surface of tumor showing areas of hemorrhage and necrosis as well as multinodular tumor masses.

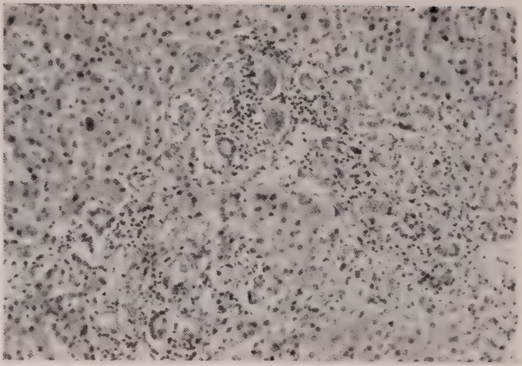

FIG. 6. Microscopic view of a portal space showing an increased number of proliferated bile ducts and moderate lymphocytic infiltration but no conspicuous fibrosis.

Pathologic Report

DR. WILLIAM B. OBER: After removing some 3 L. of ascitic fluid, the liver was seen to be a typical hobnailed liver in the atrophic stage. It weighed only 1,085 Gm., and the left lobe contained a well-demarcated tumor about 10 cm. in diameter which was soft and variegated with areas of hemorrhage and necrosis (Fig. 2). Microscopic study showed it to be a primary liver cell carcinoma (Fig. 3) arising in a typical portal cirrhosis (Figs. 4 and 5) in which there was bile duct proliferation (Fig. 6). The esophageal varices showed no areas of recent bleeding. The spleen weighed only 220 Gm. and showed only minimal fibrosis. There were no metastases from the primary liver tumor.

Edmondson and Steiner,[2] reporting on a series of 100 primary liver carcinomas from the Los Angeles area, found that the liver cell type was almost twice as common as the bile duct cell type (cholangiocarcinoma). The relationship of the intrahepatic bile duct proliferation consistently found in cirrhotic livers to the development of neoplasms of the liver cell type is obscure. Embryologic evidence indicates that the bile duct cells do not grow into the liver but that the already differentiated cords of embryonic liver cells are modified to a bile duct type of cell, possibly so organized by the ingrowth of mesenchyme along the portal tracts. It is conjectured that the liver cells which have redifferentiated as bile duct epithelium have permanently surrendered their ability to form once more functioning hepatic parenchymal units. If this hypothesis is correct, carcinomas arising from liver cells may, in the presence of mesenchymal tissue (which is ubiquitous), form bile duct components, but those carcinomas arising from bile duct epithelium cannot form liver cell units.

Berman[3] observed that primary carcinoma of the liver is almost six times more frequent in the East Coast (Portugese East African) Bantu than in the South African Bantu, presumptive evidence that environmental (exogenous) factors play a significant role in its development since there is little, if any, genetic difference between the two groups. Edmondson[4] compared the frequency of primary liver carcinoma among cirrhotic individuals of various ethnic backgrounds in the Los Angeles area, observing a low incidence among Caucasians and Mestizos and a high incidence among Orientals and Negroes. In general, primary carcinoma of the liver is common in Africa and the Orient and frequent in Europe and North America.

The role of a pre-existing cirrhosis with either or both regenerating liver lobules or proliferating bile ductules is well known. It was present in almost 90 per cent of the cases in Edmondson and Steiner's series[2] and in all of the cases Berman[3] studied. Berman summarized 893 cases from the literature; in 600 of them (67.2 per cent) cirrhosis was present.

Experimental carcinoma of the liver has been produced by a number of methods. Commonly used carcinogens include the amino-azo compounds and the aminofluorenes as well as the standard phenanthrene derivatives. Animals with a previously induced nutritional cirrhosis respond to these agents more readily than normal controls, requiring a shorter interval and a smaller dose of the carcinogen for production of the tumor. It has been suggested that the carcinogens compete metabolically with nutrients necessary for the maintenance of controlled liver cell growth and regeneration. The value of demographic studies, such as Edmondson's[2] and Berman's[3] is that they may lead the way to detecting protective substances in the human diet as well as incriminating specific deficiencies. If the pre-existing cirrhosis can be classed as an initiating factor, it is possible to speculate that the promoting factor may be the deficit of a substance rather than its application to the tissue.

Dr. Michael S. Bruno: I had the privilege of following the course of this patient during his terminal illness since he was a referred private patient. My thoughts were very similar to those already so well expressed this morning by Dr. Deraney. I was singularly impressed by the fact that this patient, who was an apparently documented cirrhotic, (I say "apparently" since there was no tissue confirmation of the observations at peritoneoscopy) developed a sudden unexplained alteration in his previously satisfactory clinical course. There was a rapid downhill progression associated with overt jaundice, pronounced ascites, considerable pain referred to the right upper quadrant, and death, all occurring within a period of four weeks. In the absence of disseminated carcinomatosis, this constellation is the most common clinical manifestation of primary hepatic carcinoma complicating cirrhosis.[1]

Substantiation of the diagnosis of hepatoma depends on examination of tissue, and is obtained by exploratory laparotomy, peritoneoscopy, or transpleural needle biopsy. The majority of primary hepatic carcinomas occur as large solitary lesions, as did this one. Successful needle biopsy, therefore, is largely a matter of chance. Certainly, in cases such as the one discussed this morning, the localization to the left lobe of the liver without demonstrable metastatic involvement of the right lobe would have made right-sided transpleural liver biopsy a misleading procedure. Paradoxically, it is this type of localization above all others which has recently suggested the potentially beneficial effects of hemihepatectomy.

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If not actually disgruntled, he was far from being gruntled.—Wodehouse

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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Cardiovascular Collapse in an Elderly Patient

ANESTHETIC management of the sick elderly patient requires careful ministration according to the patient's requirements and ability to tolerate certain drugs in proper doses. It has become known, for instance, that the intramuscular injection of 16 mg. ($^1/_4$ grain) of morphine into a person over seventy or seventy-five years of age may produce severe respiratory and circulatory depression, whereas the same dose can be tolerated well by a young, healthy adult. Similarly, certain other anesthetic procedures usually well tolerated by young adults may be overpowering in elderly patients. This was observed in the following case.

Case Report

A seventy-five-year-old male was admitted to the hospital with necrosis of the fourth and fifth toes of the left foot of four weeks duration secondary to severe arteriosclerosis obliterans. He had experienced intermittent claudication in the left leg for the previous three years. For many years he had been known to be hypertensive and had been treated with various preparations, all of which had been discontinued before admission to the hospital. The lower right extremity had been amputated six years ago.

Physical examination on admission revealed a pulse rate of 98 per minute, respirations 20 per minute, temperature 37.8 C., and blood pressure 150/98 mm. Hg. The patient was well developed, well nourished, and alert, with positive findings limited essentially to his lower extremities. The fourth toe of the left foot was necrotic, and there was absence of an arterial pulse on the lower left extremity distal to the femoral artery The lower right extremity had been amputated, leaving a 4-inch stump.

Laboratory findings on admission revealed a hemoglobin of 12.7 Gm. per cent, a white cell count of 10,800 per cubic millimeter, blood urea nitrogen 30 per cent, and blood sugar

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Discussed at a conference held at Presbyterian Hospital, New York City, December 1, 1958. Clinical Anesthesia Conferences are held on the first Monday of every month.

84 mg. per cent. Urinalysis showed a trace of albumin. The electrocardiogram showed abnormal T waves and R-T segments compatible with coronary occlusion. A Q_2, Q_3, and atrioventricular fibrillation suggested that a posterior base coronary occlusion had occurred in the past.

A vigorous course of conservative therapy was instituted in an attempt to save the patient's lower left extremity. An oscillating bed, anticoagulants, low-fat, low-cholesterol diet, reflex heat to the abdomen, warm saline foot soaks, whiskey, Ilidar, and thick cotton batting over the foot were prescribed. There was no improvement on this regime, and by the eighteenth hospital day there was clear-cut evidence of a fresh anterior apex myocardial infarction evidenced by electrocardiograms and the serum transaminase level. Soon afterward, the hematocrit began to fall to 28 because of gastrointestinal bleeding. Anticoagulants were discontinued, and 3 units of packed red cells were administered. During this time the blood urea nitrogen rose to 55 mg. per cent, and pneumonitis at both bases developed.

On the twenty-sixth hospital day amputation of the remaining lower extremity was felt to be inevitable, and the left leg was packed in ice without a tourniquet. Midthigh amputation of the left lower extremity was scheduled for the thirtieth hospital day.

No preoperative medication was administered. Vital signs were: respirations 20 per minute, pulse 90 per minute, blood pressure 150/80 mm. Hg. The patient was alert but confused. Anesthesia induction was accomplished with 250 mg. of $2^1/_2$ per cent thiopental sodium intravenously and 50 mg. of succinylcholine. Oxygen by mask was given, and the patient's trachea was intubated with a number 36 plastic orotracheal tube coated with 5 per cent lidocaine ointment. There was brief cyanosis before intubation. The patient bucked on the endotracheal tube. Nitrous oxide and oxygen in a 4:2-liter flow were administered, and 15 mg. of d-tubocurare intravenously were also given. Although the pulse remained at a rate of 70 to 80 per minute, fifteen minutes after the beginning of the induction the brachial blood pressure was unobtainable by auscultation. Within two more minutes a blood pressure of 60/40 mm. Hg was obtained.

Amputation had been begun. Diaphoresis was noted. Over the next thirty minutes the pressure slowly climbed to 120/80. The specimen was then removed, and the pressure fell again to 80/50. Surgery took sixty-five minutes, and at the end of the operation the patient was alert but confused and mottled cyanosis of his skin was noted. He was taken to the recovery room where over the next two and a half hours the blood pressure stayed at 170/80 and the pulse varied between 80 and 120 per minute. The respiratory rate varied between 0 and 30 per minute. The skin was always mottled and did not clear with positive pressure oxygen. Two and a half hours after the patient's arrival in the recovery room his heart action suddenly stopped and he was pronounced dead. No autopsy was done.

Comment

Although this patient clearly represented a bad risk and it is possible that the fatal outcome was inevitable, it is possible that the anesthetic management contributed to the immediate demise. It seems unfortunate that this elderly man, who had been treated so conservatively in the hospital for thirty days should have been anesthetized so severely for a leg amputation as if he were a young, robust man needing deep anesthesia with profound muscular relaxation. Nitrous oxide anesthesia in a semiclosed carbon dioxide absorption system for delivery of 4 L. of nitrous oxide per minute and 2 L. of oxygen per minute might have been sufficient. Instead, an initial intravenous dose of 250 mg. of thiopental sodium (10 cc. of a $2^1/_2$ per cent concentration) was superimposed—an amount ample for a young, healthy person. Although it caused considerable respiratory and circulatory depression, this was deemed to result in insufficient muscular relaxation to permit endotracheal intubation (endotracheal intubation was really not necessary for an operation such as the intended leg amputation). A dose of 50 mg. of succinylcholine then was injected intravenously to secure muscular relaxation. This is a dose which causes respiratory arrest even in a young adult person. Although no blood pressure could be determined by auscultation after this procedure, the anesthetist proceeded with the administration of nitrous oxide and the intravenous injection of 15 mg. of d-tubocurare. Half the amount of the latter drug is usually sufficient to produce muscular relaxation in a young adult.

The anesthetic technic employed seems tolerable enough for a young individual, but an elderly man with myocardial and coronary insufficiency could not—and did not—adapt himself to it.

This is an error too often committed by the technician anesthestist (be he a nurse or a physician). The better anesthetist will vary his technic and dosage of drugs according to the requirements of the patient. This is particularly true for patients in the older age group.

(Number sixty-four in a series of Clinical Anesthesia Conferences)

Safety Closures for Drug Containers Advocated

Pediatrician Dr. Jay M. Arena, of Durham, North Carolina, feels that the adoption of safety closures for all drug containers in common home use could reduce the number of cases of accidental, experimental, and innocent ingestion of potentially poisonous drugs.

His observations are reported in the March 14 *Journal of the American Medical Association*, following a study of 1,600 homes with children under five years of age.

Accidental ingestion of drugs, Dr. Arena pointed out, causes 35 per cent of the deaths from poisoning of children in the one to five age group. Incidence of poisoning from drugs is much greater than from household agents.

The purpose of the study was to test three closures—two of the safety cap variety and one conventional screw cap—to determine which would be the most effective in reducing the chance of small children gaining access to drug containers. It was also necessary for these safety caps to be designed and constructed so that mothers could remove and replace them with a reasonable amount of ease and convenience.

As a result of the study, Dr. Arena favors the use of a plastic, snap-on type cap. He said that this closure proved to be the most difficult for children to remove and the easiest for them to replace. The doctor feels that the ability of easy replacement is valuable since it implies that older inquisitive children can prevent younger infants from gaining access to containers. In addition, this cap was voted by mothers as the one in which they felt was the easiest to securely replace. This is significant, Dr. Arena said, since a loose cap means an open container.

He considered that the children's difficulty in removing the plastic cap and their mothers' ease in removing and replacing the closures made it the choice from both the manufacturers and the families standpoints.

Dr. Arena is affiliated with the Department of Pediatrics, Duke University Medical Center.

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Poisoning by Insecticide (Endrin)

THE following case of Endrin poisoning was reported by Dr. Edmund N. Joyner, III,* from Roosevelt Hospital. Since this is the first and only case in humans reported to the Poison Control Center thus far, we feel that it deserves publication in full.

Toxic Agent	Age	Sex
Endrin	1 year	Male

CHIEF COMPLAINT.—Severe poisoning with Endrin.

FAMILY HISTORY.—The patient's mother and father are living and well. There is no history in the family of any convulsive seizures or of any mental or nervous diseases. There had been no known exposure to tuberculosis. There were three siblings, ages four, eight, and ten, living and well. There had been no known exposure to any contagious diseases involving the central nervous system nor was there any epidemic of such diseases in the community. The patient had moved to Maracaibo, Venezuela, with his parents one week before the onset of the illness.

PAST HISTORY.—He had been a normal, full-term spontaneous delivery. There had been no neonatal cyanosis or convulsions. The mother's pregnancy had been entirely normal. There was no feeding problem and the baby gained weight and developed well.

He had never been seriously ill and at no time had he had a high fever. He had gained weight well and in general seemed to be a thriving and healthy infant. Specifically, there had been no episodes of severe diarrhea, convulsions, or fever of unknown origin or which in any way could be called a hyperpyrexia.

His development had been entirely normal. At the time of his illness he was an alert, well-developed, well-integrated baby who was crawling and beginning to take a few steps alone. He held his bottle in his hands, recognized his parents and siblings, vocalized well, and was beginning to say a few simple words, like "da da" and "mama." His sleep pattern was normal, and all in all his developmental and chronologic ages were compatible.

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* Chief, Department of Pediatrics.

Present Illness.—On June 27, 1958, the patient's home, which was mostly air conditioned, was sprayed because of the presence of cockroaches with a spray containing Endrin. The exact amount of Endrin and the vehicle used is not known. The spraying took place about 9:00 a.m. The child and the family dog (a small one) were not in the house at the time of the spraying. After the spraying, the floors were washed, and some time in the afternoon (approximately two o'clock) the patient was placed in his room. He played on the floor later in the afternoon. It was later noted that there still was some dry residue of the spray that previously had been used on the floor and wall. Late in the afternoon the family dog vomited, had convulsions, and died very shortly thereafter. A veterinarian stated that he thought the death was due to ingestion or absorption of the Endrin. At 10:00 p.m. that night the patient vomited and developed a convulsion and soon became unconscious. He immediately was taken to the hospital.

First Hospital Admission

When first seen, he was having generalized tonic and clonic convulsions. The fontanel was depressed, the reflexes were generally accentuated, and the pupils were mydriatic and paretic. There was slight trismus and a tachycardia. The respiratory system seemed normal. At first there was deep reddening of the cheeks and ears. This soon changed to marked pallor of the skin and labial mucosa. His general condition was stated to be very poor.

A lumbar puncture was performed immediately and a clear liquid was obtained under normal pressure. The protein was 54 mg. per cent, chlorides 662 mg. per cent, sugar 121 mg. per cent. There were three cells present, and the VDRL test result for syphilis was negative. The temperature on admission was 37 C. but immediately rose to 40.3 C. The temperature fluctuated between 37.5 and 42 C. (the latter on one occasion only) until July 10; after this the temperature remained below 38 C.

Course.—He was treated with oxygen and barbiturates in large doses for the control of the convulsions. On June 28, it was noted that his condition appeared better. There was no cyanosis or trismus, the cardiac rhythm was normal, and no convulsions were noted on this day. The reflexes continued to be hyperactive. He continued to be comatose. Bladder function was normal. He was swallowing well and took his feedings very well. On June 29 his condition again appeared to be fairly good and it was noted that he responded a little in that he opened his eyes and moved them somewhat. He continued to be comatose most of the time. On July 1 his condition deteriorated. Cheyne-Stokes breathing appeared. He vomited and was unable to swallow at this time. Tube feeding was resorted to. The cardiac system was noted to be normal. Convulsions again appeared and became more frequent. On July 2 the breathing was more normal and the vomiting continued and was blood tinged. For the first time since hospitalization it was stated that all the limbs were in a permanent state of contraction. The contractions did not respond to treatment with phenobarbital, enemas, and Pentothal enemas. From this time on, his acute symptoms gradually subsided although he remained in the state of moderate rigidity and there were quite frequent short tonic and clonic convulsive movements.

He did not seem to recognize anyone and it was the feeling of the hospital staff that he did not see at all. The eye grounds during this time were normal. The mydriasis persisted. The suck and swallow reflexes were apparently normal. At no time was the liver or spleen palpable or jaundice noted. On June 29 his temperature reached 42 C. for a very short time, the exact duration is not known but it definitely was under four hours.

Laboratory Findings.—*Blood Counts.*—Blood counts done during this portion of the patient's illness revealed the following:

On June 28 (the day after admission) the hemoglobin was 11.3 Gm. per cent, red blood cells 3,740,000, and white blood cells 15,300, with segmented neutrophils 77 per cent, nonsegmented neutrophils 6 per cent, and lymphocytes 17 per cent. On July 1 the hemoglobin was 9.7 Gm. per cent, red blood cells 3,310,000, and white blood cells 8,800, with segmented neutrophils 77 per cent, nonsegmented neutrophils 2 per cent, lymphocytes 19 per cent, and monocytes 2 per cent. On July 7 the hemoglobin was 9.7 Gm. per cent, red blood cells 3,370,000, and white blood cells 10,250, with segmented neutrophils 64 per cent, nonsegmented neutrophils 3 per cent, lymphocytes 22 per cent, eosinophils 7 per cent, basophils 1 per cent, and monocytes 3 per cent. On July 15 the hemoglobin was 10.7 Gm. per cent, red blood cells 3,540,000, white blood cells 5,850, with segmented neutrophils 62 per cent, lymphocytes 36 per cent, and eosinophils 1 per cent. On July 30 the blood sugar was 115 mg. per cent and nitrogen 24.8 mg. per cent.

Urinalysis.—On July 1 urinalysis showed a clear, yellow specimen negative for sugar with a pH of 3, and a trace of albumin and acetone. The sediment specimen contained one to five leukocytes and a rare red blood cell. Subsequent urinalysis findings were negative except for an occasional white blood cell.

On July 18 the patient's condition was considered satisfactory enough for him to be transferred to Roosevelt Hospital in New York City for further evaluation and treatment.

Second Hospital Admission

Physical Examination.—Physical examination at the time of admission to Roosevelt Hospital showed a well-nourished and well-developed year-old infant lying in bed with a typical postural sign of decerebrate rigidity. The pupils were dilated and fixed, and there was a blank staring look. Movements of the two eyes were well coordinated and there was not the slow searching movement characteristic of the nystagmus of blindness. There were quite frequent yawns, and on the least stimulation there were clonic and tonic twitchings, being most marked in the extremities and in the facial muscles. There were occasional random cries which were not particularly high-pitched. Respirations were 32 and regular, pulse 130 and regular, blood pressure 140/95, and temperature 38 C. The head was normocephalic; the fontanel, hair, and scalp were normal.

The pupils were fixed in marked dilatation, the extraocular movements were normal, the eye grounds were entirely normal, and there was no evidence of unusual pallor of the disk. There was no evidence that the child saw, and the general eye movement and look was essentially those of a two-week-old baby. There was no response to bright light when it was shined into the eye nor was there any blink reflex on bringing the hand rapidly toward the eye until the lashes were touched. The ears were normal; it was difficult to determine whether any hearing was present but sometimes there was a blink reflex to a loud noise. This was inconstant and may have been due to the concussion effect.

The nose and throat were normal. The neck was normal with no rigidity. The heart and lungs were entirely normal. The heart rate was steady and there was a regular sinus rhythm. The pulse on admission was 104. The lungs were clear to percussion and auscultation. The abdomen was soft, and the liver and spleen were not felt. The genitalia were normal. All extremities were spastic; this was much more marked in the lower extremities. Neurologic deep reflexes were present and only slightly increased. Superficial reflexes were also present. He reacted positively to the test for the Babinski reflex. Tonic neck reflexes were very suggestive, and the sucking reflex was present.

Neurologic Examination.—A detailed neurologic examination, done by Dr. Sidney Cohen on July 31, showed the following:

The child whines considerably, yawns frequently, and makes chewing movements of the jaws. The tongue is mobile but does not protrude. At times he is in opisthotonic position. The facies are still vacant and he prefers to keep the eyes to the right. Eye movements continue to be active to either side but are held chiefly in midline and right conjugate positions. There is no nystagmus. He squints when a bright light shines into the eyes or the eyelids flutter momentarily. Reaction to sound, such as handclapping, is still in doubt. The pupils are less dilated but are very reactive to light. The gag reflex is active.

When the patient is relaxed, his muscles are soft and supple except for marked spasticity and stiffness at both ankles (? early contractures). His head falls back when he is raised to sitting position and his face becomes very cyanotic. There is general skin pallor. There are random movements of the extremities, as an example, a rubbing movement of the right wrist over the head. The patient shows a startle reaction to banging on his mattress—he jumps, his extremities and trunk stiffen, his arms are raised straight over his head, and he cries.

He appears to show some perceptiveness in his response to soothing by the nurse, fondling, being held (which he demands), and being tickled. At these times he is attentive and his hand moves with some discrimination. His cry continues to be hoarse and monotonous. Spasms of eyes rolling to the right and stiffening of the extremities may be indicative of focal discharge from the right motor parietal area (see electroencephalogram report below). Conjugate deviation of the eyes would then be due to imitative focus on the left parietal area.

The upper extremities are held in semiflexion at the elbows; there is pronation of the forearms with tight fists and circumduction of the thumbs. The lower extremities are held in extreme extension with eversion of the feet and external rotation of the thighs at the hip joints. The reflexes are hyperactive throughout. There are bilateral Babinski, Chaddock, and Rossolimo signs. The small toes are spread in fanning movement to plan for stimulation.

He responds to pin pricking throughout by crying and withdrawing the right hand but not the left one. He continues to show hypertension.

Impression.—The central nervous system symptoms have shown moderate resolution. Signs indicate diffuse encephalopathy with focal motor parietal discharges on the right side, subcortical white matter degeneration resulting in decerebrate rigidity and brain stem signs (papillary centers in pretectal areas), and vasomotor instability and hypertension due to involvement of the cardiovascular centers in the medulla and pons. Startle reaction and alternating flexion and extension of upper extremities are indicative of extensive involvement of the diencephalon. Abnormal movements due to basal gangliar involvement were not noted. Physiotherapy is necessary to prevent ankylosis of the ankle joints.

Laboratory Findings.—Urinalysis repeatedly gave negative findings with two exceptions: the initial admission one which showed a few fine and coarse granular casts and one performed on another occasion which showed a few coarse granular casts. At no time was any albumin noted. The blood count on July 17 revealed the hemoglobin to be 11.2 Gm. per cent and white blood cells 9,850 with a normal differential. On August 8 the hemoglobin was 11.4 Gm., red blood cells 3,710,000, and white blood cells 9,700 with the differential again entirely normal. The electrocardiogram taken on July 28 showed normal tracing.

Chemistries.—On July 18 the urea nitrogen was 10.9 mg. per cent, potassium 4.7 mEq. per liter, sodium 143 mEq. per liter, chlorides 126 mEq. per liter, and thymol turbidity negative. The calcium was 12.2 mg. per cent, phosphorus 6 mg. per cent, alkaline phosphatase 6.83 Bodansky units, blood sugar 80 mg. per cent, and cephalin flocculation 2 plus. On August 23 the alkaline phosphatase was 9.9 Bodansky units, thymol turbidity 0.054 units, and cephalin flocculation 1.4 units. On July 28 urea clearance showed the urea nitrogen to be 14 mg. per cent and the urea clearance 86 per cent.

Cerebral spinal fluid examination on admission showed the protein to be 16 mg. per cent, sugar 80 per cent, and chlorides 125 mEq. per liter. A culture of this spinal fluid specimen showed no growth, and the cerebral spinal fluid count showed no cells.

Electroencephalogram. — The electroencephalogram done on July 18 showed a very irregular, slow-activity pattern exhibiting considerable 2 to 4 per second potentials with some predominance of the slower waves over the left motor parietal region. The impression was that the record was diffusely abnormal with increased disturbance over the left parietal zone. The tracing is consistent with a generalized cerebral disturbance with predominance in the area indicated. A repeat electroencephalogram, done on August 20, showed a mild degree of improvement in the quality of the electrical activity. However, abnormality still was present with predominance on the left. The pattern could be consistent with acute diffuse changes, which may be subsiding, or with a convulsive disorder.

COURSE IN HOSPITAL.—This infant was observed over a period of five weeks, and during this time there was gradual, definite but slight improvement in the degree of spasticity. This improvement consisted chiefly of longer periods of relaxation. The frank tonic and clonic convulsions completely disappeared although twitchings and a markedly exaggerated startle reflex was still present. During his whole stay, his respiration and cardiac rhythm were entirely normal. The blood pressure fluctuated widely, at times going as high as 190/140 and falling rapidly, within a period of half an hour, to around 100/30. During the first part of his stay, the blood pressure was consistently elevated except for short periods when it would drop precipitately. The blood pressure was controlled somewhat by administration of 0.05 mg. of Serpasil twice daily. The general spasticity and twitchings were controlled by varying doses of phenobarbital, which never exceeded $^1/_4$ grain every four hours and toward the end of his stay he was quite comfortable on $^1/_4$ grain twice a day. Because of the gradually increasing foot drop he was seen in consultation by an orthopedist who prescribed exercises and braces which held the ankles and feet in a neutral position. During his whole stay his appetite was excellent; he took both his bottle feedings and a regular infant diet well. It is interesting to note that according to the father his pattern of likes and dislikes of food were exactly the same as it had been before his illness. The dilatation of the pupils gradually subsided until at the time of discharge there was only a very mild mydriatic effect and the eyes responded well to light. At the time of discharge the child's general physical condition was excellent. There still was no definite evidence that he was in any way in contact with his environment and there still was a marked degree of spasticity of the extremities, although this was immeasurably improved over that at the time of admission. The deep reflexes were slightly hyperactive, there was no evidence of any useful vision, and there was a question as to how much hearing there was at this time.

He was discharged with instructions given that the exercises, which were shown to the father, be continued and the appliances on his feet be used. It was stressed that good nursing care was essential, and instructions were given as to how to vary the phenobarbital from day to day according to the degree of spasticity and twitching. Serpasil had been discontinued. It should also be noted that during his stay constipation was a troublesome problem.

Comment

Chronic poisoning with Endrin is much more common clinically than acute poisoning with the same substance. There has been little clinical experience with acute poisoning in the human being. One case, (revealed by a personal communication from Dr. Wayland J. Hayes, Jr., U.S. Public Health Service, Savannah, Georgia) is known of a two-and-one-half-year-old child who died on the sixth day with decerebrate rigidity. Endrin in animals is lethal at a dose of approximately 1 mg. per kilogram and apparently is absorbed quantitatively through the skin and mucous membranes.

Certainly in the present case it had a highly selective action for the cells of the central nervous system. In view of the fact that the lower brain centers were affected to quite a marked degree, one must assume that the upper brain received extreme insults, providing that this substance does not have a selective action on the lower centers. There is no reason to believe that this is so from the evidence in the present case.

It is interesting to note that with the marked central nervous system damage there was no clinical or laboratory evidence, at least at the time he was admitted to the Roosevelt Hospital, of any damage to the liver or kidneys.

As for the prognosis, although it is known, primarily from chronic poisoning, that symptoms will occur as long as six weeks after removal from exposure to the substance to be followed by complete recovery, it seems extremely doubtful that any useful degree of recovery will occur in this child. This conclusion is based on experience with other toxic substances which affect the central nervous system to an equivalent degree (for instance, producing anoxia), a situation from which recovery does not occur to any appreciable extent. It is also true that since there has been no experience with this particular substance in patients showing the same severe damage who survived, all hopes could not be abandoned. The over-all prognosis is also partly based on the minimum improvement over a period of almost two months from the time of the original ingestion. Since there are no specific antidotes, the only treatment that can be offered is good nursing care and hope. It is important that a close clinical watch be kept on this child in order that we may continue to learn as much as possible about this substance and its effect on human beings.

The Poison Control Center received a telephone request for assistance from Orange County, in a case where Endrin had been sprayed in an apple orchard to control orchard mice. Some beef cattle in an adjoining pasture broke through the fence and came down with the symptoms of poisoning. Several of the cattle died while others recovered after barbiturates were administered on the advice of the Center.

It is recommended that in any case of poisoning involving Endrin either Dr. Wayland J. Hayes, Jr. of the U.S. Public Health Service in Savannah, Georgia, or Dr. Mitchel R. Zavon of Kettering Laboratories in Cincinnati, Ohio, be contacted for any possible later developments in the treatment of poisoning from this substance.

(*Number thirty in a series of Briefs on Accidental Chemical Poisonings*)

He who says, what is mine is yours and what is yours is yours, is a saint. He who says, what is yours is mine and what is mine is mine, is a wicked man.—BABYLONIAN TALMUD, ABOTH, V

CANCER ALERTS

A series of radio talks for the practitioner
presented over Station WNYC-FM under the sponsorship of the

New York Academy of Medicine
with the cooperation of the
New York City Cancer Committee

Primary Cancer of the Bone

NORMAN L. HIGINBOTHAM, M.D., NEW YORK CITY

(*From Memorial Center for Cancer and Allied Diseases*)

THE three cardinal symptoms of a bone tumor are pain, swelling, and disability. Of these, pain is of prime importance, and persistent pain in any bone or joint should suggest to the physician the possibility—or even the probability—of the existence of a bone tumor. There should promptly follow a thorough investigation of the case, by means of a complete history, careful examination, and adequate roentgenographic survey, to determine the cause of the pain. Pain is the first symptom of a bone tumor, benign or malignant. If we wait for swelling to become obvious and disability to become marked, we may miss the diagnosis of the lesion when it is early and when it offers a reasonable chance of cure. The results in such an instance can be devastating.

Sarcoma of the bone is not particularly common in relation to the incidence of other types of cancer. It has been roughly estimated that there are about 1,000 cases of primary malignant bone tumors throughout the United States at any one time. It is obvious, then, that no one physician will see many examples in his lifetime of practice. But guided by the significance of persistent pain in any bone, every physician should be alert to the potentialities when such a case is encountered.

Before proceeding with any treatment, a definite diagnosis must be made in every case. What steps, then, should be taken to arrive at a diagnosis?

Diagnostic Procedure

HISTORY.—First, the history should be taken. A carefully elicited complete history is of the utmost importance. As usual, the patient should be permitted to tell his own story, and his symptoms should be listed in chronologic order, accuracy as to dates, sequence, and time intervals being essential. Some little detail that may seem entirely trivial or unrelated eventually may prove to be an important link in the final evaluation of the ailment. The type, nature, and duration of the pain may be quite significant; for instance, a mild degree of pain of long duration may indicate a low-grade type of sarcoma or even a benign lesion. Other factors of course, have to be considered. If swelling, or a lump, is complained of, it is important to know how rapidly the swelling has increased and its relationship to the pain. Sometimes the patient will mention episodes of fever; an inflammatory process should then be suspected. It should be remembered that fever may occur with malignant bone tumors, either as a result of rapid growth and central necrosis of the tumor or secondary infection and fungation.

Physical Examination.—Second, the physical examination should be performed, and this should include examination of the entire body. It is well within the realm of possibility that a complete examination will disclose a hard mass in the breast or the neck which was unnoticed by the patient but which, as a primary cancer, has metastasized to the bone, where it has given rise to the patient's first real symptoms. Much can be learned from careful palpation of the tumor about its consistency, its immobility, and the degree of asymmetry of the natural bone contour. Measurements should be recorded of the diameters of the tumor and the circumference of an involved extremity for comparison with the opposite side.

Roentgenographic Survey.—Third, the roentgenographic survey should be done. The importance of an adequate x-ray examination cannot be overemphasized. A skillful interpretation of the films will afford very valuable information from which a presumptive diagnosis—a correct one in a high percentage of cases—usually can be made. Roentgenographic study should be insisted on by the physician who first sees a case of suspected bone tumor. The survey should include films of a large area adjacent to that in which the pain is localized. The films should be taken from different angles if indicated and even stereoscopically in certain instances. If film results of the painful area are negative, additional views higher up should be considered, for we are all aware of referred pain, such as an ache in the knee from a lesion in a lumbar vertebra (which is not necessarily a herniated disk).

Laboratory Studies.—In addition to the routine blood count, serologic test for syphilis, and urinalysis, essential to a complete examination, blood serum values of the calcium, phosphorus, phosphatase, and protein often can be helpful in the evaluation of a case. In males over forty years of age acid phosphatase should also be determined because of its significance in cancer of the prostate which is metastatic to the bone.

Biopsy.—The biopsy is the final step in the investigation of a suspected case of bone tumor. It should be emphasized that the biopsy must be done before any treatment whatsoever is instituted. This is particularly important in any radiosensitive tumor where even a mild dose of therapeutic x-rays may so distort the microscopic appearance that the pathologist is unable to render a correct interpretation. The biopsy is a hospital procedure and preferably should be done by the surgeon who will have the ultimate care and responsibility of the case if the tumor should prove to be malignant.

As a rule, when the tentative diagnosis is a benign tumor, the open biopsy should aim at complete removal of the tumor so that, if the diagnosis of benign tumor is sustained, the surgical procedure will serve the dual purpose of biopsy and appropriate treatment.

On the other hand, if a malignant tumor is suspected, sufficient tissue from a representative area of the tumor should be submitted to the pathologist for examination. In either event, the surgical wound should be closed in layers without any packing or drains, and if this admonition is not heeded secondary infection or tumor fungation are almost inevitable and the indicated therapy seriously complicated, impeded, or precluded.

In many instances an open biopsy can

be obviated by employment of the aspiration biopsy technic, which is a relatively simple and minor procedure, yields a quick diagnosis when successful, and has proved satisfactory in approximately 80 per cent of our cases. The greatest drawback to the method is the lack of pathologists trained to interpret the smears so obtained, but this difficulty is being gradually overcome as more pathologists become familiar with the method.

Types of Primary Bone Malignancies

On completion of the survey as just outlined a definite diagnosis will be available. If the lesion is a primary malignant bone tumor it will be one of four principal types:

1. Osteogenic sarcoma.
2. Ewing's endothelioma.
3. Primary reticulum cell sarcoma of bone.
4. Multiple, or plasma cell, myeloma.

Each of these will be considered briefly.

Osteogenic sarcoma is a highly malignant tumor that affects persons of any age but is most common in the decade from fifteen to twenty-five. It is the most common type of malignant bone tumor. There are many subvarieties, based mainly on pathologic points of distinction but not of great clinical significance, for the incidence, clinical setting, and treatment are essentially the same. Local pain occurs early and increases rapidly, and swelling promptly follows the onset of pain. Disability appears early and is often quite marked. The x-rays usually are quite characteristic, and the diagnosis can be confirmed by aspiration or surgical biopsy. The principal complication of this tumor is pulmonary metastasis. Therefore, it is imperative to obtain a chest film promptly; if this is clear, early amputation of the affected extremity is indicated. Contrary to common opinion, amputation is capable of providing five-year survivals in approximately 21 per cent of all operable cases. However, in children under fourteen, in whom this type of tumor seems to be more highly malignant, the survival rate is lower.

Ewing's endothelioma is a highly malignant bone tumor with a predilection for children. Fever is a common accompaniment of the disease so that the condition is often regarded at its onset as an infection and even the x-ray film results may bear some resemblance to a bone infection. The rapid course and the characteristic onion-peel splitting of the periosteum seen on the x-rays should prompt consideration of an early biopsy to settle the diagnosis. The tumor is quite radiosensitive, and well-planned x-ray therapy usually controls the primary tumor. However, metastasis to other bones as well as to the lungs is an all too frequent complication, and most cases progress rapidly to a fatal termination. Analysis of our end results shows only a 4.1 per cent five-year survival rate.

Primary reticulum cell sarcoma of the bone is a relatively rare tumor. It is microscopically similar to generalized reticulum cell lymphosarcoma but has its origin in the metaphyseal region of the bone. It may affect persons of any age and, if not controlled, may metastasize to other bones, the lungs, or regional lymph nodes. It is quite radiosensitive so that carefully planned irradiation is often successful in controlling the primary growth. If metastases occur, the lesions usually are equally radiosensitive and therefore should be similarly treated. Some authorities recommend early amputation for this disease but we prefer to rely on radiation methods and reserve radical surgery for unusual complications. In a recent analysis of 27 cases of this disease, 48 per cent were alive and free of disease five years after treatment.

Plasma cell myeloma is a malignant tumor that arises in the bone marrow, usually in multicentric foci but occasionally first manifesting itself in a solitary area before becoming generalized. The usual age incidence of this disease is from forty to seventy-five years, and it is more frequent in males. It may occur in any long bone but has a predilection for the axial skeleton, the skull and the spine being frequently involved.

Pathologic fracture of a rib may be the initial symptom. X-ray studies reveal multiple punched-out areas of varying size in the bones. These may bear a close resemblance to metastatic cancer of the bone, and sometimes the differential diagnosis is quite difficult, principally because the age period of these two entities is the same. However, an elevated serum protein with reversal of the albumin-globulin ratio, the presence of a Bence Jones proteinuria, and a positive sternal marrow aspiration result confirm the diagnosis. The ultimate prognosis in plasma cell myeloma is grave, but considerable palliation and prolongation of life can be attained by judicious x-ray therapy to the obvious and symptomatic bone lesions together with prolonged administration of urethane by mouth under carefully controlled guidance.

From this brief review it becomes apparent why an exact diagnosis is essential since the treatment and prognosis of each of the four conditions enumerated is quite different. Early amputation is recommended if the diagnosis is osteogenic sarcoma. On the other hand, x-ray therapy is employed for Ewing's endothelioma and for reticulum cell sarcoma, but the prognosis in the former is grave while in the latter disease it is much more hopeful. In plasma cell myeloma, urethane is administered in addition to high voltage x-ray therapy to the principal bone lesions.

Benign Tumors

At this point benign tumors are worthy of mention. There are many varieties of benign bone tumors and their names are legion. Most commonly seen are the solitary bone cyst, benign giant cell tumor, central chondroma, osteochondroma, and fibrous dysplasia. With careful consideration of the history, physical findings, and roentgenograms it usually is not too difficult to recognize the benign nature of such lesions. Treatment, although not as immediately urgent as for the malignant lesion, should be instituted early. With very few exceptions, surgical removal by local excision or curettage should be done. Procrastination permits increase in the size of the tumor, often to a stage requiring more extensive surgical procedures, even radical surgery if neglect has prevailed. Furthermore, there always is the hazard that malignant transformation may take place in a pre-existing benign lesion that has been casually disregarded or inadequately removed. This is particularly apt to occur in the cartilage tumors, enchondroma or osteochondroma, but is also a potential danger in other benign conditions.

Metastatic Bone Cancer

The problem of metastatic cancer of the bone presents too large a field to discuss in this paper except to emphasize that just as cancer may arise in any organ or part of the body, any primary malignant tumor may at some future date metastasize to a bone and given symptoms requiring consideration and treatment. Occasionally the metastatic deposit in bone is the first indication that the patient has a cancer, and investigation of the bone lesion may lead to the discovery of its source, such as the thyroid, breast, kidney, lung, and so forth.

In conclusion, may I repeat the plea to all physicians to give heed to the complaint made by the patient, old or young, of persistent pain in any bone and to investigate the problem with diligence.

140 East 54th Street

(*Number twenty-three in a series of Cancer Alerts*)

If anything is sacred the human body is sacred.—Walt Whitman

CASE REPORTS

Chronic Myelocytic Leukemia

MONROE THOMAS DIAMOND, M.D., F.A.C.P., CHAPPAQUA, NEW YORK

(*From the Department of Medicine, New York Hospital–Cornell Medical Center*)

Chronic myelocytic leukemia often can be readily diagnosed early in its course by the numerous immature cells present in the blood and the leukemic infiltration of the bone marrow. However, for many years it has been recognized that the host's response to the leukemic stimulus is reflected in varying modes of onset, and that at times myelocytic leukemia may present a picture closely simulating that of aplastic anemia. Thus, as Abt[1] and Baar[2] pointed out in 1924 subleukemic leukemia in children often is confused with refractory anemia. Zypkin[3] believed that aplastic anemia may be present in the terminal stage of leukemia. Akerren[4] pointed out that some cases of leukemia in childhood begin with a more or less marked anemia of the aplastic type without showing an increased number of abnormal types of lymphocytes and without enlargement of the liver, spleen, or lymph nodes. Livingstone[5] in 1932 studied a case in an adult which simulated aplastic anemia but at autopsy proved to be subleukemic lymphogenous leukemia. Weber[6] reported a case of leukemia in an adult which he had presented one year before as aplastic anemia. He stated that many cases in which the clinical diagnosis was aplastic anemia doubtless have been examples of aleukemic myelosis. In 1933 Weber and Weisswange[7] reported a similar case, and in the following year they described another such case.[8] In the same year Thompson *et al.*[9] reported 3 cases of aplastic anemia in which the percentage of embryonic granulocytes reached sufficient proportions to warrant being considered cases of acute leukemia. Mettier and Purviance[10] in 1937 described 5 cases of leukemia, one of which at one stage was thought to be pernicious anemia and later was diagnosed as aplastic anemia. Rhoads and Miller,[11] in an excellent study of the bone marrow in cases grouped under aplastic anemia, found a high percentage of primitive cells present which conceivably could make these cases those of aleukemic leukemia. Wintrobe and Mitchell[12] noted that in some instances of aleukemic leukemia the blood picture could be confused with that of pernicious anemia but that of all the disorders of the blood, aplastic anemia is the one which most often causes confusion. More recently, greater interest has been aroused in atypical cases of leukemia in which refractory anemia is presented. In 1951 Black[13] and Adams,[14] recognizing that aplastic anemia and leukemia are disorders of cell growth, believed that these disorders may follow one another as manifestations of the same disease. Young *et al.*[15] concluded that disorderly erythropoiesis may be an early manifestation of the leukemic process. Block *et al.*[16] termed the anemic period in their patients the "preleukemic phase." Meacham and Weisberger,[17] and Bernard and Boiron[18] in 1954 and Williams[19] in 1955 further discussed the preleukemic state. Sinn and Dick[20] found 14 cases of chronic monocytic leukemia in the literature and added 8 of their own and noted that the most common type was that which presented an initial preleukemic phase. This phase was indistinguishable clinically and pathologically from aplastic anemia. More recently, Richardson[21] pointed out that the hematologic and clinical appearances in the preleukemic state may be those of an aplastic anemia with or without myelofibrosis.

The present case is one of chronic myelocytic leukemia which was followed for five years as an aplastic anemia with the true diagnosis made only at postmortem examination.

Case Report

A seventy-five-year-old white male presented himself with the chief complaint of anemia of one year's duration. He stated that he had been well all of his life except for chronic constipation for which he had been taking 2 cascara sagrada tablets nightly for over fifty years. One year ago, because his wife thought he was looking sallow, he had a check-up and was found to be anemic. He was given biweekly injections and pills which made his stools black. Because his anemia did not improve, he decided to change doctors.

Aside from poor vision for one and one-half years, nocturia of three to four times for six months, and occasional low back pain, he was asymptomatic. There had been no change in weight. His family history and past history were noncontributory. He smoked four cigars and six pipefuls daily, rarely drank a cocktail, and aside from cascara took only iron for the past year. He was a coat salesman all of his life and was still active.

Examination.—On physical examination his blood pressure was 110/70, his pulse was 80, and he was afebrile. He weighed 143 pounds and was 64 $^3/_4$ inches tall. He was well developed and well nourished. His skin had a lemon-yellow tint, his mucous membranes were pale, and examination of his eyes, ears, nose, and throat gave negative findings. His tongue was not smooth, his sinuses transilluminated well, and there were shotty axillary nodes palpable bilaterally. His neck was unremarkable, and his lungs were clear to auscultation. His heart was not enlarged, there was a normal sinus rhythm present, and no murmurs were heard. Examination of the abdomen gave unremarkable findings. The liver and spleen were not palpable. He had a hydrocele on the left side. Rectal examination revealed an enlarged prostate with no nodules. The extremities were within normal limits, and the neurologic examination gave negative findings.

Laboratory data revealed a hemoglobin of 12 Gm., a red blood cell count of 2,600,000 per cu. mm., and a white blood cell count of 9,350 per cu. mm. The peripheral blood smear showed 22 per cent lymphocytes, 1 per cent band cells, 75 per cent mature polymorphonuclears, and 2 per cent basophils. The urine had a specific gravity of 1.017, was acid, had no sugar nor albumin, and was negative microscopically. There was no increase in urobilinogen in the urine. The sedimentation rate was 2 mm. per hour, and three stools were guaiac negative. The hematocrit was 45, which gave a mean corpuscular volume of 170 cu. microns, a mean corpuscular hemoglobin of 45 cu. microns, and a hemoglobin concentration of 27 per cent. A reticulocyte count was 0.4 per cent. A gastric analysis without histamine showed a free hydrochloric acidity of 76 degrees. A gastrointestinal series and a barium enema were unremarkable. A sigmoidoscopy gave negative results except for melanotic pigmentation of the rectal mucosa. An x-ray of the chest and an electrocardiogram were normal. The Wassermann test result was negative, and the blood urea nitrogen was 15.8 mg. per cent. A bone marrow aspiration was done and revealed a total count of 400,000 per cu. mm. with 16 megakaryocytes per chamber. There were 1 per cent blast cells, 32 per cent premyelocytes, 11 per cent metamyelocytes, 18 per cent bands cells, 4 per cent adult lymphocytes, 1 per cent erythroblasts, 5 per cent normoblasts, and 1 per cent plasma cells. The hematologist felt that this was compatible with aplastic anemia.

Course.—The patient was followed regularly for one year on no medication. On one occasion he developed sudden severe left upper quadrant pain which cleared after five days and was felt to represent a splenic infarct. He was followed for the next year during which time there was gradual lowering of his hemoglobin and red blood cell count, a situation which was corrected by occasional transfusions. His white blood count and peripheral blood smear remained unremarkable. At that time, two years after his anemia was first discovered, he began to develop enlargement of his liver and spleen. A repeat bone marrow aspiration revealed essentially the same picture as the previous one, done one year before. During the following year the patient required more transfusions, averaging about one a month, and was admitted to the hospital, three years after his anemia was first discovered, because of increasing weakness.

On physical examination he appeared very pale and chronically ill. The positive findings were a Grade II systolic murmur at the apex of the heart, a liver 4 fingerbreadths below the right costal margin, and a spleen 5 fingerbreadths below the left costal margin. There was a 1 plus pretibial edema, and the prostate was enlarged to twice its size.

Laboratory data revealed a hemoglobin of 5.8 Gm., a red blood cell count of 1,700,000 per cu. mm., and a white blood cell count of 7,600 per cu.

mm., with 18 per cent lymphocytes, 11 per cent monocytes, 1 per cent eosinophils, 2 per cent basophils, 64 per cent mature polymorphonuclears, and 4 per cent band cells. The platelets were somewhat decreased. Urinalysis findings were negative, and there was no Bence Jones protein present. A twenty-four hour fecal urobilinogen was 84.8 Ehrlich units. The blood urea nitrogen was 25 mg. per cent. The total protein and albumin-gobulin ratio were normal. The stools were guaiac negative. X-rays of the chest and gastrointestinal tract gave unremarkable results. X-rays of the lumbosacral spine showed osteoarthritis with disk degeneration and osteoporosis. An electrocardiogram was within the normal limits. An iron absorption test revealed a fasting level of 95 gamma, after one hour 100 gamma, after two hours 115 gamma, and after three hours 105 gamma. This indicated poor iron absorption but a normal iron level and no evidence of an iron deficiency. A bone marrow aspiration revealed 5 per cent blast cells, 22 per cent promyelocytes, 25 per cent myelocytes, 26 per cent metamyelocytes, 8 per cent band cells, 8 per cent adult polymorphonuclears, 0.5 per cent lymphocytes, 2 per cent proerythroblasts, 1 per cent erythroblasts, 2 per cent normoblasts, and 0.5 per cent plasma cells. The megakaryocytes were numerous and forming platelets well. He was given five blood transfusions on successive days and discharged.

The patient at this point needed a transfusion about every two weeks in order to keep his blood count at a respectable level, and this continued during the fourth and fifth years of his illness. There were no significant changes in his peripheral blood smears or physical examination results. He was admitted to the hospital in terminal condition at the end of the fifth year, went rapidly downhill with the development of fever and coma, and quietly expired.

NECROPSY.—*Gross.*—The spleen weighed 1,100 Gm. Irregular thick fibrous plaques covered most of the convex surface, giving it a lobular appearance. The hilar vessels were free of thrombi. On the cut surface the normal architecture had been replaced by soft gray tissue which scraped easily from the surface. Scattered throughout were focal areas of hemorrhage, but there were no clear infarcts.

The liver weighed 2,050 Gm. The capsular surface was faintly finely granular but without gross scarring. The cut surface was a uniform copper color, and the normal lobular markings were quite indistinct. The texture was slightly more firm than normal. There were no focal infiltrates. Beneath the inferior capsule were a number of very minute calcified nodules.

The lymph nodes were of normal size except around the pancreas and hilus of the liver where they were large, soft, and uniformly brown.

The marrow of the vertebrae, sternum, rib, iliac crest, and femur was uniformly pale. The bone was slightly porotic but otherwise not remarkable.

Microscopic.—The pulp of the spleen was heavily infiltrated with granulocytic cells of all degrees of maturity, but primarily with immature forms. The lymphoid corpuscles were only faintly recognizable. In focal areas the pulp was hemorrhagic and necrotic. The trabeculae and perivascular connective tissue were heavily infiltrated with macrophages containing hemosiderin pigment.

The liver retained its lobular pattern in general although the portal areas and the liver parenchymal cells contained much hemosiderin pigment. In places the portal fibrosis was sufficient to appreciably distort the lobular pattern, and this was associated with minimal bile duct proliferation.

The follicular architecture of the lymph nodes was absent. The sinusoids were wide and filled with hemosiderin which was filled with phagocytes. The stroma of the nodes were composed of lymphocytes, macrophages, and reticulum cells.

Sections of marrow from the vertebrae, ribs, sternum, iliac crest, and femur were similar in all respects. The marrow was cellular and contained only scattered adipose cells. A Giemsa stain showed the cells to be of the granulocytic series, primarily myelocytes of varying degrees of maturity and numbers of eosinophilic myelocytes. Immature unidentifiable cells and reticuloendothelial cells were moderately numerous. Megakaryocytes and cells of the erythroid series were extremely rare.

Anatomic Diagnosis.—Granulocytic leukemia.

Comment

It is becoming more widely recognized in recent years that a preleukemic stage not infrequently occurs in cases of leukemia. This state is characterized by anemia and sometimes other cytopenias together with a cellular, nonleukemic bone marrow. It can be indistinguishable clinically and pathologically from aplastic anemia. This stage may be a long one, and the diagnosis of leukemia may be missed or made only after postmortem examination.

The present case is an instance of a preleukemic stage which lasted five years and resembled an aplastic anemia. The bone marrow smears done throughout the course were characterized chiefly by a marked depression in erythroid elements plus an increased cellularity with some increased percentage of myeloblasts and promyelocytes. This is compatible with aplastic anemia, for in the series of aplastic anemias reported by Thompson *et al.*[9] and Rhoads and Miller[11] marrows occurred with an increased cellularity and an increased percentage of immature cells. Also, Bomford and Rhoads[22] collected cases of aplastic anemia with cellular bone marrows. However, although compatible with aplastic anemia, this is atypical and should be a clue to the possibility of a preleukemic state. The spleen and liver were not palpable in this case until two years after the patient's marked anemia and then rapidly grew in size. This is compatible with myeloid metaplasia secondary to a severe anemia but again gives rise to a suspicion of a preleukemic phase. Had the concept of a preleukemic state been better known, a higher index of suspicion would have been present in the handling of this case. Then the clues present in the atypical features of the aplastic anemia might have stimulated further studies and have given the definitive diagnosis during life.

The early diagnosis of myelocytic leukemia has more than academic interest. Although there is no cure for this condition, the disease responds favorably in its early stages to many forms of treatment. Striking remissions can be produced in the majority of cases, and in some instances life may be prolonged by the judicious application of radiation, endocrine, or antimetabolite therapy.

Furthermore, the hope for a future cure of leukemia can only become more realistic if early diagnosis of cases are made when reversible cellular changes still are present. The conception of a preleukemic stage then takes on great significance, for herein is an opportunity for early suspicion that leukemia is present. It is incumbent on the physician when encountering cases which present themselves as aplastic anemia to keep in mind the possibility of a preleukemic stage of chronic leukemia and to search for clues that might bear this out.

Summary

1. The host's response to the leukemia stimulus is reflected in varying modes of onset, and at times chronic myelocytic leukemia may present a picture simulating that of aplastic anemia.

2. A review of the world literature is given on the subject of leukemia, which during its anemic phase can simulate closely aplastic anemia. This phase is referred to as the preleukemic stage and can be of long duration.

3. A case is presented of chronic myelocytic leukemia with a preleukemic stage which lasted for five years.

4. The features of the preleukemic stage in this case are stressed. Its similarity to aplastic anemia is described, and its atypical features giving clues to the correct diagnosis are discussed.

5. The importance of the concept of the preleukemic stage with its opportunity for early diagnosis of leukemia is emphasized.

175 King Street

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Psychogenic Visual Disturbances

JEROME M. SCHNECK, M.D., NEW YORK CITY

(From the Department of Psychiatry, State University of New York College of Medicine)

THREE examples of psychogenic visual disturbances encountered in psychiatric practice are described because of their pertinence for the general physician and ophthalmologist as well as the psychiatrist. It was possible to correlate the visual problems with the other aspects of personality functioning so that more complete views of the personality disturbances were available. Specific symptoms were persistence of a film or veil over the field of vision, intermittent blurring, and amblyopia.

Case Reports

CASE 1.—A fifty-two-year-old woman revealed a persistent film or veil encompassing the visual field of two years duration. Corrective lenses for visual acuity did not dispel this impression. The ophthalmologic report revealed that on examination her visual acuity was 20/200, correctible to 20/20 in each eye with a moderate hyperopic sphere. External examination gave negative findings; tension, muscle balance, media, and fundi were all normal.

From childhood she had felt second best in relation to an older sister; a brother having status because of his sex also contributed to her belief that her total role in the family was secondary. There was an impression of separation from others throughout adult life accompanied by feelings of unworthiness. She had entered treatment because of a neurotic depression. A barrier existed between her husband and herself in that surface relationships usually were satisfactory but real closeness did not exist. Also, she believed that she had not been completely successful in rearing her three sons. Something was missing. These feelings were consistent with a barrier that separated her from people and the world about her. Others would not necessarily observe her discomfort, but basically she felt apart and often detached. The film or veil was clarified as being a psychologic expression of this feeling of separation. As she evaluated her problems and established more meaningful personal relationships, the veil lifted.

CASE 2.—A thirty-four-year-old man sought treatment for an anxiety reaction. His developmental and early adult years were spent in a low socioeconomic environment with absence or avoidance of intellectual stimulation, cultural interests, and healthy personal relationships within the family setting and later in social situations and business activities. Re-evaluating his thinking and functioning, he was deeply impressed by what he came to regard as the emptiness of his life. He literally began to look about him and react with emotion to everyday things that had always been present but in which he had shown no interest. Therapeutic progress was beset with recurrent anxiety episodes.

The patient then experienced blurring of vision on certain occasions. Ophthalmologic examination revealed an insignificant error of astigmatism in the right eye which did not require lens correction. There was exophoria of 12 prism diopters with excellent corrective convergence amplitude. Intraocular pressure was normal. Examination of the external adnexae also gave normal findings. Fundus examination revealed a marked increase of tortuosity of the vessels at the disk. In the absence of hypertension this must have been a simple deviation within normal limits.

Psychiatric study revealed that blurring occurred only when the patient focussed on certain objects. They might be buildings, city landmarks, or other familiar items he had viewed previously but without a feeling of really knowing them in the sense of adequate absorption within his personal experience. It was all a "new world" for him, as he expressed it. Further study showed that this occasional selective blurring in its distortions was a psychologic representation of his striving with difficulty to see himself in new perspectives. Periodic intensification of his search for himself found expression in this externalized form—an attempt to deal with personality distortion and to effect remolding. As personality changes occurred, the blurring episodes diminished.

CASE 3.—A forty-one-year-old woman was brought to consultation for bilateral amblyopia.

She complained of inability to see but was able to discern a beam of light several feet in front of her. The impairment had developed rapidly within the previous hour. When led to the office by a friend, she stumbled along the way. During the interview she was irritable, impolite, and initially inaccessible. Although she resented questioning, she demanded immediate relief. Gradually she was able to describe ocular pain of four or five days duration, referred to medication supplied her, and expressed concern that it might have contained something to which she was allergic. Gradually she was able to tell about constant marital conflict and her resentment of her husband, who was described as passive-dependent. She had two children.

Surgical history consisted of an operation for ruptured tubal pregnancy complicated by peritonitis, a hysterectomy with a bilateral salpingo-oophorectomy, appendectomy, and coccygectomy. She told of sexual frustration and frigidity of five years duration. Gradually, as she talked, her vision began to return completely. As the discussion continued, however, she expressed resentment over the implication that her visual problem was "mental," anticipated unverbalized interpretations, and became very defensive. At this point her husband arrived and remained for a short time. The patient informed him in a derogatory fashion that the examiner regarded the problem as psychologic. Then, interestingly, as her husband sat nearby, the patient's vision began to fade. Her husband departed, the discussion continued, and once more her vision returned. In view of her apparent feelings toward her husband, she was asked about her train of thought at the time he had been present. Her reply was: "How much I hate him!"

When the interview was terminated the patient could see normally except for the feeling that a film was in front of her eyes, a point reminiscent of the first case. She declined additional help.

Comment

The veil or film impression described in the first case, even though experienced, may not be mentioned by patients in routine medical examination or when mentioned, is often ignored when a structural defect is not in evidence. Underlying psychologic components can be elicited in psychotherapy, and the data revealed here are illustrative of this.

The blurring in the second patient required ophthalmologic examination because of considerable potential danger in the form of ocular or neural pathology. The specificity of the psychopathology uncovered in this instance is a point of interest.

The third patient furnishes a problem more clearly indicative for immediate psychiatric evaluation, although in a situation of this sort the general physician or ophthalmologist may be consulted first. Of special note in this case was the rapid symptomatic relief during the course of the interview, with relapse during the same interview when the patient's husband, representing a pertinent source of psychologic conflict, appeared on the scene. Although the patient was almost well symptomatically at the conclusion of the consultation, her total personality structure showed major hysterical reaction tendencies that did not presage continued well-being. This was substantiated by her consultation with a general physician several months later when she complained of severe cardiac pain. There was no structural defect, and the symptom disappeared in two days.

The first 2 patients displayed symptoms reflecting partial withdrawal. The third patient exhibited extensive retreat through major symptomatology. Her emotional turmoil was reflected in the change from overt aggression and hostility to hostility disguised as helpless dependency. She rejected help, whereas the others sought it spontaneously and benefited from it. The psychogenic amblyopia was a poor compromise. The patients with the blurring and the visual film used their symptoms partially as impetus toward self-investigation for coming to terms with inner conflict and environmental stress. The third patient was interested more in transitory escape which was not followed by constructive intent. These correlations are of concern to all physicians in contact with such problems because their influence can play a role in the steps that might be taken toward successful adaption, growth, and general well-being.

26 West 9th Street, New York 11

Account ye no man happy till he die.—Euripides

Acute Diverticulitis of the Cecum

JULIUS LEVINE, M.D., BROOKLYN, NEW YORK

(From the Coney Island Hospital)

CECAL diverticulitis is a comparatively rare clinical entity[1] judging from the paucity of reports in the literature. In 1940 Jonas[2] reviewed 15 cases and added 5 cases of his own to the literature. He specifically excluded diverticula occurring as part of a generalized involvement of the colon. Jonas pointed out that this condition closely simulates acute appendicitis. It tends to occur in patients under forty years of age. A walling-off of the acutely inflamed diverticulum occurs early, so that free perforation into the peritoneal cavity rarely takes place. The abscess forms an easily palpable tender tumor mass. This, together with the absence of nausea and vomiting in practically all the reported cases[3,4] are two extremely important clues in differential diagnosis. Usually the pain begins in the right lower quadrant rather than in the epigastrium as in acute appendicitis. The differential diagnosis, of course, includes all of the diseases which simulate acute appendicitis.

Since the diagnosis can hardly ever be certain, operation is usually indicated. It is, of course, conceivable that cecal diverticulitis could be successfully managed by medical means alone[4] if one could be absolutely certain of the diagnosis. In such a case antibiotic therapy and rest would be all that would be required. If operation is performed, any one of the following procedures may be employed: (1) simple drainage without disturbance of the inflamed cecum, (2) ligation and resection of the diverticulum, and (3) resection and ileocolostomy if the tumor mass suggests a malignant process.

In any case, the most conservative procedure is usually the wisest. Whatever is done, however, the patient usually makes an uncomplicated recovery.

Case Report

A thirty-seven-year-old white male presented himself at my office on April 25, 1958, because of pain in the right lower quadrant of two days duration. There was no nausea or vomiting. There was no epigastric pain. The pain was aggravated by walking. There were no urinary symptoms. There was no diarrhea. In January, 1957, the patient complained of vague pains in the right lower quadrant, but these apparently had subsided in two weeks.

Physical examination revealed an acutely ill white male who walked with difficulty because of the right lower quadrant pain. His temperature was 101 F., pulse 85, respiration 20, and blood pressure 120/80. His ears, nose, and throat were within normal limits. There was no cervical adenopathy. His lungs were clear to auscultation and percussion. His heart showed regular sinus rhythm. There were no murmurs. His abdomen revealed a tender, rather diffuse tumor mass palpable in the right lower quadrant, about 6 centimeters in diameter. There was tenderness of this area on rectal examination also. The liver and spleen were not palpable. The white blood cells were 20,550, segmented cells were 72, and lymphocytes were 28. The urine analysis findings were normal.

A diagnosis of appendiceal abscess was made. The next morning the tumor mass appeared to be more localized, and immediate operation seemed indicated.

At operation, the appendix appeared normal. However, the whole cecum seemed to be acutely inflamed and there was a marked peritoneal reaction around a ruptured diverticulum of the cecum. The diverticulum extended 3 centimeters beyond the lateral aspect of the cecum. The appendix and the diverticulum were removed, and the whole area was drained. The patient made an uneventful recovery. The pathologic report confirmed the ruptured diverticulum and the abscess around it. When the patient was last seen in July, 1958, there were no complaints. He felt completely well.

Summary

Another case of solitary diverticulitis of the cecum has been added to the literature. The diagnosis is made from evidence of the presence of pain and a tumor mass in the right lower quadrant, the absence of nausea and vomiting, and no epigastric pain.

The treatment may be medical if the diagnosis is certain. If not, the most conservative surgical

procedure possible is advised.

BAY RIDGE PARKWAY BROOKLYN

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Thrombocytopenic Purpura Associated with Sulfamethoxypyridazine Administration

IRA GREEN, M.D., AND MARTIN FINKEL, M.D., BRONX, NEW YORK

(*From the Bronx Veterans Administration Hospital*)

SULFAMETHOXYPYRIDAZINE has recently been introduced into clinical use.[1-3] It combines good oral absorption, favorable antibacterial effect, adequate solubility, and slow renal excretion.[4,5] High and prolonged blood levels are attained after a single daily oral dose. We would like to report the occurrence of thrombocytopenic purpura following a short course of sulfamethoxypyridazine therapy.

Case Report

A sixty-four-year-old white male dentist was admitted for the third time to the Bronx Veterans Administration Hospital on October 27, 1957. His chief complaint was dyspnea of two days duration. The patient had sustained myocardial infarctions seven years and three years prior to admission, and for the last three years he had required treatment for congestive heart failure. There was no past history of drug sensitization or ingestion of sulfa drugs.

Physical examination revealed a patient who looked older than his stated age. He was acutely ill and had tachypnea and cyanosis of the lips. On admission the blood pressure was 160/90, pulse 100, respirations 20 per minute, and temperature 99.6 F. Cardiomegaly and pulmonary congestion were noted. The liver edge was felt 3 fingerbreadths below the right costal margin. The spleen was not felt on admission or subsequently. There was three plus pitting edema of the leg and two plus edema of the thighs.

Laboratory data on admission showed a hemoglobin of 14.2. hematocrit 43, and white blood count 7,300 per centimeter. Urinalysis showed a specific gravity of 1.015, a trace of albumin, and a white blood count of 10 to 15 per high-power field. Blood urea nitrogen was 26 mg. per cent. These values did not change significantly during the hospitalization.

Hospital Course

With the use of digoxin, bed rest, and salt restriction, there was gradual improvement in the patient's congestive heart failure. The course was complicated by the development of auricular fibrillation. No attempt was made to convert him to regular sinus rhythm; quinidine was not given. He remained afebrile during his hospital stay.

Because of the persistent pyuria, a urinary tract infection was considered to be present.

For this reason, the patient was started on sulfamethoxypyridazine on November 29, 1957. He received 0.5 Gm. twice a day until December 6, and then received 0.5 Gm. once a day until December 11. On December 11, the patient had an unexplained episode of hypotension; for this reason sulfamethoxypyridazine was discontinued. On December 12, epistaxis developed which required nasal packing for its control. At the same time petechiae covering the entire skin were noted. There was a markedly positive Rumpel-Leede test. At this time the platelet count was 5,000 per cubic centimeter. A bone marrow aspiration on December 12 showed a hypo-cellular marrow with a normal myelocyte-erythrocyte ratio. The megakaryocytes were normal in number, and did not display any morphologic abnormalities. The patient had no other evidences of bleeding. The platelet count gradually rose and on December 19 it was 164,000 per centimeter and on December 25 the count was 350,000 per centimeter. The Rumpel-Leede test became negative on December 19. The only treatment instituted for the purpura was withdrawal of the sulfamethoxypyridazine. Other medications that the patient received were digoxin 0.25 mg. twice a day and Nembutal 50 mg. once a day, and on December 16 the patient received a single 10 mg. dose of Compazine by mouth.

On December 25, after the patient's platelet count returned to normal, an in vitro study, using a technic similar to that of Ackroyd's[6] was performed. One cc. of a saturated solution of sulfamethoxypyridazine (147 mg. per 100 cc. in phosphate buffer pH 6.4) in buffer was added to 5 cc. of the patient's platelet-rich citrated plasma. A control was set up using the patient's plasma and just the buffer alone. The mixtures were incubated at 37 C. for six hours. No clearing of the plasma, to which sulfamethoxypyridazine had been added, was noted during this time, and aliquots of the mixtures showed no platelet clumping.

The remainder of the patient's hospital course was uneventful, and he was discharged on January 2, 1958. The patient was subsequently readmitted three times to the Bronx Veterans Administration Hospital for the treatment of heart failure. During these admissions there was no evidence of hematologic abnormality. His final admission was on May 3 for acute pulmonary edema. He failed to respond to treatment and died on May 4. Permission for autopsy was not obtained.

Comment

We believe sulfamethoxypyridazine should be implicated as a cause of the thrombocytopenia in our patient because his course did not suggest spontaneous idiopathic thrombocytopenic purpura, no other drugs which commonly cause this condition were administered, and the thrombocytopenia subsided rapidly after sulfamethoxypyridazine was withdrawn.

Thrombocytopenic purpura is an uncommon complication of sulfonamide therapy.[7–9] In one large early report concerning the use of sulfonamides, no mention is made of thrombocytopenia or purpura.[10] Previous case reports of thrombocytopenic purpura associated with sulfonamide administration give no clear evidence as to the mechanisms involved.[11–14] However, most authors have found the megakaryocytes in the bone marrow to be normal.[11,12,15] Two possible mechanisms may be (1) immunologic, similar to that found in quinidine[16] and sedormid purpura,[17] or (2) direct toxic megakaryocytic aplasia. In spite of the negative in vitro studies in our patient, we feel that the rapid recovery after drug withdrawal and the normal number of megokaryocytes would suggest an immunologic factor. Perhaps the patient's previous occupation as a dentist exposed this patient to contact with sulfonamides.

The frequency of sensitivity reactions to sulfa drugs depends both on the inherent properties of the particular drug being used and on the blood level attained during therapy with the drug. Previous reports indicate that the higher and more prolonged the blood level, the more likely are sensitivity reactions.[18,19] Since sulfamethoxypyridazine administration can rapidly lead to high and prolonged blood levels, it may be that this property of the drug will accentuate its sensitizing potentialities. Furthermore, once toxicity occurs, the long half-life of the drug in body fluids may be a disadvantage.

When purpura develops during the course of antibacterial therapy with sulfamethoxypyridazine, we suggest it should be recognized as a possible sensitivity reaction to the drug and not as a manifestation of the underlying disease process. Failure to do so could lead to further and more intensive drug administration.

Preliminary observations indicate that the frequency of other adverse reactions to sulfamethoxypyridazine administration are of the same order as those observed with the use of other commonly used sulfonamides[1–3] Whether thrombocytopenia will be particularly associated with administration of this drug must remain a moot point at this time. However, two other cases of purpura associated with sulfamethoxypyridazine treatment have been reported.[20]

Summary

A sixty-four-year-old male developed acute thrombocytopenic purpura after a brief course of sulfamethoxypyridazine. The process rapidly reversed after drug withdrawal. It is suggested that the high and prolonged level attained with the new drug may augment its toxic potentialities. Purpura developing during sulfamethoxypyridazine administration should be considered as a possible drug reaction.

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There is no Good, there is no Bad; these be the whims of mortal will:
That works me weal that I call "good" what harms hurts me I hold as "ill."—SIR RICHARD BURTON

Acute, Transitory, Severe Central Nervous System Toxicity Following Administration of Prochlorperazine

SAM R. MASON, M.D.,* JOHN J. SANDT, M.D., AND JOHN J. DUGGAN, M.D.,
SYRACUSE, NEW YORK

(*From the Department of Medicine, State University of New York, Upstate Medical Center, and the Medical Service, Veterans Administration*)

THE case presented here illustrates a combination of serious effects on the central nervous system produced by a tranquilizing agent in the treatment of mental disease. Hyperthermia, prolonged wakefulness, and parkinsonism were observed.

Case Report

On January 2, 1958, a twenty-two-year-old single white male was admitted for the first time to the Syracuse Veterans Administration Hospital on the Neuropsychiatric Service because of "abnormal behavior" of about one month's duration.

The patient, characterized by his sister as "shy and withdrawn," had become abusive, hyperkinetic, euphoric, and delusional some four weeks prior to admission. A tentative diagnosis of paranoid schizophrenia was made after initial psychiatric examination.

The patient's past medical history was remarkable only in that while in the Army he was told that he had high blood pressure and that he is said to have been a heavy drinker then and during the month prior to admission. There was no history of convulsions, severe trauma to the head, delirium tremens, or abnormal behavior prior to the onset of the present illness. The patient had lost no weight and apparently had been on an adequate diet. His family and social history were otherwise noncontributory.

On initial examination the patient's blood pressure was 160/70 mm. Hg, pulse 85 per minute and regular, temperature 99 F. He was well developed, stocky, restless, and anxious. He was perspiring freely and his hands were cold and moist. Except for slight obesity he showed no abnormalities on physical examination. His hemogram, urinalysis, nonprotein nitrogen, fasting blood sugar, electrocardiogram, and chest x-ray film findings, were all within normal limits. A serologic test for syphilis showed negative results.

Because of his hyperactivity the patient was treated during the first week with promazine (Sparine) 100 mg. four times daily and for three more days with 100 mg. every four hours without much effect. This drug was then stopped and over the following six days prochlorperazine (Compazine) was given with the dosage increased every two days; 30 mg. three times daily, 40 mg. three times daily, and finally 60 mg. four times daily. Two days later all medications were discontinued because of the development of fever and muscle rigidity.

During the final two days of prochlorperazine therapy the patient began to show increasing lethargy, ataxia, tremor, and diaphoresis. He was found to be semiresponsive and was able to get out of bed only with assistance. His temperature rose to 103 F., and he showed generalized muscle rigidity, a masklike facies, increased salivation, urinary incontinence, and poor responsiveness. At this time his blood pressure was 185/80 mm. Hg, pulse rate 110 per minute and regular, respirations 20 per minute. Except for moderate leukocytosis, the hemogram, urinalysis findings, and chest film were within normal limits. Lumbar puncture revealed normal pressures and dynamics. The spinal fluid contained no cells and its protein content was normal. His temperature remained at 103 F., and he was transferred to the Medical Service on his nineteenth hospital day, where he remained for the next twenty-two days.

The first week after his transfer the patient seemed to become increasingly lucid but demonstrated marked wakefulness, sleeping no more than three to four hours daily. He lay rigidly in bed, his eyes fixed on a single point except when disturbed. An electroencephalogram taken at this time was interpreted as being within normal limits. The patient's temperature was maintained below 105 F. only by intermittent sponging with cold water. Aspirin administration had no effect. As his leukocytosis rose to a high of

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* Present address: Cortland, New York.

26,500 his responsiveness diminished and he developed marked agitation, choreoathetosis, and floccilation and began to hallucinate. He was given benztropine (Cogentin) 2.5 mg. four times daily for four days without much change in his tremor. Despite aspirin administration his temperature spiked to 107.8 F. on two occasions, falling within thirty minutes with total body ice packing and ice water enemas. While hyperpyretic the patient did not sweat and responded only to painful stimuli.

During the next week the patient's temperature spiked on three separate occasions to 105 to 106 F., responding as before only to sponging with cold water. On two of these occasions 100 mg. of hydrocortisone were administered intravenously without appreciable effect on the fever. Throughout this period the patient was lucid, but his rigidity had been completely replaced by chloreoathetosis. His pupils were dilated, salivation was almost absent, and his abdomen was distended. An abdominal film at this time showed paralytic ileus. He showed one further episode of hallucination as his temperature spiked to 102.2 F.

The following week the patient demonstrated marked somnolence (reversing the wakeful pattern of the first week) and regressive behavior, with exaggerated dependency, querulousness, and lacrimation. All these abnormalities gradually subsided until he was once again ambulant and afebrile. He became relatively cheerful and lucid and was able to be readmitted to the Neuropsychiatric Service.

During the acute phase of the patient's illness a total of four lumbar punctures were done and were within normal limits, as were the bone marrow examination findings, radioactive iodine uptake, glucose tolerance test result, and cold and heterophil agglutinations. Studies of hepatic and renal functions displayed no abnormalities, and x-rays films of the skull, chest, and abdomen were normal. Several cultures of the blood, stool, and urine yielded no growth, and stool examination results for ova and parasites were negative. Guinea pig inoculation with a cerebrospinal fluid specimen gave a normal result. Neurologic examination two months later failed to reveal any evidence of nervous system damage.

In summary, this patient's illness seems to fall into four approximately week-long phases (Fig. 1):

1. Parkinsonism and wakefulness with a relatively fixed febrile range from 102 to 104 F.
2. Hyperpyrexia and increased wakefulness with hallucinations, mixed parkinsonism, and chloreoathetosis.
3. Low-grade fever to 102 F. and somnolence with diminishing choreoathetosis and regressive behavior.
4. Convalescence with normal temperature and no abnormal muscle movements.

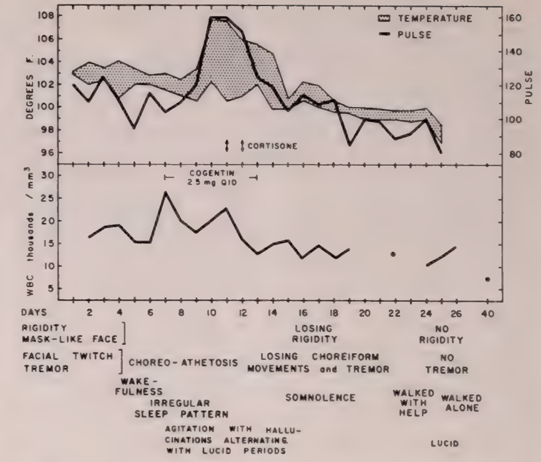

Fig. 1. Correlation of dominant clinical findings with temperature, pulse, and leukocyte count. (Aspirin was administered daily without apparent effect on the fever.)

Comment

Hyperthermia has been reported as a complication of therapy with the phenothiazine and Rauwolfia group of drugs. Lomas *et al.*[1] in a series of 800 mental patients treated with chlorpromazine (Thorazine) reported pyrexia in 2 per cent. The condition was usually mild, but occasionally temperatures of 105 F. were recorded. The fever ordinarily lasted but twenty-four to forty-eight hours and rarely persisted for as long as a week. Cohen[2] stated that fever of 102 F. to 103 F. frequently was found in his series of 1,400 cases receiving chlorpromazine therapy, usually seen as evening spikes for one to two days. Ayd[3] reported the findings from a fatal case of acute, short hyperthermia due to chlorpromazine. The brain at autopsy showed swelling of the neuronal cells (especially in the thalamus and hypothalamus), capillary congestion, distention, and petechial hemorrhages. These changes are nonspecific and of the type usually seen in cases of fatal heat stroke.

Chlorpromazine, reserpine, and prochlorperazine have been described as producing an extrapyramidal syndrome, manifested by resting tremor, rigidity, loss of associated movements, mask-like facies, increased salivation, and seborrhea—in short, Parkinson's syndrome. The appearance of this effect seems to be related to dosage and length of treatment.[4] Our patient received 900 mg. of prochlorperazine over a six-day period and manifested muscular rigidity, tremor, and choreiform movements for twenty-three days.

The frequency with which this complication occurs with chlorpromazine varies from 4 to 40 per cent in reported series.[2,5,6] The Smith, Kline and French Research Department[7] reports that one third of the hospitalized patients receiving prochlorperazine developed extrapyramidal symptoms to some degree.

Cessation of treatment usually results in the resolution of the syndrome in one to two weeks, although a case of parkinsonism, reported by Cohen,[2] persisted for four months. Our patient remained severely ill, and indeed became worse, during the first week after cessation of prochlorperazine. Gradually, over the next two weeks, he returned to his pretoxic state, demonstrating no neurologic sequelae. Thus far there have been no reports of permanent brain damage resulting from tranquilizer toxicity.

The phenothiazine tranquilizers have been shown to influence primarily the subcortical areas of the brain. These areas are the reticular formation, the hypothalamus, and portions of the rhinencephalon.[8]

Temperature regulation is integrated in the hypothalamus. Sleep-wake patterns are regulated by the reticular formation and the hypothalamus. It is possible that abnormal actions at these sites by a tranquilizer could produce disturbances in temperature and sleep control.

It is known that the reticular formation and the reticulospinal tracts are important structures in the motor outflow of the extrapyramidal system. Lesions in this reticular formation have been shown to produce the characteristic tremor of parkinsonism in monkeys.[9] Both chlorpromazine in large doses and reserpine stimulate the reticular formation.[10] The hypothalamus and the rhinencephalon also have been shown to have influence on skeletal muscle in the extrapyramidal outflow.[11,12] Unusual alterations in these areas may result in the parkinsonian picture.

Prochlorperazine and chlorpromazine are closely related chemically and their pharmacodynamics are presumed to be similar. It is deduced that the case presented in this report illustrates the effect of prochlorperazine on the subcortical structures, with a resultant parkinsonian picture, prolonged high fever, and alteration in the sleep-wakefulness cycle. This last effect was manifested by long periods of wakefulness interrupted by short naps. No attempt to prove the etiologic relationship by exposing the patient to a second course of the drug was made. The critical febrile state undoubtedly played a role in the observed wakefulness, apart from a possible hypothalamic effect.

We could demonstrate no evidence of infection or diabetes insipidus and no abnormalities in arterial blood pressure or respiration. Liver function remained intact. No antibiotic therapy was administered throughout the patient's stay in the hospital.

Summary

A case of prochlorperazine (Compazine) toxicity affecting the central nervous system is presented. The prominent clinical manifestations were hyperthermia, parkinsonism, and wakefulness. This occurred after a short course of intensive therapy for acute paranoia. The toxic state persisted for over three weeks after prochlorperazine administration was stopped, and the patient was left with no neurologic disability.

The authors are grateful to Dr. Richard H. Lyons and Dr. James B. Preston for their advice in preparing this manuscript.

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Sudden Graying of Hair May be Form of Skin Disease

History and legend are full of stories of people who grayed suddenly after severe emotional stress. Medical reports tell of graying after acute organic illness.

Among the famous who reportedly grayed suddenly are Queen Marie Antoinette, after hearing her death sentence, and Ludwig the Bavarian, after having condemned his wife to death. Rapid whitening has been reported to occur in mental patients, in paralyzed patients, and in persons with eye ailments.

Just why such sudden whitening occurs is not known, but a Brooklyn dermatologist has come up with a possible explanation for at least some of the cases. Dr. Alfred J. Ephraim, writing in the February *Archives of Dermatology*, published by the American Medical Association, thinks some of the cases may be a form of vitiligo, a skin disease in which the skin loses its pigment.

He reported the case of a man whose hair turned white within six weeks after an accident. At first, the change was attributed to a head injury suffered in the accident. However seventeen months later, the doctor again saw his patient and realized that he was suffering from vitiligo. The doctor examined pictures taken immediately after the man's hair changed color and found that his skin even then showed signs of vitiligo.

Dr. Ephraim is convinced that his case resulted from vitiligo and he believes that some other reported cases may also belong in the group of vitiligos. "It seems physiologically difficult to understand how the hair, which, once formed, is a structure without nerves or blood supply, can throughout its length undergo rapid physicochemical changes directly due to emotional influence," Dr. Ephraim said.

However, the medical literature is full of such reports. While "close scrutiny of the reports reduces the actual number of reasonably reliable cases," there are enough to show that sudden or rapid whitening really does occur. Some resulted from excitement, fright, II or mental stress, while others were related to acute organic illness. The latter occurred mainly in persons under treatment for neurologic or mental disorders. Sudden whitening has occurred in persons following railway accidents, family catastrophes, and war. Oddly enough, there is no medical report of sudden graying following mining disasters or "the horrible experience of World War II," the author said.

Exactly why hair suddenly turns white is not known. In fact, it is not even definitely known whether the usual graying process starts at the root or at the tip of the hair or whether the pigmented hair falls out and is replaced by a white one. Dr. Ephraim questioned hairdressers who said they believe that pigmented hair turns white at once. They never observed short white new growth but only long white hairs during the period of graying.

Because it takes an average of five months for a plucked hair to regenerate and to grow to a length of four fifths of an inch, it is impossible for a pigmented hair to fall out and be replaced overnight by a white one. The slow growth also negates the explanation that persons forget to dye their hair.

One of the most accepted theories of what happens in sudden graying is that air bubbles enter the hair while the pigment is fully retained. These air bubbles make the hair appear white through light reflection. Another theory is that some subtle damage is done to the cells that contain the pigment.

Dr. Ephraim also pointed out that it is known that the pigment-producing cells originate from the same area as the central nervous system cells. "This neurogenic origin may perhaps lead to an explanation of the phenomenon of rapid pigment loss." Until then, the fact remains that sudden whitening does occur in relation to emotional and organic upheaval. Dr. Ephraim does not know why, but he does believe, on the basis of his one case, that some occurrences may be related to the development of vitiligo.

He is a member of the Department of Dermatology and Syphilology of the New York University Post-Graduate Medical School.

The Life of Dr. John Stearns

WILLIAM J. FITZGERALD, M.D., ALBANY, NEW YORK
(From the A. N. Brady Hospital and Albany Medical College)

THE introduction of ergot to the medical profession was perhaps the greatest contribution ever made to obstetrics by an American physician, Dr. John Stearns.

Ergot as we know it today is a hard-won result of efforts for over a century of trial and error and investigation. This victory stems from the first investigations and use of ergot which Dr. Stearns introduced into the practice of obstetrics in 1807.[1–5] Yet very few obstetricians, gynecologists, and general practitioners have ever heard of Stearns.

At the time of his great discovery of the usefulness of ergot, Dr. Stearns was a general practitioner in the town of Waterford, Saratoga County, about eight miles north of Albany.

According to medical history we have no definite information when secale cornutum, or ergot, was first introduced into medical use. It has been recorded that a Dutch accoucheur in Holland in the year 1747 acquired great fame by his introduction of ergot to the practice of obstetrics. Ergot was used throughout France until prohibited by law in the year 1774. It was considered unsafe to administer this drug to parturient women.[6]

In that memorable year of 1807 Dr. John Stearns found a Scottish midwife in Washington County using a preparation derived from the grain of rye and giving this medicine to patients in travail.

When ergot was first introduced by Dr. Stearns he was very careful in its dosage, never giving more than 10 grains at a time. He gave it in two forms, powder and decoction; it was more efficient in decoction. Careful observations of the action of the drug on the parturient uterus were recorded and tabulated by Stearns. In 1808 he sent a letter to a Dr. Samuel Akerly, at that time physician to the New York City Dispensary, about the successful use of ergot in his obstetric practice. Following the reception of this letter Dr. Stearns received many requests about the use of this drug from practitioners in many remote parts of the State of New York and from New England. Its use was spread throughout New England by the assistance of Dr. J. Prescott who read a paper about the usefulness of this drug in obstetrics before the Massachusetts Medical Society in 1813; also in the *New England Journal of Medicine and Surgery* there were quoted the experiences of several physicians in the area of Boston concerning the efficiency of this drug in clinical obstetrics.[6]

However, many rash practitioners gave as much as a quarter of pound of ergot in less than twenty-four hours. In the reports which impute the deaths of stillborn infants to the use of ergot there is no minute detail of the dosage and circumstances of administration of the drug to form a correct opinion of its propriety. To arrest any evil consequences of the abuse of ergot to parturient women, the following rules and regulations of the use of ergot were published in the seventh volume of the *New England Journal,* 1809, with explanatory remarks by Dr. Stearns:

1. "It should never be administered where nature is competent to complete a safe delivery.
2. "It should never be used until the regular pains have ceased or are ineffectual and there is danger to be apprehended from delay.
3. "It should never be administered until the rigidity of the os has subsided and a perfect relaxation induced.
4. "It should never be given in the incipient stages of labor nor until the os tincae is dilated to the size of a silver dollar.

5. "It should never be given in any case of abnormal presentation that will eventually require the fetus to be turned."[6]

The physician, John Stearns, simply steeped powdered ergot in hot water and gave it as a decoction to his patients. Its action on the uterus was instantaneous.

Ergot is a vegetable and appears to be a spurious growth of rye. Rye which grows in low wet ground yields ergot in its greatest abundance.

While the introduction of ergot in obstetrics is undoubtedly the greatest contribution of Dr. Stearns, there are other facets of his fruitful career which should not be ignored.

John Stearns was born in Wilbraham, Massachusetts on May 16, 1770. He graduated with honors from Yale University in 1789. His medical studies were completed with Dr. Francis Sergeant of Stockbridge, Massachusetts, in 1792. In 1793 Dr. Stearns began the practice of medicine near the town of Waterford in the county of Saratoga, in the State of New York, where in 1797 he married the daughter of Colonel Hezekiah Ketchum.

Dr. Stearns pursued the duties of his profession with great success, and devoted his life with great energy and compassion to elevating the dignity of his profession and the usefulness of medicine as a science. He recommended vigorous measures for radical reform among the practitioners of medicine to relieve it from the odium of ignorance and empiricism.

A series of newspaper articles appeared in the *Saratoga Free Press* in 1798–1799 relative to the necessity for the formation of a medical society. In the year 1800 a society was formulated in the county of Saratoga, but because of discord it was dissolved a few years later. Dr. Stearns was not discouraged and in November, 1805, a meeting of physicians of Washington, Montgomery, and Saratoga counties was held for the purpose of founding a medical society based on sound scientific principles. The leaders in this great enterprise were Dr. Stearns, Dr. William Patrick, and Dr. Grant Powell. On January 16, 1806, the physicians of the counties of Saratoga, Washington, and Montgomery met under the leadership of Dr. Stearns and approved a resolution to be sent to the Legislature of the State of New York for the establishment of a Medical Society. Fortunately for the cause of science, Dr. Alexander Sheldon of Montgomery County was elected Speaker of the Assembly in 1806. The memorial resolution was referred for further action to a special committee in the Lower House. A majority of its members were medical men and on careful examination recommended a general law for the whole State. The bill was presented to the Assembly, but powerful opposition was encountered that almost spelled its defeat.

The bill was defended by a powerful supporter, the Honorable William W. Van Ness, who by his eloquence and parliamentary finesse refuted all the arguments of the opposition and portrayed all its benefits with such zeal and energy that its success was assured. Finally the law was enacted on April 4, 1806, and this new institution, the Medical Society of the State of New York, became a reality.

Dr. Stearns played a major role in the passage of the bill that established the Medical Society of the State of New York, and he was elected its Secretary at the Society's first meeting in 1807. Dr. Stearns was held in such high esteem by the people in his county that he was elected to the Senate of the State of New York in 1809 and served for four years until 1813.[7]

In 1812, the Regents of the University of the State of New York conferred on him the honorary degree of Doctor of Medicine. In 1817, he was elected President of the Medical Society of the State of New York and was re-elected for three successive terms, 1818-1819-1820, an honor that has never been conferred on any other President since. After the completion of his third term as President, Dr. Stearns moved to New York City where he continued to practice medicine and contributed many papers and scientific articles in the field of medicine and obstetrics.

When the New York Academy of Medicine was organized in 1846, it was felt that its first President should be a man distinguished for this honorable position, devoted to the love of his profession, and noted for his consistency, uprightness, and purity of character. Therefore, Dr. Stearns was elected first President of the New York Academy of Medicine.

In his address before the Academy on its first anniversary he enjoined upon its members the following: "That no impostor obtain admission within its sacred walls. On your portals be the following notation Esto Perpetua; remember it is consecrated to health, to happiness and to harmony which I trust will always be its prominent characteristics and rise to shed its scientific rays over the whole world." At the close of his address is the following quotation:

"Could I be assured of uninterrupted, enduring prosperity in disseminating health, happiness and sustaining principles of life, I should die in Peace with effusions of gratitude and praise to Almighty God for his permanent blessings upon our labors."

About a year later, on the eighteenth day of March, 1848, in the seventy-ninth year of his life, he died a martyr to his profession. The cause of his death was a poisoned wound he received by performing an autopsy on a very interesting case for one of his colleagues.

His life was the last offering that he could make to medical science. His private life was adorned by the virtues of sound Christian principles.[8-10] A simple tablet was erected in St. George's Church with the name of John Stearns, M.D., as a memorial to an honorable professional man and a trusted friend.

437 Western Avenue, Albany

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Hazards in Tranquilizing the Elderly Patient

Administration of tranquilizing drugs which are potent hypotensives (notably the rauwolfia and phenathiazine derivatives) present a hazard in the elderly patient. Given to allay anxiety and apprehension of the patient over the signs of his mental and physical decline, these drugs may only make the symptoms worse.

The author, Dr. Genevieve A. Arneson, Louisiana State University, New Orleans, suggests that when the physician sees an elderly patient with anxiety and physiologic hypertension he should search the history carefully for signs and symptoms of transient organic mental deficit before prescribing hypotensive tranquilizers. Otherwise a fatal cerebrovascular thrombosis may occur.

The rationale for this conclusion is as follows: In many elderly patients apparent hypertension is a physiologic necessity because of decreased peripheral vascular volume. By reducing this head of pressure with drugs the stream will be slowed down even more, with resulting signs of cerebrovascular insufficiency, possible thrombosis, or both. Frequently disorientation and confusion in elderly patients are significantly relieved simply by reducing the dosage or entirely abandoning such drugs.—*American Journal of Psychiatry, August, 1958*

SPECIAL ARTICLES

The Changing Scene in Health Care Economics

HARRY BECKER, NEW YORK CITY*

(*From the Blue Cross Association*)

EVIDENCE is accumulating with gaining momentum that we are on the threshold of many changes in the economics of health care. For more than a decade the issue of voluntary versus governmental insurance was debated extensively by all groups directly involved—the providers of health service, the consumers, and the representatives of governmental agencies, both legislative and administrative. About ten years ago, for all practical purposes, this issue was resolved in favor of voluntary prepayment. The issue is not likely to be reopened unless voluntary prepayment fails to do the job it has undertaken.

Governmental health insurance became a dead political issue primarily because labor introduced employe health benefits into collective bargaining. Ten years ago labor obtained from the courts a decision that health benefits as well as pension and related types of employe benefits were conditions of employment and were, therefore, subject to collective bargaining. Today, virtually every labor-management contract in the United States contains provisions requiring the employer to make health benefits available to his employes and their dependents. Employers without contracts with labor unions, whether they be large or small employers, have followed the trend established by companies having contracts with labor organizations. Most of the self-employed, also recognizing the importance of protection against unmanageable health care costs, have followed the lead of the unions by purchasing various types of voluntary health insurance. As a result, very nearly all persons who are gainfully employed now finance a significant part of their expenditures for health care through the voluntary prepayment mechanism.

Voluntary prepayment is today so much a part of the labor-management relationship, and so deeply rooted in the pattern of family spending, that it is most unlikely that either labor or management or consumers generally will seek an alternative governmental program. This is not to say, however, that there is a broad base of consumer satisfaction with voluntary prepayment as it exists today. Quite the contrary seems to be the case. But the interesting point is that almost without exception this unrest is not being translated into demands for a governmental health insurance program. Rather, it is manifested by demands that the job of financing health care be done more economically and more effectively within the framework of voluntary prepayment.

The exception to this is the current concern of many groups with the problem of how to use the insurance mechanism to finance care for the retired aged. There is, of course, a very broad base of support for the idea that the social security mechanism could be extended to include provisions for financing health care for the aged and for other social security beneficiaries. The reasoning on this score is that it is equally important that those who have withdrawn from the labor force have assurances that they can finance their health care as it is that they enjoy the present assurances of financing for their food, clothing, and shelter needs; and that the same payroll tax mechanism can be used by employed persons to finance their health care after retirement as is now used to finance income maintenance or pension benefits.

Without weighing the pros and cons of the various approaches to the financing of care for social insurance beneficiaries, it does seem almost certain that legislative action will eventually be taken to assure those persons who must withdraw from the labor force, for any reason, that the level of protection against health care costs enjoyed while working will be extended into the nonworking periods of life. The fact that legislative action to assure continuity of health care protection throughout life is likely to be taken relatively soon is not nearly as significant, in my judgement, as is the fact that all the methods proposed for accomplishing this objective involve the use of existing voluntary prepayment mechanisms. It is this general public acceptance of the voluntary prepayment idea, whether it be for labor-management programs established in collective bargaining, or for population groups historically dependent on various governmental programs for income maintenance, that introduces a new factor in health care economics.

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* Mr. Harry Becker, author of several books on prepayment financing, is an authority on medical economics. He has served with the City of New York Department of Health, the U. S. Public Health Service, Federal Security Administration, UAW-CIO Social Security Department, and the American Hospital Association Commission on Financing Health Care. He is at present Director of Program Planning for the Blue Cross Association.

A public policy decision has been made to finance a major portion of all personal health services through the voluntary prepayment mechanism. Voluntary prepayment is no longer an experimental program being proposed as an alternative to governmental health insurance.

While proposals for massive governmental intervention in health economics are no longer being generally debated, there is more public discussion today on questions involving health economics than has occurred at any time since the development of scientific medicine. The questions being debated are in most respects far more fundamental and of much greater import to the public and to the professions than the questions initially evolving around governmental versus voluntary health insurance. The issues being raised are many and the groups that are bringing these issues to public attention are increasingly more articulate. And, because compelling economic factors underlie most of this new focus of public attention on health affairs, an accelerated rate of change can be expected in the pattern of health economics that has prevailed over the past several decades. A major attack on the existing economic structure underlying health care financing appears to be in the making.

Effect of Advances in Medical Science

This attack stems from a number of factors. The most important of these factors, undoubtedly, is the tremendous advances in medical science over the past quarter century. Scientific advances in medicine just since the close of World War II have been miraculous. Medical scientists are pointing toward even greater advances in the next ten years. Even with present medical knowledge, however, the opportunities for a longer and fuller life are far greater than the public commonly realizes. If the public fully utilized present medical knowledge many instances of illness now fatal could be effectively treated, particularly if detected early in the course of development. Using presently available medical knowledge and skills periodically to screen the total population for certain illnesses that can successfully be treated if diagnosed in time, not to mention extending preventive and rehabilitation services, suggests social and economic implications that cannot be overestimated.

The gap is still very great between what present medical science could offer the public if the full range of preventive, diagnostic, and treatment services were utilized at an optimum level and the present level of public consumption. Although there will always be such a gap, it is rapidly narrowing. Public understanding of the advantages of modern medicine and of how to use medical services is advancing rapidly and will in all probability advance at an even faster rate in the future. The public's capacity to consume health services is truthfully almost without limit as is the capacity of medical science to make scientific advances.

Increases in Health Costs

Coupled with the growth of facilities for health services of all types, and with a more articulate demand by the public for those services, is the very steep increase in the cost of health. Health care, in the aggregate, has been for several years the fastest rising item in the consumer's price index. This rise is partly due to the fact that a greater volume of health services are being purchased. But even so, there has been a sharp upward trend in the price paid per unit of service. While hospital care accounts for the major portion of this rise in cost, the cost of all elements of health care have been rising.

The rate of increase in consumer expenditures for health care has been great enough to mean that more money is going to health and relatively less to some other element of today's standard of living. From present indications it would appear that this trend will continue. In an over-all economic sense it is good, of course, that we increase expenditures for health, providing the increased expenditures mean a higher level of health care. Every feasible means should be used to increase money allocations to health care in order that more people can enjoy the advantages of disease detection early in the course of an illness, and have the benefit of prompt, effective treatment. With the continuous increases in productivity in other sectors of the economy fewer persons are needed to produce many of the goods and services that are consumed. Likewise, there are many items of consumer goods that have become less urgent necessities—such as a new car every year, or frequent replacement of electrical appliances to accommodate the planned program of obsolescence of the producers. Money that in past years might have gone into such items will, in the future, be needed and used for social services including health, education, recreation, and improved transportation facilities.

We can buy a higher standard of health care than is being bought today. The problem is not to introduce deductibles and coinsurance into prepayment benefit programs to reduce money allocations to health and to curb utilization of services. Rather, the problem we are confronted with is to do those things which will encourage the public to use more of the health services that can be made available. Money is not the problem, for the people as a whole have the economic capacity to buy more health. But strangely enough some prepayment agencies, and some members of the health professions, talk about measures that can be taken to lessen the amounts paid to voluntary prepayment agencies, and to discourage utilization of services by introducing economic factors that will cause the public to think twice before using health services.

If money is not the problem, and the public is seeking more health services, why then is there so much concern about the costs of health care as expressed in terms of the cost of prepaid health care benefits?

One reason for public concern about the rising costs of health care benefits provided by prepayment plans is that the scope of protection afforded is not rising at about the same rate as increases in cost of protection. In recent weeks top spokesmen for three of the five or six largest buyers of prepaid protection in the United States, the large unions that bargain for health protection and set aside a portion of each year's economic gain for health care, have pointedly expressed concern that benefit increases lag too far behind price increases. Almost without exception, at recent public hearings held in very nearly all parts of the country on increased costs of hospital protection, consumer and other public groups have testified that not enough protection is available for purchase: Nowhere is there evidence that the buyers representing consumer points of view want to economize by cutting back on benefits!

Put in different terms, there appears to be fear and uncertainty that if a costly illness occurs the prepayment benefits will not provide sufficient protection. This fear and uncertainty has apparently not been dissipated in proportion to the increase in the public's cost of prepaid health care benefits. The issue here, of course, is what level and scope of protection should be assured through the device of prepayment. For example, are preventive and diagnostic services to be financed through prepayment as well as short- and long-term hospital care, major medical expenses, and nursing home and rehabilitation services? This policy question will ultimately be decided by the public.

Financing Adequate Prepaid Health Insurance Coverage

The overwhelming weight of evidence today is that the public wants prepaid protection for an expanding range of health services. The public wants to be assured that incidental out-of-pocket ~~expense will not~~ jeopardize the family pattern of spending and saving, nor constitute a barrier to care. Most families budget their income in such a manner that virtually all, if not all, of the components of their standard of living are purchased on the basis of payments distributed over a period of time. Housing, electrical appliances, and automobiles are examples. But equally important are the various social insurances which are purchased during the working years to provide income protection when the insured person is not gainfully employed. In a sense, what the public wants—and by public I mean the large buyers of prepaid health protection—is to package health care costs into a monthly figure which can be budgeted out of monthly payments from earned income.

In an economic sense this is good. It means that the family which has purchased prepaid health care that covers all but incidental out-of-pocket costs will have the security that is needed to go into debt temporarily to satisfy various other consumer wants. If we did not have pension programs, unemployment compensation, benefits for survivors on premature death of wage earners, and our voluntary prepayment programs for protection against unpredictable health care costs, the public would not have the confidence needed to buy many of the things produced by our expanding economy. The producers of installment-purchased goods want the public to feel economically secure so that it will have the confidence needed to buy their products. For persons who are gainfully employed and feel they now have a measure of economic security against the hazards of unemployment and retirement, there are few social programs of greater importance than prepaid health care protection in giving needed confidence to buy goods and services.

In this context prepayment for all but incidental out-of-pocket health care costs becomes an economic necessity if we are to maintain full employment and an expanding economy. Both the producers of goods and services and the buying public wanting a higher standard of living seek this type of health care protection. When the problem of adequate financing for health services is examined carefully, the providers of health care also seek a method of financing for their services which will assure ready utilization of needed services and proper reimbursement for care provided. The requirements of the producers of goods and services and of the buyer cannot be met without a smoothly functioning system of financing which reduces the cost of care to a monthly manageable figure for the ordinary man's budget.

If the public could be assured that the amounts it must pay out-of-pocket at the time of illness could be met without liquidating painfully acquired savings, public resistance to increased prepayment costs would diminish greatly. Recent surveys such as that by Elmo Roper for the New York United Hospital Fund indicate that voluntary prepayment has a long way to go before it is priced out of the market. The public, according to these studies, is willing to expand payments for prepaid health care in return for more adequate benefits. Those Blue Cross plans which have most consistently increased their benefits and which have the highest benefit levels and consequently the highest rates are those plans which have, in general, shown the greatest rate of enrollment growth.

Throughout the country there is consumer restlessness with prepayment arrangements that do not provide a broad spectrum of health protection. The autoworkers in Detroit, the steelworkers in Pittsburgh, the machinists in various parts of the country, and many other labor groups that could be mentioned are exploring various approaches to health care financing which would widen the scope of services purchased. At no time has there been more exploration of ways to provide greater prepaid health care. Both labor and other groups, seeking a high quality of health care over a broader range of services on a prepaid basis, have often been led by the economics of the situation into considering new methods. Many of the new approaches being explored led their sponsors to consider various forms of group practice organized at hospital centers or around well-equipped and fully staffed centers or clinics.

At the same time that many labor and consumer groups are exploring the problem of how to obtain a wider range of health services through prepayment financing, insurance companies, employers, and others have been approaching the same problem from a different direction. The "major medical" or "comprehensive medical" benefit pattern, introduced a few years ago, is the experimental approach being tested by these groups. Under this concept the public has protection for all health care expenses incurred regardless of their nature, on a single illness or for a given period of time, such as a year. Within the scope of protection is included drugs and all types of care outside of the hospital as well as inhospital care. The benefit limits are expressed in total dollar amounts—such as $10,000—and curbs on utilization of benefits are attempted by deductibles and coinsurance provisions.

This approach is running into economic trouble. An almost open-ended underwriting of whatever health care costs the public incurs is obviously inflationary in its effect.

The dollar limits on benefits payable that are imposed, together with the deductible and coinsurance barriers, have not proved too effective as curbs on upward trends in the costs of prepaid health care protection. The cost of this approach to health benefits is rising at least as fast as the cost of service benefits. Recently insurance company and employer spokesmen have taken firm public positions that much more needs to be done than has been done thus far to retard the upward trend in cost of the "major medical" or "comprehensive medical" type of benefit. The current belief is that prepaid health care provided in accordance with this benefit formula must move toward greater benefit restrictions rather than toward liberalizations. This is dictated, again, by economic considerations of cost of protection.

It is inconceivable that either the public or the provider of health services can in the future be satisfied with any approach to health care financing which tends to be regressive rather than progressive in its economic effect. A regressive approach seriously retards expansion of health services and slows increases in consumer allocations to health care. This is contrary to the objective of more health care for more people that must be achieved.

An interesting facet of the general problem of financing a comprehensive level of health benefits, and one frequently not understood, is the effect that labor-management bargaining exerts on the availability of funds for health care and ultimately on patterns for organization of health services. Today a very high percentage of all hospital care for the gainfully employed is financed from prepayment funds. The adequacy of financing for all elements of health care, such as hospital and surgical care, is related to the adequacy of prepayment benefits. The level and scope of these prepayment benefits are established by labor-management negotiations in what are called pattern-setting situations—that is, in such lead companies as General Motors, Ford Motor Company, U.S. Steel, and General Electric. What the corner drug store or the neighborhood grocery will do with respect to wages, working conditions, and employe benefits of various types is directly influenced by decisions made in key pattern-setting labor-management contracts.

Effect of Labor-Management Bargaining

Without legislative or regulatory action benefits cannot be increased or decreased for large pattern-setting employe groups except by agreement of the labor and management groups party to a collective bargaining contract. The prepayment agency cannot arbitrarily change benefits without first obtaining agreement from both labor and management. Management, of course, tends to resist any increases in its costs of health benefits which cannot be credited to management and labor as a collective bargaining gain. Consequently, approval for higher benefits is generally, for the pattern-setting situations, impossible to obtain except at the time the labor-management contract is open for bargaining.

When labor sits down to bargain with the employer the decisions that are reached have a profound effect on the health field. Labor and management must first agree on the economic gain which is to be allocated to labor over the period of the contract. This gain reflects labor's share of increased productivity and other bargaining factors.

If the amount labor gains in a given negotiation, for the purpose of illustration, is 10 cents an hour for each year for the following three years, labor and management then proceed to determine how this ten cents will be allocated. Part will go to take-home pay and will be almost immediately spent for consumer wants. This increase in take-home pay is needed to buy the growing volume of goods and services our highly productive economy produces.

But a part of this ten cents will go to items other than take-home pay. It will have to go to the cost of shortening the work week, for example, and to pay for supplemental unemployment benefits, to finance higher pension benefits, to meet the costs of a higher standard of retirement security, and for other similar items. And a part of this 10 cents must, of course, go to finance health service. With the costs of prepaid health care rising every year, and with the growing demands of employes for a broader scope of benefits together with higher benefits, about a penny an hour of new money has been needed every time labor and management bargain to keep pace with rising costs of health benefits.

Out of this economic situation stems much of the pressure on prepaid health care programs. Money gains are growing harder for labor to win because an inflation-conscious public insists that wage gains must be kept in closer relation to productivity increases. With the reduced economic gains being won by labor, which is probably a pattern that will prevail over the next few years, the pressure builds up for making new money gains stretch as far as possible. If collective bargaining allocations to health care could remain at a stable level of say 15 cents an hour for every hour employes work, new money won in bargaining would not have to go to health but could go to shorten the work week or for some other employe gain. But, as it is today, a goodly portion of new money gains must be allocated to health to keep pace with rising costs of prepaid protection. This means less for a shorter work week and other economic gains which labor feels are necessary.

The result of this economic picture is exactly what we would expect. Both labor and management are today studying every feasible means of accomplishing two objectives where health benefits are concerned. They want to meet higher costs of care under prevailing benefit patterns and at the same time expand benefits to provide for more protection. These two objectives they want to accomplish in a manner which will provide the most for the least increase in cost. In the same sense the employer wants to turn out a product which is the best he can produce for the least cost and the labor group wants to get the most in living standards out of the money available. And, this, I believe, is the major problem confronting us in the health field.

I have attempted to describe the pressures generated by the economics of this situation. I believe this explains, in very large part, why labor and management are demonstrating a growing concern with all the factors that affect the cost of health care. This concern will not lessen; it is certain to become greater.

Comment

It has not been my purpose in this discussion to take a position on any one of the various controversial problems confronting the health professions, hospitals, or the consumer groups. But these problems do exist and they are not going to be resolved without a considerable amount of discussion and experimentation by the interested parties. The underlying issues are mainly economic and since these economic issues reach far beyond the single problem of financing health care, they will have to be reckoned with before too long. There are too many interlocking factors and forces to expect an indefinite postponement of the basic economic questions facing all concerned with health care financing.

This paper is adapted from a speech given on November 25, 1958, to members of the Nassau County Medical Society.

New Explanation Offered for Cirrhosis of the Liver

A new explanation for the occurrence of cirrhosis of the liver in chronic alcoholics has been offered by three Cleveland physicians.

Cirrhosis occurs in about one of 12 alcoholics. When treatment is begun early, the disease can be stopped, but when treatment is delayed, the mortality rate is very high.

A dietary deficiency resulting from reduced food intake in chronic alcoholism has long been thought to be the cause of the liver damage. The Cleveland physicians, however, believe it results from the malfunctioning of the pancreas, which is damaged by excessive alcohol consumption.

Writing in the March 21 *Journal of the American Medical Association*, Drs. Edward E. Woldman, David Fishman, and Abraham J. Segal said cirrhosis of the liver may occur in alcoholics who are well nourished. In addition, undernourished persons in prison camps during World War II rarely showed evidence of liver damage.

However, many studies, including one conducted by the authors, show a high relationship between pancreatic disease and cirrhosis of the liver. The doctors believe that excessive alcohol consumption affects the pancreas in a mechanical way—not by direct stimulation or by poisonous effects.

They explained that oral intake of alcohol causes a spasm and swelling at the entrance of a duct leading from the pancreas to the small intestine. The swelling blocks the duct, preventing the pancreatic juices, which are necessary for digestion of fats, carbohydrates, and proteins, from entering the intestine. The pressure of the accumulating juices damages the pancreas. This damage prevents the pancreas from producing its necessary juices, which, in turn, affects the normal breakdown of fats. The fats accumulate in the liver, causing "fatty liver" to develop. It is followed by cirrhosis in which the liver cells are destroyed and are replaced by connective tissue.

The Principle of Parsimony in Medical Practice

I. M. TARLOV, M.D., NEW YORK CITY

(*From the Department of Neurology and Neurosurgery, New York Medical College*)

WILLIAM of Occam, a fourteenth century Franciscan monk, was called "Doctor Invincibilis." He was not really invincible, however, for he succumbed to imprisonment for heresy. Fortunately for science he escaped and gave the world his principle of parsimony, or "Occam's razor," which says that "It is vain to do with more what can be done with fewer." Among the countless applications of the principle none has ever been more brilliant than that of Copernicus, who "reduced the number of circles required to explain the apparent movements of the heavens to thirty-four from the eighty or so used by Ptolemy."[1]

Of course Occam was a philosophic doctor, not a medical doctor. The claim to invincibility that was made for him is therefore understandable. No one would ever think of making such a claim for a doctor of modern scientific medicine. Generally speaking, we have acquired a becoming humility. What we have not generally done in medical practice, even in the twentieth century, is to use Occam's razor as wisely and effectively as Copernicus used it in the sixteenth. In our use of diagnostic procedures in particular, we too often "do with more what can be done with fewer." We too often order 34 tests when, thoughtfully chosen, 4 or none would do as well—or better. Occam's razor, in short, should be made a standard piece of every doctor's scientific equipment.

A study of hospital charts will show that many doctors have either never possessed this useful implement or are letting it rust on some dank back shelf of their minds. The charts show that many doctors, sometimes through excessive busy-ness, seem not to listen to the patient's history or, at best, to listen impatiently and with half an ear. There follows a perfunctory physical examination, and then comes the payoff. "Let's get a complete work-up on this patient," the doctor says to the intern as he orders a formidable battery of tests, a substitute for the hard thinking the doctor should be doing.

It is axiomatic that the more thoughtful and able the physician, the fewer the tests he needs for correct diagnosis. In his clinical examination of the patient the good doctor never resorts to the laboratory until traditional diagnostic methods have been given a fair trial. Thorough history, careful physical examination, and equally careful thought always take precedence over laboratory tests. This is the way to the proper use of Occam's razor.

History, Examination, and Thought

The danger in not using the Occam's razor principle properly is poignantly shown in the following case. For several months a man had complained of increasing weakness of the right lower limb and of inability to feel the temperature of the bath water with his left lower limb. Examination revealed slight lower limb weakness greater on the right, and impaired appreciation of pain and temperature over the left lower limb. Myelography with pantopaque revealed a spinal block between the ninth and tenth vertebral segments. The surgeon made a laminectomy of T_9 and T_{10} and opened the dura. But he overlooked the sequence of the history which indicated a Brown-Séquard syndrome that was confirmed by the abnormal neurologic findings; all of the indications pointed to a right-sided spinal cord lesion. However, he grasped the left dentate ligament, rotated the spinal cord, and found an extradural mass (herniated intervertebral disk) on the right side, anterolaterally.

After the operation the patient was totally paraplegic and the return of function was very slow and incomplete. This serious complication could probably have been avoided, for a clear understanding of the significance of the history and physical examination would have led the surgeon to approach the mass from the right side.

In the above case the fault lay in slighting or neglecting the history and physical examination. Such slighting or neglect often begets a befuddlement in which we hear the doctor muttering, "Let's get a complete work-up on this patient." But to approach a diagnostic problem in this way—by trying to get all the facts you can, as if the quantity of the tests were an index of the quality of the survey—is to go contrary to the best traditions of science, because scientists in all fields have agreed with Occam that "entities must not be multiplied unnecessarily."

"Diagnostic procedures," Semmes[2] rightly says, "have multiplied and although each one may be essential at times, they are time-consuming, painful, expensive, and not without danger. Certainly, we should endeavor to choose the one most likely to turn up with the answer, and at least see that the patient runs the gauntlet of the electroencephalogram, pneumoencephalogram, ventriculogram, arteriogram, venogram, and isotopic concentration in the most likely order. . . . Only the doctor is in a position to determine what measures are really indicated, and the public has a right to expect of him thoughtful discrimination."

Thoughtful, systematic discrimination is the key to scientific method in medicine and in the other sciences. The function of science is to control and direct the collecting of facts. The scientist first gets a clue to the solution of a problem. He then forms an hypothesis which he tests systematically. If a test or an observation disproves it, he must search for new clues and then form and test new hypotheses. Misleading clues, false starts, unsound hypotheses—the march of science is strewn with them. But in the end if a given problem is soluble with the knowledge and means available to the scientist at the time, and if he has mastered them, he will find the right clue, and form an hypothesis that tests and observations will confirm. Lucky accident, to be sure, has played a minor role in the drama of science, but the star of the show has always been scientific method. It is also, naturally, the star in diagnosis.

It is hardly necessary, then, to insist that in diagnosis the importance of necessary and proper tests should not be minimized. One may go even further. For investigative purposes, where the object is to advance understanding and develop new tests, procedures not strictly necessary may sometimes be justified.

One must agree with Semmes,[2] however, that to violate the limits of the rule of parsimony in diagnosis through mere caprice or muddle is "time-consuming, painful, expensive, and not without danger." The writer saw a patient with an unmistakable migraine succumb to meningitis after a gratuitous lumbar puncture. Roentgenograms and blood tests of all sorts are much too often used in place of the thought that would show them to be unnecessary. Certainly routine skull x-ray examinations are superfluous when head palpation reveals no depression and examination no other abnormality. If even a linear fracture of the skull would not alter the management of a patient, why expose him to the discomfort and risk of radiation?

If a diagnostic test, no matter how simple, is not required for diagnosis or management, it should not be done except in the limiting cases we have mentioned. Forethought is often an obviator of painful or risky tests. The amount of radiation required to take a series of x-ray films of the skull may not, it is true, be harmful in itself. But since the effect of roentgen rays is cumulative and potentially harmful to the subject and to his progeny, they must be used judiciously. If not obligatory at the moment, x-radiation should be reserved for possible future important diagnosis or therapy.

The doctor must always remember that even necessary diagnostic tests, especially the more drastic ones, may do physical or psychologic damage or both. The physical damage is usually easy to see, the psychologic damage not so easy. We often do not know with what dread and anxiety the patient awaits his next test, and the next, and the next, and the next—and so on, it may seem to him, without end or reason. Is it a wonder, in these circumstances, that he sometimes does not respond satisfactorily to treatment or even that he develops surprisingly baffling symptoms as the inexorable tests go on? And if these things are often true of necessary tests, how much truer are they of the unnecessary ones which prolong the ordeal?

The humane doctor has heart and emotion as well as mind. He is not a shiny diagnostic device looking and acting as if he might have been turned out by the I.B.M. Corporation. The doctor cannot have too much heart and mind, but he may, of course, have too much emotion. Emotion must not dominate the doctor-patient relationship, for emotion is a fact among the other facts the doctor's mind must control. Emotion may properly activate the mind and be activated in turn, but it must never be allowed sole rule. Heart and emotion, like the two horses in Plato, are guided and controlled by mind, which is the charioteer. No races can be won without all three working together.

What, then, is the upshot for diagnosis? The upshot is that sound and tested tradition—the cumulative knowledge and wisdom of medical science—must be the physician's main reliance. This means that the physician must always start with a well-taken history and a careful physical examination, both critically evaluated. Only if these fail to reveal the diagnosis should tests be undertaken.

Those that are made, moreover, should be the fewest possible and the least painful, hazardous, and upsetting.

It is vain to do with more what can be done with fewer.

Above all, the physician should take a deep personal interest in each patient. When he has satisfied these conditions, the physician will be working within the great tradition of medicine.

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Alcoholism in the United States

HERBERT BERGER, M.D., F.A.C.P., STATEN ISLAND, NEW YORK

THE United States has now reached the unenviable position of having the worst alcoholism problem in the world. We have recently wrested this dubious honor from France. Seventy million of us regularly drink, and of these between 4.5 and 5 million have already hit Skid Row. Alcohol consumption in our own State has rapidly approached that of Washington, D.C., the worst area in the nation, with California in second place and we in sixth. This, then, is a problem of no small significance.

These statistics are pertinent but very dull. What interests you and me is the individual who has been hurt by alcohol and who through the habit of drink damages society in general and his own family, friends, and associates in particular.

What kind of problem is this?

Our children and we are constantly exposed to advertising extolling the virtues of this or that color, form, and type of alcohol. In some sections of New York City there is a bar on every corner. What is the attraction of alcohol? How have we become so involved with it? And what should we do about this involvement?

All of these questions demand answers. Would that the answers were as easy to postulate as the queries.

Members of every anthropologic culture from the beginning of time have sought means to escape from reality. There are times in the lives of us all when our environment becomes intolerable. Those of us who are fortunately endowed with a passive make-up recognize that such unpleasant days, like all storms, will terminate, to be replaced by a better, calmer, sunnier period. The alcoholic cannot tolerate depression for even a moment. He, like the rest of us, seeks to stay comfortable and happy all the time.

In times of duress this peak of joy which we strive to obtain can be reached by only three technics: We can alter our environment, we can run away from it, or we can change ourselves through the medium of chemistry. It is the latter technic that is used by the alcohol and the narcotic addict. Unable to remedy the problem that besets him and unwilling or incapable of

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leaving it physically, he perforce turns to the only other possibility. He alters himself so that he will become oblivious to the vicissitudes of fate that plague him.

Should we criticize him for this? We can and do recognize that drinking as a device for release from anxiety is faulty. But is our criticism warranted? We commend certain methods of escape, like religion and hard work, yet abjure others, such as the use of snuff and narcotics. We encourage our friends to drink with us, yet scourge them from our society if they show any effects of alcoholic indulgence.

The alcoholic, then, is very much like the rest of us. He wishes to be happy. So do we all. He would like to avoid care. Which of us wants it? His error lies in trying to solve life's problems chemically instead of using his own native ingenuity and ability. These qualities, which may be found somewhere in every one of us, get rusty and atrophy from lack of use, just as our muscles weaken if we do not exercise.

If we are to understand alcoholism and recognize the disorder at its incipiency, we must define it. Only then can we avoid the problems it engenders. There are as many definitions of alcoholism as there are students of this condition. One that has won wide acceptance was first promulgated by a member of Alcoholics Anonymous, Mrs. Marty Mann: "Anyone with a continuing problem with alcohol is an alcoholic." This is more than adequate for the severe instances of the malady but fails to take into account the early case for which proper help may prevent all the consequences of debauch. Another definition which has some merit and which I prefer (most probably because it is my own) is: Any individual who repeatedly depends on drink to help him meet one of life's problems is a potential alcoholic.

Thus, the salesman who needs a swift drink before facing an irascible client is on the road to alcoholism even if he has never been drunk in his life. He is using chemicals to help him face a problem. As time goes on and as he everlastingly retreats from adversity, he loses whatever inner strength he may have once possessed. The indication for that drink gets ever smaller.

We have indicated that every culture uses alcohol and that 70 million of us in the United States use it. Since we are a nation of 168 million, of which only 125 million are adults, it follows that well over 50 per cent of us drink regularly. Obviously alcohol holds more than a modicum of attraction for us.

Let us picture two men who have six characteristics, five of which are the same, one different. Both are college men. Both are wealthy. Both are Republicans. Both are Protestants. Both are white. But one is a labor boss, the other an employer. Two such individuals might never meet socially. If they did, it would be practically impossible for them to engage in friendly conversation without some kind of social lubricant. Alcohol is such a material, making it possible for these two hypothetical individuals to converse and even discuss their differences amicably.

Isn't it unfortunate that some of us cannot use this drug in this valuable manner? Yet, as we all know full well, many cannot. We in medicine have studied the phenomenon of alcoholism for many years. We have long recognized that the alcoholic is not a willful, evil person intent on destroying himself and his family. No alcoholic needs to be preached to about the dangers of alcohol. He knows full well that his drink will cost him his family, his children's love and respect, his job, his career, and his life. Yet he drinks. There can be only one explanation. The euphoric effect of the alcohol must mean more to him than any or all of the other consequences. Why?

The alcoholic is often agitated, ill at ease, nervous, insecure, resentful, tired, and distraught. He has discovered that alcohol, being an anesthetic, alleviates these unpleasant feelings. His present need for relief is much greater than the fear of future trouble. This, then, is self-treatment very much like the fellow who goes to the pharmacist for a bottle of medicine when he coughs. He may have tuberculosis or cancer of the lung. Symptoms rather than the disease are being treated, the very worst kind of medical practice. Such methods alleviate the symptoms but permit the underlying disease to progress. In the meantime the patient has a false sense of security thinking that the disease is gone. If you were in great pain because your arm was broken, the pain could be relieved with sufficient amounts of alcohol but, of course, your arm would still be broken and crooked. You haven't done a thing for the cause of your pain. Therefore, it will return as soon as the drink wears off, and you will have to drink again. How much better to set the bone and relieve the cause of the pain. Yet, this is what many of us do when we try to solve life's problems with alcohol. To make matters worse, the material we use for the relief of our symptoms, alcohol, is a deadly poison. This is really one of the world's worst therapeutic devices, the poorest treatment conceivable. It cures nothing and it poisons him who takes it.

Now, perhaps, we can begin to understand this condition. Alcoholism isn't a disease at all. It is rather only a self-induced symptom of an underlying condition. The nature of this illness is difficult to describe but suffice it to say that it is a nervous ailment. Only rarely is alcoholism initiated by a physical organic disease. The world is full of patients with painful illnesses who do not become alcoholic. This is a common excuse for alcoholism but a poor one. In truth there is no need for an excuse. A person with pneumonia doesn't apologize for his sickness; why, then, should the alcoholic? Both are sick.

I would like to reiterate that research into the nature of alcoholism reveals no enormous differences between the alcoholic and the nonalcoholic. The distinguishing features are all emotional, but these emotional characteristics are so common, so widely distributed among the human race that practically all of us possess them.

Treatment

Only after the nature of alcoholism is understood can we begin to explore the possibilities for successful treatment.

First, let us set down some principles. If our purpose is to achieve sobriety and nothing else, we are doomed to failure. The underlying emotional illness is still there. Now no longer covered by alcohol, it stands out stark naked in a flood of light. Under such circumstances the alcoholic is truly lost. Each of you no doubt has seen innumerable of your fellows whose wives put up with their drinking, who manage to keep their jobs despite their unreliability, and who retain their friends even though deeply involved with alcohol, but who on attaining sobriety lose all of these! Therefore, we must have much higher aims.

1. We must prevent alcoholism because our civilization is so constructed that unless we are on guard we will form new alcoholics much faster than old ones die or are committed to mental hospitals or are cured.

2. We must seek out and treat the underlying nervous illness in order to make our patient so emotionally strong that he no longer needs this liquid crutch to sustain him.

Prevention is of prime importance. It demands thorough education even in high school. Let us not be fearful of making children curious if we present the facts about alcohol. They are surrounded by drinking relatives, bars, liquor stores, and advertising. To them it looks manly and adult to drink. Don't underestimate the high school student. An informational program is demanded by New York State law but the facts about alcoholism are not being taught in the schools of many communities. Inquire among high school children whether they have been given lectures on alcoholism. If they have had no such lectures, ask the local Parent-Teachers Association to look into the matter, and if this outright disregard of the law persists, communicate with Dr. James Allen of the University of the State of New York in Albany.

Recognize the early alcoholic before he "hits bottom." It is one of the cardinal principles of Alcoholics Anonymous that a man must be down before he can be saved, but by that time many of our best citizens are lost through destruction of careers and economic travail, ruined family life, or innumerable stultifying and degrading arrests. Remember that the man who depends on drink in order to get something done is on the way to alcoholism. Let's ferret him out from among our associates and relatives and get him to his religious advisor, his doctor, or Alcoholics Anonymous before he descends to the gutter. Only early recognition and complete abstinence will save these often valuable members of society. He will be uncooperative and angry at first, but keep after him. We must get to these people before they are so fogged by alcohol that they cannot cooperate.

Only two concepts have ever been promulgated for the cure of alcoholism and even they are the same, the spiritual or religious and the medical or psychiatric. The fact that these two so-called different approaches are one is proved by the work of Alcoholics Anonymous which combines both of these in an over-all program. This group brought the two different ideologies together, and it has been this happy marriage of medicine and religion that has spawned the enormously successful child that is Alcoholics Anonymous. This successful organization needs religious counsellors. They are essential to the program. Alcoholics Anonymous continues to rely on medicine for two purposes: to repair the hearts, livers, kidneys, and brains which have been damaged by alcoholic excess and to treat the psychotic individuals who are so mentally disturbed that they cannot hope to be reached by even a splendid program like that of Alcoholics Anonymous. They need psychoanalysis, psychotherapy, shock, or even prolonged or occasionally permanent hospitalization.

Medicine would like a chance to study these failures. We hope to salvage some of them and perhaps get them to the point where they can travel up the Alcoholics Anonymous' 12 steps to rehabilitation.

Amazing success of Alcoholics Anonymous is due to its happy combination of religion and medicine which not only demands but also produces a spiritual rebirth, a belief in God, and a reason for living. The latter is most important for the dedication to salvage others is, of course, the only true path to happiness.

In the last year we have had a wide acceptance of the truths about alcoholism by industry and more recently by hospitals. In the Buffalo area in this State a pilot program was initiated in which all hospitals accept alcoholics as any other patient with Blue Cross footing the bill. We hope this highly successful experiment can soon be brought to New York City. The Medical Society of the State of New York has already requested all hospitals to accept these patients. This idea has been endorsed by the American Medical Association. This program has not only been valuable in the early rehabilitation of drinkers who often become acquainted with Alcoholics Anonymous for the first time in our hospitals but also in initiating young physicians (interns) into the intricacies of this very difficult and challenging area of medicine. Some elect to pursue this subject further, and from these dedicated young people, arising in ever-increasing numbers, there may be found one who will discover the eventual answers to this vexatious problem.

The need for hospital facilities for alcoholics is illustrated by an utterly frustrating recent occurrence which is indicative of so many of our difficulties. A veteran with a service-connected ulcer of the stomach which required four operations in the last twelve years was so beset with pain, discouragement, and economic troubles that he turned to alcohol for relief. Despite kindness and understanding from his wife, he became a periodic drinker with dozens of admissions to Bellevue Hospital and several jail sentences. During the last spree his ulcer began to bleed. Attempts were made to hospitalize this man. He was refused admission to a voluntary institution, the United States Public Health Service Hospital, the Veterans Administration Hospital in New York (two times), and Bellevue Hospital (three times). All this took place in one week in the greatest city on earth in the most enlightened country on earth.

Alcoholism is not a dilemma for the alcoholic alone but is a problem for us all. For too long we have buried our brothers in Skid Rows, jails, and mental institutions where we do not have to see them. Since the drinker cannot afford his addiction, the whole community must pay for it. We must seek to arouse the interest of more clergymen, doctors, legislators, and citizens. Even though we are dealing with an area of human behavior that is fantastically difficult to fully comprehend, a concerted attack by all of us cannot fail to solve the problem.

7440 Amboy Road

Instead of dirt and poison, we have rather chosen to fill our hives with honey and wax; thus furnishing mankind with the two noblest of things, which are sweetness and light.—Swift

SELECTED ABSTRACTS

EDITOR'S NOTE: *Occasionally the editors of the* JOURNAL *find articles or editorials in other medical publications which seem to us so noteworthy that abstracting them for the information of the readers of the* NEW YORK STATE JOURNAL OF MEDICINE *seems to be indicated as a function of good medical journalism. These abstracts will appear from time to time in this department.*

*Analysis of Your Professional Liability Insurance Policy**

JOSEPH F. SADUSK, JR., M.D., OAKLAND,† HOWARD JASSARD, LL.B., AND ROLLEN WATERSON,
SAN FRANCISCO, CALIFORNIA

(*From the California Medical Association*)

THE problems of adequate professional liability insurance coverage have become increasingly obvious to physicians with the rapid and progressive increase in premiums for such insurance since World War II. These problems, together with the growing complexity of the field and the increasing size of claims, settlements, and judgments make it mandatory for the physician to know whether or not he is adequately protected. Many are not.

Every physician should read his professional liability policy carefully to determine the extent of his coverage. The purpose of this communication is to guide him in an analysis of his contract and of other important aspects of his insurance protection.

The physician's analysis should, of course, be supplemented by the advice of an attorney who is thoroughly familar with current malpractice trends in the state in which the physician practices. Professional liability insurance coverage is a very highly specialized branch of the industry; relatively few otherwise qualified attorneys and insurance men realize the implications of policy provisions, insuring agreements, applications, exclusions, the need for long-term coverage by a stable carrier, expert claims service, and other factors. Furthermore, professional liability risks are not uniform and static; the problems vary from physician to physician, from locality to locality, and from time to time. Some brokers and insurance company representatives are properly qualified and currently informed, but the fact that many are not is evidenced by the faulty contracts sold to many physicians. Many state medical associations and some county societies retain legal counsel who are well qualified to provide the highly specialized advisory service required by the purchaser of professional liability insurance.

The Insurance Carrier

The selection of an insurance carrier for professional liability coverage is of paramount importance because of the latency of malpractice claims, for example, a claim may be entered or a suit be filed against a physician many years after the year to which the policy and premium applies.

It is therefore most important that the insurance carrier be selected on the basis of its past, present, and predictable future stability. There should be every reason to believe the company will remain in business and will remain stable for many years—at least for the duration of the physician's life. The carrier should be licensed under the insurance laws of the state in which the physician practices, or be permitted by such laws to write contracts as a surplus line insurer.

The size of the company should be substantial. One rule of thumb applied in one group program is that paid-in capital and unassigned surplus of the carrier should be at least ten times the aggregate annual gross premiums paid by all physicians in the group for malpractice insurance for the immediately preceding year, or a minimum of $5,000,000, whichever is greater. No precise rule can be stated—resources available to policyholders should be substantial.

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* Abstracted by permission from *California Medicine* **88**: 73 (Jan.) 1958.

† At present Dr. Sadusk is a member of the Committee on Medical-Legal Problems, American Medical Association Chicago, Illinois.

The carrier should preferably be a company with its home office in the United States. If the carrier has its home office in a foreign country, there should be adequate reserves of carrier on deposit in the United States and applicable to payment of the physician's malpractice claim. This is important since at some remote future date there may arise a conflict between the carrier and the physician as to the payment of a judgment. The physician will then be able to sue the company in his own state or in the federal courts only if the carrier is in the United States or has applicable funds on deposit in the United States. If the carrier were a foreign company, with no money on deposit and specifically assigned to this purpose in the United States, the physician would be obliged to enter suit against the carrier in the courts of the foreign country. The laws of that country could apply.

Finally, an insurance carrier with previous experience in the malpractice field should be preferred over those with no previous experience. The reason for this will become obvious in later discussion.

It is profitless to discuss the pros and cons of the stock versus the mutual company since the matter is one of individual preference. Further, the size, stability, efficiency, experience, and service of companies are the important variable factors and should be the deciding ones.

There are two additional points to consider. There should be some evidence that the policy will be renewed each year and there should be sufficient volume of business for the insurance carrier in the area in which the physician practices for it to have experienced malpractice claims adjustors and defense counsel immediately available.

Type of Program

A local (county or state medical society) group malpractice program has many advantages over the individual malpractice policy. Here are a few of the advantages:

BETTER INSURANCE PROTECTION.—Group negotiation can make possible a far better and safer insurance contract than is uniformly made available to individual physicians. For example, some group contracts have been drafted not by the insurance company but by the attorney for the group. In such groups the coverage is uniformly broad, exclusions are safe and well defined, and policy provisions reflect the needs of the insured as well as the insurer. Such carefully tailored contracts make it unnecessary for the members of the group to concern themselves with every technical detail in the policy, whereas, to be safe physicians buying individual contracts must have them analyzed in detail.

NO UNDERWRITING DISCRIMINATION.—Some insurance carriers discriminate against physicians who are known to be hazardous risks because of their field of work: one carrier recently refused coverage to orthopedists, plastic surgeons, and radiologists. Who is to be excluded from medical malpractice insurance coverage—which may be tantamount to being excluded from medical practice—should be a determination of physicians rather than insurance underwriters. Such discrimination is prevented by group programs.

CONTROL OF PROCEDURES BY PHYSICIANS.—At times and in certain areas, insurance companies have effectively prevented physicians from performing certain hazardous procedures through excluding insurance coverage of those procedures or by the device of surcharges so high that physicians could not afford to pay the premium and therefore discontinued doing the procedures. Under a group program such underwriting controls by insurance companies over what procedures a physician may perform are held within reasonable bounds.

COLLECTION OF LOSS DATA.—Few, if any, insurance companies writing professional liability coverage on an individual basis keep separate and adequate malpractice loss data, none will divulge such information if they have it. Under a group program loss data may be collected by the group and analyzed with the objectives of testing the reasonableness of premiums and, most important, establishing the underlying causes of claims and suits. Without knowledge of causes and sources of claims, there can be no effective prevention program.

PREVENTION (SAFETY) PROGRAMS.—Based on loss data that can be collected only under a group program, the group may set up an effective prevention or safety program, with a long-term view to reducing the incidence of claims and lessening liability.

BETTER DEFENSE OF SUITS.—In addition to protection against financial loss, the professional liability carrier contracts to provide a highly specialized professional service: the defense of law suits that may be brought against the insured. The expertness of this service is of paramount importance to the physician when he becomes the target of a malpractice claim or suit. The volume of suits defended under a group program is usually great enough to provide the required experience for the defense attorney or group of attorneys retained by the group carrier. On the other hand, when physicians are separately insured under a number of carriers, their locally available attorneys seldom have enough malpractice trial work to become experts in the field. It has been learned that otherwise brilliant attorneys who are without long experience in professional liability trial work are handicapped in the defense of a malpractice suit.

There is another reason many suits are better defended under a group program. In an increasing number of cases two or more physicians are named defendants in the same lawsuit. When each physician is individually insured by a different carrier, each has a different attorney, representing a different insurance company, to defend him. It is the duty of each of these attorneys to defend his individual client and to protect the funds of his own insurance company. During the trial of an unwarranted suit this is sometimes accomplished by subtly pointing the finger of invented blame at another insurance company's defendant doctor. The defense of the case becomes a farce of shifting nonexistent blame; the jury is convinced that there is liability where actually there is none and the case is lost by one or more of the separately insured doctors. Under a group program, however, where all defendant doctors have the same insurance, the total effort is to cooperate to defend the unwarranted case. The group carrier has incentive only to defend the case, not to get one doctor out by making another assume a liability that does not exist.

Better Claims Handling.—Closely allied to defense is another vital service—claims handling. This involves investigation of each case, including all records and other pertinent and often highly technical medical information. Claims handling also includes negotiations with claimants and their attorneys, judgments as to whether to defend or settle cases, assistance in preparation for trial, and many other matters that must be handled with great skill and understanding. It will readily be seen that years of training and experience with many professional liability claims are required to develop expert malpractice claims managers. Companies handling a small volume of professional liability cases cannot develop an able, specialized, malpractice claims handling team. Group coverage permits the development of skilled claims managers. This is of great importance to the insured physician because poor claims handling turns minor incidents into major lawsuits that require weeks of the physician's time in preparation for trial and many days in court, not to mention financial risk and the inescapable emotional trauma. Physicians should remember that they buy both financial protection and a number of vital and highly specialized services when they buy malpractice insurance. The service is often more important than the financial protection.

Influence Over Claims Disposition.—Under a proper group program, a committee of physicians representing the group assists in the investigation of the technical aspects of claims and can have considerable influence over which claims are to be paid by out-of-court settlement and which are to be defended. Without such a voice in the disposition of claims, decisions to settle or defend may be guided by insurance company expedience rather than in terms of the long-range needs and objectives of the profession.

Summarizing this section it becomes clear that neither knowledge nor control of its own malpractice problem are available to the profession except under properly designed group professional liability programs. Malpractice is a medical problem. Insurance companies can and do desert the field of malpractice, but the profession must continue to live with it. Better coverage, better claims handling and legal defense, better prevention programs, more equitable selection of risks, and better control of the entire problem of professional liability are the advantages of group over individual insurance underwriting. The long-range interests of the profession rather than the immediate interests of the insurance carrier are served by the group program.

State or County versus National Groups

Malpractice insurance programs of the national specialty groups share some of the advantages of local group plans over individual underwriting, but there are also distinct disadvantages and dangers to the professional liability problem inherent in this approach.

The advantages the national specialty group programs can share with local group plans have been enumerated under the headings, "Better Insurance Protection," "Control of Procedures by Physicians," "Collection of Loss Data," "No Underwriting Discrimination," and, in a limited sense, "Prevention (Safety) Programs."

The dangers of the national specialty group malpractice insurance plans may be summed up in the general statement that they divide the profession locally and are too remote to assure the physician that he will have good claims handling and, perhaps, good defense. Malpractice claims and suits have local origins and must be investigated, handled, and defended locally. If all specialists and general practitioners in the local community are insured under their separate national programs, then they have lost the local community of interest and cooperation of all physicians that is so essential to prevention and to the handling and defense of claims.

Today most cases involve two or more specialities; unity not division is needed. The general practitioner who first saw the patient and the specialists who later assisted in the diagnosis or treatment of the patient all often become defendants in the same suit. With each physician separately insured under his own national specialty program, the dangers and disadvantages of a divided defense are present. Each attorney tries to "get his client out," often at the expense of creating a nonexistent case against other defendant doctors. A divided defense of unwarranted suits increases the costs of malpractice to the profession. All doctors in a given community, regardless of practice, should be insured under the same carrier. Only under such local group programs can there be a united approach to a common problem.

In any given local area, a national specialty program will probably lack sufficient concentration of insured doctors to provide the volume of claims and suits necessary to produce locally the expert and experienced claims personnel and malpractice defense attorneys so desperately needed by the physician when he is sued. Claims must be investigated and defended locally.

National specialty societies can join the needed campaign to educate physicians in the causes and prevention of malpractice claims and suits. But all of the actual prevention must be done at the local level, with the cooperation of physicians in all types of practice, or it will not be done at all. For example, there is reliable information that proper hospital staff organization, with adequate supervision and control of the professional work, results in a low incidence of suits and claims against the physicians who work in the hospital. In other hospitals, where there is little or no staff control over the professional work, the incidence of claims and suits against physicians on the staff is far greater. It becomes clear that effective medical staff organization is an important factor in malpractice prevention; this cannot be accomplished by national programs that divide the staff members. It can be accomplished only by local cooperation of physicians in general practice and in all the specialties, with a common interest in a single local malpractice program.

Most of the causes of malpractice claims and suits require local treatment by a unified local profession. Causes vary from state to state even from county to county. The applicable law is different in every state. The national specialty societies can help in solving the problem only through the use of their excellent facilities for professional education. They cannot take the local action necessary to prevent malpractice.

Consequently, it is suggested that physicians set up local group programs for the handling of professional liability insurance. Whether this be set up on a county, regional, or state basis depends on factors such as the geography and size of the state. The important point is that a local group program, properly conceived and operated, has a greater potential than either individual coverage or national specialty group coverage.

Type of Contract and Exclusion Clauses

The insurance policy should contain a broad definition of the acts or omissions insured against, that is, all claimed malpractice, errors or mistakes, breech of implied contract, assault, battery, slander, and so forth. Some of the deficiencies found in representative professional liability insurance policies involve the way they exclude coverage for alleged criminal acts such as assault and battery or abortion, guarantees of diagnosis and treatment, restrictions as to use of fluoroscope and performance of medical practice under the influence of "drugs," and certain hazardous procedures such as spinal anesthesia.

It is certainly clear that the insurance carrier should not be obligated to pay for claims or judgments resulting from criminal acts. However it is likewise clear that such charges may be erroneously brought against the physician by the patient and consequently a proper policy should not exclude defense of the physician for these charges. The contract may properly exclude indemnity for claim or judgment but the physician should first be found guilty of these charges. In other words, it should be up to the court, not the insurance company, to determine whether the doctor is guilty of a criminal act or is practicing under the influence of alcohol or narcotics.

The use of terms such as "practicing under the influence of drugs" is potentially detrimental to the physician since the term "drugs" includes practically any type of medication. If the physician takes a capsule of a barbiturate to promote sleeping for the night, an alleged act of malpractice performed during that night could be excluded by the company not only for payment of a claim or judgment but also for defense, since properly speaking a barbiturate is a "drug." To summarize this point, there should then be no exclusions as to the obligation of the carrier to defend. Exclusions should apply only to the indemnity for criminal acts, or acts undertaken by the physician while under the influence of narcotics or alcohol.

This also brings up the important point of the "guarantee of diagnosis or treatment." Again, there should be no exclusions as to obligation of the carrier to defend for such alleged guarantee to the patient. If, in the trial of the case it becomes apparent that the physician was guilty of guaranteeing the diagnosis or treatment, then it would be proper for the insurance company to refuse to indemnify.

In some insurance policies, there is an exclusion of coverage for the use of "hand fluoroscopes." This is a deleterious exclusion clause for the physician, since the term "hand fluoroscope" is rather general. Does this term apply to the fluoroscope generally used by the physician in present day practice? Or does it apply to the portable fluoroscopic screen, commonly used many years ago, with regular x-ray apparatus? Consequently, such exclusions for hand fluoroscopes should not be accepted by the physician unless there is a clear definition of what the term "hand fluoroscope" means.

The exclusion of certain types of hazardous procedures such as the caudal or spinal anesthesia is again detrimental to the insured. As physicians we realize that hazardous procedures from time to time have to be employed for the benefit of the patient. Consequently it is necessary for the insurance carriers to cover such hazardous procedures, provided the physician is willing to pay an appropriate premium for the hazard involved. Other types of medical procedure or treatment which are specifically excluded by the insurance carrier should be considered with a great deal of suspicion by the physician.

There should be a provision that there can be no settlement of a claim without the written consent of the insured physician, or a committee representing the group program (if the physician holds a policy under a group program). In other words, the physician should have the privilege of determining whether or not he wishes to have the case settled, or he should delegate this privilege to colleagues who constitute a committee for review of his case. The physician must be careful in this respect that the policy does not include qualifying clauses as to the settlement which provide that the physician must pay the difference between the amount of a judgment and the amount for which the carrier could have settled the claim if the physician had not insisted on defending it.

Finally, the physician should not accept an insurance policy in which the exact names of his insurance carriers or a combination of such carriers and their appropriate percentages of coverage are not specifically named. He should not accept a policy with a general term indicating a group of carriers without having in hand the specific enumeration of the insuring companies and their addresses. This is particularly important in some contracts in which the broad terms "Lloyd's Underwriters and/or Other Companies," "British Companies" or other vague identifications are used. The importance of this is that ten or fifteen years later the brokers who sold him the contract may no longer be in existence and, consequently, the physician will not then know the specific company to which he must apply for defense and payment of a claim.

Cancellation Clause

Insurance carriers, wishing to protect themselves against continuing bad risks, usually include a cancellation clause in their insurance policies. This clause is extremely variable, ranging anywhere from a statement which provides that the policy may be cancelled on a ten-day written notice to the holder up to group insurance provisions that the policy may be cancelled only at the end of a given policy year. In this respect it is clear that for his own protection the physician should secure a favorable cancellation clause.

If the physician accepts an insurance policy with a ten-day cancellation clause, he suddenly may find himself with a letter served on him in which he is informed that within ten days of the mailing of the letter he no longer has professional liability insurance coverage. Most group programs specify that the policy may be cancelled only after a given contract year, or that only a certain percentage of those covered under a given contract year may be cancelled on a ten- or thirty-day notice. Here again is an example of the added protection of group coverage in contrast to individual coverage.

Contingent Partnership Coverage

Doctors who are in partnership or in group practice should realize that they are responsible for the acts of their partners or other members of the group. If a judgment is rendered against a partner or a member of a group, and the physician against whom the judgment was entered does not have sufficient coverage to meet the requirements of the judgment, the partnership or group may have its assets attached for full payment of the claim. Consequently, the physician who is in partnership or in a group should realize that he needs what is termed "contingent partnership" liability coverage.

Such coverage is ordinarily obtained with most insurance carriers by the payment of an additional premium, the amount of which differs from company to company and depends of course on the amount of coverage which the physician carries. In the lower brackets of coverage, the additional premium for contingent partnership liability may be relatively high, ranging up toward 40 or 50 per cent additional premium for the very low limits of $5,000 to $15,000. As one approaches the higher limits of coverage, this additional premium decreases proportionately.

The physician with partnership liability should realize that he may have no such protection unless contingent partnership liability coverage is specifically expressed in his policy.

Amount of Coverage

Maximum limits of liability offered by the insurance company should be available in an amount of not less than $100,000 per malpractice incident and $300,000 per contract year. The physician should be permitted to select lower coverage limits within the standard brackets up to the amounts of $100,000 to $300,000 per contract year. Those engaged in particularly hazardous types of practice may wish to secure coverage in excess of $100,000 to $300,000 per year. There is no more miserable person than the physician who has a coverage of $10,000 to $30,000 or $25,000 to $75,000 when he is sued for $100,000 or over. The physician should remember that he must protect himself against financial ruin by securing adequate malpractice insurance coverage.

Defense of Claims and Suits

The physician should be satisfied that the insurance carrier has an experienced and adequate investigation staff, and that it will employ a defense attorney who is competent to analyze and defend a medical malpractice case. As emphasized above, this point is of particular importance because medical malpractice insurance is a very highly specialized field. Claims adjustors and investigators and attorneys who are experienced in the general field of personal injury may not necessarily have the proper knowledge adequately to process and defend a medical malpractice case.

Conservative Treatment of Hemangiomas in Infants and Children

While there are various types of hemangiomas, the overwhelming majority in infants and children are the involuting type and tend to recede of their own accord. This fact, pointed out by Lister twenty years ago, was confirmed in a study of more than 700 cases. A certain number were left untreated in the early years to compare their progress with the rest, in which every recognized means of therapy was tried. When it became evident that the untreated lesions were involuting in the same manner as the treated ones, all subsequent cases of the involuting type were left untreated.

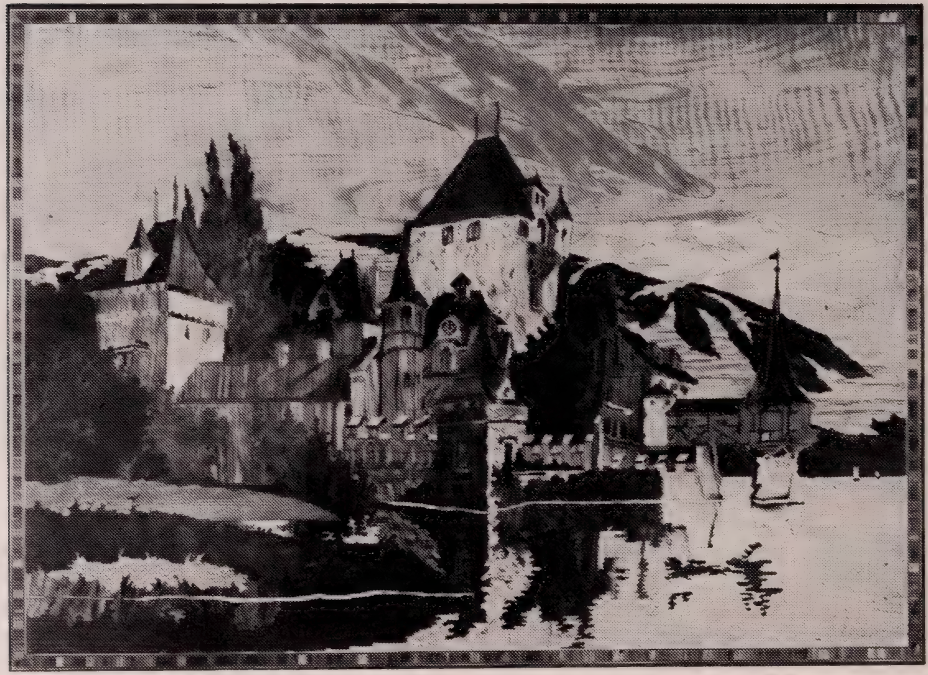
The authors, Drs. Harry M. Blackfield, Frances A. Torrey, William J. Morris, and Bertram V. A. Low Beer, indicate that frequently the problem becomes one of handling impatient parents who insist that something be done. However, when surgical intervention is forced by parental pressure and is attempted during the growing phase of hemangiomas of the large involuting type, complete excision is rarely possible and growth of residual vascular tissue continues until the latent period is reached. If the operation is delayed until involution has started, a more conservative excision is possible and residual tissue will involute spontaneously.

If early therapy is insisted upon by the parent, some homeopathic method at infrequent intervals should be carried out. Where there are residual disfigurements from large hemangiomas, plastic procedures will be necessary, but these will be simpler some years after involution than when attempted in infancy. Radical measures that may damage or prevent growth of normal tissues are contraindicated.

—*Journal of the International College of Surgeons, August, 1958*

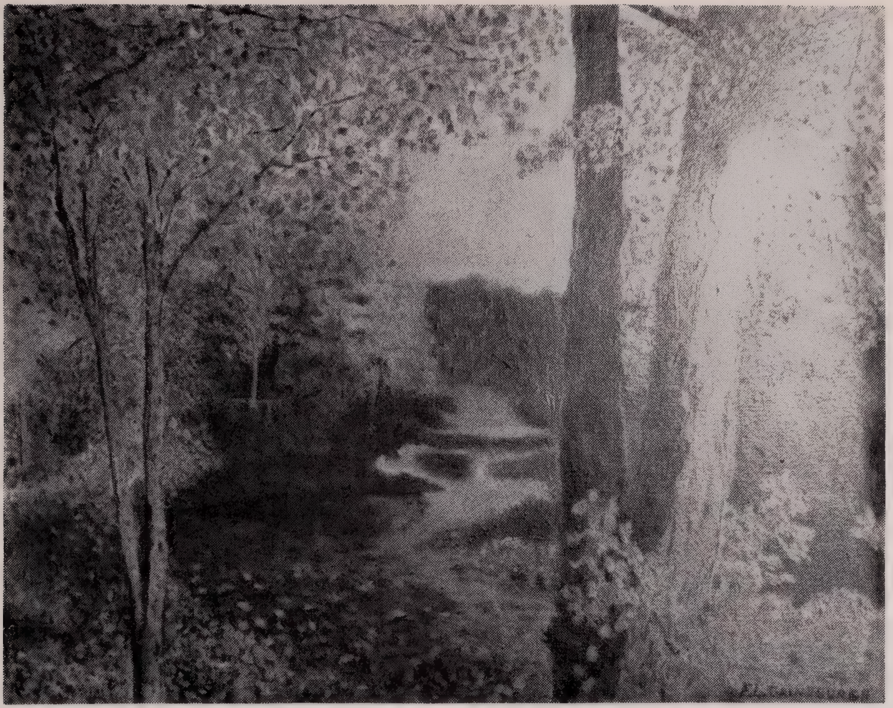
the Gallery

WALTER J. ALEXANDER, M.D., EDITOR



Wood Marketry Scene, by Emil C. Mrozek, M.D., of Binghamton. The veneer inlay is of a "castle" built in the St. Lawrence River area which is a copy of one in Switzerland.

According to Dr. Mrozek, a person selects the picture to be copied, makes a "sandwich" of 12 to 14 layers of different woods, each about $^{1}/_{28}''$ thick, and proceeds to saw each highlight of the picture. He points out that a purist does not stain the wood but uses only natural grains. A jigsaw-puzzle type of activity then takes place while the artist selects the various pieces to be fitted into their proper positions. In this particular work, there are more than 2,000 different pieces which were glued into place by a special press Dr. Mrozek made himself. In order to work without interruption, the artist spent many hours between 1 and 3 A.M. at his bench.



Berkshire Trail, oil painting by EDWARD L. GAINSBURGH, M.D., of Newark, New Jersey. Dr. Gainsburgh is self-taught since 1950 and has exhibited at the Museum of Natural History and the Metropolitan Museum of New York City. To date he has painted 50 such oils.

INFORMATION ABOUT "THE GALLERY"

On these pages, the JOURNAL is presenting a series of reproductions of physician art work, and each member of the Medical Society of the State of New York is invited to contribute to this feature.

If you would like to participate, please furnish an 8 by 10 inch black and white glossy print of good quality suitable for reproduction. Prints of the art work are not returnable. This should be sent in a cardboard back manila envelope to the editor of "The Gallery":

Walter J. Alexander, M.D.
333 Main Street
Binghamton, New York

Please include the following information:

1. Your name and address
2. Title of picture
3. Where and when painted or sculpted
4. Where previously exhibited; any prizes received
5. Short interpretation of the work
6. How long you have painted; any instruction you have had.

MEDICAL NEWS

Maimonides Physicians Cited—Dr. Morris M. Banowitch, internist; Dr. Benjamin Brodie, otolaryngologist, and Dr. A. M. Rabiner, neuropsychiatrist, recently received citations from Maimonides Hospital, Brooklyn. The doctors are members of the hospital's consulting staff.

Society of Internal Medicine Elects Officers—At the annual meeting of the New York State Society of Internal Medicine in Rochester, March 29, the following officers were elected: Dr. John R. Williams, Jr., Rochester, president; Dr. Herbert Berger, Staten Island, president-elect; Dr. Robert E. Westlake, Syracuse, re-elected secretary.

May 15th Deadline for City Tax—The last day for taxpayers to file returns and pay the New York City General Business and Financial Taxes for the calendar year 1958 will be May 15.

The rate for the General Business Tax is $^1/_4$ of 1 per cent of the gross receipts for the calendar year 1958. This tax is imposed on every person who operated, within the City of New York, any trade, business, profession, vocation, or commercial activity, and whose gross receipts exceeded $10,000 during the year. The professions affected include doctors, dentists, lawyers, accountants, engineers, and architects.

Physicians to Speak in Atlantic City—Three New York City physicians will be featured speakers at the Section on Laryngology, Otology, and Rhinology of the American Medical Association's Scientific Assembly in Atlantic City, June 8 through 12. They are: Dr. Joseph L. Goldman and Dr. Harry Rosenwasser, who will speak on "Current Concepts of the Management of Otitic Infections"; and Dr. J. M. Ravid who will speak on "Malignant Melanoma of the Nasal Cavity and Paranasal Sinuses, and Juvenile Melanoma of the Nasal Cavity."

Brooklyn Psychiatric Society Elects Officers—Newly elected officers of the Brooklyn Psychiatric Society for 1959–1960 are: Dr. Sidney Green, president; Dr. Abbott Lippman, vice-president; and Dr. Morton Golden, secretary-treasurer.

Course in Occupational Health—The New York University Post-Graduate Medical School announces a part-time course, "Occupational Health for Physicians," (482) to be given on Thursdays, 1:30 to 4:30 P.M., from September 17, 1959, to May 13, 1960.

This course constitutes an intensive survey of the field of occupational health and is designed to meet the requirements of those physicians unable to take the full-time program. The latter is a two-month program which will run from September 14 through November 6, 1959 (481).

The part-time course is given under the sponsorship of the Medical Society of the State of New York. Among the topics covered are: organization and administration of an industrial medical department; preventive and constructive medicine in industry; occupational diseases; toxicology and industrial hygiene for physicians, as well as biostatistics and epidemiology.

For further information write to: Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

Funds Available for Research in Neurophysiology—Funds are now available for basic or clinical research in neurophysiology, the Dysautonomia Association has announced. The Association will support research related to the clinical entity known as familial dysautonomia, a disease caused by dysfunction of the autonomic nervous system. It will also support any type of study that might lead to a better understanding of nervous system functions at a basic level as a stepping stone to the understanding of a disease process.

The Association will submit all requests for grants to its medical advisory board for evaluation. Requests should be addressed to Harold M. Newman, President, Dysautonomia Association, 2 West 46th Street, New York 19, New York.

Televised Symposium on Hypertension—A symposium on hypertension will be televised at 9:00 P.M. EDT, from the Cleveland Clinic on May 27 to 25 closed-circuit locations throughout the country. Locations in the New York State area where this program will be shown are: Albany, Sheraton Ten Eyck Hotel, ballroom; Brooklyn, Brooklyn Academy of Music, music hall; Garden City, Academy of Medicine Building, auditorium; New York City, Hunter College of the City of New York, assembly hall; Syracuse, Onondaga County War Memorial, auditorium.

The following leaders in the field of hypertension will participate in the symposium: Dr. Harriet P. Dustan, the Cleveland Clinic; Dr. Edward D. Freis, Georgetown University School of Medicine; Dr. Irvine H. Page, the Cleveland Clinic; Dr. Samuel H. Proger, Tufts University School of Medicine; and Dr. Robert W. Wilkins, the Boston University School of Medicine.

Openings in Graduate Courses Available at N.Y.U.—The Post-Graduate Medical School of the New York University-Bellevue Medical Center has announced several openings in graduate courses available during the 1959-1960 academic year. They may be taken as part of a residency program or in preparation for specialty board examinations.

Courses in the following fields are offered: Anesthesiology, Dermatology and Syphilology, Medicine, Orthopedic Surgery (January 1960), Otorhinolaryngology, Radiology, and Surgery.

Further information may be obtained by writing or phoning the office of the associate dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

Panel Meeting at Academy of Medicine—The subject "Prophylactic Use of Antibiotics" was discussed at the sixth and final meeting on therapeutics at the New York Academy of Medicine, April 10. Moderator of the meeting was Dr. Perrin H. Long, director of medicine, Kings County Hospital, Brooklyn. Panel members were Dr. Robert Austrian, visiting physician, Kings County Hospital, Brooklyn, and Dr. David E. Rogers, associate attending physician and head, Section of Infectious Disease, The New York Hospital-Cornell Medical Center.

Sixth June Work Conference on Rehabilitation—The roles of medicine, counseling, psychology, and social work in a vocationally oriented rehabilitation center will be the subject of the sixth June work conference, June 8 through 26, presented by the Institute for the Crippled and Disabled in association with the Department of Psychological Foundations and Services, Teachers College, Columbia University. The conference will be conducted at the Institute, 400 First Avenue, New York City, and is supported by a grant from the Office of Vocational Rehabilitation, United States Department of Health, Education, and Welfare.

Application forms and further information may be obtained by writing to: Director of Professional Education, Institute for the Crippled and Disabled, 400 First Avenue, New York 10, New York. Requests for stipends should be made in a letter accompanying the completed application form.

Work Conference on Rehabilitation of Mentally Retarded—"The Sheltered Workshop as a Community Resource in the Vocational Rehabilitation of Mentally Retarded Adolescents and Adults" is the title of a work conference for professional personnel to be held July 27 through August 14. Sessions will be held at Teachers College, Columbia University, Department of Psychological Foundations and Services, 525 West 120th Street, New York 27, New York, and at the Association for the Help of Retarded Children, Inc., Training Center and Workshop, 116 East 27th Street, New York 16, New York.

For further information concerning the conference write to: Dr. Abraham Jacobs, Box 35, Teachers College, Columbia University, New York 27, New York.

Obstetrical Course for General Practitioners—The Woman's Hospital Division of St. Luke's Hospital, New York City, will offer a one-week course for general practitioners, October 8 through 14, entitled "The Conduct of Labor and Delivery." Thirty hours category I credit will be allowed by the American Academy of General Practice.

The course will consist of lectures, demonstrations, work in the prenatal and postpartum clinics and assistance in the delivery room. Enrollment is limited and will close on September 15.

For a prospectus and further details write to: Mr. Carl P. Wright, Jr., director, Woman's Hospital, 141 West 109th Street, New York 25, New York.

Around-the-World Postgraduate Course—The International College of Surgeons will hold its fourth around-the-world postgraduate refresher tour in the fall.

Departure will be by plane from San Francisco, October 10. The tour participants will take in section meetings in Tokyo, October 18 and 19; Hong Kong, October 29 and 30; Bangkok, November 2; Tel Aviv, November 20; Istanbul, November 24; and Athens, November 27.

For further information write to: Secretariat, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois.

Special Neurologic Traineeship Program—The U.S. Public Health Service has called attention to additional opportunities for advanced study and research training in its special traineeship program in neurologic and sensory disorders. The program is under the direction of the National Institute of Neurological Diseases and Blindness, one of the seven institutes of the National Institutes of Health.

To qualify for an award, the candidate should have an M.D., Ph.D., or equivalent degree, and at least three years of training or experience pertinent to the training for which he seeks support. The applicant must be an American citizen or have filed a Declaration of Intent.

Requests for application forms and complete information about the special traineeship program should be addressed to: Chief of Extramural Programs, National Institute of Neurological Diseases and Blindness, National Institutes of Health, Bethesda 14, Maryland.

Group Health Insurance Receives Federal Grant—The National Institute of Mental Health has awarded a grant of $300,000 to Group Health Insurance, Inc. for an investigation into the insurability of psychiatric treatments. The American Psychiatric Association and the National Association for Mental Health are cosponsors of the exploratory project which will begin July 1. Additional funds will be furnished by Group Health Insurance.

The two-year program will pay for short-term treatments of mental illness, including individual and group psychotherapy, electroshock treatments and accompanying anesthesia, psychological testing, and thirty days of in-hospital care.

Personalities

Appointed

Dr. Henry J. Brock, Buffalo, as an expert consultant on dust diseases to the Workmen's Compensation Board. . .Dr. Karl Harpuder, as the second Louis J. Horowitz visiting professor in the Department of Physical Medicine and Rehabilitation at New York University-Bellevue Medical Center. . . Dr. Charles F. Schnee, Setauket, as an associate compensation examining physician of the Workmen's Compensation Board.

Elected

Dr. Carl R. Ackerman, Bronx, as a vice-president of United Medical Service, Inc. . . .Dr. David M. Bosworth, New York City, as the first foreign member of the Japan Orthopedic Society. . .Dr. Alfred P. Ingegno, Brooklyn, as a vice-president of United Medical Service, Inc.

Speakers

Dr. Conrad Berens, Glen Cove, at a symposium on remedial reading sponsored by the Long Island Ophthalmological Society, April 27. . .Dr. Harold Brandaleone, New York College of Medicine, before a conference of medical specialists, April 10, at the Hotel Barbizon-Plaza. . .Dr. John H. Conley, chief, Head and Neck Department, St. Vincent's Hospital, New York City, before the James Ewing Society, April 3. . .Dr. John V. Connorton, executive director of the Greater New York Hospital Association, before the 1959 Institute on Practical Nurse Recruitment, May 6. . .Dr. Kurt W. Deuschle, Cornell University Medical College, at the annual meeting of the New York Tuberculosis and Health Association, April 8. . .Dr. Harry H. Epstein, director, pulmonary diseases, Queens Hospital Center, at a clinical conference at Forest Hills General Hospital, April 20. . .Dr. Edgar L. Frazell, associate professor of surgery, Cornell University Medical College, May 8, at a symposium on the "Diagnosis and Treatment of Thyroid Diseases" at the University of Oklahoma. . .Dr. J. A. Katzive, executive director of Maimonides Hospital, Brooklyn, April 13, before the hospital's board of trustees. . .Dr. Maurice W. Laufer, director, Emma Pendleton Bradley Hospital, Rhode Island, the annual Otto A. Faust pediatrics lecture at Albany Medical College, April 16. . .Dr. Walsh McDermott, Cornell University Medical College, at the annual meeting of the New York Tuberculosis and Health Association, April 8. . .Dr. A. Pearlman, associate professor of radiology, New York University College of Medicine, April 20, at a clinical conference at Forest Hills General Hospital. . .Dr. Rulon W. Rawson, professor of medicine, Cornell University Medical College, at a symposium on the "Diagnosis and Treatment of Thyroid Diseases" May 8, at the University of Oklahoma. . .Dr. Nathaniel E. Reich, at a postgraduate course of the American College of Chest Physicians, April 8, Newark, New Jersey, on the topic "Esophageal Displacements by Cardiovascular Lesions". . .Dr. Frederick Reiss, associate clinical professor of dermatology, New York University Post-Graduate Medical School, before the American Management Association, April 2, on "Product Liability for Consumer Goods Industry". . .Dr. Robert Turell, New York City, at the sixth annual seminar on diseases of the colon, sponsored by the Third Surgical Service of the Boston City Hospital, on the topic "Hemorrhoidal Disease: Advances and Retreats," April 22. . .Dr. Allan H. Warner, associate physician, Triboro Hospital, April 20. . .Dr. Joseph Wilder, clinical professor of neurology, New York Medical College, before the medical faculty of the Free University of Berlin, on "The Law of Initial Value."

That which is everybody's business is nobody's business.—Izaak Walton

MEDICAL MEETINGS

Annual Health Conference

The fifty-fifth annual health conference will be held at the Olympic Arena, Lake Placid, May 25 through 28.

Among the speakers at the conference will be New York State Lieutenant Governor Malcolm Wilson; Dr. Leona Baumgartner, president of the American Public Health Association and New York City Health Commissioner; Dr. Henry I. Fineberg, president-elect of the Medical Society of the State of New York; and Dr. Herman E. Hilleboe, State Health Commissioner.

The conference is sponsored by Annual Health Conference, a nonprofit organization chartered by the Secretary of State.

Group Health Institute of 1959

"Better Medical Care for the American People" will be the topic of the Group Health Institute of 1959, sponsored jointly by the Group Health Federation of America and the American Labor Health Association, May 26 through 28, at the Hotel Biltmore, New York City.

Among the guest speakers at the meeting will be Major General Paul R. Hawley, M.D., director, American College of Surgeons, and Leonard W. Larson, M.D., chairman, board of trustees, American Medical Association.

For information and complete program write: Group Health Institute, 625 Madison Avenue, New York 22, New York.

National Civil Defense Conference

Military and medical preparedness for the management and care of mass casualties in case of war will be the subject of the seventh annual National Civil Defense Conference which will be held in Atlantic City on Saturday, June 6, immediately prior to the opening of the American Medical Association Convention.

Physicians attending the meeting sponsored by the American Medical Association and its Council on National Defense, will get a one-day version of the Army's one-week education and training program dealing with mass casualty concepts and treatment technics.

American Medical Association

Hypnosis, staphylococcal infections, blood cell disorders, space medicine, European spas, and aging are among the subjects to be considered at the 108th annual meeting of the American Medical Association June 8 through 12 in Atlantic City.

Some 450 physicians will present scientific papers or participate in panel discussions and symposiums during the meeting. In addition, there will be 387 scientific exhibits shown by physicians and 285 industrial exhibits prepared by pharmaceutical houses, medical equipment firms, and other business organizations.

For more complete information concerning the annual meeting write to: The American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

A.M.A. Special Session on Aging

A special session on new concepts in aging will be held during the annual convention of the American Medical Association in Atlantic City, June 8 through 12. This one-day session, to which all physicians are invited, will be held in Room C of the convention hall at 9:00 A.M., Wednesday, June 10, under the auspices of the American Medical Association's committee on aging.

American Neurological Association

The eighty-fourth annual meeting of the American Neurological Association will be held at the Claridge Hotel, Atlantic City, New Jersey, June 15 through 17, under the presidency of Dr. Bernard J. Alpers.

Information regarding the meeting may be obtained from the secretary, Dr. Charles Rupp, 133 South 36th Street, Philadelphia 4, Pennsylvania.

Conference on Electrical Technics in Medicine and Biology

The twelfth annual conference on electrical technics in medicine and biology will take place in the Sheraton Hotel, Philadelphia, November 10 through 12. It is sponsored by the joint executive committee in medicine and biology, appointed by and representing the pertinent interests of the American Institute of Electrical Engineers, the Institute of Radio Engineers for its group on medical electronics, and the Instrument Society of America.

For further information concerning the conference write to: Dr. Herman P. Schwan, Moore School of Electrical Engineering, University of Pennsylvania, Philadelphia, Pennsylvania.

National Society for Crippled Children and Adults

The 1959 annual convention of the National Society for Crippled Children and Adults will be held November 29 through December 2 at the Palmer House, Chicago.

For further information concerning this convention write to the Society at 2023 West Ogden Avenue, Chicago 12, Illinois.

Pan American Medical Association

The next congress of the Pan American Medical Association will be held in Mexico City, May 2 through 11, 1960. More than 6,000 physicians and their families from 22 American countries are expected to attend. The scientific program of the congress will include all branches of medicine including dentistry.

For complete information write to: Dr. Joseph J. Eller, Director General, 745 Fifth Avenue, New York City.

International Congress of Phlebology

An international congress of phlebology will be held in France at Chambery (Savoie), May 6 through 8, 1960. The official languages of the congress will be English, French, German, Italian, and Spanish. Simultaneous translations will be supplied. Those wishing to indicate their desire to attend or to submit papers should write to: Dr. S. Bourgeois, 8 Boulevard du Théâtre, Chambery (Savoie), France.

Fourth International Goiter Conference

The fourth international goiter conference will be held July 5 through 9, 1960, in London, England, under the auspices of the London Thyroid Club and the American Goiter Association. The American Goiter Association plans to make available to worthy candidates a limited number of travel grants for participants of this meeting.

For application blanks write to: Dr. John C. McClintock, 149$^{1}/_{2}$ Washington Avenue, Albany 10, New York. Applications will be accepted until January 1, 1960.

American Medical Association

ANNUAL MEETING

June 8 to 12, 1959

Atlantic City, New Jersey

MONTH IN WASHINGTON

THE overriding health issue here—and one of the more debated subjects in any field—has been the dispute over radiation health hazards.

Out of the controversy, it is clear, will come a sharply stepped-up Federal program of evaluating radiation levels, testing foods, and determining the effects of radiation on the human body.

Already, Arthur S. Flemming, Secretary of Health, Education, and Welfare, has called for such an expanded program, and key congressmen are even more insistent that the government do more work in this area.

The growing concern over radiation levels and their effect on health has prompted harsh criticism of the Atomic Energy Commission by some lawmakers who contend the agency is minimizing radiation dangers because it handles the testing of nuclear bombs.

Agency officials claim they have held back no information from the public, but they agree on the need for a government-wide survey of the entire problem to determine how it might best be handled. At present, the A.E.C. does the bulk of the research work on the biologic effects of radiation.

The A.E.C. and the Public Health Service have reported that the amounts of radioactive strontium-90—the isotope that is released into the atmosphere by hydrogen bomb shots—have been far below estimated danger levels in food that has been tested.

However, Mr. Flemming has conceded that much more research has to be done. For example, he pointed out, little is known now about how much strontium-90 is retained within the body, though the amount consumed can be gauged.

A special advisory committee of 12 scientists and physicians appointed by the Health Service recommended, after a year's study, an exhaustive program of radiation research and protection as well as shifting prime responsibility from the A.E.C. to the Health Service.

The advisory group, headed by Dr. Russell H. Morgan of Johns Hopkins University, also proposed some sort of Federal supervision over x-ray machines used by physicians.

Chairman Lister Hill (D., Ala.) of the Senate Labor and Public Welfare Committee has introduced legislation to carry out the advisory group's recommendations, and has called for hearings on the measure.

Meanwhile, the National Academy of Sciences, with the backing of the Administration, has undertaken a broad new investigation of the biologic effects of radiation.

Notes

The House overwhelmingly approved the Keogh-Simpson measure to encourage retirement plans for the self-employed. Sen. Harry F. Byrd (D., Va.), chairman of the Senate Finance Committee, promptly announced that he would hold hearings on the legislation this session. Last year, the Senate Finance Committee was unable to hold hearings on the measure since it passed the House too late in the session.

Rep. Aime J. Forand (D., R. I.), admitted that the future of his bill to provide government medical and hospital care as part of social security program is dark.

In a report to Congress, the American Medical Association noted "solid progress" in its program to improve the health care of the aged. Dr. Leonard W. Larson, chairman of A.M.A.'s Board of Trustees, said in a letter to the House Ways and Means Committee that the development of new insurance programs and expansion of existing lower cost protection for the elderly are moving forward "even faster than many of us would have dared hope only a few months ago."

The Defense Department's handling of the Medicare program providing treatment in civilian hospitals for qualified dependents of military personnel came in for some new congressional criticism. In a report accompanying an emergency money measure, the House Appropriations Committee said it was concerned with the "high costs" and believes "that little or no effort has been made to obtain reasonable rates for fees and expenses."

Prepared by the Washington Office of the American Medical Association, Washington, D.C.

Republics end through luxury; monarchies through poverty.—MONTESQUIEU

NECROLOGY

Walter William Davis, M.D., of Chester, died on April 13 at the age of seventy-nine. Dr. Davis graduated in 1903 from Syracuse University College of Medicine. He was chief attending physician at Goshen Hospital and an honorary member of the staff of Tuxedo Memorial Hospital. Dr. Davis was a member of the Orange County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Allison Harold Dugdale, M.D., of Rutherford, New Jersey, and New York City, died on April 3 at the age of seventy-two. Dr. Dugdale graduated in 1913 from the College of Physicians and Surgeons of Columbia University.

Adolph Jacoby, M.D., of New York City, died on April 12 at his home at the age of seventy-one. Dr. Jacoby graduated in 1909 from Cornell University Medical College and interned at Beth Israel Hospital. He was a consultant in gynecology and obstetrics at University Hospital. In 1952 he retired as director of the City of New York Health Department's Bureau of Social Hygiene after thirty-six years of service. He was a former associate clinical professor of obstetrics at New York University Medical School and had also taught at Post-Graduate Medical School and Columbia University. He had also served as a special consultant to the United States Public Health Service and clinic consultant to the New York State Department of Health. Dr. Jacoby was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, and a member of the American Public Health Association, the American Venereal Disease Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lee Davidson Janis, M.D., of New York City, died on March 27 at Long Island College Hospital at the age of forty-three. Dr. Janis graduated in 1940 from New York University Medical College and interned at Lincoln Hospital. He was an assistant in pediatrics at New York Hospital Outpatient Department and a member of the medical department of William Douglas McAdams, Inc. Dr. Janis was a Diplomate of the American Board of Preventive Medicine (Public Health) and a member of the American Public Health Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Walter Anthony Jarzab, M.D., of Niagara Falls, died on March 16 at the age of forty-nine. Dr. Jarzab graduated in 1934 from Hahnemann Medical College of Philadelphia. He was an attending in surgery at Mount St. Mary's and Niagara Falls Memorial Hospitals. Dr. Jarzab was a member of the Niagara County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Heinrich Katz, M.D., of New York City, died on March 22 at the age of seventy-three. Dr. Katz received his medical degree in 1911 from the University of Heidelberg. He was an associate in surgery at Italian Hospital. Dr. Katz was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leo C. Koscianski, M.D., of Rochester, died on March 24 in St. Mary's Hospital at the age of fifty-nine. Dr. Koscianski graduated in 1924 from the University of Buffalo School of Medicine. He was a consultant in general practice at St. Mary's Hospital. Dr. Koscianski was a member of the American Academy of General Practice, the Rochester Academy of Medicine, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Abraham Leikensohn, M.D., of Staten Island, died at his home on April 13 at the age of fifty-one. Dr. Leikensohn received his medical degree in 1936 from the University of Geneva. He was an assistant physician on the Communicable Disease Service at Sea View Hospital and an associate attending physician at St. Vincent's Hospital. Dr. Leikensohn was a member and president-elect of the Richmond County Medical Society and a member of the Medical Society of the State of New York and the American Medical Association.

Max Leventhal, M.D., of Dolgeville, died on April 12 in the Mary Imogene Bassett Hospital, Cooperstown, at the age of fifty-two. Dr. Leventhal graduated in 1933 from the University of St. Andrews Conjoint Medical School, Scotland. He was an attending in surgery at Little Falls Hospital, Little Falls. Dr. Leventhal was a member of the Herkimer County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ludwig Wihelm Loewenstein, M.D., of New York City, died on April 15 at the age of sixty-five. Dr. Loewenstein received his medical degree in 1921 from the University of Cologne. He was an associate attending in dermatology and syphilology at University Hospital. Dr. Loewenstein was a Diplomate of the American Board of Dermatology and a member of the American Academy of Dermatology and Syphilology, the Rudolf Virchow Medical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Moriz Lowy, M.D., of New York City, died on March 19 at the age of sixty-nine. Dr. Lowy received his medical degree from the University of Vienna in 1915. He was a member of the Medical Circle, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edmund A. Mackey, M.D., of Buffalo, died on March 22 in Mercy Hospital at the age of sixty-two. Dr. Mackey graduated in 1921 from the University of Buffalo School of Medicine. He was an attending physician at Mercy Hospital. Dr. Mackey was a member of the Buffalo Academy of Medicine, the Erie County Medical Society, and the Medical Society of the State of New York.

Arthur Prince, M.D., of Tuckahoe, died on April 12 at the age of fifty-seven. Dr. Prince graduated in 1930 from New York University and Bellevue Hospital Medical College. He was an assistant attending physician at Mount Vernon Hospital. Dr. Prince was a member of the Westchester Academy of Medicine, the Westchester County Medical Society, and the Medical Society of the State of New York.

John Stephen Reardon, M.D., of New Rochelle, died on April 11 in New Rochelle Hospital at the age of seventy. Dr. Reardon graduated in 1912 from the University of Michigan Medical School. He was a consulting physician at New Rochelle Hospital. A former president of the New Rochelle Medical Society, Dr. Reardon was a member of the Westchester County Medical Society and the Medical Society of the State of New York.

Willard Tipple Rivenburgh, M.D., of Middleburg, died on March 24 at the Albany Hospital at the age of ninety-five. Dr. Rivenburgh graduated in 1886 from the University of Buffalo School of Medicine. He had been physician of the county almshouse, a past president of the Schoharie County Medical Society, medical examiner for several insurance companies, had served as a coroner, and had been with the State Health Department. Dr. Rivenburgh was a member of the Schoharie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edwin MacDonald Stanton, M.D., of Duanesburg, died at the Mayo Clinic on April 10 at the age of seventy-nine. Dr. Stanton graduated in 1903 from the University of Pennsylvania School of Medicine. He was a consultant in surgery at Ellis and St. Clare's (Schenectady) Hospitals. In 1938 he was named to the board of managers of Glen Ridge Sanatorium and for the past few years was president. In 1948 he received the Merit Award of the Iowa State College Alumni Association for his role as an arbiter in settling the General Electric Company strike of 1946. Dr. Stanton was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the American Association of Obstetricians and Gynecologists, the Schenectady County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Abram Samuel Tepper, M.D., of Far Rockaway, died on April 14 at his home at the age of sixty-seven. Dr. Tepper graduated in 1913 from New York University and Bellevue Hospital Medical College. He was director of pediatrics at St. Joseph's Hospital, Far Rockaway and a consultant in pediatrics at Rockaway Beach Hospital. Dr. Tepper was a Licentiate of the American Board of Pediatrics and a member of the Queens Pediatric Society, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Great Literature is simply language charged with meaning to the utmost possible degree.—EZRA POUND

BOOKS RECEIVED

(The following books were received during the month of March, 1959)

And Then There Were Two. Prepared by the Twins' Mothers Club of Bergen County, N. J. Duodecimo of 52 pages, illustrated. New York, The Child Study Association of America, Inc., 1959. Paper, 35 cents.

The Unconscious in History. By A. Bronson Feldman. Duodecimo of 269 pages. New York, Philosophical Library, Inc., 1959. Cloth, $4.75.

Readings in Psychoanalytic Psychology. By Morton Levitt, Ph.D. Octavo of 413 pages. New York, Appleton-Century-Crofts, Inc., 1959. Cloth, $8.50.

Group Psychoanalysis. By B. Bohdan Wassell, M.D. Duodecimo of 306 pages. New York, Philosophical Library, 1959. Cloth, $3.75.

Group Psychotherapy—Theory and Practice. Second revised enlarged edition. By J. W. Klapman, M.D. Duodecimo of 301 pages. New York, Grune and Stratton, 1959. Cloth, $6.75.

Protection in Diagnostic Radiology. By B. P. Sonnenblick. Octavo of 346 pages, illustrated. New Brunswick, N. J., Rutgers University Press, 1959. Cloth, $7.50.

Diseases of Laboratory Primates. By Theodore C. Ruch, Ph.D. Octavo of 600 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $7.50.

Surgery of the Prostate. By Henry M. Weyrauch, M.D. Octavo of 535 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $15.

Surgical Pathology. Second edition. By Lauren V. Ackerman, M.D. Octavo of 1,096 pages, illustrated. St. Louis, The C. V. Mosby Co., 1959. Cloth, $15.

Diseases of Metabolism. Detailed Methods of Diagnosis and Treatment. Fourth edition. By Garfield G. Duncan, M.D. Octavo of 1,104 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $18.50.

Dental-Medical Emergencies and Complications. By Ira Jay Berlove, M.D. Duodecimo of 380 pages. Chicago, Year Book Publishers, 1959. Cloth, $7.50.

Antibiotics Annual 1958–1959. By Henry Welch, Ph.D., and Felix Marti-Ibanez, M.D. Octavo of 1,107 pages, illustrated. New York, Medical Encyclopedia, 1959. Cloth, $12.

The Handicapped: A Challenge to the Non-Handicapped. By A. A. Apton, M.D. Duodecimo of 124 pages. New York, The Citadel Press, 1959. Cloth sides, $3.00.

The Symptom as Communication in Schizophrenia. By Kenneth L. Artiss, M.D. Octavo of 233 pages, illustrated. New York, Grune & Stratton, Inc., 1959. Cloth, $5.75.

The Medical Clinics of North America. Volume 43, number 2. March, 1959. The Rationale and Clinical Interpretation of Laboratory Tests. By Rachmiel Levine, M.D. Octavo of 292 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Quarterly series, Cloth, $18 per year.

Atomic Medicine. Third edition. By Charles F. Behrens, M.D. Octavo of 705 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1959. Cloth, $15.

Pediatric Neurology. By Stanley S. Lamm, M.-D. Octavo of 495 pages, illustrated. New York, Landsberger Medical Books, Inc. Cloth, $12.90.

Varied Operations. By Herbert A. Bruce, M.D. Octavo of 366 pages, illustrated. New York, Longmans, Green & Co., 1959. Cloth, $6.75.

Textbook of Surgery. Third edition. By H. Fred Mosley, M.D. Octavo of 1,336 pages, illustrated. St. Louis, The C. V. Mosby Co., 1959. Cloth, $17.

Therapeutic Radiology. By William T. Moss, M.D. Octavo of 403 pages, illustrated. St. Louis, The C. V. Mosby Co., 1959. Cloth, $12.50.

The Mentally Retarded in Society. By Stanley Powell Davies, Ph.D. Duodecimo of 248 pages. New York, Columbia University Press, 1959. Cloth, $5.50.

The Treatment of Diabetes Mellitus. By Elliott P. Joslin, M.D., Howard F. Root, M.D., Priscilla White, M.D., and Alexander Marble, M.D. Octavo of 798 pages, illustrated. Phliadelphia, Lea & Febiger, 1959. Cloth, $16.50.

Group Processes. Transactions of the Fourth Conference, October 13, 14, 15, and 16, 1957, Princeton, N.J. By Bertram Schaffner, M.D. Octavo of 266 pages. New York, Josiah Macy, Jr. Foundation, 1959. Cloth, $4.50.

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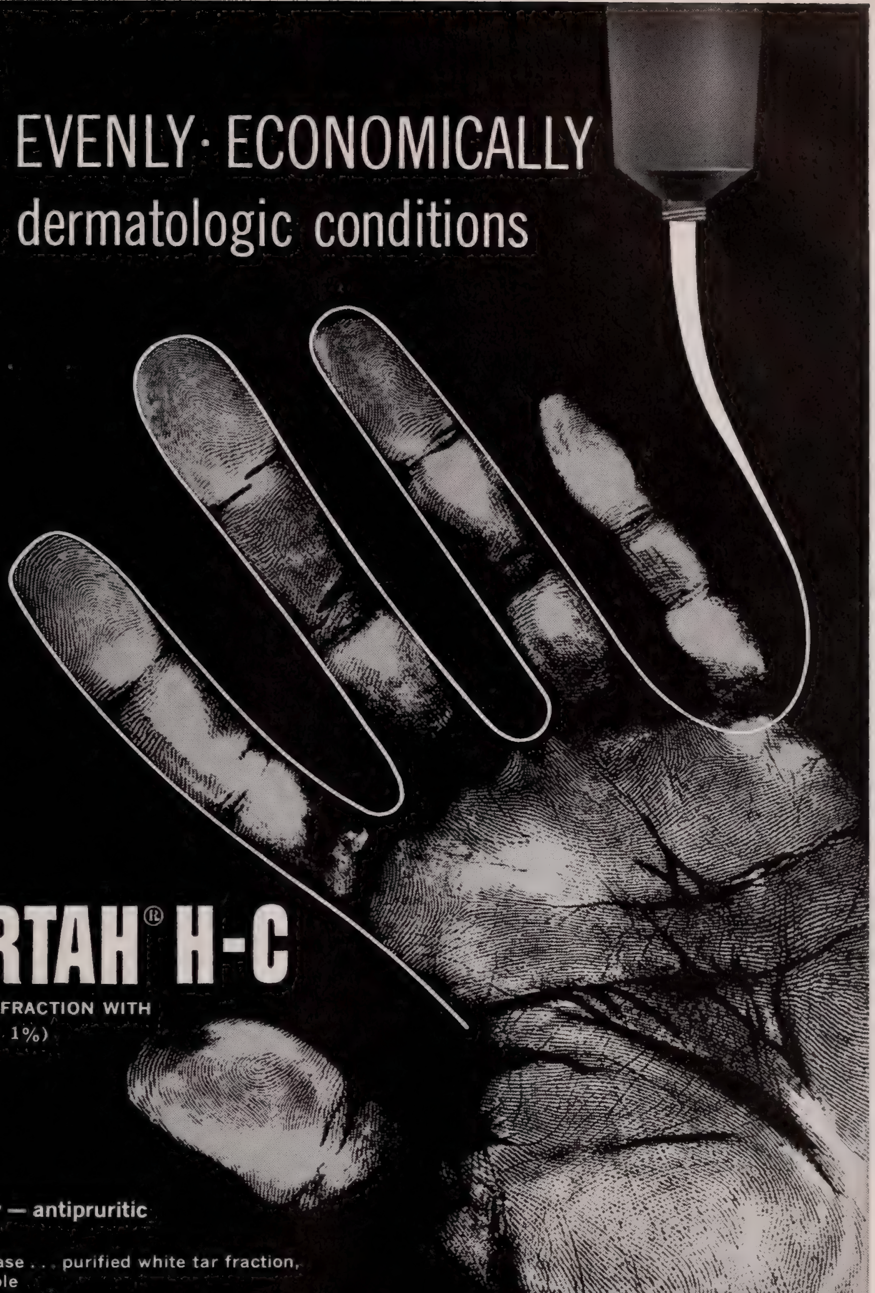

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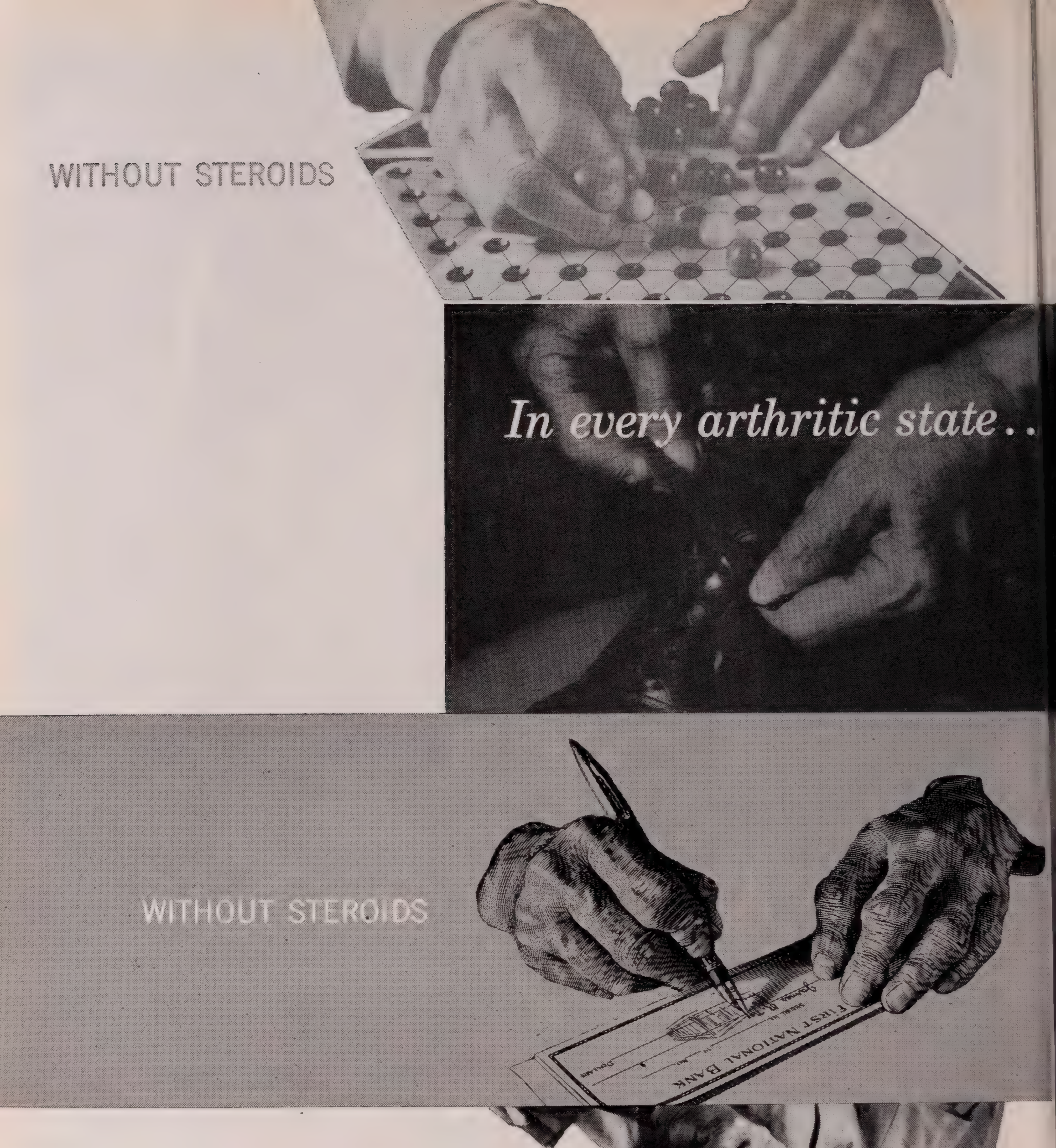
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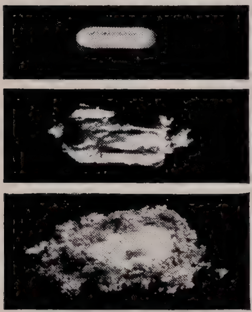

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References: 1. Hart, D.; Bagnall, A. W.; Bunim, J. J., and Polley, F. H.: Ninth International Congress on Rheumatic Diseases, Toronto, Ont. (June 25) 1957. 2. Report of Joint Committee, Medical Research Council & Nuffield Foundation, Treatment of Rheumatoid Arthritis, British Medical Journal (April 13) 1957. 3. Friend, D. G.: New England J. Med. 257:278 (Aug.) 1957.

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LETTERS TO THE EDITOR

Correction

To the Editor:

The February 15, 1959, issue of the NEW YORK STATE JOURNAL OF MEDICINE published an article by me, "Cancer in Mid-Century," which, unfortunately, contained an error. The president of the United States who had cancer of the maxilla was not William McKinley, but Grover Cleveland. The operation took place on July 1, 1893, in a yacht in the East River. The surgeon was Dr. Joseph D. Bryant, who was assisted by Dr. John Erdmann, at that time a young surgeon who was Dr. Bryant's assistant in private practice.

The reason for the secrecy surrounding this operation was a serious political crisis involving the strategy of the repeal of the Sherman Law. The whole incident is interestingly recounted by Marion Seeling in *Surgery, Gynecology and Obstetrics* for September, 1947, page 374.

LEONA BAUMGARTNER, M.D.
Commissioner of Health,
City of New York

125 Worth Street
New York 13, New York

Jejunoileal Myenteric Node

To the Editor:

I would like to introduce the term "jejunoileal myenteric node" as definitive of the node in the small intestine that I described in a letter to the editor in the September 15, 1958, issue of the JOURNAL.

This node is the seat of intussusception, and the term is descriptive of the transition from the jejunum to the ileum.

THOMAS HORACE EVANS, M.D.

350 South Main Street
Freeport, New York

One, whom we see not, is; and one, who is not, we see;
Fiddle, we know, is diddle; and diddle, we take it, is dee—SWINBURNE

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Dr. Paul Patterson
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Health Department
Dr. Harold Jacobziner
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STAMFORD
Stamford Hospital
Dr. Angelo Masterangelo
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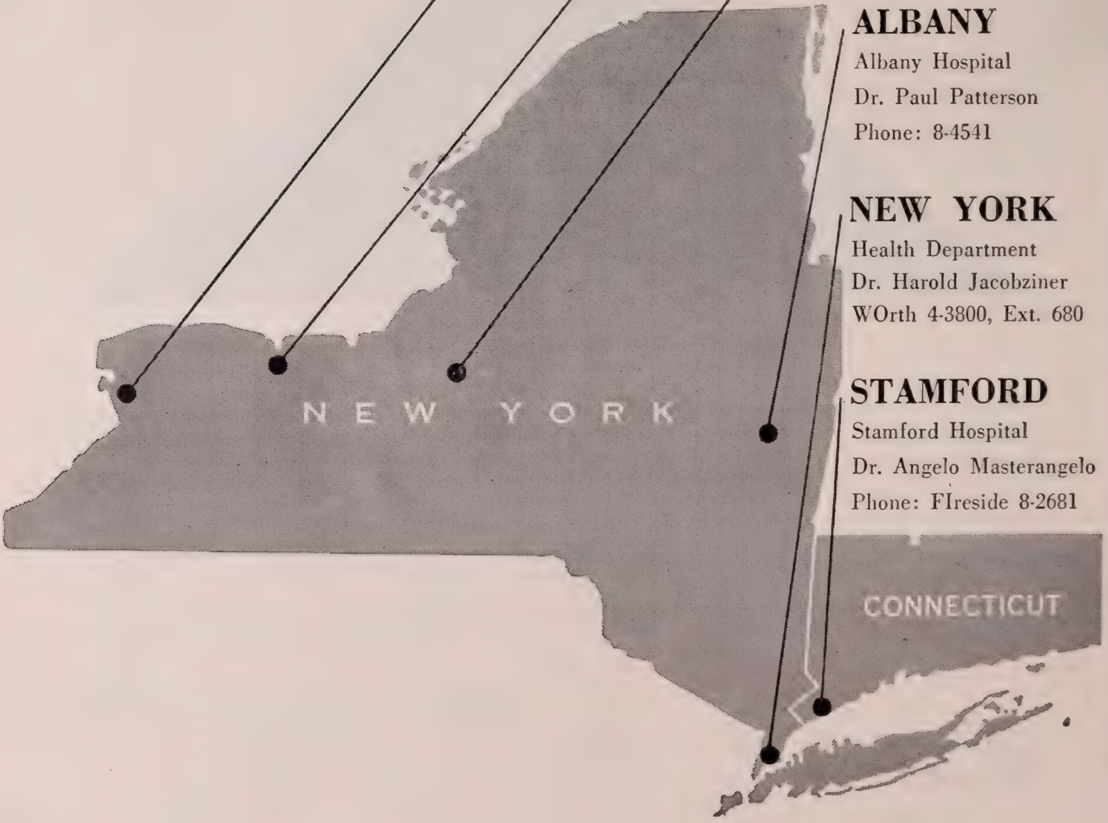

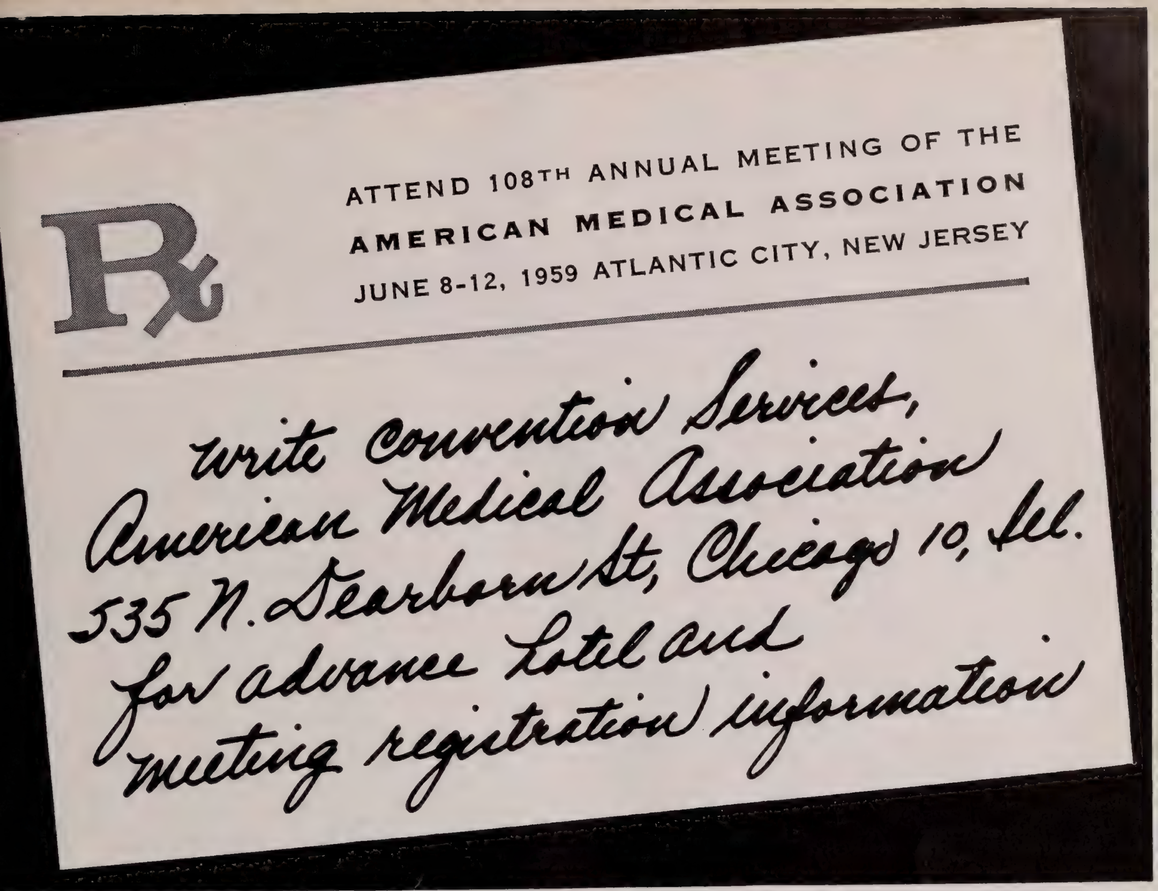

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AMERICAN MEDICAL ASSOCIATION
JUNE 8-12, 1959 ATLANTIC CITY, NEW JERSEY

write Convention Services,
American Medical Association
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for advance hotel and
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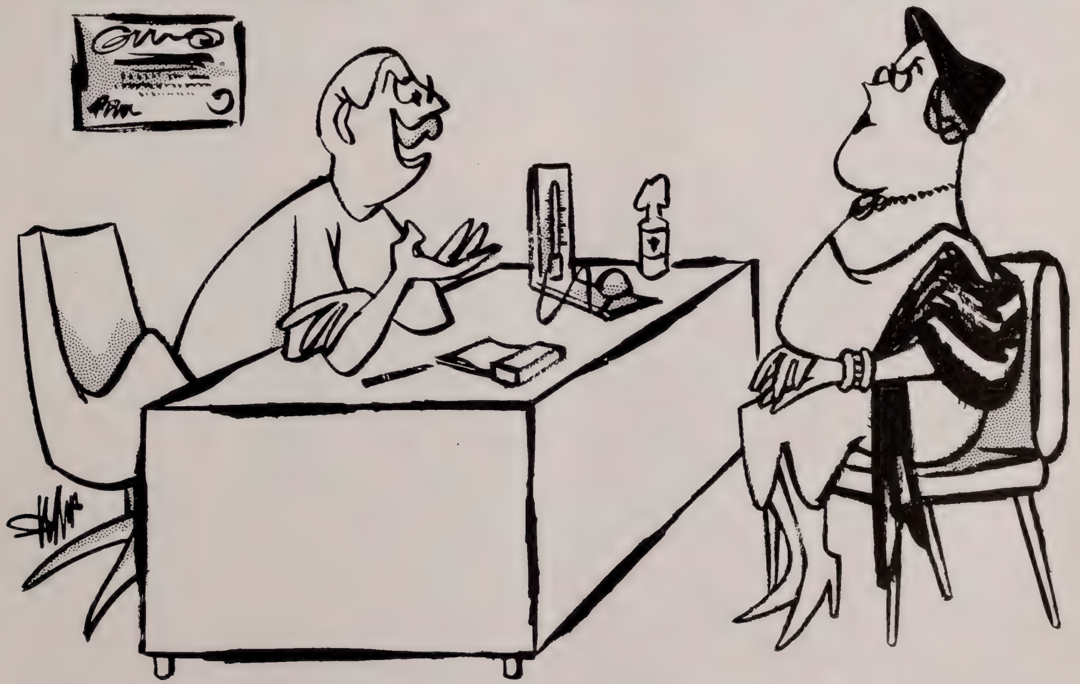


"I could get to the root of your trouble a lot faster if you would simply state your symptoms without editorializing!"

SUMMARY OF COUNCIL MINUTES

February 12, 1959

THE Council of the Medical Society of the State of New York met at the Society's headquarters, 750 Third Avenue, New York City, Dr. Leo E. Gibson, president, presiding.

Executive Committee

Communications.—Dr. W. P. Anderton, secretary, reported on the following communications, acted on by the Executive Committee: (1) a letter from Dr. Anderton to the Council requesting that he be relieved of that portion of his duties in the Bylaws that "he shall be in complete charge of the administration of the headquarters of the State Society"; (2) the application of a member of the Onondaga Medical Society to transfer to the Medical Society of the County of Cayuga; (3) the designation of Drs. L. Maxwell Lockie and Eli A. Leven to serve as delegate and alternate to the 1960 meeting of the United States Pharmocopoeial Convention; (4) the reinstatement of a member of the Medical Society of the County of Montgomery from resigned to active membership.

The Council *approved.*

Dues Remission.—The Council voted to remit the annual State dues of two members for 1958 and 15 members for 1959 because of illness; 14 members for 1959 because of military service; 1 member for 1958 because of financial hardship.

Secretary's Report

The Council *approved* the report of the secretary including the following: (1) the notification of the appointments of Dr. Harry Oliver, Newfane, as Medical Supervisor for Draft Board #81, Niagara County; Dr. James J. Norton, Montour Falls, to Draft Board #65, Schuyler County; and the appointment by the Board of Regents of the University of the State of New York of Dr. Louis M. Rousselot to the Nursing Advisory Council; (2) suggested nominations as requested by the Regents for the New York State Board of Medical Examiners as follows: For examiner in physiotherapy, Dr. Donald A. Covalt of New York City, to succeed himself, and Drs. Jerome S. Tobias of New York City and Dr. Karl Harpuder of the Bronx; for examiner in pathology, Dr. William C. Schraft, Jr., of New Rochelle, Dr. Milton D. Bohrod of Rochester, and Dr. David M. Spain of Brooklyn; for examiner in biochemistry, Dr. Ralph F. Jacox of Rochester, Dr. Jacob W. Holler of Rochester, and Dr. Allen B. Lay of New York City; and in anatomy, Dr. Leon G. Berman of Syracuse, to succeed himself, and Drs. Victor M. Emmel of Rochester, and Carl W. Clark, Jr., of Syracuse.

Treasurer's Report

Dr. Maurice J. Dattelbaum presented the Treasurer's Report which *was approved.*

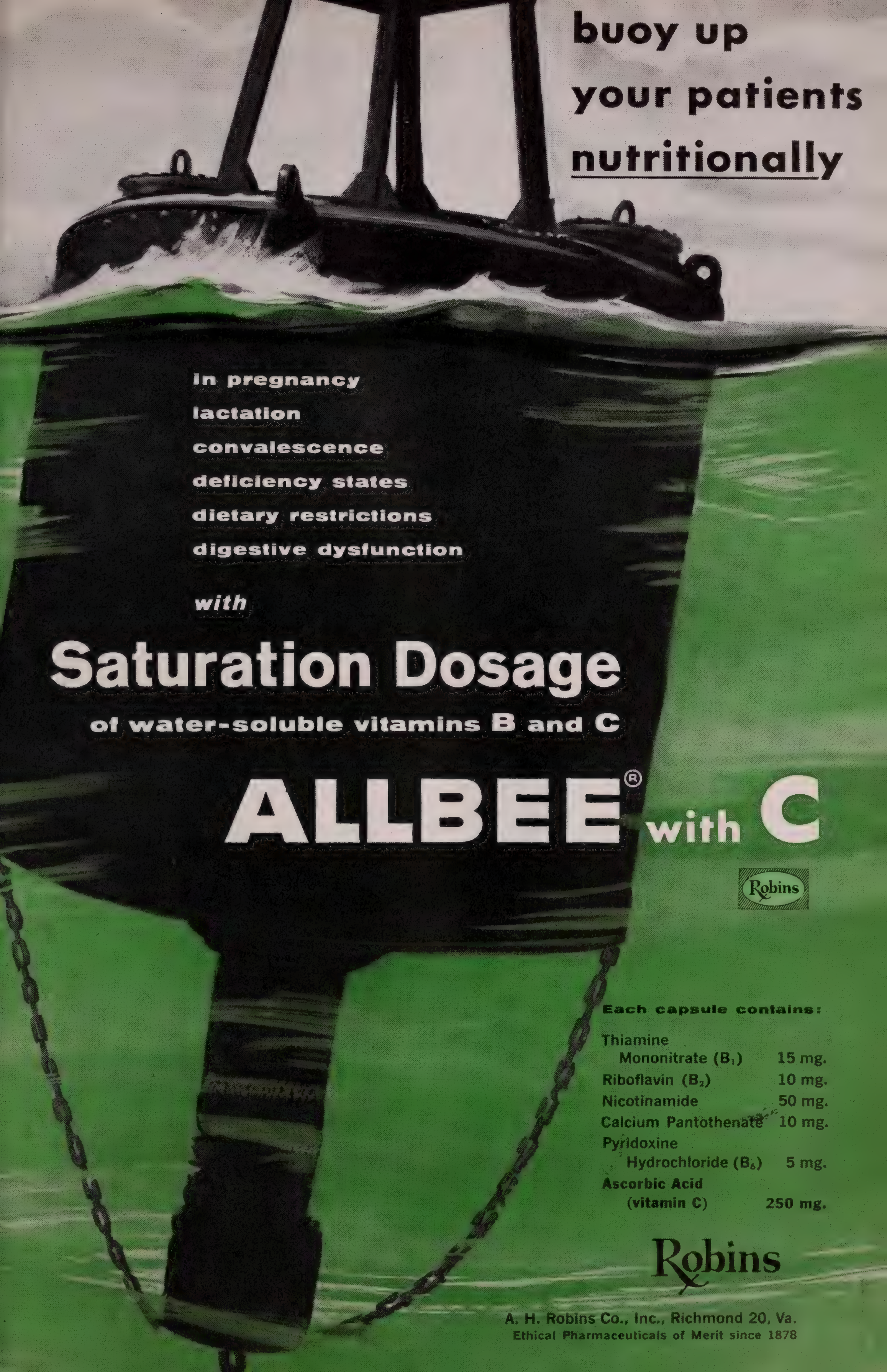
Executive Director's Report

Dr. Herbert T. Wagner reported on a meeting at Governor Rockefeller's residence at which 21 representatives of State-wide organizations were present. The Governor indicated his interest in developing contact with those present and their organizations. Dr. Wagner recommended that a meeting be arranged between the Governor and a group of the State Society.

Reports of Committees

Economics.—Dr. John C. McClintock, chairman, reported as follows: (1) the activities of Mr. George P. Farrell, director of the Bureau of Medical Care Insurance and Administrative Officer of Medicare; (2) a letter from the State of New York Insurance Department concerning dual coverage under article IX-C of the State Insurance Law and the suggestion that the State Society file a brief with the Commissioner of Insurance following the pattern of recommendations of the Coordinating Council; (3) a request from the American Medical Association to transmit answers to questions on free choice of physician and closed panel systems; after discussion, the Council *voted* to present both questions to the House of Delegates for final decision, (4) recommended that the State Society send a delegation to the forthcoming Pittsburgh meeting of the American Medical Association Committee on Insurance and Prepayment Plans at

[Continued on page 2084]



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SOMA has an unique analgesic action. It apparently modifies central pain perception without abolishing peripheral pain reflexes. SOMA is particularly effective in relieving joint pain. Patients say that they feel better and sleep better with SOMA than with any previously used analgesic, sedative or relaxant drug.

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[Continued from page 2080]

the Society's expense; (5) introduced Dr. Carl Ackerman, chairman of the Subcommittee on Medical Expense Insurance, who reported on the meeting with representatives of New York Blue Shield Plans held January 31 and February 1 in New York City at which suggested bylaws for a State Committee of all Blue Shield Plans were introduced, and recommended that this new group, to be called Associated Blue Shield Plans of New York, be approved.

The Council *approved* the report as a whole.

Public Medical Care—Dr. Earl C. Waterbury, chairman, through Dr. McClintock reported on Resolution 58-45, "Public Medical Care Fee Schedule," and recommended that each county society negotiate its own fee schedule with the Commissioner of Public Welfare of the representative county.

The Council *approved.*

Ethics.—Dr. Harold F. Brown, chairman, reported on a request for an advisory opinion concerning the propriety of a practicing physician actively engaging as an officer, stock holder, and promoter in the sale of various proprietary medicines.

The Council *voted* to recommit this for further consultation with counsel.

Hospital and Professional Relations.—Dr. Raymond S. McKeeby, chairman, reported that the committee had conferred with the Medical Society of the County of New York on the question of the Health Review Service of the Beekman-Downtown Hospital and that the hospital agreed to discuss its clinic promotion with the county society's committee.

The Council *approved* the report.

Industrial Health.—Dr. Peter J. Di Natale, chairman recommended that Dr. Anthony A. Mira, director of the Bureau of Industrial Health and Workmen's Compensation, and Dr. Herbert T. Wagner, executive director, be authorized to attend the 1959 National Health Forum as official representatives of the State Society.

The Council *approved* the report.

Labor Union and Industrial Health Centers.—Dr Joseph A. Lane, chairman, reported on the activities of the committee and future plans for meetings with labor and management.

The Council *approved* the report.

Legislation.—Dr. James M. Blake, chairman, reported on bills sponsored by the State Society which had been introduced into the legislature, including (1) the injunction bill; (2) group life insurance; (3) limitation of the activities of the Medical Practice Committee of the Workman's Compensation Board; (4) medical expense insurance; and (5) problems relating to autopsies. He also reported on legislation which the Society was opposing, including (1) suspension of licenses of persons hospitalized for mental illness; (2) licensing of chiropractors; (3) bills referring to the practice of optometry; (4) contracts for physicians, osteopaths, or physiotherapists for laboratory tests or service; and other possible legislation.

The Council *approved* the report.

Federal Legislation.—Dr. John F. Rogers, chairman, reported on the progress of the Simpson-Keogh bill on social security for self-employed individuals and recommended that each officer, trustee, and councillor write a note of appreciation to Congressmen and Senators requesting support.

The Council *approved* this action.

Dr. Rogers described the activities of physicians who are members of Congress.

The Council *approved* the report as a whole.

Licensure of Clinical Laboratories.—Dr. John J. Clemmer, chairman, through Dr. James M. Blake, chairman of the Committee on Legislation, reported on two meetings of the subcommittee at which the existence of lay laboratories in metropolitan New York was discussed, and recommended that no legislation be introduced this year pertaining to the question of licensing of laboratories.

The Council *approved* the recommendation.

Autopsy and Dead Human Body.—Dr. Alfred A. Angrist, chairman, presented a written report which was distributed to the Council and which described the activities of the committee and its objectives. The committee recommended that a study of the question by an independent commission without government support is desirable; that the Medical Society take steps to have the ruling of the Board of Regents regarding unauthorized autopsies withdrawn, revised, or clarified, and further recommended that the State Society initiate a program of publicity and education in collaboration with other organizations to promote the acceptance of the autopsy as essential in an enlightened society.

The Council *voted* to adopt the report and the recommendations.

Cults.—Dr. James M. Blake, chairman, reported on the activities planned to oppose the legislation calling for the licensing of chiropractors.

1958 Management Survey.—Dr. Renato J. Azzari, chairman, presented a detailed report concerning opinions of the committee on the suggestions and recommendations made in the 1958 Survey Report.

The Council *voted* to approve the report to be submitted to the House of Delegates.

[Continued on page 2086]

The leading site of cancer today is the colon and rectum. In 1958, 58,000 new cases were diagnosed.

The present 5-year survival rate for these cancers is less than 30%. This figure could be greatly increased by closing the very wide gap between *actual* and *possible* survival rates.

Earlier diagnosis is an immediate requirement. The American Cancer Society constantly stresses the importance of annual health checkups for all adults, and urges physicians to employ digital and proctoscopic examination of the rectum and colon to find cancer in an early stage.

With your assistance, doctor, in persuading patients to accept these uncomfortable, time-consuming procedures, the gap between actual and possible survival rates could be rapidly closed.

AMERICAN CANCER SOCIETY ®

[Continued from page 2084]

Office Administration and Policy.—Dr. John J. Masterson, chairman, reported on personnel matters, recommended that the Society pay Blue Cross premiums for all employes in addition to the Blue Shield premiums which have been paid in the past, and recommended that a travel budget be provided for Dr. Wagner.

The Council *approved* the report.

Publication.—Dr. Alfred P. Ingegno, chairman, reported on details concerning the JOURNAL and *Directory*, recommended the appointment of Anthony Albanese, Ph.D., to the associate editorial board, and reaffirmed the policy of the committee not to list proprietory hospitals in the *Directory*.

The Council *approved* the report.

Planning Committee for Medical Policies.—Dr. Frederick A. Wurzbach, Jr., chairman, reported that the committee would report to the House of Delegates on Resolution 56–6, and would recommend that no change be made in the present status of election of delegates.

The Council *approved* the report.

Public Health and Education.—Dr. Norman S. Moore, chairman, reported as follows: (1) a meeting of the *Subcommittee on Hard of Hearing and the Deaf* which recommended that if a person can function satisfactorily with a hearing aid, he should be allowed to teach in any school; (2) on plans for the State-wide Conference on Aging to be held in Utica, March 7, cosponsored by the Subcommittee on Aging and the State Department of Health; (3) that 17 postgraduate meetings had been arranged since the last report; (4) recommended the establishing of a subcommittee on glaucoma to consist of Dr. Conrad Berens, Dr. John F. Gipner, and Dr. Robert F. Korn, adviser; (5) asked approval to refer to the Legislation Committee the question of raising the minimum age for obtaining alcoholic beverages to twenty-one years; (6) the cooperation of the *Subcommittee on Cancer* with the Bureau of Cancer Control of the State Health Department and the National Cancer Institute by sending a letter to the secretaries of all county medical societies explaining the large scale study of leukemia which is being conducted in Maryland, Minnesota, and New York.

The Council *approved* the report.

Public Relations.—Dr. John F. Rogers, chairman, reported on the following activities of the Public and Professional Relations Bureau: (1) the securing of physicians to appear on several local television programs; (2) the arrangements for several radio programs concerning mediation committees of county societies; (3) assistance given the Woman's Auxiliary; (4) a meeting to be held March 12 to reevaluate and reaffirm the "Standards of Practice for Doctors and Lawyers"; (5) news releases distributed; (6) cooperation with various newspapers and periodicals; (7) routine work of the Bureau.

The Council *approved* the report.

Cooperation with Media of Information.—Dr. John C. McClintock, chairman, reported on the annual meeting with representatives of radio, television, and the press to review and renew the State Society's "Guide for Cooperation for Doctors, Hospitals, and Reporters," held January 8, at which appreciation was expressed for assistance, and several minor improvements were discussed.

The Council *adopted* the report.

Rural Medical Service.—Dr. Edward C. Hughes, chairman, reported on progress of the proposed study in the counties of Onondaga, Oswego, and Cortland, and presented a preliminary report by Prof. Bert Ellenbogen of Cornell University on "A Study of the Organization Processes by Which Rural Communities Seek to Obtain a Resident Doctor."

The Council *approved* the report.

Scientific and Educational Trust.—Dr. Henry I. Fineberg, chairman, reported on the meeting of the committee which recommended: (1) that the Educational and Scientific Trust be approved in principle; (2) the entire matter be referred to the Committee on Public Health and Education to work out the details and technicalities of starting and maintaining such a program; (3) the "blueprint" prepared by the Committee on Public Health and Education be submitted to our counsel for evaluation and legal approval; (4) that our executive director visit the scientific trust of the Medical Society of the State of Pennsylvania in Harrisburg to study its organization, its modus operandi, and accomplishments.

The Council *approved* the report and *voted* to discharge the Committee with thanks.

Woman's Auxiliary, Advisory to.—Dr. Thurman B. Givan, chairman, reported on the Auxiliary's activities and plans for its annual convention in Buffalo in May and for the Seventh Annual Health Poster contest, judging to be held April 22 at the Queens County Medical Society building.

The Council *approved* the report.

Workmen's Compensation.—Dr. Gerald D. Dorman, chairman, reported that the new Workmen's Compensation minimum fee schedules were being mailed in alphabetic order.

The Council *approved* the report.

Unfinished Business

Interprofessional Association.—Dr. Henry I. Fineberg reported that the proposed constitution and bylaws for the Interprofessional Association had

[Continued on page 2088]

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(100 mg. per cc.)

[Continued from page 2086]

been referred to our counsel for study and comment and that his recommendations would be discussed at the next Council meeting.

The Council *approved* the report.

New Business

1959 House of Delegates.—Dr. Joseph A. Lane, Speaker, announced that the House of Delegates would convene at 10:00 A.M. on Saturday, May 9, in Buffalo and not at 2:00 P.M. as originally planned.

Candidates for A.M.A. Elections—The secretary reported, following an executive session, that it had been voted to send a letter to each state medical society or association in the American Medical Association expressing the endorsement of our Society for Dr. Gerald D. Dorman as candidate for trustee and Dr. J. Stanley Kenney as candidate for vice-president.

The Council recessed for luncheon at 12:15 P.M. and adjourned at 3:05 P.M.

New Rh Blood Reaction

An explanation for certain puzzling blood reactions in persons receiving transfusions or having babies was suggested today by one of the discoverers of the Rh factor. Writing in the February 14 *Journal of the American Medical Association,* Dr. Alexander S. Wiener, in collaboration with Dr. Lester J. Unger, explained a new type of Rh reaction.

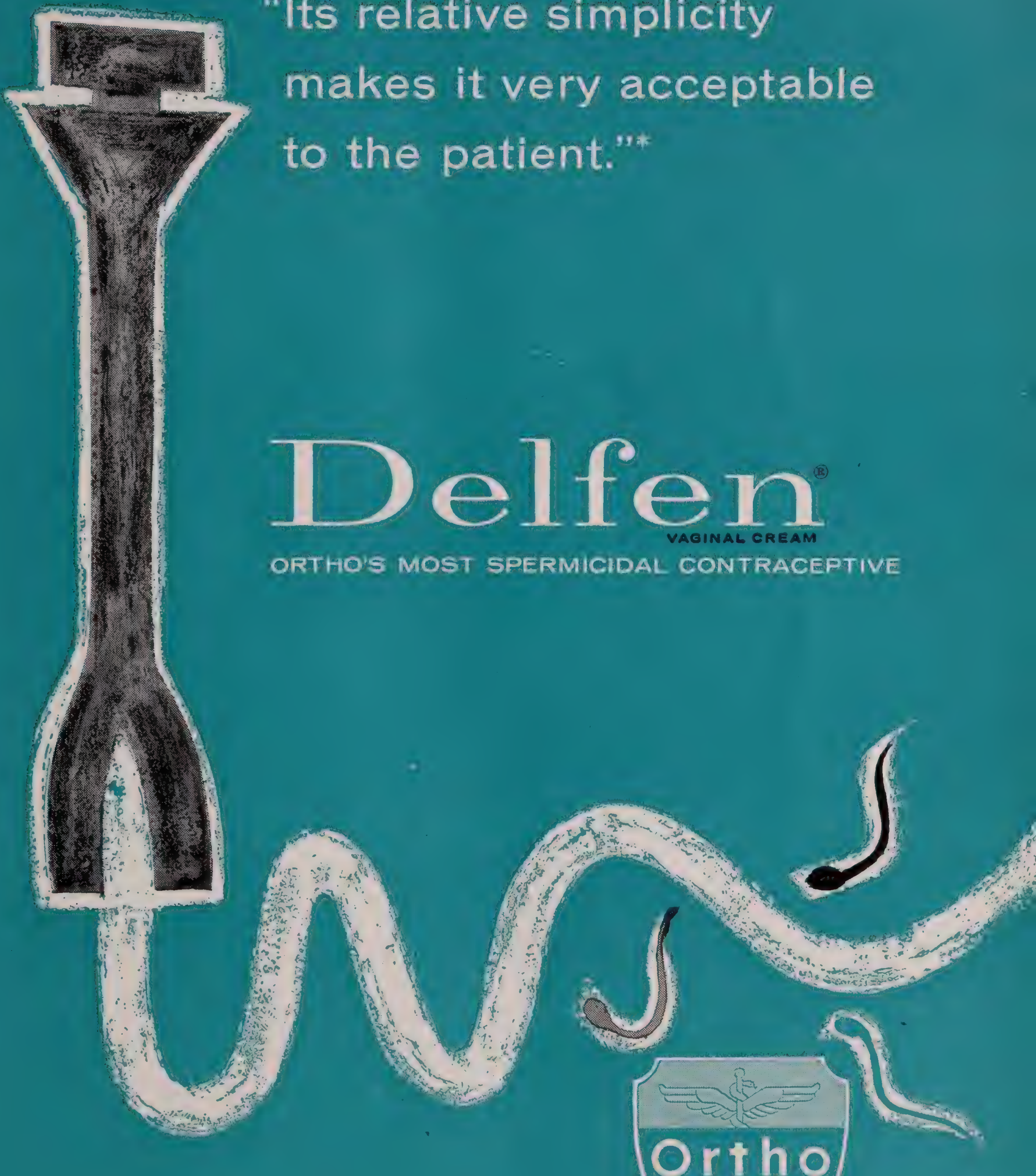
The Rh factor is a protein substance found in most persons' blood; however, some persons do not have the substance and are said to be Rh-negative. If they receive blood containing the factor, they build antibodies against it. This causes a serious reaction. Reactions may also occur in babies with the factor who are born of mothers without the factor. This condition is known as erythroblastosis fetalis.

Rh reactions have been thought to occur only between Rh-negative and Rh-positive blood in Rh-negative persons. Now, however, it has been found that blood reactions can occasionally occur in Rh-positive persons. Rh-positive persons have been found to have antibodies against the factor that strongly resemble those found in Rh-negative persons. This "seeming paradox" is explained by the fact that there are at least four Rh factors in normal blood.

If a person is missing one of the factors, he may react to blood containing the missing factor by developing antibodies against it. The possibilities of such reactions are quite small, since only about 1.6 per cent of Rh-positive Negroes and only about 0.1 per cent of Rh-positive Caucasians would be missing any of the factors.

Dr. Wiener is senior bacteriologist in the office of the Chief Medical Examiner of New York City, and Dr. Unger is director of the blood bank at New York University-Bellevue Medical Center.

"Its relative simplicity makes it very acceptable to the patient."*



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*Behne, D.; Clark, F.; Jennings, M.; Pallais, V.; Olson, H.; Wolf, L., and Tyler, E. T.: West J. Surg: 64:152, 1956.

Composition: Nonylphenoxypolyethoxyethanol 5% in an oil-in-water emulsion at pH 4.5.

BOOKS REVIEWED

Clinical Obstetrics and Gynecology. Vol. 1, No. 2. Fibromyomas of the Uterus. By R. A. Kimbrough, M.D., and Toxemias of Pregnancy by L. M. Hellman, M.D. A quarterly book series. Octavo of 256 pages, illustrated. New York, Paul B. Hoeber, Inc., 1958. Cloth, $18 a year.

This is the second in a quarterly book series. Each topic, toxemia and fibromyomas, is presented as a series of articles in a sequential, but not necessarily related fashion. Most of the contributors are associated with teaching institutions.

Emphasis in the toxemia section is put on the pathology of various organs. There is also a good discussion of treatment and prophylaxis of toxemia. The author suggests that prevention be started at the first prenatal visit with diet education. Patients are told to eat to keep thin, not to starve and be hungry. The topic is well covered and of interest to students and practitioners.

Most of the discussion of fibromyomas of the uterus is directed to the indications for the different types of treatment and the results to be expected. Operative technics are described in detail. I. Rubin contributed the article on fibroids and sterility which is very good. Another chapter of particular interest is the one on myomas associated with pregnancy. This monograph is of most interest to the resident and gynecologist.—Toni Novick

Bacterial and Mycotic Infections of Man. Third edition. By René J. Dubos, Ph.D. Octavo of 820 pages, illustrated. Philadelphia, J. B. Lippincott, Co., 1958. Cloth, $8.50.

Thirty-seven contributors make up this edition. As the editor states, this was made necessary because of the recent advances in microbial diseases.

Two new chapters have been included, "The Evolution and Ecology of Microbial Diseases"—a most interesting controversial point of view regarding infection and disease, and "Chemotherapy of Microbial Diseases."

Besides serology and immunochemistry, the allergy state and human blood groups are all discussed by well-known investigators. The part chemotherapy plays in microbial disease and the chapter on staphylococci infection is especially timely.

The bibliography is complete. This book can be recommended not only for the student and practitioner, but also for those working in the field of bacteriology and mycology.—Arthur M. Persky

Alcoholism. By Arnold Z. Pfeffer, M.D. Duodecimo of 98 pages. New York, Grune & Stratton, 1958. Cloth, $4.50.

This is another of the many monographs and countless papers which have been published over the past decade, during which alcoholism completed its metamorphosis from a moral to a medical malady, and became recognized as a psychologic rather than a social maladjustment.

Until our major texts accord this condition consideration commensurate with its prevalence and importance, these monographs will prove useful to those physicians who encounter alcoholics in their practice.

Albeit it is small in size, this volume covers the subject completely, in detail, including the latest therapeutic advances, with due appreciation of the value of A.A. It is one of the best monographs available on the subject.—Milton B. Spiegel

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Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn 16, New York. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selections for review will be based on merit and interest to our readers.

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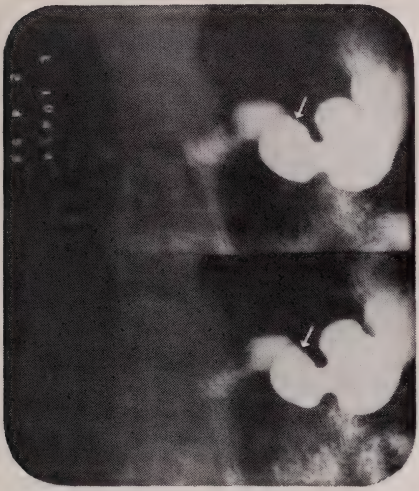
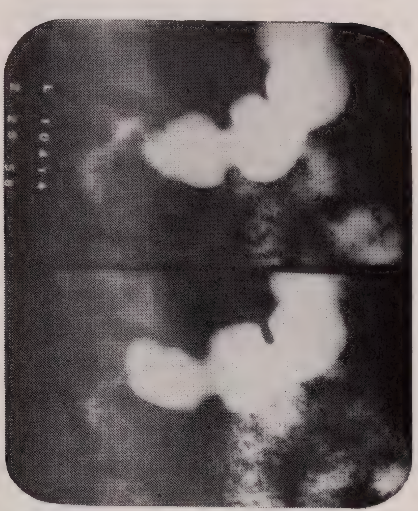


Patient A.S., age 53.
Intermittent crises of severe pain over 2 year period; hospital management with Sippy regimen provided relief of symptoms; however, symptoms recurred after each sojourn.



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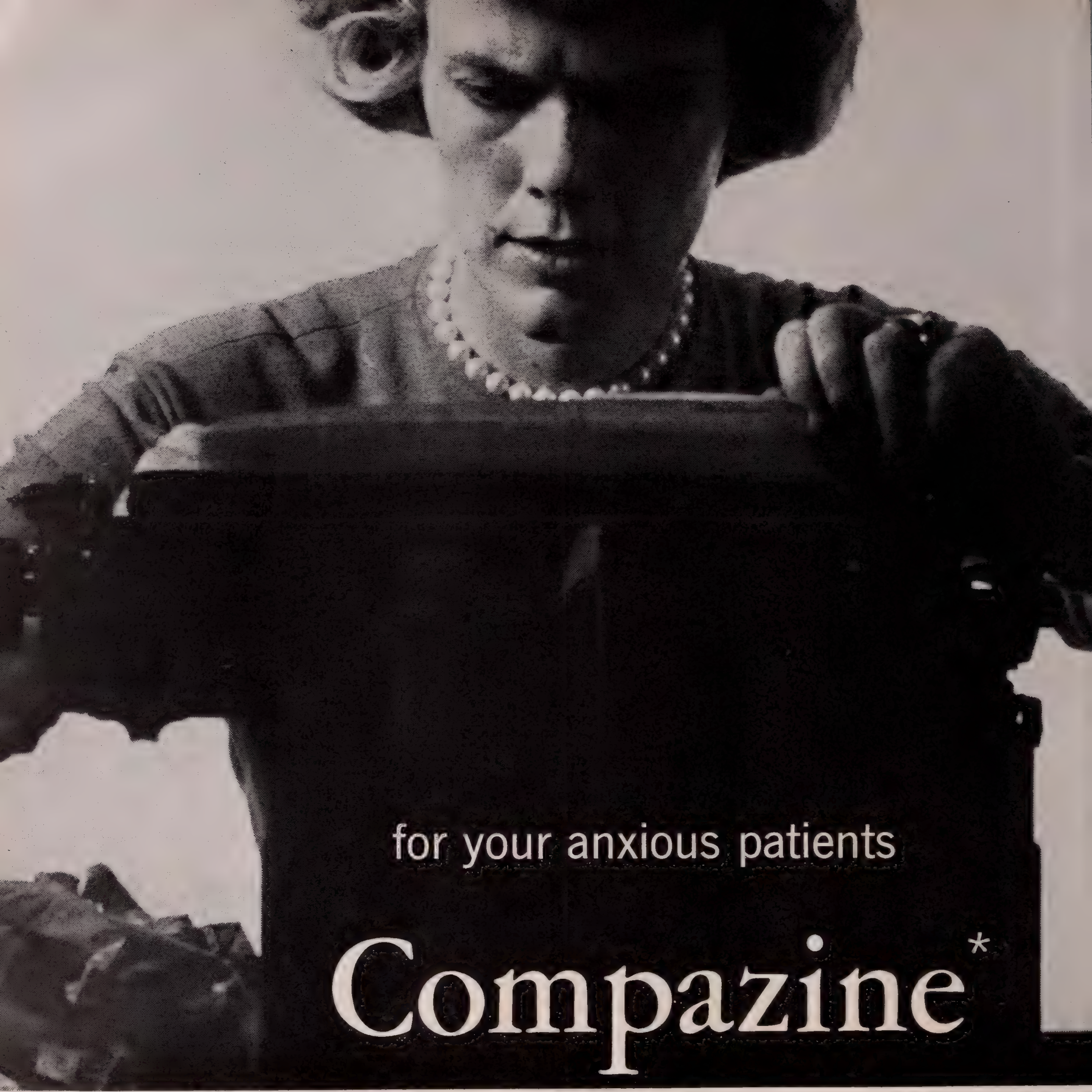

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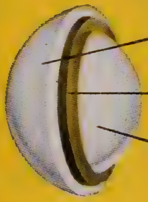

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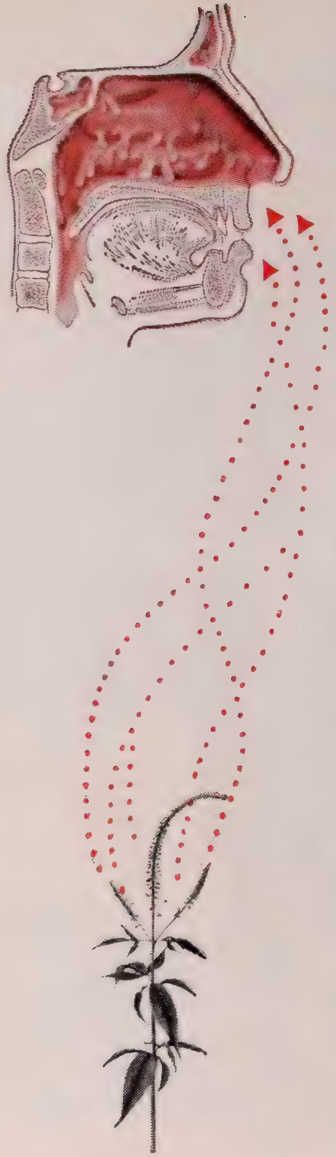

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References: 1. Sheldon, J. M.: Postgrad. Med. **14**:465 (Dec.) 1953. 2. Hubbard, T. F. and Berger, A. J.: Annals Allergy p. 350 (May-June) 1950. 3. Kline, B. S.: J. Allergy **19**:19 (Jan.) 1948. 4. Goodman, L. S. and Gilman, A.: Pharmacol. Basis Ther., Macmillan, New York, 1956, p. 532. 5. Fabricant, N. D.: E.E.N.T. Monthly **37**:460 (July) 1958. 6. Lhotka, F. M.: Illinois M.J. **112**:259 (Dec.) 1957. 7. Farmer, D. F.: Clin. Med. **5**:1183 (Sept.) 1958.

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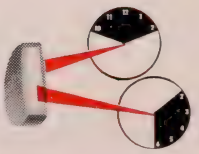

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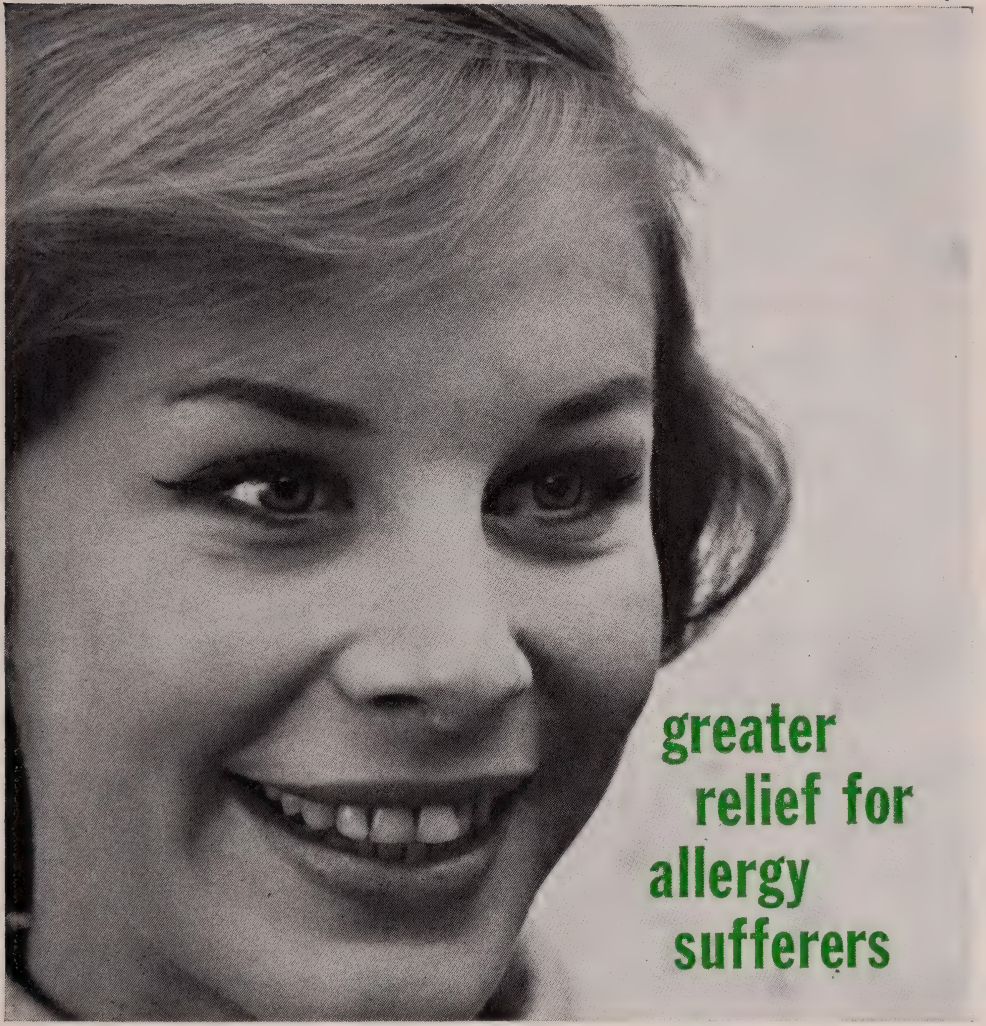

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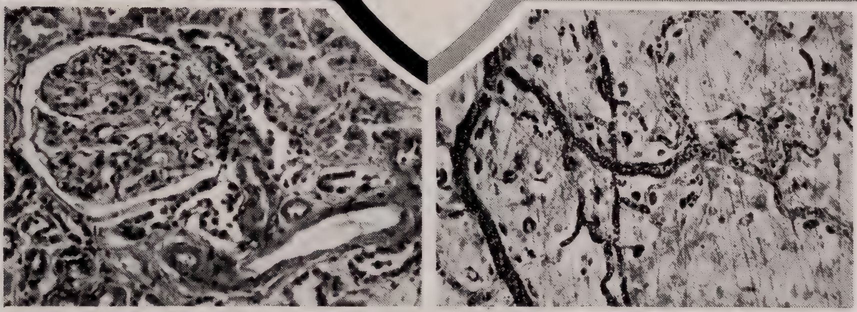

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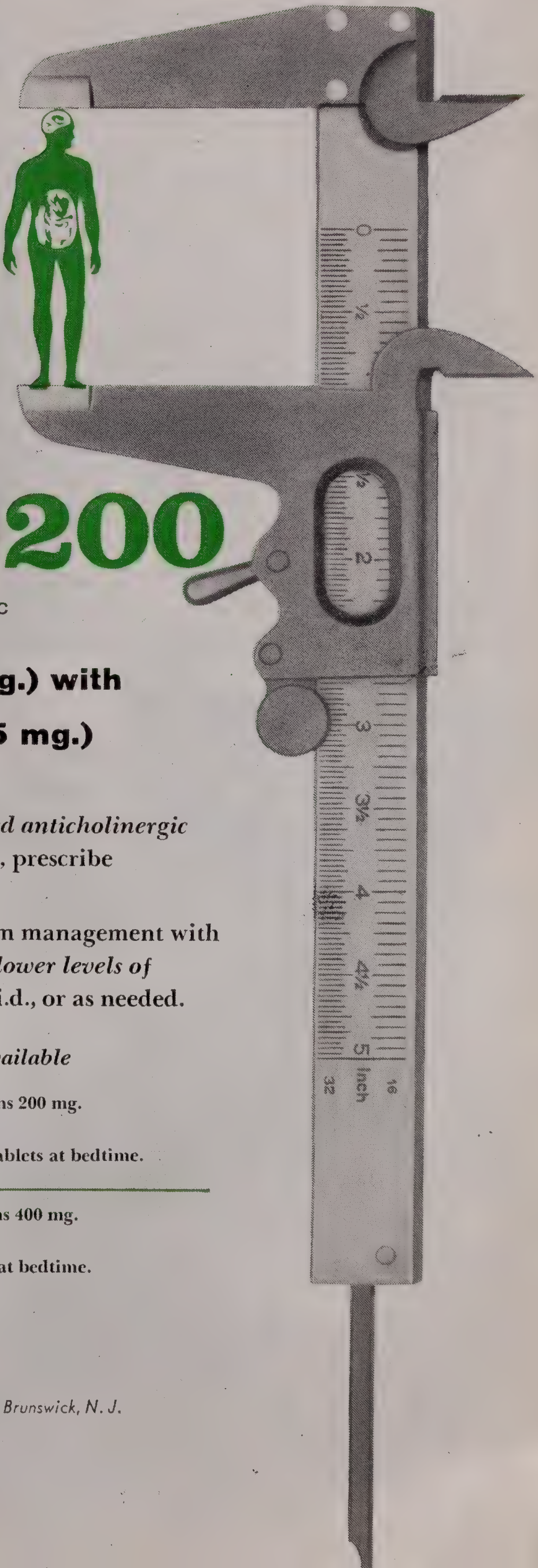

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DOSAGE: 1 tablet t.i.d. at mealtime and 2 tablets at bedtime.

Both forms supplied in bottles of 50 tablets.

WALLACE LABORATORIES New Brunswick, N. J.

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Literature? Write

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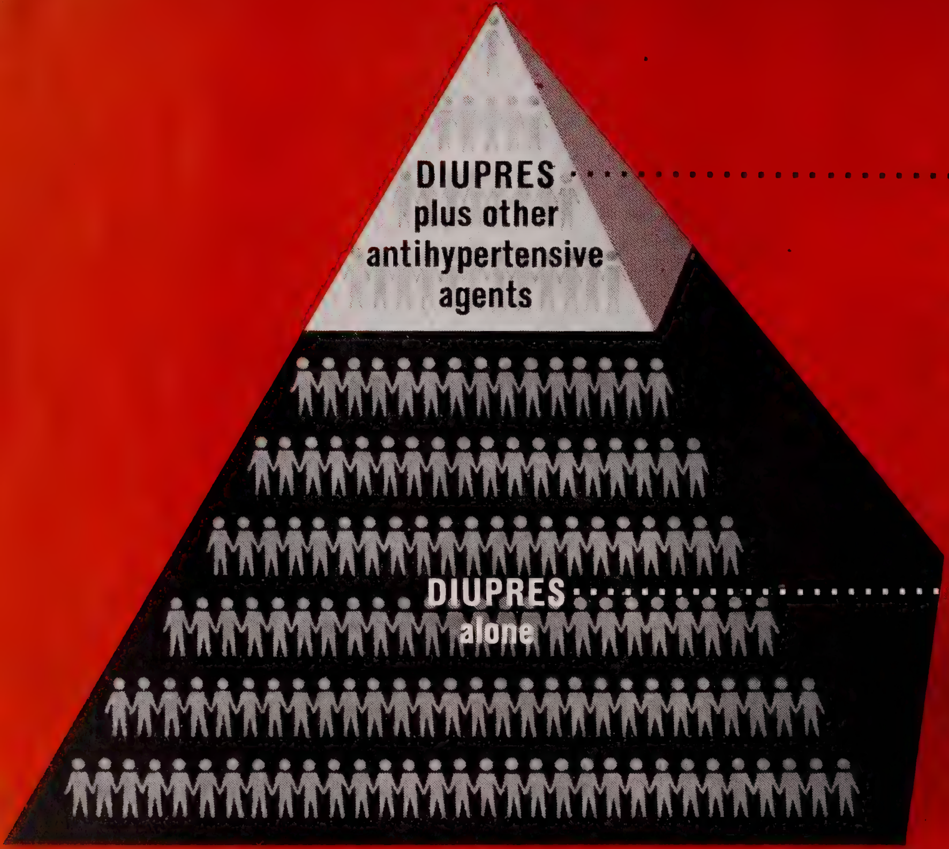
*U. S. Pat. 2,628,185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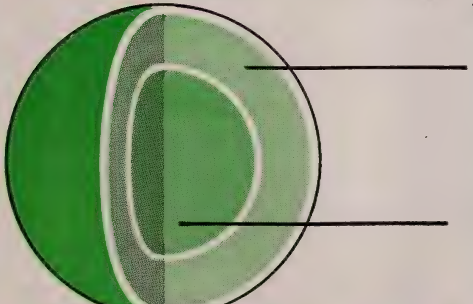

the formula: *in the gastric-soluble outer layer:*

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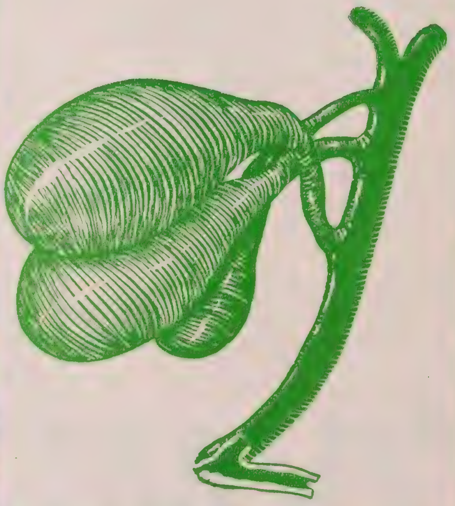
Source: Skilboe, B.: Am. J. Clin. Path. *30*:252, 1958.



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(1) Beckman, H.: Drugs: Their Nature, Action and Use, Philadelphia, W. B. Saunders Company, 1958, p. 425.
(2) Biliary Tract Diseases, M. Times *85*:1081, 1957.

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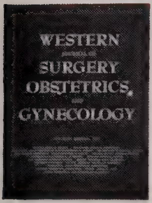
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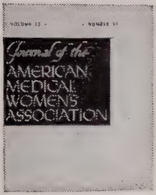
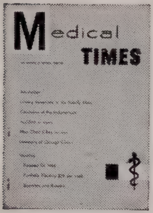
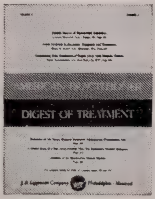
"Remarkable improvement . . . obtained in relatively all major complaints [associated with dysmenorrhea, pelvic congestive symptoms, menopausal distress]. . . . A more uniform and prolonged relief of tension may now be obtained by use of Bellergal Spacetabs." *(Stewart, R. H.: West. J. Surg. 64:650, Dec. 1956.)*


Journal of the AMERICAN MEDICAL WOMEN'S ASSOCIATION

". . . of 125 women who presented climacteric symptoms: flushes, flashes, sweats, palpitation, tension, fatigue, bloating, insomnia, and headaches . . . 73 responded [to a 2 to 4 week course of Bellergal therapy] so well that the dose was reduced...or the drug was completely discontinued. Some now only take a few tablets to help them through critical situations. . . ." *(Kavinoky, N. R.: J. Am. M. Women's A. 7:294, Aug. 1952.)*


Medical TIMES

"...based on the concept that a labile nervous system is a major factor in [premenstrual tension and disturbances of the menopause] . . . the combination of drugs present in Bellergal served admirably in the reduction of symptoms, both as to degree and number. The improved sense of well-being offers satisfactory evidence that such patients may derive considerable benefit from this simple method of treatment." *(Craig, P. E.: M. Times 81:485, July 1953.)*


AMERICAN PRACTITIONER DIGEST OF TREATMENT

"...of 303 gynecologic patients [premenstrual tension, dysmenorrhea, menstrual irregularity, postmenstrual tension] . . . a total of 90 per cent of the cases were benefited by the use of this drug [Bellergal]." *(MacFadyen, B. V.: Am. Pract. & Digest. Treat. 2:1028, Dec. 1951.)*

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REFERENCES: 1. Seidner, H. M.: Illinois M. J. 109:20, 1956. 2. Weil, L. L.: J. Florida Acad. Gen. Practice 4:9, No. 3, 1954. 3. Moyer, J. H.: M. Clin. North America, March, 1957, p. 405. 4. Kinney, J. J.: J. M. Soc. New Jersey 53:128, 1956. 5. McClure, C. C.: Personal communication. 6. Charles, C. M.: Geriatrics 11:110, 1956.

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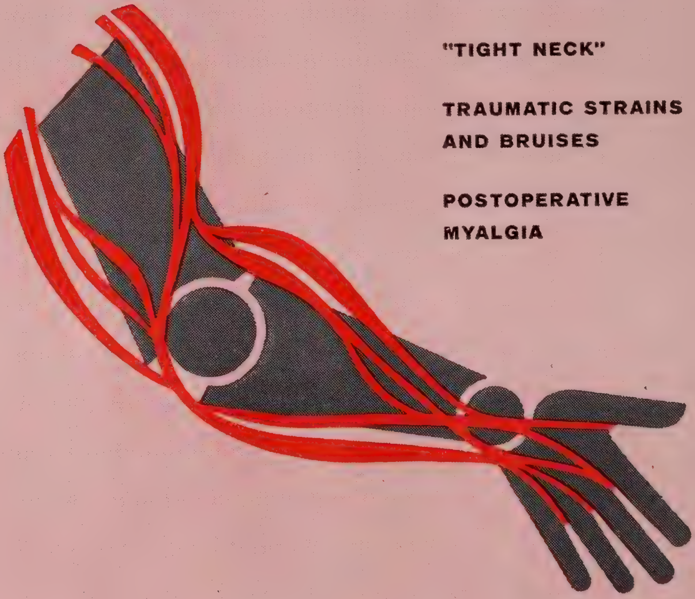

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- Modifies central perception of pain without abolishing natural defense reflexes
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SUPPLIED: Bottles of 50 white sugar-coated 350 mg. tablets.

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References: 1. Smith, I. M., and Lenyo, L.: Am. Practitioner 9:78, 1958. 2. Jawetz, E., et al.: A.M.A. Arch. Int. M. 100:549, 1957.

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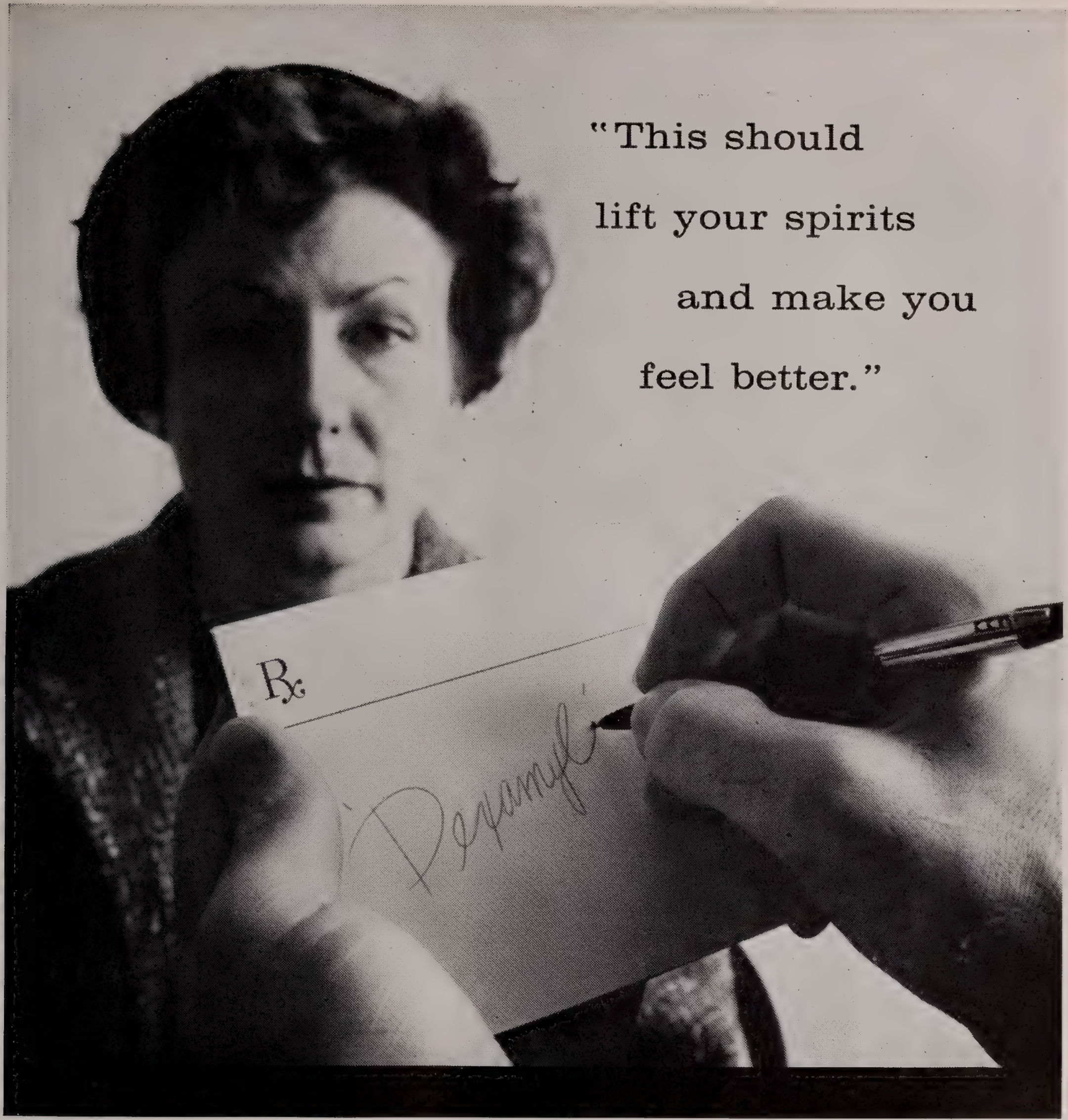
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	In each Tablet, Capsule or tsp. (5 cc.) of Elixir	Ex
Hyoscyamine sulfate	0.1037 mg.	0.311
Atropine sulfate	0.0194 mg.	0.058
Hyoscine hydrobromide	0.0065 mg.	0.019
Phenobarbital	(¼ gr.) 16.2 mg.	(¾ gr.) 48.

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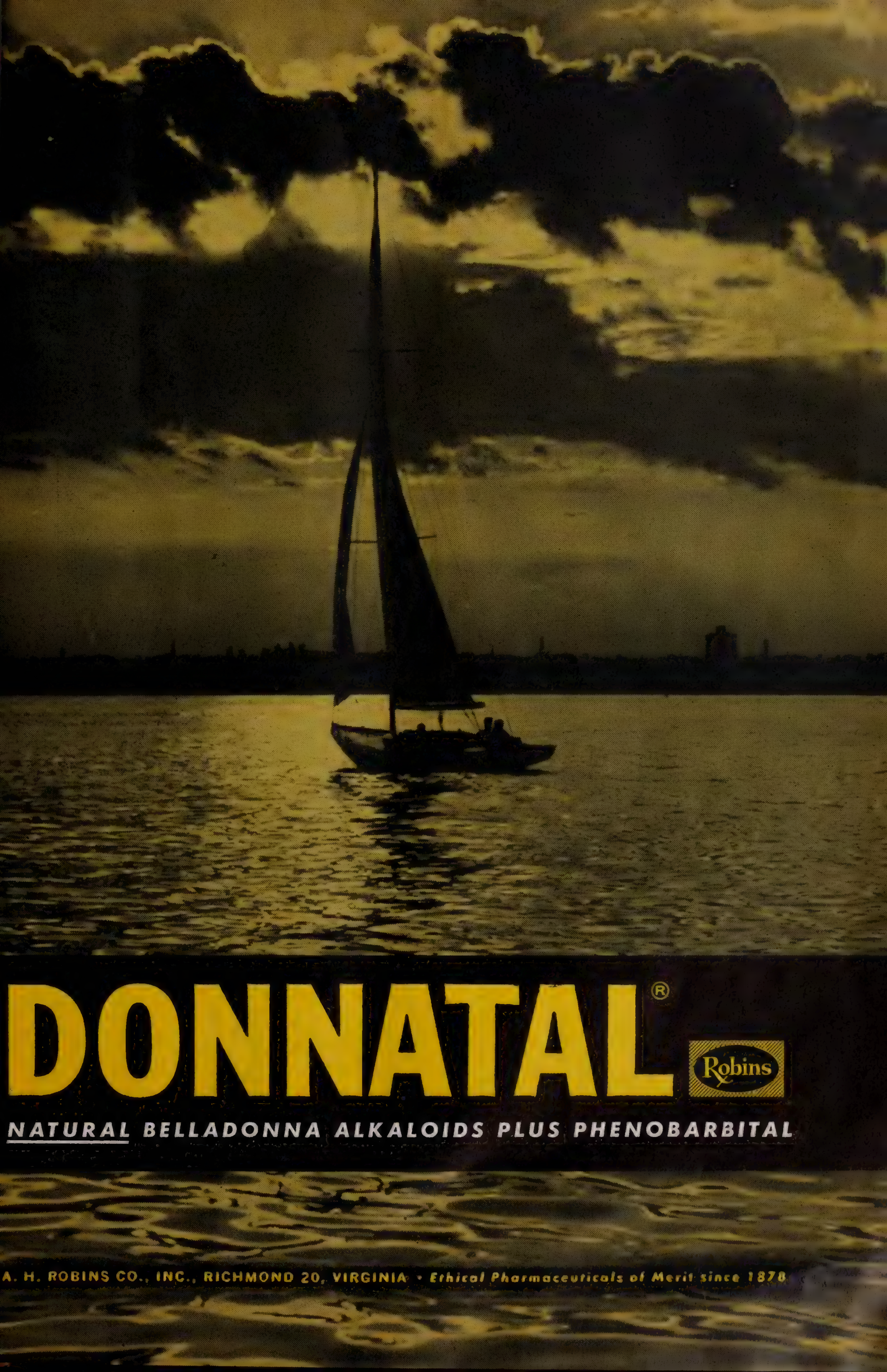

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capsules	*oral suspension*	*pediatric drops*
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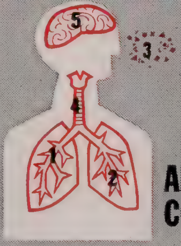

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1. Personal communication. 2. Foland, J. P.: Postgrad. Med. 18:397 (Nov.) 1955.

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EDITORIALS

Poison Control

In this issue of the JOURNAL you will find another report from the New York City Poison Control Center.

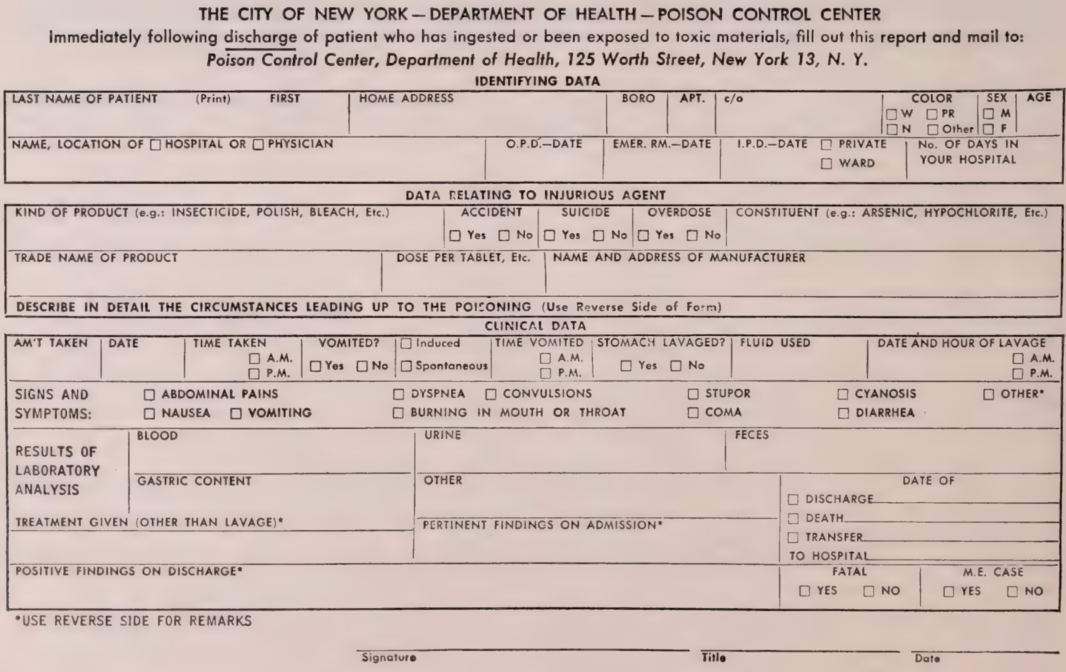
We feel that these reports are interesting and instructive. We wondered whether or not the identification of the toxic agent by its proprietary name might offer the reader a better means of recognition. However, on proper advice it was found expedient to identify only by generic names (where the agent is intended for human consumption and bears a registered brand name).

In the article on page 2223 the authors plead with "Poison Control Officers and all others reporting accidents to include pertinent and significant medical data in their reports so that this information and experience may be shared with other physicians." Many readers have written the New York City Poison Control Center that more information be included in the "Briefs." The authors cannot supply information unless it is available.

Any physician who reports a poisoning can do so easily, simply, and briefly by utilizing a special form provided by the Poison Control Center at 125 Worth Street, New York 13, New York, known as Form #45 VX (Fig. 1).

It will be noted that many of the answers may be checked off and that additional remarks may be made on the reverse, blank side.

Any reporting physician will be performing a distinct service to his community and fellow practitioners by utilizing this form.



THE CITY OF NEW YORK — DEPARTMENT OF HEALTH — POISON CONTROL CENTER

Immediately following discharge of patient who has ingested or been exposed to toxic materials, fill out this report and mail to:

Poison Control Center, Department of Health, 125 Worth Street, New York 13, N. Y.

IDENTIFYING DATA

LAST NAME OF PATIENT (Print) FIRST | HOME ADDRESS | BORO | APT. | c/o | COLOR ☐ W ☐ PR ☐ N ☐ Other | SEX ☐ M ☐ F | AGE

NAME, LOCATION OF ☐ HOSPITAL OR ☐ PHYSICIAN | O.P.D.—DATE | EMER. RM.—DATE | I.P.D.—DATE ☐ PRIVATE ☐ WARD | No. OF DAYS IN YOUR HOSPITAL

DATA RELATING TO INJURIOUS AGENT

KIND OF PRODUCT (e.g.: INSECTICIDE, POLISH, BLEACH, Etc.) | ACCIDENT ☐ Yes ☐ No | SUICIDE ☐ Yes ☐ No | OVERDOSE ☐ Yes ☐ No | CONSTITUENT (e.g.: ARSENIC, HYPOCHLORITE, Etc.)

TRADE NAME OF PRODUCT | DOSE PER TABLET, Etc. | NAME AND ADDRESS OF MANUFACTURER

DESCRIBE IN DETAIL THE CIRCUMSTANCES LEADING UP TO THE POISONING (Use Reverse Side of Form)

CLINICAL DATA

AM'T TAKEN | DATE | TIME TAKEN ☐ A.M. ☐ P.M. | VOMITED? ☐ Yes ☐ No | ☐ Induced ☐ Spontaneous | TIME VOMITED ☐ A.M. ☐ P.M. | STOMACH LAVAGED? ☐ Yes ☐ No | FLUID USED | DATE AND HOUR OF LAVAGE ☐ A.M. ☐ P.M.

SIGNS AND SYMPTOMS: ☐ ABDOMINAL PAINS ☐ NAUSEA ☐ VOMITING ☐ DYSPNEA ☐ CONVULSIONS ☐ BURNING IN MOUTH OR THROAT ☐ STUPOR ☐ COMA ☐ CYANOSIS ☐ DIARRHEA ☐ OTHER*

RESULTS OF LABORATORY ANALYSIS | BLOOD | URINE | FECES

GASTRIC CONTENT | OTHER

TREATMENT GIVEN (OTHER THAN LAVAGE)* | PERTINENT FINDINGS ON ADMISSION*

DATE OF

☐ DISCHARGE________

☐ DEATH________

☐ TRANSFER________

TO HOSPITAL________

POSITIVE FINDINGS ON DISCHARGE* | FATAL ☐ YES ☐ NO | M.E. CASE ☐ YES ☐ NO

*USE REVERSE SIDE FOR REMARKS

Signature | Title | Date

FIG. 1

Sucaryl in "Low-Calorie" Ice Cream

Recently the New York State Legislature passed a bill permitting the use of Sucaryl in a "low calorie" ice cream for use in reduction diets and by diabetic patients.

Physicians should have the facts in mind about this ice cream when prescribing or permitting its use since it is not low in calories nor indeed in carbohydrate content and must be considered an important item in estimating a diet.

Here is a sample of the contents and caloric values:

	Fat (Per Cent)	Protein (Per Cent)	Carbohydrate (Per Cent)
Regular Ice Cream Caloric value per pint—705 (1 serving [$^1/_4$ pint]—176 calories)	18	3.43	19.13
Ice Cream for Reducing Diets Caloric value per pint—533.8 (1 serving [$^1/_2$ pint]—133 calories)	12	4.66	21.5
Ice Cream for Diabetic Patients Caloric value per pint—527.4 (1 serving [$^1/_2$ pint]—132 calories)	10	3.4	20.6

The main difference is in fat content, there being insignificant changes in protein or carbohydrate values. There is also only a 20 per cent reduction in caloric value in each serving while the caloric value is still appreciable.

Due allowance must therefore be made in recommending these Sucaryl-sweetened special ice creams for diabetic patients and in reducing diets.

Editorial Comment

M.D.'s Licensed in Neighboring States.* The question comes up occasionally concerning the right of physicians licensed in a neighboring state to treat patients in New York hospitals located near the border of an adjoining state. Such hospitals will be interested in correspondence on the subject between Counselor Emanuel Hayt and Dr. Charles A. Brind, Jr., Counsel for the State Education Department.

June 23, 1958

Dr. Charles A. Brind, Jr. Counsel,
State Education Department
State Building
Albany, New York

Dear Dr. Brind:

I have had an inquiry from a member hospital of the Hospital Association of New York State concerning the right of physicians licensed in a neighboring state treating patients in New York hospitals near the border of the adjoining state, without being licensed in the state of New York.

I note that section 6512 of the State Education Law has the following provisions relating to exemptions from licensing:

> *c.* The practice of medicine by any physician duly licensed to practice medicine in a neighboring state, who resides near a border of such neighboring state, whose practice extends into this state and who does not open an office or appoint a place to meet patients or receive calls within this state.
>
> *d.* Any lawfully qualified physician in other states or countries meeting legally registered physicians in this state in consultation.

It is clear to me that such a physician must (1) be licensed in a neighboring state, (2) reside near a border of such neighboring state, (3) have a practice which extends into this state, (4) not open an office in this state,

[Continued on page 2146]

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* Reprinted by permission from Hospital Forum, **26**: 4 (July) 1958.

PRESIDENT'S PAGE

HENRY I. FINEBERG, M.D.

I am very happy to greet the more than 24,000 members of our great Medical Society through my first "President's Page." In my opinion, this very fine medium of communication is the best way of keeping in touch with the doctors of medicine in the State; and I expect to make adequate use of it during the coming year. You will be kept informed of what is taking place at central headquarters in New York City, and I will attempt to relay to you most of our philosophy and thinking about matters which should be of interest. I believe that these discussions should be rather informal in nature. It is my hope that you will feel free to write to us in order that we may know your problems.

To be chosen president of this organization is indeed the greatest honor that can be accorded any physician. I enter upon this very important office with a feeling of deep humility, fully realizing that the president of any group can only be as strong, and his administration as successful, as the membership wishes and permits. We must work together for the good of all—for the health and welfare of our people.

As chairman of the Council Committee on Legislation for several years and as president-elect, I have had the unusual opportunity of visiting various sections of the State. In this way, I have become acquainted with the folks in the densely populated regions and I have learned what makes our colleagues in the grass root areas tick. Establishing these friendships has been a most gratifying and wonderful experience, one that will stay with me always.

As I have pointed out time after time, some of us who live in the big cities with their large medical schools and hospitals become much too smug and conceited, imbued with the idea that the science and art of medicine can be practiced adequately only in large metropolitan areas. Nothing could be further from the fact. In my travels I have discovered that the so-called small town "Doc" does as well as his big city cousin. We can be proud of our profession all through the State of New York, despite the fact that we are being taken to task for many inadequacies over which we have little or no control. The public must, and eventually will, learn that they should not sell medicine short.

In this initial message, I will confine myself to two topics: public relations and legislation. For a considerable number of years, we have discussed public relations or what some experts call human relations. In too many places, the medical profession has been lambasted, sometimes unmercifully, too often without true cause; but, unfortunately, on occasion, with justification.

We have a Public and Professional Relations Bureau; and this department has been trying to effect a healthy relationship between the doctors and the public. However, it is my contention that the Bureau can only set up and blueprint the architecture of a public relations program. It is the individual physician who is the key figure in any effort of this type. Each doctor of medicine must be his own public relations director. Well devised public relations pamphlets cannot take the place of devoted service.

There is no profession that has given more unstintingly of its time and energy to human health and welfare than has medicine; but to our great distress a minority of our physicians, somewhere along the line, have lost the spirit of service that is, and has always been, so characteristic of the doctor. The result is that too frequently the sins of the few are being visited on the many. Complaints have come across my desk that general practitioners and specialists cannot be reached for varying lengths of time, especially during week ends. We have emergency medical services in most of our county medical societies; but do they always work efficiently? Are they accomplishing their purpose? I would suggest that you read a talk given by Dr. Kenneth T. Rowe at the Public Relations Conference held on October 25, 1958 (NEW YORK STATE JOURNAL OF MEDICINE, **59**: 1131, March 15, 1959), concerned with "The Case of the Disappearing Doctor."

We believe that it is important for the doctor to discuss fees frankly and directly, including those of the consultants that he calls on for assistance. He should communicate a clear and concise statement of the diagnosis and treatment to the patient. We cannot overlook the cliché (which still holds water) that the true physician must practice not only the science but also the art of medicine. In the long run, good public relations is born, and often dies, at the bedside and in the doctor's office. If we are to do a really good public relations job, everyone in medicine must cooperate. The medical schools and their teaching physicians must also inculcate into their students the fact that the practice of medicine represents a public service of the highest degree.

As I stated at the last meeting of the House of Delegates, it is my firm belief that at the same time that we practice medicine we must also assume the role of citizen. There is no better time than the present to show to the world that our life is a varied one and that the welfare of the community as a whole is also our responsibility. There is no reason why the doctor should not be represented on various organizations throughout his county: the Chamber of Commerce, the Welfare Council, the Health Council, and others. He should take an interest in the candidates for public office, vote at elections, and be concerned with city planning. In other words, the doctor should perform the duties required of all other citizens of a democratic state. My own experience has shown that this can be accomplished, although I will admit that participation in civic affairs will mean greater sacrifices on the part of the physician than for others in the community. The doctor must adhere to an exacting schedule, time being the measure of his earning capacity, and he cannot afford to endanger the welfare or the life of his patient. However, there is little doubt that the physician can take his proper place in the community and should do so.

Legislation is a very important aspect of the work of our State Medical Society. I have found that very little can be accomplished in this direction without the wholehearted support of the members and officers of the county medical societies in all parts of the State. We must be careful that our program is not too elaborate. We must try to confine ourselves to those legislative proposals that we believe have a chance of being successful, because there is no question that if we introduce too many bills our efforts can become so diluted that the important ones may fall by the wayside.

Many experts have told me that it is essential that we get to know our legislators, that we talk to them, and that we present to them our viewpoints about matters concerned with health so that they can evaluate existing conditions competently and be in a better position to resolve the problems that plague us. We have kept ourselves too far removed from the individuals in the State Legislature and in Congress who play an important role in the determination of our destiny.

May I remind you that most of our legislative projects will be long-range ones. Despite the feeling of some of our people, we cannot have enacted into law all of our propositions. A bill introduced at one session may fail to pass; but if we feel that we are in the right, and if we continue to fight, it may be successful eventually. Legislative activity requires continual planning and vigilance. We have competent counsel to whom we can turn for advice; but, here again, they can only develop the necessary patterns in Albany. It is up to us to spread the gospel throughout the State.

I will be "talking" to you again during the early autumn. May all of you have a very pleasant summer!

Henry I. Fineberg

Henry I. Fineberg, M.D., *President*

Editorial Comment

[Continued from page 2143]

(5) not appoint a place to meet patients in this state, and (6) not receive calls within this state.

The only question which troubles me is whether such a physician who refers a patient to a hospital under the prescribed conditions may be held to "appoint a place to meet patients." Such a holding would preclude a physician from membership on the staff of a neighboring New York hospital or from treating his own patients in a New York hospital, whether such patients are residents of this state or the adjoining state. I think that the whole intent of the particular exceptions in the statute is to restrict such physicians to the treatment of patients in places in which there is both administrative and medical evaluation of the physician's qualifications and supervision by duly authorized persons of the care of such patients. The only place in which such control can be exercised is in a hospital, as differentiated from "an office" or "a place to meet patients." Such an interpretation of subdivision "*c*" would seem to be supported by subdivision "*d*" which extends the privilege to consultants from other states or countries provided medical consultation is with legally registered physicians.

I would be grateful to you for your opinion.

Sincerely yours,
Emanuel Hayt

The University of the State of New York,
the State Education Department, Albany 1

July 10, 1958

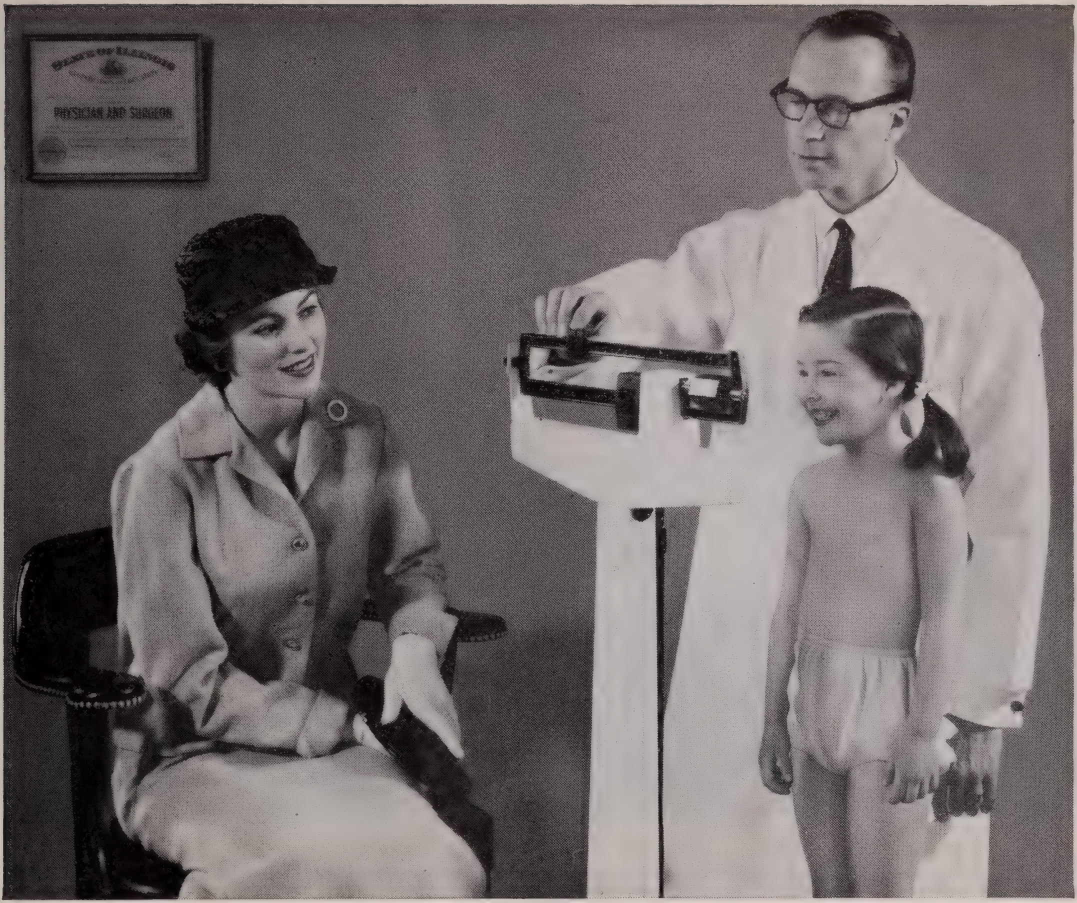
Emanuel Hayt, Esq.
Office of Counsel
Hospital Association of New York State
99 Wall Street
New York 5, New York

Dear Mr. Hayt:

I have your letter of June 23.

It is my recollection that the question you pose about membership on the staff of a New York State hospital by a physician living near the border but in a neighboring state has come up in the past, and it has been my view that membership on such staff would not constitute appointing a place to meet patients and that if the physician is carrying on activities only incidental to his out-of-state practice that he would not be outside of the terms of the exemption which you quote from Section 6512.

Very truly yours,
Charles A. Brind, Jr.



Underweight Children Gain and Retain Weight with Nilevar®

One of the most convincing evidences of the anabolic activity of Nilevar, brand of norethandrolone, has been its ability to improve appetite and increase weight in poorly nourished, underweight children.

A highly important feature of the weight gain thus produced is that it is not ordinarily manifested by deposition of fat but as muscle tissue resulting from the protein anabolism induced by Nilevar.

Anorexia and "Weight Lag" Study—Brown, Libo and Nussbaum have reported* consistent and definite increases in rate of weight gain in eighty-six patients, ranging in age from 7 weeks to 15½ years. This beneficial action of Nilevar was observed in the patients with organic and traumatic disorders as well as those whose only complaints were poor appetite and/or persistent failure to gain weight.

In this study, the weight gained was not lost after discontinuance of Nilevar therapy although many patients did not continue the sharp gains effected by the drug.

The authors are of the opinion that Nilevar is a highly useful anabolic agent for influencing weight gain in underweight children.

When Nilevar is administered to children a dose of 0.25 mg. per pound of body weight is recommended and continuous dosage for more than three months is not recommended.

Nilevar is supplied as tablets of 10 mg., drops of 0.25 mg. per drop and ampuls of 25 mg. in 1 cc. of sesame oil. Further dosage information in Searle Reference Manual No. 4.

G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.

---

*Brown, S. S.; Libo, H. W., and Nussbaum, A. H.: Norethandrolone in the Successful Management of Anorexia and "Weight Lag" in Children, Scientific Exhibit presented at the Annual Meeting of the American Academy of Pediatrics, Chicago, Oct. 20-23, 1958.

"I seem to have the blues all the time…
I can't sleep…"

in the depressed, unhappy patient

PROMPTLY IMPROVES MOOD

without excitation

- **Acts fast to relieve depression and its common symptoms:** sadness, crying, anorexia, listlessness, irritability, rumination, and insomnia.
- **Restores normal sleep**—without hang-over or depressive aftereffects. Usually eliminates need for sedative-hypnotics.

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Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

Composition: Each light-pink, scored tablet contains 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate.

References:

1. Alexander, L.: J.A.M.A. 166:1019, March 1, 1958.
2. Current personal communications; in the files of Wallace Laboratories.
3. Pennington, V.M.: Am. J. Psychiat. 115:250, Sept. 1958.

for depression

▲Deprol▲

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SCIENTIFIC ARTICLES

A Discussion of Breast Cancer

FRANK E. ADAIR, M.D., NEW YORK CITY

(*From Memorial Center for Cancer and Allied Diseases*)

The United States now has a population of approximately 175,000,000 of whom 450,000 were expected to develop cancer during 1958. Cancer is our second public health problem, being preceded only by heart disease. One out of every four persons will develop cancer of some form during our lifetime.

Many patients with cancer well established die of diseases other than cancer, such as heart, arteriosclerosis, accidents, and so forth. This accounts for the fact that cancer deaths in 1956 totaled 245,070 (16 per cent of deaths from all causes).

In men the three most common sites of origin of cancer in 1956 were:

1. Skin—31,000 new cases
2. Lung and bronchus—26,000 new cases
3. Stomach—24,000 new cases

In women the three most common sites or origin of cancer in 1956 were:

1. Breast—52,000 new cases (Tops all types in men or women)
2. Cervis uteri—25,000 new cases
3. Skin—24,000 new cases

Thus breast cancer attacks white women over twice as frequently as its closest colleague, cancer of the cervix. A personal letter from the U.S. Public Health Service stated that 60,000 new cases of cancer of the breast were expected to develop during 1958.

The Japanese have a high death rate for cancer of the esophagus and stomach; but cancer of the breast, uterus, ovary, prostate, and urinary organs is less important than among whites or other nonwhites.

In the United States, the curve of breast cancer keeps steadily going up, without any suggestion of a down-turn. It would be most interesting to know why the graph of age-adjusted cases of breast cancer continues to mount, while cancer of the lung and cervix, at certain ages, reverses itself and turns downward. In the case of cancer of the cervix, is it because the Papanicolaou smear is picking up cancer cells before true invasion takes place? Nothing is as yet in sight which gives encouragement to breast cancer incidence when compared with cancer of the cervix.

Although we recognize that a larger proportion of early cases of cancer of the breast come to clinicians than came previously, still why is it that *all* cases arriving are not early? One answer is that women dislike having their breasts examined by the physician. Modesty and embarrassment are very important factors in delaying the diagnosis of breast cancer. I have gleaned, by many years of experience, that the average woman would prefer to have a pelvic examination, under proper conditions of draping, than a breast examination. This situation leads to delay on the part of the patient.

Many women are completely unconscious of their body to the point that unless something pains or causes discomfort, or a lump is accidentally discovered, a lesion may advance quite far before its detection.

Delay is often also caused by the physician

Presented before the Royal Free Medical School and Hospital, London, England, on July 10, 1958.

TABLE I.—A SALVAGE OF BREAST CANCER CASES

Hospital	Survival (Years)	Over-All Survival (Per Cent)	Breast Alone Involved (Per Cent)	Both Breast and Axilla Involved (Per Cent)
Memorial Hospital (Adair)	5	54.4	77.5	39.4
	10	33.8	53.8	21.2
Mayo Clinic (Harrington)	5	51.2	78.3	32.5
	10	31.1	54.5	15.5
Guthrie Clinic (Guthrie)	5	...	76.0	23.0
	10	...	40.9	9.8
Karolinski Hospital (Sweden) (Rosenqvist)	5	54.4	70.9	42.5

who does not see very many cases of breast cancer in his practice during a year. Curiously enough, he may suspect a lesion as having possible importance, but not infrequently he sees physiologic lumps disappear spontaneously, such as premenstrual areas of mastitis, adenosis, and hyperplasia. The physician hopes this particular lump may also disappear. The family physician is a little too apt to "take a chance" to delay coming to grips with the problem of an exact pathologic diagnosis.

All in all, there are several different factors which add up to an unfortunate delay in dealing with this, the greatest single problem of cancer in women.

In the United States our progress in cancer of the breast seems slow. However, one should not be discouraged. The education of a population mass is always slow. When the Breast Service was started at the Memorial Hospital in 1920, our operable cases were only 22.6 per cent of our total breast cancer cases. During the following 31 years the same operable material had gone up to 80.3 per cent of our total cases without changing our criteria of operability.

During the twenty years from 1920 to 1940, very little progress was made in cancer of the breast throughout the world, except in the development of the high-voltage x-ray machine. However, during the immediate past fifteen years four things of great significance have been developed in the field of breast cancer, namely:

1. A recognition of the important role of hormones in the cause and treatment of breast cancer, utilizing testosterone and estrogens.

2. With the exception of the fifty-eight-year-old operation, ovariectomy (George Beatson, 1900), the very recent development of ablative surgery by the removal of the adrenals (Huggins) and hypophysis (Luft and Olivecrona), opening up entirely new modes of attack.

3. The development of the super-radical mastectomy. It has now become possible to attack by surgical means the second basin of lymphatic drainage, namely the internal mammary chain. Before our panel at the recent London Cancer Congress, 1,260 cases of the super-radical operation were reported in the discussion, with 9 operative deaths, showing that at least in the hands of surgeons experienced in this field, a low operative mortality can be obtained.

4. Technical improvement in the irradiation methods.

During the past few years the American Cancer Society has made an aggressive attempt to teach the public the signs of cancer. In fact, we have a film on self-examination of the breast. This educational film has now been viewed by over 10,000,000 women. We think we have evidence to support the belief that women educated in the signs of breast cancer are coming earlier to their physicians. Although advanced cases still come, and always will, there are fewer of these neglected cases than previously. The tumors are averaging a smaller size. The diagnosis of these small tumors is becoming increasingly difficult. During the past thirty years primary operable cases having axillary involvement have come down from 60 per cent to 45 per cent, which is encouraging.

In my experience, we cure a little better than half (54.4 per cent) of the primary operable cases by means of the classical radical operation and added postoperative irradiation.

Table I gives not only the five-year salvage, but also the ten-year salvage.

A glance at Table I shows some quite discouraging groups of figures. Although the five-year yardstick of cure is universally accepted, still we find even in those cases where the disease was confined at operation to the breast alone, that the ten-year salvage comes down from 77.5 per cent five-year salvage to 53.8 per cent ten-year salvage, and in those cases where the axilla was involved at operation the salvage comes down from 39.4 per cent five-year salvage to 21.2 per cent ten-year salvage.

These figures make urgent the need for new research in this field. Entirely new approaches other than surgery, irradiation, and hormones are pressing because our present results are far from satisfactory.

At present there is some discussion on the part of certain students of breast cancer to eliminate the "unfavorable" cases. Haagensen,[1] for example, takes a triple biopsy: (a) apex of axilla, (b) internal mammary chain, and (c) the original breast tumor. He decides from this information to eliminate surgery if (a) or (b) are involved. In that case, radiation becomes the treatment.

We all know that radiation therapy is an important adjunct to breast cancer therapy. But radiation has so far failed to replace surgery in breast cancer, or to cure breast cancer by itself. It seems unfair that an unfavorable case, who might still have an opportunity for cure by surgery, should be denied that opportunity. Haagensen eliminates many cases on whom the average surgeon would perform a radical mastectomy. This view disregards the well-established fact that even today, with a classical radical mastectomy, we obtain 28.4 per cent of five-year cures with the axillary surgical apex involved.[2] It also disregards the fact that even with involvement of the internal mammary chain, by the super-radical mastectomy, five-year cures are obtained. (The super-radical mastectomy involves, beside the radical mastectomy, also the removal of a centimeter of sternum, costal cartilage of five ribs, together with the internal mammary lymphatic chain.) Urban[3] has reported on 125 five-year cases of this super-radical operation with proved involvement of 43 cases of this chain. Of these 43 involved cases, 15 (35 per cent) are surviving five years later. We must, therefore, attempt to develop a greater surgical attack rather than attack only the most favorable cases.

We cure 54.4 per cent of our operable material by present established methods, leaving 45.6 per cent of the cases which will obviously become a problem for treatment of advanced breast cancer.

The present situation is as follows:

1. There is a steady increase in the total number of cases of breast cancer each year.
2. The sum total of cases of advanced breast cancer now living is enormous.
3. There is now available a great volume of new knowledge concerning the administration of synthetic hormones, and more recently ablative surgery of hormone-producing organs, including the ovaries, adrenals, and hypophysis.

Owing to these three facts, the development of a specialty in the treatment of breast cancer is inevitable. The family physician does not have the precise knowledge necessary without help to take care of these advanced cases. The average surgeon also lacks experience in the precise care of these cases, especially after ablative surgery has been employed. I believe that there is a present need for men of special experience, including knowledge of exact diagnosis, pathology, surgery, irradiation, hormone therapy, ablative surgery of hormone-producing organs, and hormone replacement therapy following ablative surgery. Breast cancer has now become an exact science in contrast to fifteen years ago.

Our next problem is to try to evaluate the procedures which should be done in consecutive order in a particular case. We must admit that our present state of knowledge is still confused. The experts are still collecting information and attempting to decide which procedure comes first in sequence. This will be settled in another fifteen years.

It is my opinion that when met with a problem of metastasis or local recurrence, an oophorectomy should be done first, if the patient is premenopausal, and if the time lapse since the last period is of less than a three-year duration. It has been shown that following menopause, oophorectomy is relatively of much less value.

The development of a breast cancer in a woman who still menstruates is, by all evidence available today, due to the presence of the hormone-producing ovaries. The start and the continuation of the growth of the cancer is dependent on the ovarian hormones. On the other hand, the development of breast cancer in the woman of fifty-five years or older is owing to the lack of the ovarian hormones. In the latter case, supplying the cancer in elderly women with estrogens, as Haddow[4] has shown, deprives the cancer of its growth essential. One of the most dramatic improvement groups are those elderly women who are given stilbesterol or other estrogens. When so treated, these elderly women often continue the remission for a period of four to five years.

For osseous metastasis testosterone is usually the method of choice. One can expect improvement in approximately 25 per cent to 30 per cent. Callus is laid down in areas of bone destruction. One thing which occasionally characterizes therapy by hormones or ablative procedures of hormone-producing organs is the curious effect of having repair take place in one bone and further destruction continuing simultaneously in another.

Today several new methods of administering testosterone have come on the market. And even some potent types of testosterone can now be taken by mouth. An improved depot injection is also now available whose effects continue for at least two weeks after the injection.

Prednisone (Meticorten) has been found to be especially good for metastasis to the lungs. In a recent study of 44 cases by Fracchia and Breed,[5] 25 (57 per cent) showed improvement in lung metastasis. The over-all improvement was 32 per cent.

At the recent International Cancer Congress, Nissen-Meyer of Norway reported on the study of 33 cases of metastatic cancer treated by cortisone alone, giving 12.5 mg. four times a day. He got a remission averaging 15.4 months in 52 per cent of his cases.

Ablative Surgery Procedures

OOPHORECTOMY.—In young women with advanced metastatic disease, one may anticipate approximately 40 per cent improvement with an average duration of nine months by oophorectomy.

In 26 cases of elderly women, reported by Treves,[6] the responses were so low that he concluded it does not pay to perform the procedure.

ADRENALECTOMY.—In a recent survey of 709 cases of adrenalectomy by nine authors, the mortality of the operation was 41 cases (5.8 per cent). There was objective response in 301 cases (42.5 per cent).

In all cases of adrenalectomy, if the ovaries have not previously been removed, they should be at the time of adrenalectomy. This is the viewpoint of Huggins, who originated the operation and who knows more than anyone else about the adrenalectomized patient.

HYPOPHYSECTOMY.—In the studies at

Memorial Hospital by Pearson *et al.*[7] there are now a total of slightly over 300 cases of hypophysectomy for advanced breast cancer.

There was an objective response in 50 per cent of the cases, averaging six months. The bones and the lungs seemed to offer the best response.

Summary

In closing, it is obvious that we are in that stage of development of new knowledge where it is most difficult to evaluate precisely each procedure. The numbers reported are too small, and some of the reporters are prejudiced.

It will take a longer time and more studies before we can tell exactly what procedure should be underaken for a particular case. However, there are indications already available which are very helpful in working out the therapy.

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Sweetness

Sweet is the rose, but grows upon a brier;
Sweet is the juniper, but sharp his bough;
Sweet is the eglantine, but pricketh near;
Sweet is the firbloom, but his branches rough;
Sweet is the cypress, but his rind is tough;
Sweet is the nut, but bitter is his pill;
Sweet is the broom-flower, but yet sour enough,
And sweet is moly, but his root is ill.
So every sweet with sour is tempered still.
—*Spenser*

Symposium and Panel Discussion

SOME PRESENT CONCEPTS OF CARCINOGENESIS

Moderator

CORNELIUS P. RHOADS, M.D., NEW YORK CITY, *Director, Sloan-Kettering Institute, and Scientific Director, Memorial Center for Cancer and Allied Diseases; Professor of Pathology, Cornell University Medical College (Sloan-Kettering Division)*

Panelists

WALTER E. O'DONNELL, M.D., NEW YORK CITY, *Assistant Director, Strang Clinic and Division of Preventive Medicine, Sloan-Kettering Institute, Memorial Center for Cancer and Allied Diseases; Assistant Professor of Preventive Medicine, Cornell University Medical College (Sloan-Kettering Division)*

JAMES J. NICKSON, M.D., NEW YORK CITY, *Attending Radiation Therapist, Sloan-Kettering Institute and Memorial Center for Cancer and Allied Diseases; Professor of Radiology, Cornell University Medical College*

CHESTER M. SOUTHAM, M.D., NEW YORK CITY, *Clinical Virologist, Sloan-Kettering Institute and Memorial Center for Cancer and Allied Diseases; Assistant Professor of Medicine, Cornell University Medical College*

WILLET F. WHITMORE, JR., NEW YORK CITY, *Attending Surgeon, Urologist, Sloan-Kettering Institute and Memorial Center for Cancer and Allied Diseases; Associate Professor of Clinical Surgery (Urology), Cornell University Medical College*

Introduction

DR. CORNELIUS P. RHOADS: In preparing this program we have attempted to select topics which we felt would be of most interest to the audience from the practical point of view. Only one of these subjects is still not in the area of clinical practice, that of the role of viruses in carcinogenesis. Since we are aware, however, that practically every cancer investigator is confronted with this question whenever cancer research comes up for discussion, it is very wise to treat it at this symposium.

The first presentation is by Dr. Walter E. O'Donnell. Dr. O'Donnell will discuss the role of inhalants in the induction of cancer with particular reference to cancer of the lung.

The Role of Inhalants

DR. WALTER E. O'DONNELL: Thank you Dr. Rhoads, members of the New York

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State Medical Society, and guests. The effect of the things that we inhale on health and disease has concerned men since ancient times. References to the influences of air, vapors, miasma, and assorted emanations on health are found in the writings of early physicians and scholars. The twentieth century with its trend toward urbanization and industrialization has complicated the problem enormously. And, of course, the world-wide spread of the use of tobacco has also brought this factor under particular scrutiny.

In the year 1958 it is virtually impossible for the average citizen to avoid exposure to inhalants of one kind or another. Accordingly it has become particularly important for us to evaluate their effects on human health. This afternoon we will concern ourselves primarily with the relationship of inhalants to cancer. I think it is of some interest that an inhalant is actually one of the first described environmental or occupational causes of cancer, at least in retrospect, in that the lung cancers found among the Schneeberg and Joachimsthal miners in Europe were probably due to radioactive dust.

It is probably most worth while at the outset to raise the question of how the inhalants act. Obviously the substances themselves can have a direct local effect on the tissue exposed to them. Alternatively, the product itself or some metabolic end-product of the substance may have an indirect effect on distant organs. I am thinking, of course, in this instance of such agents as those responsible for the so-called aniline dye bladder cancers. In the discussion, we will concern ourselves primarily with the results of the direct effects of inhalants.

Human beings are exposed to a wide variety of inhalants for which there is at least reasonable evidence of carcinogenicity. These include rather diverse substances such as arsenic, chromate, asbestos, nickel, certain petroleum products, and beryllium to which the average person is probably not exposed, although there might be some question about the extent to which the average person is exposed to arsenic or to radioactive dust. Most of these agents, however, are primarily of concern to specific occupational groups and do not affect the general population.

TABLE I.—Cancer Deaths in 1955 Potentially Related to Inhalants

Site	Male	Female	Total
Mouth	2,314	575	
Pharynx	1,730	418	
Larynx	1,967	183	
Lung	22,704	4,123	
Esophagus	3,427	937	
Totals	32,142	6,236	38,378
Per cent of cancer deaths	25.5	5.5	15.9

The problem of inhalants which might cause cancer is a question of some magnitude. We are talking about types of cancer which accounted for over 15 per cent of all cancer deaths in 1955; among men, the inhalational hazards may play a role in one quarter of all cancer deaths. In Table I you can see that if inhalational hazards were demonstrated for which some sort of preventive measure could be designed, it would result in the saving of a considerable number of lives.

In a discussion of the development of preventive measures for respiratory cancer, I think that it is probably important to concern ourselves primarily with the categories I mentioned before: air pollution, a general over-all grab bag sort of category which presumably contains many inhalants, and tobacco smoking. At the present time these certainly affect the most people and are of the most immediate concern.

For obvious reasons, tobacco smoking is considerably easier to study than is air pollution. Cigarets come in packs, we know how many cigarets there are in a pack, and we know how many packs of cigarets a person smokes a day over a number of years. Therefore we can make an almost precise estimate of the person's inhalation dosage over a period of years. This is not the case with air pollution. It is very difficult to determine the exposure of a person living right in the middle of Pittsburgh or Liverpool or any other highly industrialized city, so that the exact role of air pollution is difficult to assess.

As to the sources of these two inhalants, the source of the tobacco smoke is obvious, but that of air pollution is probably worth mentioning. So-called air pollution is normally considered to consist of organic matter which has its origin from the incomplete combustion of solid, liquid, or gaseous fuels. There is also an increment from tar and asphalt as well as perhaps some carbon black from the degradation of rubber products. There is also some inorganic matter consisting primarily of the heavy and light metals, as well as some inorganic dust, so that the so-called polluted air is a rather complex inhalant.

With this in mind, it behooves us to ask how one goes about studying this problem and what are the avenues by which one can approach the role of air pollution, the role of tobacco, and the relative importance of each. For convenience sake, those that have been approached can be divided into four different categories: epidemiology, animal studies, chemical studies, and human tissue studies. Each one of these plays a role, but we feel that first and foremost epidemiology is the proper way to determine the role of these inhalants.

In regard to air pollution, it is well known that lung cancer of the epidermoid variety—which is the common variety and the one that we are concerned with—is more common among city than rural dwellers. But here the epidemiologic evidence more or less ends as far as air pollution is concerned for the reasons which I mentioned before. As far as tobacco is concerned, the epidemiologic evidence is much easier to come by and is also, in our opinion, infinitely more convincing.

Epidemiology always puts people on their guard because it involves figures and statistics, and statisticians have been the origin of more jokes than mothers-in-law. Many people regard indulgence in statistics, graphs, and charts as the last refuge of the scoundrel. But thisis the abuse and not the use of statistics. A well-conducted epidemiologic or statistical study is every bit as valid as the so-called scientific experiments usually regarded as laboratory evidence.

Epidemiologic studies determine simply the relationship of the personal and environmental characteristics of a given population to health or disease. By and large, there are two ways to do this. One is the so-called retrospective method which takes a population group which has the disease you are interested in. It identifies these people in every conceivable way by means of an interview which determines their habits, their residences, their occupations, and everything else that is worth knowing about them. This group is then compared with a group of controls, with the controls used as a yardstick in a sense, to represent the so-called average population.

Now, this sort of study has been done to a fare-thee-well as far as tobacco is concerned. There have been probably over twenty different studies in eight different countries involving thousands of lung cancer patients and also patients with cancer of the oral cavity and of the larynx. All of these investigations have reached strikingly similar conclusions. They show very clearly that smoking is an important factor in the genesis of these cancers. To review briefly, 98 or 99 per cent of all lung cancer patients smoke. Lung cancer of the epidermoid variety is an extreme rarity in nonsmokers. Many lung cancer patients are heavy smokers; perhaps half of them smoke more than a pack a day, and as many as a quarter of them smoke two packs a day. Now, you do not need any control group to know that this is above ordinary. All of these studies have reached the same conclusion.

The prospective study is somewhat different. This identifies a large population group which has a significant risk of developing the disease that you are interested in. These people are presumably healthy at the time of their study. They are interviewed, and similar data are collected on them with regard to smoking, drinking, residence, occupation, and past medical history. They are then followed over a period of time, and the particular type of disease which they develop is recorded. This sort of study is less likely to be biased, although we feel that a properly conducted retrospective study also is an unbiased study.

The American Cancer Society, as you know, has done a truly monumental study of the prospective type. In 1951 they identified a group of over 200,000 white American males between the ages of fifty and sixty-nine years and began to follow them. Of this group, about 188,000 have been followed for a period of forty-four months now and the diseases to which they have succumbed have been determined. Once again a clear relationship has been shown between cigaret smoking and the development of lung cancer and cancer of the remainder of the respiratory tract as well. According to the first report from this study, mortality due to lung cancer among the nonsmokers is 4.5 per 100,000. Mortality due to lung cancer among the two-packs-a-day smokers is 278 per 100,000. The magnitude of this difference is some 62-fold. Mortality figures for men smoking varying amounts under two packs a day show a dose response relationship.

The American Cancer Society study also attempted to answer the question of the role of air pollution in lung cancer and so divided their study group into city dwellers and country dwellers. It is worth while noting that the mortality due to lung cancer of the epidermoid variety was much higher among those people who smoked, whether they lived in or out of the city. Nevertheless, there is some difference between the lung cancer deaths of nonsmokers in the country and nonsmokers in the city, so that perhaps air pollution plays some role, although its exact importance is hard to determine.

So much for the epidemiologic studies; we feel that they establish the relationship between tobacco and lung cancer and also other types of respiratory cancers that I have mentioned.

The second category is that of animal study and here we run into a great deal of difficulty in trying to define exactly what the relative significance of these studies is. Animal studies are done not to prove the cause-and-effect relationship between smoking and lung cancer or any kind of cancer, but rather to attempt to demonstrate the carcinogenicity of the tar and, in addition, to develop a tool to separate the potent factors of the tar from those that are relatively less potent. This is undertaken in an effort to produce a cigaret which is relatively free of the potent tar.

Suffice it to say that animal studies on tobacco tar using the whole tar have regularly produced both benign tumors and carcinoma when applied to the skin of mice, just as most known carcinogens do. It is also true that extracts from vehicle exhausts or the engine exhausts in the diesel engines or the gasoline engines as well as the so-called smog extract have also produced tumors in experimental animals.

The third type of approach to the problem is the chemical study. This simply involves the identification of the various chemicals which are found in the offending inhalant, and there is somewhat of a parallel between the tobacco information and the air pollution information. The aromatic hydrocarbons which are notably carcinogenic have been identified in material derived from both sources, and known carcinogens including benzpyrene have been found again in both sources. Our information suggests that even though the benzpyrene is present in small amounts in tobacco tars, the amount present could not conceivably account for the carcinogenic activity of the tar. We do not feel again that the chemical studies establish any cause-and-effect relationship, but they are obviously very important from the standpoint of sharpening the focus on exactly what is responsible for the carcinogenicity of the compound that you are dealing with.

The human tissue studies are the latest evidence in support of the idea that there is a definite relationship between cigaret smoking and lung cancer. Auerbach and his associates[1] made examinations of autopsy and surgical specimens of the tracheobronchial tree of patients with lung cancer and patients without lung cancer, making serial sections in 208 different areas throughout and amassing a stupendous collection of pathologic material. By careful study they were able to identify a whole panorama of changes ranging from the normal epithelium to actual carcinoma in situ. In fact, in some cases they found some beginning invasive carcinoma.

Here, once again, it was found that these changes including basal cell hyperplasia, stratification, squamous metaplasia, and carcinoma in situ were found in the tracheobronchial epithelium of both nonsmokers and smokers, but that they were much more common in the tracheal and bronchial epithelium of smokers.

We can say then, in summary, that tobacco is the carcinogenic inhalant which affects the most people and, as the converse of this, that in the absence of tobacco at least 50 per cent and perhaps even 80 per cent of carcinomas of the larynx, of the oral cavity, and of the lung would not occur. Air pollution almost certainly does play a role, but it plays a considerably lesser role as shown by the epidemiologic figures.

The important thing here is not so much to tell people to stop smoking but to design practical preventive measures which will result in the production of a "clean" cigaret which we hope will reduce the carcinogenic hazard of tobacco inhalation.

Dr. Rhoads: I am sure that you are all faced with this question of lung cancer, smoking, and air pollution in your practice and that questions about it are directed to you by your patients.

The subject of the second presentation is one of equal importance and also needs broad consideration. This is the matter of late radiation injury, discussed by Dr. James J. Nickson.

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Late Radiation Injury

Dr. James J. Nickson: Time today will permit only a review of the high lights of the subject of the relationship between ionizing radiation and cancer. This topic has recently become a matter of great public interest and concern because of the problems of radioactive fallout, primarily of strontium-90. This form of radiation exposure is on a population-wide basis and thus adds a new dimension to a problem formerly limited to physicians, physicists, chemists, and their assistants.

Today I would like briefly to summarize some of the clinical and laboratory data and, in closing, to discuss some current views on the mechanism of induction.

At the outset, it should be stressed that cancers arising presumably as a result of exposure to ionizing radiation have not been shown to be any different in kind from cancers which arise spontaneously. We are not dealing here with a special kind of cancer from the histologic point of view. We are simply inquiring into the genesis of cancers. In man neoplasms relating to occupational or therapeutic exposure to ionizing radiations have been reported for several tissues or organs. One of the first described was cancer of the skin in a radiologist reported in 1902.[1] By 1909, 54 cases had been reported.[2] The total number as of today will never be known, but there must already have been reports on between 500 and 1,000 individuals.

Exposure during the early days was to large or unknown amounts of soft roentgen rays. You will recall that the equipment then used was incapable of generating other than soft ionizing energies. It is impossible to know with any precision the exposure that these early workers had, but it has been estimated that the doses may have run as high as 1,000 to 2,000 r per year. Many of these men worked for ten or twenty years, and thus a total of 10,000 or 20,000 r may have been reached.

The skin was the organ that received the greatest exposure from soft roentgen rays and it responded by developing cancer. In general, cancer developed only after there was obvious and severe damage to the skin with multiple ulcers, breakdown in healing, and finally the development of basal or squamous cell carcinoma.

The second kind of neoplasm reported was osteogenic sarcoma. This cancer was first described in 1925 in radium dial painters. Exposure occurred during the application of radioactive paint containing radium or radium and mesothorium to the dials of aircraft and watches. It was the common practice of these workers, mostly women, to tip the brushes with their lips, thus depositing the radioactive salts in the gastrointestinal system. A small portion of these salts was absorbed and deposited in the skeleton. Other exposures occurred during the therapeutic use of radium, usually radium chloride, for various diseases.

These two groups, totaling 107 known persons, have been found to contain 22 osteogenic sarcomas. The mean induction time was twenty years. (I should add here parenthetically that in the case of the skin the mean induction time appears also to be fifteen or twenty years.)

The matter of dosage is a matter of some importance. The smallest amount of pure radium known to be associated with osteogenic sarcoma is between 0.5 and 1 microgram. This amount of radium if distributed uniformly throughout the skeletal system would give a dose equivalent of 1 rad per week. We know, however, that the distribution is not uniform. Various estimates would indicate that a nonuniformity ratio of roughly 16 to 1 is a not unreasonable one. If you take this factor for inhomogeneity, then the dose could be of the order of 15,000 to 20,000 rads for a period of twenty years.

The issue of leukemia and ionizing radiation is, of course, one which has been very much in the press recently. I think that there is no doubt that leukemia can occur as a result of occupational exposure to radiation. There have been 37 reports in the literature of leukemia among radiologists. A recent detailed examination of the source documents, however, reveals that in fact the occupations among the individuals studied are actually more varied than this. The cases reported have been predominantly among physicians, not exclusively radiologists, and also among chemists, nurses, and technicians; of the 37, indeed, no more than 25 to 27 would today be classed as radiologists.

These leukemias are mixed, the majority are myeloid, but a surprisingly large number have been of the lymphatic type. This is in sharp contrast to the leukemias seen in Hiroshima and Nagasaki following the use of atom bombs. The latest figure reported in the literature is 83 cases of leukemia out of the population group of some 75,000,[3] a rate roughly 10 times the one that would be expected without this exposure. These leukemias are heavily weighted toward myeloid type. There are, in fact, few lymphatic leukemias in this group.

The probability of the development of leukemia is directly proportional to the total body dose, although there is uncertainty about whether or not a threshold effect exists.

Other leukemias have followed the therapeutic use of ionizing radiation. Three cases of leukemia occurring after the application of iodine^{131} for therapy have been reported in the literature. Simpson and Hempelmann[4] reported on some 1,500 children who had received radiation to the thymus gland. Among these children they found 7 cases of leukemia, an incidence again about 10 times that which could be expected in a random group of children.

Court-Brown and Doll[5] studied some

9,000 people in England who had received radiation, primarily through the spine for ankylosing spondylitis, and found 28 cases of leukemia in this group. This incidence is again between 5 and 10 times the anticipated incidence in the random population of the same age and same sex distribution.

Stewart[6] in a study of cancers among children in England has reported a definite association between leukemia and diagnostic pelvimetry of the mother. Twice as many of the children with leukemia had been exposed prenatally to roentgen rays as children of the comparable control group. The precise figures are 42 instances of diagnostic pelvimetry in 269 children with leukemia and 24 such exposures in the nonleukemia group. The observation is, of course, of the greatest importance if confirmed—and it has not yet been confirmed. I stress this because it brings diagnostic levels of ionizing radiation into the area of possible leukemia induction.

Cancer of the lung has been described in the miners of the Joachimsthal and Schneeberg mines. For centuries these workers have been exposed to a concentration of radioactivity roughly 10,000 times the maximum permissible level set in this country by the Atomic Energy Commission for occupational exposure. Clearly it is not unreasonable to assume that such an exposure might be followed by deleterious effects. The incidence of lung cancer in this group far exceeds that of other cancers in both the exposed and the control groups. Although it is not strictly proved that this is a cause-and-effect relationship, it seems reasonable since there is no question but that these people have a very high incidence of cancer of the lung and they are exposed to very large amounts of radium or radon and radioactive dust.

Miscellaneous other kinds of cancers have been reported following exposure to ionizing radiation. Approximately 10 cases of cancer, half of them occurring in the liver, have been reported following the injection of thorotrast, and also one case of endothelioma of the malignant type. I can recall personally having seen 6 cases of sarcoma of the tongue following radiation since I have been associated with Memorial Hospital.

Antral carcinomas following radiation exposure have been reported in three instances.[7] These occurred in the radium dial painters, the group which was the source of the osteosarcomas; 3 of a group of 50 developed an antral cancer. Thyroid cancer following irradiation has been reported in 34 instances, 33 in children.[8] In the study by Simpson and Hempelmann[4] that I mentioned earlier, children who received thymic irradiation showed an unusually high incidence of thyroid cancer. The doses in the thymic cases were very low and as the authors have pointed out, the possibility that endocrine imbalance is a predisposing factor deserves much attention.

Time will not permit a detailed analysis of the animal experimental data. I would like to emphasize that the clinical evidence of a long-time lapse between the insult, the exposure to ionizing energy, and the development of the cancer is amply confirmed by animal studies. The interrelationship between dose and the probability of the appearance of cancer also emerges from the animal studies. The higher the dose, the more likely you are to see a cancer.

The issue, the very fascinating issue, of why cancers occur after ionizing radiation is extremely complex. Ionizing radiations are mutagenic. They are also carcinogenic. It has been commonly believed that these two things are different facets of the same character. If this is true, it has not yet been proved. Extensive work in recent years primarily with cancers of the ovary, mammary glands, pituitary gland, and the thyroid in mice indicates more and more clearly that indirect factors commonly related to hormonal balance are involved in the production of cancer by ionizing radiation.

More recently the concept of involvement of an indirect mechanism has been extended to osteogenic sarcoma and to leukemia in the mouse. It may well be that attention to the cocarcinogens involved in irradiation cancer will be a fruitful field for exploration in the immediate future. Whether or not this exploration will upset or modify the genic theory of carcinogenesis remains to be seen.

Dr. Rhoads: Once again I hope you will consider Dr. Nickson's remarks with reference to the questions which are propounded to you by your patients, and as you may see them reflected in your practice in the use of diagnostic or therapeutic radiology.

The third topic, one in which great interest has been aroused in the last few years, is that of the role of viruses in the carcinogenesis. This subject will be discussed by Dr. Chester M. Southam. He has been working in this area for a number of years and I know will have interesting remarks to make.

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The Role of Viruses

Dr. Chester M. Southam: Thank you Dr. Rhoads, ladies, and gentlemen. I could cover the topic assigned me most rapidly with a single sentence. Viruses do cause cancers in some animals and so why not in man? I am, however, not preaching the virus theory of cancer, and since the latter part of that statement—"so why not in man?"—is a very legitimate question, I think that we will spend a few minutes discussing the details.

To review the fact that many animal cancers are caused by viruses, let us just list some of those that have been proved. First, we have in the rabbit the papilloma virus; some 25 to 75 per cent of these papillomas eventuate in a true epidermoid carcinoma. In the mouse we have the virus-induced (the mammary milk-agent-induced) breast carcinoma[1] and we have the leukemia transmissible in newborn mice described by Gross,[2] and the leukemia of adult Swiss mice described by Friend.[3] Then there are also a host of virus-caused tumors in the fowl—leukoses, erythroblastoses, and solid tumors.[4]

In another class of vertebrates, the amphibians, there is the adenocarcinoma of the kidney in the frog first described by Lucké.[5] There has been a description of a melanoma-like tumor in the fruit fly[6] although this is not yet substantiated. Similarly, many other less well-established tumors could be mentioned, some of which might be questioned as to the truly malignant nature of the lesion: for example, the myxoma and the fibroma of rabbits; the fibroma of deer; and at least a half a dozen other tumors involving mammals, amphibians, fowl, and fish.

I would like to spend my time, however, discussing some basic characteristics of viruses. It seems to me that the objections to our acceptance of the possible role of viruses in the etiology of cancer fall into five categories based principally on what we have come to think of as the typical characteristics of viruses. First, we think of viruses as highly infective agents except when resisted by specific immunity. Second, we think of virus diseases as acute self-limited diseases followed by a specific serologic-type immunity. Third, we think of viruses as usually causing tissue-destructive lesions.

Fourth, we stress the specificity of effects of a given virus; that is, that measles virus always causes measles and flu always causes flu, and never the twain shall meet. In contrast to these characteristics of viruses, in human cancer we have what is clearly a noncontagious condition; that is, it is either truly noninfectious, or if it is infectious, the incidence of clinically apparent disease is very small. Likewise, human cancer requires a very long incubation period and is a chronic type of disease for the most part. Also, human cancer is a tissue-proliferative disease in the main rather than a tissue-destructive disease. Finally, there is such a multiplicity of types of human cancer that it would require either a tremendous number of specific viruses or else a multipotent group of viruses.

Fifth, the evidence that factors other than viruses are important in carcinogenesis has overwhelmed the rather feeble evidence which has been advanced concerning the virus etiology of cancer.

If the virus causation of cancer in man is to be plausible, we must resolve these apparent discrepancies. I believe that it is because recent developments in basic virology have removed or at least reduced these objections that the hypothesis of viral oncogenesis has gained renewed favor in recent years after being in eclipse for a decade or more.

In considering the basic characteristics of viruses let us first define a virus as a submicroscopic obligate (with emphasis on the word obligate) intracellular parasite. Chemically it is composed at least of protein and nucleic acid. The fact that it is an obligate parasite defines its dependence on the host cell for part or all of its metabolic processes. A virus of necessity enters intimately into the intracellular metabolism of the host either utilizing finished products of host metabolism or diverting host metabolic pathways to supplement its own partial metabolic equipment.

Now, in such a situation, there are two probable effects on the host cell. The first is the mere withdrawal of nutrients from the host cell. This might cause no inconvenience to the host if the cell is adequately endowed and can make more than it needs. It might, on the other hand, put such a strain on the host cell metabolism as to inhibit its growth. It is possible also, however, that the virus in producing its own protoplasm produces abnormal materials from the host nutrients and that these abnormal materials have a direct effect on the host cell. This effect might be inhibitory or destructive, but it might also stimulate increased size or increased reproduction of the host cell. Warts are an example of proliferative virus lesions and so are all of the pock-forming viruses in which the initial pathologic lesions are proliferative followed by tissue destruction.

Much of what we know of the relationships between a virus and a cell is based on studies of bacterial viruses and bacterial hosts. However, there is at least suggestive evidence, and in most steps there is conclusive evidence, that these same phenomena occur in animal viruses as well. Viruses are known to have two components, an inner nucleic acid component and an outer shell of protein. The virus particle adsorbs onto the cell, but during penetration into the cell all or most of the protein coat is left behind, leaving a free nucleic acid particle within the cell. The nucleic acid particle may proliferate by itself, that is, without the presence of viral protein, or it may direct the production of complete virus particles in which the protein coat is included.

The virus is then faced with the problem of getting into new cells if it wants to continue its multiplication. This may happen in three ways. You are well aware of the phenomenon of the cell being broken or destroyed with discharge of the virus into the surrounding fluids and then its penetrating into new cells, reinitiating the cycle. This has always been considered the way in which the virus is transmitted within the body. It is also possible, however, for viruses to be discharged from the cell without destroying the cell; this has very recently been demonstrated for poliomyelitis virus as well as for many of the bacteriophages.

In addition, there is conclusive evidence in bacteriophages and at least suggestive evidence in certain animal viruses that a virus may be transmitted from one cell to another during the process of cell division as if it were a normal protoplasmic constituent. Obviously this does not necessitate the traversing of an extracellular fluid by the virus. This scheme of transmission avoids any exposure to antibodies even if they do exist.

When considering how the virus behaves in the host as a whole, we have to consider several steps. There is the primary infection. Obviously we can have overt disease, but for many of our common viruses inapparent infections (infections which are not clinically detectable) occur much more frequently—probably 500 to 1,000 times more frequently—than do apparent infections. This has been specifically demonstrated for poliomyelitis and for Japanese B encephalitis.

Either of these conditions may be followed by the disappearance of the virus, which obviously accomplishes a complete cure of the infection. On the other hand, the virus may persist, probably within the host cells. If the virus persists, it might continue as a completely latent infection, and we would classify the patient clinically as cured; or it may continue to cause a chronic disease. In either event, exacerbation could follow if the balance between host and virus were upset by any additional factors.

This is not imagination. As a common clinical example we have herpes simplex in which the primary infection may be either overt or inapparent. The virus frequently persists; maybe it always persists. We usually see apparent cures, but there are frequent exacerbations and, occasionally, a long-term chronic disease.

Viruses other than herpes and bacteriophage may also exist for long periods of time in the human body, even in the presence of circulating antibodies. We have inoculated West Nile virus into cancer patients, and, by the use of fluorescein-labeled antibodies, have been able to demonstrate the presence of the virus in the tissue some three months later. The point of this is that here is a virus existing in a tissue—it doesn't matter in this context that it is cancer—for three months even though serum antibodies were circulating for most of that time.

Another problem is transmission. I want only to mention that in addition to the commonly recognized horizontal transmission of viruses, that is from individual to individual within a given population, there is also a phenomenon which we call vertical transmission which is transmission from generation to generation. The best examples of this are the oncogenic viruses, particularly the Bittner milk agent which is commonly transmitted through the mother's milk but which may also be transmitted through the ovum and probably also through the sperm. The mouse leukemia virus of Gross,[2] although maternal transmission has not been directly demonstrated, does require artificial inoculation at an extremely early age, probably within the first day or two of life, in order to produce a clinical infection. This suggests that in the natural state a maternal transmission of the virus would be required. Going into the rickettsia, if you will allow them to be classified as viruses for the moment, in Rocky Mountain spotted fever we know that the rickettsia is transmitted from generation to generation of ticks through the ova without the necessity for any horizontal transmission.

Finally, if we accept the thesis that inapparent infections may occur, persist for a long, long time, and eventually develop into an apparent infection, we are faced with the problem of what then brings on the clinically apparent infection. What has happened to change the picture? There are many possibilities. We know that treatment with agents such as roentgen rays and nitrogen mustard which interfere with the defense mechanisms of the body will render hosts more susceptible to viruses. The same is also true of the steroid hormones of the adrenal cortex. They will greatly increase the susceptibility of an animal to a virus, in fact they can make some very completely resistant ones very susceptible.

Chemical irritants will determine the localization of some viral pathologic conditions. A classical example is the application of tar to a rabbit which has been injected systematically with the fibroma virus with the result that fibromas develop at the sites of application of the tar.[7]

Trauma is known to cause localization of some virus lesions. The best known clinical example, I think, is the tendency of poliomyelitis paralysis to localize in an arm which has recently been inoculated with some other agent, for example, routine immunization shots in babies. Also genetic factors are known to exert a tremendous influence on the exhibition of viral pathologic conditions.

You will note that all of these things which I have mentioned as possibly related to the appearance of viral pathologic conditions are also agents active in carcinogenesis. This suggests the possibility that there may be multiple factors involved in cancer development.

The final objection that we would have to face in considering a virus factor in the etiology of cancer is the tremendous multiplicity of types of cancer. First let me say that cancer is certainly not one disease but a tremendously large group of diseases, and so I see no compelling reason to look for a single causative factor. Nevertheless, if one insists on an all-or-none approach toward viruses and cancer causation, there is some evidence that makes it plausible. The Lucké virus, which causes adenocarcinoma of the kidney in the frog, in an experimental study has been passed through salamanders, another cold-blooded species. After such passage this virus instead of causing adenocarcinoma of the kidney was causing muscle sarcoma in the frog.

Another example is an experiment involving the mixing of killed virus of rabbit myxoma with live virus of rabbit fibroma; instead of causing fibromas, the mixture caused myxomas. Further studies suggested that the responsible factor in the killed myxoma virus was desoxyribose nucleic acid.[8] This obviously suggests the possibility of a transforming-factor-like effect. Very recently Stewart[9] of the National Cancer Institute has grown a virus from the mouse leukemia cells in tissue culture of mouse embryonic tissue. On reinjecting such passaged virus back into baby mice, she found only a small incidence of leukemia but a tremendous incidence of a large variety of other types of mouse neoplasms. Something had happened. There either was a mixture of viruses to start with, which was not recognized, or there was a recombination within a small group of viruses, or possibly the relationship of the age of the mice inoculated and the type of cell involved may have determined the exhibition of disease.

Proof of a virus cause of cancer in man requires an isolating of the agent and the fulfillment of Koch's postulates. The barriers to this type of work are tremendous and we cannot discuss them this afternoon. But perhaps what I have outlined for you will permit you to go along with me on this concluding statement. In contrast to a decade ago, there is at present nothing in the hypothesis that some or all human cancer may be due in whole or in part to virus infection which does violence to our present concept of virology or of oncology, and neither does this hypothesis deny the role of other factors in the causation of cancer.

Dr. Rhoads: Thank you, Dr. Southam. The last of the series of four papers is again on a problem which is frequently encountered by the practitioner and concerning which a good deal of information is available. Dr. Willet F. Whitmore will discuss the etiology of carcinoma of the urinary bladder. Dr. Whitmore.

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Bladder Carcinoma

DR. WILLET F. WHITMORE: Dr. Rhoads, ladies, and gentlemen. In the interests of economy of time, I would like to confine my remarks to a review of the chain of evidence suggesting a possible genesis of bladder tumors from an exogenous or endogenous carcinogen excreted in the urine. To begin with, I would first like to give credit to Dr. Percival Potts who in 1775 pointed out the association between exposure to chimney soot and the development of scrotal cancer. His observation stimulated a long chain of researches continuing to the present time concerning the potential role of exogenous and endogenous substances in the production of neoplasms. Not until 1895 was an observation made that pertains to the subject of bladder cancer. At this time a German physician by the name of Rehn observed the association between exposure to certain aniline dyes and the development of bladder tumors. This was an astute observation since the latent period between exposure to the carcinogen and the development of the neoplasm runs into a period of many years, over twenty years in some instances.

During the years following Rehn's initial observations, attempts were made to reproduce experimentally what he had demonstrated on circumstantial evidence to be occurring clinically. Not until 1938, however, were Hueper and his associates[1] able to demonstrate experimentally for the first time the induction of bladder tumors in dogs who were fed betanaphthylamine in dosages of 300 to 500 milligrams daily over a period of several years. In their experiments it took eighteen months or more for bladder tumors to develop. Subsequently, efforts were made to produce bladder tumors by the administration of betanaphthylamine to other animals with varying degrees of success. It remained for Bonser and her associates[2] to demonstrate that the active carcinogenic substance which resulted from the administration of betanaphthylamine to dogs was 2-amino-1-naphthol and that differences in the susceptibility of various animals to tumor induction following the administration of betanaphthylamine could be accounted for, at least in part, by the differences in their respective metabolisms of betanaphthylamine; those animals which produced 2-amino-1-naphthol as a response to betanaphthylamine administration developed bladder tumors, and those which did not produce this metabolite did not. By means of implantation experiments using 2-amino-1-napthol itself, it was possible to induce tumors in some animals which were resistant to tumor induction following the implantation or feeding of betanaphthylamine.

It was also found by the same group of workers that one of the conjugated excretion products of betanaphthylamine metabolism —specifically, 2-amino-1-naphthol excreted in conjugation with sulfuric acid—is noncarcinogenic. When the latter is hydrolized, however, to give free 2-amino-1-naphthol this substance is carcinogenic.

Until 1953 there was uncertainty as to whether the carcinogenic effect of betanaphthylamine in the urinary tract is the result of its contact with the sensitive tissues of the bladder through the bloodstream or through excretion in the urine. A series of experiments conducted in a number of laboratories including our own demonstrated that in dogs in which the ureters had been transplanted into the rectosigmoid, thus diverting the urinary flow from the bladder, repetition of the experiment of Hueper, that is, the oral administration of betanaphthylamine to these animals, did not result in the appearance of bladder tumors. This demonstrated very clearly the essential role of urinary excretion in the genesis of these neoplasms. Bonser and her associates[2] had shown that although the 2-amino-1-naphthol did appear in the blood following administration of betanaphthylamine to dogs, its concentration in the urine was some 200 times greater than it was in the blood. In 1952 Mellors and Hlinka,[3] using fluorescence spectrum technics, demonstrated that following the administration of betanaphthylamine to dogs fluorescence patterns consistent with metabolites of betanaphthylamine could be demonstrated in exfoliated cells in the urine and in the superficial and deep layers of the transitional epithelium lining the bladder, but not, interestingly enough, in the gastric mucosa even though the betanaphthylamine was being administered orally. Furthermore, they were able to show that by diverting the urinary stream completely from the bladder, even in the dog whose ureters have been transplanted to the colon, the fluorescent material appears in the transitional cells lining the bladder.

Now, you may legitimately ask what bearing all this has on the problem of bladder tumors in human beings. Certainly aniline tumors of the bladder at most constitute no more than 1 per cent of all bladder neoplasms in man. What of the other 99 per cent? We can begin to answer this question by pointing out the similarities between experimentally induced betanaphthylamine tumors in dogs and the clinical situation of bladder cancer in patients. The diseases are remarkably similar. The symptomatic manifestations are the same. The pathologic characteristics and behavior of the neoplasms are the same. Furthermore, there are certain features of the human disease which suggest that the entire bladder is exposed to a carcinogenic agent. Among these features, of course, is the tendency for bladder tumors to be multiple and to recur following local destruction. Another is the fact that in our experience with total removal of the bladder we have not infrequently found microscopically identifiable areas of in situ carcinoma between grossly visible tumors in apparently normal areas of mucosa.

Furthermore, although tumors of the urinary tract collecting system may occur anywhere from the renal calices down to the urethral meatus, the most frequent site of occurrence is within the bladder. This is the site in which one would logically expect the action of any urinary carcinogen to be greatest because here is where the exposure to the action of the carcinogen would be longest by virtue of the reservoir function of the bladder.

Finally, it is important to point out that, although such occurrences have been rare, spontaneous regressions of bladder neoplasms have been reported following diversion of the urinary stream. I must say that in our clinical experience at Memorial Center with urinary diversion as a palliative measure in inoperable bladder cancer, we have not observed any clear-cut example of this phenomenon.

These observations of the carcinogenic action of an exogenous substance, betanaphthylamine in dogs and in human beings and the parallelism between the features of the diseases experimentally produced in dogs and occurring clinically in man are entirely consistent with the hypothesis that a urinary carcinogen is the cause of most human bladder neoplasms. This hypothesis has led a number of investigators, notably Boyland[4] and his associates in England and Price and his associates[5] in this country, to an investigation of urinary metabolites which might play a role in the genesis of human bladder tumors.

Since there is a wide range of chemical substances present in the urine, the question was what to start looking for. Logically, one substance for which to look was a compound chemically similar to the established bladder carcinogen, 2-amino-1-naphthol; in the urine of all of us there can be identified two metabolites of the essential amino acid tryptophan which bear striking chemical resemblances to 2-amino-1-naphthol. These are 3-hydroxyanthranilic acid and 3-hydroxykynurenin. As with 2-amino-1-naphthol, both of these compounds contain a benzene ring, both contain an amino group, and both contain an hydroxyl group. Both Boyland and his associates and Price and his associates have produced evidence that excretion of these tryptophan metabolites is increased in the urine of at least some patients with bladder tumors.

Boyland[4] and his associates have tried to demonstrate the carcinogenicity of these metabolites of tryptophan and have succeeded in producing bladder tumors in mice in whom paraffin pellets containing 3-hydroxyanthranilic acid were implanted in the bladder, but this work requires confirmation.

It thus seems possible, although the evidence at the present time is by no means completely convincing, that certain urinary metabolites of a normally ingested substance, namely the essential amino acid tryptophan, may play a role in the genesis of bladder tumors. Much further work is obviously necessary.

Dr. Rhoads: Thank you, Dr. Whitmore.

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Question and Answer Period

Dr. Rhoads: The first question is addressed to Dr. Nickson. In which months of pregnancy is diagnostic pelvimetry most carcinogenic for the offspring? Is there any safe period? Dr. Nickson, would you answer that?

Dr. Nickson: I can answer it largely by saying that no one really knows. Some evidence from the mouse work would indicate that as a general principle the organ system that is most rapidly developing is the organ system that is most sensitive to ionizing radiation. Russells'[1] work in mice indicates that detectable effects can be seen even after 25 r to the embryo. It is of interest that at a meeting of one of the gynecologic and obstetric societies out West recently, the flat recommendation was made that pelvimetry be abandoned as a routine procedure and only be used if absolutely vital. In the opinion of this group, this procedure should be abandoned to all intents and purposes.

Dr. Rhoads: Did everybody hear that? Do you endorse that stand, Dr. Nickson?

Dr. Nickson: I do. It is an extension of the concept that you do nothing in medicine unless you have a direct indication. When routine procedures in medicine involve a known noxious agent, they are to be approached with the greatest caution. In the opinion of many obstetricians pelvimetry has been used too freely in the past.

Dr. Rhoads: Here is a somewhat aggressive question without designation of the participant who is supposed to answer it. It says, "Do you admit now that cancer is contagious?" I am sure this is directed to Dr. Southam.

Dr. Southam: I would say positively that cancer is not contagious. This requires a distinction between infectious and contagious. A disease might be caused by a transmissible agent and yet not be transmissible directly from person to person, which is what we mean by contagious. I feel no hesitation at all in taking care of cancer patients and handling cancer tissue.

Dr. Rhoads: The last question is also a very important one for the practitioner. At what intervals can routine roentgenograms of the chest be performed without danger to the patient?

Dr. Nickson: Well, this again is a matter not for facts at the present time but for opinions. My own opinion, for what it is worth, is that pre-employment examinations and either annual or every-two-year examinations particularly after the age of forty are not really routine examinations but are examinations which will pay off in the early detection of disease to a far greater degree than they will add any risk to the individual so exposed to a small dose of ionizing radiations. This assumes that the equipment is properly managed; with improper equipment, of course, all bets are off.

Dr. Rhoads: Dr. Nickson, what about the patient, the old tuberculosis patient for instance, who has a gastrointestinal series every year and multiple chest roentgenograms every few months? Can this reach a potential hazardous level?

Dr. Nickson: It certainly can. Indeed, I personally have seen damage in such a patient. This is a direct effect, I believe, of improper use of ionizing radiation. The routine gastrointestinal series ought to be, and is in many places, a thing of the past, just as is the taking of a roentgen-ray film of the pelvis in the child with Legg-Perthes disease which used to be done every six months or every year. Many places today say what's the point? When the child has some trouble, then we'll take a picture, but why take a picture just so that when we give a paper we can show the progress of this disease every six months. The risk exceeds the benefit to the patient.

Dr. Rhoads: There is one question, only that was not asked here which I would like to propound. It is one which would come to any reader of the *Saturday Review.* That is, Dr. Nickson, are you prepared to endorse the statement of Dr. Willard F. Libby that fallout hazard in this area is no greater than that involved in going up a hill two hundred feet high?

Dr. Nickson: I am not so sure whether it's two hundred, four hundred, or eight hundred. . .

Dr. Rhoads: A small hill.

Dr. Nickson: A small hill, yes. I think that statement begs the real question a little bit—and that is not what the hazard is as of now, but what the hazard will be ten, twenty, fifty years from now if no check is put on the testing of nuclear weapons. This is the real question. This is the question which in my way of thinking is just a little evasive in saying that the hazard as of now is the equivalent of going up a two-hundred-foot hill. The hill isn't two hundred feet high. If you went up it just two hundred feet, then I think we would all agree that there is no hazard. But this hill goes up quite a long way beyond two hundred feet. The issue we have to decide is how far we are going up the hill: two hundred feet? Two thousand? Twenty thousand? Or two hundred thousand feet?

Dr. Rhoads: You understand that Dr. Nickson here refers to continued testing. Are there any other questions? If not, we declare the meeting adjourned. Thank you gentlemen, very much.

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My belief is that to have no wants is divine.—Socrates

Use of Polyethylene Prostheses in Mobilization of Stapes Surgery

ALAN AUSTIN SCHEER, M.D., NEW YORK CITY

(*From the Hearing and Speech Department, Manhattan Eye, Ear and Throat Hospital*)

The success of the mobilization of the stapes operation used in otosclerotic deafness depends on the restoration of sound conduction via the ossicular chain to the cochlea. The conductive impairment of sound in otosclerosis is due to ankylosis of the stapes. Whether it can be mobilized will depend on its degree of fixation and its anatomic variation.

In approximately 25 per cent of cases it is not possible to mobilize the stapes where both crura and the footplate remain intact. The primary cause of failure has been that the delicate crura fracture before the locked footplate is loosened within the oval window (Fig. 1). It is generally accepted that there must be continuity of ossicular transmission to restore hearing permanently, but it is not necessary to free the entire stapes to accomplish this.[1] A similar result can be obtained if: (1) one crus remains in continuity with one third or more of a mobile footplate. Usually it is the posterior crus; (2) the fractured crura make a firm contact with a mobile footplate.[2]

It has been difficult to salvage hearing for those patients who have had crural fractures. Sometimes when the crura fracture, part of or the entire footplate will be simultaneously mobilized. More often, it will remain solidly fixed. Occasionally the crura even though fractured will fall into place and make a permanent contact with the mobile footplate, thus producing hearing. Generally this will not occur, or if it does there may be a slight separation on the following day and the hearing will return to its preoperative level. There are other cases that will give the reverse response: patients who do not have any improvement in hearing until the tenth or sixteenth day. This is a completely unpredictable response and must be due to organization of blood and fibrous tissue that forms in the oval window well, creating crural footplate continuity. Audiometrically it is not possible to differentiate between the hearing gained through solid continuity and that gained through contact. Various technics have been tried in an effort to restore and maintain crural footplate contact, but they have all been on a hit-or-miss basis and have been unsatisfactory.

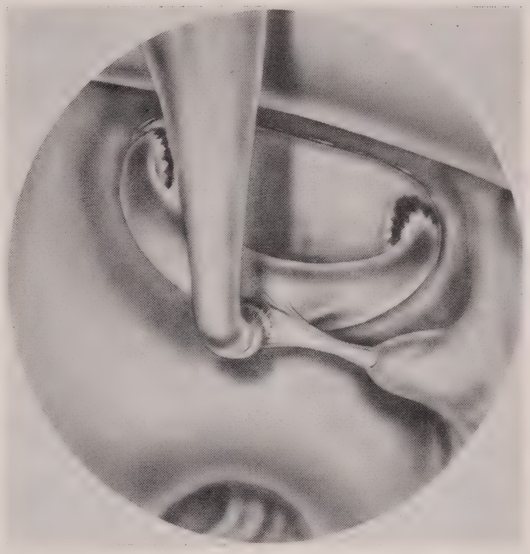

FIG. 1. Fracture of crura and their separation from the footplate.

1. Gelfoam has been placed under the crural arch where it would expand with blood and perilymph and so make contact between the crura and mobile footplate. Improvement in hearing would be sponta-

neous but would last only twenty-four to thirty-six hours.

2. Elongation of the posterior crura has been effective in closing the gap in the rare case. After disarticulating the head of the stapes from the incus, it is tipped posteriorly so that the posterior crus dips deeper in an attempt to reach the footplate. The incus is reset on the anterior lip of the head of the stapes. The vein graft technic proposed by Shea[3] has not been tried.

Both of these technics have proved to be inadequate.

Polyethylene Tube Prosthesis Technic

In an effort to establish a procedure for these cases of crural fracture that would be predictable and have some reliability and permanence, the use of a polyethylene prosthesis was adapted. It is used when the crura of the stapes fracture and there is no hearing improvement. The results of this technic have been very gratifying.

The first step of the procedure is to remove the broken crura and head of the stapes after cutting the stapedius tendon. The complete footplate of the stapes is exposed, since there is nothing to obstruct visualization. If the footplate is not already mobile, the next step is instrumentation toward this end.

An effort is made to mobilize it in such a manner that the major portion of it is freed leaving the otosclerotic area attached to the edges of the oval window. Thus, a fracture can be created through the normal footplate and adjacent to but not through the otosclerotic area. Of course it is not always possible to be this exact. The proper length of polyethylene tubing is then placed in a vertical position with one end sitting on the footplate and the other wedged under the incus (Fig. 2). If this procedure is executed correctly, in the proper case, the gain in hearing can be comparable to that obtained when a whole stapes is mobilized with complete continuity. This technic cannot be used in every case of crural fracture nor has it been successful in all cases in which it was tried. It is extremely delicate and of course must be done under the microscope as is the rest of the stapes procedure. The use of this prosthesis in the improper case will produce severe labyrinthine damage as will any gross work in the region of the footplate.

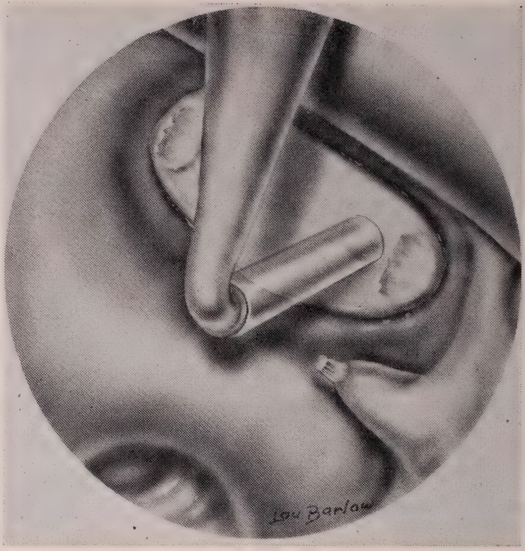

FIG. 2. Polyethylene tube making contact with the incus and a mobile footplate.

INDICATIONS.—This procedure is indicated when the crura break, whether or not the footplate has been loosened.

LIMITATIONS.—The technic can be used only after the footplate is mobilized if: (1) the oval window well is wide open, (2) the adjacent anatomy has not encroached on the footplate, (3) the footplate is completely visualized, and (4) the angle between the lenticular process of the incus and the footplate is correct.

CONTRAINDICATIONS.—The technic cannot be used when the oval window is closed down as it is in the Bellucci[4] type 4 case. In these cases the promontory and the facial nerve seem to converge on each other. Otosclerotic disease has wrapped itself about the crura and the footplate is completely infiltrated. There is no delineation of the footplate margins.

Polyethylene tube prosthesis technic should not be used if (1) the footplate is in multiple pieces as a result of prying it loose, or (2) the annular ligament at the superior or inferior margin of the footplate tears so that one edge of the footplate is depressed into the vestibule like an open door.

Observations

1. Working at the footplate has been a great advantage in stapes surgery, but the surgeon can never visualize it as completely as when both crura and the head of the stapes have been removed. The inferior border of the footplate which is rarely seen with the entire stapes in place is now visualized in its entirety and is very accessible. It is therefore reasonable that the footplate can now be more readily and accurately mobilized.

2. The maximum gain in hearing is noted when the polyethylene tube is placed on the posterior half of the footplate. Should the footplate be split across in the middle there will still be improvement if the posterior half is utilized.

3. A polyethylene tube (PE-50) must be placed so that it is set on the footplate without touching the annular ligament or the adjacent walls of the footplate well. The length of the polyethylene tubing should be such that when it is set on the footplate, its upper end will not slip readily under the lenticular process of the incus. If it does, it is too short and there will not be enough pressure applied to it by the incus. The incus has to be lifted up slightly and set down on the polyethylene tubing with a spring-like effect. This slight pressure is needed to obtain maximum transmission of sound to the cochlea. If the pressure on the polyethylene tubing is too great it will depress part of the footplate into the vestibule.

4. When the incus is disarticulated from the stapes it usually retains part of the joint capsule. This should be set into the lumen of the polyethylene tubing to insure its stability.

5. If the capsule is gone it may be necessary to notch the upper end of the polyethylene tubing to prevent the incus from slipping off. Once in place, the tube will be quite secure.

6. Setting the polyethylene tube in position is a delicate procedure.

7. The approximate length of polyethylene tubing that is required is placed over a sharp pointed pick which is angulated and is brought down into the middle ear. It is disengaged from the pick by catching it under the posterior rim of the bony canal wall. It is then slipped into position with the use of a curved pick. Occasionally it will require the use of two picks, one in each hand, so that the incus can be lifted slightly as the tubing is set in place.

The first piece of tubing that is inserted is generally either too long or too short so that it will have to be removed. It is at this stage that complications may develop since the instrumentation used to lift out the polyethylene tube may depress it further into the oval window well. If the footplate has already been fractured, or if there is a separation at the annular rim, the polyethylene tube may be depressed into the membranous labyrinth. It must be lifted gently from this position up onto the promontory with the use of delicate picks. The lumen of the polyethylene tube will fill with blood and perilymph because of capillary attraction. Should the footplate area be partially opened as a result of a fracture, contact of the suction with the open end of the tubing will suck up perilymph. Once the polyethylene tube is away from the oval window it can readily be picked up and removed from the area with a fine suction tip.

There is another indication for the use of this polyethylene prosthesis technic. During the course of our mobilization work we have had opportunities to observe cases with an extremely loose incudal stapedial joint, where only a fibrous connection between the stapes and incus remained. In such cases, after the fixed stapes was mobilized, if the poor approximation of the ossicles could not be corrected there was no gain in hearing. To correct this situation and re-establish ossicular continuity, both crura can be purposely fractured and then removed along with the head of the stapes. A polyethylene tube is then set firmly between the incus and the footplate. This has been done successfully on two occasions.

Complications

All complications that will arise are a result of trauma to the membranous labyrinth. If the prosthesis is depressed into the vestibule the most severe type of vertigo will begin. This will subside after several days but it is then followed by prolonged postural vertigo which is extremely disturbing to the patient. Further deterioration of hearing can result.

Both of these complications were observed in the same patient early in this series when the prosthesis was depressed into the labyrinth.

Results

The hearing improvement in these cases has been exciting to observe because they all occurred in patients where mobilization surgery would otherwise have failed. The return of hearing was immediate when the polyethylene tube was in its proper position. If the response was not noted at the time of the surgery, the prosthesis was not left in the middle ear.

The polyethylene tube prosthesis technic was used in a series of 80 patients. Seventy-eight of these cases had their crura fractured during attempts to mobilize the whole stapes. Included in this group are 15 cases in which the fracture had been produced during previous surgery, prior to the use of the operating microscope.

Two cases also included in this series had stapes that were completely mobilized, but there was no improvement in hearing because of a widespread incudostapedial joint. Purposeful fracture and implantation of a polyethylene tube gave the desired results in each instance.

Sixty-eight of the 78 patients in whom the crura had been unintentionally fractured had a significant result with the polyethylene tube. Therefore, a total of 70 patients in this series of 80 obtained improved hearing. The air bone gap was closed in 24 cases.

Thirty-six cases came within 20 decibels of the bone conduction level in the major speech frequencies, a gain of 15 to 35 decibels. Ten patients improved 10 to 15 decibels in these same frequencies.

How well will these results hold up? This is open to speculation along the following lines of reasoning. The results which seem to be the most permanent in our previous mobilization experience have been those in which the footplate fractured adjacent to and not through the otosclerotic pathologic condition, so that one half or more of the footplate was left attached to the posterior crus. This type of footplate fracture has been accomplished with greater frequency using the prosthesis technic and at the time of this writing it appears that the rate of refixation is less.

Conclusions

The most frequent cause of failure in stapes surgery is the result of fracturing the crura, which produces a gap in the sound-conduction mechanism in the middle ear. Various methods have been tried in an effort to salvage hearing for this group of patients. A technic using a polyethylene tube prosthesis has been successful in re-establishing continuity and restoring hearing when it is placed between a mobile footplate and the incus, following removal of the crura and head of the stapes. This technic has restored hearing in cases that have had a previous unsuccessful stapes mobilization, as well as in primary cases. It cannot be used in all cases of crural fracture because of the anatomic variations found in the middle ear. At the present time, indications are that this polyethylene tube prosthesis will have a definite role in stapes surgery.

522 West End Avenue, New York 24

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The Buckling Sign—A Determinative in Sciatic Nerve Tension

ARTHUR A. MICHELE, M.D., F.A.C.S., BROOKLYN, NEW YORK

(*From the Departments of Orthopedics, New York Medical College, Flower and Fifth Avenue Hospitals, New York City, and the United States Public Health Service Hospital, Staten Island, New York*)

This paper introduces the buckling sign as a qualitative and quantitative determinative of the presence or absence of sciatic nerve tension on the extrathecal nerve root.

Forst,[1] who studied under Lasègue, in a thesis for his doctorate in medicine, introduced the straight-leg-raising sign as worthy of special note in the detection of sciatic nerve tension. Both men were of the opinion that the positive pain response elicited by the test is due to muscle contraction in the thigh and involves the sciatic nerve trunk. Later, DeBuerman[2] and Sjöqvist[3] considered the positive pain in sciatica to be caused by stretching of the sciatic nerve and to be unrelated to the thigh muscles.

As originally demonstrated by Lasègue,[4] the maneuver was essentially a knee-thigh flexion test. With the patient supine and the thigh and knee of the affected extremity flexed, the knee is gradually extended on the flexed thigh. There are two fixed points, the hip in flexion and the ankle at a right angle; when the knee is forced into extension, stretch-tension pain of the sciatic nerve is produced. Here we have only a qualitative sciatic nerve tension sign.

In Forst's amplification[1] of the Lasègue test, with the patient supine the examiner grasps the heel of the affected member in one hand, places his free hand on the patient's knee, and, maintaining the knee in full extension, gradually elevates the extremity to point of positive pain response. This test is considered to be both qualitative and quantitative in sciatic nerve tension determination.

It should be noted that the straight-leg-raising test of Lasègue is a tension sign in which pain is due to stretching of the extra-

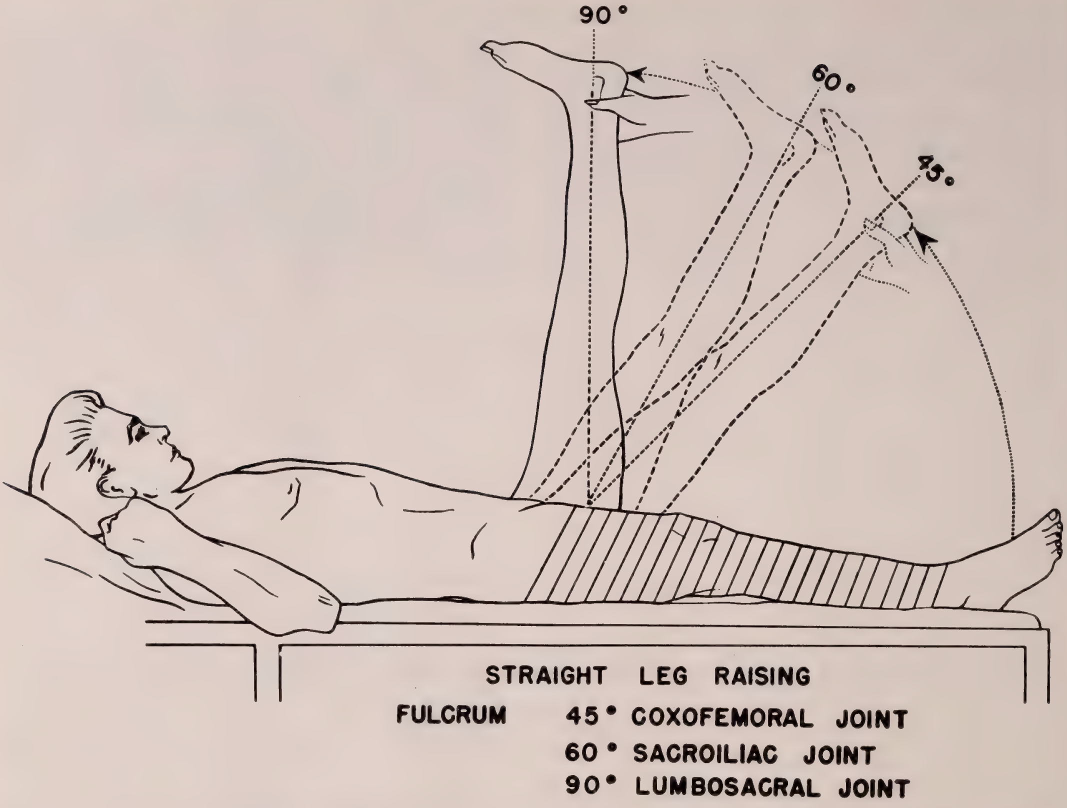

FIG. 1. Illustration of the straight-leg-raising test, pain at the various levels indicating pathology at that joint.

thecal nerve root. Several authors, including Goldthwaite,[5] have reported using the same maneuver, not as a test for sciatic nerve tension, but as a lever sign in the definition of pathology in the sacroiliac articulation. In the straight-leg-raising test used as a lever sign, assuming absence of sciatic nerve tension, elevation of the extended knee to 45 degrees produces stress pain at the level of the coxafemoral joint when disease or injury of the articulation is present. Elevation to 60 degrees brings to light pathology at the level of the sacroiliac joint; and to 90 degrees, at the lumbosacral joint (Fig. 1).

Straight leg raisings may produce bucklings at both knee joints in bilateral hamstring tension.

My own interpretation of the sciatic tension test is as follows:

With the patient supine, the palm of the examiner's hand is placed under the heel of the affected extremity, which now usually rests in a slight external rotation attitude of the thigh and mild plantar flexion of the ankle, and gradual elevation of the limb is carried out with the knee in full extension. In the presence of true sciatic nerve tension there will be a point in the arc of elevation, governed by the degree of sciatic tension (usually at about 45 degrees), at which the patient's knee will buckle, simply as an instinctive pain-escape mechanism; to continue the excursion with the knee extended must inevitably increase the pain (Fig. 2). In the absence of sciatic nerve tension the knee will not buckle at this point. Incidentally, the buckling level is essentially the same as the apodictic point used in the flip sign.[6] In the case of a simulator an actual buckling point is nonexistent and any response elicited is purely voluntary.

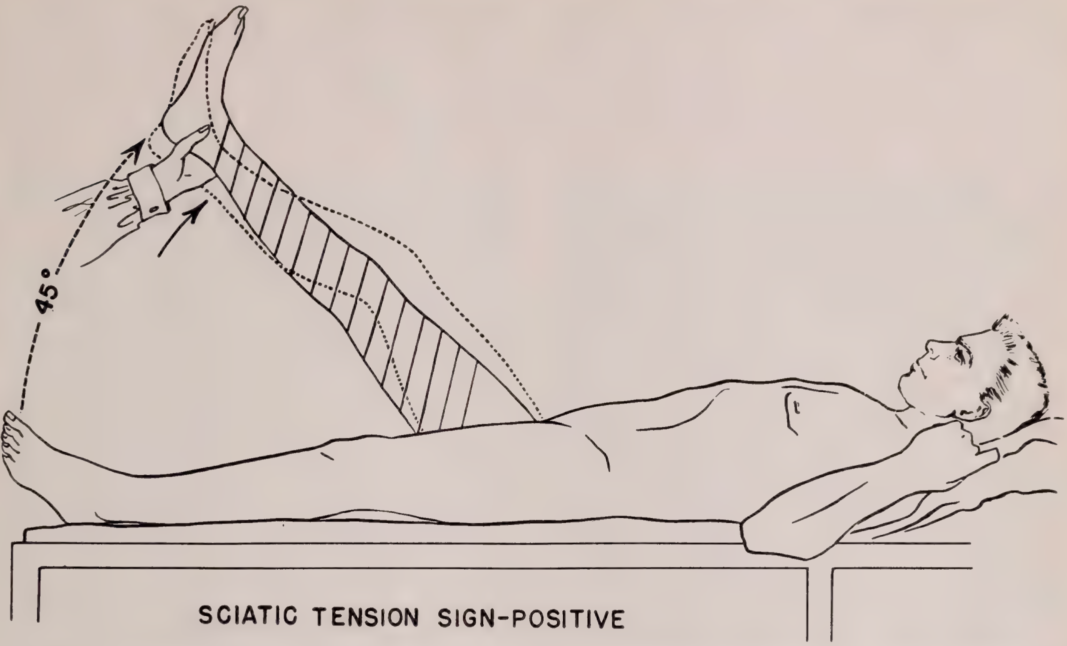

FIG. 2. Illustration of the sciatic tension test, with knee buckling regarded as a positive response.

In evaluating the test response the examiner might see with his mind's eye the picture of someone's finger touching a hot stove. The instinctive immediate withdrawal of the finger is the equivalent of genuine buckling, while an attempt to push the stove away portrays the simulator, who maintains the knee in full extension throughout the test, simply because no sciatic nerve tension is present.

Summary

The buckling sign is introduced as a method of determining, qualitatively and quantitatively, the presence of sciatic nerve tension on the extrathecal nerve root and as a criterion in differentiating between the genuine tension case and the simulator.

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Revenge is a kind of wild justice; which the more man's nature runs to, the more ought law to weed it out.—FRANCIS BACON

Some Characteristics of the Migrainous Woman

WALTER C. ALVAREZ, M.D., CHICAGO*

In 1947, after studying some 500 migrainous women, I wrote[1] that they are usually trimly built and so alert and quick in their thinking and moving that an observant physician can suspect what is wrong the minute one of them comes into his office. And it is well that he do this, because many women will fail to mention the fact that in their youth they used to have sick headaches. In their forties or fifties they will complain only of nervousness, or occasional spells of nausea, dizziness, abdominal pain, or attacks of prostrating fatigue. Unless he gets the history of an occasional scotoma or sickish headache, or the typical sick headaches in youth, the physician's diagnosis is almost certain to be vague and inadequate. If, however, he quickly recognizes a migrainous woman, and then draws out the typical story of migraine, then he knows what she has and how she can be helped.

Diagnosis.—A diagnosis may be impossible until the story of early migraine is obtained. This paper could be filled with case reports of unhappy and ailing women, with completely negative findings on examination, whose long recital of weird symptoms was puzzling until it was noted that each woman looked migrainous, and then it was possible to draw out the typical story. After that it was easy perhaps to block the spells with a dose or two of ergotamine.

To illustrate: as I was writing this, there came into my office a trimly built, stylishly dressed, and quick-witted little woman of fifty-seven who had been referred to me by able physicians who said that several thorough examinations, plus one abdominal exploration (with removal of her stoneless gallbladder), had failed to show any cause for a miserable pain in her "stomach."

One glance at her and the quick way in which she walked into my office and greeted me made me suspect migraine. On asking her to show me exactly where the pain was, she pointed to the lower end of her sternum! A few questions then showed that in her youth she had had severe sick headaches. In her thirties these had quit, to be replaced by the pain in the lower part of her thorax. This pain came after such emotional strain as entertaining guests or hurrying to finish some task. It was certainly not an anginal pain because it had no relation to effort or anger. It could hardly be due to a lesion in her digestive tract because it had no relation to eating, and it did not appear to be fibrositic or arthritic in nature. As she said, it had taken the place of her old migraines, and it came after the same old stimuli that had produced her sick headaches. The next time she started into a spell of pain an injection of Gynergen gave quick relief.

One of the cases that interested me most was that of a stout, rather unattractive woman whose story of neurotic symptoms was completely puzzling. I could learn of no strains or unhappiness. Then, one day, I saw her walking rapidly down the hall to my room and I had a strong hunch. I asked her if she had ever had sick headaches, and she said, "Yes, I used to have terrible ones. My present illness seems to have grown out of that old one." Careful study then showed that her neurosis was migrainous in nature. Then it was possible to show the woman that it was her inheritance of a migrainous disposition that had made her subject to sudden spells of exhaustion, faintness, dizziness, nausea, short-lasting depression, and sometimes abdominal pain with a brief spell of diarrhea.

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* Emeritus Senior Consultant, Mayo Clinic, Rochester, Minnesota.

The woman then was grateful because at last she understood herself and her problems and illnesses as she never had before. At last she lost her fear of her spells; she knew that they would never "turn into anything." Also, her husband and her family then understood her better and had more sympathy for her when she had to give in and cancel an engagement.

It is sad to have to confess that today migraine often goes unrecognized because there is no laboratory test or x-ray examination that will reveal it. As a result, many of the sufferers are being badly treated. One in four of those I see has received a futile pelvic operation. One woman who had had scores of spells of typical gastric crisis pain, due to a very severe form of migraine, had had nine futile operations for supposed intestinal obstruction.

HYPERSENSITIVENESS.—Because of the migrainous woman's great sensitiveness, bright lights, loud sounds and strong smells often distress her. I always start asking about migraine the minute a woman shades her eyes with her hand as she looks at the window in the office. One can practically always diagnose migraine in a moment if a woman is seen in a bad attack, completely apathetic, utterly miserable, and with no expression in her face or eyes. No other disease will, for some hours, make a woman look so nearly dead.

Usually, the woman admits she cannot stand much traveling, sight-seeing, shopping, or getting into a crowd or a cocktail party where there is much talking around her. In most cases, she will say that although she never was seriously ill, she has been often uncomfortable.

RARITY OF ORGANIC DISEASE.—When over a thousand migrainous women were examined thoroughly using all the facilities of the Mayo Clinic, there could be found only a very few with something physically wrong. Usually, it was a hypertension. A few had a silent myoma of the uterus or some silent gallstones. And here is a very important point—rarely did what little was found seem to have anything to do with producing the migrainous spells. In rare cases, a severe hypertension seemed to be causing the migrainous spells to come more frequently. Gardner, Mountain, and Hines[2] of the Mayo Clinic found migraine five times more frequently in hypertensive persons than in normotensive ones. I suspect the extra factor of hypertension made the migraine more troublesome and hence more likely to be mentioned by the woman.

How Data Gathered

Before analyzing my data on the characteristics of migrainous women, I should explain that on busy days I could not take the time to ask a woman about all of the details of her illness that I would like to have studied. Questions could be asked only about those few details on which, at the particular time, I was gathering data. Thus, one year, I questioned with care 618 migrainous persons in regard to scotomas, and the next year I questioned 600 migrainous women as to their fertility. This is why the sizes of the several groups here described vary. I always stopped studying a group as soon as I had enough data with which to answer the particular question that was then of interest to me.

I regret my inability to have gathered and studied a control group, and this in spite of much time spent in trying to get together such a group. All of the persons who are referred in a big clinic are selected in several ways, as by income, education, geographic location of their home, or by having a disease that is known to interest the particular consultant. This paper is largely a pilot study which can help the investigators who come later to see what some of the questions are that particularly need answers.

Body Build in Migrainous Women

In the cases of 260 migrainous women 74 per cent had the smallish trim body and good feminine proportions described in 1947.[1] Naturally, not all of the women of this type whom one sees suffer from migraine.

Some perhaps failed to inherit the necessary gene.

The modal, or most common height of the migrainous women was 5 feet 3 inches, while the modal weight—usually in middle life—was 123 pounds (stripped). Most of the women were attractive physically and socially. Nearly all of the trim, well-proportioned women had firm, well-placed breasts. In only 22 cases out of the 260 were the breasts poorly formed. In most cases in which the woman was past sixty years of age, her breasts were still firm.

Remarkable is the fact that most of the migrainous women had aged well. Many kept their trim figure into their sixties and seventies, and this usually without any great effort at dieting. This was true even of a number of the migrainous Latin and Jewish women, many of whom have a strong tendency to get stout as they grow older.

Some of the women were still attractive and full of energy at seventy. In looking over my notes, I find such remarks as, "Miss D. at forty-seven looks thirty," "Mrs. G. at sixty looks thirty-eight," "Mrs. B. at seventy-five has a nice figure and is still full of driving energy."

The anthropologist, Hrdlicka, showed by using as examples members of the National Academy of Sciences that great ability goes usually with a finely built body. On the other hand, students of feeble-mindedness and schizophrenia know that a poor brain often goes with a poorly built, poorly proportioned body—one that looks as though it had been made out of spare parts.

According to Ask-Upmark,[3] migrainous women have a decided tendency to inverted nipples, also a tendency to well-marked eyebrows. One observer, some years ago, said that many migrainous persons tend to have vertical wrinkles between the eyebrows.

Corpulence and Other Factors.—Of the 260 migrainous women whose build I studied, 66 were atypical. Twenty-seven were decidedly stout, 5 more were stoutish, and 8 were just big all over; 11 were too tall, 11 were too thin, and 4 were too tall and thin. In all these cases I did not think of migraine when the woman came into the office, and it was only later discovered. One very stout woman became heavy while drinking milk and cream to cure a mythical peptic ulcer; another put on weight while being treated for a supposed tuberculosis; and another became very stout while lying in bed for months after an auto accident.

The woman with a large or poorly proportioned body is the one most subject to organic disease. An interesting point is that in the rare cases in which some physical disease or abnormality was found in a migrainous woman, she was usually one of those few stout or poorly proportioned women not suspected of having sick headaches. It was a stout woman usually who had hypertension, diabetes, or gallstones.

One woman who said that in her youth she had had a pretty figure, after bearing four children had come to weigh 250 pounds. But she still had the bright, attractive migrainous temperament. Another woman, when she got stout, began to suffer from gallstones; and 6 stout women, with an atypical migraine condition, had high blood pressure.

Culture and Education Lacking with Atypical Body.—A number of the migrainous women whose bodies were unattractive and whose thinking was slow were poorly educated. For instance; a "dirt farmer's" poorly educated wife of thirty-two was well built but not quick or bright. Another farmer's wife was bright and keen at thirty-seven but did not have a well-proportioned body, perhaps because she had borne six children. Another farmer's wife of forty-five had lost her good figure after bearing four children, but she was still keen and attractive and often went into town to help in running half a dozen organizations.

A well-to-do farmer's wife had the migrainous temperament, the nice build, and two children. She was a college graduate, and her husband, who had inherited several large farms, was more of an executive than a farmer. A rancher's poorly educated wife of fifty-three, with sick headaches, did not look migrainous. A mechanic's wife was bright, but she was a thin, scrawny, and constitutionally inadequate person with small breasts. A welder's wife was trim, attractive, quick, and bright, although she had had only a grammar school education. The wife of a laborer with three children was above average in intelligence but not trimly built. A thin frail servant girl was a hard-working perfectionist, but not very bright. A fine type of Greek woman of good family, who had raised seven children, at fifty-two was still petite, trim, wide-awake, keen, and socially attractive.

In one very interesting case, the woman in girlhood had not gone beyond grammar school, but this was because, after her father died, there was no money for the education of a houseful of children. She was bright and attractive, with a trim little body, but she was married to a man in a menial position. She had such ambition that she was saving all she could each month so that some day she could put her two sons through college!

Temperament

Of the 218 cases (females) in which I made notes as to temperament, 95 per cent had the typical keen, quick, eager mind. It is possible that in some of the cases in which there was a big body and a dull mind, there was a mistake in the diagnosis of migraine; but I doubt it because whenever I came upon such an atypical case, I was particularly careful to get such a definite history, perhaps of unilateral throbbing sick headaches with a scotoma, that there could be no question about the nature of the disease.

A number of writers on migraine have ascribed a special temperament to the migrainous woman. According to Wolff,[4] many harbor strong resentments. They find it difficult to forgive the weaknesses of some of the people around them. Although usually courteous and apparently friendly, many have to force themselves to appear social. Because many dislike intimacy with people, they often give the impression of being cold or detached. This is not always found to be the case.

Among others who studied the mental characteristics of the migrainous woman were Touraine and Draper,[5,6] Knopf,[7] Trowbridge, Cushman, Gray and Moore,[8] Grimes,[9] and Slight.[10]

Migraine in Women of Several Racial Strains

Among the group of migrainous women I studied there were 14 South Americans, 5 of whom were typical both physically and mentally. Six were not typical, and 3 were definitely atypical, being big and stout. A Spanish, a Brazilian, an Italian, a Chilean, a Syrian, and a Greek woman with migraine were all nicely built and bright.

On questioning 19 Negro women (half of them nurses, technicians, and social workers) I found only 2 who had migraine, and, as was to be expected, they were the two most cultured and interesting women in the group. They were highly intelligent, bright, wide-awake, and socially attractive. One came from one of the most distinguished Negro families in America. Most of her relatives were college graduates, and she had a Master's degree. The other woman also came of a fine, educated family, and was not only a college graduate but also an expert accountant.

Color of Hair

I have notes on the hair of 160 migrainous women. Thirteen per cent had black hair, 43 per cent were brunettes, 16 per cent were blondes, and 28 per cent were rufous. The large size of this last-mentioned group tends to confirm my impression that red-headed women are more-than-usually subject to migraine.

I think migrainous women are more-than-usually likely, also, to have a heavy head of

TABLE I.—Percentage Distribution of Migrainous Women According to Number of Children Compared with Similar Figures*

Classification of Women	Number of Children (Per Cent) None	One	Two	Three	Four or More
422 migrainous women	30.0	29.0	27.0	10.0	4.0
U.S. college graduates, married and aged 45 to 49 years	30.2	23.3	25.9	11.7	8.9
U.S. high school graduates, married and aged 45 to 49 years	22.6	23.3	27.1	13.3	13.7

* These figures were secured by Mr. Herbert H. Marks of the Metropolitan Life Insurance Company. They are from Special Report P-E 5^c of Fertility (1955).

hair. Some suffered from its weight until they had had it cut.

Rarity of Concomitant Serious Disease

Migrainous women are probably largely immune to serious organic disease. Unfortunately, complete figures are not available on this, but in my notebooks, in hundreds of cases, I find references to only a few women with serious disease that was worth recording. Thus, only one case of rheumatoid arthritis is mentioned. Six women had a toxic goiter, and 2 had a symptomless goiter. One young woman, not migrainous in build or mind, had the rare type of severe exophthalmos with an almost normal basic metabolic rate. One woman had had pulmonary tuberculosis, and 2 more were supposed to have had it. A few women had diabetes; 2 had asthma; and 1, in her later years, had tic douloureux. Eight women had been operated on for gallstones but without any improvement in their headaches.

Records of 200 middle-aged migrainous women revealed hypertension in 7.0 per cent. Briggs and Bellomo[11] found 6.3 per cent in their 684 cases. Unfortunately, these figures tell us little in the absence of a well-chosen control group.

Cancer and Migraine.—In my experience, cancer rarely attacks the migrainous person. I find notes of one woman who had a cancer of the cervix at the age of sixty-one, of 2 who had a cancer of the breast in their forties, and of 1 who had a cancer of her thyroid gland at forty.

Ovariectomy and Migraine.—In a group of 501 migrainous women, among those who had had pelvic operations there were 113 who had had enough such surgery to bring on a menopause. Not a single one of these had been relieved of her migraine. Many were decidedly worse, and a few said that all their misery dated from the time of their sterilization. Certainly, with this evidence before him, no surgeon or radiologist should ever again induce a menopause with the hope of curing migraine.

Number of Children Born to Migrainous Women

For years my impression was that about a third of the migrainous women had either no children or else only one or two. Many said that because of their frail health they had feared childbearing, or, after having had one or two children, they had decided to have no more. I recorded the numbers of children born alive to 422 married migrainous women, all but a few of whom were then over forty-five years of age, and who because of an operation, early menopause, a definite loss of fertility, a strong decision not to have any more children, or a separation or divorce were not likely ever to have another child.

Table I shows the percentage distribution of migrainous women according to number of children, as compared with similar figures from the U.S. Census.

My impression is that most of my migrainous women patients had a high school education and I know that a number had some college education. We see from the Table that my patients were more often childless than are American high school graduates, but not different from American college graduates. They were somewhat more likely to have only one child (29.0 against 23.3 per cent), and they were not so likely to have four or more children.

In Latin countries, where little contraception is practiced, my impression is that migrainous women tend to have a few more children than do migrainous women in this country. In my small series of 14 Latin American woman, 2 had had no children; 3 had had one child; 2 had had two children; 4 had had three children; and the other 3 had had four, five, and seven children respectively.

CHARACTERISTICS OF MIGRAINOUS WOMAN WITH MORE THAN THREE CHILDREN.—The records of the 21 women who had had four or more children showed that, curiously, most of them lacked both the typical build and the typical temperament. Some were stout, poorly proportioned, and unattractive. In most of these cases my impression was that this physical unattractiveness was inborn and not due to the strains of childbearing. The mental slowness was, of course, almost certainly inborn.

Success in Husbands

Years ago, while studying over 500 migrainous women, my impression was strong that when they waited long enough to know what they would want and need in the way of a husband, they got excellent ones. Sometimes, when they married early, before they knew what they would need, they did not do very well. In this present study, 83 per cent of the 210 women questioned particularly on this point said they had secured an unusually good and kind husband, and many called him an angel. I think this is a much higher percentage of excellent mates than one would find in another comparable group of married women in this country.

Migrainous women, with their great desire for perfection, are commonly dissatisfied with the type of quiet, dependable, and good provider who would be accepted gratefully by many of their nonheadachey sisters. Forty-two of the 210 women studied had been married twice. On questioning in detail 33 of the 42, I found that the first husband, who in most cases had had to be divorced, was very unsatisfactory. In many cases, he was married for his charm, but he soon proved to be a playboy or a scalawag or an alcoholic person. The second husband, chosen often for security and a good financial status, proved to be good 24 times out of the 33. Eight of the twice-married women said they had gotten a bad husband both times. In some of these cases, the woman, with her often frail health and perhaps a quick temper and much self-centeredness, was not a wonderful bargain so far as a prospective husband was concerned.

A number of the women got their headaches for the first time when they married unwisely and soon had to face the question of getting a divorce. Unfortunately, some kept getting headaches after a second marriage because the new husband, though kind and good, was uninteresting, colorless, silent, and unloved.

Sexual Life

Of 78 migrainous women questioned particularly as to their sexual responses, 63 per cent said they thought they were normal; 4 per cent said that their interest in sex was slight; 15 per cent said they were anesthetic; and 18 per cent said they felt a strong distaste for intercourse, or suffered pain during it. That means that 31 per cent were either anesthetic or dyspareunic. It is hard to find a similarly classified control group of nonmigrainous women. Hamilton's table No. 358[12] shows that 26 per cent of his women patients with a normally sexed husband were much dissatisfied with sex, while perhaps 60 per cent were much dissatisfied when the husband was either over- or undersexed. According to Hamilton, 28 per cent of a group of 100 women with better-than-average education started out in marriage with a bad reaction to intercourse. Later, 41 per cent were much dissatisfied.

Terman[13] in his excellent study found, as Hamilton did, that much depends on the woman's satisfaction with her marriage. Among 541 women, 22 per cent of the satisfied had an inadequate sexual response while 75 per cent of the "poorly mated" had a poor response. My impression is that migrainous women are not definitely less sexual than are their nonheadachey sisters.

Age at Marriage.—Of 224 women who gave their age at marriage, 152 went to the altar between the ages of sixteen and twenty-five, and 19 went between the ages of thirty-five and fifty-seven. This figure of 8.5 per cent of the 224 suggests that there is a tendency for a highly intelligent migrainous woman to marry late. According to the 1955 U.S. Census reports, the average age at the first marriage of white women was about twenty years. Some migrainous women are so handicapped by their frequent sick headaches that they marry late; and many, with their keen intelligence and high idealism, are very choosy about a husband. Of 501 migrainous women seen by me, 5.6 per cent never married.

Menstruation.—I have no statistics on menstruation in migrainous women, but my impression is that they do not complain especially about their periods. Contrary to what one often reads, the migrainous woman does not often have her headaches with her period.

Migraine in Men

Migrainous men tend to have much the same mental and temperamental characteristics as women, but in men, these peculiarities are not quite so striking as they are in women. Migrainous men are usually able, well educated, and hard working, and some are perfectionists. Many are in the professions: they are physicians, ministers, lawyers, architects, musicians, teachers, writers, and artists. There is apparently no characteristic physical type.

Migrainous men seldom have the prostrating type of headache, but a few do. Fortunately, they are likely to be over their bad spells by the time they are thirty. Most men with migraine are able to keep at work with it; they rarely have to stay home for a day, as their sisters so often do. They can keep their appointments.

I have rarely seen migraine in a man who had to work with his hands, or who was easy-going or lazy. I can remember seeing only one laborer with it, but he was a Mexican, a handsome man, who, if he could have had an education, would probably have been an able business or professional man. I have seen the disease in a few farmers, but usually they were college graduates, or they were superintending the farming of so many hundred acres that their work was really that of an executive. One man who told me he was a mechanic later admitted he was head of a large shop with 50 men under him. He was an executive. One patient with a terrible form of migraine was a milk delivery man, but he was unusually intelligent.

Gould[14–16] wrote that he had never heard of a case of sick headache among farmers, policemen, firemen, ranchmen, trainmen, cattle dealers, drivers, or sailors.

In the office I see so few men complaining of migraine that there has been no opportunity to study the disease in them as carefully as I have studied it in women. On several occasions, when I have seen a man with severe migraine, I have found in the family history a complicating factor, such as epilepsy or psychosis. I shall discuss this combination of two diseases in another paper.

According to Allan,[17] when he made a study of migrainous people in his state, he found that men inherit the tendency as often as women do, but they seldom mention migraine because it so rarely lays them low. Many men, and particularly professional men, have only the scotoma without any headache.

Summary

Seventy-four per cent of 260 migrainous women had a small trim body with firm breasts. Usually these women dress well and move quickly. Ninety-five per cent had a quick eager mind and much social attractiveness. As many physicians have noted, migraine is a disease of the alert mind. The average migrainous woman is 5 feet 3 inches in height and weighs 123 pounds. Some 28 per cent were red-headed and many had luxuriant hair.

These women usually age well, and many stay neat and trim. Migrainous women who are big or stout or with a poorly proportioned body are the ones most likely to have organic disease such as hypertension or gallstones. They are also the ones least likely to be cultured and well educated, and they are the ones most likely to have had several children.

It is well that a physician recognize migrainous women as they come into his office because often they will fail to mention their headaches. When a physician knows that the patient before him is migrainous, he can usually guess correctly why she is over-sensitive and much inclined to spells of severe fatigue with much mild ill health.

The doctor can then get the woman to understand her life problems as she never did before. It will greatly help her family to understand her and sympathize with her when she cannot travel comfortably or cannot keep an engagement. Migrainous women should avoid operations on their pelvic organs or their gallbladder. They rarely have any organic disease, and when they have such disease it rarely contributes to the severity or frequency of their sick headaches.

None of the 113 women who had had enough pelvic surgery to produce an artificial menopause had lost their migraines. Many were the worse for their operations.

Migrainous women, with their frail health, are often reluctant to bear children. In a group of 422 married migrainous women who were past their childbearing days, 30 per cent had no children, 29 per cent had one child, 27 per cent had two children, 10 per cent had three, and only 4 per cent had more than three.

This experience is somewhat different from that of high school graduates, but not very different from that of American women who have gone to college.

Eighty-three per cent of 210 migrainous women specially questioned about the sort of husband they had said he was unusually good and kind, but 20 per cent had had to make at least two tries to get such a husband.

Sixty-three per cent of 78 migrainous women especially questioned as to their sexual response said it was good. Four per cent said their interest in sex was slight, and 33 per cent said they were either frigid or dyspareunic. It is doubtful that this represents a higher percentage of frigidity than that found in an average group of educated women.

Eight and a half per cent of 224 migrainous women married late, between the ages of thirty-five and fifty-seven years. Of 501 migrainous women, 5.6 per cent remained single.

Migrainous men are not so distinctive and recognizable as are migrainous women. They cannot be recognized on sight. Nearly all migrainous men work with their brains, and many are in the professions. No typical laborer and practically no dirt farmers were found with sick headaches.

700 North Michigan Avenue, Chicago 11

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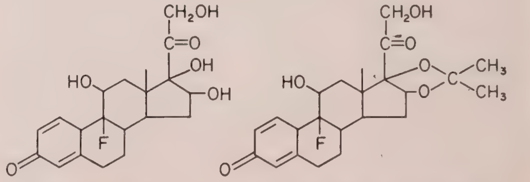
Triamcinolone Acetonide: Topical Therapy in Inflammatory and Allergic Dermatoses

NORMAN B. KANOF, M.D., AND SAUL BLAU, M.D., NEW YORK CITY

(*From the Department of Dermatology and Syphilology of the New York University Post-Graduate Medical School and the Skin and Cancer Unit of the University Hospital*)

Triamcinolone has recently become available as triamcinolone acetonide* for topical therapy (Fig. 1).

This paper relates our clinical experience with 0.1 per cent triamcinolone in cream and ointment bases in the treatment of inflammatory, pruritic, and allergic dermatoses in 53 patients. No difference in efficacy was observed between the two different base formulations, and they will be considered together in this report. In 20 patients the presence of bilateral symmetrical lesions allowed "paired comparison" of the 0.1 per cent triamcinolone acetonide with 1 per cent hydrocortisone in a comparable cream or ointment base.



Triamcinolone Triamcinolone acetonide

FIG. 1. Chemical evaluations of triamcinolone and triamcinolone acetonide.

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* Supplied by E. R. Squibb & Sons as Kenalog.

TABLE I.—DERMATOSES TREATED WITH 0.1 PER CENT TRIAMCINOLONE ACETONIDE

Diagnosis	Number of Patients	Results: Excellent	Good	Poor
Atopic dermatitis	20	15	4	1
Contact dermatitis	9	7	1	1
Nummular eczema	6	4	1	1
Eczematous dermatitis	5	3	2	..
Seborrheic dermatitis	4	2	2	..
External otitis	2	2	..	..
Pruritus ani and vulvae or scroti	4	4	..	..
Stasis dermatitis	3	2	1	..
TOTAL	53	39	11	3

TABLE II.—DERMATOSES ON COMPARABLE SITES TREATED WITH 0.1 PER CENT TRIAMCINOLONE ACETONIDE AND 1.0 PER CENT HYDROCORTISONE ACETATE IN SIMILAR BASES

Diagnosis	Number of Patients	Triamcinolone Acetonide Better than Hydrocortisone Acetate	Equal to	Less effective than
Atopic dermatitis	14	8	6	..
Eczematous dermatitis	4	2	2	..
Seborrheic dermatitis	2	1	1	..

Each patient was supplied with the medications and instructed as to their use. Treatment was continued for four to eight weeks and patients were observed at one- or two-week intervals.

Comment

Table I clearly indicates the efficacy of topical preparations containing 0.1 per cent triamcinolone acetonide in the treatment of a variety of inflammatory, allergic, and pruritic dermatoses. Fifty of the 53 patients showed an "excellent" or "good" response to therapy with triamcinolone acetonide. In 3 patients the response was unsatisfactory. A "burning" sensation on application of the medication was noted by 1 patient. However, no evidence of primary irritation or allergic sensitization from the medications was observed in any of the patients treated in this study.

Where 0.1 per cent triamcinolone acetonide could be compared with 1 per cent hydrocortisone acetate on comparable lesions in 20 patients, the 0.1 per cent triamcinolone acetonide was superior in 11 and equal to the 1 per cent hydrocortisone acetate in the remaining 9 (Table II).

Summary

Triamcinolone acetonide 0.1 per cent in cream or ointment base is effective topically in those dermatoses for which local steroids are usually employed.

In these conditions a concentration of 0.1 per cent triamcinolone acetonide is therapeutically superior or equal to 1 per cent hydrocortisone acetate.

Blessings upon Cadmus, the Phoenicians, or whoever it was that invented books.—CARLYLE

Retrografin, a New Contrast Medium for Retrograde Pyelography

JULIUS BRIMBERG, M.D., HAROLD D. BERLOWITZ, M.D., HAROLD N. SCHWINGER, M.D., MORRIS J. RENNER, M.D., MILTON LOPYAN, M.D., AND RAY BEILOUNY, R.T., BROOKLYN, NEW YORK

(*From the Departments of Urology and Radiology, Unity Hospital*)

RETROGRADE pyelography was used as a diagnostic procedure in urologic practice many years before intravenous urography.[1] Following the development of the organic iodine-containing contrast agents, which give excellent demonstration of the urinary tract and which may be administered intravenously with safety, intravenous urography has come into extensive use. In patients with poor kidney function, however, the intravenous method may give poor quality films of the upper urinary tract because the dye is usually not excreted by these patients in sufficient concentration to yield good opacification. Retrograde pyelography offers a more accurate and complete picture in these patients by providing a clear outline of the ureter and pelvis and by permitting an individual study of the function and pathologic condition of each kidney.

Inherent in the retrograde method, however, is the possibility, despite the observance of scrupulous aseptic technic, of introducing infection from endogenous sites into the kidney or of spreading infection already present from one area of the urinary tract to another previously-uninfected area. Obviously, the addition of a suitable bactericidal agent to the contrast medium should minimize this problem of infection. A new contrast medium was introduced recently which contains such a bactericidal additive. This medium is Retrografin, which is Renografin 30 per cent to which neomycin sulfate has been added.

The safety of the use of Renografin in man has been established. It has been well tolerated in intravenous urography,[2] in retrograde aortography,[3] and in cerebral angiography.[4]

Neomycin sulfate has been reported to be the bactericidal agent of choice for addition to urographic media.[5] The majority of gram-positive and gram-negative bacteria encountered in the urinary tract are sensitive, in vitro, to neomycin in relatively low concentrations.[6] Furthermore, three contrast media, to which 2.5 per cent of neomycin sulfate had been added, were employed in over 500 retrograde neomycin in the urinary tract or from its systemic introduction by backflow through the kidney.

Though complications have been reported following the prolonged parenteral administration of neomycin,[7,8] it has been given in parenteral doses of 1 to 2 Gm. daily for one to three days without observed toxic effect;[9] and in the postoperative treatment of patients with acute diffuse peritonitis, neomycin (1 to 2 Gm. per day for one to three days) was considered to be the drug of choice for intraperitoneal administration.[10] If all of the administered dose of Retrografin in retrograde pyelography were absorbed, the total amount of contained neomycin which would be absorbed would constitute less than a single dose of 1 Gm. Even in the presence of pyelorenal backflow, however, total absorption of the medium is unlikely.

Laboratory studies* indicate that Retrografin has a low order of acute toxicity to

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* Conducted at The Squibb Institute for Medical Research, New Brunswick, New Jersey.

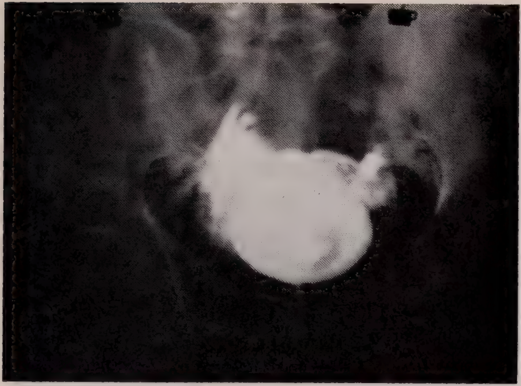

FIG. 1. *Case 1.* Demonstration of ruptured bladder with Retrografin.

mice and that it is not irritating to the rabbit eye or to the rabbit bladder. An intravenous dose equivalent to 1.0 ml. of undiluted Retrografin was not lethal to any of the 10 mice over a ten-day observation period. A dose of 0.5 ml. of Retrografin instilled into the rabbit eye produced no irritation or corneal damage at one-half hour, one hour, two hours, four hours, seven hours, and twenty-four hours after injection. A single injection of 30 ml. of Retrografin introduced by a catheter into the bladder of 9 male rabbits and retained there for thirty minutes caused no toxic reactions. There were no gross pathologic findings in 6 of the 9 rabbits sacrificed at one hour, two hours, and twenty-four hours after treatment, or in two of the three rabbits sacrificed at forty-eight hours after injection. There was gross evidence of subepithelial edema within the bladder wall in the remaining rabbit sacrificed at forty-eight hours after treatment.

Since January, 1957, clinical investigation of Retrografin has been conducted at the Unity Hospital, Brooklyn, New York. To the present time, Retrografin has been employed in over 100 retrograde studies. Prior to these studies, all patients at this hospital with obstructive uropathy had been examined by the intravenous method, because of the high rate of unwanted reactions (25 to 35 per cent) which had been experienced in retrograde studies with other contrast media.

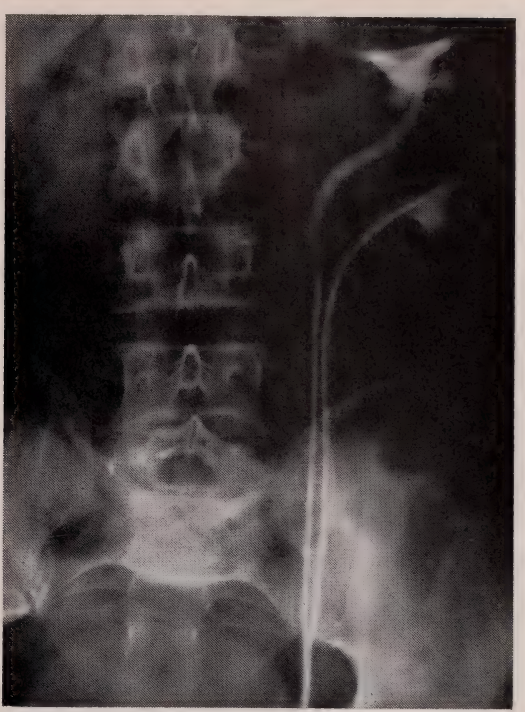

FIG. 2. *Case 2.* Hypernephroma of upper left kidney demonstrated with Retrografin.

From the beginning of the studies with Retrografin at Unity Hospital, it was apparent that this medium could be employed without severe reactions. The purpose of this report is to describe results in 100 cases in which retrograde examinations with Retrografin were undertaken at that hospital.

Methods and Materials

PATIENTS.—The patients included in this series (totaling 100) ranged in age from thirteen to eighty years. On admission each of these patients had presented evidence of uropathy varying from symptoms of acute pyelonephritis to those of possible stones, stricture, or other pathologic condition of the urinary tract.

CONTRAST AGENT.—Retrografin as used in this series was Renografin 30 per cent with 2.5 per cent neomycin base as the sulfate.

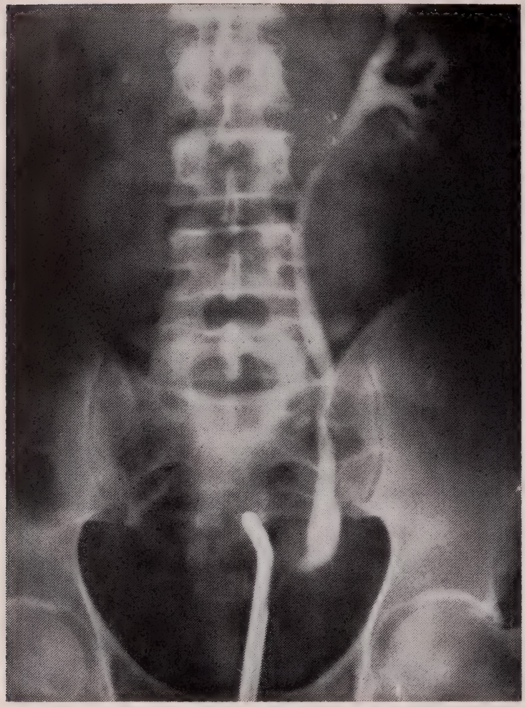

FIG. 3. *Case 3.* Renal calculus and ureteral stricture demonstrated with Retrografin.

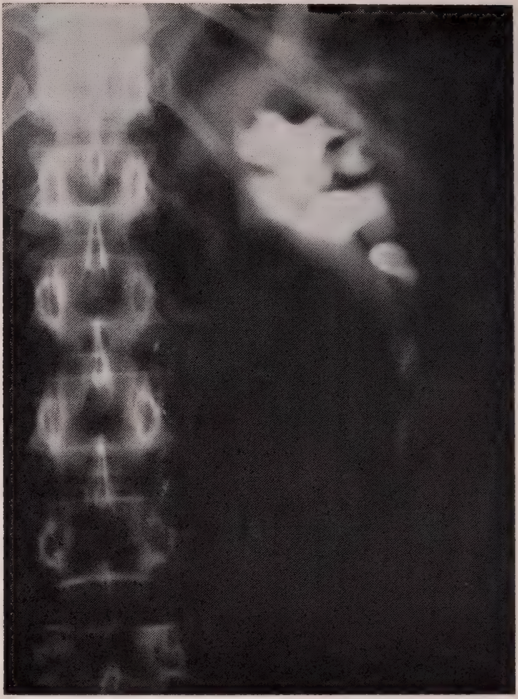

FIG. 4. *Case 4.* Multicystic kidney demonstrated with Retrografin.

By catheter each patient was given Retrografin which had been diluted prior to injection with water in the proportion of 1 part water to 1 part Retrografin. Total doses ranged from 10 cc. in the case of pyelograms to 150 cc. in the case of cystograms.

Results

Good or excellent opacification was consistently obtained in this series. The finer details of the calyceal system were generally clearly outlined, and in every case the visualization of the ureter and pelvis and/or bladder was satisfactory for diagnostic purposes. Representative films are shown in Figures 1, 2, 3, and 4.

Side reactions were negligible. In only two instances (2.0 per cent of the entire series) were there any reactions. These were characterized by fever which lasted for a period of twenty-four hours. In both cases the patients had been admitted to the hospital for severe acute bilateral pyelonephritis with elevated temperature which subsided after admission. On the evening following the cystoscopy and pyelography both patients showed a rise in temperature, but this rise completely subsided within twenty-four hours.

Occasional overdistention of the ureter or pelvis produced pain only at the time of the instillation of the medium, but this pain subsided promptly on cessation of the injection or spontaneous passage of the medium without evidence of any other type of reaction.

Four illustrative cases are briefly presented.

Case Reports

CASE 1.—A seventy-six-year-old male presented a history of hematuria with a neoplasm at the vesical neck, situated behind the posterior lobe of the prostate. A transurethral resection was done. Twelve hours postoperatively, after irrigation was attempted when the catheter occluded, the patient presented signs of a ruptured bladder. A cystogram was obtained by introducing 150 cc. of Retrografin into the bladder. The cystogram demonstrated the posterior vesical tear perfectly and the extravasation into the peritoneum. At operation the area into which there had been extravasation showed less edema and less necrosis than that previously seen in other cases. It was the clinical impression that the presence of the neomycin in the diagnostic medium had permitted healing even before evacuation was accomplished.

Case 2.—A forty-two-year-old man was admitted because of hematuria of one hour's duration. On cystoscopy two ureteral orifices were seen on each side of the trigone. With Retrografin the affected left side was demonstrated with excellent delineation of a hypernephroma of the upper left kidney. A repeat cystoscopic examination was made prior to operation. There were no reactions of any sort.

Case 3.—A fifty-four-year-old male was admitted because of left renal colic and persistent pyuria. Cystoscopy with Retrografin demonstrated a left renal calculus and a marked left ureteral stricture. Retrograde filling of the ureter and the subsequent trapping of the medium produced no reaction that was demonstrated by a change in the temperature or in the pulse.

Case 4.—A twenty-eight-year-old female presented a history of intermittent left side pain with recurrent high fever and pyuria. Retrograde studies demonstrated a multicystic kidney on the left side which was filled with the medium of good visualization. At operation the diagnosis of multicystic disease was confirmed. There was no apparent deleterious effect from the Retrografin given.

Discussion

From the results obtained in this study, it is obvious that Retrografin is a highly satisfactory medium for use in retrograde pyelography. Not only is the contrast achieved consistently excellent, but also the low incidence of reactions (2 per cent, as compared with 25 to 35 per cent experienced in previous retrograde studies, using other media without neomycin) is a distinct advantage in these procedures. This low reaction rate supports the view that retrograde pyelography with a suitable medium, such as Retrografin, need not necessarily be contraindicated in a patient because of the presence of infection in the lower urinary tract.

Summary

Retrografin, a new contrast medium which contains 30 per cent Renografin and 2.5 per cent neomycin sulfate, has been employed in 100 retrograde pyelographic (or cystographic) examinations.

Opacification was consistently good or excellent, providing a satisfactory basis for diagnosis in every case.

Reactions characterized by fever occurred in only 2 of the 100 patients. The fever subsided completely within twenty-four hours. Occasional overdistention of the ureter and/or pelvis produced pain only at the time of instillation of the medium, but the pain subsided promptly on interruption of the injection or spontaneous passage of the medium. There were no other reactions in this series.

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RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Spontaneous Hypoglycemia

PETER KORNFELD, M.D., NEW YORK CITY

(From the Departments of Medicine, The Mount Sinai Hospital, and New York University-Postgraduate Medical School)

THE PURPOSE of this review is to reexamine the entire problem of spontaneous hypoglycemia in the light of recent progress and to analyze the various abnormal mechanisms in order to arrive at a rational, physiologically sound method of therapy.

The label of hypoglycemia has become increasingly popular in recent years, yet the diagnosis is often made without adequate supportive evidence. It is not at all unusual to see a neurasthenic individual with a borderline low blood sugar value labelled as hypoglycemic, without invoking Whipple's expanded criteria.[1] The criteria consist of (1) gastrointestinal and central nervous system symptoms, with (2) a fasting blood sugar of 50 mg. per cent or less or an abnormally low postabsorptive blood sugar level, (3) dramatic relief of symptoms by the administration of sugar, and (4) a characteristically abnormal electroencephalogram which reverts to normal within a matter of minutes following the intravenous administration of glucose. In practice these criteria are far from absolute as will be shown later. Actually Harris[2] was the first to describe the clinical syndrome of hyperinsulinism, but it was not until 1927 that Wilder[3] correlated a patient's hypoglycemic symptoms with the high insulin content of a metastatic nodule of a pancreatic islet-cell carcinoma. Joslin[4] in 1928 first described the underlying physiologic mechanism of the hypoglycemic syndrome. He postulated that "by lowering the blood sugar certain oxidative processes become depressed to such a degree that the brain cells are affected in much the same manner as in asphyxia." Since then many reviews dealing with various aspects of this topic have appeared.[1,2,5–12]

Hypoglycemia is not a disease per se but rather a symptom complex which represents the clinical manifestations of a host of underlying disorders causing a derangement in the regulatory mechanism of maintaining the blood sugar within the normal range. Spontaneous hypoglycemia denotes an abnormal lowering of the blood sugar level, frequently attended by a distinct group of symptoms and not produced by exogenous drugs, chiefly insulin or the newer oral hypoglycemic agents. In other words, the metabolism acts in such a manner as to remove the blood sugar at a faster rate than the blood sugar can be replenished. A blood sugar level below 50 mg. per cent by the Folin-Wu method[13] or a true blood sugar value below 35 mg. per cent by the Somogyi-Nelson method[14] is usually accepted as one of the diagnostic criteria for a clinical diagnosis of spontaneous hypoglycemia. Yet it has been pointed out that in some cases the rate of fall may be just as important as the absolute blood sugar level itself.[7,15] Thus patients with blood sugar levels of 15 mg. per cent have been found to be asymptomatic while others with relatively normal blood sugar levels were found to be convulsing and responded readily to intravenous glucose administration.[16] The occurrence of symptoms at comparatively high blood sugar levels also raises the question of a reactive threshold in the individual patient.[17] In a study of a thousand diabetic patients with insulin reactions the blood sugar was found to be relatively normal or high in 50 per cent.[18] It has been suggested that at least some of these so-called pseudohypoglycemic reactions may have been due to hyperventilation.[19] The question has also been raised whether or not concomitant hypocalcemia might predispose to excessive insulin sensitivity.[20] However these instances of relative hypoglycemia are quite rare. One of Whipple's criteria, the immediate and dramatic relief of symptoms by the administration of sugar, may not hold true if hypoglycemic coma has been prolonged sufficiently to cause a pathologic condition of the central nervous system. Under such circumstances recovery may be delayed and incomplete. The advent of the electroencephalogram has provided another important diagnostic tool. The patient with true hypoglycemia frequently shows an abnormal tracing which reverts to normal within a matter of minutes after the intravenous administration of glucose.[1,21–25]

The terms spontaneous hypoglycemia and hyperinsulinism are not always synonymous although they are frequently used interchangeably. For instance, hypoglycemia may occur in hypothyroidism in the absence of elevated serum insulin levels and the depressed blood sugar can be controlled by the oral administration of thyroid extract.[26]

Signs and Symptoms of Hypoglycemia

The clinical pattern of response to hypoglycemia is influenced by (a) the degree of hypoglycemia, (b) the rapidity with which the blood sugar falls, (c) the duration of the hypoglycemia, and (d) the individual's reactive threshold. If the rate of fall is rapid the patient will usually complain of a generalized inward tremor, palpitations, flush, excessive perspiration, and even hunger pangs. This symptom complex is sometimes referred to as the epinephrine response. Should severe hypoglycemia persist for any length of time, the above symptoms may merge with those of the cerebral type.[27] Almost every neurologic symptom and sign, diffuse or local, has been described. The vast majority of nonorganic hypoglycemic seizures are gradual in onset. Lethargy, light-headedness, confusion, generalized tremor, or bizarre automatic movements may result in headache, convulsions, loss of consciousness, coma, and death. Transient paresis, cranial nerve palsies, peripheral neuritis, aphasia, and pathologic reflexes are not uncommon.[9,12,28–31] Characteristic psychologic concomitants have also been reported. They include inability to concentrate, abulia, loss of inhibition, and feelings of extreme depression.[32–35] Even a catatonic schizophrenia-like picture has been described.[36] Anxiety may or may not be present depending on the patient's underlying personality makeup.[37] Repeated severe attacks of hypoglycemia may result in persistent and progressive brain damage and mental deterioration.[38,39] Some observers feel that the flat glucose tolerance curve which can often be seen in neurasthenic patients may actually be caused by the "disease" rather than vice versa.[37]

The lumbar puncture examination usually yields findings of normal or even elevated spinal fluid sugar levels. Since hypoglycemic reactions develop in various patients at different blood sugar levels, the presence of a borderline value can neither prove nor disprove a causal relationship between alterations in blood sugar and the appearance of neuropsychiatric symptoms in a given case.[21,23–25] In such instances the electroencephalogram may reveal such a correlation.[22] Classically the following changes appear as blood sugar levels decrease progressively: (a) Delta activity appears during hyperventilation in subjects which did not show such activity when hyperventilated at higher blood sugar levels—the lower the blood sugar, the greater is the effect of hyperventilation on the tracing; (b) alpha activity gradually diminishes in frequency; (c) symmetric, diffuse bursts of delta activity, frequently of high voltage, appear; and (d) more or less continuous, diffuse, and generally symmetrical slow activity prevails with or without superimposed delta activity. The lowering of the alpha frequency resulting from a depressed blood sugar can, to some extent, be counteracted by oxygen administration.[21,22] Similarly, the ventilation-induced delta waves in hypoglycemia can be abolished by intravenous glucose administration. Yet even extremely low blood sugar levels cannot produce an epileptic type of brain activity, but may produce additional changes in previously abnormal electroencephalograms. The precipitation by hypoglycemia of a three per second spike and dome pattern in confirmed epileptic persons, known to have had previously normal electroencephalograms, has been reported.[40,41]

Symptomatic angina pectoris with electrocardiographic T wave inversions and cardiac arrhythmias has been cited in isolated instances.[42,43] Judson and Hollander[44] have tried to show that the flattening and broadening of the T waves following 0.1 units of insulin per Kg. intravenously, enough to reduce normal blood sugar levels to as low as 38 mg. per cent, was not associated with any clinical cardiac symptoms. However, this does not disprove the accepted clinical contention that hypoglycemia of greater severity might have produced a frank anginal syndrome and ignores variations in individual susceptibility. Of great interest are recent reports which attribute the restless and disordered behavior in some patients with severe, prolonged congestive heart failure to hepatogenic hypoglycemia rather than to cerebral anoxia.[45,46]

Factors Influencing the Blood Sugar Level

The central and autonomic nervous systems, the gastrointestinal tract with all its appendages, the endocrine system, the musculature, and, to a lesser extent, the kidneys are all intimately concerned with maintaining normoglycemic blood levels. While it is not feasible to discuss the various mechanisms in detail here, a brief summary will facilitate the understanding and intelligent management of the various types of hypoglycemia most frequently encountered.

Regulation of the blood sugar level is mainly dependent on an intact liver and on a balance of endocrine secretions, providing digestion and absorption from the gut are normal. The main site of absorption of carbohydrates is the small intestine. In vitro studies of progressive segments of small bowel reveal that glucose absorption decreases as the ileocecal valve is approached.[47] However, the rate of glucose absorption is independent of concentration above a concentration range of 10 to 13 per cent.[48,49] Small amounts of glucose can be secreted by the kidney but this is of no practical significance.[50] Muscle is unable to convert glycogen into glucose because of its lack of glucose-6-phosphatase. Impairment of hepatic glycogenolysis and glycogenesis is the basic biochemical lesion in hepatogenic hypoglycemia. The liver of a 70 Kg. male secretes glucose at the approximate rate of 12 Gm. per hour. This sugar is derived from (a) ingested glucose stored as glycogen, (b) from other hexoses converted to glycogen, and (c) from glucose precursors (pentoses, amino acids, glycerol) which may be converted to glucose by the interchanges of the anaerobic and aerobic glycolytic pathways.[51]

ACTH and the adrenocortical hormones increase the deposition of glycogen in the liver by enhancing gluconeogenesis from amino acids and by interfering with the peripheral utilization of sugar by depressing the hexokinase reaction. (However, Stadie[52] has shown that insulin, pituitary, or adrenal factors, singly or together, do not influence the hexokinase reaction in cell-free tissue. The same has not been proved in the intact animal.) The diabetogenic quality of the growth hormone of the adenohypophysis is well known. It also acts as an insulin antagonist by interfering with the binding of insulin by muscle.[51,53–55] After the withdrawal of ACTH or cortisone following prolonged usage, patients may experience periods of relative hypoglycemia due to persistence of the excessive insulin secretion formerly necessary to utilize the raised blood sugar. Suddenly increased demands for glucose are probably met by the liberation of additional adrenalin which temporarily augments liver glycogenolysis and may also aid in the breakdown of muscle glycogen and in the formation of lactate.[56]

Many investigators feel that the hypoglycemia in primary hypothyroidism is not due to a decreased thyroid hormone secretion per se, but rather is caused by the prolonged depression of the adenohypophysis and of the adrenals.[8,57–59] Others feel that the hypoglycemia of myxedema is probably directly influenced by thyroid hormone.[26,60–63] It has been shown that hyperthyroidism is associated with increased glucose absorption from the gut and thus may aggravate previously existing mechanisms. This probably results from a stimulation of gastric emptying and an increase in the rate of phosphorylation in the gut wall.[61] Furthermore, the thyroid hormones impose a block between the process of oxidation and the energy pool ordinarily derived from it, thus causing peripheral overutilization of glucose and a compensatory increase in glucose output from the liver.[64]

The major actions of insulin are: (a) influence on rate of entry of some sugars into the cell;[52,54,65] (b) acceleration of breakdown of glucose to lactate or pyruvate and of oxidation of glucose to carbon dioxide and water; (c) promotion of gluconeogenesis and lipogenesis from glucose and acetate (mainly in the liver); and (d) prevention of accumulation of fat in liver (unlike in the diabetic liver), maintenance of depot fats, and suppression of formation of ketone bodies. Insulin will cause a large intracellular accumulation of free glucose or galactose and this results from a more rapid transport of these molecules across the cell membrane. Insulin does not stimulate or inhibit the production or utilization of these sugars within the cell. This transport process in muscle is prior to and distinct from the hexokinase reaction. Unlike the muscle cell, the rate of entry of sugar into the brain cell is probably not accelerated by insulin.[66] Glucagon, a product of the alpha cells of the pancreas, activates hepatic phosphorylase as ephedrine does and thus favors glycogenolysis and an increased blood sugar level.[54,67,68] The relatively mild diabetic state encountered after pancreatectomy may possibly be due to the elimination of the alpha cells which secrete this hyperglycemic factor.

The role of pantothenic acid in carbohydrate metabolism is not clear. However, hyperglycemia with increased insulin sensitivity has been noted in the presence of pantothenic acid deficiency.[69]

Preliminary reports would also seem to indicate that the feeding of caseine and leucine in sufficient quantities to increase the blood level of amino acids may precipitate hypoglycemia. It is postulated that the mechanism is either a stimulation of insulin production or an inactivation of serum insulin inhibitors.[70]

Neurogenic factors may also be at play, although the absolute blood sugar level itself probably represents the crucial influence over insulin secretion. La Barre's vagal stimulation theory[71,72] has never been confirmed. After showing that the normal blood sugar level of a dog may be reduced by transfusing the blood from a pancreatic vein of another dog during stimulation of its right vagus nerve, he postulated the existence of an insulin regulatory center in the thalamus which was affected by the blood glucose level and transmitted its impulses via the vagus to the beta cells of the pancreas. The destruction of the hypothalamus in such a hyperglycemic dog was said to have been followed by the disappearance of hyperinsulinism.

Cerebral Metabolism

Since the majority of hypoglycemic symptoms are neurologic in character, a brief survey of cerebral metabolism will lead to a better understanding of the underlying physiology. Unlike all other organs, the brain does not need insulin for its oxidation of glucose.[73] The energy derived is needed for trophic as well as for conduction purposes. While the brain of the fetus derives a small percentage of its energy from anaerobic carbohydrate metabolism, the adult brain is almost wholly dependent on the oxidative process. In vivo the cerebral respiratory quotient is 1.0 indicating that carbohydrates are oxidized exclusively.[73] Furthermore, in man the oxygen consumption of the brain can be accounted for entirely by the oxidation of glucose absorbed from the blood passing through the brain substance.[74] This has been disputed by Geiger[75] who claims that a brain profused with glucose-free blood can function for from one to two hours. This work has not been confirmed by other investigators. It is known that the brain not only absorbs glucose but can release it as well.[15] During hypoglycemia the brain's energy requirements are met by hepatic glycogenolysis.[74] Two accessory mechanisms, in themselves not adequate, are the formation of glucose from cerebral glycogen and a change in the peripheral utilization from glucose to fat by non-nervous tissue.[74] The symptoms of hypoglycemia have been divided into five phases and their sequence correlated with the depression of the metabolic rate at various levels of the brain.[74,76,77]

The chronology and the reverse order in which the various phyletic layers are brought back into function indicate that the cortex is most, and the medulla and spinal cord least, sensitive to lack of glucose.[77,78] Recently two investigators demonstrated the presence of a response from the cochlea and auditory cortex of the cat in the presence of a blood sugar of 5 mg. per cent when the animal was in the medullary stage of coma. This would indicate that these areas are either rich in carbohydrate stores or do not conform well to the concept of phylogenetic central nervous system organization.[79] Furthermore, the metabolic heterogeneity of the brain probably depends on quantitative and qualitative differences in enzyme complexes of the various cerebral structures. While the neurons, oligodendroglia, astroglia, microglia, and connective tissue structures are subject to anoxic damage in this order of frequency, differences in regional vulnerability are much greater than the vulnerability among individual structural elements. Thus areas of cortical necrosis may be seen adjacent to a fully preserved cortical region.[80]

Lacking sugar, brain metabolism is decreased as evidenced by a decreased arteriovenous oxygen difference while the cerebral blood flow remains constant or even rises.[81,82] Reduction of cerebral blood flow alone is usually not a significant factor in depriving the brain of its glucose supply because of the large excess of sugar normally available in the blood.[83] While cerebral blood flow seems to be adaptive, it is not so to the extent of keeping arteriovenous oxygen differences constant.[84] Thus it is probably cerebral anoxia which is the immediate cause of hypoglycemic symptoms.[81,82] No significant changes in cerebrovascular resistance have been reported during hypoglycemia.

The utilization of glucose by the brain is measured by determining the magnitude of consumption in relation to its energy needs. Thus, the lack of clinical symptoms even when the blood sugar is critically depressed, as may occur in infants, can be explained either by the fact that a low blood sugar does not necessarily mean a low brain sugar or that a low blood sugar does not critically affect a brain with relatively low energy requirements. The latter hypothesis would seem to be confirmed by drowning studies wherein a large percentage of young children who had been apneic for six to fourteen minutes recovered completely. Yet adults never recover from such prolonged asphyxia.[85–87] Experimental hypoglycemia induced in animals under anesthesia produced no clinical symptoms while the same experiment performed without anesthesia yielded frank convulsions.[88] The failure of blood glucose to enter the brain cell may be one cause for the production of prolonged shock. The presumable mechanism is a deprivation of energy and a breakdown of such energy-requiring processes as phosphorylation of sugar, necessary for the passage of the molecule across the cell membrane. Prolonged, severe hypoglycemia also enhances a shift of sodium and water into the cell along with a reverse migration of potassium. This would explain the cerebral edema found at necropsy after prolonged anoxia.[89]

Other irreversible reactions resulting from hypoglycemia may include punctate hemorrhages and necrosis of the cerebral cortex, characterized by degeneration and disintegration of ganglion cells as well as swelling of the glia and axis cylinders.[90–94] Experimental severe hypoglycemia in monkeys of fourteen and a half hours duration will cause complete nerve cell destruction and disappearance while seven and a half minutes of complete anoxia will achieve the same effect in the cat brain.[78,95] The oxygen requirement of the normal adult brain is about 46 to 53 cc. per minute or approximately 18 to 21 per cent of the body's total oxygen consumption at rest. A minimum of 25 per cent of the normal cerebral metabolic rate is necessary to maintain structure and operation of vital centers in the medulla.[74] On the whole there is a good correlation between the degree of cerebral dysfunction and the extent of diminution in cerebral oxygen consumption.

Classification of Spontaneous Hypoglycemia

Since the causative factor in spontaneous hypoglycemia determines its clinical management, the etiologic classification proposed by Conn[7,8] seems most rational and is presented in modified form. We prefer the term idiopathic to functional hypoglycemia because pathologic or biochemical aberrations may well exist which, however, cannot be demonstrated by present-day methods.

A. Organic Hypoglycemia
  1. Endocrine causes
    a. Pancreas (hyperinsulinism): islet cell adenoma(s), islet cell adenocarcinoma, islet cell hypertrophy or hyperplasia
    b. Hypopituitarism (anterior lobe)
    c. Adrenal cortex: insufficiency, congenital hyperplasia
    d. Hypothyroidism (primary and secondary)
  2. Hepatic diseases
    a. Glycogen storage disease
    b. Diffuse intrahepatic cholangiolitis
    c. Toxic hepatitis
    d. Fatty metamorphosis
    e. Diffuse carcinomatosis
    f. Viral hepatitis
    g. Laennec's cirrhosis
    h. Chronic passive congestion
  3. Central nervous system disease: hypothalamus and brain stem lesions[74,96]
  4. Nonpancreatic tumors: sarcomas and fibromas
B. Idiopathic Hypoglycemia
  1. Automatic nervous system imbalance: increased vagal tone (?)
  2. Alimentary tract disturbance: enzymatic defect, rapid intestinal transit time
  3. Hyperinsulinism of infancy
  4. Idiopathic spontaneous hypoglycemia of infancy
  5. Renal glycosuria[97]
  6. Lactation[98,99]
  7. Exhaustive muscular exertion[100]

8. Starvation (? causing pituitary dysfunction)[101,102]
9. Postoperative hypoglycemia[103,104]*

C. Drug-Induced Hypoglycemia: due to surreptitious drug administration

Eighty to 90 per cent of all cases of spontaneous hypoglycemia are due to a pathologic condition of the islet cells, liver disease, or to idiopathic causes, the latter category being most numerous. In arriving at a proper diagnosis one is best guided by (a) a repetitive clinical pattern in the history; (b) the effects of prolonged fasts; (c) the effects of a standard versus a low carbohydrate diet; (d) the character of the glucose tolerance curve; and by (e) laboratory tests evaluating liver, endocrine, and brain functions.

Idiopathic Hypoglycemia

Idiopathic hypoglycemia implies an excessive functional sensitivity and responsiveness of histologically normal islet cells to a normal stimulus for insulin secretion. Patients in this group usually do not give a progressive history. Their symptoms are easily exacerbated by stress situations. Although the fasting blood sugar is usually normal, the hypoglycemia episodes occur two to four hours postprandially and are not aggravated by fasting. The glucose tolerance shows a normal rise with a rapid fall within two to four hours to subnormal levels. A spontaneous rise of the blood sugar takes place in the fourth or fifth hour. Such patients have been referred to as "vagotonic personalities" possessing an unstable autonomic nervous system.[105,106] Portis[32] suggests that the neurasthenic symptom complex per se may be responsible for the low blood sugar rather than vice versa.

The symptoms displayed by the patient are generally mild and reflect the compensatory hyperadrenalinemia. There is no progression to convulsions or coma. The severity of the symptoms is usually in direct proportion to the strength and duration of the stimulating experience. Such patients generally respond well to a diet high in protein and fat in addition to sedation and/or assurance for the original anxiety state. Protein during its metabolism yields approximately 50 per cent of its weight as glucose. The slow rate at which this sugar is released into the blood stream is of advantage because it causes no postprandial hypoglycemia, it provides a source of glucose over a prolonged period of time, and in severe cases it allows further restriction of dietary carbohydrates than could otherwise be effected.[107,108]

The total daily carbohydrate intake should not exceed 100 Gm.[8] Supplemental feedings should be added (without increasing the total caloric intake) and spaced in such a manner that the patient never is without food for more than two or two and a half hours and also has a small feeding at bedtime. With few exceptions the use of atropine to depress vagal tone[32] is no longer advocated nor is the use of insulin before meals to prevent postprandial hypoglycemia. Blind, partial pancreatic resection[109–111] no longer occupies any role in the therapeutic armamentarium for this category.

Alimentary hypoglycemia is next in numerical importance and may be seen following gastrectomy or gastroenterostomy.[112–116] Because of the loss of the pyloric sphincter, food is dumped massively into the small bowel with subsequent excessively rapid absorption. A high blood sugar level is reached quickly, resulting in excess insulin secretion and leading to a sudden fall in blood sugar. A normal pancreatic response to an abnormally severe insulinogenic stimulus seems likely. Unlike the dumping syndrome[117] which appears and disappears within thirty to sixty minutes postprandially, this type of idiopathic alimentary hypoglycemia does not appear before one to one and a half hours postprandially. Fasting blood sugars are normal. (Of course, the dumping syndrome may also be associated with this type of hypoglycemia.) Evenson[116] has been able to demonstrate a similar curve in a group of normal controls by feeding dextrose via a duodenal tube. He postulates that alimentary functional hypoglycemia really represents a normal response of a normal pancreas to an abnormally great stimulus. This type of hypoglycemia is generally more severe than the "vagotonic" type, and convulsions and loss of consciousness have been recorded. However, the management is the same, the main object being the prevention of postprandial hypoglycemia.

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*Items B5 through B9 are mentioned for the sake of completeness but will not be discussed because of their rarity.

A third important clinical type is the hyperinsulinism of infancy which refers to a postprandial hypoglycemia caused by an excessive amount of carbohydrate feeding.[39,118,119] Some of these infants were born to diabetic mothers.[27,120,121] These children do well on restricted sugar intake and the symptoms gradually disappear spontaneously as the child grows older. However, prolonged and repeated attacks may result in organic brain damage and mental deterioration.[8,39] This makes an early diagnosis mandatory. McQuarrie's idiopathic spontaneous hypoglycemia of childhood[39] is of the mixed type, that is, it is basically a fasting hypoglycemia but the glucose tolerance curve also shows a stimulative postprandial dip. The symptoms may appear at any time between birth and the age of five. A high familial incidence is common. Such children have been surgically explored and no insulinomas were found.[39,122,123] Since the symptoms here, too, tend to disappear with age, it would seem wisest to tide over the affected child with steroid therapy (particularly ACTH) which can later be withdrawn gradually.

Organic Hyperinsulinism

In organic hyperinsulinism the fasting blood sugar is usually below 50 mg. per cent and carbohydrate restriction invariably lowers this value to diagnostic levels. Exercise, skipping of meals, and fasting will usually precipitate hypoglycemic attacks. In hepatogenic hypoglycemia the attacks usually occur in the early hours of the morning. The patient may awake earlier than usual and be confused, complain of headache, and progress to convulsions and coma unless food is ingested promptly. In organic hypoglycemia it may well be the rapidity of fall in blood sugar levels which produces the symptoms and not the blood glucose level itself.[7,15] This hypothesis may help to explain why attacks occur two to three hours postprandially in the daytime. Apparently this dip in blood glucose is attained rapidly although the glucose level may actually be higher than that during the night when the low blood sugar level is reached relatively slowly.

Almost any type of glucose tolerance curve has been described in this category, including diabetic ones.[7,15,124] While this has led some observers to discard the glucose tolerance test as a reliable diagnostic tool, Conn[7,8] insists that this test can be of diagnostic value if properly standardized. His patients receive a liberal caloric diet including 250 to 300 Gm. of carbohydrate daily for three days preceding the test. Since the prolonged insulin secretion from insulinomas tends to suppress the usual insulin secretion from the normal beta cells of the pancreas, the latter may be restimulated by the ingestion of excessive amounts of carbohydrates. Under these conditions all cases of true hyperinsulinism had blood sugar values below 50 mg. per cent. The peak of the curve rarely exceeded 120 mg. per cent, was followed by a rapid fall to subnormal levels by the second postprandial hour, and remained there up to six hours. In borderline cases the importance of the blood sugar lowering effect of exercise as a helpful diagnostic procedure has been emphasized by Ford[125] and Conn and Seltzer.[8] Ford observed that a patient may be fasted for twenty-four hours or more without attacks while resting in a hospital bed. Therefore, Conn places borderline cases on a 1,200 calorie diet, including 50 Gm. of carbohydrate and 50 Gm. of protein, for three days. The vast majority of patients with organic lesions will become symptomatic by then. If not, the patient is fasted on the fourth day and subjected to vigorous exercise for one to two hours on the fifth day. Insulin sensitivity and tolerance tests have been unreliable. An ingenious diagnostic test has recently been advanced for the discovery of a functioning pancreatic adenoma. Runge[126] points out the fact that the symptoms of pheochromocytoma and insulinoma are similar in that patients in both cases may show hyperinsulinism and hypertension. It is postulated that the hyperpiesia of hyperinsulinism is also caused by increased amounts of circulating adrenalin and therefore should respond to intravenous Regitine methane sulfonate. (Actually the selective depletion of the adrenalin content of the adrenal medulla following insulin injection has been demonstrated in the cat.[127]) While a significant drop in systolic and diastolic pressure did occur in the 1 case reported, the fall was not sharp and sustained enough to call it diagnostic for pheochromocytoma. The results were nevertheless impressive, and at surgery an insulinoma was found. Unfortunately no urinary catecholamine studies were performed.

Some investigators feel that the determination of serum insulin or insulin-like substance by the rat diaphragm method can be of help in the diagnosis of islet cell adenomas.[128] However, false negative determinations occur quite often and are probably due to the blocking action of circulating adrenalin against insulin's promotion of the entry of glucose into the muscle cell.[128]

Some functioning islet cell adenomas have been found in infants as young as six and a half weeks old. A clinical differentiation between an insulinoma and idiopathic spontaneous hypoglycemia of infancy is almost impossible. It is therefore wise to tide these children over with low carbohydrate diets and steroids and to resort to surgery only if no improvement occurs by the age of four of five years (vide supra).

Crain and Thorn,[9] reviewing 258 cases of functioning islet cell adenomas of the pancreas, found the history to be frequently progressive. Twenty-five per cent of the patients had symptoms for over five years. If a brief and rapidly progressive history is elicited, an adenocarcinoma must be considered. About 9 per cent of functioning islet cell tumors are malignant (that is, with metastases) but none have been reported below the age of eighteen years.[129–131] Frantz[132] has pointed out that the differentiation between benign islet cell tumors and malignant islet cell tumors without obvious metastases is often very difficult. Ninety per cent of all cases of adult organic hyperinsulinism are due to one or more functioning islet cell adenomas.[8] Functional hyperplastic islet cell tissue is rarely found in adults.[8,133,134] Not all islet cell adenomas of the pancreas produce clinical symptoms.[129,135] Duff[136] found that more than 50 per cent of his series of such adenomas represented chance findings at autopsy and that only 64 out of 90 showed themselves clinically. The incidence among the sexes is about equal. In one series of functioning insulinomas, 12 per cent of the patients had multiple adenomas most of which were located in the body or tail.[9] Yet this does not exonerate the head of the pancreas which is difficult to expose. Adenomas missed at surgery have subsequently been found deeply imbedded in the head of the pancreas at autopsy.[9] The size of an adenoma varies from 2 mm. to 15 cm.[8–10,129–131] It must be stressed that the size of the tumor bears no direct relationship to the severity of the clinical picture.

Islet cell adenomatosis may exist alone[137] or in conjunction with adenomatous changes in other endocrine glands.[133–135,138] Here many small diffusely scattered nodules are found throughout the pancreas. The histology reveals hyperplasia, hypertrophy, or a ribbon-like arrangement of cells. Such findings have also been reported in the pancreas of a child born to a diabetic mother and may possibly represent a reaction to the increased maternal demands during pregnancy.[120,139,140]

Management.—Prompt surgery is imperative because of recurrence of symptoms and the possibility of irreversible central nervous system damage.[39,128,141] However, it is no longer thought that delay in surgery may allow malignant transformation of an originally benign adenoma.[131] It has been suggested that the patient be given ACTH or cortisone for a few days preoperatively in order to elevate the blood sugar and to protect him against postoperative hyperthermia which has been responsible for 5 out of 18 postoperative deaths.[8,131] Occasionally temporary, mild postoperative diabetes may result which requires no treatment.[142,143] Some patients whose clinical course suggested the presence of an adenoma have been explored and no tumor was found.[38] Ectopic islet cell tissue is rare, but the duodenal wall, splenic hilum, and retropancreatic tissue should be carefully explored. Although functioning insulinomas are usually small and firm,[8,140] enough variation has been encountered to make such gross criteria unreliable.[10,144] A blind subtotal pancreatic resection should remove 62 per cent of tumors,[8] but such a procedure carries a 14 per cent operative mortality, as compared with 9 per cent following the removal of a single pancreatic adenoma.[131] While the latter procedure may be the most desirable it is impractical in 10 to 15 per cent of cases because of the existence of multiple adenomas. Serial blood sugar determinations in the operating room before and after removal of an adenoma will help the surgeon decide whether the removed tissue is actually an insulinoma and also if other unobserved tumors are still present.[144–146]

Insulinomas in diabetic patients have been reported lately.[147–149] Although this may well be a chance occurrence, one observer speculates that hormonally inactive tumors may be present for a long time and later become clinically manifest when insulin production starts.[149] This hypothesis could conceivably account for unexplained remissions in previously severe diabetic patients and explain, in part, those cases with marked diabetic lability and varying degrees of insulin sensitivity.

Needless to say, steroids should be used for the control of hypoglycemia attacks in patients with metastatic disease and in those patients where medical reasons demand a temporary postponement of surgery.[150–153]

Alloxan has fallen into disrepute because of its toxic side-effects[154,155] and its lack of effectiveness.[156,157] The drug destroys only the normal beta cells but does not touch the insulin-secreting tumor cells. Similarly unsuccessful was the administration of the diabetogenic principle of the adenohypophysis to 2 patients with organic hyperinsulinism.[158]

Since glucagon is capable of counteracting, at least in part, the hypoglycemic effects of insulin in normal man as well as in diabetic patients, this mode of treatment has also been advocated.[159] Diabetic patients with insulin-induced hypoglycemia seemed to respond clinically to glucagon even before the arterial blood sugar level had risen. This led to the postulate that glucagon may facilitate the entry of glucose into the brain cell in a manner similar to its action in increasing the rate of glucose uptake in normal and in diabetic muscle. Glucagon's glycogenolytic action has already been described. The drug itself is quite harmless and can be self-administered in doses of 2 mg. subcutaneously or intramuscularly.

Other Organic Causes of Hypoglycemia

Destructive lesions of the adenohypophysis such as chromophobe tumors and craniopharyngiomas,[160–163] surgical hypophysectomy, Simmond's disease,[164–167] pituitary myxedema,[57–59] as well as pituitary failure secondary to long-standing myxedema[168] have been associated with hypoglycemia.

Several cases of primary hypothyroidism have shown hypoglycemia which responded to oral thyroid administration.[26,39,60] There is no agreement on whether this response was due to better absorption from the gut or whether the thyroid supplement may have stimulated a previously depressed adenohypophysis (vide supra).

Hypoglycemia is a well-known concomitant of Addison's disease. It may also be present in congenital adrenal hyperplasia,[169] adrenal cortical tumors,[170,171] and adrenal carcinomas.[172] The reported hypoglycemic episodes in congenital adrenal hyperplasia were precipitated by stress and were accompanied by severe sodium depletion.[169] Wilkins[173] has reported a case of macrogenitosomia praecox where the stress-induced hypoglycemia was not associated with any electrolyte abnormalities. The hypoglycemia of congential adrenal hyperplasia is due to a deficit in hydrocortisone production which, in turn, stimulates continuous ACTH secretion. During periods of stress blood hydrocortone levels do not rise and this failure is responsible for the ensuing hypoglycemia. In such children the fasting blood sugar and the 17-hydroxycorticoids of the plasma are significantly reduced.[174–176]

Increasing numbers of large fibrogenic tumors associated with severe fasting hypoglycemia are being reported.[177–182] These fibromas or sarcomas are of unusually large size and seem to favor the posterior thoracic cage and retroperitoneal sites. Insulin could not be extracted from these tumors, but following their removal the hypoglycemia disappeared. However, the hypoglycemia reappeared with tumor recurrences. Mirsky[183] postulates that these tumors may secrete anti-insulinase substances which compete with insulin for insulinase, thus diminishing the rate of insulin destruction.

Hepatogenic Hypoglycemia

Despite the previously presented impressive list of hepatic diseases capable of causing hypoglycemia, only a very few patients with liver disease actually develop clinical symptoms attributable to a low blood sugar. Hepatogenic hypoglycemia was first noted in hepatomas [184,185] and in toxic hepatitis.[186,187] Hypoglycemia is rarely found in patients with Laennec's cirrhosis or viral hepatitis, while it is more commonly encountered in fatty metamorphosis of the liver. The form of glycogen storage disease most frequently associated with hypoglycemia is caused by a missing or by a severely attenuated glucose-6-phosphatase reaction.[188] The other two types of the disease are due to a defect or absence of the enzymes responsible for the branched structure of glycogen.[189,190] The resultant bizarre glycogen probably acts as a foreign body and is responsible for the early development of cirrhosis. Recently hypoglycemia has also been incriminated as the cause of some cases of mental torpor previously attributed to hepatic coma in advanced cirrhosis and to cerebral anoxia in long-standing, severe congestive heart failure.[45,46,191]

As in organic hyperinsulinism, the fasting blood glucose level is always low after carbohydrate restriction and frequently falls below 50 mg. per cent when the patient is kept on a standard diet. This is probably caused by a reduction in hepatic glycogen stores and to a decrease in the rate at which glucose precursors can be mobilized and converted. The glucose tolerance curve often starts out with a low fasting blood sugar value, but subsequently rises to a hyperglycemic plateau associated with mild glucosuria.[8] This probably results from the fact that the depressed glycogenesis and glycogenolysis keep the blood levels of absorbed sugar at higher levels for a longer period of time than is normally found in the usual initial postprandial stage. This high plateau gives way to a gradual decline to hypoglycemic levels from between four to seven hours without a spontaneous return to normoglycemic blood levels. Such a high plateau glucose tolerance curve cannot be lowered by a previous high carbohydrate intake as is the case in functioning islet cell adenomas. These patients are intolerant to long fasts and carbohydrate restrictions and generally manifest no significant rise in blood sugar in response to adrenalin. This defect is probably due to a reduced liver cell mass and is not due to diminished glycogen concentration in the cell.[42] The rate of glucose secretion by the liver in fasting patients with cirrhosis is less than in fasting normal individuals despite the fact that the arterial glucose concentration in both are the same. Furthermore, with an intravenous glucose load the cirrhotic patient clears his blood more slowly of sugar than the normal control; yet this degree of hyperglycemia is not generally sufficient to produce glycosuria.[51]

The hypoglycemic symptoms of liver disease are usually progressive in frequency and severity. Prebreakfast attacks in the early morning hours are most frequent. Daytime episodes are rare unless patients skip meals. Despite moderately severe hypoglycemia, these patients may or may not yield clinical evidence of hepatic disease. It can be stated, however, that the degree of liver disease is generally directly proportional to the severity of the hypoglycemia present. Fortunately impaired glycogenesis and glycogenolysis are some of the last liver functions to fail. In severe, acute, but transient hepatic lesions, the recovery of the blood sugar-regulating function of the liver may be expected to parallel the restoration of other hepatic functions.[51]

The management consists of high carbohydrate and high protein diet with a liberal caloric intake interspersed among six to seven meals. A bedtime snack is imperative to shorten the interval between supper and breakfast. In the rare cases of ascending cholangiolitic hepatitis, prompt treatment of the infection and possible cholecystectomy with common bile duct exploration are indicated.[191]

Summary

A physiologically oriented review of the various types of spontaneous hypoglycemia has been presented in order to alert diagnostic awareness, to redefine clinical and laboratory critieria, to discuss rational therapy, and to prevent the needless occurrence of irreversible lesions.

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(*Number sixty of a series on Recent Advances in Medicine and Surgery*)

All human race, from China to Peru, Pleasure, howe'er disguis'd by art, pursue.—T. Warton

CLINICOPATHOLOGIC CONFERENCE

KINGS COUNTY HOSPITAL, STATE UNIVERSITY OF
NEW YORK DOWNSTATE MEDICAL CENTER

BROOKLYN, NEW YORK

Conducted by PATRICK J. FITZGERALD, M.D. APRIL 3, 1958

Discussed by MELVIN M. NEWMAN, M.D., *and* FRANK Y. WATSON, M.D.

Case History

An eleven-year-old white female was admitted to the hospital with the chief complaint of chronic cough for approximately one year. She had been referred by a private physician with a tentative diagnosis of pulmonary tuberculosis.

The patient had been well until approximately one year before admission when she developed a persistent cough that was associated with intermittent episodes of night sweats, progressive weakness, and loss of approximately 10 pounds in weight. She had had one episode of hemoptysis seven months prior to admission. Shortly before admission a private physician noted by x-ray atelectasis of the left lung with diffuse mottling which he interpreted as moderately advanced pulmonary tuberculosis. She was then referred to this hospital.

Review of the past history revealed that the patient had scarlet fever and measles ten years and chickenpox seven years before admission. She had had asthma since the age of two years. There was no history of other serious illnesses or operations. Her parents and four siblings were in good health. There was no history of exposure to infectious diseases, particularly tuberculosis.

On admission the child appeared thin and pale but in no acute distress. Her temperature was 98.6 F., pulse 78 per minute, respirations 24 per minute, and weight 65$^1/_2$ pounds. The head, eyes, ears, nose, and mouth were unremarkable. The pharynx was mildly injected, and the tonsils were enlarged. The neck was supple. No lymphadenopathy was noted. The chest was symmetric. There was a marked lag in expansion of the left hemithorax, and there was dullness to percussion and absence of breath sounds throughout the left lung. The right lung was hyperresonant to percussion but otherwise was unremarkable. The heart was of normal size. There was a sinus arrhythmia and a very soft Grade I systolic murmur at the apex. The pulmonic second sound was questionably accentuated. The abdomen was soft without tenderness. The liver, kidneys, and spleen were not palpable. No masses were felt. The external genitalia were normal. The extremities were normal. The neurologic examination gave negative findings.

On the patient's admission her white cell count was 8,600 per cubic millimeter, with 24 per cent neutrophils, 73 per cent lymphocytes, and 3 per cent monocytes. A repeat white cell count was 9,000 per cubic millimeter, with 47 per cent neutrophils, 52 per cent lymphocytes, and 1 per cent monocytes. The urinalysis gave negative findings. The sedimentation rate was 55 mm. per hour. The total protein was 6.8 Gm. per cent, albumin 3.7 Gm. per cent, and globulin 3.1 Gm. per cent. The prothrombin time was 11.9 seconds, and the control 12.6 seconds. The first and second purified protein derivative tuberculin tests gave negative results. X-rays of the chest revealed marked atelectasis of the left lung with a mediastinal shift to the left, elevation of the left side of the diaphragm, and compensatory emphysema of the right lung. There were confluent patchy areas of bronchopneumonic infiltration irregularly involving the left lung.

On the ninth hospital day the patient had a fever of 105 F. and ran a spiking fever for one week. During this period a blood culture grew Hemophilus influenzae. The patient was treated with Gantrisin, a teaspoonful, and Chloromycetin, 0.5 Gm., every six hours. After this episode the patient was afebrile except for one elevation to 101 F. Bronchoscopy revealed that the left main bronchus was obstructed approximately 3.5 cm. from the carina and proximal to the orifice of the bronchus to the left upper lobe by a smooth glistening mass of granulomatous tissue that was surrounded by purulent exudate. The mass was very friable and bled when touched. There was evidence of stenosis or dilatation of the bronchus at the point of occlusion. An attempt to remove the mass was unsuccessful. A biopsy of the mass revealed chronic inflammation of the bronchial mucosa. A repeat biopsy revealed squamous metaplasia of the bronchial mucosa. Bronchial washings contained cellular debris, clusters of epithelial cells, and some red and white blood cells. Smears of the bronchial washings for tubercle bacilli were negative. One bronchial aspirate yielded Pseudomonas aeruginosa on culture. One Papanicolaou smear contained atypical cells (Class II) but there was no evidence of malignant tumor cells. A bronchogram revealed an obstruction in the proximal portion of the left main bronchus approximately 3 cm. from the carina. Only a minimal amount of opaque material passed the obstruction. The bronchial tree in the right lung appeared normal. A barium swallow revealed a normal esophagus. Cultures of three gastric washings were negative for tubercle bacilli.

Except for the one period of spiking fever the patient's condition remained unchanged. Since attempts to remove the obstruction in the bronchus during bronchoscopy were unsuccessful, a thoracotomy on the left side was performed.

Discussion

Dr. Melvin M. Newman: This eleven-year-old girl had symptoms of cough, night sweats, progressive weakness, and loss of 10 pounds in the past year. Her original physician suspected tuberculosis. As has been pointed out recently, cough is common in pulmonary tuberculosis in infancy and adult life. It is relatively rare in the older child with pulmonary tuberculosis.

The symptoms given indicate the presence of some sort of chronic pulmonary suppuration. We were told that the tuberculin skin test gave a negative result. The diagnosis of tuberculosis seems even more unlikely. Usually the skin allergy to tuberculin is easily demonstrated after six weeks of clinically active tuberculosis or five to six weeks after vaccination with BCG. This is true except in patients who have overwhelming infection and who are said to demonstrate anergy.

Physical examination showed pallor and anemia, which are very common in chronic pulmonary infection. There was a lag to the left side of the chest on respiration. This almost always means obstruction of a major bronchus. Contraction of the left lung apparently had proceeded to produce obvious mediastinal shift.

The laboratory data are of little help except for the very high sedimentation rate, 55 mm. per hour. On the ninth hospital day she developed a serious infection, accompanied by a bacteremia with Hemophilus influenzae demonstrated on blood culture. My experience is that it is unusual to see Hemophilus influenzae as a primary invader, except in infancy and early childhood, but it is quite common to find it as part of the mixed flora in cases of bronchiectasis and occasionally in chronic lung abscess. Although we are not informed so by the case history it seems likely that this acute episode was a pneumonia caused by Hemophilus influenzae and accompanied by bacteremia.

Perhaps Dr. Mellins could show the x-rays at this point.

Dr. Harry Z. Mellins: (*Film*) This is a film on admission, demonstrating shift of the heart to the left, elevation of the left dome of the diaphragm, and an irregular density directly contiguous with the heart shadow. It is difficult to distinguish the outline of the heart border on the left side. When this occurs, one has to think of consolidation in that portion of the lung which is adjacent to the heart, usually the upper lobe. A penetrated film demonstrates that there is herniation of the right lung into the left hemithorax as well as a shift of the trachea to the left. There is a large filling defect in the left main bronchus, outlined by the air column. One can also see some air in the bronchi peripherally, indicating that this is not a complete block. There is consolidation of the left lung behind some kind of bronchial block, and in addition to consolidation there is loss of lung volume.

(Slide) In order to determine the cause of the bronchial block or to get some clues about it, a bronchogram was done. You now see, as a filling defect against the lipiodol in the left main bronchus, a rounded filling defect at about the point of origin of the left upper lobe. This is the positive shadow against the air in the bronchus that we saw on the penetrated film.

(Slide) The next film in the bronchographic study shows that some contrast medium got past the bronchial block. The lateral film at that time gives a very good demonstration of upper lobe atelectasis of the left lung with retraction of the lung in characteristic fashion. It pulls forward and along the anterior chest wall to make a circuitous retraction course to the hilum. As it is retracting, one sees the edge of the lung on end in the lateral view anteriorly, and this continues to pull around toward the hilum. The lower lobes do the reverse. They pull back along the posterior wall towards the hilum. The question then arises whether we can give any clue to the nature of the bronchial obstruction. It is a rounded masslike lesion rather than a stenotic or constricted one. The commonest cause in a girl of this age would be a foreign body or a bronchial tumor.

There is nothing about this that would permit us to specifically make or rule out a diagnosis of a rounded foreign body. The lesion is not opaque, and there is nothing else that is characteristic. The other possibility is that this represents a bronchial tumor. The commonest bronchial tumor in a girl of this age would be a bronchial adenoma, and there are certain aspects of this case characteristic of an adenoma—a female under the age of forty with an episode of hemoptysis. On occasion, adenomas will show some calcification in their bases which will permit the diagnosis to be made. There are other variations of bronchial adenoma which again cannot be excluded, such as cylindroma and mucous gland tumors. I would say that from the radiologic evidence the first choice is a tumor of the bronchus, probably benign, and the second is a foreign body.

Dr. Newman: From what Dr. Mellins has shown us, there is a partial or incomplete bronchial obstruction. From the history we must have known that this was so because where complete bronchial obstruction occurs suddenly, as with a transverse division of the bronchus following, for instance, a crushing injury to the chest, suppuration usually does not develop. Where there is incomplete obstruction and stasis in the bronchial cavity, infection is likely to supervene.

The possibility of foreign body must be

considered in any child. Most of the foreign bodies in the old days used to be metallic. With recent technologic advances and mass production of plastic toys, we have seen patients in whom the foreign bodies were nonopaque to x-ray and were only demonstrated after surgical specimens were removed.

A slowly growing tumor is the other good possibility. Malignant tumors of the respiratory tree which occur in childhood tend to have a fulminating course and tend to be mediastinal rather than pulmonary, although a few primary carcinomas of the lung have been reported, even in infancy. We therefore have to assume that the other good possibility is some sort of benign lung tumor. Whether in this instance it is the commonest one, so-called bronchial adenoma, or whether it is something rare, such as a polyp, chondroma, lipoma, leiomyoma, or what have you, it is impossible to say. The latter types have been reported only a few times and are less important.

Bronchoscopy was the next step and showed a smooth glistening mass of granulation tissue in the left main bronchus. The mass bled when touched. Immediately we become suspicious that it is a bronchial adenoma. Several fatal hemorrhages occurring after biopsy of bronchial adenoma have been reported. In general, it is a very vascular tumor, and as soon as one recognizes a vascular tumor of the bronchus, it must be approached very cautiously. When we are told that the bronchus at this point was neither dilated nor constricted, the other possibility, a foreign body, seems much more remote because around a foreign body the acute local inflammatory reaction is usually such that a sharp funnel-shaped constriction occurs in the bronchus at that point.

Because of the duration of the symptoms, the history of hemoptysis, and the type of episodic suppuration with probable secondary bronchiectasis, the best possibility is a benign tumor.

At this point all we can do is bet on the odds, and the odds are overwhelmingly great that this is a bronchial adenoma. The age is a little young. In Overholt's[1] series of 60 patients, 2 were age thirteen, a boy and a girl. The mean age for his series was forty years. The oldest patient was sixty-five. Liebow[2] has characterized bronchial adenoma as occurring in several varieties, the commonest one, the one which accounts for more than 90 per cent of the cases, being the carcinoid-like tumor in older patients. The oncocytic variety of this and the cylindroid tumors are the other main varieties. Rarer types, like mucoepidermoids, have been reported but are less common.

The case history does tell us that the bronchial secretions showed some atypical cells and some evidence of squamous metaplasia but does not tell us much else. Those who have studied the bronchial cytology in proved cases of bronchial adenoma very rarely have been able to demonstrate the cells of this tumor. The amount of undifferentiation apparently is not great enough to be demonstrable. In 1 case, however, reported by Umiker and Storey,[3] where a secondary degeneration of the bronchial adenoma took place with formation of adenocarcinoma, the adenocarcinoma was sloughed into the bronchial mucus.

In summary then, this eleven-year-old girl with symptoms of chronic pulmonary suppuration seems to have an incomplete obstruction of the left main stem bronchus secondary to bronchiectasis, and the best possibility is a bronchial adenoma, and of the bronchial adenomas the statistically most common one is the carcinoid variety.

DR. PATRIC J. FITZGERALD: Dr. Dock, would you go along with this diagnosis?

DR. WILLIAM DOCK: I think that there is very much to discuss. It is worth pointing out that with partial obstruction the lungs did not dilate but collapsed, which is contrary to most of the teaching. If you have something that acts like a ball valve and is partial, the lungs tend to get bigger and balloon in the opposite direction. This lung collapses because of recurrent infection, is that right?

Dr. Newman: Presumably so.

Dr. Harold A. Lyons: I think Dr. Newman has shown that this is a classical story of endobronchial obstruction and due to a tumor. I thought he would dwell a little more on some of the rarer tumors of the bronchus, such as amyloids, chondromas, epidermoids, and neuroblastomas, which have been the subjects of several reports. However, the odds are that this tumor is a friable, easily bleeding one, and bronchial adenoma is the best possibility. I don't think with the evidence on hand that one can be more specific except to know that there are many types of endobronchial tumors, other than the various types of bronchial adenoma.

Dr. Fitzgerald: Would you care to comment on the diagnoses of sarcoidosis, made by two students, and a fungus infection, also suggested by two students.

Dr. Lyons: Sarcoid now has been generally recognized to infiltrate the submucous layer of the bronchial wall with granulomatous tissue. In fact, it has been recommended that biopsy of the bronchus be used for diagnosis. Rarely has the sarcoid involvement of the bronchus produced obstruction, but when it did occur resembled bronchogenic carcinoma. Isolated lesions of a bronchus have occurred, and it is not unlikely that this could be a possibility. However, it is hoped that if an adequate bronchial biopsy was made—and I don't think it was made in this particular instance—the diagnosis could have been established by this means.

This would be a most unusual clinical presentation of a fungous disease. If one wants to mention granulomatous diseases as being the cause of endobronchial obstruction, tuberculosis could be a possibility, but the other fungous diseases are most rare. As a cause this possibility would not occur with the clinical picture presented by this patient.

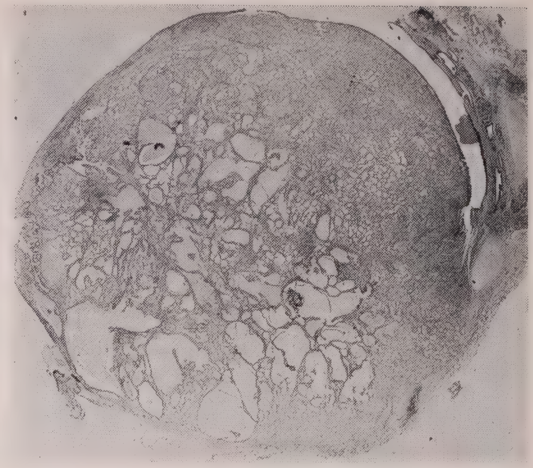

Fig. 1. Cross section of mucoepidermoid tumor of the bronchus (1.3 cm. in diameter) showing smooth surface and broad base.

Dr. Fitzgerald: Dr. Austrian, are there any other possibilities or would you care to comment on the original diagnosis of tuberculosis?

Dr. Robert C. Austrian: I think it improbable that, if the tuberculin test was carried out properly, we interpret that mass as tuberculosis. It is most unlikely. I would think that sarcoid was even less likely than tuberculosis in the face of a negative tuberculin test result. I would go along with Dr. Newman that this is a benign bronchial adenoma.

Dr. Fitzgerald: Dr. Newman, would you relate the asthma since two years of age to the same lesion?

Dr. Newman: What parents sometimes refer to as asthma in such a situation might be a unilateral wheeze. Continuing from the age of two to eleven seems a little long, especially without any suppuration developing in the lung during that time. I suspect that the child probably had allergic asthma, a condition which confused the discussers.

Diagnoses

Clinical.—(1) *Bronchial adenoma, probably benign, or* (2) *a foreign body.*

Dr. Newman.—*Bronchial adenoma, probably the carcinoid type.*

Anatomic.—*Mucoepidermoid tumor of the bronchus to the left upper lobe with bronchial obstruction, severe bronchiectasis, marked chronic bronchitis, and extensive organizing pneumonia in the lung parenchyma peripheral to the tumor.*

Pathologic Report

DR. FRANK Y. WATSON: The patient had an exploratory thoracotomy on the left side. A mass was found at the junction of the bronchus to the left lung and the bronchus to the upper lobe of the left lung and seemed to involve both bronchi. A pneumonectomy was therefore performed in order to completely remove the tumor (Fig. 1).

The lesion in the main stem bronchus was a tumor which arose in the bronchus to the upper lobe of the left lung, bulged into the lumen of the main stem bronchus, and pointed as a finger-like projection proximally. It measured 1.5 by 1.3 cm. in its greatest dimensions. It was surrounded by purulent exudate, and the surface was irregular and ragged where several biopsies had been taken. The main stem bronchus was occluded by the tumor but the wall was not involved. The tumor arose from one wall of the bronchus to the left upper lobe. It extended into the wall but did not penetrate into the surrounding lung parenchyma. It was composed of many glands of various sizes which were seen grossly and contained a mucoid material. The surface was covered with epithelium that had undergone squamous metaplasia. Pegs of this epithelium extended for varying distances into the tumor proper. A cross section of the tumor in the bronchus revealed that the tumor was attached to the wall by a rather broad base. The rest of the surface was not adherent, although this tumor completely filled the bronchus.

In some areas the glands comprising the tumor were lined with epithelial cells producing copious amounts of mucus. Other glands were lined with two types of cells, mucous and squamous. In addition, a third type, the so-called intermediate cell, was found. This has a moderate amount of pale cytoplasm and a small oval nucleus. It does not resemble either a squamous epithelial cell or a mucus-producing cell. Most of the tumor was composed of glands lined by mucus-secreting cells and of foci of intermediate cells. Scattered in a few places only were the distinct areas of squamous epithelium blending with the mucous and intermediate cells. The mucoid material in the goblet cells and in the lumen of the glands stained positively with the mucicarmine stain (Fig. 2).

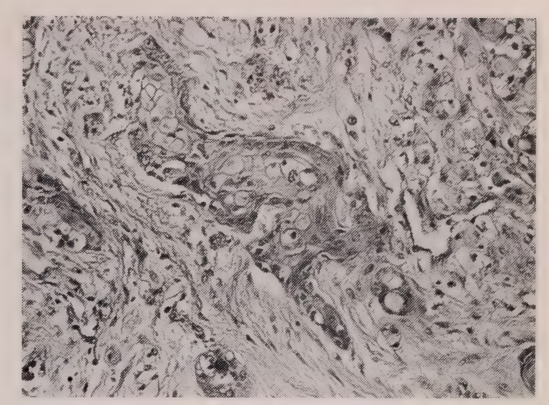
FIG. 2. Admixture of well-differentiated squamous epithelial and goblet cells in a mucoepidermoid tumor.

The remaining portion of the left lung, the upper lobe particularly, was markedly atelectatic and showed evidence of rather extensive bronchiectasis. The bronchi contained a large amount of purulent mucoid material, and the portion of the lobe contained rather extensive, organizing pneumonia. There was some bronchitis and foci of organizing pneumonia in the left lower lobe but this lobe was much less affected than the left upper lobe.

It is difficult to know just where to put this type of tumor in a classification of tumors of the bronchus for so few have been seen. Liebow[2] considers this type of tumor a variant of adenoma of the bronchus.

In the literature there is some pressure for reclassification of these lesions since more of the so-called variants are being reported. Originally, adenomas were classified as either carcinoid or cylindroid, according to their cell type. The carcinoid form consists of rather uniform cells with a finely granular cytoplasm. These are arranged in sheets, strands, and rounded masses. This pattern is strikingly similar to the carcinoid tumor in the intestinal tract, particularly in the appendix. The cylindroid form consists of small cells with homogeneous cytoplasm. These are arranged in branching cylinders or tubes which often are lined with a double row of cells, giving the mass a plexiform or honeycomb appearance. This tumor closely mimics a tumor seen in the major and minor salivary glands and is somewhat more invasive and more prone to metastasis than the carcinoid type.

A variant of bronchial adenoma is the oncocytoid form, which occurs in somewhat older individuals and is composed predominately of rather large, bright pink eosinophilic cells that usually are arranged in a nodular fashion. Recently several bronchial tumors composed entirely of glands lined by mature mucus-producing cells have been reported,[4] and several cases of tumors with the pattern of the mucoepidermoid tumor that we presented here today have been seen.[5,6] The mucoepidermoid tumor of the bronchus is microscopically identical with the mucoepidermoid tumor of the salivary glands, which exhibits varying degrees of malignancy.[7] It is for this reason, I think, that some people prefer to consider this tumor as separate from adenomas of the bronchus. In the salivary gland the more malignant forms metastasize widely.

Adenomas comprise 6 to 10 per cent of the primary tumors of the lung. The average age of the patient is thirty-five to forty years. They do occur in children, but quite rarely. These tumors, particularly the carcinoid form, are prone to bleed, and all types are prone to obstruct the major bronchi. These tumors grow very slowly and even when incompletely removed recur rather late. Some recur even ten to fifteen years after complete removal. These tumors show a relatively slight tendency to destroy bronchi and adjacent tissue despite the tendency to invade. They rarely will metastasize; when they do, they usually go to adjacent lymph nodes.

Cancer is quite a rare disease in children. Considered quantitatively childhood cancer does not seem to be a major pediatric problem but in comparison with certain other diseases as the cause of death its significance becomes apparent.

The tumors in childhood involve most organs of the body but rarely affect the cardiovascular or respiratory systems.

Benign or relatively benign tumors in the respiratory tract are somewhat more common than frankly malignant ones but they too are quite rare. A cursory review of the literature of the past fifteen years revealed a light sprinkling of cases of bronchial adenomas and papillomas, but I could find no series of these in children. There was no reported case of a mucoepidermoid tumor of the bronchus in a child, but personal communications from Dr. Liebow at Yale, Dr. Wollner at the Mayo Clinic, and Dr. Stewart at Memorial Hospital revealed that rare cases of such tumors in adults have been seen. Two such cases are also on file at the Armed Forces Institute of Pathology.[2,7]

Stewart[5] and Foote[7] at one time divided mucoepidermoid tumors of the major salivary glands into benign and malignant forms. After observing metastases of a few of the tumors originally thought to be benign, they now consider them all malignant tumors but of varying degrees of malignancy. Using their criteria, the tumor in this case would be classified as a low-grade mucoepidermoid carcinoma.

In summary, the patient had a mucoepidermoid tumor of the bronchus to the left upper lobe with bronchial obstruction, severe bronchiectasis, marked chronic bronchitis, and extensive organizing pneumonia in the lung parenchyma peripheral to the tumor.

The patient was seen recently, approximately eight months after the pneumonectomy, and she seems to be doing well.

She is back in school and has gained much of the weight she lost.

Discussion

Dr. Fitzgerald: Obviously we have a rare lesion. Those who saw the case early were debating whether the lesion was malignant. I was convinced that it was a malignant lesion from the cytologic evidence. Since the nodes of the specimen show no metastasis and there is no deep extension into the wall, one would assume that the prognosis is good. One always has to be a bit guarded when giving a prognosis, however, because in the case of salivary glands we have said the same thing and the patient ended up some years later with subcutaneous or skull metastases. I doubt that the lesion in the case under discussion, at least from what we could see from the representative section, is going to be of any further trouble. The mere fact that the patient had signs for at least some years suggests that it was slow-growing, and only in the past few months, when she had obstruction, was there any progression of signs and symptoms.

Dr. Newman: The only comment I would like to make would be to echo what many other people have said before, namely, that the term "bronchial adenoma" probably should be discarded altogether. These I think are all carcinomas, as you say, of varying degrees of malignancy and only by complete removal can we offer the patient a good chance for cure. When the lesion is removed completely the five-year survival has been better than 95 per cent, but it is only fair to point out that in the recent series of 60 cases which I mentioned Overholt[1] reported that 2 individuals had direct extension in the regional lymph node and 2 others had distinct metastases. I have seen 1 patient who died with cerebral metastases from the carcinoid type of bronchial adenoma.

Dr. Fitzgerald: That is the general experience where considerable tumor work is done and it is a good point. The plea has been made for many years to change "adenoma" to "carcinoma" but we dislike to change. I think we probably will have to have some better test to determine whether a lesion is benign or malignant in borderline lesions, where one at present can only follow the course of the patient and see what happens. Unfortunately there are limits to morphology. The nature of most of these debatable lesions, whether benign or malignant, is solved only when enough cases have accumulated in five-, ten-, and fifteen-year follow-ups.

Dr. Dock: Are the carcinoids in this site genuine tumors, do they contain serotonin, and are they different tumors from argentaffinomas?

Dr. Fitzgerald: They usually are not argentaffin, a characteristic they share with carcinoids of the rectum.

Dr. Dock: They don't produce serotonin?

Dr. Fitzgerald: I don't know whether enough have been analyzed or not.

Dr. Dock: It looks as though the term "carcinoid" is changed to "carcinoma" anyway since the lesions metastasize from the gastrointestinal tract to the liver and a special designation is needed for this type of carcinoma, which is of low metastasizing power but still metastasizes. We have the serotonin problem added to it. They either do or don't produce serotonin. I suppose this is of some importance in diagnosis as to what the cell really is.

Dr. Fitzgerald: Some of the carcinoids which metastasize have not produced any. I don't believe that this is a sufficient test. I believe that even carcinoids of the appendix are malignant although only rarely do they metastasize. Usually they obstruct the small lumen of the appendix and are picked up clinically early whereas a lesion of the same size in the colon or ileum gives less obstruction and probably grows for a long period before signs or symptoms develop.

Dr. Dock: They stay in situ for a long time but this we admit for all sorts of cancer now. By "in situ" I mean in the original organ. You get them out when you take the appendix out and they usually do not recur. It depends on how you define "in situ," histologically or by organ.

Dr. Gordon Hennigar: Dr. Leo Weiss, a pathologist at Cedars of Lebanon, when in Dallas two years ago dealt with a case of so-called bronchial adenoma with a lesion in the right side of the heart.

Dr. Dock: Some of these do produce serotonin.

Dr. Hennigar: It was not analyzed for serotonin and was questionably silver-positive, and the case was not published but is well documented however.

Dr. Dock: The patient had the tricuspid lesion?

Dr. Hennigar: He had the tricuspid and pulmonic valvular lesions.

Dr. Dock: That is very curious for in the lungs the drainage sent through the bronchial vein should have gone to the systemic circulation.

Dr. Hennigar: There were no metastases, either regional or distant, in this case.

Dr. Dock: So presumably this material had gone through the systemic circulation, most of it, before it got back to the tricuspid valve, which is different from the ones in the liver, where the material goes directly from the liver to the tricuspid and pulmonary valve and the serotonin level drops fast as the blood goes through the lung. This is very interesting. We have to wait until Dr. Weiss has some other cases.

Dr. Fitzgerald: Has not that thesis, because the lesion hits the lung first and gives rise to changes, not decreased in favor as an explanation of this lesion?

Dr. Dock: I don't think it has with people studying it pharmacologically. All you have to do is take serum, run it once through the lung, and put it in a rabbit's ear and it has no vascular effect. Practically none, a 90 per cent decrease, which is very striking to the pharmacologists.

Dr. Dock: The only thing I think about this case is that it is not irrelevant to the case that Professor Witts had, a patient whose tumor produced mature erythrocytes. We see this all the time in epithelial tumors where squamous, ciliated, and goblet cells from the same tumor are produced and we don't get upset about it at all. We also see epithelial tumors that produce a tremendous reaction of lymphoid tissue in the nasopharynx, so-called lymphoepitheliomas, and cells that produce a tremendous reaction in the connective tissue, which we call scirrhous carcinoma or rhinitis plastica or what not. When a mesenchymal type of hematopoietic system produces either a lot of ground substance of lymphocytes or something of this sort, everybody gets disturbed about it, as though it could not be a tumor then and you have to call it something else. I think that Dr. Witts was dealing with a form of leukemia, no more remarkable biologically than this tumor, which produces both squamous epithelium and goblet cells as well as some other undifferentiated cells in between.

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NUTRITION EXCERPTS

Prepared with the cooperation of the Faculty of the Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.B., B.S., *Editor*

Patient Selection for Weight Reduction

CHARLOTTE M. YOUNG, PH.D., ITHACA, NEW YORK

PHYSICIANS, like everyone else, are in danger of being caught in the whirlpool of cultural condemnation of obesity and public health propaganda for the slim figure. Desirable as so-called "ideal weight" may be, more and more evidence points to the need to consider carefully whether it is always in the best interest of the patient to strive for the willowy figure. Several kinds of evidence indicate that for some individuals it may not be wise to do so. In each instance the physician must consider the patient's personality make-up, his current environmental circumstances, and other factors in order to determine whether the patient should undertake weight reduction. The useless waste of time for both therapist and patient and the often unhappy results for patients make such a careful appraisal imperative.

Any weight reduction study in which careful records have been kept for over more than two months shows a very high failure rate even under the most desirable therapeutic circumstances.[1] The proportion of patients achieving satisfactory weight reduction is disappointingly small. In some cases there may be a rapid initial weight loss followed by losses tapering off long before the desired weight is achieved or equally rapid regain of weight. Furthermore, in the relatively few good follow-up studies which have been reported an even poorer showing is made. Many patients initially classified as successful reverted to their original obese condition in full or in part one or two years later.[2] An added difficulty is that emotional symptoms often arise during weight reduction and sometimes even frank emotional disorders may be precipitated.

What can be done to avoid these difficulties? Much rests with the physician. He somehow must carefully screen those for whom he is considering a weight reduction regimen, selecting only those for whom there is some likelihood of success and in whom undesirable sequelae are not likely to follow. In other words, those with emotional difficulties which might make it unlikely that they lose weight successfully and without a traumatic experience should be excluded. By doing so the physician or therapist would be saving countless hours of his own time and that of the patient; the patient unable to cooperate would be saved feelings of guilt and further anxiety at his inability to follow instructions and those who are successful, severe emotional complications sometimes attending weight loss.

Specifically, what can the physician do? First, he can have an intelligent understanding of obesity. Psychiatrists have written well on the psychiatric aspects of obesity.[3–9] One, however, does not have to be a psychiatrist to recognize these aspects of the problem. Anyone who has carefully followed a sizable group of obese patients over a period of time will be aware of them. Probably only a psychiatrist is able to understand the mechanisms involved, but anyone who works closely with obese patients, especially during the attempted weight reduction period, cannot help but be aware that emotional problems are often involved. Even as a nonpsychiatric, nonmedical person, I became acutely aware in our own research of the causal role of emotional difficulties in some cases of obesity, the emotional problems involved in being obese, and the psychologic complications which often arise during the reducing process.

One becomes acutely aware of the desirability of carefully choosing for weight reduction only those patients with sufficient emotional stability to be able to cooperate and for whom weight loss is a realistic goal. As Bruch has pointed out, there is now need for an organized public campaign to counteract the enormous propaganda in favor of reducing as a cure-all: "A new orientation of the medical profession is a first step towards a more rational approach to the whole problem of obesity."[4] With an intelligent understanding of obesity, the physician may have the courage, in the best interests of the patient, to go against cultural attitudes and not encourage weight reduction unless the patient is ready for it. Certainly it seems that with all the popular material available on methods of weight reduction (diets, etc.) most people who are really motivated to lose weight and have sufficient emotional stability to do so probably reduce on their own. Even for them it is not a painless process, and they may come to the physician solely for his sympathetic support and because of the need to answer periodically to someone outside themselves.

In many obese patients who come to the physician, psychologic factors may be basic to the causation of the obesity. Certain cases of obesity developed during childhood (developmental obesity), characterized by excessive eating, avoidance of physical activities and social contacts, overprotection by a dominant parent, and inability to cope with reality demands, are particularly refractive to the usual treatment of dieting alone. Often, extensive psychiatric treatment is needed before the patient feels stable and secure enough to undertake reducing or to handle his problems more constructively. Bruch considers the most characteristic form of obesity in adulthood and middle life (although sometimes occurring in children) to be reactive obesity in which overeating is a response to and compensation for tension and frustration or a reaction to some traumatic experience. Patients in this group often become depressed during reducing.[9] Even in obese patients who appear essentially well adjusted, weight reduction is often accompanied by some of the feelings and actions ascribed to those found in starvation and semistarvation states: general tiredness, weakness (especially when climbing stairs), irritability over minor annoyances, moodiness, increase in psychosomatic complaints, constant talk about food, great preoccupation with ideal weights and rate of weight loss, gulping down of food or undue prolongation of the meal by nursing every mouthful, and a great increase in the quantities of tea, coffee, and cigarets consumed.[10] For obese people who are obese because they use excessive food and drink to obtain satisfaction and who avoid activities and situations in which they might experience anxiety, a change of eating and activity patterns interferes with their essential defense mechanisms and their basic sense of security. Psychologic symptoms in these instances are not surprising. If the diet is not broken, there may be real danger of the patient becoming severely depressed or even psychotic.[4] Stunkard, in a study at New York Hospital, observed untoward responses to weight reduction in a startlingly high proportion (50 per cent) of a group of 100 unselected obese female patients; severe emotional disorders in connection with dieting were observed in 9 out of 25 patients studied in more detail.[9] The notoriously poor cooperation with the reducing regimen is an expression of the great importance the state of obesity, the excessive food intake and underactivity, have for the maintenance of the emotional health of obese people. In other words, these factors are a protection against more severe mental disorders.[4]

But how is the physician, who is not a psychiatrist but in whose hands the obese person is usually found, to select the ones who may profit from a trial of the usual dieting routine? This is difficult to answer. Some indication may be gained from a realistic evaluation of the patient's total situation. What does the patient hope to gain by weight loss? As Bruch has pointed out, to the adequately adjusted overweight person reducing is a rational task with only one goal, losing weight. For the disturbed overweight person with unrealistic expectations dieting is not what it appears to be in physiologic terms but becomes a magic tool that will bring about fulfillment of impossible aspirations. For what purposes is the particular obese patient using food? What are the patient's difficulties? In what areas does he need help? Can he accept dieting and other changes in his life? Can the physician help him to remove or solve difficulties which lie in the way of his following a dietary regimen? Are his current circumstances favorable to these alterations? Is the physician able and willing to give him unjudging, unchastizing, nonthreatening sympathetic support? Even the well-adjusted obese person does not find reducing simple or easy and will need, at least initially, emotional support and supervision. Will the patient need extensive psychiatric help to solve his basic problems before he is able to tackle weight reduction per se? Much can be gained by such a thoughtful appraisal by the physician prior to the institution of weight reduction therapy.

In view of the limited psychiatric professional personnel available one is aware of the futility of suggesting that every obese person be screened by a psychiatrist or clinical psychologist to determine his readiness for weight reduction. In our own research an investigation was made of the possibility of the use of a simple pencil and paper psychologic test, the Bell Adjustment Inventory, to indicate the emotional adjustment of obese patients. These results were later correlated with the success achieved on a weight reduction regimen.[10] From our experience with the use of this test with clinic patients it would seem that it might be quite useful in screening patients to be referred for weight reduction therapy. One might expect those with above average emotional adjustment to be reasonably successful in weight reduction if they were really interested in losing weight. Those with below average emotional adjustment scores would be likely to be unsuccessful and probably should not be subjected to the routine. The group with average emotional adjustment would offer the greatest challenge to the therapist. Patients with strong motivation and good life situations at the time probably would have a fair chance of success. Conversely, those with either little motivation of their own or with trying life situations probably would not succeed. Those with scores at the low end of the average range probably would not succeed. Particularly with patients in the average range it would be important for the physician to try to assess the desire to lose as well as to evaluate the immediate life circumstances in terms of an auspicious time for undertaking weight reduction. It would be interesting to see this objective testing tool tried by others dealing with weight problems.

The plea made here is for careful evaluation of each case for whom weight reduction is prescribed. In our experience best success may be expected when: (1) there is a high level of emotional adjustment, (2) patients are in the early stages of obesity, (3) obesity was developed in adult life rather than in childhood, (4) there is no previous history of attempts at weight reduction with failure or with regaining of essentially all the weight lost, (5) the patient has a reason meaningful to himself for undertaking the struggle of reducing, and (6) weight reduction is a realistic goal to the patient, who is not nurturing a fantasy concerning the great advantages to be achieved by weight loss.[1] When patients are carefully selected to include only those for whom weight loss is a realistic and rational goal, results of therapy will be much more satisfying to all concerned and patients will be spared needless guilt frustration and further anxiety. Such selection of patients is a difficult problem but one for which there is hope of solution when the emotional aspects of obesity are generally recognized.

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(Number four in a new series of Nutrition Excerpts)

American Medical Association

ANNUAL MEETING

June 8 to 12, 1959

Atlantic City, New Jersey

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies in the operating room including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
LESTER C. MARK, M.D.
VALENTINO D. B. MAZZIA, M.D.

Cardiovascular Collapse from Overdose of Ether

Ether anesthesia has a reputation for being "safe" because the circulatory center still remains active in the event of respiratory arrest due to anesthetic overdose. Recovery can be obtained by discontinuing anesthesia and inflating the lungs of the etherized patient with air or oxygen. However, despite ether's relative wide margin of safety it can produce fatal cardiovascular collapse, as was observed in the following 2 cases.

Case Reports

Case 1.—A thirteen-month-old, 10-Kg. female was admitted to the hospital for the third time to undergo elective genitourinary surgery. In the course of treatment of her right-sided ureterocele she had undergone five uneventful general anesthetic procedures and four major operations, including a suprapubic right-sided ureteral meatotomy and excision of a ureterocele on the right side via the transurethral route. In spite of these procedures, the child still had an obstruction at the right ureterovesical junction, a hydroureter on the right side, and hydronephrosis on the right side. She also had cystitis. Accordingly, reimplantation of the right side of the ureter or a right-sided nephrectomy was planned. The child otherwise was in excellent health.

She was given 0.6 mg. morphine sulfate and 0.2 mg. atropine subcutaneously one hour before induction of general anesthesia. Vital signs before anesthesia were pulse 140 per minute, respirations 40, temperature 36.4 C. Induction was accomplished by the open drop method with divinyl ether followed by diethyl ether. A smooth and uneventful induction was accomplished. Ten mg. of succinylcholine were injected intravenously, and an appropriate plastic orotracheal tube was inserted under direct vision. There was no apnea from the succinylcholine, and open drop ether with oxygen supplementation under the mask was continued. Respiration was

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spontaneous and unassisted.

Surgery began twenty minutes after the beginning of the induction with the child in the supine position, left side down and right side slightly elevated. Exploration of the right side of the ureter was done for an hour and twenty minutes with the pulse rate staying between 140 and 150 per minute and the respiratory rate between 40 and 48 per minute. Whole blood transfusion had been begun with the initial incision. After an hour and twenty minutes of surgery the surgeons commented that the blood was dark, and the presence of cardiac arrest was confirmed. Up to this time the anesthetist had noted no change in the vital signs or skin color and had continued to administer diethyl ether. A few gasps were heard before apnea supervened, and the pupils were found to be widely dilated. Artificial ventilation with 100 per cent oxygen and a left-sided thoracotomy and cardiac massage were begun. Adequate heart action and spontaneous respirations were restored within four minutes. In the recovery room the pupils became progressively smaller and the diethyl ether, its odor rather concentrated in the initial exhalations, decreased rapidly in concentration. However, irreversible cerebral damage had occurred, and the child died twenty hours postoperatively. At autopsy there were no findings which shed any light on the mechanism of death.

Case 2.—A forty-two-year-old woman suffered episodes of right upper abdominal quadrant pain due to cholelithiasis with cholecystitis. Cholecystectomy was proposed. Except for obesity (she was 5 feet 2 inches tall and weighed 175 pounds), her physical status was good and all laboratory data were within normal limits.

She was given 8 mg. of morphine with 0.4 mg. of scopolamine by subcutaneous injection. Fifty minutes later she was anesthetized with nitrous oxide and ether with oxygen in a closed circle system with carbon dioxide absorption. Endotracheal intubation was attempted, but the patient's relatively short neck made visualization of the larynx difficult and intubation was abandoned because of the surgeon's impatience. The patient required greater than usual amounts of ether. The surgeon kept complaining of lack of abdominal relaxation. Because no endotracheal airway had been provided, the anesthetist was afraid to administer any muscle relaxant intravenously. In attempting to satisfy the demands of adequate muscular relaxation, the anesthetist continued administration of ether and assisted the patient's respirations by manually compressing the breathing bag intermittently. The patient's diaphragmatic movements were overactive at first and this interfered with abdominal exploration. The anesthetist was now in an embarrassing position; with the left hand supporting the patient's chin and the right hand manually compressing the breathing bag, signs of anesthesia became difficult for him to evaluate. Thus, he had been able to determine only the preanesthetic blood pressure and pulse rate of the patient. Interfering diaphragmatic movements gradually subsided but relaxation was still inadequate. Spontaneous respirations ceased, and lung respiration was then carried on by continuing intermittent manual compression of the breathing bag and volatilization of ether. One of the surgeon's assistants suddenly noted the presence of cyanosis of tissues in the operative field. The anesthetist increased the amount of oxygen and discontinued administration of ether. The abdominal aorta was felt but it did not pulsate, nor could the heart be felt to beat through the diaphragm. The patient's pupils were completely dilated. The surgeon incised the diaphragm and found the heart dilated and in standstill. He quickly started rhythmic manual cardiac contractions. The anesthetist was able now to introduce an endotracheal tube through the larynx and to start artificial respiration with oxygen. The patient's cyanosis cleared but spontaneous heart action did not resume. Epinephrine $^1/_2$ mg. diluted in 5 cc. saline was then injected into the left ventricle and manual cardiac contractions were continued. In about one minute the heart began to contract spontaneously. Fifteen minutes later diaphragmatic contractions returned. They were weak at first but increased in strength gradually. The patient's arterial blood pressure was then 84 mm. Hg systolic and 60 diastolic with a pulse rate of 124 per minute. Cholecystectomy was accomplished quickly. The patient's pupils became less dilated, showing 2 mm. of the patient's iris. Despite the return of good color in the patient's tissues, the blood pressure did not return to normal. The respirations which at first had returned with diaphragmatic activity again ceased, and it was necessary to institute artificial respiration by means of manual bag pressure at first and then with an artificial resuscitating machine. This status was maintained for ten hours, when suddenly cyanosis supervened again and the patient was pronounced dead. An autopsy was performed but no direct cause of death could be found.

Comment

The relatively long-lasting stages during administration of diethyl ether anesthesia permit manifestation of the signs of anesthesia better than any other anesthetic agent. Nevertheless, unfortunate catastrophes may occur even during ether anesthesia because of inattention, as in the first case, or because of a compromising situation, as in the second.

The postoperative course of the first patient would seem to indicate that this child had suffered from an overdose of diethyl ether, possibly superimposed on hypoxia and hypercarbia. It is generally supposed that it is impossible to administer an overdose of ether by the open drop method. However, in the presence of some asphyxia, especially asphyxia which might occur after the organism is well saturated with ether, overdoses may occur. The heavy ether concentration in the exhaled breath and the change in the respiratory pattern during recovery as well as the progressive constriction of the pupils while in the recovery room would support the hypothesis that an overdose of ether had been administered. The means of preventing this catastrophe are to maintain as light a plane of etherization as is compatible with the surgical requirements and to assist ventilation, especially in infants. From the public health point of view it is disturbing that in cases such as this one there are no facilities any place where one can send a sample of blood or tissue to get a determination of the amount of ether in it. A toxicology laboratory which could provide blood levels of anesthetic agents would be a great service to the community and would assist in shedding considerable light on the mechanisms of death under anesthesia.

A number of lessons can be learned from the second case.

First, unless the anesthetist employs some cardiac monitoring device or has an assistant who can be detailed to make regular routine determinations and recordings of the patient's arterial blood pressure and continuous observations of the patient's heart or pulse as well as determine signs of depth of anesthesia, he should not place himself in the position that both of his hands are being used to administer anesthesia (one hand holding the patient's chin and the other compressing the breathing bag). It is the anesthetist's duty to be cognizant of the patient's vital signs at all times. He should be able to determine these, and to do so it is necessary that he have at least one hand free to perform such manipulations (unless, as was suggested previously, there be an assistant to make such determinations).

Second, it is important to know the respiratory signs of anesthesia, which are most evident during ether anesthesia. The first three planes of the surgical stage are so characteristic that they actually depict the anesthetized subject's "language," whose "vocabulary" is three words. In the first, or light plane, intercostal and diaphragmatic activity are both present and the respiratory tidal volume and respiratory rate are both increased. There is no pause between inspiration and expiration or after expiration; the patient seems to be saying "some more! some more!" As more anesthesia is given and the second plane is reached, costal and diaphragmatic movements are both active and the respiratory rate and depth are decreased to normal limits. The phase of inspiration is less rapid and a slight pause appears after the end of expiration; the patient seems to be saying, "all right." As anesthesia advances into the third plane, intercostal activity becomes weaker and intercostal movements are delayed as a result of beginning paresis while diaphragmatic activity becomes more prominent in an effort to compensate for costal depression. Regularity in rhythm persists, but the respiratory pattern is changed so that inspiration is rapid and expiration is more prolonged; the patient seems to be saying "enough!" and he is right.

Seldom should the depth of anesthesia go beyond this plane for if it does, as happened in the present case, respiratory arrest will ensue.

Third, and this is important with any anesthetic agent, when respiratory arrest does ensue, artificial or "controlled" respiration should be performed with administration of anesthesia discontinued until some evident sign of lightening anesthesia becomes noticeable. Failure to discontinue administration of anesthesia at this stage can lead to anesthetic overdose and circulatory arrest due to medullary paralysis from which recovery is difficult.

(*Number sixty-five in a series of Clinical Anesthesia Conferences*)

New Ear Wax Removal Agent

A new chemical preparation that softens impacted ear wax so that it may be easily removed was described in the March issue of the American Medical Association publication, *Archives of Otolaryngology.*

"The ease with which this agent facilitates the removal of ear wax is in striking contrast to the cumbersome operative irrigation technics," according to the article.

The standard method for removing ear wax is to irrigate the ear with water and then remove the wax with a blunt instrument. If the wax has been impacted for a long time, the outer layer of the ear canal skin may become attached to the wax. When the wax is removed, the skin is torn. A wax-dissolving substance will prevent such injury to the skin.

The new preparation, with the tradenames Cerumenex and Cerulau, is put into the ear a day or two before the wax is to be removed. By that time, the wax is soft and loose and easy to remove.

The preparation was used on 230 patients with varying degrees of excessive and impacted wax. A "dramatic" wax dissolution was observed in most instances, with complete removal in 204 patients (88.7 per cent). Nineteen (8.2 per cent) had good results and seven (3 per cent) poor results. No patient showed an adverse reaction to the agent.

The report was made by six researchers, headed by Dr. Arthur C. Reiniger, chief of the Department of Otolaryngology at the Stuyvesant Polyclinic, New York.

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Accidental Chemical Poisonings in Adults

THE following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Opium Alkaloid	20 years	Male

An overdose of an opium alkaloid was taken by a youthful addict; the exact amount is unknown. On admission to the hospital the patient was cyanotic, had convulsions, and was in coma. He was immediately treated in the emergency room with oxygen by mask and with a narcotic antagonist (Lorfan Tartrate 2 mg.) The response was dramatic, and within thirty minutes the patient walked out of the hospital.

Although a narcotic addict usually is subject to detention, this patient was permitted to leave presumably because no drugs were found in his possession.

In addition to the use of specific antagonists, other modes of therapy, as indicated, should be employed. Gastric lavage, if done within several hours of ingestion, is beneficial. Oxygen administration, correction of airway obstruction, and maintenance of hydration and electrolyte balance by administration of intravenous fluids and salt are of help. Overhydration, however, must be avoided. Stimulants, such as caffeine and amphetamine, may also be used. Strychnine and picrotoxin, however, should *never* be used because of their convulsant action. Maintenance of body temperature and good nursing care are also essential.

In contrast, it may be noted that in another case of narcotic overdosage, in a seventeen-year-old, fatality resulted because an antagonist was not administered.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Boric Acid Solution	85 years	Female

An eighty-five-year-old adult ingested half a glass of boric acid eye solution. One hour after ingestion the patient vomited.

She was immediately taken to a hospital for treatment.

Because of continuous vomiting, her stomach was not lavaged. The patient was treated with sodium bicarbonate, and after two days was discharged in good condition.

A considerable number of boric acid "medicine cabinet" accidental ingestions due to mistaken identity for other products, such as bicarbonate and epsom salts, have been reported. The usual amount ingested is a teaspoonful. No serious sequelae have thus far been reported. The same amount in very young children, however, may prove fatal, and physicians must alert parents about the need for greater caution in the handling and storage of such items.

Dr. Gertrude Stern, the Poison Control Officer of New York Hospital reported the following case and Incident 10.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Phenobarbital	21 years	Female

The patient ingested, on June 29, 1958, at 4:30 P.M., five "handfulls" of 15-mg. tablets of phenobarbital. She was taken to the hospital in coma about three quarters of an hour after ingestion where her stomach was lavaged. The blood barbiturate level was 4 to 8 mg. per cent. She was treated with intravenous fluids and an endotracheal tube. The morning after admission the blood barbiturate level was 8 to 20 mg. per cent.

On July 1, 1958, because the patient still was unconscious, dialysis was begun at 4:15 P.M. with a cutdown at the right radial artery to the right antecubital vein. She received 100 mg. of heparin throughout the procedure and 2,500 cc. of intravenous fluids. It was estimated that she lost 1,200 cc. through the ultrafiltration during dialysis. She received 1.5 Gm. of Chloromycetin through an intravenous drip. At the end of the procedure, at 5:20 P.M., the endotracheal tube was removed, she moved spontaneously and opened her eyes on command. On July 2, 1958, she was talking. On the evening of July 2, 1958, she was alert. The patient was continued on intravenous fluids. On July 9, 1958, she was discharged to Rockland State Hospital on the advice of a psychiatrist.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Oxalic Acid	62 years	Male

This incident was reported from Yonkers, New York. The patient presumably ingested 6 ounces of oxalic acid with suicidal intent. He vomited one hour after ingestion and was taken to the hospital in shock. The other signs and symptoms were abdominal pains, diarrhea, and deafness (temporary). The patient's stomach was lavaged with magnesium sulfate two hours after ingestion. No oxalic acid blood level was obtained, and no oxalic acid was found in the urine. The guaiac test for blood in the stools was negative. The patient was treated in the hospital with intravenous infusions of 5 per cent dextrose in saline and Levophed. This was continued until the blood pressure was stabilized. Prophylactic antibiotics and Equanil were also administered. The patient was put on supplemental vitamins, and after a while a restrictive Sippy diet was changed to a regular one.

After eighteen days of hospitalization and appropriate therapy the patient made an uneventful recovery.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Tranquilizer and Sedative	50 years	Female

This incident was reported from Bay Shore, Long Island. The patient ingested 100 mg. of perphenazine and 90 grains of a barbiturate. He was brought into the hospital in a comatose condition, completely areflexic. Respirations were good. The systolic blood pressure had dropped to 50 and the diastolic could not be recorded. A slight chemosis of the eyes was also noted. The patient was treated with Levophed and supportive therapy, such as suction, airway, and turning. After twelve hours the blood pressure stabilized and the excitement phase abated. Recovery without sequelae followed in thirty-six hours.

After four days the patient was in good physical condition, and he was transferred to a mental hospital for treatment. He was diagnosed, on admission to the mental hospital, as a manic depressive.

Incident 6

Toxic Agent	*Age*	*Sex*
Reducing Pills	27 years	Female

The patient ingested 21 reducing tablets composed of amphetamine and thyroid; the total dosage was estimated to be 200 mg. amphetamine and 6 grains thyroid. The pills were ingested over a period of seven hours. One hour later the patient was taken to the hospital with symptoms of agitation, restlessness, and dilated pupils. The stomach was lavaged with saline about one hour and ten minutes after the ingestion period. Sodium phenobarbital and Serpasil were administered.

This patient signed a release the following day. The family physician was called and he agreed to administer the follow-up care.

Incident 7

Toxic Agent	*Age*	*Sex*
Tranquilizer-Antiemetic	64 years	Female

The patient ingested 100 25-mg. tablets of prochlorperazine with suicidal intent. She was admitted to the hospital in coma. Her stomach was lavaged with saline in the emergency room, and she was admitted to the ward. She was treated with bed rest, penicillin, and Crysticillin and responded well to therapy. After three days of hospitalization the recovery was complete and she was discharged.

The lack of extrapyramidal symptoms in this case is noteworthy and may perhaps be explained by the fact that this patient was transferred from another hospital, with time for the symptoms to abate.

Incident 8

Toxic Agent	*Age*	*Sex*
Digoxin	77 years	Male

The patient ingested a total of 8.75 mg. digoxin with suicidal intent. He was brought to the hospital some time on the day of ingestion, but it is not known how many hours elapsed following ingestion. Blood pressure on admission was 180/80. He was treated with dextrose and nitroglycerine, but without avail. Death ensued two days after admission.

The death was attributed to an overdose of digoxin in an attempted suicide.

Incident 9

Toxic Agent	*Age*	*Sex*
Household Ammonia	21 years	Female

The patient ingested 2 ounces of household ammonia and beer with suicidal intent. About an hour after ingestion she vomited and was taken to the hospital. Milk and orange juice were administered prior to her admission. Symptoms on admission were burning in the mouth and throat, abdominal pain, chest pain, and stupor. The patient was unable to swallow. Laboratory findings were as follows: Her red cell count was 4,270,000 with 85.3 Gm. per cent hemoglobin, and her white cell count was 16,400. The urine contained 4 plus albumin and 1.6 per cent sugar. The gastric content was bloody. The patient was treated with intravenous fluids and atropine.

The admitting diagnosis was chemical

ulceration of the esophagus. She remained in the hospital from September 14, 1958, to September 19, 1958. The final diagnosis, at the time of discharge, was chemical ulceration of the stomach and edema of the esophagus.

Because of inability to swallow and pain in the throat, the patient was readmitted to the hospital on October 3, 1958, with an admitting diagnosis of ulceration of the stomach. She was discharged, however, twenty-five hours after admission with a final diagnosis of stricture of the esophagus and ulceration of the stomach. She was transferred to Meadowbrook Hospital for surgical care. She had attempted suicide presumably because she was scolded by her mother for coming home late.

The severe harmful effects following the ingestion of household ammonia in chemical poisonings reported to this Center indicate that this product deserves greater attention than it is currently receiving from both layman and physician.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Sleeping Pills	30 years	Female

The patient was admitted to Bronx Municipal Hospital following an ingestion of about 20 (nonbarbiturate) glutethimide tablets. She aspirated some fluid before admission and apparently was intubated at the hospital. The patient was comatose on admission and after thirty hours, during which time her blood pressure fell and her condition showed progressive deterioration, she was transferred to New York Hospital for dialysis. The procedure was begun at 11:15 P.M. with cannulae in both radial arteries and the cephalic vein on the right side. After two hours the patient became responsive and her blood pressure rose. The urine output during dialysis was 375 cc. Following dialysis there was a rise in temperature, possibly due to aspiration. The patient was also treated with intravenous fluids and antibiotics and made an uneventful recovery. Twelve days after hospitalization the patient was transferred to Bellevue Hospital, Psychiatric Division, on advice of a psychiatrist. Her physical condition was entirely normal on discharge.

It is noted that hemodialysis is a lifesaving measure in certain types of poisoning. It is therefore recommended that each hospital be familiar with the dialysis facilities in its neighborhood and, since considerable time is necessary for the preparation of a hemodialysis procedure, the mechanism of referral.

Requests are frequently received by the Center to include more detailed medical data on briefs. This is not always possible because of a lack of information on the follow-up reports received from the reporting hospitals. An urgent plea is therefore made to Poison Control Officers and others reporting incidents to include pertinent and significant medical data in their reports so that this information may be shared with other physicians (Reported by Dr. Stern.)

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Tranquilizer	23 years	Female

The patient ingested 67 100-mg. tablets of chlorpromazine. She vomited and was taken to the hospital five hours after ingestion where her stomach was lavaged with saline.

On admission the patient was nauseated, vomited, and appeared stuporous. She was admitted to the inpatient service for an unindicated period of time. After her physical condition improved she was transferred to the Harlem Valley State Hospital for psychiatric care.

This case is cited to provide reassurance to physicians in cases of massive ingestions of chlorpromazine. It is an agent frequently employed but happily without very severe complications.

INCIDENT 12

Toxic Agent	*Age*	*Sex*
Barbiturate	62 years	Male

This patient is a known diabetic of several years duration, the diabetes being controlled by diet alone. He fell in the morning and was seen by the family physician, who could find no pathologic condition. The patient was sent home; on arrival he went to sleep, and his wife could not arouse him. He was admitted to Mount Sinai Hospital in comatose condition.

His stomach was immediately lavaged with saline in the emergency room. The gastric contents contained 1 Gm. pentobarbital. The blood content was 1.68 mg. per cent pentobarbital, and the urine 30 mg. of pentobarbital per liter. After sixteen days of hospitalization, treatment, and supportive therapy the patient recovered.

It was never definitely ascertained whether the coma in this patient was due to the head injury or barbiturate. The family physician felt that it was traumatic in origin and maintained that his patient did not have suicidal intent.

(*Number thirty-one in a series of Accidental Chemical Poisonings*)

Unusual Skin Disease Reported by Boston Dermatologist

An unusual skin disease—sweat band dermatitis—was reported by a Boston dermatologist in the April 11 *Journal of the American Medical Association.*

Dr. George E. Morris, a member of the A.M.A. Committee on Occupational Dermatoses, said sweat band dermatitis has not been reported recently in the United States because tanning materials containing chrome—a common cause of such skin disorders as shoe leather dermatitis—are not used in the preparation of sweat bands.

However, Dr. Morris has seen three cases of sweat band dermatitis in recent months. One resulted from a sensitivity to chrome, but not because it was present in the sweat band.

The man worked in a tannery. He was sensitive to tanning substances and had a rash on hands, arms, and other parts of the body that were in contact with the tanning solution. He developed the sweat band dermatitis because he had been wiping the perspiration off the sweat band with his hands, which were contaminated with the tanning solution.

The other two cases were not related to tanning substances. One man was sensitive to the material used to "finish" the paper sweat band of a painter's cap. The other was sensitive to oil used in the ropes with which he worked. The sweat band dermatitis developed when he wiped the sweat band of the cap with his hands which were contaminated with the oil.

Dr. Morris noted in conclusion that sweat band dermatitis is usually caused by a finishing agent for paper or synthetic fibers or by substances rubbed onto the sweat band by the hands.

CANCER ALERTS

A series of radio talks for the practitioner
presented over Station WNYC-FM under the sponsorship of the

New York Academy of Medicine
with the cooperation of the
New York City Cancer Committee

Early Diagnosis of Cancer of the Male Genitourinary Organs

WILLET F. WHITMORE, JR., M.D., NEW YORK CITY

(*From the Department of Surgery and the Strang Cancer Prevention Clinic, Memorial Center for Cancer and Allied Diseases*)

IT IS axiomatic that before any cancer can be intelligently and successfully treated it must be accurately diagnosed as early in its development as possible. Not every physician is trained to administer the appropriate treatment, but each should be equipped to make the correct diagnosis if malignant condition does exist.

The requisites for early diagnosis of neoplasms in general and for genitourinary cancers in particular are:

First, an awareness of the possibility of the existence of cancer. This should be obvious. It simply means that one should give serious consideration to the possibility of cancer in any clinical situation.

Second, a working familiarity with the clinical manifestations of the neoplasm in question and a willingness to do the careful history and physical examination necessary to elicit these symptoms and signs.

Third, some knowledge of the laboratory and roentgenologic aids which are likely to afford help in the particular problem.

How do these basic requirements for diagnosis find application in the recognition of the various neoplasms of the male genitourinary tract?

Cancer of the Kidney

Cancer of the kidney usually has attained considerable size before clinical manifestations occur. The great majority of renal neoplasms are either adenocarcinomas, renal pelvic growths, or Wilms tumors. The first two occur most commonly in individuals beyond forty years of age and show a predilection for the male sex. Wilms tumors have their greatest incidence in children between two and five years of age and show no sex preference.

The classic symptomatic triad of lumbar pain, hematuria, and a mass in the flank is so well known that an elaborate exposition is not necessary. The great majority of adenocarcinomas and renal pelvic growths will be associated with gross hematuria, but gross bleeding is unusual for Wilms tumors. Lumbar pain is a complaint in about half the patients with renal adenocarcinoma or renal pelvic cancers but is uncommon in patients with Wilms tumors. The complaint of a mass is uncommon among patients with renal adenocarcinoma or renal pelvic cancers but is registered by about three quarters of children with Wilms tumors.

Little diagnostic acumen is needed to arouse suspicion of the existence of a renal tumor in a patient with the classic triad of symptoms, but the initial manifestations may be much more subtle and any or all of the classic symptoms may be absent.

Among patients with renal adenocarcinoma or Wilms tumor, fever is common and on rare occasions may be the only symptom and sign of the growth. General malaise, weight loss, weakness, and symptoms of gastrointestinal dysfunction, such as anorexia and constipation, may each be the first or even the only symptom. These conditions as symptoms of malignancy are not usual but nevertheless warrant special emphasis because recognition of their possible causes may constitute the difference between early and delayed diagnosis of a cancer.

On physical examination a palpable mass in the lumbar region helps to confirm a suspicion but its absence does not rule out the possibility of a renal growth. The hemogram may reveal varying degrees of anemia and leukocytosis among patients with renal cancer and may be the focal point of the diagnostic process.

With respect to routine urinalysis, perhaps the most important thing to remember is that a normal specimen or even a series of normal specimens does not exclude the possibility of renal neoplasm. Most patients with renal cancers do have abnormal urinalysis findings, proteinuria being a more frequent abnormality in this regard than microscopic hematuria. The Papanicolaou method for examination of the urinary sediment is a useful adjunct in diagnosis. It is a highly reliable but not infallible technic in the diagnosis of renal pelvic tumors but has only limited value in the diagnosis of renal adenocarcinomas and Wilms tumors.

The bulk of objective evidence affirming or denying the presence of a renal neoplasm is derived from radiographic study. An anteroposterior film of the abdomen is the first step. Here one looks for enlargement or deformity of the renal outline, displacement of the kidney, and calcification. The next step is intravenous pyelography followed, if warranted, by retrograde pyelography. On any pyelogram, whether done by the intravenous or retrograde technic, one looks for deformities on the renal pelvis or calices. Such deformities include compression, dilatation, elongation, displacement, partial or complete obliteration, and filling defects. A high index of suspicion of minor degrees of deformity will help in the detection of minimal lesions.

Nephrography, aortography, retroperitoneal pneumography, and tomography offer further help in the difficult diagnostic problem by improving definition of the renal shadow or by outlining the renal vasculature. Renal exploration is the final step in diagnosis.

Cancer of the Bladder

Cancer of the bladder is apt to give rise to symptoms relatively early in its course. The majority of such cancers occur in patients in the fifth decade of life, and the male is the victim about three times as commonly as the female. Gross hematuria is the first evidence of the disease in about three fourths of the cases and usually is accompanied by symptoms of bladder irritation, including frequency, urgency, and burning. If infection supervenes, and it is common, the symptoms may be markedly increased. Occasionally the patient may complain of flank pain due to obstruction of the ureteral orifice by the neoplasm. Physical examination may be quite unrevealing, but a careful palpation of the bladder base through the rectum or vagina with the bladder empty may reveal a mass or abnormal induration.

Abnormal urinalysis findings, including

variable degrees of hematuria and pyuria, are the rule in the patient with a bladder neoplasm. Examination of the urinary sediment by the Papanicolaou technic provides a highly useful adjunct in diagnosis.

Intravenous pyelograms may disclose a hydronephrotic kidney resulting from ureteral obstruction by the growth, and a cystogram may demonstrate a filling defect within the bladder lumen. Nevertheless, cystoscopy with biopsy is, of course, the keystone of diagnosis in the patient suspected of a bladder tumor.

Cancer of the Prostate

Cancer of the prostate offers a very fertile field for the practitioner interested in early diagnosis of cancer. This common neoplasm increases in frequency with succeeding decades beyond the age of fifty. Several popular misconceptions have done much to hinder proper treatment of this disease:

First, the erroneous idea that prostatic cancer is never curable by surgical excision. This misconception is derived from the fact that only about 1 in every 20 patients with prostatic cancer has his lesion detected early enough to be amenable to the potentially curative operation.

Second, the mistaken belief that radical perineal prostatectomy, performed in the few suitable patients, is extremely risky, exceedingly disabling, and rarely curative. Actually, perineal prostatectomy carries a mortality risk of less than 2 per cent. As for disability, only about 10 per cent of the patients become incontinent of urine, hardly a prohibitive risk for the patient with cancer. With regard to end results, the 40 per cent five-year apparent cure rate obtained from total prostatectomy is a figure rarely equalled in the treatment of other visceral cancers.

Third, the popular misapprehension that endocrine therapy offers a significant prospect of cure to patients with prostate cancer. Without elaborating, it is fair to say that endocrine control of these neoplasms rarely extends beyond two to three years and that apparent cures are distinct oddities.

Early prostatic cancer produces no symptoms. At the present time the most potent instrument in the detection of this neoplasm is one which should be standard equipment with every practitioner, namely, a finger capable of doing digital rectal examination of the prostate. Any area of induration in the normally elastic-feeling prostate becomes suspect, and if it is not adequately accounted for by coincident evidence of prostatic infection or calculus, biopsy is indicated.

Symptoms of urinary obstruction as a result of prostatic cancer are manifestations of locally advanced and usually inoperable disease. Similarly, the low back pain and sciatica present in fully half the patients with prostatic cancer at the time of diagnosis usually indicate bone metastasis. Elevation of the serum acid phosphatase is a manifestation of advanced, usually inoperable, disease. Similarly, elevation of the serum alkaline phosphatase, if a result of the prostatic cancer, is due to bone metastases and hence is hardly an early laboratory sign.

Efforts to detect prostatic cancer in its preclinical stage by examination of prostatic fluid by the Papanicolaou technic have yet to prove successful. Fortunately the majority of prostatic cancers begin in the posterior lobe of the gland and are readily accessible to the examining finger. Consequently, routine and periodic digital rectal examination of all men past the age of fifty continues to be the most practical and productive technic for the detection of early prostatic cancer.

Cancer of the Penis

Cancer of the penis should be easily recognized if the possibility is borne in mind. This neoplasm occurs most commonly in uncircumcized individuals past forty years of age. There frequently is an antecedent history of phimosis with or without superimposed infection. Finally a nodule or ulceration develops on the glans, in the coronal sulcus, or on the mucosal surface of the prepuce. The ulceration increases but pain is rarely a serious problem even with extensive lesions. A positive serologic finding does not rule out the possible coexistence of cancer, and biopsy should be done of any papule, ulceration, or keratotic plaque which does not heal promptly with therapy. Frequently dorsal slit or circumcision may be necessary to expose the lesion and permit resolution of the local irritation.

Cancer of the Testis

Cancer of the testicle is most common in the age group between twenty and forty. The earliest local symptoms are apt to be painless enlargement of the testis and dragging discomfort in the groin. Occasionally the patient will give an antecedent but etiologically unrelated history of trauma. Occasionally too the onset may be acute, simulating an epididymitis. An overlying hydrocele can conceal the presence of an underlying tumor, but aspiration of the hydrocele will permit accurate palpation of the testis.

Transillumination is a simple technic which aids in the differential diagnosis of hydrocele.

Physical examination discloses a nontender, firm mass which when small does not alter the shape of the normal testis but which may cause it to become nodular and irregular with further increase in size. Unilateral or bilateral gynecomastia due to the hormonal activity of the tumor may be the first evidence of abnormality in some cases.

The differential diagnosis of scrotal masses is seldom difficult, but prompt surgical exploration is indicated in all doubtful cases.

Comment

It is evident that in the early diagnosis of genitourinary neoplasms an accurate history and careful physical examination coupled with a strong awareness of the possibility of cancer will usually lead to a reasonable suspicion if not to an absolute diagnosis. In doubtful cases laboratory and roentgenologic procedures will usually prove of value. In situations where reasonable doubt persists, even after careful study, surgical exploration should be considered.

It should be remembered that the presence of another cause for a particular symptom does not exclude the possibility of a concomitant neoplasm. A good illustration of this point is furnished by the simultaneous occurrence of a calculus and a neoplasm in the pelvis of a bleeding kidney. It should also be remembered that symptoms from a persistent cause may be intermittent. Thus, hematuria from both renal and bladder cancers is apt to be intermittent and the spontaneous cessation of bleeding hardly means a spontaneous resolution of the neoplasm. Unfortunately many patients and unforgivably many physicians have been lulled into a false sense of security by the fortuitous cessation of hematuria, frequently coincident with the administration of some totally irrelevant medication.

Early diagnosis still offers the greatest immediate hope in the battle against cancer and it is the general practitioner who has the first opportunity to wield this weapon.

(Number twenty-four in a series of Cancer Alerts)

We do not count a man's years, until he has nothing else to count.—Emerson

CASE REPORTS

Prolonged Depression of the Radioactive Iodine Uptake Following Ingestion of Iodopyrine in a Patient with Thyrotoxicosis

JACK GELLER, M.D., MOUNT KISCO, NEW YORK

(From the Northern Westchester Hospital)

Numerous studies have established the fact that organic and inorganic iodides interfere with radioactive iodine studies of thyroid function in euthyroid patients. Infrequent instances are reported, however, of prolonged depression of the radioactive iodine^{131} uptake in patients with untreated thyrotoxicosis following iodide ingestion. The present report concerns a patient who was observed over an eleven-month period while receiving radioactive iodine therapy for hyperthyroidism. An unusual aspect of the case was the persistent depression of the radioactive iodine uptake below normal limits on five occasions during the initial eight months of observation. These levels were observed at a time when the patient exhibited overt clinical hyperthyroidism. In a search for possible causes of the discrepancy between laboratory and clinical findings, it was finally discovered that the patient had taken medication containing iodopyrine for asthma at two- to three-day intervals over the preceding twenty-five years. The influence of iodopyrine on the uptake of radioactive iodine by the thyroid gland has not been reported previously.

Case Report

A sixty-five-year-old white male was referred for treatment of thyrotoxicosis in May, 1957. He had been working and in good health until February, 1957. At that time he noted the onset of fatigue, a 20-pound weight loss despite a good appetite, increasing nervousness, visible trembling of all extremities, insomnia, and palpitations. He had noted dyspnea on exertion, but no orthopnea, myasthenia, eye changes, or enlargement of the neck. Except for healed apical turberculosis many years previously, there was no history of major illness.

The initial physical examination revealed a thin, white male who appeared chronically ill. Obvious fine tremors of both upper extremities and tongue were noted. The palms were warm, but not moist. The thyroid gland was estimated to weigh 30 Gm. with slight nodular enlargement of the right lower lobe. The chest was barrel-shaped with diminished respiratory excursions of the rib cage. The breath sounds were diminished in intensity with no rales or wheezes. The heart was not enlarged. The cardiac rhythm was totally irregular with a ventricular rate of 120 and a pulse deficit of 10 to 12 beats per minute. There was no enlargement of the liver, distended neck veins, or peripheral edema. The blood pressure was 170/70; the body weight was 125 pounds. The radioactive iodine uptake at twenty-four hours was 7 per cent.

The patient denied iodide ingestion from the usual sources and had never received iodine-containing opaque media for x-ray film studies. No dietary intake of goitrogens was elicited. It was finally ascertained that the patient had taken felsol powders for the past twenty-five years. The powders had been prescribed for mild asthma twenty-five years previously in Czechoslovakia, and he had continued to take about three powders weekly from that time until the present. Each felsol powder weighs 1 Gm. and consists of 0.869 Gm. of antipyrine, 0.031 Gm. of iodopyrine, and 0.1 Gm. of citrated caffeine. It was felt that an increased iodide pool would therefore best explain the low radioactive iodine uptake. The patient was instructed to discontinue felsol and was placed on 600 mg. of propylthiouracil daily. He was also digitalized without influence on the cardiac rate.

One month later there was moderate clinical improvement and weight gain. The radioactive iodine uptake was 21 per cent two days after the discontinuation of propylthiouracil. Protein-bound iodine was 10.4 gamma per cent with a total blood iodine of 12 gamma per cent. Two weeks later, 7 millicuries of radioactive iodine were administered.

Two months after the therapeutic radioactive iodine, the patient had deteriorated. A repeat twenty-four-hour radioactive iodine uptake was now 13 per cent. It was decided to withhold further radioactive iodine therapy until the radioactive iodine uptake was at a higher level. The patient was therefore restarted on 800 mg. of propylthiouracil daily.

Over the next two months on propylthiouracil, his symptoms of thyrotoxicosis improved considerably, so that by October 19, 1957, five months after initial observation, the patient had gained a total of 10 pounds in weight and no longer complained of palpitations or shakiness. The pulse rate was now 80 per minute and totally irregular. Radioiodine studies were repeated for the fifth time on October 19, 1957, two days after stopping antithyroid medication. The radioactive iodine uptake was found to be 20 per cent at six hours and 21 per cent at twenty-four hours. It was decided to attempt definitive therapy with radioactive iodine again, despite the low radioactive iodine uptake, and on October 26, 1957, a second dose of 12 millicuries was given.

Two months later, and three weeks after the discontinuation of propylthiouracil, the patient was greatly improved and complained only of infrequent palpitations. There had been a further weight gain of 3 pounds. A minimal fine tremor of the outstretched hands was still present. The pulse rate was now 80 per minute and still totally irregular.

One month later, without further therapy, the cardiac rhythm spontaneously reverted to a regular sinus rhythm with a pulse and ventricular rate of 104 per minute. The twenty-four-hour radioactive iodine uptake was now 49 per cent.

Persistent mild thyrotoxicosis was thought to be present clinically. The radioiodine studies, although frequently not reliable following therapeutic radioactive iodine, were now consistent with the clinical state. A third dose of radioactive iodine consisting of 4 millicuries was therefore given on February 1, 1958. Two months later the patient was clinically euthyroid and without complaints. He weighed 145 pounds, and his pulse rate was regular at 76 per minute. A twenty-four-hour radioactive iodine uptake on April 1, 1958, was 20 per cent.

Comment

A transient depression in the thyroidal radioactive iodine uptake following the administration of any iodine compound would be expected as a result of an increased body iodide pool. However, the persistent reduction of the radioactive iodine uptake on five occasions over an eight-month period in a patient who exhibited overt classical thyrotoxicosis over the same period of time is not as easily explained in terms of iodide pools. The protein-bound iodine test, performed just before the first treatment with radioactive iodine, was 10.4 micrograms per cent, considerably below the range seen in patients following the ingestion of organic iodides. Furthermore, the plasma inorganic iodide level, measured at the same time, was less than 2 micrograms per cent one month after discontinuing iodopyrine. This level, according to Benotti and Benotti,[1] is not suggestive of an enlarged extrathyroidal iodide pool resulting from previous iodide administration. It is the stated experience of Werner,[2] Rall,[3] and Keating,[4] that following the administration of Lugol's solution to patients with thyrotoxicosis, the radioactive iodine uptake returns to elevated levels within two to three weeks. This return to baseline values is more rapid than that seen in similarly treated normal subjects. The difference has been attributed to the more rapid metabolic turnover of iodide in patients with thyrotoxicosis. Rall[3] noted a twenty-four-hour radioactive iodine uptake of 70 per cent in a patient with thyrotoxicosis one month after discontinuing Lugol's solution administered daily for four consecutive years.

Keating,[4] on the other hand, states that the twenty-four-hour radioactive iodine uptake may be depressed for a period up to one year in hyperthyroid patients given gallbladder dye. Presumably, residual depots of dye continuously augment the body iodide pool as long as they are present.

Little is known about the pathways of iodopyrine metabolism in man. However, this substance bears a close chemical resemblance to aminopyrine and antipyrine. The latter two are distributed in total body water and disappear from plasma at the rate of 6 per cent per hour.[5] If iodopyrine is similarly metabolized, it should disappear from body water stores in a relatively short time.

Despite previously mentioned arguments to the contrary, a strong possibility still exists that the ingested iodopyrine resulted in a significant and prolonged alteration of the extrathyroidal iodide pool. The eventual elevation of the radioactive iodine uptake in this patient to 49 per cent after eight months of observation is in keeping with this concept.

Other possible causes of the depressed radioactive iodine uptake in the patient were considered. A diagnosis of subacute thyroiditis could not be borne out by the clinical findings and the clinical course. A rapid turnover of radioiodine and a shortened effective half-life of the isotope was ruled out by a six-hour radioactive iodine uptake of 20 per cent on October 19, 1957.

No complete explanation is forthcoming for the observations in the present case. The facts do indicate that a normal or low twenty-four hour radioactive iodine uptake should not be a deterrent to the diagnosis of thyrotoxicosis in the presence of adequate clinical evidence of the disease.

The data in the present case strongly suggest that iodopyrine must be added to the list of iodine compounds interfering with radioactive iodine studies of thyroid function.

Summary

In a patient with overt thyrotoxicosis, cured with radioactive iodine over an eleven-month period, twenty-four hour radioactive iodine uptake studies were repeatedly low or low-normal for the first eight months. Although the evidence is not conclusive, it is felt that the previous administration of iodopyrine for twenty-five years accounted for the discrepancy between the radioactive iodine studies and the clinical picture.

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Radiation fear is the latest food fad, reports the Nutrition Foundation. Faddists are frightening the public with stories of possible radiation damages caused by vegetables and meat grown in areas where atomic arsenals and testing grounds are located. All foods have a limited amount of natural radioactivity. There is no scientific indication that radiation in common foods at levels now reaching the market causes body harm, says the Nutrition Foundation.

Government agencies are obligated to be extremely careful, of course, to prevent a local or general build-up of radiation materials that could become dangerous.

Systemic Scleroderma

JOSEPH JOEL FRIEDMAN, M.D., UNADILLA, NEW YORK

(*From the Department of Medicine, The Hospital, Sidney, New York*)

THIS case is reported because it is a classic example of scleroderma; the patient demonstrated practically every sign and symptom of the disease during the twenty years he had it.

The essential microscopic lesions in scleroderma consist of degenerative and sclerotic changes in the connective tissue throughout the body with obliterative lesions in the arterioles. The patient is prone to relapses and remissions but nevertheless pursues an unrelenting deteriorating course.[1]

Lewin and Heller[2] credit the earliest descriptions of this disease to Zacutus Lusitanus in 1634, Diemerbroeck in 1660, and Curzio of Naples in 1752. Gintrac in 1874 is believed to have been the first to use the term "scleroderma."

Its highest incidence is in the fourth and fifth decades of life but it may occur at any age and has been reported in an infant girl and in persons in the seventh decade.[3,4]

Its cause is unknown; there is no generally accepted theory regarding the development of symptoms.

Case Report

FIRST ADMISSION.—*Present History.*—A fifty-one-year-old white, married dairy farmer was admitted to the Mary Imogene Bassett Hospital in Cooperstown, New York, on November 14, 1938, complaining of arthritis or rheumatism in his hands and feet of twelve months duration, indigestion and burning in his stomach of eight months duration, severe loss of appetite of two months duration, and a loss of thirty pounds in weight.

He stated that after silo-filling time in the fall his fingers had begun to swell and feel stiff, with the skin becoming warm and red and sweating a good deal. Shortly after this his feet had become warm, red, and stiff. The stiffness of his hands and feet became more marked, more painful, and more crippling. He grew pale and weak and came to the hospital for help.

Past History.—His past history threw no light on the problem. He always was quite healthy. He had had a tonsillectomy as a young man but no other operations, injuries, or diseases other than the childhood ones. As a child he had had measles, mumps, whooping cough, and chicken pox. He rarely had a headache, never fainted, and had good hearing and vision. His teeth were poor, and many had been extracted. He never had had significant symptoms referable to his respiratory, genitourinary, cardiovascular, or neuromuscular systems. His usual weight was 185 pounds.

He left school at thirteen years of age to work in a lumber mill, which he did until he was thirty-four years old. Since then he was a dairy farmer. He was married thirty years and had two children living and well. He never used alcohol or tobacco.

Physical Examination.—Physical examination revealed a fifty-one-year-old white male, alert and cooperative, in no distress, and neither cyanotic nor jaundiced. His temperature was 99.8 F., respirations 20, pulse 80, and blood pressure 112/70. His skin was well tanned and firm with pigmentation about the neck and forearms; there were no eruptions. His head was bald; his eyes, ears, and nose were entirely normal. His neck was not stiff; there were no glandular enlargements. His thorax was symmetric and moved well on respiration. His lungs were clear and resonant throughout. His heart was normal in size and shape with good sounds, regular sinus rhythm, and no murmurs. Abdomen, genitalia, and rectal examination findings were normal in all respects. All reflexes were physiologic and normal. The spine had no loss of motion and was not tender.

Both hands and feet were swollen and edematous. The skin was red, mottled in color, warm, moist, and firm. It seemed to be thicker than normal. Motion was slightly limited, with no tenderness. A good dorsalis pedis pulse was felt. The fingers of the hands were fusiform in shape; the nails, fine and curved. There was no clubbing nor tremor. There were no varices of the legs.

The admission diagnosis was a questionable rheumatoid arthritis, a questionable vascular disorder, and a protein deficiency due to faulty diet.

Laboratory Examination.—Urinalysis findings were negative. The red cell count was 5,500,000 with 17 Gm. per cent hemoglobin, and the white cell count was 6,050 with 70 per cent polymorphonuclears. The Wasserman blood test gave a negative result, as did the streptococcus agglutination test. The sedimentation rate was 5 mm. in one hour, and the glucose tolerance test gave a negative result. Skin tests for grasses, weeds, trees, and foods gave negative results. The basal metabolic rate was minus 5 and 0. The gastrointestinal series of tests gave normal findings.

X-ray films of the hands and feet showed no definite abnormalities of the bones. An x-ray of the skull showed nothing unusual. The electrocardiogram was normal.

Blood studies showed ascorbic acid 0.35 mg. per cent, serum protein 6.54 Gm. per cent, albumin 4.09 Gm. per cent, and globulin 2.45 Gm. per cent (with the albumin-globulin ratio 1.67).

Diagnosis.—Further questioning of the patient elicited from him that for the past six weeks he had experienced stiffening of the face and jaws, making chewing difficult, and stiffening of his abdominal muscles.

The clinical diagnosis of scleroderma was arrived at, supported by the thickening of the skin of the hands and feet, the brawny edema of the hands and feet, the acrocyanosis, and the stiffness of the muscles of the face and of the muscles in general. He was discharged on November 22, 1938, after nine days in the hospital.

COURSE OVER THE NEXT TWENTY YEARS.—The patient continued to show progressive signs and symptoms of scleroderma for the next two years. In the late summer of 1940 he went into a sudden collapse suggestive of adrenal failure. He was treated with 10 cc. of adrenal cortical extract, given as one injection intramuscularly, and with a salt solution orally and intravenously. His recovery was remarkable.

He was continued on small doses of adrenal cortical extract and on a high-salt, high-protein, and high-fat diet. He gained 12 pounds, felt stronger, was up and around, and seemed to be in remission. The adrenal cortex extract was discontinued after several months.

On August 12, 1945, he was admitted to The Hospital, Sidney, New York, for extreme weakness, cough, nausea, and vomiting. His weight was 125 pounds. His blood pressure was 90/60. He was treated with adrenal cortical extract 1 cc. every two hours, ephedrine sulfate $^3/_8$ grains every four hours, and hypertonic saline solution intravenously and orally. He left the hospital four days later in very good condition.

On March 10, 1951, he was readmitted to The Hospital with nausea, vomiting, exhaustion, and loss of weight. These signs and symptoms began thirteen weeks before admission and grew progressively worse; he had resisted hospitalization during this episode.

His weight now was 90 pounds. His skin was tight and hard all over his body. He had pains in the muscles of his body and chest. He had fixed flexion of the fingers, and his head was beginning to look skull-like. His spine was stiffening a little, and his ankles were quite stiff. Movement at the shoulders, elbows, wrists, hips, and knees was very limited.

He was treated for four days with saline intravenously, adrenal cortical extract, testosterone, vitamin B_{12}, and the B complex parenterally in large doses and soon managed to get back on a high-carbohydrate, high-protein, and high-salt diet. He seemed to recover quickly and felt quite well for the next four years. His disability due to stiffness increased and he was now bedridden.

On July 2, 1955, he was again brought to The Hospital, this time for seven days. He had marked weakness, difficulty in swallowing, crippling of his extremities, marked pallor, and a small bed sore of his sacral region.

He now weighed 95 pounds and looked all skin and bones. He had a marked sclerodactylia with complete contracture deformity of both hands. His blood pressure was 170/80; he had a regular sinus rhythm, a faint systolic blow at the apex, and an enlarged heart.

Laboratory findings were as follows: The electrocardiogram was abnormal and revealed myocardial degeneration. The sedimentation rate was 38 mm. in sixty minutes. Urinalysis findings were negative. The red blood count was 4,550,000 with 7.8 Gm. per cent hemoglobin, and the white cell count was 5,750 with 60 per cent segmented forms and 3 per cent eosinophils. The cholesterol content was 159 mg. per cent, chlorides (such as sodium chloride) 670 mg. per cent, and urea nitrogen 14.3 mg. per cent. His blood type was O positive.

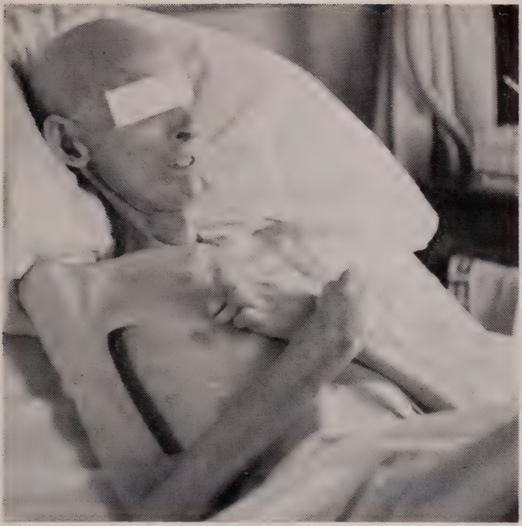

Fig. 1. Photograph of patient with systemic scleroderma taken several days before his death.

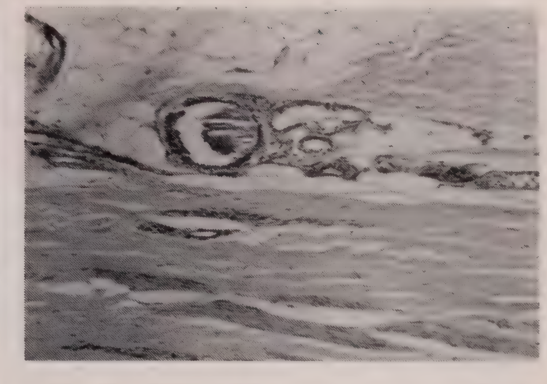

Fig. 2. Low-power microscopic view of skin section showing marked atrophy of the epidermis and focal basophilic degeneration of the dermal collagen with other histologic changes, all indicative of scleroderma.

X-ray films showed marked arthritis of the lumbar spine, pelvis, and hip joints. There was calcification of both iliac vessels and the right renal artery. After whole blood transfusions the hematocrit rose to 44 and the hemoglobin to 15 Gm. per cent.

The gastrointestinal series of tests showed that cardiospasm was present with no definite lesion of the stomach or duodenum. It was extremely difficult for the patient to swallow the barium. The impression was that the patient was suffering from scleroderma of the esophagus with stricture and spasm at the distal end and some ballooning proximally.

The patient responded very well to the same treatment and continued in good condition until 1958. His final admission to The Hospital was on May 29, 1958. He expired on June 2, 1958.

For many weeks he had been slipping rapidly—eating less, losing weight, growing paler and thinner, and finally becoming severely obstipated for one week. A large fecalith was removed from his rectum, and his bowel was relieved with high colonic irrigations.

He now weighed 55 pounds and was too exhausted and weak to swallow anything. He was unable to move. All his extremities were flexed and fixed (Fig. 1). His heart was fibrillating with a rate of 120. His blood pressure was 90/60. The electrocardiogram revealed left axis deviation, ventricular extrasystoles, first degree heart block, and a previous anterior septal infarction.

Other laboratory findings were: The urine was negative. The hematocrit was 23, hemoglobin 7 Gm. per cent, and white cell count 7,200 with 79 per cent segmented forms and 21 per cent lymphocytes. Blood chemistries were as follows: cholesterol 170 mg. per cent, glucose 53 mg. per cent, acid phosphatase 0.7 Bodansky units, alkaline phosphatase 1 Bodansky unit, potassium 5 mEq. per liter, sodium 122 mEq. per liter, urea nitrogen, 26.5 mg. per cent, total protein 5.7 Gm. per cent, albumin 3.45 Gm. per cent, and globulin 2.25 Gm. per cent.

X-ray films showed some prominence of lung markings bilaterally (more so at the right hilus). There was no gross parenchymal infiltration, and there was possible lymph node enlargement of the right hilus. The electrocardiogram revealed sinus tachycardia with ventricular extrasystoles and first degree heart block. There probably was a previous anterior septal infarction.

A skin biopsy was done. Skin section shows marked atrophy of the epidermis and focal basophilic degeneration of the dermal collagen with no clear demarcation between dermis and subcutaneous tissue. Dense collagen fibers are closely packed. No sebaceous glands are seen. Sweat glands are still present (located nearer the dermis) with hydropic degeneration of the glandular epithelium (Fig. 2). All the histologic changes are diagnostic of scleroderma of the skin.

Despite every possible treatment, the patient expired.

Comment

Orabona and Albano,[5] in a very fine study of systemic progressive sclerosis, studied the effects of the disease on all the organs of the body and report the following:

The esophageal disorder is ascribed to muscle weakness and wasting in the lower half. In most cases the gastrointestinal symptoms appear late in the disease and are of bad prognostic significance. The liver, pancreas, and spleen are rarely affected. Cardiac involvement is frequent, and when insufficiency appears it usually is irreversible. The pulmonary system may be moderately involved. The urinary system, if involved, is usually clinically silent. Arthropathies are present in all patients, skeletal muscles are involved in every case, and atrophy is common and severe. Calcinosis is a frequent finding. Neurologic symptoms are not generally reported and occur rarely.

The condition of the present patient fits the above description exactly.

Summary

A white male, married farmer was diagnosed clinically to have scleroderma when he was fifty-one years old. He died twenty years later from systemic scleroderma.

He had numerous remissions and exacerbations. The exacerbations clinically always simulated adrenal failure.

His course was progressive to death. During the twenty years of his ailment he developed every sign and symptom of the classic case.

A film of a positive skin section and a photograph of the patient's appearance three days before death are presented. Permission for autopsy was refused by his wife.

Treatment was symptomatic because no specific treatment has yet been developed. The picture of adrenal failure was a frequent and prominent one, and until his death he always responded very rapidly to adrenal cortical extract, high-salt intake, and high-protein diet.

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Potatoes consist not only of starch. Actually an average "spud" contains only 85 calories and has a water count of over 77 per cent as well as appreciable amounts of Vitamins A and C, plus some other vitamins, protein, and "trace" minerals along with calcium and phosphorous. It is not so much the lonely potato which is adding inches to the waistline, says Dr. C. G. King of the Nutrition Foundation, the "extra" often put in, on, and around the potato is the real troublemaker.

SUMMARY OF COUNCIL MINUTES

March 12, 1959

THE Council of the Medical Society of the State of New York met at the Society's headquarters, 750 Third Avenue, New York City, Dr. Leo E. Gibson, president, presiding.

Executive Committee

Communications.—Dr. W. P. Anderton, secretary, reported on the following communications acted on by the Executive Committee: (1) an invitation from Dr. Louis H. Bauer, Secretary-General of the World Medical Association, to designate observers to represent the Society at the 13th General Assembly, September 7–12, 1959, in Montreal. The Council *approved* the designation of Dr. Edward P. Flood, Bronx, as representative of the State Society. (2) A memorandum from Dr. Wagner concerning various forms of the Council minutes; the Council *approved* the report which was amended to retain the privilege of speaking off the record and not having such remarks recorded.

Miscellaneous.—The Executive Committee also reported the following: (1) that telegrams had been sent to New York State representatives in Congress asking support of the Simpson-Keogh Bill; (2) that the recommendation of the Public Health and Education Committee to defer the proposed cytologic screening survey for uterine carcinoma in New York State hospitals be voted until further details can be arranged; (3) a recommendation to the Council that the State Society invite the American Medical Association to hold its annual convention in New York City in 1965 or 1966; (4) a recommendation to the Council that the resignation of Dr. John H. Iselin, Jr., be accepted effective the end of May; (5) the approval in principle of the appointment of a full-term assistant to the executive director who was requested to present a job analysis and recommendation of approximate salary.

Dues Remissions.—The Council *voted* to remit annual State dues of one member for 1957, 3 members for 1958, and 12 members for 1959 because of illness; and 3 members for 1958 and 10 members for 1959 because of financial hardship.

The Council *approved* the report of the Executive Committee as a whole as amended.

Secretary's Report

The Council *approved* the report of the secretary which detailed appropriations by the Board of Trustees; preparations for the annual convention in Buffalo May 9 to 15; meetings of committees and other groups which he had attended; the president's appointment of Dr. David F. Gillette as chairman of the new subcommittee on glaucoma, of the Public Health and Education Committee; and the suggestion that because of the American Medical Association meeting in Atlantic City in June, the Council meet on June 4.

The Council *approved* this report.

Treasurer's Report

Dr. Maurice J. Dattelbaum presented the treasurer's report which *was approved.*

Executive Director's Report

Dr. Herbert T. Wagner detailed (1) meetings which he had attended during February and meetings which he was scheduled to attend during March and April; (2) proposed plan to service reservations for State Society officers and delegates to A.M.A. annual meetings; and (3) progress on the membership drive.

The Council *approved* the report.

Reports of Committees

Budget.—Dr. Maurice J. Dattelbaum, chairman, requested the transfer of a balance of $2,359 from the 1958 to the 1959 budget for the membership drive.

The Council *approved.*

Constitution and Bylaws.—Dr. Ezra A. Wolff, chairman, reported on some proposed revisions of the constitution and bylaws of the Medical Society of the County of Cattaraugus.

The Council *approved* the report.

Constitution and Bylaws, Special Committee.—Dr. George J. Lawrence, chairman, reported on

Resolution 58–9 that it was the committee's opinion that no change in the Bylaws is necessary and that they recommend no action be taken, regarding membership status in relation to county of residence or county of office location because the Council has proper regulatory power.

The Council *approved.*

Economics.—Dr. John C. McClintock, chairman, reported on the following: (1) the activities of Mr. George P. Farrell, director of the Bureau of Medical Care Insurance and Administrative Officer of Medicare, including the regional meeting of the Committee on Medical Services of the A.M.A. in Pittsburgh, February 28 and March 1; (2) the request of the *Subcommittee on Medical Expense Insurance* that the Council petition the Blue Shield Plans in the State to make available a contract for the low income and aged groups; (3) the statement presented by Dr. Earl C. Waterbury, chairman of the *Subcommittee on Public Medical Care*, at a public hearing of a joint legislative committee in Albany on February 19 regarding Social Welfare Department clients; (4) the report of the *Subcommittee on Liaison with the Veterans Administration* which described the government's wish to renegotiate our State-wide contract with changes which the subcommittee considered undesirable. Dr. Herbert H. Bauckus, president of the Veterans Medical Care Plan of New York, Inc., described to the Council the areas under discussion.

The Council *voted* that the subcommittee be authorized to continue its negotiations.

The Council *approved* the report as a whole.

Ethics.—Dr. Harold F. Brown, chairman, reported progress.

Legislation.—Dr. James M. Blake, chairman, reported on the major activities in the State Legislature concerning bills in which the State Society is particularly interested. A detailed discussion concerning the progress of the chiropractic bill was held and suggestions were made concerning possible contacts to be pursued in the Legislature.

The Council *approved* the report.

1958 Management Survey.—Dr. Renato J. Azzari, chairman, presented the recommendation of the committee that a Commission on Medical Services be organized as the first step in coordination and strengthening of committee work, and that this recommendation be presented to the House of Delegates.

The Council *approved.*

Nursing Education.—Dr. John M. Galbraith, chairman, reported that the committee was investigating the possibilities of promoting greater interest in nursing as a career and suggested that physicians cooperate in "career day" programs and future nurses clubs in high schools. The committee also recommended that the delegates to the A.M.A. be empowered to take appropriate action, if deemed advisable, to petition the government to establish nursing schools in government hospitals.

The Council *approved* the report.

Office Administration and Policies.—Acting for Dr. John J. Masterson, chairman, Dr. Anderton reported that the committee had approved various personnel matters; requested the purchase of an adding machine at a cost not to exceed $500, and an increase in the budget to provide for an additional employe in the administration department; and the suggestion that an associate membership for Dr. Wagner at the Cornell Club be obtained, for outside meetings as necessary.

The Council *approved* the report.

Publication.—Dr. Alfred P. Ingegno, chairman, reported that the committee had approved the reports of the editor and business manager of the JOURNAL; recommended a special subscription price of $5.00 per year for the JOURNAL be made available to interns and residents; that membership in the American Medical Writers Association be listed in the biographical section of the *Directory;* that the request of the American Medical Writers Association, Metropolitan New York Chapter, to use the Council chamber for meetings, be referred to the Council without recommendation.

The Council *voted* that this be approved in principle with details to be worked out.

He also reported that the request of Miss Grace I. West to retire as of June 1, 1959, had been received; that because of complaints as to the condition of the JOURNAL when received by members, a stronger envelope would be used; that the Reuben H. Donnelly Corporation would deliver the new 1959 *Medical Directory* in Manhattan, Bronx, Brooklyn, and Queens.

The Council *approved* the report as a whole.

Public Health and Education.—Dr. Norman S. Moore, chairman, reported on the following: (1) a meeting on February 27 with representatives of the State and New York City Health Departments to discuss a campaign to promote polio vaccine injections, with a joint letter to be signed by President Gibson and Commissioner Herman E. Hilleboe to be sent to all upstate physicians; (2) the recommendation that the Council endorse the statement by the American Academy of Pediatrics on prophylaxis of ophthalmia neonatorum; (3) that 23 programs of postgraduate education had been arranged since the last report to the Council; (4) that the committee be authorized to send a

[Continued on page 2242]

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[Continued from page 2240]

letter to all county societies and woman's auxiliaries concerning the polio vaccine campaign; and (5) that a mobile unit was to be available in the early summer to conduct multiple screening in upstate areas for glaucoma and diabetes.

The Council *approved* the report.

Public Relations.—For Dr. John F. Rogers, chairman, Dr. McClintock presented the following report of the activities of the Public and Professional Relations Bureau: (1) the second briefing session for the speakers panel on chiropractic; (2) the request to county societies to submit nominations for the 1959 annual General Practitioner Award; (3) the activities of the field representatives in their respective territories; (4) assistance to the Woman's Auxiliary; (5) routine activities of the Bureau.

The Council *approved* the report.

Cooperation with Media of Information.—Dr. John C. McClintock, chairman, recommended that the Council request the Trustees to appropriate a sum not to exceed $3,000 for the purpose of reprinting and distributing the "Guide for Cooperation."

The Council *approved* the report.

Workmen's Compensation.—Dr. Gerald D. Dorman, chairman, reported that copies of the new minimum fee schedule of the Workmen's Compensation Board had been distributed, and discussed briefly several complaints concerning inequities in this schedule.

The Council *approved* the report.

New Business

Joint Commission in New York State for the Improvement in the Care of the Patient.—President Gibson requested permission to appoint Dr. Raymond McKeeby and Dr. Samuel Z. Freedman to fill vacancies on the Joint Commission in New York State for the Care of the Patient.

The Council *approved.*

The meeting adjourned at 11:55 A.M.

The law doth punish man or woman
That steals the goose from off the common,
But lets the greater felon loose,
That steals the common from the goose.
—ANON.

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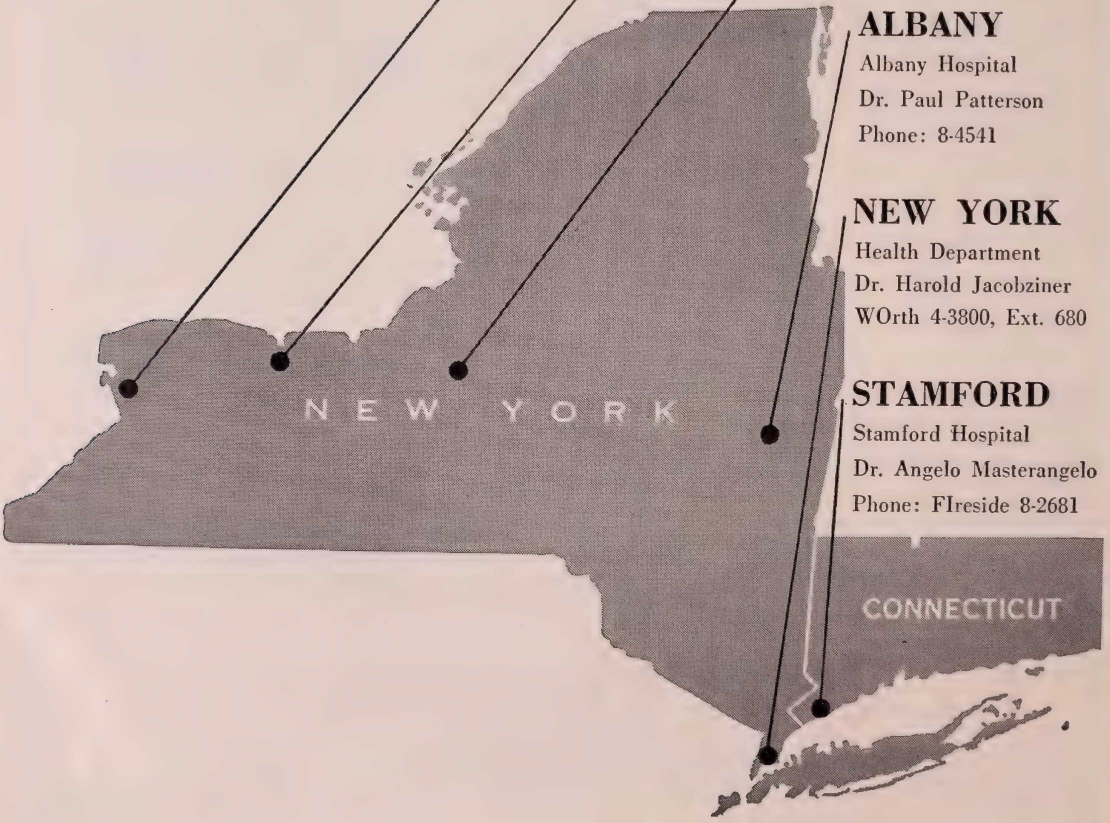

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NECROLOGY

Vincent Anello, M.D., of Brooklyn, died on April 20 at his home at the age of sixty-three. Dr. Anello graduated from Columbia University College of Physicians and Surgeons in 1921 and interned at St. Catherine's Hospital. He was an attending physician in medicine at St. Catherine's Hospital as well as chief of the medical staff there. In 1954 he was created a Knight of St. Gregory by Pope Pius XII for his services to Roman Catholic charities. Dr. Anello was a member of the American Geriatrics Society, the New York Cardiological Society, the Morgagni Medical Society of New York, the Associated Physicians of Long Island, the Kings County Medical Society, and the Medical Society of the State of New York.

Margaret Adler Blake, M.D., of Scarsdale, died on April 24 at Memorial Hospital, New York City, at the age of thirty-two. Dr. Blake graduated from New York Medical College in 1951 and interned at Queens General Hospital, New York City Hospital (now City Hospital at Elmhurst), and Veterans Administration Hospital, Albuquerque, New Mexico. She was a member of the staff at Perry Point Veterans Administration Hospital, Perrysville, Maryland.

Richard Max Brickner, M.D., of New York City, died on April 25 at Mount Sinai Hospital at the age of sixty-two. Dr. Brickner graduated from Columbia University College of Physicians and Surgeons in 1923. He was an associate in neurology at Mount Sinai Hospital. For twenty-five years he had been on the staff of the Neurological Institute of the Columbia-Presbyterian Medical Center and was a founder of the Multiple Sclerosis Society. Dr. Brickner was a Diplomate of the American Board of Psychiatry and Neurology, a Member of the American Psychiatric Association, and a member of the American Neurological Association, the Association for Research in Nervous and Mental Disease, the New York Academy of Medicine, the New York Neurological Society of which he was a past president, the New York Society for Clinical Psychiatry, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

David Chapman Bull, M.D. of New York City, died on April 18 at his home at the age of sixty-six. Dr. Bull graduated from Columbia University College of Physicians and Surgeons in 1916 and interned at Bellevue Hospital. He was an associate in surgery at Presbyterian Hospital. A founder of the Blood Transfusion Association, he served on the committee whose recommendations led to the establishment of the Presbyterian Hospital Blood Bank in 1939. He was also active on committees of the American Red Cross Blood Bank Program. From 1931 to 1945 he was acting chief of clinic at the Columbia-Presbyterian Medical Center's Vanderbilt Clinic. Dr. Bull was a Diplomate of the American Board of Surgery and a member of the New York Academy of Medicine, the New York Surgical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Irma Klausner Cronheim, M.D., retired, of New York City, died at her home on April 24 at the age of eighty-five. Dr. Cronheim received her medical degree in 1901 from the University of Halle, Heidelberg. From 1943 until her retirement in 1957 she had been a resident physician at the Oceanside (Long Island) Garden Sanitorium. She was a Member of the American Psychiatric Association and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Leighton, M.D., of Long Beach, died in Memorial Hospital, New York City, on April 26 at the age of fifty-eight. Dr. Leighton received his medical degree in 1936 from the University of Munich and interned at Jewish Hospital of Brooklyn. He was an attending physician at Long Beach Memorial Hospital. Dr. Leighton was a member of the Nassau Society of Internal Medicine, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William A. Moulton, M.D., of Candor, retired, died on April 5 at the age of eighty-seven. Dr. Moulton graduated from New York University College of Medicine in 1897. He was an associate attending physician at Tioga County General Hospital. Dr. Moulton was a member of the Tioga County Medical Society, the Medical Society

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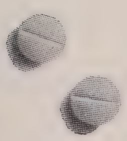

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of the State of New York, and the American Medical Association.

Reuben Ottenberg, M.D., of New York City, died in Mount Sinai Hospital on April 25 at the age of seventy-seven. Dr. Ottenberg graduated from Columbia University College of Physicians and Surgeons in 1905. He was a consulting physician at Mount Sinai Hospital. A former assistant professor of clinical medicine at Columbia University College of Physicians and Surgeons, he had also taught at the Mount Sinai Hospital nursing school as well as written a textbook "Chemistry for Nurses." Dr. Ottenberg was one of the first physicians in New York to perform a matched blood transfusion. He was a Diplomate of the American Board of Internal Medicine and a member of the American Society for Clinical Investigation, the Society for Experimental Biology and Medicine, the New York Academy of Medicine, the New York Pathological Society, and the Society for the Study of the Blood.

Percival Albert Robin, M.D., of Freeport, Manhasset, and Garden City, died on April 30 at the age of fifty-two. Dr. Robin graduated from McGill University Faculty of Medicine in 1932 and interned at Presbyterian Hospital. He was an attending in radiology at Nassau Hospital, Mineola, a consultant in radiology at Meadowbrook Hospital, Hempstead, and St. Francis Hospital and Sanatorium, Roslyn. Dr. Robin was a Diplomate of the American Board of Radiology (Roentgenology), a Fellow of the American College of Radiology, and a member of the American Roentgen Ray Society, the Radiological Society of New York State of which he was past president, the New York Roentgen Society, the Nassau Radiological Society, the Nassau County Medical Society of which he was vice-president, the Medical Society of the State of New York, and the American Medical Association.

Martin G. Vorhaus, M.D., of New York City, died on April 29 at Lenox Hill Hospital at the age of sixty-two. Dr. Vorhaus graduated from New York University and Bellevue Hospital Medical College in 1918. He was a consulting physician at the Hospital for Joint Diseases where he had formerly served as chairman of the medical board. In 1935 he received a special certificate of honor from the American Medical Association for pioneering in the clinical use of vitamin B_1 in the treatment of neuritis. Dr. Vorhaus was a Diplomate of the American Board of Internal Medicine (Gastroenterology), a Fellow of the American College of Physicians, and a member of the American Gastro-Enterological Association, the American Therapeutic Society, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jacob J. Weiss, M.D., of the Bronx, died on April 21 at the age of seventy-eight. Dr. Weiss graduated from New York University and Bellevue Hospital Medical College in 1915 and interned at Lincoln Hospital. He was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

The net of law is spread so wide
No sinner from its sweep may hide.
Its meshes are so fine and strong,
They take in every child of wrong.
O wondrous web of mystery!
Big fish alone escape from thee!
—J. J. Roche

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Division, Chas. Pfizer & Co., Inc.
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Premo
EMOCILLIN POWDE
250
with THREE SULFONAMIDES
250,000 Units

designed for the young in severe infections . . .

PREMOCILLIN "250"
WITH
THREE SULFONAMIDES

SUPPLIED
in 60 ml. bottles.

DYNAMIC ANTI-INFECTIVE THERAPY for mixed infections . . . PREMOCILLIN penicillin — triple sulfonamide combination in exceptionally palatable fluid form . . . provides a wider antibacterial spectrum; is convenient to administer and is usually well tolerated. PREMOCILLIN combines 250,000 U. potassium penicillin G and 0.5 Gm. sulfonamide (0.167 Gm. each sulfadiazine, sulfamerazine, sulfacetamide) per teaspoonful. •

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MEDICAL NEWS

Alumni Association to Hold Dinner—The Alumni Association of the College of Physicians and Surgeons, Columbia University, will hold a dinner party June 10 in the Chevy Chase Room, Marlborough Blenheim Hotel, Atlantic City. Alumni and wives are invited to attend.

Tickets may be obtained from the Alumni Office, 630 West 168th Street, New York 32, New York, or at the registration desk at the A.M.A. convention.

Physician's Art Exhibit—The twenty-second annual exhibit of art works by American physicians will take place June 8 through 12, at Convention Hall in Atlantic City.

Held in conjunction with the annual convention of the American Medical Association, the show will include over 550 works of art in oil, water color, sculpture, crafts, photography, and lithography.

The American Physicians Art Association is a national, nonprofit organization, which aims to broaden the physician's knowledge and appreciation of the arts of the past and present and to stimulate physician artists to produce works of art in the fields of painting, sculpture, photography, graphic arts, design, and creative crafts.

Further information concerning the Association can be obtained from Dr. Kurt F. Falkson, secretary, American Physicians Art Association, 7 East 78th Street, New York 21, New York.

Vocational Help for Homebound Children—A project, first of its kind in the United States, whose objective is to provide physically and emotionally handicapped "homebound" boys and girls of high school age with vocational services, was begun May 4 at the Federation of the Handicapped, New York City.

The project will be conducted cooperatively by the Federal and State Divisions of Vocational Rehabilitation, New York City Board of Education, Bureau of Physically Handicapped Children, and the Federation of the Handicapped. The demonstration project in vocational counseling and prevocational training for homebound adolescents will continue for five years at a cost of a half-million dollars which will be shared by government sources and the Federation of the Handicapped.

For more complete information concerning this program contact Mr. Milton Cohen, executive director, Federation of the Handicapped, 211 West 14th Street, New York 11, New York.

Academy of Psychodrama and Group Psychotherapy to Hold Seminar—The Academy of Psychodrama and Group Psychotherapy, under the personal direction of Dr. Jacob L. Moreno, will conduct a three-week seminar at the Group Theatre of Psychodrama of the Moreno Institute, 259 Wolcott Avenue, Beacon, New York, July 3 through 24. The seminar will deal with the philosophy and methods of psychodrama, sociodrama, role playing, sociometry, and group dynamics. A number of part scholarships are available for selected applicants.

For further details write to: The Academy of Psychodrama and Group Psychotherapy, Moreno Institute, 259 Wolcott Avenue, Beacon, New York.

Arthritis and Rheumatism Foundation Offers Awards—The Arthritis and Rheumatism Foundation offers predoctoral, postdoctoral, and senior investigatorship awards in the fundamental sciences related to arthritis for work beginning July 1, 1960. Deadline for applications is October 31, 1959.

These awards are intended as fellowships to advance the training of young men and women of promise for an investigative or teaching career. They are not in the nature of a grant-in-aid in support of a research project.

Predoctoral fellowships are limited to students who hold a bachelor's degree. Postdoctoral fellowships are limited to applicants with the degree of Doctor of Medicine, Doctor of Philosophy, or their equivalent. Senior investigator awards are made to candidates holding or eligible for a "faculty rank" such as instructor or assistant professor (or equivalent) and who are sponsored by their institution.

For further information and application forms write to: Medical Director, Arthritis and Rheumatism Foundation, 10 Columbus Circle, New York 19, New York.

New York Rheumatism Association Elects—The following officers were elected at the annual meeting of the New York Rheumatism Association April 14, at the New York University-Bellevue Medical

[Continued on page 2252]

JUST 1 TABLET DAILY

WHENEVER SULFAS ARE INDICATED

KYNEX*

Sulfamethoxypyridazine Lederle

provides therapeutic sulfa levels for 24 hours... Highly soluble... rapidly absorbed... produces fast, sustained plasma-tissue concentrations. Simple, easy-to-remember, single 0.5 Gm. daily dose. No crystalluria.[1]

with low incidence of sensitivity reactions... Extremely low in toxic potential. [2,3] No cutaneous or other objective reactions seen in a wide scale study of clinical toxicity. [2] Even minor subjective reactions are not expected to occur [2] or are reported absent [3] when recommended schedule is used.

TABLETS, 0.5 Gm., bottles of 24 and 100. New ACETYL PEDIATRIC SUSPENSION, cherry flavored, 250 gm. sulfamethoxypyridazine activity per teaspoonful (5 cc.), bottles of 4 and 16 fl. oz.

1. Editorial: New England J. Med. 258:48, 1958.
2. Vinnicombe, J.: Antibiotic Med. & Clin. Ther. 5:474, 1958.
3. Sheth, U. K., et al.: Ibid., p. 604, 1958.

LEDERLE LABORATORIES, a Division of **AMERICAN CYANAMID COMPANY**
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*Reg. U.S. Pat. Off.

[Continued from page 2250]

Center: President, Dr. James A. Coss, Jr.; Vice-President, Dr. Harry Bartfeld; Secretary-Treasurer, Dr. Albert W. Grokoest.

Course in Postgraduate Gastroenterology—The American College of Gastroenterology will hold its annual course in postgraduate gastroenterology at the Biltmore Hotel, Los Angeles, California, September 24 through 26.

The subject matter of the course will cover the advances in diagnosis and treatment of gastrointestinal diseases and a comprehensive discussion of diseases of the mouth, esophagus, stomach, pancreas, spleen, liver and gallbladder, colon, and rectum.

For further information and enrollment write to the American College of Gastroenterology, 33 West 60th Street, New York 23, New York.

Blue Cross Applies for Increase—Blue Cross has applied to the State Insurance Department for an average increase of 34.2 per cent in subscription charges to become effective September 1, 1959. Mr. Charles Garside, chairman of the board and president of Associated Hospital Service of New York, reports that the action was voted by the Associated Hospital Service board of directors to halt the depletion of Blue Cross reserves and to provide for higher payments to hospitals which are threatened by growing financial losses caused by the rising cost of care and demands for higher wages for hospital employes.

American Board of Obstetrics and Gynecology—Applications for certification by the American Board of Obstetrics and Gynecology, new and reopened, Part I, and requests for re-examination, Part II, are now being accepted. Candidates are urged to make application at the earliest possible date. Deadline for receipt of applications is August 1, 1959.

Candidates are requested to write to the office of the secretary for a current bulletin in order that they might be well informed as to the present requirements.

Application fee, photographs, and lists of hospital admissions must accompany all applications.

Conferences at Montefiore Hospital—The following conferences are scheduled at Montefiore Hospital in June:

Monday, June 1, 8, 15, 22, and 29–8:00 A.M., surgical conference; 9:00 A.M., pathologic conference, neoplastic; 1:30 P.M., attending rounds, neoplastic; 3:00 P.M., clinical medicine conference.

Tuesday, June 2, 9, 16, 23, and 30–12:30 P.M., psychosomatic medical conference; 12:30 P.M., electrocardiography conference; 4:00 P.M., cardiovascular surgical conference; 2:30 P.M., pulmonary medical-surgical conference.

Wednesday, June 3, 10, 17, and 24—8:30 A.M., alternating rounds, neoplastic; 1:30 P.M., grand rounds, neoplastic; 3:00 P.M., clinical medical-pathologic conference.

Thursday, June 4, 11, 18, and 25—8:00 A.M., radiologic-pathologic conference; 9:00 A.M., alternating rounds, neoplastic; 1:30 P.M., attending rounds, neoplastic; 1:30 P.M., diagnostic-radiologic conference; 3:30 P.M., gastroenterologic conference; 3:30 P.M., rehabilitation conference.

Friday, June 5, 12, 19, and 26—9:30 A.M., neurologic-neurosurgery staff conference; 1:30 P.M., attending rounds, neoplastic; 3:30 P.M., neoplastic seminar; 3:30 P.M., dermatologic conference.

Course in Brain Functioning—A pioneering course in brain functioning will be offered at Cornell University in September. The course, entitled "Brain Mechanisms and Models," will be tried on an experimental basis for one year. It will deal with the relationships between mechanical functioning and the processes of thinking and knowing, and with the extent to which man-made mechanisms can duplicate human intellectual processes.

For information concerning the course contact Mr. John Mason Potter, director, Cornell University News Bureau, 111 Day Hall, Ithaca.

Doctor Meets Prime Minister Nehru—Dr. Abraham Stone, director of the Margaret Sanger Research Bureau, New York City, and India's Prime Minister, Jawaharlal Nehru, exchanged greetings and ideas at the recent International Planned Parenthood Federation conference in New Delhi.

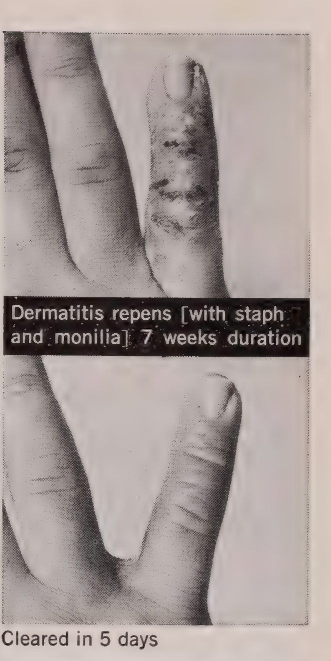
Dr. Stone was a guest of the Indian Government Health Service for several weeks, during which time he observed India's birth control program and held seminars for physicians and public health workers. He also visited clinics in East and West Pakistan, Indochina, Hong Kong, the Soviet Union, Japan, and the Philippines.

Prosthetic and Orthetic Technician Training—The Institute for the Crippled and Disabled in New York City has announced that it is accepting applications for its 1959–1960 training courses for prosthetic and orthetic technicians. The nine-month courses will begin on September 14, 1959, and end on June 24, 1960.

Application forms and other information may be obtained by writing to the Director, Prosthetic and

[Continued on page 2254]

new for total management of itching,[1,2] inflamed,[3,4] infected[5,6] skin lesions


Dermatitis repens [with staph and monilia] 7 weeks duration

Cleared in 5 days

Mycolog

Kenalog, Spectrocin and Mycostatin in Plastibase

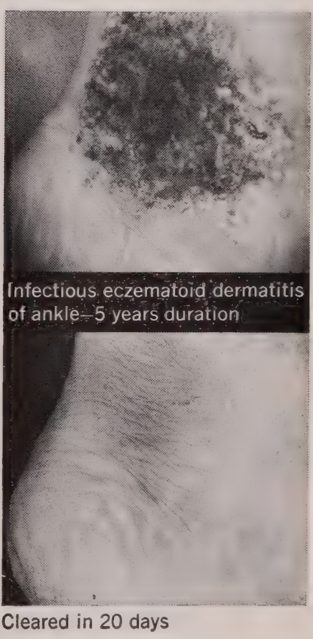
ointment

antipruritic/anti-inflammatory/antibacterial/antifungal

Mycolog Ointment—containing the new superior topical corticoid Kenalog—reduces inflammation,[3,4] relieves itching,[1,2] and combats or prevents bacterial, monilial and mixed infections.[5-7] It is extremely well tolerated, and assures a rapid, decisive clinical response for most infected dermatoses.

> "Thirty-one of 38 patients . . . obtained excellent or good control of dermatological lesions . . . [Mycolog] was highly effective, particularly in the management of mixed infections. Several recalcitrant eruptions which had not responded to previous therapy were remarkably responsive to the daily application of this preparation over periods of 2 to 3 weeks."[5]

For total management of itching, inflamed, infected skin lesions, Mycolog contains triamcinolone acetonide, an outstanding new topical corticoid for prompt, effective relief of itching, burning and inflammation[1-4]—neomycin and gramicidin for powerful antibacterial action[7]—and nystatin for treating or preventing Candida (Monilia) albicans infections.[8,9]


Infectious eczematoid dermatitis of ankle—5 years duration

Cleared in 20 days

Application: Apply 2 to 3 times daily. Supply: 5 Gm. and 15 Gm. tubes. Each gram supplies 1.0 mg. (0.1%) triamcinolone acetonide, 2.5 mg. neomycin base, 0.25 mg. gramicidin, and 100,000 units nystatin in PLASTIBASE.

References: 1. Shelmire, J.B., Jr.: Monographs on Therapy 3:164 (Nov.) 1958. • 2. Nix, T.E., Jr., and Derbes, V.J.: Monographs on Therapy 3:123 (Nov.) 1958. • 3. Robinson, R.C.V.: Bull. School of Med., U. Maryland 43:54 (July) 1958. • 4. Sternberg, T.H.: Newcomer, V.D., and Reisner, R.M.: Monographs on Therapy 3:115 (Nov.) 1958. • 5. Clark, R.F., and Hallett, J.J.: Monographs on Therapy, 3:153 (Nov.) 1958. • 6. Smith J.G., Jr.; Zawisza, R.J., and Blank, H.: Monographs on Therapy, 3:111 (Nov.) 1958. • 7. Monographs on Therapy, 3:137 (Nov.) 1958. • 8. Howell, C.M., Jr.: North Carolina M.J. 19:449 (Oct.) 1958. • 9. Bereston, E.S.: South. M.J. 50:547 (April) 1957.

And whatever the topical corticoid need, a suitable Squibb formulation is available—Kenalog-S Lotion—7½ cc. plastic squeeze bottles. Each cc. supplies 1.0 mg. (0.1%) triamcinolone acetonide, 2.5 mg. neomycin base and 0.25 mg. gramicidin. Kenalog Cream, 0.1%—5 Gm. and 15 Gm. tubes. Kenalog Lotion, 0.1%—15 cc. plastic squeeze bottles. Kenalog Ointment, 0.1%—5 Gm. and 15 Gm. tubes.

SQUIBB

Squibb Quality — the Priceless Ingredient

'SPECTROCIN'®, 'MYCOSTATIN'®, 'PLASTIBASE'®, 'MYCOLOG' AND 'KENALOG' ARE SQUIBB TRADEMARKS

[Continued from page 2253]

Orthetic Laboratories, Institutes for the Crippled and Disabled, 400 First Avenue, New York 10, New York.

Personalities

Honored

Dr. Dominick F. Maurillo, Brooklyn, with a dinner given by UNICO National, a national service-fraternal organization, in appreciation for his "inspirational leadership in the field of education."

Awarded

Dr. Goodwin M. Breinin, chairman of the Department of Ophthalmology, and Daniel B. Kirby Professor of Research Ophthalmology, New York University-Bellevue Medical Center, the 1959 Edward Lorenzo Holmes Memorial Award of the Institute of Medicine of Chicago. . . Dr. Harry W. Fritts, Jr., assistant professor of medicine, Columbia University, a grant for the study of feedback control of organ function, from the John Simon Guggenheim Memorial Foundation. . . Dr. Burton Zweiman, a post-doctoral fellowship in research and clinical allergy by the Allergy Foundation of America.

Elected

Dr. John E. Heslin, professor of urology at Albany Medical College, as president-elect of the American Urological Association . . .Dr. Herman E. Hilleboe, New York State Commissioner of Health, as chairman of the New York State Interdepartmental Health Resources Board. . .Dr. Edward C. Hughes, Syracuse, as first vice-president of the American College of Obstetricians and Gynecologists. . .Dr. A. A. Karan, director of the Bronx Hospital, as president of the Greater New York Hospital Association. . .Dr. Theodore R. Miller, New York City, as president of the American Radium Society. . .Dr. Gray H. Twombly, New York City, as first vice-president of the American Radium Society.

Speakers

Dr. Ralph Banay, Greenmont-on-Hudson, at the annual meeting of the Central Neuropsychiatric Association in Chicago, March 19. . .Dr. Edmund Prince Fowler, New York City, at a conference on Health Aspects of Hearing Conservation in Washington, D.C., May 18 and 19. . .Dr. William M. Hitzig, New York City, on May 11 before the Society of Medical Jurisprudence. . .Dr. Sandor Lorand, New York City, at the Veterans Administration Hospital, Northport, Long Island, April 7. . .Dr. Gordon McNeer, New York City, at the monthly meeting of the Medical Society of Jefferson County, April 21. . .Dr. Howard A. Rusk, New York City, at a fund rally in behalf of Lawrence Hospital in Bronxville. . .Dr. William B. Terhune, New Canaan, Connecticut, before the hospital staff of the Veterans Administration Hospital at Northport, Long Island.

O, let us love our occupations,
Bless the squire and his relations,
Live upon our daily rations,
And always know our proper stations.
—Dickens

For your
**WHITE
MOUNTAIN**
Holiday!

Forest Hills

HOTEL AND COTTAGES
Franconia 15, New Hampshire

You'll love the club-like character of this famed mountain resort, beautifully situated on 200 scenic acres. Private golf course, heated swimming pool, tennis, riding stables, spring-fed trout pool. Cocktail lounge, dancing, great cuisine. Hay fever free.

George W. Collier, President
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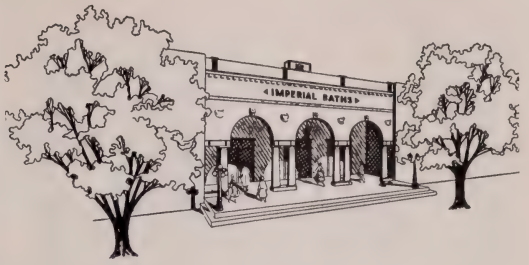


Stubborn cases of arthritis and rheumatism will often respond to complete relaxation in pleasant surroundings.

That has proved to be especially true at Sharon Springs, N. Y. Here, balneotherapy (sulphur water baths, massage, Nauheim baths and related treatments) has combined with bracing mountain air and a restful atmosphere to "perform wonders" for patients with these disorders.

A new color brochure on this old-established spa, 50 miles west of Albany, will gladly be sent to you or the patients you specify.

**WHITE SULPHUR BATHS, Inc.
Sharon Springs 3, N. Y.**
*Charter Member, Association of American Spas
(Medically Supervised)*

general use...
in general practice

fast, effective and long-lasting relief from...

BURNS — sunburn, cooking, ironing

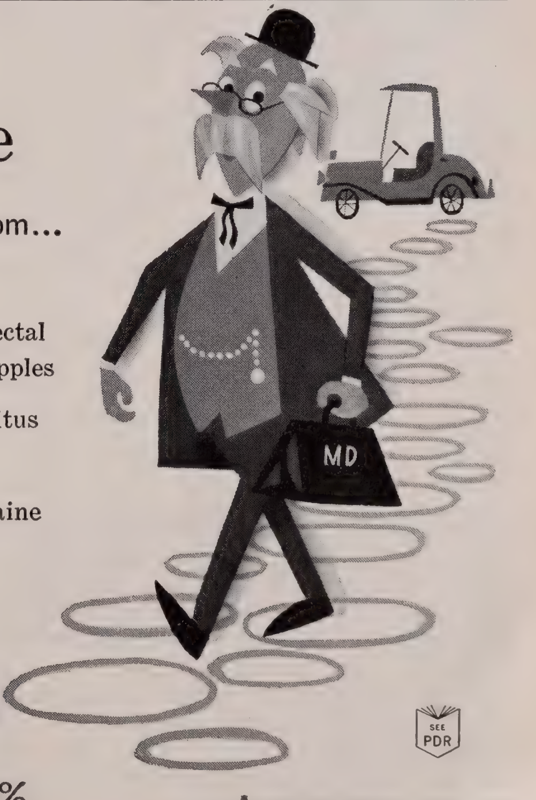
PAIN — hemorrhoids and inoperable anorectal conditions, cuts and abrasions, cracked nipples

ITCHING — insect bites, poison ivy, pruritus

The water-soluble, nonstaining base melts on contact with the tissue, releasing the Xylocaine for immediate anesthetic action. It does not interfere with the healing processes.

Astra Pharmaceutical Products, Inc.,
Worcester 6, Mass., U.S.A.

XYLOCAINE®
(brand of lidocaine*)
OINTMENT 2.5% & 5%



SEE PDR

*U.S. PAT. NO. 2,441,498 MADE IN U.S.A.

Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

Editor's Note: *Because of its interest not only to the Woman's Auxiliary but also to the members of the Medical Society of the State of New York, we are pleased to publish portions of the inaugural address of Mrs. James L. McCartney, Garden City, State Auxiliary president for the coming year, as presented on May 13, 1959, at the annual Auxiliary convention in Buffalo.*

President's Inaugural Address

. . . Since the first objective of the Auxiliary to the American Medical Association, of which we are a component part, is to assist our doctors in their program for the continuing advancement of medicine and public health, it is imperative that we have an understanding of the problems confronting American medicine today, and also a knowledge of just how organized medicine is seeking a solution to these problems. Just over one hundred years ago Abraham Lincoln said, "If we could first know where we are, and whither we are tending, we could better judge what to do and how to do it." Therefore, it is a must that all Auxiliary officers have the advice of their advisory committees when making plans for the year's program, so that they may know where they are and where they are going, and what and how. This holds true for our county auxiliaries just as much as it does on State and national levels. In each county we must have the closest contact with the medical society, and fortunate is that county auxiliary which has in its medical society, leaders, men of vision who are aware of the trends and patterns of the times.

Each county, of course, must fit its projects and activities to meet the needs and program of its own county medical society and community. But at the same time, *no* county should lose sight of the "priority projects" chosen by our State and national organizations. Just what are priority projects? Priority projects become priority projects at the direct request of organized medicine, whether on the county, State, or national level. It is quite necessary that this be understood by our membership. Our priority projects are not the whims of a few but have been assigned to us after careful consideration. This gives to these projects the prestige and importance they should have, and we do not lightly cast them aside. . . . Working with our doctors on projects assigned to us by them gives us that feeling of partnership which lends dignity to our work as a medical auxiliary and sets this field apart from any other activity in which we might engage. We are sharing in the high calling of our husbands' profession.

Briefly, let us consider the projects for this year which have been high on the priority list.

The Medical Society of our State requests us to:

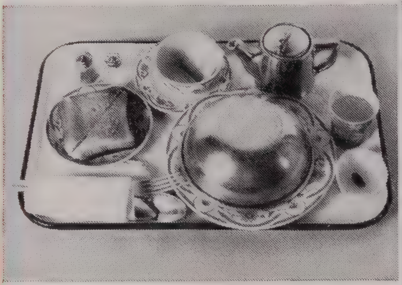
1. Assist in opposing legislation on State level which, if passed, would be detrimental to the medical profession and to the general public.
2. Help raise funds for the Physicians' Home.
3. Assist in educating the general public in such fields as civil defense, mental health, health hygiene, medical careers, and voluntary health plans. Our State Fair Project and our Health Poster Contest are two of the means we use to this end.
4. Promote good public relations by being ourselves informed and understanding.

The American Medical Association requests its Auxiliary to:

1. Assist in raising funds for the American Medical Education Foundation.
2. Assist in opposing Federal legislation which, if passed, would be harmful to the medical profession and to the general public.
3. Assist the A.M.A. in the circulation of its publication for the laity, *Today's Health.*

[Continued on page 2260]

CORN
FLAKES
Viterra



3 to make ready

ready to recover
ready to rebuild
ready to resist

That's the patient with the right form of VITERRA on his regimen! This comprehensive vitamin-mineral formula is ideal in frank nutritional deficiency states (VITERRA Therapeutic) or in daily supplementation (VITERRA Capsules, VITERRA Tastitabs® and VITERRA Pediatric).

VITERRA Therapeutic: when high potencies are indicated.

VITERRA Capsules: 10 vitamins, 11 minerals for balanced daily supplementation. Now in a soft, soluble capsule this small ▶ for added patient convenience.

VITERRA Tastitabs: VITERRA the way children like it best. Chew it, swallow it, let it melt in the mouth. Dissolve it in liquids, or add it to the formula.

Or prescribe convenient, delicious **VITERRA Pediatric** in the unique new Metered-Flow bottle.

Dosage: usually one capsule or Tastitab daily.

Supplied: CAPSULES: in 30's and 100's.
TASTITABS: bottles of 100.
VITERRA PEDIATRIC: 50 cc. bottles.

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New York 17, N. Y.
Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being

about waking up at 2 A.M.

nebralin®

timed-release tablet

timed-release action for a full night's sleep

NEBRALIN is designed to duplicate the normal sleep pattern. It encourages muscular relaxation and induces sustained, relaxed sleep by the release of Dorsital and mephenesin in a timed-release tablet. Rapid-acting mephenesin quickly relaxes skeletal muscles to overcome "fatigue-tension" and conditions the body for sleep. Dorsital provides CNS sedation to induce sound, relaxed sleep. The initial and sustaining dosages are designed to keep the amount of barbiturate to be inactivated at any one time at a low level tapering toward morning. Evidence indicates that mephenesin is capable of producing sleep,[1] and when combined with a barbiturate enhances barbiturate action.[2,3] Moreover, the integrated action of the two components permits smaller dosages of each,[4] assuring your patients refreshed awakenings without "morning hangover."

1 Schlesinger, E. B.: Tr. New York Acad. Sc. 2:6, (Nov.) 1948.
2 Richards, R. K., and Taylor, J. D.: Anesthesiology 17:414, 1956.
3 Shideman, F. E.: Postgrad. Med. 24:207, 1958.
4 Berger, F.: Pharmacol. Rev. 1:243, 1949.

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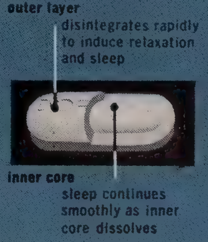
For those patients who complain

carries your patients through the middle of the night


outer layer
disintegrates rapidly to induce relaxation and sleep
inner core
sleep continues smoothly as inner core dissolves

Each Nebralin timed-release tablet contains:

Dorsital* .... 90 mg.
Warning: May be habit forming

Mephenesin ....425 mg.
*Dorsey brand of pentobarbital

CAUTION: Federal law prohibits dispensing without prescription

Dosage: One or two tablets ½ hour before retiring.

[Continued from page 2256]

4. Promote safety. The accident is the leading cause of death among American children from one to fourteen years of age.
5. Assist in recruitment for medical careers.

These then are the highlights of our proud and ambitious program. How can we carry out such a program? Certainly only by accepting the challenge it offers and only by being dedicated to it. . . .

In the community, ours is a role of leadership if we choose to make it so. When we launch a project in the community and it becomes established, let us be content for others to carry it on. Much work, even in the field of health, can be done by lay groups when they have been shown the way. We can be leaders in the service organizations of the community, but we must not become bogged down in them! Too many doctors' wives are lost to us in this way. Here is the challenge of leadership. By all means, let us lead; let us initiate; but then let us remember to delegate so that we may remain free for the larger task.

It is our duty and our privilege to serve in the struggle that is being waged today to keep our American way of life. It is also our privilege as doctors' wives to help in the struggle that organized medicine is waging to keep the free enterprise system of the private practice of medicine. On every hand it is being threatened. It is being threatened by cults, by labor, by something called security, and by government itself. More and more people, some of them doctors and doctors' wives, are willing to let the government take responsibility. They need to remember: "Any government big enough to give you everything you want is big enough to take away everything you have." We must help our doctors answer the challenge facing organized medicine. The work we do for them in legislation and the support we give to medical education are of paramount importance.

As our theme for the year, I have chosen, "Facing Our Challenge." In facing the challenge of these critical times, our first need is to increase our membership, and then let us lead that membership to put these first things first. If we are able to do this, we shall be well on our way to "Facing Our Challenge."

Mrs. James L. McCartney, *President*

223 Stewart Avenue
Garden City, New York

Antibiotics Should Not Be Used in Cosmetics

The inclusion of antibiotics in cosmetics was opposed recently in a report of the American Medical Association. There is no evidence that "constant degerming" of the skin, such as would be presumed to occur with the use of antibiotics in cosmetics, is "necessarily always or even frequently desirable," according to the report appearing in the April *A.M.A. Journal.* The report was written by two New York dermatologists, Drs. Carl T. Nelson and Marion B. Sulzberger, for the A.M.A. Committee on Cosmetics.

Antibiotics are now being used in deodorants to help kill bacteria and thus reduce odor. They have also been suggested for inclusion in face creams and in blemish lotions, according to Veronica L. Conley, Ph.D., committee secretary.

In a note, Dr. Conley said, "The persistent trend toward the incorporation of pharmacologically active ingredients into cosmetics has caused growing concern among the medical profession . . . .Medical experience provides considerable evidence of the health implications in the widespread, prolonged or indiscriminate use of antibiotics."

There is essential agreement, the report said, that antibiotics generally useful in the treatment of systemic infections should not be used in cosmetics. However, it has been proposed that certain other antibiotics (bactracin, neomycin, polymyxin, and tyrothricin) be permitted in cosmetic preparations. Even these, which are rarely used other than on the skin, carry certain dangers, according to the report. Some persons may be sensitive to the drugs and develop allergic reactions from continued contact.

In addition, little information is available about the possibly harmful effects of the various antibiotics after absorption through the skin.

The possibility of bacteria becoming resistant to the effects of the antibiotics may be increased through prolonged use of the drugs. This would mean that when the drugs must be used to treat a disease caused by a resistant strain of bacteria, they would be ineffective.

In conclusion, the report said, "Except for the deodorant action of such agents in reducing axillary odors, their incorporation in cosmetics has not been proved to be of specific value, and their widespread use in cosmetics could well represent an increased risk to general public health as well as to certain hypersensitive individuals."

From all over America

HOSPITAL STAFFS ACCLAIM 'SENOKOT' IN THE TREATMENT OF CONSTIPATION

'Senokot' Tablets and Granules are routinely prescribed in more than 3000 hospitals from coast to coast an overseas. 'Senokot' is preferred, not only by hospitals, but by an ever-growing number of physicians fo the safe, physiological correction of constipation. Following are typical comments, among many, fro hospitals throughout the United States:

CHARLOTTE, NORTH CAROLINA

"...not one of the patients has experienced any untoward reaction nor has there been any evidence of diarrhea in the infants of post-partum mothers who were breast feeding."

"...nurses...report that they no longer have complaints of abdominal 'griping' pain which was so prevalent heretofore with the usage of harsher laxatives in postpartum patients."[1]

BERWYN, ILLINOIS

"...standard item in the obstetrical service at MacNeal Memorial Hospital."[2]

SCHENECTADY, NEW YORK

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"...have been used mainly with patients who complained of constipation as a side effect of chlorpromazine therapy."[5]

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"...certainly effective clinically..."[7]

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"...cut down the number of enemas required by approximately 60 per cent..."[8]

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untoward accidents have occurred thus far on o
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for our patients."[12]

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"...unquestionably it has reduced the instances
enemas in our Institution."[13]

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"...we are recommending it for our patients."[14]

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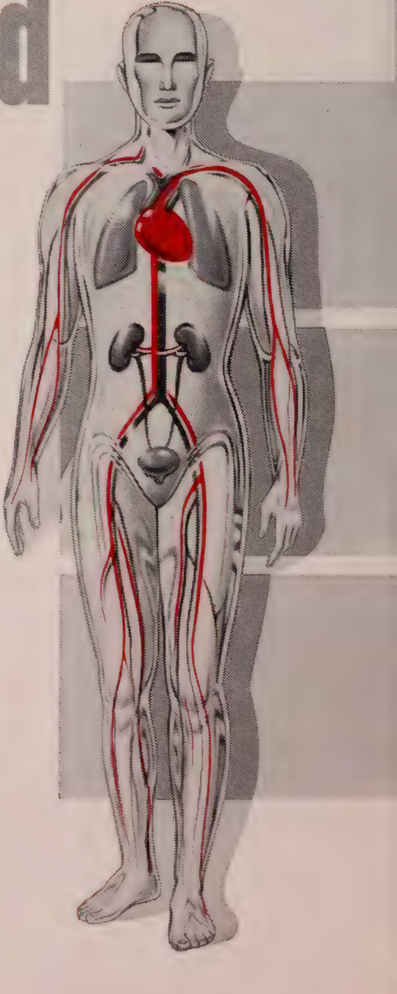

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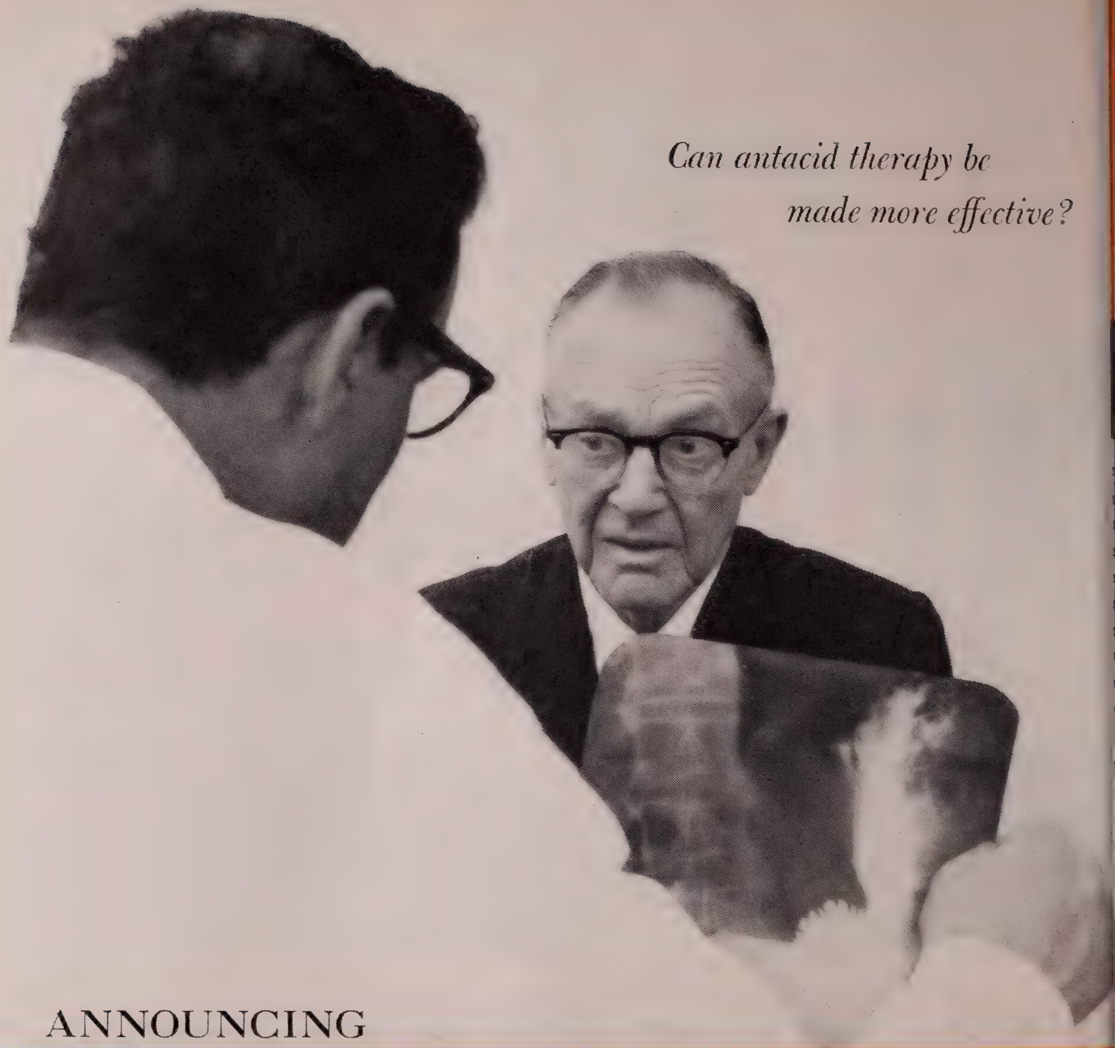

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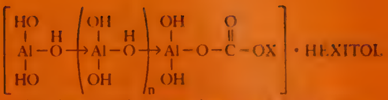

$$\left[\begin{matrix}HO\\ |\\ Al\\ |\\ HO\end{matrix}-\overset{H}{O}\rightarrow\left(\begin{matrix}OH\\ |\\ Al\\ |\\ OH\end{matrix}-\overset{H}{O}\right)_n\rightarrow\begin{matrix}OH\\ |\\ Al\\ |\\ OH\end{matrix}-O-\overset{\overset{O}{\|}}{C}-OX\right]\cdot \text{HEXITOL}$$

n is at least 1 and averages less than 6. X is a cation.

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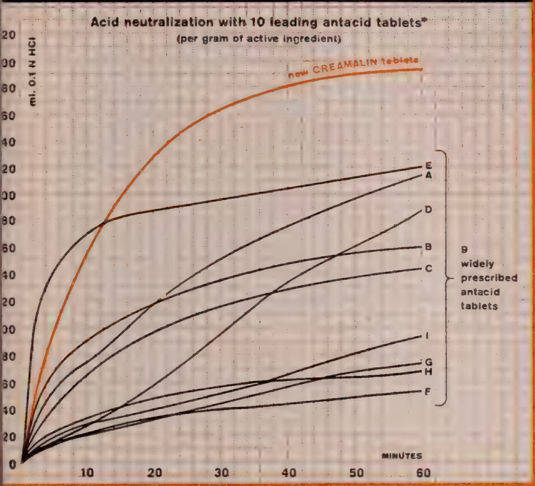

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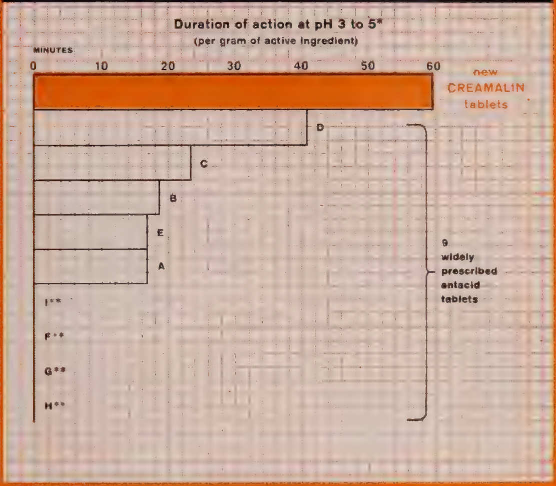

*Hinkel, E. T., Jr., Fisher, M. P. and Tainter, M. L.: A new highly reactive aluminum hydroxide complex for gastric hyperacidity. To be published

**ph stayed below 3

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NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Alpha Omega Alpha Lecture—Commander George F. Bond, currently assistant officer in charge, Medical Research Laboratory, U.S. Naval Submarine Base, New London, Connecticut, gave the annual Alpha Omega Alpha lecture on April 23. In ceremonies preceding the lecture Dr. Victor N. Tompkins, assistant comissioner of health, and a member of the faculty, and Edward P. Baker, Jr., New York City; Howard J. Dworkin, Putnam Valley; Robert E. Knack, Jeffersonville, New York; Irving M. Polayes, New Haven, Connecticut; Amnon Rosenthal, Miami, Florida; Marvin J. Godner, Forest Hills; Donald E. Kamm, Rochester; and Richard P. Propp, Albany, all students, were initiated as members of the medical honor society.

Commencement Speaker—Honorable Arthur S. Flemming, Secretary of Health, Education, and Welfare, delivered the address at the 129th commencement exercises on May 28.

Appointed—Dr. Wilbur A. Thomas, associate professor of pathology, Washington University School of Medicine, St. Louis, has been named professor of pathology and chairman, Department of Pathology, to become effective July 1. Dr. Thomas succeeds Dr. Arthur W. Wright who has reached retirement age and has headed the department for twenty-five years. Dr. Wright will continue as professor of pathology and as an active member of the Department.

Columbia University, College of Physicians and Surgeons

Jesup Lectures—The 1959 Jesup Lectures were delivered by Dr. Erwin Chargaff, professor of biochemistry at the College. The lectures, were established in 1905 in honor of Morris Ketchum Jesup.

New York University College of Medicine

Christian A. Herter Lecture—Dr. Feodor Lynen delivered the Christian A. Herter Lecture on April 23.

This program is designed to stimulate the student's interest in medical and biologic research and the lectures are given twice a week by distinguished scientists from other institutions on topics of current interest.

New York University Post-Graduate Medical School

Grant—The U.S. Public Health Service has awarded a grant of approximately $200,000 for a training project in the field of human genetics with emphasis on cardiovascular research. The project will be under the direction of Dr. Charles F. Wilkinson, Jr., Department of Medicine.

State University of New York Downstate Medical Center

Adam M. Miller Memorial Lecture—Dr. Charles S. Davidson, associate professor of medicine, Harvard Medical School, delivered the 23rd Adam M. Miller Memorial Lecture on April 20. The lecture was established in 1936 by the Theta Chapter of the Phi Lambda Kappa fraternity in honor of the late Adam M. Miller, professor of anatomy, and dean of the College of Medicine from 1914 to 1935.

[Continued on page 2268]

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[Continued from page 2266]

State University of New York Upstate Medical Center

Research Fellowship—Dr. Robert E. Greenberg, research fellow in pediatric endocrinology, received a postdoctoral research fellowship from the National Foundation for study in Sweden. Dr. Greenberg will continue his studies in the laboratory of Professor U.S. von Euler, Fysiologiska Institutionen, Karolinska Institutet, Stockholm.

Symposium—A Symposium on Molecular Genetics and Human Disease was held on April 23 and 24 as part of the observance of the Center's Dedication Year. Among the persons present were Drs. Vernon M. Ingram and F. H. C. Crick, Cambridge University, England; Dr. James F. Crow, professor of human genetics, University of Wisconsin; Dr. James V. Neel, chairman, Department of Human Genetics, University of Michigan Medical School; Dr. Bruce Wallace, associate professor, Department of Plant Breeding, New York State College of Agriculture at Cornell University; Dr. Howard B. Newcombe, head, Biology Branch, Atomic Energy of Canada, Ltd.; and Dr. W. L. Russell, principal geneticist, Biology Division, Oak Ridge National Laboratory. Other participants were Drs. Barton Childs, Henry N. Kirkman, and Paul A. Marks, and William H. Zinkham, Johns Hopkins, National Institutes of Health, and Columbia University, respectively. Cochairman of the subcommitte planning the symposium were Dr. Lytt I. Gardner, professor of pediatrics, and Dr. Alfred Farah, professor and chairman, Department of Pharmacology.

Graduate Training Program—The U.S. Public Health Service, Division of General Medical Sciences of the National Institutes of Health, awarded $146,000 to support a graduate training program in human genetics to Dr. Lytt I. Gardner, professor of pediatrics. The grant will provide stipends for senior postdoctoral research fellows over a five-year period.

MEDICAL MEETINGS

American Board of Legal Medicine

The American Board of Legal Medicine, Inc. will hold its annual convention at the Senator Hotel, Atlantic City, June 7.

Subjects covered at the convention will range from "Liability for Prenatal Injury," by Dr. Harold W. Mayberger, Syosset, to "Medicolegal Aspects of Senility," by Dr. Gustav Machol, Brooklyn. Dr. George A. Friedman, New York City, will also speak. His topic will be "Space Medicine."

For further information contact: Dr. George A. Friedman, secretary, The American Board of Legal Medicine, Inc., 133 East 58th Street, New York 22, New York.

Vermont Symposium on Cardiovascular Pathology

A symposium on the catecholamines in cardiovascular pathology will be held at the University of Vermont College of Medicine, Burlington, Vermont, August 23 through 26. The symposium will be subdivided into three sections: (1) pathogenic mechanisms, (2) prophylactic possibilities, (3) rationale of therapeutic procedures. Both fundamental phenomena at the cellular level and clinical implications will be discussed in order to correlate basic and clincial points of view.

For information write to: Dr. Wilhelm Raab, Professor of Experimental Medicine, University of Vermont College of Medicine, Burlington, Vermont.

American Association of Blood Banks

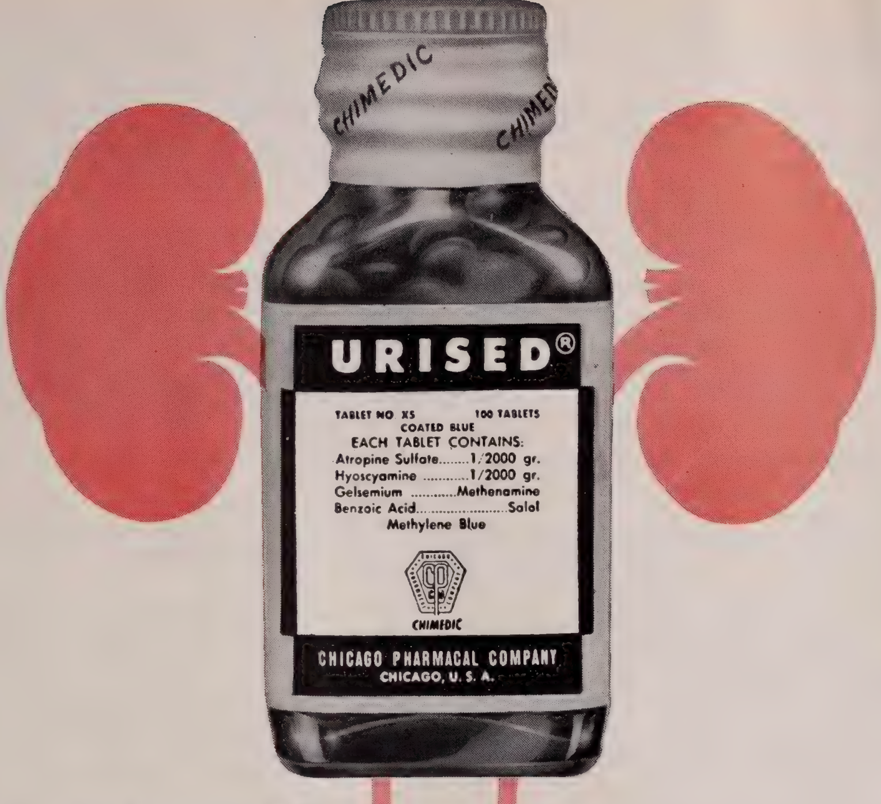
The American Association of Blood Banks will hold its twelfth annual meeting, November 4 through 7, at the Edgewater Beach Hotel, Chicago. Any member of the medical profession, administrative or technical personnel, or members of the biologic or chemical sciences interested in blood banking are invited to register.

For further information write to: Office of the Secretary, American Association of Blood Banks, 30 North Michigan Avenue, Chicago 2, Illinois.

Symposium at Long Beach, California

The second annual symposium of the medical staff of the Seaside Memorial Hospital of Long Beach, California, will be held the afternoon and evening of Wednesday, December 2.

Further information can be obtained by writing to: Dr. George X. Trimble, director, Medical Education, Seaside Memorial Hospital of Long Beach, California.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BOOKS REVIEWED

Surgical Technique and Principles of Operative Surgery. By A. V. Partipilo, M.D. Sixth edition. Quarto of 966 pages. Illustrated with 719 figures containing 1,235 illustrations, four in color. Philadelphia, Lea & Febiger, 1957. Cloth, $20.

This edition has been brought up to date by the addition of 38 new chapters. Most of these have been written by men recognized as experts on the subjects they discuss.

The description of the operative technic used by the contributors is excellent. Not all modifications of each procedure are described, only those which the contributors have found most satisfactory.

Besides operative technic, there is a discussion of the anatomic, pathologic, and physiologic principles involved. The book is well written, with excellent illustrations. Surgeons young and old will find it a very fine work to have on hand.—EDWARD P. DUNN

Heredity of the Blood Groups. By Alexander S. Wiener, M.D., and Irving B. Wexler, M.D. Octavo of 150 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $6.00.

The authors, who are well-known immunogeneticists, have devoted this volume to the fundamental concepts necessary to understand the exceedingly complex and numerous problems in genetics. The text has been divided into several chapters, each dealing with a specific blood system and its heredity. Among the blood systems described are the A-B-O, M-N-S, P, Rh-Hr, Kell, Lutheran, Duffy, and Kidd blood systems. This volume should interest geneticists and hematologists.

References are complete and this text is recommended not only for students in genetics because of its simplicity but also as a reference text in genetics and hematology.—VICTOR GINSBERG

Vascular Surgery. By Geza de Takats, M.D. Octavo of 726 pages, illustrated. Philadelphia, W.B. Saunders Co., 1959. Cloth, $17.50.

Until recent years, vascular surgery was limited to operations for varicose veins or an occasional embolectomy and various attempts to prevent rupture of aneurysms. It was believed generally that operations on the vascular system were extremely difficult and impractical. However, several bold pioneers including Holman, Gross, the author, and many others charted the course for those that followed. Through them we learned that there are underlying principles in vascular surgery. These principles apply throughout to all blood vessels. Anastamosis of blood vessels, replacement of portions of vessels, and other procedures all follow basic principles of surgery.

The author has had many years of experience in surgery of the vascular system. He has contributed immeasurably to the literature of this field both from an experimental and a practical point of view.

In the present volume, he follows a definite plan which embodies the underlying principles of hemodynamics, vascular shunts, the vasomotor apparatus, and then the clotting mechanism.

The second part of the volume is devoted to methods of diagnosis and this consists of two chapters, the history and the examination.

The third section consists of 13 chapters in which various conditions which require surgical care are taken up in detail.

The fourth section is devoted to surgical technic. Line drawings are used to depict the steps in the surgical procedure. Generally these are complete. The reader is given sufficient information to enable him to follow the steps.

There is insufficient information on the use of the various prosthetics being used today. There is no discussion of the body reaction, synthetic vessel replacement, and the mechanism of formation of a new lining by a type of tissue which acts as an endothelial layer. There are a considerable number of excellent references throughout the work. On the whole, this book gives the physician a good approach to the diagnosis and management of a considerable number of problems which beset the peripheral vascular system.—ALAN A. KANE

Applied Medical Library Practice. By Thomas E. Keys, A.B. Octavo of 495 pages. Springfield, Ill., Charles C Thomas, 1958. Cloth, $10.75.

This work covering the whole range of medical library service and management, follows rather closely the generally accepted policies and principles of modern medical library practice. In addition to technical processes usually found in this type of publication, the author has included a wealth of ancillary material relating to medical libraries, publishing and history, all of which is of

[Continued on page 2272]

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[Continued from page 2270]

considerable interest and value.

With years of experience as librarian of the Mayo Clinic, the author is well qualified to write this practical work which should appeal to those having any interest in medical literature or medical libraries. In addition to being a successful medical librarian, Mr. Keys is known for his publication on the history of surgical anesthesia and is the author of many articles pertaining to medical history and bibliography.

Chapters on abstract journals and the patients' library by associates of the author increase the value of the work. The one on abstract journals by Catherine Kennedy, Associate Librarian of the Mayo Clinic, discusses the use and importance of these journals and includes a list of current titles. The one on the Patients' Library by Ruth Tews, hospital librarian of the Clinic is filled with information of special interest to anyone having to do with providing reading matter for patients.

Each chapter is well documented with a comprehensive list of references for further reading. As a whole, the work is well done and meets the usual high standard of publications written by workers at the Mayo Clinic.—WESLEY DRAPER

Principles of Internal Medicine. Third edition. By T. R. Harrison, M.D., R. D. Adams, M.D., I. L. Bennett, Jr., M.D., W. H. Resnik, M.D., G. W. Thorn, M.D., and M. M. Wintrobe, M.D. Quarto of 1782 pages and 57 index pages, illustrated. New York, McGraw-Hill Book Co., 1958. Cloth, $18.50.

The editor has an excellent cast of editors to help him and the list of contributors is a "who's who" in medicine and has been carefully chosen. This book is divided into nine parts. Part I, "The Physician and the Patient," is concerned with the proper approach to the patient.

Part II, "Cardinal Manifestations of Disease," has been thoroughly revised, and the sections on disorders of the circulation and pulmonary function have been brought up to date. This section is not only extremely rewarding to the student of medicine, but also to the clinician who will find many helpful aids in its pages.

Part III is on biologic considerations.

Part IV, devoted to metabolic and endocrine disorders, is excellent and will be consulted often.

Part V is on disorders due to chemical and physical agents.

Part VI, on diseases due to biologic agents, is well done.

Part VII, on diseases associated with reactions to stress and to antigenic substances, is especially helpful.

Part VIII discusses diseases of organ systems.

Part IX is on care of the patient.

This book, in its presentation of the various subjects, has been aimed directly at the medical student, and discusses these subjects as the student would take them up year by year.

The discussion of main symptoms of disease is of particular usefulness to the clinician. The chapter on disorders due to alterations in barometric pressure is helpful in understanding the symptoms in these cases. There is an excellent chapter on the modes of action of antibiotics and chemotherapy of infection, which is most helpful. A good many of the antibiotics are discussed, including those used in the treatment of tuberculosis.

There are many useful tables and illustrations to complement the text, including one on complications of chemotherapy which is very detailed. In addition, there are helpful laboratory values of clinical importance in the appendix.—VINCENT ANNUNZIATA

Hormone Production in Endocrine Tumours. By G. E. W. Wolstenholme, and Maeve O'Connor. Ciba Foundation Colloquia on Endocrinology. Volume XII. Duodecimo of 351 pages, illustrated. Boston, Little Brown & Co., 1958. Cloth, $9.00.

This book is the result of the probing efforts of dedicated individuals like Dorfman, Wooley, Von Euler, Gardiner, Pincus, Furth, *et al.* The basic research in distrubances in hemostasis which lead to tumor, its development from dependency to autonomy, the isolation of distinct hormone-producing cells, enzyme relationships, and the biologic behavior of hormones in conventional and tumor environment are explored. General biologic phenomena encountered by anticarcinogenic adaptive mutations are noted. Choice clinical facts are mentioned. Conventional pathologic examination is inadequate to explain and describe tumors and must be aided by a newer armamentarium of bio- and chemical assay.—BERNARD SELIGMAN

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn 16, New York. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selections for review will be based on merit and interest to our readers.

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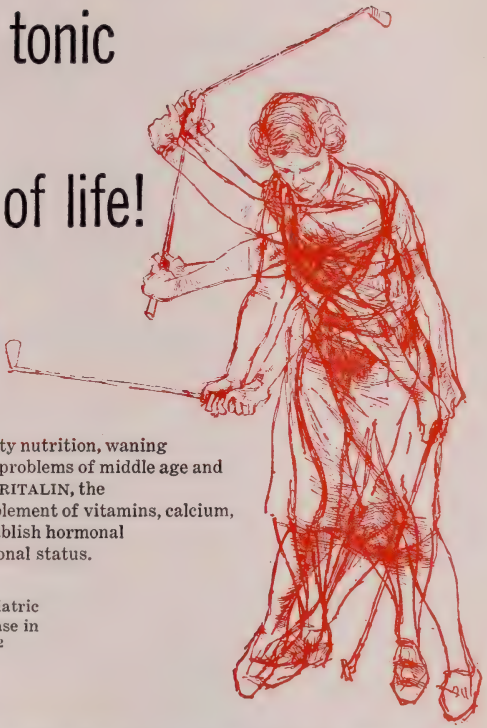

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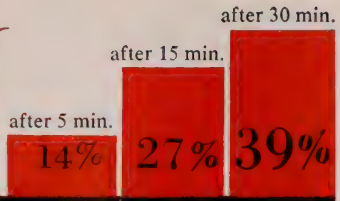

Average vital capacity of 20 patients in acute asthmatic attack was 2088 cc. before treatment.*

*Spielman, D.: Ann. Allergy 15:270, 1957.

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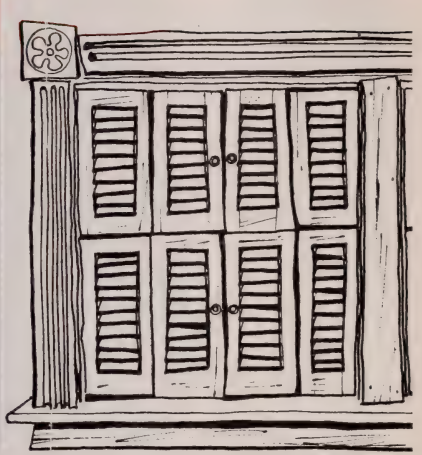

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– Schluger, J., et al.: Am. J. M. Sci. 234:28, 1957.

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(*Continued from page 2286*)

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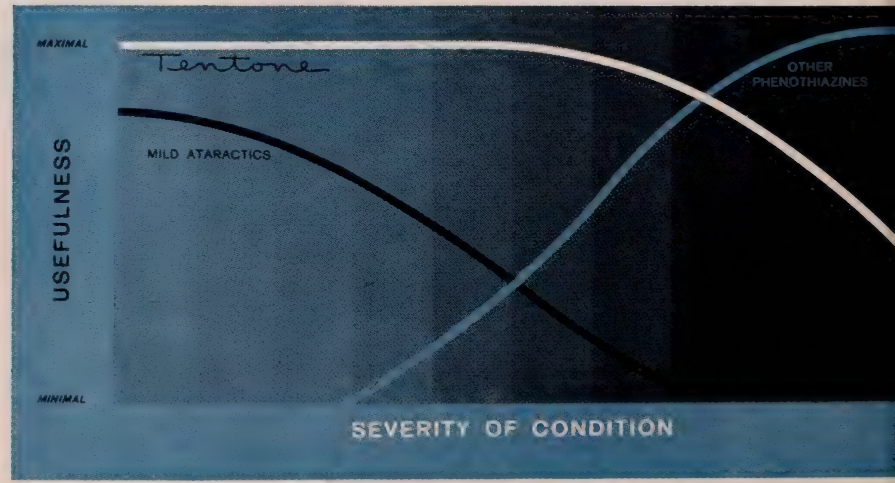

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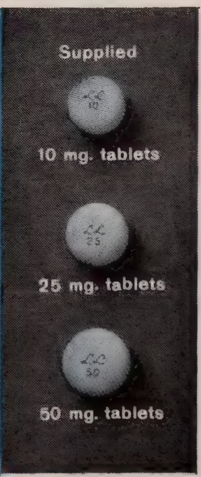

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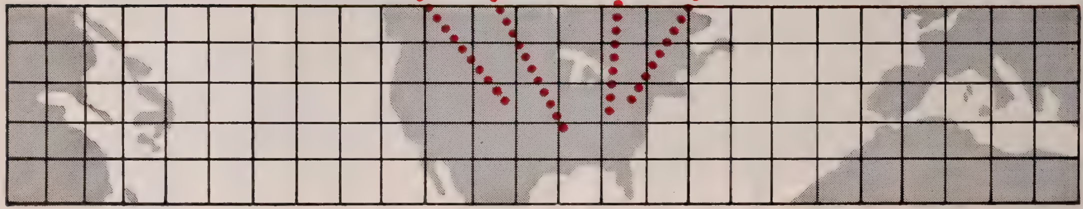

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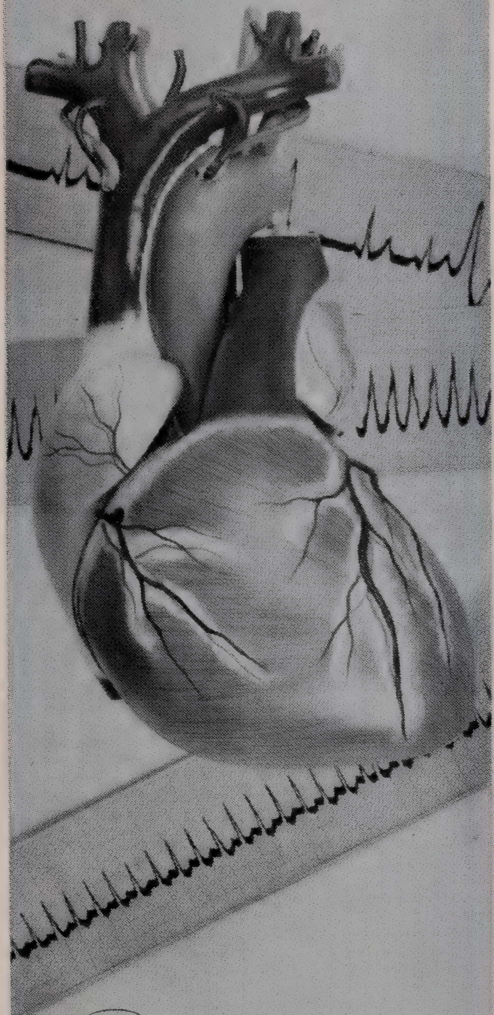

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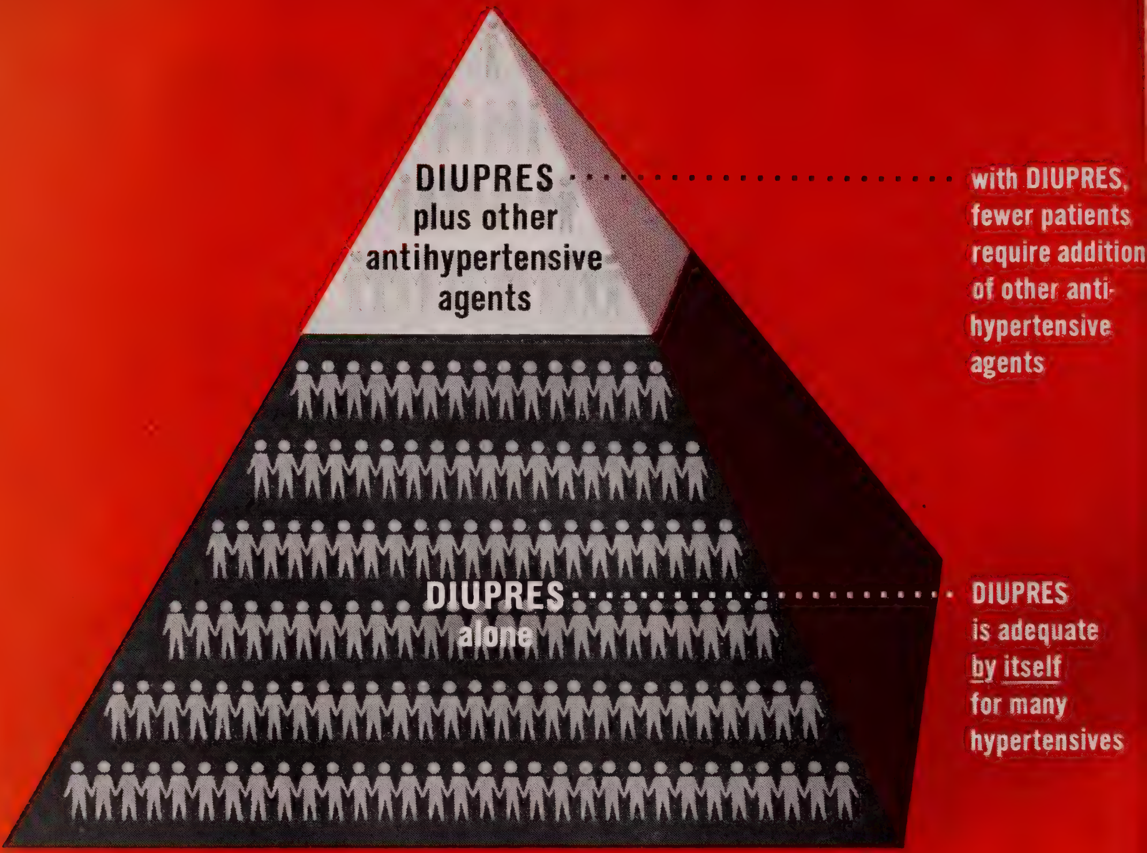
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Fostex provides essential actions necessary in treating acne. It degreases, dries and peels, and degerms the skin while the patient washes.

Fostex is well-tolerated and easy to use. Instead of using soap, patients wash with Fostex Cream or Cake, following this simple routine two or four times a day—

> Wet face and other affected areas with warm water. Massage Fostex lather into the skin for 5 minutes. Rinse and dry.

FOSTEX CREAM . . . for therapeutic washing in the initial phase of oily acne treatment. In 4.5 oz. jars.

FOSTEX CAKE . . . for therapeutic washing to keep the skin dry and free of blackheads during maintenance therapy. Also used in relatively less oily acne. In bar form.

Write for samples

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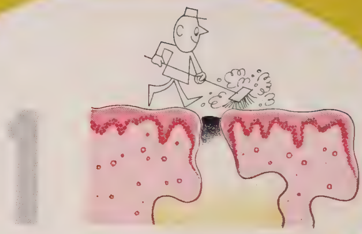
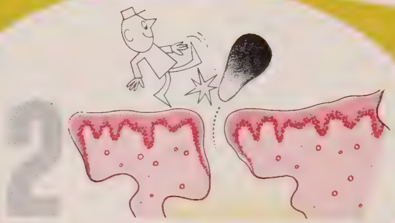
P.O. Box 31, Station G, Buffalo, New York

Makers of Lowila® Cake, Lowila Emollient, Sebulex,® Alpha-KERI,ᵀ Gentia-Jel®.

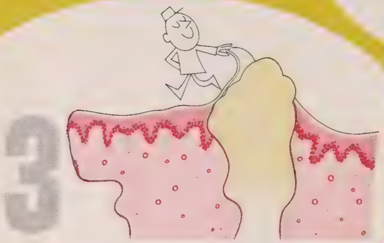
this is how
Fostex works IN ACNE



Degreases the skin



Helps remove blackheads



Dries and peels the skin

Fostex completely emulsifies and washes off excess oil from the skin. It unblocks pores by penetrating and softening blackheads and sebum plugs. Keratolytic action dries and peels the skin, removing papule coverings, thus permitting proper drainage of sebaceous glands.

Fostex effectiveness is provided by Sebulytic®, a combination of surface-active cleansing and wetting agents (sodium lauryl sulfoacetate, sodium alkyl aryl polyether sulfonate, and sodium dioctyl sulfosuccinate). These agents have remarkable antiseborrheic, keratolytic and antibacterial actions which are enhanced by sulfur 2%, salicylic acid 2% and hexachlorophene 1%.

Write for samples

WESTWOOD PHARMACEUTICALS • P.O. Box 31, Station G, Buffalo, New York

Makers of Lowila® Cake, Lowila Emollient, Sebulex,® Alpha-KERI,ᵀ Gentia-Jel®.

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given in affiliation with

COLUMBIA UNIVERSITY
JULY through DECEMBER, 1959

COURSES FOR GENERAL PRACTITIONERS

Surgical Pathology
Sept. 12 to Dec. 19; Sat., 2 to 4 p.m.

General and special pathology
Sept. 19 to Dec. 26; Sat., 3 to 5 p.m.

Radiology of the chest
Sept. 28 to Oct. 6; Mon. to Fri., 9 to 10:30 a.m.

Normal and pathological physiology
Oct. 7, 1959 to Apr. 13, 1960; Wed., 2 to 4 p.m.

Electrocardiography
Oct. 13 to 23; Mon. to Fri., 9 to 12 noon

Differential diagnosis in radiology of the chest
Oct. 13 to Dec. 21; Mon., 4:45 to 6:15 p.m.

Clinical Cardiology
Oct. 13 to Dec. 15; Tue., 2 to 4 p.m.

Differential diagnosis in gastrointestinal radiology
Oct. 13 to Dec. 15; Tue., 5 to 6 p.m.

Chemotherapy of infections and parasitic diseases
Oct. 20 to Nov. 5; Tue. & Thur., 4:30 to 6 p.m.

Diseases of the liver
Oct. 26 to 30; Mon. to Fri., 9 to 12; 2 to 5 p.m.

Clinical hematology
Oct. 27 to Dec. 15; Tue., 1:30 to 4:30 p.m.

Ophthalmoscopy for general practitioners and pediatricians
Nov. 5 to Dec. 3; Tue. & Thur., 2:30 to 4 p.m.

Office proctology
Nov. 5 & 6; Thur. & Fri., 10 to 12 and 1 to 4 p.m.

Management of diseases of metabolism for internists
Nov. 12, 13 and 14; Thur., Fri., Sat., 9 to 12:30 and 2 to 5:30 p.m.

Spatial vectorcardiography and vector interpretation of the electrocardiogram
Nov. 30 to Dec. 4; Mon. to Fri., 9 to 12 and 1 to 3 p.m.

Minor surgery for general practitioners
Nov. 30 to Dec. 2; Mon., Tue. & Wed., 8:45 to 5 p.m.

COURSES FOR SPECIALISTS

Trans-meatal (Endaural) surgery
Sept. 8 to 19; Mon. to Fri., 9 to 6 p.m.

Clinical electroencephalography
Sept. 24, 1959 to Jan. 21, 1960; Thur., 9 to 12 noon

Clinical use of radioactive isotopes
Sept. 28, 1959 to May 16, 1960; Mon., 3 to 6 p.m.

Glaucoma
Oct. 6 to 23; Tue. & Fri., 2:30 to 4 p.m.

COURSES OF WHICH DATES ARE TO BE ARRANGED

Seminar in selected topics in gastrointestinal physiology
Oct. 1959 to May 1960; one hour, twice weekly

Use of radioactive iodine
Sept. through Nov.; repeated Dec. through Feb.
Mon., Tue., Thur., Fri., 1 to 4 p.m.

Radiotherapy (full time)
a 6-month or 12-month course.

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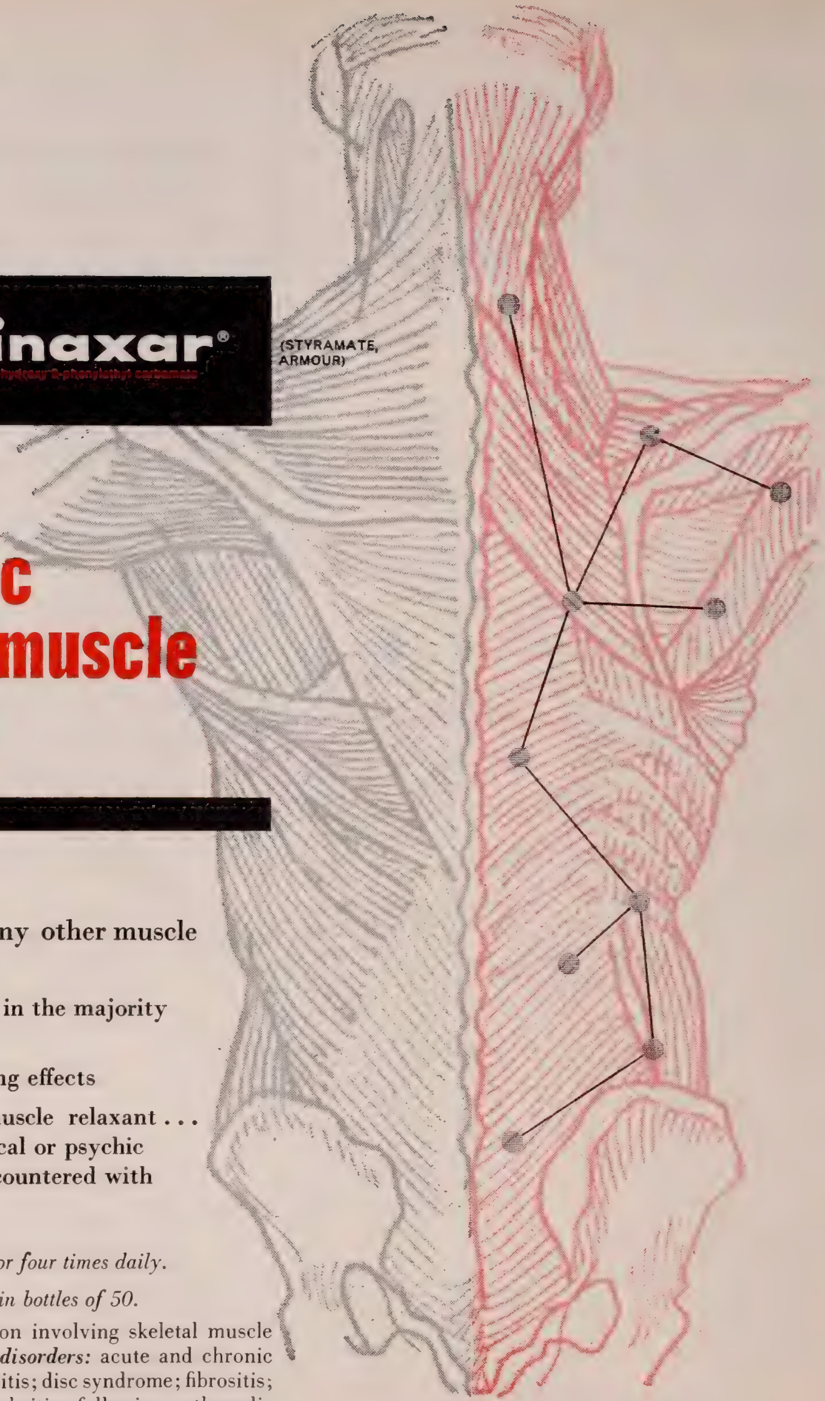

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(STYRAMATE, ARMOUR)

a specific skeletal muscle relaxant

Chemically unlike any other muscle relaxant, Sinaxar is

- consistently effective in the majority of cases
- long acting: no fleeting effects
- purely a skeletal muscle relaxant . . . free of adverse physical or psychic effects frequently encountered with tranquilizers

DOSAGE: *Two tablets three or four times daily.*

SUPPLIED: *200 mg. tablets in bottles of 50.*

INDICATIONS: Any condition involving skeletal muscle spasm, as ***musculoskeletal disorders:*** acute and chronic back ache; arthritides; bursitis; disc syndrome; fibrositis; myalgia; myositis; osteoarthritis; following orthopedic procedures; rheumatoid arthritis; spondylitis; sprains and strains; torticollis; ***neurologic disorders:*** cerebral palsy; cerebrovascular accidents; cervical root syndrome: multiple sclerosis.

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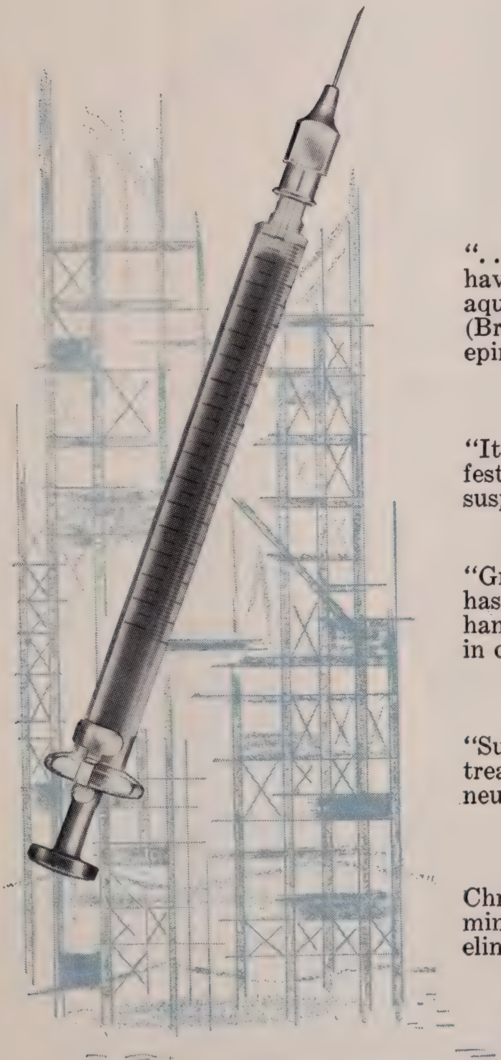
with SUS-PHRINE

(Aqueous subcutaneous epinephrine suspension 1:200)

Sus-Phrine acts quickly and its action is sustained



for

- acute bronchial asthma
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proven by long clinical use.

"... we have had considerable experience with, and have been favorably impressed by, the action of an aqueous suspension of epinephrine, Sus-Phrine 1:200 (Brewer). This material has a decided advantage over epinephrine suspended in oil."

Levin, Samuel J.: Management of the Acute Asthmatic Attack in Childhood. Ped. Clin. of N. A. *1*:975, (November) 1954.

"Its action is about as prompt as the solution, manifested in 1 to 5 minutes, and as prolonged as the oil suspension, lasting 8 to 12 hours."

Naterman, H. L.: Epinephrine Base Suspended in Water with Thioglycollate. J. Allergy *24*:60, (Jan.-Feb.) 1953.

"Greatest individual acceptance of the new injection has been by children. The dosage is small enough to be handled easily (0.30 to 0.40 cc. in adults; 0.15 to 0.20 cc. in children)."

Unger, A. H., and Unger, L.: Prolonged Epinephrine Action. A Report on Use of an Epinephrine Suspension. Ann. Allergy *10*:128, (Mar.-Apr.) 1952.

"Sus-Phrine is a valuable therapeutic adjunct in the treatment of bronchial asthma, urticaria and angioneurotic edema . . ."

Jenkins, C. M.: A Clinical Study of "Sus-Phrine", an Aqueous Epinephrine Suspension for Sustained Action. J. Nat. M. A. *45*:120. (Mar.) 1953.

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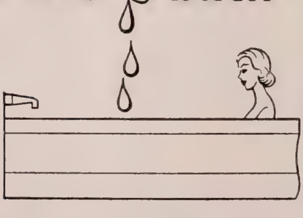
for **dryness** and **itching,** prickly heat and rash
intertrigo, insect bites, other summer skin discomforts

Sardo®

in the bath



Sardo
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1. Spoor, H. J.: N. Y. State J. Med., Oct. 15, 1958

SARDO acts promptly to help restore needed natural oil and moisture[1] to dry, itchy skin, by helping to re-establish the normal lipid-aqueous balance. Thus SARDO eases irritation, soothes, softens, brings sustained comfort.

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brand of chlorpropamide

tablets/once-a-day dosage

effective in 85% of patients who have become refractory to other oral agents

The specific pharmacologic properties of DIABINESE – high activity, freedom from metabolic degradation, and gradual excretion – permit (1) prompt lowering of elevated blood sugar levels *without a "loading" dose*, and (2) smooth, sustained maintenance "devoid of . . . marked blood sugar fluctuations"[1] on convenient, lower-cost, once-a-day dosage. This is the consensus of extensive clinical literature.[1-11] Widespread use of DIABINESE since its introduction has confirmed the low incidence of side effects reported by the original investigators.

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1. Greenhouse, B.: Ann New York Acad. Sc. 74:643, 1959. 2. Dobson, H., et al.: Ibid., p. 940. 3. Forsham, P. H.; Magid, G. J., and Dorosin, D. E.: Ibid., p. 672. 4. Beaser, S. B.: Ibid., p. 701; New England J. Med. 259:573, 1958. 5. Blöch, J., and Lenhardt, A.: Ann. New York Acad. Sc. 74:954, 1959. 6. O'Driscoll, B. J.: Lancet 2:749, 1958. 7. Hadley, W. B.; Khachadurian, A., and Marble, A.: Ann. New York Acad. Sc. 74:621, 1959. 8. Duncan, G. G.; Schless, G. L., and Demeshkieh, M. M. A.: Ibid., p. 717. 9. Handlesman, M. B.; Levitt, L., and Calabretta, M. F.: Ibid., p. 632. 10. Hills, A. G., and Abelove, W. A.: Ibid., p. 845. 11 Drey, N. W., et al.: Ibid., p. 962.

fast *welcome relief of spasm and pain is continuously reported in functional G-I disorders, such as irritable, spastic colon syndrome; peptic ulcer; biliary dyskinesia; pylorospasm; and infant colic.*

sure

relief can be expected . . . even in patients where other antispasmodics have failed.[1-3]

direct *dual antispasmodic action is specific to the G-I tract. Spasm pain is relieved by direct relaxation of the smooth muscle and postganglionic parasympathetic nerve blockage.*

safe *even in the presence of glaucoma*[4] *. . . BENTYL does not increase intraocular tension, produce blurred vision, dry mouth or urinary retention.*

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20 mg. t.i.d. (dicyclomine) Hydrochloride

1. Chamberlain, D. T.: Gastroenterology *17*:224, 1951. 2. Hock, C. W.: J.M.A., Ga. *43*:124, 1951. 3. Derome, L.: Canad. M.A.J. *69*:532, 1953. 4. Cholst, M., Goodstein, S., Berens, C., and Cinotti, A.: J.A.M.A. *166*:1276, 1958.

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Direct antispasmodic action, plus control of anxiety and tension, provide rapid, safe relief of pain, spasm and anxiety—without the side effects of belladonna, bromides or barbiturates.

FORMULA: Each scored tablet contains: meprobamate 400 mg., tridihexethyl chloride 25 mg. (formerly supplied as the iodide).

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1. Bandes, J.: Combined Drug Therapy in Gastrointestinal Disturbances; Increased benefit through diminished side reactions, Am. J. Gastroenterology, *30*:600, Dec. 1958.

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reduced Miltown® dose (200 mg.) plus full anticholinergic dose (25 mg.)

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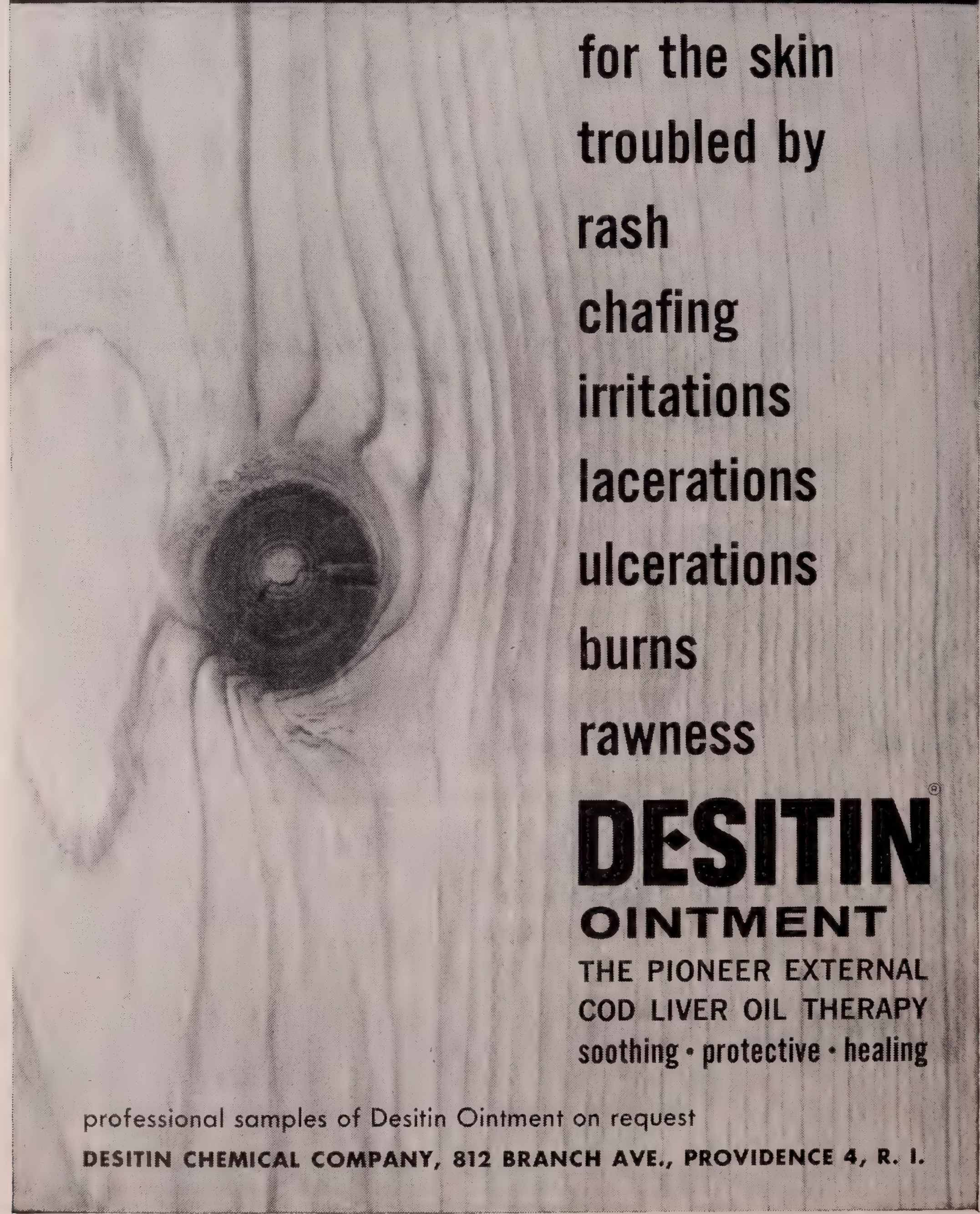

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*logger who rafts logs in a "boom"

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prescribe PARAFON in low back pain —sprains—strains—rheumatic pains

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PARAFLEX Chlorzoxazone‡ ....125 mg.
A most effective oral muscle relaxant
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The preferred analgesic for painful musculoskeletal disorders

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Supplied: Tablets, scored, pink, bottles of 50.

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in epileps

PREREQUISITE FOR EMOTIONAL ADJUSTMENT: THERAP

"The most effective form of psychotherapy is to demonstrate to the patient that his seizures can be adequately controlled by the use of anticonvulsant medication

REQUISITE FOR THERAPY

THE PARKE-DAVIS FAMILY OF ANTICONVULSANT

effective anticonvulsants for most clinical need

bibliography: (1) Carter, S. M.: *M. Clin. North America:* **315** (March) 1953. (2) Chao, D. H.: *Ibid.*, p. 465. (3) Goc man, L. S., & Gilman, A.: The Pharmacological Basis of Therapeutics, ed. 2, New York, MacMillan Company, 19 p. 187. (4) Davidson, D. T., Jr., in Conn, H. F.: Current Therapy 1958, Philadelphia, W. B. Saunders Compar 1958, p. 568. (5) Zimmerman, F. T.: *New York J. Med.* **55**:2338, 1955. (6) French, E. G.; Rey-Bellet, J., & Lenn W. G.: *New England J. Med.* **258**:892 (May 1) 1958.

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"Coincident with the decrease in seizures there occurs improvement in intellectual performance. Salutary effects of the drug on personality, memory, mood, cooperativeness, emotional stability, amenability to discipline . . . are also observed, sometimes independently of seizure control."[3]

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PHELANTIN Kapseals (Dilantin 100 mg., phenobarbital 30 mg., desoxyephedrine hydrochloride 2.5 mg.), bottles of 100.

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After five years of study, using MILONTIN in a series of 200 patients with petit mal epilepsy, one investigator reports: "Results confirm our previously published data on a smaller number of cases and show that MILONTIN is an effective agent for the treatment of petit mal epilepsy . . . relatively free from untoward side effects."[5]

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References: 1. Graham, W.: Canad. M. A. J. **79**:634 (Oct. 15) 1958. **2.** Robins, H. M.; Lockie, L. M.; Norcross, B.; Latona, S., and Riordan, D. J.: Am. Pract. Digest Treat. **8**:1758, 1957. **3.** Kuzell, W. C.; Schaffarzick, R. W.; Naugler, W. E., and Champlin, B. M.: New England J. Med. **256**:388, 1957.

Availability BUTAZOLIDIN® (phenylbutazone GEIGY): Red coated tablets of 100 mg. BUTAZOLIDIN® Alka: Capsules containing BUTAZOLIDIN® (phenylbutazone GEIGY), 100 mg.; dried aluminum hydroxide gel, 100 mg.; magnesium trisilicate 150 mg.; homatropine methylbromide, 1.25 mg.

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With Singoserp this patient's blood pressure was controlled for the first time without side effects

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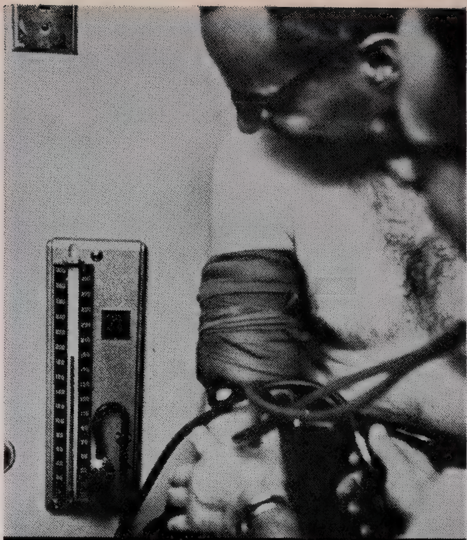
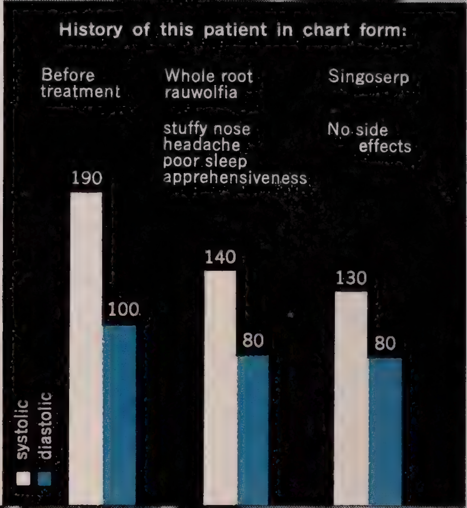


Tombstone salesman had known hypertension for 16 years; rejected by U.S. Army because of high blood pressure. Whole root rauwolfia lowered pressure satisfactorily, but patient could not tolerate side effects.



Singoserp in a dosage of 0.5 mg. daily lowered his blood pressure to 130/80, produced no side effects. Patient feels well, works well, speaks of marked improvement in outlook and function.

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IN 735 PATIENTS, BLOOD PRESSURE FELL AN AVERAGE OF 30.7 mm. Hg:

- more than half of these patients suffered from **moderate to severe hypertension**
- more than half of the cases involved hypertension of at least 6 years' standing, with **many histories of up to 20 years' duration**

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SERPASIL®
(reserpine CIBA)
for the anxious
hypertensive
with or without
tachycardia

THE SIDE-EFFECTS PROBLEM WAS MINIMIZED IN MOST PATIENTS:

Chart shows gratifyingly low incidence of side effects in 233 patients given Singoserp with no other antihypertensive medication

Side Effect	Number	Per Cent
Lethargy	7	2.9
Headache	6	2.5
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Vertigo	2	0.8
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GENERAL INFORMATION

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The Dangers of Steroid Therapy

Because the large number of patients under treatment with steroid drugs represents an equally large number of patients who are exposed to the dangers of this treatment, it is necessary to stress the need for caution in the use of these powerful and effective remedies.

Short-term treatment is defined as treatment for ten days or less, whereas long-term treatment extends for more than ten days. Since it is long-term administration of cortisone and related drugs which has been associated with striking side-effects, attention will be directed to it exclusively.

The steroid drugs have been used in treating patients with diseases such as asthma and rheumatoid arthritis for periods of many months and in some cases for several years. From time to time reports have appeared of sudden death from adrenal insufficiency or death from a bleeding or perforated duodenal ulcer in patients who have taken steroids for long periods of time. Patients on this therapy have developed psychoses. Sometimes the first indication of an untoward reaction has come with the development of a fractured vertebra as a result of steroid-induced osteoporosis. And many patients have developed the picture of Cushing's syndrome.

Kern* has described the dangers of steroid therapy in detail, listing the indications, contraindications, and precautionary principles by which the physician should be guided in prescribing the drugs. He points out a rise in the death rate in asthmatic patients and from duodenal ulcer in persons over fifty years of age following the introduction of cortisone in 1949.

The untoward effects of these drugs may result from too rapid withdrawal of the medication or from too high dosage. Since administration of the drugs is followed by suppression of function and eventual atrophy of the adrenal, sudden withdrawal of the drug can result in adrenal insufficiency. Intermittent administration of ACTH has been practiced with the hope of preventing this atrophy, but it may not be successful. It may, in fact, cause further pituitary atrophy.

Excessive amounts of the drug may lead to hypercorticism with development of Cushing's syndrome. Hypertension, edema, convulsions, mental symptoms, psychosis, decreased carbohydrate tolerance, osteoporosis, peptic ulcer, and growth arrest have all occurred. An important observation which may be overlooked is the greater frequency of toxic effects in patients over fifty.

Prednisone, prednisolone, and the newer steroids are considered safer than cortisone and hydrocortisone primarily because salt and water retention does not occur with their use. All the other toxic effects of the earlier drugs, however, do occur in relatively the same frequency and to relatively the same extent when the newer drugs are used. In fact, the lack of salt and water retention deprives the physician of a danger signal, edema, which forewarns of greater trouble.

Before long-term treatment with steroid drugs is begun it should be established that they are clearly indicated. It should be established as clearly that there is no contraindication to their use. Long-term steroid therapy should be reserved for the treatment of severe disease for which there is no other help. It should be avoided in acute infections for which there is no effective antimicrobial agent, in chronic diseases such as peptic ulcer, and in patients who have a history of previous psychosis. It should be used with great care in elderly persons.

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* Kern, R. A.: Am. J. M. Sc. 233: 430 (1957).

Every physician prescribing these drugs should have a thorough knowledge of their effects and should use them only with greatest care and after due consideration, following the patient closely and carefully for the first sign of toxicity.

The Law and the Doctor

The doctor in active practice today in this State whether he works alone, as a member of a group, or in partnership with others is confronted with an increasing number of judicial decisions. These derive from actions tried in the courts under State and sometimes Federal statutes.

It seems desirable that our membership be apprised of at least the more important of these decisions. In consequence, from time to time there will be found either in the editorial section of the JOURNAL or as special articles such material as the legal counsel of the Medical Society of the State of New York considers should be brought to the notice of the membership.

The changing patterns of the statutes are presented each year by the *Legislative Bulletins* so that all members of the Society are made aware of new State laws affecting medicine and amendments of old ones. But what happens after the statutes commence to run? Cases arise. They are tried. Gradually a body of precedent is accumulated as decisions are handed down. Not all of these decisions interpreting the statutes are of significance to the doctor. But occasionally some unusual interpretations may occur which may alter the intent of operation of the law. Of these the JOURNAL will endeavor to print the most significant as they are handed down by the courts.

No one can foretell when he or she may become involved in litigation. It is true that ignorance of law excuses no one, but on the other hand knowing what interpretations the courts place on the statutes may be a means of avoiding trouble. We hope that our readers will find these articles useful.

Need for Caution

A case which may be interesting to the medical profession and yet at the same time demonstrates the need for care on the part of a physician who executes a report is that of Gasperini *v.* Manginelli (196 Misc. 547). In that case the father of a patient sued the defendant psychiatrist for libel.

The defendant treated the son for a nervous ailment. In the course of his treatment, he had occasion to issue a writing diagnosing the son's illness and requesting that the son be admitted for observation.

The writing was given to the wife of the patient, according to the defendant psychiatrist. The father and the patient son bear the same name except that the latter had the suffix "Jr." The defendant psychiatrist had omitted, however, to add the suffix "Jr." to the name of the patient.

The father suing for libel alleged that the defendant had published the writing concerning him; that it was false; that the defendant knew it was false; that the defendant was activated by actual malice; and that the publication had injured the plaintiff's credit and reputation.

The defendant psychiatrist claimed that he wrote concerning the son; that he gave the writing to the son's wife; and that she knew it referred to the son as did the son's family to whom the son's wife may have published it.

In advance of a prospective trial the defendant moved to dismiss the cause of action by the father on the ground that it was legally insufficient, and also on the ground that it was a sham and frivolous.

The Court had before it the sole question as to whether the complaint, i.e. the first cause of action on behalf of the father, was sufficient as a matter of law. If it were, the defendant would then be required to answer it.

The Court said:

> The fact that a statement is intended to refer to and may be true of one person does not as a matter of law make it impossible to be defamatory of another. In Corrigan *v.* Bobbs-Merrill Co. (228 N.Y. 58, 63–4) the Court said "The question is not so much who was aimed at as who was hit."

The Court then went on to say:

> Whether everyone who read the writing understood that it referred to the son is a question of fact to be developed at the trial. It cannot be said as a matter of law that the first cause of action is either sham or legally insufficient, and accordingly the first and third branches of the motion are denied insofar as they are directed to the first cause of action. The fact that the writing was prima facie privilege (Ashcroft *v.* Hammond, 197 N.Y. 488) does not avail the defendant on a motion to dismiss in advance of trial (Loewinthan *v.* Beth-David Hospital 290 N.Y. 188)."

In the Loewinthan case a physician sued a hospital and certain defendants claiming slander. It appeared from the testimony of the plaintiff that the plaintiff physician had been a member of the staff of the hospital in question and had received a telephone call to come to the hospital to operate on a named patient; that on his arrival he found the patient in a private room; and that the patient told the plaintiff he was paying for everything and that he had been recommended to the hospital by a vice-president of that hospital. Before sending a bill to the patient the plaintiff had discussed the matter with the superintendent of the hospital who told him to send the regular bill, which was done but which was not paid. The plaintiff physician testified that at the suggestion of an executive director of the hospital and of the superintendent he instituted an action against the patient, but thereafter at their recommendation instructed his attorneys to discontinue the action.

The plaintiff physician further testified that subsequently he went to the hospital to perform an operation on the patient waiting there for him, and when making inquiry as to why the patient had not been taken to the operating room the telephone operator had replied that the plaintiff physician had been suspended from the staff, and that she had heard the superintendent of the hospital say that the plaintiff physician had "tried to collect money from a charity patient." This conversation, according to the plaintiff's testimony, took place in the presence of the plaintiff's patient and anyone who happened to be passing through the hallway where it occurred. The next day, he received a letter notifying him of his suspension from the hospital. According to the case report there was additional evidence on the hearing of the charges that the superintendent had told the committee that the plaintiff had tried to collect money from a charity patient.

The plaintiff physician's action for slander was dismissed by the trial court, but the Court of Appeals held:

> The complaint should not have been dismissed as against these defendants-respondents. Their communications were protected by a qualified privilege but plaintiff's proof made out a prima facie case of malice. . . .The question was for the jury.

The judgment was then reversed and a new trial granted.

How Much Is Enough?

All over the State and, for that matter, throughout the country it is becoming evident that the number of organizations in the business of collecting money for one or another disease is rapidly mounting. So rapid has been the increase that shortly there will be too few diseases with heartstring appeal to satisfy the requirements of the organizers. Already some encroachment and overlapping of the fields is noted, and interorganization strife is in the making. In any particular locality there is growing competition for the giver's dollar among the organizations—national, state, and community—in the health agency field. Where will it end?

There seems to be nothing to prevent any group from starting a new enterprise providing they register with the State Charities Bureau and file each year a certified accounting. Says the *Westchester Medical Bulletin** in part:

> It has recently become apparent that in the frantic search for a disease or diseases with appeal value, some groups are overlapping and encroaching on one another. For example, the National Tuberculosis Association recently announced plans to extend its interests to cover all phases of the respiratory system. This would include cancer of the mouth, tongue, lung; respiratory infections, rheumatic fever, and many more. Clearly, many of these diseases are already having money collected in their names by other well-established and responsible groups. The National Foundation for Infantile Paralysis which led this extension of program policy became just "The National Foundation" and announced that its scope of interest would include arthritis and rheumatism, virus diseases, and birth defects. And the Nephrosis Foundation suddenly became The National Kidney Disease Foundation.
>
> This practice is weakening the whole structure of voluntary giving and threatens the very existence of essential and necessary fund raising.

The law of diminishing returns together with increasing taxation—Federal, State, and local—may serve to check somewhat such astounding growth, but, unfortunately, this may affect the worthy as well as the not so worthy enterprises both in and out of the health field. In many instances there is little relationship between the occurrence of the particular disease in a given area and the fund-raising pressures to which that area is subjected. Solicitation by telephone, says the *Bulletin*, for workers to collect for the cause is the next step, and then the group may or may not attempt to get a physician to lend his name or sponsorship. Physicians are advised in case they are approached and before becoming involved in such an undertaking to investigate thoroughly "first the finances, then the need, and finally whether any other organization could or is covering the same field."

This is sound advice. Each county medical society in the State could be helpful in obtaining requisite information in the preceding categories for any member physician so approached.

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* Westchester M. Bull. **27**: 21 (Apr.) 1959.

Editorial Comment

High Lights from the State Health Commissioner's Report for the Year 1958. A new record for births, 362,000; the third lowest death rate at 10.4 per 1,000; an all-time low death rate for tuberculosis, 8.1 per 100,000; and the lowest death rate for cancer in eight years were the outstanding statistics.

The climb in birth rates and drop in death rates have combined since 1950 to increase the population in this State by 1,500,000 persons. This trend is expected to continue. Medical services must keep pace with this. Certain new problems have arisen as a result of our industrial and scientific progress, namely air pollution and ionizing radiation. The Air Pollution Control Board is operating a 15-station air sampling network and also an intensive pilot survey in the area of Elmira. Base line surveys of natural radiation are constantly going on with particular attention to the milk shed to determine levels of strontium-90 in these areas.

Important studies in cancer are under way in four general hospitals in which vaginal and cervical smears are being taken for study from each newly admitted female patient. At Roswell Park Institute experiments are going forward in vaccination of cancer patients against their own tumors.

Rehabilitation programs have been instituted in six county home infirmaries and the results are promising enough to furnish an impetus in this direction for all institutions dealing with the aged.

Five new types of Coxsackie viruses were discovered. Bacteriophage typing of staphylococci is a very active and important project in the State laboratory. Two new Salmonella organisms were typed.

These are a few of the high lights. Anyone wishing to learn more may obtain a copy of the full report from the Director, Office of Public Health Education, 84 Holland Avenue, Albany 8, New York.

Blue Shield Conference. Recently there was held in Chicago the Annual Blue Shield National Professional Relations Conference. The conference brought together a record total of more than 300 people, half of whom were physician trustees representing Blue Shield Plan governing boards and officers of 20 state medical societies. The executive secretaries of some 25 state and county societies and 130 Blue Shield professional relations personnel comprised the balance of the conference group.

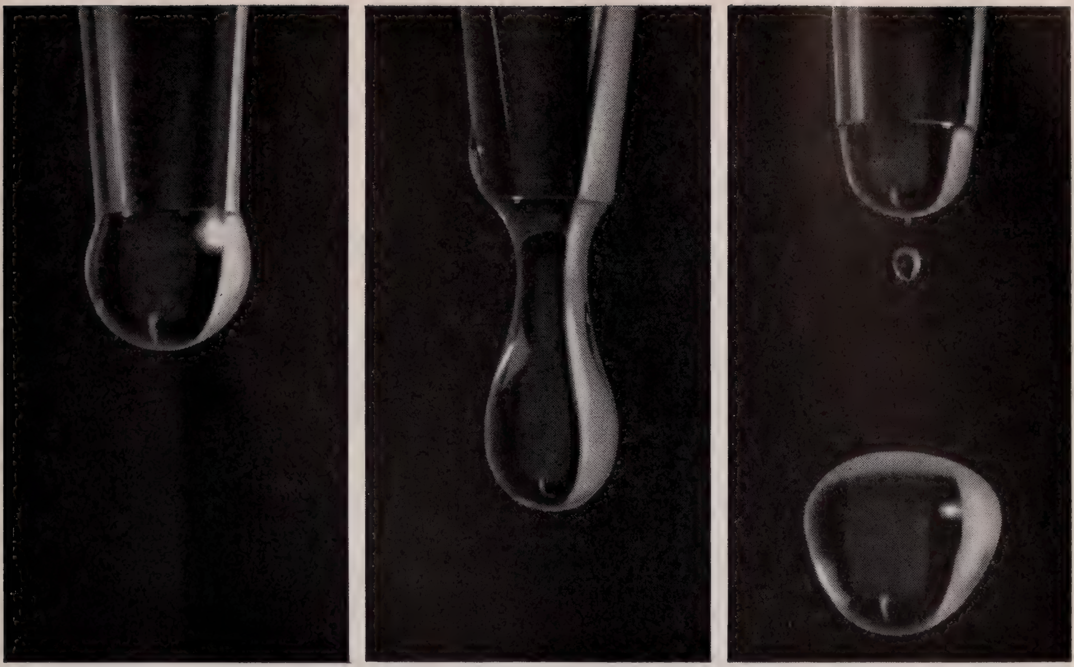
Dr. Louis M. Orr, president-elect of the American Medical Association, gave the keynote address commending Blue Shield for its "magnificent role" in developing the medical prepayment program. He urged a stepped-up program "to provide realistic positive approaches to all phases of health care among all people, young or old."

Referring directly to the needs of "senior citizens," Dr. Orr said he was "gratified that Blue Shield has been one of the first to pledge its all-out cooperation in working with the medical profession to do an effective job in providing medical care for the aged, especially the lower income group." He also commended Blue Shield's present accomplishments in developing a model contract for people over sixty-five and progress in removing age limits on nongroup enrollment.

Twenty-four physicians from the Empire State attended the conference. The group was addressed also by Dr. Carlton E. Wertz, of Buffalo, president of the Blue Shield Medical Care Plans. Discussion groups of physician trustees, medical society executives, and professional relations personnel of Blue Shield plans concentrated their attention on ways and means of improving professional relations between the Plans and their sponsoring medical groups, and of getting the story of Blue Shield across to all physicians.

These discussions covered the methods of maintaining liaison; ways of involving physicians in the guidance of their Plans; helping doctors to play a leading role in the constant improvement of Blue Shield so it can meet the needs of patients more completely; the necessity for medicine itself to lead in developing policy, formulating schedules of medical payments, levels of income for service benefits, and so forth.

The discussion group of Plan professional relations personnel reported an emphatic agreement that *physicians,* individually and collectively, are the key to the success or failure of Blue Shield.



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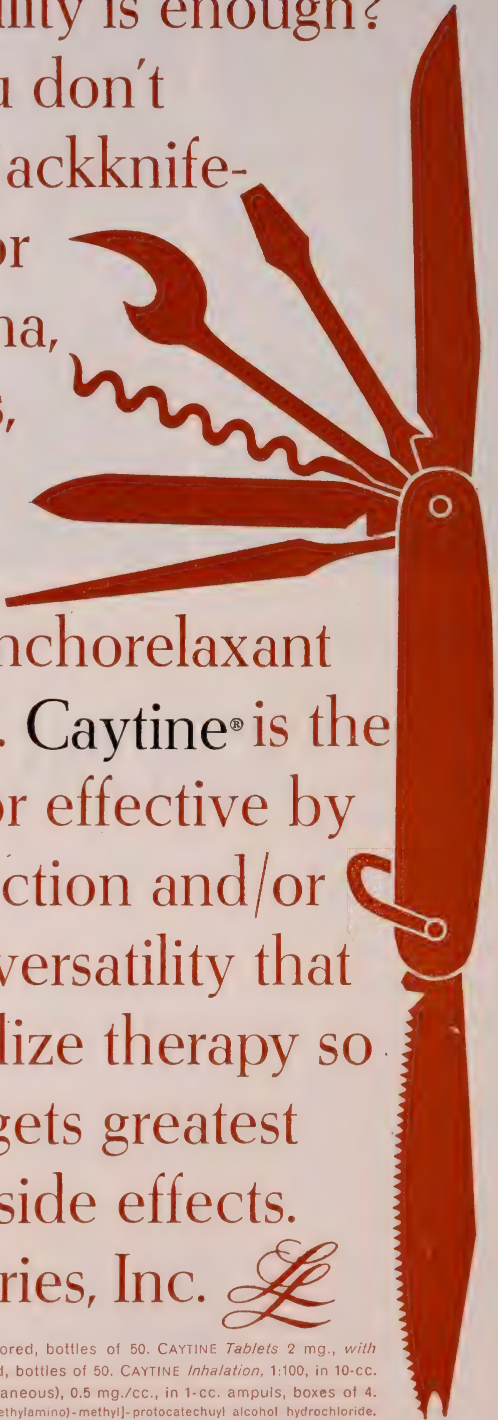

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conference

MEDICAL SOCIETY ACTION IN THE FIELD OF AGING

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Council Committee on Public Health and Education

Subcommittee on Aging

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New York State Department of Health
Bureau of Chronic Diseases and Geriatrics

Held at the HOTEL UTICA, UTICA MARCH 7, 1959

At a meeting in Chicago on September 13 and 14, 1958, the American Medical Association's Committee on Aging presented a six-point action program to an audience consisting of representatives of over forty State Medical Societies and State Departments of Health.

The health problems of older persons are currently very much in the public eye, and it was the consensus of the Chicago meeting that medical societies should assume real leadership in facing up to these problems.

In New York State, the Subcommittee on Aging of the State Medical Society's Committee on Public Health and Education, in concert with the State Department of Health, organized a conference comparable to that of the American Medical Association, inviting representatives of county medical societies and local departments of health. The conference was held in Utica on March 7, 1959.

The purpose of the conference was "to develop effective responses to the growing challenges in aging that face medicine and to coordinate Medical Society activities in the field of aging with those of departments of public health and voluntary health agencies."

Joseph J. Witt, M.D., of Utica, Chairman of the State Society's Subcommittee on Aging, served as Chairman of the conference. The morning session was developed around the six points of the A.M.A.'s Committee on Aging. During the afternoon the conference continued in regional discussion groups, with reports from the discussion groups at the end of the afternoon. At the luncheon session the plans for the 1961 White House Conference on Aging were discussed.

The proceedings of the conference were recorded and have been reproduced and summarized in this issue of the JOURNAL. *Your Subcommittee on Aging hopes that those who were unable to attend the conference will find this material of interest, and that county societies throughout the State will interest themselves in the problems of the aging and develop their own action programs on behalf of our older citizens.*

Introductory Remarks

Dr. Joseph J. Witt: The sixty-five-and-over age group presently numbers between 14 and 15 million in the United States and this number is increasing from day to day. Sooner or later all of these people will have problems: medical problems due to more frequent and more prolonged illness, financial problems due in part to inflation, reduced income and unusual expenses due to illness, social problems due to community attitude, and the waning of the physical and mental powers of the individual.

As individuals, all physicians have time and again been in a position to see and help solve some of these problems. However, as organized medicine on the local level, we have for the most part not taken a good look at the problem as a whole, nor have we delineated the area of our responsibility in meeting it. It is urgent that we do this and do it now. The Forand Bill to provide up to one hundred twenty days of hospital and nursing home care yearly for more than 13,000,000 social security beneficiaries is again before Congress. It is urgent that we consider this, and it is hoped that this conference will provide information and inspiration in the direction of eliminating the conditions which have inspired such legislation.

We have selected three outstanding men to bring you their greetings and a few of their thoughts concerning the general problem of aging.

Mr. John Guy Miller, *Committee on Aging, American Medical Association:* Dr. Witt, members of the Medical Society of the State of New York, and guests, asking me to substitute for Dr. Frederick C. Swartz is a little bit like putting in Bob Turley to bat for Mickey Mantle or Leo Durocher to pinch hit for Babe Ruth; but I have worked closely with the Committee on Aging and shall endeavor to bring to you some of the things that I am sure Dr. Swartz would like to say to you and some of the concepts that the Committee on Aging also would like to bring to your attention.

I think Dr. Swartz would like me to express his sincere and deep regret at his inability to be here today. I'm sure he would like very much to be present.

I think also that if Dr. Swartz were here, he would like to take this opportunity to congratulate the Medical Society of the State of New York on holding a conference of this type. This is not an unusual sort of thing for New York, particularly in the field of aging. We who have worked with New York are fully cognizant of the leadership that the physicians and the Department of Health of New York State have maintained for some time in this field.

It is fitting then that one of the first conferences of this type, probably the very first, should be sponsored jointly by the Medical Society of the State of New York and the State Department of Health.

It is extremely important, of course, that medicine's program for the new era of aging be transmitted through physicians at the grass roots level. The American Medical Association's Committee on Aging can give a great deal of thought to the problems of aging. It can examine facts and various considerations which should be a part of the total program. The Committee met with physicians from all over the United States in regional and national meetings endeavoring to get local thinking and to tailor the A.M.A. program as closely as possible to the needs of the community. It has done so because it has recognized that the problems and needs of the aged must be met in their own milieu.

The Committee on Aging of the A.M.A. recognizes that it alone cannot implement medicine's positive health program for older citizens. Therefore, it is extremely pleased at meetings like this that are being planned around the country and the leadership you are showing because of the great necessity for carrying the new concepts in the field of aging to the grass roots and the community levels.

I think if Dr. Swartz were here, he could not resist the temptation to point out to you that, when it was originally created, his committee was designated the Committee on Geriatrics of the American Medical Association. At the first meeting of the Committee it was agreed that while there are diseases among the aged there are no diseases of the aged.

It became quite clear that what the Committee must concern itself with is much more than disease: the total health of the some 15 million and a continuously growing number of persons over sixty, over sixty-five, over seventy; and the great need for a program which could be related to the individual health needs, preventive and positive, of these people who are our older citizens. And so the Committee recommended that its name be changed to the Committee on Aging, and the House of Delegates accepted that recommendation.

The Committee also recognized very early that it could not confine its activity purely to the medical aspects if it were to be concerned with the problems and the needs of the "well old" as well as the "sick old."

It impinged on medicine to take full cognizance of the social and economic factors relating to the health of older persons. It is no accident that, in a six-point program developed by the A.M.A. Committee on Aging, in consultation with committees at the state level and through regional meetings with physicians, the first point calls for "the stimulation of a realistic attitude toward aging," or an educating of all people. In this education the doctor must lead. He is looked to by people in all walks of life who are interested in aging because of the understanding and guidance that he alone can bring.

I believe Dr. Swartz also would have wished me to point out to you certain meetings of special interest to you. One, that the A.M.A.'s annual meeting in Atlantic City on June 10 held a full-day program on aging, under the title of "New Concepts in Aging." It was presented in the miscellaneous topics session. Also, I am sure he would like for me to call to your attention the National Conference of the Joint Council to Improve Health Care of the Aging which was held in Washington, D.C., June 12 to 14. For those of you who are not familiar with this organization, the Joint Council to Improve Health Care of the Aged is an organization created by and consisting of the American Medical Association, the American Hospital Association, the American Nursing Home Association, and the American Dental Association, these four groups being the principal purveyors of health care in the United States. The Joint Council endeavors to coordinate the activities of these groups and to carry on cooperative programs.

I do not think that you need to be reminded that American medicine has created, through the private practice of medicine and through public health, a continuing revolution in aging. It is not my purpose nor would it be my place to go into the details of this revolution with which you are all familiar; but you have added many years to the average life span of American citizens. You have done more than that. Through medicine, surgery, and all other aspects of medical practice you have created a new potential for adding life to years. It often has been said that the average man at forty-five in 1900 frequently was far less capable, had poorer health, had a lower productive capacity than the average man of sixty-five today. This is just one aspect of what you have done. You have done your medical job, your health job extremely well.

You are fully cognizant, however, that there are obstacles to the actual exercise of the product that you have created and are creating, and don't ever let the public or yourselves forget that this is a continuing process. It is still moving forward. This gets back to the need for physician leadership at the community level. Arbitrary retirement, family attitude, community attitude: you know full well how these can be obstacles to the enjoyment and to the fruitfulness of the product you have helped create.

As physicians it is only natural that your inclination will be to concern yourselves first with the sick aged. It is appropriate that your committees on aging at State and county levels provide dynamic leadership in meeting needs for care of both chronically and acutely ill seniors. You readily recognize the importance of wider use of restorative services among the aged. You are fully aware of the need for greater emphasis on positive health programs as exemplified well in New York State by your previous efforts on and support of periodic health appraisals and health-maintenance activities.

On the other hand, you physicians must recognize equally that your efforts cannot produce optimum health as long as economic and social barriers exist on the basis of chronologic age. Employment restrictions, arbitrary retirement policies, community social patterns, family attitudes, and individual misconceptions about aging all serve to create a second-class status for seniors. Removal of these obstacles also is a responsibility of medicine because as long as they exist the primary object of medicine, optimum health, cannot be achieved; its fruits cannot be realized. It is this of which the A.M.A. Committee speaks when it sets as its number one objective the stimulation of a new and realistic attitude toward aging by all people. It is for this reason that adequate medical society programs on behalf of seniors must be comprehensive. They must be geared to the health needs of all older persons.

DR. HERMAN E. HILLEBOE, *Commissioner, New York State Department of Health:* Dr. Witt, honored guests, and ladies and gentlemen. First of all, I should like to welcome you officially on behalf of the State Health Department. We are delighted to have an opportunity to sponsor this meeting with the Medical Society and other groups throughout the State. I should like to take a few minutes to give you some background for your meetings in the latter part of the day.

First of all, a few statistics, not too many. The question that invariably comes up in discussions of aging and the problems of the aged is: "What is old age?" Well, old age is a relative thing. We have to distinguish between functional old age and chronologic old age. Too many people set up an artificial breakpoint of sixty-five or sixty or some arbitrary figure, but in talking about aging we must consider that there are different kinds of aging, and some of these kinds depend on who is making the observation. I've heard my relatively young son refer to me as "The Old Man," and I'm sure he thinks I am an old man. A person of forty-five may look on an individual of sixty-five as a person who need no longer be concerned with raising children or with education or with the job of making a living. When a person reaches sixty-five, then seventy-five years of age seems like something that might be considered old age. Not infrequently in some of our nursing homes we hear an eighty-year-old person remark at how old and feeble the ninety-year-old person in the next bed is getting.

So this business of relativity is a very important one. I think, too, we need to think of expectation of life and of expectation of life for different periods. In our country today, as most of you know, the expectation of life at birth is about sixty-eight for males and about seventy years of age for females; and yet one often forgets that the expectation of life at certain ages is quite different. For example, in New York State in 1950, using the most recent figures, the expectation of life for a person who is sixty-five years of age is seventy-seven if that person is a male and seventy-nine if that person is a female. And so, on the average, there are quite a few years left after one reaches sixty-five. We know many individuals who are in the seventy-five-year-old bracket who can live to four score and ten, quite beyond the biblical three score and ten.

You've heard about the national problem. Now for some figures on aging that have to do with New York State, the background of our own State must be brought into focus. You should know that our concern about aging in New York State centers around the shift in the population that is now occurring. The population in 1950 in our State was about 15,000,000. The latest estimates made in 1958 were that by 1970 we will have 20,000,000 people in the State of New York. In 1950 about 8.5 per cent of our State's population of 15,000,000 were sixty-five and over. This group totals 1,250,000 individuals. If we look at 1970 and what our estimates will be among the 20,000,000 people, and this is a high estimate of the total population, it is anticipated by our growth curves that approximately 13 per cent of our population will be sixty-five and over. This represents 2,500,000 people. And so, the shift is a very important one and one that you as physicians must concern yourselves with because it is quite obvious that within the next ten to fifteen years the majority of your patients will be in the older age groups. Fact number two is that about 60 per cent of those over sixty-five years will have one or more chronic diseases. Sometimes these people are not sick in bed but they certainly have many different disease conditions. We must point out too that while many of these conditions cannot be cured, they can be treated. This means that one of our principal forms of treatment will be rehabilitation, which is an attempt to help these people to achieve some degree of independent living.

Health insurance is a very important part of this problem, and the medical profession can do a great deal in developing plans for voluntary health insurance among the aging. The most recent figures we have for 1957 are that approximately 40 per cent of the persons sixty-five and over have some form of voluntary health insurance. Now, it's significant that this is an increase over the 1952 estimate of about 26 per cent; but it's also significant that about 50 per cent of persons over sixty-five have never enrolled in a health insurance plan. And so, here is an area for exploration by the medical profession to assist in developing voluntary health insurance to meet health needs.

I should like to mention in just a few words one of the projects that has been carried on at our State hospital at West Haverstraw. As many of you know, we have a rehabilitation hospital there where we take care of crippled children and adults. In the past several years we've been concerned about the increasing number of disabled persons who are on public assistance rolls and who have been labeled as permanently and totally disabled. Right now in New York State there are about 40,000 such individuals. Remember, these individuals are receiving pensions which average about $85 every month. It's a simple matter of arithmetic to multiply 12 by 85 by 40,000 and come up with a grand total of $40,800,000. You and I are paying for this in Federal, State, and local taxes. An effort was made in cooperation with the Department of Social Welfare and the Division of Vocational Rehabilitation of the Department of Education to see how many of these individuals could be helped with intensive rehabilitation therapy. Up to the present time we have handled over 400 such individuals referred from counties throughout the State, and it's amazing that we have been able to help over 50 per cent in some way. Bear in mind that these individuals have had an average of three months of hospitalization; remember, too, that we're dealing here mostly with paraplegic and hemiplegic and the more severe arthritic patients. Many of these people have been brought in from back bedrooms. Some have had bed sores from shoulders to buttocks. They cannot move alone; they are the most difficult cases you could possibly imagine. And yet it is possible with medical skill to measurably help over half of these individuals. Surprisingly enough, of the first 100 we actually took 3 off the public assistance rolls. We felt that if we achieved this with just one person we would be successful, because any time you remove one from the rolls you are doing several things. You are cutting down the cost of care and you are giving independent living to another individual.

I would simply say in conclusion, Dr. Witt, that we need the combined resources of all of our public and our private health and welfare groups and individuals. This problem is big, and it's getting even bigger. This means we will need every conceivable resource to combat it. And we mustn't forget, as the previous speaker said, that in addition to the medical aspects, we must be concerned with the social and the economic factors as well.

Two of the things that we must combat are the inactivity and the loneliness of these older people. Approaching this problem jointly, I think there is every possibility of doing much more than we have in the past. I would say that one of the first things that you ladies and gentlemen can do in your own communities is to survey your local resources and your local problem in terms of aging people. I don't know how many of you have seen the county profile that is put out by the State Charities Aid Association, but this is a compilation of statistical items, giving population characteristics, economic factors, and health and welfare conditions. I would suggest that you obtain this type of information and if you can, through your county medical society, actually survey your local situation, see what your problem is, what the resources are, and then take the leadership in doing something to meet some of the needs.

Dr. Norman S. Moore, *Chairman, Council Committee on Public Health and Education, Medical Society of the State of New York:* Dr. Witt, Dr. Hilleboe, Mr. Miller, guests of the conference. When I sat down at the table and saw Dr. Hilleboe perusing his notes, I said to him, "Will you leave me anything to say?" He said, "I'm only going to talk a little bit." Well, he's given you so many statistics that I believe it appropriate for me to omit the statistical part of my remarks. As Chairman of the Committee on Public Health and Education and on behalf of the Medical Society of the State of New York, I wish to welcome all of you to this conference.

Dr. Witt runs one of the most active subcommittees for which my committee has responsibility. I think it is a tribute to Dr. Witt and the community here that so much interest is present in Utica and Oneida County in affairs of the aged. It is quite fitting, in my opinion, that this meeting is held in Utica, thus honoring Dr. Witt.

Dr. Hilleboe did leave one statistic for me to talk about, and that is the fact that although we have increased the life span during this century to say an average of sixty-seven years for males and seventy-three years for females, we haven't done much about increasing the potentiality of the life span of man. In other words, the few who lived to be one hundred years of age in the last century, if they were living today, would not live any longer than that. It is true, however, that more people live longer now than did in the nineteenth century. And so we have a challenge to find out something about aging processes so that the span of life can be increased for more people and in addition a potentially longer lifetime can be achieved for man. In my opinion, this involves all the disciplines we can mobilize.

Dr. Hilleboe and Dr. George Moore showed me through Roswell Park Memorial Institute some time ago. I was impressed with the many laboratories there for the study of cellular physiology, cellular biochemistry, cellular microscopy, cellular biology, and so forth. In other words, if we are going to find out about the malignant cell, we must first find out all about the normal cell. I feel that this type of method will point the way to resolution of some of the problems of aging. We're going to have to bring in anatomists, biochemists, geneticists, economists, physiologists, dentists, psychologists, and sociologists among others to consider the total problem. In other words, we are confronted with the problem: Is aging largely dependent on disease and environment? Or, is aging a property of connective tissue brought into play by hereditary factors? We know very little about this sort of thing, and I feel that it is most appropriate for the medical profession to take the lead not only in the scientific studies but also in the social studies and the social problems that come up in the community along with the medical problems.

I want to give you a little example of the need for more research from a study at the School of Nutrition at Cornell. Dr. Jeffrey Fryer took for granted that Ancel Keys' formula for body composition as determined from the specific gravity method was applicable to all ages. It seems satisfactory for the middle-age group and for youth, but when Dr. Fryer applied this to people sixty to eighty years of age he found a quite different story in the few instances he has tried to date. He discovered that people in the older-age bracket appear to have different body composition from people in the middle-age group. They have less intracellular water, but their total body water is the same. Their extracellular water is the same or a little elevated. In place of protein, that is, in place of protoplasm, body composition seems to be changed, there being relatively more fat. In other words, fat has replaced other tissue in larger measure with these people than with younger persons. Dr. Fryer has several patients who are really underweight, but they have more fat than people of normal weight. Because he cannot accept the formulas worked out for middle age and for young people, he will have to spend the better part of the year finding what the formula of body composition is for the older-age group before he can continue. This shows how little we have scratched the surface in understanding the physiologic and anatomic problems of the aged.

There is a place for the doctors, I believe, in this. As Dr. Joseph A. Falzone, Jr., brought out in the conference on the problems of the aged of the A.M.A., we have need for longitudinal studies; and the doctor, if he's trained and stimulated, is the ideal person to collect data. There are many patients who go to the same doctor over the period of a lifetime. However, if these people are studied in a laboratory, there is always the problem of changing personnel. The laboratory personnel understand the patient as of today, maybe last year, or maybe next year; but they don't understand him or see the changes that develop in this person from say age thirty to age sixty. Many doctors in practice for fifty years have records on people that are going to waste; but if these physicians were trained, particularly those who are associated with medical institutions and hospital laboratories, to make these observations, worthwhile findings could be translated into something that could be useful. I think the medical profession could add a great deal to the scientific part of the understanding of the aging. In other words, better clinical care will be built through facts discovered through research. We're going to have people who can interpret to doctors the findings of interdisciplinary groups and their recommendations and who can promote knowledgeable and meaningful ways for more medical men to contribute to the problem. It is a great tribute to Dr. Witt and his committee that he has arranged this meeting where for the first time, on a Statewide basis, the Medical Society and the Department of Health have joined forces really to attack this problem.

THE AMERICAN MEDICAL ASSOCIATION'S POSITIVE HEALTH PROGRAM ON AGING

1. *Stimulation of a Realistic Attitude Toward Aging*
2. *Improving Methods of Financing Health Care for the Aged*
3. *Training of Personnel and Development of Facilities for Care of the Aged*
4. *Promotion of Health-Maintenance and Restorative Services*
5. *Expansion of Medical and Socioeconomic Research in Reference to Aging and the Aged*
6. *Leadership in Community Programs for Senior Citizens*

Stimulation of Realistic Attitudes Toward Aging by All People and Wider Use of Rehabilitation Services

MICHAEL DACSO, M.D., WELFARE ISLAND, NEW YORK

(*From the Department of Physical Medicine and Rehabilitation, Goldwater Memorial Hospital*)

THE stimulation of realistic attitudes toward the aging is primarily an educational problem in which the medical profession has a unique and prominent responsibility. By virtue of his highly respected and authoritative position in the community the physician is in the rather favorable position of being able to reach practically every segment of the population. This privileged position imposes considerable responsibility on all of us who are practicing a combination of modern medical science and the ancient art of healing. To be able to fulfill this responsibility may at first sight seem simple, but it is basically a rather difficult task. We must begin with the clarification of certain fundamental issues within ourselves. It must be accepted as a basic tenet that of all people the physician and the clergyman are among those who can least afford to discriminate against any person or group of persons. This is true regardless of whether the discrimination is based on color, faith, or—what is our immediate interest—on chronologic age or duration of illness. The Hippocratic Oath, one of the most significant documents in the history of man, upon which the ethical and moral principles of our profession are based, does not state or imply that the iatros, the healer, must serve everybody except those who are advanced in years or who are suffering from long-term diseases.

In the brief time which I have, I shall attempt to discuss the means through which rehabilitation can serve to stimulate interest in both the professional and lay public. Rehabilitation is a complex activity of various health and social professions aimed at total or at least partial physical and social restoration of the disabled, chronically ill, or aging patient. Although the physician's activities in this field are usually referred to as rehabilitation, in order to eliminate misunderstanding and confusion I prefer to refer to the physician's activity and contribution as restorative medicine. This is a term which appropriately identifies the physician's function in physical or mental restoration. The physician alone is in no position to render total rehabilitation services. He contributes his medical skill, and for the other elements of rehabilitation enlists the help of various other professional persons. Since the primary problems in the life of the disabled, chronically ill, and aging patients are mainly related to health, it is logical that the physician should act as coordinator of all of the activities in such a complex service. The impetus for increased interest in rehabilitation in the past has always come from such dramatic events as wars with their inevitable by-products, the legions of crippled and maimed and the accumulation of disabled young veterans; or at other times from an epidemic of some crippling disease affecting a large segment of the population, such as poliomyelitis. All these situations contain an element of impressive drama, and thereby have a great deal of emotional appeal which expresses itself in the mobilization of society toward immediate help. In other situations, where crippling or long-term diseases affect the elderly members of society, there is a lack of drama and emotional appeal, and often no community help is available. This is one of the basic reasons why for the large and ever-growing number of elderly disabled people there are hardly any services available where they could benefit from modern restorative medicine.

It is to a considerable extent the responsibility of the physicians and the private and governmental health agencies to recognize the urgency of this situation and to bring about adequate changes as quickly as possible. To facilitate changes in the public concept and in the attitude of the health professions, the medical profession must be cognizant of the fundamental facts. At this stage of development the positive contribution of restorative medicine to the total rehabilitation of the aging person is generally accepted. The practical problem is: What is the most appropriate and effective utilization of this new medical specialty? It is important to point out that when speaking about a specialty I do not imply that the technics applied in restoration of the disabled aging are the exclusive property or domain of a small group of specialists. Any physician, regardless of his specialty, with proper interest and effort can learn the simple elements of restorative medicine which will allow him to take care of some of the common disabling diseases of older people in his practice. An overwhelming majority of the long-term and chronic crippling diseases do not require the highly specialized care of the physiatrist or of rehabilitation centers. These specialists and institutions should be reserved for the more complicated cases.

As a fundamental principle it must be accepted that restorative medicine is in no position to cure or to eliminate a disabling disease and it is primarily concerned with the restoration of function rather than correction of anatomic disability. The anatomic correction remains the responsibility of the orthopedic and neurologic surgeon. However, the anatomic restoration itself does not serve any practical purpose if it is not followed by the improvement of function. Some of the more elementary technics in restorative medicine can be learned in the now widely available postgraduate courses, or by attendance at rehabilitation clinics or departments for the necessary period.

It is also within the responsibility of the medical profession to recognize community needs and to advise the responsible authorities concerning the creation of rehabilitation facilities. Whenever the organization of such new facilities is being considered the lay leaders of the community are usually thinking in terms of a rehabilitation center. However, in the experience of many who have been instrumental in establishing services, the rehabilitation center is not always the best rehabilitation facility in a small community. It is often more effective and economical to attach a rehabilitation service to an existing hospital. Such an arrangement not only eliminates the need for the construction of a new building but also allows the utilization of hospital services for restorative medical purpose without the necessity of duplication. This refers to x-ray, surgical facilities, laboratory, housekeeping, kitchen, light, heat, and so forth. I have had the opportunity to visit small communities where not one but two and sometimes three so-called rehabilitation centers were in operation: one for children with poliomyelitis, one for cerebral palsied children, and another one perhaps a sheltered workshop or some other type of rehabilitation facility. By the very nature of the situation these institutions were very poorly staffed and were in keen competition for the one or two available physical and occupational therapists and other scarce specialists in the community. The result was a highly uneconomical and ineffective operation. If all these agencies could have pooled their resources and created well-equipped rehabilitation services in one or two of the general hospitals the entire community could have enjoyed the benefits of restorative medicine and the professional staff would have had the satisfaction of working in a vigorous and effective facility. In larger communities and in teaching units there is a pressing need for the establishment of rehabilitation centers. In such settings these centers would function as the focal point of all rehabilitation activities and serve as a quasi home base for the hospital rehabilitation services. The rehabilitation center is a highly specialized and rather expensive institution which should not be organized or used indiscriminately.

The potentials of restorative medicine in preventing a disability have not yet been sufficiently recognized. An early introduction of simple rehabilitation measures can frequently and substantially minimize the development of fixed disabilities in diseases where such can be expected. For instance, a simple and logical positioning of the patient with early hemiplegia in bed can prevent the development of incapacitating flexion contractures; and the early introduction of simple therapeutic exercises will serve to prevent disuse atrophy with all its undesirable consequences. Early ambulation of hemiplegias and other disabling conditions, especially in the elderly age group, will help prevent incontinence, decubiti, and mental deterioration, and substantially reduce the incidence of osteoporosis, thrombophlebitic phenomena, negative nitrogen balance, and other complications.

The coordination of medical service with the use of community resources is a fundamental prerequisite of a successful rehabilitation program. If restorative medicine is to fulfill its important responsibility in everyday medicine, a closer cooperation between the practicing physician and the voluntary and governmental health agencies will be needed. The medical community of the State of New York has already recognized this need and can be justly proud of the foresight and wisdom of their leaders which has resulted in a large number of meetings throughout the State, similar to the one we are having today. Based on my experience both here and abroad, I can proudly say that the recognition and acceptance of the principles of restorative medicine is on a gratifyingly high level in the State of New York. To further strengthen this favorable situation, I feel that the cooperation between the State and local health departments, and the State and county medical societies should be further strengthened. It appears that the publication of a newsletter dealing with practical restorative medical problems would be a useful cooperative action between the medical societies and public health agencies.

This periodical publication could, in addition to practical clinical suggestions, contain a list of the local health and social resources. Such information would keep the medical practitioner abreast of all the recent developments in restorative medicine and would give him an easily available list of agencies to which he could refer his patients. I am convinced that such a simple and inexpensive publication would materially strengthen the private physician's ability to handle simple disabling conditions, and by making all available outside resources accessible considerably broaden his therapeutic armamentarium.

The medical societies also could serve as clearinghouses of information concerning the availability of training resources. They should maintain a list of the teaching rehabilitation centers and hospital services to which they could refer physicians from all over the State for short-term courses in restorative medicine. These short-term courses would be rather informal and would be more aptly called "exposure to restorative medicine" rather than formal postgraduate courses. Emphasis should be placed on simple diagnostic methods and therapeutic technics in the care of disabled elderly patients. Such efforts should by no means compete with the more organized type of postgraduate courses which are offered by the various medical centers at regular intervals. It is recognized, however, that the busy schedules of many practicing physicians, both in large cities and in rural areas, does not allow them enough time to participate in these organized postgraduate restorative medical courses. It is for that reason that brief "clinical exposures" are being suggested as a kind of emergency measure for those who cannot avail themselves of the organized postgraduate course.

Extension of Effective Methods of Financing Health Care for the Aged

CARLTON E. WERTZ, M.D., BUFFALO, NEW YORK

(*Chairman, American Medical Association Committee on Insurance and Prepayment Plans*)

HAVING reached the age which we are discussing, sixty-five, I think I have the privilege of talking more about it than some of you other gentlemen in the room. I have been asked to speak with you on this subject in which we're so greatly interested and which has such great social, economic, and, I might add, political implications.

What is the problem as far as the financing of these people of sixty-five and over is concerned, as far as we can see? You've heard figures already this morning. I think Dr. Hilleboe in his remarks has said almost everything that is necessary. We have the problem today of the 14 or 15 million people who are sixty-five or over in this country. That figure varies with various people. Some say 12 and 15 and some say more. They say that number is going to be doubled in the next twenty or thirty years. The insurance people of private insurance companies have told me that the health of people between sixty and seventy today is much better than was the case ten years ago. That's right from insurance statistics concerning the health of people between sixty and seventy. And Dr. Hilleboe also told us that if you're sixty-five you have an expectancy of anywhere from twelve to fourteen years. And it is the financing of the health care of these people that you have to think and talk about.

Fairly recent surveys show that of these 14 or 15 million people, 40 per cent have now some form of health insurance; and of the 60 per cent left some were never insured, some thought they never did need it, some had it previously and dropped it for one reason or another, or were dropped by the carrier when they reached a certain age. Then there were others who felt that they could not afford it, and there were others who were rejected. At the present time over 2.5 million of these 14 or 15 million people are covered by Blue Shield. Blue Cross covers about 3.5 million of these people. The number covered by the Blue Plans is growing each year because of the fact that once a member of these organizations the individual can continue his coverage regardless of age. That is something that I don't think the public at large knows very much about, and I think many doctors don't know that when you once have a Blue Shield contract or are a member of it, you can carry it until you die, regardless of age.

The number of people who keep their contracts with Blue Cross and Blue Shield is growing every year. I'm happy to say now that the private (or commercial) carriers are also now extending their contracts in many areas beyond the age of sixty-five. In recent years many groups through negotiations with management have been able to permit their retired personnel to continue working with the active workers.

I think this is true also of the contract that the Civil Service employs with New York State: that the retired worker continues his coverage. In addition, it's also my understanding that beginning in July of this year, the private or commercial company will not be allowed to cancel its contracts in this State because of age.

What is being done and can be done for those sixty-five and over who have no insurance? Blue Shield throughout the country is taking cognizance of this fact and has for some years. In many states and areas Blue Shield removed the age limit for new enrollment, and new contracts have been developed recently in Nebraska, Arkansas, Ohio, and Kansas.

I'd like to say a word about the contract developed in Western New York by Blue Shield, and these contracts are being sold to people over sixty-five. In Western New York they have developed a contract within the last few months by which people over sixty-five with an income ceiling of $6,000 are given inhospital medical care, surgery, consultation, assisting fees if they're in a hospital where there are no residents or interns, and electrocardiograms and a very complete coverage on one-hundred-twenty-day inhospital care.

The private carriers also have now developed and are offering for sale new contracts for people over sixty-five. Much is being done to take care of these people.

There have been many suggestions in regard to paid-up insurance in one form or another so that an individual on reaching the age of sixty-five will not have to pay any more premiums. This is being tried in a few instances by management, but it is too early to judge its effectiveness. And the present formula of paying premiums for twelve or fourteen years after the age of sixty-five can perhaps be made more effective. But it is very difficult to predict the need or the utilization in the years ahead. That is one of the difficulties of all insurers.

Another suggestion is that the individual while working could pay a higher premium and thus create a fund to be used after retirement. This has many objections both from the angle of administration and from the human factor of not wishing to pay more for the indefinite future, to say nothing of the present.

Another suggestion has been made that an individual be allowed to set aside a certain sum of dollars each year tax free to be used to purchase insurance after he retires. This has considerable merit and should be studied fully. Another suggestion is that children, sons and daughters of those over sixty-five, be allowed to sponsor the premiums for those who need it.

Now, what can we as physicians do?

I believe it's our duty to urge and see to it that the Blue Shield Plan in our respective areas develops special contracts to be offered and sold to those over sixty-five who are not now insured. It's also our duty, I think, to see that our plans put on a more progressive attitude to keep people who have Blue Shield and Blue Cross, to keep them enrolled as members after they reach the age of sixty-five. I think we need a lot more publicity in regard to this and, again, a lot more education of the doctors as well as the public.

It is believed that these people of sixty-five and over will require more medical attention proportionately than surgery in contrast to the younger groups. Now, the younger group has a high utilization of insurance as regards tonsillectomies, appendectomies, perhaps hernias and, of course, obstetrics. The elimination of these services will allow a contract to be written with a moderate premium. And, as I said before, because of these factors, the group in Western New York drew up a new contract and offered it for sale. I just had a report before I left home and read that this new contract has been offered just recently, and up to the present moment 1,300 contracts have been sold.

Now this has, as I said before, a $6,000 ceiling. The premium for two people is $84 a year. I just mention in passing that it can be done.

In addition to this over-all picture of these people of sixty-five, there is great need for another contract as urged by the American Medical Association for persons with low income and very modest resources; and this should be geared to a family income say of $2,500 or $3,000. This is the group who are living on social security payments which average at the most around $1,200 a year plus other very limited income or resources. In this group it is felt that the premium should be somewhere between $2.00 and $3.00 per person per month. It has been recommended that for this group the minimum coverage should be inhospital-medical, one hundred twenty days, surgical coverage, anesthesia, x-ray in or out of the hospital, and radiation therapy. It has also been felt that it might be advisable to consider at least a limited number of house and office calls. By eliminating the things that I mentioned before, the utilization of a large percentage of the premium dollar for tonsils and appendectomies and obstetrics among the age group between say twenty and forty-five and fifty, you can develop a contract to take care of the things that the older people are more apt to have: a fractured hip, prostatic trouble, and medical needs. Now remember, these are the people with a very low income and we physicians are asked to accept a reduced fee for this category. This is in keeping with medicine's great tradition all through the years. I know that all of you are doing this very thing in your private practice and treat many with no expectation of any fee whatsoever.

American medicine has taken the leadership in the whole problem in the field of aging. That is why we are gathered here today. The financing of health care for the aging is a problem, but not nearly as great as some of us think. It is and can be solved without further government intervention.

91 Parker Avenue, Buffalo 14

Extension of Skilled Personnel Training Programs and Improvement of Medical and Related Facilities for Older People

FRANKLYN B. AMOS, M.D., ALBANY, NEW YORK

(*From the Office of Professional Training, New York State Department of Health*)

YOUR Program Committee requested each one of us to prepare a text but, unfortunately, it was not possible for me to see the papers prepared by the participants who preceded me before I wrote my paper. Therefore, I am going to vary considerably from my prepared paper and touch on a few of the highlights of the things that I outlined originally. Also, I will take the liberty of using a few terms a bit differently from the way Dr. Dacso outlined them. I take no exception to his definitions, but again, I did not have the definitions at hand when preparing my paper. I will, however, remain within my allotted time.

One statistic that I would like to point out at the moment, relating to the one which Dr. Hilleboe pointed out, is that at the present time, in New York State, out of the 16.5 million population approximately 1.5 million people—and this is according to the estimate of the Bureau of Vital Statistics—are over the age of sixty-five. I think we will all agree that the problem of medical care of the aged, as Dr. Hilleboe and others have brought out, is not particularly different from medical care of other people in terms of the types of illness which they have, but rather in terms of the preponderance of the kinds of illness that are peculiar to the aged person. I think too the fact that our population has become an older population has emphasized the problems of the chronic illnesses so that we are giving first attention to this phase at the present time.

The topic assigned to me is of two interrelated parts which have to be considered separately. One is the question of people and the other the question of things. I think we'll all agree that both are necessary, but I would submit to you that the more important of the two is people. If you have adequately qualified and trained people and you don't have adequate facilities, somehow or other the facilities will either be obtained or improvised so that they are adequate to meet the situation. I think here again this has been repeatedly demonstrated in the field of rehabilitation.

As for the kinds of people, the Commission on Chronic Illness in its recent report recommended the following groups of health personnel as essential for the care of the chronically ill patient: physicians, nurses, dentists, trained attendants, social workers, therapists, vocational counselors, and administrative personnel. I believe we could all think of others we might add and that within each group there are certain kinds of people who are more important for this particular problem. For instance, it has been emphasized that in the medical group it's the general practitioner, the psychiatrist, the specialist in physical medicine and rehabilitation, and the public health physician who are most needed to take care of aged and chronically ill patients. It's similar in other professional groups.

Many studies tend to show a need for total increases in nearly all of these groups. In other words, we need more doctors because we have more people. Perhaps an even more important point to emphasize is the need for relative increases in these groups of the number interested and skilled in the care of the patient with chronic illness.

Education, I think, has to be thought of in three phases. The first phase is undergraduate education. As we all know, the care of the chronically ill is frequently rather frustrating. Perhaps it is somewhat understandable that the medical student who is filled with vitamins, vim, and vigor is less interested in the chronically ill patient than he is in the acutely ill patient. His attitude, apparently, is affected also by the faculty of the medical colleges. I reviewed very carefully one medical school catalog and found that there was no identifiable emphasis on the problems of the aged nor on chronic disease per se. There was an indication that the faculty was teaching physical medicine and rehabilitation. I also casually reviewed several other catalogs, and apparently this is the usual situation in undergraduate medical teaching.

Perhaps one of our important points of attack would be to increase emphasis on this particular area in medical school curricula. I have no suggestion at the moment as to the best method of doing this other than to say that a recognition of the field would be desirable and steps should be taken to explore the best method of satisfying the need. Then perhaps the physician of tomorrow will not be like the physician of today who in his medical school days was inculcated with the idea of getting rid of the chronic disease patient, the "crock" as we used to call him when I was in medical school.

Pertinent to this, the Governors' Conference on Problems of the Aging held in 1955 in Albany recommended: "All medical schools in the State should appoint a full-time faculty member to coordinate teaching and research in gerontology among the various departments of the school." I think we can repeat this now, four years later. And perhaps we can even paraphrase a statement which has been attributed to Æsculapius and add "Medical Care of the aged is a combination of the science and the art; and the greater of the two is the art." I don't think that at the present time in our medical schools we teach very much of the art of medicine; we do teach a great deal of the science of medicine.

The second phase is the question of postgraduate education. The general practitioner in particular needs to be aware of the newer developments in diagnosis, treatment, rehabilitation, and, I would add, prevention of illness in the aged patient. There is a need to change the attitude which is so prevalent in the practitioner of today to the attitude which I think is so well exemplified by Dr. Howard Rusk and his associates: the idea that something can be done. Medical societies have in the past, particularly through Dr. Moore's Committee, taken the lead in providing continuing education for the practicing physician. They may well take the lead in emphasizing continuing education in the field of geratrics and chronic diseases. This may be through a variety of patterns, as in other postgraduate education: articles in journals, symposia at medical meetings, stimulating and promoting short courses, and encouraging short-term hospital refresher training.

Here I would like to introduce the thought that perhaps the medical societies should make postgraduate education mandatory for continued membership, similar to the requirements of the Academy of General Practice.

The third phase is graduate education. There is a need for specialists in this field. Unfortunately, I cannot give you the details of what training such a person should have. I'll submit that he certainly should be well qualified in internal medicine, should know psychiatry and psychology fairly well, and should be familiar with the field of physical rehabilitation.

What I've said about medical education applies to nursing, dental, and other professional groups.

Now for the other part of my discussion, the question of facilities. This does not come into my particular area of responsibility and so I have to get some outside assistance. Several of the people in this audience have assisted in giving me this information. Among other things, there are certain facts which we have to consider when we think of facilities. Some of these are:

1. Older people may have several diseases rather than just one, or the disease may be complicated by disabilities.

2. The chronically ill patient needs continuing although not necessarily continuous medical supervision.

3. There's a high although frequently undetermined emotional component in medical problems of the aged.

4. As high as 45 per cent of current admissions to State mental hospitals are individuals over sixty-five years of age.

5. There may be need for frequent special medical or paramedical services, such as x-ray, laboratory, or physical therapy.

6. Skilled nursing care may prevent further progression of disability or disease, or complications such as bed sores or urinary tract infections.

7. The patient may have no immediate family to perform the many services not requiring skilled care.

8. Financial resources may be limited or unavailable. There are 34,000 patients in a thousand nursing-home-type institutions in New York State at the present time, and over one half of these patients are on welfare.

The facilities most frequently referred to to satisfy the needs of the aged are more or less in this order: hospitals, nursing homes, and domiciliary homes. There are three types of hospital facilities needed: (1) hospital beds for acute illness, (2) beds for long-term hospital treatment of the physically disabled, and (3) facilities for hospitalization of the aged with mental illness. The nursing home type of care is needed when the principal need of the patient is for some type of nursing care at frequent intervals but not necessarily the constant nursing care which one gets in the hospital for acute illness. Domiciliary care, as I first thought of it, is not really a part of this discussion; but in a preventive sense it is pertinent in that it's a place for the aged to live where he will have proper nutrition, be safe from hazards of injury, be taken care of when he has minor illness, and be assured of prompt medical care when he needs it.

Everyone seems to agree that there's a need for an increased total number of hospital beds but I don't find any very great agreement as to what kind of hospital beds are needed nor where they should be located. Certainly I shall not attempt to arbitrate these differences of opinion. I would submit however, that perhaps something the medical societies could take under consideration is to determine what kind of additional beds are needed and what facilities are necessary to satisfy these needs.

There also seems to be agreement on the need to extend and improve the present nursing home facilities. Many of these nursing homes, it is agreed, are meeting the needs of the patient; but apparently many of them are not. There seem to be several reasons why not. Among these are the proprietary self-interest of the owners and operators of the homes, the lack of adequate legislation, inadequate and poor training of personnel, and division of responsibility.

Pertinent to this the Commission on Chronic Illness said in its report: "Chronic illness is everyone's problem, and by the same token, no one's clear responsibility. Hospitals, physicians, welfare agencies, health departments, councils of social agencies, community chests—all are deeply concerned and involved, but none clearly responsible for charting and pursuing a course of action. For the individual long-term patient, the absence of a single responsible agency is a major lack." Perhaps bringing order out of the present administrative chaos by providing this facility for the care of the long-term aged patient is more important at the present time than are the physical facilities over which there is so much controversy.

To assume leadership in solving this administrative problem in the medical care of the aged by obtaining the proper information may be a challenge to the medical society, state, local, and national. Dr. Moore, I think, referred to the fact that there is certainly a lot of information which can be obtained about patients and facilities needed, and about determining how these facilities should be obtained. Perhaps most important of all is the necessity for carrying through and assuring that the facilities are obtained at the right time, are the right kind in the right place, are adequately supervised, and satisfy the medical needs of the patient.

84 Holland Avenue, Albany 8

Promotion of Health-Maintenance Programs

GEORGE G. READER, M.D., NEW YORK CITY

(*From the Cornell University Medical College*)

I SHOULD like to start out by saying that aging should be looked on as something that starts long before sixty-five or even sixty. This is particularly true in terms of health maintenance. Pediatricians start us off on health maintenance in early life, and then there is a hiatus while people are in their productive years and thinking about their family difficulties and not about their health problems. Certainly to prevent the kinds of things that cause an unhappy and foreshortened old age it's necessary to start health promotion at least in the forties. We might say that health prevention or health-maintenance examinations have to be thought of in terms of a longitudinal view of the patient's life. Every patient who is seen has to be thought of in terms of how he will be ten, fifteen, or twenty years hence and not only in terms of what can be done about his immediate symptoms. The reason I mention this is that a longitudinal perspective seems to be one of the hardest things for physicians to attain. They tend to focus on the cross-section that the patient presents to them, the acute problem in clinical diagnosis and not the long-term problem. The art of prognosis to which Hippocrates gave great emphasis has been replaced in recent years by identification of clinical entities because there are recommended therapeutic regimens available for almost everyone. Therefore, most physicians believe that if one identifies the clinical entity, one can give the right therapeutic regimen and the problem is solved. The idea that the patient may continue to have his disease in spite of the therapeutic regimen comes as a shock to medical students, and I have a suspicion it may come as a shock even to some practicing physicians to have patients turn up years after therapy was given with the same disease process present but with perhaps a different set of symptoms to go with it.

If we start looking for "signs of aging" as early in life as the early forties, what do we mean by the term? I should like to suggest that aging has three components to it. These might be termed the social, the physiologic, and the pathologic.

As a person goes through life, he is at first completely dependent on his parents for nourishment and for sustenance of all kinds. Only gradually does he begin to become more and more independent as he grows older so that one might construct a curve of social participation which would start at a low point, rise to a peak at age twenty-five or thereabouts, go on rising gradually until the middle years, and then begin to decline at about age fifty-five. After age sixty to sixty-five there would be a rather sharp decline in the sense that the fullest amount of participation in social activities as an independent functioning person is not permitted after retirement. So, we can say at the outset that if one has a patient who is on the down-slope of this curve, no matter what one does to him medically, it will not put him on the up-slope. In other words, insofar as his participation and activities of life are concerned, they will be somewhat less after he passes the peak of his curve. And most of us reach this peak perhaps earlier than we would like to admit. At any rate, the doctor can't be expected to do anything about the curve itself. He perhaps can change the slope a little bit, but he can't change the direction of it.

An interesting feature of this phenomenon is that the patient at the end of the curve often winds up very much in the same position as he was in the beginning. Whereas in the beginning he was totally dependent on his family, at the end of the curve he may be also totally dependent on his family, his friends, his community, or someone other than himself; dependent for sustenance, dependent for help at various times.

Dr. Monroe in his study of patients in the older age group at the Peter Bent Brigham Hospital found that dependency was an important characteristic of his group of patients. At ages sixty-one to sixty-five 83 per cent were independent, but this rapidly fell so that only 44 per cent of those patients eighty-five and over were independent. It would look as though dependency is a major feature of old age.

Another important aspect of growing older is that a cultural difference arises. The older person in the community has a different set of values from younger people. This is obvious to all of us in terms of the values that we hold versus those that our children hold of Elvis Presley and his kin. We have a different way of looking at life as we go through it, and the older we are the further we get from the kinds of values that are being taken on by younger people.

This difference in values is very like the difference between the cultural orientations of a person who comes from another country and those of his children who grow up in the new country. Even within the same ethnic groups, older people have a different outlook from younger people. This makes it difficult for them to communicate. It tends to isolate the older people from many of the activities that the younger generation are engaging in so that they tend to fall back more and more on themselves and, as their associates drop off one by one, this leaves them with fewer people who even hold the same values as they do.

In addition, another important feature of aging is the way society looks on these older persons. Although it was a great step forward as far as social benefits were concerned when pension plans went into effect, it had an unfortunate, an unanticipated consequence in terms of the way that society came to look on older people. In order to set up pension programs, actuaries had to calculate what was the age at which pensions should begin. And in this way it became defined that people sixty to sixty-five who were at the edge of retirement became socially defined as aging. People past retirement now by definition are old although chronologically, physiologically, and in various other ways they may actually not be as elderly as people who are fifty years of age or so.

The physiologic aspects of aging are all familiar to you, and I won't review them nor the pathologic aspects in detail. Sensory perception is reduced in old age. There are more neuromuscular-skeletal diseases; more degenerative diseases of the arteries, lungs, and the endocrine glands; and there is more neoplastic disease. Dr. Amos has covered very well the facilities that are required in order to deal with patients with the multiple diseases of the old-age group. I want to stress the fact, however, that it isn't just a matter of disease that we have to deal with; we have to deal also with the matter of dependency, for our society has decreed that absence of economic productivity shall be a natural concomitant of old age.

In order to use all the facilities and the personnel that Dr. Amos has mentioned, one of the most important requirements is organization. If one were setting up an ideal program to encompass all the personnel that both Dr. Dacso and Dr. Amos have indicated are needed at various times for patients who are old, dependent, and ill, one would probably set it up with an administrative chief of some sort, appropriate clerical help, and with the indicated numbers of physicians and other personnel. There would also necessarily be a kind of bureaucracy established.

Now we do have available in our communities such bureaucracies in the form of hospitals. Some hospitals are better organized than others to be sure, but they all represent some form of bureaucracy. A hospital-based program of organized care for the aged, therefore, seems to make the most sense. There are no hospital-based programs at present, as far as I know, that really encompass the whole community in taking in all the different facilities that are available to the aged. But in Waterville, Maine, at the Thayer Hospital they are now experimenting with such a hospital-based program. It is planned that it will reach out and involve the nursing homes in the community, the public health activities, visiting nurse service, and so forth, so that they can together provide a coordinated form of ongoing care for patients.

In the practice of medicine today most medical services are supplied by individual practitioners, but even here there is a network of communications so that they have available various consultants and other specialists. They also must have a hospital available to them, and in addition there is the medical society, the department of health, and other community agencies. All these are present but many of them are not activated as they should be because there is no coordinating function being exercised by anyone. The practicing physician is usually not in the best position to be the coordinator of these activities, for one thing because of the necessary costs of administrative overhead. Therefore, what I should like to suggest is that it might be well for a community itself to set up some kind of coordinating organization. This might be organized by the medical society and might well be based in the community hospital. Or it could be set up by the public health agency or one of the other community agencies. It certainly ought to be planned by physicians.

Now, a final word on how health promotion can best be carried out. First of all there is a major problem in the lack of motivation of patients. Patients don't particularly want to be reminded that they might have some dire disease and that if they'd only come to the doctor, he'd find it for them. There's another big resistance, however, one that perhaps is a little easier to overcome, and that is the economic barrier to ordering some of the diagnostic procedures that are necessary for patients. These procedures are not covered by Blue Cross nor most of the other insurance companies. If one has a patient, for example, whom one sees in the office and an x-ray examination of the chest is indicated, it may cost so much that one hesitates to order it as a routine. This may be even more commonly true for a proctoscopy. There's evidence that proctoscopy ought to be a routine part of every complete examination if prevention is thought of at all. There are figures available from the Strang Clinic at Memorial Hospital that as many as 4 per cent of patients at age forty have polyps and this is a very high yield for any kind of screening procedure. But it goes up to 10 per cent at age sixty-five in a straight-line relationship which would mean that if these figures are true for the general population, every patient over forty should certainly have a proctoscopy every year or so. It's quite possible, however, that a proctoscopy is not something one can do economically in an office for every patient, economically in the sense that either the physician can't charge appropriately for the time it takes or the patient can't afford to pay for it in addition to the rest of the examination.

One way to deal with this is to put it off until later. If one plans for a patient overtime one can work in a number of these diagnostic procedures during the course of a year. And here I would like to say a word against annual health examinations. I think that it's manifestly foolish to think that if we could ever get all the patients in the country into doctor's offices every year that there'd be enough doctors to do anything with them, even shake hands. The goal of a periodic physical examination for everyone is unrealistic. Also, there is not good evidence that annual physical examinations really produce the best results in dealing with preventable disease. Perhaps what we ought to think of instead is that each physician should have the kind of relationship with his patients that gives him a longitudinal view of their problems in terms of what may be done or what needs to be done at any given point in the patient's life. For example, if you have a patient who smokes very heavily, then you certainly have an obligation to get an x-ray examination of the chest on that patient every year or every six months. Whether or not you would do other examinations at the same time would depend on the circumstances and on the plan for that particular patient.

Another way of approaching health maintenance through disease detection is in terms of mass surveys. Most physicians are trained to think in terms of individual cases. Many people in public health feel that the medical schools fall short of teaching students to think of patients in terms of large numbers of people and how the incidence and prevalence of disease can be determined in a population. This concept is admittedly hard to get across. It's hard partly because students aren't easily motivated to learn about it. It doesn't seem as dramatic as illness in the individual patient.

Survey technic can be introduced usefully into the individual doctor's practice in that he may do certain procedures on every patient routinely. One such case-finding technic might be tonometry on patients over age forty-five to detect glaucoma. A doctor could arrange his office so that he could do this himself or perhaps he could hook into the community network of consultants so that he could send his patients regularly to the hospital to have this done by ophthalmologists who would devote one day a month to it in rotation or one day a year. The county medical society might well organize this kind of survey activity, and this would produce a case-finding service and would increase patients' awareness of the importance of prevention and health maintenance.

Another way of finding cases might be called the index case technic. There is some evidence that people who are chronically ill usually come from families where there is more chronic illness than elsewhere. If you have a patient who is chronically ill and you can get the other members of that family in, your changes of finding such illness in those members are greater than if you examine the families of other patients.

Counseling services are another way of bringing elderly patients particularly into medical care. An experimental counseling program was carried on in the Kip's Bay Health Center under the direction of Dr. Wilson Smillie for several years and demonstrated that many older people had no doctors, never went near hospitals, and didn't really know how to gain access to the various community facilities that were available to them. They struggled along on their own, their medical and social problems gradually becoming worse and worse. It was only by putting on an aggressive advertising campaign that they were brought into the health center where a counselor was able to find out about some of these problems and make appropriate referrals. Counseling services that provide patients easy access to medical care and help to motivate them to do something about their problems is one more way that community action can be taken to promote health.

Amplification of Medical and Socioeconomic Research in Problems of the Aging

DAVID B. ALLMAN, M.D., ATLANTIC CITY, NEW JERSEY

(*Immediate Past President, American Medical Association; Member, American Medical Association Committee on Aging*)

For a long time I have been cognizant of the great importance of this subject, which is very close to my heart, to American medicine and to the American people. I want officially, in the name of the A.M.A. and our Committee on Aging, to thank and congratulate the Medical Society of the State of New York, the New York State Department of Health, and the particular committees involved therein for arranging this fine program.

In 1900, approximately 4 per cent of the nation's population were over sixty-five. In 1930, 5 per cent were over sixty-five. In 1957, 9 per cent were over sixty-five. These very broad percentages based on the Census Bureau's statistics indicate in themselves the growing importance of the problems of the aged and the aging. The very fact that the greatest change in the average age of our population has occurred during the past twenty-five years demonstrates the necessity for a new look at our social patterns as they relate to the older person. In my opinion, there is no more important issue before American medicine today or before the American public than the problems of the aging. These problems carry social and economic implications for all Americans, regardless of their age or occupation. It is up to American medicine to provide leadership in this matter. We can't sit by and let the other fellow do it. We've got to provide leadership to find good common-sense solutions to the problems which are now confronting us.

We as physicians have a special responsibility in this field. In our own practices of medicine, in our own offices, we daily see individuals who are loosely linked together in statistics. We personally see how the health problems of our senior citizens have their basis in psychologic, physiologic, social, economic, and many other causes. We see them in the context of their individual lives, the only context that has any validity when you consider any group of people. We have a special understanding of how the health problems of the older people have their roots in their family relationships and in their social patterns, in their job opportunities, and in many other elements which the layman may think are very far removed from health but which we know play a very important part in health problems. We know as few other people know the importance of individual responsibility in meeting the problems and in avoiding problems before they arise which, of course, is equally important. We can comprehend more readily than many how hastily developed programs designed to help the aged can actually do injury to the individuals involved. And we have a great responsibility to inform all of our citizens accurately with regard to all aspects of aging and the interrelationship between medical and social and economic considerations in the health of these aging people. Accuracy depends on careful research and for this reason the A.M.A. felt that it was very important to include in its six-point health program for older citizens the amplification of medical and socioeconomic research in the problems of the aging.

It need not be told here again of the great progress that has already been made in research in connection with the medical aspects of the aging. In recent years many old concepts have been supplanted by new knowledge and by better understanding of the entire situation. Through the physicians of America this research has been translated into a vastly increased life span for the average person. This is clearly recognized by everybody, but unfortunately too often it is overlooked.

Optimum health of the older person can hardly be achieved until social customs and economic patterns catch up with the physiologic advances that have been brought about by modern medicine. For this reason, our Committee on Aging placed first in this program of older persons the stimulation of a realistic attitude toward aging. We must take a realistic look at these people who are aging.

As physicians, you and I know there is a need for much more medical research in this matter. The American Medical Association is dedicated to expanding such research relating to aging on all fronts. It must be recognized, however, that every step forward in the science of medicine makes our obligation to relate medical progress to social and economic considerations even greater; and, therefore, we have an increasing responsibility as we cause more people to reach more advanced age.

It has been estimated that by 1975, 10 per cent of our population will be over sixty-five. Of course, reduction in the birth rate, possible new discoveries in heart disease, or the expected conquest of cancer could greatly increase this percentage. So the assessment of 10 per cent in 1975 may be entirely erroneous. In my opinion, it will be much higher than that. Nevertheless, with 9 per cent of our people presently over sixty-five the pressure is mounting for solutions to the health problems of the aging.

Many proposals that come to us offer panaceas which bear little relationship to the real problems. Frequently they contain elements which would make the problem worse rather than better and this danger is especially great in proposals that come from national legislation, such as the Forand Bill. If we as a nation can accurately diagnose the needs of these aging people, then the solution of the problem can be found. It is true in medicine; it is true in this problem of the aging. Without a careful diagnosis, we may turn a potentially golden era into a stark tragedy for our senior citizens.

Webster defines research as "critical and exhaustive investigation or experimentation having for its aim the discovery of new facts and their correct interpretation, the revision of accepted conclusions, theories, or laws, in the light of newly discovered facts or the practical applications of such new and revised conclusions." In this definition, certain key words stand out: facts, experimentation, and practical application. Each of these has unusual significance when it's directed toward the problem of the aged and the aging.

Now, what are the facts? What facts are missing? When we speak of the problems of the over-sixty-five age group, we're speaking of the individual problems of individual persons over sixty-five, not of statistics. When we propose special solutions to this problem whether it's in medical, economic, or social aspects, it is logical that we direct our attention to those individual problems which are normally common in people over sixty-five and to those problems which are normal for those people in other age groups. All people have problems. Whether we like it or not, whether we're rich or poor, young or old, healthy or sick, problems seem to be a universal ingredient of living. Whatever perfection may be, it rarely if ever is achieved. In the medical field, for example, there are those who talk about the best possible medical care for every individual. The fact is we can't provide the best possible care to everybody. We don't have the trained personnel, we don't have the facilities. We must recognize that we never will have. So, in medicine we do not have perfection, nor do we have it anywhere else. We strive for it, we come as close as we can to it, but we just don't have perfection. By the same token, those who have proposed panaceas for the aged are being either unrealistic or dishonest.

What are the facts? Only from an examination of the facts can we determine the problems of older people and how they're different for older people from what they are for other age groups. What do we know about the aging? One thing that repeated studies have shown is that most persons over sixty-five are productive workers. While they've lost some of their physical agility, they compensate for that with their experienced judgment, their greater stability, and their apparently higher incentive. Another important observation is that most of them want to keep working when they get to be sixty-five. At forty or forty-five they may think they want to stop working at sixty-five, but when they get there they want to keep on working. Now, contrary to the opinion of younger people, it's a fact that when retirement age approaches, meaningful, productive activity takes on a new importance. People find that reading, fishing, or just sitting around are not enough; such activity doesn't satisfy them, and they're not happy. Now, how do these two facts make the older person different from the younger? Are the young not also able to work? And are not the young also willing to work? Of course they are to some degree. The difference is that the young are given a chance to work, a chance often denied older people; it's this denial of a chance to participate that makes the senior citizen different, and this difference is a major source of the older people's special problem.

What does this have to do with research? It has a great deal to do with research. We need more facts in this field. There should be so many facts developed on this point that employers and labor unions and all others responsible for the arbitrary retirement policies that are based on chronologic age will be forced to give the older person a chance to work. We need more experimentation and practical application in this aspect of the problem and this too is research.

Admittedly, some types of jobs become difficult for the older person to perform. The movement toward mechanization in factories and on the farm is rapidly making this factor less significant, but to the extent that it still exists it should be the object of careful research on our part. We need much more experimentation by industry in the transfer of workers from one job to another, from jobs requiring useful, physical prowess to other less strenuous activities where the experience of the aging and the knowledge of the aged can be conserved and be of great help to the industrialist. We need continuing research on changes in industry, especially those related to automation and mechanization and the relationship of these changes to job performances by the older person. We need constant research devoted to the appraisal of the physical and mental capabilities of persons over sixty-five, indeed those over forty-five, because we now know that the average person at sixty and sixty-five today is often comparable in health and capabilities to the person forty or forty-five years of age in we'll say 1900.

Medical progress may be expected to bring even more changes in the future, and if the older citizen is to benefit from these changes, society should be made aware of such changes. Industry must be shown that simply because a man has a chronologic age of sixty-five, that doesn't mean what it did in 1890 or 1900, that he's through.

How do people over sixty-five differ economically from the other age groups? How permanent are the differences that do exist? What income do these people actually have? What resources are available to them from their productive years, and to what extent are their families able and willing to take care of them? There is a great need for fact-finding in this field.

The studies that are available and which have any validity at all are extremely few. In fact, some of the studies that have been made by apparently reliable sources show errors as high as 65 per cent away from the actual facts; but despite their obvious shortcomings, I think you'd be interested in some of the figures that have been assembled.

Out of the 15 million persons sixty-five or over, roughly 4 million are employed or are wives of employed persons. About 2.5 million are on some form of public assistance. One million receive veteran's survivors pensions, another million receive other government pensions, and about 9 million receive OASI benefits. Another million receive private pensions. Today 16 million workers are covered by private pension plans which will change the entire picture in the years ahead. There are a number of persons over sixty-five who are not included in any of these figures.

What these figures indicate is that the over-sixty-five group is heterogeneous and the accurate assessment of its financial status is very difficult. Most persons of sixty-five or older have lower incomes than they did in their peak productive years. But what does that actually mean? The person twenty to twenty-four years of age also does not have the peak earnings that he will have in later years. And how does this income of the aged relate to their needs? Quite obviously the reason that many older persons retire comfortably and on a reduced income is that their children are out on their own, their insurance is paid up, and their income taxes are lower both because their earnings are lower and because of special deductions which people over sixty-five get. And as a rule by the time they reach that age the mortgage on their home is paid off and they own their home.

With reference to these points, it's necessary that research should be conducted to ascertain how these economic plus factors that I've just mentioned tend to balance the minus factors among the aged. There are some plus factors we must consider, and there are some minus. We must try to reach a happy balance. For example, approximately 70 per cent of the aged couples under OASI own their own homes, and the majority of these homes are, as I say, free and clear of mortgage. Of comparable interest is the Federal Reserve Board's report that 20 per cent of the aged have $5,000 in liquid assets, as compared with less than 10 per cent of the total population, including these aged people. And 40 per cent of the aged have $2,000 or more in liquid assets as compared with 20 per cent of the total population. So, the aged aren't doing so badly. The Federal Reserve Board considers as liquid assets government bonds, checking accounts, savings accounts, and so forth.

There are many services which we can render elderly people to make their lives happy and to make them useful citizens. We shouldn't lump them together as statistics. We should treat them as individuals, and I am sure that we will have a healthier aging group and a better America.

In conclusion, I want to urge you to remind your colleagues and all others that there is a great need for research in this field of aging, research in which we can build a proper recognition of the senior citizen's place in society and an accurate understanding of how he is different from and similar to other people. We want to develop flexible programs, not government fiats but flexible programs which will meet the real needs today and tomorrow.

Leadership and Cooperation in Community Programs for Senior Citizens

FRANK W. REYNOLDS, M.D., ALBANY, NEW YORK

(*From the Bureau of Chronic Diseases and Geriatrics, New York State Department of Health*)

Four years ago the special health needs of the aged were recognized when the Bureau of Chronic Diseases and Geriatrics was established in the New York State Department of Health. At that time something of the extent and the growing nature of the geriatrics problem was known, but precisely what could be done about it was by no means well understood. Since that time much insight has been gained into the health needs of older people, and a far better idea of what specific steps can be taken to meet these needs has evolved. Each of the previous speakers has discussed one or more specific components of the broad geriatrics program developed by the American Medical Association's Committee on Aging. My assignment is to speak on the sixth recommendation: leadership and cooperation in community activities for senior citizens.

The needs of older people are many and varied. They include special housing, better recreational and diversional opportunity, information, referral and counseling services, and a goodly number of others. Physicians as individuals and good citizens of their communities will be interested in these aspects of gerontology and will do whatever they can to assist with projects of this kind. But as organized groups, county medical societies, in my opinion, can make their greatest contribution to improving the lot of older people by providing leadership and cooperation for senior citizens in community activities that are of specific medical importance.

In this connection, it seems desirable to make a distinction between geriatrics and gerontology. The word geriatrics is derived from two Greek roots, geros and iatros, meaning respectively old age and physician. Geriatrics then specifically refers to those aspects of aging of direct concern to the physician and the word is to be differentiated from the broader term, gerontology, which is, of course, the study of aging. A number of components of a community geriatrics program have already been discussed: education, rehabilitation, periodic health-maintenance examinations, research, and better financing of health care. Those that remain seem to fall generally into two main categories, prevention and improved patient care.

On the subject of prevention, Dr. Reader has discussed what no doubt is an excellent health-protecting procedure for older people, the periodic health-maintenance examination. Only one community in New York State, Schenectady County, provides these examinations as a special project of the Medical Society.

There are, of course, preventive aspects of many of the ills of older people. Perhaps three will suffice as illustrations. First of all are home accidents. Accidents in the home, especially falls, are a major cause of death and disability among people over the age of sixty-five. Many are preventable if potential causes such as loose rugs and poorly lighted stairways can be identified and corrected. An accident-abatement program, it seems to me, would be an excellent project for a county medical society.

Second is osteoporosis. This disease is more common and results in more disability than many realize. The old lady with the broken hip or the gruesomely deformed neck, the elderly man with extensive periodontal disease, are victims of osteoporosis. Much can be done to prevent this condition by keeping people active and by assuring that they have an adequate protein and calcium intake.

Third is senility. It may seem unusual to try to discuss the preventive aspect of senility, but much can be done to prevent and sometimes even to reverse this condition. We know that social isolation is a most common precursor to senility. We can encourage our patients not to live isolated lives but rather to keep up their interests in family and community, and we can correct defects such as hearing loss that encourage social isolation. For many of the chronic ills of older people we do not yet have the knowledge necessary for primary prevention. The next best thing to prevention is early detection so that appropriate steps can be taken to postpone, minimize, or prevent complications.

A number of county medical societies in this state have sponsored or cosponsored community programs for the detection of such diseases as diabetes and glaucoma. I sincerely hope that as a result of this conference more societies will become interested in projects such as these. There is a tendency today to combine categorical disease-detection programs to prevent repetitious community organizational efforts. I hope more of our county societies will interest themselves in multiple disease-detection programs in cooperation with official and voluntary health agencies.

On the topic of improved patient care, it is not difficult to list many services and facilities which, if available, would make it possible for physicians to improve the care they give their patients. How many communities, for example, have comprehensive home care programs? How many have physical therapy available for patients in the home? How many have homemakers service? Or sheltered workshops? And would not the development of services such as these be legitimate and useful undertakings for a medical society interested in helping older people? The care of older people in institutions in many cases also leaves much to be desired. It would seem to me that physicians might well interest themselves in the nursing homes in their community: in the county home and in its infirmary, if one exists; in proprietary homes for adults; and in homes for the aged. Institutions such as these rarely have adequate medical coverage and almost never have adequate medical supervision. Patients in facilities of these kinds urgently need activities programs. To fill needs like this would constitute a real achievement for organized medical groups.

These are but a few of the many projects that county medical societies might sponsor or support on behalf of older people. We hope that other projects will be suggested during later discussions, and we hope that from this conference you will take back to your own society specific suggestions for action in the field of aging within the broad framework of the program so well outlined by the American Medical Association.

What We Can Do to Help the Aging

Reports of Regional Discussion Groups

New York City

Frederic Zeman, M.D., *New York City, Past Chairman, Subcommittee on Aging, Medical Society of the State of New York:* This report from New York City is streamlined for this occasion. It's important to realize as far as New York City is concerned that we have an extremely complex local situation. We have large numbers of physicians, a large number of hospitals both voluntary and municipal, as well as a tremendous number of welfare agencies which are organized on a sectarian, non-sectarian, or governmental basis. The problems of old age in general and of older patients have engaged the attention of county medical societies increasingly over the past ten years. It is important to realize that this meeting today is the culmination of a great many efforts that started, many of them, more than ten years ago.

Efforts have been made by the county societies to interest physicians largely through lectures at stated meetings. Some societies in New York State have developed committees on the aging person which have had an important influence on county society policies. It is our belief that these committees or subcommittees on aging of the county societies have a very large function to perform and can make tremendous contributions.

These subcommittees on the aging person as well as the total membership of the societies can make effective contributions by setting up referral panels of physicians who are especially interested in the problems of old age and by intensive educational efforts not only for physicians but also for professional nurses and social workers. Courses of instruction for the general public should be organized, and welfare agencies should be apprised of the willingness of county society members to give these talks for the education of the general public. I think we have to realize that nothing happens in the field of community health or in the field of community welfare unless one has a highly educated and well-informed laity that is wise enough and intelligent enough to insist on certain high standards for that particular community. County societies should lend weight to efforts to raise standards and improve care in commercial nursing homes. We have to do our best to support the proper authorities in this area, and I think that we have to help the State officials in their efforts to police these commerical institutions. We have to make every effort to improve standards which have now in some cases sunk so low as to be a community disgrace.

The county society should study the financial problems of the aged in order to make medical care more readily available to those who are unable to afford the current schedules of prices. But over all, the county societies should encourage extramural care programs including such novelties as meals-on-wheels, such well-established programs as visiting nurses, and should make it possible to send visiting physical therapists and occupational therapists into the patient's own home under the direction of the patient's own physician. County societies should exercise every care to maintain the doctor-patient relationship in this field of old age. We should do everything possible to discourage competition between well-intentioned welfare organizations and the physician in the desire to give the patients care.

111 East 88th Street, New York 28

Suburban New York

William Donovan, M.D., *White Plains, Director, White Plains Regional Office, New York State Department of Health:* As in Dr. Zeman's case, I was unable to delegate the responsibility of a recorder and had to assume it myself. Our session was one in which we picked the brains of Dr. Wertz and his tremendous knowledge of the financial aspects of medical care so that I'm sure you will realize that the recommendations we make are not entirely original with our committee. We did not restrict our activities to the suburban area but have felt we must consider this as much overall as possible.

These are some of the things that we thought might be realistic. Since physicians have a responsibility to be conversant with the various types of insurance in the medical care field, the county medical society with the help of State and national societies should first educate physicians in these matters; through the use of pamphlets and folders distributed by these agencies, the physician would be able in turn to make these available to his patients in his office. This literature should include information regarding (1) descriptions of various types of policies, whether they're for medical or surgical care or sickness and accident, (2) expected costs, and (3) definite information about exact coverage.

The second thing we thought about was in accordance with the A.M.A. suggestion: County societies should encourage physician members to reduce fees for low-income patients over sixty-five years of age.

The third idea was that county societies should keep physicians informed in as brief a manner as possible regarding the types of legislation in the medical care field that are being promulgated at the State and national levels.

Four, physicians should be kept informed regarding community agencies and the services that they render. County societies could assist in promoting the proper use of accepted diagnostic procedures in local communities by cooperating with official and voluntary agencies.

The final point is to encourage physicians through postgraduate medical education to keep themselves informed regarding changes in the practice of medicine concerning the aging.

55 Church Street

Albany

Samuel R. Powers, Jr., M.D., *Albany, Member, Subcommittee on Aging, Medical Society of the State of New York:* We in our group felt that the problem broke down into two general areas that were discussed this morning: the first one, that of personnel or people and the second, that of facilities. Under the problem of personnel and people, our first and immediate problem perhaps was the physician. The first thing that we agreed on, I think, was that at the undergraduate medical school level certain things could be done. It might be desirable for us to recommend that in each medical school an individual, probably as a subdepartment man within the department of medicine, should be assigned the job of coordinating the various facilities in the institution which have to do with the care of the aged, and we specifically want to emphasize that we were not recommending a separate department or subdepartment of geriatrics or gerontology but merely an individual whose primary interest would be to bring together and to know of all the facilities that were available and see that these were brought before the medical student as part of his education.

In the over-all training of medical students, more emphasis should be given to the teaching of medicine through the so-called longitudinal method, so the student might have the opportunity to appreciate the changing pattern of diseases with increasing age. I should mention that in some medical schools this is already being carried out. This has been appreciated as a real problem.

Now, from the standpoint of facilities, again we attempted to be realistic about the places where we could attack the problem, and one of the ones that we're all concerned about, of course, is the problem of the nursing homes. After discussing many things that perhaps could be done to improve this situation, we all agreed that improvement had to come as an internal discipline from the county medical society, very like the case of medicine many years ago when it did pull itself up by its own bootstraps. Therefore, we should specifically recommend that each county medical society have a subcommittee which would be primarily concerned with the supervision and perhaps the inspection of local nursing homes in an attempt to see that their facilities were kept up. Such things as having periodic meetings with the directors of the nursing homes, perhaps on a yearly basis or more often if necessary, might stimulate an interest in the directors of the homes to improve the facilities. And finally, that a coordinator not necessarily or preferably not an M.D. should be considered by the county medical society. The coordinator would know and have at his fingertips all the information concerning all the facilities available in that community which would be or should be used in the care of the aging.

NEW SCOTLAND AVENUE, ALBANY 8

Syracuse

LEO JIVOFF, M.D., *Syracuse, Recorder for Syracuse Regional Group—Seymour H. Schwartzberg, M.D., Moderator:* The problem of promotion of health-maintenance programs was discussed in two ways. The first portion of the discussion was devoted to the problem of seeing to it that doctors themselves undergo periodic examinations. A review of various methods tried in various communities was undertaken. Out of this came the feeling of the group that county societies should inform their members that health-maintenance programs begin at home with themselves and that each doctor should have a way of having his own personal physician. Examinations should include those specific examinations which produce high-yield results in terms of potential abnormalities.

Such a program for providing care to physicians should also include provision of care for their families. How such plans might be set up was reviewed with multiple suggestions, one major suggestion being that out-of-town physicians might be imported periodically for the sole purpose of performing these examinations.

The purpose of discussing health maintenance among physicians was presented in the light that it would be of great value to present to these communities the fact that doctors themselves should undertake periodic examinations as the first step toward convincing the other members of the community that they should have this done.

The next discussion was in the area of health-maintenance programs for the community at large, and here we had many opinions and no final conclusions. It was felt that county medical societies might consider in some cases employing a health educator. In other cases, it was felt that it is necessary to be sure that long-range planning facilities are available in the community; that is, ascertain the availability of paramedical specialists such as social workers or psychologists and undertake the responsibility of seeing to it that appropriate agencies are available in the community for adequate long-range planning for patients.

1509 SOUTH AVENUE

Rochester

MILTON TULLY, M.D., *Rochester, Recorder for Rochester Regional Group—Joseph Garen, M.D., Moderator:* Our group was privileged to have Dr. Allman participate in the discussions which were quite spirited and lengthy. The report on the contrary is brief.

It was recommended that there be further research in regard to the promotion of better medical education in gerontology, that there be a study of the incentive to continue employment by changes in the social security law which limits benefits to a certain maximum earnings per year, and that there also be some study on the method to pick out employes who are capable of carrying on after a certain age rather than have a chronologic retirement age. What we're talking about really is a physiologic retirement age with some means of determining what this should be. There was also a feeling that there should be a study at the local level of the medical and socioeconomic problems facing the aging population or the older age group, this being led or with leadership assumed by the county medical societies in cooperation with local health departments.

Finally, it was felt in regard to research that the results of these studies as well as of other studies concerning the problems of the aging should be well publicized both to the profession and to the public and applied rather than simply published and forgotten.

119 EAST MAIN STREET

Buffalo

Frank Reynolds, M.D., *Buffalo, Recorder for Buffalo Regional Group—Stephen A. Graczyk, M.D., Moderator:* Our group considered that the most important single thing that a county medical society has to offer older people lies in the field of education. They suggested that perhaps some of the district branches might wish to consider programs similar to the one that we've had here today. The group coming from Buffalo area region points out that there is in existence a Western New York Geriatrics Society which is very active in professional education, which sponsors a senior citizens hobby show each year, and which is doing a fine job. They suggest that other regions might do the same sort of thing and have their own society.

It is hoped that the Erie County Medical Society can develop a Speakers Bureau for talks to various groups on many aspects of aging. The possibility that these speakers might participate in programs of preretirement counseling was specifically noted.

The group thought it might be possible to encourage labor unions and industry to sponsor programs of preretirement counseling and also activities programs for retired employes, and that doctors have a role to play in the health-counseling phase of retirement counseling.

The group believes that it would be a fine thing for county societies to sponsor institutes for nursing home personnel, discussing pertinent topics such as the management of incontinence, geriatric rehabilitation, cancer nursing, and other appropriate subjects.

It was considered that there might be a role for the doctor's receptionist to play, particularly if she could become well-informed about the services that are available in the community for older people and thus function as an information and referral service.

Medical societies should take an interest in nursing homes and encourage better supervision of these nursing homes.

It was pointed out that Erie County has a very successful diabetes detection program with which they're well pleased and are happy to recommend similar projects to other societies. A glaucoma detection program is also under consideration.

Several unique projects in Buffalo were mentioned. One outstanding project is a home for the aged in which there is a small but effective sheltered workshop.

Hospitals offer a good many opportunities for activities in the field of aging. Specifically mentioned was the possibility that someone in the hospital might be able to work with families of patients while the patient is still in the hospital in order that the patient might later be cared for more effectively in the home.

1105 Broadway, Buffalo 12

Closing Remarks

Joseph J. Witt: We've had a good day today. We've heard an exposition of an action program for medical societies in the field of aging. We have shared in a discussion of the various points of this program, and we have adapted them to the conditions peculiar to the region in which we live and work. We now must carry the information and inspiration we have gained here today back to our own county societies, there to initiate new and nurture existing programs in the field of aging. Organized medicine has certain responsibilities in solving the problems of aging. Let us meet these responsibilities with dignity and to the benefit of all our fellow men.

258 Geneva Street

Ergotamine Tartrate: Its History, Action, and Proper Use in the Treatment of Migraine

ARNOLD P. FRIEDMAN, M.D., THEODORE J. C. VON STORCH, M.D., AND SHUKURO ARAKI, M.D.,
BRONX, NEW YORK

(From the Headache Unit, Montefiore Hospital)

ERGOTAMINE tartrate has been used effectively in the symptomatic treatment of migraine for the past twenty-four years. However, in spite of the advantages of this agent, there still is a great deal of hesitancy and misunderstanding on the part of many practicing physicians concerning its use. The purpose of this communication is to review the use of ergot from a historical standpoint, and to discuss the pharmacologic and clinical aspects of ergotamine as a treatment for migraine.

For centuries epidemics of ergot poisoning due to the contamination of grain by a poisonous, parasitic fungus, Claviceps purpurea, have been reported. This illness occurred chiefly in the rye-producing districts of South Germany and France, where rye was grown in preference to wheat. The disease appeared only in certain years and in wet seasons. Under such circumstances the rye is commonly affected with a fungus which appears in the head of the grain as black, slightly curved spurs three or four times the length of the natural grain.

Such epidemics appeared mostly in the fall after harvest time, attacking primarily the poor, causing untold suffering, and leaving many people crippled. Documented reports of ergot poisoning in the early Greek and Roman literature are difficult to secure, but it is known that in the Middle Ages gangrenous ergotism occurred in epidemic form in France. The characteristic symptom was gangrene of the feet, legs, and arms. In severe cases the tissues were dry and blackened, and the limbs separated from the body without loss of blood. Mention was also made of burning sensations in the extremities. The disease was called "holy fire" or "St. Anthony's Fire," the latter in the honor of the saint at whose shrine relief was said to be obtained. The religious wars of the sixteenth and seventeenth centuries brought further evidence of ergotism, which spread over Germany and into Switzerland. During this period grain was not cleaned and because of their great hunger people ate any obtainable food. The outbreaks in these countries were characterized by the convulsive as well as the gangrenous form of ergotism.

In the middle of the seventeenth century it was found that ergot was probably the cause of many of the destructive epidemics which for centuries had raged uncontrolled. Nevertheless, these continued into the present century, occurring in Ireland in 1925, in Russia in 1926, and possibly in France as late as 1953.

The earliest reports in the medical literature of the use of ergot in the treatment of migraine were made by Eulenburg[1] of Germany in 1883 and Thomson[2] of the United States in 1894. In 1898 Loomis and Thompson's[3] "System of Practical Medicine" recommended ergot therapy in migraine. In the years to follow, ergot was not used in this way by many practitioners, owing perhaps to the inconsistent effects of the crude extracts. However, in 1918 Stoll[4] succeeded in isolating a new and homogeneous alkaloid of ergot which was given the name ergotamine (or Gynergen). In the first years after its discovery it was used only in the field of obstetrics and gynecology. In 1926, however, Maier[5] of Zurich, Switzerland, mentioned the effectiveness of ergotamine tartrate in the treatment of migraine at a meeting of the Neurological Society in Paris. The first systematic study was published in 1928, when Tzanck[6] of France reported 12 cases in which ergotamine tartrate was taken orally to abort attacks of migraine.

Results of the first controlled studies in the United States were published independently in 1934 by Lennox[7] of Boston, Brock, O'Sullivan, and Young[8] of New York, and Logan and Allen[9] of the Mayo Clinic in Rochester, Minnesota. These reports were soon followed by a number of others which contributed greatly to the acceptance of ergotamine therapy for migraine. In 1937 Graham and Wolff[10] demonstrated the vascular origin of migrainous pain and clarified the probable action of ergotamine in this disease.

In order to insure a reliable action, ergotamine was at first given by injection. In an effort to secure equal effectiveness with oral and rectal medication, caffeine was combined with ergotamine in tablets and suppositories (Cafergot). The first studies on this form of drug were published in 1948 by Horton, Ryan, and Reynolds[11] of the Mayo Clinic and by Friedman, Brenner, and Merritt[12] of New York. Since that time many papers have been published on the use of this drug in the treatment of thousands of cases of migraine.

Pharmacology

Ergotamine, together with other related active principles, is synthesized by the ergot fungus, Claviceps purpurea. However, experience has shown that the content of active principles in ergot is extremely variable, depending on the origin and age of the organism. The earlier therapeutic results obtained by obstetricians were often disappointing because some of the samples of ergot contained little of the active principles. When ergotamine was isolated as a crystalline chemical compound, it was employed with greater certainty in obstetrics and gynecology, and later in the treatment of migraine.

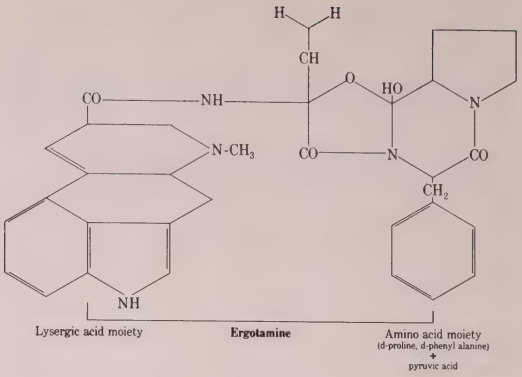

FIG. 1. The chemical components of ergotamine.

The substances isolated from ergot have been divided by Barger[13] into two main groups. In the first group are the important ergot alkaloids which are not obtainable from any other source; in the second group are a heterogenous collection of compounds which are also obtainable elsewhere. Among the latter are carbohydrates, glyceroids, sterols, amino acids, amines, and quaternary ammonium bases. Among the amines of pharmacologic importance are histamine, tyramine, and isoamylamine. Among the quaternary ammonium bases found in ergot are choline and acetylcholine.

All ergot alkaloids are derived from lysergic acid, an indole compound which contains the characteristic indole ring structure.[14] It is a nonsaturated aromatic acid containing five double bonds (C=C). One of these double bonds of lysergic acid can be selectively saturated, resulting in the formation of a well-defined, stable, and crystallized dihydrogenated alkaloid, dihydroergotamine.[15] Ergotoxine and ergotamine are polypeptide derivatives of lysergic acid, while ergonovine is simpler and consists of an amino acid alcohol attached to the lysergic acid nucleus (Fig. 1). All ergot alkaloids occur in pairs that are stereoisomeric. The "ine"-alkaloids are levorotatory and show more pharmacologic action than the dextro-alkaloids.[16]

The sympathicolytic action of the ergot alkaloids does not result from the lysergic acid portion of the molecule but from the basic fragment to which it is joined by an amide-like linkage. Hydrogenation decreases the ability of all natural alkaloids to stimulate smooth muscle and increases their adrenergic blocking activity. It is pertinent to note that the hydrogenation of ergot alkaloids, which increases adrenergic blocking activity, reduces their effectiveness in the treatment of migraine.

The principal actions of these alkaloids may be classified as follows: (1) those which result from an alteration of central nervous system activity affecting respiration, pulse rate, blood pressure, body temperature, and causing emesis, and sedation of emotional motor excitation; (2) those with peripheral points of attack, such as direct stimulation of smooth muscle organs, especially the uterus, blood vessels, and iris; and (3) those which are latent or potential, that is, the inhibition of functions which are stimulated or depressed either by the excitation of sympathetic nerves or by epinephrine. Such effects are visible only if the expected function is activated by either a sympathetic nerve or epinephrine.

Ergotamine exerts rather complex actions on the central nervous system and the cardiovascular system, which are difficult to analyze in human beings.[17,18] It acts as a direct coronary vasoconstrictor and will cause peripheral vasoconstriction by a direct action on vascular musculature. Isolated arteries and perfused blood vessels react to the drug by constriction. Ergotamine may also damage the capillary endothelium; the mechanism of this action is not understood. Vascular stasis, thrombosis, and gangrene may result and cause many of the features noted in ergot poisoning. The diethylamides of lysergic acid produce powerful central nervous system reactions which cause confusion and a state resembling schizophrenia.[19]

Experiments have shown that ergotamine and dihydroergotamine produce vasoconstriction of the extracranial and intracranial branches of the external carotid artery.[20] These drugs may also increase the cerebral blood flow, probably by dilating the branches of the internal carotid artery. Although ergot alkaloids possess a significant adrenergic blocking activity, it is unlikely that this occurs with the dosage used in the treatment of patients with headache.[21]

One of the most characteristic effects of the ergot alkaloids is the direct stimulation of smooth muscles in many organs. In most instances this occurs with smaller doses than are necessary to produce adrenergic blocking. That stimulation of smooth muscle by ergot alkaloids is unaltered by dibenamine (N, N-dibenzyl-B-chloro-ethylamine) is evidence against the effect's being sympathomimetic in nature. The beneficial effect of ergotamine in migraine is probably due to the direct action of the substance on the smooth muscles of the blood vessels, producing a constriction of these vessels and a decrease in amplitude of pulsation.

Pichler[22] and his co-workers recently demonstrated that the therapeutic effect of ergotamine in migraine is peripheral. The following observations led to this conclusion: (1) The elevation of the blood pressure during the "cold pressor" reaction was not prevented. (2) Sensitivity of the carotid sinus reflex was not altered during the period of nausea following administration of ergotamine tartrate. (3) Bradycardia during infusion of levarterenol occurred during the period of nausea following administration of ergotamine tartrate. (4) In two subjects with sympathectomized extracranial arteries the peripheral vasoconstrictor action was as effective as in subjects with intact arteries.

The physiologic effects of ergot in humans are exceedingly variable. In some persons there is a slowing of the pulse and a slight rise in the blood pressure and in the cerebral spinal fluid pressure.[23] Ergot may delay the emptying of the stomach, presumably by direct action on the gastric musculature.

The emetic effect probably results from action on the central nervous system.

The fate and excretion of ergot alkaloids is in need of further investigation. Penetration of significant amounts into the brain cannot be demonstrated, but they have been found in the cerebrospinal fluid.[16,24] The liver apparently contains greater concentrations of alkaloid than does the circulating blood. The ergot alkaloids have also been recovered in the kidney, spleen, and muscles. Their action probably persists for several hours.

Use of Ergotamine in the Treatment of Migraine

Ergotamine in the treatment of migraine headache acts as a vasoconstrictor on the affected vessels, thus interrupting the vasodilator mechanism responsible for the pain. Clinical evidence of its beneficial effect has been supported by experimental observations in the laboratory. No other drug has been as effective for specific treatment of migraine.

In the symptomatic treatment of 2,500 patients with migraine, ergotamine tartrate proved to be the most successful and useful drug, as reported by Friedman and Merritt.[25] A composite study of this group indicated that the highest percentage (83 per cent) of symptomatic relief was obtained by early and adequate administration of ergotamine and caffeine, alone or combined with antispasmodic drugs and/or sedatives. When the drugs were used in various combinations as mentioned above, the results were not significantly better for any one combination or for oral or rectal routes of administration. Oral administration of ergotamine tartrate gave good results in 50 per cent of the patients, but when given parenterally, this drug or dihydroergotamine was effective in 80 per cent.

Kadish,[26] Moench,[27] and MacNeal[28] essentially concurred with the above findings. Rigg and Beaver[29] reported successful use of ergotamine and caffeine in aborting attacks of migraine in a series of 82 patients. Graham,[10] in a review of the treatment of migraine, reported similar results with these preparations. O'Sullivan,[30] Lennox,[31] and von Storch[32] in early studies reported successful treatment of migraine with ergotamine. Wolff[33] and his co-workers showed both clinical and experimental evidence of its effectiveness.

In spite of ergotamine's value in the treatment of migraine, its use is often avoided because of fear of complications. When used, it is at times unsuccessful because no attempt is made to find the proper stabilizing dose for the patient, to control the side-effects, or to differentiate between the side-effects of the drug and accessory symptoms which occur even without its use. This differentiation can be made by means of careful history.

Administration and Dosage.—Although ergotamine tartrate can be used in symptomatic treatment orally, rectally, or parenterally, the most practical route is oral or rectal. Rectal administration has proved empirically to be most efficacious, especially when oral medicament cannot be retained. The importance of administering the drug early in the course of an attack, as well as in adequate doses, cannot be overemphasized. Many therapeutic failures are the result of dosage which is too little or too late. The optimal time of administration is in the prodromal period or, at least, not later than immediately after the onset of the headache.

For each attack the average initial oral dose of Cafergot is two tablets, followed by one tablet at half-hour intervals until the necessary effect is produced, or to a total of six tablets. (Each tablet contains ergotamine tartrate 1 mg. and caffeine 100 mg.) However, the minimum effective dose must be determined for each patient. Thus in some cases the initial dose may be one tablet, whereas in others four may be necessary at the first sign of a headache. Furthermore, the severity of attacks varies from time to time in each patient, as well as

TABLE I.—Ergotamine Preparations Used in Treatment of Vascular Headache

Method of Administration	Medicament	Action
Oral	Ergotamine tartrate 1.0 mg. (Gynergen)	Vasoconstrictor
	Ergotamine tartrate 1.0 mg., caffeine 100 mg. (Cafergot)	Vasoconstrictor
	Ergotamine tartrate 1.0 mg., caffeine 100 mg., pentobarbital sodium 30 mg., Bellafoline 0.125 mg. (Cafergot P-B)	Vasoconstrictor and sedative
	Ergotamine tartrate 1.0 mg., caffeine 100 mg., belladonna alkaloids 0.1 mg. (levo-rotatory), acetophenetidin 130 mg. (Wigraine)	Vasoconstrictor, antispasmodic, and analgesic
	Ergotamine tartrate 1.0 mg., cyclizine hydrochloride 25 mg., caffeine 50 mg. (Migral)	Vasoconstrictor and antiemetic
	Ergotamine tartrate 1.0 mg., amphetamine sulfate 1.0 mg., caffeine 50.0 mg.	Vasoconstrictor
	Ergotamine tartrate 0.6 mg., bellafoline 0.2 mg., phenobarbital 40 mg. (Bellergal)	Vasoconstrictor, antispasmodic, and sedative
Rectal	Ergotamine tartrate 2.0 mg., caffeine 100 mg. (Cafergot)	Vasoconstrictor
	Ergotamine tartrate 2.0 mg., caffeine 100 mg., Bellafoline 0.5 mg., pentobarbital sodium 60 mg. (Cafergot P-B)	Vasoconstrictor, antispasmodic, and sedative
	Ergotamine tartrate 2.0 mg., caffeine 100 mg., belladonna alkaloids 0.1 mg., acetophenetidin 130 mg. (Wigraine)	Vasoconstrictor, antispasmodic, and analgesic
	Ergotamine tartrate 2 mg., cyclizine hydrochloride 50 mg., caffeine 100 mg. (Migral)	Vasoconstrictor and antiemetic
Parenteral	Ergotamine tartrate 0.25 mg.–0.5 mg. (Gynergen)	Vasoconstrictor
	Dihydroergotamine methanesulfonate 1.0 mg. (DHE-45)	Less vasoconstricting than ergotamine tartrate

from patient to patient; hence some adjustment of dosage may be required. The average rectal dose of Cafergot is one suppository (ergotamine tartrate 2 mg. and caffeine 100 mg.) every half hour, a total of three suppositories being used if necessary. The maximum dose of ergotamine is 6 to 8 mg. in any one day; this dose (six to eight tablets or four suppositories) should not be given more than once weekly.

In certain instances ergotamine with caffeine in suppository form is more effective than the tablet. Although some authors state that parenteral administration of ergotamine tartrate is the most effective treatment for the migraine attack, we have seldom found it necessary to continue use of this route. The majority of headaches have, in our experience, been eventually controlled by oral or rectal administration. When the drug is given parenterally, not more than 0.5 mg. subcutaneously or 0.25 mg. intravenously should be administered in a single week.

Cafergot P-B suppositories are particularly effective when anxiety, abdominal pain, and vomiting are associated with the attacks of migraine. An initial trial with one half of a suppository is recommended. If this is not effective, the dosage may be increased to two or three suppositories for any given attack. Following the administration of the larger doses the patient is frequently sedated and unable to carry on fully his everyday functions.

In the past ten years we have tried numerous combinations of ergotamine tartrate with antispasmodics, sedatives, central nervous system stimulants, antiemetics, and others. More recently many forms of ergot derivatives have been made available as proprietary preparations incorporating some of the agents mentioned above (Table I). These preparations may be used to suit the individual patient's need.

Some patients react poorly to ergotamine tartrate. In such instances the use of dihydroergotamine methanesulfonate (DHE-

45) is indicated. Dihydrogenation of ergot reduces the vasoconstrictive action. To produce an equivalent therapeutic effect dihydroergotamine must be given in doses twice as great as those of ergotamine tartrate. It can be administered only parenterally and, like ergotamine, it must be given as early as possible in the attack. The usual dose is 1 mg. intravenously or subcutaneously, to be repeated in an hour if necessary.

Ergonovine is only moderately effective in migraine. It terminated the headache in only 37 per cent of the patients reported by Lennox[31] in 1938. Our experience is in agreement with his findings.

Contraindications.—The administration of ergotamine or dihydroergotamine is contraindicated in the presence of peripheral vascular diseases, angina pectoris, impaired hepatic or renal function, and septic states associated with intravascular diseases, thyrotoxicosis, cachexia, avitaminosis, or pregnancy.

Complications.—If persistent paresthesias, substernal oppression, pain in the abdomen or extremities, tachycardia, or bradycardia develop, therapy should be discontinued at least temporarily. Most of these effects are transitory and do not necessitate permanent discontinuation of ergotamine therapy. Most frequently they indicate the need for stabilization of dosage and control of side-effects. In the occasional patient who is sensitive to the drug, localized itching and edema may develop following administration of the drug. However, muscle spasm of the extremities can be ameliorated by massage or exercise, and nausea and vomiting and intestinal spasm may be relieved by the use of one of the following drugs before or during the administration of the medicament: atropine sulfate 0.65 mg. (1/100 gr.), Bellafoline 0.25 mg. (1/250 gr.), Thorazine 50 to 75 mg., or Compazine 10 to 15 mg.

TABLE II.—Reported Instances or Prolonged and/or Massive Dosage of Ergotamine Tartrate without Ill Effects

Number of Cases	Years	Range of Dosage (Mg.)	Maximum Totals (Mg.)
20	2–5	9 by mouth subcutaneously	2,160[32]
5	1–9	0.15 to 0.5 parenterally	1,460[34]
5	10–32	7 per rectum to 2.25 intramuscularly	7,650[39]
1	4–1/2	? intravenously and intramuscularly	1,422[35]

In the past four years in our clinic over 1,200 patients have been given ergotamine plus caffeine either orally or rectally for the treatment of migraine. Side-reactions occurred in approximately 10 per cent of this group, while they occurred in approximately 16 per cent of a series of 108 patients who were given ergotamine tartrate parenterally for symptomatic treatment of migraine. The outstanding symptoms were nausea and vomiting (62 per cent). Other symptoms included abdominal pain, leg cramps, vertigo, diarrhea, and increased headache. No serious complications occurred. Our findings are comparable to those previously reported in the literature. These reports[26–29] indicate that ergotamine, by injection, produced side-effects in 15 to 30 per cent. Ergotamine and caffeine were said to produce side-effects in only 10 per cent.

In reviewing the literature we find that during the past thirty years a number of reports have been made concerning the side-effects of ergotamine. However, considering the number of patients using the drug, serious effects probably occur in less than 0.01 per cent, as reported by von Storch[32] in 1938. If we eliminate the cases wherein ergotamine has been contraindicated because of other conditions, or wherein proper dosage has not been maintained, the problem of serious complications becomes negligible.

Peters and Horton,[34] Wolfson and Graham,[35] Alvarez,[36] Silverskiold,[37] Lennox,[38] Friedman, Brazil, and von Storch,[39] and others have reported patients taking large doses of ergotamine for long periods of time without any significant side-effects (Table II). One of us (A. F.) observed a fifty-two-year-old male who had been taking from 2 to 4 mg. of ergotamine tartrate daily by oral or parenteral route for over eighteen years, with no side-effects noted or observed on examination.

It should be noted that frequent doses of ergot will stop the headache of the moment but tend to produce a rebound phenomenon of vasodilatation which produces the next headache. In such instances the patient should be hospitalized and all ergot medication withdrawn. The use of heavy sedation with gradual reduction of the sedation, in our experience, allows the patient to stop using ergot and break up the headache cycle.

On the other hand, reports in the literature[40-45] indicate that complications of ergotism have developed from the use of ergot preparations. Circulatory symptoms were the most prominent and usually started in the extremities. The signs and symptoms arising from such vasoconstriction are muscle cramps, joint pains, paresthesias, coldness of the extremities, pulselessness, thrombophlebitis, peripheral arterial thrombosis, and gangrene. Anginal pain, tachycardia, or bradycardia may also occur. Two factors may be involved in the impairment of circulation: vasoconstriction and lesions of the intima which occlude the smaller arteries. In addition to circulatory disturbances, other symptoms of ergot poisoning include headache, nausea, dizziness, weakness, and symptoms referrable to the central nervous system such as confusion, depression, and convulsions. The only reported fatal cases of ergot poisoning occurring in the course of migraine therapy have been those of physicians who took 3 mg. and 3.2 mg. of ergotamine tartrate administered in one dose intravenously. However, it should be pointed out that ergot poisoning as described previously is exceedingly rare with the present purified form of the alkaloid. Our review of the literature indicates that poisoning can occur only when ergot alkaloids are used in conditions contraindicating the drug, or are injected in large amounts for uses other than treatment of migraine, for example, abortion.

Conclusions

Through the labors of many chemists and clinicians a valuable substance, namely, ergotamine tartrate, has been derived from its poisonous parent, ergot. When properly used, this substance is valuable and safe in the practice of medicine. Singly, or especially when combined with caffeine, it is the most successful symptomatic agent in the treatment of migraine. Its unpleasant side-effects can be minimized or eliminated when the drug is properly administered. Only in rare instances has ergotism been a serious consideration in its use. Massive doses given over prolonged intervals have in many instances been without ill effect. Minimal properly controlled dosage is recommended in all cases, despite seeming safety in occasional massive dosage.

Ergotamine tartrate, usually in suitable combination with other drugs, and in a dosage adjusted to the individual patient, continues to be the best symptomatic treatment for true migraine.

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Needle Biopsy of the Pleura

ROBERT A. GREEN, M.D., BRONX, NEW YORK*

(*From the Chest Section of the Medical Service, Veterans Administration Hospital*)

BIOPSY of the parietal pleura with the Vim-Silverman needle was originally reported by DeFrancis *et al.*[1] as a diagnostic procedure in patients with pleural disease and effusion of unknown cause. Because of its simplicity, ease of performance, considerable diagnostic value, and lack of serious complications, the procedure seems to have gained fairly widespread acceptance and use since publication of the original article.[2-5]

This report will present the results of 22 biopsies of the pleura in 18 consecutive patients. This comprises our experience with the procedure in the first ten months of its use on the medical service of the Bronx Veterans Administration Hospital. The indication for pleural biopsy in this group was the presence of pleural disease with effusion of not immediately apparent cause.

Procedure

The technic used in this series was that described by other workers with some modifications.[1,2] No premedication was given. Following identification of the biopsy site and suitable preparations of the skin, local anaesthetization with 1 per cent procaine hydrochloride was carried down to the pleura. As soon as pleural fluid was obtained, the distance from the skin to the pleural cavity was noted on the anaesthetizing needle; by using parallel Kelly clamps, an equal distance was marked off on the outer Vim-Silverman needle with the biopsy shaft in place. A small incision was made in the skin, and the Vim-Silverman needle, with the biopsy shaft removed and the obturator in place, was inserted under the skin to the level previously marked off by the Kelly clamp. The obturator was removed, the biopsy shaft reinserted to its full depth, and the Kelly clamp removed. The outer trocar was extended downwards approximately 2 cm., and then both the trocar and the biopsy shaft were rotated and the entire apparatus removed. Collodion and a dry dressing were applied.

Findings

The procedure was performed on 18 patients. In 11, pathologic changes were found which influenced, to varying degrees, the diagnosis and conduct of the cases. In 7, either an inadequate specimen or no definite pathologic condition was identified. Table I gives pertinent data for each case.

In 3 patients, pleural biopsy was the decisive factor in diagnosis and subsequent management. These 3 cases are more fully described below.

CASE 1.—A sixty-three-year old white male developed left-sided chest pain and dyspnea, which were progressive, two months prior to admission. Physical examination gave normal findings except for signs of pleural fluid over the lower half of the left side of the chest, confirmed by x-ray. Laboratory study was not helpful. The tuberculin skin test (PPD-S) result was positive in first strength. Thoracentesis revealed clear yellow fluid which contained 1,800 white cells per cubic centimeter, of which 78 per cent were lymphocytes. The specific gravity was 1.020 and total protein 4.2 Gm. per cent. Cultures for acid-fast bacilli were negative. Bronchoscopy gave negative findings. The patient was afebrile. Gradual reaccumulation of fluid was noted after a number of thoracenteses. The differential diagnosis was considered to lie between tuberculosis and neoplasm.

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* Currently, Chief of the Chest Section, Veterans Administration Hospital, Ann Arbor, Michigan.

TABLE I.—Summary of Data Pertaining to 18 Cases in which Needle Biopsies of the Pleura Were Performed

Case	Age	Preoperative Data	Chest X-ray Finding	Reason for Biopsy	Biopsy Finding	Complications	Confirmation	Course
GROUP A.—Cases in Which the Pleural Biopsy Specimen was Positive								
1.	63	Two months dyspnea, chest pain. No fever. Gradual reaccumulation of left pelural lymphocytic exudate.	Pleural effusion, left.	Diagnosis (tuberculosis?, tumor?).	1. Negative 2. Carcinoma cells	None None	Lymph node biopsy.	Gradually downhill; death two years later.
2.	66	Acute febrile illness. Right pleural effusion, lymphadenopathy, high white cell count.	Calcifications both upper lobes; pleural effusion, right.	Differentiate tuberculosis and leukemia.	Tuberculoid granuloma	None	Pleural fluid cultures negative.	Response to antituberculous chemotherapy. Died one year later of myocardial infarction.
3.	62	Known chronic lymphatic leukemia. Fever, dyspnea. Left pleural effusion.	Pleural effusion, left. No mediastinal nodes.	Differentiate tuberculosis and leukemia.	Tuberculoid granuloma	Intrapleural hemorrhage, chest wall infection.	Pleural fluid cultures positive for acid-fast bacilli.	Response to antituberculous chemotherapy.
4.	42	Acute febrile illness. Tuberculin and histoplasmin skin tests positive. Sputum smears negative for acid-fast bacilli.	Bilateral midzone pulmonary infiltrates with pleural effusion, left.	Differentiate tuberculosis, possibly other infection.	Tuberculoid granuloma	None	Pleural fluid and sputum cultures positive for acid-fast bacilli.	Response to antituberculous chemotherapy.
5.	69	Upper respiratory infection followed by right pleural lymphocytic exudate.	Pleural effusion, right.	Differentiate tuberculosis, tumor, postpneumonic effusion.	Tuberculoid granuloma plus much nonspecific inflammation.	None	Pleural fluid cultures positive for acid-fast bacilli.	Response to antituberculous chemotherapy.
6.	33	Chest pain for one month. Afebrile. Right pleural lyphocytic exudate. Tuberculin test positive.	Small pleural effusion, right.	Differentiate tuberculosis from other causes of effusion.	Large area of nonspecific fibrosis.	None	Pleural fluid culture negative for acid-fast bacilli.	Rapid clearing of effusion.
7.	60	Ascites, pleural effusion three months. Cause obscure.	Pleural effusion, right.	Diagnosis; suspect tumor.	1. Negative 2. Adenocarcinoma	None None	None	Death one month later (no autopsy).
8.	60	Adenocarcinoma of colon resected one year previously. Asymptomatic.	Pleural effusion, right. Possible nodular metastases, left lung.	Diagnosis; suspect tumor.	Necrotic adenocarcinoma. Much adjacent fibrosis.	None	Autopsy	Death one month later.

9.	65	Cough, weight loss, chest pain two months. Originally considered to be tuberculosis. Sputum smears negative.	Cavity right upper lobe, infiltration right lower lobe. Pleural effusion, right.	Diagnosis; suspect tumor.	Adenocarcinoma	None	Bronchoscopy revealed carcinoma	Death two months later.
10.	39	History of "lymphoma" for six months diagnosed and treated elsewhere. Fever. Questionable positive smear for acid-fast bacilli on pleural fluid.	Bilateral pleural effusion.	Differentiate tuberculosis and lymphoma.	Lymphosarcoma	None	Autopsy revealed massive lymphosarcoma; no evidence of tuberculosis.	Death three weeks later.
11.	42	Known chronic lymphatic leukemia, arteriosclerotic heart disease with congestive heart failure. Recurrent right pleural transudate.	Pleural effusion, right. Enlarged heart	Differentiate leukemia and heart failure.	1. Fibrin particles 2. Scattering of chronic inflammatory cells. Leukemic infiltrate?	None None	Autopsy re-revealed some nonspecific fibrinous pleurisy with focal collection of leukemic cells under the visceral pleura.	Death three months later.
GROUP B.—Cases in Which the Pleural Biopsy Specimen was Either Negative or Inadequate for Diagnosis								
12.	61	Known pulmonary tuberculosis, inactive for five years. Acute illness with left pleural lymphocytic exudate.	Bilateral upper lobe pulmonary infiltration. Small pleural effusion, left.	Differentiate tuberculosis from other infections.	Negative	None	Pleural fluid cultures acid-fast negative for bacilli but sputum positive.	Response to antituberculous chemotherapy.
13.	37	Known Laennec's cirrhosis. Febrile course with left pleural lymphocytic exudate.	Pleural effusion, left.	Diagnosis; suspect tuberculosis.	Negative	None	Pleural fluid cultures negative for acid-fast bacilli.	Apparent response to antituberculous chemotherapy.
14.	60	Weakness, chest pain.	Mass left lung with small pleural effusion.	Diagnose involvement of parietal pleura by tumor.	Negative	Subcutaneous emphysema, no pneumothorax.	Developed masses in right lung.	Death (no autopsy).
15.	57	Known chronic myelogenous leukemia. Febrile course, with left bloody pleural effusion.	Pleural effusion, left.	Differentiate leukemia and tuberculosis.	1. Negative 2. Negative	None Intrapleural hemorrhage	At autopsy pulmonary infarcts; no evidence of significant pleural leukemia.	Death in blastic crisis of leukemia two months later.

(Continued)

(TABLE 1.—*Continued*)

Case	Age	Preoperative data	Chest X-ray Finding	Reason for Biopsy	Biopsy Finding	Complications	Confirmation	Course
16.	59	Cough, chest pain for two months.	Pleural effusion, right. Mass visualized after thoracentesis.	Diagnose involvement of parietal pleura by tumor.	Negative	None	Bronchoscopy revealed carcinoma.	Death eight months later.
17.	66	Known congestive heart failure. Bloody pleural exudate, left.	Pleural effusion, left. Paralyzed diaphragm.	Differentiate tumor and heart failure; suspect tumor.	Small patch of fibrosis.	None	None	Died one week later (no autopsy).
18.	59	Acute illness with dyspnea, chest pain, pericardial friction rub. Electrocardiogram suggestive of pericarditis.	Enlarged heart with pleural effusion, left.	Differentiate tuberculosis, tumor, or the causes of pericarditis.	Negative	None	None	Probable acute benign pericarditis with complete recovery.

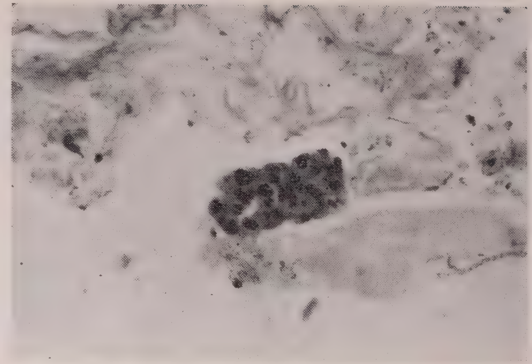

FIG. 1. *Case 1.*—Microscopic view of clump of carcinoma cells in pleural tissue (× 280).

Vim-Silverman needle biopsy of the parietal pleura was performed on two occasions, no pleura being obtained on the first one. A clump of cells interpreted as carcinoma cells was seen on the second biopsy (Fig. 1). Because reaccumulation of fluid gradually ceased and the patient required no further thoracenteses, no treatment was felt to be indicated. One year later a left supraclavicular lymph node appeared, and biopsy revealed metastatic adenocarcinoma. The primary site never became clinically apparent. The patient died two years after the clinical onset of disease. Permission for autopsy was not obtained.

CASE 2.—A sixty-six-year-old white male gave a history of fever, dyspnea, and right-sided pleuritic chest pain of three weeks duration. On admission he was febrile and acutely ill. Signs of a right pleural effusion, including a friction rub, were noted. Generalized enlargement of lymph nodes was also found. His white blood cell count varied between 37,000 and 65,000, with 65 to 83 per cent lymphocytes in the differential count. Anemia was present, but there was no thrombocytopenia. X-ray of the chest demonstrated a right pleural effusion and calcific densities in both upper lobes. The tuberculin skin test result was positive in first strength. Thoracentesis revealed clear amber fluid which contained 8,000 cells, 99 per cent of which were lymphocytes. Specific gravity was 1.015, the total protein 4.1 Gm. per cent. A lymph node biopsy was read as compatible with chronic lymphatic leukemia or lymphosarcoma. The bone marrow showed increased numbers of lymphocyten.

The patient's course continued markedly

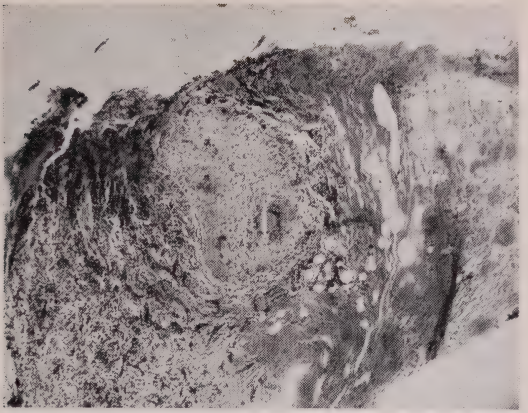

FIG. 2. *Case 2.*—Microscopic view of pleural specimen revealing a tuberculoid granuloma (× 100).

febrile. It was felt that the differential diagnosis lay between tuberculosis (perhaps with a leukemoid reaction), a leukemic process, or both diseases. Vim-Silverman needle biopsy of the parietal pleura revealed a tuberculoid granuloma (Fig. 2). He had an excellent and prompt clinical response to antituberculous chemotherapy without a significant change in his hematologic status. His course indicates that he has both a tuberculous pleural effusion and chronic lymphatic leukemia. It is of interest that culture of the pleural fluid for tubercle bacilli was negative.

CASE 3.—This sixty-two-year-old white male had known chronic lymphatic leukemia of eight years duration. He developed fever and dyspnea shortly before admission. He gave a history of multiple febrile episodes in the past, usually treated by radiation therapy or occasionally by a short course of steroids. Physical examination revealed hepatosplenomegaly and moderate generalized lymphadenopathy as well as evidence of the left pleural effusion. The white blood count was 108,000 with 97 per cent lymphocytes in the differential count. X-ray of the chest demonstrated a large left pleural opacity with no evidence of mediastinal or hilar adenopathy. Thoracentesis revealed straw-colored fluid containing 5.6 Gm. per cent protein and numerous lymphocytes. Temperature elevations to 103 F. were noted daily. The most likely diagnosis was considered to be chronic lymphatic leukemia with pleural involvement, and preparations were made for installation of radioactive P^{32} into the left pleural space. However, needle biopsy of the pleura revealed a number of tuberculoid granulomata, one of which showed central necrosis (Fig. 3). In addition, a focal collection of lymphocytes was noted in the subpleural fat, compatible with either the inflammatory response or a leukemic infiltration. A small artery was also seen. Culture of the pleural fluid for acid-fast bacilli was later reported as positive.

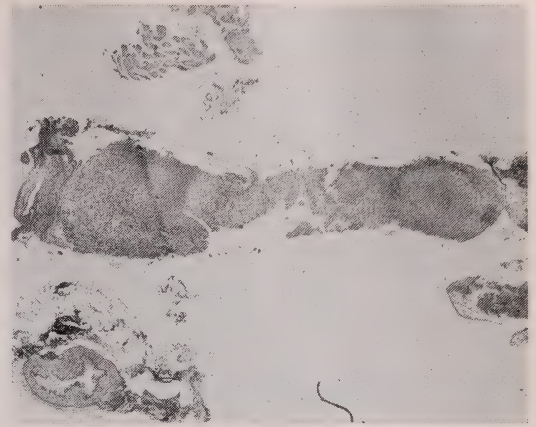

FIG. 3. *Case 3.*—Microscopic view of multiple caseating granulomata in pleural tissue with a small artery also in the specimen (× 33).

Eight hours after the procedure the patient had a chill and noted some increase in dyspnea. Hemoglobin, which previously had been 9.3 Gm. per cent with a hematocrit of 29, was noted to have dropped to 7.1 Gm. per cent. The hemoglobin fell further to a low of 5.7 Gm. with a hematocrit of 18 four days after the procedure. Thoracetesis on a number of occasions was productive of moderate amounts of serosanguineous fluid. The patient responded to multiple transfusions.

Six weeks later a 4-by-4-cm. fluctuant mass was noted in the chest wall at the biopsy site. Aspiration revealed frank pus which was sterile on routine culture. No fluid could be obtained from the pleural cavity at this time, and the chest wall mass did not recur.

The patient responded well to antituberculosis chemotherapy, promptly becoming afebrile despite the complications. He has apparently developed a partial fibrothorax on the left side, presumably secondary to the hemothorax, from which he has noted no significant disability.

In 7 patients in this study a clinical diagnosis of tuberculosis was favored, but confirmatory evidence was not available at the time the needle biopsy of the pleura was

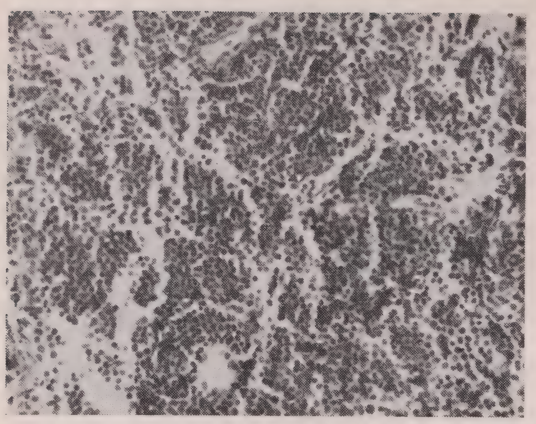

FIG. 4. *Case 10.*—Microscopic view of pleural tissue revealing lymphosarcoma (× 280).

performed. In 2 patients (Cases 12 and 13) the biopsy specimen was inadequate. Bacteriologic confirmation of the diagnosis of tuberculosis was obtained in Case 12. Both patients responded to antituberculous chemotherapy. Of 5 patients in whom the pleural biopsy specimen was adequate, the histologic findings in 4 (Cases 2 to 5) were highly suggestive or diagnostic of tuberculosis of the pleura. In 3 of these patients the pleural fluid cultures were positive for tubercle bacilli. In Case 2, however, bacteriologic studies all gave negative findings. The response to antituberculous therapy was good. In the 5th patient (Case 6) a large area of nonspecific fibrosis, with a scattering of chronic inflammatory cells, was present in the section. Cultures reported later did not reveal tubercle bacilli, but in spite of the negative bacteriologic and histologic findings we elected to diagnose and treat this patient as a case of tuberculous pleural effusion because of the presence of a compatible clinical picture. In 1 case (Case 10) needle biopsy revealed lymphosarcoma (Fig. 4).

Complications

Four complications worthy of mention were noted in this series. Two of these, an instance of hemothorax and of chest wall infection, both occurring in Case 3, have been described in the foregoing. The other two instances are presented below.

CASE 14.—A sixty-year-old white male developed weakness and chest pain. X-ray revealed a mass within the left side of the chest associated with a small pleural effusion. Needle biopsy of the pleura was performed in an attempt to learn if a tumor involved the parietal pleura. The biopsy specimen was inadequate. Twenty-four hours after the procedure a moderate amount of subcutaneous emphysema was noted in the chest wall at and around the biopsy site. Fluoroscopy was done, and chest x-rays taken in expiration were promptly obtained. These failed to reveal evidence of pneumothorax. The patient later showed evidence of spread of the tumor to the right lung.

CASE 15.—This fifty-seven-year-old Negro male with known chronic myelogenous leukemia of four years duration, recently treated with Myleran, was admitted to the hospital because of pain on the left side of the chest. Lymphadenopathy, hepatosplenomegaly, fever, and signs of a left pleural effusion were noted. The white blood count was 30,000 with a shift to the left of the granulocytic series. The platelet count was 195,000. Multiple thoracenteses revealed dark bloody fluid which gradually reaccumulated after each tap. Vim-Silverman needle biopsy of the parietal pleura was performed on two occasions in an attempt to differentiate between tuberculosis and leukemic involvement of the pleura. No definite abnormality was noted on either biopsy specimen.

Ten hours after the second biopsy, the patient became severely dyspneic. Chest x-ray revealed considerable increase in the amount of fluid within the left hemithorax with mediastinal shift and a small apical collection of air. The hemoglobin fell from 9.6 Gm. per cent to 8.3 Gm. per cent. The patient received multiple blood transfusions. Tube drainage of the left hemithorax was performed, with removal of copious amounts of bloody fluid which had a hemoglobin value of 4.5 Gm. per cent. It is of interest that the platelet count, which was 204,000 prior to the procedure, was 81,000 the next day. The patient was in serious condition for a few days but then recovered. The pleural fluid had not reaccumulated by the time of his death one month later; the death was due to an acute blastic crisis of his leukemia.

At autopsy the left pleural cavity was obliterated by fibrous adhesions which contained much old hemorrhagic material. Sections of the left lung revealed multiple areas of pulmonary infarction and hemorrhage. Only rare focal collections of leukemic cells were noted underlying the visceral pleura. Unfortunately the intercostal vessels at the biopsy site were not examined.

Comment

TUBERCULOSIS AND NONSPECIFIC FIBROSIS.—In recent years numerous reports have appeared describing various biopsy procedures in the study of patients with pleural effusions of unknown cause.[1-9] Some of these patients were suspected on clinical evidence of having malignant disease of the pleura, but the majority had the clinical picture ordinarily described as idiopathic, or primary, pleural effusion. Bacteriologic[10,11] pathologic,[12] and clinical[13-16] evidence has become available which indicates that in the vast majority of instances this syndrome is a manifestation of tuberculosis. Falk and Stead,[15] reviewing experience with pleural effusions in the United States Army in World War II, concluded that despite negative pleural fluid or sputum bacteriologic findings it is essential that a firm clinical diagnosis of tuberculosis as the cause of primary pleural effusion be made. This is especially true in the younger patient with a more or less characteristic clinical picture.

In broad outline, the cardinal symptoms are chest pain of pleural type, dyspnea, and varying degrees of fever. Cough is usually minimal and most often nonproductive. The onset is not as acute as in the pleurisy associated with bacterial pneumonia. Although constitutional symptoms may be present for some months prior to the appearance of the triad of dyspnea, fever, and pleural pain, these latter usually develop over a period of a few days or weeks. The patient's general condition is most often quite good; when fever is marked, he may not seem as ill as his temperature curve suggests. Abnormalities on physical examination are limited to signs of pleural effusion. The tuberculin skin test result is almost invariably positive, and most of the laboratory findings are within normal limits. The pleural fluid most often consists of a moderate amount of straw-colored exudate with a predominance of lymphocytic cells.

A noticeable reluctance persists in many areas, however, to diagnose tuberculosis in these patients on a clinical basis alone. The various surgical procedures, including needle biopsy of the pleura, have often been utilized in an attempt to obtain pathologic confirmation of the clinical diagnosis. If a significant percentage of patients with negative bacteriologic findings but with a compatible clinical picture were to be subjected to needle biopsy of the pleura with positive results, the value of the procedure would be quickly established. In the majority of patients thus far reported, however, those with positive pleural biopsy results for tuberculosis also have had concurrent or subsequent positive bacteriologic findings. This was also true in the present series. Heller,[2] in fact, wondered if it were possible for a patient to have caseating tuberculous lesions in the pleura revealed by biopsy in the absence of positive cultures, as was demonstrated in Case 2 of this series. Thus, in a small percentage of patients confirmation of the clinical diagnosis of tuberculosis is obtained only by pleural biopsy.

The presence of nonspecific fibrosis in a pleural biopsy specimen presents a problem of decision for the clinician, and it appears that there is a tendency in some areas to consider patients with this finding as nontuberculous.[2] Certainly, nonspecific reactions can be the result of nontuberculous illnesses in patients with relatively similar clinical pictures; individual examples of this are presented in other studies referred to previously.[2,3,5,9] However, a nonspecific fibrosis is known to occur at the periphery of many inflammatory granulomatous and even malignant lesions. This was so in Case 5 of the present series. One of the cases reported by Heller *et al.*[2] which later proved to be tuberculous showed only fibrin at a small open thoracotomy. In the study by Donohoe *et al.*[5] nonspecific pleuritis was noted on 13 occasions. Open thoracotomy in 10 of these patients revealed tuberculosis in 5, malignancy in 2, and truly nonspecific changes in the remaining 3. Thus, 70 per cent of the group in whom a nonspecific reaction was found proved to have tuberculosis or a tumor.

Complete exploration of the thoracic cavity, as performed by Stead *et al.*[9] appears to be necessary before one can conclude that an area of nonspecific reaction in a biopsy specimen, obtained at either a closed or a small open procedure, is representative of the actual pathologic condition. In addition, as evidence indicates that antibiotic chemotherapy considerably decreases the incidence of subsequent tuberculosis in patients with primary effusions,[15] it seems that the wiser alternative is to treat these patients as if they had tuberculosis if the clinical picture is at all compatible. Subsequent experience with the various biopsy technics, correlation of histologic and bacteriologic findings, and long-term clinical follow-up of the patients with nonspecific fibrosis on biopsy are necessary before this group can with confidence be considered nontuberculous.

COMPLICATIONS.—In the 6 patients in the original report by DeFrancis *et al.*[1] no instance of serious complication occurred, and it was felt that the incidence of untoward reactions would be the same as that with simple thoracentesis. No complications were mentioned in the series of five procedures of Breckler *et al.*[3] Although Heller *et al.*[2] state that the procedure is without undue risk, in 1 of their 20 cases an increase in pleural fluid believed to be due to hemothorax was noted after the biopsy and in another patient lung tissue was present in the biopsy specimen. However, neither of these patients had adverse clinical responses. Katz[4] mentions no complications early in his series, and Donohoe, Katz, and Matthews[5] in the completed study report that in 70 biopsies performed on 45 patients no serious complication ensued. However, small pneumothoraces were noted on 2 occasions.

In the present series of 22 biopsies, four complications (18 per cent) were noted. These consisted of two instances of intrapleural hemorrhage, one of chest wall infection, and one of subcutaneous emphysema. In view of the absence in Case 14 of evidence of pneumothorax on the films taken at the time subcutaneous emphysema was noted, it is assumed that the air palpated in the chest wall was introduced at the time of the biopsy. However, injury to the underlying lung cannot be completely excluded, especially in view of the report by Heller *et al.*[2] of the presence of pulmonary tissue in one biopsy specimen in their series and the pneumothoraces mentioned by Donohoe *et al.*[5]

The procedure, therefore, has not been without risk in our hands, with hemorrhage the major complication. Vim-Silverman needle biopsies of the liver have been done extensively in recent years, by either an intercostal or transabdominal approach. Spellberg,[17] in a review of 21 separate series, states that with either approach hemorrhage, usually from the liver, is the most frequent complication. Bleeding from torn intercostal vessels resulting in pleural hemorrhage, although rare, is known to occur. The incidence may be higher in biopsies of the pleura because the associated pleural disease may have resulted in some contraction of the chest wall, thus considerably narrowing the intercostal space in some patients. It is also of interest that both instances of hemothorax in this series occurred in patients in whom the major clinical diagnosis was leukemia, although no specific bleeding tendency had previously been noted in either. In Case 5 the platelet count was found to be low after the procedure was done, and this may well have contributed to some extent to the intrapleural hemorrhage.

The problem of the significant rate of

complications in this series of needle biopsies of the pleura raises the serious question whether this procedure should be performed more or less routinely in cases of undiagnosed primary pleural effusion. The number of patients in this study is small, and further experience with a larger number of cases may indicate that the incidence of hemorrhage in our series is more related to the presence of leukemia in the 2 patients than to the procedure per se. However, at the present time it appears that caution should be exercised in the selection of patients for needle biopsy of the pleura. Certainly, the procedure can be extremely helpful in differentiating between neoplasms and various inflammatory conditions. It seems clear, however, that it should not be done in patients with bleeding diatheses. It is suggested that needle biopsy of the pleura probably should not be performed in those cases in which the clinical diagnosis appears fairly characteristic but should be limited to atypical cases of apparently truly obscure causation.

Summary

Vim-Silverman needle biopsies of the parietal pleura were performed on 18 patients. Pathologic findings of importance were noted in 11 of them. Four instances of complications occurred, two of which were of serious import. It is concluded that caution should be exercised in the selection of patients for the procedure.

The author wishes to thank the staff of the Medical Illustration Service for the preparation of the photomicrographs reproduced in this paper.

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Obesity shortens life, and the greater the amount of overweight, the higher is the mortality rate, according to *Patterns of Disease*, published by Parke, Davis & Company for the medical profession.

Myeloid Metaplasia in Hodgkin's Disease

RUVEN LEVITAN, M.D., HENRY D. DIAMOND M.D., AND LLOYD F. CRAVER, M.D.,
NEW YORK CITY

(From the Medical Neoplasia Service, Department of Medicine, The Memorial Center for Cancer and Allied Diseases, the Lymphoma Section of the Division of Clinical Chemotherapy, The Sloan-Kettering Institute for Cancer Research, and the Department of Medicine, Cornell University Medical College)

Myeloid metaplasia or extramedullary hematopoiesis is found in many conditions and especially in children in the presence of anemia, infection, and erythroblastosis fetalis.[1] In adults it is also seen in different anemias, leukemias, metastatic carcinomas, infectious diseases of bacterial or protozoal origin,[2] hepatic disease[3] (called secondary extramedullary hematopoiesis), and as a separate entity designated as agnogenic myeloid metaplasia.[4]

Myeloid metaplasia in Hodgkin's disease was mentioned in the literature in only one case to the best of our knowledge.[3] This patient had widespread involvement of the marrow by tumor.

It seems to us that the occurrence of myeloid metaplasia in Hodgkin's disease is not generally appreciated; and, therefore, we feel that the following presentation may be of interest.

Material

During a study at Memorial Center of 112 autopsy cases having Hodgkin's disease we observed 5 cases (4.46 per cent of the series) with extramedullary hematopoiesis. In all these cases the site of hematopoiesis was in the spleen. One case also showed hematopoiesis in the liver. In none of these cases was the presence of such a process suspected during life.

An additional case of extramedullary hematopoiesis was found in a patient with Hodgkin's disease who had undergone a splenectomy for hemolytic anemia. All the cases under discussion had a tissue diagnosis of Hodgkin's disease established by members of the Department of Pathology at Memorial Center. All of the patients had been followed at this institution.

Clinical Findings

In the present group there were 3 males and 3 females, all Caucasian. Their ages varied from nineteen to forty-nine years. Four patients had Hodgkin's granuloma, and 2 had Hodgkin's sarcoma. All of the patients had generalized Class III disease. The spleen and liver were palpable in 5 patients, and jaundice was present in 4 cases. One patient had diabetes mellitus.

Anemia of the normocytic and normochromic type was present in all 6 patients; hemolysis was proved in 1 case. Blood loss was not detected in any of these patients. None of them had been exposed to industrial chemicals; however, all had required systemic chemotherapy. All 6 patients required repeated blood transfusions in order to maintain their hemoglobin at a satisfactory level. Leukopenia and thrombocytopenia were present in 5 cases. Red cell abnormalities were not described in any of the cases. In the peripheral blood, normoblasts were seen in only 1 case. Bone marrow aspiration in the 2 cases in which this procedure was performed revealed hypocellular marrows in both instances. Moderate bone involvement by tumor was proved radiologically in 1 case.

The total duration of disease from diagnosis to death varied from thirteen to seventy-four months. The average duration was thirty-one plus months.

This study was supported by a grant from the Lloyd F. Craver Fund of The Memorial Center for Cancer and Allied Diseases.

Pathologic Findings

Five of the cases came to autopsy. Myeloid metaplasia in the spleen was present in all the cases, and it was usually moderate to marked. Myeloid metaplasia in the liver was present in 1 case, and it was of a moderate degree.

In 3 of the cases the bone marrow was extensively involved with Hodgkin's disease, and it was markedly hypocellular in the remaining 2. The spleen was involved with Hodgkin's disease in 3 cases with the result that in these spleens extramedullary hematopoiesis was present in conjunction with Hodgkin's disease. The liver showed abnormalities in 4 cases. In 3, Hodgkin's disease was present; and in 1 case, postnecrotic cirrhosis was demonstrated. One of the cases with Hodgkin's sarcoma involving the liver also had cholangitis with an hepatic abscess. The lungs were involved by Hodgkin's disease in 3 cases, the gastrointestinal tract, and the pancreas in 1 instance each.

Of the pathologic findings not directly related to Hodgkin's disease, it is interesting to note that 4 out of the 5 cases had some renal pathologic condition. The findings in the kidneys were marked glomerulosclerosis in 2 cases (the patients were forty and forty-three years old respectively and neither had hypertension), subacute pyelonephritis in 1 case, and chronic glomerulonephritis in a case with an anomaly of the ureters.

Infections were found in 4 patients. Lobar pneumonia and hepatic abscess were present in 1 case while bronchopneumonia, listerella monocytogenes meningitis, and cryptococcus septicemia were found in 1 case each. These infections were the terminal events in these cases.

Comment

The generally accepted opinion of hematologists is that extramedullary hematopoiesis is a compensatory mechanism, in most cases, which comes into play in the presence of bone marrow failure.[2,5] However, extramedullary hematopoiesis does not necessarily follow bone marrow failure as it is rarely described in the aplastic anemias.[6] Replacement or invasion of the bone marrow cavity does not always cause extramedullary hematopoiesis, for instance, in Albers-Schönberg disease where such a process is seen in only about 25 per cent of the cases.[7] In view of these facts, one has to assume that in addition to bone marrow failure, other factors are necessary to initiate or allow the extramedullary hematopoiesis.

It has been observed that prolonged administration of anterior pituitary extracts resulted in myeloid metaplasia in the spleen and adrenals.[8] This possibly indicates that hormonal factors may be important in initiation of the process. Extramedullary hematopoiesis has been induced in animals by different technics including bleeding and experimental infections.[2] In human beings infections have also been considered as a possible factor in inducing myeloid metaplasia.[4]

In all our present cases of Hodgkin's disease and myeloid metaplasia, anemia and bone marrow failure were present. The bone marrow failure resulted from involvement by tumor in 3 cases and was probably due to chemotherapy in 2 cases. It is of interest, however, to point out that anemia was present in 67 per cent of the 112 patients with Hodgkin's disease. Most of these cases had either a hypocellular marrow or one invaded with tumor, but they did not show extramedullary hematopoiesis. It is also interesting to note that infections and liver disease were each present in 4 cases of the series. Possibly they were contributory factors in the development of extramedullary hematopoiesis.

An intriguing feature, in our opinion, is the fact that 4 out of the 5 autopsied patients had a pathologic condition of the kidney which was unrelated to Hodgkin's disease. We are in no position to comment on the possible significance of this finding.

Summary

Five cases of extramedullary hematopoiesis in the spleen, with similar findings in the liver of 1 patient, were found in 112 autopsied cases with Hodgkin's disease.

The pertinent clinical and pathologic findings in these cases have been presented and discussed, as have the possible mechanisms that initiated extramedullary hematopoiesis in Hodgkin's disease.

We are grateful to Stephen S. Sternberg, M.D., of the Department of Pathology, Memorial Center for Cancer and Allied Diseases, New York City, for his review of the pathologic material.

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Cold Vaccine Predicted within Twenty-Four Months

A vaccine which will prevent from 60 to 70 per cent of all common colds will probably be available within the next twenty-four months, an expert in cold research has predicted.

"I realize that I have stuck my neck out," Dr. Thomas G. Ward, professor of virology at Notre Dame University, South Bend, Ind., said. However, he believes that a vaccine can be developed against "an acceptable proportion of the common colds." In an interview, reported in the April *Today's Health*, published by the American Medical Association, Dr. Ward said he does not believe that common colds will be wiped out, even with an adequate vaccine.

"People are not going to take the vaccine, just as they are not taking polio vaccine. . .," he said. "People are people and we have great difficulty in selling preventive medicine. The prevention of disease is not as glamorous or as consuming to the individual as his actual illness."

From 75 to 80 per cent of common colds are caused by a group of viruses or a group of ordinary bacteria of the streptococcus type, Dr. Ward said. Others may be allergy-symptom colds or psychosomatic. Viruses are protein substances that cannot be seen, even through a microscope. While related to the one-celled bacteria, viruses are not considered to be living bodies in themselves; they have the peculiar ability to live only in the presence of growing material. In addition to colds, they cause such diseases as measles, chickenpox, poliomyelitis, and rabies.

Vaccines composed of dead or "tamed" viruses may be injected into the body and cause it to develop resistance against invasions by the viruses.

Dr. Ward defined a common cold as one wherein the individual has a runny nose two days in succession. This is the nasal type cold which causes the lining of the nose to become reddened and inflamed. No fever is associated with it and it is the kind that may be spread easily to other people. There is no drug now on the market that could be termed effective against common cold viruses. Colds caused by bacteria may respond to antibiotics and allergy-caused colds may respond to antihistamines.

Until an effective cold vaccine is developed, about the only way to keep from catching cold, according to Dr. Ward, is to "follow the usual health measures such as keeping warm and dry, and well-fed. If possible stay away from those who have colds."

Physical Findings in Early Rheumatoid Spondylitis

STANLEY L. WALLACE, M.D., BROOKLYN, NEW YORK

(From the Department of Medicine and the Arthritis Clinic, Jewish Hospital of Brooklyn, and the Department of Medicine, State University of New York Downstate Medical Center)

RHEUMATOID spondylitis is a systemic inflammatory disease, occurring with greatest frequency in young men and characterized by involvement of the sacroiliac joints and the apophyseal joints of the spine. Arthritis of the peripheral joints may occur in about 25 per cent of patients with this disease.[1] Rheumatoid spondylitis may be intermittent or chronically active and often is progressive, with ascending involvement of the spine.

The earlier the diagnosis of this disorder is made and the earlier therapeutic and deformity-preventing measures are instituted, the better the long-range prognosis. Early diagnosis, however, is frequently very difficult. In one large series the average interval between onset of symptoms and recognition of the disease was 5.7 years.[2] Others have reported intervals ranging between two years eleven months[3] and seven years.[4] In another group of 68 patients (all males), seen at a military hospital, 17 were diagnosed within the first year of symptoms and 9 not until after ten years.[5]

Rheumatoid spondylitis may present itself as low-back or gluteal pain. The character of the pain may be variable. It may be a short acute stabbing or sharp pain occurring at intervals with periods of freedom or a persistent ache with acute exacerbations. There may be sciatic radiation of the pain, and the sciatic syndrome may be alternating or bilateral. Fibrositic stiffness in the low back occurs with great frequency. The symptoms of this disease are usually insidious in onset and similar to those caused by other disorders, such as acute low back strain, herniated nucleus pulposus, osteoarthritis of the lumbar spine, spondylolisthesis, and fibrositis, thus making it difficult to distinguish this disease from other disorders.

The diagnosis of rheumatoid spondylitis is most commonly made by x-ray. Sacroiliac joint involvement occurs almost invariably in this disease,[6,7] and x-ray evidence of this involvement is considered by some to be necessary for diagnosis.[3] However, roentgenographic signs may not appear in some patients until several years after symptoms have begun,[8] and in most many months pass after onset of symptoms before the first unequivocal x-ray changes are noted. It is in this period that the diagnosis may be especially difficult to make.

Physical findings in early rheumatoid spondylitis have been underemphasized as diagnostic features of the disease. The poker spine is easily recognized, but this is an infrequent and far-advanced manifestation. Hart *et al.*[3] have listed four criteria for diagnosis: elevation of the sedimentation rate, sacroiliac x-ray changes, stiffness of the lumbar spine, and limitation of chest expansion. Stiffness of the lumbar spine may occur in a number of other disorders, including acute lumbar muscle strain. Limitation of chest expansion is more specific for rheumatoid spondylitis but since it necessitates thoracic spine involvement for its production, it cannot be considered an early manifestation in most patients with this disease. Many patients with spondylitis never show limitation of chest motion.

Muscle tenderness, spasm, or atrophy may result from the inflammatory involvement of the sacroiliac or spine joints affected by rheumatoid spondylitis. Tenderness overlying the sacroiliac joints or spine and loss or accentuation of normal spine curvatures also occur in this disorder. These physical findings are not diagnostic and may occur in many other disorders.

Since the sacroiliac joints are involved almost universally in rheumatoid spondylitis and are usually the first joints involved, maneuvers designed to produce stress on these joints might be of diagnostic value, especially early in the disease before x-ray findings are present. This study was designed to consider the diagnostic value and specificity of physical findings in rheumatoid spondylitis.

Material and Methods

Twenty-two patients with rheumatoid spondylitis were studied, all with x-ray changes of the disease. A total of 18 patients had the radiologic findings limited to the sacroiliac joints, 3 had sacroiliac, lumbar, and thoracic spine involvement on x-ray, and a fourth had cervical spine changes in addition to these. Twenty patients had clinically active disease when first seen. Symptoms had been present for from four weeks to twelve years; 20 of the 22 patients had symptoms for more than six months. There were 21 males and 1 female. Ages ranged from seventeen to forty-four years. One patient whose entire spine was affected also had hip, knee, and elbow involvement; no other patient had peripheral joint involvement, and none had iritis, cardiac disease, or evidence for Reiter's syndrome. Erythrocyte sedimentation rates (Westergren) were elevated in 18 patients when the patients were first seen.

A search was made for physical findings related to involvement of the sacroiliac joints and spine. Repeated examinations were made for muscle, sacroiliac joint, or spine tenderness and for muscle spasm or atrophy, limitation of spine motion, loss or accentuation of normal spine curves, and decrease in chest expansion. In addition, a number of maneuvers designed to elicit sacroiliac joint and surrounding structure tenderness were tested in all patients. These included the straight leg-raising test, extension of the knee with the hip already flexed (Goldthwait), forcible flexion, abduction, and external rotation of the hip (Faber), flexion of the hip and knee and hyperextension of the other hip (Gaenslen),[9] and separation and compression of the iliac crests.[10]

This last test is done as follows: With the patient supine, the anterosuperior iliac spines are sprung apart. With the patient lying first on one side and then on the other, the sacroiliac joints are compressed by manual pressure on the uppermost iliac crest.

A second group of 50 consecutive patients with low back pain without x-ray evidence of rheumatoid spondylitis was also studied. The final diagnoses in this group were: acute lumbar muscle strain in 31, herniated nucleus pulposus in 7 (4 at the level of the fourth and fifth lumbar vertebrae and 3 at the third and fourth), osteoarthritis of the lumbar spine in 5, spondylolisthesis in 5, and osteitis condensans ilii with low back pain in 2. This control group was studied to evaluate the diagnostic specificity of the iliac crest separation-compression test.

Results

Of the 22 patients with rheumatoid spondylitis 18 had tenderness over the sacroiliac joints on percussion or deep palpation. Only 3 had tenderness over the lumbar spine and none over the thoracic or cervical spines. Lumbar paravertebral muscle tenderness and spasm was present in 12 patients, and 8 had limitation of lumbar spine motion. There was decrease or loss of normal lumbar spine lordosis in 8. All 4 patients with x-ray evidence of lumbar spine involvement had paravertebral muscle tenderness and spasm, limitation of lumbar motion, and loss of lordosis.

Only 3 patients had marked decrease in chest expansion. Another patient with spondylitis with x-ray evidence of thoracic spine apophyseal involvement and squaring of vertebrae had a chest expansion of $1^1/_2$ inches. None of the remaining patients had any decrease in ability to expand their chests with deep inspiration. The 1 patient with cervical spine involvement on x-ray had marked limitation of cervical anterior and lateral flexion, extension, and rotation.

Iliac crest compression produced local pain over the sacroiliac joints or in the gluteal muscles in 17 patients. In 3 of these iliac crest separation and compression produced pain which also had sciatic radiation. In general, this maneuver reproduced the pain that the patient had had spontaneously in his low back.

Straight leg raising caused sacroiliac area symptoms in 8 patients. The Gaenslen maneuver—flexion of the hip and knee on one side and hyperextension of the other hip—produced symptoms in 10. The other procedures designed to put stress on the sacroiliac joints—the Goldthwait and Faber maneuvers—led to local symptoms in the back in only 3 patients for each of the maneuvers.

Of the 50 patients with low back pain not due to rheumatoid spondylitis 5 also had positive iliac crest separation and compression test results. Acute lumbar muscle strain was present in 3, 1 had spondylolisthesis, and 1 had osteitis condensans ilii. The sedimentation rates in all were normal. Two of the men with lumbar muscle strain were followed for periods of one year and one and one-half years each. The acute lumbar muscle symptoms and signs disappeared, and no further clinical or radiologic evidence for rheumatoid spondylitis occurred. The other patients were not seen again after the acute episode, and it is possible that some of these might have had early rheumatoid spondylitis before the appearance of radiologic evidence of the disease.

Comment

The small group of patients with rheumatoid spondylitis consisted primarily of early or nonadvanced cases of the disease. Of the 22, 18 had x-ray abnormalities limited to the sacroiliac joints; only 1 had peripheral joint involvement, and none had other complications of the disease. In this group stiffness of the lumbar spine and decrease in chest expansion had little diagnostic value. Limitation of lumbar spine motion was revealed in 8 patients, and only 4 of the 22 had difficulty in expanding their chests on deep inspiration. These findings may be of value in the late, but not in the early, diagnosis of rheumatoid spondylitis.

There were only three physical abnormalities occurring in more than 50 per cent of the 22 patients. Lumbar paravertebral muscle spasm and tenderness was present in 12 patients, 18 had tenderness on percussion or deep palpation over the sacroiliac joints, and 17 had local sacroiliac and/or gluteal pain produced by iliac crest compression and separation. The first of these is quite nonspecific and occurred in many of the 50 control patients with various other low back disorders. Unfortunately this control group was not studied specifically for sacroiliac area tenderness to pressure, but 5 of the 50 did show positive iliac crest separation-compression test results. In none of these 5 did other evidence for sacroiliac joint disease exist, but only 2 were followed for any period.

The iliac crest compression and separation maneuvers tended to reproduce the type and location of distress that occurred spontaneously in these patients with rheumatoid spondylitis. Reproduction of symptoms by the maneuvers correlated well with the presence of active clinical disease in the sacroiliac joints. When there was no other clinical evidence of active sacroiliitis, even in the face of advanced fusion and sclerosis of the joints on x-ray, the iliac crest maneuvers did not produce symptoms. It would seem logical to expect that any other active sacroiliac disease, such as tuberculosis and brucellosis, would also give positive iliac crest separation-compression test results. There were no such cases in the control group studied.

Although positive iliac crest compression and separation test results were not limited to patients with rheumatoid spondylitis, this maneuver is a useful physical finding for screening in the early diagnosis of rheumatoid spondylitis.

Summary

Early rheumatoid spondylitis may be very difficult to diagnose. Physical findings were evaluated as diagnostic measures in a small group of 22 early or nonadvanced spondylytic patients. A control group of 50 patients with low back pain not due to spondylitis was also studied.

Limitation of thoracic cage excursion with respiration and limitation of lumbar spine motion were of little diagnostic value in the small group studied.

The iliac crest compression and separation test was the best single diagnostic screening method among those used to elicit physical findings in this small group of patients.

1122 Ocean Avenue, Brooklyn 30

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Plasma Cell Tumors of Mice

Studies with the electron microscope have revealed virus-like particles in a group of mouse tumors that are similar to the human bone cancer, multiple myeloma.

This finding was reported to the meeting of the American Association for Cancer Research, Atlantic City, New Jersey, on April 10, by Albert J. Dalton, Ph.D., Laboratory of Biology, National Cancer Institute, Bethesda, Maryland. The paper, coauthored with Michael Potter, M.D., of the same Laboratory, was entitled, "Some of the Features of the Fine Structure of a Series of Plasma Cell Tumors of Mice."

There is no indication that the virus causes the mouse tumors. Many other forms of cancer in mice and other animals are known to have a viral origin, however.

Scientists of the National Cancer Institute reported some time ago that certain mouse plasma cell tumors produce an abnormal serum protein similar to a protein in the serum of patients with multiple myeloma. This led to intensive studies of the mouse tumor in an effort to acquire knowledge applicable to the human disease.

In the course of these studies, Dr. Dalton examined six types of mouse plasma cell tumor. One of the morphologic characteristics common to all six tumors was the presence of particles resembling viruses.

Some of the photographs made with the electron microscope showed these particles in various stages of formation within the tumor cells.

Further studies will include efforts to determine whether viruses are involved in the mouse plasma cell neoplasms and to extend the results to investigations of human multiple myeloma.

No form of cancer in man has yet been shown to result from the action of viruses. Investigators in the National Cancer Institute's Laboratory of Biology are attempting to develop technics and procedures to study thoroughly the relationship of viruses to human cancer.

Report of an Outbreak of Bacillary Dysentery in a Recreation Center in Putnam County

BEATRICE B. BERLE, M.D., DONALD GIBBONS, M.D., ELSA PAULSEN, M.D., MARGARET GROSSI, M.D., AND ELSIE JACKSON, R.N.

(*From the Society for the Investigation of Human Ecology*)

"BACILLARY dysentery is always with us" according to the Director of the Bureau of Preventable Diseases of the Department of Health of the City of New York.[1] It is not confined to military camps in the tropics nor to children living in the Middle or Far East as many of us are inclined to think. From January, 1955, to September, 1958, 12 outbreaks of bacillary dysentery exclusive of the one to be discussed were reported by the Bureau of Preventable Diseases in New York City. Two occurred in city hospitals, two in a temporary shelter for children, one in a school for retarded children, one in a State hospital, and the others in apartment buildings on the West Side. Thirty to 40 cases developed in the various institutions. In one outbreak this represented 1 case out of 4 of the population exposed. In a school with a population of 2,006 there were 33 cases. Three carriers with positive stools were discovered in a municipal hospital, and 3 cases developed among the close associates of these individuals. Shigella sonnei and Shigella flexner were the organisms isolated in these several outbreaks.

In addition to the outbreaks mentioned, the Bureau of Laboratories of the Department of Health of the City of New York isolates between 40 and 50 Shigella sonnei and 20 Shigella of other types in random stool samples submitted for culture in the course of a calendar year.[2]

Nevertheless, the comparative frequency of outbreaks of bacillary dysentery among residents of metropolitan areas in the United States is not always appreciated among clinicians. For this reason, a detailed account of an outbreak of bacillary dysentery among a group of New York City residents may be of interest. The outbreak occurred when these individuals were staying at a recreation and conference center in Putnam County. The manner in which the organisms were spread from person to person, the clinical course of the illness, and the treatment with antibiotics are reported here.

Course of Outbreak

A religious organization with headquarters in New York City owns 130 acres of farm and woodland in Putnam County, New York. Three dwellings with a capacity for housing 29 people in the main house and 10 people in each of the other two are located on this property. No animals are kept, and the farm is used by members of the parish and their families and by the clergy and lay staff for vacations, weekends, and conferences throughout the year.

The septic tanks are in good order. The drinking water from a drilled well on the premises has been analyzed by the Westchester Department of Laboratories in Mount Vernon, New York, and less than 2.2 coliform bacilli per 100 ml. have been found in all samples taken through the summer including the latest taken on September 15, 1958. This puts the farm water in class II according to the classification worked out by the American Public Health Association.[3] Class II is considered satisfactory for private water supplies. The health officer in Putnam County reports that no cases of diarrhea were brought to his attention in the neighboring community throughout the past summer.

The manager, his wife, and five children occupy one of the houses throughout the year. The summer staff during the months of July and August included one cook, four junior counselors between the ages of seventeen and eighteen years, and one trained nurse. Another family, a mother and three small children, were in residence through August. No significant cases of diarrhea were reported either among the staff or the guests until the end of August. Between August 25 and September 5, in addition to the individuals mentioned, 61 transients passed through the farm for a period ranging from half a day to five days. On August 27, the next day after arriving at the farm, a five-year-old child of Puerto Rican parentage, born and living in Manhattan, became severely ill with abdominal cramps, high fever, frequent watery stools, and fecal incontinence. He defecated in various parts of the house and on a couch where he had been allowed to sleep in order not to disturb the other children. His brother, aged ten, also became ill on the following day but was not incontinent. The mother and five children returned to New York on August 29 where the sick children received penicillin injections in the emergency room of a city hospital.

A stool specimen for culture sent by us to the New York City Health Department on September 5 was reported as negative in the case of the first child who had recovered by this time. His brother was still having a few loose stools, and the stool culture taken at this time was reported as positive for Shigella sonnei. The father, who had never left the city, the mother, and two other brothers remained asymptomatic throughout, but the small sister became quite ill with both diarrhea and tonsillitis on September 5. No further positive stool cultures were obtained in this particular family.

The four junior counselors and six guests departed on August 30. From September 1 to September 4, 47 other individuals including 16 children from the age of six months to fifteen years spent from one to four days at the farm. On September 1 the cook, who had been well all summer, developed mild abdominal cramps which lasted several days. She felt relieved after taking milk of magnesia. A culture from a rectal swab taken on September 11 was reported as negative. The manager's two youngest children, who had been in good health all summer, were playmates of the child who had become ill on August 27. The Puerto Rican children left on August 29, and the manager's children developed diarrhea on August 30. Two guest children under three years of age who arrived on September 1 and stayed at the manager's house developed severe cramps, diarrhea, and vomiting on September 2. These symptoms continued until chloramphenicol was administered six days later. Rectal swabs could not be taken on these 2 children until after the administration of antimicrobial therapy. They were returned as negative. The nine-year-old son of the manager developed mild diarrhea later in the same week. His mother attributed this episode to nervousness associated with the prospect of a new teacher with a reputation for severity. All 5 children as well as the mother in this family developed diarrhea of varying degrees of severity over the next twelve days. The manager remained asymptomatic, and his rectal swab was negative on two occasions. The rectal swabs in the case of the mother and of the 5 children taken on September 16 were positive for Shigella sonnei. The one-year-old infant in the other family who had been in residence through August developed diarrhea on September 2 or 3. Her parents and two siblings remained asymptomatic. One of these siblings was the only individual who remained asymptomatic throughout, with a positive stool culture. Five guests who stayed in this particular house including 2 children had mild symptoms for one day and negative cultures.

Two young women in shorts sat on the couch in the main house for the better part of the day of their arrival on September 1. This was the couch where the first child who became ill had defecated. Shigella may survive for considerably longer than three days in the dry state and while contamination of human fingers with fecal material is the first step in the direct transfer of organisms from one individual to another, contamination of inanimate objects such as toilet seats, toys, door handles, pottery, and glassware used in common by many people represents an intermediate step in the process.[4]

These 2 young women became ill with abdominal cramps, explosive diarrhea, and fever. They consulted a physician on their return to New York on September 5. The usual supportive measures including the administration of paregoric and kaopectate after each bowel movement did not relieve their symptoms. One of the young women was hospitalized on September 9, as her temperature had risen to 104 F. She recovered promptly after one day of chloramphenicol therapy (1 Gm). Stool cultures taken before the administration of specific therapy were positive for Shigella sonnei in both these women. Their roommates in New York City, who had been at the farm also, remained asymptomatic throughout, and stool cultures were negative. Another young man was hospitalized on his return to New York City on September 4 and was discharged as cured four days later. He was treated with Achromycin. Unfortunately, a stool taken on his admission to the hospital was lost, and culture from a rectal swab taken on September 11 was reported as negative. No cases of diarrhea were reported among those who had been in contact with this patient in the hospital.

Altogether 77 individuals were exposed to Shigella sonnei between the period of August 25 to September 5. It has been impossible to contact 7 of these. Seventy individuals have been contacted; of these, 37 denied any disturbance whatsoever in their bowel habits. Thirty-three had symptoms ranging from mild gastrointestinal discomfort for one day to severe symptoms requiring hospitalization. The symptoms were classified as severe, moderate, or mild. Severe symptoms involved 10 or more stools a day for several days, abdominal cramps, tenesmus, prostration, and a fever of 102 F. or more. Two patients with severe symptoms were hospitalized. Moderate symptoms consisted of intermittent loose stools and abdominal cramps over a period of from three to eight days, possibly with some fever. An individual who suffered vague abdominal discomfort with one or two loose stools for a period of not more than forty-eight hours during the period of exposure was classified as having mild symptoms (Table I). All 33 individuals who had symptoms of dysentery during the period from August 29 to September 16 were considered to be cases of bacillary dysentery whether or not a positive stool culture was obtained.

TABLE I.—DISTRIBUTION OF SYMPTOMS AMONG 70 INDIVIDUALS EXPOSED TO SHIGELLA SONNEI INFECTIONS

	Children			
Symptoms	Six to Thirty-Five Months	Six to Fifteen Years	Adults	Totals
Severe	5	2	5	
Moderate	2	6	7	
Mild	0	4	2	
Total symptomatic	7	12	14	33
Total asymptomatic	1	12	24	37
TOTAL exposed				70

In other words, slightly less than half of the 70 individuals who were exposed developed symptoms. Thirty-one were children from the age of six months to fifteen years; of these, 19 developed symptoms, and 12 remained asymptomatic; that is, roughly two out of three children exposed became ill. Of the 38 adults—childless couples, single individuals, and parents of smaller children alike—14 developed symptoms, and 24 were asymptomatic; that is, less than half the adults became ill. In the case of the adults, the 2 women who were apparently exposed to contact with the dried excreta from the first case were the most severely ill. The degree of exposure in the case of the young man who was hospitalized is not clear. However, the nurse who took

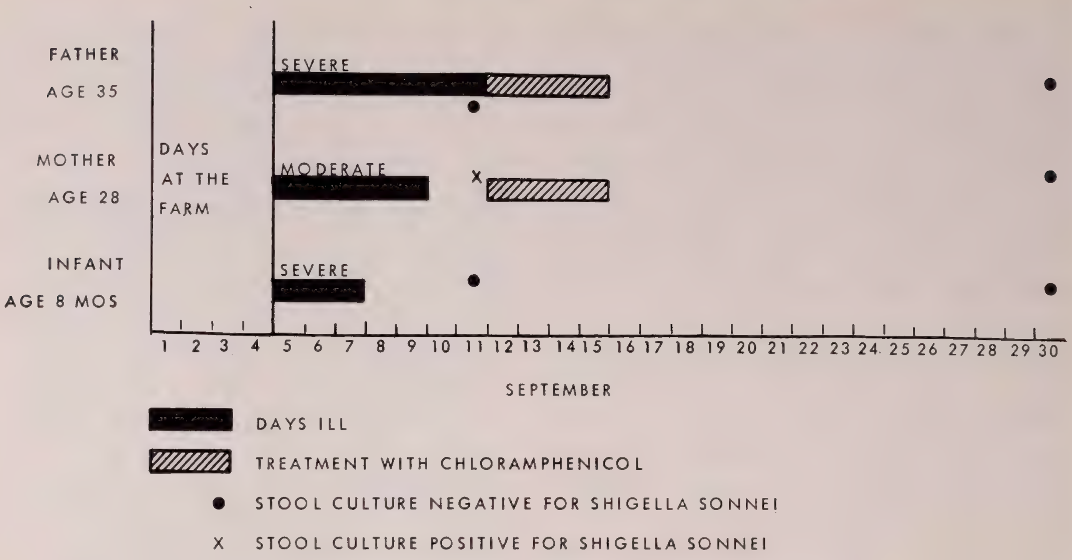

FIG. 1. Course of outbreak of bacillary dysentery in family.

care of the sick children, and the manager whose wife and 5 children were all sick and had positive cultures, remained asymptomatic.

Four individuals in this population are well known to us and have received medical care and health examinations over a period of several years. The 2 young women most affected had a perfect health history. One woman who has a variety of complaints associated with stress was unaffected. Her complaints are not usually related to the gastrointestinal tract; she has frequent headaches and insomnia. Another young woman, who for several winters has suffered from a greater number of respiratory infections than anyone else in this population, was also unaffected. The mother of a small infant who has been treated for irritable colon had moderate symptoms, while her husband with a good health history had severe symptoms.

Family Epidemiology

The course of the outbreak within particular families is interesting. The youngest child usually became ill first. Among the 47 guests who passed through the farm between September 1 and September 5, in four different families, there were 5 children under the age of three. Only 1 child remained asymptomatic, and he was there only a few hours.

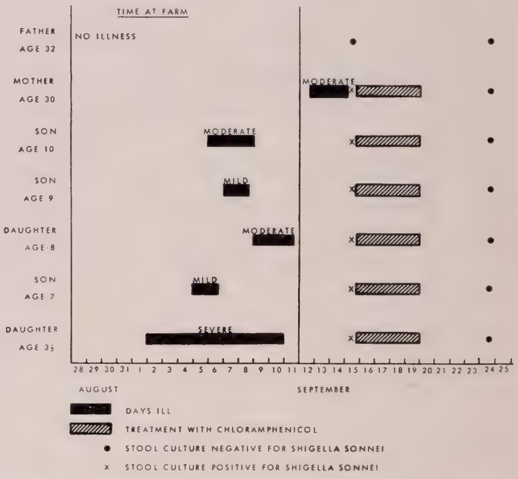

FIG. 2 Course of outbreak of bacillary dysentery in the manager's family.

In one family the eight-months-old infant, the father, and the mother all developed symptoms within twenty-four hours (Fig. 1). In most families symptoms developed successively in different individuals. The manager's youngest child was the first to become ill in their family on September 1, but his wife did not develop diarrhea until thirteen days later (Fig. 2).

TABLE II.—Distribution of Results of Stool Cultures for Shigella Sonnei in 65 Individuals in Relation to Stage of Their Symptoms

	Children							
Condition	Three to Thirty-Five Months (Plus–Minus)		Three to Fifteen Years (Plus–Minus)		Adults (Plus–Minus)		Totals (Plus–Minus)	
Recovered–specific treatment	0	2	0	0	0	1	0	3
Recovered								
Severe	0	1	0	1	0	1	0	3
Moderate	1	1	4	0	0	2	5	3
Mild	0	0	3	1	0	2	3	3
Symptomatic								
Severe	0	2	1	0	2	1	3	3
Moderate	0	0	2	0	2	4	4	4
Mild	0	0	0	0	0	0	0	0
Asymptomatic	0	1	1	10	...	19	1	30
Totals	1	7	11	12	4	30	16	49

Stool Cultures

The first positive stool culture for Shigella sonnei was reported on September 9 in the case of a stool submitted on September 5 from the child who had become ill on August 28 or 29. A number of individuals who had been at the farm during the September 1 to 5 period applied to physicians' offices for treatment of diarrhea on their return to New York City. The epidemic nature of the disease thus became evident, and efforts were made to obtain rectal swabs for culture on as many individuals as possible.

Contact was established with 70 of the 77 individuals who had been exposed. A single rectal swab was taken in 65 cases and was sent to the Bureau of Laboratories of the Department of Health of the City of New York for culture. A positive (plus) culture for Shigella sonnei was obtained in 16 of these. As Table II shows, all but one of the asymptomatic persons had a negative (minus) culture. Three individuals received specific antimicrobial therapy before a swab could be obtained. Their stool cultures were negative. One, a man whose stool was lost in the hospital where he had been admitted on September 4 and discharged on September 9, had received Achromycin in the hospital. Two infants in whom symptoms had continued unrelieved for a period of six days and who were becoming dehydrated, received chloramphenicol once the probability of a Shigella infection became established. Negative cultures were obtained from the swabs of individuals who were still symptomatic at the time the swab was taken while swabs from individuals who had recovered symptomatically yielded positive cultures.

Treatment

An individual whose stool culture was reported as positive was immediately treated with chloramphenicol regardless of the clinical picture. Cultures from rectal swabs taken on these 16 individuals five to ten days after cessation of treatment were negative in all but 1 case. The mother of this twelve-year-old boy reports that he neglected to take a part of the prescribed medication. A second course of chloramphenicol was ordered, and a third stool culture was taken one week after termination of the second course was reported as negative.

Chloramphenicol was prescribed as follows: 250 mg. four times a day for five days for adults (total of 5 Gm.) 25 mg. per Kg. per day or 80 to 100 mg. per Kg. of chloramphenicol palmitate suspension in the case of infants and children. The conversion of a positive stool culture to a negative one has already been mentioned. All patients who were symptomatic at the time chloramphenicol was administered reported relief of ab-

TABLE III.—Distribution of 32 Patients Recovering Symptomatically with or without Treatment with Chloramphenicol

	Children			
Symptoms	Six to Thirty-Five Months	Three to Fifteen Years	Adults*	Total
Severe with chloramphenicol	4	1	3	8
Severe without chloramphenicol	1	1	1	3
Moderate with chloramphenicol	1	1	4	6
Moderate without chloramphenicol	1	5	3	9
Mild with chloramphenicol	0	0	0	0
Mild without chloramphenicol	0	4	2	6

* One of the adults who was hospitalized was treated with achromycin and is the 33rd patient in the series.

dominal cramps and the return of stools to normal within twenty-four hours. This was particularly gratifying in the case of those patients who did not recover spontaneously and who were untouched by the usual supportive measures.

The first individuals who became ill applied to local physicians or to the emergency rooms of the city hospitals for treatment. A number of them received penicillin and recovered. The clinical recovery after penicillin therapy is interpreted as coincidental or spontaneous, since Shigella sonnei is known to be unaffected by penicillin. The organism in this particular epidemic was found to be resistant to penicillin in vitro in the particular cases where a sensitivity test was carried out by the Bureau of Laboratories of the Department of Health of the City of New York.

Eighteen of the 33 patients who had gastrointestinal symptoms during this period recovered without specific therapy (Table III). The use of sulfadiazine and sulfaguanidine in the treatment of Shigella infections became widespread during World War II epidemics, but the emergence of strains resistant to sulfonamides is mentioned frequently in the literature notably in regard to Shigella sonnei.[5] Still, in view of the expense involved, a trial of sulfadiazine therapy was about to be made when the first report of resistance to sulfadiazine in this particular organism came from one of the hospitals. Subsequent sensitivity tests were made by the Bureau of Laboratories of the Department of Health of the City of New York in 13 cases where Shigella sonnei had been isolated in the stool. All 13 proved resistant to all antibiotics except chloramphenicol and polymyxin B sulfate. Streptomycin and tetracycline were among the antibiotics to which these organisms were resistant in vitro.

Comment

Since no significant outbreak of diarrhea occurred during the summer at the farm and a stool positive for Shigella sonnei was reported in the case of the brother of the child who first became ill, these children have been considered to be the source of the present outbreak in which 77 people were exposed, 70 were contacted, and 33 reported symptoms. The evidence presented suggests that transmission occurred through contact between infected children and through contaminated objects. This of course does not explain where the first child acquired his infection in New York City, since no cases of diarrhea occurred in his family before he became ill.

The difficulties in identifying the organism, treating the patient, and preventing a recurrence of bacillary dysentery are well illustrated in this little outbreak.

The practical problems involved in obtaining rectal swabs from a group of people not living under one roof and under military or institutional discipline are obvious. Further, the conditions most favorable for the growth of Shigella sonnei must be met. This means prompt transportation of the specimen to a competent laboratory before the organism dies out. Fermentation of lactose by Shigella sonnei does not take place for at least forty-eight hours, so that when the patient does not appear to be recovering spontaneously, treatment must be instituted before the laboratory reports are in. The most recent medical literature, the clinical experience, and sensitivity tests in this particular outbreak indicate that chloramphenicol appears to be the drug of choice at present. The risks of bone marrow depression on a short-term treatment is considered negligible. Chloramphenicol has another advantage as it may be effective against Salmonella, the organism most likely to be responsible for a clinical picture similar to that presented by Shigella.

If the patient is not sick, and his culture is reported positive, he must be treated and another culture obtained after treatment. The phasic character of positive and negative cultures in the same individual has been pointed out.[6] The rule that an individual may not be discharged as cured until stool cultures have been negative on three successive days is sound, but in a scattered civilian population it is impossible to carry out.

Although chronic carriers are considered rare in this disease, in a carefully documented study carried out on a United States battleship, where rectal swabs were taken on 902 seamen on three successive days, positive cultures were obtained in 5 individuals one hundred fifty to one hundred fifty-five days after the original positive culture. These men had received two courses of streptomycin and sulfadiazine during this period. Their stools cleared after a third course of treatment. Therefore, we do not claim that all organisms were destroyed in the bowels of those individuals whose cultures were negative after a course of chloramphenicol. So far no secondary cases outside immediate families have been reported. Some of the individuals involved come together again from time to time at the farm, and the manager has been requested to urge all guests to report to us should they develop diarrhea. The necessity of hand washing before meals and after going to the toilet, scalding dishes, and maintaining clean toilets has been emphasized. Since no specific immunization procedure has been successful, personal hygiene is considered the most effective means of preventing bacillary dysentery.[7] Those mothers who have succeeded in teaching their children something about cleanliness may derive some comfort from this fact.

Conclusion

Seventy-seven individuals, residents of New York City and the suburbs, were exposed to bacillary dysentery while residing at a farm in Putnam County. Thirty-three individuals became ill; seven were not contacted. Cultures made from rectal swabs taken from 65 individuals grew out Shigella sonnei in 16 cases.

There were no fatalities. Two adults were hospitalized. Eighteen recovered spontaneously, 14 were treated with chloramphenicol, 1 Gm. a day, four doses for five days in the case of adults, 25 mg. per Kg. of body weight per day per child, or 80 to 100 mg. per Kg. of chloramphenicol palmitate suspension in the case of infants and children.

Following treatment with chloramphenicol, a second stool culture taken in those individuals whose original culture had been positive for Shigella sonnei was reported as negative.

Treating and controlling an outbreak of this kind in a civilian noninstitutionalized population presents a number of difficulties: locating the individuals exposed, persuading those who are asymptomatic that stool cultures are necessary, and getting the culture media to and from the laboratory.

The desirability of sending stool cultures to the Health Department in the case of diarrhea involving more than one individual in a family has been emphasized.

The authors wish to express their appreciation for the cooperation of the Bureau of Preventable Diseases and the Bureau of Laboratories of the Department of Health of the City of New York for their help and cooperation in making this study possible.

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Miscellany

For the first time since World War II the estimated number of veterans is showing a consistent downward trend, according to VA. On Sept. 30, there were about 22,723,000 veterans in civil life, the sixth straight month the veteran population has shown a decrease. Barring another war, the decline will continue unless there is an unforeseen increase in the discharge rate of Korean war veterans, VA notes.

Veterans Administration and American Cancer Society are sponsoring a program for testing a method of mass screening of population groups for incipient lung cancer. About 8,500 residents of six VA domiciliary homes will be screened twice a year by use of the sputum cell analysis method, plus chest x-ray films. The VA said it will enable doctors to determine the extent of correlation between history of smoking, symptoms of bronchial and lung irritations and infections, and development of lung cancer in residents of the homes.

Social Security Administration is trying to reach about 400,000 persons who may be eligible for payments under the 1958 amendments to the social security law. An intensive effort is being made by the Bureau of Old Age and Survivors Insurance and its 584 district offices to reach newly eligible persons and inform them that claims must be filed before benefits can start. SSA said in many cases it cannot identify or locate the eligibles.

Brig. Gen. Harold H. Twitchell is the new president of the Association of Military Surgeons. He is command surgeon of the U. S. Air Forces in Europe, located at Wiesbaden, Germany.

Three hundred representatives of colleges and universities in the central Atlantic area and Puerto Rico and the Virgin Islands attended a Washington, D. C., conference on the new national defense education act. Discussions dealt largely with loans to students, graduate fellowships, counseling and guidance institutes, and foreign language development. The law provides U.S. aid to educational institutions in all these areas.

Food and Drug Administration reports the seizure of 14 drugs and medical devices in October, 11 for alleged false and misleading claims. Three were vibrator devices offered as weight reducers. Shipments of a brand of cigarets advertised as an aid in weight-reducing also were seized at Cleveland, Kansas City, Mo., Glendale, Calif., and Trenton, N. J.

Activities of the Army Medical Service reserve program were discussed at a two-day meeting of an advisory committee to the Army surgeon general. One of the reports was from retired Major Gen. Earle Standlee, staff director of the American Medical Association's Commission on National Emergency Medical Care.

A kit of guidance materials from the President's Committee on Scientists and Engineers will be sent to every junior college and similar institutions. The kit was given final approval by a special conference called to review its contents. The objective is to interest students at the precollege level in careers in science and engineering.

College and university enrollment for the current fiscal year has set another all-time record—3,258,556. The U. S. Office of Education says this is 6.2 per cent more than last school year and the seventh consecutive year in which a new record has been set.

National Science Foundation announces a new program of summer fellowships to give secondary school teachers an opportunity for further graduate study and research in the sciences. About 750 fellowships will be offered. Information is available at the Teacher Program, American Association for the Advancement of Science, 1515 Massachusetts Ave., N. W., Washington 5, D. C. The foundation will pay tuition, travel, and dependency allowances and $75 per week.

—*J.A.M.A., December 20, 1958*

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Diverticulosis and Diverticulitis of the Colon

CHARLES W. MAYO, M.D., AND P. KENT CULLEN, JR., M.D., ROCHESTER, MINNESOTA

(*From the Section of Surgery, Mayo Clinic and Mayo Foundation*)

Uncomplicated diverticulosis of the colon probably does not give rise to symptoms or to any abnormality that will be apparent on physical examination. Yet the presence of colonic diverticula should not be regarded as insignificant even though the patient is asymptomatic or is believed to have an irritable bowel syndrome as well. No patient has acute diverticulitis or a complication of diverticulitis without first having diverticulosis or at least one diverticulum.

Management of Diverticulosis

Since the main risk in diverticulosis lies in the development of diverticulitis, the physician should explain the nature of the condition to the patient and advise him how to decrease the risk associated with the presence of the diverticula. The patient should understand that the size and number of diverticula are likely to increase with age and that diverticulitis can result from diverticulosis but that the presence of diverticulosis does not imply that diverticulitis will develop. These facts should be presented not to frighten the patient into following a rigid sequence of rules but to make him understand why the limitations prescribed may be helpful. This is especially important for the asymptomatic patient. Patients with asymptomatic diverticulosis are relieved to know that although diverticulosis or diverticulitis or both may coexist with malignant disease there seems to be no definite evidence of more than a casual relationship.

A diet low in indigestible cellulose, large seeds, nuts, and other coarse foods should be adhered to in order to minimize irritation to the colonic wall and to avoid retention of particles in the colon which could enter and obstruct the neck of a diverticulum and thereby give rise to diverticulitis.

The bowel habits of a significant percentage of persons with diverticulosis are irregular, and some patients have used harsh laxatives or purgatives or both. An attempt should be made to establish some degree of regularity in bowel habit by modifications of diet and the use of laxatives. Laxatives used should be limited to the milder forms, such as mineral oil, milk of magnesia, or a combination of equal parts of each, in doses of 1 to 2 ounces at bedtime. Numerous stool-softener, bulk-producing types of medication have been introduced recently and may be helpful in regulating bowel habits. The use of enemas should be condemned because they can cause perforation of diverticula, as exemplified in the report by Oberhelman.[1]

Obesity is commonly associated with diverticulosis or diverticulitis or both. Obese patients not only should be encouraged not to gain additional weight but also to lose weight. Reduction of weight should be stressed not only from the point of view of general health but also from the point of view of surgical risk. If surgical treatment should become necessary, the technical procedure will be easier and the postoperative course most likely will be smoother for the patient of average weight than for the obese patient.

The significance of the irritable bowel syndrome should be discussed with all patients with diverticulosis and especially with any patient who has that syndrome in association with diverticula. Patients complaining of vague symptoms, such as mild abdominal discomfort, flatulence, epigastric distress, and nausea, with irregular bowel habits commonly ascribed to irritable bowel frequently are found to have diverticula. These complaints, however, are so common when diverticula are not present that the physician should not automatically ascribe the symptoms to the diverticula. At the same time he should explain to the patient that a change in symptoms or increase in their severity should not be disregarded entirely in the belief that they are due to the irritable bowel syndrome since they may be due to an insidious onset of diverticulitis.

The patient with diverticulosis should be told which measures he must take at the first warning of the onset of diverticulitis. He should stay in bed and take a liquid diet, since these measures may lessen the severity of the impending attack. Above all, he should seek early consultation with his family physician so that appropriate treatment, discussed in this report in relation to diverticulitis, can be instituted.

Medical Management of Diverticulitis

In asymptomatic diverticulosis the diverticula communicate with the lumen of the bowel and are able to fill and empty. When the narrow stalk of the sac becomes blocked so that it is prevented from emptying into the bowel, infection develops. Edema further interferes with the evacuation of the sac, and diverticulitis develops.

When acute diverticulitis is the most probable diagnosis, the patient should not be subjected to numerous diagnostic procedures even though definite confirmation has not been established; however, if he does not respond to medical management or associated carcinoma is strongly suspected, these procedures become necessary. The possibility of aggravation of the pathologic process or perforation or both is ever present when the patient is subjected to proctosigmoidoscopy and retrograde barium examination. These procedures can be reserved for the less acute phase, indicated by subsidence of signs and symptoms of inflammation. Judd and Smith[2] have described a case in which a diverticulum became inverted and hung like a polyp within the lumen of the bowel and was fulgurated.

Acute attacks of uncomplicated diverticulitis may last for a few days to two or three weeks. Irrespective of the duration, once diverticulitis has developed, its management, with few exceptions, is a medical problem; surgical intervention should be reserved for complicated cases.

MEDICAL MEASURES.—The medical management of diverticulitis that is employed at the Mayo Clinic, recently outlined by Wakefield,[3] consists of the following:

1. A liquid diet is prescribed, with the intake of fluid individualized. Fluids are administered orally, intravenously, or in both ways. As symptoms subside, diet content and quantity may be increased.

2. Rest in bed, consisting of absolute rest in bed or rest in bed with bathroom privileges only, is enforced.

3. Heat is applied to the lower part of

the abdomen by means of a hot water bottle, heating pad, or a moist heat apparatus.

4. Analgesics are given as tolerated and in the quantity necessary to obtain rest and relief of pain.

5. Antibiotics are administered. Penicillin (200,000 to 600,000 units given intramuscularly every six hours) and streptomycin (250 to 500 mg. given intramuscularly every twelve hours in combination with the penicillin) are the antibiotics of choice. Patients who are allergic to either penicillin or streptomycin or both can be treated with a broad-spectrum antibiotic, such as the oral or intravenous form of chlortetracycline hydrochloride (250 mg. every six hours) and oxytetracycline hydrochloride (250 mg. every six hours).

6. General measures are employed. Tincture of belladonna is administered in adequate doses, starting with 8 drops in $^1/_4$ glass of water every four to six hours, until there is just definite evidence of dryness of the mucous membranes. In the presence of vomiting, atropine sulfate ($^1/_{100}$ grain) can be used to replace the belladonna. Retention enemas of warm water, cottonseed oil, or olive oil may be given daily.

7. The diet and the patient's general activity are advanced as the symptoms regress and the patient can tolerate more food and activity.

Complications.—During the acute episode the attending physician should remain alert for impending complications. In a review of 202 cases in which diverticulitis was complicated, it was noted that the sequence of complications was obstruction, abscess, and vesicosigmoidal fistula.[4] Intestinal obstruction usually results from edema added to an already compromised lumen which is fibrosed from repeated acute attacks of diverticulitis. Nevertheless, obstruction may ensue with the first attack. The signs and symptoms of impending obstruction usually are present a few days before obstruction becomes complete. At the first indication of partial obstruction, a liquid diet or parenteral administration of fluids together with long-tube suction and antibiotics may be sufficient for relief; if, however, colonic obstruction becomes complete, surgical decompression usually is necessary.

Recognition of abscesses is extremely difficult. With the use of antibiotics and intensive medical care, many patients recover from abscesses and some recover from subacute perforation. Whenever free perforation of a diverticulum into the peritoneal cavity can be diagnosed, surgical treatment is indicated if the risk of operation is not too high.

Recognition of a sigmoidovesical fistula is made with ease in the event of feces in the urine and pneumaturia. Dysuria, urgency, and frequency may either subside after the acute attack or remain, the latter indicating impending formation of a fistula. The mechanism of sigmoidovesical fistula in bowel disease recently has been described by Scorer.[5] Recognition of an impending fistula with interval surgical treatment could prevent a lengthy period of hospitalization with multiple-stage surgical procedures.

Management After Acute Attack.—Inadvertently some patients are carried through an acute attack and then are dismissed from the hospital without further guidance. Diverticulitis is a disease of exacerbations and remissions. The exact frequency of recurrent acute episodes varies but may be more common than most suspect. In Colcock's[6] series of 131 patients, 45 per cent of the patients who had one attack of diverticulitis had subsequent attacks. Much can be accomplished with the patient who has had an acute attack, for the patient after one acute episode will be eager to avoid repetition of it. He does not feel that the physician is attempting to alter a preestablished pattern without much reason. The general measures advocated for the management of diverticulosis should be reemphasized, with particular emphasis on what to do at the first warning of another attack of diverticulitis. Frequently, a recurrent attack can be prevented early or its severity lessened by the immediate institution of bed rest, liquid diet, and antibiotic therapy; if possible, the condition should not be allowed to progress to the point where hospitalization is necessary.

Surgical Treatment of Diverticulitis

Operative treatment of diverticulitis has evolved slowly and conservatively because even the simpler procedures, such as incision and drainage, formerly resulted in prolonged morbidity and high mortality. Only recently has the multiple-stage operation, which was considered by most colon surgeons as the safest and most sensible approach, given way to a fairly standard one-stage operation. The one-stage procedure has been carried out under ideal circumstances and has been attended by low mortality rates and low incidence of postoperative complications.

Full credit for the advances which have brought about this state of affairs should be given to those in specialties other than surgery. Briefly, some of these advances are:

1. Advances in fluid and electrolyte therapy, permitting the surgeon to start his difficult task with a patient who is well hydrated and in close to normal electrolyte balance.

2. Refinements in the collection, storage, and administration of whole blood, plasma, dextran, other replacement and expanding solutions, and nutrient solutions, helping to keep the patient in good condition.

3. The rapid development of specific antibiotics, furnishing numerous agents that the surgeon may utilize to combat preoperative and postoperative infections and other complications.

4. The refinement of vitamins, especially vitamin C and the various forms (oral and parenteral) of vitamin K, a very important contribution to surgical care.

5. New technics in bowel preparation before operation, contributing much to the safety of the operation. Before the advent of intestinal sterilization, the flora of the colon posed a constant threat which too often resulted in catastrophic operative and postoperative morbidity and mortality.

Preparation of the bowel varies in different hospitals; the procedure employed on our medical services usually requires two days. Two days before the operation a minimal residue diet is instituted, and the patient is given 2 to 4 drams of a combination of sodium phosphates (Fleet's solution) orally twice daily and 1 Gm. of neomycin and 250 mg. of oxytetracycline orally each hour for four doses starting at noon. Rectal irrigations are carried out morning and night; if a colostomy has been performed, both loops of the bowel are irrigated. On the day before the operation neomycin (1.5 Gm.) and oxytetracycline (250 mg.) are given at 6 A.M., 10 A.M., 6 P.M., and 10 P.M. In addition, 1 dram of paregoric is given at 6 P.M. and 10 P.M. to terminate the diarrhea. Rectal aspirations are carried out until the water returns clear; at this point the patient is taken to the operating room.

The development of the bowel preparation technic utilized at this clinic has been described by various authors.[7–9] Phillips, Dearing, and Waugh[10] have compared postoperative complications of patients prepared preoperatively with oral antibiotics with those of patients prepared with parenteral ones.

Even though acute diverticulitis is best treated by medical management, recurrent episodes are common. However, recurrence of the disease process is almost unheard of after adequate definitive resection of the offending area. These facts, coupled with the knowledge that a single-stage operation performed under nearly ideal circumstances can spare the patient the increased risk, discomfort, inconvenience, and expense associated with multiple-stage procedures, have somewhat altered the medical thinking and surgical management of the problem.

Two definite trends of thought have evolved concerning surgical treatment of patients with diverticulitis:

1. Limiting the surgical treatment of diverticulitis to cases in which complica-

tions have developed or to cases of an acute nature in which local catastrophes are either impending or have already occurred.

2. Performing prophylactic or interval resection in a selected group of cases in which complications seem inevitable but before they actually develop.

The indications for surgical intervention in cases of the first type are: (1) perforation with peritonitis, (2) abscesses, (3) intestinal obstruction, (4) fistulas, (5) chronic or recurring diverticulitis that incapacitates the patient repeatedly, and (6) inability to distinguish the condition from cancer. Patients of this type, of necessity, may be subjected to multiple-stage procedures, although a one-stage procedure may be employed at times, as, for example, it was without recurrence in Waugh and Walt's[11] series of 19 cases of fistulas.

Numerous procedures and combinations of stages exist, from preliminary colostomy to ultimate resection. The subject has been reviewed recently by Welch.[12] The main criticisms of multiple-stage operations are directed toward the economic loss and lengthy hospitalization endured by the patient. Most surgeons consider that with the modern aids available a benign disease like diverticulitis should not be allowed to impose such morbidity if it can be prevented. For the nonspecialized colon surgeon, multiple-stage procedures are in all probability the safest way to treat the majority of complications of diverticulitis.

The second trend of surgical treatment developed in an attempt to seek out the patients who continued to have recurrent attacks which ultimately would lead to long-term illness and complications. The indications for surgical treatment in this group of patients, which are more widespread, are: (1) intractability with consequent recurrent episodes of inflammatory difficulties, (2) episodes of subacute obstruction, (3) walled-off perforation which responds temporarily to antibiotic agents and to nonsurgical treatment, (4) unexplained melena in the presence of roentgenographic evidence of diverticulitis, (5) the presence of a fistula between the sigmoid and other organs, (6) recurrent or persistent urinary symptoms caused by diverticulitis, and (7) the persistence of a palpable mass or deformity which cannot definitely be differentiated from carcinoma.

A one-stage resection without concomitant colostomy can be performed with creditable results (1.1 per cent mortality in the series reported by Waugh and Walt[11]) under near ideal circumstances in this group. The patient need no longer spend a long time away from work, the average period of hospitalization being fourteen to twenty days, nor need he accept multiple-stage procedures as inevitable. The obvious criticism is that surgical treatment may be advised when vigorous medical treatment alone would have produced complete resolution.

Numerous surgical procedures can be employed in the management of diverticulitis, but time and experience have proved certain of these procedures to be ineffective and associated with further complications. Incision and drainage of abscesses without colostomy, simple closure of a perforation, laparotomy without any other surgical procedure, simple excision of a fistula, and closure of a colostomy without definitive resection are all too frequently followed by formation of a fistula or recurrence or both. These procedures, therefore, should be complemented by more definitive procedures whenever the patient's general condition permits. Other reports on the subject, such as those by Pemberton, Black, and Maino,[13] Mayo and Blunt,[4] and Colcock,[6] present a similar point of view. The pertinent factors to be considered in planning a surgical attack are: (1) perforation or obstruction, (2) the acuteness of the infectious process, (3) the extent of peridiverticulitis, (4) the degree to which the mesocolon is inflamed, and (5) the accessibility of the involved portion of the sigmoid.

Summary

Physicians can and should explain the nature of the condition and the necessary protective measures to the patient who has diverticulosis, and time should be devoted to helping him understand his problem. Management of diverticulosis and uncomplicated diverticulitis is conservative. The medical treatment of diverticulitis generally used at the Mayo Clinic has been presented.

In recent years surgical thinking has been modified in favor of a prophylactic or interval resection in the quiescent stage even though many of the established complications of diverticulitis are probably best treated by multiple-stage procedures. The important point, as far as the actual surgical procedure is concerned, is to utilize the appropriate operative procedure as indicated at the time of operation rather than to attempt to carry out rigidly preconceived ideas. Sound surgical judgment in the selection of the procedure of choice for the patient with diverticulitis is necessary. The procedure of choice is the one which is best adapted to the extent of involvement and the variety of complications presented by the individual patient. The importance of individualization in the operative management of diverticulitis cannot be overemphasized. Acute perforation and complete obstruction are, of course, indications for immediate operative intervention.

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Performed daily or regularly, exercise can bring about loss of weight, it is reported in *Patterns of Disease*, published by Parke, Davis & Company.

Walking for one-half hour per day can result in a weight loss of five pounds over a year. Similarly, a half-hour daily of handball or squash can, over the same period, account for a 16-pound weight loss, and splitting wood, for a 16-pound loss.

Since the energy cost of exercise is proportional to body weight, the overweight person will consume more calories than the slender person performing the same exercise. For example, a person who is 20 per cent overweight will expend approximately 20 per cent more calories in walking, playing handball or squash, etc. than the normal or underweight person.

CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL, NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and*
WILLIAM B. OBER, M.D.

JUNE 25, 1958

Discussed by GEORGE HYMAN, M.D.

Case History

DR. RAYMOND M. SIMON: A twenty-eight-year-old Negro male was admitted to Knickerbocker Hospital in coma. He had been in good health until six months previously, when he had had an episode of pleuritic pain. An x-ray film of the chest at that time showed a small, ill-defined shadow in the left lung which was interpreted as a patch of pneumonia or pulmonary infarction (Fig. 1). His recovery was rapid and uneventful. There was no history of anemia, bone or joint pain, or exposure to noxious chemicals, sewage, or contaminated water.

Three days prior to admission he experienced sudden onset of low back pain while washing windows. He attributed this to having strained his muscles. The following day he was seen in the emergency ward and was treated with salicylates and back strapping. This did not relieve his pain, and he returned the next day complaining of more intense lumbosacral pain. An x-ray of his lumbodorsal spine gave a negative result. He was given Demerol 100 mg. and was referred to the surgical clinic for the next day.

However, that evening he developed a fever of 100 to 101.6 F., complained of severe headache, and became delirious. Later, he lapsed into stupor from which he could be aroused only briefly. On the morning of admission he was in coma, responding only to painful stimuli. He was described as a "moderate week-end drinker," never consuming more than a pint of whiskey weekly. Narcotic addiction was denied. Exposure to sewage, contaminated water, or noxious chemicals was also denied.

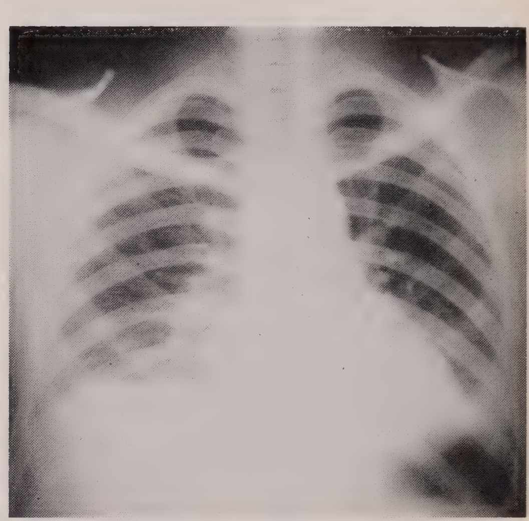

FIG. 1. Chest film taken six months before final illness showing an area of infiltration in left lower lobe interpreted as a possible infarct or possible pneumonitis.

Physical examination revealed an acutely ill, comatose, well-developed young Negro responding only by groans to painful stimuli. Respiratory distress, although moderate, was evident. His temperature was 100.4 F., pulse 132, respirations 28, and blood pressure 130/80. The pupils reacted to light, but random movements of the eyes were present. There was questionable scleral icterus. Fundoscopic examination showed normal optic disks and vessels; there was no papilledema. The teeth were clenched and the gums hypertrophied. Scattered small bleeding points were present on the buccal mucosa. The neck was stiff. The trachea was in the midline, and the thyroid gland was not palpable. The cervical lymph nodes were not enlarged. Examination of the heart revealed the point of maximal impulse in the fifth intercostal space in the midclavicular line. The rhythm was rapid and regular without dropped beats. There was no murmur or gallop. The lungs were clear to percussion and auscultation. The abdomen was slightly tense and diffusely tender. The liver edge was felt 3 cm. below the right costal margin. The spleen was not palpable. Active peristaltic sounds were audible. No masses were found on rectal examination, and the prostate was normal. No petechiae or ecchymoses were seen in the skin. Neurologic examination revealed normal plantar reflexes, no paralyses, absent superficial reflexes, absent deep tendon reflexes in the lower extremities, and questionable decrease of tendon reflexes in the right arm.

Laboratory studies showed a hemoglobin of 11.3 Gm., red cell count 3.6 million, white cell count 8,500 (corrected), with 60 per cent neutrophils (including 18 per cent stab forms, 12 per cent juvenile forms, and 10 per cent metamyelocytes), 36 per cent lymphocytes, 1 per cent eosinophils, and 3 per cent monocytes. There were 65 normoblasts per 100 white blood cells. The reticulocyte count was 0.2 per cent, and the platelet count 92,000. About half the red cells were well shaped and normochromic, but about half were in the form of target cells. A sickle cell preparation was positive, about 90 to 95 per cent of the red cells being sickled. A smear of sternal marrow showed markedly increased cellularity with pronounced normoblastic hyperplasia.

The urine had a specific gravity of 1.012, no sugar or acetone, 4 plus albumin, and 10 to 24 red cells and 4 to 12 white cells per high-power field. Hyaline and granular casts were abundant. Urine cultures yielded Bacillus proteus, Bacillus pyocyaneus, and hemolytic streptococci. Blood cultures were sterile.

A spinal tap was performed immediately. The initial pressure was 210 mm. water, and the final pressure was 150 mm. after 10 ml. were removed. The fluid was crystal clear and sterile and had 2 lymphocytes per cu. mm., 46 mg. per 100 ml. protein, 79 mg. per 100 ml. glucose, and 710 mg. per 100 ml. chlorides.

The bleeding time was 2 minutes and 4 seconds, and the clotting time was 3 minutes and 20 seconds. Direct and indirect Coombs tests gave negative results. The carbon dioxide was 21 millimols per liter. The bromsulphalein test showed 64.5 per cent retention at thirty minutes. The nonprotein nitrogen was 64 mg. per 100 ml. and the creatinine was 2.85 mg. per 100 ml. The serum bilirubin was 2.25 mg. per100 ml. total, with 1.25 mg. indirect and 1 mg. direct. The cephalin flocculation was 3 plus. The total protein was 6 Gm. per 100 ml., with 3.3 Gm. per 100 ml. albumin and 2.7 Gm. per 100 ml. globulin. The cholesterol was 223 mg. per 100 ml. with 180 mg. esterified. The prothrombin time was 18 seconds (control 13 seconds). The transaminase was 114 units.

An electrocardiogram showed a normal sinus rhythm with a ventricular response of 150 per minute. U waves were prominent throughout the tracing. The S-T segments in leads II, III, aVf, V_4, V_5, and V_6 were depressed and flattened. A staircase-like configuration of the S-T segments was present in the standard leads. There was an RSR complex in aVr. The tracing was interpreted as showing incomplete right bundle branch block. The prominent U waves and alterations in S-T segments were considered consistent with acute pulmonary hypertension.

The patient was treated with intravenous fluids. A gastric tube was passed for feeding.

Fluid aspirated from the stomach contained reddish-brown material resembling recently acidified blood. Consequently, Wangensteen suction was instituted. Approximately 450 cc. of bloody fluid was aspirated over the next twenty hours. Six hours after admission the temperature spiked to 105.6 F. Treatment with aspirin suppositories and alcohol sponges reduced the fever to 103.6 F. where it remained thereafter. Coma persisted, and the general condition of the patient deteriorated. Respiratory distress increased although auscultation of the chest continued to give unremarkable findings.

Sixteen hours after admission the hemoglobin had fallen to 8.5 Gm. per 100 ml. and the red cell count was 2.6 million. The white cell count was 7,330 with an essentially unchanged differential. The platelet count was 82,000. The reticulocyte count was 0.3 per cent. The urinary output for twenty-four hours was 1,200 cc.

The morning after admission the patient passed some loose black stools. Before transfusion could be started, he expired suddenly, twenty-six hours after admission.

Discussion

Dr. George Hyman: This patient is of particular interest in that he was an apparently healthy young Negro male who died of a fulminating illness within twenty-six hours after admission to the hospital. His entire present illness consisted of three days of increasingly severe low back pain with an x-ray of the lumbosacral spine giving a negative result, twelve hours of low-grade fever and headaches progressing to delirium, and coma on admission and persisting until death.

His past history, as given by a close friend, was said to be normal with particular mention of the absence of articular pain, anemia, exposure to noxious agents, or severe alcoholism. A mention of a brief episode of pleuritic pain six months previously is, I believe, pertinent to his present illness.

Positive findings on physical examination disclosed a robust young Negro male in coma with low-grade fever, sinus tachycardia, a normal respiratory rate, and normal blood pressure. There was slight icterus. The ocular fundi were normal. Nuchal rigidity was present but there were no localizing neurologic signs. There were no cardiac abnormalities other than the tachycardia. The abdomen was tense, diffusely tender, and without splenomegaly but with moderate hepatomegaly.

The attending physicians are to be commended on the rapidity with which they collected pertinent laboratory data. These findings are both helpful and also confusing to the perplexed discussor of this case. The hematologic findings are of major interest and will be described briefly now and returned to later. The patient had a mild normocytic, normochromic anemia. The hemoglobin was 11 Gm. per 100 ml. The total white count was normal but there was a marked shift to the left in the granulocyte series. A large number of normoblasts were seen in the peripheral blood, and approximately 50 per cent of the red cells were in the form of target cells. A mild thrombopenia was present. A sickle cell preparation with metabisulfite was strongly positive at thirty minutes. The reticulocyte count was normal. There was a mild thrombocytopenia, but tests for hemorrhagic phenomena were not significantly abnormal. The Coombs test gave a negative result.

The involvement of multiple systems was demonstrated not only by the history but also by laboratory findings. The genitourinary tract was involved, as evidenced by the proteinuria, cylindruria, demonstration of red and white cells, positive urine culture, and azotemia. Liver function was disturbed, as evidenced by the marked bromsulphalein retention, 3 plus cephalin flocculation, moderately depressed serum albumin, and moderately elevated transaminase which in the absence of cardiac or muscular disease indicates hepatic disease.

The electrocardiogram showed diffuse changes with depressed S-T segments. The bone marrow aspiration, which I have been allowed to review personally, demonstrated extreme normoblastic hyperplasia, as expected in an active hemolytic process, and a normal number of megakaryocytes. In spite of clinical evidence of central nervous system involvement, the cerebrospinal fluid was normal. Chest x-ray was not done on this admission; the cardiac contour, however, was normal six months previously. Gastrointestinal involvement was demonstrated when bloody material was recovered on intubation.

During the twenty-six hours that the patient lived after admission, he remained deeply comatose. The temperature rose to 105.6 F. and he did not respond to penicillin. He subsequently passed large dark tarry stools and suddenly expired before transfusion could be given. His hemoglobin had fallen to 8 Gm. per 100 ml. by that time and his red count to 2.6 million, although the white count, platelet count, and reticulocyte count remained essentially unchanged.

We, thus, have to explain a fulminating febrile illness presented as coma, involving many organs and systems, and leading to death within twenty-six hours. Our reasoning may take two major paths: (1) coma leading to death and (2) agents causing widespread disease. The commonest metabolic cause of coma is hypoglycemia. This can be easily ruled out; the patient was not diabetic, was not receiving insulin, and the coma persisted in spite of rehydration with intravenous glucose solutions. Uremia likewise can be eliminated since the nonprotein nitrogen was only 64 mg. per 100 ml. and the carbon dioxide 21 millimols per liter. Cholemia is unlikely in a patient who was well and conscious within hours of the time of death; the serum bilirubin was not high enough for liver failure, although there was hepatomegaly and laboratory evidence of disturbed liver function. There is no history and no evidence of ingestion of hepatotoxins, such as chlorinated hydrocarbons or methyl alcohol. Cirrhosis of the liver with bleeding varices is unlikely, although the hypersplenism of fibrocongestive splenomegaly would explain the absence of leukocytosis and reticulocytosis as well as the depression of platelets. By elimination, one is led to a consideration of single or multiple intracranial lesions leading to coma and death.

We can now turn to systemic agents which may lead to the picture we have described. Septicemia or bacteremia due to Gram-negative bacilli, meningococci, or hemolytic Staphylococcus aureus secondary to staphylococcal pneumonia may be fulminating, as may infections associated with an acute or subacute bacterial endocarditis in rare instances. The negative spinal fluid rules out meningitis but does not rule out multiple small or large brain lesions of hemorrhagic or infectious nature other than gross cerebral hemorrhage. The absence of significant cardiac disturbances, such as cardiomegaly or murmurs, makes bacterial endocarditis unlikely, as does the absence of clubbing, splenomegaly, and embolic phenomena and the rapidity of the course. The absence of multiple evidences of infection as well as the absence of a demonstrable primary site of entry makes septicemia unlikely.

Other infectious agents, such as Leptospira icterohaemorrhagiae, must be considered, particularly in view of the hepatic and renal involvement. However, the absence of leukocytosis, deep jaundice, severe hematuria, uremia, and epidemiologic contact militate against a diagnosis of Weil's disease.

Noninfectious conditions involving multiple organ systems must be considered. The so-called hepatorenal syndrome is inadequate as a diagnostic entity; as our understanding of disease mechanisms increases, we prefer to dispense with wastebasket diagnoses. Lupus erythematosus, periarteritis nodosa, and polymyositis almost never would take a patient from apparent good health to death in a matter of hours. There is one condition, thrombotic thrombocytopenic purpura, which may involve multiple organs; it is associated with hemolytic anemia, normoblastosis, and disturbances in hepatic, renal, and cerebral function. In this entity platelet thrombi become attached to damaged endothelium of capillaries, arteries, and occasionally venules throughout the body. There is deposition of a homogeneous eosinophilic material with thrombi occluding the involved vessels. Of the cases so far reported, over 90 per cent have had diffuse multiple neurologic manifestations, with seizures, alterations of consciousness, pareses and paralyses, nuchal rigidity, and lethargy. Widespread hemorrhagic phenomena are described almost universally, particularly in the skin, retina, and mucous membranes. Anemia is generally severe; in addition to a pronounced normoblastosis there is almost always a pronounced reticulocytosis of 15 per cent or higher. Platelet counts are almost invariably below 50,000, usually in the vicinity of 20,000. The clinical course may be a matter of a few days to a few months, and there is no known beneficial therapy. Diagnosis may be supported before death by lymph node or bone marrow biopsy and the demonstration of the characteristic vascular lesion. In our patient the extreme rapidity of his course, unrelenting coma, absence of leukocytosis and reticulocytosis, only moderate thrombocytopenia, and mildness of the hemolytic anemia combine to make a diagnosis of thrombotic thrombocytopenic purpura second on our list.

We therefore turn to a consideration of one other condition, that of an uncommon variation of the sickle cell hemoglobin syndrome, as a possible explanation for the entire picture presented by this patient. Sickle cell disease was first described by Herrick[1] in 1910. After four decades of nosologic studies and characterizations, a most significant contribution to our understanding of the disease came from an unexpected quarter when Pauling,[2] a Nobel laureate in physics, observed that the globin moiety of the hemoglobin in patients with sickle cell anemia migrated more slowly in an electrophoretic field than the globin moiety of normal hemoglobin. Subsequent and continuing refinements of the technic of electrophoresis have led to methods of paper electrophoresis and starch gel electrophoresis. These have demonstrated a variety of abnormal hemoglobins, each with some degree of ethnic, geographic, and genetic individuality. Alkali denaturation can be used to distinguish the hemoglobin of adults from that of the fetus and newborn. Since many of the important aspects of the diseases produced by abnormal hemoglobins are still *sub judice* and since the field has become rather complex, I will merely summarize some of the more generally accepted views and try to show how they explain the illness and death of our patient.

Sickle cell hemoglobin, or hemoglobin S, is apparently inherited as a simple Mendelian dominant. The homozygous situation in a child, to whom each parent contributes the hemoglobin S gene, leads to the well-known entity, sickle cell anemia (hemoglobin S-S disease). The presence of a combination of hemoglobin S and normal adult hemoglobin (hemoglobin A) in what is usually a 40 per cent S and 60 per cent A proportion, with hemoglobin S present in every cell, yields the so-called sickle cell trait (hemoglobin S-A disease). Approximately 10 per cent of Negroes carry the hemoglobin S gene, percentages varying in the United States from 7.3 to 13.4 per cent and in some areas in Africa running as high as 40 per cent or more. I would estimate the incidence of sickle cell trait in Harlem to be about 10 per cent. The chance of 2 carriers of the trait (S-A) producing issue with the disease (S-S) is about 3 per cent of the total hemoglobin S reservoir, or about 1 in every 600 persons. In patients with sickle cell disease, hemoglobin S is found in cord blood with a value of about 6 per cent at birth, rising to 90 per cent or more by the age of four months and remaining constant throughout the life of the individual.

As further studies were made, a number of different abnormal hemoglobins were described and identified electrophoretically. These are labelled hemoglobin C, D, E, G, and K. Hemoglobin F is used to designate fetal hemoglobin which has the same rate of electrophoretic mobility as hemoglobin A (normal adult hemoglobin) but which resists alkali denaturation. Hemoglobin A is now being subdivided into A_1, A_2, and A_3 components. We must remember that the hemoglobin molecule is composed of amino acids; preliminary observations have shown that there are differences in the proportion of certain amino acids when the normal and abnormal hemoglobins are further analyzed. Therefore, electrophoresis merely delineates the nature of the molecular defect; finer analyses of the molecular structure are necessary to define it.

Today we must be concerned with hemoglobin C as well as hemoglobin S. It occurs, as does hemoglobin S, almost exclusively in Negroes, although both have been reported in Caucasians. Hemoglobin C is present in about 2 per cent of American Negroes. Its presence when heterozygous (C-A, or C trait) is almost entirely asymptomatic; when homozygous (C-C, or C disease), a mild hemolytic anemia, splenomegaly, reticulocytosis, and many target cells in the peripheral smear may be the only stigmata. The C-C combination occurs in 1 out of 6,000 American Negroes.

Thalassemia (Cooley's anemia), the other major hereditary form of hemolytic anemia, is not so clearly understood as sickle cell anemia. Thalassemia does not involve the presence of an electrophoretically abnormal hemoglobin. Patients with thalassemia have hemoglobin A plus an increased amount of hemoglobin F, often as much as 20 per cent. Hematologic abnormalities in thalassemia consist of severe hypochromic microcytic anemia, the presence of target cells, chronic reticulocytosis, increased osmotic resistance of erythrocytes, hyperbilirubinemia, splenomegaly, and normoblastosis. Sickling does not occur. Thalassemia can be ruled out in our patient.

Genetically determined combinations of any of the abnormal hemoglobins and the thalassemia trait are possible. For example, the sickle cell gene may be combined with the gene for hemoglobin C to produce hemoglobin S-C disease, or with the gene for thalassemia to produce an SFA hemoglobin configuration, known as sickle cell thalassemia or microdrepanocytosis. Hemoglobin S may be combined with D, E, or other hemoglobins as well as with hemoglobin A or C. In all of these conditions tests for sickling give positive results.

The most significant laboratory observation in the present case is the positive test result for sickling. It establishes that the patient inherited the hemoglobin S gene from at least one parent. There are, for practical diagnostic purposes, four hematologic entities which he may have had:

1. S-A, or sickle cell trait.
2. S-S, or sickle cell anemia.
3. S-C, or hemoglobin S-C disease.
4. S-thalassemia, or microdrepanocytosis.

The first is the most common and is found in 10 per cent of American Negroes. It produces symptoms so rarely and under such unusual circumstances that we may dismiss it as a possible cause of this patient's illness and death.

The second, sickle cell anemia, occurs in 1 of every 600 Negroes. It usually produces symptoms early in life, retarding growth and development. Anemia is usually severe, and the typical osteoarticular crises are usually well established in childhood. Cardiomegaly, bone deformities, leg ulcers, chronic renal disease, and chronic liver disease are often present at an early age. I think it unlikely that this patient could have survived to the age of twenty-eight with no history of anemia, osteoarticular crisis, and the concomitant disorders if he had had sickle cell anemia.

It is difficult to distinguish on purely clinical grounds between hemoglobin S-C disease and hemoglobin S-thalassemia. At present, the best method of differential diagnosis is the electrophoretic pattern. I assume that it is being withheld because it was not reported until after death. However, some of the other laboratory data is helpful. In sickle cell-thalassemia (microdrepanocytosis) there usually is an onset of symptoms in childhood, although they are less severe than in sickle cell anemia. There usually is a microcytic hypochromic anemia; this patient had a normochromic normocytic anemia. There usually is a chronic reticulocytosis; this patient had a normal reticulocyte count. On this basis I tend to favor a diagnosis of hemoglobin S-C disease. Let us now examine this entity and determine if it fits our patient.

According to Smith and Conley[3,4] and Edington,[5] in this particular combination hemoglobin S and hemoglobin C are present in approximately equal quantities. Accordingly, sickling may occur in up to 100 per cent of cells, while the C hemoglobin molecule can be responsible for target cell percentages of 50 per cent and higher with large numbers of nucleated red cells in the peripheral blood, particularly in crisis. The patient's condition generally had all of the features of sickle cell crisis except the cardiac manifestations. However, almost all observers indicate that S-C disease is usually milder than S-S disease, that patients may survive into the seventh decade, and that there generally is no anemia except during crises. It is important to point out that the degree of anemia in both S-S and S-C diseases is not proportionate to the frequency of crisis or the severity of symptoms; the anemia is merely a manifestation of the underlying hemoglobinopathy, a function of the shortened red cell survival time as compensated for by increased hematopoiesis. Other manifestations of S-S disease are less common in S-C disease, such as tortuosity and aneurysmal dilatation of retinal vessels, the turret skull, collapse of vertebral bodies, and periosteal new bone formation. Articular pain is uniformly present in S-S disease, but was present in only 7 of 16 patients with S-C disease in Smith and Conley's study. However, recently it has become recognized that aseptic necrosis of the femoral head, splenic infarction, hematuria, crises in pregnancy, and maternal mortality are more commonly seen in S-C disease than in S-S disease.[3,4] Thus, 5 of Smith and Conley's 16 patients with S-C disease had aseptic necrosis of the femoral head, compared to a much smaller percentage in the cases of S-S disease. Neurologic symptoms occur in both groups, with convulsions, confusion, and pareses occurring in both syndromes. Only 1 of 15 patients with S-S disease had an episode of hematuria, but 3 of 16 patients with S-C disease had hematuria, 2 of them having had many recurrent episodes. Of importance is the fact that in S-S disease splenomegaly is found in less than 15 per cent of all patients, the large majority with palpable spleens being less than ten years of age. In an adult with sickle cell anemia, splenomegaly is almost unheard of. In S-C disease splenomegaly is reported in 75 to 80 per cent of cases. No splenic enlargement was found in this patient. The negative observation has little significance for differential diagnosis.

Since it seems probable that our patient had S-C disease, could the known pathologic manifestations of the entity explain his symptoms and course? If we remember that the manifestations of this disease are due to small necrotic lesions attendant on obstruction of small blood vessels by masses of sickled erythrocytes appearing during crisis, I believe we can explain all of the findings in this patient. Six months prior to his last illness, he had an episode of pleuritic pain which may well have been due to a small pulmonary infarct.[6] The severe back pain which preceded coma may have been due to bone infarction, an entity commonly seen in all the heterozygous hemoglobin S syndromes. The hepatic and renal involvement may be explained on the basis of vascular thromboses and multiple small necrotic lesions. Since such focal necroses may involve mucous membranes, the source of the gastrointestinal bleeding may have been such a focus. Multiple focal necroses in cerebral tissue, described by Wertham *et al.*,[7] may have produced the unrelenting coma and the nuchal rigidity without producing changes in the spinal fluid. Such a case has been described by Diggs and Jones;[8] in the discussion mention is made of a review of autopsy material by Vorder Bruegge and Diggs in which patients with sickle cell traits died suddenly and unexpectedly. In such cases the small- and medium-sized blood vessels are distended with sickled erythrocytes, the spleen is often enlarged and resembles a "bag of blood, and there are microscopic areas of ischemic necrosis in the brain, liver, and other organs. Many of these cases were studied before current electrophoretic separation of hemoglobins made possible some of the distinctions which we have drawn today, and it is extremely probable that some of the cases are examples of S-C disease.

Therefore, my diagnoses are: (1) Active hemoglobin S-C disease with crisis, (2) multiple cerebral capillary thromboses, (3) extensive focal encephalomalacia with hemorrhage, hemorrhagic necrosis, and infarction, (4) hyperplasia of bone marrow, (5) necrotic lesions of mucous membranes with ulceration and hemorrhage into the stomach and duodenum, and (6) multiple necrotic lesions involving kidney, spleen, liver, heart, lungs, and bones, secondary to vascular occlusions.

To sum up, hemoglobin S is involved in a number of syndromes spanning a spectrum from sickle cell trait, which rarely gives symptoms, to sickle cell disease, which gives severe symptoms early in life. Intermediate combinations of hemoglobim S with other abnormal hemoglobins, such as hemoglobin C, or with other inheritable hematologic abnormalities, such as thalassemia, have milder, more prolonged courses with fewer symptomatic episodes. However, these combinations may on occasion be associated with severe disease. In some instances, sudden death may be caused by the phenomenon which is common to all of the hemoglobin S syndromes, namely, disseminated vascular thromboses due to intravascular sickling of erythrocytes which leads to multiple focal necroses in many organs.

Dr. Leo S. Weiner: The presence of 90 to 95 per cent sickle cells and over 50 per cent target cells in an American Negro patient suggests that hemoglobin S-C disease is the most likely diagnosis. Although target cells are found in thalassemia, rarely do they exceed 25 per cent; in hemoglobin C states they are considerably higher and may vary from 50 to 100 per cent of the cells.

Hemoglobin S-C disease is generally considered a mild to moderate hemolytic disease. The severity of this disease, however, may vary from an asymptomatic state similar to sickle cell trait to the most severe, and ever fatal, crises similar to those encountered in homozygous sickle cell anemia. The degree of severity seems to be related to the percentage of sickle cell hemoglobin, which may vary from 30 to 60 per cent. The milder cases are those with the lesser amounts of hemoglobin S. Whereas the symptoms of homozygous sickle cell anemia generally start in early childhood, the symptoms of hemoglobin S-C disease may first become manifest only in the twentieth or thirtieth years of the patient's life.

Although the appearance of normoblasts in the peripheral blood frequently has been interpreted as a compensatory mechanism for anemia, others have considered it as evidence of damage to the bone marrow with the release of immature marrow elements into the peripheral circulation. The frequent appearance of increased normoblastosis during sickle cell crisis, particularly when there is no evidence of increased hemolysis as judged by a fall in red cell count or hemoglobin values, would suggest bone marrow damage rather than the operation of a compensatory mechanism.

The absence of previous history up to the age of twenty-eight, the onset with low back pain, the fulminating course terminat-

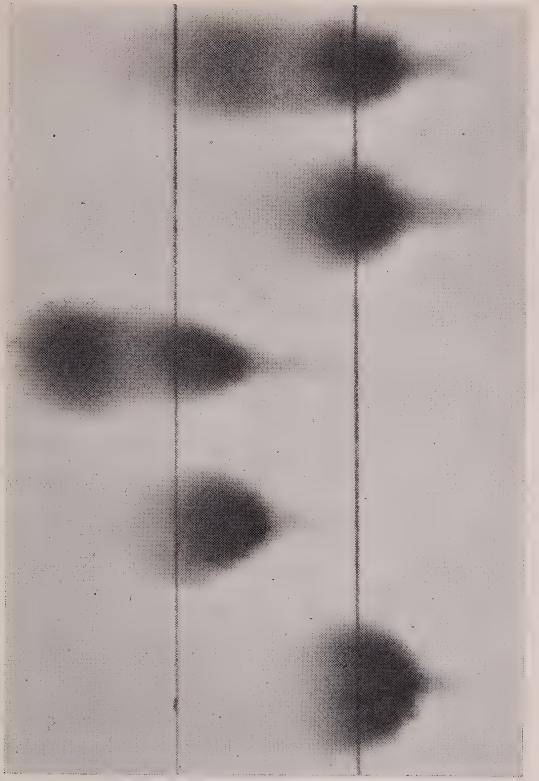

FIG. 2. Film of hemoglobin electrophoresis showing, from top to bottom, hemoglobins S and A, A, S and C (as in the present patient), S and A.

ing in coma and death, the hematologic findings of 90 to 100 per cent sickle cells, and 50 per cent target cells, and normoblastosis suggest a fatal vascular crisis encountered in hemoglobin S-C disease.

Diagnoses

Clinical.—(*1*) *?Leptospirosis icterohemorrhagica (Weil's disease) and (2) hemoglobinopathy, type undetermined.*

Dr. Hyman.—(*1*) *Hemoglobin S-C disease with crisis (intravascular sickling), (2) multiple focal necroses of brain, heart, liver, spleen, kidney, lungs, and bones with cerebral and gastrointestinal hemorrhage, and (3) hyperplasia of bone marrow.*

Anatomic.—(*1*) *Hemoglobin S-C disease with generalized intravascular sickling, (2) acute hemorrhagic infarction of hyperplastic bone marrow, and (3) multiple fat emboli to lung, kidney, and brain.*

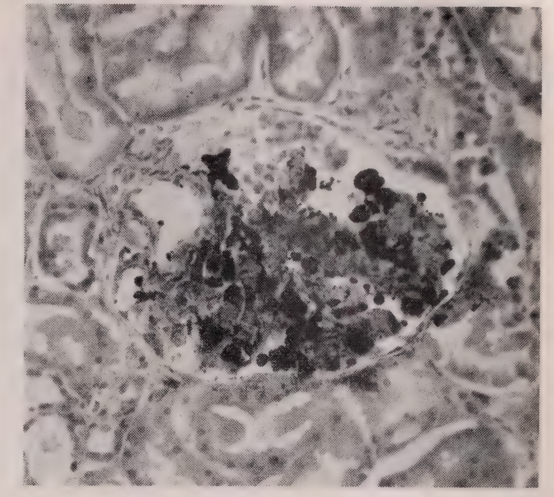

FIG. 3. Microscopic view of glomerular capillary loops filled with embolic globules of lipid stained with Sudan black B.

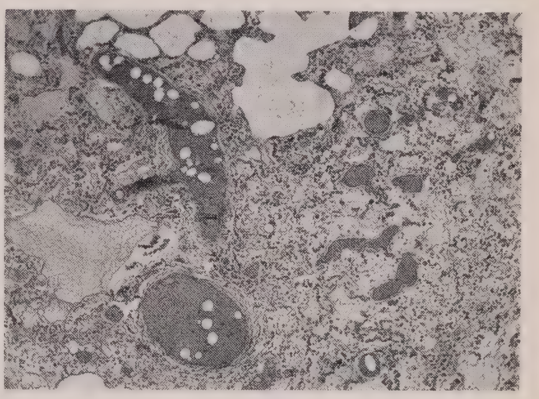

FIG. 4. Microscopic view of distended pulmonary vascular bed with conglutinated thrombi of sickled cells admixed with globules of lipid; agonal intra-alveolar edema is also present.

Pathologic Report

DR. WILLIAM B. OBER: After the patient's death, two clinical laboratory reports were returned. A complement fixation test for Weil's disease gave a negative result. The hemoglobin electrophoresis showed a mixture of hemoglobin S and hemoglobin C with no hemoglobin F (Fig. 2). This was quantitated at 62 per cent hemoglobin S and 38 per cent hemoglobin C.

Autopsy disclosed extensive hemorrhagic infarction of a hyperplastic bone marrow with dispersion of fat and marrow elements

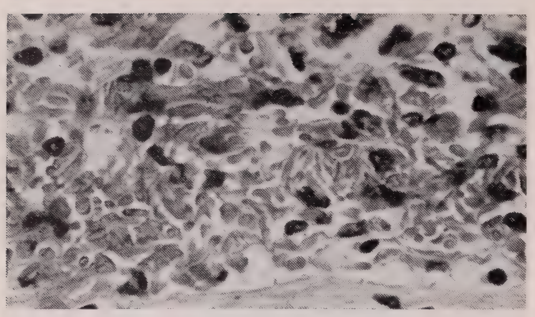

FIG. 5. Microscopic view of the splenic sinusoids distended by pools of sickled red blood cells; a few irreversibly sickled cells are seen as fine filamentous forms.

throughout the blood stream, demonstrable in the pulmonary arteries and capillaries, glomeruli (Fig. 3), and cerebral capillaries. Diffuse intravascular sickling accompanied the fat embolism and was especially prominent in the pulmonary bed (Fig. 4), hepatic sinusoids, renal glomeruli, and sinusoids of the spleen itself (Fig. 5). The lesions had not progressed to the stage of focal necroses. A discrete ulcerated bleeding point was not demonstrated in the stomach or duodenum. It is inferred that the gastrointestinal hemorrhage was a result of diffuse capillary oozing secondary to intravascular sickling in the terminal loops in the mucosa. The degree of pulmonary vascular obstruction was extensive, sufficient to produce acute pulmonary hypertension and acute cor pulmonale.

I would interpret the respiratory distress and electrocardiographic changes on that basis. The disturbed liver function tests and the disturbed renal nitrogen clearance reflect circulatory obstruction in both these organs.

The spleen weighed 70 Gm. and had a shrunken, bosselated appearance. There were retracted gray areas of scarring alternating with bulging purplish areas of congestion. Microscopic examination showed fibrosis with Gandy-Gamna body formation in the scarred areas and sinusoids distended by intravascular sickling in the bulging areas.

I have gone through much of the same ground as Dr. Hyman in preparing this case and need not recapitulate his analysis of the hereditary hemoglobinopathies. There have been a few cases reported of fat embolism associated with sickle cell hemoglobin, notably those reported by Wade and Stephenson,[9] Vance and Fisher,[10] Wyatt and Orrahood,[11] and the first case in the study by Wertham *et al.*[7] However, fat embolism is not mentioned in a recent report of autopsied cases of S-C disease by Edington.[12] Presumably the marrow infarction and extrusion of fat and marrow elements precedes the intravascular sickling. This would account for the low reticulocyte count. However, we are unable to assign a cause to the apparent spontaneous infarction of a hyperplastic marrow in these few cases. Once intravascular sickling is established as a result of local decrease in capillary oxygen tension at the embolized areas, a vicious cycle is set up. Intravascular sickling is a deoxygenation effect. When the pulmonary vascular bed is thus obstructed by embolic fat and sickled red cells in conglutinated aggregates, an alveolar capillary block is created with consequent reduced systemic oxygenation, and further intravascular sickling ensues. Sickling is a function of hemoglobin S rather than hemoglobin C.

The red cells contain both abnormal hemoglobins and sickled target cells were seen in the peripheral smear. I would incriminate hemoglobin S as the villain in the case and infer that the severity of the symptoms, risk of a sickling crisis, and chance of sudden death are proportional to the amount of hemoglobin S.

The presence of irreversibly sickled erythrocytes, appearing as fine filamentous structures within the splenic and hepatic sinusoids, has previously been described only in homozygous sickle cell anemia and has never before been described as occurring in a heterozygous state. Their presence in this case indicates the severity of the sickling phenomenon, which led to the patient's rapid demise.

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Child's Elbow May Be Injured by Sudden Jerk of Hand

A sudden jerk on a small child's hand, which lifts him off his feet, may injure his elbow, a North Dakota orthopedist warned. The injury, first described in 1671, is sometimes called "nursemaid's elbow." Actually it is a dislocation of the upper end of the radius, which, being directly fixed to the bones of the hand, is pulled out of the ligaments at the elbow.

According to Dr. George M. Hart, Northwest Clinic, Minot, N.D., the injury usually occurs in children between the ages of two and four years and rarely after the age of six.

Writing in the April 11 *Journal of the American Medical Association,* he reported seven cases of the injury. They had occurred in several ways—when the child rolled on the arm, when a cousin twisted the child's arm, and when the child fell on the arm. The most common means of injury, however, is when the child's hand is jerked and he is pulled off his feet. After injury there is pain in the region of the elbow, the child refuses to use the arm, and he holds the elbow slightly bent and the forearm with the palm turned down.

The treatment is simple, Dr. Hart said. The affected elbow is grasped with one hand with the thumb on the head of the radius. The forearm is held with the opposite hand at the wrist and extended. The forearm is then forcibly turned so the palm faces upward and at the same time slight pressure is applied at the radius head with the thumb. Upward pressure may be made on the forearm so that the radius is pushed upward. As the manipulation is carried out, a slight click is often felt over the head of the radius and pain and limitation of movement are relieved.

"Reduction is usually so easy that it may occur spontaneously," Dr. Hart said, "or may be accomplished by the parent or x-ray technician during manipulation of the arm."

After the bone is back in place, the arm should be put in a sling for a few days and care should be taken that the child's forearm is not pulled, he said.

CLINICAL ANESTHESIA CONFERENCE

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Cardiovascular Collapse from Respiratory Obstruction

RESPIRATORY obstruction during anesthesia is a condition which usually can be overcome by restoring a patent airway with a pharyngeal or endotracheal tube. In the following case report, however, respiratory obstruction was such that it could not be alleviated by means of an artificial airway.

Case Report

A fifty-four-year-old obese woman had a mass in her anterior chest wall which had been noted to have grown progressively during the last six years. The mass was palpable just below the skin. Arterial pulsations could be felt, and auscultation over the mass revealed a murmur. A diagnosis of large aortic aneurysm was made, and it was proposed to excise the lesion before its imminent rupture.

Preoperatively, roentgen examination confirmed the obvious clinical diagnosis. The patient's arterial blood pressure in the brachial arteries varied between 230/130 to 170/90; her pulse rate varied between 94 and 108 per minute. Her other vital signs, blood count, and urinalysis findings were normal. She was eating adequately and did not require intravenous fluids. No specific medication was administered except for digoxin 0.5 mg. daily.

On the day of operation she was quite apprehensive. In an effort to calm her, she was given 200 mg. of sodium amytal and 50 mg. of chlorpromazine intramuscularly at 5:30 A.M. Two hours later she was given 10 mg. of morphine sulfate and 0.4 mg. of scopolamine hydrobromide by intramuscular injection. When she arrived in the operating room, thirty-five minutes after the last injection, she appeared drowsy but could help herself onto the operating table. Her arterial blood pressure was 150/100, pulse rate 118 per minute, and respiratory rate 22 per minute.

Anesthesia was induced with cyclopropane and oxygen. Fifteen mg. of Intocostrin were given intravenously and a number 36 anode tube was inserted into the patient's trachea during direct laryngoscopy. Anesthesia was maintained with cyclopropane and oxygen in a closed-circle, carbon dioxide-absorption system with intermittent doses of Intocostrin intravenously. Following endotracheal intubation, there was a transient rise in the patient's arterial blood pressure to 170/90, but after ten minutes there followed a progressive decline until fifty minutes later, when

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Discussed at a conference held at Bellevue Hospital, New York City, January 5, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

it had fallen to 66/50 with the pulse rate 86 per minute. Surgery had been started only a few minutes previously and was not a cause of the hypotension. At this time, the breath sounds in the left lung were weak and distant. The endotracheal tube was withdrawn 1 inch; this seemed to result in improved breath sounds of the left lung, but arterial hypotension persisted.

It was decided to start an intravenous drip infusion of Neo-Synephrine in a 1:50,000 concentration, and the patient was also given 0.5 mg. of digoxin intravenously. During the thirty minutes following this treatment the patient's arterial blood pressure rose to 140/80. An electrocardioscope was connected to the patient, and the operative course was uneventful during the next hour. Then, occasional premature ventricular contractions were noted on the electrocardioscope. Although the patient had been placed on controlled respirations, it was felt at this time that there was difficulty encountered in inflating the lungs. When the right side of the chest was entered surgically, it was observed at first that the right lung could be inflated with ease and then it was noted that it became difficult to do so. A few minutes later the right lung could not be inflated nor could it deflate spontaneously. Assuming that there was something wrong with the endotracheal tube, it was removed and replaced by another tube. Extreme positive pressure then produced some inflation of the right lung although obstruction was still obviously present. The patient again was extubated, and a Ruth-Bailey tube was passed into the right main bronchus. There still was no improvement in lung inflation. The tube was removed and another anode tube again was introduced into the trachea. This resulted in easier lung inflation, and the operation was continued while the patient was "controlled" with difficulty.

The aortic aneurysm was so extensive that it was deemed impossible to excise it. Instead, the surgeon decided to apply a considerable quantity of polythene plastic wire into the aneurysm. The system of anesthesia was changed from a closed-circle one to a closed to-and-fro one. After a period of adequate control of lung ventilation, the patient again became obstructed. During this period of respiratory obstruction, lasting over three hours, the patient's circulation remained amazingly adequate, with the arterial pressure varying between 90/50 and 110/80 and the pulse rate varying between 76 and 90 per minute. Cyanosis was present most of the time. Nine pints of blood had been administered to compensate for a similar amount of blood lost. The operation was finally completed, and a tracheostomy was performed. A number 32 anode tube was placed into the tracheostomy, and the patient was taken to the recovery room. There, oxygen was administered by way of the tracheal tube, and the patient's color improved. Soon and suddenly no pulse could be obtained. The left side of the chest was opened quickly and cardiac manual contractions restored a spontaneous heart beat. The patient recovered and she was connected to a Jefferson ventilator. One hour later the patient again suffered cardiac arrest. Again, the heart beat was restored by manual contractions. Fifteen minutes later the patient's heart stopped once more but resuscitative measures failed.

At autopsy a large aortic aneurysm was found which involved the entire aortic arch and invaded the sternum. It was deemed inoperable. No obstruction was found inside the trachea or bronchi, but the large aortic mass was compressing the right bronchus.

Comment

The pathologic circulatory process in this patient was of such magnitude and of such long duration that usual circulatory responses to mechanical respiratory obstruction were abnormal. Although respiratory obstruction was evident, because of inability to inflate the exposed lung, the usual initial circulatory response, characterized by tachycardia and arterial hypertension, did not occur. The only evidence of oxygen-lack was observed on the electrocardioscope, which showed the development of premature ventricular contractions. When the final stage of circulatory failure due to respiratory obstruction occurred, it did so quickly, as it usually does, but again there was no evidence of a prior phase of asphyxia, characterized by a slow, bounding pulse.

(*Number sixty-six in a series of Clinical Anesthesia Conferences*)

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Unusual Modes of Ingestion

The following incidents were recently reported to the New York City Poison Control Center.

Incident 1

Toxic Agent	*Age*	*Sex*
Tetra-ethylthiuram	25 years	Male

The patient ingested 7 tablets of this drug, used as an adjunct in the treatment of alcoholism, with suicidal intent. The patient had convulsions at home for a while, with no heart or pulse beat for a brief period. When seen in the admitting room, however, the patient did not appear to be in acute distress. He was treated in the admitting room with ephedrine 25 mg. subcutaneously and transferred to the Bellevue Psychiatric Division for indicated psychiatric care.

Incident 2

Toxic Agent	*Age*	*Sex*
Insecticide	27 years	Male

This incident is reported because of its unusual mode of occurrence. The patient was cleaning the stock in his pharmacy when a can containing insecticide (sodium fluoride) fell from a height onto him. The patient was looking up at the time, and some of the contents fell into his mouth and nose. The patient reflexively swallowed and then, realizing what had happened, tried to rid himself of what he had swallowed and inhaled.

He went to a hospital a half hour after the occurrence. Prior to admission, vomiting was induced. In the emergency room his stomach was lavaged with saline, and calcium chloride was given orally. The patient was otherwise asymptomatic and in good condition. He was discharged home after twenty-four hours of observation.

Incident 3

Toxic Agent	*Age*	*Sex*
Insecticide	2 years	Female

The patient was found by an older sibling with blue powder in her mouth. The sibling administered olive oil but vomiting could not be induced. The patient was brought to the hospital for indicated treatment. On admission she was entirely asymptomatic. Her stomach was lavaged with saline in the admitting room about twenty minutes after ingestion. The patient was then admitted to the ward, where 10 cc. of calcium gluconate in a cup of water was administered. The only physical finding on admission was an inflamed oral mucosa. After two days of observation she was discharged as improved.

The increasing resistance of household insects to many synthetic insecticides is causing a return to the household use of sodium fluoride. The presence of a blue-green powder is characteristic of much of the sodium fluoride on the market and should be a telltale symptom to the admitting physician. Gastric lavage and calcium therapy should be employed as quickly as possible in the treatment of such poisonings.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Meprobamate-Benactyzine	54 years	Female

This incident is reported primarily because the drug involved is a new preparation and this is the first incident with it reported to this center. The patient ingested 8 tablets of the drug, each tablet containing Meprobamate 400 mg. and Benactyzine 1 mg.

On admission the patient was apprehensive and had abdominal pains and abdominal tenderness. She was treated with Coramine, penicillin, and dextrose and water intravenously. The urine and gastric content were negative for barbiturates; the negative report for barbiturate is very understandable since this is a nonbarbiturate product. After two days of hospitalization the patient was discharged as recovered.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Barbiturate	16 years	Female

The patient took an overdose of barbiturates (6 capsules of unknown composition) with a suicidal intent; she had been very depressed and went to the bathroom and took her grandmother's sleeping pills. She collapsed shortly afterwards in the bathroom but was able to tell friends who knocked on the door what had happened. She was taken to the hospital in comatose condition about a half hour following ingestion.

The laboratory findings were as follows: The blood consisted of 11 mg. per cent urea nitrogen and 80 mg. per cent glucose. The Mazzini test gave a negative result. The sedimentation rate was 3 mm. in five minutes and 4 mm. in one hour. The urine contained many bacteria but otherwise was negative. Barbiturates were part of the gastric content. The hemoglobin was 13 Gm. per cent and the white cell count 9,450, with 56 per cent segmented forms, 3 per cent staff cells, 36 per cent lymphocytes, 4 per cent monocytes, and 1 per cent eosinophils. The hematocrit was 40.

Her stomach was lavaged in the admitting room with saline. The patient was treated with caffeine sodium benzoate and Thorazine. After five days she was released in the custody of a private physician, who agreed to refer her to a psychiatrist for indicated psychotherapy. This is the second attempt at suicide by this patient and she is said to have been under the care of a mental hygiene clinic.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Insecticide	18 years	Female

This incident is reported because of its unusual mode of occurrence. The patient relates that she prepared a "coke" for herself in a paper cup and, after drinking part of it, set it down on a shelf. Her boss, a bartender, had poured Flit into several paper cups for use as an insecticide behind the counter. Not realizing that Flit was in any of the cups the patient hurriedly took a cup containing the Flit instead of the "coke" and ingested it. She drank some milk and continued her work as a barmaid.

After she returned home she felt ill and soon vomited. She reported to a hospital emergency room, where her stomach was lavaged with saline; she was then admitted to the inpatient service. The only findings on admission were the symptoms of abdominal pain, dizziness, and chest pain. She was treated with bed rest, a soft diet, and supportive therapy. After two days she was sent home.

Incident 7

Toxic Agent	*Age*	*Sex*
Esso Flit (5 per cent DDT)	$1^1/_2$ years	Female

This one-and-one-half-year-old child obtained the solution from the back of the linen closet although, according to the mother, the solution was presumed to be well hidden. An unknown amount of the solution was ingested. The father is a physician and contacted the Poison Control Center for advice with regard to therapy. Gastric lavage was advised and was performed by the father.

During a subsequent visit by the public health nurse the mother emphatically stated that all harmful preparations are kept out of her children's reach and are locked and that the DDT is also being locked away from the children.

Incident 8

Toxic Agent	*Age*	*Sex*
Bichloride of Mercury	10 months	Male

An older sibling, aged three, climbed up to a kitchen shelf, obtained a bottle of bichloride of mercury and emptied it into the baby's playpen. The ten-month-old infant ingested 2 tablets of the bichloride and immediately had burning of the mouth and throat and became dyspneic. He was rushed to the hospital, and on admission his mouth, lips, and tongue were markedly edematous. His face was flushed and he vomited continuously. His stomach was lavaged with sodium benzoate twenty minutes after ingestion. After lavage the patient was admitted to the inpatient service where fluids were forced and milk and potassium bitartrate were administered. Dimercaprol was administered by injection. A daily urinalysis initially showed 4 plus albumin, glycosuria, and acetonuria with many casts, but toward the end of his hospitalization the urinary findings were negative. The blood urea nitrogen was never elevated. The red cell count was 3,820,000, and the white cell count was 12,300. The hemoglobin content was 13 Gm. per cent.

While in the hospital the patient developed an acute pharyngotonsillitis and gastroenteritis which were treated in the usual manner; they responded well to treatment. After fourteen days the patient was discharged as well but was to be observed for kidney function in the outpatient department.

The bichloride of mercury was originally prescribed by a hospital resident physician to be used as an antiseptic in a diaper rinse. One $^1/_2$-Gm. tablet was to be dissolved in $2^1/_2$ gallons of water.

The assistance of the Poison Control Center was requested because of an edema glottis. The question of tracheotomy was considered. The resident physician was advised by the Poison Control Center to try a Levine tube first; if no relief was obtained and obstruction persisted, a tracheotomy was to be done. Hemodialysis was also considered. The expected renal damage, however, did not materialize. After insertion of the Levine tube the patient obtained a considerable measure of relief and a tracheotomy was not needed. Apparently the chief damage in this case was oral, which is contrary to expectations since in most cases it would be renal. One questions, however, why this chemical was advised as a disinfectant since more effective and less dangerous products are now available. In addition to the ingestion hazard, the possible development of acrodynia should also dissuade the use of mercurial products.

Incident 9

Toxic Agent	*Age*	*Sex*
Cyanide (in Metal Polish)	1 year	Male

A one-year-old child, while left alone with a six-year-old brother for several minutes, opened a cabinet underneath the sink and removed a bottle of Oridex; he ingested some of its contents.

When the mother returned, the older sibling informed her that the patient had swallowed the cleaning material. She rushed into the kitchen and found the child lying in coma with labored breathing. The child was taken to the hospital.

On admission the following symptoms were noted: deep coma, abnormal corneal reflexes, bradycardia, and very slow pulse. The hospital physician called the Center and mentioned the trade name of the product involved. We were unable to identify the product since it had a very limited distribution. The doctor was advised to make an effort to obtain the label. He called back within ten minutes to inform the Center that the product contained cyanide, and he was advised on appropriate therapy.

One-half hour after ingestion the patient's stomach was lavaged, vomiting had been induced ten minutes after ingestion. In the hospital the patient was placed in an oxygen tent and treated with amyl nitrite, Coramine, and sodium caffeine benzoate.

Unexpectedly and happily, this child recovered from the cyanide poisoning which so frequently is fatal. The product had been given to the father several months prior to this incident by the manufacturer, who is a friend of the family. This is the most toxic of the products stored "under the sink" which have resulted in incidents reported to this center.

Although this patient responded well and most unexpectedly to the therapy used, it is strongly recommended that every emergency room have available a standard cyanide treatment kit.

Incident 10

Toxic Agent	*Age*	*Sex*
Flashlight Battery	7 years	Male

A pencil-type flashlight battery was swallowed in toto by a seven-year-old boy. The hospital physician was concerned about the poisoning effect of the chemicals involved in the battery but the Center reassured him of their innocuous character inasmuch as the battery was intact and coated with zinc with the inside contents of manganese dioxide inaccessible.

After two days of hospitalization and x-ray observation the patient was discharged. The battery was passed rectally after the patient had been discharged.

Incident 11

Toxic Agent	*Age*	*Sex*
Snake Venom	31 years	Male

A research physician at the Rockefeller Institute was bitten on October 30, 1958, by a copperhead while walking in Palisades Park, an unusual incident for this time of year. The picture was complicated because the physician knew he was sensitive to horse serum and the available antivenins are manufactured from it. The Center was contacted to ascertain a source of antivenin other than horse serum; after numerous inquiries it was found that such an antivenin was not available. The doctor was desensitized in five hours and treated with the available antivenin.

As a result of this incident the Center raised a question with several sources whether some emergency supplies, based on other animals, could be available at some regional depot, since a five-hour interval would be too prolonged in a young child and could result in a needless loss of life.

Voodoo Dolls and Poisonings

The United States Public Health Service recently warned that voodoo dolls imported from Haiti and sold in this country as novelties and "swizzle sticks" can be harmful to persons who handle them. The cashew-nut heads of these dolls contain a shell liquid which is chemically similar to the oil of poison ivy.

Some volunteers of the Public Health Service, at the Occupational Health Field Headquarters in Cincinnati, who were tested with pieces of the shell, developed blistering skin reactions resembling poison ivy within thirty-five to fifty minutes. An allergic outbreak was also reported involving 50 students in a high school in Atlanta, Georgia.

The eyes of these dolls are even more dangerous than the cashew-nut heads; they are believed to be made of lethal jequirity beans. According to the United States Public Health Service, animal tests indicate that one of the "eyes" when ingested or swallowed by a young child can cause serious illness which may terminate fatally. (The injurious agent in the "eye" is a toxic albumin which resembles the protein of the castor bean).

Extreme caution is therefore urged in the handling and use of these dolls. Happily, no incidents incriminating the voodoo dolls from Haiti have thus far been reported to the New York City Poison Control Center. Physicians are requested to alert their patients to the possible dangers of these dolls.

(*Number thirty-two in a series of Briefs on Accidental Chemical Poisonings*)

New Rauwolfia Preparation Causes Few Side-Effects

A new derivative of Rauwolfia, the old Indian snake root remedy, has been found to lower high blood pressure without producing the many adverse side-effects caused by other Rauwolfia preparations.

The new drug, called syrosingopine (Singoserp), was discussed in the April 4 *Journal of the American Medical Association* by four Galveston, Texas, physicians.

They gave the drug to 77 patients with essential hypertension (high blood pressure of unknown cause) at the University of Texas Medical Branch.

The chief advantage of syrosingopine over other Rauwolfia derivatives, such as reserpine, is the relative infrequency with which it produces disturbing side-effects, the doctors said. These include drowsiness, terrifying nightmares, depression, nasal congestion, and gastrointestinal distrubances.

Fourteen of the patients were markedly intolerant to other Rauwolfia preparations, but only four of these showed any signs of intolerance to syrosingopine, and these were relatively minor.

The doctors—George R. Herrmann, Elmer B. Vogelpohl, Milton R. Hejtmancik, and James C. Wright—recommended the use of syrosingopine for those patients with essential hypertension who are unable to take the other Rauwolfia preparations.

CANCER ALERTS

A series of radio talks for the practitioner
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New York City Cancer Committee

Diagnosis of Tumors of Hands and Feet

ROBERT J. BOOHER, M.D., NEW YORK CITY
(*From Memorial Center for Cancer and Allied Diseases*)

IT HAS generally been felt that there is a preponderance of benign over malignant tumors of the hands and feet. For example, in a recent review of the material in the surgico-pathologic laboratory of one of our large metropolitan teaching hospitals, presented before The American Society for Surgery of The Hand, 1,203 benign tumors were found in contrast to 143 malignant ones.[1]

Our experience has not confirmed this viewpoint. In a previous survey of twenty years experience with tumors of the hands and feet on the Mixed Tumor Service at the Memorial Center for Cancer and Allied Diseases, Pack[2] found a total of 204 benign as opposed to 369 malignant ones. In a more recent survey of a thirteen-year period partially overlapping the preceding analysis, we have studied a total of 526 benign tumors, 350 being on the hands as opposed to 176 on the feet, while of 331 malignant tumors, 180 were on the hands and 151 on the feet.

While we are aware that our material at the Memorial Center for Cancer and Allied Diseases is quite highly selective, it has seemed that a prevalent impression of the benignity of tumors of the hands and feet has often contributed to failure in early detection and not uncommonly in inadequate initial surgical consideration. Our experience has not been that of one of the authorities on hand surgery who has stated that malignant tumors of the hand are rare, but that when they do occur, because of their peripheral location and the fact that they can be diagnosed at an early stage they afford a good chance for cure.[3] If the latter part of his statement is a fairly universal experience, we would like to consider a few pertinent facts relative to the more common tumors of these locations, although time precludes even enumeration of the less frequent ones.

Squamous and epidermoid cancers comprise the largest group of malignant tumors of the hands and feet. Various authors use these terms somewhat interchangeably, but the term "squamous cancer" is an inclusive one, while epidermoid cancer should be restricted to those cancers showing absence of keratohyalin and pearl formation. In a study of 150 of these cancers on the hands and feet, 136 or 91.3 per cent were on the hands and 14 or 8.7 per cent on the feet. Cancer of the hands is one of the cancers of the white race, and in this series none occurred in the Negro; but 2 of the 14 cancers or 14 per cent occurred on the foot in Negroes, which substantiates a well-known fact that cancer of the exposed skin is infrequent in the colored races but is of approximately the same percentage of occurrence in the covered skin of the Negro as in a controlled group.

Squamous cancer results from chronic irritation, whether it be due to the chronic microtrauma of sun, wind, and rain, with subsequent damage and atrophy of the protective mechanism of sebaceous and sweat glands; from exposure to x-rays or radium (a common occupational cancer of physicians); or from the chemical irritation of tar, dyes, paints, or industrial oils. Chronic mechanical irritation and scar may contribute, though in a small degree. Regardless of these factors, the reactive hyperplasia, at first apparent as keratosis, in time gives way to in situ cancer, and this approximately 20 per cent of the time gives way to actually invading cancer.[4] These cancers are usually of low histologic malignancy, of Grade I or II, and rarely ever Grade III in the Broders' index. Here in New York City the incidence in our patients has been almost 4 males to 1 female, although more usually it is 2 or 3 to 1. The lesion practically always is on the dorsum of the fingers and hands.

Clinical attention is turned first to senile keratosis, usually occurring in patients well over fifty years of age; although it may appear in younger people who have borne excessive exposure to sun and wind, such as sportsmen and people whose complexions are blonde or sandy and who by nature seem more sensitive to the injurious effects of actinic rays. These lesions are usually multiple, very slightly elevated, brown with varying shades of peripheral reddening, and with or without a central whitened, scaly plaque. Whether such lesions are keratoses, carcinoma in situ, or early squamous cancers may be difficult to tell, especially if detection is early. Suspicion of the lesion should indicate the need for excision, and the exact diagnosis must be determined by the pathologist. We prefer excision to destruction of such lesions by cauterization whether it be electrical or the potential cautery of chemical agents. Every such localized cutaneous growth should be considered a potential cancer until proved otherwise by microscopy. What is said of senile keratoses obtains for roentgen hyperkeratoses. Those of arsenical origin are palpably diagnosed by the horny papular characteristic feeling of the palms or soles. The hyperplastic keratoses subsequent to long exposure to industrial cutting oils, greases, tars, and dyes in general are a more ominous group. Any of these lesions may give way slowly to sharply circumscribed nodular indurated squamous cancers which may be only a few millimeters in size, but are more generally a centimeter or over. With continued growth the nodular lesion ulcerates superficially, then deeply, may either present a pearly, slightly reddened granular margin with an encrusted ulceration, or it may fungate. Skin cancer of the hands and feet does not cross the supertendinous layer of the deep fascia until late, so that early wide excision is usually quite adequate treatment.

Our findings corroborate the work of Schrek[5] showing that the median size and duration of the cancer is a convenient measure of the stage of development of the process, and that with progressive increase of size, recurrences and metastases are more frequent occurrences.

In our recent analysis of these cancers of the hands, 18.7 per cent eventually metastasized to the axillary lymph nodes, although axillary dissections were actually accomplished in only 15 per cent of the entire group. The incidence of metastases to the groins, though assuredly in a smaller group of patients, was 28 per cent of those cancers arising on the feet. Detection and care of the primary and more especially of the recurrent squamous cancers necessitates continued expectant observation of the patient for regional node metastases.

Only passing mention is to be made of the occurrence of basal cell skin cancer in these areas, the incidence being only one-tenth that of the squamous cancers.

While squamous cancer is the most common malignant tumor of the hands, melanoma is the one found most frequently on the feet. Consideration of the prophylaxis of melanoma demands brief attention to the fact that the tumor is more apt to be related to a mole than at any other site.

While the distribution of benign pigmented nevi of the hands and feet is infrequent, the high incidence of melanoma in relation to the limited skin surface of the feet indicates good reason to analyze the regional variations of the types of nevi which may contribute to the development of melanoma.

Recognition of the junctional nevus is most important in the morphogenesis of melanoma since this lesion is the precancerous phase. While there is great argument as to the pathogenesis of melanoma between those championing epidermal derivation as opposed to neural origin, this discussion can be readily side-tracked on the basis of time by the epitome of this problem as expressed by Masson,[6] the ablest proponent of the neurogenic theory.

> "The opinion of Becker and Allen regarding the melanomas of the cellular nevi seems to be fairly logical. It is based also on the observation of melanomas beginning in the cellular nevi. Consequently, the cellular nevi whose epidermis retains the characteristics of the 'junctional nevus' and especially those corresponding to the so-called 'compound nevus' stage would be susceptible to neoplastic change. Concerning the true 'intradermal nevi,' this eventually would be much less likely."

Nevi on the hands and feet are infrequent, but in a survey of 29 on the hands and 34 on the feet carefully restudied and reclassified by Dr. Sophie Spitz for us, 3.4 per cent on the hands and 5.4 per cent on the feet showed straight junctional or dermoepidermal change, while 31 per cent of those on the hands were compounded as opposed to 70.3 per cent on the feet. Since over 75 per cent of those on the feet showed junctional changes, this is a compelling reason for the excision of all nevi of the feet, and almost as forcibly this may be stated as regards the hands.

The junctional nevus is clinically recognized as usually smooth, although it may be slightly elevated; it is hairless and from light tan or mauve to deep brown in color. However, on the palms and soles it is alalmost never elevated. The size may vary greatly from a millimeter to several centimeters. The compound nevus is the intradermal nevus with junctional changes overlying it. The appearance is that of the common mole most commonly without hair, flat or elevated, smooth or papillary, and flesh to brown in color. A differential diagnosis of the nevus is not too important if it corresponds to the diagnosis of any mole on the feet; there is a 75 per cent chance that it has junctional changes in various degrees overlying it. From this change to the fully developed melanoma, great argument concerning the histologic interpretation may prevail as to whether the changes are junctional only or whether there is an early invasion signifying malignant melanoma. While this may be a difficult decision for the pathologist, it will be a fortunate instance for the patient and the clinician since there will be a few patients who will thus be saved from the more aggressive phase of melanoma.

Melanoma has been previously discussed in this series by Pack.[7] When the pigmented tumor is slightly elevated, presents an irregular border, is firm and indurated, and is of light to deep brown and even black in color, there is little doubt as to the diagnosis. In the experience of various authors, the incidence of melanoma developing in a pre-existing nevus varies from 18 to 83 per cent of reported patients, but in our experience existed in only 30 of 121 (24.8 per cent) melanomas of the feet.[8] Pack, Gerber, and Scharnagle[9] in analyzing 1,190 melanomas at the Memorial Center, found 9 per cent of them on the sole of the foot, 1.3 per cent on the palm, and 2.9 per cent subungual.

The third class of tumors to be considered are those of synovial origin. The most common benign tumor of the soft somatic parts of the hand is the solitary xanthomatous tumor which is sometimes called benign synovioma but is more properly termed a giant-cell tumor of tendon sheath origin. A large volume of literature has accumulated on the subject of this tumor in which the original viewpoint held it to be a specific tumor, and at first it was quite generally classified with the sarcomas. More recent studies consider it as not a true neoplasia and assign it the more descriptive name of villonodular synovitis; but by common consent it is generally considered a benign neoplastic process. This tumor occurs along the tendon sheaths or bursae, or arises from the synovia of the joints. It is roughly ovoid or rounded, and as it increases in size, it becomes lobulated. Its color is orange-yellow to tan or even grey.

In an analysis of 45 cases on the hand we found that the tumor was usually located on the fingers, and in 17 out of the 35 times that it occurred on such a site it was on the index finger. It is about equally distributed between volar and dorsal locations and has usually been present for two and one-half years before the patient seeks attention. The average age of patients in our series was forty-three and one-half years. It is not uncommon that the problem is a recurrent one. Local dissection is in order, although anatomic peculiarities of the capsule do not make the matter one of simple local excision.

Malignant synovioma is found more frequently than is generally appreciated, and in our experience it is the second most frequent malignant tumor of the hand. While the knee is most often involved, the hand and the foot are about equal for second place in incidence. Awareness of this fact should make the physician suspicious of the diagnosis when considering tumors of the hands and feet. The sex incidence of the tumor is equally distributed, with a median age of thirty-eight years. The patient usually presents an innocuous painless mass ranging from 2 to 4 cm. in size, generally of short duration, though a history of a lump present for ten years is sometimes noted. The presence of an asymptomatic firm hard tumor, usually small in size, occurring along the tendon sheath in the hand or over the metacarpophalangeal joints or along the interosseous spaces of the hands and feet, and with a roentgen-ray manifestation of soft tissue mass, possibly with flecks of calcification, should make the doctor sufficiently suspicious of the diagnosis to hospitalize that patient for prompt biopsy diagnosis and therapy.

In a city with a high proportion of foreign-born patients, it is not surprising that Kaposi's idiopathic multiple hemorrhagic sarcoma is a frequent tumor. While it is not always initially manifest on the hands or feet, it eventually spreads to these sites. Twenty-two out of 32 cases on the hands and feet, or 68 per cent of our experience in this location, have been in patients of Hebrew or Italian birth. The mean age of onset is fifty-five years, males being affected in 31 of 32 cases in our series.

In the initial manifestation, the tumor may be only a very small papule or macule and histologic diagnosis at first may be difficult. Since the origin is multicentric, eventual papular, nodular, or ulcerated lesions yield satisfactory tissue for study. While we are all aware of the long-term nature and progress of the disease, and since we expect multiplicity of origin, we must remember that occasionally early adequate excisional or radiotherapeutic methods have resulted in cure. Two of our series are alive without recurrence sixteen and eighteen years after excision, and 2 are alive twelve and fourteen and one-half years after x-ray therapy of low voltage after excisional biopsy. These surely are cured patients, but the space of thirteen years between initial and secondary manifestations in one man makes me conservative in designating a patient as cured of this process which usually progresses with multiple types of lesions over an average of five years before it kills the patient either from ulceration and infection or from systemic spread.

The benign tumor of blood vessel origin, the hemangioma, whether capillary or cavernous or mixed in type, is of frequent occurrence and is more prominent in the hands than in the feet.

Time precludes consideration of the benign, painful tumor arising from the glomus body, the glomus tumor most frequently found beneath the nail.

While lipoma is the most common tumor in the body, it rarely occurs in the hands or feet. While the distribution of adipose tissue is widespread, in some locations neoplasms of adipose tissue alone rarely occur. When they do occur, they are more frequently seen arising along the tendon sheath, mainly in the palm, though sometimes on the dorsum of the hand. Since these tumors are symptomless we have found that in studying 13 such cases there was an average delay of over five years before attention was sought. Radiographic study showed diminished density in the mass characteristic of fat and established the diagnosis.

Malignant tumors of lipoblastic origin are rare in the hands and feet as well as are those of fibroblastic histogenesis.

Summary

Therefore, since in our experience malignant tumors of the hands and feet have been of far more frequent occurrence than has been generally suspected, it is our conviction that awareness of this fact in the clinical consideration of these tumors in their early manifestations would reasonably compel the attending doctor to give early adequate treatment at a stage in which cure is easier to obtain and before elapsing time has contributed metastases to complicate the problem. If the prevailing attitude of benignity of the neoplastic processes in the hands and feet is stressed, this will predispose to delay which results in uninterrupted development of some of the malignant tumors in these locations and surely no great increase of salvage of patients with the malignant tumors we have discussed.

139 East 36th Street

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(*Number twenty-five in a series of Cancer Alerts*)

All ambitions are lawful except those which climb upward on the miseries or credulities of mankind.—Joseph Conrad

CASE REPORTS

Impaired Diffusion in Pulmonary Sarcoidosis

ARTHUR WIGDERSON, M.D., M. HENRY WILLIAMS, JR., M.D., LENORE R. ZOHMAN, M.D., AND WILLIAM G. CHILDRESS, M.D., VALHALLA, NEW YORK

(*From the Cardio-Respiratory Laboratory and Chest Service, Grasslands Hospital*)

Two aspects of sarcoidosis which have received considerable attention during the past five years are the aberrations of pulmonary physiology which occur and the efficacy of treatment with adrenal steroid hormones. The following case presentation serves to illustrate these aspects of pulmonary sarcoidosis, and focuses attention specifically on the estimation of the diffusing capacity as a guide to management and prognosis in any individual case.

Case Report

A thirty-five-year-old Negress was admitted to Grasslands Hospital on December 11, 1957, as a tuberculosis suspect.

The patient had enjoyed good health until October, 1957, when she had developed malaise, weakness, cough, and dyspnea. The shortness of breath had been slowly progressive, and prevented more than modest exertion. Her cough produced 20 to 40 cc. of greenish-yellow sputum daily; the sputum was never foul or bloody. All symptoms referrable to the ocular, cutaneous, gastrointestinal, genitourinary, and neurologic systems were denied.

The patient was under the care of her family physician who had prescribed penicillin and symptomatic therapy. Failure to respond to this regimen led to her admission to another hospital in November, 1957. A chest film taken at this time revealed numerous soft, ill-defined infiltrates in both lungs. A film taken in January, 1957, was entirely normal. A lung biopsy was performed and interpreted as a granuloma consistent with tuberculosis. She was subsequently transferred to the Chest Service of Grasslands Hospital for antituberculous therapy.

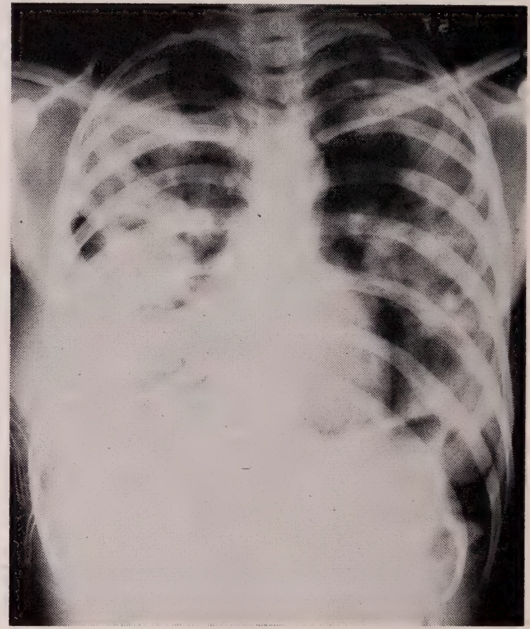

FIG. 1. Lobular infiltrations in both lungs, most marked peripherally.

Physical examination revealed a thin Negress, slightly dyspneic and in no acute distress. The pulse was 100 and regular, the respiratory rate 23, the oral temperature 100 F., and the blood pressure 110/70. There was no cyanosis, clubbing, skin lesion, or lymphadenopathy. The mediastinum was in the midline and chest expansion was symmetrical and unrestricted. Normal resonance was present throughout both lungs and coarse rales were audible over both lower lobes. The apical heart rate was 100 and regular. The second heart sound at the pulmonic area was not accentuated and no murmurs were detected. The abdomen was soft, flat, and nontender. There were no palpable abdominal

TABLE 1.—PULMONARY FUNCTION TEST RESULTS

Date	Vital Capacity (Per Cent Normal)	3-Second Vital Capacity (Per Cent Total)	Maximal Mid-Expiratory Flow Rate[1] (Liters per Second)	Diffusing Capacity for Carbon Monoxide[2,3] (cc. Carbon Monoxide per Minute per mm. Mercury)		Arterial Saturation (Per Cent)		Arterial Carbon Dioxide Pressure (mm. Mercury)
				Rest	Exercise	Rest	Exercise	Rest
Dec. 16, 1957	21.0	100.0	...	3.9	...	83	..	38
Feb. 20, 1958	74.0	100.0	2.3	5.3	8.3	92	85	43
Apr. 25, 1958	77.4	99.1	2.5	5.1	8.3	92	..	43

viscera or masses. There were no neurologic abnormalities.

A chest plate taken on admission (Fig. 1) revealed confluent, lobular densities in both lungs, most marked peripherally, with relatively clear hilar areas. These findings were considered atypical of tuberculosis, but compatible with sarcoidosis. Antituberculous therapy was instituted, however, and consisted of isoniazid 100 mg. three times a day, streptomycin 1 Gm. intramuscularly three times per week, and para-aminosalicylic acid 4 Gm. three times daily. There was cutaneous insensitivity to 0.1 to 1.0 mg. of old tuberculin on repeated tests and tubercle bacilli could not be cultured from numerous sputa and gastric aspirates. A Nickerson-Kveim skin test showed negative findings as did slit-lamp microscopy and radiographs of the hands and feet. The serum calcium was 9.7 mg. per cent; the serum albumin and globulin were 4.5 Gm. per cent and 2.3 Gm. per cent respectively. The lung biopsy was reviewed and found to be compatible with sarcoidosis. A diagnosis of sarcoidosis was considered justifiable on the basis of the lung biopsy, x-ray film appearance, and negative tuberculin test findings.

Pulmonary function tests were performed on December 16, 1957, and revealed marked reduction of vital capacity, severe impairment of diffusion, and hypoxemia (Table I). On December 24, 1957, prednisone 40. mg. daily was started; streptomycin and para-aminosalicylic acid were discontinued. Within seven days there was pronounced symptomatic and radiographic improvement. The patient remained asymptomatic throughout the remainder of her hospitalization. According to roentgenography the pulmonary lesions became stable during the tenth week of hormone therapy which had been gradually decreased to 15 mg. daily (Fig. 2). The pulmonary function tests were repeated on February 20, 1958, and revealed a 53 per cent increase of vital capacity and less hypoxemia at rest. Diffusion, however, remained severely impaired, and prednisone was continued for a total of eighteen weeks in an attempt to obtain further improvement (Table I). The failure to obtain a significant effect on the diffusing capacity prompted the decision to terminate prednisone, and the patient was discharged on May 8, 1958.

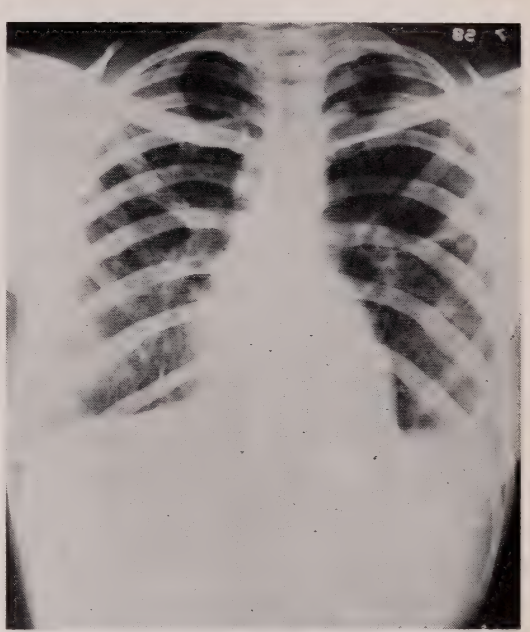

FIG. 2. Roentgenogram after ten weeks of prednisone, demonstrating marked clearing of the infiltrates.

Comment

Disturbances of pulmonary function are common in sarcoidosis and are related to the extent, location, and duration of the disease. Hilar node involvement without parenchymal lesions usually leaves lung function unaltered. Parenchymal involvement, on the other hand, can be attended by pronounced disturbances of physiology, the major impairment being that of diffusion.[4,5]

Acute, parenchymal, pulmonary sarcoidosis may cause a reduction of vital capacity, impaired diffusion, and hypoxemia, the latter being manifest particularly during exercise.[4,6] Spontaneous remissions can occur with complete restoration to normal of pulmonary function. Progression of the disease may be accompanied by further deterioration of lung function, and these abnormalities may become irreversible.[5]

If pulmonary sarcoidosis progresses, interstitial and/or peribronchiolar fibrosis develops. This stage may not be attended by a marked degree of involvement as revealed by roentgenogram or by symptoms. Study of such patients usually reveals a reduction of vital capacity and impairment of diffusion. If peribronchiolar fibrosis is marked, airway obstruction may develop, as manifested by a lowered maximal midexpiratory flow rate and timed vital capacity.[1] This is uncommon, and the usual picture is of interstitial fibrosis with the syndrome of alveolar-capillary block. The features of this are hypoxemia aggravated by exercise, absence of CO_2 retention, and, eventually, pulmonary hypertension, right ventricular hypertension, and right heart failure.[7-10]

The persistence of a reduced diffusing capacity despite roentgenographic evidence of improvement suggests that the disease has progressed to the stage of fibrosis. Impairment of diffusion may persist despite intensive, prolonged administration of steroids.[4,7,11] This is most likely to occur in those patients whose symptoms have been present for a considerable time. McClement *et al.*[12] studied 10 cases of diffuse pulmonary sarcoidosis, in 5 of whom symptoms had been present for twenty-four to sixty months. Oxygen diffusion studies were carried out in 4 of these patients and severe impairment was found in all, with no improvement following cortisone administration. This was contrasted with 5 patients in whom symptoms had been present for one to twelve months. Only 1 such patient had a reduction of diffusing capacity, and this returned to normal after one month of cortisone therapy. Marshall *et al.*[5] in a report on 26 cases of sarcoidosis confirmed the close relationship of impaired diffusion to duration of symptoms, the greatest reduction of diffusing capacity occurring in those patients with chronic disease.

The precise duration of the disease is frequently difficult to determine. Indeed, patients will be encountered who have no symptoms and unremarkable chest plates, yet diffusion may be extremely impaired. Although such patients may have irreversible interstitial fibrosis, they should probably receive a course of steroid therapy. The failure to obtain an improvement of the diffusing capacity suggests a poor prognosis since cor pulmonale may ultimately develop.[9]

There have been numerous reports attesting to the beneficial influence of adrenal steroid hormones in sarcoisosis.[8,13-18] The degree of improvement in any individual case appears to be closely related to the acuteness of the disease.[15] Marked improvement will frequently occur in those patients with fresh, widespread, pulmonary lesions. Rapid disappearance of symptoms and the steady resolution of the granulomata as detected by serial x-ray films can be expected. The improvement of pulmonary function usually parallels the clinical and radiographic clearing, and steroid therapy should be continued until maximum restoration of function has been achieved. A good result from steroid therapy cannot be claimed despite symptomatic and radiographic improvement if pulmonary function remains abnormal.

Conclusions

The case presented illustrates several of the features mentioned previously. The use of steroids was clearly indicated because of the presence of symptoms, extensive pulmonary infiltrates, and deranged pulmonary function. The improvement, both clinically and radiographically, was dramatic. Pulmonary function, however, remained abnormal, as manifested by a low diffusing capacity and hypoxemia. The inability to improve diffusion after eighteen weeks of steroid therapy indicated the presence of fibrosis, and suggested a guarded prognosis.

Summary

Impairment of diffusion is the most significant alteration of lung function in pulmonary sarcoidosis. This defect can occur in both the stages of granulomatous infiltration and of fibrosis. At present, adrenal steroid hormones offer the best means of restoring the diffusing capacity to normal. If no improvement attends the use of steroids, it is reasonable to assume that the disease has advanced to fibrosis and that the

eventual development of the full alveolar-capillary block syndrome may be anticipated.

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New Operation Devised for Correcting "Lop" Ears

The only way an "outstanding ear" can be made less prominent is by taking the spring out of the cartilage that provides its skeleton, according to a Boston ear, nose, and throat specialist. Cartilage is "nearly a perfect spring in that it may be bent for long periods of time, but once the force which holds it is released it will spring back to its former shape," Dr. Edgar M. Holmes said.

Any procedure to alter the shape of a "lop" ear must first "remove the temper of the cartilage before it will remain in its new position," he said. A number of procedures have been used, but most of them present such varying difficulties as scars or ugly creases in the skin of the back of the ear. Dr. Holmes, however, has developed a new surgical procedure that seems to work better than the older methods. He described it in the April *Archives of Otolaryngology*, published by the A.M.A.

In the operation, the skin on the back of the ear is folded back, exposing the cartilage. A row of small cuts from top to bottom is made in the part of the ear nearest the head. Following this more rows of tiny cuts are made, overlapping each other, until the entire area to be bent is covered. This gives the appearance of fish scales or shingles on the roof, and also breaks the spring of the flat surface which is to be bent. When the spring has been sufficiently broken, the ear will remain nearly in its new position without holding it, Dr. Holmes said. When the ear is in its correct position, there is a small amount of excess skin, which is removed before the skin is closed. A pressure dressing is applied and left in place for a week, when the stitches are removed.

The new technic permits the bending of a malformed ear to a more normal position without creating secondary undesirable deformities or irregularities, Dr. Holmes said.

Bronchogenic Carcinoma Simulating Thyroiditis

MORRIS KLATZKO, M.D., BROOKLYN, NEW YORK

(*From the Department of Medical Services, Maimonides Hospital*)

BRONCHOGENIC carcinoma ranks with stomach cancer and prostatic cancer as the most common malignant growth in the male.[1] Usually, lung cancer can be diagnosed easily by the generally accepted methods of diagnosis. However, by its metastatic spread it can mimic other diseases so that the primary disease may be obscured. In such instances it may give rise to symptoms suggesting brain tumor, stroke, bone tumor, or, even, Addison's disease.[2]

Metastasis to the thyroid by lung cancer is an unusual occurrence.[3] A rare case of bronchogenic cancer simulating thyroiditis is herewith presented. It illustrates not only the difficulty in diagnosing the primary disease but also the possibility of a small lesion causing widespread dissemination with metastasis to the thyroid as part of a generalized process.[2,3]

Case Report

A sixty-two-year-old white male was admitted to the Maimonides Hospital on February 22, 1957, because of painful swelling of the neck, cough, shortness of breath, and a choking sensation of six weeks duration. He was first seen on January 14, at which time he stated that two weeks previously he had had a cough productive of whitish sputum, chills, and a fever of 102 F. After one week he had noticed a painful swelling of the left side of the neck. He also had noticed a 10-pound weight loss. Examination revealed a tender swelling of the left lobe of the thyroid. He returned on January 21 with a tender swelling of the right lobe and the observation that his collars were getting tight. Cough, shortness of breath, and hoarseness were present at this time. A bilateral, tender indurated swelling of the thyroid was palpated, and it was my impression that the patient had subacute thyroiditis. The basal metabolism rate was plus 10 per cent. A chest roentgenogram showed an elevation of the right side of the diaphragm, and an electrocardiogram showed normal findings.

Because of the tentative diagnosis of subacute thyroiditis, 5 mg. of prednisolone were given four times daily for about ten days. This relieved some of the neck tenderness, but the shortness of breath, hoarseness, and choking at night persisted. He was next seen on February 4, with less pain in the cervical region and some diminution in the size of the thyroid. However, an indurated lymph node, measuring 1.5 cm. in diameter, was palpated in the left supraclavicular fossa.

On February 16, a radiologic study was done by Dr. Stanley Slater, who reported an I^{131} uptake of 23 per cent in twenty-four hours. He found less uptake over the left lobe and no uptake over the supraclavicular node or superior mediastinum. He thought that there were some features of subacute thyroiditis but could not substantiate this diagnosis. He suggested the possibility of a malignant lesion involving the left lobe of the thyroid.

Because of dyspnea, hoarseness, stridor, and the presence of a supraclavicular lymph node the patient was admitted to the Maimonides Hospital on February 22 for further study.

The past history revealed that he was gassed in World War I. He had a long history of alcoholism but had abstained for the past ten years. He smoked a pack of cigarets daily for many years.

The family history was significant in that his father and older brother died of rectal cancer and a maternal aunt died of breast cancer.

Physical examination showed an elderly white male who was in acute distress, cyanotic, and dyspneic. Both lobes of the thyroid were enlarged and firm but not tender. A hard nodule, measuring 1.5 cm. in diameter, was felt in the left supraclavicular fossa. The chest was clear to percussion, and there were scattered wheezes and rhonchi. The heart was normal and the abdomen was negative. The extremities revealed no clubbing but the nail beds were cyanotic. The temperature was 99.8 F., pulse 100 per minute, and blood pressure was 150 per 100 mm. Hg on the right side. The radial pulse on the left was absent.

The urine was negative on routine analysis. The hemoglobin was 13.2 Gm. per 100 ml.,

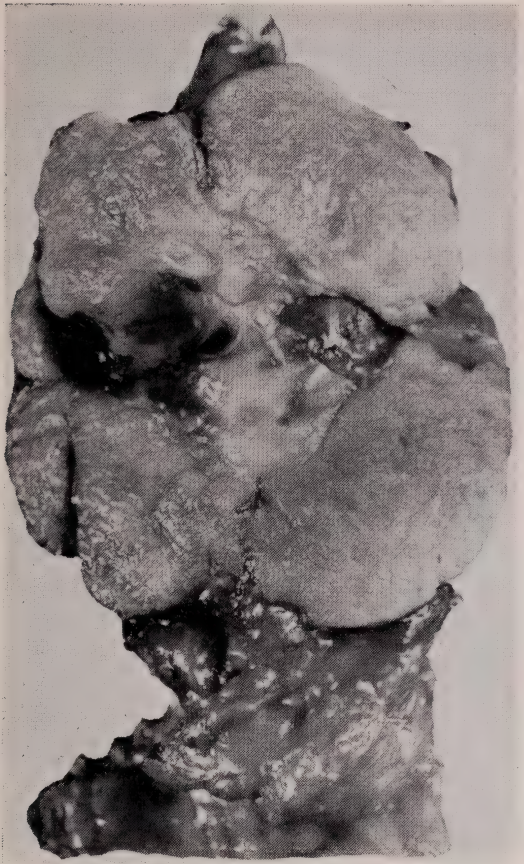

FIG. 1. Section of thyroid revealing almost complete replacement by metastatic carcinomatous tissue.

and the white blood count was 12,000 per cu. mm. with a normal differential smear. The serologic test for syphilis gave a negative result. A chest roentgenogram revealed only a markedly elevated right diaphragmatic cusp. There was no increase in the hilar markings. The venous pressure taken in the arm was 35 mm. of water with no rise of hepatic pressure.

The supraclavicular node was removed the day after admission and a report of metastatic epidermoid carcinoma was returned. Because of persistent hoarseness, a laryngeal examination was done revealing edematous vocal cords which were freely movable.

In view of the shortness of breath, choking sensation, supraclavicular metastasis, and the most likely diagnosis of bronchogenic carcinoma, it was decided to administer nitrogen mustard. This was given on the fourth hospital day, but despite treatment the patient showed no improvement. He became more dyspneic and cyanotic and was gasping for air. The patient expired on the fourth day of treatment in acute respiratory failure.

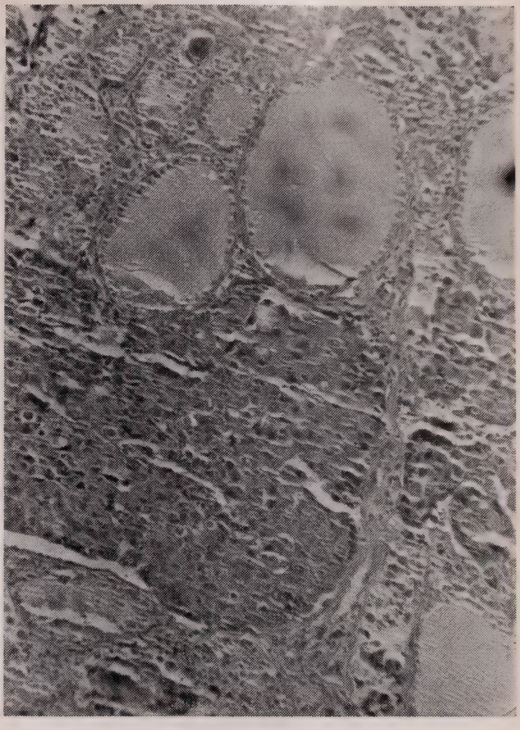

FIG. 2. Microscopic view (× 40) of section of thyroid showing follicles and nests of epidermoid carcinoma cells.

An autopsy was performed eight hours after death by Dr. A. Naji,* with the following pertinent observations: At the orifice of the segments leading to the upper and middle portions of the left upper lobe a small bronchogenic carcinoma, measuring about 0.8 cm. in diameter, was noted. The parahilar, paratracheal, and paraesophageal lymph nodes were involved in the metastatic process. There were metastatic nodules in the heart, right adrenal gland, and the appendices epiploicae of the sigmoid.

The thyroid gland was enlarged bilaterally and lobulated. It was light grayish-tan and firm in consistency. Section through the gland revealed that the gland was almost completely replaced by a gray-white tissue which diffusely infiltrated through the gland (Fig. 1). Histologic section showed thyroid follicles and nests of epidermoid carcinoma infiltrating the gland (Fig. 2).

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* Assistant Pathologist, Maimonides Hospital.

Comment

In this case the first symptom of cancer of the lung was related to its metastasis and dominated the clinical picture. The primary lesion produced very few symptoms to suggest the correct diagnosis. The painful swelling of the thyroid following an upper respiratory infection suggested a diagnosis of subacute or nonsuppurative thyroiditis. Hoarseness, choking sensation, tightness and progressive swelling of the neck, cough, wheezing, and a tender gland are characteristic of this condition;[4] these are the very symptoms that the patient presented. Against this diagnosis was the absence of fever and a normal twenty-four hour uptake of I^{131}. The patient had an I^{131} uptake of 23 per cent, while in subacute thyroiditis the average range is from 0 to 13 per cent.[4]

While the diagnosis of subacute thyroiditis could not definitely be established, the cause of the painful swelling was not clear. The presence of the supraclavicular node suggested that we look elsewhere for the origin of the primary disease. When a report of metastatic epidermoid carcinoma was returned, the diagnosis of an intrathoracic cancer was strongly suspected; however, this finding did not explain the painfully enlarged thyroid. It was only at necropsy that the cause of this enlargement became apparent when metastases from a small bronchogenic cancer were found to have almost completely replaced the gland.

Mayo and Schlicke[5] state that "sudden changes in the size of the thyroid gland of a person known to be suffering from a malignant disease elsewhere in the body are strongly suggestive of metastatic lesions in the thyroid gland." It now seems obvious that this is what occurred. We finally knew that he had a malignant lesion in the chest but did not think of the possibility of metastasis to the thyroid as a cause of the swelling.

Metastatic involvement of the thyroid by lung cancer is not a common occurrence. The frequency of metastatic growth in the thyroid is difficult to assess accurately because the thyroid is not always adequately examined in routine necropsies.[6] Unless the gland is dissected and thoroughly sectioned, many metastatic nodules will escape discovery.[6] In 500 autopsies in which all of the thyroid was thoroughly examined, Willis[6] discovered discrete metastatic growths in 21 cases, of which only 2 arose from a lung cancer.

Abrams *et al.*[7] in an analysis of 1,000 autopsied cases found 19 cases of metastatic thyroid carcinoma. Out of a total of 160 lung cancers, only 4 metastasized to the thyroid. Mortensen *et al.*[8] studied intensively and minutely the thyroid from 467 patients who had a malignant lesion situated elsewhere. Eighteen cases had thyroid metastases, and 4 of these originated from a total of 41 lung cancers. Budinger[2] reported 250 autopsied cases of bronchogenic cancer and observed 18 instances of thyroid involvement within this group.

The cause of the relative infrequency of thyroid metastasis is unknown. However, Mayo and Schlicke[5] suggest that the structurally altered gland is more vulnerable to circulating tumor cells than the normal gland. "It may be that the changed vascular condition favors the arrest of tumor emboli or that the abnormal thyroid tissue with its lower oxygen content offers a metabolically more suitable environment to the tumor cells."[5] It is precisely for this reason that metastatic deposits are found more frequently in altered or adenomatous thyroid tissue. These authors in 19 cases of metastatic thyroid glands found 12 of these glands to be frankly adenomatous. The case under discussion is unusual in that the thyroid did not reveal any adenomatous involvement and was diffusely infiltrated and not studded with the usually observed discrete nodules.

Finally, the mode of spread from a bronchogenic tumor to the thyroid may arise either from embolic metastases through the blood stream or by direct invasion from a neighboring growth.[6] The metastasis in this case arose from the spread first to the mediastinal nodes and then to the left supraclavicular node and from there to the thyroid.

Summary

A case of bronchogenic carcinoma simulating thyroiditis is presented. The difficulties in diagnosing the primary disease are emphasized. This case is another illustration of how a small primary lesion may cause widespread dissemination. It also reveals that when the thyroid is involved in metastasis, the involvement is only part of a generalized process. The case is unusual in two respects: (1) the thyroid metastasis was the predominant clinical condition, and (2) the metastasis occurred in a normal gland which was diffusely involved.

The thyroid should be considered the site of metastasis when it changes size if a malignant lesion is known to be present elsewhere.

36 DAHILL ROAD, BROOKLYN 18

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Value of Unsaturated Fats Depends on Rest of Diet

Vegetable oils will produce a lowering of the blood cholesterol levels only when combined with a diet that is sharply limited in the use of saturated or "hard" fats, three New York researchers report. The addition of unsaturated fats to the diet has frequently been suggested as a way of reducing blood cholesterol levels and thereby perhaps helping to prevent heart disease.

However, unsaturated fats will not help unless the diet is restricted in saturated fats, such as beef fat, according to Dr. Richard Perkins, Dr. Irving S. Wright, and Barbara W. Gatje, B.S., of the New York Hospital-Cornell University Medical College Department of Medicine.

Writing in the April 11 *Journal of the American Medical Association,* they reported giving two types of unsaturated fats—safflower oil and corn oil—to 22 medical students for periods of seven weeks. The students followed their normal diets with the addition of the vegetable oils. The oils also contained pyridoxine (Vitamin B_6) which is thought to be involved in fat metabolism.

As had been the case in previous studies, there was a considerable variation from week to week in the cholesterol levels of individuals, the researchers said. There was a slight downward trend in the levels, but at no time was the decrease statistically significant. "There is little doubt," the researchers said, "from the reports of other experimenters that the use of either corn oil or safflower oil, substituted for most of the fat in the diet, will produce a significant decrease in serum cholesterol levels. But in this study, the results of the use of these oils as supplements to a regular diet were not significant enough to justify this as a therapeutic procedure."

In conclusion, they said, "Significant results should not be expected from the use of corn oil or safflower oil, even with the addition of pyridoxine, as a supplement to the usual American diet. . . .This study reemphasizes the fact that, if one wishes to produce a significant lowering of the serum cholesterol level, unsaturated fats should be used only when combined with a diet which sharply limits the use of saturated fats."

Renal Hemangioma

SALAH AL ASKARI, M.B., CH.B., PABLO A. MORALES, M.D., JORGE FERNANDEZ-LEAL, M.D., AND ROBERT S. HOTCHKISS, M.D., NEW YORK CITY

(From the Urology Service, Fourth Division, Bellevue Hospital, and the Department of Urology, New York University-Bellevue Medical Center)

RENAL hemangioma is an essentially benign lesion infrequently reported in the literature. These tumors vary in size and may be so small that the only manifestation is a recurrent hematuria. The large lesions are usually detected by the conventional diagnostic procedures.

Waller, Throckmorton, and Barbosa[1] reviewed the literature in 1955 and found reports of 78 cases of renal hemangioma; they added 1 case of their own. In the same year, Ferguson, Cameron, and Carron[2] reported 2 cases. Thus, the total number of cases reported is 81. The rarity of this disease is demonstrated by the finding of 1 case of renal hemangioma in 30,000 autopsies.[3] We should like to report a case of renal hemangioma arising from the subcalyceal tissue which, without changes revealed in the pyelograms, was the cause of severe and recurrent hematuria.

Case Report

A thirty-three-year-old Negress was Admitted to Bellevue Hospital on February 6, 1956, with the chief complaints of hematuria and syncope for the past ten days. The patient dated the onset of her illness to 1951 when she had bouts of hematuria which lasted eight to ten days and recurred every three to four weeks. At that time she was admitted to the New York Hospital, and cystoscopy performed at that time revealed bloody efflux from the left side of the ureter. Excretory and retrograde pyelogram findings were judged normal. The patient was discharged with the diagnosis of essential hematuria.

PHYSICAL EXAMINATION.—Physical examination on her admission to Bellevue Hospital revealed a well-developed female whose blood pressure was 120/70, pulse rate 80, and temperature 99 F. The skin, heart, and lungs were normal and the head was normocephalic. No abdominal masses were felt. The liver, spleen, and kidneys were not palpable. The external genitalia were normal.

Cystoscopy was done immediately and the bladder was found to be filled with clots. After the clots were evacuated, the bladder mucosa appeared normal. However, there was bloody efflux from the left side of the ureter, whereas the efflux from the right side was clear.

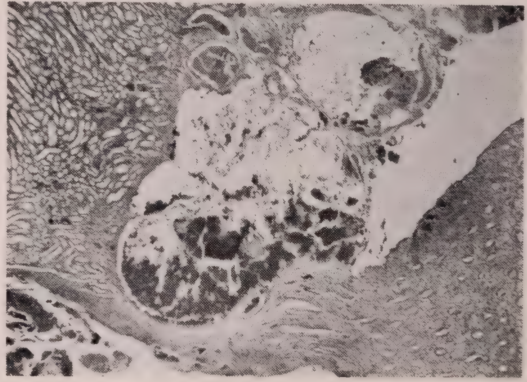

FIG. 1. Photomicrograph showing dilated vascular channels in the subcalyceal region covered with attenuated connective tissue and mucosa.

LABORATORY DATA.—The hemoglobin content was 4.5 Gm. per cent, red blood cells 1,800,000, white blood cells 3,400 with a normal differential, and nonprotein nitrogen 20 mg. per cent. A Papanicolaou smear of the urine from the left kidney was not diagnostic. The bone marrow smear showed an increase in lymphoid elements. Bleeding time was two minutes and thirty seconds and clotting time ten minutes. Clot retraction and prothrombin times were normal. The platelet count was 250,000, and no sickling trait was demonstrable. An x-ray film of the chest was normal.

COURSE.—The patient was transfused with whole blood until her hemoglobin content was raised to 9 Gm. per cent. An intravenous pyelogram done on the third postadmission day was regarded as normal. Cystoscopy on the fifth day again revealed bloody efflux from the left side of the ureter and clear urine from the right side. A retrograde pyelogram done at the same time was also within normal limits. The gross hematuria cleared but recurred on the

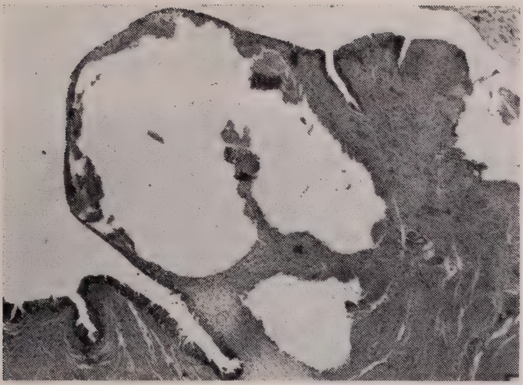

FIG. 2. Photomicrograph showing large vascular channels in the subcalyceal region with thrombus material undergoing organization adherent to their walls.

seventeenth and nineteenth days. Cystoscopy on those occasions revealed that the blood was coming from the left kidney.

Because of the repeated attacks of massive hematuria, which at times endangered the patient's life, a left nephrectomy was performed through a left lumbar incision on the twenty-fourth postadmission day. The patient withstood the procedure well, and the postoperative course was uneventful. She was discharged on the thirteenth postoperative day. At that time her hemoglobin content was 12.5 Gm. per cent and her urine was negative. Follow-up examination two years later revealed no recurrence of the hematuria.

PATHOLOGY REPORT.—The specimen, examined by Dr. M. Kuschner,* consisted of grossly normal kidney tissue with 6 cm. of ureter. The kidney measured 3 by 6 by 11 cm. The capsule stripped easily, and the ureter and renal pelvis were normal. On section there was a small 3 by 2 mm. reddish area raised above the surface of the superior calyx minor at its fornix and there was a small ecchymotic area over the renal pelvis.

MICROSCOPIC EXAMINATION.—Within the submucosal connective tissue of the calyx there were numerous vascular channels of varying sizes. The deeper channels consisted of vessels of capillary size and were closely clustered. More superficially, the channels were dilated and cavernous in type and bulged into the calyceal lumen. The mucosa and a thin layer of connective tissue was stretched and attenuated over these vessels. No smooth muscle nor elastic tissue was demonstrable in the walls of the small or large channels (Fig. 1). In several sections at varying levels thrombus material undergoing organization was adherent to the walls of the larger cavernous spaces which intercommunicate (Fig. 2). A medium-sized artery and vein abutted on the lesion but a communication with either was not demonstrable.

Comment

Unilateral hematuria without demonstrable alterations in the urogram are not infrequent clinical problems. Until a definite diagnosis is established, it is customary to label these patients as having essential hematuria. A variety of well-known conditions may account for the renal blood loss, among which are vascular renal tumors of benign character. Of this group, hemangiomas are the most common, yet only 81 cases have been reported. Hereditary hemorrhagic telangiectasis may be the cause of unilateral hematuria, but only 3 cases have been reported in the American literature.[4] Communication between dilated venous sinuses and the calyceal lumen have also been reported as a cause of unilateral hematuria.[5] In Negro individuals, unexplained hematuria may be the sole manifestation of pelvic or subcalyceal hematoma.

Summary

A case of renal hemangioma is reviewed with brief reference to the lesions causing unilateral hematuria.

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* Professor of Pathology, New York University College of Medicine, and Director of the Department of Pathology, Bellevue Hospital.

Gastrocolic Fistula Due to Ulcerative Colitis

RICHARD D. BRASFIELD, M.D., F.A.C.S., NEW YORK CITY

(*From Memorial Center for Cancer and Allied Diseases*)

FISTULA formation is a rare complication of chronic ulcerative colitis; only two cases of the gastrocolic type have been reported.[1,2] This patient was treated successfully by a one-stage resection of the stomach and transverse colon.

Case Report

A fifty-two-year-old white male was admitted to Memorial Hospital on December 16, 1955, complaining of dull aching epigastric distress of two weeks duration. This was associated with fever (102 F.), chills, nausea, and vomiting of partially-digested food which had a foul odor. Daily he had two or three liquid, brown stools without blood or mucus. In four weeks he had lost 15 pounds. Antibiotic therapy in another institution for a period of two weeks did not result in improvement. Six years ago he had had a short episode of diarrhea without blood, pus, or mucus. Barium enema at that time revealed some loss of the mucosal pattern with thickening and narrowing of the transverse colon.

Physical examination revealed a pale, cachectic, dehydrated male who had moderate epigastric pain which radiated into the left upper lumbar area. The skin was warm and dry. No rash was present. The peripheral lymph nodes were not enlarged. Pallor of mucous membrane was marked. The lungs were clear to percussion and auscultation with no enlargement. No arrhythmia or murmurs of the heart were noted. The blood pressure was 110/70, pulse was 84, and respirations were 20 per minute. The abdomen was scaphoid and soft. The liver, kidney, and spleen were not felt. A 10 cm. globular, slightly tender, mobile, nonpulsatile mass was felt in the left hypochondrium. Digital examination of the rectum revealed no mass, ulceration, or tenderness. Sigmoidoscopic examination to 22 cm. was not remarkable. Soft brown feces was found in the rectum. Minimum clubbing of fingers was noted. The nail beds were pallid and without petechiae.

A Levine tube was passed and 500 cc. of partially digested, foul-smelling food was aspirated. Continuous Wangensteen suction was instituted. A gastrointestinal series revealed a constant 5 cm. filling defect in the proximal part of the antrum on the greater curvature. There was no delay in emptying. No barium was noted in the colon. The radiologic diagnosis was carcinoma of the stomach. A roentgenogram of the chest gave normal findings. No barium enema was done. Gastric analysis revealed free hydrochloric acid in 45 minutes for a total of 66 degrees; total acidity was 80 degrees. An electrocardiogram showed evidence of a healed posterior myocardial infarct. Blood volume determination using the Evans blue technic revealed a deficit of 2,000 cc. This was replaced in forty-eight hours.

The bowel was prepared with magnesium sulfate, 1 ounce three times a day for forty-eight hours, Terramycin 250 mg. every six hours, and neomycin 1 Gm. every four hours for twenty-four hours. Liquid diet supplemented by parenteral glucose and saline was given for forty-eight hours. Five days after admission an exploratory laparotomy through a long, left paramedian incision revealed a 10 by 10 by 8 cm. hard mass fixing the greater curvature of the gastric antrum to the transverse colon, near Cannon's point. This mass was covered with the omentum. The body and tail of the pancreas were free. No peritoneal implants were seen. Frozen section of an enlarged lymph node in the mesentery of the transverse colon was interpreted as possible reticulum cell sarcoma. A Hofmeister-type gastric resection, plus resection of the entire transverse colon and greater omentum, was performed. The continuity of the colon was re-established by a two-layer interrupted silk anastomosis of the ascending to the descending colon. Penrose drains were inserted into the lesser omental sac. During the operation 1,500 cc. of whole blood were given.

Pathologic study of the specimen revealed an 8 mm. fistula between the gastric antrum and the transverse colon. A small halo of ulceration was noted about the gastric stoma. However, a 10 cm. irregular cobblestone mucosal ulceration was found in the colon. The bowel was contracted near the fistula. Beyond the ulceration the colon appeared normal. The diagnosis was gastrocolic fistula due ulcerative colitis.

During the postoperative course the patient received daily fluids of 2,500 cc. of glucose in water plus 500 cc. of glucose in saline for five days. A small liquid stool was passed on the fourth postoperative day. Wangensteen suction was discontinued on this day, and four small feedings were begun. Combiotic (2 cc.) was given twice a day plus terramycin 200 mg. every six hours intramuscularly. His maximum temperature was 101 F. which occurred on the first postoperative day. He was ambulatory on the first postoperative day. By the eighth postoperative day a regular daily diet was given in five small feedings. He was discharged on the fourteenth postoperative day without medication. There was a gain in weight of 22 pounds within six weeks. The patient now has two soft, formed stools daily. Recent barium enema was normal.

Summary

A rare complication of chronic ulcerative colitis, gastrocolic fistula, has been managed successfully by a one-stage gastric and transverse colon resection that is described.

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Emotional Problems Cause Many College Drop-outs

The "spoon feeding" of children has been blamed for the high rate of drop-outs from college. Four out of 10 students in college today will not stay long enough to be graduated, according to an article in the April *Today's Health*, published by the American Medical Association.

The root of the high drop-out rate lies in pyschologic troubles, most educators think. The students simply are not mature enough to cope with college and its demands. They are the product of an "era of spoon feeding," the article said. When they get to college and find that everything is not done for them, they crack up and drop out.

There are, of course, other reasons for leaving college, including financial difficulties, marriage, or inability to meet the necessary intellectual standards. However, the emotional problems are great.

The article offered some suggestions to parents and students for handling these college emotional problems. Parents can help their children remain in college by leaving the children alone; by seeing that they have information about college and career selections, but letting them make their own choice; by refraining from imposing their parental interests on the children; by seeing that children have a previous living-away-from home experience; by not overstressing the need for high grades; and by letting the children earn part of their own expenses.

For students who want to avoid "joining the army of drop-outs," the article offered the following suggestions: Before going to college, try to get a realistic picture of what to expect. Recognize that college will present stiff academic competition. From the start, budget study time. If you are shy, get a roommate. Make yourself available for social contacts, but don't overemphasize the social side of college. Try to think through what you want to get out of college, then make sure your work has a direct relationship to your career. Get plenty of rest, and realize that minds do not work better when stimulated by anything stronger than coffee or "Coke." Give the college a chance to provide helpful guidance for adjustment. Know what resources the college offers and take advantage of them.

In conclusion, the article noted, "The sound, sensible approach to college life, by students as well as their parents, can do much to cut down drop-outs—the deplorable waste of America's most competent manpower." The article was written by Theodore Irwin, Scarsdale, New York.

SPECIAL ARTICLE

Workmen's Compensation

JOSEPH E. COLANERI, M.D., NEW YORK CITY

(*Medical Director, State Insurance Fund*)

MADAM Chairman and medical colleagues, I shall confine my talk to that portion of Workmen's Compensation with which I am most familiar: first, the role of the Medical Department of the State Insurance Fund, its relationship to the Workmen's Compensation Board and the medical profession.

Claimants are requested to appear for medical examination at our home office or at places reasonably convenient to the claimant. For those who are not ambulatory we maintain a staff of field medical examiners who examine the claimants at home or at the hospital. The purpose of these examinations is principally to determine the degree of disability, causal relationship, and possible referral for rehabilitation. When there is a question of causal relationship or the opinion of a consultant is desired, the claimants are referred to one of our specialists. We have a panel of consultants in practically every field of medicine.

At this point I should like to speak on disability and its classifications. Disability is classified as follows: (1) permanent total disability, (2) temporary total disability, (3) permanent partial disability, and (4) temporary partial disability.

PERMANENT TOTAL DISABILITY.—The loss of both hands, or both arms, or both feet or both eyes, or of any two thereof constitute permanent total disability.

TEMPORARY TOTAL DISABILITY.—For example, if a claimant suffers a severe fracture, he has a temporary total disability. When he is able to do some work he has temporary partial disability. Finally if he has any permanent residual defects, such as motion defects or loss of function called "loss of use" in compensation parlance, then he has a permanent partial disability.

PERMANENT PARTIAL DISABILITY.—The amount of compensation depends in part upon the degree of disability. Our temporary partial disabilities are further classified as follows: (1) marked partial disability—claimant has a 25 per cent earning capacity, (2) moderate partial disability—claimant has a 50 per cent earning capacity, and (3) mild partial disability—claimant has a 75 per cent earning capacity.

In the permanent partial disability cases where there is a loss of a member of the body:

Arm—equivalent to 312 weeks of disability
Leg—equivalent to 288 weeks of disability
Hand—equivalent to 244 weeks of disability
Foot—equivalent to 205 weeks of disability
Eye—equivalent to 160 weeks of disability
Fourth finger—equivalent to 15 weeks of disability
Third finger—equivalent to 25 weeks of disability
Second finger—equivalent to 30 weeks of disability
Index finger—equivalent to 46 weeks of disability
Thumb finger—equivalent to 75 weeks of disability
Great toe—equivalent to 38 weeks of disability
Toe other than the great toe—equivalent to 16 weeks of disability
Loss of hearing in one ear—equivalent to 60 weeks of disability
Complete loss of hearing in both ears—equivalent to 150 weeks of disability

The loss of one phalanx of a digit is equivalent to 50 per cent of that digit. Compensation for the loss of more than one phalanx shall be the same as for loss of an entire digit. Compensation for loss or loss of use of two or more digits or one or more phalanges of two or more digits of a hand or foot may be proportioned to the loss of use of the hand or foot.

When there is a definite loss of a member of the body, permanent partial disability is fairly easy to calculate. However, the "loss of use" or functional loss is open to different interpretations. For example, following a Pott's fracture, if there is a motion defect such as the restriction of dorsiflexion, plantar flexion, eversion or inversion of the ankle, if the restriction is minimal, the schedule could be 5, 10, or 15 per cent of a foot; if the restriction is moderate, 15 to 30 per cent of a foot. Besides motion defect, on evaluation one

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Presented at the Fourth District Branch Meeting in Amsterdam, New York, on October 30, 1958.

must consider functional loss also. It is in the evaluation of this type that there is some diversity of opinion on degree of schedule loss. Schedule loss is the term used in compensation for degree of permanent partial disability. Schedule losses are calculated six months from the date of accident in case of a finger to a period of eighteen months in the case of a fracture of the femur or spine. The average time to determine the schedule is twelve months following the date of the accident, at which time the condition has usually reached a stage of permanency. In determining function or loss of use the following factors are also to be considered: (1) quickness of action, (2) coordination of movements, (3) strength, (4) security, and (5) endurance.

Non-schedule adjustments, generally called lump sum settlements, are made in cases of back and head injuries and occupational diseases, since they are not readily transmutable into a schedule of weeks as in loss of limb cases.

Enough has been said about disability and its classification. Another function of the Medical Department is the selection of cases for rehabilitation at the time of examination. Definite medical criteria are used to train examiners for the proper selection of cases. We all agree that early referral of cases is most important for successful results. If the Rehabilitation Unit considers the case suitable for rehabilitation, it will refer it to the Workmen's Compensation Board for evaluation and examination by a staff of rehabilitation specialists or, if indicated, obtain direct approval from the attending physician. He receives copies of all reports and is kept fully informed of the progress of his patient, and he continues to observe the patient at frequent intervals. There has always existed a spirit of full cooperation between the Medical Department of The State Insurance Fund, the Rehabilitation Unit of the Workmen's Compensation Board, and the attending physician.

New York State encourages employers to hire the physically disabled by provisions in the Second Injury Fund. The legislative intent of the Second Injury Law is stated to be "that every person in this State who works for a living is entitled to a reasonable opportunity to maintain his independence and self-respect through self-support even after he has been physically handicapped by injury or disease." The purpose of this law is to facilitate the employment of the physically handicapped by relieving the carrier or employer of excess compensation costs due to previous permanent physical impairment. "An employee who has permanent physical impairment incurs a subsequent disability by accident arising out of and in the course of his employment or an occupational disease arising therefrom, resulting in a permanent disability caused by both conditions, that is materially and substantially greater than that which would have resulted from the subsequent injury or occupational disease alone."

The carrier in these cases, called 15–8 cases, pays whatever awards are made but is entitled to reimbursement from the Second Injury Fund for all compensation and medical expenses in excess of those payable for the first one hundred four weeks of disability except in silicosis or dust disease cases, then for the first two hundred sixty weeks.

Another unit of The State Insurance Fund is the Arbitration Unit whose task it is to refer cases to the Medical Practice Committee of the Workmen's Compensation Board when there is some issue in controversy. Before referring the case for arbitration all reasonable efforts are made to adjust the bill amicably. Note some of the instructions given to the claims men:

1. Be courteous.
2. Listen to the physician's explanation.
3. Do not interrupt.
4. Do not threaten arbitration as a basis for forcing an adjustment.
5. Arbitration is litigation. It is our policy to curtail unnecessary litigation.
6. Always endeavor to terminate a conversation amicably.
7. In general, remember that amicable adjustment is a superior method of disposition of a conflict than is arbitration.

During the period from August 1, 1957, to July 31, 1958, our New York office received 295,654 medical bills. Only 363 bills were arbitrated, making the percentage of bills arbitrated .0012 or one tenth of 1 per cent. Of the 363 cases which were arbitrated over 50 per cent were arbitrated in our favor by the Medical Practice Committee.

I shall briefly mention some other units of the State Insurance Fund, but I will not go into detail about them.

We have an Occupational Disease Unit which handles all occupational disease cases. To mention a few briefly: lead, zinc, mercury, phosphorous, arsenic, formaldehyde, chrome, and carbon monoxide poisoning. Cataracts in glassworkers are due to exposure to glare of molten glass. Dermatitis venenata is caused by use of or direct contact with acids or alkalies. All silicosis and dust disease cases are referred to the chest consultants of the Workmen's Compensation Board, as are caisson disease or compressed air illness, or its sequelae. One of the complications of caisson disease as we all know involves aseptic necrosis of the bones and joints, and of relatively recent vintage, cases of occupational loss of hearing resulting from exposure to industrial noises.

We have a Disability Benefits Unit for handling cases of injury or illness that do not arise out of and in the course of employment—"off-the-job" disability. There is cooperation on the part of The State Insurance Fund with the Workmen's Compensation Board and the attending physicians. However, the picture is not entirely utopian, as sometimes there are some differences of opinion such as to the amount of schedule loss, the degree of disability, and causal relationship such as in myocardial infarctions, Dupuytren's contractures, and others.

There is one controversial problem that is becoming more evident in compensation than ever before, and that is the cardiac patient. Dr. Herman Ehrlich, Medical Consultant to a recent Moreland commission studying operating procedures under the Workmen's Compensation Law of New York State, issued some interesting statistics on the cardiac problem in compensation, based on a questionnaire sent to 700 specialists in internal medicine and cardiology throughout the United States.

The cardiac patient in compensation was again discussed at a staff conference of the Workmen's Compensation Board in February, 1958, and also from a legal and medical standpoint at the Institute of the Workmen's Compensation Meeting held in New York City on October 22 and 23, 1958.

I shall not attempt to interpret the findings in this problem since in the final analysis causal relationship of the cardiac patient in compensation is a question of law to be interpreted by the Workmen's Compensation Board based on the medical evidence presented in each individual case. However, there are many who feel that medical opinion should play a bigger role in the final disposition of these cases.

Mouse Lymphoid Leukemia Virus

Studies of a virus that causes leukemia within ten weeks in 100 per cent of mice have been reported by J. B. Moloney, Ph.D., of the National Cancer Institute.

The virus was found in cell-free preparations of Sarcoma 37, a transplantable tumor of the connective tissue of mice. It is active in numerous mouse strains and in mice at various age levels. To date, the virus has produced no form of cancer other than leukemia.

Dr. Moloney reported this work in a paper entitled, "Preliminary Studies on a Mouse Lymphoid Leukemia Virus Extracted from Sarcoma 37," which was read before the meeting of the American Association for Cancer Research in Atlantic City, New Jersey, on April 10.

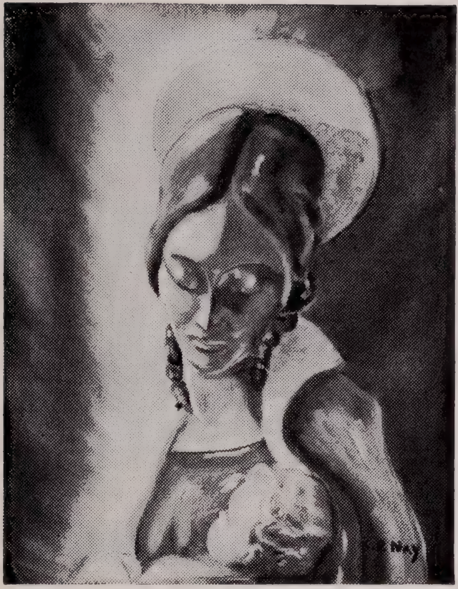
Dr. Moloney's studies originated in an investigation of the biochemistry of Sarcoma 37. He found that when cell-free extracts of Sarcoma 37 were inoculated into other mice less than sixteen hours old, nearly all the animals died of leukemia within four to eight months.

Further studies showed that extracts obtained from tissue of the mice that first developed leukemia contained higher concentrations of virus. This material, when injected into newborn mice, produced leukemia in 50 per cent of the recipients within seven weeks and 100 per cent within ten weeks.

Dr. Moloney and his colleagues of the Laboratory of Biology are engaged in a comprehensive study of the role of viruses in the production of animal and human cancer. One of the principal objectives of this work is the development of a standardized model for the study of virus tumors in experimental animals. It is believed that Dr. Moloney's work may provide cancer research scientists a valuable tool for the study of viruses and other aspects of the cancer problem.

the Gallery

WALTER J. ALEXANDER, M.D., EDITOR



Madonna, oil painting by C. PAUL NAY, M.D., of Binghamton. Dr. Nay, an internist, is now a medical director with a life insurance company in Springfield, Massachusetts.

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On these pages, the JOURNAL is presenting a series of reproductions of physician art work, and each member of the Medical Society of the State of New York is invited to contribute to this feature.

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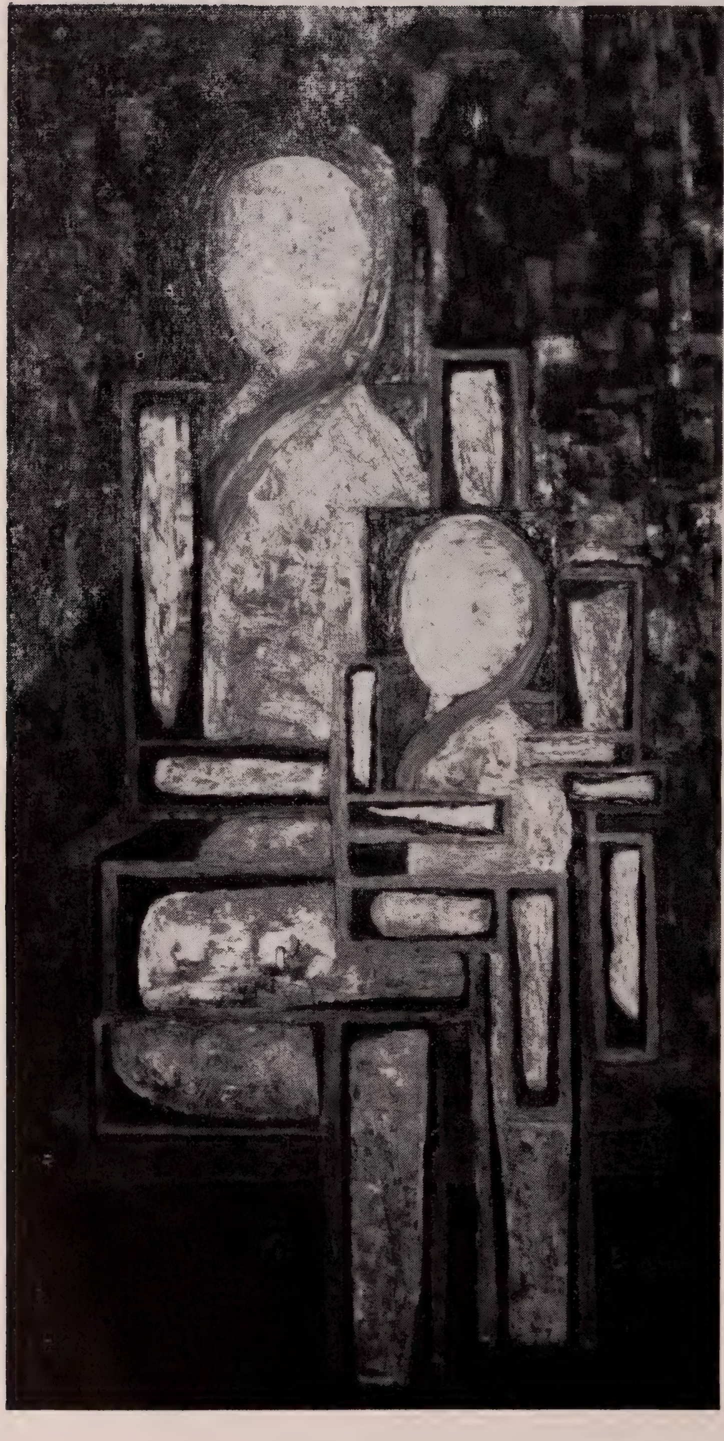

Mother and Child, by Emerick Friedman, M.D., of Albany, who has exhibited in several Albany groups. This was painted on the rough side of masonite with heavy impasto layers of oil. The planes and squares into which the bodies are divided give impressions of movement, containment, and attachment.

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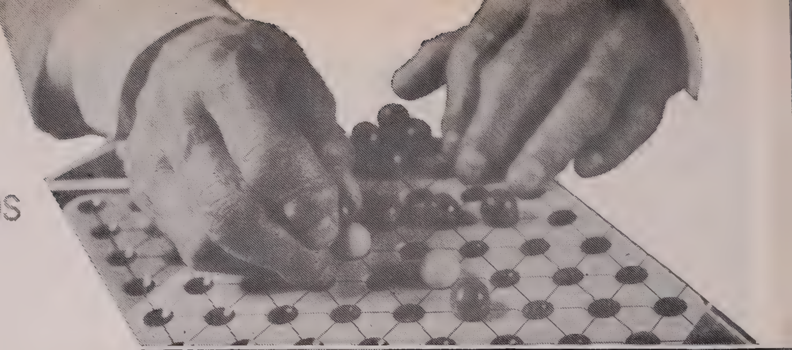

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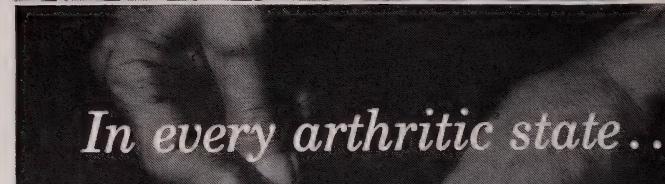

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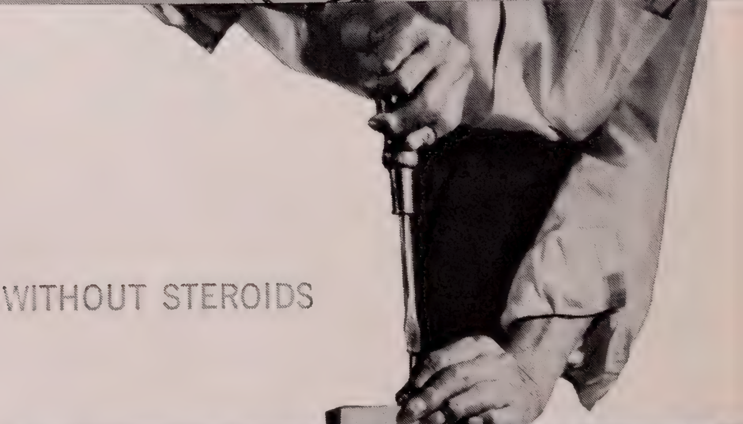

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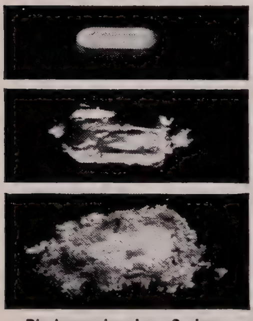

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References: 1. Hart, D.; Bagnall, A. W.; Bunim, J. J., and Polley, F. H.: Ninth International Congress on Rheumatic Diseases, Toronto, Ont. (June 25) 1957. 2. Report of Joint Committee, Medical Research Council & Nuffield Foundation, Treatment of Rheumatoid Arthritis, British Medical Journal (April 13) 1957. 3. Friend, D. G.: New England J. Med. 257:278 (Aug.) 1957.

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NECROLOGY

David Bergstein, M.D., of New York City, died on March 31 at the age of sixty-five. Dr. Bergstein received his medical degree in 1920 from the University of Vienna. He was a member of the American Academy of General Practice, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry Frederick Bruning, M.D., of Brooklyn, died on May 11 in Methodist Hospital at the age of seventy-six. Dr. Bruning graduated in 1905 from Columbia University College of Physicians and Surgeons. He was a member of the Associated Physicians of Long Island, the Brooklyn Society of Internal Medicine, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Camillo Anthony Cerchiara, M.D., of Mount Vernon, died on March 26 at the age of sixty-three. Dr. Cerchiara graduated in 1922 from Cornell University Medical College. He was an attending in obstetrics and gynecology at Mount Vernon Hospital and chief of obstetrics at Mount Vernon Hospital Outpatient Department. Dr. Cerchiara was a Fellow of the American College of Obstetricians and Gynecologists and a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hans Joachim Cohn, M.D., of Woodstock, died on April 18 at the age of fifty-two. Dr. Cohn received his medical degree in 1931 from the University of Greifswald and served as a paratrooper during World War II, winning the Silver Star for gallantry and the Medical Combat Badge with four battle stars. He was a member of the Ulster County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Carl Gittinger, M.D., of Flushing, died on May 12 in an airplane crash near Baltimore, at the age of thirty-three. Dr. Gittinger graduated in 1949 from New York Medical College, Flower and Fifth Avenue Hospitals. He was medical director of the Pfizer Laboratories. Dr. Gittinger was a member of the American Geriatrics Society, the New York Cardiological Society, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frederick Morgan Havens, M.D., of Niagara Falls, died on February 27 at the age of forty-nine. Dr. Havens graduated in 1933 from the University of Buffalo School of Medicine. He was an attending in anesthesiology at Mount St. Mary's and Niagara Falls Memorial Hospitals. Dr. Havens was a member of the American Society of Anesthesiologists, Inc., the New York State Society of Anesthesiologists, the Niagara County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ernestus Otto Kuhr, M.D., of New York City, died in Roosevelt Hospital on May 7 at the age of eighty-one. Dr. Kuhr graduated in 1902 from Columbia University College of Physicians and Surgeons. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Langs, M.D., of Brooklyn, died on April 18 at the age of sixty-seven. Dr. Langs graduated in 1915 from New York University and Bellevue Hospital Medical College. He was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Willard Judd Lee, M.D., of Garden City, died in Memorial Hospital, New York City, on May 12 at the age of sixty-one. Dr. Lee graduated in 1923 from Hahnemann Medical College of Philadelphia and interned at Fifth Avenue Hospital. During World War II he served in the U.S. Navy and won the Navy Commendation Ribbon for outstanding service, and after the war was stationed at the Brooklyn Naval Hospital. He was a former surgeon of the Garden City Fire Department and had served on the staffs of South Nassau Communities Hospital, Mercy Hospital, and Nassau Hospital.

John Nestler, M.D., of Brooklyn, died on March

[Continued on page 2444]

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Copper (as CuO)	1 mg.
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[Continued from page 2442]

2 at the age of forty-eight. Dr. Nestler received his medical degree in 1943 from the University of Budapest. He was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Stanley George Padykula, M.D., of Endicott, died at his home on May 1 at the age of forty-seven. Dr. Padykula graduated in 1939 from the University of South Carolina School of Medicine. He was an attending in obstetrics and gynecology at Charles S. Wilson Memorial Hospital, Johnson City. Dr. Padykula was a Fellow of the American College of Obstetricians and Gynecologists and a member of the Binghamton Academy of Medicine, the Central New York Association of Gynecologists and Obstetricians, the Broome County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arnold Walter Pensig, M.D., of Brooklyn, died on May 12 in an airplane crash near Baltimore, at the age of thirty-three. Dr. Pensig graduated in 1948 from New York Medical College and interned at Bellevue, Maimonides, Jewish Memorial, and Goldwater Memorial Hospitals. He was a clinical assisting physician at Kings County Hospital and a medical director of the Pfizer Laboratory Division of Chas. Pfizer & Co., Inc. Dr. Pensig was a Diplomate of the American Board of Internal Medicine and a member of the Brooklyn Society of Internal Medicine, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Michael Rosenbluth, M.D., of New York City and the Bronx, died on March 19 at the age of seventy-eight. Dr. Rosenbluth graduated in 1902 from Columbia University College of Physicians and Surgeons and interned at Lebanon Hospital. He was an associate in otolaryngology at Harlem and Lebanon Hospitals. Dr. Rosenbluth was a Diplomate of the American Board of Otolaryngology and a member of the American Academy of Ophthalmology and Otolaryngology, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

J. Leon Stewart, M.D., of New York City, died on April 19 at the age of sixty-three. Dr. Stewart received his medical degree in 1919 from the University of Paris.

Albert George Swift, M.D., of Syracuse, died on April 22 at the age of seventy-nine. Dr. Swift graduated in 1902 from Syracuse University College of Medicine. He was a senior attending in surgery at St. Joseph's Hospital and a senior consultant in surgery at Syracuse University Hospital (now Hospital of the Good Shepherd). Dr. Swift was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the Syracuse Academy of Medicine, the Central New York Surgical Society, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Heinrich Franz Wolf, M.D., of New York City, died in Seville, Spain, on May 12 at the age of eighty-six. Dr. Wolf received his medical degree in 1897 from the University of Prague. He was a consulting physician in physical medicine at Mount Sinai Hospital. Dr. Wolf was a Diplomate of the American Board of Physical Medicine and Rehabilitation and a member of the American Congress of Physical Medicine and Rehabilitation, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

"Overweight" does not always mean "obese," according to *Patterns of Disease*, published by Parke, Davis & Company for the medical profession.

A person whose weight is 20 per cent above the normal, for his skeletal build, is considered to be obese.

In one study of overweight men, 44 per cent were found not to be obese, 51 per cent were described as moderately obese, and 5 per cent very obese.

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MEDICAL NEWS

Dr. Hatch is Honored—Dr. Edith Rebecca Hatch, Buffalo, has been named woman doctor of the year by the Women's Medical Society of New York State. Dr. Hatch has been a physician for fifty-three of her eighty-three years.

Smith Kline & French Fellowship—The creation of the Smith Kline & French Fellowship in Physical Medicine and Rehabilitation for a Mexican physician to undertake a three-year period of postgraduate training in the United States has been announced by Dr. Howard A. Rusk, president, World Rehabilitation Fund, Inc.

Dr. Leobardo Ruiz of Mexico City has been selected by the World Rehabilitation Fund as the Smith Kline & French Fellow. He will begin his three-year training program in the United States at the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, on July 1, 1959.

Clement Cleveland Award—Mr. Laurance S. Rockefeller has been awarded the Clement Cleveland Award of the American Cancer Society's New York City Cancer Committee. The presentation of the award was made by Dr. Henry T. Randall, clinical director and chairman of the Department of Surgery of Memorial Center.

Institute for Research in Hypnosis—The Institute for Research in Hypnosis, established January, 1957, by provisional charter from the Education Department of the State of New York, officially opened its new headquarters at 33 East 65th Street, New York City, on April 25, 1959.

The institute is a nonprofit educational corporation organized to sponsor education and research in clinical and experimental hypnosis. It received its absolute charter on February 27, 1959.

Doctors Receive Honorary Degrees—Dr. Byron Stookey and Dr. Henry Alsop Riley received honorary doctor of science degrees, May 16, during a convocation held jointly by the Columbia-Presbyterian Medical Center and Columbia University. The convocation was part of a two-day commemoration of the fiftieth anniversary of the Medical Center's Neurological Institute. The degrees were conferred by Dr. Grayson Kirk, University president.

Personalities

Appointed

Dr. Francis N. Kimball, New York City, as general director of medical activities for Eastern Air Line's New York headquarters.

Elected

Dr. Thomas N. Sheen, New York City, as the president of the New York Tuberculosis and Health Association.

Relocated

Dr. Frederick L. Patry, formerly of Albany, has opened an office for the private practice of psychiatry in Bradenton, Florida.

Speakers

Dr. Arnold Bachman, New York City, at the spring meeting of the Central New York Radiological Society, May 16, on the subject, "Radiologic Functional and Anatomic Studies of the Normal and Abnormal Larynx, Hypopharynx, and Cervical Esophagus". . .Dr. M. C. Balfour, New York City, at the National Conference on World Health, May 10, on the subject of birth control. . .Dr. William Z. Fradkin, Brooklyn, at the 193rd annual meeting of the Medical Society of New Jersey, April 29, on the topic, "Clinical Aspects of Diarrhea". . .Dr. Nathaniel E. Reich, Brooklyn, at the postgraduate seminar of the American College of Chest Physicians, Atlantic City, June 3; before the American Board of Legal Medicine, June 7; and at a meeting of the American College of Angiology, June 7. . .Dr. Howard A. Rusk, New York City, at the dedication of a surgical center at the Kane Pavilion, St. Barnabas Hospital, May 13, on the subject of the increasing need for facilities for the treatment of chronic diseases.

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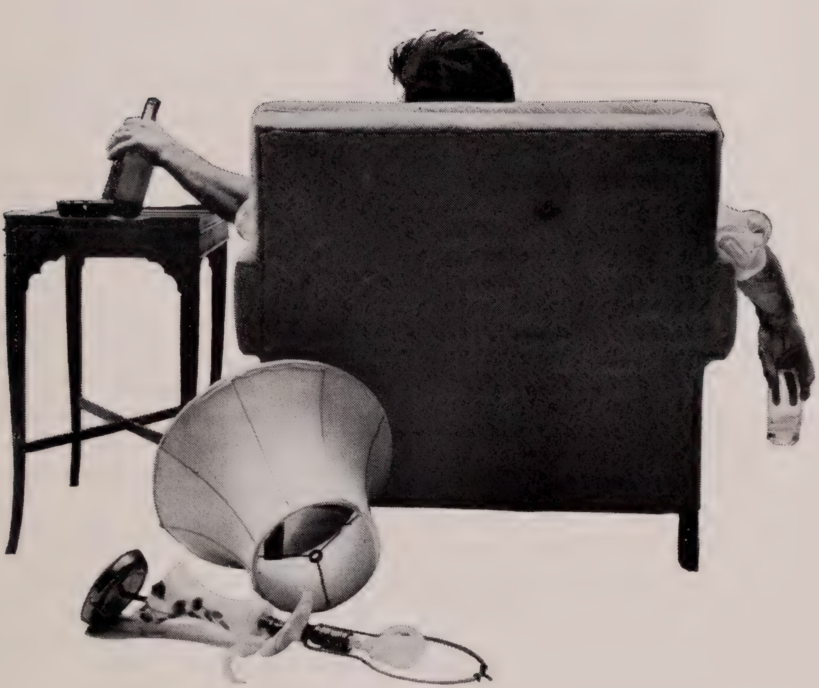

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MONTH IN WASHINGTON

Congress won the first round in a battle over medical research funds, but the Eisenhower Administration is in a strategic position for the final outcome.

The House voted $344,279,000 for the National Institutes of Health, $50 million more than the Administration asked for in the fiscal 1960 budget. The move to increase medical research funds also had strong support in the Senate.

However, the Health, Education, and Welfare Department and the Budget Bureau will have the final say on how much of the appropriated funds are spent during the 1960 fiscal year when the Administration is striving to balance the budget.

Arthur S. Flemming, Secretary of Health, Education, and Welfare, vigorously denied a charge of the Democratic-controlled House Appropriations Committee that the Administration had "gone so far as to set back the medical research program—in a desperate attempt to present, on paper, a balanced budget." Flemming said the committee was trying to give a "clearly misleading" impression. He also said it was hard to see how the Administration's $294 million program could be regarded as a backward step.

Flemming pointed out that the Administration request was for the same amount voted by Congress last year, and that some of last year's appropriation will not be spent this fiscal year.

At the same time, U. S. Surgeon General Leroy E. Burney testified before a Senate Appropriations Subcommittee that there was a shortage of trained personnel in all fields related to human health, including medical research.

Rep. Francis E. Dorn (R., N. Y.) again has introduced a bill that would provide for a special commission making a study of the supply of physicians. In a letter put in the *Congressional Record*, Dr. F. J. L. Blasingame, executive vice-president of the American Medical Association, envisaged an adequate supply on a long-range basis. He said, "Over the long haul, the increase in medical students is much greater proportionately than is the increase in the population. The future, I believe, looks bright."

A government-sponsored, six-year study of the causes of cerebral palsy, mental retardation, and kindred defects in children has gotten under way in 16 private hospitals and universities. The study involves no experimentation, only observation. About 40,000 women will be kept under close check from the second or third month of pregnancy through childbirth. Observation of their children will be maintained through six years of age.

U. S. scientists have blamed Russia for most of the radioactive fallout thrust into the atmosphere in the last two years, but testimony before a Joint Congressional Committee on Atomic Energy estimated that over-all the United States and Great Britain had created nearly three times as much radioactive debris by testing nuclear weapons as had the Soviet Union.

Russian tests were described as "extremely dirty" as to radioactive debris. However, the Russians have not exploded as many test weapons and devices as have the Western powers.

The scientists differed on the degree of danger to humans posed by the radioactive fallout. John A. McCone, Chairman of the Atomic Energy Commission, said that up to now the fallout hazard has been "very small" and not serious when compared with common hazards, including natural radiation. But he warned against a "very serious hazard" in the future if nuclear tests are not restricted by international agreement.

The Walter Reed U. S. Army General Hospital in Northwest Washington quietly marked its fifteenth anniversary recently. Its 448,000 patients since it was founded in 1909 have included presidents, congressmen, cabinet members, and other notables. President Eisenhower underwent an ileitis operation there in 1956. Gen. John J. Pershing died there in 1948 after being a patient for seven years. The two most distinguished patients recently are former Secretaries of State John Foster Dulles and George C. Marshall.

A Food and Drug Administration official has urged that physicians use care and judgment in writing p.r.n. and similar prescriptions for sleeping pills and amphetamines. Nevis Cook of the agency's enforcement bureau said some pharmacists have been selling the drugs too freely on such prescriptions. The F.D.A. planned to take court action when a glaring abuse presented a strong case. The issue is whether a pharmacist improperly practices medicine by indiscriminately refilling such prescriptions.

[Continued on page 2450]

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[Continued from page 2448]

Navy and Public Health Service scientists reported that a commercially prepared vaccine proved 83 per cent effective in preventing Asian flu in a study among naval recruits at the Great Lakes Naval Training Station. U. S. Surgeon General Leroy E. Burney said the controlled survey confirmed previous observations that good "protection results" from inoculation with the epidemic, Asian-strain vaccine.

MEDICAL MEETINGS

International Congress on Lifesaving

An international congress in the field of lifesaving work will be held September 10 through 12 at Scheveningen, a seaside resort of The Hague, Netherlands.

The congress will be sponsored by the Royal National Society for Lifesaving and First Aid to the Injured, also known as the "Orange Cross." The main accent of the congress will be on resuscitation, burns, and electric shock.

Those wishing further information may write to: The Secretariat, Royal National Society for Life-saving and First Aid to the Injured, 14, Burgemeester de Monchyplein, The Hague, Netherlands.

American Cancer Society

A symposium on the evaluation of early diagnosis of cancer will be presented at the annual scientific session of the American Cancer Society to be held October 26 and 27 at the Biltmore Hotel, New York City.

The program is approved and recommended by the American Academy of General Practice for twelve hours of category II credit for its members.

The following physicians from New York will participate: *Albany:* Dr. John C. McClintock; *Buffalo:* Drs. John B. Graham and Glenn H. Leak; *New York City:* Drs. Leona Baumgartner, Emerson Day, Michael R. Deddish, Frank W. Foote, Jr., Edgar L. Frazell, E. Cuyler Hammond, Ralph Hertz, George T. Pack, and Jerome A. Urban.

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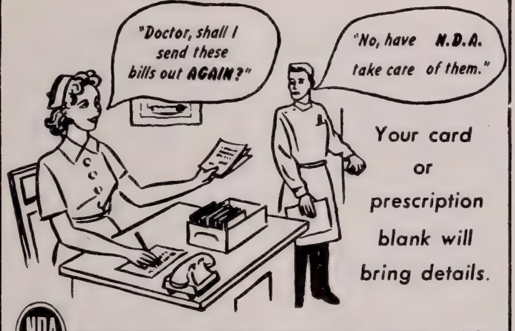
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BOOKS REVIEWED

Therapeutic Exercise. By Sidney Licht, M.D. Octavo of 893 pages, illustrated. New Haven, Elizabeth Licht, 1958. Cloth, $16.

The editor and publisher must again be commended for their splendid contribution to this field. This volume confirms their perseverance and courage. It attempts to summarize our knowledge on exercise therapy, and stresses the need for greater utilization of this, a most important modality. The subject matter is covered in two parts, the basic science aspect and the clinical application. It includes chapters on the motor unit, the physiology and anatomy of muscle, and the biomechanics and mensuration of motion. The clinical entities are briefly discussed and exercise programs outlined.

The editor calls this volume "encyclopedic in scope." It is an extremely high goal and difficult to achieve. The first part of the book, the basic science material, is very well presented and very thorough. The clinical discussions are excellent for some entities, but only sketchy for others. It is a challenging and extremely difficult task to devote space and to stress some clinical conditions possibly at the expense of others. The choice of stressing some conditions and the manner of presenting this clinical material permit reviewers to offer critical remarks. Some physicians may find the discussions on the diseases superfluous and the exercise programs inadequate in some of the chapters. It is appropriate to wonder whether exercises for the various anatomic regions may not have been more practical. This volume presents the value of exercise therapy; it answers the question as to the type of exercises to be utilized in various conditions; and to a variable extent, outlines exercise programs to be employed.

The editor and the 36 contributors have ably completed a tedious task. The subject matter, particularly the basic science aspect, is well written, precise, informative, and authoritative. The reference material is vast and well indexed. It is certainly worth while for all utilizing exercise therapy in their comprehensive care for their patients, and is a reference book which merits space on the shelves of those engaged in rehabilitation care and of libraries.—EUGENE J. ROGERS

Psychopharmacology. By Harry H. Pennes, M.D. Octavo of 362 pages, illustrated. New York, Paul B. Hoeber, Inc., 1958. Cloth, $8.00.

This book should prove interesting to any physician who prescribes tranquilizers. The book is a symposium which attempts to analyze the basic mechanisms of action, as well as the clinical correlates of these actions, of the rapidly increasing number of psychopharmaceutic drugs. In particular, the phenothiazine compounds, the reserpine alkaloids, serotonin, and the various hallucinogenic drugs such as lysergic acid diethylamide are considered.

The 41 participants in this symposium represent different research and clinical disciplines. The discussions following the specific papers presented at the conference provide an excellent perspective of the particular problems involved by virtue of their multidisciplinary approach as well as their informality. The subject matter of the specific reports includes several papers on the in vitro effects of these drugs on nervous tissue metabolism; pharmacologic studies of drug tolerances and toxicities and in vivo actions; electrophysiologic studies of the effects of these compounds on nerve and synaptic transmission; psychologic evaluations of "the mental aspects of behavior" of man and animals which may be affected by these drugs; a discussion of the semantics of nomenclature of these compounds; a psychoanalytically oriented outline of human personality parameters which should be studied.

The general level of all of the papers and the discussions is of a uniformly high caliber. An adequate bibliography follows each paper and each discussion. The editing of Dr. Harry H. Pennes is excellent.

Although much material in this book is of a highly technical nature, and hence of primary appeal to the interested specialist, the book should also be of interest to the general medical reader. The symposium offers an over-all view of the problems and current progress in the study of those drugs affecting neurologic and psychiatric changes.—HAROLD H. GOLDBERG

Year Book of Endocrinology. 1957–1958 Series. By Gilbert S. Gordan, M.D. Duodecimo of 381 pages, illustrated. Chicago, The Year Book Publishers, Inc., 1958. Cloth, $7.50.

This year an attempt to review the literature not readily available to the average physician as well

[Continued on page 2454]

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[Continued from page 2452]

as to digest the significant new contributions to endocrinology has been made. Autoimmune antibodies in thyroid diseases, oral hypoglycemic agents, aldosteronism, adrenal growth factor, and sex chromatin patterns are stressed. An evaluation of the endocrine manipulations in cancer is given both by the author as well as by Dr. George Escher.—Bernard Seligman

Cerebral Vascular Diseases. Transactions of the second conference held under the auspices of the American Heart Association, Princeton, N. J., January 16–18, 1957. Irving S. Wright, Chairman, and Clark H. Millikan, Editor. Octavo of 224 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $4.00.

The authors and participants of the conference represent an unusual collection of many of the best minds of those investigators, clinicians, and surgeons particulary concerned with this problem. "The objectives of this conference are to facilitate the cross-fertilization and communication of ideas between investigators and students" and "it is hoped that this will stimulate new investigators to join the attack on cerebral vascular diseases."

The conference seemingly did accomplish its objectives—but fortunately did even more. The book is certainly an excellent reference for present-day nomenclature and pathology of cerebral vascular disease. Further, it gives the reader up-to-date knowledge of the physiology as well as the pathophysiology of the cerebral blood flow.

The present-day concepts of the therapy of atherosclerotic disease are well covered. The chapter on anticoagulant therapy in cerebral thrombosis is certainly of interest and practical application for the clinician. The book fulfills a real need and is a ready and up-to-date reference book on this very important group of diseases. It is of value both to those investigators as well as the clinicians especially interested in this field.—Henry D. Fearon

The Physiology and Pathology of the Cerebellum. By Robert S. Dow, M.D., and Guiseppe Moruzzi, M.D. Octavo of 675 pages, illustrated. Minneapolis, The University of Minnesota Press, 1958. Cloth, $12.50.

This volume represents the first truly comprehensive text in English exclusively concerned with the physiology and pathology of the mammalian cerebellum.

The authors, both well qualified in this specialized field, have collated a considerable body of data from many sources to form a well-coordinated text concerning cerebellar function and dysfunction. Parenthetically, much of the included information represents their own published and unpublished observations. The bulk of the text is limited to descriptions of electrophysiologic experimentation, and to a lesser degree, the findings of disturbed physiology subsequent to ablation and stimulation experimental procedures. These findings are coordinated into a final physiology chapter which represents a thorough summarization of cerebellar function based predominantly upon animal experimentation.

The second half of the text is assigned to the clinical disorders related to the cerebellum and the various pathologic lesions noted in this region. The segments of the text relating to morphology are not so comprehensive as the sections concerned with normal and abnormal physiology. Much of the pathologic descriptions are paraphrasings from the accepted literature and do not represent the personal observations of the authors. This latter portion of the text, as a result, suffers from overgeneralization and lack of any quantitative expression. A very complete bibliography of 67 pages concludes the text.—Stanley Aronson

The Management of Emergencies in Thoracic Surgery. By John Borrie, M.D. Octavo of 340 pages, illustrated. New York, Appleton-Century-Crofts, Inc., 1958. Cloth, $10.

This volume packs more information between its covers than many other volumes on kindred subjects which are several times its size. However, it is lacking in details regarding alterations in thoracic function which take place in the conditions requiring emergency thoracic surgery. At other times this book goes far afield of its original intentions and because of this I believe it would have been better called an omnibus of the management of acute surgical conditions of the thorax. Although this reviewer does not agree with some of the opinions of the author, there is no doubt that the principles and practices set forth by the author are sound and will benefit the patient.—Lew A. Hochberg

The Eternal Search. By Richard R. Mathison. Octavo of 381 pages, illustrated. New York, G. P. Putnam's Sons, 1958. Cloth, $5.95.

The author is a lay reporter and magazine writer with an interest in the ancient and exotic traditions of folk medicine. He has written a fascinating account of the evolution of drug therapeutics down the ages. The book commingles lore, legend, and superstition, and by historic analysis unravels the maze of fact and fiction.

The book is divided into chapters which are devoted either to a specific disease or drug category, and such topics as the art of poisoning, aphrodisiacs, alchemy, plague, and childbirth are included.

Without being exhaustive, the book is comfortably

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[Continued from page 2454]

complete and accurate; it is also replete with spicy and earthy comment, and extremely well-written in the finest journalistic tradition. The book is unreservedly recommended to the physician both for content, style, and for the acquisition of a broader understanding of the backgrounds of present-day pharmacy.—Norman Shaftel

Cold Injury, Ground Type. By Col. Tom F. Whayne and Michael E. DeBakey, M.D., Medical Department, United States Army. World War II. Octavo of 570 pages, illustrated. Washington, D.C., Office of the Surgeon General, Department of the Army, 1958. Cloth, $6.25.

This is a most comprehensive and authoritative volume on the ground type of cold injury. It is written primarily for the Army, but it is equally valuable as a reference book for the problem of cold injury among civilians. There are excellent chapters on the pathogenesis and pathology of lesions resulting from exposure to cold, and the clinical picture is well presented. Throughout the book it is emphasized that prevention is the *sine qua non*, and at the same time it is pointed out how difficult this is to accomplish under battle conditions. A vast amount of planning and organization goes into a preventive program—including adequate supplies of proper clothing, education of the soldier, good food, and rest periods out of the front line. Unfortunately, the lessons learned by one army or group were not transmitted to others, and prevention only became effective late in World War II. More research is needed both in prevention and treatment, and the Armed Forces are especially suited to carry this out.

This volume is highly recommended.—Edwin P. Maynard, Jr.

Tumors of the Lungs and Mediastinum. By B. M. Fried, M.D. Octavo of 467 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $13.50.

The technic of diagnosis of chest conditions has advanced so much in the past thirty years that it is difficult to recall, as does Dr. Fried, a time when lung cancer was often mistaken for tuberculosis. The first two thirds of the book discusses in detail cancer of the lung. The various chapters take up its histogenesis, classification, etiology, clinical manifestations, metastasis, and diagnostic procedures. Contributing authors, all authorities in their respective fields, discuss different aspects of the subject. Radiology, surgical treatment, and radiotherapy are discussed. The author also takes up adenoma, cylindroma, sarcoma, and other rare tumors of the lungs and mesothelioma. The last third of the book takes up tumors of the mediastinum of lymphoid tissue, thymus gland, teratodermoids, neurogenic tumors, cysts and their radiographic diagnosis. The book is easy to read, complete, and well illustrated. Each chapter has a fairly complete bibliography. It is a worth-while addition to a medical library.—Emanuel Mendelson

The Neurologic Examination. By Russell N. DeJong, M.D. Second edition. Octavo of 1078 pages, illustrated. New York, Paul B. Hoeber, Inc., 1958. Cloth, $20.

This large volume is almost encyclopedic in scope, with extensive descriptions of common and uncommon signs, symptoms, reflexes, along with the various methods of neurologic examination. There are long chapters on anatomy and physiology of the nervous system.

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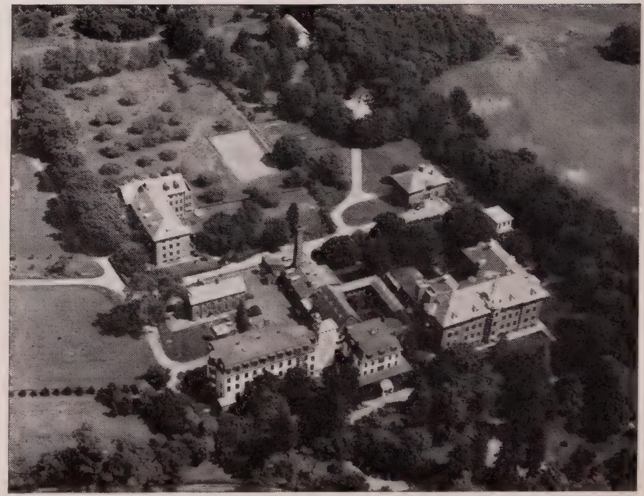

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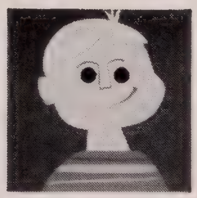

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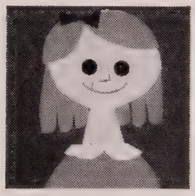

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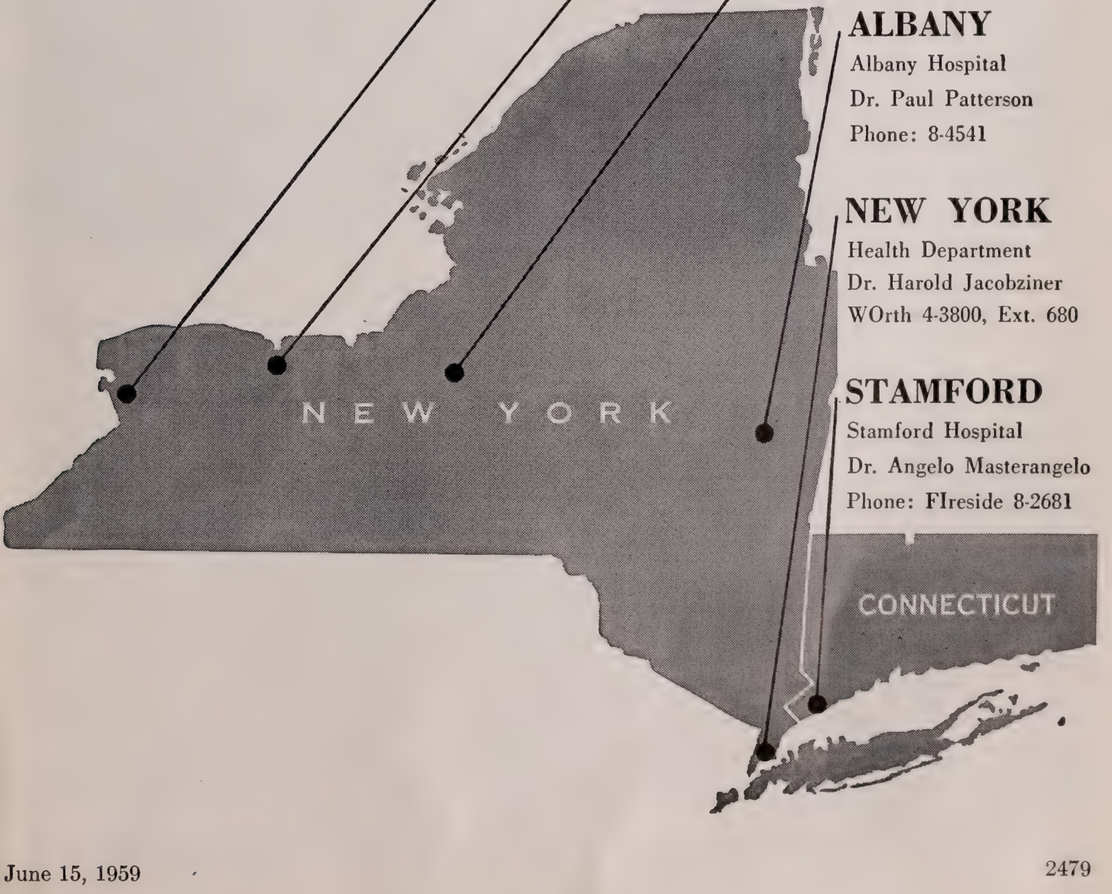

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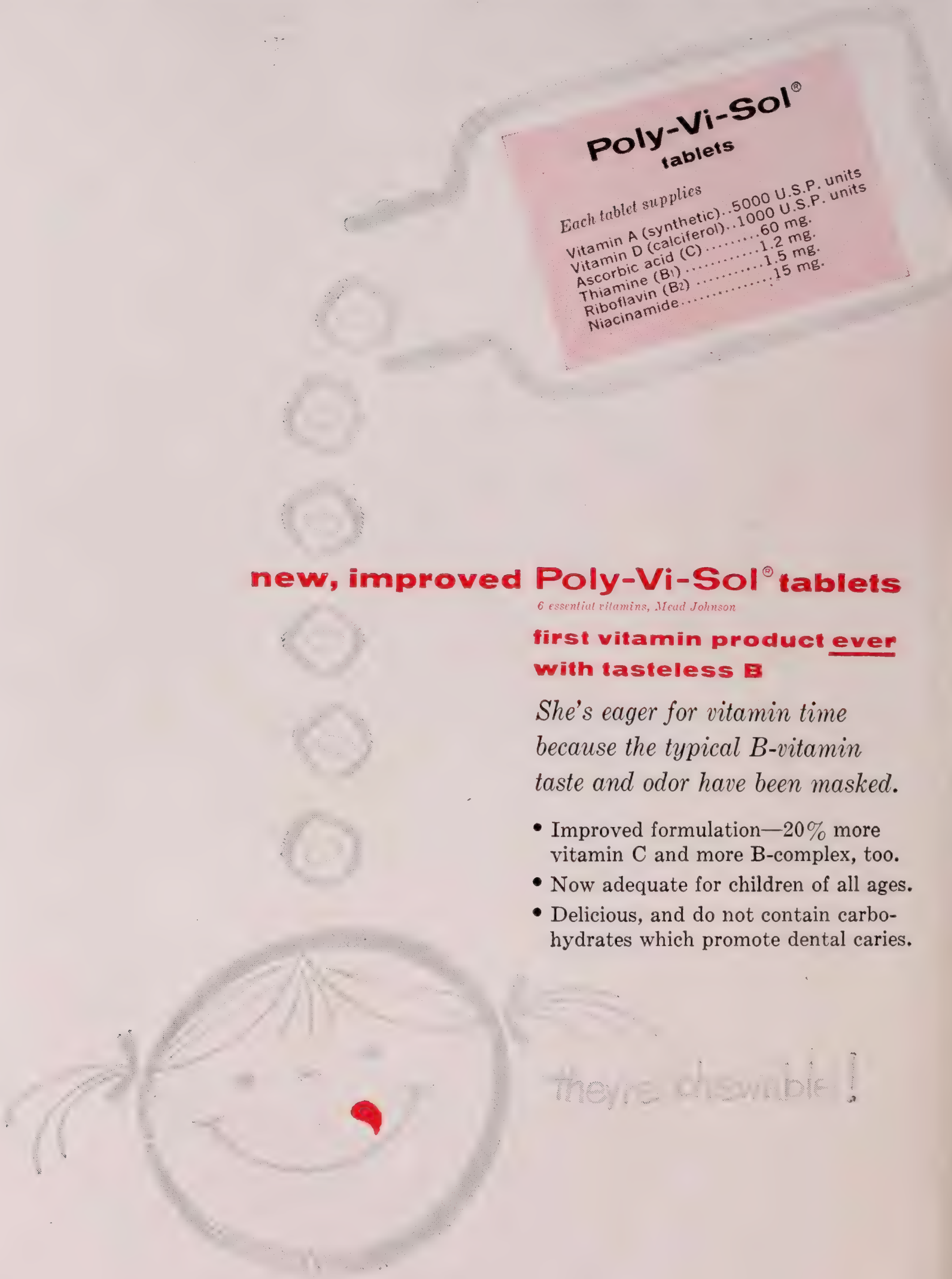
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1. Proctor, R. C., Southern Psychiatric Assoc. Meeting, October 7, 1957. **2.** Feuss, C. D. and Gragg, L. Jr.: Dis. Nerv. Sys. *18*:29, 1957.

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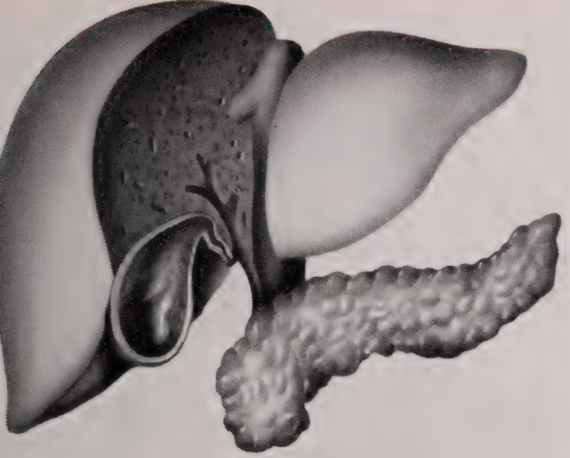

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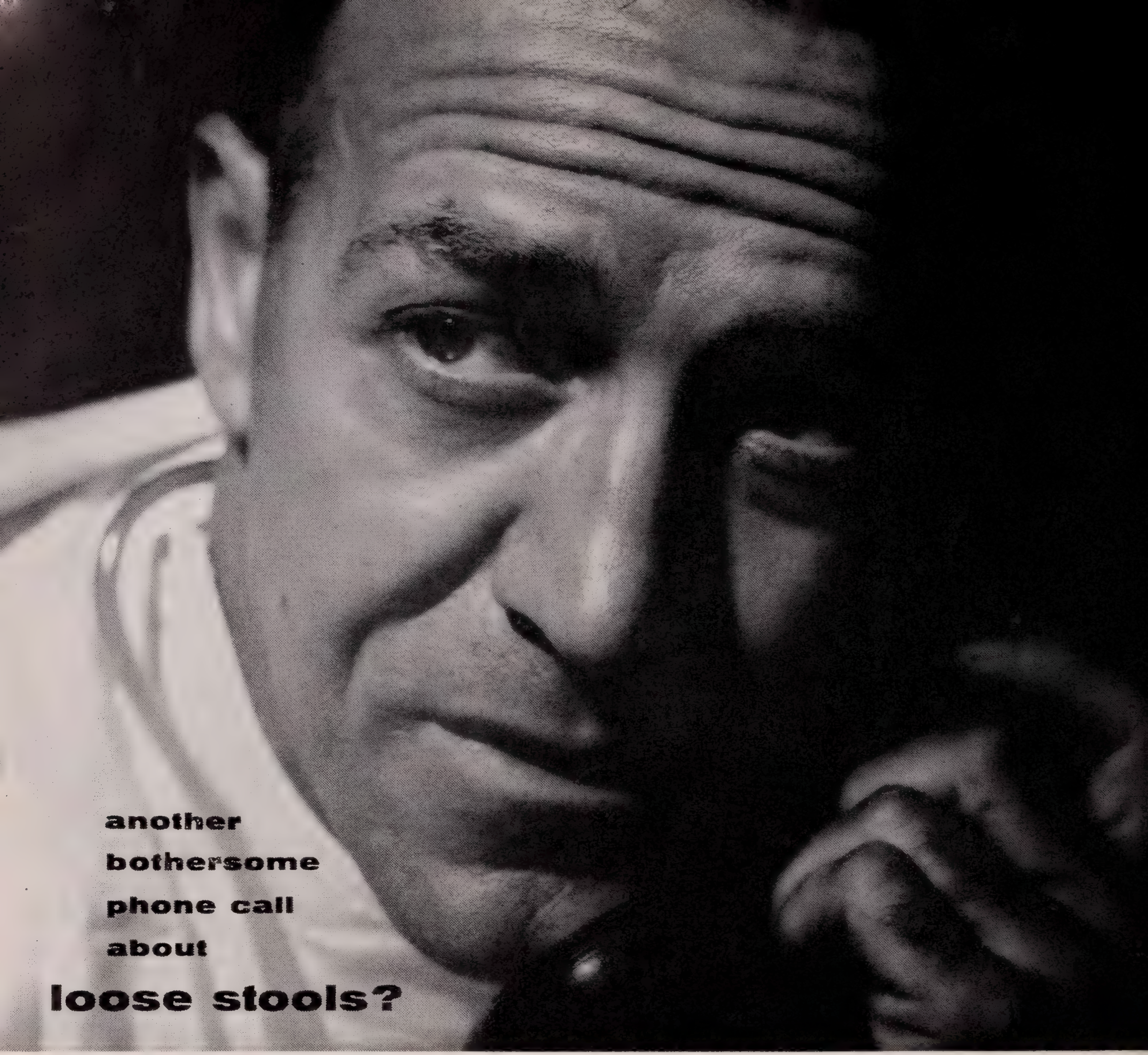

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2 mo.	27	1
3 mo.	12	1
4 mo.	10	1
5 mo.	14	0
6 mo.	8	0
7 mo.	19	0
8 mo.	11	0
9 mo.	10	0
10 mo.	8	0
11 mo.	11	0
12 mo.	10	0
	190	3 (1.6%)

†Exclusive of infants admitted with infectious diarrhea

1. Frost, L. H., and Jackson, R. L., J. Pediat. 39:585-592 (Nov.) 1951.
2. Henrickson, W. E.: GP 8: 51-56 (Oct.) 1953.

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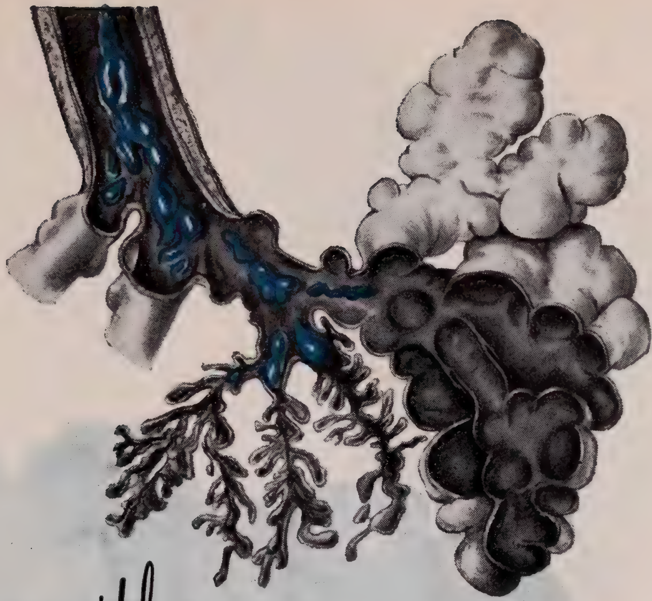

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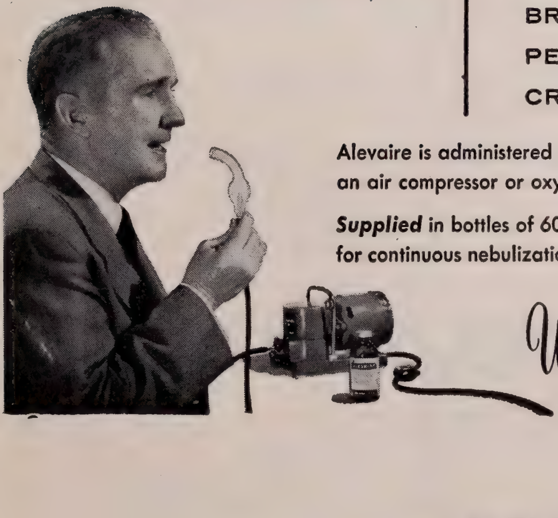

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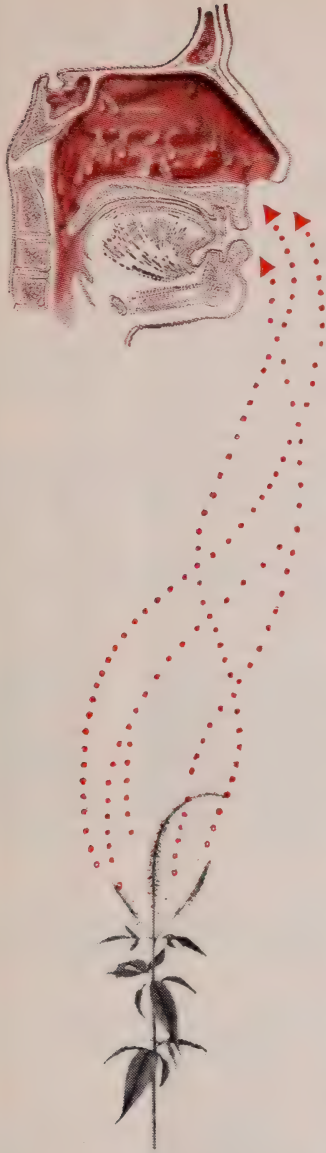

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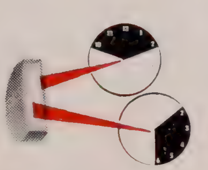
References: 1. Sheldon, J. M.: Postgrad. Med. **14**:465 (Dec.) 1953. 2. Hubbard, T. F. and Berger, A. J.: Annals Allergy p. 350 (May-June) 1950. 3. Kline, B. S.: J. Allergy **19**:19 (Jan.) 1948. 4. Goodman, L. S. and Gilman, A.: Pharmacol. Basis Ther., Macmillan, New York, 1956, p. 532. 5. Fabricant, N. D.: E.E.N.T. Monthly **37**:460 (July) 1958. 6. Lhotka, F. M.: Illinois M.J. **112**:259 (Dec.) 1957. 7. Farmer, D. F.: Clin. Med. **5**:1183 (Sept.) 1958.

Triaminic®

TRIAMINIC provides around-the-clock freedom from hay fever and other allergic respiratory symptoms with just one tablet q. 6-8 h. because of the special timed-release design.



Each TRIAMINIC timed-release tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

Also available: TRIAMINIC SYRUP for those patients of all ages who prefer a liquid medication. Each 5 ml. teaspoonful is equivalent to ¼ Triaminic Tablet or ½ Triaminic Juvelet. TRIAMINIC JUVELETS provide half the dosage of the Triaminic Tablet with the same timed-release action for prompt and prolonged relief.

STOP *running noses* *and open stuffed noses orally*

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(*Continued from page 2490*)

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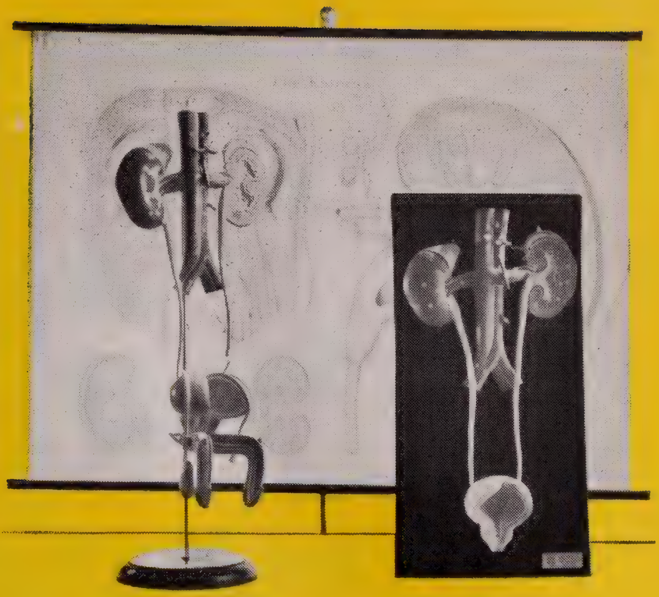

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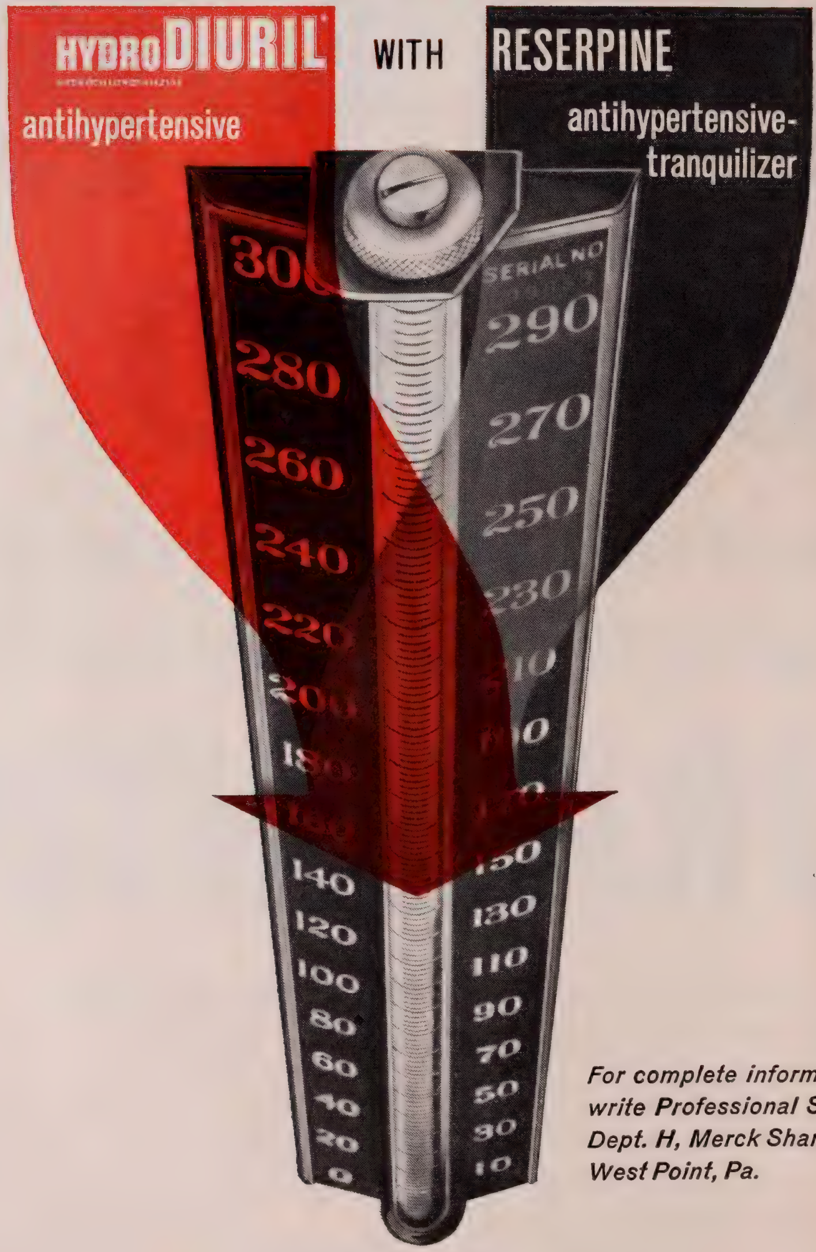
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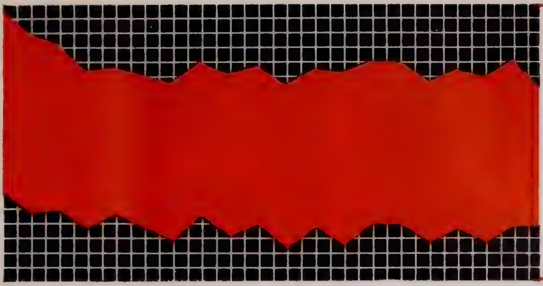

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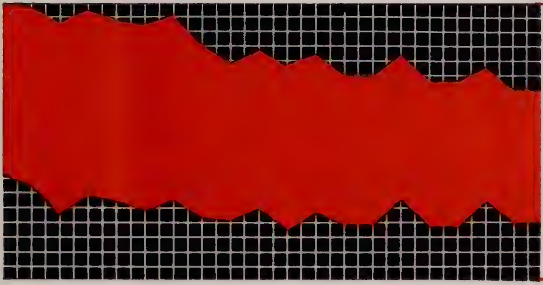

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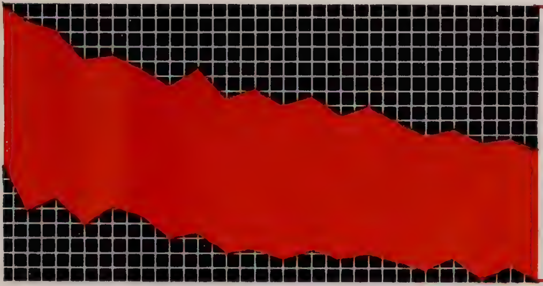

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- Arrest or reversal of organic changes of hypertension may occur.
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- With HYDROPRES, dietary salt may be liberalized.
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HYDROPRES-25
25 mg. HYDRODIURIL, 0.125 mg. reserpine.
One tablet one to four times a day.

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If the patient is receiving ganglion blocking drugs or hydralazine, their dosage must be cut in half when HYDROPRES is added.

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Calurin crystals in complete solution one minute after being mixed into water.

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avoid the risk of insoluble, irritating aspirin particles

Fig. 1 — Gastrectomy specimen from patient with chronic duodenal ulcer. Two regular aspirin tablets administered 45 minutes prior to surgery. Each of these aspirin particles was found to be firmly adherent to the gastric mucosa, but not imbedded within it, as often happens. Damage was found under each particle.

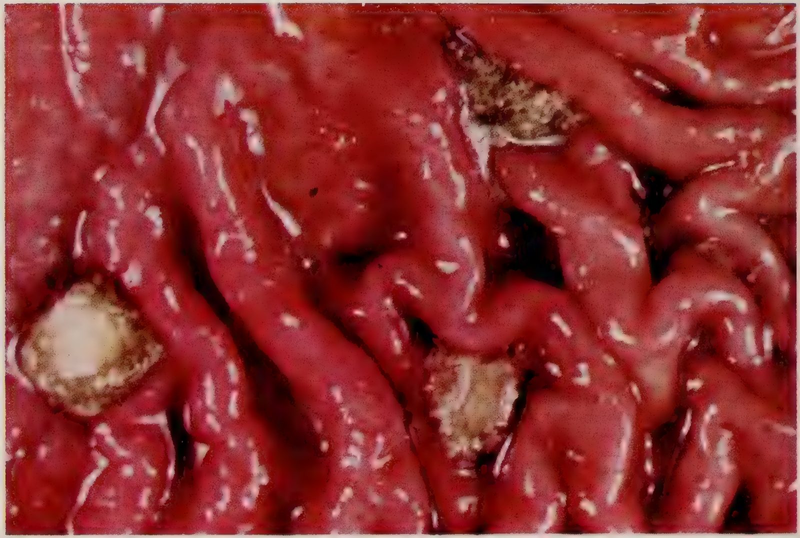
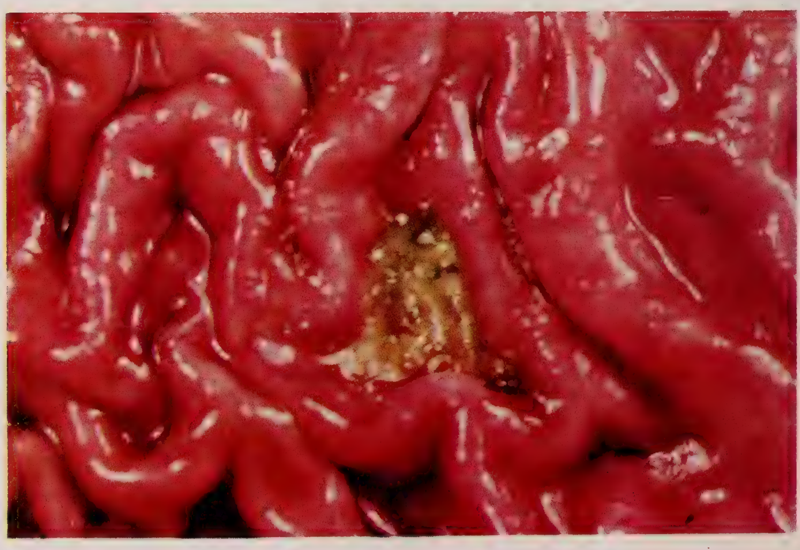


Fig. 2 — Gastric mucosa, showing damage found under aspirin particle. At the center of the lesion is a deep, circular erosion. There is surprisingly little hyperemia surrounding the lesion. This may be due to the early tying off of the gastric arteries during the operation.



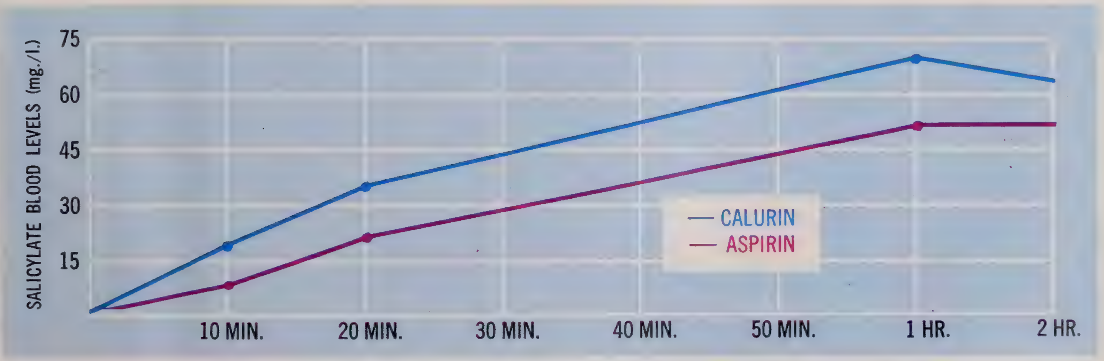
CALURIN

SOLUBLE CALCIUM-ACETYLSALICYLATE-CARBAMIDE

Chief among the drawbacks to aspirin usage is gastric intolerance. This ranges from mild upset and "heartburn" to severe hemorrhagic gastritis,[1-10] and is particularly important in patients on long-term, high-dosage therapy. Muir and Cossar report and reconfirm that aspirin is the causative factor in an average of 1 out of 8 cases of gastroduodenal hemorrhage. This may be associated with the relative insolubility of aspirin, which results in its remaining in particulate form after dispersion in gastric contents. Studies performed in conjunction with gastrectomy[4,5] and gastroscopy[2] have shown aspirin particles firmly adherent to the gastric mucosa and imbedded between rugae (Fig. 1). Reactions varying from mild hyperemia to erosive gastritis (Fig. 2) have been reported to occur in the areas immediately around such particles.[2,4,5,9]

One of the methods designed to allay or overcome the irritating effect of aspirin on the gastric mucosa has been to mix the aspirin with antacids or buffers. A recent editorial in the British Medical Journal[10] reviews the work of Batterman[8] and Cronk[9] and concludes: "Taken together, these two studies appear to dispose of the claims which have been put forward in support of buffered aspirin tablets."

Success in reducing the drawbacks of plain or buffered aspirin has been achieved with new, soluble Calurin. This is the freely soluble, stabilized calcium aspirin. The high solubility of Calurin assures faster, higher salicylate blood levels with virtually no risk of damage to the gastric mucosa, such as local hyperemia and ulceration. Calcium aspirin does not have the irritant action of regular aspirin[4] and it "...has certain advantages over acetylsalicylic acid in that it is more soluble in water, more readily absorbed, has less tendency to produce an albuminuria and is apparently less toxic..."[11]



Salicylate blood levels more than twice as high within 10 minutes were found in a comparison between Calurin and plain aspirin.[12] This investigation with 12 subjects also showed that the salicylate levels persisted higher for at least two hours. These results are depicted in the above chart. In reporting comparative studies between plain and buffered aspirin, Cronk[9] states: "The salicylic acid blood concentrations in the 20 human volunteers after the administration of 0.6 gm. of buffered or nonbuffered acetylsalicylic acid were essentially identical."

the freely soluble aspirin

CALURIN

CALURIN is the aspirin of choice, especially when long-term therapy is indicated

1. High solubility forestalls gastric irritation or damage. This advantage is of special importance in arthritis and other conditions requiring high-dosage, long-term therapy.

2. Produces high salicylate blood levels rapidly for prompt analgesic, anti-pyretic, anti-arthritic effect.

3. Sodium-free—another important advantage in long-term therapy.

4. Flavored: can be chewed or dissolved in the mouth without water if desired—an advantage for patients requiring aspirin administration during the night and for pediatric patients.

DOSAGE: Each tablet of Calurin is equivalent to 300 mg. (5 gr.) of acetylsalicylic acid. For relief of pain and fever, the usual adult dose of Calurin is 1 to 3 tablets every 4 hours, as needed; in arthritic states, 2 or 3 tablets 3 or 4 times daily; in rheumatic fever, 3 to 5 tablets 4 or 5 times daily. Children 6-12, one tablet, and children 3-6, one-half to one tablet every 4 hours as required.

SUPPLIED: Bottles of 100 tablets.

REFERENCES: 1. Waterson, A. P.: Aspirin and gastric haemorrhage, Brit. M. J. **2**:1531, 1955.
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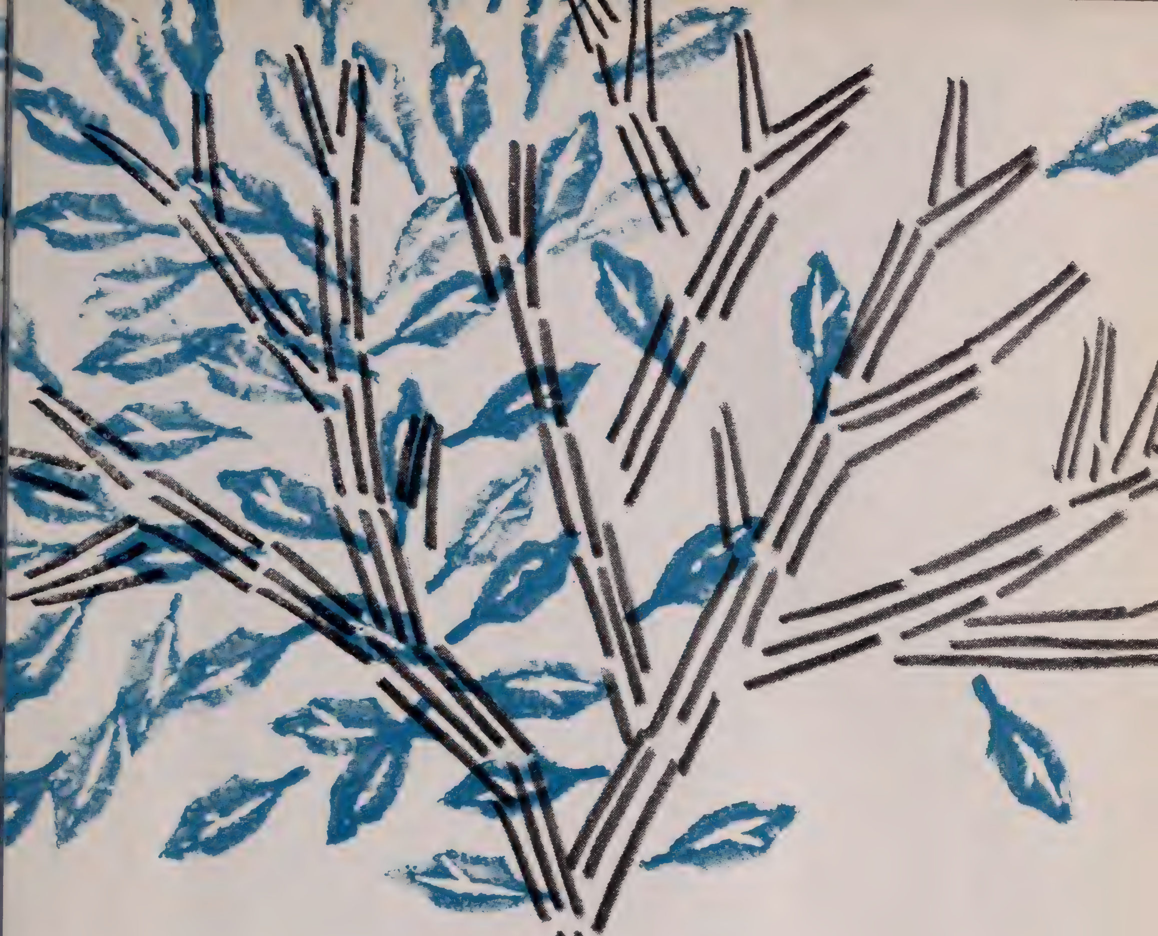

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MT-J-359

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there's pain and
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it could be mild
or severe, acute or
chronic, primary or
secondary fibrositis—or even
early rheumatoid arthritis

more potent and comprehensive treatment than salicylate alone

. . . assured anti-inflammatory effect of low-dosage corticosteroid[1] . . . additive antirheumatic action of corticosteroid plus salicylate[2-5] brings rapid pain relief; aids restoration of function . . . wide range of application including the entire fibrositis syndrome as well as early or mild rheumatoid arthritis

more conservative and manageable than full-dosage corticosteroid therapy—

. . . much less likelihood of treatment-interrupting side effects[1-6] . . . reduces possibility of residual injury . . . simple, flexible dosage schedule

THERAPY SHOULD BE INDIVIDUALIZED

acute conditions: Two or three tablets four times daily. After desired response is obtained, gradually reduce daily dosage and then discontinue.

subacute or chronic conditions: Initially as above. When satisfactory control is obtained, gradually reduce the daily dosage to minimum effective maintenance level. For best results administer after meals and at bedtime.

precautions: Because SIGMAGEN contains prednisone, the same precautions and contraindications observed with this steroid apply also to the use of SIGMAGEN.

References: **1.** Spies, T. D., et al.: J.A.M.A. 159:645, 1955. **2.** Spies, T. D., et al.: Postgrad. Med. 17:1, 1955. **3.** Gelli, G., and Della Santa, L.: Minerva Pediat. 7:1456, 1955. **4.** Guerra, F.: Fed. Proc. 12:326, 1953. **5.** Busse, E. A.: Clin. Med. 2:1105, 1955. **6.** Sticker, R. B.: Panel Discussion, Ohio State M. J. 52:1037, 1956.

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corticoid-salicylate compound tablets

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METICORTEN® (prednisone)	0.75 mg.
Acetylsalicylic acid	325 mg.
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Ascorbic acid	20 mg.

Packaging: SIGMAGEN Tablets, bottles of 100 and 1000.

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New hope for fetal salvage
Delalutin
SQUIBB HYDROXYPROGESTERONE CAPROATE
improved progestational therapy

The results of administering Delalutin before the 12th week of gestation to 82 women with habitual abortion were reported recently by Reifenstein.[1] Every patient had experienced at least three consecutive abortions immediately preceding the treated pregnancy. More than 68% of these women were delivered successfully and uneventfully following Delalutin therapy.

Boschann,[2] in a study of pregnancies with threatened abortion, found that:
37% of 73 pregnancies were carried to term without progestational therapy
64% of 42 pregnancies were salvaged by progesterone
83% of 73 pregnancies were salvaged by Delalutin

Eichner,[3] found that with Delalutin fetal salvage of infants below term weight (1000 to 2000 gm.) was significantly improved.
108 (76%) of 142 babies of this birth weight survived without progestational therapy.
16 (100%) of 16 babies of this birth weight survived with Delalutin therapy.
A comparison study was made of a group of repeated aborters treated with Delalutin, and a group with a similar history treated with bed rest and sedation.[4] Pregnancy salvage with Delalutin was twice that of the control group. Delalutin was found to be "highly active," well-tolerated and long-acting.

Delalutin offers these advantages over other progestational agents:

- longer-acting and more sustained therapy
- more effective in producing and maintaining a completely matured secretory endometrium
- no androgenic effect
- more concentrated solution requires injection of less vehicle
- unusually well-tolerated, even in large doses
- requires fewer injections
- low viscosity makes administration easier

DELALUTIN is also potent and safe therapy for: threatened abortion; postpartum after-pains; amenorrhea, primary and secondary; dysfunctional uterine bleeding not associated with genital malignancy; infertility with inadequate corpus luteum function; production of secretory endometrium and desquamation during estrogen therapy; premenstrual tension; dysmenorrhea; cyclomastopathy, mastodynia, adenosis and chronic cystic mastitis.

Administration and Dosage: Because of its low viscosity, Delalutin may be administered with a small gauge needle (deep intragluteal injection). Complete information on administration and dosage is supplied in the package insert.

Supply: Delalutin is available in vials of 2 and 10 cc., each cc. containing 125 mg. of hydroxyprogesterone caproate in sesame oil, and benzyl benzoate.

References: 1. Reifenstein, E. C., Jr.: *Annals N. Y. Acad. Sci.* 71:762 (July 30) 1958. 2. Boschann, H-W.: *ibid.,* p. 727. 3. Eichner, E.: *ibid.,* p. 787. 4. Hodgkinson, C. P.; Igna, E. J., and Bukeavich, A. P.: *Am. J. Obst. and Gyn.* 76:279, 1958.

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Three-pronged attack on acne:

- Detergent base—removes oil
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Outstanding success in clinical trials in more than one thousand cases over 10-year period.

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Smith-Dorsey Company, Div. of the Wander Co. 2491, 2497, 2498–2499, 2500, 2530–2531
E.R. Squibb & Sons, Div. Mathieson Chemical Co. 2504–2505, 2647
Stiefel Laboratories 2506

Valentine Company 2508

Wallace Laboratories 2483, 2528–2529, 2538, 2641
West Hill 2645
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Uneventful Recovery

the pattern of

GLUCOSAMINE-POTENTIATED TETRACYCLINE

therapy

COSA-TETRACYN*

capsules
125 mg., 250 mg.

oral suspension
orange flavored, 2 oz. bottle, 125 mg. per teaspoonful (5 cc.)

pediatric drops
orange flavored, 10 cc. bottle (with calibrated dropper), 5 mg. per drop (100 mg. per cc.)

Pfizer *Science for the world's well-being*
PFIZER LABORATORIES
Division, Chas. Pfizer & Co., Inc.
Brooklyn 6, N. Y.

*Trademark for glucosamine-potentiated tetracycline

Note: Rapid and high initial antibiotic blood levels are an important factor in uneventful recoveries. Glucosamine potentiation provides fast, high tetracycline levels with oral therapy. Bibliography and professional information booklet available on request.

Old age
Convalescence
Adolescence
Infant diarrhea
Debilitating gastrointestinal conditions
Postoperatively

Whenever the diet is faulty, the appetite poor, or the loss of food is excessive

through vomiting or diarrhea—

Valentine's
MEAT EXTRACT

stimulates the appetite,
increases the flow of digestive juices,
provides: supplementary amounts of vitamins, minerals and soluble proteins,
extra-dietary vitamin B_{12},
protective quantities of potassium, in a palatable and readily assimilated form.

Supplied in bottles of 2 or 6 fluidounces.

Dosage *is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy.*

VALENTINE Company, Inc.
RICHMOND 21, VIRGINIA

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Side effects are generally absent with FELSOL . . . antipyrine causes no harmful effects to normal persons.

EFFICACY

FELSOL is effective as an anti-asthmatic, analgesic, and antipyretic —elevating threshold in cases where prompt and enduring antipain or antifever action is required.

IN THE Felsol FORMULA

℞	Each Powder	Each Tablet
Antipyrine	870 mg	435 mg
Iodopyrine	30 mg	15 mg
Citrated Caffeine	100 mg	50 mg

Try this safe and effective preparation for symptomatic treatment. Write for free professional samples and literature.

AMERICAN FELSOL CO., LORAIN, O.

JUST ONE TABLET DAILY

provides therapeutic levels . . . for 24 hours . . . with low incidence of sensitivity reactions . . .

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KYNEX®

Sulfamethoxypyridazine Lederle

0.5 Gm. TABLETS/NEW ACETYL PEDIATRIC SUSPENSION

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

150,000 PHYSICIANS THE WORLD OVER DEPEND ON THE INTEGRITY BEHIND THIS NAME

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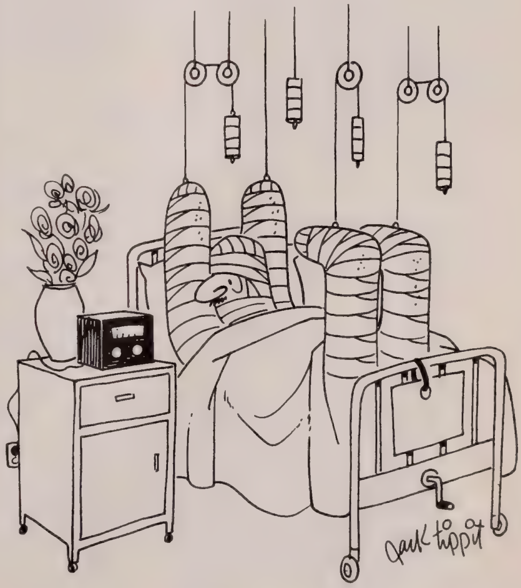


"Hi there! . . . This is your old friend, lovable Charlie Keyes, with a full sixty minutes of the latest foot-stomping rock and roll hits!"

What IS The Truth About Dietary Fats?

Recently a great deal of interest has been aroused on the question of a possible etiologic link between the ingestion of food fats and pathophysiologic changes in certain body tissues.

Basic research on this problem is being carried on throughout the world, the approach ranging from animal experimentation to biochemistry, to ethnological statistics.

In a number of instances the lay press has prematurely reported the findings of one research group or another, *without the benefit of unbiased competent evaluation.* Some scientific as well as lay articles have attempted to correlate inconclusive, fragmentary, and conflicting results, frequently leading to undesirable confusion.

The problem, however, is far from settled. If final results of this world-wide research establish beyond reasonable scientific doubt that fat intake is directly related to degenerative disease, accurate information should be provided for the profession so that in turn the public may be properly enlightened.

On the other hand, if conclusive evidence points to little or no etiologic relationship between fat ingestion and degenerative disease, it will become difficult for the scientific world to counteract the cumulative effects of misinformation on the public mind.

Furthermore, evidence is accumulating to indicate that lowering of the plasma cholesterol by limitation of dietary fat and by administration of unsaturated fatty acids may actually increase the deposition of cholesterol in the tissues.[1]

The obvious need at present is for basic research and proper evaluation as well as unprejudiced correlation of findings from all quarters, so that the medical profession as well as the public may be protected from the publicizing of premature and unwarranted conclusions.

---

[1] Kuhl, W. J., Jr., and Cooper, J.: Exchangeable C^{14}-Cholesterol Pool Size as an Index of Cholesterol Metabolism: Effect of Low Fat and Highly Unsaturated Fat Diets, Proc. Cen. Soc. Clin. Res., J. Lab. & Clin. Med. *52*:919 (Dec.) 1958.

STATEMENT BY NATIONAL RESEARCH COUNCIL

"A large amount of information has been made available in recent years relating fats to the causation of atherosclerosis, coronary artery disease, and other similar diseases. However, the data are so incomplete and conflicting that it is impossible to draw conclusions which are universally acceptable to nutritionists and medical authorities."

"Until it is clearer which fats are more desirable nutritionally and which, if any, are undesirable—major changes in American dietary habits are not to be recommended."

•

The Role of Dietary Fat in Human Health: National Academy of Sciences—National Research Council, Washington, D. C., Publication 575, 1958.

American Meat Institute

Main Office, Chicago...Members Throughout the United States

re-evaluating tranquilizers?

READ WHAT CLINICIANS ARE NOW SAYING ABOUT ATARAX®

(brand of hydroxyzine)

IN GERIATRICS

"ability to decide correctly has increased, while the illogical response to anxiety has diminished."[1]

IN WORKING ADULTS

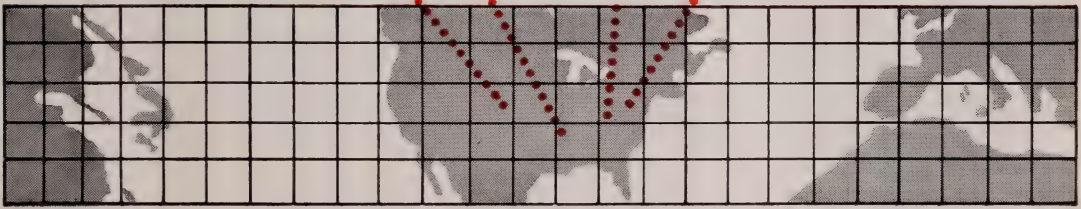
"especially well suited for ambulatory patients who must work, drive a car, or operate machinery."[3]

IN PEDIATRICS

"ATARAX appeared to reduce anxiety and restlessness, improve sleep patterns and make the child more amenable to the development of new patterns of behavior . . . ."[2]

IN GENERAL

ATARAX is "effective in controlling tension and anxiety . . . . Its safety makes it an excellent drug for out-patient use in office practice."[4]



INVESTIGATORS AGREE ON OPTIMAL ATARAX DOSAGES

For childhood behavior disorders	10 mg. tablets Syrup	3-6 years, one tablet t.i.d. over 6 years, two tablets t.i.d. 3-6 years, one tsp. t.i.d. over 6 years, two tsp. t.i.d.
For adult tension and anxiety	25 mg. tablets Syrup	one tablet q.i.d. one tbsp. q.i.d.
For severe emotional disturbances	100 mg. tablets	one tablet t.i.d.
For adult psychiatric and emotional emergencies	Parenteral Solution	25-50 mg. (1-2 cc.) intramuscularly, 3-4 times daily, at 4-hour intervals. Dosage for children under 12 not established.

Supplied: Tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution, 10 cc. multiple-dose vials.

References: 1. Smigel, J. O., et al.: J. Am. Ger. Soc., in press. 2. Freedman, A. M.: Pediat. Clin. North America 5:573 (Aug.) 1958. 3. Ayd, F. J., Jr.: New York J. Med. 57:1742 (May 15) 1957. 4. Menger, H. C.: New York J. Med. 58:1684 (May 15) 1958. 5. Coirault, M., et al.: Presse méd. 64:2239 (Dec. 26) 1956. 6. Bayart, J.: Presented at the International Congress of Pediatrics, Copenhagen, Denmark, July 22-27, 1956.

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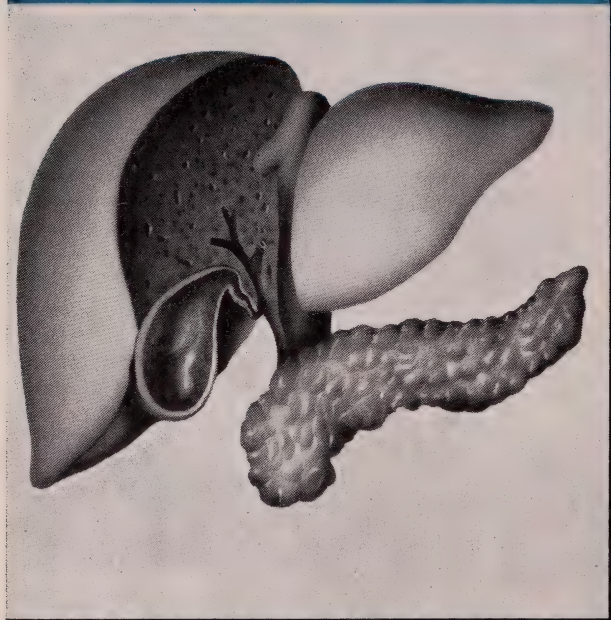
AN AMES CLINIQUICK®

CLINICAL BRIEFS FOR MODERN PRACTICE



why should the urine be tested for sugar in acute cholecystitis?

The high incidence of pancreatic disease associated with pathologic conditions of the biliary tract indicates their close relationship. The appearance of glycosuria in acute cholecystitis points to involvement of the pancreas in the inflammatory process.

Source: Refresher Article:
Biliary Tract
Diseases, M. Times
85:1081, 1957.

to help forewarn of pancreatic involvement...
and for reliable urine-sugar testing at any time

color-calibrated CLINITEST®
BRAND
Reagent Tablets

"...the most satisfactory method for home and office routine testing...."
GP *16*:121 (Aug.) 1957.

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- STANDARDIZED "PLUS" SYSTEM...covers entire clinical range
- STANDARDIZED SENSITIVITY...avoids insignificant trace reactions

consistently reliable results
day after day...
test after test

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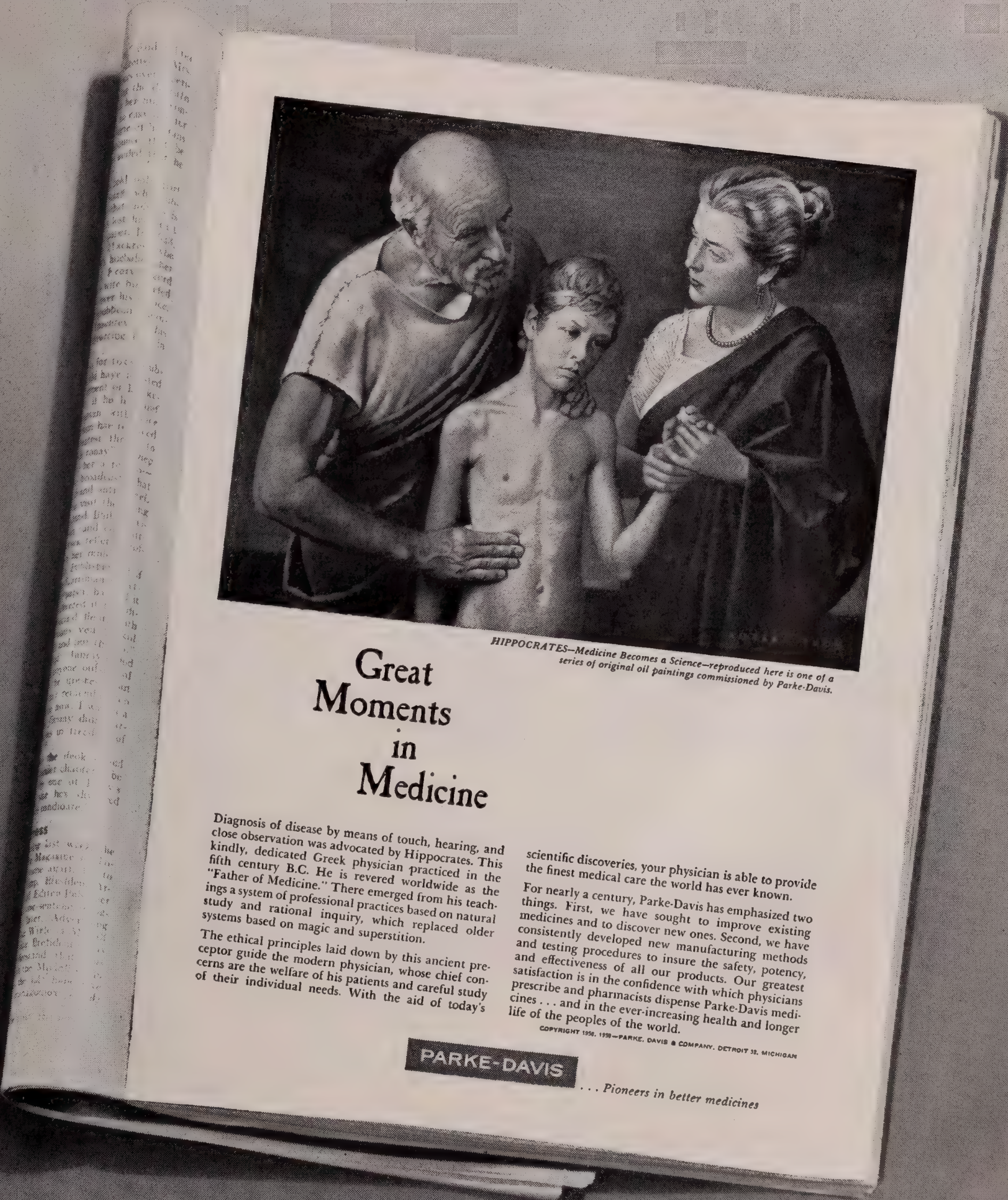

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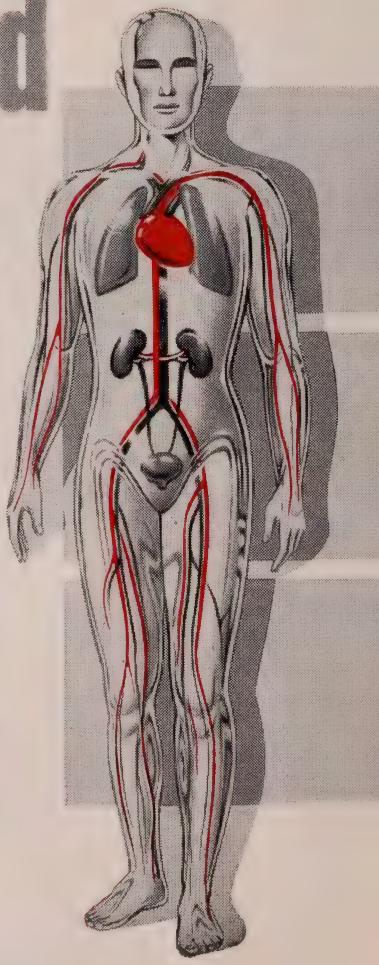
NEW

HYDRODIURIL T.M.

(HYDROCHLOROTHIAZIDE)

simplifies* and improves any regimen for hypertension



*it's as easy as 1, 2, 3 to use

HYDRODIURIL T.M.

(HYDROCHLOROTHIAZIDE)

1 **Initiate therapy with HYDRODIURIL:** one 25 mg. tablet or one 50 mg. tablet once or twice a day. HYDRODIURIL by itself often causes an adequate drop in blood pressure over a period of two to three weeks. This may be all the therapy some patients require.

2 **Add or adjust other agents as required:** HYDRODIURIL enhances the activity of all commonly-used antihypertensive agents; thus, the dosage of other medication (rauwolfia, reserpine, hydralazine, veratrum) should be initiated or adjusted as indicated by patient condition. If a ganglion-blocking agent is contemplated or being used, usual dosage must be reduced by 50 per cent.

3 **Adjust dosage of all medication:** the patient must be frequently observed and careful adjustment of all agents should be made to establish optimal maintenance dosage.

Supplied: 25 mg. and 50 mg. scored tablets HYDRODIURIL (Hydrochlorothiazide) bottles of 100 and 1,000.
Additional literature for the physician is available on request.
HYDRODIURIL is a trademark of Merck & Co., INC. Trademarks outside the U. S.: DICHLOTRIDE, DICLOTRIDE, HYDROSALURIC.

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DESITIN®

Medicinal and Nursery

POWDER

is saturated with high grade Norwegian Cod Liver Oil (plus its vitamins A and D)...so will not "dry out" the skin, nor deprive it of its natural fats.

Instead...DESITIN POWDER acts to keep baby's skin normally lubricated, soft, smooth, **supple**..... in **diaper rash**

prickly heat rash
chafing, skin irritations

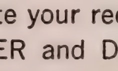
DESITIN®
MEDICINAL and NURSERY
POWDER
The Pioneer Norwegian Cod Liver Oil Powder for the Relief of
Diaper Rash
Skin Irritations
Chafing, Abrasions
Sunburn
Contains: Norwegian Cod Liver Oil Zinc Oxide, Talcum Powder, Magnesium Oxide

Every baby deserves the tender, loving care of soothing, protective, **healing** DESITIN POWDER.

Mothers will appreciate your recommendation of both DESITIN POWDER and DESITIN OINTMENT.

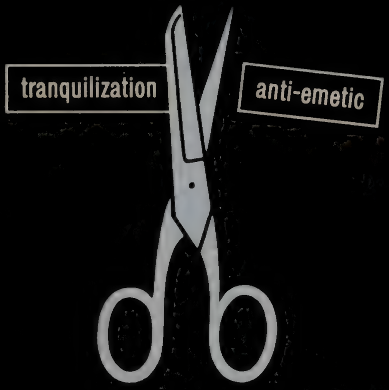
samples cheerfully sent—write **DESITIN CHEMICAL COMPANY**
812 Branch Ave., Providence 4, R. I.

DESITIN SOAP ...ideal for baby's bath!



DESITIN
SOAP

now potent tranquilizer therapy is safer than ever



Virtual freedom of Mellaril from major toxic effects is due to greater specificity of tranquilizing action – divorced from such "diffuse" effects as anti-emetic action.

MELLARIL is virtually free of such toxic effects as

- jaundice
- Parkinsonism
- blood dyscrasia

"Thioridazine [MELLARIL] is as effective as the best available phenothiazine, but with appreciably less toxic effects than those demonstrated with other phenothiazines. . . This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."[1]

SANDOZ

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels

remarkable lack of side effects

In more than 3,000 carefully-followed patients, Mellaril has been almost completely free of such major side effects as jaundice, extrapyramidal symptoms, Parkinsonism, blood dyscrasia, dermatitis–even when given in quantities far in excess of the usual dosage.

"POVERTY" OF SIDE EFFECTS

"The most striking aspect of thioridazine [Mellaril] therapy is the poverty of side effects.... In its lack of side effects and low toxicity, it is superior to all other tranquilizing drugs tested. For this reason also it is well tolerated by patients, particularly those who are not hospitalized and who frequently discontinue their medication because of dizziness, sleepiness, increased tension or parkinsonism with other drugs."[2]

NEGLIGIBLE SIDE EFFECTS

"Side effects were negligible at all dosage levels: no incidence of parkinsonism or other extrapyramidal symptoms. Minimal sedation, on the whole lower than with other tranquilizing agents. No alteration in liver function, urine or blood. No photosensitivity. Patient acceptability was exceptional: lack of drowsiness, lethargy or 'washed out' feeling, permitted patients to carry on normal everyday activities. Orthostatic hypotension was absent. The initial 'keyed up' tense feeling common to other drugs of this type was absent.... Patients forced to interrupt treatment with other phenothiazine derivatives because of parkinsonism or other extrapyramidal symptoms were able to continue therapy with thioridazine without appearance of parkinsonism."[3]

SINGULARLY FREE OF SIDE EFFECTS

"The extrapyramidal syndrome was not encountered in any of its forms. Dizziness and sleepiness responded to a reduction in dosage. Other side effects did not occur.... It is singularly free from the side effects ordinarily seen with these [phenothiazine] compounds."[4]

ABSENCE OF SIGNIFICANT SIDE EFFECTS

"None of the following toxic effects, so common after administration of the phenothiazines, was present during the period of Thioridazine administration: Parkinsonism or Parkinson-like symptoms, photosensitivity, orthostatic hypotension, bone-marrow depression."[1]

MINIMAL SIDE EFFECTS

"Side effects such as extrapyramidal activity, jaundice and photosensitivity have not been observed in patients treated with Thioridazine [Mellaril]. Extrapyramidal side effects produced by other phenothiazines have disappeared promptly with no deterioration in the behavioral response when these patients have been shifted to Thioridazine."[5]

NO JAUNDICE

"No allergic reactions were observed such as skin eruptions, jaundice or agranulocytosis. Central nervous system toxicity, as manifested by extrapyramidal effects, seizures, and excitement did not occur despite the use of high doses (up to 2000 mg.) of the drug."[6]

Mellaril®

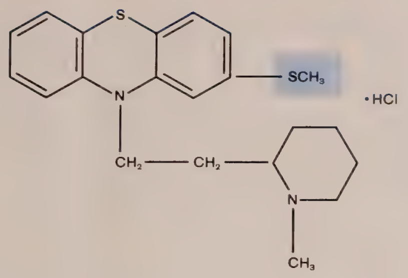
THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels

tranquilization

anti-emetic

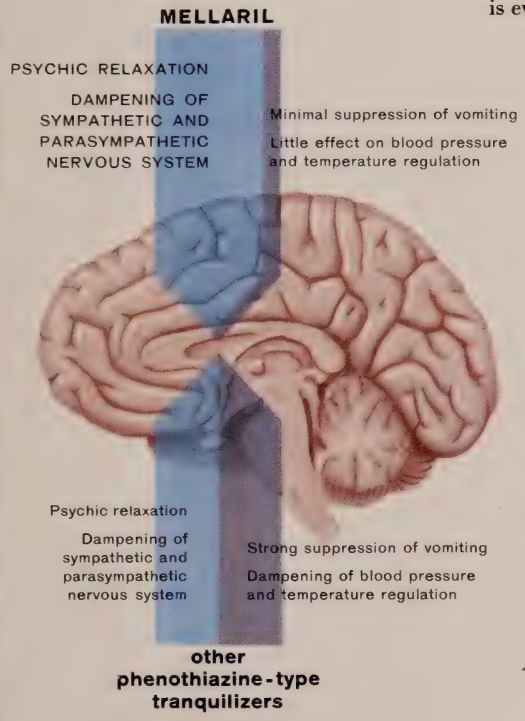
a new advance in tranquilization: greater specificity of tranquilizing action plus fewer side effects


S
N
SCH₃
•HCl
CH₂
CH₂
N
CH₃

Of 109 phenothiazines synthesized by Sandoz, Mellaril was selected as the most promising on the basis of extensive evaluation. The presence of a thiomethyl radical ($S\text{-}CH_3$) in the position conventionally occupied by a halogen in other phenothiazines is unique and could be responsible for the relative absence of side effects and greater specificity of psychotherapeutic action. This is shown clinically by:

1 A specificity of action on certain brain sites in contrast to the more generalized or "diffuse" action of other phenothiazines. This is evidenced by a lack of appreciable anti-emetic effect.

tranquilization
anti-emetic


MELLARIL
PSYCHIC RELAXATION
DAMPENING OF SYMPATHETIC AND PARASYMPATHETIC NERVOUS SYSTEM
Minimal suppression of vomiting
Little effect on blood pressure and temperature regulation
Psychic relaxation
Dampening of sympathetic and parasympathetic nervous system
Strong suppression of vomiting
Dampening of blood pressure and temperature regulation
other phenothiazine-type tranquilizers

2 Less "spill-over" action to other brain areas — hence, absence of undue sedation, drowsiness or autonomic nervous system disturbances.

3 A notable absence of extrapyramidal stimulation.

4 Lack of impairment of patient's normal drive and energy, while achieving psychomotor control in mental and emotional disorders.

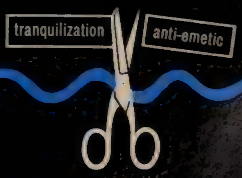
5 Virtual freedom from toxic effects — jaundice, photosensitivity, skin eruptions, disturbed body temperature regulation, blood forming disorders have been absent in reports currently available.

These properties add up to a greater margin of safety in general office practice, in ambulatory psychiatric out-patient clinics, and in hospitalized patients.

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels


tranquilization
anti-emetic

excellent clinical response

In office practice and in hospitalized patients, Mellaril has proved highly useful for a wide variety of major and minor emotional disorders (such as anxiety, tension, apprehension, alcoholism, agitated psychoneurosis, agitated psychotic states, etc.).

EXTREMELY SATISFACTORY "... produced extremely satisfactory results in the broad therapeutic range represented in this series."[3]

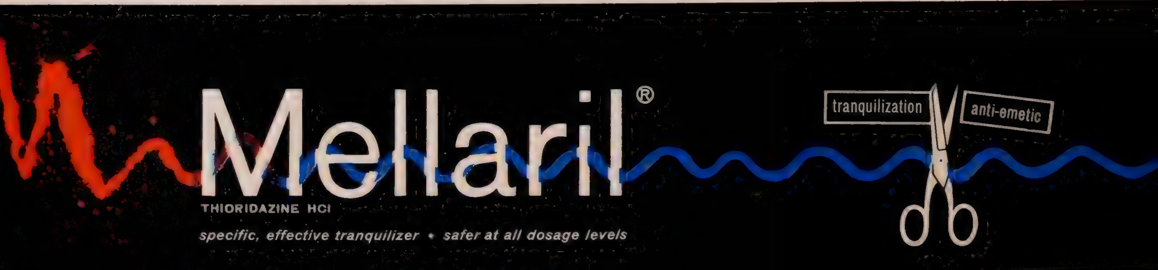
POTENT AGENT "... appears to be a potent agent in the symptomatic management of a variety of psychiatric states."[4]

MAJOR ADDITION TO THERAPEUTICS "This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."[1]

AN ACTIVE AGENT "Thioridazine is an active therapeutic agent.... It is effective in a variety of psychiatric disorders, including schizophrenic reactions.... The drug is particularly advantageous for a group of schizophrenic patients who are sometimes made worse by other phenothiazine derivatives or Rauwolfia alkaloids. It should also be suitable for treating patients with psychoneuroses and chronic brain syndrome."[6]

EVEN IN VERY SEVERE CASES "Of the 152 patients treated 25 have been released and they have not suffered a relapse. This proportion is significant if we stop to consider that we are dealing only with acute cases which had been considered hopeless and obviously destined to finish their days in an asylum."[7]

EXCELLENT THERAPEUTIC RESPONSE "Patients with emotional tensions resulting from the stress and strain of life ... were treated with Mellaril at the dosage level of 10 mg. three times daily. In 94 such patients, 83 obtained an excellent therapeutic response."[8]



specific, effective tranquilizer • safer at all dosage levels

"...extremely satisfactory results..." in a clinical spectrum ranging from minor nervous disorders to severe psychotic disturbances[3]

RESULTS WITH MELLARIL IN 194 PATIENTS[3]

ACUTE PSYCHOTICS	CHRONIC PSYCHOTICS	NEUROTICS
83% satisfactory effect	68% satisfactory effect	57% satisfactory effect
Some cases had complete remission of symptoms. Most were able to return home to useful occupations.	Relief of symptoms in cases permitted easier management and a return to a more or less useful life.	Some cases, complete relief of symptoms. Other cases, partial relief of symptoms.

RESULTS WITH MELLARIL IN PATIENTS PREVIOUSLY TREATED WITH OTHER TRANQUILIZERS[3]

DIAGNOSTIC CATEGORY	IMPROVED %	VERY SATISFACTORY %	SATISFACTORY %	UNSATISFACTORY %
SCHIZOPHRENIA				
Acute	89	61	28	11
Chronic paranoid	84.2	31.6	52.6	15.8
Chronic, other	73.9	21.7	52.2	26.1
Residual	57.1	9.5	47.6	42.9
CHRONIC BRAIN SYNDROME	66.6	33.3	33.3	33.3
CHRONIC PSYCHONEUROSIS	62.5	12.5	50	37.5
CHRONIC PSYCHOSOMATIC DISORDERS	75	25	50	25

Mellaril®
THIORIDAZINE HCl
specific, effective tranquilizer • safer at all dosage levels
tranquilization
anti-emetic

a guide to administration and dosage

Dosage ranges from 10 mg. three or four times a day in milder situations to 25 mg. three or four times a day for more disturbed patients. In ambulatory psychiatric out-patients, dosages of 50 to 100 mg. three or four times a day have been found adequate. For severely disturbed hospitalized psychotics, dosages of 200 to 300 mg. three times a day may be administered.

Dosage must be individualized according to the condition and degree of response. In all cases, the smallest effective dosage should be determined for each patient.

INDICATION	USUAL STARTING DOSE	TOTAL DAILY DOSAGE RANGE
	ADULTS	
Mental and Emotional Disturbances:		
MILD — where anxiety, apprehension and tension are present	10 mg. t.i.d.	20-60 mg.
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1. Ostfeld, A. M.: Scientific Exhibit, American Academy of General Practice, San Francisco, April 6-9, 1959. **2.** Kinross-Wright, V. J.: Lecture, Clinic Meeting, American Medical Association, Minneapolis, Dec. 4, 1958. **3.** Kinross-Wright, V. J.: Scientific Exhibit, Clinical Meeting, American Medical Asso ation, Minneapolis, Dec. 2-5, 1958. **4.** Cohen, S.: TP-21, a new phenothiazine, Am. J. Psychiat. *115*:358, Oct. 1958. **5.** Glueck, B.: Scientific Exhibit, Americ Psychiatric Association, Philadelphia, April 27-May 1, 1959. **6.** Hollister, L. E., and Macdonald, B. F.: Presented at California Medical Association; Section Psychiatry, San Francisco, Feb. 25, 1959. **7.** Remy, M.: Schweiz. med. Wchnschr. *88*:1221, Nov. 29, 1958. **8.** Freed, S. C., in discussion on Thioridazine (Mellari in Psychiatric Patients, Hollister, L. E., and Macdonald, B. F., presented at California Medical Association; Section on Psychiatry, San Francisco, Feb. 25, 195

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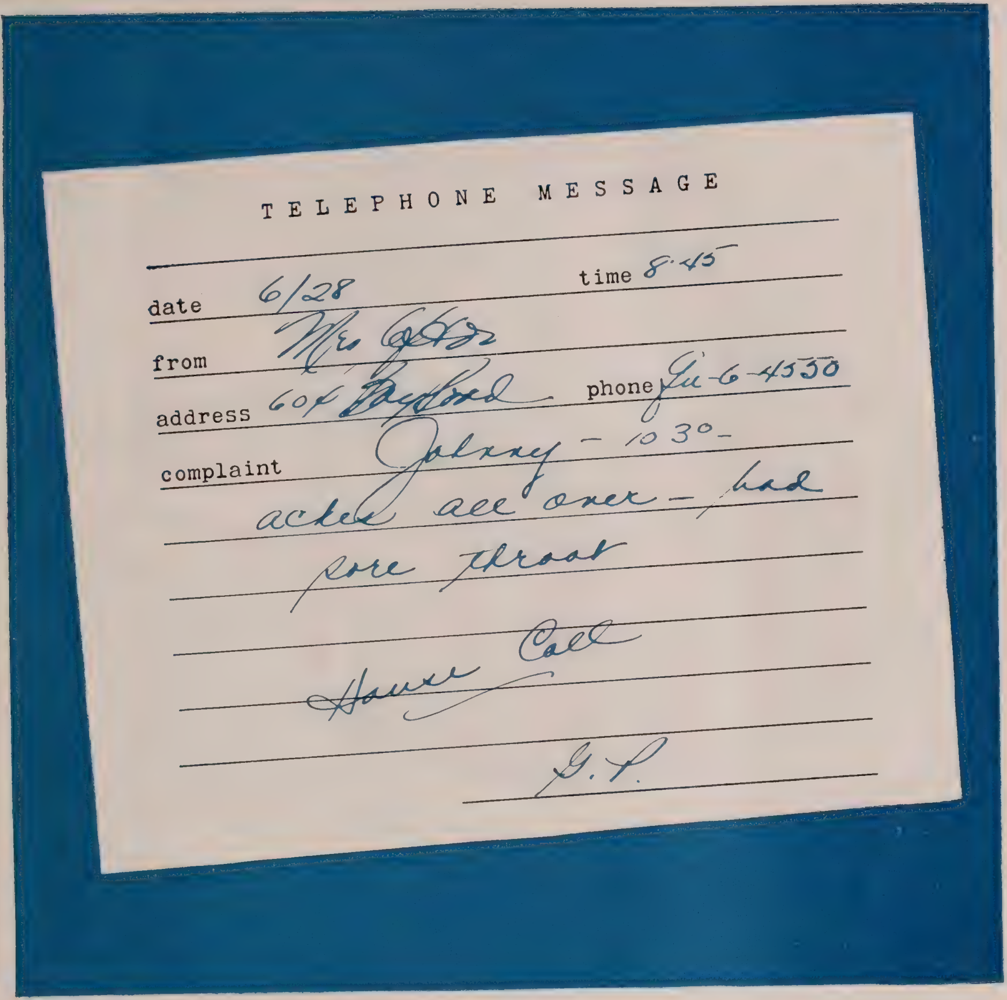

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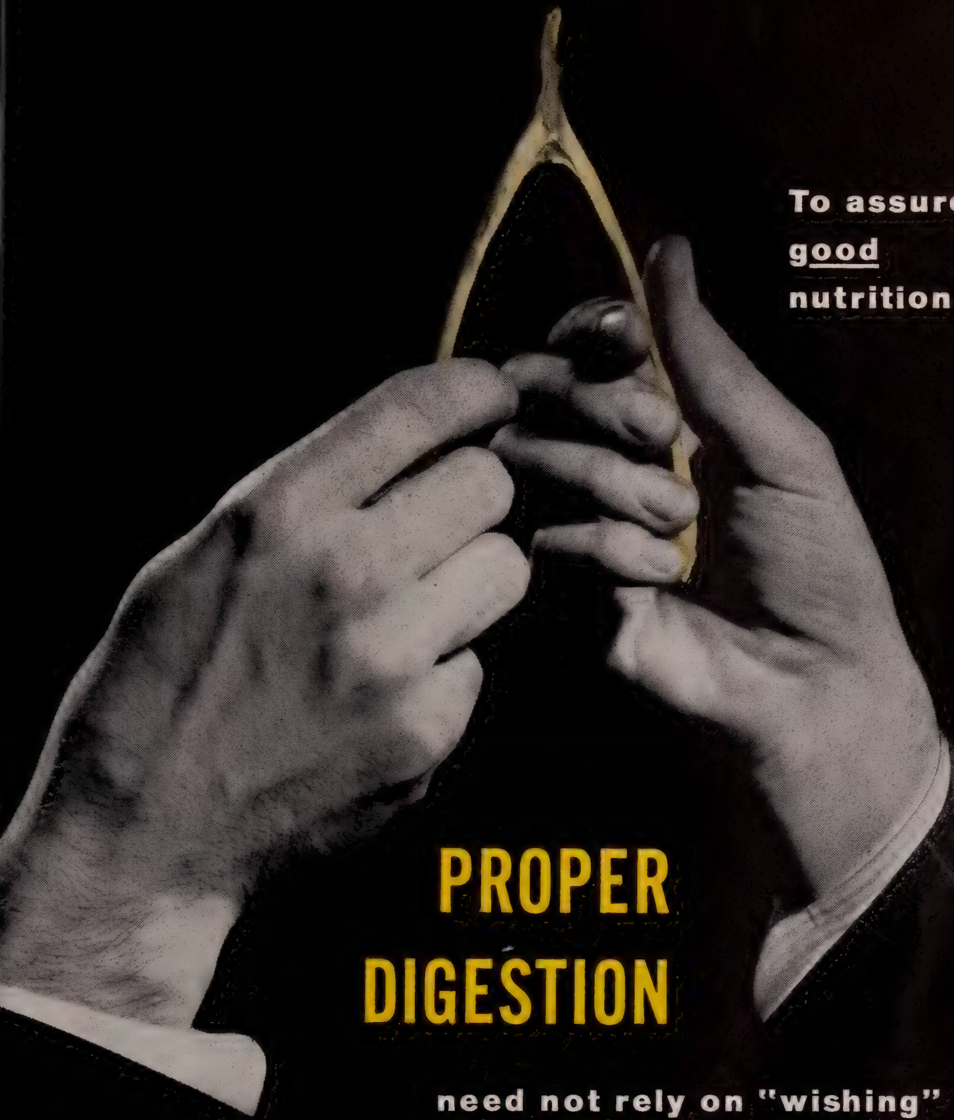

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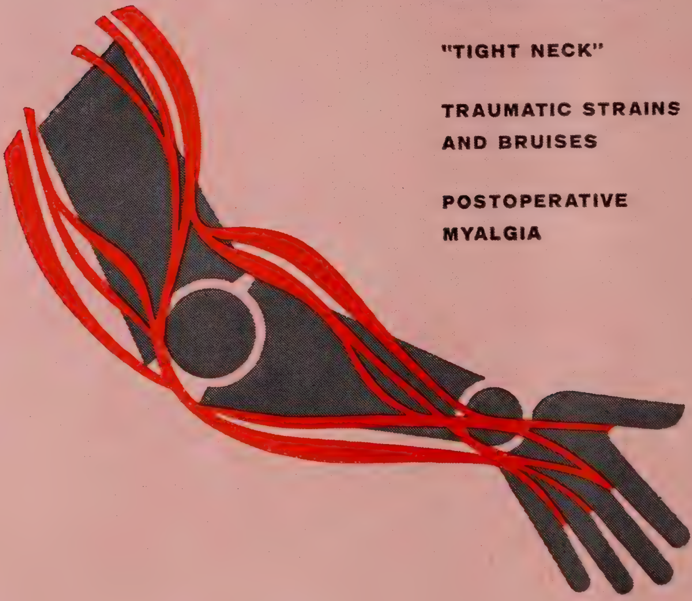

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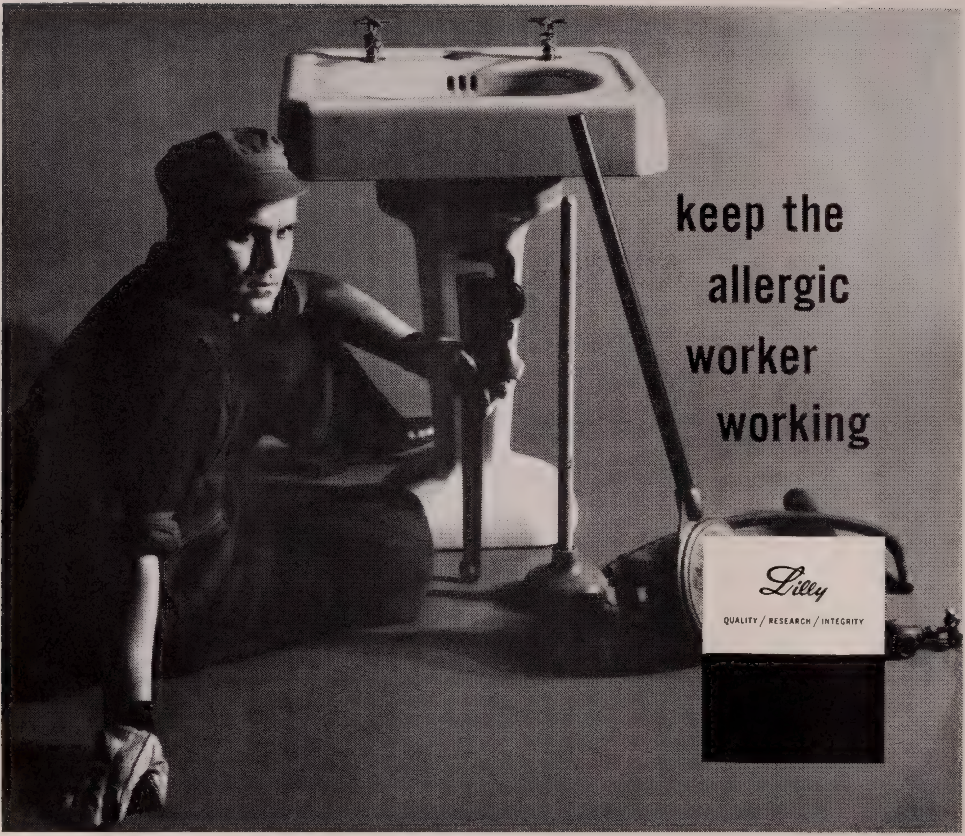
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EDITORIALS

Right or Privilege to Maintain Staff Association

The Appellate Division of the Fourth Department had before it a suit brought by a physician to annul the determination of the Board of Governors of the City Hospital in Fulton, New York, which denied him a reappointment to the medical staff of the hospital, and in addition excluded him from the use of the facilities of the City Hospital. (Matter of Alpert *v.* Board of Governors of City Hospital, 286 App. Div. 542). The physician petitioner it was found without question fully satisfied the requirements stated in the rules and bylaws for membership on the staff and use of the facilities of the City Hospital. For nine years up until February 1, 1955, he was accepted for membership on the active staff and entitled to use the facilities of the hospital. On February 1, 1955, the determination which he sought to annul was made.

He alleged in his petition that if his patients required hospitalization they must retain other physicians and since the nearest other hospitals were at a considerable distance the physician petitioner alleged that his exclusion from the City Hospital at Fulton would effectively destroy his practice and deprive him of the right to practice medicine in that area. His petition alleged that he had advanced training and experience in medicine and surgery, had developed a large practice, and had made a substantial investment in his office and facilities in Fulton. He also alleged that the determination was arbitrary and without foundation in fact, and that it deprived him of his property without due process of law.

The petitioner was granted neither notice nor hearing prior to the determination made by the Board of Governors. The Board of Governors made no findings of fact.

The opinion discloses that the answer of the Board of Governors alleged that the determination was made after a careful consideration of a multitude of circumstances and facts which justified its action, but it did not state and, therefore, the Court was not informed of what the facts were. In other words, the Board did not submit in its return to the plaintiff's petition evidentiary facts. This was done on the advice of its counsel who elected to rest the case on its original answer which did not contain the findings of fact made by the Board or the evidentiary facts. Consequently, the Appellate Court held that the return did not satisfy a procedural requirement as set forth in the Statute, and therefore, by withholding the evidentiary facts, the respondent, that is the Board of Governors, failed to raise an issue of fact and hence the Court could dispose of the matter as though it were on a motion for summary judgment. This being so, there being no evidentiary facts, the Court held that the exclusion of the petitioner from the hospital was arbitrary, capricious, and unreasonable.

The Court then stated:

> The only question is whether there is a remedy.

The Board of Governors of the City Hospital took the position that it had an uncontrolled discretion in the management of the hospital and that no Court could presume to review or correct its official acts.

Counsel for the respondent had relied on the VanCampen case against Olean General Hospital, but the Court pointed out that that case involved a dispute between a physician and a voluntary hospital whereas the respondent in the case under consideration was a public hospital, i.e. it was publicly owned, controlled, and financed by the City. The Court said:

> The distinction is significant for two reasons: (1) the general public, not merely a particular class, is entitled to use a public

hospital; (2) public or governmental action is limited by the constitutional requirement of due process of law.

It then went on to state:

> The determination complained of in effect deprives him of the right to practice medicine in the area of the City of Fulton, without notice of charges and without hearing. . . . There was in this case a lack of procedural due process in arriving at the determination. We conclude that a qualified physician admitted to practice in a public hospital acquires a species of tenure and cannot be capriciously excluded and thereby injured financially and professionally, without notice and an opportunity to be heard.

The Court concluded that the petitioner was entitled to use the facilities of the public hospital—it is to be remembered that the nearest other hospital was at a considerable distance—in the treatment of his own patients.

The Court however, denied the request of the petitioner physician for an order that he be reinstated on the active medical staff. It pointed out that the active staff consists of those physicians who have been selected regularly to attend patients in the hospital, and to whom all such patients shall be assigned. It held that the respondent, City Hospital, i.e. the Board of Governors, should have:

> complete freedom of choice in such matters.

It continued stating:

> Petitioner, although entitled to treat his own patients in the hospital, has no right to represent the hospital or to treat patients who have not engaged his services. Appointments to the medical staff are made by the Board of Governors for a term of one year. Respondent's failure to reappoint him to the staff gives rise to no legal remedy, nor is such reappointment necessary to assure him of the right to use the facilities of the hospital and to treat his own patients therein.

The Court stated:

> That right is subject to no one year limitation and continues so long as petitioner obeys all reasonable rules and regulations of the Board of Governors and gives no cause for his removal.
>
> This result at the same time controls arbitrary conduct by respondent in matters of public concern, yet gives a free hand to the Board of Governors with regard to the internal management and organization of the hospital.

The Court then granted the petitioner's petition insofar as it allowed him to use the facilities of the City Hospital of Fulton in the treatment of his own patients.

In the VanCampen case the same court, in 1924, denied relief to a physician who had received notice by the action of the Board of Directors of the Olean General Hospital of dropping him from the visiting staff, but with the privilege of treating his patients then in the hospital.

According to a finding of the Court it appeared that differences had arisen between the plaintiff and the persons in charge of the defendant's hospital which was a private voluntary hospital supported mainly through voluntary gifts and by fees paid by the patients. It appeared that prior to the discontinuance of the physician's association with the staff he had made complaints against the management of the hospital in certain respects, and the hospital authorities had made complaints against the physician in respect to his failure to obey the rules and regulations of the hospital, and that the disagreement tended to and did interfere with the harmony, discipline, and orderly conduct and management of the hospital.

One of the bylaws of the hospital provided that the medical staff was to be composed of resident practicing physicians and surgeons of the county who are members of the hospital but it did not state the staff shall include all such physicians and surgeons. Another bylaw provided that if the Board of Directors determined that the character, conduct, or acts of any member of the medical staff are such as to interfere with the orderly conduct of the hospital, the Board by resolution could remove or suspend him.

There was no provision in the bylaws for a hearing prior to removal or suspension.

The Court, concerning this failure to provide a hearing prior to removal or suspension, said:

> We think none is required. The selection and retention of physicians to treat patients admitted to the hospital are matters of judgment and discipline. The power to appoint usually implies the authority to remove.

Further it said that when a disagreement between a physician and hospital management becomes so pronounced:

> as to interfere with orderly management and discipline and when there is persistent violation and disobedience of necessary rules and regulations, we think the Directors may bring the inharmonious conditions to an end by summary judgment. They are not required, in our judgment, to give notice and conduct a trial in every such case.

Further it said:

> The law does not require a corporation like defendant to furnish its services and accommodations to everyone who applies, whether patient or physician. There can be no absolute right in individuals to claim the benefit of its privileges. Such a thing would be impossible. There must be discretion vested in the management to make selection from applicants with regard to accommodations available. . . . Nor, do we deem it such discrimination if from a large number of physicians it select members of its visiting staff with regard not only to their medical skill, but to their adaptability to the rules and discipline of the institution.

Blue Shield Must Pay "Practitioners"

For many years the Blue Shield Plans in this State have paid only the bills of licensed physicians. Many attempts have been made from time to time to include Blue Shield and other nonprofit health plans to pay the bills of nonphysicians, but until recently with little or no success. *Medical Economics* reports that "New York's Blue Shield subscribers are now being notified of the new development, which has its roots in an eighty-year-old law. When passed, the law was generally considered to permit—not compel—Blue Shield to extend payments to nonphysicians. Then several years ago dentists insisted they had a legal right to payments. But New York City's United Medical Service, for one, didn't like being told it had to take in the dentists—and went to court to say so. The courts upheld the dentists."*

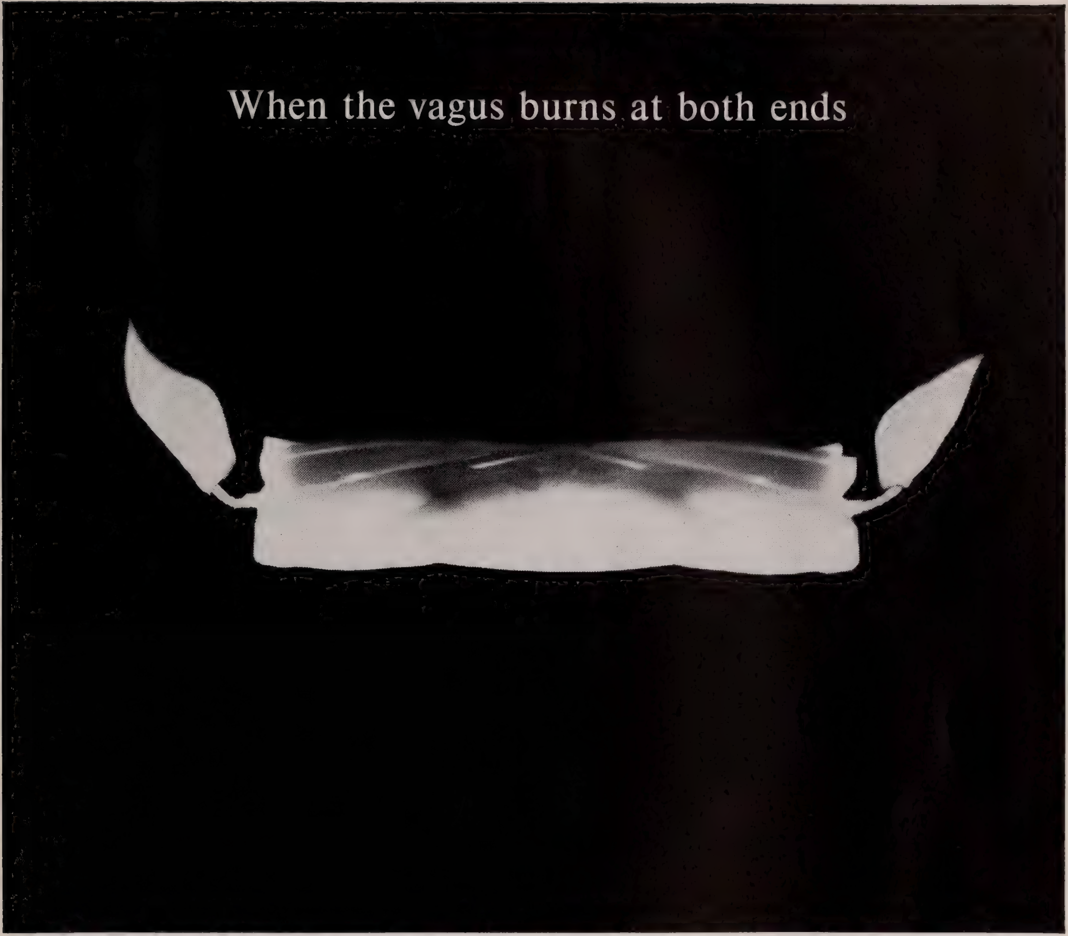
This means that shortly dentists and podiatrists, "practitioners" as specified in the law, will be in line for Blue Shield payments on the same basis as physicians for any procedures covered by contract and which the "non-M.D.s are legally qualified" to perform. Under the new law it is understood, New York is the sole state to compel Blue Shield and other nonprofit plans to include dentists and podiatrists. Some other states permit their inclusion by statute.

It would appear that the camel now has his nose in the tent. How long before other paramedical "practitioners" will join him?

---

* *Medical Economics*, Vol. 36, No. 11, May 25, 1959.

What light is to the eyes—what air is to the lungs—what love is to the heart, liberty is to the soul of man.—R. B. Ingersoll



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References:

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ELAINE P. RALLI, M.D., NEW YORK CITY

(From New York University College of Medicine and the City of New York Department of Hospitals, Bellevue Hospital Center)

It is estimated that in the next twenty-five years the population of the United States will increase to approximately 250 million. This means that there will be a continued increase in the demand for medical care, especially in the larger cities such as New York, Chicago, Philadelphia, San Francisco, Los Angeles, and others. A recent census of the Bellevue Out Patient Department indicates that the bulk of medical care to the medically indigent is now being given on an ambulatory basis. For example, the number of outpatient visits at Bellevue Hospital has increased from 377,971 in 1950 to 447,510 in 1958. We can expect a continued and increased demand for medical care of this type not only because of the expanding population but also because the improved methods and technics in medical care and the antibiotics make it unnecessary to hospitalize patients who would previously have required hospitalization.

During the past eight years the Out Patient Department at Bellevue Hospital has been reorganized and developed for the purpose of giving complete medical care to the increasing number of patients coming to the clinics. The general plan of organization which we have developed might serve as a blueprint for other hospitals faced with similar problems. One major problem confronts all city hospitals, namely, the problem of obtaining adequate funds. The money for the development of outpatient departments comes from city taxes, and although the Department of Hospitals may press vigorously for increasing funds, the administrative powers of the city are primarily interested in keeping down the expenses of running the city. This means that at some time in the future Federal funds for this type of medical care should be available.

One fallacy that has persisted in the City of New York Department of Hospitals is that all outpatient care and medication should be given without any charge. This is an unrealistic approach. If patients cannot pay they should receive all care without cost, but if a patient can pay, I believe that some charge should be made for the services rendered. Such funds should be used for the clinics and to pay the doctors for the care which they now give without financial remuneration.

The primary purpose of this paper is to outline the problems of outpatient care in a city hospital outpatient department and to indicate how these problems can be met. Obviously, it is important to organize the outpatient department so that medical care can be given expeditiously to the patient. It is equally important that the patient should be treated with all the kindness and understanding that are inherent in good medical care. He should not be shuttled through the various clinics as if he were some odd number in a pool.

In view of the constantly expanding concepts of medical care, the organization of the outpatient department must be flexible enough to accommodate changes in procedures and to permit initiation of new clinics.

Function of an Outpatient Department

The outpatient department should care for the average ambulant patient. The scope of medical care in the outpatient department should be such that hospitalization of patients should not be required except for emergencies, serious infectious diseases, surgical care, or for the complications of chronic diseases.

The outpatient department has two major roles in serving the patient and the hospital. First, it should serve as the screening center for the admission of patients to the hospital; second, it should provide complete and adequate care to the ambulatory patient. This should include, in cases of elective surgery, the patient's work-up prior to admission to the hospital. It should provide adequate follow-up care to patients discharged from the hospital. These two latter roles decrease the number of hospital days required and provide continuity of medical care. For the fulfillment of these roles, it is absolutely necessary that there should be a unit record system, so that all data on the patient are available to the doctor whether the patient is ambulatory or in the hospital. Outpatient services should also be integrated with a home care program so that patients with minor illnesses or with the less serious complications of chronic diseases need not be hospitalized but can be seen by the home care physicians.

The outpatient department has an important function in the teaching and the training of physicians. This is the area in the hospital which provides the resident doctor with the kind of experience that he will meet in his general practice. The young doctor has the opportunity of diagnosing the patient as he comes into the clinic, of evaluating the effects of therapy, and of developing judgment concerning the course of disease and its management. If the hospital is connected with a medical school, as is the case at Bellevue Hospital as well as in many other city hospitals, training and experience can also be given to third- and fourth-year medical students.

It is also the function of an outpatient department to provide opportunities for research, particularly in chronic diseases. Actually, the specialty clinics that treat the patients with chronic illnesses make it possible to investigate diseases in a way that is not possible in the patient who is hospitalized. Physicians appreciate the opportunities provided for the study and investigation of patients with chronic diseases, so that they are interested in working in these outpatient clinics. By granting the physicians this opportunity, not only is better service rendered to the patient but also the training of the doctor in broadened and his knowledge and experience of new methods of therapy are increased. This also means that, indirectly, private patients for whom he is responsible will profit by his training and experience.

Social complications arising from disease add to the manifold responsibilities of the outpatient department. To meet this aspect of disease, the social service department should integrate its functions with the medical care of the patient. This integration of outpatient department services increases the over-all effectiveness of patient care. The fact that patients coming to the outpatient department are usually accompanied by a member of the family provides an excellent opportunity for educating the family as to the nature of the disease suffered by the patient and their role in the care of the patient.

With this type of comprehensive medical service, the patient's capacity to adapt himself to his illness is improved and medical care is developed and applied in its broadest sense.

Administration

In reorganizing the Out Patient Department at Bellevue Hospital, a committee composed of the chiefs of the major clinics was established. This has proved to be an effective way of stimulating and developing medical care. Also serving on this committee are the Consulting Psychiatrist, the Director of Nurses, the Supervisor of Nurses in the Clinic, the Director of Social Service, the Supervisor of Social Service in the Clinic, the chiefs of the Laboratory and the X-Ray Departments, the Record Librarian, and the Superintendent of the Out Patient Department. The chairman is a physician who acts as Medical Director of the Out Patient Department. The Medical Director is available daily for any problems that may arise in connection with medical care. The Medical Superintendent of the Out Patient Department, which is a civil service position in the City of New York Department of Hospitals, is responsible for the administrative problems in the Out Patient Department, for the home care program, and for problems concerning the physical plant of the building. All problems arising in the Out Patient Department are discussed at committee meetings, which are scheduled regularly, every two weeks. These problems involve the nature of the medical care in the various clinics, administrative problems in connection with medical care, problems involving the various departments in the clinic, integration of the various clinics, and, in fact, any problem that is concerned with the care of the patient. These meetings also serve as a forum where improvements in the methods of therapy or in the organization of the clinic are discussed. It has been our experience at Bellevue Hospital that the Committee of the Out Patient Department has developed the clinic services to an extent that otherwise would not have been possible. By having the doctors who are responsible and interested in outpatient care meet regularly, new ideas have been developed, reorganization of services has been effected expeditiously, and many plans for improving services have been initiated.

Physical Design of an Outpatient Department

The outpatient department can be either in a separate building or be part of the hospital building itself. It should be designed with the realization that the bulk of medical care in the future will be in the clinic. The area allotted to the outpatient department should be spacious, flexible, soundproof, and air conditioned. The various sections needed are:

REGISTRATION AREA.—The registration area should be on the ground floor and should have plenty of individual registration windows, to avoid long queues of patients. Ample space should be provided for the clerks working in this area.

WAITING ROOMS.—There should be well-furnished waiting rooms connected with each clinic area.

PHARMACY.—The pharmacy should be on the ground floor. There should be adequate space so that long lines of patients do not have to queue up to wait for their drugs.

STAFF AND REST ROOMS.—There should be rest rooms for the nurses, technicians, and clerical staff, with adequate toilet facilities. These should be located adjacent to the working areas of these personnel. There should also be staff rooms for the doctors. All staff rooms should be equipped with lockers so that the staff can leave their coats and bags safely.

CAFETERIA.—There should be a cafeteria, preferably on the ground floor, for patients who have to remain at the clinic for the better part of the day. This will make it possible also for members of the staff to get some lunch or snacks.

PLAYROOM FOR WELL CHILDREN.—A problem which often presents itself in an outpatient department is that of well children who accompany their mothers to the clinic. A playroom should be available for these children so that they can be separated from the sick patients. This room should be arranged so that the children can either entertain themselves under supervision or have some organized exercises. Actually, volunteers can often handle this area very well.

Dietitians' Classes, Demonstration Rooms, and Group Therapy Rooms.—There should be several areas where dietitians can hold classes and demonstrations. Such rooms should be adjacent to clinics where diet forms an important part of the therapy. Group therapy for various diseases can also be given in these rooms. The demand for this kind of therapy is increasing and is particularly helpful for patients with long-term illnesses who have common problems that can be discussed under the supervision of a competent adviser.

Injection and Special Waiting Room.—There should be a room for patients who do not have to see the physician but who require injections once or twice a week. This room should contain a refrigerator, it should have proper waiting room facilities, and it should be situated on the ground or first floor so that the patient can come in, receive the injection, and go home.

Nursing Service Office.—There must be adequate facilities for the nursing office, for conferences, and for the teaching of student nurses. In the individual clinics space should be provided on each floor so that the charge nurse can properly supervise the clinic.

The Record Room.—The record room should be situated so that it is readily accessible to the outpatient department. This is necessary because the daily census of the clinics is such that the greatest number of charts pulled daily are required in the clinic. The record room should be air conditioned. There should be plenty of small rooms where doctors can inquire into records and do research. There should be ample space for sorting the records and for locating them readily. In any well-organized hospital there should be a unit record system. This means that the patient's whole record is available in either the hospital or in the clinic, wherever the patient is seen by the doctor.

X-Ray Department.—Obviously, an up-to-date x-ray department is an important part of any outpatient department. One x-ray department, provided it is centrally located, should be sufficient for both inpatient and outpatient services. The x-ray department must have a sufficient number of x-ray technicians and clerks, and adequate waiting room space. It has been the policy at the Bellevue Out Patient Department to take a chest plate on every new patient coming to the clinic. This can easily be arranged if the x-ray department is properly organized.

Laboratory Department.—The laboratory space should be adequate and so divided that the laboratory determinations can be grouped together. The laboratory should be prepared to do blood counts, hemoglobin tests, and urine studies during clinic hours. Special laboratory determinations can be done by appointment. Waiting rooms should be provided for patients waiting for blood chemistry tests. For patients who are having gastric analyses there should be small rooms where they can rest comfortably during the analysis. Serologic and cystologic studies require special equipment and should have their own space in the laboratory. Parasitology, which needs toilet facilities so that fresh specimens can be collected, should also have its own space and equipment. There should be a lecture or conference room adjacent to the laboratory where conferences can be held by the staff and also joint conferences with the physicians from the various clinics. It is important that there should be a rest room and a place where the staff can keep their personal belongings.

Electrocardiographic and Basal Metabolism Areas.—Several rooms should be set aside in which basal metabolisms can be taken. Since basal metabolism determinations are done early in the morning, the electrocardiographic unit can occupy this area for the remainder of the day.

Area for Isotopic Studies or Therapy.

—Space for doing radioactive iodine studies, either diagnostic or therapeutic, should be available in the clinic or in the hospital.

Examining and Treatment Rooms.—It is difficult to evaluate exactly the number of examining rooms required for each clinic in an outpatient department. There should be a sufficient number of rooms so that each doctor has his own examining room, adequately equipped for the examination and care of the patients. A suggested arrangement is that the doctor's office, the room in which he takes the history, should have on either side of it a private examining room. This means that a doctor could be taking a history on one patient while another patient is getting ready for examination; also, if a medical student is working with the doctor, he could be conducting the preliminary part of the examination while the doctor is taking the history on another patient. The examining rooms should contain examining tables, blood pressure baumanometers, and all of the necessary equipment for a complete physical examination. The office should have a desk and three or four chairs to accommodate members of the family who might come along. It should be pleasantly arranged so that the patient has a feeling of relaxation, and it should be air conditioned so that the doctor can take the history in a quiet atmosphere.

Storage Space.—There must be sufficient storage space for the materials that are required in the clinic and there should be a service elevator to deliver the equipment and supplies to the various clinics.

Organization of Clinic Services

The clinic services are provided through the basic clinics, which are the general medical, surgical, pediatric, and prenatal clinics, and the specialty clinics. All patients, with the exception of prenatal or pediatric patients, are seen in the medical clinic. Patients with acute problems involving the eye, ear, nose, and throat may first go to these specialty clinics but they should then be referred to the medical clinic for a complete examination. The surgical clinics should refer their patients for medical consultations, as indicated.

The most desirable arrangement, as far as the time of the clinics is concerned, is to have the surgical and medical clinics functioning at the same time, both mornings and afternoons. In this way consultations can be done with a minimal loss of time. Owing to the lack of space in the Out Patient Department, we have not been able to arrive at such an arrangement. Our Surgical Clinics operate in the mornings and our Medical Clinics in the afternoons.

Specialty Clinics

Specialty clinics are a means of providing up-to-date medical care for diseases requiring special technics and therapy, as well as for chronic diseases. The specialty clinics give more complete care in their particular specialties than can be provided in a general medical or surgical clinic. Once a patient has been seen and diagnosed in the medical clinic, if his disease is one that requires special care he is referred to one of the specialty clinics. At the present time there are 40 different specialty clinics in the Bellevue Out Patient Department. These include: Allergy, Angina, Arthritis, Cardiac, Chest, Child Guidance, Dental, Diabetic, Endocrine, Eye, Gall Bladder, Gastrointestinal, Hearing and Speech, Hematology, Hypertension, Infertility, Liver, Luetic, Mental Hygiene, Metabolism, Migraine, Neurology, Neurosurgery, Obesity, Occupational Therapy, Orthopedic, Otolaryngology, Peripheral Vascular, Plastic, Podiatry, Post Laryngectomy Speech, Prenatal, Rectal, Rehabilitation, Skin, Thyroid, Toxemia, Tumor, and Urology. The Pediatric Clinic has its own specialty clinics. These clinics meet either daily or several times during the week.

The specialty clinics permit investigation of disease and provide specialized training for the members of the resident staff, for medical students, and for nurses. It is in these clinics that the physicians acquire experience in therapeutic technics, learn the newer methods of therapy, and are able to study and follow the course and complications of the diseases studied.

Diagnostic Services

X-Ray Diagnostic Department.—The x-ray diagnostic department should be set up to provide any and all types of x-ray examinations for ambulatory patients, including such special examinations as bronchograms, hysterosalpingograms, intravenous pyelograms, tomograms, and special skull series studies.

The X-Ray Department of the Out Patient Department at Bellevue Hospital provides such services. In emergency cases, the complete x-ray examination, interpretation, and x-ray report can reach the referring physician within one hour from the time the patient reaches the X-Ray Department, so that the referring physician receives the information on the patient's condition during one patient visit.

Every new patient coming to the clinic receives a 4- by 5-inches photoroentgen chest film on admission to the clinic, prior to the first examination by the physician of the proper clinic. In our survey at Bellevue Hospital, using this system, our pick-up of tuberculous cases averages approximately 5 per cent.

The x-ray equipment in the Bellevue Hospital X-Ray Department is such that every type of x-ray examination can be performed.

Laboratory Services.—Laboratory services should be organized to provide all of the modern laboratory diagnostic procedures. Complete urine and hemoglobin examinations are done on all patients on admission to the clinic.

Other laboratory services are ordered as required by the physician. All clinical pathologic procedures are done at the Out Patient Department laboratory. Special tests, such as those for protein-bound iodine, are also taken care of by the Out Patient Department laboratory staff.

Organization of the Nursing Services in the Outpatient Department

The head nurse in an outpatient department is responsible for the supervision of nursing care administered in the various clinics by nurses, auxiliary personnel, and volunteers. Her responsibilities may be summarized under the following headings:

Supervising Personnel.—Supervision involves delegation of duties to the nurses assigned to the various clinics, assignment of auxiliary personnel to the nurses, and supervision and orientation of new personnel.

Establishing and Maintaining the Highest Standards of Patient Care and Promoting Continuous Improvement.—The responsibility of maintaining standards is fairly obvious and involves evaluating patient groups at the beginning of each clinic session so as to care for emergencies as well as adjusting clinic procedures and routines to the changing needs.

Coordinating Clinic Services with Other Services in the Hospital, with Outside Agencies, and with Various Educational Programs.—Coordination of services involves integrating the clinic services with other departments of the hospital and with outside agencies.

Recognizing Importance of Good Public Relations, What Contributes to Their Maintenance, and Staff Participation.—Public relations is concerned with the relations of the clinic to outside agencies.

Supervising Maintenance of Physical Facilities, Equipment, and Supplies so as to Ensure Optimum Efficiency, Safety, and Comfort for Patients and Employes in the Department.—Maintenance involves training nurses for various clinic duties such as ordering supplies, requisitioning repairs, reporting required changes, devising means of economizing with equipment and supplies, and helping nurses to make the available facilities meet the needs.

Recognizing Importance of All Rec-

ORDS AND REPORTS AND SUPERVISING THEIR CAREFUL AND ACCURATE MAINTENANCE.—Supervision of records involves the responsibility for charts and their distribution and return to the record room, as well as for ordering x-rays and laboratory data.

Ancillary Services

DIETETICS.—There are five dietitians in the Out Patient Department at Bellevue Hospital. The extent of their work is evidenced by the fact that they see approximately 1,100 patients monthly. The dietitians are assigned to all specialty clinics in which diet is an integral part of therapy, as well as to the general Medical Clinics, the Tuberculosis Clinic, the Prenatal Clinic, and the Cardiac Clinics. Each dietitian has her own room with adequate space for filing records and for demonstration of diets. Patients from any clinic in the Out Patient Department can be referred to the dietitians at their main stations. Where specialty clinics are concerned, the dietitian moves into that clinic area when the clinic is in session.

Each dietitian is responsible for group therapy diet classes. The most important of these are for obese patients, prenatal patients, tuberculous patients, diabetic patients, pediatric patients, and family feeding.

We have found that the dietitians have required special instructions in the handling of the ambulatory patients. Special diets involve the family as a whole. They should be planned, as far as possible, so as not to add to the burdens of the individual responsible for buying and cooking the meals. The dietitians, by instructing the patients and the family, help immeasurably in facilitating patient care.

SOCIAL SERVICE.—The Social Service Department in the clinic is under the direction of the Director of Social Service. There are 12 workers. Their role is similar to that in any other clinical setting.

The social worker is a member of a team consisting of the doctor, nurse, and social worker, who have as their prime focus restoring the patient to maximum health and community living. Since effective casework service is dependent on a well-qualified staff, professionally trained case workers are a necessity to ensure high quality of performance with good production.

Each social worker has an office which is placed near the clinic from which the greatest number of her patients come. Patients from smaller clinics are referred to her at this office, or she may move into a special clinic area during its session.

GROUP THERAPY.—In handling large numbers of patients, group therapy for special or chronic diseases is a great help. It accomplishes three things: (1) It brings patients with similar diseases together so that they can discuss their problems; (2) it provides an opportunity to instruct the patient on the care of his disease and provides him with an opportunity to discuss this with a competent person; and (3) it removes from the doctor a load which he could not possibly carry. The physician does not have the time to give group therapy on an individual basis when he is seeing a large number of patients. In the group therapy sessions physicians often give one or more sessions.

At the present time we have group therapy for obese, diabetic, prenatal, tuberculous, and pediatric patients, and a class in family feeding. In developing this program it would be desirable to have one person responsible for all group therapy classes. This type of therapy should be integrated with the needs of the patient and should cover not only diet but also rehabilitation, the less severe mental illnesses, and the problems of planning family life when one member of the family has a serious disease.

The group therapy classes have been organized so that they are given in series which are repeated during the year. Patients can start at any time and carry through one whole series, and if they care to they can repeat the series. The development of group therapy will be limited only by the imagination of the individuals responsible for such care.

Podiatry.—Podiatry is an extremely important aspect of outpatient care. I know of no service which gives greater relief to the patient. It should be administered by trained, graduate podiatrists. Podiatrists in the Out Patient Department at Bellevue Hospital work in all the Diabetic Clinics and see patients regularly. In addition, they work in the Orthopedic Clinic and in some of the Obesity Clinics. We also have a separate Podiatry Clinic to which patients can be referred from any clinic in the Out Patient Department.

Rehabilitation Services.—The rehabilitation services are planned to take care of any patients requiring rehabilitation. The largest group are patients who have had cerebral vascular accidents, amputations, or muscular diseases. The Out Patient Department of the Department of Physical Medicine and Rehabilitation is a referral service. The staff members have their own area which includes the special equipment needed for rehabilitation care. The consultation services meet three afternoons a week for ambulatory patients.

The outpatient services provide a total rehabilitation program, including such specialized clinics as prosthesis, braces, speech, and vocational exploration. In addition, there is a Departmental Evaluation Conference one morning a week and a Pediatric Rehabilitation Clinic one day a week. It would be desirable to have these two clinics meet oftener.

Volunteers in the Outpatient Department

The organization of the volunteers in the Out Patient Department at Bellevue Hospital is under the direction of a paid Director. The volunteers fill a very important need. Opportunities for them are provided in the following assignments: receptionists, clerical assistants, nurses aides, aides to the dietitians, interpreters, patient guides, typists in the Social Service and the specialty clinics, caretakers of children in the children's playroom, assistants in the Electrocardiogram Laboratory, and assistants in the Record Room.

Prior to working in the Out Patient Department, they are given a short orientation course.

Research Facilities

The fact that the outpatient services are organized into Specialty Clinics for the treatment of special or chronic diseases means that they provide an exceptional opportunity for research in these diseases. Research in chronic diseases must obviously be carried on over a very long period of time, and it is unrealistic to hospitalize patients for this type of study. In an outpatient department an area should be set aside and especially designed for the study of the various chronic diseases. This area should be provided with adequate laboratory space, individual examining rooms, fluoroscopic equipment, and space for any special equipment necessary for the studies. The laboratory space should be primarily designed for investigation and should not be used as a diagnostic laboratory. Physicians who spend their entire time in research should have office space and a place to work in this area.

In the development of the Out Patient Department at Bellevue Hospital many studies have been undertaken by physicians and most of these are financed either by grants from pharmaceutical concerns or by grants from the United States Public Health Service. Among the present groups of patients being investigated are patients with hypertension, patients with arthritis, patients with diabetes mellitus, patients with special types of carcinoma, patients with speech and hearing defects, patients who have had cerebral accidents, and patients with certain blood dyscrasias.

Summary

A plan has been outlined for the organization of outpatient services in large hospitals, based on the experience obtained in the Bellevue Out Patient Department over a period of eight years.

The purpose of outpatient care should be to provide complete and adequate medical coverage on an ambulatory basis. This can be effected by proper organization and integration of outpatient services and involves having major diagnostic clinics and specialty clinics.

The major diagnostic clinics should serve not only as treatment clinics but also as screening clinics for admission of patients to the hospital. Specialty clinics, which include the chronic disease clinics, should be concerned with the care of patients with long-term illnesses and with patients requiring specialized technics involving the eye, ear, nose and throat, skin, and so forth. The pediatric clinic should have its own specialty clinics.

The administration of the outpatient department should be done through a committee composed of the chiefs of the major clinics, the administrative personnel of the outpatient department, and the chiefs of the major specialty clinics. This committee, by meeting every two weeks and discussing the problems of clinic care, provides a stimulus to the maintenance of up-to-date medical care and is the means by which the clinic services can keep pace with the changing concepts of medical care.

A well-organized outpatient department not only provides complete medical care to the patient but also provides training for physicians and provides for research in chronic diseases.

I am indebted to Miss Virginia Shattuck for the outline of the organization of the nursing services in the Out Patient Department.

Jet Travel Presents Infection Hazard

Rapid air travel presents a danger—and a challenge—in the control of infectious diseases, according to Dr. Wesley W. Spink, an expert in the field. Writing in the April 18 *Journal of the American Medical Association,* Dr. Spink of the University of Minnesota Medical School said "in this era of missiles and jet travel a medical problem in Madras, India, today, may be that of New York City's tomorrow."

For example, a German physician traveled from India to Ceylon, where he thought that he had contracted influenza. He continued on by plane to Switzerland and then by train to Heidelberg, Germany. Shortly thereafter, the physician and at least 13 other persons with whom he had been in contact were given diagnoses of smallpox.

Such spread of a disease has occurred many times in more restricted geographic areas, but "the availability of rapid means of travel could readily expand the area," he said.

One of the major problems presented by a possible spread of a disease to a new part of the world is that many physicians are unfamiliar with diseases not prevalent in their own areas.

During World War II, a special training program in tropical diseases was set up for American physicians so they would recognize and know how to treat diseases acquired by servicemen in the tropics.

Dr. Spink suggested that a similar program be set up as a regular postgraduate course for physicians. In such a program, which might be worked out through such agencies as the U.S. Public Health Service and the World Health Organization, physicians would be sent to different areas in the world to see diseases under natural conditions.

He noted that many diseases are well controlled in certain areas, such as smallpox in the United States. However, "it is well to recall that in all of the history of medicine no infectious disease has ever been treated out of existence," he said. Even plague still exists in the world, although it rarely breaks out, mainly because of public health measures.

The great advances in the control and elimination of infectious diseases have taken place only because of the accumulation of precise data about the life habits of specific infective agents, he said. Armed with accurate information men have made efforts to block the channels through which disease is spread. But to continue to do this, men must be trained to understand all infectious diseases, he concluded.

Results of Surgical Treatment of Extraosseous Ossification in Paraplegia

CARLOS T. ARMSTRONG-RESSY, M.D., ANDOR A. WEISS, M.D., AND ALFRED EBEL, M.D., BRONX, NEW YORK

(From the Physical Medicine and Rehabilitation Service of the Bronx Veterans Administration Hospital and from the Department of Rehabilitation Medicine, Albert Einstein College of Medicine of Yeshiva University)

IN THE literature one finds little mention of the results of surgical treatment of extraosseous ossification. Miller and O'Neill[1] described 1 case of removal of the mass around the hip joint, but the clinical results were not presented. Their interest was in the pathologic appearance of the resected specimen. They found marked degeneration of muscle with atrophy, and the newly formed bone appeared entirely normal, containing normal bone marrow. All publications on the subject are in agreement as to the failure of local conservative treatment for this condition. Efforts to modify or prevent the abnormal deposition of bone by dietary methods have failed. Abramson[2] suggested early ambulation of the patient as a method of prevention of extraosseous deposits of bone, hoping thereby to prevent osteoporosis and the subsequent deposition of excess calcium around the joint.

We are presenting 4 cases of traumatic paraplegia in whom massive para-articular ossifications developed around the hip joints, and in whom surgery was performed. The indications for surgery were as follows: (1) to eliminate ankylosis and thus enable the patient to sit up in bed and transfer to a wheelchair, (2) to permit the patient to use the commode instead of the bedpan, and (3) to permit the patient to be up and about and to drive a car instead of being confined to bed or to a litter.

Case Reports

CASE 1.—A thirty-six-year-old Negro male was admitted to the hospital on March 30, 1946, with a diagnosis of spinal cord injury at the level of the 4th thoracic vertebra, secondary to compression fracture sustained in an auto accident on December 26, 1943, while in the Armed Forces. There was loss of bladder and rectal sphincter control, spastic paraplegia with a sensory level at the T4 segment, and decubitus ulcer of the left trochanteric area. His hospital course from admission was complicated by perineal fistulas which necessitated surgery, transurethral resection for bladder neck obstruction, pathologic fracture of the left femur treated by open reduction, and excision and grafting of decubitus ulcers of the left hip and left pretibial area. In February, 1949, extensive calcifications of the soft tissues around the hips and knees were noted which prevented flexion (Fig. 1). The patient became bedfast.

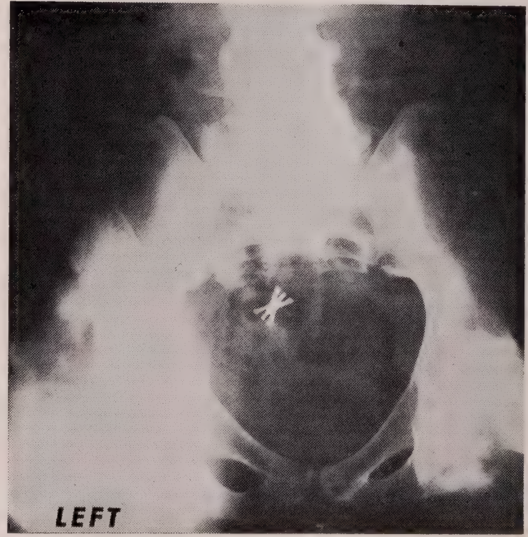

FIG. 1. Note marked involvement of both hips, especially the left.

Examination revealed solid ankylosis of both hips and marked limitation of motion in both knees. Three alternatives were offered: (1) massive resection of bone about the hip, (2) oste-

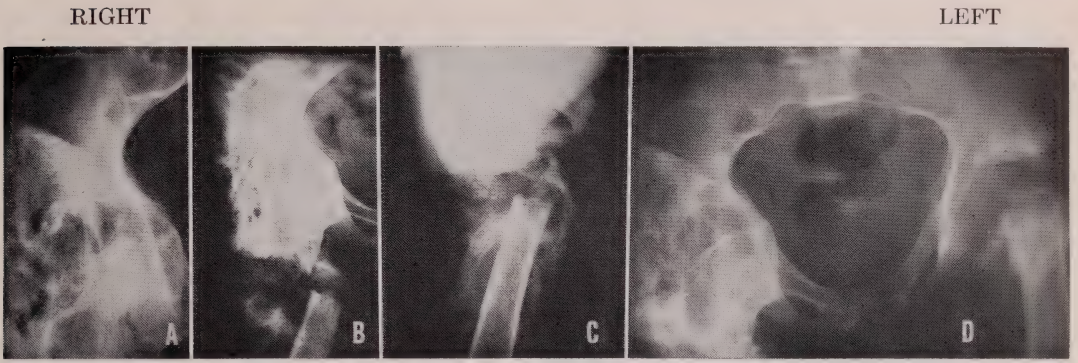

Fig. 2 (*A*) Note extensive extraosseous ossifications resulting in fusion of the right hip. (*B*) Osteotomy below the heavy bone mass. Note early redeposition of calcium. (*C*) Note further progress of definite ossifications at operative site. (*D*) Bony ankylosis resulting from reossification.

otomy, or (3) amputation. The concensus of orthopedic opinion was amputation with subtrochanteric partial osteotomy because it was feared that an attempt at resection of the bone mass would result in excessive hemorrhage. A high left thigh amputation was done on April 20, 1948. A second amputation was performed on June 8, 1949, on the right at midthigh level. Extensive efforts were made at rehabilitation postoperatively, and physical therapy was administered daily. Even after bilateral amputations the patient experienced difficulty in sitting because of immobility of the hip joints. A prosthesis was therefore devised which enabled him to sit in a wheelchair. This prosthesis consisted of a close-fitting leather encasement of the lower part of the body and stumps and was fastened to the wheelchair, permitting the patient to use the chair for locomotion. The leather prosthesis was also suitable for use behind the wheel of an automobile and afforded considerable stability in driving.

Case 2.—A thirty-two-year-old paraplegic veteran was admitted to the hospital on October 8, 1952, for treatment of a decubitus ulcer over the sacrum. The patient had sustained a cord injury in 1944 in a fall. A laminectomy at the T10 to T12 level was performed shortly after the injury at another hospital. His hospital course was complicated by large decubitus ulcers over the buttocks, hips, knees, and heels, and these were treated by plastic surgery. Suprapubic drainage was instituted shortly after injury but was removed a year later. The patient used braces for a short time in 1945 and was able to ambulate about 100 feet. From 1946 to 1949 he had several operations including femoral head and neck resections because of dislocation and erosion of the bone through the skin. The site of operation on the right drained recurrently from abscesses but eventually healed.

Owing to redeposition of bone in the operative region, hip flexion was limited to 60 degrees only (Fig. 2A). This interfered with ambulation and patient was unable to sit. Inasmuch as the patient's primary concern was his inability to flex his hips, especially the right, preventing him from attending school or from sitting for any length of time, an osteotomy just below the callus of the right femur was performed on October 27, 1952. The patient developed cellulitis of the right hip postoperatively, and because of the spreading infection mobilization of the right hip, which was begun immediately after operation, had to be discontinued. Additional callus developed with the final result unimproved over the preoperative status (Figs. 2B–D). During the rest of his stay in the hospital the patient was up and about on a litter and occasionally in a wheelchair, although in a very awkward position. Nevertheless he left the hospital against advice on May 11, 1953.

Case 3.—A thirty-four-year-old veteran was admitted to the hospital on August 6, 1949, for follow-up treatment of his paraplegia. He had sustained a gunshot wound on January 5, 1949, the bullet penetrating his left chest and shoulder and lodging in the 6th thoracic vertebra. This was followed immediately by complete motor and sensory loss below this level. Eight days after injury a laminectomy was performed with removal of the bullet from the spinal canal. Since

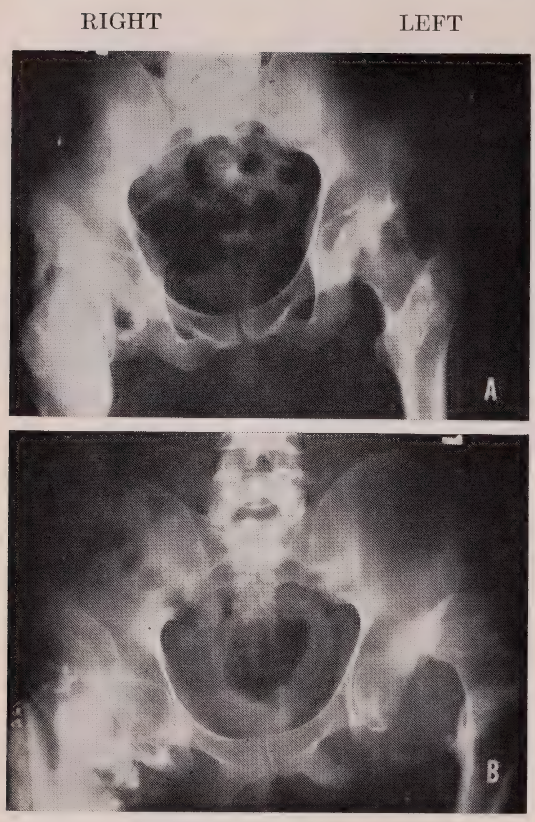

FIG. 3. (*A*) Note extensive ossifications around right hip joint (1950). (*B*) Residuals of surgery of right hip. Note dislocation of left femoral head (1957).

the original injury the patient had had numerous decubitus ulcers which had been treated with extensive plastic surgical procedures. His sacral, coccygeal, and trochanteric areas were affected at the time of admission with some drainage from a sacrococcygeal decubitus ulcer. Shortly after admission excessive bony deposits and exostoses were noted extending from the right acetabular rim, and also around the greater and lesser trochanters bilaterally (Fig. 3A). On the right acetabular rim this progressed to bony union between the exostoses of the superior acetabular rim and the neck of the right femur. The hip joint per se was observed to be free from any bony union; however, the surrounding area showed ankylosis. For this reason the patient was completely bedridden and no rehabilitation procedures could be carried out.

In March, 1950, an excision of the entire bony mass about the right hip was performed, and a flail joint was obtained. The final result was very good and the patient was able to sit in a wheelchair and became ambulatory with an ischial weight-bearing brace on the right. Shortly afterward it was noted that the left hip was easily dislocated and standing with the use of braces had to be discontinued (Fig. 3B). The patient became wheelchair-bound but was capable of performing all activities of daily living in a normal fashion from his wheelchair.

CASE 4.—A thirty-year-old veteran was admitted on August 3, 1953, for further treatment and rehabilitation of his paraplegia. He was injured on September 5, 1951, in a fall from a stoop. He lost consciousness and on awakening he found he was paralyzed from the waist down. X-ray pictures revealed compression fracture of the 11th thoracic vertebra, and early laminectomy resulted in partial return of sensation of both lower extremities but no change in motor function. His entire hospital course was complicated by decubitus ulcers over the buttocks, hips, and over both ischial areas. Admission x-ray films of both hips showed extraosseous ossifications (Fig. 4A). The right knee, likewise, showed ossification of the medial aspect and generalized osteoporosis. There was great difficulty in sitting in a chair. Because of the complete fusion of the left hip an old-type wooden wheelchair was used in which the patient was able to sit for short periods of time but with a great deal of discomfort. He pleaded for operative help if possible.

It was felt that surgery was not likely to be successful, but at the patient's insistence he was referred to the orthopedic conference which suggested establishing a pseudarthrosis in the upper part of the left femur below the site of the dense ossification. Surgery was carried out on April 26, 1954, consisting of osteotomy and insertion of a Judet prosthesis into the upper end of the distal fragment of the femur (Fig. 4B). Following surgery the patient was able to sit. However, infection developed and continued in spite of irrigations and antibiotic therapy. It became finally necessary to remove the Judet prosthesis six months later. In spite of removal of the Judet appliance considerable discharge from the sinus persisted. The patient was, however, able to sit in a wheelchair and to perform all activities of daily living. An acute exacerbation of osteomyelitis of the extraosseous ossification with marked toxicity of the patient necessitated

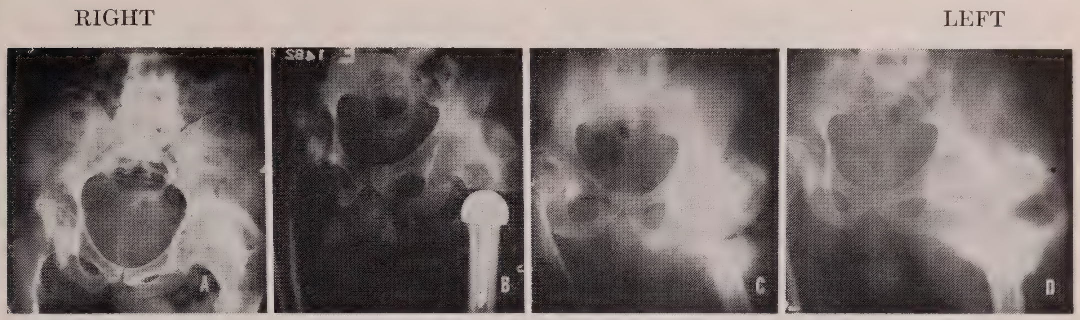

Fig. 4. (*A*) Note massive fusion of left hip due to extensive extraosseous ossifications. (*B*) Status postoperative, left subtrochanteric osteotomy and insertion of Judet prosthesis in upper end of distal fragment. (*C*) After removal of prosthesis and resection of infected bony mass, extraosseous ossifications more extensive than prior to original surgery. (*D*) Present status of left hip area with extensive ossifications and bone infection.

open drainage with resection of the osteomyelitic mass (Fig. 4C). Since this surgical procedure the patient has again laid down massive ossifications and a small amount of drainage persists (Fig. 4D). However, he has been up and about in a wheelchair and been capable of driving his car. Four years later a hematogenous osteomyelitic process developed in the cervical vertebrae which responded well to open drainage, Crutchfield traction, and a supportive brace.

Comment

Theories Postulated as to the Mechanism of Normal Bone Deposition.—1. Wells[3] felt that a protein constituent of cartilage adsorbs calcium, for which it exhibits a special affinity; the calcium salts subsequently combine with phosphorus to form tricalcium phosphate. He observed bone salts deposited on a piece of boiled cartilage which he had placed in the abdominal cavity.

2. Howland's[4] theory states that the saturation of a solution of a salt such as calcium phosphate, and the precipitation of the latter in the solid form is determined by the product of the concentration of the calcium and phosphate ions in the solution, that is on the product of calcium × phosphorus, and not on the total quantities of calcium and phosophorus present in the blood. The presence of protein in the solution reduces the degree of ionization because part of the calcium becomes bound to form calcium proteinate, a weak electrolyte. The carbon dioxide dissolved in the body fluids increases their ability to hold calcium salts in solution. Any reduction in the protein concentration or in the carbon dioxide tension in the body fluids would therefore favor the deposition of calcium salts. Calcification, however, cannot be explained on a physical-chemical basis alone; the activity of living cells is also involved in the process. Shipley, Howland, and Kramer[4] showed that in in vitro experiments calcification was inhibited by a protoplasmic poison such as hydrocyanic acid.

3. Watt[4] felt that calcification was due to active osteoblastic secretion of bone salts derived from the calcium and phosphorus of the blood.

4. Robinson's[4] phosphatase theory holds that the enzyme phosphatase produced by the osteoblasts, proliferating cartilage cells, and cells of the inner layer of the periosteum liberates inorganic phosphate from phosphoric esters, thereby raising the local concentration of the phosphate ion. The product of the concentration of the calcium and phosphate ions then exceeds the solubility product of calcium phosphate, which is in consequence deposited in the cartilaginous matrix.

Recent research, including electron microscopy and low-angle x-ray scatter, shows that the bone mineral is a crystal with an apatite lattice structure. The microcrystals are 300 to 400 Å in length and breadth and 20 to 50 Å in thickness. The molar ratio of calcium to phosphorus varies from 1.3 to 2.0. This variability in composition disproves Robinson's theory which states that calcification involves a precipitation by exceeding locally a constant of the solubility product. Nearly all the protein in bone is in the form of collagen, which is crystalline, with fibers of indefinite length and of about 800 Å units in width, and with cross-banding at 640 Å intervals. Electron micrographs show that the tabular bone crystals lie in or on the collagen fibers between the major striations which occur at 640 Å unit intervals. This demonstration of the interrelationship between collagen fibers and the crystals, and the demonstration that serum is supersaturated, has led to the following three theories:

1. Collagen fibers of bone induce the production of crystal nuclei, perhaps through the presence in the molecule of a phosphorylated amino sugar.[5–7]

2. In cartilage, the protein is rendered active by the enzymatic transfer of a pyrophosphate group from adenosine triphosphate to the protein.[8]

3. The active nucleation center in cartilage involves a complex between collagen and chondroitin sulfate.[9]

Present Concepts of the Significance of Phosphatase in Bone Formation[10].—1. Phosphatase is associated with production of phosphate ions which precipitate calcium as bone salt.

2. Phosphatase is associated with organic matrix formation.

3. It forms a phosphate ester which acts as a template for the crystallization of bone salt.

4. It keeps the surface of bone crystals free of ester phosphate, thus permitting continued growth of the crystals.

Theories to Explain Abnormal Ossification of Soft Tissues.—Several theories have been advanced to explain the development of extraosseous ossifications, but none have been universally accepted. Dejerine[11] attaches great importance to the subcutaneous and deep edema of the tissues which, she believes, in some way modifies the vitality and resistance of the connective tissue. The importance of functional irritability of the nerve elements in the intermediolateral sympathetic column of the cord adjacent to the traumatic lesion is also stressed. Eloesser[12] and Repetto[13] considered the loss of joint sensibility as being responsible for the typical joint changes, analagous to the Charcot joint, but they failed to explain the para-articular ossifications. Abramson[2] concluded that there was a close relationship between the formation of urinary calculi and soft tissue ossifications, and the extensive demineralization of the bones below the level of the spinal cord injury. He advocated early ambulation to prevent extraosseous ossifications. De Castro[14] and Hurrell[15] proved the existence of nerve fibers in close relationship to bone cells of growing bone, and suggested a reflex control of bone growth and maintenance. Jeannopoulos[16] reported bone changes with lesions of the spinal cord and of lumbosacral plexus roots. He referred to the work of the last two authors in showing the influence of denervation on bone. Trauma has been proposed as one of the etiologic factors but has been rejected by most workers because of the symmetry of the lesions and the usual absence of a history of local trauma. These ossifications have been found more frequently in patients with upper motor neuron lesions, but have occurred in flaccid paralysis resulting from injury to the spinal cord or the cauda equina. It has also been seen in patients with poliomyelitis.[16,17] Geldmacher's[18] theory followed Leriche and Policard[19] in the belief that tissues lose their normal character under the influence of denervation and may then assume embryonic characteristics. Frejka[20] lists the conditions necessary for bone formation as follows: (1) embryonic connective tissue (mesenchyma) stimulated by hemorrhage, purulent inflammation, or trophic changes from cord lesions, and (2) local increase in lime salts in lymph, produced by adjacent bone.

He believes that local ossification differs from the progressive myositis ossificans in that a general predisposing dystrophy or diathesis is lacking.

Summary

1. Four cases of traumatic paraplegia with extraosseous ossification are presented in whom surgical procedures were carried out to facilitate rehabilitation. In 1 case a good result was obtained with the patient being able to leave the bed and becoming ambulatory. In 2 cases infection played an important part in the failure of the surgical procedure. In 1 of these, however, the clinical result was satisfactory. One patient was subjected to bilateral amputation, but new bone deposition continued to hamper the patient, requiring the fabrication of a special leather prosthesis to enable him to sit without losing balance.

2. The two factors responsible for failure were infection and redeposition of new bone in the operated areas.

3. Various theories of normal and extraosseous bone formation were discussed.

4. A universally acceptable theory for the causation and localization of extraosseous ossifications has not been developed.

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Familial tendencies play a role in obesity (a condition in which weight is 20 per cent or more above normal), according to *Patterns of Disease*, published by Parke, Davis & Company for the medical profession.

When both parents are of normal weight, only 10 per cent of the offspring can be expected to be overweight. When one parent is obese and one is of normal weight, however, 50 per cent of the offspring may be overweight. If both parents are obese, 80 per cent of offspring may be overweight.

"The overweight state is influenced apparently not only by environment but also by genetic factors. Studies of identical and of fraternal twins indicate that food habits are not the main factor in obesity in families," *Patterns* reports.

Myofascial Trigger Mechanisms and Temporomandibular Joint Disturbances in Head and Neck Pain

Differential Diagnosis

ARTHUR S. FREESE, D.D.S., NEW YORK CITY

MYOFASCIAL pain is the term applied to those pain syndromes which originate in the myofascial structures. The myofascial trigger area is a small, circumscribed, hypersensitive region in myofascial tissues from which arise impulses to bombard the central nervous system and produce referred pain. It must be understood that this is only a physical sign and the patient is usually unaware of its existence. This area exhibits a circumscribed deep hyperalgesia, fasciculation, and referred pain. Trigger areas in skeletal muscles have been found[1–20] in pain syndromes as varied as myocardial infarction, effort angina, painful shoulder syndromes, breast pain, sciatica, mandibular muscle spasm, patterns of hysteria, and syndromes of headache and postural vertigo.

Myofascial Trigger Mechanisms

The pattern of pain distribution is so constant and predictable in all individuals that it can be charted for the skeletal muscles commonly involved as Travell,[7] Travell and Rinzler,[18] and Weeks and Travell[19] have done. This predictability in all individuals would seem to prove the presence of fixed anatomic pathways. Travell and Rinzler[18] found that patients can distinguish between zones of reference which are only a half inch apart, and that different parts of a muscle may produce different pain reference patterns. The area of a zone of reference is dependent on the sensitivity of the trigger area. A very sensitive trigger area will produce wide radiation of pain in the zone of reference. Bonica[11] has pointed out that when the trigger area is in a muscle, the zone of reference usually is a considerable distance away, and when it is in the fibrous tissues of a joint, the zone of reference usually is close by. The author has repeatedly confirmed this observation.

The zone of reference presents pain, hyperalgesia, and muscle spasm. High intensity discharges from the myofascial trigger area may also produce certain autonomic concomitants in the zone of reference such as vasomotor changes, sweating, and gooseflesh. The deep hyperalgesia in the zone of reference lasts longer than the pain, and it is possible for the nonpainful symptoms to be the dominant ones. Stimulation of the trigger area leads to muscle spasm in the zone of reference, and we are all familiar with the pain of muscle spasms. There is a resistance to stretching which produces an apparent shortening of the muscle affected together with limitation of motion and weakness. No atrophy will develop in these muscles even when this shortening of muscle and limitation of motion are present for years. If the trigger mechanism should be blocked, the muscles will function perfectly again.

It is possible for a myofascial trigger area to produce a new trigger area in the zone of reference of the original trigger area, and this new trigger area may in turn do the same in its zone of reference. How devastating the rapid spread of this condition can be to a patient is quite obvious. This is the explanation for the phenomenon reported by the author[8,10] in which he found that clearing up a trigger area in the masseter muscle cleared up the trigger area in the internal pterygoid muscle.

Travell[7] lists the causes of myofascial trigger areas as precipitating and predisposing. The precipitating causes are: "(1) sudden trauma to musculoskeletal structures, (2) unusual or excessive exercise, (3) chilling of the body, (4) immobilization, (5) an acute visceral lesion, such as myocardial infarction or appendicitis, with localized reflex spasm of the skeletal musculature, (6) acute arterial closure in the extremities, as in popliteal thrombosis, (7) rupture of an intervertebral disk with nerve root pressure, and (8) acute emotional stress."

She lists the predisposing factors as: "(1) chronic muscular strain, produced by repetitive movement frequently performed over a long period of time, (2) general fatigue, (3) acute infectious illness, e.g., infectious mononucleosis, acute hepatitis, or an acute upper respiratory infection (postinfectious myalgias), (4) a chronic focus of infection, (5) nutritional deficiencies, (6) a progressive lesion of the nervous system, (7) nervous tension, (8) syndromes of the menopause and male climacteric, and (9) hypometabolism with creatinuria."

The mechanism of this myofascial pain is not completely understood, but it is some sort of pathophysiologic disorder such as a feedback neuron circuit. In any case, a self-perpetuating pain cycle is produced. However, in those cases where the trigger mechanism is not completely blocked, the sensitivity may be reduced to a point at which the trigger area becomes clinically latent. These clinically latent trigger areas can be activated at any time. This fact is of vital importance in treatment, for we must be certain that the trigger mechanism has been completely blocked and the trigger area eliminated or the condition can recur at any time.

Myofascial trigger areas can be activated by motion stretching the structure, pressure, needling, intense heat or cold, prolonged cooling, or drafts. It is thus obvious how easily clinically latent trigger areas can be activated, for the necessary stimuli occur widely. Diathermy should be avoided, for it often will aggravate the pain. However, prolonged pressure can block the trigger mechanism although simple pressure activates it.

Head and Neck Pain of Myofascial Trigger Areas

The referred pain of myofascial trigger areas is usually dull and aching in character. Travell and Rinzler[18] have charted the zones of reference of the most commonly occurring trigger areas in the head and neck muscles (Fig. 1). The black areas represent the "essential" zones and the stippled areas the "spill-over" zones. The essential zone is that area in which stimulation of the trigger area produced referred pain in 100 per cent of the subjects. The spill-over zone is that area in which stimulation of the trigger area failed to produce referred pain in all the subjects, the density of the stippling indicating the frequency of occurrence.

The diagnosis of this pain can be confirmed simply with the knowledge of these zones of reference. The pattern of the referred pain clearly indicates the location of the trigger area and stimulation of this trigger area will confirm the diagnosis. Spraying the trigger area with ethyl chloride in long slow sweeps without frosting the skin will clear up the referred pain and this too will confirm the diagnosis.

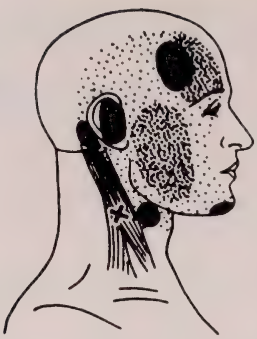
Temporomandibular Joint Disturbances

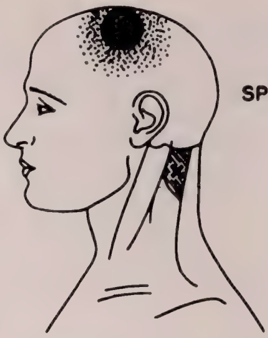
Temporomandibular joint disturbances have been classified by the author[10] as follows:

1. Traumatic: the symptoms are pain, swelling, limitation of motion, and muscle spasm. A careful history and a clinical and roentgenographic examination will establish the diagnosis.

2. Neoplastic: the symptoms which include pain may simulate other conditions. This is a relatively rare condition. Roentgenographic examination will establish the diagnosis.

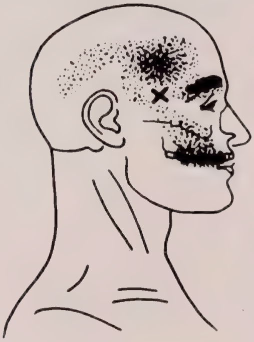
STERNOMASTOID

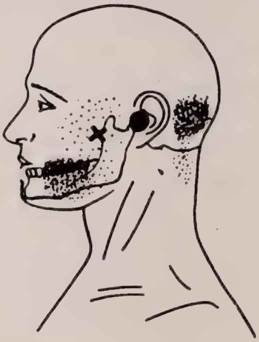




SPLENIUS CAPITIS

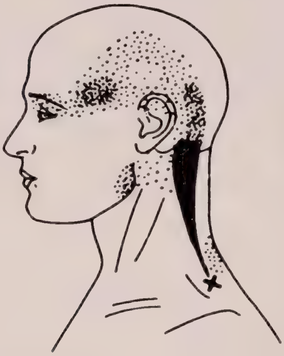
TEMPORALIS

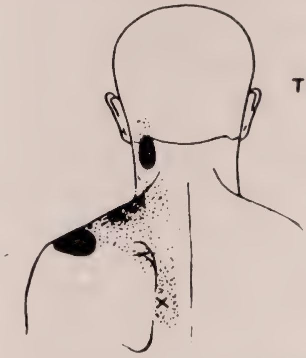




MASSETER

TRAPEZIUS





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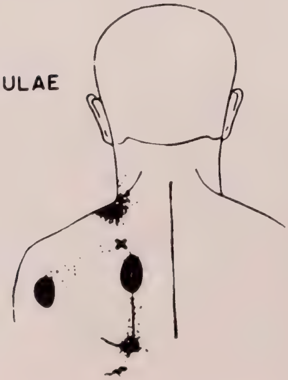

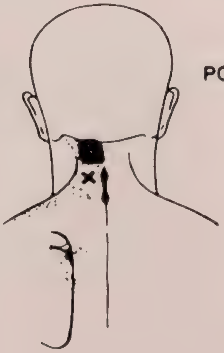

POSTERIOR CERVICAL

3. Infectious: the symptoms are pain, swelling, limitation of motion, and, on occasion, systemic involvement. This is also relatively rare and is usually an extension from an infectious process in the neighboring structures.

4. Arthritic: this is either degenerative joint disease (osteoarthritis) or rheumatoid arthritis. The symptoms are pain, stiffness, and joint sounds. The author[21] has demonstrated an improved technic for obtaining comparable roentgenographs of the temporomandibular joint so that the presence and progress of the condition can be seen. In the early stages it is practically impossible to differentiate the two forms of arthritis by local examination. However, the systemic nature of rheumatoid arthritis will indicate the correct diagnosis.

Differential Diagnosis of Pain of Temporomandibular Joint Disturbances and Myofascial Trigger Mechanisms

The pain of temporomandibular joint arthrosis may be localized to the site of its origin or it may be referred elsewhere, most commonly to the ear. The pain is similar both in character and intensity to that found in the same condition in any other joint. When the pain is severe, muscle spasms of the muscles of mastication may occur in an attempt to protect the joint by immobilizing it. These muscle spasms will then add their own pain to the pain of the arthrosis. The absence of any myofascial trigger areas is, of course, the significant diagnostic feature. Relief of the arthritic pain, usually with salicylates and heat, will clear up the muscle spasms, and help in establishing the diagnosis. Salicylates and heat will not block the myofascial trigger mechanism; in fact, the heat may only serve to aggravate the pain. Thus while salicylates and heat may relieve the pain of muscle spasms and even reduce the spasms, the condition will only recur following the discontinuance of treatment because the trigger mechanism has not been blocked.

However, temporomandibular joint pain may have many confusing diagnostic features. Pain can be referred to the temporomandibular joint from myofascial trigger areas, and the author has found the most common site of these trigger areas to be in the masseter muscle. It must be remembered that there is a deep hyperalgesia in the zone of reference. Thus tenderness of the joint on palpation may occur even though it is not the primary source of pain. The importance of this phenomenon cannot be overemphasized because tenderness of the joint is almost always accepted as proof that there is a joint disturbance whereas it may only be the deep hyperalgesia of any zone of reference. Confirmation of the diagnosis will rest on the location of the trigger area and its elimination.

There is one group of patients in whom clinical experience is more important than anything else in making the diagnosis. These are the patients who present with both muscle spasms and degenerative temporomandibular joint disease, and the problem lies in the fact that either one of these conditions is capable of producing the other. Where a trigger area can be located and the trigger mechanism blocked, we often find ourselves faced with marked symptoms of joint disease. Trigger areas whose zones of reference are in the masticatory muscles will throw these mucles into spasm. This

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PAIN PATTERN ▨ **TRIGGER AREA** X

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Fig. 1. These are the pain reference patterns of myofascial trigger areas in the most commonly involved skeletal muscles of the head and neck. The black areas are the "essential" zones and the stippled areas are the "spill-over" zones (Travell and Rinzler, reproduced with permission from Postgraduate Medicine **11**: 425 (May) 1952).

produces considerable strain and pressure on the temporomandibular joint and its elements, and may interfere with the coordinated action of the articular disk and the head of the condyle. Many investigators, including Sicher,[22] Bellinger,[23] and the author[10,24] believe that these muscle spasms can of themselves produce degenerative temporomandibular joint disease by the strain and the wear and tear they produce on the joint elements. There would seem to be no contradictory opinions on this mechanism although scientific proof is lacking.

Summary

The roles of temporomandibular joint disturbances and myofascial trigger mechanisms in head and neck pain and their differential diagnosis have been described.

1775 Broadway, New York 19, N. Y.

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If you get simple beauty and naught else,
You get about the best thing God invents.
—R. Browning

Arterial Embolism

WILLIAM J. McCANN, M.D., F.A.C.S., NEW ROCHELLE, NEW YORK

(From the Department of Surgery, St. Clare's Hospital, New York City)

EMBOLI are the most common cause of acute arterial occlusion. The heart is the most common site of origin of such emboli. Thrombi form within the heart following altered intracardiac hemodynamics due to valvular deformities and alterations of rhythm, particularly auricular fibrillation. Thrombi may also occur following injury to the wall of the heart chambers, as seen in myocardial infarction and surgical trauma. Emboli may also arise from thrombi formed in the great vessels particularly the pulmonary veins, the aorta, and the branches of the aorta. Last, paradoxical emboli may arise in the right side of the heart or from the venous bed and pass through the heart by means of a septal defect. Three quarters of all clinically evident emboli lodge in limb arteries, and 83 per cent of these occur in the main vessels of the lower extremities (Fig. 1).

The clinical picture reflects the site of the occlusion. In attempting to localize the block, it should be remembered that emboli lodge at the sites of bifurcations of vessels and less frequently in areas of compression. The onset of symptoms is most often abrupt but may at times be insidious. Pain, numbness, coolness, and pallor are present. The superficial veins are collapsed. Loss of motor function is usually present to some degree, and the deep tendon reflexes are absent. Temperature changes are evident on manual examination, and thermal levels may be readily demarked. Arterial pulsations are absent distal to the block. Oscillometric recordings are not usually important in the diagnosis of acute occlusion but may, however, demonstrate an increased deflexion above the site of the block and absent pulsation distal to the block.[1] Arteriographic findings may be misleading in acute arterial obstruction.[2]

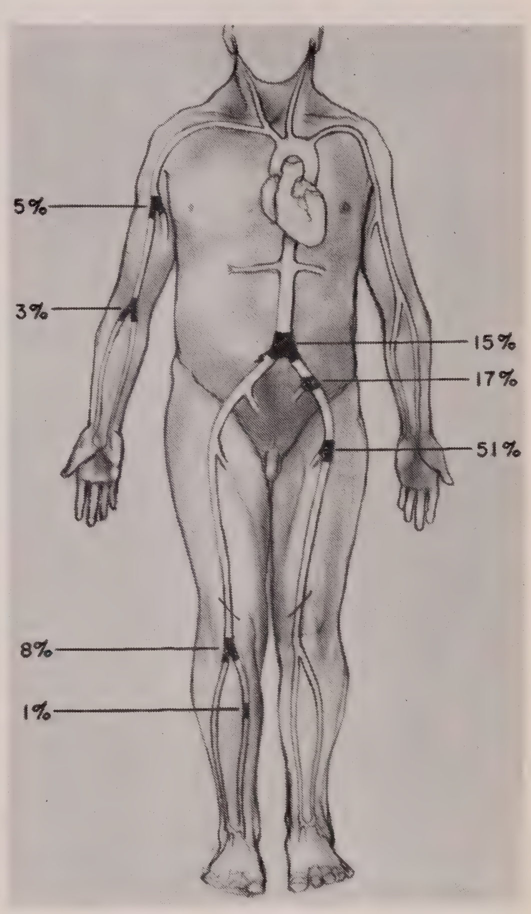

FIG. 1. Incidence of clinically apparent peripheral emboli according to location.

Warren *et al.*[3] reported that the origin of emboli was clinically evident in 86.5 per cent of their patients. This fact should be helpful in considering the differentiation of acute thrombosis and embolism. It may be generally stated that patients with heart disease are more likely to have an embolus, while patients with generalized vascular or systemic disease are more likely to have thrombosis. Usually one is able to differentiate thrombosis from embolization on the basis of background, history of onset, and physical examination findings. At times, however, the differentiation is made only at operation.

Phlegmasia cerulea dolans, or pseudoembolic thrombophlebitis, may resemble an arterial embolus in that it is occasionally associated with marked arterial spasm resulting in a cold cyanotic limb with diminished or absent arterial pulsations. The key to the differentiation is the edema which is always present with massive venous involvement at the onset of phlegmasia cerulea dolans. Hyperhidrosis seen in this condition is also found lacking in arterial emboli.

All too often the discussion of the treatment of peripheral arterial embolization revolves around the relative advantages and disadvantages of nonoperative and operative managements. Actually, the treatment selected should be determined by the needs of the individual patient after consideration of all factors involved. Some of these factors include the type of basic underlying disease, presence of other unrelated disease, degree of pre-existing arterial disease, localization of the block, time interval since occurrence, state of viability of the extremity distal to the block, and facilities at hand. The general management of a patient with acute arterial block consists in the treatment of the basic disease, institution of efforts directed toward increasing the blood supply to the involved part, and prevention of further extension of the blood clot already present. All modalities which achieve these ends constitute definitive treatment in the nonoperated patient and supplement the surgical management in the patient on whom an operation has been performed. The patient should not be allowed to use tobacco in any form and should be well sedated and removed from all emotional stimuli. The extremities should be left exposed to room temperature, and no thermal modalities should be used on the involved part. Heat causes an increased metabolic demand on tissues already deprived of normal oxygen requirements, and cold results in arterial spasm. The use of an oscillating bed to produce passive assistance to blood flow is helpful if available. When not available or when motion intolerance makes its use impractical, simple gravitational aid to blood flow may be achieved by elevation of the head of the bed.

Papaverine has been time honored since its introduction by Denk in 1934.[4] Its use is preferred to that of the hexamethonium compounds, which Foley and Wright[5] reported may open arteriovenous shunts with actual decrease in peripheral arterial blood flow. It is considered poor judgment to inject any solution into an artery in which blood flow is critical, and, accordingly, no intravascular medications are used.

Continuous spinal anesthesia, as suggested by Smith and Rees,[6] should be instituted immediately. This is best done with the aid of an indwelling catheter and is to be preferred to paravertebral blocks. With paravertebral blocks repeated injections are required, one is not always sure of localization, and the risk of hemorrhage is always present when these blocks are used in conjunction with anticoagulants. The spinal block may be continued for one to two days and is always available for anesthesia if surgical intervention should be necessary. Ansbro[7] has reported on a catheter technic for continuous brachial block when the upper extremity is involved.

In general, surgical treatment is preferred when emboli involve the aorta or the iliac or femoral arteries. Popliteal emboli do well with conservative management from the standpoint of limb survival. However, the incidence of late ischemic manifestations, with diminished functional capacity and subjective symptoms, is high with this type of treatment. The same situation pertains in the upper extremity, as in the popliteal artery, and probably surgical intervention is indicated in selected

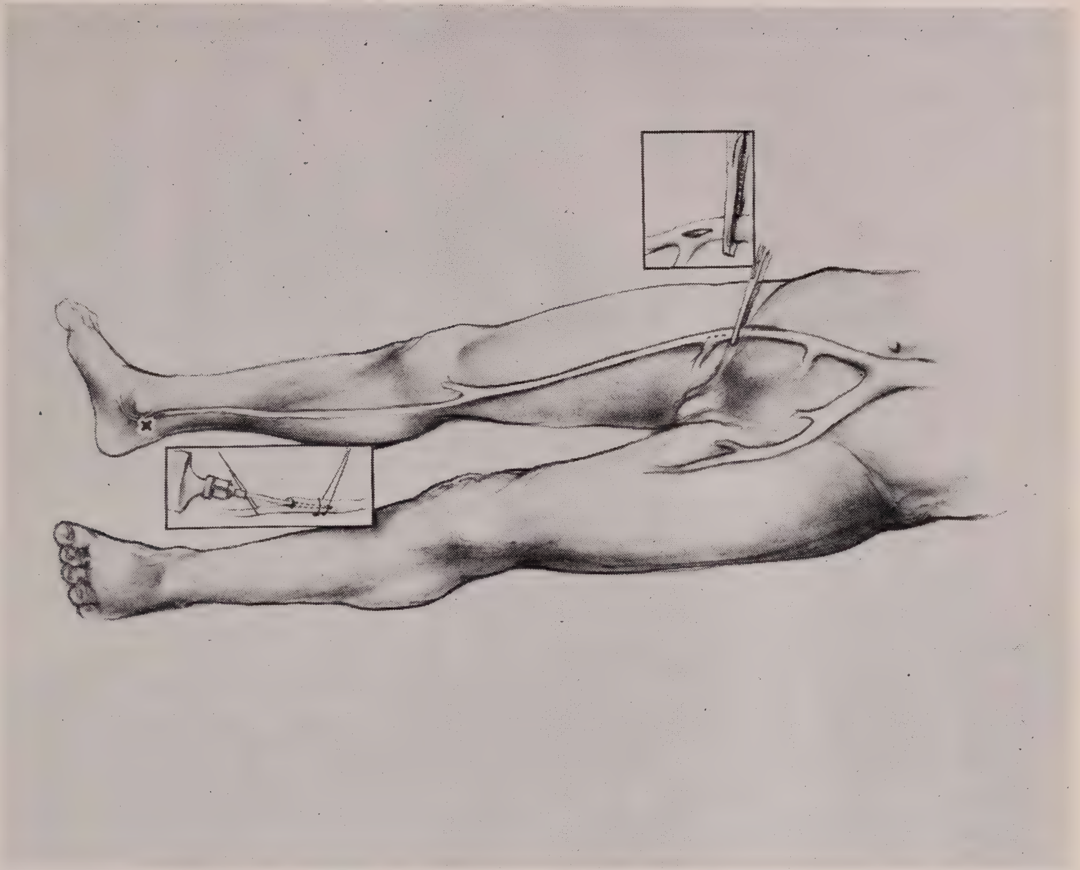

FIG. 2. Technic of retrograde flush in late embolectomy.

cases in both of these groups. When embolectomy is performed, liberal irrigation with heparin solution, both distal and proximal to the site of embolic block, is routine.

It has long been felt that the golden time for operative intervention in the treatment of arterial emboli is during the first six to eight hours following the onset of symptoms. Shaw[8] and Olwin *et al.*[9] have recently suggested a delayed surgical approach which utilizes a modification of the retrograde flush technic employed by Lund in 1930[10] (Fig. 2). This method is applicable in patients in whom collateral circulation has been sufficient to maintain adequate viability to the part distal to the block and in whom there is no previous block of the main vessels. Sympathetic denervation and anticoagulant therapy are necessary adjuncts to this kind of surgery. With the use of this method there have been very promising indications that the time interval for the surgical management of this disease may be extended over a period of several days.

Wessler *et al.*[11] studied the five-year survival rate of their patients following termination of initial hospitalization and compared it with a corrected standard rate. They found that life expectancy following one episode of arterial embolization was reduced to about half of the normal expectancy. Much of this increased death rate is due to subsequent visceral or cerebral emboli. Kohn and Levine[12] reported that in multiple emboli 75 per cent occur within the first year. Accordingly it is felt that long-term anticoagulant therapy is indicated for at least the first year after an initial episode of arterial embolus. It is understood that such therapy does not preclude the possibility of subsequent embolization, but it is felt that the incidence will be lower.

Tullock and Wright[13] in a series of 227 patients report an embolization rate of only 11.4 per cent in those under anticoagulant therapy.

Auricular appendectomy, as originally suggested by Madden,[14,15] has proved to be of no value in protection against subsequent embolism.

The use of quinidine to alter auricular fibrillation in these patients, as reported by Kohn and Levine, may be of value.[12] The use of the fibrinogenic enzymes in clot dissolution is still in the investigative stage.[16] When a satisfactory agent with few side-reactions is available, this type of treatment will undoubtedly have much to offer.

Summary

Arterial embolism is a serious complication of a still more serious underlying disease. Aggressive treatment tempered with judicious judgment and with intelligent selection of the mode of treatment best suited to the individual patient is required. Such patients represent a medical-surgical problem, and combined thinking in the over-all management is desirable and will offer the most satisfactory outcome.

421 Huguenot Street

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Heart and artery diseases are often associated with extreme overweight, it is reported in *Patterns of Disease*, published by Parke, Davis & Company for the medical profession.

Advanced atherosclerosis is three times more prevalent and coronary artery disease is more common in obese (more than 20 per cent overweight) individuals than among those who are underweight. Comparison of persons in the same age group shows that sustained hypertension is twice as frequent among obese persons as among those of normal weight. Other diseases which seem to be more prevalent among overweight persons include anemia, gallbladder disease, diabetes and liver disease.

External Endometriosis: the Clinical Problem

ALVIN M. SIEGLER, M.D., AND ALEX FRIEDMAN, M.D., BROOKLYN, NEW YORK

(From the Departments of Obstetrics and Gynecology of the Beth-El Hospital and the Maimonides Hospital, and the State University of New York, Downstate Medical Center College of Medicine, Brooklyn, New York)

SINCE the pioneer contributions of Cullen[1,2] on adenomyoma and of Sampson[3] on hemorrhagic ovarian cysts, numerous scientific publications have appeared describing the incidence, pathogenesis, and management of external endometriosis. The clinical significance was reemphasized by Counsellor,[4] Meigs,[5] and Scott and TeLinde,[6] the latter terming it a scourge of the private patient. The dysmenorrheic infertile patient burdened with dyspareunia and menstrual irregularities due to advanced pelvic endometriosis is a difficult problem for the gynecologist to manage successfully. However, the incidence of these cases in gynecologic practice is small.

Although the diagnosis of external endometriosis can be presumed clinically and is suggested by gross examination of the pelvic organs at laparotomy, histologic study is required for proof. Bayly and Gossack[7] reported that external endometriosis was diagnosed by the appearance of the pelvic organs in 22 per cent of 1,177 consecutive laparotomies, but it was proved in only 14.5 per cent of them. If the diagnosis is not substantiated in a significant number of patients by direct observation at a laparotomy, logically the clinical impression derived from subjective complaints and palpation could lead to the exaggeration of the frequency of endometriosis. This study was undertaken to determine the incidence of external endometriosis in the two hospitals within a certain period, basing the diagnosis on the histologic findings. Furthermore, an attempt was made to correlate the clinical diagnosis with the postoperative findings.

Material and Method

The pathologic reports on the tissue submitted from 2,669 consecutive pelvic laparotomies performed for gynecologic disease at the Beth-El and Maimonides Hospital from January 1, 1954, to December 31, 1957, were reviewed. The diagnosis of external endometriosis appeared in 73 instances for an incidence of 2.7 per cent. The Jewish patients outnumbered the other religious groups by 2 to 1. The private and ward patients did not differ significantly from each other in race or religion, and 88 per cent of the total gynecologic patients were from the private service.

The 73 charts in the series were analyzed. The age, parity, presence or absence of dysmenorrhea, dyspareunia, and menstrual irregularities were recorded. A comparison was made of the clinical diagnosis, the gross surgical diagnosis, and the subsequent histologic report. The histologic diagnosis was made on the presence of identifiable endometrial glands with endometrial stroma. Stromatosis was not included.

Results

An average of 658 pelvic laparotomies were performed per year in the two hospitals. An average of 18 cases of histologically verified external endometriosis were found each year. The incidence was 2.7 per cent. There was no significant difference from one year to the next.

The ages of the patients varied from eighteen to fifty-eight years with a median of forty-two years. Six patients were less than thirty years of age, and 9 patients were fifty years or more. The remainder, 79 per cent (58 patients), were between thirty and forty-nine years.

The parity varied from 0 to 6 live births, and the median was 2 live births. However, 29 per cent (21 patients) had no living children and 49 per cent had less than 2 term pregnancies.

The most common symptom was menometrorrhagia which occurred in 63 per cent of the women (46 cases). However, in 27 patients there were associated myoma, in one patient a carcinoma of the uterus was present, and in another patient a papillary cystadenoma of the ovary existed. Some degree of dysmenorrhea was present in 40 per cent (38 cases), but the pain was severe enough to require bed rest in only a few instances. Dyspareunia was recorded as a complaint in the history of 5 per cent of the women (4 cases). Twenty-two per cent of the women had regular menses with no dysmenorrhea or dyspareunia, whereas only 11 per cent (8 patients) complained of the triad of symptoms. Of the latter group, 4 had the so-called classical history of infertility associated with dyspareunia, dysmenorrhea, and menorrhagia.

In the group of 73 patients there were 21 women (28 per cent) who had endometriosis as the only significant histopathologic finding. None of these cases were diagnosed correctly preoperatively. The most common associated lesion was myoma which occurred in 62 per cent (46 cases). It was difficult to ascertain which lesion was the cause of the symptoms.

If the designation of chocolate cysts is accepted as a term for endometrial cysts, then 45 per cent (33 cases) of the operative diagnoses were proved by tissue study. Thus direct inspection of pelvis at laparotomy did not suggest endometriosis in the majority of cases.

Comment

Dougal[8] stated that in order to evaluate the extent of the clinical problem it was important to determine the incidence of the disease. In our series the frequency of intraperitoneal endometriosis was 2.7 per cent which corresponded closely to the study reported by Brzezinski and Bromberg[9] who reported an incidence of 2.1 per cent of histologically proved cases. These authors explained their low incidence by Mosaic laws which condemn voluntary sterility, the use of contraceptives, sexual intercourse at the time of episodes of vaginal bleeding, and any interference with the free drainage of the menstrual discharge. Scott and TeLinde[6] reported an incidence of 5.6 per cent, Wetterdal[10] 5 per cent, Vehaskari[11] 8.5 per cent, Cavanagh[12] 7.5 per cent, and Dougal[8] 10 per cent. These statistics cannot be reconciled with the reports of Meigs[5] who noted an incidence of 30 per cent.

Counsellor and Crenshaw[4] reviewed 1,742 cases of external endometriosis, and they noted that as many patients were below thirty years of age as above fifty years of age. However, the majority were in the thirty to forty-nine age group. In the original 23 cases reported by Sampson,[3] the median age was thirty-nine years, which is not significantly different from the median age in our study of forty-two years.

The incidence of infertile marriages in the general population is estimated to be 15 per cent. Cavanagh stated that endometriosis was associated with infertility in twice the normal expected frequency in women who married before the age of thirty and 9 times the expected frequency thereafter. He suggested that the difference in the private and ward incidence was the presence of pelvic inflammatory disease and myoma in ward patients. Twenty-one patients (29 per cent) in our series were nullipara, and an additional 15 women had only one child. Previous observations on the relative infertility of the patient with endometriosis were noted by others.[13,14] Sampson[3] reported that only 4 of the 17 patients where parity was known had two or more children. It was difficult to prove whether the associated pathology which usually was combined with endometriosis or the latter condition itself was the cause of the increased occurrence of infertility. Sterility was not a problem in some patients who had advanced gross involvement of their pelvic organs. Endometriosis can be considered the primary cause of the sterility only if a thorough evaluation on the infertile couple reveals no other pathologic lesions. The association of infertility with dysmenorrhea, dyspareunia, and menorrhagia suggest endometriosis. In addition, pelvic findings which indicate the presence of nodular tender uterosacral ligaments and an adherent retrodisplaced uterus with palpable ovarian cysts support the diagnosis.

Randall[15] noted that 44 per cent of the patients in his general gynecologic practice complained of degrees of dysmenorrhea, but the symptom was present in only 40 per cent of his patients who had endometriosis. Scott and TeLinde[6] quoted an incidence of 71 per cent of dysmenorrhea and 44 per cent of abnormal uterine bleeding in their group of women who had proved endometriosis. However, 57 per cent of these patients had associated myoma, 12 per cent had adenomyosis, and salpingitis was present in 21 per cent. Endometriosis was observed as the only lesion in 23 per cent of the women. Furthermore, Bayly and Gossack[7] studied 264 patients who had a diagnosis of endometriosis and suggested from several observations that endometriosis had little or nothing to do with abnormal uterine bleeding. In our study, abnormal bleeding occurred in 63 per cent and dysmenorrhea in 48 per cent of the patients. We could not substantiate the popular concept that external endometriosis was a frequent or important cause for abnormal uterine bleeding.

In our retrospective study only the proved cases were collected, and the correct preoperative diagnosis of external endometriosis was made in 3 patients for an incidence of 4 per cent. Women in whom a preoperative diagnosis of endometriosis was made which subsequently was not proved by the pathologic examination were not evaluated. Thus the difficulty of an accurate clinical diagnosis is demonstrated. In the original series of 23 cases published by Sampson,[3] the correct preoperative diagnosis was made in 5 patients. On the other hand, McCall and Dolan[16] were able to confirm their presurgical diagnosis in 82 per cent of their 92 cases. They suggested laparotomy on the infertile woman who failed to conceive after eighteen to twenty-four months of effort when no other cause for the infertility was found.

However, Goodall[17] noted that the vast majority of cases of intraperitoneal endometriosis are recognized only at operation. The reasons he stated were (1) lack of characteristic symptoms, (2) numerous slight types of cases, and (3) the absence of any biologic diagnostic test. He foresaw no prospect of increased correct diagnostic percentage unless a test specific for the disease were devised.

The presumptive clinical diagnosis of pelvic endometriosis is based on characteristic symptoms and typical physical findings. However, presumed endometriosis is not endometriosis in a considerable proportion of cases. Thus it is impossible to attribute the efficacy of endocrine therapy in external endometriosis unless the diagnosis has been verified by some surgical procedure. Karnaky,[18,19] Preston and Campbell,[20] Haskins and Woolf,[21] Kistner,[22] and others suggested different endocrine preparations for the treatment of endometriosis, but in the overwhelming majority of their patients biopsy confirmation was not obtained prior to therapy. The improvement of symptomatic cases of verified endometriosis with hormonal therapy would be a significant contribution. Therefore, at the present stage of our knowledge, when treatment is indicated because of incapacitating symptoms or the pronounced degree of pathology, surgery is warranted.[23]

Summary

A group of 73 cases of proved external intraperitoneal endometriosis found in 2,669 laparotomies is reported. The incidence was 2.7 per cent.

The incidence of infertility was marked in the group of patients studied in conformity with previous reports in the literature. The gynecologist who specializes in sterility has an excellent opportunity to treat these patients before the disease renders them incurably sterile.

The classic symptoms of infertility—dysmenorrhea, dyspareunia, and menorrhagia—were present in only 4 patients.

Clinically, suspected external endometriosis is not endometriosis in many cases. Prolonged and costly endocrine therapy is not indicated prior to biopsy verification.

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Although studies by some insurance companies have shown overweight to be more common in women, more recent studies by the Public Health Service indicate that overweight occurs nearly twice as frequently among men in the white population, according to *Patterns of Disease*, published by Parke, Davis & Company.

Among nonwhite persons, obesity (a condition defined as one in which weight is 20 per cent or more above normal) is more prevalent among women.

Incidence of overweight is believed to have declined among women and increased among men in recent years.

Experiences with Tolbutamide in a Diabetic Clinic

JULIUS LEVINE, M.D., NORMAN T. GOTTLIEB, M.D., AND MAX TISCHLER, M.D., BROOKLYN, NEW YORK

(*From the Coney Island Hospital*)

THIS report is concerned with some experiences with the use of tolbutamide (Orinase) in the diabetic clinic of a municipal hospital. The purpose of the study, over an eight- to twelve-month period, was to evaluate the applicability and practicability of this hypoglycemic agent in a general clinic population. By extension, this would apply to diabetic patients seen in general practice.

Previous reference reports by numerous investigators have dealt adequately with the chemistry, action, administration, side-effects, and selection of patients for prescription of tolbutamide.[1,2] For the most part, these studies have been carefully controlled by repeated laboratory tests and close supervision of the patients under study. Because of the very nature of our clinic, our attention was always focused on the practicability of the use of tolbutamide, with a minimum of laboratory work compatible with safe administration.

Our diabetic clinic census is about 300 patients, most of whom are seen at approximately monthly intervals or less in groups of 60 to 90 at a time. Well over half of these are older people in the sixth to eighth decades; and in addition to their diabetes they are either under treatment or have been diagnosed as having the ailments common to this age group such as cardiovascular disorders, hypertension, and arthritides. The group is either indigent or in the lower economic bracket and many of the patients are foreign born and have difficulty understanding instructions. A considerable number cannot self-administer insulin; others will not; and still others, because of infirmity or poor vision, are never quite sure of the amount they have taken. Despite every effort on the part of the medical and nursing staff, there is the repeated problem of the patient's using the incorrect scale on a multiscaled syringe and taking double or half the prescribed insulin dosage. Some are allergic to insulin.

The advantage of an effective oral preparation in a group such as this is obvious.

Materials and Methods

Patients were selected for this study in conformity with the general requisites set by previous studies.[3] These were diabetic persons who fell into the following category:

1. Used 40 units or less of insulin daily.
2. Had no history or record of repeated ketosis or acidosis.
3. Had no history or record of significant renal or hepatic dysfunction.
4. Responded to a loading dose (tolerance test) of 3 Gm. tolbutamide by a 25 per cent or greater fall in fasting blood sugar four hours after administration of the dose.

Insulin was omitted for forty-eight hours prior to the test.

The loading dose test was included to indicate which patients might respond to therapy, and to preclude the development of ketoacidosis in potential nonresponders. Since our study patients might not be rechecked for one to two weeks, or might fail to keep a clinic appointment, this seemed to be an important consideration. The test was performed on about 85 per cent of the patients in this group.

When a patient was found to be a candidate for therapy, tolbutamide was prescribed in the following manner: 3 Gm. (six 0.5-Gm. tablets) in divided doses for three days, 2 Gm. (four tablets) in divided doses for the next three days, and 1 Gm. (two tablets) on the seventh day.

In some patients requiring more than 25 units of insulin the latter was gradually reduced over a period of four days as tolbutamide was instituted, so that by the fifth day they took no more insulin. The maintenance dose was then adjusted at from one to four tablets daily, depending on follow-up urinalyses, fasting blood sugars, and reports by the patient as to his well-being. A record was kept of the patient's weight, and periodic estimations were made of the blood urea nitrogen, liver function tests, and complete blood counts. The prescribed diet differed in no way from that being followed previously, with or without insulin.

Patients who could do so were instructed to test the urine at least once daily and to report any untoward symptoms. If unable to contact the hospital, they were to discontinue medication and resume their former regimen until seen at the next visit.

Results

Results were evaluated by a comparison of the degree of diabetic control on insulin and/or diet vs. control with tolbutamide and the same diet. This was based on observation of: (1) fasting blood sugar, (2) glycosuria, (3) weight, and (4) comments by the patient.

As an arbitrary standard, we classified the results of blood sugar determinations (Folin-Wu method) by averaging them for a year prior to the study and for the period during which the patient took tolbutamide, and labeled them: good (up to 130 mg. per cent), fair (130 to 180 mg. per cent), and poor (above 180 mg. per cent). Urinalyses were similarly averaged and called good (negative to trace), fair (1 to 2 plus), and poor (3 to 4 plus).

Seventy-seven patients were observed under the previously noted conditions, and the results of measurements of the fasting blood sugars and twenty-four hour urine glucose are shown in Figure 1.

There was general improvement in that more patients fell into the "good" control groups and there was a corresponding fall in the "poor" control group. There was a threefold increase in the "good" control group as measured by glycosuria; the improvement in the "good" control group as measured by fasting blood sugar was not as marked. Although the series is too small to submit to statistical analysis, the figures indicate that there was a significant improvement in diabetic control. Examination of patients' weights showed that they remained about the same.

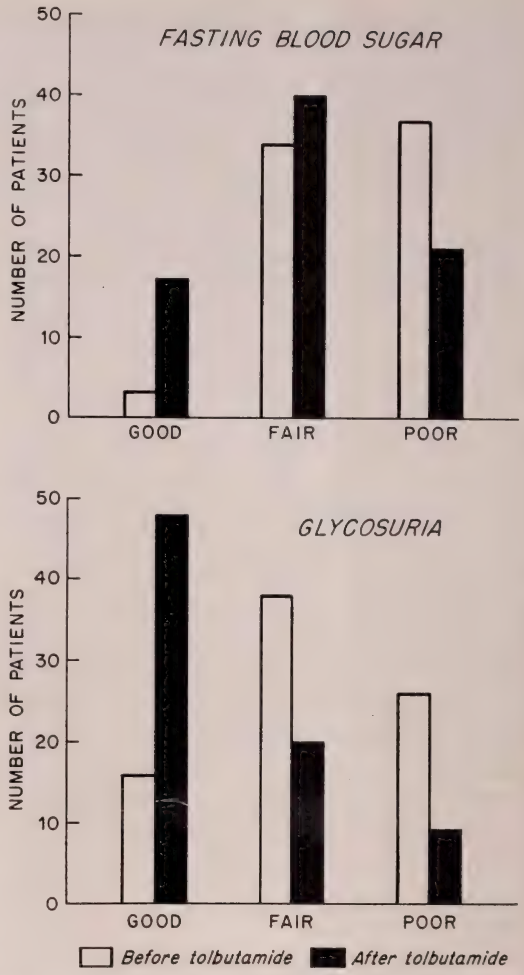

FIG. 1. Results of measurements of fasting blood sugars and twenty-four hour urine glucose.

In no instance was there any evidence of toxicity as manifested by symptomatology, rash, changes in peripheral blood counts, liver function tests, or estimation of blood urea nitrogen. It should be noted that the loading dose and institution of tolbutamide therapy was larger than that reported by some other investigators without apparent reaction or deleterious effect. This would indicate a good margin of safety in dosage. No case developed ketosis or acidosis. This may be ascribed, at least in part, to the prerequisites for selection of patients for treatment.

Those patients who did discontinue the drug were advised to do so because of laboratory evidence of increasing hyperglycemia and glycosuria rather than because of complaints or symptoms of any kind. In some instances these patients insisted that they felt just as well or better taking the tablets and were reluctant to reinstitute insulin despite our instructions and advice. A few showed slightly higher levels of fasting blood sugar with tolbutamide therapy with but little or no increase in glycosuria or an actual decrease in glycosuria. Keeping in mind the purpose of this study, we allowed the patients to discontinue therapy because of its ease of administration. Some patients who maintained an excellent response initially showed only a fair response after three to four months. They were continued on tolbutamide.

Comment

We have mentioned that most of the group were treated with a loading dose of tolbutamide, and the four-hour blood sugar was compared with the premedication level. We found that while this served as a guide to long-term response, it was by no means infallible. Several patients with a good test response did not maintain adequate control with the drug. Eight such patients were returned to insulin and are considered failures. We have now discontinued the test and prescribe the drug on the basis of clinical evaluation of antecedent diabetic history, amount of insulin taken, and pattern of blood and urine sugar, with equally effective control.

We have mentioned in our introductory remarks that many patients in our clinic population have difficulties of various kinds with insulin administration. The general improvement in diabetic control in our group is due, we feel, not alone to tolbutamide effect, but also to the regular use of a hypoglycemic agent that is taken easily.

Summary

Experiences with the use of an oral hypoglycemic agent in the diabetic clinic of a municipal hospital are reported. The 77 patients observed over an eight- to twelve-month period were preselected on the basis of criteria indicating mild to moderate diabetes. No change in regimen was made other than the substitution of tolbutamide (Orinase) for insulin. Our observations lead to the following conclusions:

1. Tolbutamide is an effective hypoglycemic agent in properly selected cases.
2. Diabetic control was equally good or improved in all but 8 of 77 patients.
3. No toxic effects were noted.
4. No patient developed ketosis or acidosis.
5. Patient acceptance was good.
6. The tolbutamide loading dose test is of only limited prognostic value for long-term response.
7. The use of an oral hypoglycemic agent is a boon to the aged, infirm, incapacitated, allergic, or insulin-recalcitrant patient whose degree of diabetes justifies its use.

The authors acknowledge with gratitude the cooperation given them by the Medical Attending Staff of the Diabetic Clinic as well as by the Nursing Staff headed by Mrs. Helen B. Long.

438 Bay Ridge Parkway

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The Usefulness of Neomycin in Retrograde Pyelography

WILLIAM SAMELLAS, M.D., LEONARD BIEL, JR., M.D., AND JOHN W. DRAPER, M.D.,
NEW YORK CITY

(From the Department of Surgery (Urology), Cornell University Medical College, and Department of Urology, Second (Cornell) Division, Bellevue Hospital)

Although retrograde pyelography is invaluable as a diagnostic procedure for studying the upper urinary tract, experience has placed certain limitations on it. Intravenous pyelograms may be contraindicated because of impaired renal function or a history of certain allergies. Infection may be spread from one area of the urinary tract to another, or there may be systemic reactions, particularly in hydronephrotic kidneys or in those obstructed by stone, stricture, or tumor. These risks are especially evident when the condition of the kidneys is unknown prior to examination.

Since we have seen untoward reactions following retrograde pyelography at Bellevue Hospital, we undertook the present study, that of determining the effect of neomycin as an additive to the contrast medium in this procedure.

The prerequisites of the antibiotic additive may be briefly summarized as follows:

1. Lack of toxicity in effective concentrations.
2. Significant bactericidal activity against the organisms commonly found in the urinary tract.
3. Chemical compatibility with the urographic contrast media.
4. Stability of the combination for long periods of time at room temperature.

Bacterial Studies

The spectrum of neomycin is given in Table I.[1]

TABLE I. Organisms Sensitive to Neomycin in Retrograde Pyelographic Media

Gram-Positive Organisms	Gram-Negative Organisms
Streptococcus agalactiae	Aerobacter aerogenes
Corynebacterium diphtheriae	Escherichia coli
Streptococcus viridans	Proteus vulgaris
Streptococcus pyogenes	Pseudomonas aeruginosa
Streptococcus faecalis	Klebsiella pneumoniae
Ataphylococcus albus	Hemophilus influenzae
Bacillus anthracis	Morax-Axenfeld diplobacillus
Diplococcus pneumoniae	Neisseria catarrhalis
Mycobacterium tuberculosis	Salmonella typhi
	Salmonella paratyphi
	Salmonella schottmuelleri
	Salmonella paradysenteriae

In order to check on the efficacy of neomycin in the concentration and fashion used in this study, in vitro culture studies were made in our laboratory. Urine was obtained from 10 patients known to have urinary tract infections. Escherichia coli, proteus, and Pseudomonas were the most common bacteria found in these studies. Three groups of culture studies were carried out:

Group I: Cultures made with 10 cc. of undiluted urine.
Group II: Cultures made with 10 cc. of urine to which was added 5 cc. of the contrast material (Renografin 30 per cent).
Group III: Cultures made with 10 cc. of urine to which was added 5 cc. of contrast material containing 2.5 per cent neomycin base (as sulfate).*

All Group I cultures showed luxuriant

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* The material used in this study, Renografin 30 per cent and Renografin 30 per cent with 2.5 per cent neomycin base as the sulfate (Retrografin), was supplied by E. R. Squibb & Sons, Div. of Olin Mathieson Chemical Corp.

TABLE II.—Indications for Performing Retrograde Pyelography

Indications	Number of Patients
Abnormal intravenous pyelogram	42
Tuberculosis	25
Tumors	12
Chronic pyelonephritis	14
Calculi	11
Hematuria	8
Nonfunctioning kidney	8
Ureteropelvic juncture stricture	4
Hydronephrosis	4
Poor visualization	4
Ureteral obstruction	6
Polycystic disease	2
Total	140

TABLE III.—Reactions Following Unilateral Retrograde Pyelography

Diagnosis	Reactions	Side
Stone	CVA* tenderness	Right
Tuberculosis	Fever; CVA tenderness	Right
Abnormal IVP†	Fever; CVA tenderness	Right
Tuberculosis	Fever; flank pain	Right
Uremia	Fever; CVA tenderness	Right
Tuberculosis	CVA tenderness	Right
Abnormal IVP	CVA tenderness	Right
Abnormal IVP	CVA tenderness, flank pain	Right
Stone	Fever, CVA tenderness	Right
Abnormal IVP	Fever, CVA tenderness	Right
Tuberculosis	CVA tenderness	Left

* Costovertebral.

† Intravenous pyelogram result.

TABLE IV.—Reactions Following Bilateral Retrograde Pyelography

Diagnosis	Reactions	Side
Polycystic kidney	Fever, flank pain, CVA* tenderness	Bilateral Right
Bilateral ureteral obstruction	CVA tenderness, flank pain	Right
Hematuria	CVA tenderness	Right
Hydronephrosis of right kidney, abnormal intravenous pyelogram of left kidney	Fever, CVA tenderness	Right
Tuberculosis	CVA tenderness, flank pain	Right

*Costovertebral.

growth. Growth in all Group II cultures was as prolific as that in Group I. All Group III cultures showed no growth after twenty-four hours of incubation.

Materials and Methods

A controlled study comprising 140 consecutive unselected pyelograms was carried out. Renografin, both without and with 2.5 per cent neomycin base (as sulfate), was used as the contrast media. Left pyelograms were performed in 61 patients and right ones in 79; 18 patients underwent simultaneous bilateral pyelography. All left pyelograms were performed with the medium containing the antibiotic, while the right studies were carried out without the addition of the antibiotic. In all instances the medium was introduced with a hand syringe, with various operators performing the task. Doses of the media ranged from 3 cc. to 35 cc. The indications for retrograde study are detailed in Table II.

Results

Reactions observed are summarized in Tables III and IV.

For the purposes of this study costovertebral tenderness, fever above 101 F., and flank pain were considered to be reactions. In observing for reactions, patients were carefully followed for forty-eight hours. Colicky pain immediately following the removal of the catheter was not considered a reaction to pyelography.

Using these criteria, 16 patients were observed to have experienced reactions. Only 2 reactions occurred on the left side, where contrast media containing the antibiotic was used. It is significant that in the 18 bilateral examinations, reactions were observed on the right side in 5 and on the left side in all but 1.

Comment

Renografin either with or without neomycin, in the strength and the amounts used in our studies, caused no untoward reactions or signs of toxicity. Although in some patients evidence of pyelotubular and pyelovenous backflow was observed on both sides, no systemic toxic reactions were noted.

The use of this agent in amounts up to 35 cc. is considered safe, since it has been demonstrated that neomycin is not toxic when given in parenteral[2,3] doses of 1 Gm. daily for one to three days.

If all of the neomycin were absorbed in a retrograde study, which is very unlikely, the serum dose would not exceed 1 Gm., an amount which can be absorbed without toxic reaction.

It appears that the use of neomycin sulfate as an additive to pyelographic contrast media has considerable value. The addition of neomycin has not affected the quality of the films. It permits retrograde pyelography in the presence of urinary infection and in cases in which it was previously contraindicated.

Summary

Renografin 30 per cent and Renografin 30 per cent with neomycin 2.5 per cent were used in 140 consecutive, unselected patients undergoing retrograde pyelography. With the media containing neomycin there was marked reduction in reaction.

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New Emollient Detergent as Adjunct to Dermatologic Therapy

MILTON REISCH, M.D., NEW YORK CITY

(*From the Department of Medicine, New York Hospital–Cornell Medical Center*)

OVER the years dermatologists have sought a detergent for cleansing inflamed, exuding, crusted, dry, or scaly skin without irritation. The alkalinity of the average toilet soap in such instances causes edema and partial shedding of the epidermis, thereby exposing the underlying tissues to irritation. Efforts have been made to correct or alleviate the damage caused by this high pH by the use of vegetable oils, animal fats, and recently by hydrophilic petrolatum. Detergents, however, modified by the addition of oils, fats, and emollients lose much of their cleansing properties.

Several years ago interest was aroused in a botanical extract (Botan) of the leaves and rootstock of agaves.[1] The Agave,[2] a large botanical genus of the family Amaryllidaceae, is succulent, is native to the New World, chiefly Mexico, but is found also in southern and western United States, Central America, and tropical South America. In addition to the fibers and several kinds of primitive alcoholic drinks prepared from the expressed juice of the plants, agaves furnished the aboriginal Indians with many other useful products, among which were drugs and poisons as well as foods. Notable is the fact that a good many agave species possessed, mainly in the roots, useful saponaceous substances that have been in use among the Mexican Indians for many centuries. Essentially all known species thus far tested show a varying amount of saponins, particularly in the roots. The best known species is that which the Spanish-speaking people call Lechuguilla.[3] This particular species, as it occurs near the Mexican border, is distinguished by a cluster of radical, yellowish-green, spine-tipped, fleshy leaves, few in number (according to one authority not over 15), and barely a foot long. The flowers are borne in a close panicle resembling a spike. The trunk of this plant is very short and in it is the saponin which has been in general use for centuries among the native Indians and others as a detergent.

The early white settlers in the neighborhood of Brownsville, Texas, formerly depended almost entirely on the agave root as a soap substitute. One resident near Brownsville reported recently that the root-stock of this agave is still used more or less generally by the local residents and stated that the inner fibrous tissues of the lower stem or root-stock are used, the stem being gathered and reduced into cubical pieces as large as an ordinary walnut. One of the pieces, grated and mixed with a quart of warm water, affords enough saponaceous material to clean a whole suit of clothes. The gummy soapy juice lathers in salt as well as in fresh water.

Composition

The expressed juice of the Agave[4] is not a simple substance but a heterogeneous mixture of unrelated compounds including enzymes, chlorophyllins, sapogenins, sugars, gums similar to acacia, numerous gel colloids, pectins, steroids, and waxes. The dominant polysaccharide is inulin and the dominant fermentable monosaccharide is fructose.

This juice is slightly acidic, having a pH of 6.7. The surface tension is 48.2 dynes per cm. as compared with 72.4 dynes per cm. of water.

Clinical Use

With the knowledge that this extract had been used for so long and is still being used, it was incorporated into a French milled soap. This soap (ViDerm) has been incorporated in the treatment routine for neurodermatitis, ichthyosis, psoriasis, eczema, contact dermatitis, and intertrigo. In 142 patients with dermatoses usually intolerant of ordinary soaps, this soap was tolerated by all except 2 with atopic dermatitis.

There were no instances of sensitization. The pectin, sapogenin, and gum constituents apparently modify the alkalinity and give the soap emulsifying and water-softening properties not available in ordinary soaps. These mitigate any deleterious effect on inflamed, irritated skin, help maintain the normal epidermal pH, and create an environment favorable to therapy and normal tissue regeneration.

By the use of the Ross Miles Pour Foam Apparatus, the foaming properties of this soap, two other popular soaps, and a common syndet were compared. It was shown that the addition of the expressed juice of the Agave did not affect the foaming property of the soap and that the foam obtained was as stable and of the same magnitude as that produced by other preparations.

Conclusion

In common dermatoses, a soap containing an extract of agaves enhances the cleansing properties of the soap without irritation, aids in maintenance of the protective acid mantle, and does not degrease or unduly dry the skin.

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RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Hemangiomas

JEFF DAVIS, M.D., NEW YORK CITY

(*From the Department of Dermatology, Pack Medical Group*)

The most common tumor of infancy and childhood is the hemangioma. It is an autonomous new growth in which there is formation of blood vessels or proliferation of vascular walls. Embryonic separations of angioblastic cells give rise to clusters of solid endothelial cords and islands. Later these acquire lumens and form dwarfed intercommunicating blind capillaries, eventuating in a hemangiomatous tumor. It has one afferent and one efferent blood vessel which do not anastomose to adjacent blood vessels except in the racemose type of hemangioma. The resultant tumor may be a simple hemangioma with its encapsulated aggregation of modified blood vessels, or in the process of its original separation other mesodermal inclusions, such as muscle cells, fat, bone, and the primitive blood islands of Pander, may contribute to the ultimate complex structure of the growth.[1]

General Characteristics

Incidence and Location.—Seventy-five per cent of hemangiomas are present at birth. The greater part of the remainder appear in early infancy. In 1 of 5 patients, hemangiomas are multiple, and as many as 25 have been observed in 1 patient. They occur twice as often in females as in males. Tumors located in such regions as the breast and genitalia as well as those developing primarily in organs other than the skin, such as the tongue, brain, orbit, retina, bone skeletal muscle, liver, and gastrointestinal tract, require special consideration and treatment.

Clinical Course and Description.—Hemangiomas of the skin are usually situated in the dermis or the subcutaneous tissue or both. Frequently the greater substance of the mass lies deep in the subcutis. Hemangiomas vary in size, from punctum or small localized tumors to a point where they involve extensive portions of the body. Hemangiomas may remain constant in size or enlarge at varying rates with the growth of the child and, on occasion, completely regress. Once the patient has achieved maturity, the hemangioma generally ceases to enlarge. The color is affected by changes in posture, crying, respiration, or exertion. The surface may be smooth or irregular, level with the skin or elevated in varying degrees, thus presenting a nodular, lobulated, or polypoid mass. Compression produces blanching or complete disappearance of the tumor and serves as a means of differential diagnosis.

Spontaneous ulceration frequently occurs as a result of vascular thrombosis or trauma. This produces incomplete involution of the tumor with excessive scarring. Spontaneous involution may occur in some instances, while in other cases aggressive growth may ensue. Accidental thrombotic occulsion of the central blood supply to the tumor will also produce involution.

Types of Skin Hemangiomas

Capillary Hemangiomas.—By far the greatest proportion of hemangiomas are of the capillary type. At times they may grow rapidly, and they vary in size, from the minute strawberry tumor to a large port wine stain. They ordinarily are circumscribed, sessile, lobulated, and bright red.

Port Wine Stain (*Nevus Vinosus*).—This pink to purplish, flat, superficial hemangioma is a congenital defect, noted at birth, and may grow with the child. The superficial vessels of the derma exhibit diffuse telangiectasia but no proliferative masses such as are found in other hemangiomas. The purple patch blanches under pressure. As the child grows older, the color is more apt to become darker blue rather than fade. Unfortunately, the face is the most common site. The lip and its mucosal surface as well as skin, cheek, and oral cavity may be involved in continuity. Once this hemangioma is fully developed it usually remains unaltered throughout life.

Nevus Flammeus Nuchae.—This is a common inconsequential hemangioma, appears as a superficial light red or pinkish growth at one or both sides of the posterior midline of the neck, just between the occipital protuberance and the fifth cervical vertebra. Frequently it is involved with a seborrheic dermatitis that may extend to this area from the scalp. It is said to occur in 5 per cent of the adult population. It is important to assure the mother that the lesion will never develop further and that in the majority of instances it completely disappears.

De Morgan spots (nevus flammeus) are minute, smooth, pink or reddish puncta of the skin that occur in midadult life and later.

Spider Angioma (*Nevus Araneus*).—The cutaneous arterial spider is a tiny red angioma which owes its descriptive name to its resemblance to a small red spider. The arterial spider consists of a central red punctum with many fine capillary strands radiating like spokes of a wheel for a distance of 0.5 to 1 cm. or more. The spider angiomas are commonly located on the face, arms, fingers, upper trunk, and, less frequently, on the lower trunk and legs. Spiders of similar structure have been reported in the mucous membrane of the conjunctiva, tongue, lips, nasal mucosa, and gastrointestinal and genitourinary tracts.

Sclerosing Hemangioma.—Due to profuse connective tissue proliferation, a solid mass is formed which clinically resembles a small cutaneous fibroma with a faint bluish hue just beneath the surface of the skin. It is frequently seen in adults and is located about the extremities, thighs, or buttocks. Definite diagnosis in many instances depends on pathologic examination of the excised tumor. Spontaneous sclerosing of the hemangioma accounts for the consequent marked changes in both their clinical and pathologic aspects.

Cavernous Hemangioma.—The blood vessels become very much more dilated than in the capillary type. This physical characteristic is due to an expanding connection between the general circulation and the channels of the fundamental capillary hemangioma so that the capillaries become distended to form pools or sinuses. These spaces are limited by their septa, forming spheric sacculations, or cul-de-sacs, in which the circulation is sluggish. The entrant vessels are larger than in the capillary hemangioma. These soft, readily compressible tumors extend into subcutaneous tissue. Depending on their vascular connections and locations, they may reach enormous size and exhibit aggressive growth. Visceral hemangiomas of the liver and gastrointestinal tract and those of bone and muscle are usually cavernous.[1]

Frequently the superficial surface portion of these tumors is strawberry-like, giving the impression of a capillary tumor. Careful palpation is necessary for the detection of the deeper subcutaneous element of the growth.

Hypertrophic Hemangioma.—This tumor is the benign analogue of the malignant hemangioendothelioma. It is a solid, noncompressible tumor of variable hue, usually purplish red. The endothelial cell is the neoplastic unit, and the growth of these endothelial cells tends to obliterate the lumens of the blood vessels. These neoplasms are often locally aggressive and tend to recur after their surgical removal. The tumor grows slowly but never undergoes spontaneous regression. Local blood supply and lymph drainage may be impaired through pressure, resulting in destruction of surrounding structures, hemiatrophy, or elephantiasis. Clinically it resembles a histiocytoma or small fibroma of the skin so that its true nature is often dependent on the pathologic examination.

Racemose (Cirsoid).—The aneurysmal hemangioma may arise as such or through the transformation of a preexistent hemangioma. The essential, or distinguishing, feature is the size of the anterovenous fistula. This tumor may gradually become evident or suddenly present itself, usually in adult life. Most cirsoid hemangiomas are located on the face or neck and have close vascular connections with branches of the carotid artery. Dilated, tortuous, throbbing vessels of this tumor present a pulsating mass. As with aneurysms, the constant pulsations of the tumor are capable of eroding adjacent bone. It may extend over the scalp, erode the skull, penetrate the cranium, and even communicate with the meningeal vessels.[1]

Hemangioendothelioma.—Although malignant forms of hemangioma are rare, the majority are of this type. In certain instances, hemangioendotheliomas may be benign or only of local malignancy. In any event they are known to be resistant and tend to recur after surgical excision. They are soft, dark red tumors of 1 to 6 or 8 cm. or more in diameter and may have satellite nodules. The lesions are usually painless but tend to ulceration with bleeding. Although the tumors may occur at any age, they are more frequently seen in teen-age and older patients. They would seem to occur more frequently in females.

The benign type of hemangioendotheliomas are probably the congenital ones and appear early in life. The hemangioendothelioma has its origin in the vascular endothelial cell. Histologically this tumor is formed by small anastomizing vascular channels imbedded in a delicate fibrous reticulum, with its lumen lined with an overproliferation of atypical embryonic endothelioma cells. This proliferation of endothelial cells within the lumina serves to differentiate it from the hemangiopericytoma, another malignant vascular tumor in which the tumor cells appear outside of the lumina. The benign form is less anoplastic and more nearly simulates the hypertrophic hemangioma.

Hemangiopericytoma.—The hemangiopericytoma, described by Stout and Murray[2] in 1942, is a vascular tumor formed by endothelial tubes and sprouts derived from the contractile pericytes outside the reticulin sheath of the capillary wall. Stout[2] recently reported on 38 cases. He found that these tumors occur as nodules on all portions of the body, located for the most part in the skin, subcutis, and muscle. It usually is a slow-growing tumor with a history of several months to several years duration, occurring in both sexes of any age. Although ordinarily benign, on occasion they may demonstrate wide infiltration with metastasis.

Systemic Hemangiomas.—Systemic hemangiomas are those diffuse vascular tumors which usually occupy an entire extremity or portion of the head or trunk. As much as an entire half of the body may be involved in this congenital neoplastic process. The extremity from the shoulder to the nail beds or from the pelvis to the toes may be completely implicated. This hemangioma may follow the subcutaneous pattern of a major nerve. Imbecility, epileptiform seizures, and neurofibromatosis occasionally accompany the systemic hemangioma.

Congenital Neurocutaneous Syndromes Associated with Angiomatosis

Certain neuroectodermal defects, involving the central nervous system and peripheral nerves, are frequently found to be associated with hemangiomatous lesions and may be intracranial, dermal, and visceral in distribution. It is possible for these patients to be intelligent, but in the average case the brain lesion is so gross and so often associated with hemorrhages and structural maldevelopment that variable degrees of mental and psychic impairment are evident.

Four congenital neurocutaneous syndromes have been found to be associated with angiomatosis: (1) Recklinghausen's neurofibromatosis and angiomas of the skin, (2) Bourneville's syndrome with tuberous sclerosis, Pringle's disease, and regional angioma, (3) Sturge-Weber's disease, encephalofacial angiomatosis, and (4) Lindau-von Hippel's disease, hemangiomatosis of the retina and cerebellum.

Recklinghausen's Neurofibromatosis and Angiomas of the skin.—Neurofibromatosis is not only associated or coexists with multiple lipomas but also with angiomatous lesions of the skin and mucous membranes. Diffuse port wine stains, capillary hemangiomas, and, rarely, systemic angiomas are found in patients bearing the classic stigmata of Recklinghausen's disease of the peripheral nerves.

Bourneville's Syndrome with tuberous Sclerosis.—This is a complex neuroectodermal defect in which proliferative glial nodules and angiomas of the brain along with hemangiomas of the skin are associated with a multitude of varying signs and symptoms. These are chiefly: evidence of mental defects, nevus multiplex of Pringle (adenoma sebaceum of the skin), various other cutaneous manifestations (polyps, nevi, café-au-lait spots, and fibromata), other congenital malformations, and angiomas of the kidney.

Excephalotrigeminal Angiomatosis (Sturge-Weber's Disease).—The unilateral involvement of the face and brain by an angioma is associated with classic signs and symptoms. The four distinguishing features of this syndrome, although not constantly associated with it, are: facial distribution of angioma, central nervous system phenomena, ocular lesions, and distinctive roentgenographic findings which are present in 90 per cent of the cases.

Lindau-von Hippel's Disease.—In Lindau-von Hippel's disease multiple angiomas of the retina and brain are present. These hemangiomas most frequently involve the cerebellum, occur less often in the medulla and spinal cord, and are rarely, if ever, observed in the cerebrum.

Hemangioma of Organs Other Than the Skin

Orbit and Retina.—They may involve either the eyelid or conjunctiva and may develop in the retrobulbar fat and cause unilateral exophthalmos. Coats's disease is a massive exudative retinitis associated with cutaneous hemangiomas.

Tongue.—The lingual hemangiomas are usually cavernous in type and congenital in origin. The tip of the tongue is the common site, but the tumor may encompass the entire organ. The bulk of the tumor may interfere with mastication and speech.

Gastrointestinal Tract.—The stomach is rarely involved but the small intestine and colon are occasionally the sites of multiple hemangiomas, usually associated with superficial tumors.

Liver.—Cavernous hemangiomas of the liver are uncommon and are usually discovered at autopsy. At times, symptoms may lead to surgical removal.

Bone.—Hemangiomas of the bone are rare. They are usually slow-growing and asymptomic. The roentgen picture of hemangioma may so closely simulate other tumors of the bone as to necessitate biopsy for final differentiation. Kast's syndrome consists of multiple hemangiomas associated with chondromas. Bone may demonstrate changes secondary to the presence of a hemangioma in adjacent soft tissue. In Maffucci's syndrome there is a shortening of the long bones associated with multiple hemagiomas of an extremity.

Present Concept of Therapy

Follow-up studies have been made on limited series of cases in which treatment of the tumors was withheld.[3–11] In general, these observations indicate that the small superficial capillary tumors of 1 cm. in diameter or less are the most apt to undergo resolution without treatment within a five-year period. Of the cavernous hemangiomas, approximately 15 per cent may resolve without interference. These figures on instances of spontaneous resolution are not too impressive.

Since, in certain instances, untreated hemangiomas may undergo spontaneous regression, some recommend postponement of treatment although the facts do not seem to warrant such a gamble. The complete adherence to such a policy may prove lamentable in some cases.

Aside from the fact that the chances are against a given tumor spontaneously resolving without therapeutic intervention, there are other disadvantages in a "waiting policy." The tendency for some hemangiomas to enlarge aggressively or ulcerate is well known. When this occurs, treatment becomes more difficult and the cosmetic effect may be less pleasing. Spontaneous resolution is not always complete, and the resulting scar is not always desirable. There is no method of determining whether a hemangioma will remain at status quo, grow aggressively, or eventually resolve. The older the growth, the less effective is the response of the tumor tissue to the agent employed. This is especially true after the infant is six months old. For this reason, in order for the treatment to be most advantageous it must be instituted at the earliest possible time after the appearance of the growth. This is especially applicable to growths strategically located from a cosmetic viewpoint, that is in places where enlarged tumors would be unsightly, such as about the eyes, nose, cheeks, neck, scalp, and hands. It is also particularly applicable to tumors of the lips, nares, eyelids, and ears which are frequently prone to ulceration and as a consequence end in an untoward scar of a prominent anatomic site.

The method of therapy to be employed depends on the depth, anatomic site, and age of the tumor. Superficial growths, such as port wine marks, may respond to thorium, x-ray, or tattooing when the child is older. Carbon dioxide is best for strawberry growths and for the resolution of superficial portions of deeper tumors. In capillary tumors of greater depth and in cavernous hemangiomas, the injection of one of the sclerosing agents gives excellent results. In very extensive systemic hemangiomatosis and small localized encapsulated tumors, surgical excision may be indicated. X-ray therapy is the choice of some therapists. The combination of sclerosing injections, carbon-dioxide applications, and implantation (intratumoral) of small radon seeds is efficacious in difficult cavernous tumors, especially those demonstrating aggressive growth.

Irradiation therapy of hemangiomas has become more widely accepted in recent years. Principally, because in most instances it can be easily administered, the procedure is painless and cosmetic results usually good. The present routine of x-ray therapy of hemangiomas has been markedly modified from that formerly administered. There has been a definite trend toward minimizing the total dosage and filtration along with the lengthening of the intervals between treatments. Nevertheless, the fact remains that late radiation sequelae from both x-rays and radium may still present themselves in the skin ten to fifteen years after treatment. In instances of injudicious use of the modalities the resulting effects may be observed even before the tumor is fully resolved. Radiation is contraindicated in tumors situated over the breast, genitalia, or epiphyseal joints since it may have a detrimental effect on the growth of these parts.

In cases in which there are multiple tumors, hemangiomas in and about the eye, signs and symptoms suggestive of one of the major syndromes, or systemic hemangiomatosis, the child must undergo a complete physical examination. This includes referral for special consultation, such as ophthalmologic or neurologic work-up and indicated x-ray studies, for instance those of the brain (as in a suspected Sturge-Weber syndrome). These measures should be taken before any form of therapy is instituted.

The philosophy of treatment of hemangiomas is diametrically opposed to the usual attitude of treating a tumor growth. The therapist is not concerned with quick obliteration. His ultimate desire for complete resolution with a good cosmetic effect dictates that he make an assiduous effort to accomplish relatively slow regression without accompanying untoward reactions

139 East 36th Street, New York 21

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In weight reduction, if normal weight can be maintained for six months to a year, it is likely that the individual will keep his weight down for a long time, it is reported in *Patterns of Disease*, published by Parke, Davis & Company for the medical profession.

Among persons in the forty-five- to fifty-year-age group, 10 excess pounds increase the chance of death by 8 per cent above normal. Thirty excess pounds increase the chance of death by 28 per cent, and 50 excess pounds, by 56 per cent.

CLINICOPATHOLOGIC CONFERENCE

BINGHAMTON CITY HOSPITAL

BINGHAMTON, NEW YORK

Conducted by FREDERICK P. BECKER, M.D.

DECEMBER 1, 1958

Discussed by JAMES L. PALMER, M.D.

Case History

This was the second Binghamton City Hospital admission of a sixty-nine-year-old white married woman who entered with the chief complaint of pain in the right side of the flank of about eighteen hours duration.

PRESENT HISTORY.—At noon on the day prior to admission the patient developed a sudden sharp, stabbing pain in the right side of the flank. Concomitantly she began to have frequent urination which was unaccompanied by burning or pain. At this time she also began to pass blood in her urine at frequent intervals. The pain in the right side of the flank remained constant and unremitting; there was no radiation. She vomited twice on the evening prior to admission, the vomitus consisting of ingested food and not containing blood.

On the day prior to admission she had had two bowel movements and the stools were normal in form and color. There had been no chills and, as far as the patient knew, no fever.

PAST HISTORY.—The patient had experienced sudden onset of bronchial asthma in February, 1956. From then onward she had had frequent bouts of dyspnea at rest (the dyspnea being very marked when she climbed the stairs), orthopnea, wheezing, and coughing. Her first admission to Binghamton City Hospital was on July 21, 1956, for an episode of dyspnea and wheezing of four days duration. At that time she received ACTH, Vaponephrin spray, aminophylline suppositories, and Amesec. She improved rapidly and was discharged six days later, on July 27, 1956, free of symptoms. She was readmitted, the present admission, two days after discharge.

There was no previous history of heart disease, hypertension, chest pain, or palpitations, nor was there a history of renal disease, ankle edema, or anorexia. System review disclosed nothing pertinent about her nervous system.

She was para 3, gravida 3 and had had her last menstrual period at forty-seven years of age, about twenty-two years before the present admission. There had been no vaginal bleeding until the present time. Her occupation was that of a housewife; her family history and habits were not mentioned.

PHYSICAL EXAMINATION.—Physical examination revealed a well-developed, well-nourished elderly white female appearing somewhat pale and dehydrated but not in acute distress. Her temperature (taken orally) was 99.2 F., pulse 96 and regular, respirations 20, and blood pressure 175/100.

Examination of the head gave unremarkable findings. There was no sclera icterus. The pupils were round, regular, and equal and reacted to light and accommodation. The ears and eyegrounds were not examined. The tongue was dry, and there was slight pharyngeal injection.

There was no nuchal rigidity. The veins of the neck were flat, and the carotid pulsations were of normal intensity bilaterally. The thyroid was not enlarged. There was slight thoracic kyphoscoliosis. The lungs were clear to percussion; the breath sounds over both bases were diminished but were otherwise clear to auscultation. The heart had a normal sinus rhythm with a pulse rate of 96 per minute. The point of maximal impulse was in the fifth left intercostal space, about 2 cm. to the left of the midclavicular line. The sounds (first and second mitral, second aortic, and second pulmonic) were well defined. There were no murmurs.

The abdomen appeared slightly distended. There was slight tenderness to palpation in the right side of the flank and the lower right section of the abdomen. There was no rigidity, or rebound tenderness, and no mass was palpable. The liver, spleen, and kidneys were not palpable. Bowel sounds were active. There was marked tenderness to percussion in the right costovertebral angle.

Vaginal examination revealed a third-degree prolapse of the uterus with cystocele and rectocele. The proplapse was reducible. The cervix appeared edematous and markedly eroded. The uterus seemed normal in size. There was no bleeding. Adnexal masses or tenderness were not present. Rectal examination showed the rectum to have good sphincter tonus. There was marked rectocele but no masses or tenderness. There was no blood on the examining finger.

Examination of the extremities revealed hardened peripheral arteries. All peripheral pulses were present but they were weak. There was no peripheral edema. The neurologic findings were unremarkable.

Laboratory Findings.—The hemoglobin content was 12.8 Gm. per cent and hematocrit 39. The white cell count was 19,350, with 9 per cent lymphocytes, 3 per cent monocytes, 8 per cent stab cells, and 80 per cent segmented forms. The total granulocyte count was 88 per cent.

The urine had a specific gravity of 1.015 and a pH of 6 and was negative for sugar. Urinalysis also revealed a trace of albumin, 0 to 2 white blood cells per high power field, 1 to 3 red blood cells per high power field, and a rare hyaline cast.

X-ray of the chest showed definite cardiac enlargement, with an increase in heart size since the previous film was taken, on July 22, 1956. There was slight calcification in the arch of the aorta and grossly clear pulmonary parenchyma.

In an excretory urogram the kidneys appeared normal in size, shape, and position. A solitary gallstone, measuring 18 mm. in diameter, was suspected. The left calices and renal pelvis appeared normal, but there was some dilatation of the left side of the ureter, representing incomplete obstruction at the ureterovesical junction. The right calices visualized very poorly; the superior calyx on the right side was normal but the others were poorly seen. The pelvis visualized poorly. The right side of the ureter appeared normal. The postvoid film showed that 100 cc. of opaque material remained in the bladder. The impression was that the patient probably had cholelithiasis. The left renal collecting system was normal. There was the possibility of a clot in the right renal collecting system. The patient had a poorly draining left ureter and residual urine in the bladder.

Cystoscopy revealed bladder obstruction secondary to well-marked procidentia. There were obstructive changes in the bladder. Ureteral orifices were seen only when the procidentia was reduced. Obstructive cystitis was also present. A retrograde pyelogram revealed a normal bilateral renal collecting system. The nonfilling of the right renal pelvis noted on the excretory urogram was no longer present. The suspected gallstone was again noted. Urine specimens taken during cystoscopy showed that of the bladder to contain 25 to 30 white blood cells per high power field and no red blood cells. That of the kidney contained no white blood cells but did contain 40 to 50 red blood cells per high power field, and that of the right kidney 0 to 1 white blood cell per high power field and 1 to 2 red blood cells per high power field.

Hospital Course: On the second hospital day the patient's temperature (taken rectally) rose to 101.4 F. The right-sided flank pain had disappeared. She seemed comfortable and ate fairly well. However, she had a rather severe cough unaccompanied by dyspnea. There was no hemoptysis and no hematuria or vaginal bleeding. On the third hospital day her temperature (taken orally) decreased to 99.8 F. She was free of pain and appeared in good condition. There still was flank tenderness on the right side. On the fourth hospital day she continued to be free of symptoms and her temperature was normal. A cystoscopy and retrograde pyelogram were performed with findings as described previously. She was placed on Furadantin 50 mg. three times daily. The fifth hospital day was uneventful.

Early on the sixth hospital day she began to complain of abdominal cramps and vomited several times, the vomitus consisting of fluids ingested and yellowish material and totaling about 600 cc. Later on in the day she began to complain of steady, severe midback pain, and she continued to vomit after eating. She had two liquid bowel movements, each containing dark red blood. Her temperature remained normal. She received Demerol 50 mg. and Compazine for the pain. On the seventh hospital day she developed severe constant midepigastric pain radiating to both upper quadrants and through to the back. The pain was intensified in the supine position, and she was unable to be on her back. She continued to have severe nausea and vomiting but there were no further bloody stools. The pain was only partially relieved by Demerol. Her temperature was 98 F. and blood pressure 180/80. She appeared pale and severely ill. The lungs were clear to auscultation. Her heart rate was 72. The abdomen was not distended. There was tenderness across the upper portion of the abdomen without rigidity or rebound. Bowel sounds were hypoactive. The white cell count was 42,000, with 6 per cent lymphocytes, 1 per cent eosinophils, 13 per cent stab cells, and 80 per cent segmented forms; the total granulocyte count was 94 per cent. The hemoglobin content of the blood was 12.9 Gm. per cent and the hematocrit 42. Serum amylase was 140 units and serum lipase was 100 units. On the eighth hospital day the patient continued to have severe epigastric pain as on the previous day but also complained again of severe pain in the right kidney region. She continued to have nausea and vomited a small amount of brown material. The pain was relieved only slightly by Demerol. There was no chest pain or shortness of breath. The abdomen became distended. She appeared apprehensive and in acute distress. The extremities were cold and clammy, and her temperature rose to 103.2 F. Her blood pressure dropped to 90/60 with a pulse rate of 130. The abdomen was distended. There was marked tenderness and rigidity across the lower portion of the abdomen. Bowel sounds were absent. An electrocardiogram revealed a heart rate of 130 and normal sinus rhythm but was otherwise unremarkable. Serum amylase was 324 units. The white cell count was 52,900 with 6 per cent lymphocytes, 1 per cent monocytes, 28 per cent stab cells, and 65 per cent segmented forms; the total granulocyte content was 93 per cent. The hemoglobin content was 12.5 Gm. and hematocrit 39.

A flat plate of the abdomen showed marked distention of the stomach and small intestine. Thickening of the intestinal wall was seen, and edema of the small intestinal wall was suspected. The impression was that the patient had incomplete small intestinal obstruction, but the findings were also compatible with mesenteric thrombosis. The patient was placed on Levophed, 4 cc. in 1,000 cc. of 5 per cent glucose in water, Achromycin 500 mg. intravenously, and Solu-Cortef 200 mg. intravenously. The blood pressure rose to 130/65 but the abdominal symptoms and signs persisted. Her abdomen became more distended and diffusely tender. Her extremities remained cold and clammy. Her respirations became rapid and labored. She became unresponsive, except to painful stimuli. On the ninth hospital day her temperature rose to 105.6 F. The white cell count was 74,000, with 1 per cent lymphocytes, 4 per cent monocytes, 1 per cent eosinophils, and 36 per cent segmented forms. She became comatose and cyanotic. Her blood pressure became unobtainable, and she expired at 12:20 P.M.

Discussion

DR. FREDERICK P. BECKER: Will the radiologist please discuss the x-rays.

DR. VICTOR DRUCKER: These two chest roentgenograms were taken at an interval of about a week. The first film, taken shortly after admission to the hospital, shows a moderate degree of fibrosis and emphysema but no definite evidence of any acute pulmonary parenchymal disease. The apices are clear, as are the costophrenic sinuses. The heart and mediastinum are normal in size, shape, and position. There is some calcification in the aortic knob, indicative of arteriosclerosis. The later film shows nothing essentially different.

DR. JAMES L. PALMER: Dr. Drucker, in the case history, a change of heart size was suggested on the two films; you don't feel that there was any evidence of pericardial effusion?

DR. DRUCKER: No. There is nothing here to indicate a pericardial effusion. The slight difference in the size of the heart can be explained by the fact that these two films were taken in different projections. Actually, the heart is not enlarged.

The next set of films of interest is an intravenous urographic study. The flat plate shows some gas within the small and large bowel but not of an amount to warrant a diagnosis of a true ileus. A gallstone is present in the right upper quadrant. After intravenous administration of the medium, good excretion and normal filling on the left are noted. There is rather delayed and poor excretion on the right, with a slight filling defect in the lower pole calyces which does not appear to be due to an inflammatory or neoplastic process but may represent a blood clot.

DR. PALMER: Dr. Drucker, from these or from subsequent films can you tell us anything about the aortic shadow?

DR. DRUCKER: The abdominal aorta?

DR. PALMER: Yes, sir. Do we see any abdominal aortic shadow, or do we see any difference between your first set of films and your second set?

DR. DRUCKER: There is slight calcification in one area just proximal to the bifurcation, which is another indication of the arteriosclerosis that was already noted in the thoracic aorta. But there is no evidence of dilatation or displacement.

Retrograde pyelography, performed as a follow-up to the intravenous study, shows more complete filling of the right kidney structures, without distortion or displacement of calices, infundibula, or pelvis, confirming the original impression of an absence of inflammatory or neoplastic involvement. The left upper portion of the genitourinary tract, as shown on intravenous urography, is entirely normal. The last film of the presentation was taken four days after the retrograde pyelography. It is a flat plate of the abdomen and shows definite evidence of small bowel distention with a few loops of dilated small intestine arranged in step-ladder fashion and a moderate amount of gas within the colon—a picture which is suggestive of a low-grade paralytic ileus.

DR. PALMER: The case history suggested thickening of the bowel wall. How sure can you be of that on x-ray appearance?

Dr. Drucker: We cannot be sure of it from this study. We see that there is slight separation between several of the small bowel segments, suggesting the presence of peritoneal exudate, but an actual thickening of the intestinal wall is very difficult to make out.

Question: Can you see any gallstones in that film?

Dr. Drucker: Yes, there is a single, small radiopaque calculus here. The opacification is definitely beyond the confines of the kidney shadow and therefore does not represent a renal calculus or any other calcification within the kidney.

Dr. Palmer: I believe that any clinician faced with the data given in the present history of the patient would direct his attention primarily toward disease involving the right kidney. The sudden onset of the patient's pain, the location and sharp stabbing nature of her pain, and the frequent urination and hematuria surely point toward trouble in the right side of the urinary tract. Vomiting may of course be associated with severe pain from any source; almost all sensory nerves, cranial and peripheral as well as autonomic, are capable of transmitting emetic influences. Probably frequent urination also might be associated with any severe pain. The complex of symptoms, however, could hardly lead one initially anywhere but to the urinary tract. I dare say, even with this much data, one would already be giving most serious consideration to the presence of a right renal calculus, although the constant nature of the pain described might be indicative of some other type of lesion. Also, the advanced age of the patient should make one consider at once the possibility of one of the degenerative and malignant diseases.

But in the patient's past history we have our attention directed toward the cardiorespiratory system. The sudden onset of bronchial asthma, occurring only six months before the onset of the terminal illness, merits considerable thought. So-called "intrinsic" asthma does occasionally have its onset late in life, and the response to the medications which this patient received would lead one to believe that her disease was, in fact, asthma. (Incidentally, I would have us keep in mind that she received ACTH.) But because of her age, even in spite of the negative past history, we must seriously consider that there might be an element of cardiac failure responsible for her dyspnea. I would mention the lack of history regarding her habits only to wish that we had knowledge regarding whether or not she was an alcoholic person.

The systemic review is important chiefly because all findings except those referable to the cardiorespiratory system were negative. It is of interest to note that if she did in fact experience cardiac failure it appeared to be all left-sided failure; she had no peripheral edema and she was never digitalized.

Physical examination revealed tachycardia, slight fever, and mild, but, I think significant, hypertension. There was cardiac enlargement, but evidently there was no pulmonary edema. What is something of a disappointment to me, as I endeavor to piece this picture together, is the fact that she was not fibrillating. Also of importance is the lack of cardiac murmurs. Her peripheral arteries were hardened, but I think it is quite significant to note that all peripheral pulses were intact. (I would pause here and stress to the house staff the value of checking peripheral pulses, particularly those of the lower extremities, in all patients. Oftentimes, existing correctable vascular disease is discovered only in this manner.)

Examination of the abdomen revealed tenderness in the right flank and the right lower quadrant; I think this is of some significance in light of subsequent events. Bowel sounds were still active, and there was percussion tenderness over the right kidney; we are not told of any tenderness found in the right upper quadrant. Rectal examination findings seem to have been negative.

Thus far, I would say that we find little to tell us that the primary source of trouble was not in the right kidney. But as we begin our laboratory and roentgenologic investigations we begin to find that all is not what it seems. First, there is a rather innocuous urine report; where we might expect to find considerable pus and blood, we find little or nothing. Then we learn of the presence of a gallstone, which at best is a red herring and at worst might explain the whole structure thus far. When our medical forefathers listed lues as the great imitator, I believe they might have mentioned that gallbladder disease was a first cousin to lues in this one respect. Next, we learn of abnormality in the left side of the urinary tract, which until now we had not suspected. This evident ureteral obstruction I will dismiss, however, as of no importance and perhaps due to the cystocele and prolapse. We also learn that there was not any stone in the right kidney. This we should keep in mind.

For the first five days our patient's symptoms and general condition improved satisfactorily, despite all the work-up to which she was, of necessity, submitted. However, on the sixth day after her admission the picture began to change. She began to experience abdominal cramps and vomiting. Then she had severe midback pain, and she began to pass bloody liquid stools. She next developed upper midabdominal pain with radiation to her back. But as late as the seventh day her pulse and blood pressure had not changed appreciably. She did, however, develop a severe leukocytosis (42,000); and on the eighth day we began to see signs of more rapid deterioration, with falling blood pressure, abdominal distention, high fever, tachycardia, and marked tenderness and rigidity across the lower portion of the abdomen. By this time also there was absence of bowel sounds, a moderate elevation of serum amylase, and a more severe leukocytosis. A flat plate revealed a distended abdomen and intestine with thickening of the intestinal wall. Therapy thereafter was directed toward control of shock.

It must be evident to us all by now that acute primary disease of the right renal tract can hardly explain the rapid downhill course which this woman experienced. Therefore, I shall propose three possible clinical entities, each of which, I believe, might have played a part in the production of this picture. These are: dissecting aneurysm of the aorta, acute pancreatitis, and mesenteric vascular occlusion. I am aware of the folly of neglecting to consider neoplasm in this age group, but we are given no concrete evidence that any such entity existed and I find myself unable to explain such a rapid demise on the basis of a neoplasm alone.

Dissecting aneurysm usually begins in an atherosclerotic aorta in the presence of hypertension. She had both. Although we do not have a serology report, lues is quite an uncommon basis today. The manifestations of this disease may simulate renal infarction with malignant hypertension, pancreatitis, mesenteric thrombosis, and peripheral embolization, among other things. Perforation of the adventitia may occur anywhere along the course of the aorta or its main tributaries, resulting in hemorrhage into neighboring structures. The initial evidence pointing to the right kidney might well have indicated involvement of the renal artery, and the subsequent events pointing toward involvement of the mesenteric vessels might have been downward progression to these vessels, which arise from the aorta at, or not far distant from, the renal vessels. One could make a more convincing argument for this diagnosis if one had support from the x-ray department in the finding of a widening aortic shadow as time progressed, if there was more evidence of vascular and/or neurologic disturbance involving the lower extremities, and if a pulsating abdominal mass had been described.

The case for pancreatitis, I think, is a real one. You will recall that in this disease there is intrapancreatic activation of proteolytic enyzmes with consequent digestion of pancreatic tissue and blood vessels.

Such a picture is thought to be due to obstruction of pancreatic secretion, as from a gallstone in the ampulla or from spasm of the sphincter of Odi, with reflex of bile into the pancreatic tissue. Persons with gallstones or peptic ulcers and those addicted to alcohol are most prone to develop pancreatitis. We have no history of alcoholism and I can find little evidence of a peptic ulcer, although I suppose a perforating ulcer might have initiated this entire train of events and we must remember that she did receive ACTH therapy for her asthma. But we do know that our patient had at least one gallstone, and she may very well have had more. The elevation of her serum amylase would seem to indicate the presence of pancreatitis, whether or not it is the main pathology; we do know that serum amylase may also be elevated following the use of morphia and in the presence of a perforating ulcer and of a mesenteric vascular occlusion. Although hemorrhagic phenomena are rare in pancreatitis, there may occasionally be rupture of a major blood vessel with internal hemorrhage. This, I suppose, could have explained the bleeding from the bowel. But pancreatitis as the chief diagnosis does not give us a satisfactory explanation for the initial presenting symptoms, even though it might appear to explain the terminal events. And in my experience, pancreatitis producing such a violent terminal picture would be expected to produce a much higher serum amylase than this patient presented.

That this patient did experience mesenteric vascular occlusion I feel reasonably sure. I should say that this occlusion involved the superior mesenteric vessels. Among the three possible mechanisms of occlusion of these vessels, venous thrombosis, arterial thrombosis, and arterial embolism, I find it difficult to choose. Probably arterial thrombosis is the more likely, on the basis of the patient's arteriosclerosis. An embolus might have come from a mural thrombosis, but we would be on safer ground with such an hypothesis if only the patient had been fibrillating. Embolic phenomena could nicely explain her entire course of events, with an embolus in the right renal artery responsible for her initial complaints and an embolus to the superior mesenteric artery explaining the terminal events. But this would necessitate the presence of two separate emboli occurring close together. Among the earliest symptoms of mesenteric vascular occlusion is severe crampy abdominal pain, caused by hyperperistalsis resulting from early ischemia. This our patient had terminally. Shock, abdominal distention, severe leukocytosis, and melena, all of which are commonly seen in cases of arterial embolism, she likewise had. She also had cardiovascular disease, which is so commonly a basis for occlusion of these vessels. Mesenteric vascular occlusion is not a pathologic entity but rather a complication of any number of other diseases.

In summary then, and to avoid being too verbose, I believe autopsy would disclose evidence both of pancreatitis and superior mesenteric vascular occlusion. The former, I believe, would not be her primary disease but might well be secondary to the latter. As for the cause of the mesenteric occlusion, I am not too well convinced. But because I think no medical problem is so well served as when the attending physician commits himself to a definite diagnosis, be it right or wrong, I shall predict the presence of a dissecting aneurysm. This I would place in the abdominal aorta so as to involve the renal arteries and the superior mesenteric artery. I doubt that it will have ruptured clear through the aortic wall. Although I admit the obvious weaknesses in this concept, I believe it explains the over-all picture better than any other single entity I have thought to consider.

Dr. Becker: Thank you Dr. Palmer. Are there any questions for the people who have spoken so far?

Dr. Ahmad Aurandy: Referring to the interpretation of the first pyelogram, one significance of colicky pains arising from a kidney is radiation down to the genital area and groin. How often don't we have radiation of those renal pains?

Dr. Palmer: I don't know whether I can say how often we don't have it. It surely is common. On a percentage basis I don't believe I can answer it. When I referred to the significance or the possible significance of the pain in the right lower quadrant I was thinking more in terms of the subsequent diagnosis of mesenteric occlusion.

Dr. Thomas Isa: During the cystoscopy there were no red blood cells in the urine and then in the catheterization of the left kidney they found 40 to 50 of them. How is that?

Dr. Palmer: I would like to ask one of the urologists to answer that but I would first like to say that I think trauma might have been the reason. I don't say that with any malice, but she did have a severe prolapse and I think that might explain it. Dr. Bandell would have a better explanation for it.

Dr. Herbert Bandell: I agree with Dr. Palmer on this cause. Too often we see microscopic hematuria on catheterization of the ureter without getting red cells in the urine. Unless you have reason to suspect that the urine did have red cells before catheterization, it is sometimes unreliable and may throw you off.

Dr. William McKechnie: It seems that the possibilities of myocarditis and endocarditis in particular as causes of this patient's symptoms should be considered. She had a history, as Dr. Palmer pointed out, suggestive of some degree of failure in the past and a fairly recent onset. The cause of the myocarditis, I think, would be very hard to determine, but a number of cases of this disease occurring in the auricles, both right and left, associated with endocarditis and unassociated with auricular fibrillation have been reported. It may very well be that in our patient a number of emboli were detached, probably from her heart and probably from the left auricle, which caused both a renal infarct and a mesenteric infarct and possibly some infarct of her pancreas too.

Dr. Sambamurti Srinivasan: There were 50 red blood cells from the left kidney. Would it be correct to assume that the patient had a left kidney infarct, and if so how does it happen that she did not have left loin pain?

Dr. Palmer: I think that perhaps we answered that in part previously. I would sooner think these red cells came from trauma from the cystoscopy than from the infarct. If we had evidence that she had bleeding from both kidneys I would be much more inclined to suspect the blood cells from the left were on the basis of renal pathology, as from an embolism or infarct. But where we have it only on the left I think that it seems to be more likely that it came from trauma than from the cystoscopy.

Dr. Vasan: Dr. Bandell, if this is due to trauma would there be such a discrepancy in the number of red blood cells for both the kidneys? Would it be possible to have only 1 red blood cell in the right kidney and 50 in the left kidney if they are of traumatic origin?

Dr. Bandell: Yes.

Dr. George Miller: The gallbladder findings have been referred to as "red herrings." It seems possible that the symptomatology and findings could have resulted from rupture of the gallbladder, with a resultant generalized severe peritonitis and pancreatitis.

Diagnoses

Clinical.—*(1) Cholelithiasis, (2) incomplete small intestinal obstruction, and (3) mesenteric thrombosis (?).*

Dr. Palmer.—*(1) Superior mesenteric vascular occlusion due to a dissecting aneurysm and (2) pancreatitis.*

Anatomic.—*(1) Superior mesenteric vascular occlusion due to arterial thrombosis resulting from arteriosclerosis, (2) extensive gangrene and distention of small bowel, (3) infarct of the right kidney and spleen, and (4) cholelithiasis and chronic cholecystitis.*

Pathologic Report

Dr. Becker: External examination revealed a small quantity of bloody and bile-tinged fluid about the mouth and external nares. There was a paramedian incision over the right lower portion of the abdomen which had healed and a fresh venous cutdown on the medial aspect of the right ankle. There was no evidence of edema, jaundice, or superficial lymphadenopathy. A normal state of nutrition and development was evident. The principal findings involved the small bowel and the aorta. The small bowel showed extensive gangrene of a somewhat patchy nature and was slightly distended throughout its length. The orifice of the superior mesenteric artery was occluded completely by a thrombus. Similar thrombotic emboli were present in the common iliac bifurcation, but these did not occlude the lumens of either common iliac artery. Another thrombus was found in the superior mesenteric artery, about 3 inches distal to the one previously described. This was firmly wedged and completely occluded the lumen of the vessel. Dissection of the aorta disclosed two separate vegetation-like adherent thrombi situated about 5 cm. above the aortic valve. These were friable and were dislodged. The aorta showed arteriosclerotic changes throughout its length. These were moderate in nature. The thrombi in the proximal aorta were apparently the source of the emboli in the superior mesenteric artery and also those of the iliac bifurcation. Additional related findings were recent infarcts of the spleen and of the right kidney but not of the left kidney. Embolic clots were not demonstrated in the respective arteries but these were apparently of very small caliber. The peritoneum showed accumulations of cloudy fluid, moderate in quantity, associated with massive necrosis of the small bowel. Gross examination of the heart gave essentially negative findings. The heart weighed 300 Gm., and there was moderate coronary arteriosclerosis without occlusion. Microscopically the heart showed evidence of anoxia in the form of a minimal focal infiltration of polymorphonuclear leukocytes. There was no evidence of frank necrosis of the heart muscle. Sections of the liver showed early lobular necrosis and congestion. The gallbladder revealed chronic cholecystitis and a solitary gallstone which measured about 3 cm. in diameter. The central nervous system was not examined. The lungs were essentially negative, and there was a minimal increase in fluid in each pleural cavity. May we have the slides please?

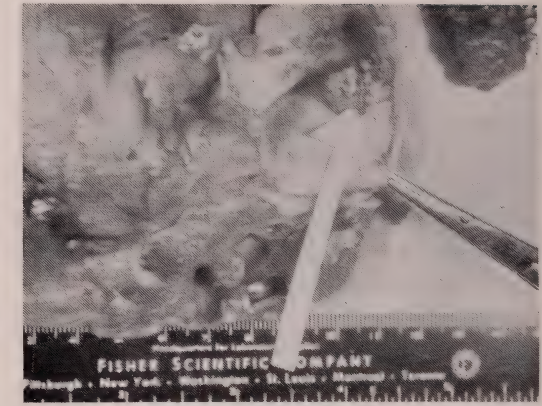

FIG. 1. Section through the proximal aorta above the heart with arrow pointing to vegetation-like thrombus.

DR. PALMER: Was there any evidence of pancreatitis?

DR. BECKER: The pancreas grossly did not show any evidence of pancreatitis. Microscopically it showed some round cell infiltration, which is what you commonly see in individuals of this age.

DR. BECKER: This is a section through the proximal aorta above the heart (Fig. 1). You are looking down at it. This is the attached vegetation or thrombus, at least part of it. This is the rest of it. As you can see, this thrombus has the characteristics of antemortem structure. It is yellowish, friable, and does not show the separation of the red cell layer and fibrin which you see in the postmortem clot.

The next slide shows a section of the typically gangrenous small bowel. The bowel is distended and shows numerous large and small hemorrhages and yellowish-brown discoloration and gangrene (Fig. 2).

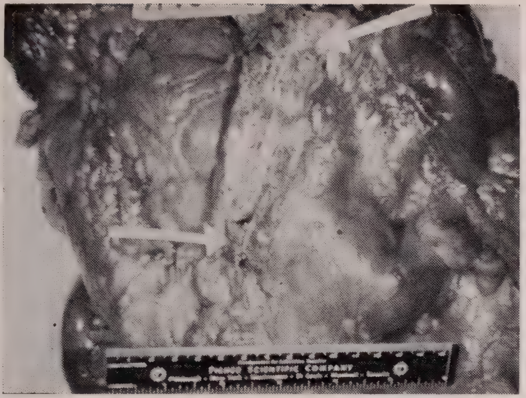

FIG. 2. Section through the length of the superior mesenteric artery with arrows indicating thrombi. Necrotic small bowel is also seen.

The next slide shows a section of the right kidney; up here is a recent infarct with a zone of hemorrhage around it and yellowish necrotic tissue in the center, and further down there is a more recent infarct. Are there any questions on pathology?

DR. PALMER: What was the origin of the aortic thrombus?

DR. BECKER: The aorta showed moderate arteriosclerotic changes, and presumably the basis of the thrombus was arteriosclerosis above the aorta valve. There was nothing in the heart valves indicating any vegetation. I think what happened was that this thrombus in the proximal aorta dislodged in small bits and some of these emboli lodged in the right kidney, some went down to the bifurcation of the aorta, and others went to the splenic artery and right renal artery.

Cancers of Blood-Forming Organs

Studies showing that cancers of the blood-forming organs can be prevented to some extent in irradiated mice by injection of embryonic liver tissue have been reported by Miss Delta E. Uphoff and Dr. Lloyd W. Law, National Cancer Institute's Laboratory of Biology.

The protection against such radiation-induced lymphomas, however, was not equal to that produced by injection of compatible bone marrow.

Miss Uphoff reported this work in a paper, "Comparative effectiveness of marrow and embryonic hematopoietic tissue on reversal of induction of reticular neoplasms following x-radiation," which she presented to the meeting of the American Association for Cancer Research, in Atlantic City, New Jersey, on April 12.

Studies reported earlier in the scientific literature had shown that compatible bone marrow (bone marrow from the same or a parent strain) protected mice against the development of radiation-induced lymphomas. In the present study, the protective effects of bone marrow and fetal blood-forming tissue were compared.

Fetal blood-forming tissue was selected because of previous observations by Miss Uphoff that mice receiving such tissue were afforded the same excellent protection from death due to radiation as were mice receiving isologous bone marrow (marrow from the same strain).

A group of first-generation hybrid mice, one month old, was exposed to a total of 672 r (roentgens) of x-radiation given in four equal doses at seven-day intervals. Shortly after the final irradiation, the test mice received intravenous inoculations of embryonic liver tissue or bone marrow.

At thirteen months of age, the incidence of lymphomas was as follows: among the controls, which received no protective treatment, 64 per cent; among the group receiving bone marrow from a parent strain, 22 per cent; and among the group receiving embryonic liver tissue, 34 per cent.

This research is part of a program designed to study the development of radiation-induced leukemias in laboratory animals. These results provide clues to the factors involved in the cause and prevention of such leukemias.

NUTRITION EXCERPTS

Prepared with the cooperation of the Faculty of the Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.B., B.S., *Editor*

In Vivo Studies of Body Composition in Man

J. H. FRYER, M.B., B.S., ITHACA, NEW YORK

THE popular literature of nutrition is probably more liberally larded with trite but misleading phrases than that of any other biologic science. An exposition on the reasons for this phenomenon and the harm done by it would be beyond the scope of this notation, even if such an analysis could be made. However, a brief report on an area in which there has been, and is, much misunderstanding and in which research may ultimately contribute to a more fundamental knowledge of anatomy, physiology, and pathology is justified.

Contemplation of the phrase "we are what we eat" shows at once its small helping of truth. There is no doubt that after birth the vast majority of extra atoms needed for repair of tissue and growth has to enter the organism by an orogastrointestinal route. The implication, however, that what we eat must necessarily be even a major influence on what we are is quite misleading. Except perhaps for the more extreme cases of a frank deficiency of an essential nutritive factor or a frank excess of calories in any form, what we are is probably relatively little affected by what we eat. This, at first surpising, statement could be exemplified by what would occur if a middle-aged female typist and a teen-age male professional athlete were both to eat the same diet, containing, say, 5,000 calories and 100 Gm. of protein. Very marked differences in what they would become, that is to say, in their body composition, could be confidently expected. It is in the study of perhaps subtler differences in body composition and the causes and effects of these differences that there has been renewed interest by nutritional scientists in recent years.

The body components that are amenable to study in the living human being are generally considered to be fat, water, cell solids, and bone mineral, of which the latter three are termed the "lean body mass." Further subdivision of the water into its extracellular and intracellular components is also possible. Brief consideration is given to the methods by which quantitative assessment of these components can be made but the reader is referred to several more complete monographs for greater detail and for a comprehensive bibliography on this topic.[1-5] Finally, the possible significance of some of the findings in this area of study will be touched on.

The ultimate court of appeal for all indirect methods, the chemical analysis of tissues, has been utilized in cadavers in a relatively few instances and in biopsy specimens from the living with respect to certain nutrients, notably nitrogen, water, and electrolytes. This approach, however, has obvious limitations for most purposes and will not be dwelt on further. Suffice it to say that the results of such analyses have, in general, supported the findings of in vivo methods.

The fat component of the body has proved amenable to quantitative measurement by the ingenious application of its physical properties, especially specific gravity. Chemical fat has a specific gravity of about 0.9 and "adipose" tissue, which actually contains some water and protein, about 0.94. Fat-free tissues (or lean body mass), on the other hand, have a specific gravity of about 1.1. It therefore follows that the specific gravity of the whole human being, calculated without taking into account air in the lungs or gastrointestinal tract, will depend on the ratio of fat to lean body mass. Fat floats and fat people tend to float also, an observation based on Archimedes' principle, which has been used to determine the specific gravity of living human beings by the ratio of their weight in air to their weight when they are totally submerged in water. The details of this method and the validation of it must be sought elsewhere.[6] It has proved reliable in skilled hands, although necessarily requiring much specialized equipment. Even more complicated are the methods under development which measure specific gravity by the displacement of an inert gas or measure fat directly by the uptake of fat-soluble substances such as cyclopropane. On the other hand, the fact that, in the younger male at least, most of the fat is subcutaneous enables relatively simple measurements of skin folds at a few sites to be extrapolated to an estimate of specific gravity and hence to the percentage of total fat.

Subtracting total fat from total body weight, by definition, gives the lean body mass. Conversely, one method, devised for the determination of lean body mass, will give an estimate of body fat by subtraction. Experimental evidence suggests that the ratio of total body water to lean body mass is relatively constant, providing hydration is "normal." Estimates of this ratio vary from 67 per cent to 73 per cent. It is thus possible to extrapolate from the total body water to the lean body mass,[7] and the former can be determined in the living human being by a series of methods all based on dilution technics. These depend on the injection of compounds known to go into solution in body water, throughout the extracellular and intracellular space, and the quantitative determination of the dilution of the marker substance after equilibrium has been attained. Among the compounds which have been used are urea, antipyrine and its analogues, deuterium, and tritium. Additional information about the extracellular compartment can be obtained by using such solutes as thiocyanate, thiosulfate, or inulin, and the difference between total body water and the true extracellular space gives, by definition, the intracellular space.

If it can be assumed that these methods permit more or less accurate determination of the fat and water content in the body, it is only necessary to add 6 per cent of body weight as an estimate for bone minerals (an approximation based on actual chemical analyses) and the balance of body weight represents the compartment labelled "cell solids." This, in fact, is almost entirely the protein of the body, with a little storage carbohydrate added, and it constitutes, essentially, the dehydrated cytoplasm or actively metabolizing tissue, excluding that associated with adipose tissue. In making this synthesis, however, it must always be remembered that the cell solids component, derived by subtraction of determined components from total body weight, carries the burden of cumulative error. The only direct approaches to its measurement, which are hardly quantitative for the individual but may be of value in group studies, are the determination of basal oxygen consumption or of creatinine excretion, which are more closely correlated to lean body mass than to any other parameter.[8]

Having touched on some of the basic technics by which information can be obtained about body composition, it remains to consider what significance such data might possibly have in areas of both basic and applied research. Studies published to date have been largely confined to populations of younger men and have been concerned primarily with the establishment of technics, the derivation of mathematical relationships (for example, the multiple regression equations by which skin-fold measurements can be used to calculate specific gravity), and the characterization of one more or less "normal" segment of the population, the younger men. There is a wide range in "normality" of body composition, and no one would presume to define its precise limits in the frame of reference of optimum health. However, a "reference man" has been defined, having characteristics which cannot be defined strictly as either "ideal" or "normal" in the present state of knowledge but which represents a considerable advance on "ideal weight" as a yardstick. Such a man has 14 per cent of body fat and 6 per cent of bone mineral, by definition, and, by calculation, 19 per cent of cell solids and 61 per cent of body water. It must be stressed, however, that these figures cannot be applied to the female of any age, to males before the completion of growth, or, with confidence, to males over about the age of fifty. Adequate studies on these population groups have not yet been reported, although some reports of the changes in growth are available.[9]

The concept of the reference man permits a far more accurate definition of obesity than that of ideal weight. As can be clearly recognized, a heavily-muscled man may be overweight but not at all obese, and one of the areas which is reopened to investigation is the relative contribution which excess fat, as opposed to excess weight, makes to morbidity and mortality. It is quite possible, of course, that excess muscle at one age may become excess fat later in life. Many of the theories concerning obesity will need to be reappraised, using the more precise tools that are now available to us.

On the other hand, the effects of under nutrition on tissue can also be more completely characterized. It has long been well known that gross starvation produces not only loss of both fat and protein, the latter of which would be represented as cell solids in our present scheme, but, in addition, an expansion of the extracellular space, a situation which in its grosser forms is starvation edema. Keys and his coworkers,[10] in their classic studies, have documented some of these changes. However, more detailed studies should now be possible, and especial attention, in the absence of frank "starvation" or "semistarvation," should be paid to subtler changes in body and tissue composition which may occur with diets of marginal adequacy. Some reports of work on this problem have been made by pediatricians in Mexico.[11]

Another area of great potential interest will be studies of changes which may occur with the aging process. Also, there is need to consider the possibility that body composition may be influenced in a specific way by specific disease processes. The example of increased total body water in overtly edematous states is obvious; however, clinically unapparent edema can also undoubtedly occur, and it may be that other body components will show significant changes. There is need for studies of the state of individual nutrient stores, such as total body sodium, potassium, and other electrolytes, correlated with observations on gross body composition.

Summary

It may be said that technics of study of body composition in living man have the potential of providing more detailed information than could be obtained through the older methods of anthropometry or the mere observation of height and weight, which have been the basis of so many of our standards. The process of growth itself and the influence of genetic and environmental factors should be further elucidated. In addition, we may hope for a greater understanding of some of the abnormal processes, including those directly attributable to undernutrition, overnutrition, and, perhaps, to many metabolic diseases. While studies of structural change will not, of themselves, elucidate the functional abnormalities which are causative of them, the detailed chemical analysis of tissue allied to observations on changes in over-all body composition may well provide leads to the pathophysiologic process involved.

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(*Number five in a new series of Nutrition Excerpts*)

Don't say things. What you are stands over you the while, and thunders so that I cannot hear what you say to the contrary.—Emerson

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ELIZABETH CRAWFORD, M.D.
ALFRED F. GRANATELLI, M.D.
LESTER C. MARK, M.D.
VALENTINO D. B. MAZZIA, M.D.

Cardiovascular Collapse in Operation for Aortic Stenosis

CARDIAC surgery is rapidly becoming routine in most hospitals. Each case presents its own particular problems, and various complications may be encountered. All anesthesiologists should be familiar with some of the general problems that may be associated with this type of surgery and anesthesia. The following case report illustrates the development of two episodes of cardiovascular collapse in a patient undergoing valvulotomy for aortic stenosis.

Case Report

A forty-five-year-old male had aortic stenosis. He complained of increasing fatigue, anterior chest discomfort, and dyspnea on climbing one flight of stairs. On physical examination his heart was found to be markedly enlarged, reaching the anterior axillary line. On auscultation a harsh systolic murmur was heard over the aortic area. Chest x-ray revealed calcification of the aortic valve. All other physical findings were normal.

It was proposed to do an aortic valvulotomy by the transaortic approach by means of an Ivalon pouch sutured on the aorta. For preanesthetic medication the patient was given 150 mg. of sodium amytal intramuscularly at 6:00 A.M. and 10 mg. of morphine sulfate with 0.4 mg. of scopolamine at 7:00 A.M. He was calm when he arrived in the operating room an hour later. His arterial blood pressure was 140 mm. Hg systolic and 80 diastolic, pulse rate 88 per minute, and respiratory rate 18 per minute.

The patient was anesthetized with cyclopropane and oxygen by using a closed system with a to-and-fro canister of Barylime for carbon-dioxide absorption. A number 38 cuffed anode tube was used as an endotracheal airway. The patient's heart was exposed after a sternotomy procedure. After incising the pericardium, a clamp was placed

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Discussed at a conference held at Bellevue Hospital, New York City, March 2, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

sagitally on the ascending portion of the aortic arch. The isolated segment of the aorta was incised, and the Ivalon pouch was sutured. The aortic clamp was opened then, and valvulotomy was started. There was considerable blood loss, with 3,100 cc. of pure blood filling the suction bottle over a fifteen-minute period. To compensate for this, 5 pints of citrated whole blood were pumped into the patient within a half hour. There was progressive weakening of the heart beat followed by asystole. Immediately, manual rhythmic cardiac contractions were started, but two minutes later ventricular fibrillation developed. Defibrillation was carried out with 3 110-volt shocks for 0.1 second. This resulted in a spontaneous but weak heart beat, and manual cardiac contractions were resumed. Calcium gluconate 2 Gm. and calcium chloride 0.5 Gm. were given intravenously. Three minutes later strong spontaneous heart beats developed. Respirations, which had been maintained artificially, became spontaneous. The patient began to awaken, and cyclopropane and oxygen were administered again. Surgery was continued, with the patient remaining in good condition. The heart beats were strong and regular. The arterial blood pressure was sustained at normal levels.

In an attempt to place a drain in the right hemithorax, the right lung was collapsed by the surgeon's hand. Ventilation was noticed to be difficult. Rapidly, cyanosis and tachycardia appeared. After the right lung was allowed to reexpand, the patient's condition improved somewhat. However, cyanosis, tachyarrhythmia, and abnormal pulmonary resistance to ventilation persisted. Possible causes thought of at this time were left tension pneumothorax, left atelectasis, bronchiolar obstruction, and light anesthesia. The patient's airway was examined and it seemed clear on auscultation; good breath sounds could be heard on both sides of the chest.

When the operation was completed, anesthesia was discontinued and the patient's respiratory system was flushed out with oxygen. The patient was extubated when the endotracheal tube could not be tolerated any longer even though presence of cyanosis persisted. Oxygen was continued by means of a face mask. A severe delirium developed, and cyanosis became more pronounced. The patient's airway became obstructed. Quickly, an endotracheal tube was reinserted and oxygen given by positive pressure. Five minutes later, auscultation of the chest revealed rales covering both lung fields while creamy and frothy mucus was suctioned out in large amounts. In an effort to treat pulmonary edema that seemed to have developed, the patient's trunk and head were elevated and he was given 12.5 mg. of Thorazine intravenously followed a few minutes later by 10 mg. of morphine. During the next forty-five minutes the patient's vital signs and his electrocardiographic pattern underwent continuous deterioration. Severe bradycardia developed and finally asystole. An artificial electric cardiac pacemaker was connected to the patient and started. Several doses of 0.2 mg. of Isuprel hydrochloride were injected intravenously. There was no improvement, and ten minutes later there was cessation of spontaneous electrical myocardial activity.

An autopsy was performed. The lungs showed congestion and some pulmonary edema. But the greatest pathologic condition was found in the heart itself. The heart was enlarged, weighing 995 Gm. The right coronary artery was completely occluded by a plaque of calcium 1 cm. from its origin, and the left coronary artery had a calcium plaque lodged at its bifurcation.

Comment

The complications that arose in this case pose several problems of which the surgical team should be aware.

The pathology involved in aortic stenosis predisposes the patient to certain deficiencies which are reflected in possible complications. Impeded left cardiac outflow due to obstruction of the aortic valve leads to left ventricular enlargement, myocardial insufficiency, and coronary insufficiency. Aortic obstruction also tends to cause retrograde congestion in the pulmonary circulation, which can be aggravated easily into pulmonary edema. The calcific type of aortic stenosis is prone to embolic phenomena by release of calcific plaques. Patients with this pathologic condition are on a delicate balance. In one direction, they are prone to myocardial failure; in the other, they may go into pulmonary edema. In the present case all three such complications occurred—myocardial failure, pulmonary edema, and coronary embolization. The problems involved when these complications occurred are interesting.

Myocardial failure developed when sudden considerable blood was lost as the aortic clamp was opened and valvulotomy was started. An amount of 3,100 cc. of pure blood filled the suction bottle in fifteen minutes, and in order to overcome this sudden hemorrhage 2,500 cc. of citrated whole blood (in addition to 500 cc. which had been given previously) were pumped into the patient within thirty minutes. Yet, there was progressive cardiac weakening with eventual asystole. Although rhythmic manual cardiac contractions were started immediately and oxygenation was increased by means of artificial respiration, ventricular fibrillation developed in two minutes. This was combated successfully by electric defibrillation and by the intravenous administration of calcium gluconate and calcium chloride.

Many problems are involved in this dramatic complication. First is the problem of sudden massive blood transfusion with stored bank blood. Stored blood usually is citrated and also introduces excess amounts of potassium and ammonium. Excess citrate may lead to citric acid intoxication and may also interfere with the clotting mechanism. Excess potassium causes increased cardiac irritability with the possibility of cardiac arrhythmias and even induced cardiac arrest. Calcium ions may overcome this cardiac effect. The danger of introducing the virus of homologous serum hepatitis increases in direct proportion to the amount of blood transfused. Electric defibrillation is an accepted technic when ventricular fibrillation occurs, but its use in a patient who has been anesthetized with cyclopropane (or another explosive agent) carries the danger of ensuing explosion when the defibrillator is made to function inside the patient's chest with the electrodes on either side of the heart. However, in this case (and it should be done in every case) the concentration of cyclopropane was reduced by eliminating the cyclopropane mixture in the lungs and replacing it with pure oxygen. At any rate, the patient overcame this steep hurdle and seemed to have recovered satisfactorily.

The problem of pulmonary edema developing in this type of patient is a difficult one. During this eight-hour operation, the patient was given 13 pints of blood and 1 L. of 5 per cent dextrose in water. The amount of blood given was considered necessary to compensate for at least a similar quantity of blood lost, which could be determined by direct measurement in the suction bottle and by weighing the amount of blood on the gauze sponges. From the pathology involved it has been shown that these types of patients cannot tolerate any excess of circulating fluid. It is most likely that clamping the aorta sagitally on the ascending portion of the aortic arch interfered further with left ventricular and left auricular outflow so that retrograde pulmonary congestion increased to the point of pulmonary edema. To diminish this possibility, some surgeons and anesthesiologists advocate induced hypotension with Arfonad, induced hypothermia, extracorporeal circulation, or induced cardiac arrest with potassium. These are all difficult technics which carry their own inherent dangers.

The last complication that occurred was embolization of both coronaries with calcific plaques, a situation which came as a surprise when it was discovered at autopsy. From the anesthetic point of view, it was unrelated.

It should be borne in mind that such plaques of calcified tissue from the aortic valve may become detached and cause embolic effects in the arterial system.

(*Number sixty-seven in a series of Clinical Anesthesia Conferences*)

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Petroleum Distillates (Furniture Polish), Aspirin, and Other Ingestions and Suicidal Attempts

The following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Lemon Oil Furniture Polish	1 year	Male

The child's mother, who is seventeen years of age, was using a lemon oil furniture polish. She left the room for a few minutes. The child picked up the bottle and ingested some of its contents. He vomited and was taken to a hospital emergency room, where his stomach was lavaged about one-half hour after ingestion. The following day the patient developed a high temperature and was taken to another hospital. The temperature on admission was 102 F. Patient was admitted to the inpatient service, where x-rays revealed pneumonitis. The child was treated with oxygen and antibiotics and after three weeks made a complete recovery.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Furniture Polish	1 year	Male

While the mother was peeling some apples in the kitchen, the child was playing on the floor nearby. The mother turned away for a second to dispose of the apple peelings in the garbage can; she suddenly heard the child crying, coughing, and choking. She turned around and saw the child with the furniture polish bottle in his hand. The child was taken immediately to the hospital, where his stomach was lavaged with milk (?). He had ingested 10 cc. of the furniture polish. In the hospital the patient received penicillin and was observed for thirty-six hours. X-ray of the chest prior to discharge gave a negative result.

The lack of symptoms in this case is obviously due to the absence of aspiration. The frequency and cause of aspiration in some cases and absence in others is as yet undetermined.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Lemon Oil Furniture Polish	2 years	Female

The mother and baby were visiting a friend. A bottle of lemon oil furniture polish was in a kitchen closet, on a low shelf near the floor. While playing in the kitchen, the child opened the closet door, removed the furniture polish bottle, and ingested some of its contents. It is believed that the child ingested about 1 tablespoonful. Five minutes after ingestion the patient vomited spontaneously. She also had burning of the mouth and throat and was dyspneic. The child was rushed to the hospital, and within twenty minutes after ingestion her stomach was lavaged with saline. On admission to the hospital the child showed a red pharynx. She was treated with Achromycin and was also put in an oxygen bed where she remained for three days.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Furniture Polish	22 months	Male

The child's mother was cleaning furniture, and after finishing she placed the polish on the night table in the bedroom. The child obtained the furniture polish and drank an unknown quantity of it. He complained of abdominal pains and vomited. He was taken to a hospital emergency room from which he was sent home without treatment. Symptoms, however, continued, accompanied by a loss of appetite. The patient was then taken to another hospital where he was admitted. After ten days of hospitalization and appropriate therapy he made a complete recovery.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Furniture Polish	$1^1/_2$ years	Male

The mother was cleaning and polishing furniture. She left the bottle of polish on a kitchen table and went into the bathroom. The child obtained the bottle from the table and drank about 2 ounces of its contents before the mother could retrieve it from him. He was taken to a hospital emergency room, and within one-half hour of ingestion his stomach was lavaged with tap water and saline. On admission the patient was drowsy and cyanotic. After six days of hospitalization and appropriate therapy he made a complete recovery.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Cream Furniture Polish	18 years	Female

The patient prepared coffee for several young visitors. While her back was turned, one of the children poured a small amount of cream furniture polish, (from a nearby bottle containing the product) into the hostess' coffee cup, thinking it was cream. The mistake was due to the fact that "cream" appeared on the label; thus, the child used the "cream" for the coffee.

Three hours after ingestion the patient was nauseated and began to vomit. She also had abdominal pains. An older sister soon recognized the error and took the patient to the hospital, where vomiting was again induced and olive oil was administered. Since there were no symptoms, the patient was sent home. Happily, no complications developed.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Furniture Polish	2 years	Female

The patient's mother was in the living room polishing the television set. After she finished polishing, she placed the bottle on the kitchen table. The patient, mistaking the polish for milk, since the polish is a white heavy liquid, poured the polish into a glass and proceeded to drink its contents. The mother noticed a white rim around the patient's mouth when she entered the living room. She soon surmised what had happened. A physician was immediately called, and he advised the parent to rush the child to the hospital. Although the child was asymptomatic, his stomach was lavaged with saline. After several hours of observation he was sent home.

The mineral seal oil type of furniture polishes, which include the lemon oil types, do not normally present an acute poisoning situation. The danger, however, lies in the subsequent development of pneumonitis because of aspiration. It is therefore again urged that all such patients be admitted to the hospital for a period of observation of not less than thirty-six hours and that several chest x-rays be taken in order to ascertain the absence of any pulmonary pathology prior to the patients' discharge.

We have repeatedly cautioned about the hazard of not admitting patients who ingest petroleum distillates, including furniture polish, for an observation period of several days. This case is a striking illustration of the fact that while the patient may be asymptomatic early on admission to the hospital, both clinically and on x-ray, signs and symptoms of pneumonitis will develop sometime after twenty-four or thirty-six hours following ingestion.

From the serious role of lemon oil furniture polishes in the household-preparation poisoning picture, it would appear most desirable that manufacturers of furniture polish give some thought to replacing lemon oil as the odorant. The function of lemon oil ordinarily is to mask the unpleasant odor of the cheap grade of petroleum product used. There are, however, other alternative deodorants which are not reminiscent of citrus beverages and flavored candy.

It may be pointed out that, in general, most of these patients would benefit from judicious neglect. However, when pathology develops it must be treated promptly and appropriately.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Detergent (Lestoil)	19 months	Female

The bottle containing Lestoil was left uncapped on the window sill by a maternal aunt who had been cleaning furniture the previous evening. The mother of the patient was unaware of this. The child obtained the bottle from the window sill and ingested an undetermined amount of its contents. She was taken to the hospital, where her stomach was lavaged within one hour after ingestion. On admission the following symptoms were noted: nausea, vomiting, diarrhea, stupor, glassy eyes focused upwards, and cyanotic lips. Prior to taking the child to the hospital the mother administered milk in order to induce vomiting. The patient was observed in the hospital for three days where she was treated with supportive therapy. She was finally discharged as completely recovered.

Many other incidents involving Lestoil ingestion were reported to the Poison Control Center recently. This case, however, presents the most severe symptoms.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Nicotine Insecticide	64 years	Male

The patient mistakenly took the nicotine insecticide as a cough syrup. He had nausea and vomited spontaneously. When taken to the hospital thirty minutes after ingestion the patient had burning of the mouth and throat, cyanosis, and bradycardia. He was lavaged with saline. While in the hospital he was also given intravenous fluids and caffein. The urine showed a 4 plus albumin on admission. The patient remained in the hospital for twenty-four hours after making a complete recovery.

The rapid recovery may be attributed to the fact that spontaneous vomiting occurred within ten minutes after ingestion and that vomiting was also induced immediately thereafter. Recovery in a patient of this age and with this potent agent is noteworthy.

Incident 10

Toxic Agent	*Age*	*Sex*
Aspirin	3 years	Male

This three-year-old child emptied a bottle of baby aspirin into a glass of water and drank the entire amount (48 pills). The patient was brought into the hospital by his parents and apparently was not in distress. His stomach was lavaged with water within one hour after ingestion. Complete recovery soon followed. Undoubtedly the flavor and color had attracted the youngster to the aspirin.

Incident 11

Toxic Agent	*Age*	*Sex*
Sleeping Pills (Methapyrilene)	62 years	Male

The patient took an unknown amount of an "over-the-counter" proprietary hypnotic at 1:00 P.M. He awoke about 2:00 P.M. and vomited. It is possible that he took some additional pills at that time since a history of the imbibing of alcoholic beverages on the morning of the accident was elicited from a member of his family.

He was taken to the hospital soon after 4:00 P.M., where his stomach was lavaged with tap water. On admission the patient was comatose and his face was flushed. In addition to the lavage the patient received oxygen and was kept on sodium benzoate, administered intravenously. In spite of all heroic therapy he expired twelve hours after admission. The necropsy findings are not available as yet. It may be pointed out, however, that thus far most of the methapyrilene incidents reported to this center were nonfatal.

Incident 12

Toxic Agent	*Age*	*Sex*
Aspirin	29 years	Female

The patient related that she ingested about 100 tablets of 5-grain aspirin and 3 effervescent salicylate-containing analgesic tablets at about 4:00 P.M. of the day of admission. The reason she took this medication is because she felt "something moving" in her stomach and was afraid she was pregnant. The patient vomited spontaneously after ingestion. She was admitted to the hospital, where her stomach was lavaged with saline within two hours after ingestion. The only symptom on admission was abdominal pain. The blood chemistry showed urea nitrogen 6 mg. per cent and glucose 97 mg. per cent. The urine was essentially negative. The patient was treated with supportive therapy for one week, after which she was discharged in good health.

Incident 13

Toxic Agent	*Age*	*Sex*
Aspirin	17 years	Female

Another incident of aspirin poisoning, reported from the same hospital as the previous incident, pertains to a seventeen-year-old girl, who relates that she took the aspirin for the relief of a toothache the day prior to admission. She ingested 5-grain aspirin tablets, five at a time, at irregular periods throughout the day, until a total of 100 tablets were ingested. She vomited spontaneously and was taken to the hospital. The symptoms on admission were vomiting and ringing of the ears. Her stomach was lavaged with saline. The blood chemistry showed urea nitrogen 13 mg. per cent and glucose 90 mg. per cent. The urine findings were entirely negative.

The favorable outcome in all 3 aspirin-poisoning cases is undoubtedly due to the spontaneous vomiting which occurred.

INCIDENT 14

Toxic Agent	*Age*	*Sex*
Anticonvulsant (Diphenylhydantoin Sodium)	13 years	Female

This medication was taken with suicidal intent because of difficulty at home. The father is an alcoholic, and there is continuous parental quarreling. The patient's suicidal gesture is attributed to the disorganized home conditions. On admission to the hospital the patient appeared drowsy. Her stomach was lavaged and she was also treated with Coramine. After ten days in the hospital and appropriate therapy she was discharged as improved.

INCIDENT 15

Toxic Agent	*Age*	*Sex*
Barbiturate	17 years	Female

According to the patient's mother, the patient ingested 6 capsules with suicidal intent after an argument with each other. The patient was taken to the hospital within an hour after ingestion where her stomach was immediately lavaged with saline. On admission the patient was in coma. The blood chemistry showed a carbon dioxide of 36 volumes per cent; the urine was negative. The patient was treated with sodium caffeine benzoate, Thorazine, and Achromycin, and was discharged as improved. after six days of hospitalization.

INCIDENT 16

Toxic Agent	*Age*	*Sex*
Barbiturate (Pentobarbital Sodium)	20 years	Female

The patient ingested 16 $1^1/_2$-grain pentobarbital sodium capsules with suicidal intent. She was taken to the hospital in a stuporous condition. Her stomach was lavaged with sterile water within an hour and twenty minutes after ingestion. The blood, urine, and gastric contents showed evidence of barbiturate ingestion. On admission stupor, low blood pressure, and rapid pulse were noted. She was treated with fluids intravenously. Levophed and 600 cc. of human plasma were also administered. After five days in the hospital the patient recovered fully.

(*Number thirty-three in a series of Accidental Chemical Poisonings*)

Gift, like genius, I often think means only an infinite capacity for taking pains.—JANE E. HOPKINS

CANCER ALERTS

A series of radio talks for the practitioner
presented over Station WNYC-FM under the sponsorship of the

New York Academy of Medicine
with the cooperation of the
New York City Cancer Committee

Moles and Melanomas

GEORGE T. PACK, M.D., NEW YORK CITY
(*From the Department of Surgery, Memorial Center for Cancer and Allied Diseases*)

One of the most baffling problems in neoplastic disease is that of the ubiquitous mole and the iniquitous melanoma. The mole is one of the most common of all tumors; the melanoma, however, ranks among the cancers of relatively infrequent incidence. The mole is constantly available for study, and the melanoma is the most accessible of all malignant tumors. The low curability rate of the maligant melanoma is a constant stimulus toward rigorous efforts at prevention by excision of moles considered dangerous and treatment by radical surgical attack on the maligant tumors.

One thousand adult patients who came to a general diagnostic clinic with no concern about their moles were examined to ascertain the distribution and character of their nevi and a composite scattergram was made. This study revealed that the average patient has 15 moles, or true nevi, and that they, as distinguished from pigmented spots, are relatively scarce on the feet and genitals. In a comparative scattergram showing the regional distribution of malignant melanomas in 1,225 patients, it was found that the melanoma was very frequent on the soles of the feet and quite common on the genitals, in contra-distinction to the general distribution of pigmented moles. The conclusion which can be drawn from this comparative analysis is that certain moles occurring on the feet and genitals present a greater hazard than other kinds occurring elsewhere. The junctional nevi, which are most inclined to become melanomas, are three times as frequent on the feet as on other skin surfaces. The lesson to be learned from such a knowledge is the advisability of surgical excision of such pigmented moles occurring in these locations.

With due consideration for the frequency of melanomas in individuals of different complexions and racial types, it may be stated that malignant melanomas occur most frequently in blond individuals, particularly those who have extremely pale skins of soft texture but including those of sandy complexion, and those with red hair who may freckle easily but do not tan well or heavily on exposure to sunlight. Our clinical impression has been that the prognosis is extremely bad in this type. So evident has the fact been to us in the study of this large group of patients that we urgently advocate, as a proper prophylactic measure, the routine removal of all brown or black moles in blond or red-headed individuals of the skin coloration described. Simple surgical excision or excisional biopsy with primary wound closure is sufficient for moles that have the clinical appearance of benignity.

It has been our policy to advocate the removal of all moles of suspicious or dangerous character in infancy or childhood, before the possibility of malignant transformation can occur. Such moles generally should be removed before the advent of puberty to avoid the hormonal stimulation coincident with this state.

It is not always possible to observe by clinical means the transformation of a pigmented nevus into a malignant melanoma. When a pigmented mole has long been quiescent and then goes through certain changes, such as becoming elevated with increasing pigmentation or with ulceration, bleeding, and localized discomfort or pain, it may indicate that the tumor is already malignant. When a pigmented nevus begins to bother the patient, it may signify that a melanoma has already developed. The local recurrence of the melanotic tumor or the appearance of metastases in regional nodes or distant viscera after a conservative removal of a supposed benign nevus indicates that the original tumor was already malignant but unrecognized as such at the time of the conservative excision. This offers a strong argument for the routine microscopic study of every pigmented mole that is excised.

It has not been generally recognized that a malignant melanoma may have multiple primary foci in the same individual. Although the incidence of this circumstance is not great, only 16 of our 1,250 patients with melanomas showed evidence of multiple primary lesions, it is undoubtedly higher than the frequency of occurrence of melanomas in the general population.

In studying the development of pigmented nevi, it is observed that many of these moles are not at all visible until after the onset of puberty. A child with a few scattered pigmented moles may with the endocrine changes attendant on the state of puberty experience the rather sudden development of numerous moles on the skin of the face, trunk, and extremities. There is one important type of pigmented nevus which bears such a close resemblance to malignant melanoma that it is not possible clinically to distinguish between the two. This nevus may be found in children from the ages of one to the time of puberty. Usually they are darkly pigmented, bluish, blue-black, or dark brown in color, smooth, and well demarcated. When this tumor is excised in infancy and childhood and submitted to pathologists for diagnosis, they are sometimes unable to determine whether the neoplasm is benign or malignant. Even though some of these tumors structurally have the conformation of the true melanoma, they ordinarily do not behave as such until after puberty. Others are identifiable microscopically as a melanotic tumor largely peculiar to childhood, running a relatively benign course and labelled as juvenile or prepubertal melanoma. There have been some isolated instances wherein metastases have occurred from the pre-pubertal melanoma. The significant conclusion to be drawn from this observation is the obvious necessity for complete surgical removal in childhood of all dark, deeply pigmented nevi. It may be a serious mistake to delay this operation until some evident change has occurred in the appearance of the tumor, particularly if this change develops at the time of or shortly after puberty.

The transformation of benign moles to malignant melanomas during pregnancy and the rapid growth of the malignant form, its early dissemination, and its low rate of cure during that time has not been generally known. In our experience with many patients with malignant melanoma, we have found 32 patients who had pregnancy associated in some way with the growth of the malignant melanoma. Apparently the pregnant woman has two or three times the tendency to develop melanoma as the nonpregnant woman, making due allowance for comparative time spent as pregnant or nonpregnant. This fact serves to emphasize the great importance of the examination of pigmented moles in young women at the time of pregnancy and the removal of moles showing any suspicious signs of growth during this period.

Once the diagnosis of malignant melanoma is made by microscopic study of the specimen removed by excisional biopsy, the surgeon must perform an extremely wide excision of the tumor and the skin surrounding it. Cosmetic restoration is not so important as safety, which is afforded by wide and deep surgical excision. In the majority of instances, the removal of skin must be so great as to necessitate the immediate application of a skin graft. The excision should go so deep as to constitute a three-dimensional dissection, involving not only the skin but also the underlying fat and fascia overlying the muscles, in order to extirpate the adjoining lymphatics in the neighborhood of the melanoma.

The best prognosis exists, of course, when the malignant melanoma is widely excised by these methods before metastasis has occurred. It is not always possible to detect metastases in the early stage or to know by which of the vascular routes cells will be disseminated. Those malignant melanomas which seem to metastasize by way of the regional lymphatics are still amenable to surgical treatment. Those, however, which enter the blood vascular system at an early stage will spread through venous channels; these patients may ultimately develop visceral metastases and if so, they are incurable.

The principle of excision and dissection in continuity for primary and metastatic melanomas can be applied when the malignant melanoma is so situated in the skin as to be relatively and closely adjacent to the first relay of lymph nodes. In such a case an elliptic segment of skin which includes the primary melanoma, the skin intervening between the melanoma and the axilla or groin or neck, and the lymph node-bearing region should be removed, together with a wide dissection of the underlying fat and fascia down to and exposing the muscles over this area. The operation is completed by a radical dissection of the regional lymph nodes that may contain metastatic melanoma cells. The fascial dissection is much wider than the sacrifice of the skin. By this means not only the primary tumor and the first relay of metastases in regional nodes are removed but also the intervening lymphatics. This measure should check, to some extent, the great tendency for metastases to develop in the tissues between the primary site and regional lymph nodes. The application of this principle in the treatment of melanomas has been responsible for better results.

Unfortunately, the condition sometimes exists wherein the primary malignant melanoma is situated in the skin at a remote site from the regional lymph nodes that are involved by metastases, such as a melanoma on the sole of the foot with metastases in the femoral and inguinal lymph nodes or a melanoma in the nail matrix of the hand with metastases in axillary lymph nodes. With such an enormous intervening distance between the primary melanoma and the metastases in regional lymph nodes, it is not at all possible by any technical procedure to remove both primary and metastatic foci with the dissection of all the intervening lymphatics between the two sites. Yet there is a strong element of hazard in permitting any of the intervening lymphatics to remain.

Although the patient and physician might immediately consent to such a radical operation as hip joint disarticulation for a bone sarcoma of the femur, it has been difficult to secure consent for this operation in the case of a small melanoma on the ankle with metastases to femoral lymph nodes, the latter situation nevertheless is as fatal as other types of cancer that seem to have more frightening aspects. Amputations for melanomas of the hands or feet with metastases to axilla or groin should include removal of the entire extremity plus dissection of the regional lymph nodes. The majority of such amputations have been performed late in the course of the disease, when it is an operation of desperation or last resort rather than an operation of election and hope. Occasionally patients treated by means of axillary and groin dissections for metastases to regional nodes of primary melanomas on the hands and feet survive for many years, even though amputation is not done; yet the prospect of salvage is not good. The situations calling for this discontinuous procedure are better than those dictating amputation, yet even here the great majority of patients succumb, the fatal outcome due to the recurrence of a melanoma between the distal extremity and the site of node dissection. If amputations were done for melanomas of this more favorable distribution (only, of course, if metastases to axillary or inguinal nodes are proved), the results might conceivably be better.

The Memorial Hospital series of patients with malignant melanomas treated by the application of the foregoing therapeutic principles show continually better results. The five-year definitive cure rate for all patients treated during the years 1917 to 1945 was 21.4 per cent. The statistics department of the Memorial Cancer Center has recently furnished data enumerating results of the Center's experience with the disease, covering all admissions to the Center regardless of the stage of the disease, between January 1, 1948, and January 1, 1951; the five-year definitive cure rate was 37.9 per cent.

139 East 36th Street

(*Number twenty-six in a series of Cancer Alerts*)

What is an epigram? A dwarfish whole,
Its body brevity. and wit its soul.—S. T. Coleridge

CASE REPORTS

Agranulocytosis Following Antihistamine Therapy

Report of Fatal Case

BENJAMIN F. NORRIS, M.D., ALBANY, NEW YORK

(*From the Department of Medicine, St. Peter's Hospital, and the Department of Hematology, Bender Hygienic Laboratory*)

Adams and Perry[1] were the first to report agranulocytosis associated with thenalidine tartrate therapy. Sandostene is an antihistamine, thenalidine tartrate (1-methyl-4-N-(2 thenyl) anilinopiperidine tartrate). It has been found effective for relief of pruritic skin conditions and allergic disorders.[2,3]

Until the report of Adams and Perry, no serious blood dyscrasias had been reported in the literature in association with this drug. The following is a report of another case. However, the patient in the present report had taken another antihistamine, parabromdylamine maleate (Dimetane),[4] some two months before starting her thenalidine therapy.

Case Report

A sixty-four-year-old woman was admitted to St. Peter's Hospital on May 16, 1958, complaining of abdominal pain, nausea, and diarrhea. The patient had been in a state of anxiety since September, 1957, when some close friends had been killed in an auto accident. On January 19, 1958, a physician prescribed parabromdylamine maleate tablets for a pruritic rash and an ointment containing hydrocortisone acetate and neomycin sulfate (Neo-Cortef) for topical application. The patient took a 4 mg. tablet four times a day for a total of 30 tablets. This prescription was renewed on February 1, 1958. There was a renewal of the prescription for 82 more tablets on February 21, 1958. The symptoms persisted and the patient saw another physician. He prescribed thenalidine tartrate on March 21, 1958. The patient took a 25 mg. tablet four times a day for a total of 24 tablets. On March 26, 1958, this prescription was refilled and the patient took 24 more tablets. On April 9, 1958, the patient had a refill of 50 thenalidine tartrate tablets and she said she took one to four 25 mg. tablets a day, depending on the severity of the hives. She took these until the time of her admission to the hospital. For the two weeks prior to admission she had felt nauseated and on the day of admission she had pain in her left lower side and was vomiting.

Past history was not remarkable except for right herniorraphy seven years previously and an operation for anal fistula thirty-two years ago. The patient took medication for migraine headaches for several years, but had had no medication for such headaches for the past six years.

On physical examination the patient's blood pressure was 138/60 mm. Hg, her pulse rate was 116 beats per minute, and her temperature was 103.4 F. She was an elderly, white, sick-appearing female in moderate distress with flushed face and a hot, dry skin. The conjunctivas were pale and a few small cervical nodes were palpable. The throat revealed a hemorrhagic area about 1 cm. in diameter on the left posterior aspect of the soft palate. There was a sinus tachycardia but no murmurs were audible. The lungs were clear to percussion and auscultation. The abdomen was soft and there were no masses or tenderness. The liver, kidneys, and spleen were not palpable and there was no costovertebral angle tenderness. In the left inguinal area there was a red, swollen, tender area about 3 cm. in diameter. The admitting diagnosis was a possible strangulated left inguinal hernia. The remainder of the physical examination was not remarkable.

Laboratory data on admission revealed a hemoglobin level of 10.2 Gm. per cent, a packed cell volume of 34 per cent, and a white blood count of 225 per cubic millimeter. Only lymphocytes and 2 monocytes were seen on the smear of the peripheral blood; platelets were abundant on the smear and the red cells showed a slight hypochromia. Urinalysis showed a trace of albumin, trace of sugar (the patient had been receiving 5 per cent glucose in distilled water intravenously), and no acetone. There were 5 to 10 white blood cells per high power field. Blood chemistry revealed a blood sugar of 149 mg. (following 5 per cent glucose in distilled water intravenously the day previously). The blood nonprotein nitrogen was 32 mg., cephalin flocculation was negative, the serum protein level was 6.1 Gm. per cent, the albumin level was 3 Gm., and the globulin level was 3.1 Gm. On the second hospital day the white blood count was 550 per cubic millimeter. On the fourth and fifth hospital days the white blood count was 500 per cubic millimeter.

A throat culture yielded a few Hemophilus influenzae, a few micrococcus albus, and Neisseria catarrhalis. A blood culture yielded no growth. A bone marrow aspiration on the second hospital day showed moderate cellularity with adequate megakaryocytes. There was a striking increase in plasma cells, a moderate number of lymphocytes, but no myeloid elements. There was a slight increase in erythroid elements. The total bilirubin was 0.74 mg. and thymol turbidity 0.7 units. An electrophoretic pattern of the serum showed no significant change from normal. Examination of the urine showed negative findings for Bence Jones protein. A metastatic survey of the bone showed no evidence of metastases or myelomatous change. A chest x-ray film showed the heart to be at the upper limits of normal in size and the lungs were not remarkable.

The patient had had a previous blood count on August 1, 1957, and at that time the red cell count was 4,690,000, hemoglobin 12.4 Gm. per cent, and a white cell count of 4,600 with a normal differential. Another blood count on March 12, 1958, revealed a red cell count of 4,190,000, hemoglobin 13.8 Gm. per cent, and a white cell count of 6,200 per cubic millimeter with a normal differential.

The patient showed slight improvement after antibiotic and steroid therapy was started. Therapy consisted of 80 units of adrenocorticotropic hormone (ACTH) in gel form every twelve hours for seven days, and then 40 units every twelve hours. The patient received 600,000 units of aqueous procaine penicillin intramuscularly twice a day for six days and then erythromycin at a dose of 250 mg. four times a day. The patient was given tetracycline with citric acid in a dose of 250 mg. every six hours for the last six days of the hospital course. On admission the patient received 500 mg. of tetracycline intravenously. Her temperature came down to normal and the abscess in the left groin subsided but another abscess developed in the left gluteal area. The patient became very lethargic and weak on the seventh hospital day, her blood pressure dropped, and she became cyanotic. Her temperature went to 105.2 F. and she expired early on the eighth hospital day.

Gross findings at autopsy revealed an ecchymotic-like discoloration of the skin of the left upper thigh about 20 cm. in diameter. There was a superficial ulceration of the skin of the left buttock over a 7 cm. area. Coronary arteries were sclerotic Grade II and patent throughout. The lower lobes of the lungs were collapsed, dark purple, and showed scattered petechia-like dark red blotching of the dependent portions. The gastrointestinal tract was grossly unremarkable. Both adrenals appeared moderately and diffusely enlarged. The cut surface showed a dark red discoloration of the cortex which extended into the medulla. The capsules of the kidneys stripped with difficulty and the cut surfaces were pale pink with indistinct corticomedullary demarcations. The bone marrow was red brown in appearance and abundant.

Microscopically, the spleen showed marked red pulp congestion. The adrenals showed heavy infiltration with lymphocytes and plasma cells particularly in the zona reticularis and medulla. The bone marrow showed increased cellularity and the predominant cell was the plasma cell although many of the cells showed autolysis. Few myeloid elements were present. A blood culture taken four hours and fifty minutes post mortem yielded a good growth in pure culture of Escherichia coli.

Comment

This case is similar to the third case described by Adams and Perry[1] in that the patient had received only two drugs. In this case both drugs were antihistamines. A blood count obtained after the first antihistamine, parabromdylamine maleate, was terminated was normal. No hematologic side-effects from parabromdylamine maleate have been reported to date in the literature.[4] The patient had taken thenalidine tartrate exclusively from that time until her admission to the hospital. This tends to substantiate the findings of Adams and Perry of agranulocytosis associated with thenalidine tartrate therapy.

An interesting feature of this case was the mass that was present in the left inguinal region and the tentative diagnosis of strangulated hernia on admission. Because of the finding of plasma cells in the marrow, it was necessary to rule out myeloma. However, plasma cells, lymphocytes, and reticulum cells may be increased in number in agranulocytosis.[5]

This case emphasizes again the importance of close supervision in drug therapy and the insidious onset of agranulocytosis.

Summary

A case of agranulocytosis following antihistamine therapy with parabromdylamine maleate and thenalidine tartrate is reported.

I wish to thank Dr. Raymond Leddy and Dr. Harold McGan of the staff of St. Peter's Hospital for their permission in presenting their case. I am grateful to the Pathology Department of Bender Hygienic Laboratory for their cooperation, and to Dr. John J. Clemmer, Director of Bender Hygienic Laboratory, for his assistance.

806 MADISON AVENUE, ALBANY 8

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Acute Leukemia

A study of the treatment of acute leukemia in 250 children and adults indicates that initial therapy with one anticancer drug can increase the beneficial effect of another drug administered later.

This observation was reported by Emil Frei, III, M.D., of the General Medicine Branch, National Cancer Institute, Bethesda, Maryland, and Farid Haurani, M.D., of the Jefferson Medical College, Philadelphia, Pennsylvania. Their paper, "A Comparative Study of Three Antimetabolite Regimens in the Treatment of Acute Leukemia," was read before the meeting of the American Association for Cancer Research, in Atlantic City, New Jersey, on April 11.

In the study, two well-known anticancer drugs, 6-mercaptopurine (6-MP) and methotrexate, were administered to groups of acute leukemia patients according to three different regimens: 6-MP followed by methotrexate, methotrexate followed by 6-MP, and both drugs given simultaneously. The patients' response was measured in terms of percentage of remissions in each group and survival from the beginning of the study.

When methotrexate was given after exposure to 6-MP, 27 per cent of the patients experienced remissions. Without initial use of 6-MP, methotrexate produced remissions in 13 per cent of the patients.

When 6-MP was given following methotrexate, 23 per cent of the patients has remissions. 6-MP without prior methotrexate treatment yielded remissions in 24 per cent of the patient group.

When both drugs were administered simultaneously, half of the children went into remission; but an identical treatment regimen produced remissions in only 5 per cent of the adult patients.

Drs. Frei and Haurani suggest on the basis of these results that 6-MP in some way modifies acute leukemia cells making them more susceptible to subsequent treatment with methotrexate.

The study was carried out in 13 hospitals throughout the country.

It is one of several cooperative clinical investigations sponsored by the National Cancer Institute to accumulate precise information on the effectiveness of anticancer drugs.

In addition to the National Cancer Institute and the Jefferson Medical College, the cooperating hospitals were: Duke University, Durham, N.C.; Walter Reed Army Hospital, Washington, D.C.; Jackson Memorial Hospital, Miami, Fla.; Medical College of Virginia, Richmond, Va.; Roswell Park Memorial Institute, Buffalo, N.Y.; Children's Hospital of Pennsylvania, Philadelphia, Pa.; Mayo Clinic, Rochester, Minn.; Emory University, Atlanta, Ga.; Mt. Sinai Hospital, New York City; Bowman Gray School of Medicine, Winston-Salem, N.C.; and Hitchcock Clinic, Hanover, N.H.

Sclerosing Hemangioma of the Lung

LEONARD SOLOMON, M.D., AND ZELMA WESSELY, M.D., JAMAICA, NEW YORK

(*From the Department of Thoracic Surgery and Pathology, Queens Hospital Center*)

IN 1956, Liebow and Hubell[1] described hemangiomatous lung tumors for which they coined the term "sclerosing hemangioma of lung" and demonstrated the histologic similarity of these tumors to analogous lesions occurring in the skin, brain, and liver. Only a few capillary hemangiomata of the lungs had been previously described in the English literature,[2] although numerous cases of cavernous hemangiomata and arteriovenous pulmonary fistula are reported in the English and German literature.[3-7] The article of Liebow and Hubell drew attention to this entity and several articles pertaining to it have subsequently been published,[8] among them an excellent review of the literature by Rubin *et al.*[9] The authors present this case in order to draw the clinician's attention to the not infrequent occurrence of this pathologic entity and in order to review current opinion regarding this lesion.

Clinical History

A forty-eight-year-old single white woman was admitted to Triboro Hospital on February 18, 1958, from the Board of Health Clinic because of an abnormality that was apparent on her chest x-ray film. One month prior to admission, the patient had developed a respiratory infection with pain in the left side of the chest and one episode of blood-streaked sputum. Following this episode she went to the Board of Health for a chest x-ray examination and hospitalization was recommended. She had no weight loss or subsequent hemoptysis. Previous history revealed a left salpingooophorectomy in 1948 and a rectal polypectomy in 1955. The rest of the past history was not remarkable.

Physical examination revealed a well-developed, moderately obese, white woman in no distress. Vital signs were normal, there was no cyanosis, no clubbing of the fingers, and no dyspnea. Auscultation of the chest revealed normal breath sounds throughout with no change in percussion sounds. The remainder of the physical examination was essentially noncontributory. Because of the previous polypectomy, the patient was examined by proctoscopy for a distance of 25 cm. and no abnormalities were noted. Intravenous pyelography and barium enema showed negative findings. Routine pulmono-arterial and lateral roentgenograms (Figs. 1 and 2) revealed a sharply demarcated, small, lobulated mass 3$^1/_2$ cm. in size, round in shape, in the left hilar zone extending anteriorly into the lingula. No surrounding infiltration was noted and there was no evidence of atelectasis. Fluoroscopy revealed good mobility of both diaphragmatic domes and a diagnosis of bronchogenic new growth was made. Anterior pituitary and left lateral tomographic studies confirmed these findings (Figs. 3 and 4). Angiocardiography revealed no distortion of the left pulmonary artery or of the aorta (Figs. 5 and 6). Bronchoscopy revealed no endobronchial disease. Examination of a Papanicolaou smear of the bronchial washings showed no tumor cells.

The preoperative differential diagnosis included tuberculous adenopathy; sequestration of lung; a benign tumor such as hamartoma; or a malignant tumor such as lymphoma, teratoma, or bronchogenic carcinoma. The clinical picture did not suggest Boeck's sarcoid. Since the patient had no other lymphadenopathy, negative findings on a Mantoux test, and no history of pulmonary infection or tuberculous contact, it was felt that the mass did not represent the enlarged hilar nodes of a lymphoma or a tuberculous lymphadenitis, but was a tumor mass, orginating in the lung parenchyma and representing either a benign or a malignant tumor. The angiogram precluded a possible diagnosis of an arteriovenous fistula. The preoperative clinical impression favored the diagnosis of bronchogenic carcinoma.

On March 10, 1958, the patient underwent a left thoracotomy. Exploration revealed a discrete tumor at the hilum of the left lung above the left upper bronchus. The tumor was subpleural in location and did not appear to involve the bronchial tree. There was no evidence of lymph node involvement and the remainder of the lung parenchyma was normal. There was no involvement of the major blood

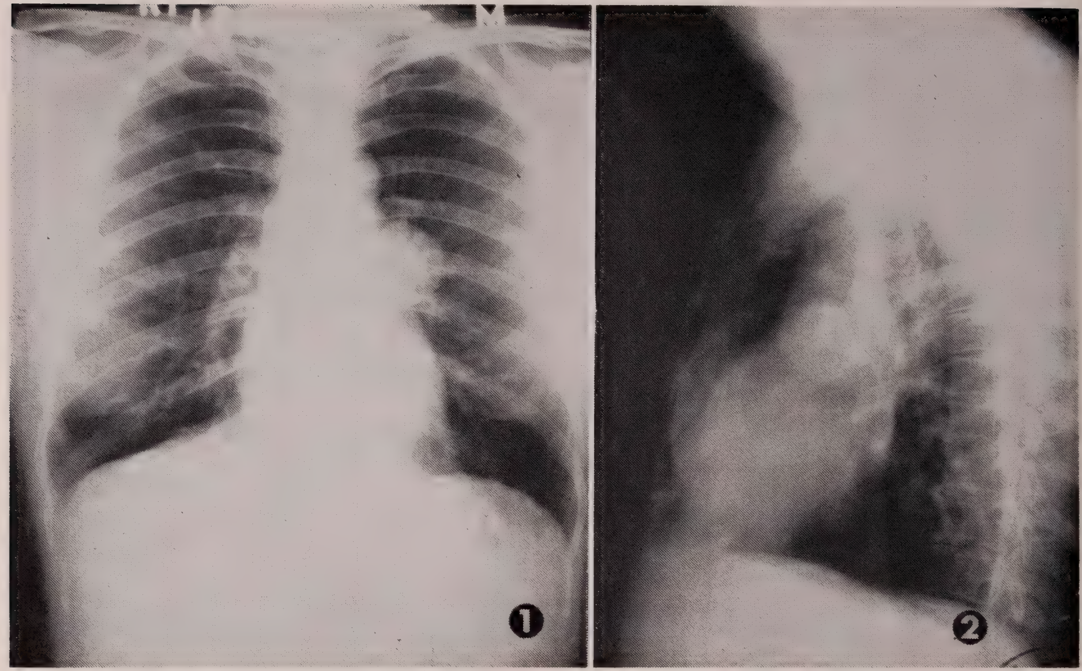
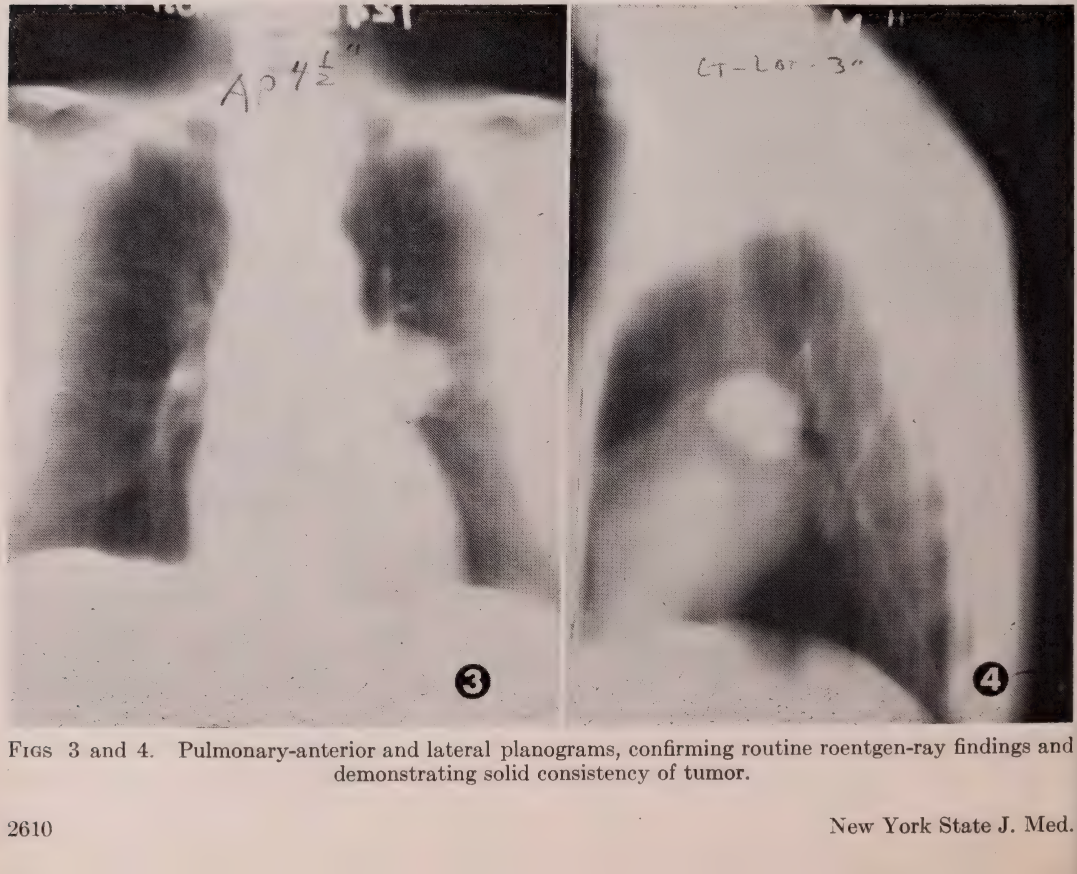
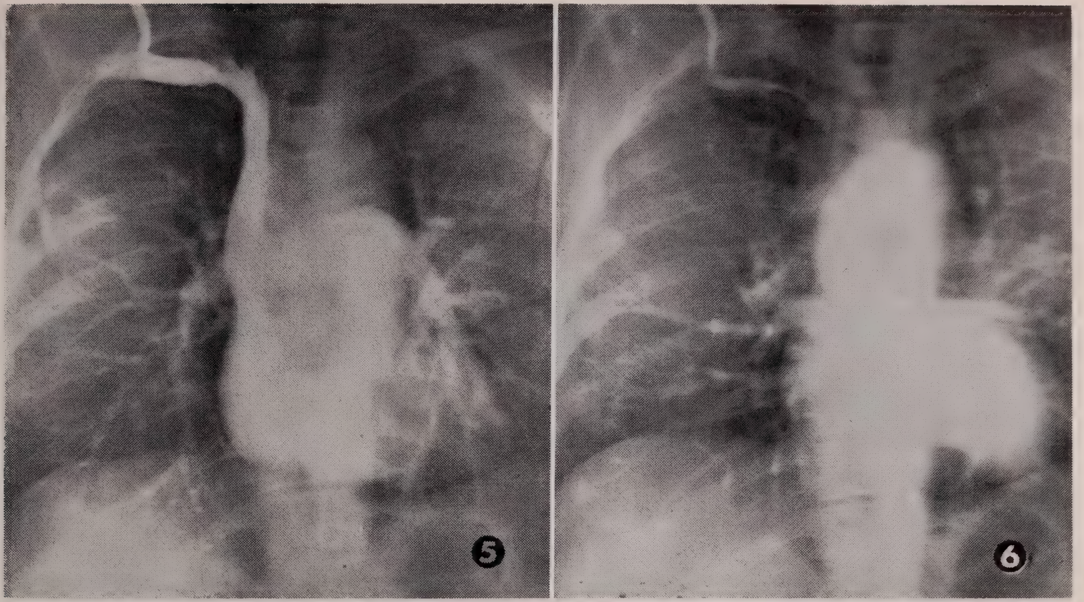


FIG. 1 and 2. Routine pulmonary-anterior and lateral roentgenogram, revealing sharply demarcated globular mass in left hilum involving upper lobe without other cardiopulmonary abnormalities.



FIGS 3 and 4. Pulmonary-anterior and lateral planograms, confirming routine roentgen-ray findings and demonstrating solid consistency of tumor.



FIGS. 5 and 6. Early and late angiocardiograms, demonstrating normal cardiovascular system.

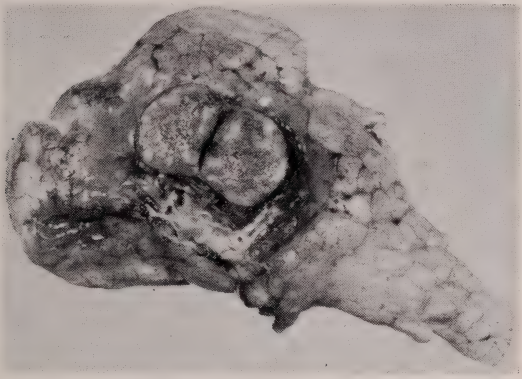


FIG. 7. Left upper lobe with lobular ovoid mass, cut surface exposed, between upper and lingular branches of bronchial tree, but not attached to them.

vessels. Since it was felt this was a parenchymal tumor of the lung and that it was probably malignant, a left upper lobectomy was performed. The postoperative course was good and the patient was discharged on March 28, 1958.

GROSS DESCRIPTION OF SPECIMEN.—The specimen consists of a left upper lobe. A lobular, ovoid mass is seen between the upper and lingular branches of the bronchial tree but is not attached to them (Fig. 7). The mass measures 4 by $3^1/_2$ by 2 cm. The mass is subpleural, and the overlying pleura is smooth and shiny. It is discrete, well demarcated, but with no definite capsule. It does not involve the pulmonary vessels. The cut surface is grayish-yellow and mottled with dark reddish hemorrhagic-appearing areas.

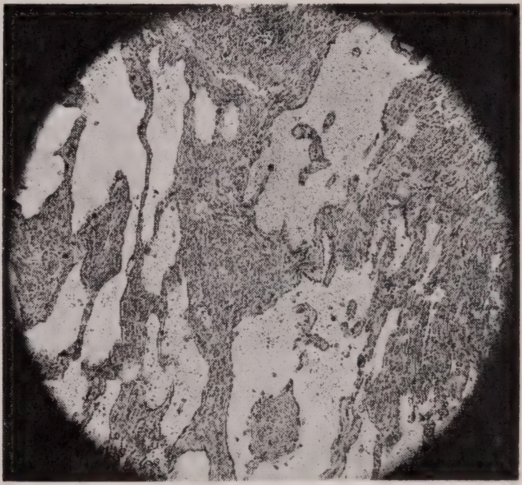


FIG. 8. Photomicrograph showing vascular areas alternating with dense cellular areas.

MICROSCOPIC EXAMINATION.—The tumor is a well-demarcated mass composed of vascular areas alternating with dense cellular areas (Fig. 8). The vascular areas are composed of irregularly shaped and sized spaces filled with blood and separated from each other by dense fibrous tissue, presenting a honeycombed appearance. The cellular areas are formed by papilli-

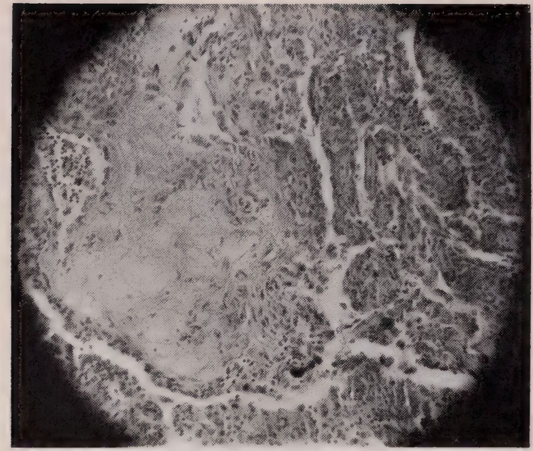


FIG. 9. Papilliform hyalinized septa, covered by cuboidal cells alternating with densely cellular (fibroblastic) areas.

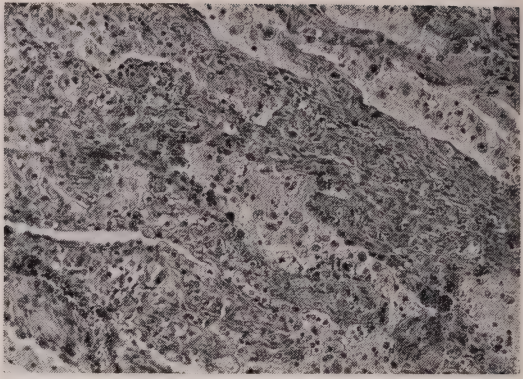


FIG. 10. Alveolar spaces filled with hemosiderin and fat-laden histiocytes.

form, hyalinized septa, and are covered by rather prominent cuboidal cells in some areas and by densely cellular fibrolastic stroma in other areas (Fig. 9). Alveolar spaces, which are few and far between, are filled with hemosiderin-laden and fat-laden histiocytes (Fig. 10). Almost all small and medium-sized arteries show markedly thickened and hyalinized walls with almost complete obliteration of the lumen. Small and medium-sized veins also show a moderate degree of thickening and hyalinization of their walls. The parenchyma of the remaining lung shows focal emphysema but otherwise no remarkable pathologic condition.

The diagnosis of sclerosing hemangioma of the lung was made.

Comment

Since Albrecht originally coined the term hamartoma in 1904,[10] case histories of tumor-like lesions in various organs answering his description have appeared, first in the German and later in the English literature. The improvement of x-ray diagnosis and advancements in anesthesia and thoracic surgery have resulted in increased experience with definitions and subdivisions of this entity as seen in the lung. Simon,[11] in his excellent review of the literature, distinguishes between the chondromatous type and the hemangiomatous type of pulmonary hamartoma.

The chondromatous type is usually subpleural, firm, dense, somewhat lobulated, bluish-gray to white on section, usually encapsulated, and sharply demarcated from the lung. Histologically, a mixture of cartilage, fat, and glandular elements are seen. It corresponds more or less to the circumscribed hamartoma of Liebow.[12]

The hemangiomatous hamartoma is an infrequently occurring, tumor-like malformation of the blood vessels which may occur familialy or may be associated with small hemangiomata, vascular nevi, or telangiectasis elsewhere. When large, the lesions may be associated with secondary polycythemia, cyanosis, clubbing of the fingers, hemoptysis, epistaxis, dyspnea, or vertigo.

Liebow[12] subdivided the hamartomas into two types. The first is a smooth, circumscribed lesion of the adult, two to three times more common in the male. Usually small and peripherally or subpleurally located, it rarely obstructs the lumen of the bronchus or produces clinical symptoms. It is usually found incidentally on routine roentgen-ray examination or autopsy. Histologically it consists of thick, "communicating masses of stroma which carry before them into divided lumen sheets of columnar or cuboidal epithelium, resembling that of bronchi, but devoid of cilia." The stroma consists of varying amounts of cartilage, which merges peripherally with fibrous connective tissue which often contains groups of fat cells or bundles of smooth muscle. The lesion is often surrounded by a thin capsule of connective tissue sometimes in association with a branch of the pulmonary artery.

The second type of hamartoma described by Liebow is a diffuse type of lesion of the newborn child involving a large part or all of one lung.

Liebow also described cavernous vascular lesions, single or multiple, consisting of communicating, large, dilated, tortuous vascular channels, with both venous and arterial connections. On routine histologic examination it is usually impossible to distinguish the arterial from the venous components, because most cavernous channels have thin walls with a minimal of muscle, consisting almost entirely of endothelium supported by an extremely thin connective tissue lamina. The right middle and lower lobes are most commonly involved by this lesion.

In 1956 Liebow and Hubell[1] described a series of 7 cases of lung tumor, 4 of them found accidently in routine roentgen-ray examination, 5 occurring in women, and all found in patients under the age of fifty. All tumors were located in the lower lobe, generally on the right. The nodules were spherical or ovoid, from 1.5 to 8 cm. in diameter, encapsulated, and intraparenchymally situated without obstruction of the bronchus. A cut section showed a mottled appearance of translucent, grayish-pink tissue alternating with hemorrhagic areas or dilated vascular channels. Microscopically the tumor showed proliferation of vessels with a tendency to sclerosis. Papillary infolding into the terminal air spaces due partly to the vascular proliferations were present. Hemorrhages in various stages of organization could be seen as well as infiltration of the supportive tissues and filling of air spaces with histiocytes laden with fat and hemosiderin. The authors considered these features sufficiently characteristic to enable them to distinguish these lesions from the previously described hemangiomata of the lung and they found these features consistent with lesions described in the liver, skin, and brain known as sclerosing hemangioma.

The other lesions which have to be considered with these developmental abnormalities are pulmonary sequestration and teratoma. Bronchopulmonary sequestration can be diagnosed very easily at the operating table because the involved bronchopulmonary mass is nourished by an aberrant artery from the aorta and consists of nonfunctioning lung tissue. In some cases the affected lobe or segments have been the seat of multiple cysts or of marked cystic bronchiectasis.

A teratoma is readily diagnosed microscopically and consists of tissues of all three germinal layers. In the benign, cystic form these tissues are of a mature type; in the malignant solid form these tissues are of an immature type.

In this case the tissue did not appear to be malignant and the microscopic differential diagnosis was either a cavernous hemangioma or a sclerosing hemangioma. The microscopic picture fitted the description of the sclerosing hemangioma and that diagnosis was made.

Summary

A case of a sclerosing hemangioma of the lung in a forty-eight-year-old, single white woman, with a history of a single episode of hemoptysis is shown here because it presented a differential diagnostic problem and because the authors want to draw the attention of clinicians and pathologists alike to this entity. A review of current opinion regarding this unusual lesion has been presented.

The authors wish to thank Dr. Averill A. Liebow for reviewing the slides.

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Hypersensitivity to Cold

NORMAN S. BLACKMAN, M.D., BROOKLYN, NEW YORK

(From the Department of Medicine, Brooklyn Hospital)

BECAUSE of recent advances in the utilization of cold substances in physiotherapy, psychophysiotherapy, and anesthesia, there has been increasing interest in reactions of the skin when it is exposed to cold environment. Extensive exploration of the Arctic and Antarctic regions has led to great interest in skin diving in cold water. There is considerable variation in the ability of individuals to withstand cold environments. For those who are hypersensitive to cold, a rather moderate exposure, in both time and degree, may be sufficient to result in violent physical and chemical reactions, both locally and systemically.

In the sweltering heat of summer, millions of people flock to the beaches seeking relief by swimming in the cool ocean waters. Death by drowning occurs for a variety of reasons, a rather poorly appreciated one being hypersensitivity to cold.

Since 1866, when Bourdon[1] first described a woman's local and systemic reactions to cold, sporadic reports of hypersensitivity to cold have appeared in the literature. A great impetus to the study of this condition was given by the basic researches of Lewis and coworkers,[2-5] Harris and coworkers,[6,7] and Carrier,[8] by the clinical observations of Horton, Brown, and Roth,[9-15] and by Duke.[16-18] Tragic consequences may ensue in those who are hypersensitive to cold, especially if they do not realize their handicap. In view of the fact that this condition can be favorably influenced by treatment, the following case is reported.

Case Report

The patient was a fifteen-year-old-girl who went swimming in the Atlantic Ocean in July, 1957. She had been in the water only three minutes and had not yet immersed her head when she became "chilly" and developed vertigo. Syncope soon occurred, and she had to be dragged from the water to the beach. Direct questioning of her friends who accompanied her through this incident revealed that she had become "extremely red all over" when removed from the water. She was brought to the local first aid station where oxygen was administered. She returned to consciousness in about fifteen minutes. Her local physician, who was immediately contacted, suggested that in view of the extremely hot weather the probable cause of her difficulty was heat prostration. He recommended that she be brought to the hospital for observation and suggested that she be packed in ice. The mother refused hospitalization and took the girl home. A second physician then examined the patient and noted that she was "obviously" anemic since she showed marked puffiness and pallor of the eyelids and of the entire face. The patient later developed mild pains in both knees, which persisted for about twenty-four hours.

The past history was significant only in that during the preceding winter she had been treated by her family doctor with an injection of penicillin for a severe upper respiratory infection. Although there had been no history of allergy or hypersensitivity of any kind, the patient developed a generalized skin eruption about one week after this injection. One month later the patient was dressed in a gym suit while taking physical training exercises out of doors. She developed wheals on the skin of her face, arms, and legs (the exposed portions of her body) which varied in size from that of a half-dollar to 6 inches in diameter. After this episode she consistently reacted to cold or to cool windy weather by developing wheals on the exposed parts of her body. Exposure of the face during a rain storm resulted in the same reaction. As a result the patient was forced to remain indoors in cool and inclement weather. In addition, she noted numbness and swelling of her fingers after holding cold objects. Wheals occurred and lasted between one and a half and two hours. They were sharply localized and were shaped to the cold object which had come in contact with the skin. There was no intolerance to drinking cold water nor was there a history of cyanosis or mottling of the hands or feet. No change in the color of the urine had ever been noted after exposure to cold.

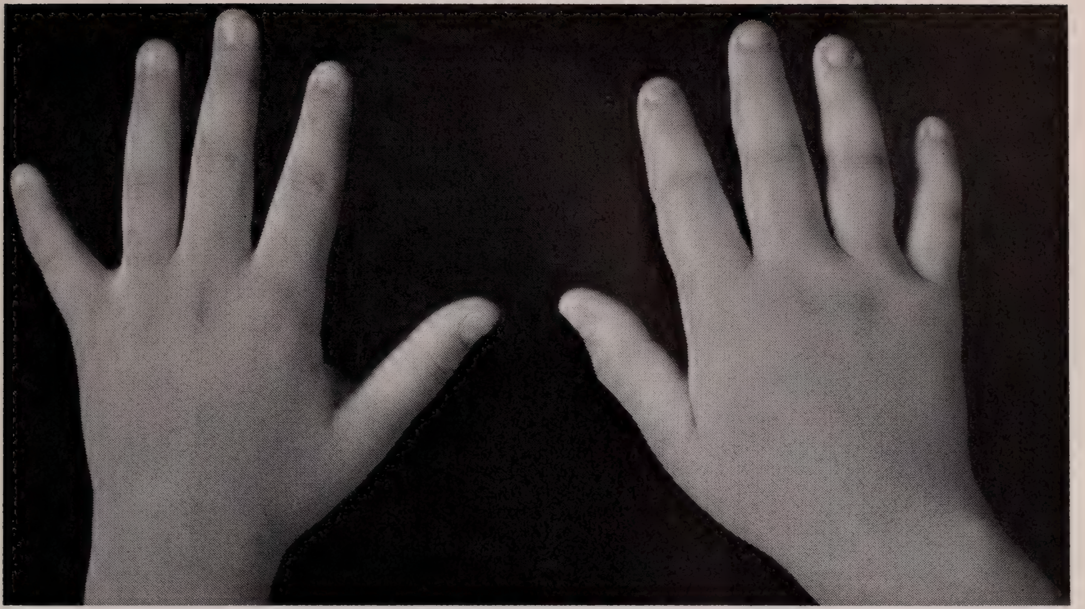

FIG. 1. The right hand was immersed in water at 5 C. for three minutes with resultant marked swelling and loss of creases; some swelling was still present twenty-four hours later.

The family history was negative with regard to similar hypersensitivity to cold.

Physical examination of the patient was entirely nonrevealing. It was noted that the patient was somewhat apprehensive and tense, and there was evidence of nail biting. No dermographia could be detected over any portion of the body. The blood pressure was 110/80.

Immersion of the left elbow in water at 4.5 C. was followed by a marked redness of the immersed area immediately on withdrawal. The redness was always sharply limited precisely to the area immersed. Shortly after withdrawal, itching of the exposed skin occurred. This was accompanied by obvious gross increase in the skin temperature. Within two minutes after withdrawal, some elevation and swelling of the skin was apparent. Five minutes later the swelling became more pronounced and the redness was replaced by blanching, with the itching subsiding. A well-demarcated urticarial reaction had fully developed in the entire exposed area. This persisted for about ten minutes, by which time the reaction had reached its height, gradually subsiding over the next twenty minutes but still perceptible one or two hours later. Trial immersion exposures of the hands up to 22 C. produced similar but much milder reactions (Fig. 1). These exposures approximated the coldness of ordinary tap water.

Protection of the skin against cold was afforded by the local use of antihistaminic skin cream and by cortisone inunction. Therapy with Pyribenzamine and later with prednisolone by mouth was tried without noticeable beneficial effect. The patient stated that she was still unable to immerse her hands in ordinary tap water at about 26 C. for fifteen minutes without the occurrence of bluing of the skin. Neither whealing nor redness, however, occurred at this temperature. Five-minute exposure at 21 C. resulted in redness of the skin as well as in the formation of multiple small white urticarial elevations, approximately 1 mm. in diameter. A few larger urticarial areas subsequently developed in the exposed area.

The patient was hospitalized in Brooklyn Hospital. The following laboratory data were obtained: Urinalysis findings were normal. The hemoglobin was 15 Gm. per cent, hematocrit 42, and white blood count 8,800, with 64 polymorphonuclear leukocytes, 25 lymphocytes, 8 monocytes, and 3 eosinophils. The total serum protein was 7.2 Gm. per cent with an albumin/globulin ratio of 5 to 2.2. The sedimentation rate was 9 mm. per hour. The Thorn test showed 113 eosinophils per cubic millimeter in the first specimen and 83 eosinophils per cubic millimeter in the second one. Cold agglutinins were reported to be absent. A chest roentgenogram was normal.

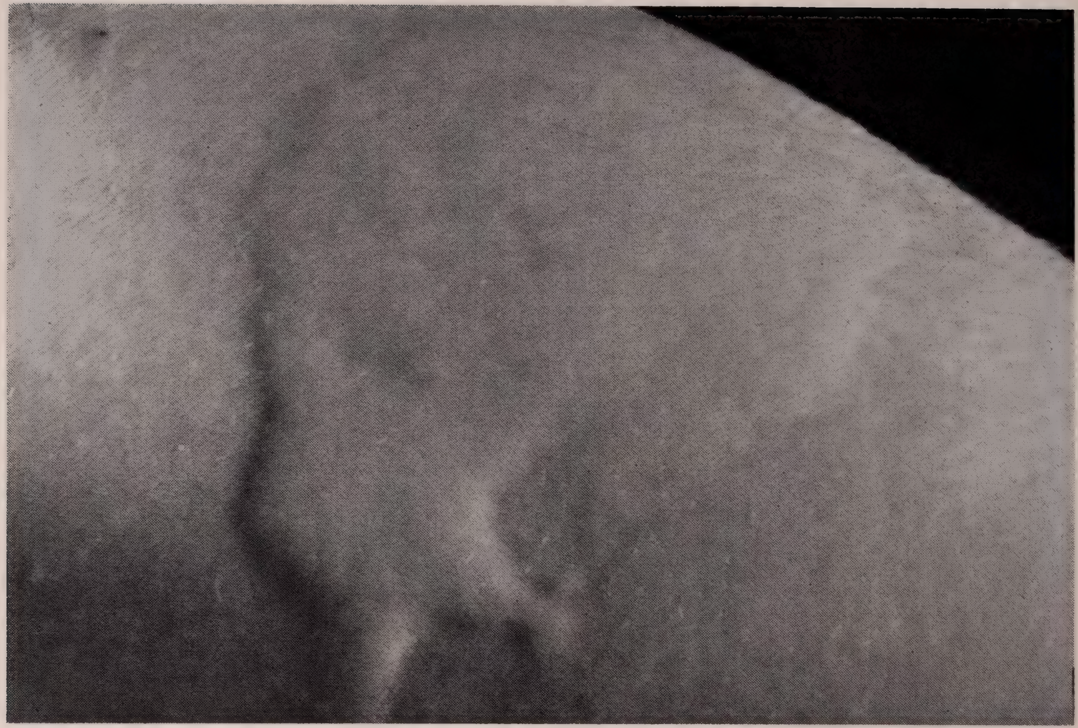

FIG. 2. The protected part of the skin to which an ice cube was applied shows less wheal formation, because of the effect of the previously applied ointment, than the unprotected area over which dripping cold water from the melting ice had passed.

Application of a small cube of ice to the flexor surface of the skin of the left forearm for three minutes resulted in the typical sequence of events described in the foregoing. The experiment was repeated after preliminary preparation of the exposed site by inunction of prednisolone and Pyribenzamine ointments. Both resulted in a gross amelioration of the reaction. Slight redness of the skin was observed, however, but the itching and blanching of the skin was greatly diminished, as was the final wheal formation. A protective action was also noted when ordinary vaseline was used as a control. It is not clear whether the medications or the base in which they were prepared had the beneficial effect. It can be observed that an urticarial reaction occurred at the site of exposure of the skin to the ice cube but a more severe reaction took place in the area over which dripping cold water from the melting ice contacted the skin which was unprotected by ointment (Fig. 2). It was observed that the skin over the entire body showed similar hypersensitivity.

Histamine desensitization was resorted to in the following manner: After a test dose the patient was given subcutaneously 0.25 cc. of histamine phosphate solution (1 mg. per cubic centimeter) in the morning, the dose being increased by 0.05 cc. to 0.30 cc. in the afternoon. The next morning the latter dose was again increased by 0.05 cc. The procedure was continued until the patient was receiving 0.8 cc. of the solution twice a day. The initial dosage merely caused some flushing of the face and a mild throbbing headache. As the dosage was increased, a few red blotches appeared on the upper arm, proximal to the site of injection. Later, some blotching appeared on the contralateral arm as well. When the dose approached 0.8 cc., reddening of both upper arms, face, chest, and shoulder areas also appeared.

In addition to histamine desensitization the patient was instructed to soak her hands in water for fifteen minutes four times a day, starting with a temperature of 25 C. At this temperature some reddening of the palms with mild itching occurred. The temperature of the water was gradually reduced by 1 or 2 degrees daily until 10 C. produced only slight redness and no swelling or itching. After discharge from the hospital, daily cold water soaks were continued and the patient was maintained on 0.8 cc. of histamine phosphate injected subcutaneously weekly. She ultimately was able to withstand temperatures as low as 5 C. without difficulty.

Comment

The relationship between the development of hypersensitivity to cold and the preceding hypersensitivity to penicillin may have been more than casual. Cold sensitivity in this patient was noted to follow hypersensitivity to penicillin by about one month. It has been reported in the literature that hypersensitivity to physical agents may be preceded by injury to the skin by other agents. In 3 sisters recovering from measles it was reported that cold urticaria developed. This subsided spontaneously. The same phenomenon followed an attack of chicken pox in another patient. A preceding skin disease was thought to be a related factor in another case. Even emotional factors have been thought to act as trigger mechanisms. It is true, however, that in most patients no obvious preceding event can with certainty be related to the sudden appearance of hypersensitivity of the skin to cold.

It is most fortunate that the patient was not packed in ice as orginally contemplated at the time of her episode of syncope, then thought to be due to heat prostration.

Because of the failure to control the local skin reaction to immersion of the hands in water at 25.5 C. while the patient was on antihistamine and prednisolone therapy, this treatment was considered to be inadequate. Histamine desensitization appears to have been of value in this patient.

Patients who show hypersensitivity to cold are amenable to treatment. Local and systemic desensitization can be accomplished by immersion of a hand in water at 10 C. for from one to two minutes twice daily for three or four weeks. This procedure is believed to be adequate to immunize the average patient. Also effective is daily immersion for increasing periods in water at 65 F. gradually decreasing the temperature to 45 F. The results of cold desensitization in this manner have been described as excellent. Patients can be desensitized to cold also by the subcutaneous administration of 0.1 mg. of histamine twice daily for two or three weeks.

In the case reported, treatment consisted of a combination of gradually increased histamine administrations and soaks in water, as described, the temperature of the bathing medium gradually being decreased.

Summary

The record of a patient who manifested local and systemic hypersensitivity to cold is presented. It should be emphasized that fatal consequences due to syncope during a systemic reaction may occur if the condition is unrecognized or if it is not appreciated that systemic reactions may result in syncope. Suggestions as to treatment are outlined. Active treatment has been observed to be of definite value in curing or ameliorating cold sensitivity.

100 Remsen Street, Brooklyn 1

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Obstruction to Airway Associated with Endotracheal Tube

ROBERT S. DONNENFELD, M.D., AND HAROLD F. BISHOP, M.D., VALHALLA, NEW YORK

(*From the Department of Anesthesiology, Grasslands Hospital*)

Two cases have recently been reported associated with ballooning of the endotracheal cuff over the end of the tube.[1,2] This prevented exit of gases from the lungs. One other case of ventilatory obstruction associated with a mucous plug has also recently been reported.[3]

Our case is presented for the reason that it demonstrates a different technic of treatment of endotracheal tube obstruction.

Case Report

An eighty-one-year-old white male, who was in good health until six weeks prior to admission, developed signs and symptoms of gastric retention and obstruction. These produced vomiting, nausea, eructation, and gastric distress. The symptoms progressed rapidly, so that at the time of admission (two weeks prior to the operation) the patient was vomiting immediately after every meal, and his hydration was deficient.

In the hospital the patient was diagnosed as having pyloric obstruction. In addition he was found to have emphysema, mild hypertension, and arteriosclerotic heart disease with an enlarged heart. He was treated for mild bronchopneumonia at the beginning of his hospital stay, but this cleared up before operation. He was scheduled for abdominal exploration and possible gastrojejunostomy.

Just prior to the operation his temperature was 98 F., pulse was 60, respiration was 16, and blood pressure was 140/75. Urine sugar and albumen showed negative results. Hemoglobin was 10.5 Gm., white blood count was 5,800, with 82 per cent polymorphonuclears. Blood sugar was 103, and nonprotein nitrogen was 44. He was classified as a physical status of 3.

Premedication was Nembutal 30 mg. orally, and scopolamine 0.15 mg. subcutaneously one and one-half hours before time of operation. The patient was intubated awake using 10 per cent cocaine spray and 1 cc. of 10 per cent cocaine intratracheally. A number 40 French Magill endotracheal tube was employed for intubation. A single layer removable endotracheal cuff was placed over the end of the endotracheal tube and located with lowest portion approximately 1 to 1$^1/_2$ cm. from the end of tube. This cuff was filled with 7 cc. of air after the intubation was completed.

Preanesthetically the blood pressure was 170/75, pulse was 80, and respirations were 32. The patient was induced on a to-and-fro closed system using cyclopropane 500 cc. per minute and oxygen 600 cc. per minute. As soon as the patient was asleep, the system was opened continuing the to-and-fro system with 4 liters of nitrous oxide and 2.4 liters of oxygen. Gradually increasing doses of ether were added using a copper kettle. The ether was increased until 200 cc. was indicated on the copper kettle, when the cyclopropane was discontinued. Ice bags were applied on the body to produce mild hypothermia. A temperature of 95.5 F. was reached (nasal thermometer).

For approximately one-half hour after induction there were no abnormalities noted in blood pressure, pulse, or respirations. Blood pressure remained approximately 140/80, pulse about 80, and respirations at 30. It was then noted that the surgeons were having difficulty performing their exploration because of jerking movements of the diaphragm. Because of this, it was decided to paralyze the patient using 0.1 per cent succinylcholine drip and continue him on 4 liters of nitrous oxide and 2.4 liters of oxygen. The ether was discontinued at this time. For twenty-five minutes the patient's condition remained as previously described. By controlling his respirations the jerky diaphragmatic motions were stopped, and the surgeons were able to perform an adequate exploration. At the end of that time (approximately one hour after the induction of anesthesia) it was observed that it was becoming increasingly difficult to ventilate the patient. Nitrous oxide and succinylcholine were discontinued at this time. Oxygen was maintained at 6 liters per minute. The blood pressure dropped to 50 systolic with diastolic undeterminable, pulse dropped to 60, respirations were being controlled with difficulty even though both hands were used to compress the bag. A consultant was called in and a suction catheter was passed through the endotracheal tube with no difficulty. No secretions were obtained this time.

After approximately five minutes of this difficult manual compression of the bag (using both hands) the compression became gradually easier, blood pressure rose to 160/80, pulse returned to 100, and it was easier to maintain ventilation under control. At this time nitrous oxide was restarted at 5 liters with the succinylcholine drip. About ten minutes later it was found that the patient could be controlled adequately without the succinylcholine drip, and this was discontinued. The patient was now maintained on 6 liters of nitrous oxide and 6 liters of oxygen. Five minutes after the discontinuation of succinylcholine and approximately one and one-half hours after the induction of anesthesia, the breathing bag again became difficult to compress, despite the use of both hands at a maximum force. The process was more severe than previously, and it was absolutely impossible to move any air in or out of the endotracheal tube. At this time no blood pressure, pulse, or respiration were obtainable by the anesthetist. The surgeon was asked to palpate the aorta, and he found a weak pulse of 40. The chest was in about mid-inflation during this period. The bag was unsuccessfully compressed several times. A suction catheter passed easily into the trachea. With the surgeon reporting a weakening pulse, it was decided to remove the cannister and blow through the tube. One of us therefore blew through the endotracheal tube with a short sharp burst. A gurgling sound was heard, and the chest moved. Succeeding breaths were progressively easier. Blood pressure then returned and was stabilized at 80 to 100 systolic after an initial period of 130/80. The surgical procedure was completed using nitrous oxide 50 per cent and oxygen 50 per cent.

Postoperatively the patient responded to verbal stimuli in the operating room immediately after anesthesia but had retrograde amnesia for the entire preoperative and operative day. It was difficult to convince him that the operation was completed.

Complete anuria existed for the first two postanesthetic days. Death occurred fourteen days after operation and was listed as metastatic carcinoma of the stomach.

Comment

There are several possibilities as to the cause of this airway obstruction. It might have been due to kinking of the tube, a mucous plug, slipped cuff, approximation of the tracheal wall with the tube orifice, or a muscular rigidity of the bronchiolar or chest walls. The tube was examined in situ with the laryngoscope before extubation. There were no kinks visible, nor were there areas of sharp flexion. There was no mucous obstruction and very few secretions were aspirated. The cuff could be deflated of 7 cc. of air, and the cuff had not moved from its position. The possibility that the tube orifice lay against the tracheal wall is strongly possible. The oral pressures exerted in blowing might have been sufficient to clear the orifice from the trachea. The possibility of muscular rigidity, or spasm, strong enough to resist bimanual compression of the bag, is also possible.

It was doubted postoperatively that the mouth-to-the-tube breathing pressure was greater than the bag pressures, but it was easily demonstrated later that pressures 2 to 3 times bag pressures could be achieved by blowing. This was proved by blowing on the tubing of a mercury manometer and also by compressing a breathing bag similarly connected. Blowing created pressures of 120 to 140 mm. Hg, and bimanual bag compression did not exceed 50 mm. Hg. The bag used in all instances was a Foregger Black Latex 5 liter AAl-C.

Summary

This case is presented to demonstrate the possibility of overcoming airway obstruction by forcible blowing through the endotracheal tube. It should be emphasized that pressures that may develop can rupture the tracheobronchial tree and must not be resorted to except in desperation.

References

1. Gross, G. L.: Acute bizarre airway obstruction, Current Res. Anesth. & Analg. **35**: 137 (Mar.-Apr.) 1956.

2. Orr, R. B.: Respiratory Obstruction, S. Clin. North America, p. 632 (June) 1957.

3. Grem, F. M., Ed.: Newsletter of the American Society of Anesthesiologists, Case Report No. 195, **21**: 42 (July) 1957.

MEDICAL NEWS

Award Established for Medical Reporting—An "Empire State Award for Excellence in Medical Reporting" has been established by the Medical Society of the State of New York and the Annual Health Conference Inc., on behalf of the New York State Health Department.

State Health Commissioner Herman E. Hilleboe, M.D., has announced that the purpose of the award is to encourage the further development of sound medical reporting in New York State.

The recipient of the award will receive a certificate and $500. The newspaper represented by the recipient will also receive a certificate. Any member of the editorial staff of any newspaper published five or more times a week in New York State may be nominated to receive the award. A reporter may be nominated for a single article or series of articles. The judges will also consider the general medical or health stories written by each nominee during the year.

Queens Pediatric Society—The Queens Pediatric Society has announced the election of the following officers for 1959–1960: Frederick Castrovinci, M.D., Jackson Heights, president; Emanuel Fletcher, M.D., Flushing, president-elect; Joseph Stein, M.D., Jamaica, secretary; Elmer E. Amerman, M.D., Jackson Heights, treasurer.

The Society will meet on the second Tuesdays of October, December, February, and April, at the Seminole Club, 112th Street and 70th Road, Forest Hills.

Karen Horney Clinic Fellowship of the American Institute for Psychoanalysis—A $5,000 fellowship is available to psychiatrists applying for the full course of psychoanalytic training in the American Institute for Psychoanalysis. The recipient of the fellowship will be granted $2,500 per annum during the second and third years of the training period.

In his first year of training, the Fellow will attend staff conferences of the Karen Horney Clinic. During the second and third years, he will do five hours of therapy with clinic patients each week and will have one hour of supervision per week.

Physicians who are graduates of an American Medical Association-accredited medical school and have completed a one-year general internship and two-year psychiatric residency in hospitals approved by the American Medical Association are eligible to apply.

Further information and application forms may be obtained from the registrar, Miss Janet Frey, American Institute for Psychoanalysis, 220 West 98th Street, New York 25, New York.

New York Society for Clinical Ophthalmology—The New York Society for Clinical Ophthalmology has announced the election of the following officers for 1959–1960: Joseph Laval, M.D., president; Alfred Kestenbaum, M.D., vice-president; Alan H. Barnert, M.D., recording secretary; Leon H. Ehrlick, M.D., corresponding secretary; Henry M. Kera, M.D., treasurer; and Robert S. Coles, M.D., historian.

The following committee chairmen were also elected: Abraham Schlossman, M.D., program; Alfred Weintraub, M.D., instruction session; Benjamin C. Rosenthal, M.D., legislative; Howard Agatston, M.D., membership; and Edward M. Douglas, M.D., industrial.

Arthur Linksz, M.D., retiring president, was elected to the advisory council.

Urology Award—The American Urological Association offers an annual award of $1,000 (first prize of $500, second prize $300, and third prize $200) for essays on the result of some clinical or laboratory research in urology. Competition is limited to urologists who have been graduated not more than ten years, and to hospital interns and residents doing research work in urology.

The first prize essay will appear on the program of the meeting of the American Urological Association, to be held at the Palmer House, Chicago, May 16 through 19, 1960.

For full particulars write to the executive secretary, Mr. William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be received before December 1, 1959.

Rochester Academy of Medicine—At the annual meeting of the Rochester Academy of Medicine, May 12, Conrad E. Good, M.D., was elected to succeed Allan A. Fisher, M.D., as president of the Academy.

Other officers elected for 1959–1960 were: Theodore B. Steinhausen, M.D., vice-president; Robert E. Wells, M.D., secretary; and Stearns S. Bullen, Jr., M.D., re-elected treasurer.

The following physicians were elected to serve three-year terms on the board of trustees: Frank A. Disney, M.D., A. Gordon Ide, M.D., and Donald H. Kariher, M.D.

Harry L. Segal, M.D., was awarded the Academy's highest honor in the form of the Albert David Kaiser Medal.

Advisory Committee for Workmen's Compensation Board—Appointment of a nine-member advisory committee to treat with current questions of the medical fee schedule and other phases pertaining to medical aspects of workmen's compensation has been announced by Col. S. E. Senior, chairman of the Workmen's Compensation Board.

Among the committee members are Gerald D. Dorman, M.D., chairman, Commission on Medical Services, William E. Pelow, M.D., chairman of the Workmen's Compensation Committee of the Medical Society of the State of New York; Anthony A. Mira, M.D., director of the Bureau of Industrial Health and Workmen's Compensation of the Medical Society of the State of New York; Willis M. Weeden, M.D., medical director of the Workmen's Compensation Board; and Chester L. Davidson, M.D., chairman of the medical practice committee of the Board.

Medical Textbooks Needed—The Polish Institute of Arts and Sciences in America has issued a call to all American medical groups, colleges, hospitals, and physicians to contribute new and used medical textbooks, reference books, and journals to medical schools and teaching hospitals in Poland.

Individuals and organizations may send books and journals prepaid postage, express or freight to: Mr. Maryan Chodacki, Polish Institute of Arts and Sciences in America, 145 East 53rd Street, New York 22, New York. Individuals and groups with contributions but without funds to pay shipping costs should contact Mr. Chodacki at the above address.

Physician to Address Meeting—Leo Kanner, M.D., of Johns Hopkins University, has been announced as the academic lecturer for the 1959 divisional meeting of the New York State District Branches, American Psychiatric Association, to be held at the Biltmore Hotel, New York City, November 27 through 29. Dr. Kanner will speak on the topic, "Child Psychiatry: Retrospect and Prospect."

New Pfizer Award—The History of Science Society, Cambridge, Massachusetts, has announced the establishment of a $500 annual award to be given to an American scholar for a distinguished contribution on a topic related to the history of science.

The prize, made possible by Chas. Pfizer & Co., Inc., is to be called the Pfizer Award. Selection of the prize winner will be made each year by a rotating committee of three scholars, appointed by the Society's president with the approval of its council. There are no age restrictions involved in the Pfizer Award, but in practice it will work toward the recognition of postdoctoral scholars without a large body of work to their credit, who have nevertheless shown that they are capable of making important contributions.

Personalities

Awarded

Leona Baumgartner, M.D., New York City Health Commissioner, a citation for meritorious service in medicine from the Gotham Chapter of the National Foundation for Muscular Dystrophy, May 16. . . Bernard J. Ficarra, M.D., Brooklyn, the honorary degree of doctor of science, from the College of Steubenville, Steubenville, Ohio, May 31. . .Sidney Rubenfeld, M.D., New York City, the alumni meritorious service medallion by New York University in recognition of "conspicuous service" to alma mater, June 11. . . Howard A. Rusk, M.D., chairman, Department of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, a public service award, May 20, from the Department of New York of the Jewish War Veterans of the United States.

Appointed

J. Morrison Brady, M.D., New York City, as medical director of the Muscular Dystrophy Associations of America, Inc. . . Ludwig Fink, M.D., Forest Hills, as medical director of the Long Island Consultation Center, Forest Hills. . .Franklin M. Foote, M.D., former executive director of the National Society for the Prevention of Blindness, as State Health Commissioner of Connecticut. . . Roscoe P. Kandle, M.D., former New York City Deputy Health Commissioner, as State Health Commissioner of New Jersey. . .William J. Pyles, M.D., New York City, as medical director of the New York Heart Association.

Elected

Donald A. Covalt, M.D., New York City, as president of the American Academy of Compensation Medicine. . .Alfred S. Dooneief, M.D., Mt. Kisco, as president of the New York State Trudeau Society, May 7. . .Ludwig G. Lederer, M.D., medical director of Capital Airlines, as president of the Aerospace Medical Association, April 29.

Speakers

Nathaniel E. Reich, M.D., Brooklyn, a panel discussant on the topic "Problem Cases of Cardiovascular Disease" at the New York Cardiological Society, May 20. . .Cornelius P. Rhoads, M.D., New York City, at the annual awards luncheon of the Thomas Alva Edison Foundation, May 20. . . Frederick J. Stare, M.D., Boston, before the hospital staff of the Veterans Administration Hospital, Northport, Long Island, on the subject "Nutrition and Atherosclerosis" May 12. . .Nicholas Vincent, M.D., East Orange, New Jersey, before the Association for the Advancement of Psychotherapy, May 29, on the topic "The Psychodynamics of a Case of Migraine". . .Lawrence E. Young, M.D., Rochester, before the monthly meeting of the Medical Society of Jefferson County, on the topic "Pitfalls in the Management of Anemia."

MEDICAL MEETINGS

Symposium on Prevention and Treatment of Athletic Injuries

The University of Rhode Island will offer a two-day symposium on the prevention and treatment of athletic injuries, August 17 and 18. Lectures, panel discussions, and demonstrations will be included.

Among the guest speakers at the symposium will be George G. Deaver, M.D., physician in charge of physical medicine, Bellevue Hospital, New York City, and professor of clinical rehabilitation and physical medicine, New York University.

For application forms or further information write to: Department of Physical Education and Athletics, University of Rhode Island, Kingston, Rhode Island.

Association for Research in Nervous and Mental Disease

The annual meeting of the Association for Research in Nervous and Mental Disease will be held on December 11 and 12 at the Hotel Roosevelt, New York City. The subject of the meeting will be "Mental Retardation."

Knowledge is the only instrument of production that is not subject to diminishing returns.—PERCY HAMMOND

NECROLOGY

Charles Franklin Abbott, M.D., of Syracuse, formerly of Elmira, died on May 2 in Syracuse General Hospital at the age of eighty-three. Dr. Abbott graduated from the University of Maryland College of Physicians and Surgeons, Baltimore, in 1903 and had practiced for many years in Elmira, until his semiretirement in 1952 when he moved to Syracuse. He was honorary attending physician at St. Joseph's and Arnot Ogden Memorial Hospitals in Elmira. Dr. Abbott was a member of the Chemung County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Maurice Brent, M.D., of Niagara Falls, died on May 3 in Mount St. Mary's Hospital at the age of fifty-five. Dr. Brent was graduated from the University of Buffalo School of Medicine in 1929. He was attending roentgenologist at Mount St. Mary's Hospital and had served several terms as president of the Niagara Falls Board of Education. Dr. Brent was a member of the Radiological Society of North America, the Radiological Society of New York State, the Niagara Falls Academy of Medicine, the Buffalo Radiological Society, the Niagara County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leo A. Connelly, M.D., formerly of Buffalo, died on May 2 in the Veterans Administration Hospital, Northport, Long Island, at the age of sixty-two. Dr. Connelly was graduated from the University of Buffalo School of Medicine in 1924 and had practiced in Westfield, Buffalo, and Newburgh. During World War II he served with the Army Air Corps with the rank of major.

Richard P. Doody, M.D., of Troy, died on May 8 at his home at the age of sixty-four. Dr. Doody was graduated from Albany Medical College in 1916 and served during World War I as a captain in the U.S. Army Medical Corps. He was attending surgeon at St. Mary's Hospital and had served for many years as surgeon for the Troy police and fire departments. A Fellow of the American College of Surgeons, Dr. Doody was a member of the Rensselaer County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ralph Marsh Hall, M.D., of Cold Spring, died on May 21 at his home at the age of sixty-seven. Dr. Hall was graduated from Albany Medical College in 1915 and had practiced in Cold Spring since 1918. He was attending surgeon at the Julia L. Butterfield Memorial Hospital, Cold Spring, and consulting surgeon at the Highland Hospital, Beacon. Dr. Hall was a member of the Putnam County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James Sherman Houck, M.D., of Rochester, died on April 29 while vacationing in Los Angeles, California, at the age of sixty-three. Dr. Houck was graduated from the University of Buffalo School of Medicine in 1921. He was assistant attending surgeon at Strong Memorial Hospital, consulting surgeon at Genesee Hospital and the Monroe County Infirmary, and an instructor in surgery at the University of Rochester School of Medicine and Dentistry. A Fellow of the American College of Surgeons, a Diplomate of the International College of Surgeons, and a Fellow of the International College of Surgeons, Dr. Houck was a member and had been president of the Rochester Academy of Medicine, the Rochester Pathological Society, and the Monroe County Medical Society, and belonged also to the Medical Society of the State of New York and the American Medical Association.

Samuel O. Kemp, M.D., of Albany, died on May 1 at his home at the age of seventy-six. Dr. Kemp was graduated from Albany Medical College in 1906 and had practiced in Albany since that date. He was a member of the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Hugh Wellington Knipe, M.D., of New York City, died on May 28 at his home in Katonah at the age of seventy-eight. Dr. Knipe was graduated from the Columbia University College of Physicians and Surgeons in 1903 and interned at Roosevelt and Sloane Hospitals. During World War I he served in France with the Army. He was a consultant in obstetrics at Gouverneur Hospital. A Diplomate of the American Board of Obstetrics and Gynecology and a Fellow of the American College of Surgeons, Dr. Knipe was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Albert Lang, M.D., of New York City, died on June 1 in Harkness Pavilion, at the age of eighty-three. Dr. Lang received his medical degrees from the University of Toronto Faculty of Medicine in 1898 and from the Royal College of Surgeons, England, and the Royal College of Physicians, London, in 1902. He interned at Babies Hospital.

Walter S. Lilienthal, M.D., of Albany, died on April 28 at Albany Hospital at the age of sixty-three. Dr. Lilienthal was graduated from Albany Medical College in 1910.

Lawrence James Nacey, M.D., of Rochester, died on March 26 at his home at the age of seventy-three. Dr. Nacey was graduated from the Queens University Faculty of Medicine, Kingston, Ontario, in 1913 and interned at Post-Graduate Hospital in New York City. During World War I he served with the Army Medical Corps overseas. He was consulting otolaryngologist at St. Mary's Hospital and honorary otolaryngologist at Rochester General Hospital. A Diplomate of the American Board of Otolaryngology, Dr. Nacey was a member of the American Academy of Ophthalmology and Otolaryngology, the Rochester Academy of Medicine, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Clara Loewenherz Okrainetz, M.D., of New York City, died on December 25, 1958, at the age of fifty-eight. Dr. Okrainetz received her medical degree from the University of Jena in 1925 and interned at Montefiore Hospital. She was an attending radiotherapist at Manhattan Eye, Ear, and Throat Hospital and an associate attending radiotherapist at Montefiore Hospital. A Diplomate of the American Board of Radiology and a Member of the American College of Radiology, Dr. Okrainetz was a member of the Radiological Society of North America, the New York Roentgen Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Erpinio Paganelli, M.D., of New Dorp, Staten Island, died April 23 at Richmond Memorial Hospital at the age of sixty-nine. Dr. Paganelli was graduated from the Long Island College Hospital School of Medicine in 1917 and served during World War I with the U.S. Army Medical Corps. He was attending otorhinolaryngologist at Richmond Memorial Hospital. A Diplomate of the International College of Surgeons and a Fellow of the International College of Surgeons, Dr. Paganelli was a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edwin Raymond, M.D., of Mount Vernon, died on May 8 at the age of fifty-one. Dr. Raymond received his medical degree from the University of Bern in 1938. He was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harold Russell Robert, M.D., of Farmingdale, died on May 2 at the Veterans Administration Hospital, Northport, Long Island, at the age of seventy. Dr. Robert received his medical degree from the McGill University Faculty of Medicine, Montreal, Canada, in 1912. He was a member of the Associated Physicians of Long Island, the Nassau County Medical Society, and the Medical Society of the State of New York.

Mary B. Spahr, M.D., of Ithaca, died on May 25 at her home at the age of sixty-two. Dr. Spahr was graduated from the Cornell University Medical College in 1922 and was attending in pediatrics at the Tompkins County Memorial Hospital. A Licentiate of the American Board of Pediatrics, she was a member of the American Academy of Pediatrics, the Tompkins County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Cassius Hinds Watson, M.D., of Brookfield Center, Connecticut, formerly of Brooklyn, died on June 1 in Stamford, Connecticut, at the age of eighty. Dr. Watson was graduated from the Long Island College Hospital School of Medicine in 1905. He was retired medical director for the American Telephone and Telegraph Company of New York and former president of the National Safety Council. A Fellow of the American College of Surgeons, Dr. Watson belonged to the New York Academy of Medicine, the Kings County Medical Society, and the Medical Society of the State of New York.

Henry Wolfer, M.D., of Monterey, Massachusetts, formerly of Brooklyn, died on May 23 in Monterey, at the age of seventy-three. Dr. Wolfer was graduated from the New York University and Bellevue Hospital Medical College in 1908 and interned at Gouverneur Hospital. Before his retirement he had been a consulting physician at Mary Immaculate, Kings County, and Long Island College Hospitals. A Diplomate of the American Board of Internal Medicine and a Fellow of the American College of Physicians, Dr. Wolfer was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

State Officers for 1959–1960

Election of officers of the Woman's Auxiliary to the Medical Society of the State of New York as held during the annual convention in Buffalo from May 10 through May 13. The following officers were elected: *President,* Mrs. James L. McCartney, Garden City; *president-elect,* Mrs. Milton W. Kogan, Oswego; *first vice-president,* Mrs. Eugene F. Wolff, Newburgh; *second vice-president,* Mrs. H. D. Vickers, Little Falls; *recording secretary,* Mrs. Ezra A. Wolff, Forest Hills; *corresponding secretary,* Mrs. E. Van Brunt Vurgason, Baldwin; *treasurer,* Mrs. Irwin Alper, Utica; *assistant treasurer,* Mrs. Dominic R. Pitaro, Troy; and *parliamentarian,* Mrs. Harry F. Pohlmann, Middletown.

Directors elected were: Mrs. Maurice G. Sheldon, Olean; Mrs. Frederic W. Holcomb, Kingston; Mrs. Gerald Cooney, Syracuse; Mrs. Leif G. Jensen, Staten Island; Mrs. Albert Vander Veer, II, Albany, and Mrs. John L. Neubert, Roslyn Heights.

Councillor-at-Large for 1959 to 1960 will be Mrs. Isadore Zadek, New Rochelle, and councillors will be Mrs. John Purpura, Brooklyn, for District 1; Mrs. Ferdinand Pitrelli, Islip, for District 2; Mrs. William L. Gould, Albany, for District 3; Mrs. Ralph Isabella, Schenectady, District 4; Mrs. Marvin Brown, Cleveland, District 5; Mrs. Raymond B. McKeeby, Binghamton, District 6; Mrs. Paul C. Johnson, Penn Yan, District 7; Mrs. Edward Briggs, Wellsville, District 8, and Mrs. David Block, Tivoli, District 9.

Committee chairmen elected were: Mrs. Henry Fineberg, Jamaica, American Medical Education Foundation; Mrs. Michael R. Mazzei, Staten Island, archives and historian; Mrs. John W. Platt, New Hartford, civil defense; Mrs. Joseph H. Kinnaman, Hempstead, and Mrs. J. P. Gale, Lindenhurst, convention; Mrs. Herbert J. Ulrich, Buffalo, *Distaff*; Mrs. Royal W. Howard, Staten Island, *Distaff* circulation; Mrs. Alexander J. Bellanca, Rochester, and Mrs. J. A. Chaintreuil, Rochester, fall conference; Mrs. Arthur L. Bennett, Buffalo, finance; Mrs. Harvey Kausel, Slingerlands, legislation; Mrs. Austin Corbett, Troy, mental health; Mrs. Jerome H. Flatow, Syracuse, *National Bulletin;* Mrs. L. W. Sincerbeau, Auburn, and Mrs. W. F. Newcomb, Homer, New York State Fair; Mrs. Thomas d'Angelo, Flushing, organization and membership; Mrs. Ernest Santemma, Hempstead, Physicians' Home; Mrs. Sol. Axelrad, Woodhaven, poster contest; Mrs. Louis Tischler, Schenectady, press and publicity; Mrs. Charles Shlimbau, Islip, printing and supplies; Mrs. Nicholas Klimow, Johnson City, program; Mrs. William Merrill, Parish, public relations; Mrs. Carleton Heist, Westfield, recruitment; Mrs. John J. Scalzo, Brooklyn, revisions and resolutions; Mrs. Thomas F. Houston, Buffalo, *Today's Health;* Mrs Franklin Fry, Garden City, safety; and Mrs. John B. Horner, Albany, voluntary health plans.

To desire immortality is to desire the eternal perpetuation of a great mistake.—Schopenhauer

LETTERS TO THE EDITOR

Vendors of Doctor-Care

To the Editor:

Doctor-care is the application of technical knowledge and skill to the needs of an individual by another individual who has met the standards of education specified by the State. Hospitals, medical centers, and closed panel groups operating under a trade name cannot "practice medicine." They are vendors of doctors' services.

Our state laws regulate the practice of medicine but they do not regulate the vending of doctor-care. The day has come when we must emphasize the distinction between doctor-care and medical care. All of the paramedical activities are embraced under the latter term. The confusion of thought can have serious consequences, such as furthering the aims of those who seek to make the doctor merely the technical head of a team which will be managed and exploited under lay controls.

The medical profession has a code which is intended to protect both the public and the profession against conditions prejudicial to the good and welfare of both the public and the profession. One intent of that code is to prohibit unbridled advertising as a means of promotion, such as prevails in some commercial enterprises.

The medical societies have ordained that groups of doctors are under the same ethical conduct provisions as are specified for the individual. Some of our institutions have made the line between commercial and professional conduct vague, if not entirely invisible.

The doctors who permit their licensed privileges to be sold through third parties or promoted by a trade-name partnership and who profit through the vendors' promotions are violating the spirit if not the letter of the code. When will the medical profession discipline this commercialization for profit to the disadvantage of individual doctors who abide by the code faithfully?

The small closed panels justify government management and impersonalization of sick care, the necessary step to a system of state medicine. There is real danger ahead because the hospitals and Blue Cross are financially in trouble. Hospital insurance rates must go up if the hospital "per diem" cannot come down. The government has taken over the hospitals in Canada. When will they take the doctors, as has been done in England?

It can happen here—if the doctors are not alert and united in support of a free medical profession. It will be fatal to the future of our profession if doctors permit it to be thrown into a political soup kettle.

NAME WITHHELD

Activities of Physicians' Home

To the Editor:

On Saturday, May 9, 1959, a few items in regard to the activities of the Physicians' Home were presented to the House of Delegates of the Medical Society of the State of New York.

In June, 1959, the Physicians' Home will have had forty years of operation. The following is a summation of beneficiary aid delivered since the inception of Physicians' Home in 1919:

Total number of beneficiaries	129
Total number of beneficiary years	376
Total amount of beneficiary aid	$398,802.50

This does not include the cost of maintenance of five doctors for a total of 49 years and 7 months in a residence of Connecticut. These five individuals were supported for an average of 9.9 years. The average period of maintenance of the others was 2.3 years.

The beneficiary with the longest period of assistance is Mrs. C.C.M., widow of Dr. C.C.M. of New York County, who has to date been assisted for 17 years and 1 month. The next longest is Dr. H.F.,

[Continued on page 2628]

PROMPT SUMMERTIME RELIEF FOR INFANT DIARRHEA!

HI-PRO
HIGH PROTEIN
LOW FAT
COW'S MILK
JACKSON MITCHELL PHARMACEUTICALS, INC.
CULVER CITY, CALIF.

AN EFFECTIVE BALANCE OF PROTEIN/FAT/CARBOHYDRATES

Protein	41.00%
Fat	14.00%
Carbohydrate	35.00%
Calcium	1.15%
Calories per ounce (3 tbsp.)	121

When summertime infantile diarrhea strikes, HI-PRO is the indicated formula for effective relief! Four easy steps, with quantities for 24-hour periods, as follows:

1. After a starvation period (with plenty of water) give:

HI-PRO	7 Tbs.	Protein	3.2%
Water	30 Ozs.	Fat	1.0%
		Lactose	2.7%
		Cal. per fl. oz.	10

2. With improvement or within 48 hours, carbohydrates may be cautiously added.

3. After 2 or 3 days increase HI-PRO concentration as follows:

HI-PRO	10 Tbs.	Protein	4.6%
Water	30 Ozs.	Fat	1.5%
Maltose-Dextrin Mixture	4 Tbs.	Carbohydrate	7.4%
		Cal. per fl. oz.	18

4. Change in about one week to a stronger formula (the following is an example):

HI-PRO	6 Tbs.	Protein	4.5%
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[Continued from page 2626]

also of New York County, who lived for 15 years and 5 months in the home at Stamford. The beneficiary receiving the greatest amount of aid was Dr. J.J.D. of Kings County, who received $20,595 over a period of 14 years. His widow is now receiving $175 monthly.

We have had beneficiaries from 28 counties, New York contributing the largest number with 46 individuals for a total of 153 years and 5 months and aid amounting to $122,615. Kings County is second with 15 beneficiaries for 71 years and 7 months and aid amounting to $74,283.

In the year ending September 30, 1958, the physicians of the Society, on the $2.00 voluntary assessment, contributed $20,184, which indicates that 10,092 members of the Society subscribed to Physicians' Home. In addition, $37,467.50 was donated to the Home by physicians who contributed a minimum of $10 each. Furthermore, Physicians' Home received $2,373 from the woman's auxiliaries of the component county medical societies and State Medical Society. Dr. Louis Pellman, Dr. Aaron Kottler, and Dr. Solomon Schussheim reported to the House of Delegates a gift of $1,000 for Physicians' Home from the Kings County Physicians Guild.

The number of our guests has increased in the last few years from 41 to 61. The number of beneficiaries during the year 1958 was:

Single or widowed doctors	13
Married doctors	8
Wives	8
Widows	27
Dependents	5
TOTAL	61

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Russian Medical Training

To the Editor:

It was surprising to me to see the item on page 766 of the March 1, 1959, issue of the JOURNAL concerning "Medical Education and Training, U.S.S.R." More surprising is the fact that other readers did not call for a clarification.*

It is incorrect to translate the Russian word "vrach" as "doctor." It means "physician." This is no mere semantics. Briefly, the Russians after their 1917 Revolution instituted large training groups of "fel'shers" (taken from the eighteenth century German term "feldchir," feld [field], and the first syllable of chirurgeon [chir]). These individuals had only *one* year of intensive lecture work before being turned loose. Later, the requirements were raised to two years. Then, when the requirements were raised to three years, they began to call them "vraches" (physicians). Eighty-five per cent of these are women.

Still later they began to recall the upper 3 to 5 per cent of the most promising vraches for real training. First, one year of genuine clinical study. Then, a preliminary screening exam, after which the individual, if successful, becomes a "Candidate for the degree of Doctor of Medicine." Three years of what we consider residency training (clinics, etc.) follows. This is concluded by a written thesis and exam. Only then does the individual become a "doctor." He (doctors are chiefly men) is now in line for teaching appointments, head of hospital staff positions, etc.

The differences in salary between a vrach and a doctor can be anywhere from five to tenfold.

It is wrong to lump fel'shers, vraches, and doctors together and call them all doctors. Only a very small fraction of listed Russian medical personnel are doctors in our meaning of the word.

ARNOLD LIEBERMAN, M.D.

41–42 Elbertson Street
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* My article on "Practice of Medicine in U.S.S.R." [J.A.M.A. **105**: 1989 (Dec. 14) 1935], evoked at least some discussion.

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NEWS FROM THE MEDICAL SCHOOLS

Albert Einstein College of Medicine of Yeshiva University

Grants—During the month of April, the following grants were received: From the National Institutes of Health to the Department of Biochemistry, $12,420 for "A Study of the Aging Process in the Mammalian Erythrocyte," and $14,981 for "Studies on the Nature of Collagen and of Collagenase"; to the Department of Pathology, $24,345 for "Squamous Metaplasia and Carcinogenesis in Rat Bladder," and $500 for "Tumor Regression"; to the Department of Pharmacology, $23,806 for "Neurohumoral Transmission of Sensory Nerve Activity"; and to the Department of Physiology, $8,450 for "Active Transport of Oxygen."

During the month of May the following grants were received: Department of Obstetrics and Gynecology, $25,000 from the American Cancer Society, for "All Factors of Cancer"; Department of Medicine, $10,000 from United States Atomic Energy Commission for "The Metabolism of Adenosine Triphosphate and Related Compounds in the Erythrocyte"; Department of Medicine and Radiology, $31,250 from The National Institutes of Health for "Plasma Lipoproteins in Atherosclerosis"; to the Department of Neurological Surgery, $23,430 for "Microelectrode Investigation of the Epileptiform Spike," from The National Institutes of Health; to the Department of Pathology, $6,000 for "The Role of the Egg Surface and Cortex in Control of Sperm Penetration" from Planned Parenthood Association of America and $4,588 from the National Institutes of Health for "The Electron Microscopy of Abnormal Myelin"; to the Department of Pharmacology, for "Drug Effect on Electron Transport in Brain Cell, $2,760 from The National Institutes of Health which also awarded $19,739 to the Department of Psychiatry for "Role of Stimulus Recognition in Autonomic Response"; the Damon Runyon Memorial Fund, $4,300 to the Department of Radiology for "The Carcinogenic Action of Thorium Dioxide on the Cirrhotic Liver," and to the Department of Rehabilitation Medicine $25,734 from the Department of Health, Education, and Welfare, Office of Vocational Rehabilitation, for "Experimental Analysis of Phantom Limbs and Appendages with Special Reference to Somatosensory and Experimental Concomitants of Amputation."

Speakers—Dr. Lawrence S. Kubie, clinical professor of psychiatry, Yale University School of Medicine; Dr. Robert D. Terry, Montefiore Hospital; Dr. Shirley Ferguson, Presbyterian Hospital; Dr. Seymour Lieberman, Department of Biochemistry, College of Physicians and Surgeons, Columbia University; Judge Dorothy Kenyon, director, National Board of American Civil Liberties, and director, National Board of Y.W.C.A.; Dr. Leonard Hamilton, Sloan-Kettering Institute for Cancer Research; Dr. Abraham Mazur, Cornell University; Dr. Paul Hoch, Psychiatric Institute; Dr. Robert L. Straube, Argonne National Laboratory, and Dr. Leo G. Rigler, University of California Medical Center.

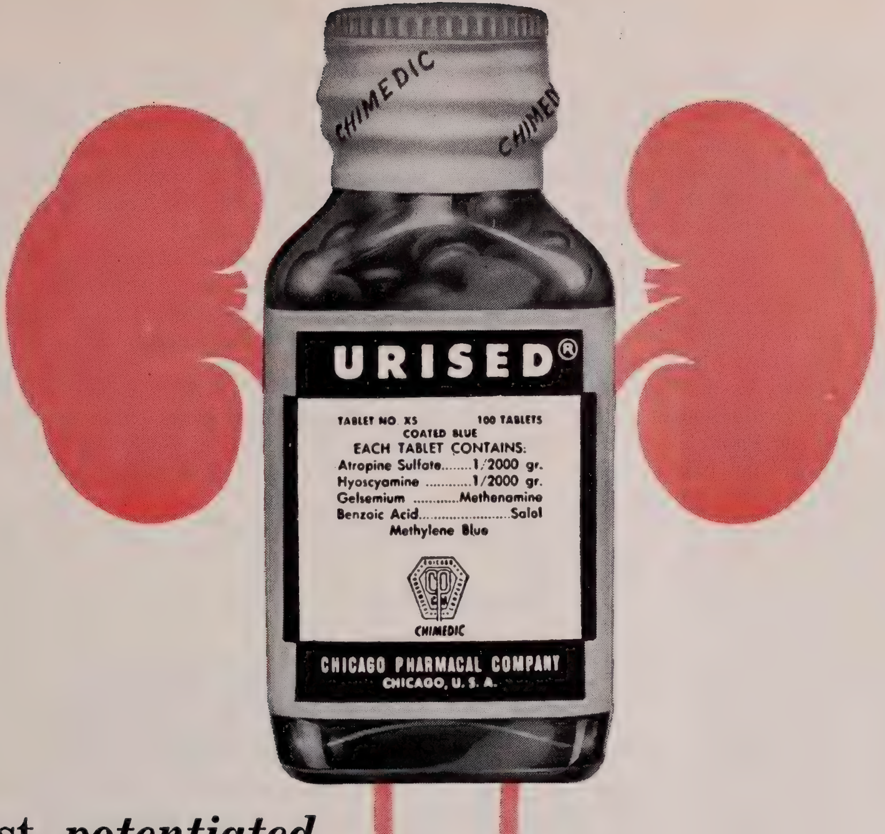
Visiting lecturers during May were: Dr. Theodore T. Puck, University of Colorado School of Medicine, Denver; Dr. Irwin A. Rose, Department of Biochemistry, Yale University School of Medicine, New Haven; Dr. Bernard Halpern, Director of Research, French National Research, Paris, France; Dr. Howard Schneiderman, Department of Biology, Cornell University; Dr. Nathan O. Kaplan, Department of Biochemisty, Brandeis University; Dr. Philip I. Marcus, Department of Biophysics, University of Colorado, and Dr. Alfred Gellhorn, professor of medicine, Columbia University College of Physicians and Surgeons.

Albany Medical College

Grant—The National Science Foundation has awarded a grant of $8,280 for the support of student summer research fellowships. This grant enables a number of qualified students to spend two months of their summer vacation performing basic research projects under the supervision of trained researchers and teachers.

Research Paper Presented—Dr. Arthur A. Stein, associate professor of pathology, presented a research paper before the International Congress of

[Continued on page 2632]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[Continued from page 2630]

Infectious Pathology, Milan, Italy, on May 8.

Commencement—Fifty-one candidates received their degrees at the 129th commencement exercises on May 28. Nine members received prizes—C. Dominique Allerand, Mamaroneck, the John Milton Bigelow Prize, for the senior passing the best examination in diseases of the nose and throat; Edward P. Baker, Jr., New York City, the R. J. Wharton Prize for the senior who demonstrates the greatest proficiency in pediatrics; Amnon Rosenthal, Miami, Florida, the S. Oakley Vander Poel Prize, for passing the best bedside examination in general medicine; Donald P. McKibbin, South Glastonbury, Connecticut, and Roy D. Shaffer, Kijabe, Kenya, the Daggett Deportment Prizes; Roger A. Yerry, Kingston, George M. Howard, Detroit, Michigan, and Russell F. Shaw, Pawtucket, Rhode Island, the Lamb Foundation Prizes to the three seniors who most nearly approach the ideal in doctor-patient relationship, and Orlando T. Hines, Hartford, Connecticut, the Association of the Alumni Medal, to the member of the graduating class whose outstanding qualities give promise of his typifying the ideal alumnus. At the exercises, an honorary degree of doctor of science was conferred on Dr. Ellis Kellert, class of 1909, recently retired as chief pathologist, Ellis Hospital, and member of the Department of Pathology.

Dr. William L. Holt, Jr., professor of psychiatry and chairman, Department of Psychiatry, served as faculty marshal, and Donald P. McKibbin, White Plains, was the student marshal.

Presented Paper—Dr. Thomas F. Shelley, fellow in medicine (endocrinology and metabolism), read a paper at the meeting of the American Diabetes Association in Atlantic City on June 7.

Research Fellowship—Edwin S. Beatrice, Schenectady, received a research fellowship of $4,269 to make a special study of atherosclerosis from the U.S. Public Health Service. Mr. Beatrice is a sophomore and the fellowship enables him to withdraw from academic studies for a year.

College of Physicians and Surgeons, Columbia University

Appointed—Dr. Stanley E. Bradley will become director of the Department of Medicine and director of the Medical Service and an attending physician at Presbyterian Hospital. Dr. Bradley succeeds Dr. Robert F. Loeb who is retiring. The appointment becomes effective on July 1.

Investigation on Viruses—The National Foundation, supported by a March of Dimes Grant of $53,923, for an investigation of how viruses multiply and cause damage to the cells they infect will be carried on at the College. Dr. Harry M. Rose, the John E. Borne Professor of Medical and Surgical Research and chairman, Department of Microbiology, will direct the project. Dr. Councilman Morgan, associate professor of microbiology, will investigate further the virus particles arranged in crystal-like forms and combine his phase of virus development with the chemical processes. Associated with Drs. Rose and Morgan will be Drs. Peter M. Breitenfield, Arline D. Deitch, Gabriel C. Godman, Margaret Holden, Calderon Howe, and Alice W. Knox, also of the Department of Microbiology.

New York Medical College

Annual Alumni Day Scientific Program—Dr. Jane C. Wright, class of '45, now assistant professor of research surgery, Department of Surgery, Post-Graduate Medical School, New York University-Bellevue Medical Center, spoke on "Local Cancer Chemotherapy," and Commander Richard P. Dobbins, also class of '45, medical officer aboard the *U.S.S. Nautilus* when it made its historic voyage under the North Pole, now medical officer of Submarine Squadron Ten staff, U.S. Navy submarine base, New London, spoke on "Medical Aspects of Nuclear Propulsion," at the annual alumni day program.

Commencement Speaker—General Carlos P. Romulo, ambassador to the United States from the Philippines, delivered the commencement address on June 9. The honorary degree of Doctor of Humane Letters was conferred upon him. One hundred and twenty-three candidates received their degrees.

State University of New York Downstate Medical Center

Grants—The National Institutes of Health has awarded a five-year grant of $150,830 to Dr. David Grob, professor of medicine and director of medical services at Maimonides Hospital of Brooklyn for research in diseases of muscle. Particular attention

[Continued on page 2634]

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1. Greenhouse, B.: Ann. New York Acad. Sc. 74:643, 1959. 2. Dobson, H., et al.: Ibid., p. 940. 3. Forsham, P. H.; Magid, G. J., and Dorosin, D. E.: Ibid., p. 672. 4. Beaser, S. B.: Ibid., p. 701; New England J. Med. 259:573, 1958. 5. Bloch, J., and Lenhardt, A.: Ann. New York Acad. Sc. 74:954, 1959. 6. O'Driscoll, B. J.: Lancet 2:749, 1958. 7. Hadley, W. B.; Khachadurian, A., and Marble, A.: Ann. New York Acad. Sc. 74:621, 1959. 8. Duncan, G. G.; Schless, G. L., and Demeshkieh, M. M. A.: Ibid., p. 717. 9. Handelsman, M. B.; Levitt, L., and Calabretta, M. F.: Ibid., p. 632. 10. Hills, A. G., and Abelove, W. A.: Ibid., p. 845. 11. Drey, N. W., et al.: Ibid., p. 962.

[Continued from page 2632]

will be paid to the cause of weakness in myasthenia gravis and other muscular diseases of unknown cause.

Dr. Brian F. Hoffman, associate professor of physiology, and Dr. Philip N. Sawyer, assistant professor of surgery, were recipients of $22,710 and $19,250, respectively, from the American Heart Association.

Dr. Karl E. Karlson, professor of surgery, received $13,340 from the National Institutes of Health for studies of breathing in postoperative patients. Also from the National Institutes of Health, a grant of $8,010 to Dr. Walter D. Wosilait, assistant professor of pharmacology, for studies on the biologic role of vitamin K.

Dr. Felix A. Silverstone, clinical assistant professor of medicine, received $4,600 from the National Institutes of Health for the study of changes in the metabolism of sugars in pregnancy in an attempt to find an early method for detecting diabetic tendencies in pregnant women.

The New York Tuberculosis and Health Association has awarded $4,177 to Dr. Harold A. Lyons, professor of medicine, for studies of the fate of patients with tuberculosis who have refused surgery.

The Ciba Pharmaceutical Company has awarded $1,000 for studies of the effects of certain drugs in treating angina pectoris to Dr. Benjamin A. Rosenberg, clinical instructor of medicine.

Alumni Reunion—A scientific session on "Recent Advances in Chemical Aids to Diagnosis" and a special address by William Agar, consultant to the American Association for the United Nations, were features of the 79th annual Alumni Day on May 16.

Special Events—On May 15, Dr. Kenneth Shirley Smith, editor-in-chief of the *British Heart Journal* and president of the Life Assurance Medical Society of Great Britain, delivered a special lecture on "Heart Disease and Life Assurance As Related to the New Outlook in Coronary and Hypertensive Diseases."

Another special lecture sponsored by the Graduate Educational Program was delivered by David R. Curtis, Fellow of the John Curtin School of Medical Research of the Australian National University, May 26. Dr. Curtis spoke on "Investigations Upon Transmitter Substances in the Central Nervous System." Dr. Curtis, who has been on the teaching and research staff of the Australian National University since 1954, will serve as visiting professor of physiology for one year beginning in September, 1959.

Alpha Omega Alpha Lecture—The eleventh annual Alpha Omega Alpha Lecture was delivered on May 12 by Dr. George W. Thorn, Hersey Professor of the Theory and Practice of Physic at Harvard Medical School and physician-in-chief, Peter Bent Brigham Hospital.

Senior students elected to the Society were: Ruth Gail Abramson, Far Rockaway; Abby Schlein Greenberg, Walter Richard Hampton, Lester Levine, Barrie Levitt, Roger Norman Levy, Richard I. Mazze, Harold Moskowitz, Harold Satz, and David Herman Steinberg, all of Brooklyn; Ronald Howard Levine, New York City; John Gabriel Rafter, Flushing; Carl Lester Rosengart, Averne, and Leslie Howard Sobin, Forest Hills.

Junior students elected were: Charles Kenneth Cordes, Long Beach; Milton Maurice Dana, Harold Lawrence Levine, William Erwin Paul, Stephen Richard Shapiro, Leroy Strom, and Elliott Burt Urdang, all of Brooklyn, and Albert Nicholas Martins, Bronx.

Sigma Xi Club—Dr. H. Bentley Glass, professor of biology, The Johns Hopkins University, spoke on "The Genetic Hazards of Atomic Radiation" following his installation of a new Sigma Xi Club at the Medical Center on June 5. The new Sigma Xi Club, which was established under the authorization of the National Society of the Sigma Xi, will have as its purpose the encouragement of research. The official installation ceremony took place at a banquet before the lecture. Dr. Glass was the installing officer. Officers of the new Sigma Xi Club are: Dr. Paul Cranefield, associate professor of physiology, president; Dr. David Kydd, professor of medicine, vice-president; Dr. Leonard Procita, assistant professor of pharmacology, secretary, and Dr. Harold Levey, assistant professor of physiology, treasurer.

Alumni Medallion—The twelfth Alumni Medallion for Distinguished Service to American Medicine was awarded on June 10 to William Benham Snow, a pioneer in the field of physical medicine and rehabilitation. Dr. Snow has been assistant director of physical therapy at the Beekman Street Hospital, assistant physician in charge of physical therapy at the Vanderbilt Clinic, director of physical therapy at Fifth Avenue, Presbyterian, and Doctors Hospitals, director of professional services in physical medicine and rehabilitation at Columbia-Presbyterian Medical Center, on the faculty of the Department of Physical Medicine and Rehabilitation at the College of Physicians and Surgeons, and is currently professor of physical medicine.

Honors Day—The Medical Center held its first Honors Day Convocation, May 18. Papers describing results of research projects which they have carried out at the Medical Center were read by four fourth year medical students, two of whom shared the $500 Honors Day Award for Research. The awardees were Arthur Hirshkowitz and James Mor-

[Continued on page 2636]

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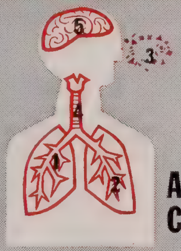

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1. Personal communication. 2. Foland, J. P.: Postgrad. Med. 18:397 (Nov.) 1955.

[Continued from page 2634]

ris, Jr., whose research papers were selected by a faculty committee as most noteworthy of those submitted by senior students this year. Other honors went to Richard Mazze, for excellence in surgery; Louis Rodriques, for excellence in anatomy; and Herman Rosen, for general excellence in all departments of the medical school. Following the Award, Dr. Elting E. Morison, professor of industrial history at Massachusetts Institute of Technology, delivered an address entitled "The Anatomy of the Affections."

New Appointments—Three clinical associate professors have been appointed to the faculty. Dr. Joseph Wortis, director of pediatric psychiatry at the Jewish Hospital of Brooklyn, has been named clinical associate professor of psychiatry. Appointed to the posts of clinical associate professor of pathology were Drs. Silik H. Polayes and Max Wachstein. Dr. Polayes is chief pathologist at Cumberland Hospital, director of pathology at Prospect Heights Hospital, and consulting pathologist to the V.A. and Kings Highway Hospitals, all in Brooklyn. Dr. Wachstein is chief of laboratories at St. Catherine's Hospital, Brooklyn.

Research Society—Dr. Sigmund A. Wesolowski, assistant professor of surgery, and Drs. Arthur Shapiro and Donald Goodenough, Departments of Medicine and Psychiatry, presented papers at the 127th meeting of the Research Society of the State University of New York Downstate Medical Center on May 20.

State University of New York Upstate Medical Center

Fifth Annual Student Research Symposium—The fifth annual Student Research Symposium was held on May 12. The papers presented were: "The Relation Between Urine pH and Antibiotic Effectiveness in Urinary Tract Infections," Richard Lubera; "Inguinal Hernia Repair in Infants and Children," George Zografakis; "Some Aspects of Thiosemicarbazide and Vitamin B_6 Activity in the Cat," Edward S. Betz; "Correlation of Glucose Levels in Tears and Saliva with Blood Sugar Level," Barry Segal; and "The Sodium Excretion Defect in Hepatic Cirrhosis as Studied by the Use of a Steroidal Lactone," Samuel Hellman. These reseach papers represent work done by the students at the Medical Center during the tenure of summer research fellowships on projects under the supervision of faculty members.

Albert G. Swift Lecture—Dr. George E. Moore, director, Roswell Park Memorial Institute, delivered the annual Albert G. Swift Lecture on May 14. Sponsored by the Alpha Kappa Kappa medical fraternity, the lecture is in honor of the late Dr. Albert G. Swift, professor emeritus of surgery at the College.

Papers Presented—Dr. Aldona L. Baltch, an instructor of medicine, Dr. Walter R. Spofford, associate professor of anatomy, Dr. Bessie Lendrum, assistant professor of pediatrics, and Dr. Fred T. Caldwell, Jr., an instructor of surgery, read papers at the spring meeting of the Syracuse Research Club on May 21.

Promotions—Dr. William F. Knoff, formerly assistant professor of psychiatry to associate professor; Dr. Paul F. Wehrle to associate professor of pediatrics; Dr. David G. Whitlock to associate professor in the Department of Anatomy; Dr. Helen H. Blauvelt from teaching and research assistant to assistant professor of pediatrics; Dr. John J. Danehy, from instructor to assistant professor of psychiatry, and Dr. Leonard Hersher from instructor to assistant professor of pediatrics.

Alumni Day—Dr. Victor Johnson, director, Mayo Foundation for Medical Education and Research, delivered the Weiskotten Lecture at the 84th annual Alumni Day on June 6. On June 5 and 6 special five-year class reunions were held. Among alumni returning was Dr. Louis K. Peck, Barryton, Michigan, class of 1892, who marked the oldest anniversary of graduation—sixty-seven years. Fiftieth reunions were celebrated by ten members of the Class of 1909.

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BOOKS RECEIVED

(The following books were received during the month of April, 1959)

Headache. Diagnosis and Treatment. By Arnold P. Friedman, M.D., and H. Houston Merritt, M.D. Octavo of 401 pages, illustrated. Philadelphia, F. A. Davis Co., 1959. Cloth, $8.00.

Science & Psychoanalysis. Vol. II. Individual and Familial Dynamics. By Jules H. Masserman, M.D. Octavo of 218 pages. New York, Grune & Stratton, Inc., 1959. Cloth, $6.75.

Principles of Peripheral Vascular Surgery. By S. Thomas Glasser, M.D. Octavo of 410 pages, illustrated. Philadelphia, F. A. Davis Co., 1959. Cloth, $12.50.

Hearing. By Norton Canfield, M.D. Duodecimo of 214 pages. New York, Doubleday & Co., 1959. Cloth, $3.50.

Therapeutic Electricity and Ultraviolet Radiation. By Sidney Licht, M.D. Octavo of 371 pages. New Haven, Elizabeth Licht, 1959. Cloth, $10.

Principles of Self Damage. By Edmund Bergler, M.D. Duodecimo of 469 pages. New York, Philosophical Library, 1959. Cloth, $6.00.

Navy Surgeon. By Rear Admiral Lamont Pugh, Medical Corps, retired. Octavo of 459 pages. New York, J. B. Lippincott Co., 1959. Cloth, $5.00.

Treatment of Cancer and Allied Diseases. Vol. III. Tumors of the Head and Neck. By George T. Pack, M.D., and Irving M. Ariel, M.D. Octavo of 781 pages, illustrated. New York, Paul B. Hoeber, Inc. Cloth, $30.

Fundamentals of Otolaryngology. Third edition. By Lawrence R. Boies, M.D. Octavo of 510 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $8.00.

History of American Medicine. A Symposium. By Felix Martí-Ibáñez, M.D. Octavo of 181 pages. New York, MD Publications, Inc., 1959. Paper, $4.00.

Gynecologic Endocrinology. By Gardner M. Riley, Ph.D. Octavo of 330 pages, illustrated. New York, Paul B. Hoeber, Inc., 1959. Cloth, $8.50.

Neurosurgery. Vol. I. Medical Department, U.S. Army. Surgery in World War II. By R. Glen Spurling, M.D., and Barnes Woodhall, M.D. Octavo of 466 pages, illustrated. Office of the Surgeon General, Department of the Army, Washington, D.C., 1958. Cloth, $5.00.

Biosynthesis of Terpenes and Sterols. Ciba Foundation Symposium. By G.E.W. Wolstenholme, M.A., and Cecilia M. O'Connor, B.Sc. Duodecimo of 311 pages, illustrated. Boston, Little, Brown & Co., 1959. Cloth, $8.75.

Glaucoma. Transactions of the Third Conference, January, 8, 9, and 10, 1958. By Frank W. Newell, M.D. Octavo of 272 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1959. Cloth, $5.25.

Now or Never. The Promise of the Middle Years. By Smiley Blanton, M.D. Octavo of 273 pages. Englewood Cliffs, N.J., Prentice-Hall, Inc., 1959. Cloth, $4.95.

A Doctor Remembers. By Edward H. Richardson, M.D. Duodecimo of 252 pages, illustrated. New York, Vantage Press, 1959. Cloth, $3.95.

Total Surgical Management. By James D. Hardy, M.D. Octavo of 292 pages, illustrated. New York, Grune & Stratton, Inc., 1959. Cloth, $9.50.

General Urology. Second edition. By Donald R. Smith. Octavo of 328 pages, illustrated. Los Altos, Lange Medical Publications, 1959. Paper, $4.50.

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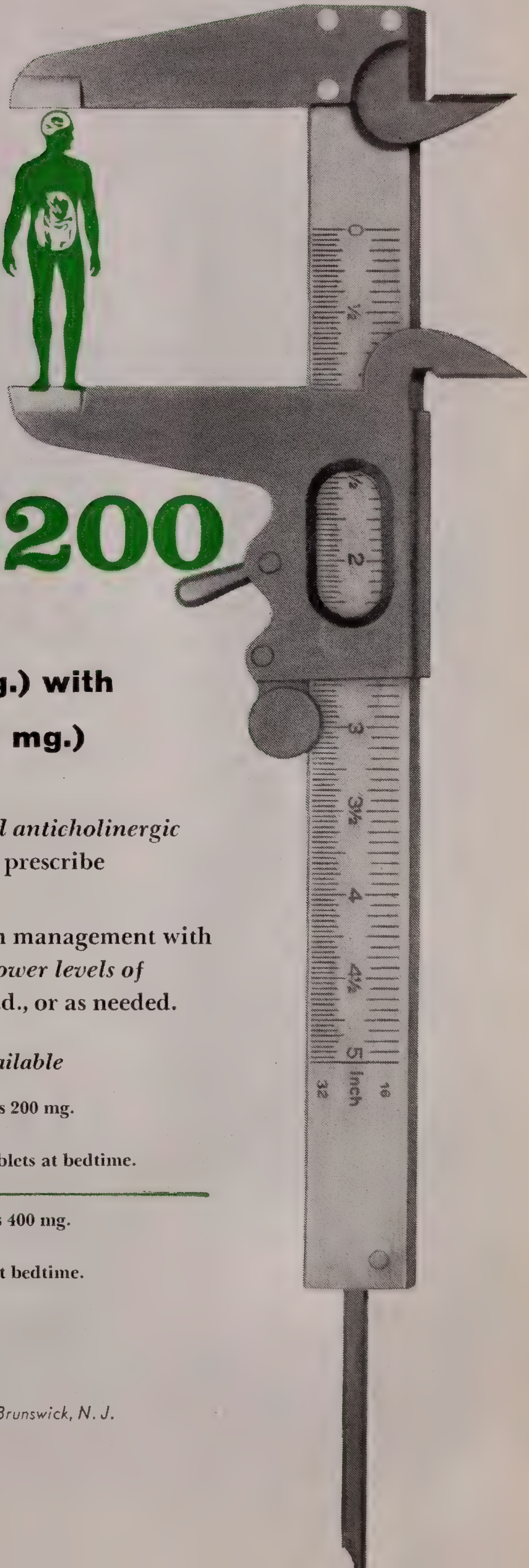

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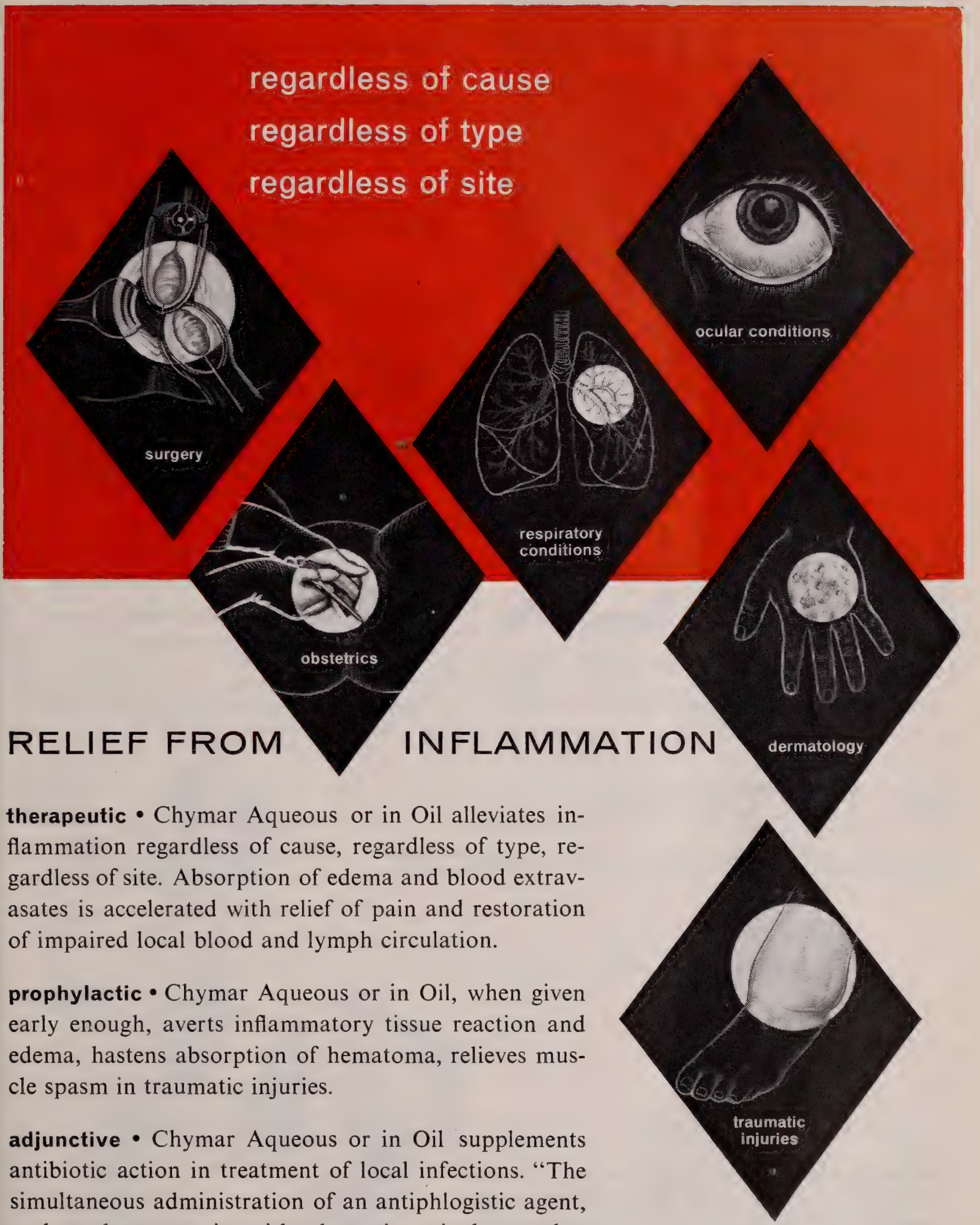
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*Cornbleet, T.; Chesrow, E., and Latoni, J.: Antibiotic Med. & Clin. Therap. 6:21, 1959.

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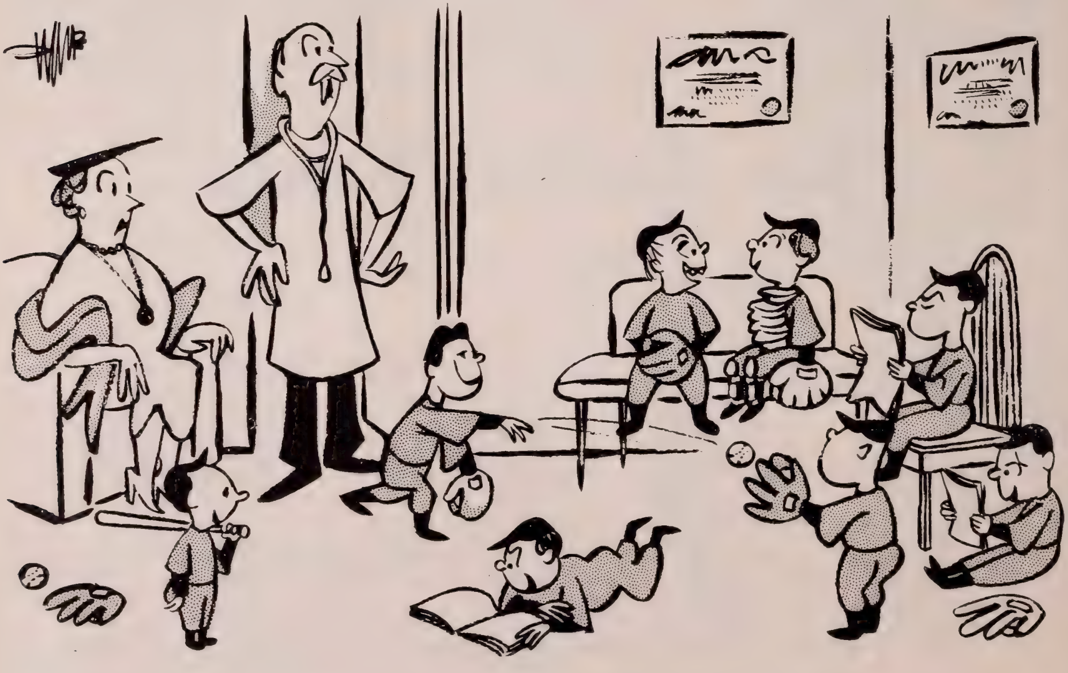

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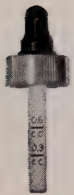

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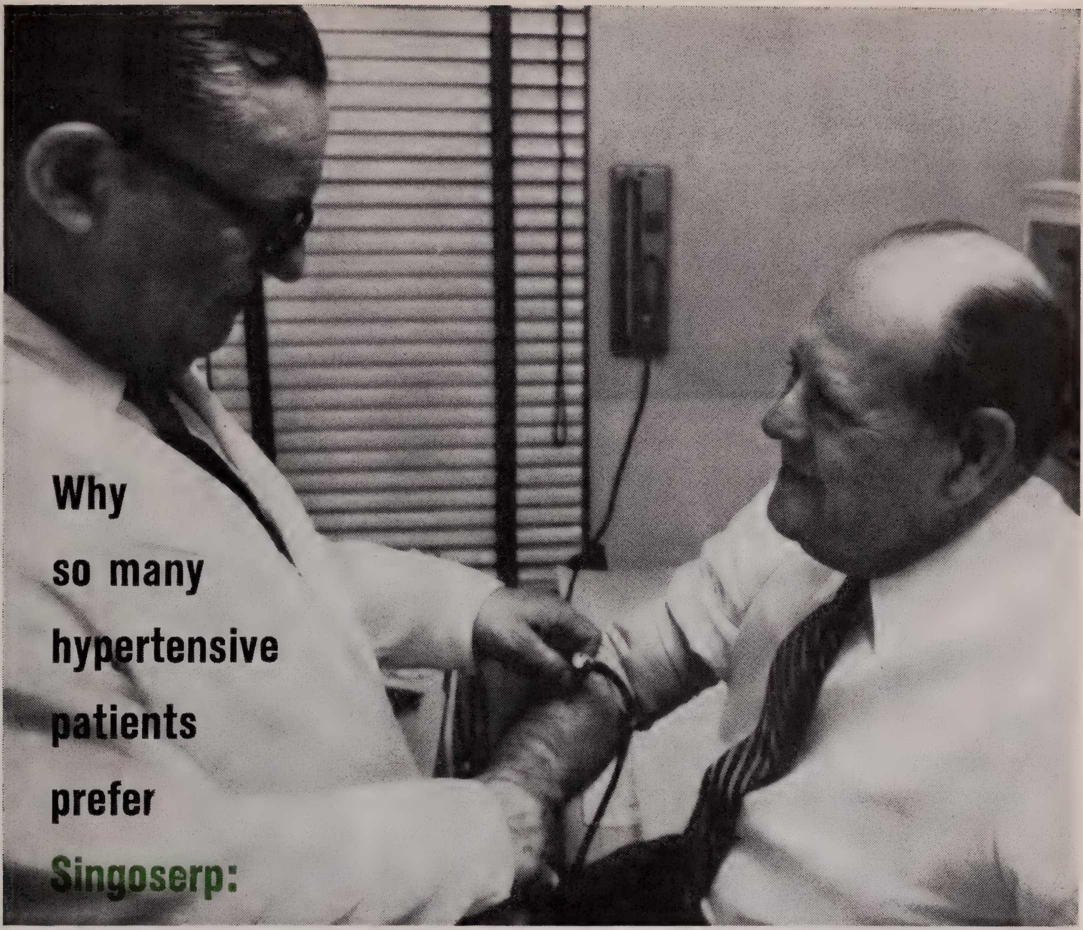

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*Herrmann, G. R., Vogelpohl, E. B., Hejtmancik, M. R., and Wright, J. C.: J.A.M.A. **169**:1609 (April 4) 1959.

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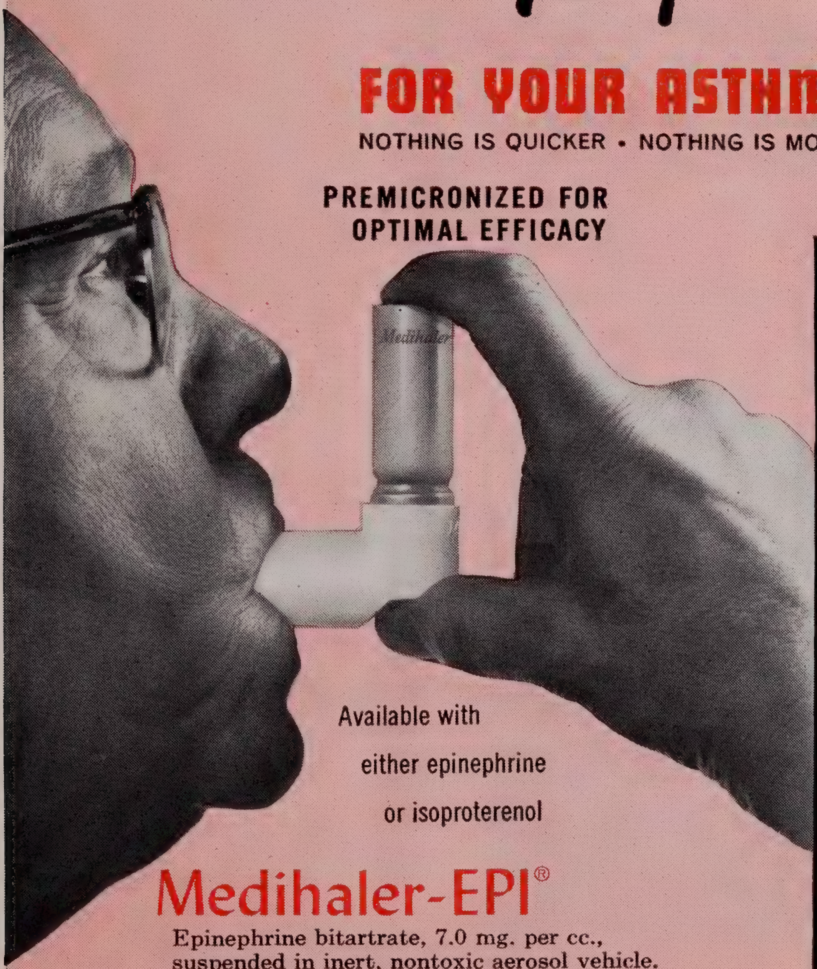

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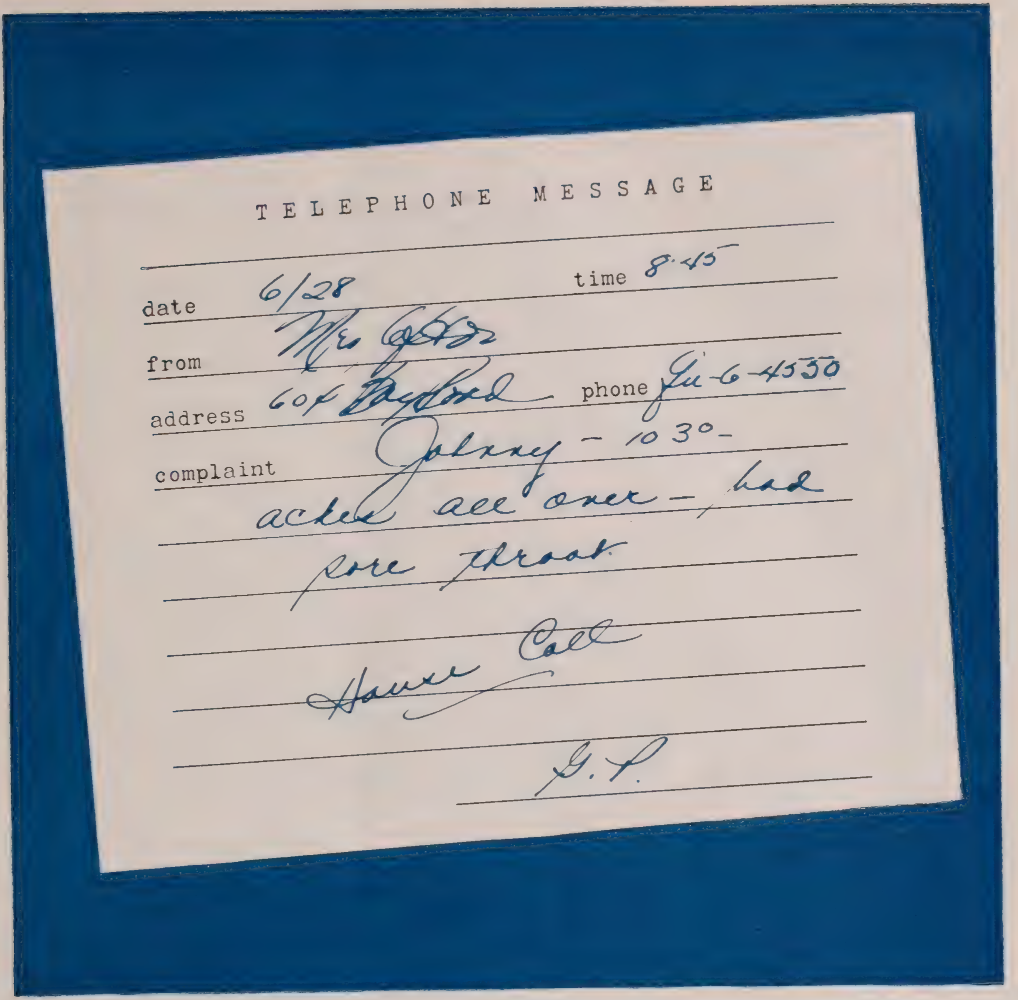

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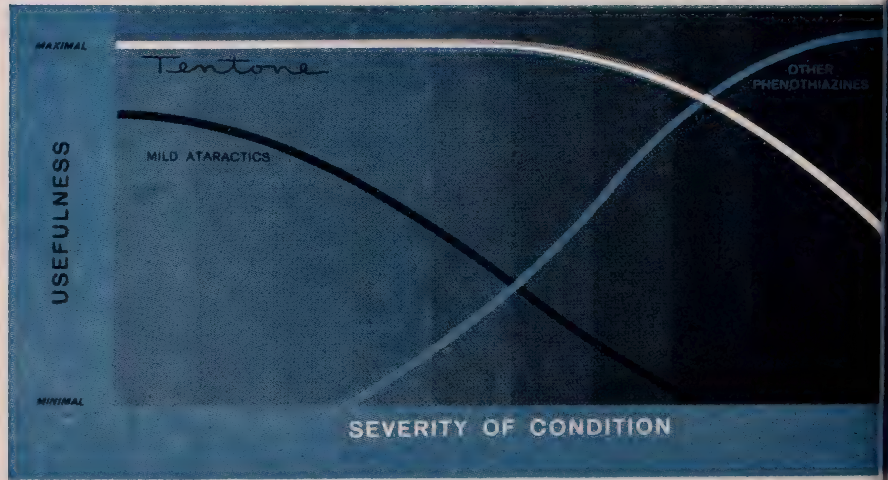

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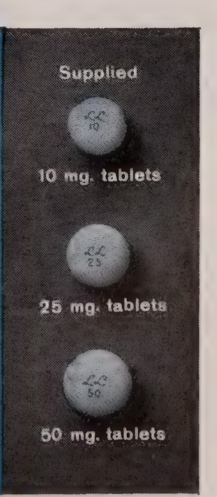

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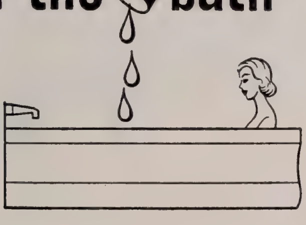

Sardo
Sardo

1. Spoor, H. J.: N. Y. State J. Med., Oct. 15, 1958

SARDO acts promptly to help restore needed natural oil and moisture[1] to dry, itchy skin, by helping to re-establish the normal lipid-aqueous balance. Thus SARDO eases irritation, soothes, softens, brings sustained comfort.

USED IN THE BATH, SARDO releases millions of microfine water-dispersible globules* to provide an emollient suspension which enhances your other therapy . . . in prickly heat, intertrigo, insect bites, skin dryness and itch of atopic dermatitis, eczematoid dermatitis, senile pruritus, soap dermatitis, etc.[1]

Patients appreciate pleasant, convenient, easy-to-use SARDO. Non-sensitizing. Most economical. Bottles of 4, 8 and 16 oz.

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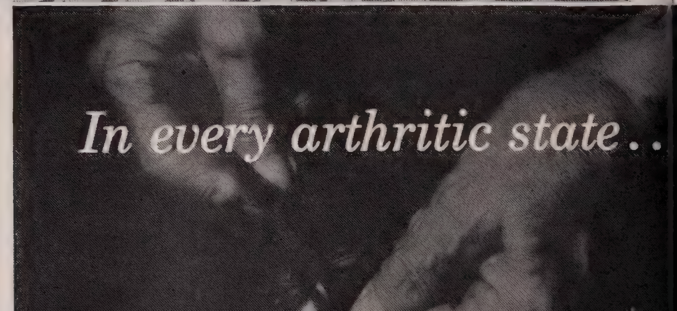
In every arthritic state . .

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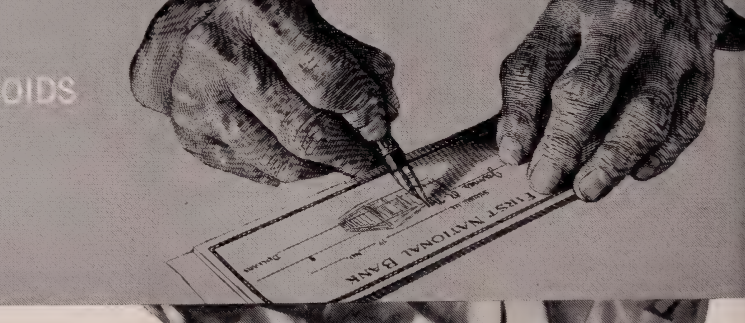

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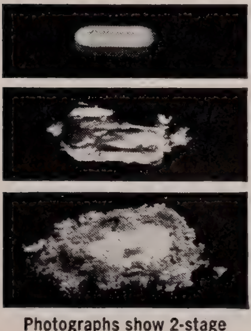
Buffered Pabirin provides superior maintenance therapy. It epitomizes fundamental long-term basic therapy since it can be given month after month without serious complications and with minimal problems to patient and doctor alike.

Buffered Pabirin is formulated to provide high and sustained salicylate blood levels. Each tablet consists of an outer layer containing a buffer (aluminum hydroxide), para-aminobenzoic acid, and ascorbic acid; a core of acetylsalicylic acid.

In the stomach, the outer layer quickly releases the buffer, which protects against nausea, dyspepsia and other gastrointestinal symptoms so frequently encountered with salicylates alone. The core of Buffered Pabirin then disintegrates rapidly, permitting rapid absorption of the acetylsalicylic acid for faster pain relief.



Photographs show 2-stage Tandem Release disintegration

Each tablet contains:

Acetylsalicylic acid (5 gr.)	300 mg.
Para-aminobenzoic acid (5 gr.)	300 mg.
Ascorbic acid	50 mg.
Dried aluminum hydroxide gel	100 mg.

All Buffered Pabirin is sodium- and potassium-free.

Dosage: Two or three tablets 3 or 4 times daily.

References: 1. Hart, D.; Bagnall, A. W.; Bunim, J. J., and Polley, F. H.: Ninth International Congress on Rheumatic Diseases, Toronto, Ont. (June 25) 1957. 2. Report of Joint Committee, Medical Research Council & Nuffield Foundation, Treatment of Rheumatoid Arthritis, British Medical Journal (April 13) 1957. 3. Friend, D. G.: New England J. Med. 257:278 (Aug.) 1957.

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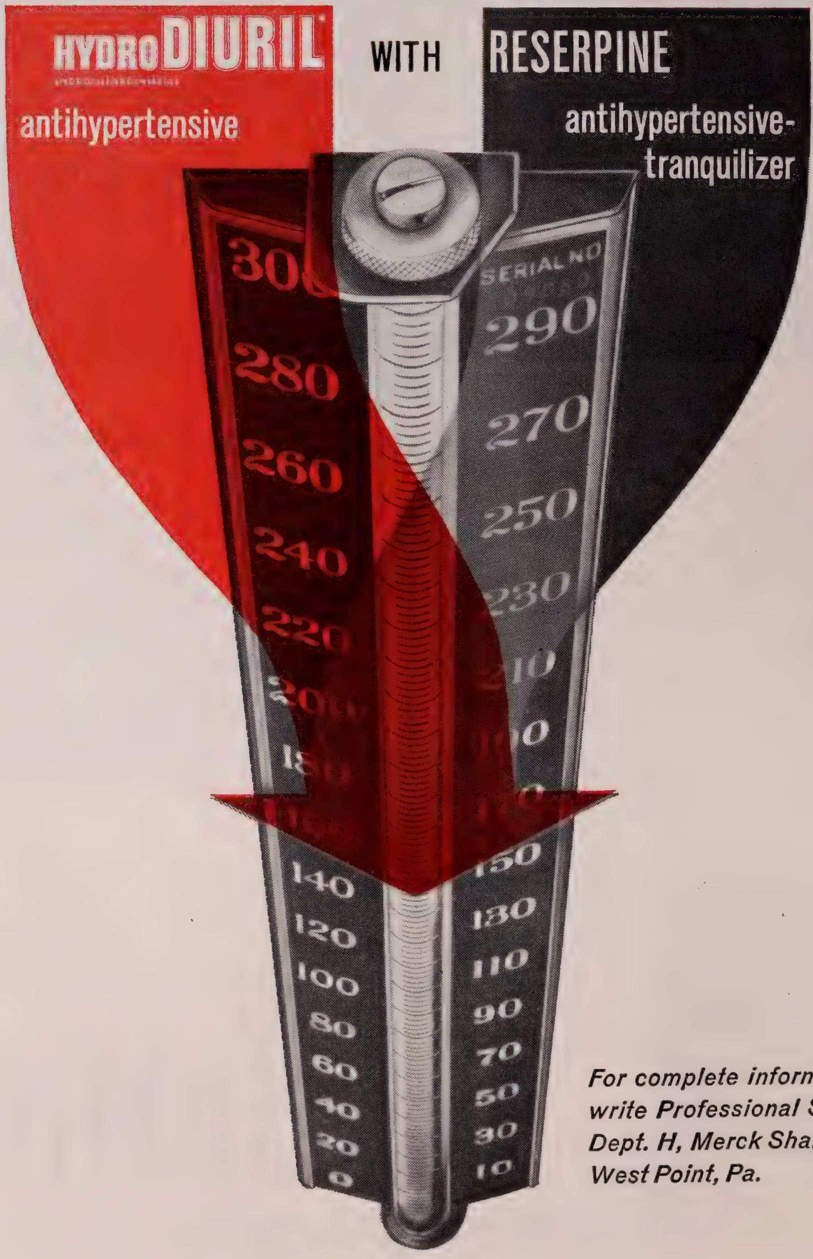
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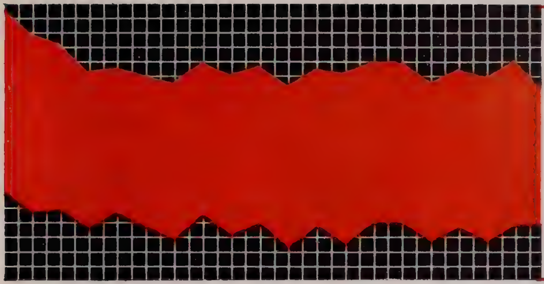

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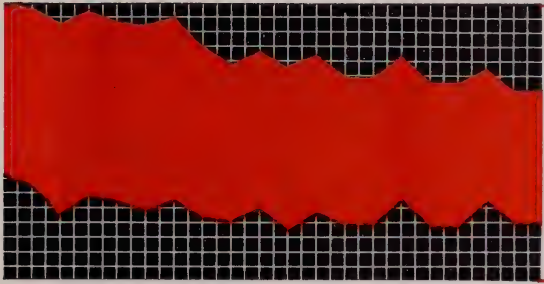
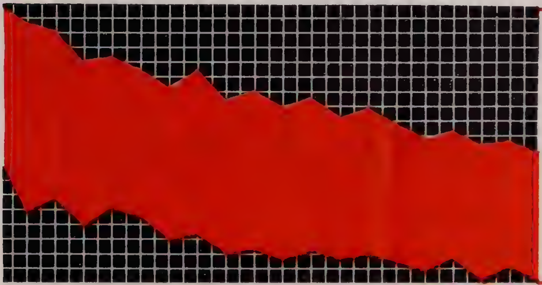


RESERPINE alone



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components alone

- Effective by itself in a majority of patients. Provides smooth, more trouble-free management of hypertension.
- Since HYDRODIURIL and reserpine potentiate each other, the required dosage of each is lower when given together as HYDROPRES than when either is given alone.
- HYDROPRES provides the needed and valuable tranquilizing effect of reserpine. Lower dosage may reduce such side effects of reserpine as excessive sedation and depression.
- Arrest or reversal of organic changes of hypertension may occur.
- Headache, dizziness, palpitations and tachycardia are usually promptly relieved. Anginal pain may be reduced in incidence and severity.
- With HYDROPRES, dietary salt may be liberalized.
- Convenient, controlled dosage.

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25 mg. HYDRODIURIL, 0.125 mg. reserpine.
One tablet one to four times a day.

HYDROPRES-50

50 mg. HYDRODIURIL, 0.125 mg. reserpine.
One tablet one or two times a day.

If the patient is receiving ganglion blocking drugs or hydralazine,
their dosage must be cut in half when HYDROPRES is added.

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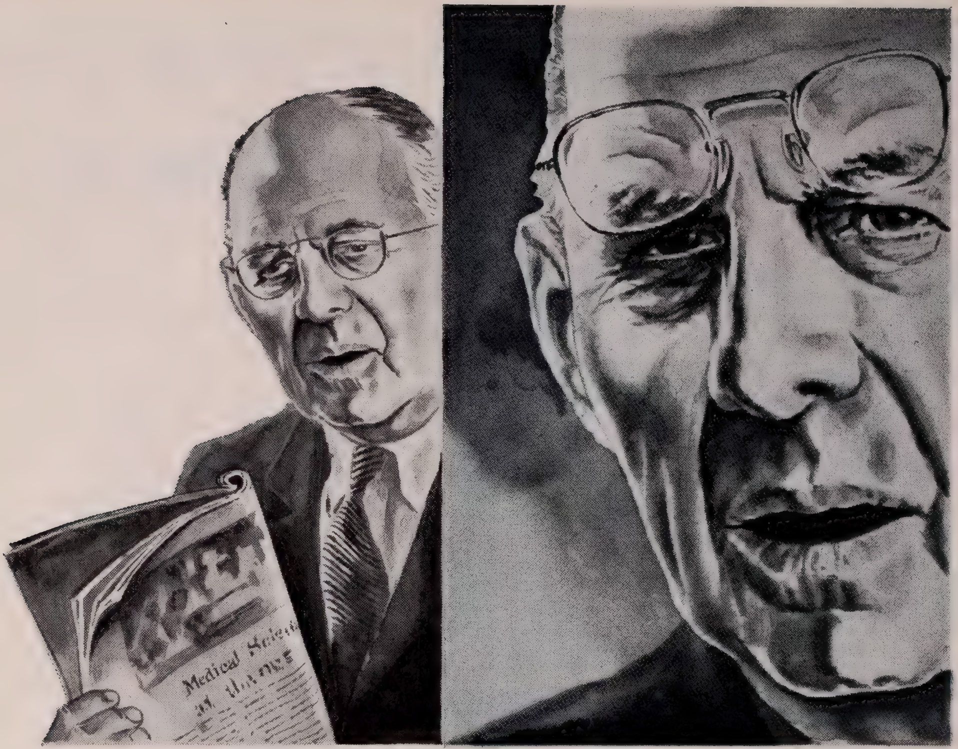
*HYDRODIURIL AND HYDROPRES ARE TRADEMARKS OF MERCK & CO., INC.



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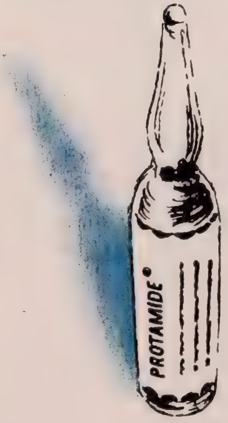

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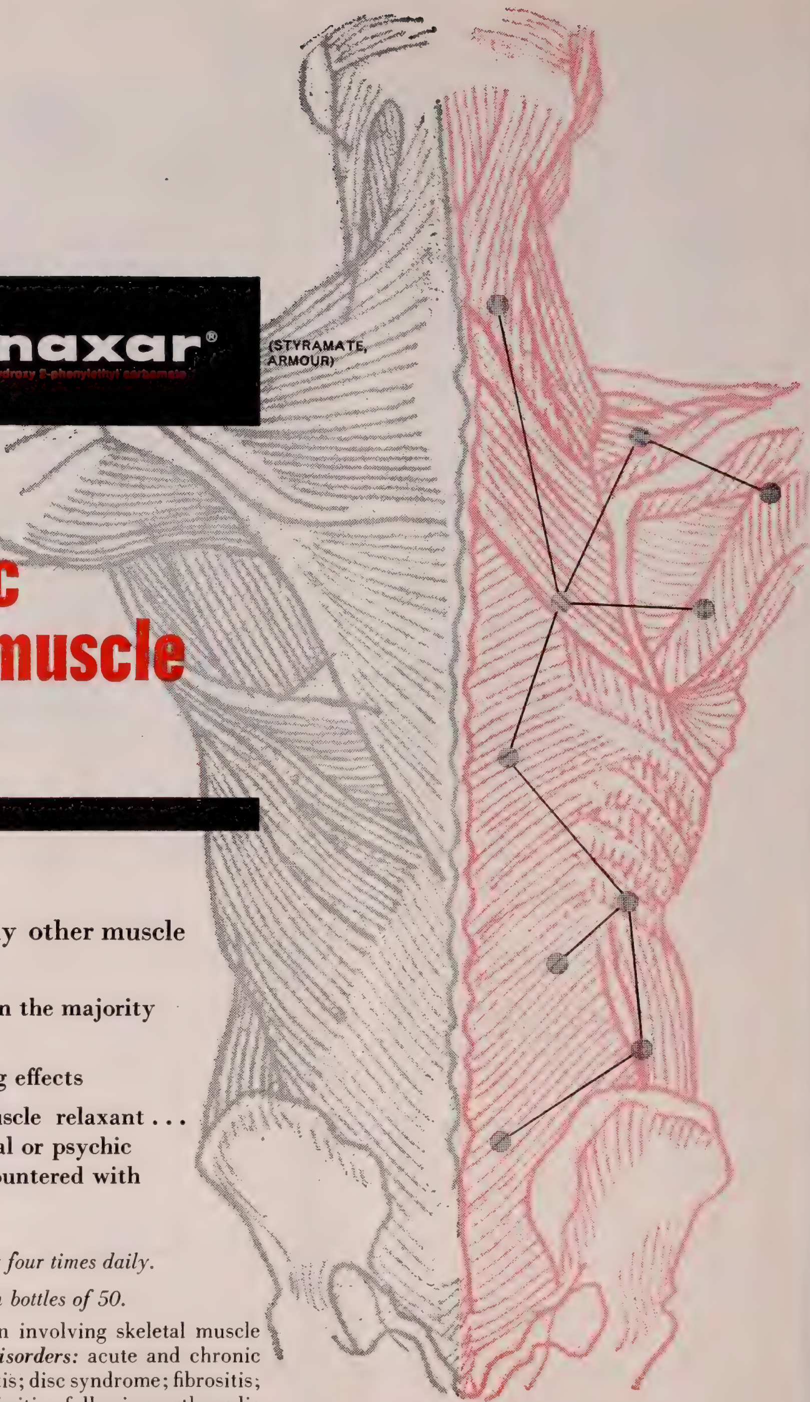

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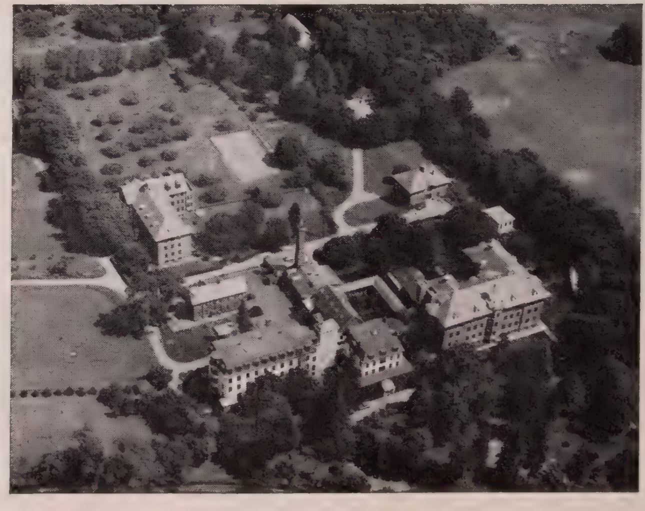

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in urticaria and pruritus

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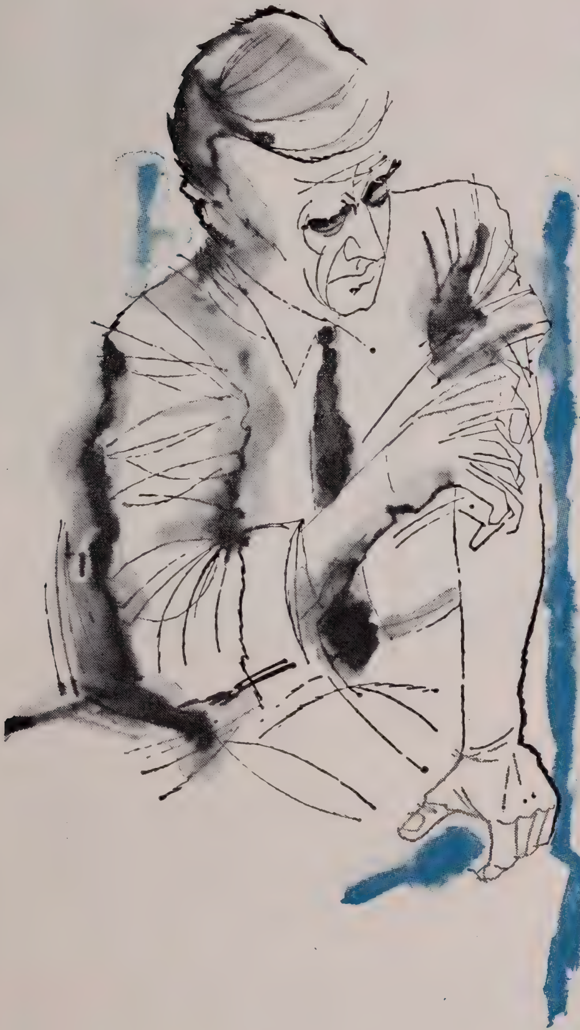

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for effective relief of tension and anxiety.[1-4]

Recommended Oral Dosage: 50 mg. q.i.d. initially; increase or decrease according to individual response.

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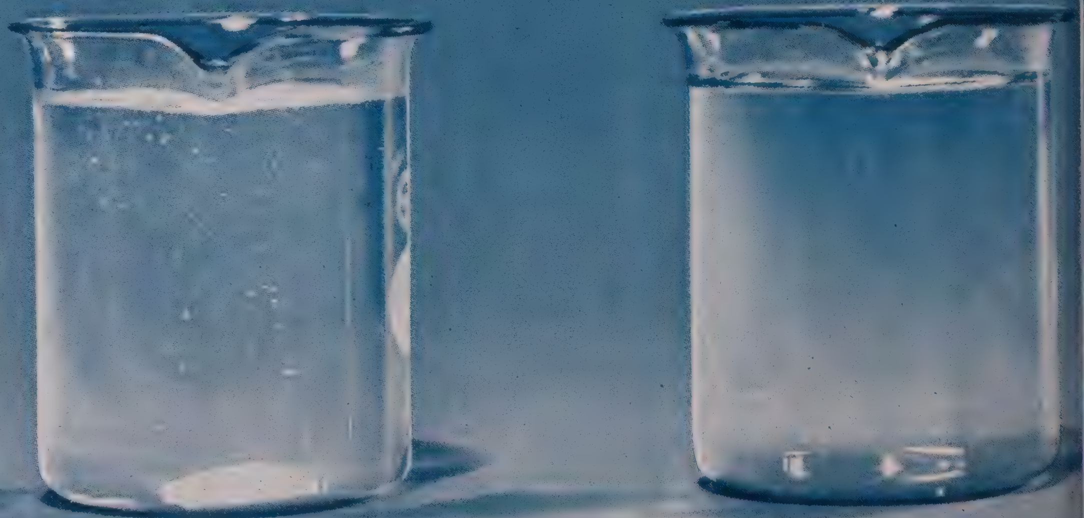
one of the unique nitrofurans— products of Eaton research
Eaton Laboratories, Norwich, New York

avoid the risk of insoluble, irritating aspirin particles

Chief among the drawbacks to aspirin usage is gastric intolerance. This ranges from mild upset and "heartburn" to severe hemorrhagic gastritis.[1-10] Studies performed in conjunction with gastrectomy[4,5] and gastroscopy[2] have shown insoluble aspirin particles firmly adherent to the gastric mucosa and imbedded between rugae. Reactions varying from mild hyperemia to erosive gastritis have been reported to occur in the areas immediately surrounding these adherent particles.[2,4,5] This is reported to be particularly true in patients with peptic ulcer.[4]

CALURIN is the freely soluble, stable calcium aspirin complex. Its high solubility forestalls gastric irritation or damage

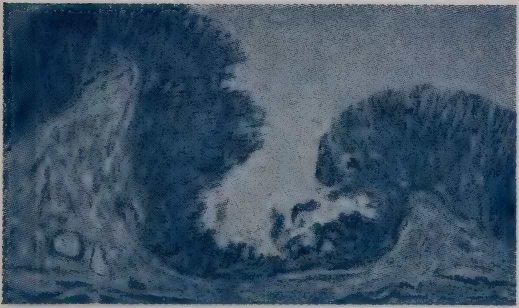


Regular aspirin crystals 24 hours after being mixed into water.

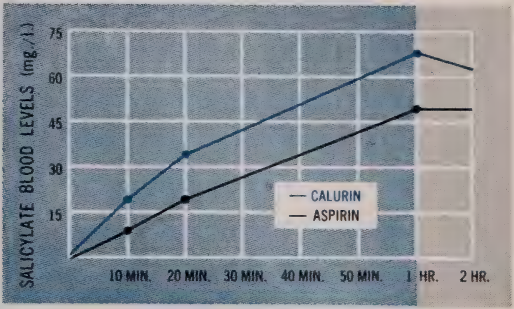
Calurin crystals in solution one minute after being mixed into water.

CALURIN*

STABLE SOLUBLE CALCIUM-ACETYLSALICYLATE-CARBAMIDE



Particle-induced ulceration — section through lesion found in gastrectomy specimen. An aspirin particle was found firmly imbedded in this undermined erosion. Such lesions may be associated with the relative insolubility of aspirin, which remains in particulate form after dispersion in gastric contents.



Calurin, being freely soluble, is promptly available for absorption into the systemic circulation. Salicylate blood levels in 12 subjects receiving both Calurin and plain aspirin were found to rise more than twice as high within ten minutes following Calurin. Also, these levels persisted higher for at least two hours.[11]

CALURIN is the aspirin of choice, especially when high-dosage, long-term therapy is indicated:

1. High solubility forestalls gastric irritation or damage. This advantage is of special importance in arthritis and other conditions requiring high-dosage, long-term therapy.
2. Produces high salicylate blood levels rapidly for prompt analgesic, anti-pyretic, anti-arthritic effect.
3. Sodium-free — for safer long-term therapy.
4. Flavored: can be chewed or dissolved in the mouth without water if desired — an advantage for patients requiring aspirin administration during the night and for pediatric patients.

Dosage: Each tablet of Calurin is equivalent to 300 mg. (5 gr.) of acetylsalicylic acid. For relief of pain and fever in adult patients, the usual dose of Calurin is 1 to 3 tablets every 4 hours, as needed; in arthritic states, 2 or 3 tablets 3 or 4 times daily; in rheumatic fever, 3 to 5 tablets 4 or 5 times daily. For children over 6 years, the usual dose is 1 tablet every 4 hours; for children 3 to 6 years, ½ tablet every 4 hours, as required. Not recommended for children under 3.

REFERENCES: 1. Waterson, A. P.: Aspirin and gastric haemorrhage, Brit. M. J. **2**:1531, 1955. 2. Douthwaite, A. H., and Lintott, G. A. M.: Gastroscopic observation of the effect of aspirin and certain other substances on the stomach, Lancet **2**:1222, 1938. 3. Editorial Comments: The effect of acetylsalicylic acid (aspirin) on the gastric mucosa, Canad. M. A. J. **80**:47, 1959. 4. Muir, A., and Cossar, I. A.: Aspirin and ulcer, Brit. M. J. **2**:7, 1955. 5. Muir, A., and Cossar, I. A.: Aspirin and gastric haemorrhage, Lancet **1**:539, 1959. 6. Schneider, E. M.: Aspirin as a gastric irritant, Gastroenterology **33**:616, 1957. 7. Bayles, T. B., and Tenckhoff, H.: Salicylate therapy in rheumatic diseases, Scientific Exhibit, Ann. Mtg. A. M. A., San Francisco, Calif., June, 1958. 8. Batterman, R. C.: Comparison of buffered and unbuffered acetylsalicylic acid, New Eng. J. M. **258**:213, 1958. 9. Cronk, G. A.: Laboratory and clinical studies with buffered and nonbuffered acetylsalicylic acid, New Eng. J. M. **258**:219, 1958. 10. Editorial: Aspirin plain and buffered, Brit. M. J. **1**:349, 1959. 11. Smith, P. K.: Plasma concentration of salicylate after the administration of acetylsalicylic acid or calcium acetylsalicylate to human subjects, Report submitted to Smith-Dorsey from Dept. of Pharmacology, Geo. Washington Univ. School of Medicine, Washington, D. C., Sept. 5, 1958.

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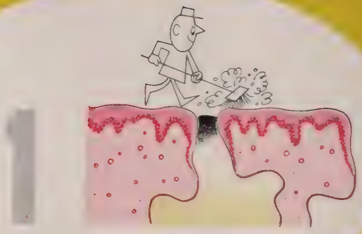

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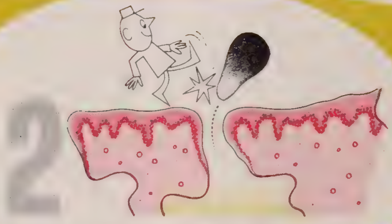

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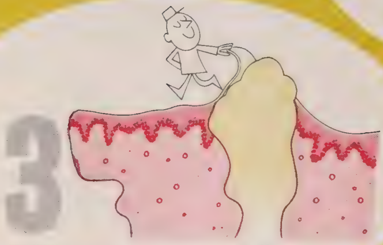

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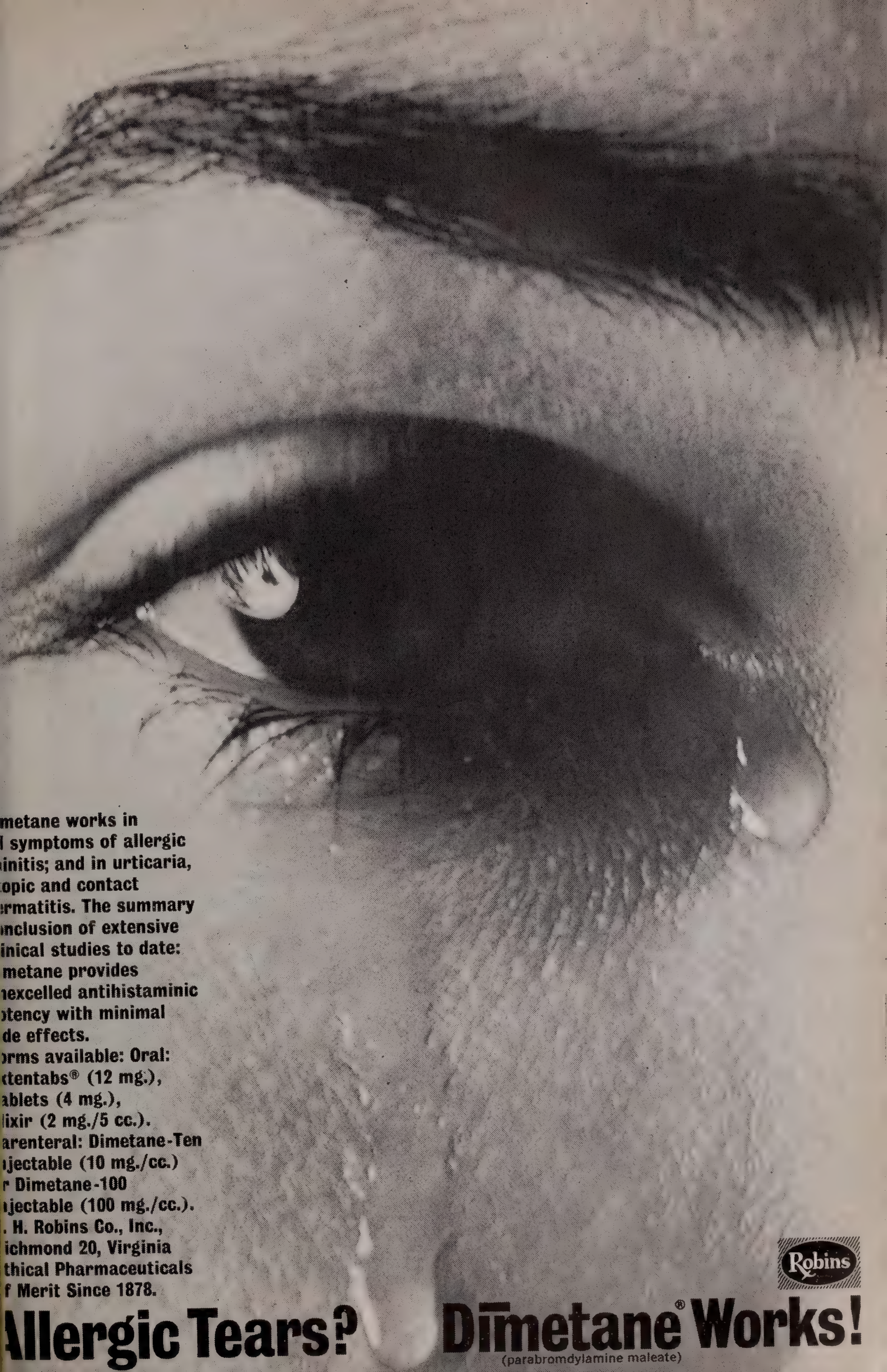
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KANSAS CITY, KANSAS—Friday, September 25, 1959
Battenfeld Memorial Auditorium
INDIANAPOLIS, INDIANA—Wednesday, Sept. 30, 1959
The Sheraton-Lincoln Hotel
OKLAHOMA CITY, OKLAHOMA—Friday, October 2, 1959
The Skirvin Hotel
BIRMINGHAM, ALABAMA—Sunday, October 11, 1959
The Dinkler-Tutwiler Hotel
TACOMA, WASHINGTON—Wednesday, October 14, 1959
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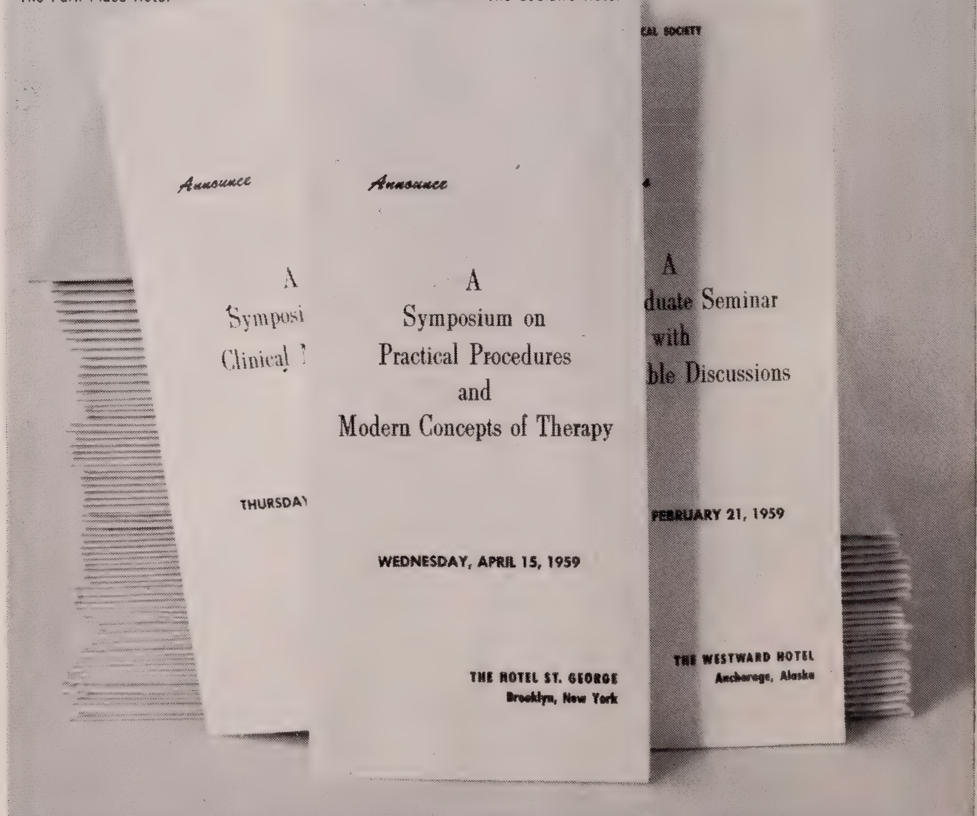
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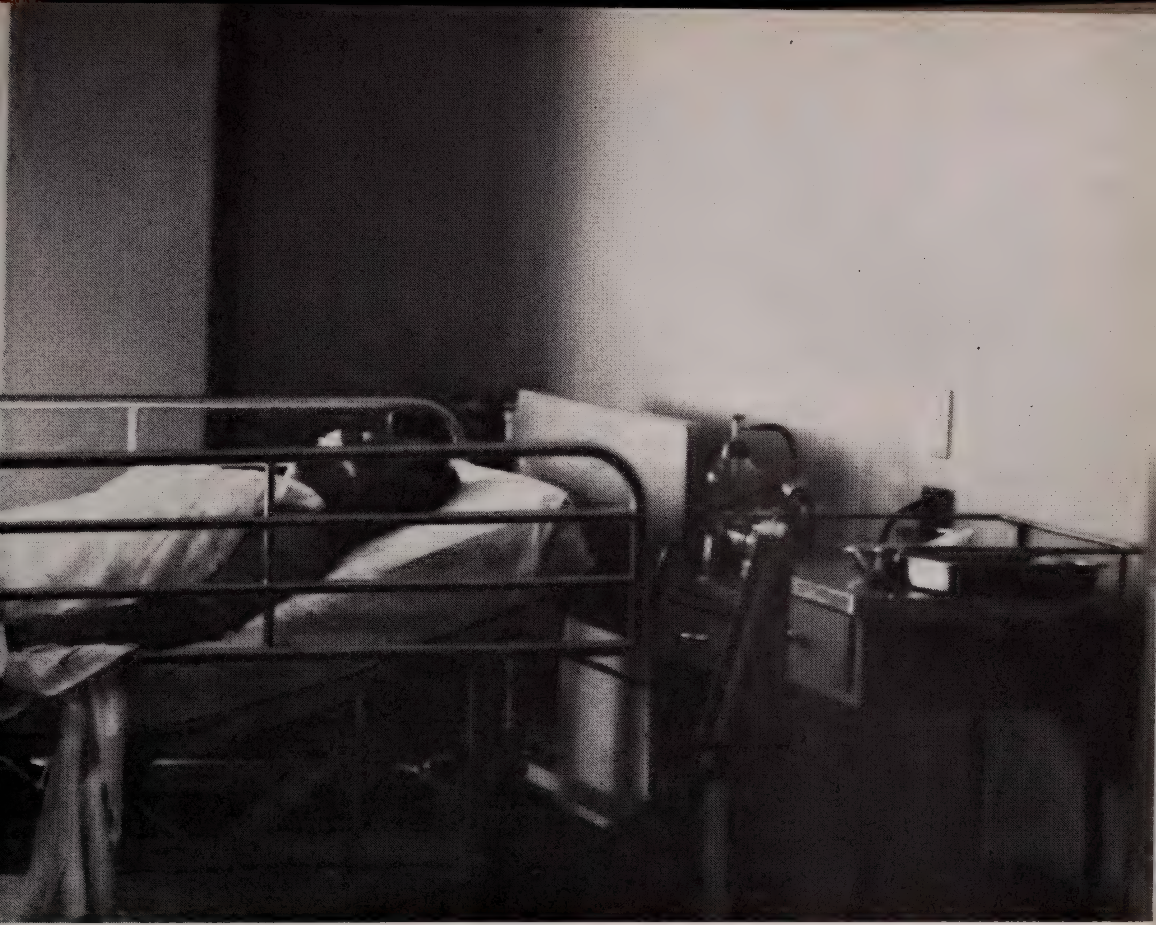
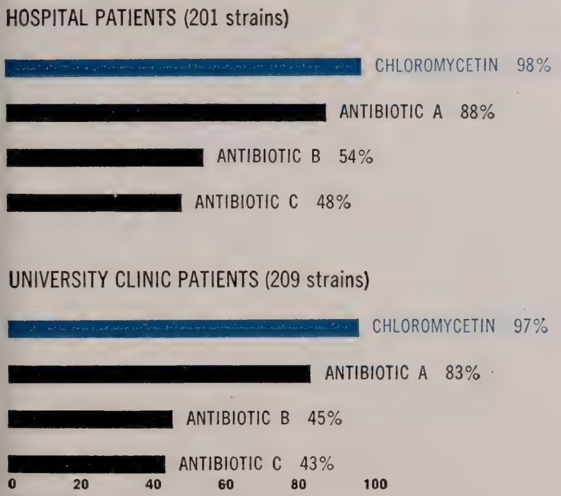
REFERENCES: (1) Smith, I. M.: Staphylococcal Infections, Chicago, Year Book Publishers, Inc., 1958, p. 21. (2) Pryles, C. V.: *Pediatrics* 21:609, 1958. (3) Monro, J. A., & Markham, N. P.: *Lancet* 2:186, 1958. (4) Purser, B. N.: *M. J. Australia* 2:441, 1958. (5) Williams, R. E. O., in National Conference on Hospital-Acquired Staphylococcal Disease, Sept. 15-17, 1958, Atlanta, Georgia, U. S. Dept. Health, Education, and Welfare, Communicable Disease Center, 1958, p. 11. (6) Rountree, P. M., & Beard, M. A.: *M. J. Australia* 2:789, 1958. (7) Mudd, S.: *J.A.M.A.* 166:1177, 1958. (8) Fischer, H. G.: *Deutsche med. Wchnschr.* 84:257, 1959. (9) Royer, A., in Welch, H., & Marti-Ibañez, F.: Antibiotics Annual 1957-1958, New York, Medical Encyclopedia, Inc., 1958, p. 783. (10) Hennessey, R. S. F., & Miles, R. A.: *Brit. M. J.* 2:893, 1958. (11) Markham, N. P., & Shott, H. C. W.: *New Zealand M. J.* 57:55, 1958. (12) Oswald, N. C.; Shooter, R. A., & Curwen, M. P.: *Brit. M. J.* 2:1305, 1958. (13) Suter, L. S., & Ulrich, E. W.: *Antibiotics & Chemother.* 9:38, 1959. (14) Borchardt, K. A.: *Antibiotics & Chemother.* 8:564, 1958.



IN VITRO SENSITIVITY OF STAPHYLOCOCCI, FROM TWO SOURCES, TO CHLOROMYCETIN AND TO THREE OTHER ANTIBIOTICS*



*Adapted from Fischer.[8]

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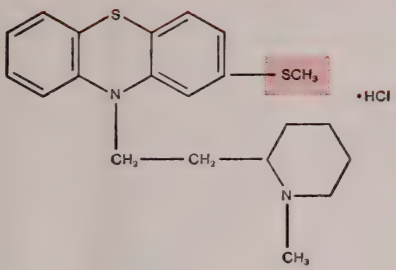
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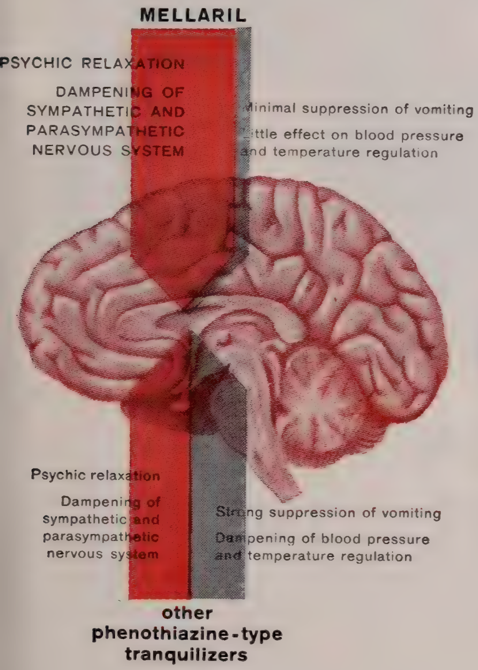
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MILD—where anxiety, apprehension and tension are present	10 mg. t.i.d.	20-60 mg.
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EDITORIALS

Strontium-90 Fallout

Recently the matter of fallout of strontium-90 resulting from weapons testing has been surveyed by the United States Atomic Energy Commission. In part, the Commission says that certain information as to the estimated yield of various weapon tests and certain other factors bearing on the radioactive content of the upper atmosphere have defense implications which require classification, but the significant information on actual fallout throughout the free world that the Atomic Energy Commission has developed has been released. Furthermore, the Commission has been largely responsible for the development of equipment and procedures to measure extremely minute quantities of radioactive materials.*

It is now apparent that the circulation of the upper atmosphere, and particularly the stratosphere, is much more complicated and the concentration of bomb debris less uniform than had been anticipated when early estimates were made. This condition has resulted in nonuniform distribution of the fallout with higher concentrations in the middle latitudes of the Northern Hemisphere. Fortunately, it was just here that most of the early measurements of actual fallout were made. The principal result of later information has been to reduce somewhat the earlier estimates of future fallout of debris which has been injected into the stratosphere near the Equator by the United States and Great Britain. The debris injected last autumn by U.S.S.R. tests into the stratosphere in the more northerly latitudes has been falling out quite rapidly and is largely confined to the Northern Hemisphere.

A reasonable estimate of the amount of fission products that have been injected into the stratosphere by all nuclear tests is 65 megatons (TNT equivalent) of fission energy. This corresponds to about 100 pounds of strontium-90 in the entire stratosphere. It is estimated that fully 50 per cent (50 pounds) of the strontium-90 has already fallen out. This means that not more than half of the total strontium-90 injected into the stratosphere still remains there.

The present state of knowledge does not permit a full evaluation of the biologic effects of fallout. However, in order to place the hazard of fallout in proper perspective, it should be pointed out that the total amount of external radiation to the body resulting from fallout to date, together with future fallout in any part of the world from previous weapon tests, is: (a) less than 5 per cent as much as the average exposure to cosmic rays and other background radiation and (b) less than 5 per cent of the estimated average of radiation exposure of the American public to x-rays for medical purposes.

It is interesting to note that human beings have lived for many generations in parts of the world with five times or more as much background radiation as that normal to the United States, or more than one hundred times the average amount of radiation from fallout in the United States.

In regard to internal effects of strontium-90 due to ingestion, the amount of strontium-90 found in food and water is less of a hazard than the amount of radium normally present in the public drinking water supply in certain places in the United States, and in public use for many decades.

---

* Statement by the General Advisory Committee to the U.S. Atomic Energy Commission, May 4, 1959.

Walter Palmer Anderton, M.D., Retires

Following the annual meeting of the Medical Society of the State of New York at Buffalo, 1959, Walter Palmer Anderton, M.D., secretary of the Society since 1945 and general manager since 1951, retired after nearly fifteen years of dedicated service to the physicians of the State.

Dr. Anderton, a graduate of Harvard University in 1908 who received his degree of M.D. at the College of Physicians and Surgeons of Columbia University in 1911, succeeded the late Peter Irving, M.D. He had been a practicing physician in New York City since 1913 and was assistant professor of clinical medicine at Columbia University College of Physicians and Surgeons and associate attending physician at Presbyterian Hospital at the time of his appointment. He gave to the Society during his long service in the difficult postwar period a full measure of devotion.

The House of Delegates in its final session by voice vote passed unanimously a resolution introduced by John J. Masterson, M.D., past president and trustee. In part this resolution stated: "In every way he has proved a true physician and a loyal member of the medical profession, and he has always had uppermost in all his thoughts and actions the welfare of the physicians and the public of the State and has demonstrated time and again his unwavering loyalty to the Society." The good wishes of all follow him.

Editorial Comment

The Dangers of Bed Rest. Although the original article appeared in the *British Medical Journal* twelve years ago,* the information is still very pertinent! Herbert Notkin, M.D., Medical Director of the County of Onondaga Department of Public Welfare, Syracuse, New York, has prepared the following abstract:

The Dangers of Going to Bed

Bed rest is often assumed to be a basis for treatment without realization of its dangers. Hardly any part of the body is immune to these dangers.

In the respiratory system, the maintenance of one position encourages the development of hypostatic pneumonia. In the circulatory system, phlebothrombosis occurs frequently due to a slow venous circulation resulting from absence of muscular activity. In the skin, the frequency and dangers of bedsores are too well known to need comment. Contractures and serious muscle imbalances often complicate later attempts at ambulation, as exemplified by foot drop. Bed rest certainly increases osteoporosis, with its effect on slower healing of fractures. In the renal system, the effect of bed rest on increasing incontinence is very well known as is the increased tendency to form urinary calculi. In the gastrointestinal tract, anorexia, constipation, and obstipation are often noted. In the nervous system, bed rest in such diseases as multiple sclerosis often increases the patient's immobility even more than the disease process itself. Mental changes are frequent, usually in the direction of increasing lethargy in the daytime, complicated by nocturnal insomnia and sensitivity to noise because of too much daytime sleep.

What can be done? First, bed rest must be prescribed on specific medical indication and not assumed on the part of the doctor or the nurse. This is just as true in medical problems as it is for the early ambulation of the surgical patient—a practice now very commonly accepted. Second, hospital wards need reorganization in terms of permitting patients to wear their usual clothes and in terms of having recreational activities which will encourage patients to be active.

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* British Medical Journal, December 13, 1947.

Miss Grace I. West Retires. With regret the editors of the NEW YORK STATE JOURNAL OF MEDICINE announce the retirement on July 1, 1959, of the senior employe of the advertising department. Miss West came to the JOURNAL in December, 1938, and has been in charge of production of the advertising section of the JOURNAL ever since. During her more than twenty years of meticulous and accurate handling of advertising copy her work has been outstanding. The Publication Committee and the editors of the JOURNAL extend to her their appreciation of her long and valuable service.

Community Pessimism Retards Mental Illness Recovery

A pessimistic attitude on the part of the community is responsible for sending many discharged mental patients back to hospitals, according to a Maryland researcher. This conclusion was voiced by Erwin L. Linn, Ph.D., Bethesda, following a study of 582 patients who had been treated during 1955–1956 with the then new tranquilizing drugs, chlorpromazine and reserpine. His report appears in the June *Archives of Neurology and Psychiatry*, a publication of the American Medical Association. The study was sponsored by the National Institute of Mental Health.

Of the 582 patients, Dr. Linn said that 39 per cent were released to the community and remained there for one year, but were then readmitted to the hospital.

He attributes this to an optimistic attitude on the part of the hospital staff which has not been transferred to the community.

The effectiveness of treatments with the tranquilizing drugs is credited by Dr. Linn with creating the optimistic attitude in the hospital. He said that the drugs were first used with "some reluctance." However, the successful results gave the staff members a feeling of confidence which led to a more optimistic and helpful approach to the patient.

"Staff optimism arose because the hospital witnessed within a relatively short time a dramatic improvement in the usual behavior of its patient population. The families or friends of released patients had no similar institutional experience." If the patients recovered because of staff optimism, they were likely to relapse on release because they were no longer sustained by such optimism.

The researcher also noted that the patients in his study were less overactive and were released more quickly than patients who had never been treated with tranquilizers. "The lower hyperactivity of the 1955–56 patients and their higher release rate may have ensued from a change in the attitude of the staff from skepticism concerning drug therapies to a sense of expectancy that they would work.

A staff relieved of many tensions, with time freed from control of hyperactivity, with a mounting sense of hope for patient improvement, could not fail to communicate its enthusiasm to all patients.

Dr. Linn concluded that the discontinuity in optimism between hospital and community explains why patients treated with tranquilizers are more likely to return to the hospital within one year than had earlier patients.

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SCIENTIFIC ARTICLES

The Use of Heart Pumps in "Open Heart" Surgery

ALBERT D. MENNO, M.D., BUFFALO, NEW YORK

(From the Edward J. Meyer Memorial Hospital)

WITH the performance of the first successful patent ductus operation by Gross in 1939 a new era of surgery was opened which promised new hope to the hundreds of children born each year with malformed hearts.

There were still many defects or complicated combinations of defects, such as interventricular septal defects and tetralogy of Fallot, however, which needed special methods and technics to be repaired successfully—that is, some method by which the heart could be laid open and its disarranged structure returned to normal. Many surgeons are now engaged in working out technics by which so-called "open heart" operations can be successfully performed.

Two main methods have been employed thus far to allow opening of the heart under controlled conditions. These are by the use of hypothermia and by the use of pump oxygenators. It is the author's objective to review the published literature regarding the latter method, to describe some of the essential background studies which are the basis of the method, and to provide an idea of the problems that have arisen from the use of the technic.

This manuscript does not deal with any new or different ideas concerning heart pumps, oxygenators, or perfusion procedures. It has been prepared with the idea in mind of assembling in one place and in one continuous stream of thought many of the facets of surgery within the vital chambers of the human heart. It has been the intention to bring these facts forth in such a way that they could be understood and be instructive to those people who are not otherwise engaged in the field, but who are interested in what is being accomplished in this field of surgery and in what the advantages and limitations of the new pump oxygenators are.

Objectives

To obtain complete functional closure of defects without compromise of the circulation, production of arrhythmia, or occurrence of peripheral or cerebral anoxia, the malformation at hand must be thoroughly evaluated and sutures carefully and precisely placed. A dry or nearly dry intracardiac operative field over a prolonged period of time, such as could be provided by the use of cardiac bypass or extracorporeal circulations, would be ideal to accomplish this aim. However, certain objectives must be met. These are:

I. To divert the hemic stream around the chamber or chambers with which one must deal.

II. To maintain the oxygenation of the blood.

III. To maintain the status of the rest of the body at as nearly a physiologic state as possible under the circumstances at hand.

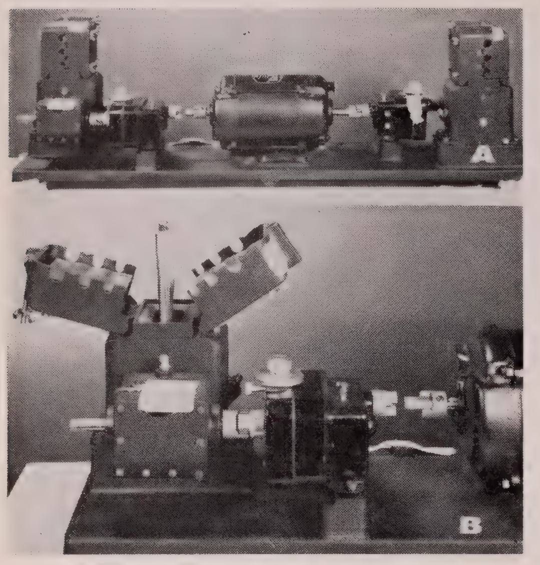

FIG. 1. Photographs of a Sigmamotor pump.
A. Full view showing two pumping units powered by the same motor.
B. Close-up view of one pump unit, opened to show the cam-operated rods that produce the pumping action.

IV. To maintain the nutrition of the cardiac muscle and to protect it from arrhythmia and conduction disturbance.

I. TO DIVERT THE HEMIC STREAM.—In order to accomplish the first of these objectives, an extracorporeal source of propulsion is necessary. One need simply cannulate the superior and inferior venae cavae, and with the aid of the pump mechanism and an oxygenator divert this stream into an aortic cannula, thereby completely bypassing the cardiac chambers and the lungs.

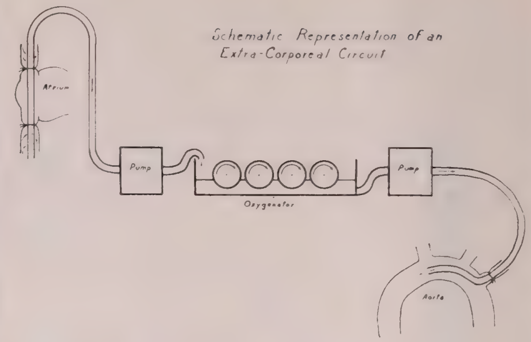

FIG. 2. A typical extracorporeal circuit with a venous pump, oxygenator, and arterial pump. The oxygenator in the diagram is a "thin film" type, consisting of multiple perforated rollers in a shallow reservoir.

Many different pumps, each of which has its advocates, have been designed to meet these needs, but probably the most successful and most popular is one produced by Sigmamotor Company (Fig. 1).[1] This works on a principle of massaging blood through a portion of flexible tubing such as polyethylene by means of cam-operated fingers which compress the tube at successive points with a rippling motion. This permits the blood to remain within properly coated tubing at all times, and operates simply, with a minimum of trauma to the contained blood. One can employ a single circuit for diversion of blood about one side of the heart or two circuits for the bypass of all four heart chambers, with the insertion of an adequate oxygenation unit between the two circuits (Fig. 2). The innumerable circulations which have been described all seem to be variations of the aforementioned simple principle. Into this schema many controls have been incorporated—flow meters to monitor and maintain constant rate of flow, pH meters to monitor acid-base balance, and pressure meters to monitor the two divisions of the circuit to prevent overloading of one side. Present pump mechanisms can deliver from 100 to 5,000 cubic centimeters per minute or more. The limitation lies not in the mechanical but in the physiologic principles involved. The pump mechanism itself has not been much of a deterrent to the development of a suitable bypass machine.

II. TO MAINTAIN OXYGENATION OF THE BLOOD.—Maintenance of oxygenation of the blood and transportation of waste products, notably carbon dioxide, is the second objective and is a present source of concern to workers in the field. Early workers secured oxygenation by the use of cross-circulation between the ill recipient and a healthy adult donor.[1-3] In this arrangement blood from both venae cavae was diverted by cannulas through a pump to the femoral vein of the donor and again from the donor's femoral artery to the aorta of the recipient through a suitable pump. The donor circulation assumed the total function of the lung to carry off excess carbon dioxide, to oxygenate the blood, and to maintain acid-base balance as it became necessary.

There were many objections to this arrangement, based mainly on the production of sensitization of blood elements in recipient and/or donor, on the occurrence of minor blood incompatibilities, and concern over the safety of the donor who necessarily had to face the dangers of anesthesia and blood sensitization.[1-3] Indeed it is plausible that some ill individuals might not have donors, suitable from the point of view of health and blood compatibility, to provide the necessary respiratory functions. A mechanical oxygenator obviously would be more desirable and universally applicable.

There has been no great problem in being able to combine oxygen into the hemoglobin structure. It has been demonstrated innumerable times that the hemoglobin molecule combines avidly with the oxygen molecule if the two are merely brought together. Given enough time and contact surface almost any design for an oxygenator would be suitable. The vital point, however, is that the oxygenation apparatus must be efficient enough to allow 95 to 100 per cent oxygen saturation of a volume of blood which may be as high as 5,000 cubic centimeters per minute during the brief period when the hemoglobin and the oxygen are in contact. Moreover one would hope for a design which is not bulky, one which does not itself produce danger or complication in the subject, one which can be easily sterilized, and one which will neither remove necessary blood elements such as platelets nor initiate the formation of thrombi in the circulating blood.

Three main types of oxygenators have evolved in recent years to satisfy these needs.

Thin film oxygenators allow oxygenation to take place as blood is made to flow in a thin layer in an oxygen-rich atmosphere. The original oxygenator demonstrated by Gibbon[4] in 1939 was of this type, blood being made to flow down the inside surface of a spinning metal cylinder and spread into a thin layer by centrifugal force. These are probably the least complicated oxygenators but they suffer from the disadvantage of being a rather slow method in proportion to the rate of oxygenation which can be accomplished with a given flow of blood. Rapid oxygenation of large quantities of blood necessarily requires large surface areas, which in turn implies bulk. However, Gibbon, who is the most notable of the users of this type of oxygenator, feels he can use it satisfactorily for bypass procedures. Gibbon, incidentally, is one of the proponents of the "full cardiac output" philosophy of flow rate during the bypass, which makes his statement all the more significant.

Membrane diffusion oxygenators have been devised in which thin layers of blood are allowed to pass on one side of a thin membrane, oxygen-rich air on the other side, oxygenation taking place across the membrane. Kolff,[5] who was a pioneer in the work on renal dialysis with membrane diffusion principles, has done a great deal of basic work on this type of oxygenator also. Many types of membrane have been used, the most common being polyethylene plastic membranes. These are usually made in the form of stacks of corrugated membrane with the blood and gas made to flow in alternate layers.

These oxygenators enjoy the advantage of being inexpensive and can be disposed of after a single usage, although some are of a more permanent nature. Criticisms of this type of oxygenator have been that it interposes a solid layer between the interacting air and blood and is necessarily less efficient than oxygenators which do not interpose such a layer. Some authors have also stated that this oxygenator requires a higher pump pressure to force blood through its layers, producing the possibility of increased damage to formed elements of the blood.

Bubble oxygenators[6,7] have also been devised. One of the greatest plagues to the cardiac surgeon in performing open heart surgery is the trapping of air bubbles in the small blood vessels of a vital organ, so-called "air embolism." Until recently, great pains were taken to ensure that no air bubbles remained in the blood as it was pumped back to the patient. Pains were taken to allow settling, to prevent shaking and agitation of the blood that would produce bubbles or foam, and to prevent tube leaks that would admit bubbles into the stream. A few years ago, following work done by DeWall[6] of the University of Minnesota, bubbles were introduced purposely, this time as a means of oxygenation. DeWall passed fine air bubbles into the blood, taking advantage of the huge surface areas at the bubble-blood junction. Dissipation of the bubbles and foam then was accomplished by the addition of antifoam agents and the use of siliconized glass or plastic surface on all exposed internal surfaces of the circuit. Settling was allowed to occur in spiral-shaped reservoirs. Oxygenators of this design have enjoyed the greatest vogue of all in recent months because of their high efficiency and the limited bulk of the apparatus.

Obvious criticisms of this method have been that air embolism is still liable and perhaps even more likely to occur. Advocates say that this has not been a serious problem peculiar to this type of oxygenator. To the present time bubble oxygenators have only been adapted for use with low flow-rate pumps, so that their merits are dependent on the merits of the low flow-rate principle, and vice versa.

No adequate comparison can satisfactorily be made of these methods at this time. Each of the oxygenator types has its advocates and all have their limitations as mentioned. Only time and further study will delineate the most satisfactory type.

III. TO SUPPORT BODY FUNCTIONS.—The third objective in the use of the heart pump, that of supporting general body functions, arises because of the obvious vital function that the heart serves. Many organs have been effectively severed from the rest of the body during operations on them or during experimental study of them for varying periods of time. The heart obviously cannot be so easily severed from the rest of the body. A great deal of work has been done in perfusion of isolated organs with known solutions or blood through main arterial channels and recovering blood from the main venous channels. The concept of perfusing the total organism, as in research animals or in humans, is a relatively new one, however. At the inception of the study of total body perfusion as in heart pump technics, a great deal had to be learned regarding rate of flow, rate of oxygenation, introduction of anesthesia, and so on.

Early thoughts regarding the rate of perfusion quite naturally were concerned with matching the normal resting cardiac output[4] and maintaining the general physiologic state. Within a short time, however, it was found that animals could survive perfusion periods of twenty to thirty minutes at rates of 30 to 50 per cent of normal resting cardiac output, and that indeed there might be some advantage in using these lower perfusion rates.[7]

Two separate schools of thought then grew up in regard to the volume of blood one should attempt to perfuse through the anesthetized individual at the time of cardiac bypass. One group headed by Gibbon[4] in Pennsylvania and Kirklin[8] at the Mayo Clinic holds the view that the full estimated minute cardiac output should be perfused to maintain as nearly a physiologic milieu as possible. Another group[1-3,6,9,10] headed by Lillehei, Varco, and others at the University of Minnesota hold the view that only a fixed percentage of blood flow should be allowed to perfuse, stating that this amount is all that is necessary to tide the patient through the procedure, and that an attempt to perfuse the full minute volume is dangerous to the patient. The "azygos principle," on which these latter views are based, was first expounded by Andreason and Watson[8] in 1952.

In a series of experiments they demonstrated that a majority of experimental dogs can survive completely without damage if the venous flow from their azygos vein is allowed to pass through their circulatory systems during thirty to forty minutes of otherwise complete inflow occlusion. The measured azygos flow in the anesthetized dog was found to be about 10 per cent of estimated resting peripheral cardiac output. This represents the lowest flow rate necessary to ensure survival, without damage, of the majority of experimental dogs. In further experimental studies in dogs and in empiric human operations in which survival and well-being could be correlated with the flow rate, the feeling has arisen that a flow rate of 30 to 50 per cent of the estimated resting cardiac output is optimal.[11] Faster flows produce mechanical difficulties; slower flows produce acidosis, cerebral anoxia, and an increased incidence of nonsurvival.

IV. TO MAINTAIN CARDIAC NUTRITION AND PREVENT ARRHYTHMIA.—The fourth objective, nutrition of the cardiac musculature, is accomplished by perfusion actually at the same time that perfusion of the rest of the body is accomplished. The efferent cannula from the pump oxygenator is usually threaded into a large section of the aorta. At the same time that blood is forced into the peripheral vasculature, it is also forced in a retrograde fashion to the coronary cusps of the aortic valve and into the coronary arteries. While the ventricular walls are intact, the aortic cusps may flutter open and closed as the left ventricular pressure is built up in systole and perhaps exceeds the perfusion pressure. However, with the right ventricle, the usual site of cardiotomy, open, and with a ventricular septal defect present, the left ventricle cannot build up its pressure in systole because the presence of the ventricular septal defect acts as a pressure vent for the left ventricle. The aortic cusps therefore remain closed at all times. The left ventricle thus is also unable to force air seeping into it through the septal defect past the aortic cusps and into the coronary arteries.

By the simple maneuver of opening the right ventricle, which has been the primary intention, one accomplishes the dual purpose of providing a closed perfusion system to provide nutrition to the myocardium and setting up a barrier at the aortic valve to the passage of potentially dangerous air bubbles. With auricular septal defects the ventricular vent does not exist and a greater theoretical hazard from air embolism exists. Heart pumps thus far have been used for the most part in ventricular septal defect surgery, and the increased hazard from air embolism in auricular septal defect repair has not been thoroughly tested.

Adequate figures for comparison regarding the incidence of ventricular fibrillation, heart block, and asystole as such with the use of heart pumps are hard to find mainly because one is not clearly able to differentiate between those arrhythmias that arise from the use of the pump and those that arise from manipulation and suture placement. Probably the most common of these disturbances are the gross rhythm disturbances such as ventricular fibrillation which, it has been noted, occur at almost any time during the cardiac procedure.

It was noted that ventricular fibrillation occurred during the early phases of operation in some patients after the commencement of the pump perfusion. Many of these fibrillations can be attributed simply to the manual manipulation of the myocardium attendant on any surgical procedure upon it. Strained myocardium such as that which has been forced to put forth exhaustingly high cardiac outputs is in itself hyperirritable, as is well demonstrated in a few cases of cardiac catheterization where ventricular fibrillation and other disturbances have been observed. Only a mechanical irritation of a strained and irritable myocardium can be blamed.

Next, ventricular fibrillation has been observed at the time of placement of sutures in the upper portions of the ventricular septum in the approximate area of the ventricular conduction system, usually the postero-inferior margin of the defect. The mechanism here is obvious and constitutes one of the dangerous points of the procedure. Much has been learned concerning the anatomy of the septum and the areas to be avoided in suture placement, but this topic of anatomic and technical details of repair is a broad one and will not be discussed here.

Also, fibrillation has been observed in a certain proportion of cases following closure of the ventricular defects (and associated defects when present). It is assumed in some of these cases that the drastic changes of flow in the various chambers attendant on the anatomic and functional closure throw a tremendous burden on incapable muscle.

The occurrence of ventricular fibrillation is undesirable and to be avoided when possible, but it is not looked upon with as much dread now as it was a few years ago. Defibrillation can be accomplished in a high percentage of cases either with a series of low-voltage shocks from a defibrillating machine or from one or two high-voltage shocks to produce standstill, followed by a few stimulating low-voltage shocks. Normal sinus rhythm sometimes resumes spontaneously after asystole is produced with high-voltage shocks.

Of course, complete heart block is dangerous because it produces shock which may be irreversible. It is thought that this occurs because the maximum cardiac output that can be produced at the idioventricular rate is insufficient to maintain circulation and pressure. Many surgeons have observed that if these patients can be carried through the early period following onset of complete block, by the use of intravenous Isuprel hydrochloride to increase the idioventricular rate and to contract the vascular bed, they can survive.[12] Usually their rhythm will revert to normal spontaneously or their cardiovascular system will adjust itself to the new rate. If complete block occurs while the pump oxygenator is still in use, the problem is not so great, since support can be given to the patient while the heart adjusts itself. A few patients have been carried along in this manner for prolonged periods until it was felt that their hearts could safely bear the load of peripheral circulation. Also the pump oxygenator has been reapplied in some instances where complete block was noted shortly after bypass was discontinued.

Lillehei* has stated that the incidence of complete heart block in his experience is 12 per cent of patients having ventricular septal defect repaired. He did not elaborate on his statement, unfortunately. He mentions 11 cases of heart block, all of whom have had severe pulmonary hypertension, that is, pulmonary artery pressures of 70 to 80 per cent of systemic pressure. He states that he has seen block occur with placement of sutures and occasionally has seen complete block develop before any sutures were placed.

Isolated bundle branch block, on the other hand, has shown itself to be a more permanent state when it occurs, unless it is noted soon after the placement of a suture and that offending suture is removed. It has been known to occur spontaneously prior to or after surgery under conditions where no factor can be blamed other than manipulation of an irritable myocardium. The factor of suture placement is probably the more common causation, however.

For purely anatomic reasons isolated block occurs much more frequently in the right bundle.[12,13] It has been shown clearly in dogs and indirectly shown to be similar in human beings that the right bundle descends on the right side of the septum as a single cord up to the papillary muscle of the conus before it fans out to the ventricular musculature.[6] The left bundle, on the other hand, fans out almost immediately into at least three cords. In addition, cardiotomy is usually accomplished through the right ventricle, bringing the right rather than the left bundle into the operative field. The conditions then are much more favorable to including the whole right bundle branch in a single suture rather than to including the whole left bundle branch. Unfortunately the location of the bundle branches cannot be identified with certainty even with the right ventricle open to vision during the operation. The most dangerous point has been found, however, to be the most inferior and posterior portion of the defect, assuming the defect is high in the ventricular septum where it most commonly occurs.

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* Comments by Lillehei on a paper by Kirklin.[12]

Isolated bundle branch block is not as dangerous a situation as is complete heart block, since the cardiac output and the cardiovascular system in general are not grossly impaired.

Many other interesting points in this new technic of open heart surgery, such as the maintenance of anesthesia with mechanical oxygenators, the deliberate induction of cardiac standstill to produce a motionless field,[14-16] and the deliberate induction of ventricular fibrillation to prevent air embolism[14,17,18] have been reported which are beyond the scope of this paper.

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Triamcinolone Therapy in Chronic Bronchial Asthma*

LOUIS LEVIN, M.D., F.A.C.A., AND EMANUEL SCHWARTZ, M.D., F.A.C.P., BROOKLYN, NEW YORK

(From the Division of Allergy, Department of Medicine, The Long Island College Hospital, and the Department of Medicine, State University of New York, College of Medicine)

THE discovery and synthesis of the adrenocorticosteroids and their use in the treatment of disease was an epoch-making step in the history of medicine.[1] Like all new discoveries it had great merit, but at the same time there were many unknown features in its use that left much to be desired. The original adrenocorticosteroids of the class (those showing more marked glucocorticoid than mineralo-corticoid activity) under discussion[2] had to be given in fairly large doses to obtain effective relief. At the same time there occurred some potent side-reactions, among which were the retention of sodium and the elimination of potassium. Frequently the therapeutic effects could not be obtained without the occurrence of these side-effects. Very often the administration of these adrenocorticosteroids became a calculated risk as to whether the therapeutic effects were more urgent and necessary than any damage that might be sustained from the side-effects; and so when it became a matter of a lifesaving procedure, the adrenocorticosteroids had to be used in spite of their side-effects. However there were many instances in which the disease was of such a nature that, although it was not an immediate matter of life and death, the symptoms were severe enough as not to be compatible with life over an extended period of time; and the adrenocorticosteroids were the only modality at hand that could in any way control the symptoms, and in many cases, the disease itself.

Greater efforts were made in the laboratories to obtain a better and more potent adrenocorticosteroid which would be more effective therapeutically in a smaller dose and at the same time eliminate entirely, or diminish some, or all, of the undesirable side-reactions. These attempts concerned either changing the basic ring structure of cortisone or substituting and/or adding some of the radicals in the various portions of the ring, or both.

It would perhaps be of some help at this time to review the ring structure of the basic adrenocorticosteroid, cortisone, and then to trace the various steps and changes up until the present adrenocorticosteroid under discussion, triamcinolone (Fig. 1).

So from the basic cortisone or 17 hydroxy-11-dehydrocorticosterone, the hydroxyl ion in solution radical was substituted for the oxygen in the eleventh position producing hydrocortisone.[3] This was found to be as effective as cortisone, but in a lesser dose. However, the undesirable sodium retention and potassium elimination side-reactions were still present. The next step was the placing of a double bond in the first and second (delta) position, (produced by hydrogenation at position 1 and 2 of the cortisone nucleus), of the cortisone ring, which has a double bond in the fourth and fifth position, thus producing Δ1 (delta-1) cortisone or prednisone. The same addition of a double bond in the delta-1 position of hydrocortisone produced prednisolone. These two newer adrenocorticosteroids were effective in a much smaller dose than either cortisone or hydrocortisone. Now, for the first time, two of the most potent side-reactions, namely sodium retention and potassium elim-

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* Triamcinolone (Aristocort) was furnished by Dr. Christopher Demos of the Lederle Laboratories, Division of the American Cyanamid Co., Pearl River, New York.

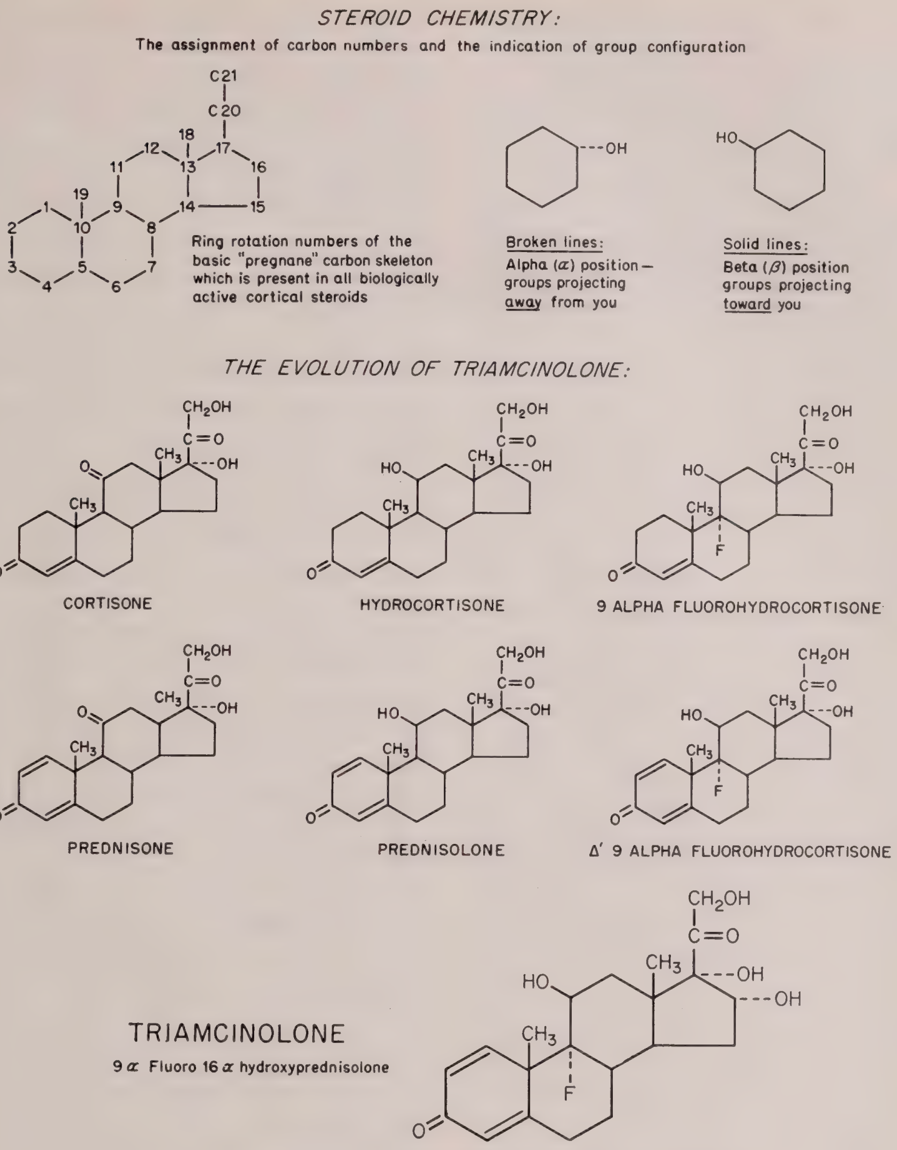
STEROID CHEMISTRY:
The assignment of carbon numbers and the indication of group configuration
Ring rotation numbers of the basic "pregnane" carbon skeleton which is present in all biologically active cortical steroids
Broken lines: Alpha (α) position — groups projecting away from you
Solid lines: Beta (β) position groups projecting toward you
THE EVOLUTION OF TRIAMCINOLONE:
CORTISONE
HYDROCORTISONE
9 ALPHA FLUOROHYDROCORTISONE
PREDNISONE
PREDNISOLONE
Δ' 9 ALPHA FLUOROHYDROCORTISONE
TRIAMCINOLONE
9α Fluoro 16α hydroxyprednisolone

FIG. 1. Steroid chemistry and the evolution of triamcinolone.

ination, were eliminated to a marked degree, if not entirely. These newer adrenocorticosteroids could be administered much more safely, especially to patients with cardiac involvement and edema.

The addition of a fluorine atom at the position 9 alpha to hydrocortisone, called halogenation,[4-6] increases the anti-inflammatory effect over that of hydrocortisone manyfold, but at the same time increases the mineralo-corticoid properties in animals to about 50 times that of hydrocortisone. The addition of a double bond between carbon 1 and 2 to form Δ1, 9a-fluorohydrocortisone, resulted in about equal anti-inflammatory and antirheumatic effect with no decrease in the sodium retention properties. So, even though these adrenocorticosteroids could be used effectively in small doses to obtain good therapeutic effect, the toxic effects were so marked that their use internally was impractical. Bernstein and others,[7] by adding on hydroxyl ion in solution in the alpha-16 position to the 9a-fluoroprednisolone were able to obtain an adrenocorticosteroid, triamcinolone, which still had marked anti-inflammatory and anti-allergic properties, and at the same time eliminated to a marked degree sodium retention and potassium loss. In many instances sodium was not only no longer retained but was even eliminated, and the potassium remained in equilibrium.

In reference to the clinical uses of triamcinolone, Dubois[8] treated 29 cases of disseminated lupus erythematosus with an average initial dose of 20.6 mg. a day and a maintenance dose of 26.0 mg. a day. He found no evidence of any sodium loss or potassium elimination. There was no evidence of peptic ulceration on x-ray film studies of 16 of the patients, except in 1 who was taking 96 mg. a day. There was some progressive loss of weight which he attributed to fluid loss. The most serious side-effect he found was muscle weakness, which appeared in 6 patients, all women, in from four to thirty-two weeks after starting triamcinolone. He found the dosage to be 1.3 times more potent than prednisolone, and 6.4 times more potent than hydrocortisone. It should be noted that in these cases high doses of triamcinolone had to be used, which may account for the more drastic side-effects.

Freyberg, Bernstein, and Hellman[9] treated 89 patients with rheumatoid arthritis. Thirty-eight of the patients who were treated for less than ninety days had no undesired side-effects. Of the 51 patients treated for more than ninety days, 8 had undesired side-effects. Of the side-effects occurring, those that were not commonly observed with other corticosteroids were headache, dizziness, anorexia, nausea, gastrointestinal distress, sleepiness, weakness, fatigue, erythema, and weight loss. Of 89 patients, triamcinolone had to be discontinued in 13 because of troublesome side-effects. Most of these patients received from 6 to 18 mg. daily. They summarized that some other effects of this steroid as compared with the effects of other available steroids are, for the most part, favorable, an important consideration when prolonged use of a corticosteroid is contemplated.

Hartung[10] found that out of a total of 67 patients with rheumatoid arthritis treated with triamcinolone, all without exception showed unwanted side-effects of some kind, but that most of these were minor. His most notable observation was that edema and high blood pressure were not observed when these had been present with prednisone and prednisolone. Also euphoria and psychic unrest, usual sequelae previously, were very rare and less severe than with previously administered corticosteroids. There was weight loss as compared to other corticosteroids, but his impression was that it was probably due to water loss and not to protein loss and muscle wasting, as this loss was usually confined to the first few weeks of medication only. In view of the reported excessive weight loss observed by some of the other investigators after administration of triamcinolone, he was careful to note this point. One side-effect that appeared more frequently with triamcinolone than with other corticosteroids was leg and foot cramps, especially at night. This occurred in about 16 per cent of the 105 cases. However, this side-effect often disappeared with continuation of therapy. Therapy was started with about 24 mg. a day, and the maintenance dose was usually about 10 mg. a day.

Sherwood and Cooke[11] gave triamcinolone to 42 patients with bronchial asthma and allergic rhinitis. They noted that there was an absence in increase of blood pressure in all patients. In 12 patients there was actually a reduction in blood pressure when they were transferred to triamcinolone from prednisolone. The dose used in the treatment of asthma was an average of 6 mg. a day with a range of 2 to 14 mg. In this comparatively lower dose range level than that used in treating some of the other diseases, the side-effects observed were not too severe. Good to excellent results in all but 4 cases were achieved on one-third less than similar effective doses of prednisone or prednisolone.

Feinberg, Feinberg, and Fisherman[12] treated 70 patients with allergic disease, of which 52 had asthma, with triamcinolone for from one-half to forty weeks, with 24 patients receiving treatment for more than twenty weeks. The initial dose used varied from 8 to 16 mg. a day, and a maintenance dose of 2 to 8 mg. a day, with an average of 6 mg. a day, was used. They found the comparative daily maintenance dose, as follows: prednisone, 12 mg.; methylprednisolone, 10.6 mg.; and triamcinolone, 6 mg. They noted a marked diuretic effect. A unique feature of triamcinolone therapy occurred in some patients, consisting of headache, dizziness, drowsiness, and weakness. In some the effects were moderate and disappeared in time. Loss of weight was common, and was thought to be due to fluid loss and in some cases to a decrease in appetite. They considered the potency of triamcinolone to be about twice that of prednisone.

Friedlander and Friedlander,[13] in a group of 40 asthmatic patients transferred to triamcinolone from prednisone and prednisolone, found that the immediate effect for the first three to seven days was the same in 33 patients and improved in 7 patients. Of these, 2 who were obtaining satisfactory relief with triamcinolone preferred to return to prednisolone because of undesirable side-effects. By the end of four weeks, 5 other patients went back to prednisolone for the same reason. They found that the maintenance dose of triamcinolone averaged between 50 to 60 per cent that of prednisolone. Weight loss was more often experienced than weight gain. Side-effects such as fatigue, weakness, and headache were more prominent. They hoped that the lesser dosage requirements of triamcinolone might be reflected in a reduction of the side-reactions, especially in long-term therapy. Their maintenance dose varied from 2 to 20 mg. with an average of 8.5 mg.

Material and Methods

A clinical study was undertaken to determine the antiallergic effects of triamcinolone. The symptomatic response and the side-effects were recorded in a series of 50 patients suffering from chronic intractable bronchial asthma. The duration of therapy was from one to nine months. These cases included both sexes, and ranged in age from three to seventy-five years. These patients were selected because previous available therapy failed to afford symptomatic relief, and there was no other source of help. These patients, for the most part, had suffered from chronic intractable bronchial asthma for years. The guiding principles in the study of this therapy were: the allergic tissue response, the physiochemical aspects, indications, contraindications, precautions, dosage, and side-effects of adrenocorticosteroids.

Triamcinolone was not used to the exclusion of other forms of therapy. It was used as a supplement to other symptomatic, local, and immunologic management. The dose of triamcinolone varied from 1 to 16 mg. daily in divided doses. The average initial dose was 6 to 8 mg. (74 per cent of the cases), and the average maintenance dose was 2 to 4 mg. (62 per cent of the cases). In those patients who had been on other steroid therapy, all other steroids were discontinued. At the same time, proper pre- and cotreatment of such complicating conditions as infections, stress, adrenal hypofunction, diabetes mellitus, congestive heart disease, peptic ulcer, tuberculosis, and others were carried on. The progress of the patients was followed by frequent physical and laboratory examinations including weight; blood pressure; urine analysis; and x-ray films of the chest, spine, and pelvis. In no instance was the diminution or cessation of therapy necessary because of the severity of adverse side-effects.

Results

Figure 2 represents the therapeutic response to triamcinolone therapy in chronic

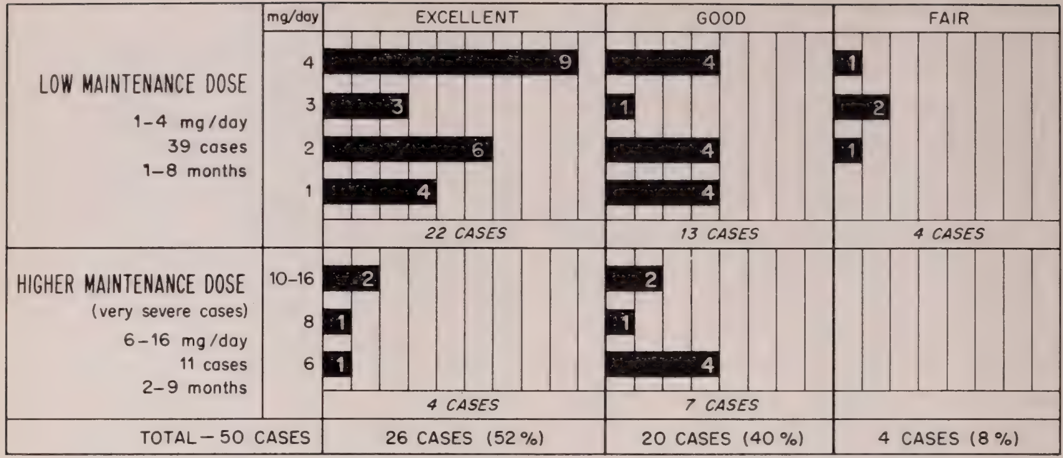

FIG. 2. Therapeutic response to triamcinolone therapy in chronic intractable bronchial asthma.

intractable bronchial asthma.

Of the 50 cases, 26 (52 per cent) had excellent results, 20 cases (40 per cent) had good results, and 4 cases (8 per cent) had fair results. In no instance was the response poor. Of the excellent results, 22 of the cases required only from 1 to 4 mg. daily as a maintenance dose, and only 4 cases required from 6 to 16 mg. daily for maintenance. Of the good results, 13 cases were maintained on from 1 to 4 mg. daily and 7 required from 6 to 16 mg. daily; of those that obtained only fair results, 4 could be maintained on from 1 to 4 mg. daily. In all cases the effort was made to keep the dose at that minimum at which the patient was satisfied with the relief obtained, even though in some cases there still remained some amount of wheezing. In those cases in which there still remained some wheezing, the amount and severity of symptoms was so much less than the patient had been experiencing that the patient was very well satisfied with the amount of relief obtained. This type of result was considered as fair in these particular cases, and no attempt was made to increase whatever dose these patients were on with the hope that perhaps the patient could do better on a larger dose. A number of the patients were fairly free of symptoms, with only an occasional recurrence. These were considered as good results. In those patients who were entirely free of symptoms and remained so, the results were considered as excellent. There were some patients who did not respond at all on a small dose, but who responded excellently on a 6 to 16 mg. dose. On the other hand, there were some who would have only a fair response on a 1 to 4 mg. dose, and they were then nevertheless kept on this dose. Others would respond excellently to as little as a 1 to 4 mg. dose. This type of rationale was followed in all cases.

There was a total of 18 side-effects in the 50 cases under consideration. Some of the patients experienced more than one side-effect. In all, a total of 8 patients experienced side-effects. In 2 of these patients the side-effects had already existed prior to triamcinolone therapy and were due to previous adrenocorticoid therapy. The undesirable side-reactions resulting from triamcinolone in the dosage used in the management of these 50 chronic intractable bronchial asthma cases were never severe enough in any of the cases in which they did occur to make it necessary to stop or decrease the dose.

The following are the side-effects observed in this study of 50 cases: moon face—1, weight loss—5, tachycardia—1, nausea-pyrosis—1, increased urination—3, bloating—1, sweating-flushing—1, weakness—2, fatigue—1, hirsutism—1,* and striae—1.*

The side-effects not observed were: osteoporosis, epigastric distress, peptic ulcer, mental disturbance, sodium retention, hypertension, purpura, vertigo, nervousness, and wide spreading of infection.

Summary

Fifty cases of chronic intractable bronchial asthma were treated with triamcinolone. Fifty-two per cent had excellent relief, 40 per cent had good relief, and 8 per cent obtained fair relief. In no instance was the response poor. The daily maintenance dose varied from 1 to 16 mg.

A total of 18 side-effects occurred in 8 of the 50 patients. No patient had to have the dose stopped or decreased because of any side-effect.

Conclusions

It should be noted that in most of these cases the patients could be maintained on a very small dose. It should also be noted that in some cases where the patient had been futilely seeking relief, the administration of triamcinolone with the subsequent dramatic improvement in his condition gave the patient such a new and bright outlook that he cooperated enthusiastically in undergoing a complete study and search for the etiologic factors causing his asthma. This, after all, is of prime consideration. Without this relief it has been at times almost impossible to do a complete routine allergy study with the willing cooperation of the patient. Thus, this relief, although in many cases only temporary, is of the utmost importance to both the patient and the doctor, for the reasons outlined.

Triamcinolone is a useful drug in the management of chronic intractable bronchial asthma because of the satisfactory symptomatic relief obtained with comparatively small doses and the infrequency of severe side-effects in doses that render effective symptomatic relief in chronic intractable bronchial asthma on short-term therapy.

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*Results of previous adrenocorticosteroid therapy.

When we have not what we like, we must like what we have.—Bussy-Rabutin

A New Ganglionic Blocking Agent for Induced Hypotension

PETER J. FENNEL, M.D., WILLIAM S. HOWLAND, M.D., AND WILLIAM W. DANIEL, M.D., NEW YORK CITY

(*From the Department of Anesthesiology and Gynecology Service of Memorial Center for Cancer and Allied Diseases*)

ALTHOUGH the value of controlled hypotension during surgery is still controversial, there is sufficient interest in its use to suggest that it is not entirely valueless, and that if the ideal hypotensive agent were to be developed, the use of this technic would become more widespread. Previously, in the evaluation of these drugs there was a period of activity in which the hypotensive agent was used widely followed by a period of evaluation of the deficiencies of the drug or the hypotensive technic. This often resulted in waning enthusiasm for either the agent or the technic. Part of this loss of enthusiasm has been due to failure to establish standards for hypotensive agents. A hypotensive agent, to be clinically useful, should be predictable, have a rapid onset, be easily controllable, and have an easily reversed effect. In addition, the hypotensive agent should be sufficiently versatile to produce a lowered blood pressure during elective surgical operations or to produce ganglionic blockade in hypovolemic shock.

The continued search for more controllable hypotensive agents has resulted in the testing of a series of tropenium esters. One of these esters, phenacyl homatropinium (Trophenium*) appears to be a powerful ganglioplegic agent with a short duration of action. Robertson, Gillies, and Spencer[1] found that in man phenacyl homatropinium was readily controllable and its effect was of short duration. These advantages seemed to indicate that phenacyl homatropinium would fulfill the two indications for a hypotensive agent, namely, the production of controlled hypotension for elective surgery and production of ganglionic blockade in hypovolemic shock. This report is concerned with the use of this drug in 34 cases of induced hypotension and 6 cases of hypovolemic shock.

Source of Material

This series comprises 33 women and 7 men ranging from seventeen to seventy years of age. Thirty-four patients had preoperative hemoglobin determinations of 11.7 to 16.4 Gm. and in 6 of the patients in whom phenacyl homatropinium was administered after the patient was in shock the hemoglobin levels were unknown.

Prior to induction of anesthesia 21 of the patients were normotensive, 14 were hypertensive, and 5 were without recordable blood pressure by palpation or auscultation. Thirty-four of these patients had an abdominal operation, 4 had operations done for resection of the temporal bone, 1 had a hemipelvectomy, and 1 had a bilateral radical groin dissection and vulvectomy.

The primary anesthetic agent was ether in 27 patients, cyclopropane in 8 patients, and thiopental sodium-nitrous oxide-oxygen anesthesia in 5 patients. Twenty patients received succinylcholine chloride and 14 of the patients received d-tubocurarine chloride for muscle relaxation.

Method

In the 34 patients in whom elective hypotension was induced the anesthetic sequence

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* Trophenium was kindly furnished by Dr. Harry D. Evans, Jr. This study was supported by a grant from the American Cyanamid Company, Danbury, Connecticut.

consisted of an induction dose of thiopental sodium (200 to 400 mg.) followed by a translaryngeal block (2 cc. of 5 per cent cyclaine), intubation, and then general anesthesia which was often supplemented with a muscle relaxant. Blood pressures were recorded by auscultation. The position of the patient was usually moderate Trendelenberg. Phenacyl homatropinium was administered intravenously in normal saline solution in concentrations of 0.1 to 0.3 per cent.

The time administration of the drug commenced depended on the type of the surgical procedure and the necessity for hypotension. In 31 cases administration of the drug commenced following the draping and preparation of the skin for surgery, with hypotension partially or fully established at the time of abdominal exploration. The extent of surgery was not anticipated in three procedures preoperatively, and the intravenous administration of phenacyl homatropinium was not begun until the decision to carry out radical surgery was made.

The initial rate of administration of the phenacyl homatropinium was regulated by the rapidity of the patient's blood pressure response, the preoperative systolic blood pressure, the age of the patient, and the position in which the patient was to be placed for the operative procedure. If the initial blood pressure drop was not accomplished within two or three minutes, the rate of the infusion was increased in an effort to obtain the effect. If, conversely, the blood pressure response was rapid, the rate of infusion was diminished or even discontinued. There was so much individual variation in the response of the patient that the only satisfactory method of administering phenacyl homatropinium was to judge each patient's response.

In patients with elevated preoperative blood pressure no effort was made to reduce the systolic blood pressure to levels of 70 or 80 mm. of mercury, but rather a blood pressure drop of 50 to 60 mm. of mercury systolic was attempted.

In elderly patients the rate of administration was slow and the infusion was given with great care with constant monitoring of the blood pressure response. In these patients care was taken to establish hypotension slowly so that no untoward effects from a sudden blood pressure drop with possible cerebral vascular or cardiac complications could occur.

When hypotensive anesthesia is being administered, the patient's position on the operating room table is important. Obviously in operations in which the pelvis is elevated above the head (the majority of the cases in this series) a blood pressure of 70 or 80 mm. in the brachial artery will be considerably higher than the blood pressure in the pelvic vessels which may be as much as 12 inches above the level of the head and arm in marked Trendelenberg position. In cases in which the operations occur about the area of the head and neck the lower levels of systolic blood pressure must be obtained so that adequate hypotensive effects may occur.

The administration of the phenacyl homatropinium was discontinued after the hypotensive effect was obtained and further drug was added as the blood pressure started to rise. In all cases we made an effort to terminate the administration of the phenacyl homatropinium sufficiently far ahead of the closure of the surgical wound so that undetected bleeding vessels could be ligated. The discontinuance of the phenacyl homatropinium also enabled us to determine whether or not the patient was short of circulating blood volume. In all cases, throughout the operative procedure, the blood loss was calculated by the weighing of sponges and the volumetric measure of blood in the suction bottle. We believe these last two factors to be very important in the assessment of the adequate blood replacement during hypotensive procedures.

Results

No relationship was observed among premedication, the primary anesthetic agent or muscle relaxant, and the onset or degree of

TABLE I.—Duration of Time after the Start of Phenacyl Homatropinium until the Desired Blood Pressure Was Reached

Time (Minutes)	Number of Patients*
1 to 5	10
6 to 10	18
11 to 20	3
21 to 30	2

* One patient had no effect, and 6 patients were hypotensive at the start of the infusion.

TABLE II.—Amount of Systolic Blood Pressure Drop following Administration of Phenacyl Homatropinium

Amount (mm. Hg)	Number of Patients
None	1
Unknown	6
10 to 15	20
51 to 100	10
101 to 140	3

hypotension achieved. Also no relationship was observed between the sensitivity to phenacyl homatropinium and the degree of hypertension present preoperatively. One patient whose blood pressure was 110/70 mm. Hg did not become hypotensive after receiving phenacyl homatropinium.

The dosage of phenacyl homatropinium required to produce the desired hypotensive level varied from 150 mg. to 2,500 mg. In 24 of the 40 cases in whom phenacyl homatropinium was used, the dose required was less than 500 mg. Although 22 of the patients received phenacyl homatropinium for more than one hour, the duration varied from ten minutes to four hours.

The time required to achieve the desired hypotensive effect is shown in Table I. In the majority of patients the desired hypotensive level was obtained within ten minutes. The amount of systolic blood pressure drop is tabulated in Table II.

The time of return to the previous blood pressure after cessation of the phenacyl homatropinium drip is shown in Table III. It was necessary to administer blood to 16 patients to achieve a normal blood pressure and reverse the hypotensive effect after the cessation of the phenacyl homatropinium drip. Vasopressors were given to return the systolic pressure to preoperative levels in only 2 instances, and both of these occurred early in the series.

Pulse rate variations with hypotension were not consistent. In 14 patients there was no change in the pulse from prehypotensive levels, in 18 there was an increase in pulse rate, and in 8 there was a bradycardia.

TABLE III.—Duration of Time for Return to Preinfusion Blood Pressure after Cessation of Phenacyl Homatropinium

Time (Minutes)	Number of Patients*
1 to 5	6
6 to 10	8
11 to 15	5
16 to 30	5

* Blood transfusion was required in 16 patients.

Two major complications occurred in this series. In the first the patient had to be returned to the operating room because of postoperative bleeding following extensive pelvic surgery. This was thought to result from the vasoconstriction and masking of open blood vessels secondary to the use of Vasoxyl to conclude the hypotension.

The second complication was much more involved and consisted of anuria which may or may not have been secondary to the induced hypotension. This patient was a sixty-two-year-old woman who had a total pelvic exenteration and received 2,500 mg. of phenacyl homatropinium during sixty-five minutes, with a resultant systolic blood pressure drop of 40 mm. of Hg to 110/70. At this time the specimen was removed, and 1,000 cc. of blood were administered. During the next hour the blood pressure gradually returned to prehypotension levels, and the patient received an additional 2,000 cc. of blood. The blood pressure was maintained at normotensive levels for the next three hours, and during this time she received 1,000 cc. of blood—a total of 4,000 cc. The blood pressure was satisfactory on her admission to the recovery room, but during the next two hours she had a period of severe hypotension and received only 100 cc. of blood. When intensive therapy was begun, the patient had an imperceptible blood pressure and depressed ventilation. The blood pressure gradually improved with 2,500 cc. of blood and digitalization, but she remained anuric for a week. She was then dialyzed; renal function returned, but death, secondary to septicemia, resulted.

It is difficult to absolve the induced hypotension from the tragic result in this patient who developed anuria. Factors that might mitigate against this are the facts that phenacyl homatropinium had been discontinued for five and one-half hours, the blood pressure had returned to prehypotensive levels for four hours, and, finally, the patient was in shock for two hours in the recovery room without adequate blood replacement. On the other hand, this patient received 2.5 Gm. of phenacyl homatropinium, which was five times the dose required to induce hypotension in the majority of the patients in this series. The other patient in this series, who received 2.5 Gm., had no untoward results.

When controlled hypotension is indicated to reduce blood loss during surgical procedures in which hemorrhage becomes an impediment to satisfactory operating conditions, minute-to-minute control of the blood pressure is desirable. In our experience phenacyl homatropinium fulfills this criterion of controllability.

The belladona-like side-reactions from the drug appear to be negligible. Tachycardia, when it occurred, was thought to be secondary to inadequate circulating blood volume.

Satisfactory hypotensive levels were produced in all but 1 of the 40 patients in this series. The reason for this is obscure, but experiences with trimephan camphorsulfonate (Arfonad) have suggested that it often is difficult to induce hypotension in young and robust individuals. It may be that a 0.1 per cent phenacyl homatropinium drip was inadequate in this seventeen-year-old patient. Zaimis[2] has shown that the diminished effect on blood pressure following subsequent doses of ganglion blocking drugs is not due to lowered sensitivity of the ganglionic synapse but to a sensitization of the effector cells to epinephrine and norepinephrine. Since this was our first case with this agent, both the dilution of the drug and the slowness of administration may have contributed to its failure to produce the desired effect.

Patients who remained hypotensive for a period longer than fifteen to thirty minutes following the cessation of the phenacyl homatropinium were found to be clinically deficient in blood volume usually due to inadequate blood replacement during surgery. In the first 2 patients we were concerned if the pressure did not return to the preoperative range within five to ten minutes, and we administered vasopressors. Now we preferentially administered whole blood. Conversely, during the maintenance of hypotension, if the rate of whole blood administration exceeded blood loss, it usually became necessary to increase the rate of phenacyl homatropinium administration.

Six patients who had uncontrollable hemorrhage received phenacyl homatropinium. In the first case blockade was not instituted until the surgeon stated that he was unable to control the blood loss and consequent hypotension during the operation. Five patients with severe hemorrhage had no audible blood pressure on their arrival in the operating room. These patients prior to administration of phenacyl homatropinium felt cool, appeared pale, and had ashen fingernails typical of marked vasoconstriction. After the administration of the phenacyl homatropinium they became warm and pink. The bleeding vessels were then ligated and following the replacement of lost blood and cessation of phenacyl homatropinium, the blood pressure returned to the preoperative level.

In the 6 patients in whom ganglionic blockade was induced when the blood pressure was unobtainable, the criteria for the amount of phenacyl homatropinium administered was largely empiric. All patients exhibited a change from pale, gray, and cold to warm and pink. This change was used as an end point in the administration of the phenacyl homatropinium drip, and when this occurred the administration was discontinued. Postoperatively, the urinary output was adequate in all 6 patients.

Comment

For many years it was thought that when a patient was in hypovolemic shock it would be deleterious to further reduce the blood pressure by the use of ganglionic blocking agents.[3]

Converse[4,5] and his group working at the Albany Medical College have shown that in patients in whom severe hypovolemic shock had occurred, the administration of trimephan camphorsulfonate had resulted in the survival of a small percentage of their patients in whom survival would not be expected. It is their belief that trimephan camphorsulfonate, by producing vasodilatation, allows defense against blood loss with production of low capillary pressure allowing reinfusion from the extravascular spaces and preventing vasoconstriction with its attendant production of anoxia and anaerobic metabolites. As all of our patients were treated in the operating room when muscular relaxation had been produced by a relaxant agent, the ventilatory insufficiency which was described by Converse, McKechnie, and Boba[4] was not seen. Clinically, ventilatory insufficiency was not apparent in the postoperative course.

Summary

Phenacyl homatropinium, a hypotensive agent, believed to be a pure ganglionic blocker, was evaluated in 40 operative procedures. This drug produces a rapid onset and recovery from induced hypotension. The rate of onset of the hypotension was not related to the type of anesthetic agent used, muscle relaxant used, or the type of operation. There was no relationship between the response to the phenacyl homatropinium and the degree of hypertension present preoperatively. In this series the pulse rate response of the patient with hypotension was not consistent. Bradycardia, tachycardia, or no change in the pulse was observed.

The development of a tachycardia or the failure of the blood pressure to respond to prehypotensive levels within fifteen minutes after the discontinuance of the phenacyl homatropinium usually indicates that the patient has not received adequate blood replacement.

There were two complications in this series, the first of which was inadequate hemostasis during the operative procedure, which required the patient to be returned to the operating room. The second complication was the development of anuria postoperatively which may or may not have been related to the induced hypotension.

In the 6 patients in whom severe hemorrhage had occurred, phenacyl homatropinium was administered to produce ganglionic blockade to reverse the possible effects of so-called "irreversible shock." The clinically observed beneficial results using this agent suggest the possibilities of further investigation of use of this agent as a protective means in hypovolemic shock.

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Myocardial Infarction in the Negro

SOL GLOTZER, M.D., BROOKLYN, NEW YORK

(*From the Department of Medicine, Kings County Hospital Center*)

ALTHOUGH in the Negro hypertensive disease is more frequent and hypertensive cardiac disease occurs at an earlier age with a higher death rate, involvement of the coronary arteries is relatively uncommon. In all surveys on the subject, the economic and social status of the Negro in each locale and the extent to which he seeks medical care must be considered.

Reports indicating a lower incidence of myocardial infarction in the American Negro are numerous. In 866 necropsies of Army men between eighteen and thirty-nine years of age in which coronary artery disease was found, 7.4 per cent were in Negroes, a lower incidence than the 10 per cent figure given as the proportion of Negroes in the entire Army.[1] In a U.S. Army hospital with 15 per cent Negro admissions, there were 34 patients with coronary occlusion in four years, none of whom were Negroes.[2] A St. Louis hospital reports a 2.9 per cent incidence of infarctions in Negroes, 6.4 per cent in whites.[3] In a mid-southern university hospital with a 70 per cent Negro admission rate, only 51 per cent of infarctions occurred in Negroes.[2] With Negro admissions almost twice as numerous as white, infarctions were equal in number in a hospital in the District of Columbia.[4]

On the other hand, Weiss[5] in a series of 1,431 consecutive autopsies consisting of 48.2 per cent Negroes reports that 42.6 per cent of the myocardial infarctions were in Negroes; he concludes that if social status and hypertension are considered, there is no racial difference. Mihaly and Whiteman[6] recently reviewed the incidence of coronary occlusion in the Negroes of Harlem Hospital in New York City. Although they conclude that there is no racial variation, their figures show 14.8 per cent of the total number of infarctions occurred in the 5.8 per cent of total admissions who were white. In general, the preponderance of statistics is in favor of a much lower incidence of myocardial infarction in the Negro.

Reasons for the discrepancy between the high incidence of hypertension and arteriosclerosis and its failure to involve the coronary arteries are still speculative. Failure of adaptation to a hectic environment and dietary factors have been mentioned as causes.

Kings County Hospital, in Brooklyn, New York, is the largest municipal hospital in that borough; it admits its patients directly through the clinics, emergency, and admitting rooms and by ambulance from all other hospitals in that borough, including other municipal hospitals which may be overcrowded. There therefore can be no selection of cases. Most patients are from the low income groups, particularly in recent years with the increased use of private medical care made possible through hospitalization insurance.

The yearly hospital admission rate during the period studied, 1951 to 1956, averaged 59,000, of which 42 per cent were Negroes. Although patients from Trinidad and British West Indies are classified as Negro, Puerto Ricans are classified as "white" by the medical record librarian. We have been informed that this classification holds true in Harlem Hospital as well as in other municipal hospitals.

The total number of patients discharged during this period with a diagnosis of myocardial infarction or coronary occlusion was 4,869, of which 225 were Negroes. Each of the 225 charts were reviewed. The diagnosis is not always accurate since in any large hospital cases of sudden death of un-

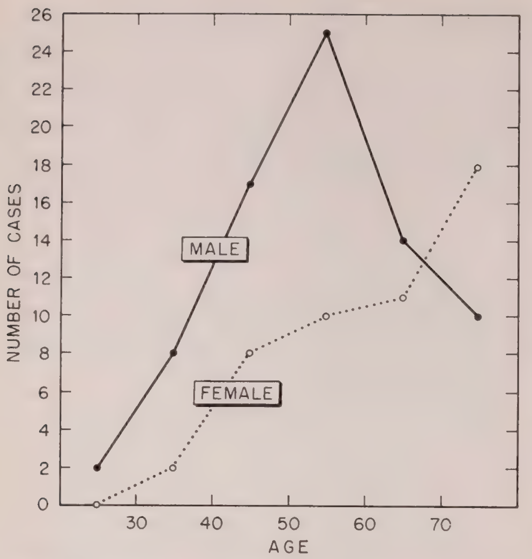

FIG. 1. Incidence of myocardial infarction in 125 American Negroes.

known origin may be included. Critical evaluation, therefore, requires positive evidence of coronary artery involvement either by autopsy or electrocardiogram. We were compelled to eliminate 100 of the 225 cases for the following reasons:

1. Autopsy failed to show myocardial infarction or coronary occlusion.
2. Electrocardiograms showed no old or recent infarction.
3. Hypertensive cardiac disease with congestive failure or acute pulmonary infection was the obvious cause of death.
4. Cardiac failure secondary to diabetes mellitus, hepatic disease, malignant hypertension, or uremia was the cause of death.
5. Sudden death was unexplained.

The corrected figure would be 125, or 4.6 per cent of the total number of cases. If we are to confine our statistical analysis to the American Negro, further elimination of patients born in the British West Indies, Trinidad, and so forth must be made, leaving 101 American Negroes with definite myocardial infarction.

Males outnumbered females, 76 to 49, with a slightly higher death rate in the female (26 females, 21 males). This might be ascribed to the fact that the age peak for the female was at least ten years higher (Fig. 1).

The relation between coronary disease and those diseases in which arteriosclerosis occurs with greater frequency is well documented. Hypertension generally carries a higher incidence of coronary sclerosis, and in this series it was present alone in 38 patients and in combination with diabetes mellitus in 8. This incidence of hypertension is lower than the figure of 87.5 per cent for Negroes given by Weiss and Gray[7] and the generally accepted 70 per cent incidence in all coronary cases. It would seem that hypertension in the Negro is not an important factor since, even with a generally higher incidence of hypertension, he is less prone to sclerosis in the coronary vessels.

Diabetes mellitus was present alone or combined with hypertension in 20, a high incidence suggesting a statistical linkage with myocardial infarction. Lues has declined to a level of etiologic unimportance, with only 9 cases having a positive serologic result, and in none could the cardiac lesion be considered luetic in origin. Cerebral vascular damage was present in 9, peripheral vascular lesions in 2, an old history of rheumatic fever in 3, peptic ulcer in 7, and cardiac disease of arteriosclerotic or hypertensive type in 7.

Our analysis of myocardial infarction in the Negro in Brooklyn unequivocally supports the contention that myocardial infarction is unusual in the American Negro in our area, is more common in the male than in the female, and occurs at a later age in the female. Hypertension seems to bear little relation to the incidence, although diabetes mellitus may be a factor.

A number of reports have stressed the rarity of coronary occlusion in the Bantu, and it has been suggested that when he deviated from his usual low-fat diet to the higher fat intake of the white population, his susceptibility to coronary disease also increased.[8] We therefore surveyed, albeit superficially, the eating habits of our Negro segment. The same group of families serviced in the hospital in many instances are also on the relief rolls of the Department of Welfare. Female Negroes reporting to the surveying clinic of this Department were questioned as to their dietary habits in an attempt to quantitatively determine the percentage of fat in the diet.

Some women were interviewed whose acceptance of relief payments was very temporary and who were ordinarily self-sustaining. These consumed a diet almost identical with that of the white population in the same economic class. Among the chronically indigent group, the dietary pattern is strikingly similar. Meat products are a daily item and consist of the fattest portions of the hog, including the neck, chops, feet, maws, ears, and chitterlings. Fat, in the form of lard, bacon fat, and fat back, is used in every type of cooking and baking, including biscuits. It is not unusual for each individual to use the equivalent of 1 pound of lard and $^1/_2$ to 1 lb. of fat back or bacon grease per week. Soups are made of vegetables with meat leftovers or similar very cheap cuts of meat, high in fat content. Fish is a frequent addition, in the cheaper forms, such as whiting, butterfish, and porgies, high in fat. The similar high pork intake of Negroes in New Orleans has been reported.[9]

Comment

One gathers the impression that the diet of the Negro who enters Kings County Hospital, in whom we find this low incidence of myocardial infarction, is much higher in fat than that of the comparable white population. Genetic and anatomic variations could more likely account for the racial difference, with the usual reasons of economic and emotional stress and failure of adaptation to environment of only minor importance. We wish to call attention to a number of these variations.

The heart of the Bantu has shown a number of anatomic deviations which might have a bearing on his relative immunity to myocardial infarction. Ordinarily, occlusion is most common in the left anterior descending and left circumflex arteries; the heart in which the left coronary artery is preponderant, as classified by Schlesinger,[10] is less prone to have adequate collaterals. Right, rather than left, coronary preponderance is the rule in the Bantu, as contrasted to the white,[11] and might provide him with a greater source of collateral branches as protection against fatal infarction.

The course of the coronary artery after its origin is through the epicardial fat, and it does not dip into the muscle until it nears its termination. In some instances, it may dip into the myocardium just after its origin, to be covered by a layer of 5 mm. or more of muscle. Geiringer[12] reports that in the left anterior descending artery, which lies in the epicardium, the intima is thicker than in the similar mural vessel. He suggests that the muscle layer reinforces the wall of the coronary artery and thus minimizes the mechanical stress of intravascular tensions. Edwards[13] disagrees; he finds no difference in degree of atherosclerosis between mural and epicardial vessels. The high percentage of intramural coronary arteries in the Bantu might be considered a significant protective factor if the former opinion is true.

Although most hearts have only two major-size coronary arteries, a third branch is occasionally seen arising from the angle between the two main branches of the left coronary artery. This situation has been reported in 80 per cent of Bantus as against only 24 per cent of Europeans.[14] Its importance lies in the greater extent of collaterals possible from the increased blood supply available through a larger number of major vessels.

Blache and Handler[15] noted that the coronary ostia are located higher above the line of closure of the aortic valve cusps in the Bantu than in the European. No comment is made on its significance, although this location could minimize their involvement in valvular sclerosis.

With regard to the Negro, it is noted that beyond the age of twenty-five years, the left anterior descending branch shows a lesser degree of fragmentation of the internal elastic lamella and a lighter deposit of calcium.[15] If one were to agree with Moon and Rinehart[16] that fragmentation of the internal elastic membrane is the direct result of intra-arterial tension and probably the initiating mechanism in coronary atherosclerosis, the possibility suggests itself that pressure in the coronary artery of the Negro is not as high nor as destructive as in the white.

Summary

Much has been written about racial differences in incidence of myocardial infarction, with the greatest stress placed on dietary habits. Although evidence is preponderantly in favor of the positive effect which a high intake of saturated fat has on coronary atherosclerosis, we feel that in the American Negro there is a reasonable doubt. We have found in Kings County Hospital a remarkably low incidence of myocardial infarction among the low-income segment of the Negro population, in which we estimate the animal fat content of the diet to be higher than the average for this city. A number of anatomic variations in the hearts of the Bantu and the Negro have been reported; these may be factors in protecting these races against coronary atherosclerosis and myocardial infarction, in spite of the widespread sclerosis in other vessels. Many of these variants have not been sufficiently analyzed and may be of little importance, but they present additional facets to a problem which has not yet been solved. The findings suggest another approach to the problem–a study of the anatomy of the Negro heart.

87 Winthrop Street, Brooklyn 25

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Be thou familiar, but by no means vulgar.—Shakespeare

Carbazochrome Salicylate Therapy in Hereditary Hemorrhagic Telangiectasia

MELVIN H. STICH, M.D., F.A.C.P., BROOKLYN, NEW YORK

HEREDITARY hemorrhagic telangiectasia is a familial, nonsex-linked bleeding disorder characterized by the presence of multiple dilated capillaries and small venules in the skin and mucous membranes, and by the occurrence of repeated episodes of abnormal bleeding, either spontaneously or following trauma. Although most cases have only occasional mild bleeding, incapacitating hemorrhages are not uncommon. It seems worth while to re-emphasize in the literature the fact that there is a drug available which seems to have a specific effect on capillaries, causing increased tone and decreased permeability.

The excellent therapeutic effect of this drug, carbazochrome salicylate (Adrenosem salicylate), on a total of 36 episodes of abnormal bleeding in 7 patients belonging to three families is the subject of this report. All were treated with an identical dosage, namely one 5 mg. ampule intramuscularly immediately and again two hours later, followed by 2.5 mg. orally, either in tablet or syrup, every two hours for four doses.

Case Reports

CASE 1.—A white sixty-nine-year-old male has had recurrent, severe, spontaneous epistaxis for thirty years, bleeding usually lasting one or more days. On seven different occasions posterior nasal packing had been required. There was also a history of severe hemorrhage following dental extraction on three occasions, and marked hemorrhaging following a transuretheral resection of the prostate thirteen years ago. Three pints of blood were received after the latter episode. Examination revealed marked buccal and posterior pharyngeal telangiectases. During the past fifteen months, 11 episodes of epistaxis have rapidly responded to the therapeutic regime described above. Also, two dental extractions without excessive bleeding were accomplished, the therapy being the same as previously except that the first intramuscular dose was given one hour prior to extraction.

CASE 2.—A white forty-three-year-old male, the son of Case 1, has had recurrent, moderately severe, spontaneous epistaxis for twenty years. Buccal and posterior pharyngeal telangiectasia were present. During the past nine months, three separate episodes of epistaxis responded promptly.

CASE 3.—A white ten-year-old female, the daughter of Case 2, has had recurrent to moderately severe spontaneous epistaxis for the past eight years. Buccal, pharyngeal, and many cutaneous telangiectases were present. During the past thirteen months, six attacks of epistaxis responded promptly.

CASE 4.—A white thirty-seven-year-old female has had recurrent, severe epistaxis for the past fifteen years and has had frequent episodes of severe menorrhagia, one of which, two years ago, had required the transfusion of two pints of blood. Buccal, pharyngeal, and cutaneous lesions were present. Several pelvic examinations were completely normal. During the past eleven months, four episodes of epistaxis and two of excessive menstrual bleeding were treated with rapid response.

CASE 5.—A white eight-year-old male, the son of Case 4, had had many episodes of epistaxis and three of hemoptysis during the past four years. Several chest roentgenograms showed normal findings. Buccal and pharyngeal lesions were present. During the past ten months, four episodes of epistaxis have been successfully treated.

CASE 6.—A white forty-three-year-old female has had recurrent spontaneous epistaxis for fifteen years and episodes of menorrhagia for ten years. Four years ago, one of her excessive menstrual periods was followed by a 30 per cent drop in hemoglobin, and 2 pints of blood were given by transfusion. Buccal, pharyngeal, and cutaneous telangiectasia was present. Several pelvic examinations were normal. During the past nine months, three episodes of epistaxis responded rapidly to therapy.

Case 7.—A white forty-eight-year-old female, the sister of Case 6, has had recurrent epistaxis for twenty years. Buccal and pharyngeal lesions were present. During the past eight months, three episodes of nasal bleeding ceased rapidly on therapy.

In each of these cases, complete coagulation studies, including bleeding, coagulation, and prothrombin times, as well as clot retraction and platelet counts, were performed on several occasions. All tests were always found to be within normal limits.

Carbazochrome salicylate is a synthetic drug, chemically related to epinephrine but without any sympathomimetic qualities. It has no effect on any of the components of the blood which take part in the normal process of coagulation, nor is it in turn affected by heparin, dicumarol, or vitamin K. It has been used to control capillary oozing in all types of surgical procedures,[1–4] and it is probably most commonly used following tonsillectomy.[5] Employing it therapeutically in this hereditary disease of capillary bleeding seemed logical and has proved effective.

Summary

Seven cases of hereditary hemorrhagic telangiectasia in three families have had a total of 36 episodes of abnormal capillary bleeding promptly controlled by the use of carbazochrome salicylate within a fifteen-month period. This drug, a derivative of epinephrine, without sympathomimetic action, has a specific effect on capillaries, increasing tone and reducing permeability.

2809 Avenue L, Brooklyn 10

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Population Shifts in New York State

The estimated population of upstate New York as of July 1, 1959, will be 8,981,224, or 178,595 more than the figure for July 1, 1958. Announcing the estimates prepared by the State Health Department's Office of Statistical Services, Dr. Herman E. Hilleboe, State Health Commissioner, said that the estimated population of the entire State as of July 1 will be 16,774,019 with more than half living outside New York City.

These preliminary figures indicate that New York City will have a population of 7,792,795, approximately the same as for the years 1957 and 1958. An estimated 53.5 per cent of the State's population resides outside New York City, Dr. Hilleboe reported. Figures prepared after the 1950 census showed 53.2 per cent of the State's population located in New York City.

Since 1950, the population of upstate New York has increased by 2,042,000 (29.4 per cent.) During the same period, New York City's population has decreased by 99,000 (minus 1.3 per cent).

Commenting on the figures, the State Health Commissioner said that cities throughout the State are finding that their population concentrations are shifting and that a great number of persons are moving to suburban areas.

"This development has stressed the need for establishment of more county health departments which can provide the same quality of health services in the surrounding suburbs that are now available to residents of the larger cities," Dr. Hilleboe said.

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Diagnosis and Treatment in Vascular Diseases of the Nervous System

MORTIMER F. SHAPIRO, M.D., AND MORRIS BENDER, M.D., NEW YORK CITY

(*From the Department of Neurology, the Mount Sinai Hospital*)

Advances in the sciences of medicine in the past two decades, particularly progress in the treatment of infectious diseases, have increased life expectancy. Therefore, the physician increasingly is faced with medical problems which tend to appear in the older segments of the population. Among those problems, and so important that they now represent the third largest cause of death in the United States, are those of vascular diseases of the nervous system.

In many aspects the concept of vascular diseases of the nervous system is an artificial one. It is illogical, from a dynamic viewpoint, to isolate conceptually the vessels of the nervous system from those of the neck and the cardiopulmonary and systemic circulations. Furthermore, the vascular diseases that produce effects in the nervous system are most usually facets of systemic disease. Ultimately the challenges they present must entail an approach in terms of total body physiology. Pragmatically, however, consideration of the aspects of regional manifestations of systemic problems still remains a valid approach. This is particularly so in terms of the nervous system.

The major importance of vascular diseases of the nervous system lies in their effects on neural functions and the basic roles that neural integration plays in life processes. From one viewpoint the relationship can be conceived as the problem of the effective maintenance of an adequate transport of metabolic needs. Of these, the need for an adequate oxygen supply is paramount. In fact, the problems of vascular diseases of the nervous system are in large measure the problems of impairment of oxygen supply to neural tissue and the resulting dysfunction.

Cerebrovascular Accidents

Perhaps the most common of all diseases of the brain are those secondary to defective circulation. Of these, the so-called acute cerebrovascular accidents are most important because of their frequency of occurrence and the nature of the disability they cause. This group is characterized by the sudden interruption of neural function due to failure of adequate blood supply to a portion of the brain at a given time.

It is paradoxic that so little is known about cerebrovascular accidents. Until relatively recently a mood of fatalism and impotence characterized the medical approach to these problems and deterred systematic investigation of them.

Most neurologic textbooks still define cerebrovascular accidents in terms of thrombosis, embolus, and hemorrhage, and speak of their clinical differential diagnosis. From our own experiences the criteria posited for such a differential diagnosis are discouragingly inadequate. In a significant study, Dalsgaard-Nielsen[1] compared the clinical diagnosis of so-called cerebrovascular accident, made in 291 patients, with the findings on autopsy examination. In 10 per cent the pathology was not that of ictus at all. Moreover, in the diagnosis of cerebral hemorrhage an error of 35 per cent was made, and in the clinical diagnosis of thrombosis or embolism the error was 42 per cent.

Even the conception that in cerebrovascular accident there must occur a local mechanical obstruction to blood flow, such as in thrombosis or embolus, is no longer tenable. In an autospy study by Hicks and Warren, [2] 60 of 110 cases of so-called cerebral infarction showed no evience of gross pathology, such as thrombus, embolus, or primary hemorrhage, within the brain.

Cerebrovascular Insufficiency.—As a result of such studies there has been an increasing awareness that other explanations beyond the local mechanical discontinuity of blood supply must be sought in many cases of so-called cerebral infarction. One avenue of investigation that seems promising is that opened by the concept of cerebrovascular insufficiency.

Cerebrovascular insufficiency may be defined as that state in which the metabolic requirements of local cerebral tissue cannot be met by the arterial blood supply within a particular time interval because of a relative failure in the vis a tergo rather than because of simple vascular discontinuity or obstruction. The concept presumes that inadequate blood flow to a given area damages neural tissue which has already been partially compromised by atherosclerotic or arteriolosclerotic local circulation. Such inadequate blood flow may occur, for example, if cardiac output is diminished or circulation impaired for other reasons, such as diminution in the lumen of one or more major vessels of the neck.

As experimentally determined by Denny-Brown and Meyer,[3] localized ischemic anoxia so induced leads initially to patchy microstasis in the venous end of the capillary bed and initially effects a potentially reversible neuronal paralysis. If adequate circulation is not established within fifteen to thirty minutes, the patchy microstasis becomes confluent, damage to capillary endothelium is produced, and irreversible neuronal changes occur. Only after there has been anoxic damage to the endothelium does infarction occur. If circulation, either collateral or direct, is established after capillary endothelial damage has occurred, edema results in the ischemic brain area, and the escape of red blood cells through the damaged walls produces the classic hemorrhagic infarct. If, on the other hand, there has been a catastrophic collapse of circulation, a pale infarct occurs.

Digital carotid compression has evoked interest as a diagnostic test for cerebrovascular insufficiency. It has long been known that carotid sinus pressure or massage in some individuals may produce bradycardia and rapid fall in blood pressure. This may be reflected cerebrally in syncope, convulsions or their equivalents, and in many other manifestations of disturbed central nervous system function. This response is not necessarily indicative of chronic cerebrovascular insufficiency. However, digital compression of a carotid artery, either below the carotid sinus region or with the sinus response blocked by atropine, does suggest cerebrovascular insufficiency when cerebral symptoms are so precipitated. Webster and Gurdjian[4] report that when there is occlusion in the basilar artery system, compression of either carotid will produce syncope. If there is chronic insufficiency in both carotid systems, compression of either carotid will also precipitate neurologic symptoms. When an anterior cerebral artery is occluded, compression of the contralateral carotid will also cause unconsciousness. However, when only a middle cerebral artery is obstructed, carotid compression on either side has no effect. In their opinion the presence of neoplasm or areas of degeneration does not affect the response to this maneuver.

The degree to which ischemic anoxia causes permanent damage is directly related to the rapidity with which collateral circulation can be re-established. Until relatively recently the cerebral vasculature was thought of as an end-arterial system with little flexibility for collateral circulation. Meyer and Denny-Brown[5] have demonstrated, however, that effective collateral circulation through vessels 50 to 250 microns in diameter may occur within seconds of small arterial occlusion.

This adjustment is apparently mediated by the Bayliss effect. Bayliss [6] demonstrated that the smooth muscle of cerebral arterioles have a stretch response to pressure. The higher the intraluminal pressure, the greater the arteriolar contraction. Conversely, a drop in intraluminal pressure causes dilatation. In the area of ischemia, immediate vascular dilatation occurs because of the drop in intraluminal pressure. Blood then may flow into the dilated arterioles of the ischemic area from neighboring regions of higher pressure. This pressure differential is probably the initial factor in the establishment of collateral circulation. Later, further adjustments, determined by local diminution of oxygen tension, rise in local carbon dioxide, and local lowering of pH slowly occur over a period of hours.[5]

It is evident that aspects of the systemic circulation, particularly blood pressure, play a significant role in both the precipitation of cerebral infarction and the natural remedial processes set in motion once local cerebral ischemia has occurred. It is possible that many of the so-called "little strokes" are actually episodes of cerebrovascular insufficiency. Local circulatory changes, resulting from transient alteration in systemic circulation, produce anoxia sufficient to impair neural function. It is also possible that many of the transient clinical impairments of neural function that have been considered warnings or prodromata of ictus are actually the reflections of reversible neuronal anoxia, determined by temporary cerebrovascular insufficiency.

The role of systemic circulation in cerebral disease has been further emphasized by the recognition of the effects of impairment of the pulmonary circulation on brain function. Austen and coworkers[7] have called attention to the syndrome of headache, papilledema, tremor, and impairment of consciousness resulting from chronic pulmonary insufficiency. They presume a cycle of obliteration of the pulmonary bed, causing pulmonary hypertension, myocardial hypoxia, cerebral hypoxia, and hypercapnia. Cerebral hypoxia and hypercapnia produce vascular dilatation, an increase in intracranial pressure, and papilledema. Typically, the condition of these patients is seriously aggravated if oxygen is administered by ordinary methods, such as by nasal catheter or oxygen tent. However, the cerebral symptoms are usually reversible when adequate cardiac-pulmonary function is reestablished.

Cerebral Vascular Spasm.—A concept which has been controversial for many years is that of spasm in the vessels of the brain. For many years this concept has been used to explain transient strokes and other cerebral dysfunctions of mild degree and short duration. This hypothesis has also been suggested as an explanation for the phenomenon of ischemic cerebral infarcts without evidence of mechanical obstruction.

There is little doubt that cerebral vasculature can contract and dilate. However, there does not seem to be any impressive evidence that acute spasm of cerebral blood vessels plays any major role in acute cerebral infarction. Some of the arguments that have been advanced to support the hypothesis of cerebral vascular spasm are based on analogies to peripheral circulation, where spasm is a well-established phenomenon. However, cerebral vasculature differs significantly in musculature anatomy and innervation from peripheral vasculature. Other arguments rely on the demonstration of arterial spasm produced by mechanical or electrical stimuli in an exposed brain—conditions which cannot be considered at all within the range of physiologic experiences to be expected for any organism.

Kety[8] has shown that section or paralysis of the cervical sympathetic system, which theoretically would supply constrictor innervation to the cerebral circulation, has no effect at all on cerebral blood flow, oxygen uptake, or cerebrovascular resistance. Rather, his evidence indicates that the important regulators of cerebral circulation, apart from blood pressure, are chemical. Thus, hyperventilation will decrease cerebral blood flow by 35 per cent, whereas inhalation of 5 to 7 per cent carbon dioxide will raise cerebral blood flow by 75 per cent.

It is possible that vascular constriction, chemically mediated, may play some initiating role in cerebral ischemia, but it is doubtful, from present information, that spasm alone can produce infarction.

Treatment.—*Stellate Ganglion Block.*—The concept of cerebral vascular spasm was the original rationale for the treatment by stellate ganglion block of cerebrovascular accidents other than hemorrhage.

Apart from its debatable theoretic background, considerable controversy still exists as to its pragmatic value. De Takats,[9] one of the foremost advocates of this treatment, has tried to avoid the controversy about cerebral vascular spasm by pointing out, perhaps irrelevantly, that in the treatment of arteriosclerotic disease of the lower extremities sympathectomy produces its best results when there is no vasospasm. He approaches the question with the proposition that stellate ganglion block is simple and harmless and that empirically some patients are benefited. Both points, however, are still considered moot, and reports in the literature are conflicting.

Naffziger and Adams,[10] in their treatment of 155 acute cerebrovascular accidents by stellate ganglion block, reported good results in 59 per cent, fair in 24 per cent, and poor in 17 per cent. Ruben and Mayer[11] described improvement in 60 per cent of 58 cases of cerebrovascular accident. On the other hand, Millikan, Lundy, and Smith[12] studied 87 patients intensively and reported very different results. Sixty patients were treated by stellate ganglion block and 27 were not. After two weeks the mortality in the treatment group was 19 per cent, whereas the mortality was only 8 per cent in the control group. Furthermore, 13 per cent of the control group was normal after two weeks, in contrast to only 5 per cent in the treatment group. It was also observed that 3 patients developed progressive hemiplegia after effective stellate ganglion block had already been established. In an attempt to clarify the problem, Linden[13] studied 28 patients with cerebrovascular accidents before and after stellate ganglion block, measuring cerebrovascular resistance, oxygen consumption, and blood flow. He found stellate ganglion block produced no effect if the cerebrovascular resistance was less than 3.5 mm. Hg; if, however, the resistance was above that figure initially, block could produce a significant fall in resistance and an increase in blood flow and oxygen consumption. It was only in this latter group that any clinical improvement from the procedure could be anticipated. He estimated that at most only one out of every 3 or 4 patients with thromboembolic cerebrovascular accident would fall in this category.

Such conflicting reports suggest that adequate criteria for the evaluation of this treatment method are not yet available.

Anticoagulants.—There has been increasing interest in the efficacy of anticoagulant therapy in the treatment of cerebrovascular accidents. There is little evidence that once thrombosis or embolism has occurred lowering of the prothrombin time has any significant therapeutic effect. Carter,[14] however, reports that in a study of 60 cases of cerebral embolization, 26 patients treated with anticoagulants showed a better recovery after three months than did 34 patients who had either no treatment or repeated stellate ganglion block. The statistical validity of this data is, however, open to question.

Some feel that such treatment has value as a prophylactic procedure. However, again, the statistical evidence is encouraging but not as yet very convincing. Meyer and his colleagues[15] followed the untreated course of 29 patients with severe carotid or basilar artery disease. Within two years 31 per cent had died and 41 per cent were severely disabled. However, in a similar group of patients treated with anticoagulants, 75 per cent showed improvement in the course of the disease. Of the 4 deaths in the treated series, 3 occurred after the anticoagulant was discontinued and the fourth was unrelated to the arterial disease. Wright and his group[16] reported on 57 patients who had 137 episodes of thromboembolism, of which 46 were cerebral, in 464 patient months. When the patients were placed on anticoagulation regimens, in 710 patient months there were only 11 thromboembolic episodes, of which only 4 were cerebral.

The prophylactic value, whatever it may be, of anticoagulant medication probably lies mainly in its retardation of thrombus formation. Also, as Spooner and Meyer[17] have pointed out, dicumarol decreases platelet adhesiveness, and it is possible that this mechanism may help prevent sludging in small vessels, an event which occurs early in the pathology of cerebrovascular insufficiency. It is also possible that this same mechanism may aid in the establishment of collateral circulation through the smaller arteriole anastomoses.

Apart from theoretic and statistical questions, the application of anticoagulation therapy presents a number of problems. The chronicity of the therapy is unpleasant. There are real difficulties in maintaining an effectively lowered prothrombin time while avoiding spontaneous and serious intracranial bleeding. Moreoever, if a cerebrovascular accident occurs and a hemorrhagic infarction is present, anticoagulants may aggravate the bleeding. Furthermore, if the type of ictus has been misdiagnosed and the possibility of hemorrhage, aneurysm, or vascular anomaly overlooked, a low prothrombin time may cause extremely grave complications.

Hypothermic Treatment.—Laborit and Huguenard[18] proposed the hypothesis that in acute major physiologic emergencies, such as severe trauma, the homeostatic mechanisms of the body may play a noxious role by unnecessarily increasing stress. They postulated that blockade of the autonomic nervous system by such drugs as chlorpromazine and other phenothiazine derivatives and the artificial lowering of the body temperature would be beneficial. These technics were indeed found useful not only in acute traumatic surgery but were also successfully carried over into general surgery and, later, into neurosurgery. Also, sporadic, sometimes spectacular reports on the medical treatment of severe head trauma by these methods have appeared in the literature, and considerable interest in the physiology of the hypothermic state has developed. Laboratory investigations demonstrated that brain oxygen consumption is truly a function of temperature, decreasing linearly as the temperature is lowered.[19] Rosomoff[20] found that lowering the temperature of dogs to 22 to 24 C. protected them against major infarction after ligation of the middle cerebral artery, as long as the effective level was reached within ninety minutes of the ligation. Other investigators noted that hypothermia effectively lowered intracranial pressure and minimized the development of edema.

Howell and coworkers[21] believe that death in cerebral hemorrhage is primarily the result of cerebral edema. They postulate that reduction of cerebral volume by artificial hypothermia might minimize this. They treated 8 patients who had fulminating, spontaneous intracranial hemorrhage by prolonged hypothermia. Although only 2 survived, it was the authors' impression that all patients showed some improvement and that errors in technic prevented greater success. Our own limited experience in the past with these technics has not been better. We have encountered complications in the form of cardiac irregularities, bleeding time abnormalities, and so forth.

There appears to have been little attempt to test the clinical value of hypothermia in routine cerebrovascular accidents. One of the difficulties, of course, is the time lag that must ensue between the ictus and the start of effective treatment. However, there is the possibility that even a delay of several hours may not invalidate life-saving aspects of the treatment. This would seem particularly true in the effects of these technics on edema and the possibility of maintaining viability in the tissues at the periphery of the area of absolute infarction.

Further understanding of the physiology of hypothermia and refinements in its technic now seem to make it worth while to test its effects in less hopeless cerebrovascular accidents.

Carotid Artery Occlusion

Until relatively recently, occlusion of the carotid artery was considered an uncommon phenomenon. Interest in this condition and the development of carotid angiography have effectively demonstrated that, far from being rare, the condition is quite common. In a series of 432 routine autopsies of the brain and carotid vessels, Fisher[22] found that one or both carotid arteries were occluded in 6.5 per cent of cases. An additional 3 per cent showed severe narrowing, making a total of 9.5 per cent cases of advanced carotid disease.

Occasionally such occlusion produces the classic syndrome of sudden ipsilateral blindness with contralateral hemiplegia, hemisensory syndrome, and homonymous field defect. More often, the clinical course is that of repetitive, minor incomplete attacks. These clear partially, only to recur progressively, leaving an increasing disability.

The major site of occlusion is usually just distal to the bifurcation of the common carotid. Apparently, males are affected almost four times as frequently as females. The age distribution averages between the fourth and seventh decades. The obstruction usually begins as an atheromatous plaque. Hemorrhage may develop under the plaque and a mural thrombus form around it. Such a thrombus may become a source of emboli. Fisher[22] found 4 such cases of embolization in his autopsy series.

Diagnosis.—Carotid angiography offers the best means of diagnosis. Visualization of the obstruction is, of course, diagnostic. The filling of the contralateral anterior and middle cerebral arteries, when there has been no carotid compression, also may be considered diagnostic of occlusion of the opposite carotid. Ophthalmodynamometry can also be of considerable value. The demonstration of a difference of more than 10 per cent in the retinal systolic pressure and more than 15 per cent in the diastolic pressure, when both eyes are compared, is significant.[23] Palpation of the carotid vessels in the neck or even through the pharyngeal wall is not reliable as a diagnostic test of carotid occlusion.

Treatment.—*Anticoagulants.*—A number of authors believe that partial carotid occlusion can be arrested by the use of anticoagulants. Millikan and coworkers[24] report the successful treatment with dicumarol of 7 patients with intermittent insufficiency of the internal carotid arterial system. They hypothesize that the repetitiveness and similarity of the episodes characteristic of this disease reflect embolization from carotid mural thrombi. These emboli temporarily occlude smaller arteries and then fragment, permitting re-establishment of blood flow and regression of neurologic signs. They believe that lowering the prothrombin time diminishes the incidence of such thromboembolic episodes. It is probable, however, that once complete carotid occlusion has occurred, anticoagulation therapy will have little effect.

Surgery.—Considerable interest has developed in the possibility of a successful surgical approach to the problem of mechanical occlusion of the carotid system. Eastcott, Pickering, and Rob[25] in 1954 resected the occluded portion of the internal carotid and carotid bifurcation and sutured the internal to the common carotid. The operation was performed with the use of hypothermia, and in its course the common carotid was clamped for twenty-eight minutes. The patient was thereafter free of the recurrent attacks of transient blindness and hemiparesis which had characterized his illness. Rob and Wheeler[26] later reported their results in 27 carotid explorations. Employing thromboendarterectomy, or end-to-end anastomosis, they obtained complete freedom of symptoms in 5 patients and objective improvement in an additional 3. In 15 patients there was no change. Two patients were temporarily worse, and there were 2 deaths from pulmonary embolus and coronary infarction. The surgeons felt that their best results were obtained when the carotid occlusion was incomplete. Lyons and Galbraith[27] reported excellent results in the operative treatment of 4 out of 5 patients with carotid occlusion. In their technic the occluded segment of the internal carotid was not resected, but a shunt was established between the subclavian artery and the internal carotid distal to its obstruction. They emphasize that best results are obtained in surgery when there is no clinical or electroencephalographic evidence of major infarction having already occurred.

There is insufficient data for the evaluation of these surgical procedures. The establishment of a patent carotid vessel apparently is not sufficient in all cases to effect a good result. In Rob and Wheeler's[26] series, good flow was established in 15 cases but only 8 showed any objective improvement. On the other hand, at the Mount Sinai Hospital we have had the experience of canceling a thromboendarterectomy for complete occlusion of the internal carotid artery because of a sudden deterioration in the patient's cardiac status. Later a marked spontaneous improvement occurred in his neurologic status. Had the thromboendarterectomy been carried out, we probably would have attributed the patient's improvement to the operation. Conversely, we have seen patients improve after endarterectomy, but subsequent angiograms still showed complete occlusion of the internal carotid artery.

Intermittent Insufficiency of the Basilar Artery System

Another vascular syndrome that has been recently emphasized is that of intermittent insufficiency of the basilar artery system. Millikan and Siekert[28,29] characterize the syndrome as one of periodic recurrent neurologic symptoms which progress inevitably to permanent disability and death. The symptoms arise from intermittent ischemia of those intracranial areas, such as the brain stem and the posterior cerebrum, which are supplied by the posterior circulation.

It has long been known that of all the intracranial vessels, the basilar artery is most frequently affected by arteriosclerosis.[30] Atheromatous changes also occur with considerable frequency in the vertebral arteries. Hutchinson and Yates[31] reported significant changes in 19 of a series of 48 individuals who died of various cerebrovascular disorders.

Intermittent ischemia may result from a combination of atheromatous changes in these vessels and fluctuations in the systemic circulation. Mural thrombi in the arteries may also play a large role. In addition, postural changes may compress the vertebral artery and produce posterior circulatory insufficiency. De Kleyn[32] demonstrated that extension of the neck and rotation of the head may effectively compress the contralateral vertebral artery. The vertebral arteries are usually unequal in size. If the major functional vertebral artery is compressed by such postural maneuvers, transient brain stem signs, such as nystagmus, dysarthria, and extensor plantar responses, may be precipitated.[33]

The symptoms of basilar artery system insufficiency are frequently bilateral. They may include motor and sensory phenomena, bulbar and pseudobulbar symptoms, nystagmus, and visual impairment such as hemianopia. Sometimes insufficiency of this posterior circulation may not affect the brain stem per se but instead may produce bilateral involvement of the anterior cerebellum or of the occipital cortex. Initially these symptoms may be transient and repetitive. Ultimately though, irreversible damage occurs.

Diagnosis.—The diagnosis is essentially clinical. Vertebral angiography is usually of only slight value. The diagnosis entails some difficulties in that the syndrome is usually not clearly defined. Sometimes the relationship of an apparently classic syndrome to the basilar artery system is dubious. We have examined at autopsy the brain of an individual who presented a clinical picture identical with that of intermittent insufficiency of the basilar artery system. At autopsy the basilar artery system was grossly and microscopically intact, as were the tissues it supplied. However, both middle cerebral arteries had been occluded.

Collagen Diseases

Once thought to be rare, collagen diseases are no longer so considered. This reflects not only an increase in diagnostic awareness, but also, perhaps, a true increase in the incidence of these disorders. Since the processes in systemic lupus erythematosus, polyarteritis nodosa, and thrombotic thrombocytopenic purpura affect the connective tissue in blood vessels, these diseases may present many neurologic facets.

Systemic Lupus Erythematosus.—It has been estimated that central nervous system symptoms are present in as high as 37 per cent of individuals with systemic lupus erythematosus.[34] The pathology is essentially that of an endarteritis with partial occlusion of the small arteries or arterioles. Since this may occur in any locus of the nervous system, almost any neurologic symptom or sign may be precipitated. Clinically, however, spinal cord involvement is very rare compared to cerebral disease. Meningeal syndromes, papilledema, confusional and paranoid states, hemiplegias, cranial nerve palsies, convulsions, chorea, and so forth, have all been reported.

Not infrequently the neurologic aspects appear before it is evident that the disease process is a systemic collagen disease. Some patients have been diagnosed as suffering from multiple sclerosis or having an idiopathic convulsive disorder before it was recognized that systemic lupus erythematosus was responsible for the symptoms. Sometimes the initial neurologic symptoms are so poorly defined as to suggest psychogenic symptomatology. Thus, Haserich[35] noted that 11 of his patients had been treated for psychogenic disturbances before the true diagnosis was established.

Polyarteritis Nodosa.—Polyarteritis nodosa involves medium and small vessels and thereby produces neurologic dysfunction. The most common neurologic manifestation is a mononeuropathy multiplex. It has been estimated that 18 to 52 per cent of individuals with this disease develop this complication. Essentially it is an ischemic neuropathy, without order or symmetry, of several peripheral nerves. Each attack is acute and rapid. In the beginning, sensory deficit is more pronounced than motor impairment. The lower extremities are usually more involved than the upper ones. Sometimes the disease produces a polyneuropathy which may mimic the clinical picture seen in infectious or metabolic polyneuropathy. Cranial nerve involvement has been observed. The facial nerve is most frequently affected.

Although the neurologic complications of polyarteritis nodosa are usually considered to be primarily those of the peripheral nervous system, cerebral infarction and hemorrhage have been reported. Also, since one of the common effects of the disease is hypertension, any of the neurologic complications of that state, such as hypertensive encephalopathy and cerebral hemorrhage, may be encountered. Roger[36] suspects that polyarteritis nodosa may also be associated with a metabolic muscular degeneration, producing a pathologic picture similar to that of interstitial myositis.

Thrombotic Thrombocytopenic Purpura.—A majority of patients with this rare collagen disease present neurologic symptoms. These symptoms are secondary to involvement of the intima and subintima of the smaller blood vessels, particularly the arteriolocapillary junction. The neurologic manifestations may be protean. Convulsions, paralysis, coma, delirium, and encephalitic-like syndromes have been described, as well as evidence of involvement of the spinal cord and peripheral nerves.

From a neurologic viewpoint the treatment of collagen diseases is unsatisfactory. Steroid therapy may produce a temporary remission in the progression of systemic lupus erythematosus and polyarteritis nodosa. However, the large doses of steroids required may in themselves produce convulsions, confusional psychotic states, and muscular weakness. No treatment for thrombotic thrombocytopenic purpura is as yet known.

Subarachnoid Hemorrhage

The improvement in technics and the wider utilization of angiography has led to better definition of the background of subarachnoid hemorrhage. It has become easier to determine whether the bleeding has occurred from an aneurysm, congenital vascular anomaly, neoplasm, and so forth.

Diagnosis.—Although diagnostic methods have improved, many questions about clinical management of such cases remain in debate. There are physicians who recommend angiography immediately after the hemorrhage has occurred and those who prefer to wait for varying periods of time. Still other physicians feel that if it can be reasonably established by clinical observation that the bleeding results from an aneurysm, angiography is only an academic process carrying with it a potential risk.

Treatment.—If an aneurysm has been defined, considerable difference of opinion still remains as to what should be done about it. One school of thought holds to the view that nothing beyond absolute bed rest for a minimum of four to five weeks is valuable. Some feel that artificial hypotension maintained for a long period of time is the treatment of choice. Others believe that ligation of the internal or common carotid artery will diminish the pressure against the weakened arterial segment and thereby avert the frequent recurrence of hemorrhage. Still others maintain that if the aneurysm is approachable surgically, direct intervention, possibly with hypothermic technics, is the best solution.

That such diversity of opinion exists is eloquent testimony that the major problem that besets all evaluation of the therapy of vascular disease of the nervous system is that the natural history of the disease and its correlation with the many complex factors that may affect it is not well known. To some extent this reflects the lack of a central pool of information gathered under similar criteria of evaluation. The National Institutes of Health has recently undertaken a nationwide project in which different centers will collect data on various surgical and medical approaches in the treatment of subarachnoid hemorrhage. The central pool will attempt, by correlating this information, to establish a firmer basis to the knowledge of the natural history, diagnosis, and therapy of the conditions that produce subarachnoid hemorrhage.

Intracranial Angiomas

In the past decade increasing clinical awareness and the widespread diagnostic use of angiography have added much information about congenital vascular malformations. Their initial symptoms usually appear in the third decade. In Paterson and McKissock's[37] study of 110 cases, 70 per cent had their first symptoms before the age of thirty. Subarachnoid hemorrhages were the initial manifestations in 38 per cent, 29 per cent had epileptic seizures as the initial component, and 15 per cent had periodic migrainous headaches as their first symptoms. Although intracranial angiomas are not true neoplasms, they tend to increase in size, possibly by repetitive silent hemorrhage, thrombosis, and revascularization. They may sometimes clinically mimic neoplasms. Thus, some intracranial angiomas may produce focal seizures and a steady progressive hemiparesis or, if in the posterior fossa, may effect an obstructive hydrocephalus.

Diagnosis.—The diagnosis is made essentially by angiography. About one fourth of these cases show calcification on plain skull x-ray, and in about one-third a bruit can be heard. However, since bruit and calcification are present in other lesions, such as neoplasms, the diagnosis can only be established by angiographic visualization.

Treatment.—As in intracranial aneurysms, there is controversy over whether medical or surgical approaches are indicated in the treatment of intracranial angiomas. Olivecrona and Riives[38] originally were pessimistic about the prognosis if surgical intervention was not the form of treatment. They felt that most, if not all, of these patients ultimately either become severely disabled or die. Svien and coworkers,[39] on the other hand, feel that present data indicate that when operative mortality and morbidity and long-term success are considered, the natural course of the untreated disease offers just as good a prognosis. Paterson and McKissock[37] are of the opinion that if total excision is possible such a procedure is well worth attempting. Hayne and coworkers[40] also advocate surgery. There is some evidence that clipping of the vessels which feed into the malformation sometimes is of value. Ligation of the ipsilateral carotid artery seems to be ineffective. X-ray treatment has been completely disappointing.

At present it appears that progress in the treatment of intracranial angiomas depends on further improvement in surgical technics and more adequate criteria in the selection of cases for operative intervention.

Other Disease Entities

Segmental Thrombo-obliterative Disease of Aortic Arch Branches.—This rare condition is also known as pulseless disease, Takayasus' disease, and Martorell's syndrome. Its cause is unknown. Possibly it is one of the collagen diseases. Histologically there is intimal proliferation and fibroblastic adventitial and medial changes in the proximal segments of one or more of the major arteries branching off the aortic arch. Normal tissue is found, characteristically, both above and below the affected segment. When the carotid arteries are involved, a large variety of neurologic disturbances reflecting cerebral vascular insufficiency may be produced. These may range from headache to paralysis, seizures, blindness, and organic mental syndromes. Some success has been reported occurring after thromboendarterectomy or by-pass operations.[41]

Temporal Arteritis.—In 1932 Horton, Magath, and Brown[42] reported on a previously undescribed arteritis affecting the temporal vessels. Since then it has been recognized that temporal arteritis as such is only a local manifestation of a systemic vascular disease.[43] The pathology of the condition is that of a specific, nonsuppurative, granulomatous arteritis, characterized by destruction of elastic fibers and the presence of many multinucleated giant cells. Intimal proliferation often results in organized thrombosis. Although the temporal and retinal arteries are most frequently affected, other arteries, such as the coronary arteries, cerebral arteries, and the aorta, have been found to be affected.

In its usual form the disease involves individuals above the age of fifty-five. Its early manifestations include unilateral temporoparietal headache. Besides the headache there may be pain on chewing, tenderness and swelling of the temporal arteries, night sweats, and muscle pain. Mild anemia is often present, and the sedimentation rate is usually elevated. Over 50 per cent of patients develop ocular involvement. In Horton's[44] series 21 individuals developed a bilateral vision loss and 11 had unilateral involvement. Treatment with ACTH and cortisone has been effective, but biopsy alone, curiously, sometimes arrests the disease.

Hypertensive Encephalopathy.—The pathogenesis of hypertensive encephalopathy still remains obscure. In one hypothesis that seems promising, advanced by Byrom,[45] the condition is viewed as one of acute cerebral ischemia mediated by arteriolar constriction. This condition may be the result either of the Bayliss effect, that is to say, the stretch response of arterioles to intraluminal pressure, or may be an effect secondary to an unknown metabolic element. This ischemia first leads to neuronal paralysis and then to infarction and edema. He was able to reverse these processes in hypertensive rats by lowering the blood pressure.

From a clinical viewpoint very considerable progress has been made in the treatment of hypertensive encephalopathy. The increasing efficacy of hypotensive drugs has led to a marked decrease in the incidence, duration, and severity of hypertensive encephalopathy crises.

Angiography

Refinements of technics and increasing experience with the relative safety of angiographic procedures has led to their broader use as diagnostic aids. Originally thought to be hazardous procedures, to be used only in rare situations, they have now become acceptable diagnostic methods.

Segelov[46] has reported that he performed, without any complications, 660 angiograms in 400 patients. He emphasizes that 8 of these patients were over seventy years old and that intravenous anesthesia was used in 206 cases. In our experience at the Mount Sinai Hospital as reported by Coddon and Krieger,[47] 17 per cent of 483 patients showed transient complications following angiography. A complication was defined as any deleterious change occurring in the first twenty-four hours after the procedure. However, only 8 per cent had any permanent complication involving the nervous system. There was only 1 death directly related to angiography. It is significant that 102 of the 483 patients were over the age of sixty and that the presence of systemic hypertension or systemic arteriosclerosis seemingly had little effect on the incidence of complications.

Although carotid angiography has become a relatively common procedure in this country in the past five years, vertebral angiography (to outline the posterior circulation) has only recently been generally used. To some degree this is a reflection of past difficulties in establishing a safe and effective technic. In the past two years at Mount Sinai Hospital we have adopted Lindgren's[48] technic and have done 106 successful vertebral artery injections with 11 minor transient and 2 permanent complications.

The possible late complications of angiography still are not well known. Crawford[49] studied the carotid arteries in 75 subjects in whom angiography had been done from two hours to eight months prior to death. He reported that scarring takes place around the needle tract by the twenty-eighth day, but that even after eight months there was no evidence of reconstitution of the media or the elastic lamina of the artery. Mural thrombosis was frequent, and thrombotic occlusion was present in 4 cases. One patient had an embolic occlusion of the basilar artery, and 5 patients had multiple cerebral infarcts. Such a report brings up the disturbing question of whether needle punctures of a major artery may not produce thrombosis or embolization at an undetermined time after angiography. At present there is no adequate answer. Such data can only act as a caution against the indiscriminate use of angiographic procedures but cannot outweigh the immediately useful information obtained in selected cases.

INTRAVENOUS INTRACRANIAL ANGIOGRAPHY.—A major handicap in angiographic diagnosis has been the anatomic fact that if intra-arterial technics are used, a complete survey of brain circulation requires at least three separate procedures—injections into both carotid arteries and at least one vertebral artery. Viallet *et al.*[50] have tried to circumvent this difficulty by developing a technic of intravenous injection. They report that injections of radio-opaque material into the antecubital vein permits outlining of the total cerebral circulation in from five to fifteen seconds. We have attempted to reproduce their results in adults, but with indifferent success. We have experienced difficulty in timing the intracranial arrival of the radio-opaque substance. Even when this difficulty has not been present, the quality of definition of the outlined vasculature has been, for the most part, inferior. However, we have been uniformly and gratifyingly successful in outlining arteriovenous anomalies and hemangiomas by this method.

The technic of intravenous intracranial angiography has been adapted by Pheline and coworkers[51] for the study of neurologic diseases in children. He reports its successful use in 35 patients ranging in age from several months to fourteen years. These procedures were done on an ambulatory basis in the outpatient department. In his report he points out that such clinical conditions as diffuse cerebral atrophy, unilateral cerebral atrophy, and hydrocephalus have been diagnosed by this method. He also describes a syndrome of the slowing of the cerebral circulation. This syndrome is characterized clinically by intellectual retardation, fluctuating focal neurologic signs, and episodic coma states. Angiographically the diagnosis is indicated by an unusual duration of the arterial phase, which has been observed to last as long as eight seconds in these children.

It is probable that further advances in radiologic technics, such as the combined use of intensifying screens and x-ray movies, will increase the usefulness of these angiographic technics.

TRANSVERSE MYELOPATHY FOLLOWING AORTOGRAPHY.—Some of the complications that have followed angiography have been the result of a toxic or sensitivity reaction of the central nervous system to the radio-opaque material injected. This reaction, unfortunately, has been dramatically evidenced in a few patients who have developed a transverse myelopathy following aortography. Autopsy studies have shown degeneration of the anterior and lateral funiculi of the cord but have repeatedly failed to demonstrate any thrombosis of the lumbar or anterior spinal arteries. It is probable that this complication has an anatomic correlate. The arterial system of the spinal cord is functionally an end-arterial one. The current technics of aortography may, under certain circumstances, force radio-opaque oil in high concentration into one of the radicular lumbar or lower thoracic arteries that form the anterior spinal artery chain. The end-artery system then precludes adequate dilution. Although the complication is not very common, its severity has led to some hesitancy about further use of diagnostic aortography.[52]

Conclusion

Although the vessels of the central nervous system differ in some anatomic and physiologic aspects from the peripheral vasculature, they are still in large measure subject to the same systemic processes. Major medical problems, such as arteriolosclerosis, atherosclerosis, hypertension, diabetes, and aging processes, which affect the entire vasculature, also affect that of the central nervous system. As progress is made in understanding the pathophysiology of these conditions, cerebrovascular disease will become less of a problem. Ultimately these diseases, to a large degree, may become preventable.

In the meantime, since at this time they are not yet preventable, pragmatic considerations demand more accurate methods of diagnosis, prognosis, and treatment. A major prerequisite for progress is the detailed clarification of the phenomenology of these diseases.

The complexity of factors that play a role in cerebrovascular disease is staggering. Interrelationships between such obvious elements as age, sex, cardiac status, atherosclerosis, arteriosclerosis, lipid metabolism, emotional lability, and hormonal patterns must all be clarified. Only after such information is known can there be a proper evaluation of therapy.

What is required, obviously, is patient, dispassionate collection and correlation of facts. It is possible, because of the enormous number of variables, that such acquisition of data and meaningful correlations may be feasible only under the conditions of a series of unified nationwide projects.

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Protective Devices Reduce Radiation Exposure

A group of protective devices which sharply reduce radiation exposure normally occurring in chest x-ray examination with minifilm (miniature x-ray film) units has been developed by the State Health Department's Bureau of Tuberculosis Case Finding. The protective devices consist of rectangular diaphragms which are placed over the tube outlet, 2.5 mm. of aluminum used for filtration of the x-rays, and protective lead aprons which are suspended from the screen.

Dr. Herman E. Hilleboe, State Health Commissioner, said that previous to use of the protective devices, the average gonadal dose from chest x-ray films with a minifilm unit was 5 milliroentgens. By using the new protective devices, the average dose is cut to 0.4 milliroentgens.

The State Health Commissioner said that all hospitals in New York State using State Health Department equipment now have the protective devices for their minifilm units.

CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and*
WILLIAM B. OBER, M.D.

OCTOBER 29, 1958

Discussed by THOMAS N. SILVERBERG, M.D.

Case History

DR. HENRY H. MURPHY: On September 2, 1958, a forty-two-year-old housewife was admitted to Knickerbocker Hospital complaining of recurrent vomiting, excessive thirst, frequent urination, constipation, headache, nervousness, easy fatiguability, a 30-pound weight loss, pain in the left buttock and both legs, and swollen ankles of variable duration.

A chronologic medical history revealed that the patient's initial continuing illness began five years prior to admission when she experienced the first of many episodes of vomiting. These appeared to arise from a variety of causes. Although the patient had a distinct fatty food intolerance and roentgenologically demonstrated cholelithiasis, she did not respond to a low-fat diet and had frequent bouts of emesis for no apparent cause as well as many associated with nervousness and/or tension headaches. For approximately four years some of these attacks had occurred in conjunction with severe epigastric burning and were said to be at times productive of coffee ground material. Melena, however, was denied, and a gastrointestinal series was said to have given normal results.

A year or so later the patient developed yet another chronic problem—an intermittent sharp pain in her left leg with sciatic-like radiation. Although troublesome, this pain had not been of sufficient intensity or duration to require more than simple rest and analgesics, and the patient had neither been hospitalized nor x-rayed.

In March of 1958 the patient had all her teeth extracted because of multiple abscesses. She stated on admission that she had suffered multiple ills ever since this was done. Prominent among these were increased vomiting, anorexia, and a 30-pound weight loss. Attendant thereon were weakness, fatigue, increased nervousness, and more frequent attacks of abdominal pain. She also noted both polydipsia and polyuria. She developed pain of increasing severity in the left hip, left buttock, and leg. This pain was not described well, but it was ascertained that it differed somewhat in distribution from her former complaints and was much more severe. As a result of these combined complaints, she was hospitalized at another hospital.

Physical examination is reported to have revealed a thin, pale woman complaining of pain in her left hip and gluteal area. Her blood pressure was 100/70 and her heart rate regular. There were no abnormal findings in the head, neck, or cardiopulmonary system. The abdomen was diffusely tender but no masses could be felt. There were a few shotty inguinal lymph nodes. Vaginal examination showed no abnormality of the uterus but there seemed to be a firm right paravaginal mass. This could also be felt through the rectum, and it appeared that the vaginal wall was somewhat infiltrated. The extremities were unremarkable except as already noted.

Laboratory study revealed a hemoglobin of 10 Gm. with a hematocrit of 30. The urine was negative except for an occasional trace of albumin. A chest x-ray revealed no abnormalities. X-rays of the lumbosacral spine revealed a loss of lumbar lordosis and spurring at the margins of the lumbar bodies. The intervertebral spaces were normal. There were calcifications in the wall of the abdominal aorta and there was a suggestion of a questionable mass in the right side of the pelvis. A Graham test revealed the gallbladder to concentrate the dye well and to contain small radiolucent stones. A gastrointestinal series revealed the esophagus to be normal during fluoroscopy. The gastric rugae were very coarse, as were the mucosal markings in the duodenum. There appeared to be a tiny ulcer crater on the lesser curvature of the stomach at the incisura. A small bowel study revealed the stomach to empty in three hours and the head of the meal to be in the lower ileum. There was a coarsening of the mucosal pattern in the jejunum. A barium enema revealed the colon to fill without defect. The terminal ileum filled and appeared normal.

The patient's course was afebrile, and the pain in her left hip, buttock, and leg disappeared on bed rest. An exploratory laparotomy was advised. This was delayed, and after several weeks the patient was transferred to Knickerbocker Hospital for re-evaluation. Between hospitalizations the patient developed extreme aching pain in the left thigh and the right leg from knee to ankle, which increased in severity so that she was unable to walk. Shortly thereafter she developed marked pretibial and ankle edema bilaterally and noted the onset of nocturia and urgency. No other significant history was elicited.

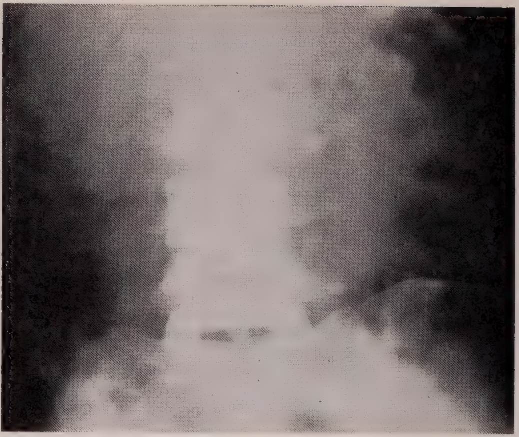

FIG. 1. Flat film of abdomen showing obliteration of the left psoas shadow and renal outline.

Physical examination revealed a chronically ill, malnourished female complaining of pain in both legs. Temperature, blood pressure, and respiratory and pulse rates were normal, as were the examination findings of the head, neck, thorax, and lungs. The heart was not enlarged, but a soft, blowing apical systolic murmur was present. The abdomen was extremely tender. Although it was not rigid and was without rebound, no organs or masses could be felt. Neurologic examination revealed accentuated reflexes without any other abnormality. The extremities were edema free. Lasègue's sign was positive bilaterally. Pelvic examination findings were as previously described. The uterus was without abnormality, and the cervix was freely movable without evidence of induration or new growth; the mucosa was intact. An additional finding of induration in the left side of the parametrial region was described.

Laboratory studies revealed the hemoglobin and urine to be unchanged. The sedimentation rate was 56 mm. per hour, nonprotein nitrogen 46 mg. per 100 ml., creatinine 2.2 mg. per 100 ml., serum electrolytes normal, and the alkaline phos-

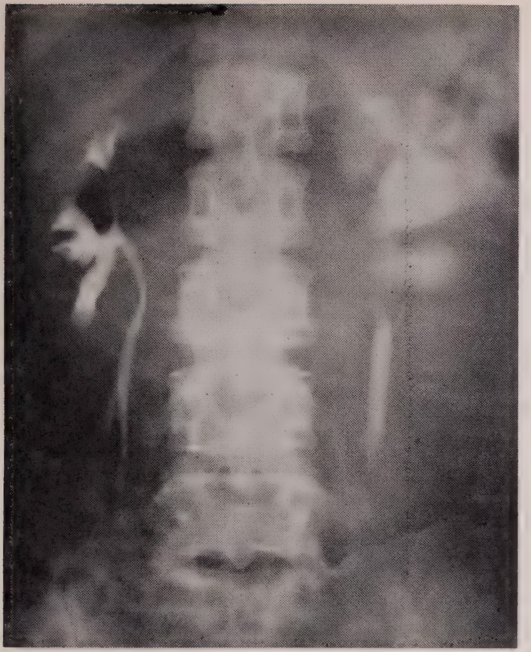

FIG. 2. Retrograde pyelogram showing normal collecting system on the right and dilatation of the left ureter, pelvis, and calyces due to extrinsic pressure.

phatase 3.4 Bodansky units. The total protein was 5 Gm. per 100 ml., with 4 Gm. albumin and 1 Gm. globulin.

An intravenous pyelogram showed the right psoas shadow to be faintly visualized, while the left was obscured on all films (Fig. 1). Serial films showed poor concentration of dye bilaterally. Although the right collecting system could be faintly visualized, at no time could the left collecting system be seen. A retrograde pyelogram revealed a normal right kidney and ureter; however, the left kidney revealed striking hydronephrotic changes. Both psoas shadows were indistinct, and only the upper portion of the left ureter was visualized (Fig. 2). This was felt to represent an obstructive element in the region of the ureteropelvic junction. Cystoscopy done at the time of pyelography revealed evidence of ureterectasis, thought to be due to extrinsic pressure.

A dilatation and curettage was performed with negative results. However, with the patient fully anesthesized, the presence of an ill-defined left periumbilical mass was noted. As a consequence, an exploratory laparotomy was performed on the eighth hospital day.

Discussion

DR. THOMAS N. SILVERBERG: Thinking over the facts of the case, it struck me that it offers an instance of a particular kind of problem that comes up in medicine time and time again. The type of case that this represents seems to me to be one in which it may not be possible to make an exact and rigid anatomic or physiologic diagnosis that will pinpoint the pathology and permit the attachment of a specific pathologic label. When we get little or no help from the laboratory and the problem is not self-evident, making a diagnosis depends on the many variables that we call clinical features and our efforts, in the main, depend on careful interpretation of the meaning and interrelationships of these clinical features. Points in the history, salient physical findings, and the patient's specific complaints must furnish the clues to the understanding of the disease process. However, this sort of diagnostic method is more apt to lead to an approximation than to a precise answer. This is not said in order to provide an apology or a defense; it is simply a statement of one of the realities that makes the practice and study of medicine so challenging.

Our patient this morning was a forty-two-year-old woman who had been suffering from a chronic upper gastrointestinal disorder for about five years prior to her hospitalization. The nature of her difficulty is not very clearly defined. Although she had demonstrable gallbladder disease, it would appear that her symptoms of epigastric pain and vomiting were often related more closely to emotional tensions and anxiety. The mention of occasional coffee-ground vomitus suggests that there may have been some more serious cause for her symptoms than a nervous stomach, but we are told that she had not had tarry stools and that x-ray findings of her upper gastrointestinal tract had been normal.

Four years before admission she had begun to experience attacks of sciatic-like pain in her left leg. These are said to have been intermittent and not particularly severe. In any event, no attempt was made at the time to look into the cause of her sciatica.

Beginning about six months before her admission the patient quite evidently became much more seriously ill. Her attacks of vomiting increased, and she became anorectic, lost 30 pounds in weight, noticed polyuria and polydipsia, and complained of weakness and pains in her abdomen and left hip and leg. She was first examined at another hospital, where she was noted to appear thin and pale. The only other positive physical finding mentioned was a firm mass in the right paravaginal area with induration of the right vaginal wall. She was found to be moderately anemic, but her urine, significantly, showed no abnormality beyond a trace of albumin. Many x-ray studies were done, and these will be reviewed a little later. In essence, they were reported to reveal negative chest findings, evidence of gallstones, a normal colon, coarsening of the gastric rugae and duodenal mucosa, and a small ulcer crater along the lesser curvature of the stomach. A film of the lower spine was described as showing loss of normal lumbar lordosis and suspicious evidence of a right-sided pelvic mass.

She evidently returned home and experienced some relief of the left leg pain by remaining in bed. However, in the few weeks before she was admitted to this hospital, she again developed severe pain in her left thigh and began to have pain in the right lower leg as well. In addition, she noticed swelling of both legs and ankles and complained of urgency and nocturia.

When examined here she appeared malnourished and chronically ill. A blowing systolic murmur was heard which probably had no significance except as either a functional murmur or a hemic murmur caused by the anemia. Her abdomen was apparently diffusely tender but without any signs suggestive of peritonitis. No organs or masses were palpable, and I assume, although this is not stated, that there was no evidence of ascites. On pelvic examination the paravaginal mass on the right side was again felt and the left side of the parametrium was thought to be indurated. The uterus and cervix, however, seemed to be normal. Later, when the patient underwent a dilatation and curettage under anesthesia, the abdominal wall was relaxed enough to permit palpation of an abdominal mass to the left of the umbilicus. There were no abnormal neurologic findings, and the extremities were described as normal.

The laboratory data are meager and unspectacular. A moderate and presumably normocytic anemia again was found. The urine was essentially normal, and both the creatinine and nonprotein nitrogen were slightly elevated. The sedimentation rate was considerably increased. Alkaline phosphatase, the albumin-globulin ratio, and electrolyte determinations were all normal. The x-ray survey was rounded out by a complete study of the urinary tract.

Dr. Joseph M. Moynahan: First, let us review the films taken at the time of her previous hospitalization elsewhere. The chest film shows the area to be negative. The upper gastrointestinal series shows some prominence and irregularity of the gastric rugae. The small shallow notch, which suggests an ulceration, is present on one film only and is not convincing. These findings are compatible with a gastritis or, less likely, a lymphoma involving the stomach. The small bowel films are not revealing. The barium enema also shows an essentially normal colon and terminal ileum. The gallbladder series shows a few small radiolucent calculi. The flat film of the abdomen taken here shows obliteration of the left psoas shadow and renal outline (Fig. 1). The intravenous pyelogram shows no visualization of the left kidney and very faint visualization of the collecting system on the right; the latter shows no gross abnormalities. A retrograde pyelogram reveals a normal right kidney and collecting system. There is evidence of left hydronephrosis and slight dilatation of the upper third of the ureter (Fig. 2). These findings raise the question of a retroperitoneal mass with secondary obstruction of the left urinary collecting system. The flattening of the normal lumbar lordosis as shown on a lateral film supports this idea; however, there is no scoliosis.

Dr. Silverberg: Sifting through the history, it seems clear that whatever the earlier gastrointestinal symptoms may have represented, our patient did not become seriously ill until about six months before admission. During this time she lost 30 pounds, became weak and malnourished, and complained principally of pain in the abdomen and incapacitating pain in both lower extremities. There were urinary symptoms that progressed, a transient episode of ankle edema, and severe anorexia accompanied by vomiting. The patient was never febrile, and there was no evidence of either infection or an underlying metabolic abnormality to explain her wealth of symptoms. The outstanding physical findings were the masses described as located in the left side of the parametrium, in the area adjacent to the right vaginal wall, and in the abdomen to the left of the umbilicus.

It seems to me that we are forced to the conclusion that the patient's disease was neoplastic and that its primary location was either in the lower adbomen or the pelvis. The discussion and differential diagnosis must involve consideration of this lower abdominal or pelvic mass and its relation to the various symptoms and signs. There are four major organ systems or areas which, to my mind, might conceivably have been the sources from which a malignancy with so many manifestations could have arisen: the lower gastrointestinal tract, the pelvic organs (exclusive of the bladder), the kidneys and ureters, and the retroperitoneal region.

I should like to consider neoplasm of the large bowel first, because it seems to me that this can be quickly eliminated. Although it is true that carcinoma of the colon and rectum has a high statistical frequency, that there is fair likelihood of its occurrence in a patient of this age, and that our patient had symptoms that certainly seem referable to her gastrointestinal tract (constipation, nausea, vomiting, and possibly her anorexia and weight loss), there is really very little else that would favor this diagnosis. Although these neoplasms can be locally highly invasive, it is worth noting that the closest neighboring structures, in females particularly the uterus, are the chief sites of prediliction for direct extension. Other and more frequent routes of spread are, of course, by way of the local lymphatics and blood stream. Metastases to the parametrium and vaginal wall without involvement of the uterus would be a little unusual. In the next place, it would be difficult to explain why the patient had such pains in her legs if the primary lesion were in the large bowel; similarly, in the absence of ascites it would be hard to account for the development of ankle and leg edema. Spread to involve the left ureter would be another rather unusual metastasis for such a tumor. Another, but not very telling, objection to a large bowel lesion is the absence of evidence of metastases to the liver, lungs, bones, or peritoneum. Finally, there is the most overwhelming objection of all, a completely normal x-ray study of the colon and rectum.

Primary malignancy of either the cervix or uterus seems to be excluded by both the normal physical examination findings and the negative results of curettage. However, neoplasms of the ovary, both primary and secondary, can present extremely complex and varied clinical syndromes and may be remarkably difficult to detect. We can, at least, begin by eliminating any of the so-called functioning tumors of the ovary on the grounds of having no evidence at all to support such a possibility.

Among all the primary tumors of the ovary, approximately 15 per cent are malignant. The peak age of incidence is in the sixth decade, and about half of the primary carcinomas of the ovary occur bilaterally. They have been classified in many different and confusing ways, but for our purposes it is sufficient to distinguish between the solid carcinomas, which are rare, and the cystic carcinomas (or cystadenocarcinomas), which are by far the most frequent. Most cases of ovarian carcinoma present lower abdominal pain and/or menstrual irregularities. Other symptoms are usually related to the weight and pressure of the tumor or to adhesions that may form with involved surfaces. It is important to note that the cystic type is frequently found to lie anterior to the uterus, a differential point from inflammatory cysts, which are usually either behind the uterus or fixed in the lateral pelvis. As far as spread is concerned, ovarian carcinoma may metastasize widely by lymphatic or vascular channels and may seed the peritoneum and its contents with multiple implants. It is worth mentioning that even when there are no other disseminated masses, nodules can be palpated in the cul-de-sac. Ascites is another important feature of primary ovarian cancer. As Curtis and Huffman[1] have said: "In general, it may be stated that the incidence of ascitic fluid runs more or less parallel with the menace; the more benign the growth, the less the frequency of ascites."

There are several reasons why I think the diagnosis of primary ovarian carcinoma is not tenable. The patient does not seem to have had any menstrual irregularities and did not complain of pain in the usual lower abdominal area. There was no mass in the expected location, no cul-de-sac implants, and no accumulation of ascitic fluid. Even if these obstacles are ignored, it is very difficult to understand why the patient should have had such persistent leg pain or why there should have been edema of the legs in the absence of ascites. A mass large enough to produce urinary symptoms, edema of the legs, and pain in the lower extremities should certainly have been large enough to have been felt on at least one of several pelvic examinations.

Secondary carcinoma of the ovary usually arises from a primary site in either the uterus or colon. Occasionally it may arrive at the ovary from some other more distant source. Since I have already excluded both the colon and the uterus from consideration, it may seem a waste of time to even bring up the possibility of some other and remoter primary site. However, there is one special type of secondary ovarian cancer that should be included in the picture and which, on first reading the case history, I had thought was quite plausible—perhaps because this is a clinicopathologic conference in which common sense sometimes goes by the board in favor of an eye-catching or bizarre diagnosis. To go back to the x-rays for a moment, on reading that an ulcer crater had been seen on the stomach, I thought of the possibility of a Krukenberg tumor. This is no more than a primary carcinoma of the stomach or colon which has spread to the ovary either by retrograde lymphatic drainage or by dissemination of malignant cells which have fallen free into the peritoneal cavity. It may involve one or both ovaries and commonly occurs with diffuse infiltrations. The normal contour of the ovaries is usually preserved, and ascites is a frequently associated feature. Unhappily, the more I examined the x-rays, the less sure I felt that there was even a gastric ulcer, let alone a convincing malignancy. Then, in view of the fact that any argument in favor of secondary ovarian carcinoma would face the same difficulties as those faced by a primary ovarian tumor, the case for the Krukenberg tumor seemed to collapse.

I should like to turn now to considering the diagnosis of a primary tumor of the kidney or ureter. Renal malignancies have been grouped by pathologists under four main headings. Adenocarcinoma (or hypernephroma) is by far the most common variety and makes up nearly 85 per cent of the total. Nephroblastoma (Wilms tumor) is confined almost exclusively to children and accounts for about 5 per cent of renal cancers. Epithelial tumors of the renal pelvis make up 7 per cent and sarcomas about 3 per cent. Almost 90 per cent of these malignancies occur in patients beyond the age of forty and mainly in the sixth and seventh decades. Curiously enough, as in so many of the more unpleasant afflictions, there is a predominant incidence among males of nearly 2:1.[2] Carcinoma of the ureter is a less common disease. It is, I believe, invariably a papillary epithelial carcinoma in type.

The symptoms of renal carcinoma have often been described in terms of a "classic triad": hematuria, flank pain, and a mass in the abdomen or flank. However, the "classic triad" is subject to a number of important reservations. Hematuria will usually not occur in peripheral lesions of the kidney parenchyma. Flank pain, which is thought to be due to stretching of the renal capsule, will not be produced by small lesions and not invariably by large ones. Also, a mass in the area of the kidneys obviously has to be rather large in order to be palpable. Other symptoms of renal cancer are due to pressure of an enlarging mass on neighboring structures, necrosis of the tumor, and sometimes hemorrhage. About 50 per cent of these growths involve the renal pelvis, and this usually is the prerequisite for hematuria. Carcinoma of the kidney tends to spread locally through the lymphatics of the renal bed, especially to the para-aortic nodes. There is a pronounced tendency for the tumor to invade the renal veins and create embolic foci; from these, distant metastases quite frequently occur early in the course of the disease. In one large series of 320 cases, metastases to the lungs occurred in 55.9 per cent, to the lymphatics in 38.1 per cent, to the liver in 35 per cent, and to bones in 33.1 per cent.[2] The bone lesions are generally osteolytic and appear most often in the spine, ribs, scapulae, pelvis, and long bones.

A renal neoplasm, since it might involve many retroperitoneal structures as well as press anteriorly on the abdominal viscera, could account for a good many of our patient's symptoms and signs: the abdominal mass, the pain in the abdomen and legs, perhaps the peripheral edema, and even the vague gastrointestinal symptoms. I do not see how this possibility can be definitely ruled out, and yet there are a number of reasons why I do not feel that this is the most acceptable diagnosis. It is, first of all, disturbing that of the "classic triad" of symptoms, two, hematuria and flank pain, are absent altogether, while the third is fulfilled by a mass in the abdomen but not in the flank. Second, we have every reason to think that in our patient there was pelvic invasion, and this is not characteristic of carcinoma of the kidney. In the third place, we have no indication of metastases to lungs, liver, bones or other distant organs, and such metastases, as we have said, occur with great frequency in renal cancer. Finally although the x-rays show us ureteral obstruction and a hydronephrotic left kidney, they offer no evidence of a defect or distortion within the kidney shadow that suggests the presence of a tumor mass.

After I had told him my impression of this case, Dr. Ober was kind enough to send me copies of the proceedings of two recent clinicopathologic conferences.[3,4] One concerns a carcinoma of the ureter which produced an obstructive hydronephrosis presenting itself as an abdominal mass without hematuria, pyuria, or flank pain immediately preceding it. The second concerns a patient with anorexia, weight loss, and nocturia who likewise had a large hydronephrotic kidney caused by an impacted ureteral stone. During the discussion, mention was made of still another patient, seen at the Massachusetts General Hospital, who had a huge abdominal mass—a hydronephrotic kidney—for three years without any urinary symptoms or signs at all. This one, too, was produced by a carcinoma of the ureter. Certainly this possibility should also be kept in mind, but it is open to the obvious objection that it does not explain why our patient had tumor invasion into the pelvis. One wonders how a carcinoma of the ureter could reach the parametrium without involving the urinary bladder. I am very grateful to Dr. Ober for providing these clues but I think that I will disregard them in this instance.

Primary tumors of the retroperitoneum have been studied very extensively by Dr. Arthur Purdy Stout, whose series from the Columbia University Laboratory of Surgical Pathology is the largest to date, the data from which is included in an Armed Forces Institute of Pathology fascicle.[5] In all, he had collected and analyzed 340 retroperitoneal tumors as of 1951. Of this total, 265 (78 per cent) were malignant and the remaining 75 benign. This poses the disconcerting prospect that of every 5 of these tumors 4 will turn out to be histologically malignant. Of the malignant tumors, 176, or almost exactly two-thirds, proved to be of connective tissue origin—sarcomas of various types. The commonest was the lymphosarcoma, and the next three most common in order of frequency were liposarcoma, leiomyosarcoma, and Hodgkin's disease.

These tumors may become quite large before causing symptoms. This may happen because the retroperitoneal space is itself extensive and because the structures within it and the adjacent organs are more easily displaced than actually invaded. The tumor may present itself as an abdominal mass of somewhat indefinite size, shape, and location and may be quite confusing to the examiner. Its symptoms may be general and nonspecific: weakness, weight loss, anemia, and fever of obscure origin. However, paresthesias and pain in the thighs and lower legs are often produced by pressure on and around the spine and by radicular involvement of spinal nerves. Blockage and thromboses of large veins, the iliac ones or inferior vena cava, may occur, leading to edema of the legs and, at times, to ascites. Quite frequently these tumors involve the ureters, causing hydronephrosis and eventual renal failure. They may spread to the mesentery, to the large or small bowel, or extend over the sacrum and invade the pelvis.

This summary of characteristics is consistent enough with all the features presented by our patient to sound almost like a recapitulation of her illness. To reconstruct the pathologic process, I am assuming that a retroperitoneal mass directly involved the nerve roots emerging from the lower spine and produced our patient's symptoms of sciatica. Similarly, this mass may be envisioned as obstructing major lower abdominal veins and causing edema of her feet and legs. In like fashion, it seems reasonable to assume that this mass must have encroached on the left ureter and produced the picture of hydronephrosis. The urinary and gastrointestinal symptoms are probably best explained as the results of increased intra-abdominal pressure which was due to the enlarging retroperitoneal mass.

I believe, then, that the patient had a tumor which arose in the retroperitoneal space and spread to the pelvis from there. I think that although the tumor involved the left ureter along with other retroperitoneal tissues, its origin was independent of the kidney or ureter. And if I haven't already pushed my luck too far, I will follow the odds one step further and guess, for this is only a statistical guess, that the tumor was a retroperitoneal sarcoma.

Dr. Kurt S. Nahm: When I examined this patient, I felt that I was able to discern a mass in the left upper abdominal region. Therefore, I asked both Dr. Decker and Dr. Bukanz to operate on the patient.

Dr. Michael S. Bruno: As noted at the other hospital, study of the patient revealed a possible ovarian mass. Here, following further studies, the case was found to be of considerably greater complexity. The curettage performed by Dr. Decker showed only proliferative endometrium and chronic cervicitis.

Dr. Joseph M. Andronaco: Dr. Bukanz requested that I see this patient after the intravenous pyelogram failed to demonstrate the left renal collecting system well. I therefore did a cystoscopy and retrograde pyelogram. The bladder was normal and without evidence of implants. The left ureteral orifice was patulous, and a hydronephrotic drip was present from the dilated left ureter. The films demonstrate the degree of urterectasia and the dilated pelvis. An indwelling catheter was left in place, and it is worthy of note that this relieved some of the patient's symptoms. On prior pelvic examination the uterus and adnexae were freely movable. An induration was present which seemed to extend up the anterior aspect of the sacrum. After the patient had received general anesthesia, it was possible to palpate an abdominal mass which extended into the left epigastrium.

Dr. Silverberg: To what may we attribute the symptoms of frequency, nocturia, and urgency? This does not look like a cord bladder due to involvement of sacral parasympathetic innervation.

Dr. Andronaco: Yes, these symptoms seem to be due to extrinsic pressure rather than to neurologic involvement. However, symptoms of this character may be due to a variety of causes.

Dr. Seymour L. Bukanz: The abdomen was opened through a 6-inch lower rectus incision. As the small bowel was being displaced upwards from the pelvis, about a quart of milky white fluid was noted in the pelvis. This was obviously chyle, which quickly pointed to the fact that our preoperative diagnosis was probably correct.

Careful exploration then revealed that the entire retroperitoneal space was covered by a sheath of firm tissue through which the large vessels could hardly be palpated. The uterus and adnexa were normal, and the mass that we were feeling in the right pelvis was this firm retroperitoneal tissue. Palpation of the upper abdomen through the lower left rectus incision revealed that the entire retroperitoneal space was filled with this firm tissue. It was more nodular and irregular in the left upper quadrant in the region of the pancreas, which accounted for the preoperative findings. The kidney could not be palpated through it. The presence of the chyle showed obvious occlusion of the lymph drainage of the abdomen with blockage of the cisterna chyli. A small nodule, about the size of a dime, on the dome of the left liver could be palpated but could not be visualized or biopsied through the left lower rectus incision.

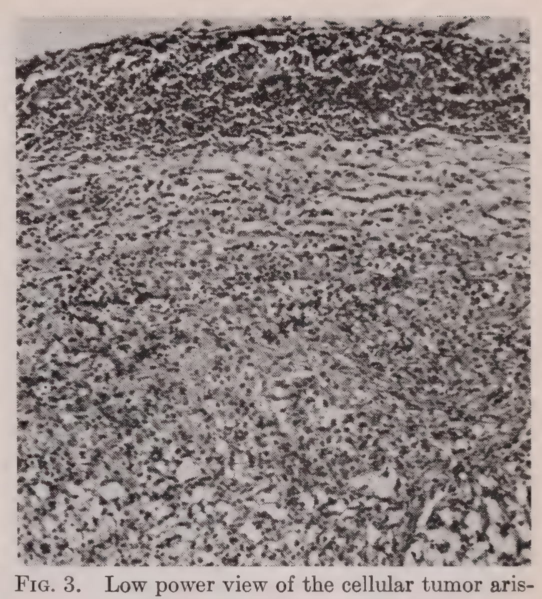

Fig. 3. Low power view of the cellular tumor arising in retroperitoneal lymph nodes.

The peritoneum was opened in two areas over the retroperitoneal tissue, the left upper quadrant and the right pelvis, and an adequate biopsy was taken. The tissue was firm and appeared to be of the consistency of a firm lymph node. Any surgical excision of this extensive mass was impossible, and, consequently, the wound was closed in the usual manner. The biopsy specimens and some of the chyle were sent to the laboratory for examination.

Dr. William B. Ober: Was it your impression that the mass was confluent and nodular or that it was a more diffuse type of induration?

Dr. Bukanz: The mass was nodular only to the left of the pancreas. Elsewhere it was solid and diffuse. One could not palpate the kidney through the tumor.

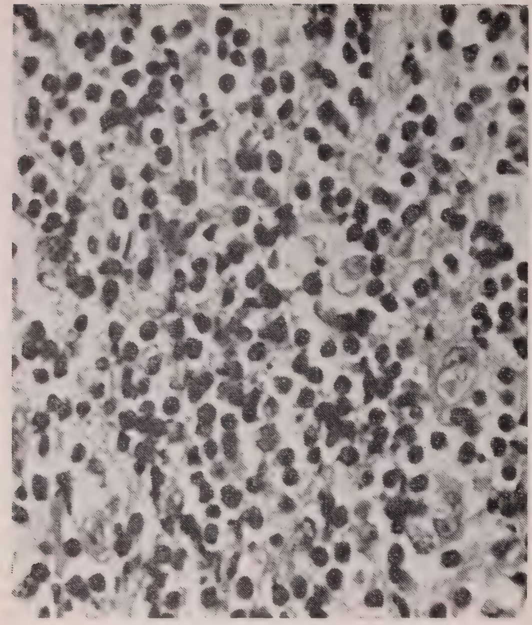

FIG. 4. High power view of the biopsy specimen, the predominating cell being a small neoplastic lymphoid cell (X 430).

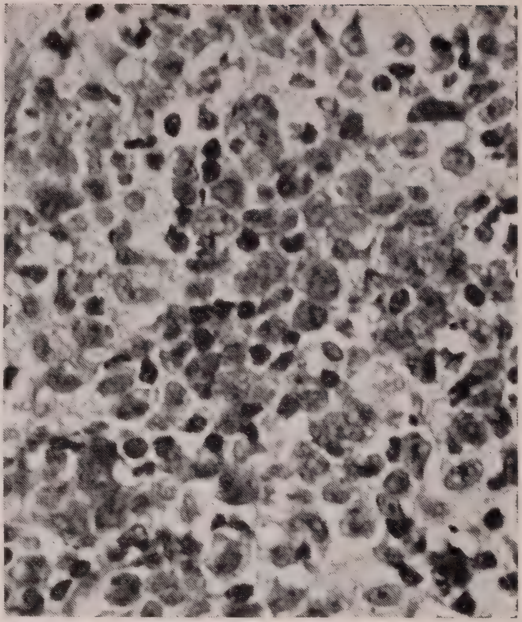

FIG. 5. High power view of the biopsy specimen in which accumulations of neoplastic cells identified as reticulum cells are found in scattered foci (X 430).

Diagnoses

Clinical:—*Retroperitoneal sarcoma.*

Dr. Silverberg:—*Retroperitoneal sarcoma*

Anatomic:—*Lymphosarcoma, retroperitoneum.*

Pathologic Report

DR. OBER: Biopsies of the retroperitoneal mass showed a malignant lymphoma arising in retroperitoneal lymph nodes (Fig. 3) composed chiefly of small dark cells with inconspicuous cytoplasm and no distinctive pattern (Fig. 4). Although the most frequent cell form is a neoplastic lymphocyte, warranting the label of lymphosarcoma, there were scattered areas, even in the small sample, of tumor which contained neoplastic reticulum cells (Fig. 5). Custer and Bernhard[6] have emphasized the fluidity of histologic pattern in malignant lymphomas. Although some contemporary writers consider this a radical (even heretical) concept, actually it reflects the attitude of traditional and conservative classical morphology, similar to the spirit in which T. S. Eliot wrote the following passage in "Ash Wednesday":

> Because I know that time is always time
> And place is always and only place
> And what is actual is actual only for one time
> And only for one place
> I rejoice that things are as they are.

It is important to keep in mind that the cytology of a malignant lymphoma is not invariably uniform and immutable in any given case and that a single biopsy affords us a view of only a small portion of a large tumor, seen at a given instant of time in its development.

With regard to the classification of retroperitoneal masses, Dr. Arthur Purdy Stout furnished the data for Dr. Lauren V. Ackerman's fascicle, Tumors of the Retroperitoneum, Mesentery, and Peritoneum.[5] Of a total of 340 retroperitoneal tumors, 265 (78 per cent) were malignant and 75 (22 per cent) were benign. If one recasts the data slightly, a table can be constructed (Table I).

It is evident that of the malignant re-

TABLE I.—TYPES OF MALIGNANT RETROPERITONEAL TUMORS AND THEIR INCIDENCE IN 340 CASES (MODIFIED FROM ACKERMAN[5])

Tumor	Cases		
	Number		Per Cent
Malignant lymphoma		77	29
Lymphosarcoma	51		
Hodgkin's disease	26		
Connective tissue sarcomas		99	37
Liposarcoma	35		
Leiomyosarcoma	29		
Hemangiopericytoma	18		
Rhabdomyosarcoma	5		
Mesenchymoma	5		
Fibrosarcoma	4		
Myxoma	3		
Neurogenic tumors		21	8
Sympathicoblastoma	18		
Malignant schwannoma	3		
Germ cell and embryonal tumors		33	12
Embryonal carcinoma	24		
Teratocarcinoma	6		
Chordoma	2		
Disgerminoma	1		
Miscellaneous		35	13
TOTAL		265	78

troperitoneal tumors, lymphosarcoma is numerically the most frequent type but that connective tissue sarcomas as a group are somewhat more frequent than malignant lymphomas. However, there is little to choose between these two classes on a statistical basis; the clinical pictures are comparable. In this patient there was no peripheral lymphadenopathy to point in the direction of a malignant lymphoma.

The presence of a moderate amount of chylous ascites is of interest. It is my impression that the chylous nature of many transudates in neoplastic disease would be more accurately appreciated were the fluid tested for fat more often. The full-blown milky appearance implies a relatively large amount of emulsified fat; smaller amounts would merely give a slight turbidity or an opalescence to the fluid. In practise, this is often overlooked. The most frequent cause of nontraumatic chylous ascites is involvement of the thoracic duct by neoplasm, particularly as it passes through the diaphragm. Malignant lymphoma is the tumor most likely to do this, but bronchogenic carcinoma is a close second, particularly in respect to chylothorax, but any neoplasm with extensive involvement of retroperitoneal lymph nodes and invasion of the thoracic duct can produce the same effect.[7]

DR. BRUNO: This is the third example of a retroperitoneal sarcoma that we have seen in this hospital during recent months. I think it is noteworthy that the retroperitoneum is a "silent area" for neoplasms. All 3 of these patients had rather protracted histories of nonspecific symptoms before a diagnosis was arrived at. In the other 2 cases the elements of obstructive uropathy were lacking. However, in all 3 cases the distribution of pain was bizarre and not easily ascribable to mischief in the retroperitoneum. I think that a good general maxim is that when the symptomatology is atypical, the diagnosis is apt to be unusual.

In general, the prognosis in lymphosarcoma is poor. Below the age of twenty the chance for long-term survival is small: above the age of forty it is appreciably greater. Cases which evolve into a leukemic pattern are uniformly fatal. Cases in which the lesion is confined to the cervical or axillary lymph nodes or which are localized to the mouth, nasopharynx, or gastrointestinal tract are more favorable sites than those in which the spleen, thyroid, mediastinum, retroperitoneum, or multiple groups of lymph nodes are involved.[8] In several large series of cases the over-all five-year survival runs as high as 15 per cent, and 10 per cent are living and free from evidence of disease.

This emphasizes that the diagnosis of malignant lymphoma need not be a death sentence.

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Snake Bite and Treatment

Victims of poisonous snake bites may increase in number and geographical distribution as camping and outdoor activities increase in popularity. Most cases of snake bite occur in the southern and southwestern states where there are more snakes and the conditions favor greater exposure. However, poisonous snakes are found in all states except Maine and Alaska.

Writing in the May 16 *Journal of the American Medical Association,* Drs. Thomas McCreary and Harold Wurzel of Philadelphia told physicians that they must be prepared to treat poisonous snake bites. Estimates on the incidence of snake bite in this country range as high as 3,000 a year, but the death rate is low—perhaps 10 or 20 a year.

At least 35 species or subspecies of poisonous snakes are known in the United States. Most of these are pit vipers or Crotalidae, which include the many species of rattlers, the copperhead, and the cottonmouth or water moccasin. The coral snake, found in the southern states, is related to the cobra and is not a pit viper. The Crotalidae are generally nocturnal in their habits and are dangerous on land or water. They are not aggressive and strike usually only for food or in self-defense.

A number of factors affect the seriousness of a snake bite, the doctors said. Very young and very old persons are more susceptible to serious aftermath. A bite is less dangerous on an extremity than one near a vital organ.

The earlier treatment is started, the more effective it will be. Since most bites occur far from a doctor's office, the victim himself must apply the first aid. If he remains calm, he should have little trouble. The first step is usually the application of a tourniquet. The objective is to close off the superficial lymphatics to lessen the spread of the venom. Incision and suction at the bite site is used by many persons to remove large quantities of venom. If it is used, the incision need be made only to the depth of the subcutaneous tissues. As swelling extends beyond the site, short incisions may be made at the edge of the advancing swelling and suction applied over the incisions.

While many persons have survived without the use of antivenin, it should be given by a physician whenever there is any reason to believe that the bite is serious. The amount given may vary—a small person requires a large dose because the venom, distributed in a small volume, is less dilute.

The authors noted that snake bite is always a medical emergency and every victim should be hospitalized. The effects of snake bite may include blood coagulation difficulties, internal hemorrhage, vomiting, shock, and muscular twitching. Generally the patient is thought to be out of danger if he survives the first forty-eight hours.

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Out-of-Town Incidents

The following incidents were recently reported to the New York City Poison Control Center from out of town.

Incident 1

Toxic Agent	*Age*	*Sex*
Parathion	11 years	Male

This incident, reported by a physician from Mahopac, New York, resulted from exposure during a spraying operation, which began at 3:00 P.M. The first symptoms appeared at 6:45 P.M. The Poison Control Center was consulted, and atropine was recommended as a therapeutic agent.

The same advice and guidance relating to therapy was again provided to the inquiring physician at the hospital. On admission to the hospital, several hours following exposure, the patient was in critical condition, with marked dyspnea and orthopnea. There were also coarse muscular tremors, and the patient was comatose. Additional pertinent physical findings were pallor and a macular multiform skin rash which was present over the entire body. Bubbling rales were heard in both lung fields. Reflexes were symmetrically hyperactive; the patient had a positive reaction to the Babinski test and had ankle clonus. The pulse rate was 172 per minute, and the respirations were rapid (60 per minute). The blood pressure was also elevated (176/100).

The blood chemistry revealed the following: sodium 149.5 mEq. per liter, potassium 4.9 mEq. per liter, chloride 110 mEq. per liter, and carbon dioxide 22.2 mEq. per liter. The blood count and the differential showed white blood cells 18,100, with polymorphonuclears 80 per cent (6 per cent with band cells), lymphocytes 13 per cent, monocytes 1 per cent, and hemoglobin 12.6 Gm. per 100 cc. of blood. No test was done for Parathion, and, regrettably, no choline esterase determination was done. The latter determination is most essential in organic phosphate poisonings. The physician treating such cases is advised to consult a clinical manual for the proper taking and preservation of a blood sample for a subsequent choline esterase determination. The Division of Industrial Hygiene of the New York State Department of Labor is equipped to make this determination.

The only significant finding in the urine was a 4 plus sugar which disappeared prior to discharge. The treatment consisted of a total dose of 7.6 mg. of atropine intramuscularly administered over a period of two hours. After four days of hospitalization and additional supportive therapy the patient finally recovered.

The thoughtlessness of the farmer in permitting an eleven-year-old child to use this hazardous type of insecticide is highly regrettable and could easily have resulted in the loss of a life. Farmers must be alerted by the family physician not to permit children to handle these potentially hazardous substances. The rural physician may profitably engage in such educational activities.

Incidentally, the attending physician was very much impressed with the dramatic effect of atropine in the treatment of this patient. The Poison Control Center is also very grateful to the reporting physician for submitting a very detailed history of the incident. It is well to remind the practicing physician that there is in common usage a group of household insecticides composed of organic phosphates which are not normally a poisoning problem in the low concentrations used at present. These are mainly Malathion, Diazinon, and Dicapthon. The minor amounts usually ingested by children or inhaled during the ordinary household spraying exposure should not create the profound apprehension attached to the more toxic members, such as Parathion.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
"Pharaoh's Serpent"	2 1/2 years	Female

This incident was reported from New Jersey. The physician noted that this child likes to take pills found in old drawers. He reported that the child ingested only 1 pill of this product. Vomiting was induced with the aid of a finger. The vomiting continued for eight hours, at which time Thorazine was given as an antiemetic and the vomiting stopped promptly.

The physician may recall his childhood experience with "Pharaoh's Serpent," a Fourth of July delight, which when ignited produced voluminous coils of fluffy ash.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Lighter Fluid	1 1/2 years	Female

This incident, also reported by a physician from New Jersey, concerns a child who ingested an unknown amount of barbecue lighter fluid. She was taken to the hospital, where the only symptom on admission was a cough and gagging. Although vomiting did not occur, the patient was not lavaged. The patient was put in a croupette and treated with antibiotics after a diagnosis of aspiration pneumonia was made. The blood, with hemoglobin 9.2 Gm., showed a red cell count of 3,700,000 and a white cell count 16,000. The urine showed a trace of sugar with a 4 plus acetone. The chest x-ray revealed a bilateral basal pneumonitis which was thought to be on an aspiration basis. The patient remained in the hospital for five days and was then discharged as improved. When seen a month after discharge the patient offered no complaints and the pneumonitis had cleared up.

The physician should take cognizance of the myriad forms of household products in which gasoline or another light petroleum product is a constituent. As stated previously, on repeated occasions, the danger of pneumonitis lurks in lighter fluids, lubricating oils, household insecticides, furniture and floor polishes, sprays, and so forth.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Lighter Fluid	3 years	Female

This incident was also reported from New Jersey. No detailed account is available of the mode of occurrence, that is, where the child obtained the lighter fluid, except that according to the physician the housekeeper related that the child swallowed some charcoal lighter fluid. The child was taken to a hospital emergency room, where her stomach was lavaged with normal saline within fifteen minutes following ingestion. Since the child was asymptomatic, she was discharged after a short period of observation in the emergency room. It was subsequently ascertained that she had an elevated temperature, between 100 and 102 F., for three days in spite of alcoholic sponge therapy (applied at home). The elevated temperature was probably associated with a pulmonary infection.

These 2 case reports, relating to the ingestion of a similar product, again sharply indicate the diversity in the method of treatment at different institutions.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Whiskey	13 years	Male

This case was reported from Pearl River, New York. A thirteen-year-old boy ingested 5 "shots" (glasses of blended whiskey) within forty-five minutes "to see how I would feel." The parents were not at home at the time of occurrence. The child vomited spontaneously one hour after ingestion. He also had abdominal pains, nausea, diarrhea, and stupor. He was taken to the hospital, where his stomach was lavaged with sodium bicarbonate four hours following ingestion. On admission the pertinent symptoms were pulse rate 120, dilated pupils, and a nauseated and semistuporous condition. The patient was treated with sodium bicarbonate and caffeine sodium benzoate. After three days of hospitalization and supportive therapy the patient was discharged as improved.

Alcoholic beverages are available in many American homes. Most families do not mentally catalogue these products with household poisons, and they are thus easily accessible to children and other members of the household. The cooperation of the practicing physician is needed in alerting parents and adolescents to the potential dangers of alcoholic beverages and to employ the necessary safety precautions pertaining to their storage and handling.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
(Canned Freezing Mixture)	3 years	Male

This incident, reported from New Jersey, is related chiefly because of the mode of occurrence. The patient found a case of Skotch Ice in the garage. A group of older boys opened cans and everyone present had a drink. This particular child suffered no ill effects except for "a funny taste in the mouth."

This product, which has been involved in many incidents reported to this center, is packaged in a can similar in size and lithographic appearance to frozen orange juice cans. It is designed to be kept in the freezing compartment of the refrigerator and to be used as a coolant for picnic lunches. Fortunately, the contents in this particular instance consisted essentially of water with a fraction of a per cent of harmless alkaline rust inhibitor.

The ingestions of this product have frequently resulted in overtreatment.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Perphenazine	2 years	Male

This two-year-old child ingested four 8-mg. tablets of a tranquilizer-antiemetic. It is not known specifically how the child obtained the medication. Vomiting was induced five minutes after ingestion, and his stomach was lavaged with saline forty-five minutes after ingestion. On admission to the hospital the patient was comatose and had choking sensations. He was treated with oxygen and intravenous fluids as well as other supportive measures. After two days in the hospital the condition cleared except for slight grogginess on discharge.

The symptoms of Perphenazine overdosage are frequently very alarming to the practitioner as well as to the family. In the incidents reported to this center the outcome has always been favorable.

Attention is called to an interesting syndrome that occurred in a psychiatric patient after ingestion of this product, as reported in the January 15, 1959, issue of the JOURNAL. In a panel discussion on "Early Recognition of Psychiatric Conditions" the panelist relates: "A doctor called me and said, 'I have a patient with an acute hysteria. She won't talk; she says her jaw is dislocated, her tongue is sticking, and she is spitting all over the place. I would like to have you look at her right away.' I asked him if she was getting [Perphenazine]. He said, 'How did you know?' I told him that this happened, also, to a patient of mine." While we have encountered the tetanic-like symptoms in our reported cases, no mention has as yet been made of the sticking of the tongue or of the spitting. In a recently reported incident involving a child who was treated with 2 Perphenazine suppositories, alarming symptoms were also noted. These serious side-reactions should be considered in the choice of phenothiazine tranquillers in pediatric practice.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Horse Chestnuts	7 years	Female

This child ingested 2 horse chestnuts with no apparent ill effects. The symptoms which have been described as following poisoning with horse chestnuts are: inflammation of mucous membranes, vomiting, depression, stupor, loss of power to coordinate action of extremities, twitching of muscles, weakness, and possible paralysis due to the presence of glucosides.

It is reported that many children have been poisoned by eating the large nuts. In general, the experience of this center with reported ingestion of seeds, berries, and leaves (outside of mushrooms) has not produced noteworthy poisoning. Much of the literature on plants and seeds appears to be quite old and, unfortunately, not well documented by present standards. It would appear that because of this situation physicians may become unduly alarmed.

Where the ingestion is associated with intact seeds and berries, mild or no symptoms may be expected. A good example of a potentially harmful berry is the jequirty bean, which contains the poisonous protein abrin, the absorption of which may prove fatal to a child. On the other hand, many ingestions have occurred in which the seed passed intact.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Reserpine	21 months	Female

The patient ingested several 0.25 mg. tablets, the exact quantity unknown, at 1:00 P.M. She was taken to the emergency room of a hospital two hours later where her stomach was lavaged with saline. The child was observed in the emergency room for one hour; since she was asymptomatic, she was sent home. In the emergency room she was given a teaspoon of castor oil and 2 ounces of orange juice. One and one-half hours later the child began to become excessively drowsy, and she was again brought to the hospital in stuporous condition with twitching of the extremities. She was admitted to the inpatient service about five hours after ingestion. She remained in the hospital for four days, where she was observed and treated with intravenous fluids and supportive therapy. She finally made a complete recovery. All cases of reserpine ingestion by children reported to this center have had a favorable outcome.

(Number thirty-four in a series of Accidental Chemical Poisonings)

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ELIZABETH J. CRAWFORD, M.D.
LESTER C. MARK, M.D.
VALENTINO D. B. MAZZIA, M.D.
GEORGE WALLACE, M.D.

Cardiovascular Collapse During Cardiac Catheterization in a Child

CARDIAC catheterization has become an accepted diagnostic procedure for the evaluation of cardiac function and pathology. It is accomplished satisfactorily in the adult who can withstand the procedure with good cooperation. When cardiac catheterization is deemed advisable in a young child, however, a number of problems become involved.

Although the procedure is not too painful, it does require analgesia for the puncturing of the site at which the catheter is to be introduced in the arm vein. This can be accomplished by injection of a local analgesic drug. In the child, however, difficulties arise because he will move or cry. These are conditions which interfere with the performance of the procedure and in the evaluation of the results. To overcome these difficulties, the use of pharmacologic drugs that produce analgesia is resorted to. Since the procedure is carried out in a darkened room with the use of fluoroscopic control, it becomes necessary to limit the use of analgesic or anesthetic drugs to noninflammable ones.

The drugs so used should not produce cardiac depression or arterial hypotension since these effects would interfere with the test. In addition, some means of lighting should be made available so that the color of the patient's skin or mucous membranes can be observed in order to prevent cyanosis.

The following case report illustrates several difficulties that may arise when such measures are not carried out.

Discussed at a conference held at Bellevue Hospital, New York City, February 2, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

Case Report

A two-year-old little boy, weighing 12 Kg., had episodes of dyspnea. A roentgenogram of the chest showed an enlarged heart. Fluoroscopy demonstrated four-chamber enlargement with hilar dance, enlarged pulmonary arteries, and a prominent aortic knob. It was decided to further evaluate this child's cardiac condition by means of cardiac catheterization.

The child was sent to the cardiopulmonary laboratory without any sedation or premedication. There was a period of two and a half hours taken up in organizing the apparatus for recording and in preparing the necessary vein cutdowns. One per cent procaine was used for local analgesia. When all preparations had been completed, an attempt was made to advance the catheter into the right saphenous vein but the patient's movements hampered this. To overcome this difficulty the child was given 2 cc. of 1 per cent thiopental sodium by intravenous injection. Since the child's movements persisted, he was given an additional 3 cc. of the same solution intravenously and still another 3 cc. five minutes later, making a total dose of 8 cc., or 80 mg., of thiopental sodium. Shortly after the third dose the anesthetist became aware that the patient had ceased to breathe. An attempt was made to administer oxygen under positive pressure. The only face mask available was a large adult mask which afforded no fit. At the time that the patient had ceased to breathe it was noted that the patient's electrocardiogram was unchanged from its previous control pattern. While oxygen was being administered, the catheter was advanced further into the vein. It was noted then that the patient's jaws were tightly closed and that his skin was cyanotic. With difficulty, laryngoscopy was performed and a tube was inserted through the larynx into the trachea. The heart rate at this time was noted on the electrocardiogram to be 40 per minute with idioventricular rhythm. There was no palpable pulse. Now that oxygen was being delivered through the endotracheal tube, rhythmic manual pressure on the breathing bag was effective in raising the patient's chest and ventilating his lungs. However, cardiac arrest supervened. Thoracotomy and manual rhythmic cardiac contractions were performed. Within four minutes the electrocardiogram revealed reestablishment of a normal sinus rhythm, and the peripheral pulse could be palpated synchronously with manual cardiac contractions. Application of an electroencephalogram revealed a pattern of light anesthesia. The patient's chest was closed, and he was taken to the recovery room. The patient never regained consciousness. His temperature decreased to 32.7 C., and his respirations were irregular. A Bennett respirator was used to assist his breathing, but the patient's condition deteriorated rapidly and his electroencephalogram became flat and showed the brain to be nonfunctioning.

A postmortem examination was done which revealed atelectasis of all posterior lung segments and pulmonary edema. The congenital heart disease consisted of cor triatrium (all pulmonary veins drained into an accessory chamber at the base of the heart which emptied into a very small left atrium through a 1-cm. orifice).

Comment

This case illustrates a fatal outcome due to inadequate preparation for the management of a number of complications that could be expected to arise in the performance of cardiac catheterization in a child. Specifically, the inadequacies consisted of insufficient quiescence of the child, inadequate analgesia, lack of means of observation when the room is darkened, and lack of resuscitative equipment at hand.

The problem of quiescence in a small child is a difficult one. For a two-year-old to be separated from his parents and his usual environment after being starved for at least six hours and then brought to a strange-looking room which is then darkened is a frightening experience, even though the surrounding personnel may attempt to be cheerful and reassuring. One anesthesiologist has recommended small doses of 2 narcotics (Levo-Dromoran and Nisentil) combined with a respiratory stimulant (Lorfan) and a tranquilizer drug (Phenergan).[1] In addition, sodium thiopental is administered rectally at a dose calculated to produce a state of somnolence. For analgesia he recommends the use of some form of inhalation anesthetic agent in a light plane. This may represent the other extreme in the establishment of quiescence in a child. Many anesthesiologists believe that pharmacologic sedation in a child should be individualized and prefer a middle-course, with a barbiturate, such as Nembutal intramuscularly or Pentothal rectally, or a tranquilizer, such as Vistaril or Phenergan, in appropriate dosage.

For the analgesia that is required to introduce and pass the intravenous catheter, local analgesia at the point of insertion of the catheter may be the only thing necessary. If further analgesia should be required, the administration of nitrous oxide, in a 60 to 75 per cent concentration in oxygen, may be added.

Needless to say, suitable and adequate resuscitative equipment should be at hand at all times. Similarly, a small flashlight should be available for use when the room is darkened for fluoroscopy so that one may be able to observe the patient's color and to watch the flowmeters of the anesthetic machine.

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(*Number sixty-eight in a series of Clinical Anesthesia Conferences*)

Statistics on Tuberculosis in New York City

New York City, which has almost 5 per cent of this nation's population, last year accounted for 8.7 per cent of the new tuberculosis cases found throughout the continental United States. In addition, this city had 7 per cent of all the deaths attributed to tuberculosis throughout the country.

These statistics, compiled from reports received by the New York Tuberculosis and Health Association, show that TB is increasingly "an urban disease."

A total of 5,482 persons with previously undetected cases of TB was reported in New York City last year. Provisional figures for the nation as a whole showed 63,300 new active TB cases. The 833 persons who died from tuberculosis in this city last year compared to 11,950 for the nation as a whole.

As has been true for the past several years, Manhattan in 1958 had the highest number of patients with new TB cases—2,602—of any of the city's five boroughs. Another 1,501 new cases came from Brooklyn. A total of 751 was reported in the Bronx, Queens showed 559, and Richmond recorded 69.

CANCER ALERTS

A series of radio talks for the practitioner
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Diagnosis of Cancer of the Female Generative Tract

VIRGINIA K. PIERCE, M.D., NEW YORK CITY

(*From the Memorial Center for Cancer and Allied Diseases*)

Carcinoma of the cervical portion of the uterus is the most common malignant tumor of the female genitalia, the incidence being second only to breast cancer. Approximately 16,000 women develop this disease annually in the United States. Unfortunately, cervical carcinoma respects no age group, but it is most commonly encountered between the ages of thirty-five and fifty-five.

In this type of malignant tumor, early diagnosis yields the highest percentage of cures following proper therapy. The early signs and symptoms are abnormal vaginal discharge and irregular or prolonged vaginal bleeding. These presenting complaints warrant thorough examination before any type of therapy is advised. The presence of vaginal bleeding at the time of office visit is not to be considered a contraindication to pelvic examination and may actually be of aid in determining whether the bleeding is uterine or cervical in origin.

Examination includes internal and bimanual palpation, speculum exposure of the cervix, and rectal examination. A very early carcinoma of the cervix on speculum visualization may appear to be nothing more than a cervical erosion. The suspicious area should be wiped with a cotton-tipped applicator and a slide prepared for cytologic study. A final diagnosis must not be made on the smear result alone. A suspicious or positive smear report warrants biopsy. Numerous satisfactory instruments for punch biopsy and endometrial biopsy are available. Multiple areas of the cervix may be biopsied safely as an office procedure in one sitting. The small amount of bleeding that usually occurs following cervical biopsy may be controlled by a cotton tampon inserted snugly against the biopsy site. Cauterization of the cervix must never be considered until both smears and biopsies have been reported by the pathologist as showing no evidence of carcinoma. The combination of cytologic smears and multiple cervical biopsies will allow detection of the great majority of cervical carcinomas, even in the early stages. However, if symptoms persist even though the cervical biopsies and, later, endometrial biopsy with a

Novak curette have given negative results, a diagnostic dilatation and curettage is indicated in order to detect the rare instance of carcinoma arising in the endocervical canal.

Treatment of carcinoma of the cervix is highly successful in the early stages of the disease with reported cure rates ranging between 70 and 85 per cent. When the disease has progressed slightly beyond the cervix, the cure rate ranges from 30 to 50 per cent. If diagnosis or therapy is delayed until more extensive parametrial invasion has occurred, the cure rate is only 20 to 25 per cent. When the cancer has metastasized to lymph nodes in the pelvis, about 25 per cent of the patients may be cured.

After adequate therapy and apparent control of the cervical lesion, the patient must be observed carefully and examined at frequent intervals in order to detect possible recurrence. If local recurrences appear, the situation is still far from hopeless. Aggressive surgical treatment can still offer the patient a more than 25 per cent chance for cure, providing recurrence is still confined locally to the cervix. If radiation therapy was employed as the initial treatment, the procedure of choice in the presence of local recurrence is surgical excision of the uterus, tubes, ovaries, and upper portion of the vagina and systematic excision of all the pelvic lymph nodes and areolar tissues. Any surgical procedure less than this is inadequate. The two most important factors in the rate of cure are: (1) thorough examination for early detection of the primary lesion and (2) frequent post-therapy examinations to detect early recurrence.

Cancer of the uterine corpus is less frequent than cervical carcinoma and occurs more often in patients in the menopausal and postmenopausal age groups. The warning symptom is irregular vaginal bleeding or postmenopausal bleeding. This symptom should be considered to result from cancer until proved otherwise and should not be assumed to be an ordinary symptom of menopause. The diagnosis is based on either endometrial biopsy, as an office procedure with the Novak curette, or diagnostic dilatation and curettage. The smear test is not as reliable in carcinoma of the corpus as it is in the cervical neoplasms. Prompt therapy, which includes total hysterectomy, bilateral salpingo-oophorectomy, and wide pelvic lymph node dissection, offers a high incidence of cure in the early stages. Some surgeons prefer the use of intrauterine radium therapy six weeks prior to surgery but the advantage of this method is still questionable.

Malignant neoplasms of the ovary are extremely difficult to diagnose in the early stages inasmuch as the patient has no subjective symptoms warranting consultation. Unfortunately, most patients are unaware of the malady until abdominal distention due to ascites, low abdominal pain, nausea, emesis, obstipation, etc. are present. These usually are the signs and symptoms of advanced and probably incurable cancer. The hope for early detection and cure of ovarian cancer is based on routine pelvic examinations, advocated to be performed every six months in asymptomatic patients. In this manner the early enlargement of an ovary would be detected on bimanual palpation. An ovarian mass due to early carcinoma is usually quite firm and often feels lobulated on rectal examination. If there is a question of ovarian enlargement, the patient should be re-examined after two or three weeks, by preference immediately following an enema. If the mass is firm and has increased in size, surgery is to be advised. If on the initial examination, however, the mass is firm and larger than 6 cm. in diameter, surgery should be performed immediately rather than delayed for later re-evaluation. Since ovarian carcinoma is present in both ovaries in more than 50 per cent of cases, the pelvic findings of bilaterally enlarged firm ovaries warrant the recommendation of immediate surgical intervention. At laparotomy the entire mass is removed, great care being exercised not to rupture the capsule. After removal, the suspicious tumor is incised, and a frozen section biopsy is performed by the pathologist while the patient is in the operating room. If carcinoma is present, it is then necessary to complete the operation by removing the entire uterus, both tubes, and the opposite ovary. This is most important since it has been shown that microscopic metastases are frequently present in the uterus or opposite ovary although these organs appear grossly normal.

Carcinoma of the vulva is a disease of elderly women and often arises in patients with pre-existing leukoplakia and kraurosis. These patients should be examined at frequent intervals, and areas of ulceration should be excised and submitted for pathologic examination. If the area of leukoplakia is extensive, particularly if it is associated with pruritis, a simple vulvectomy is indicated. Any ulcerated lesion of an otherwise normal vulva warrants biopsy; if the area is small, the entire lesion should be excised for microscopic study. If the pathology report indicates the presence of invasive carcinoma, bilateral block excision of the inguinal nodes should be done in continuity with vulvectomy. In patients who are very old, debilitated, and with an extremely small primary lesion, the magnitude of the surgery should be modified and may be done in stages rather than in one sitting.

Conclusion

It should be re-emphasized that the prompt diagnosis and adequate treatment of carcinoma of the gynecologic tract in the early stages affords a high incidence of cure. Therefore, regardless of age, a complete gynecologic examination must be considered essential by any physician assuming the responsibility for the thorough clinical investigation of his patients.

444 East 68th Street

(Number twenty-seven in a series of Cancer Alerts)

Our family has produced an example of the Canute reversion complex. In the bath the other night my son, while dallying in the water, absentmindedly pulled out the plug. For some minutes he was too preoccupied to notice the departure of the water. Suddenly realizing his predicament he slid over to the end of the bath, glared down the drain, and yelled "Come back!"—*The Lancet, April 25, 1959*

CASE REPORT

Nephrectomy in Systemic Lupus Erythematosus Complicated by Pyelonephritis

JAMES W. HANWAY, M.D., DANIEL SCHMITT, M.D., AND MILES J. SCHWARTZ, M.D., NEW YORK CITY

(From the Department of Medicine, St. Luke's Hospital)

THE course of systemic lupus erythematosus is frequently complicated by infection. Indeed, secondary infection has been noted to be a significant cause of death in this disease. We have recently had the opportunity to observe 2 cases of systemic lupus erythematosus in which pyelonephritis secondary to obstructive uropathy necessitated nephrectomy.

Case Reports

CASE 1.—A fourteen-year-old Puerto-Rican-born schoolboy was admitted to St. Luke's Hospital on December 10, 1955, with a chief complaint of bilateral elbow pain of one day's duration. He had been well until three months prior to admission when he developed a nonproductive cough. Three weeks before admission he noted slight difficulty and discomfort in speaking and mild anorexia. On the day of admission he was seen by a doctor who made the diagnosis of tonsillitis and gave the patient some liquid medicine. The same day he vomited and developed a fever, bilateral elbow pain, and a rash on the legs.

The patient's past history included treatment for pleurisy five years before admission and for pneumonia three years prior to admission. One of the patient's siblings had had rheumatic fever.

Pertinent physical findings on admission were as follows: The patient was well developed and well nourished and weighed 130 pounds. He appeared to be acutely ill. His temperature was 100.2 F., pulse 88, respiratory rate 20, and blood pressure 110/70. His voice was hoarse. There were numerous 1 to 6 mm. purpuric lesions on the extremities, especially the lower legs. The tonsils were enlarged but not inflamed. Examination of the extremities revealed swelling of the right forearm. Tenderness was present over the right upper and lower arm; over the metacarpal-phalangeal joint of the right thumb; and over the left upper arm, thigh, calf, and sole.

Initial laboratory studies were as follows: Hemoglobin was 14.3 Gm. per cent, hematocrit was 47, platelet count was 276,000 per cu. mm., erythrocyte sedimentation rate (Wintrobe) was 24 mm. in one hour, the serum albumin was 4.4 Gm. per cent, and the globulin was 2.3 Gm. per cent. The Rumpel-Leede tourniquet test, venous clotting time, bleeding time, and prothrombin time showed normal findings. Other studies showing normal findings included typhoid, paratyphoid A and B, Brucella and Proteus OX-19 agglutinins, serology, electrocardiogram, and chest x-ray film. A throat culture grew group A beta hemolytic streptococcus and two blood cultures showed no growth, nor did thirteen additional blood cultures taken throughout the remainder of the patient's hospital course. A lupus erythematosus preparation was negative, as were eight subsequent lupus erythematosus preparations during the initial eight weeks. The admission white blood cell count was 9,150 per cu. mm. with 63 per cent neutrophils, 28 per cent lymphocytes, 4 per cent monocytes, and 5 per cent eosinophils, rising to 28,000 with 90 per cent neutrophils on the third day. Admission urinalysis was normal but four days later showed 2 plus albuminuria, 4 to 6 white blood cells, and 0 to 2 hyaline casts per high power field.

During the first forty-eight hours the patient's temperature rose to 103 F., and he developed swelling about the left wrist and an increase in the swelling and tenderness of the right arm. The purpuric lesions on the feet became confluent and petechiae were noted on the hard palate.

From the beginning the diagnoses considered included infectious disease and/or a collagen disease, allergic drug reaction, or a Schoenlein-Henoch syndrome. Therapy during the first week consisted of penicillin later replaced by tetracycline. ACTH gel, 40 mg. intramuscularly every twelve hours, was given from the fourth to the tenth days.

During the first week the patient demonstrated emotional instability; he was seen by a psychiatrist who made a diagnosis of simple schizophrenia. The patient frequently complained of abdominal pain and vomited several times. Lumbar puncture revealed no abnormalities. The hemoglobin dropped progressively to 7.6 Gm. per cent on the twelfth day at which time his red blood cell count was 2,520,000 per cu. mm., and the white blood cell count was 40,650 per cu. mm. with 92 per cent mature neutrophils and 2 per cent metamyelocytes. Reticulocyte count was 2.7 per cent, serum bilirubin 0.1 mg. per cent, and fecal urobilinogen 210 mg. per twenty-four hours (normal is 40 to 200 mg.). Direct Coomb's test gave negative findings as did daily stools for occult blood. Bone marrow aspiration disclosed hyperplasia of all elements.

On the tenth day the patient complained of chest pain and a pleural friction rub was heard on the left side. A chest x-ray film showed negative findings but x-ray films taken on the twelfth and thirteenth days showed an area of infiltration at the left base and then bilateral pleural effusions. A thoracentesis on the left side yielded 30 cc. of serosanguinous fluid which showed 100,000 red blood cells per cu. mm. and 40,000 white blood cells per cu. mm. with 95 per cent neutrophils; the fluid was sterile.

On the tenth and eleventh days a pericardial friction rub was heard. Electrocardiography revealed a sinus tachycardia and an elevation of the ST segment in standard lead I. Repeat electrocardiograms throughout the remainder of the hospital course showed intermittent sinus tachycardia as the only abnormality.

During the second hospital week the patient developed a progressive temperature rise. His illness appeared grave. A collagen disease appeared to be the most likely diagnosis, so prednisone, 10 mg. by mouth every six hours, was started on the twelfth day. In view of the possibility of infection, procaine penicillin was restarted at the same time; on the fourteenth day tetracycline was stopped and streptomycin, 1 Gm. per day, was added to the regimen. Streptomycin was continued until the sixty-third day.

During the first two months the patient remained acutely ill and unresponsive to all attempts at therapy. Prednisone dosage was gradually reduced and finally was discontinued on the fifty-fifth day. The patient lost 26 pounds. He ran a continuous low grade fever, the leukocytosis persisted, and the hemoglobin continued to fall: 3,000 cc. of whole blood were transfused during the period of a month. Because of the appearance of a heart murmur and subungual splinter hemorrhages, 12 million units of aqueous penicillin daily were added between the twenty-fifth and forty-eighth days without change in his status. Isoniazid was added during the sixth week.

Intravenous pyelography was performed on the forty-eighth day because of increasing proteinuria and pyuria. Rather marked caliectasis was noted on the right side with evidence of a block at the ureteropelvic junction; the left kidney and ureter appeared to be normal. Right retrograde pyelography was done four days later and demonstrated marked dilation of the right pelvis and calyceal system with narrowing and irregularity of the ureter proximally. Culture of the urine from the right ureter grew Pseudomonas aeruginosa. There was no growth of acid-fast bacilli after eight weeks. On the fifty-fifth day the patient developed right flank pain and tenderness and his temperature rose to 105.6 F.; his white blood cell count was 62,250 per cu. mm. with 94 per cent neutrophils. Prednisone was stopped and polymyxin, nitrofurantoin, and chloramphenicol were started. Two blood cultures showed negative findings. The temperature fell slowly.

On the sixtieth hospital day study showed the tenth lupus erythematosus preparation to be positive, and repeat preparations examined during the next forty-eight hours were also found to be positive. It thus seemed established that the patient had two diseases, active systemic lupus erythematosus and right hydronephrosis secondary to an obstructive ureteral lesion with superimposed Pseudomonas pyelonephritis; the urology consultant noted that the x-ray picture was compatible with tuberculosis of the right ureter and kidney. It was felt that the steriod therapy required to control the lupus was causing exacerbation of the renal infection. In view of the apparent obstructive nature of the renal disease it was decided to perform a right nephrectomy, even though the blood urea nitrogen varied between 13.7 and 29 mg. per cent; intravenous phenolsulfonphthalein excretion was diminished (13.4 per cent in fifteen minutes, 34.9 per cent in two hours); and the maximum specific gravity was 1.020, suggesting bilateral renal disease.

Right nephrectomy was performed on the sixty-eighth day. At operation no anatomic variant was seen to explain the ureteral narrowing. The kidney weighed 203 Gm. and its surface presented areas of punctate hemorrhage. Microscopically, there was marked fibrous thickening of the proximal ureter with mucosal ulceration and replacement by granulation tissue heavily infiltrated with inflammatory cells. Streaks of polymorphonuclear and mononuclear inflammatory infiltration were seen to run through the renal medulla with localized tubular destruction. A majority of the glomeruli were normal, but some were swollen and bloodless with endothelial proliferation, others had fibrotic or hyalinized tufts, and a few were completely hyalinized. The pathologic impression was: "probable focal embolic glomerulonephritis, and acute and chronic pyelonephritis and ureteritis." While no wire loop lesions pathognomonic of lupus nephritis were seen, the glomerular lesions found were similar to the predominate renal lesion found by Stickney and Keith[1] in 7 out of 15 patients dying of lupus erythematosus.

During the immediate postoperative course a pulsus alternans thought to be due to lupus myocarditis was observed. Prednisone was restarted and by the fourth postoperative day the patient was afebrile; his temperature remained normal. Prednisone was gradually withdrawn, and the patient was discharged on April 23, 1956, his one hundred thirty-fifth hospital day.

Repeat postoperative urinalyses demonstrated a maximum specific gravity of 1.012, a decrease in albuminuria, and minimal pyuria; urinalysis on the day of discharge was normal. The hemoglobin rose gradually to 13.6 Gm. per cent without specific therapy. The white blood cell count fell gradually and at the time of discharge was 6,300 per cu. mm. with 39 per cent neutrophils, 44 per cent lymphocytes, 11 per cent monocytes, 3 per cent eosinophils, and 3 per cent basophils. The erythrocyte sedimentation rate and blood urea nitrogen fell to normal, and a urea clearance test done just before discharge was normal. However, the intravenous phenolsulfonphthalein test at that time revealed only 6.8 per cent excretion in fifteen minutes, 31.8 per cent in two hours. A lupus erythematosus preparation two weeks before discharge gave negative findings.

The patient has been asymptomatic since discharge. When last seen, two years after discharge, the following laboratory studies were obtained: hemoglobin 13.2 Gm. per cent; hematocrit 41; and white blood cell count 7,850 with 41 per cent neutrophils, 41 per cent lymphocytes, 11 per cent monocytes, and 7 per cent eosinophils. Erythrocyte sedimentation rate (Wintrobe, corrected) was 21 mm. in one hour, blood urea nitrogen was 16.6 mg. per cent, serum albumin was 4.9 Gm. per cent, serum globulin was 1.9 Gm. per cent, and a cephalin flocculation test showed negative findings. Urine specific gravity (casual specimen) was 1.013; there was a trace of albumin and occasional white blood cells per high power field. An intravenous phenolsulfonphthalein test revealed 20.6 per cent excretion in fifteen minutes.

Case 2.—A thirty-seven-year-old white female was admitted to the private Urological Service on April 12, 1957, complaining of fever of two days duration. Since 1940 the patient had experienced repeated episodes of joint pains, fever, and general malaise. On several occasions during this period she was found to be anemic. In 1951, following a blood transfusion, the patient developed severe upper abdominal pain. An exploratory laparotomy was performed at another hospital but no cause for the pain was found. Abnormal liver chemistries without jaundice were noted in 1953 and the diagnosis of hepatitis was made. At that time the patient complained of colicky left flank pain which persisted; therefore, in September, 1956, a retrograde pyelogram was performed. A left renal calculus was found and in March, 1957, a left nephrolithotomy was performed. The patient was discharged home even though the wound failed to heal and a draining sinus remained in the left flank. She began to have severe fatigue, hematuria, and failed to gain weight. Two days prior to her admission to St. Luke's Hospital she developed fever with a shaking chill.

Pertinent physical findings were as follows: The patient appeared acutely and chronically ill with a temperature of 101.8 F., pulse 120, and blood pressure 125/70. A systolic murmur was heard in the pulmonic area and the abdomen revealed a partially healed draining wound in the left posterior flank. Laboratory findings were as follows: a urinalysis revealed a trace of albumin, one to five white blood cells per high power field, and one to five red blood cells per high power field. The hemoglobin was 9.5 Gm. per cent, the white blood cell count was 10,100 per cu. mm.; neutrophils were 84 per cent, lymphocytes 9 per cent, monocytes 2 per cent, eosinophils 4 per cent, and basophils 1 per cent; toxic granulation was noted; the reticulocyte count was 3.2 per cent; and the platelets were 214,000 per cu. mm. The thymol turbidity was 11.2 units, the cephalin flocculation was 4 plus, bilirubin was 0.5 mg. per cent, albumin was 3.5 Gm. per cent and globulin was 4.7 Gm. per cent, blood urea nitrogen was 17.8 mg. per cent, the lupus erythematosus preparation was strongly positive, the urine culture revealed Aerobacter aerogenes, and the sinus tract grew Proteus morgani. Examination of two blood cultures gave negative findings. An electrocardiogram showed sinus rhythm with inverted T waves in V4 and V6 and flat T waves in leads 1, 2, 3, and aVf. A chest x-ray film showed a normal condition. Intravenous pyelography revealed a normal right kidney but poor opacification of the inferior calyces of the left kidney with the dye passing by way of the sinus tract instead of by the ureter.

On the fifth hospital day exploration of the left nephrostomy sinus was done. Heavy scar tissue lined the sinus tract which on probing communicated with a cavity at the junction of the left renal pelvis and ureter. The ureter could not be identified. A Penrose drain was left in place.

Retrograde pyelography demonstrated free-flowing clear urine from the right ureter with good concentration of phenolsulfonphthalein dye in three minutes. The urine from the left ureter flowed slowly and was cloudy. Phenolsulfonphthalein dye excretion from the left kidney appeared in good concentration in the left flank sinus in five minutes.

During the first three weeks the sinus continued to drain and the patient had a low grade fever in spite of antibiotic therapy. For the first two weeks she was given penicillin and streptomycin to which novobiocin sodium was added during the second week. During the third week these antibiotics were discontinued and chloramphenicol and later tetracycline were substituted.

On the twenty-third day the drainage from the left flank stopped, the temperature rose to 104 F., and the patient looked more acutely ill. She was given chloramphenicol intramuscularly but two hours later the temperature rose to 106.2 F. and the blood pressure fell to 50/30. Norepinephrine in 5 per cent dextrose and 1 to 3 parts normal saline was started. A catheter was placed in the left ureter in an attempt to facilitate drainage from the left kidney. The patient was semicomatose, disoriented, and complaining of generalized pains. She was placed in an oxygen tent and had to be restrained. Chloramphenicol, novobiocin sodium, and tetracycline were given and the norepinephrine was continued in order to maintain blood pressure. Eighteen hours later hydrocortisone was added to the infusion and eight hours thereafter the temperature had dropped from 104.2 F. to 100 F. and the blood pressure could be maintained without the norepinephrine. The patient's urinary output during this twenty-four-hour period was only 370 cc. During the evening of the twenty-fourth day the left flank sinus began to drain copious amounts of urine. Two days following the onset of the oliguria the blood urea nitrogen rose to 48 mg. per cent. Intravenous fluids and antibiotics were continued and hydrocortisone was given in decreasing amounts. The patient improved on this therapy and the blood urea nitrogen dropped to 19 mg. per cent.

On the thirtieth day an intracapsular left nephrectomy was performed. Examination of the kidney revealed a pale pink-tan surface with scattered petechiae and irregular hemorrhages. The parenchyma was atrophied in the hilar area with considerable fatty replacement. The cortical and medullary margins were indistinct. There was moderate dilation of the calyces with irregular calcarious fragments within the lumen. Microscopic examination revealed hyalinized fibrous scarring, many shrunken glomeruli, and infiltrations of mononuclear inflammatory cells. The medium-sized and small blood vessels showed marked fibrous thickening of their walls. The findings were consistent with chronic and acute pyelonephritis. No changes characteristic of systemic lupus erythematosus were seen.

Postoperatively the patient was maintained on intravenous fluids, antibiotics, and hydrocortisone. She was given 500 cc. of whole blood without untoward reaction. The hydrocortisone was maintained for only a few days, tapered, then stopped. There was gradual improvement but generalized weakness and an anemia of 7.1 Gm. per cent persisted. On the seventy-second day the patient received a transfusion of 500 cc. of whole blood, and six hours later she developed severe abdominal pain and joint pain. Examination of the abdomen failed to reveal any localizing signs. Cortisone was given with relief of the abdominal pain and joint pain. On the seventy-seventh day she was discharged without medication.

The patient continued to improve at home. The lupus erythematosus preparation has not been repeated, but the patient now has a normal hemoglobin level, is free of joint pains, has a clear urine, and is able to work regularly in a dress shop.

Comment

In the pre-antibiotic era infection was the principal cause of death or a significant contributing factor in the death of a large majority of patients with systemic lupus erythematosus.[1–10] Today, lupus nephritis is a major problem in the management of the disease and renal failure plays a much more significant role as a cause of death.[11–17] However, infection continues to complicate systemic lupus erythematosus with great frequency.[11,13–15,17–22] In the series of Harvey *et al.*[11] secondary infection was considered to be the primary cause of death in 39.5 per cent of 38 autopsied patients, most of whom died after 1948; in 2 of these patients widespread urinary tract infection was noted. Haserick[23] has emphasized "the devastating effect of complications on patients with L.E." and the urgency of concomitant treatment of active systemic lupus erythematosus and secondary infection; he has noted that infection may cause exacerbation of quiescent systemic lupus erythematosus. Tumulty[18] has observed that patients with systemic lupus do not handle infections well; "the presence of an infection must be continually sought and treatment designed with the realization that normal immune mechanisms may not exist."

Six of 62 patients treated with steroids by Harvey's group[11] developed infections of the urinary tract and in 2 patients pretreatment urinary tract infection became more severe during ACTH administration. Others have also noted the frequent incidence of secondary renal infection in systemic lupus erythematosus.[14,17,18,24] The urinary findings of pyelonephritis may be easily confused with those of lupus nephritis,[12,25] however, and Muehrcke *et al.*[12] have stressed the need for a meticulous search for evidence of renal infection complicating systemic lupus erythematosus when there is laboratory evidence of renal disease.

In light of the foregoing information, and because of the urologic indications for surgery, nephrectomy was performed in Case 1, although there was question concerning its advisability in view of the incidence of renal failure in systemic lupus erythematosus. In Case 2 it was evident that nephrectomy was urgently indicated. The encouraging experience gained in the management of the first case led to the prompt decision to operate. Both patients tolerated the operative procedure well and in each the postoperative course was relatively uncomplicated. The transfusion reaction in Case 2 emphasizes the very common occurrence of this phenomenon in patients with systemic lupus erythematosus.[26] It is worthy of note that this patient had no reaction to whole blood while receiving steroids.

Leukocytosis occasionally occurs as a primary manifestation of systemic lupus erythematosus[11,15,17,26] and may be secondary to steroid therapy of the disease.[11,17,21] Nevertheless, leukocytosis in systemic lupus erythematosus usually reflects infection[11,21–23,27–29] and it is our feeling that the presence of leukocytosis warrants a thorough search for an underlying infection. Leukocytosis of the degree noted in Case 1 is extremely unusual in systemic lupus erythematosus.

The occurrence of a positive L.E. test after the inception of steroid therapy in a patient whose L.E. tests were negative prior to therapy, as occurred in Case 1, has been reported,[30] but such a finding is exceptional.

Summary

Two cases of obstructive uropathy and pyelonephritis complicating systemic lupus erythematosus have been presented. Both patients underwent successful nephrectomy with subsequent generalized improvement. The high incidence of infection complicating systemic lupus erythematosus has been discussed.

Department of Medicine, St. Luke's Hospital
New York 25 (Dr. Schwartz)

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Spiders Hear with Their Legs!

Spiders hear with their legs and walk with their ears. This discovery has come out of a Cornell University student's research for his Ph.D. thesis.

The researcher, Charles Walcott, says he made the find accidentally while studying the effects of drugs on spiders' reactions. Working under the direction of associate professor W. G. Van der Kloot, Mr. Walcott attached sensitive instruments to a spider's leg to record impulses sent along its nerves. The scientists discovered that the number of nerve impulses increased whenever the Cornell University chimes rang.

Further study showed that the lower end of a spider's leg acts as an eardrum. Each leg was found to have about ten small slits tuned to different frequencies of sound. By increasing the tension on the leg, the researchers learned that these slits could be made more sensitive to specific frequencies.

Mr. Walcott says spiders apparently change the tension on their legs by bouncing up and down in their webs. This, he says, seems to be a spider's way of "tuning in" on his prey before attacking. The scientist says this is illustrated by the fact that, when a tuning fork is applied to a spider's web, the creature will rush over and attack it.

A Medical History of Columbia County

JOHN DARDESS, M.D., CHATHAM, NEW YORK

It is remarkable that the first physician within the present limits of Columbia County was also its first settler.

In 1654, when New York was still a Dutch province, Abraham Staats, a surgeon of Fort Orange, purchased a tract of land from the Mohican Indians on the east shore of the Hudson in the present town of Stockport. A native of old Amsterdam, when he was twenty-four and was fired with the spirit of an adventurous age, he had sought life and fortune in the service of that merchant prince, Killian Van Rensselaer, whose dream it was to revive in the new world the dying feudalism of the old. The master surgeon of the city gave his testimonial; the patroon marked him as a capable person and a member of the church and bound him by contract to serve for a period of six years as surgeon to his colony of Rensselaerwyck. In the summer of 1642, attended by one servant, and leaving behind him a bride of nineteen, Staats embarked for America. The season was propitious, and the voyage was uneventful. He landed at New Amsterdam on August 4. A house had been prepared for him on the east side of the Hudson, opposite Fort Orange, with a swamp inland for protection from the Indians.

The settlement numbered about a hundred families with 25 or 30 thatch-roofed board houses, on both sides of the river, above and below the Fort. Although the wars of conquest or revenge in which they were continually engaged soon diminished their ranks, the Mohawks at this time were the most numerous as well as the most savage of the Iroquois.

In 1643 a band of Mohawks stopped at the Fort to trade. With them, as their prisoner, was the French missionary, Father Jogues. The Dutch were then at peace with the Indians, and to free their captive would mean certain war. But Van Curler, who was in charge of the colony, secretly urged him to escape. A sloop was loading in the river, and a boat was conveniently left on the shore. The savages were quartered for the night in the barn of a Dutch farmer, and while they lay sunk in sleep and wine, the priest stole softly from their midst. In the darkness he was attacked by the farmer's dog and severely bitten in the leg. Weakened by this new wound and previous tortures, he managed to launch the boat, and at dawn he found safety aboard the vessel. Here he remained for two days, hidden in the hold, until the ship's officers, frightened by the threats of the Indians who were furious at his escape, conveyed him to the Fort.

He lay there in seclusion for six weeks, while the Mohawks ransacked the colony for their victim. In the meantime, the wound in his leg had become septic and his condition became grave. The surgeon Staats was summoned, and by his skill he saved the life of the saint. The savages finally departed, balked of their prey, and solaced with the ransom the settlers offered in his place. The Jesuit set sail for the Manhattans, and from there to France. He returned the next year to the Canadian Missions and to his martyrdom.

This is the only case on record of a patient who was attended by Abraham Staats. However, the duties of a surgeon filled but a small part of his day. In 1643 he was made a magistrate, and for the duration of his contract was a member of the colony court and finally its presiding officer.

The old patroon died in 1644, and the guardians of the young heir appointed Brant Van Slichtenhorst as Director of Rensselaerwyck. He arrived in the colony in 1648. At the same time, Abraham Staats' contract with the patroon expired. He was free to return home, but he chose to remain in the colony. His wife had joined him in America, and he shortly obtained a building lot next to the Fort. He had been licensed to deal with the Indians for furs, and from necessity or inclination he now turned his hand to trade.

A contention had arisen between the West India Company and the patroon over the jurisdiction of Fort Orange. As its site was included in the Van Rensselaer grant, the patroon concluded the fort belonged to him, but since the fort antedated the colony, the Company maintained the fort was theirs. Moreover, they held that possession of the fort gave them title to the land around it to the distance of a cannon shot. But since Van Slichtenhorst, as the first act of his administration, had obliged the settlers on both sides of the river to remove to the vicinity of the fort, for reasons of safety and convenience, the majority of the patroon's tenants now dwelt within the controversial area.

In this dispute between the West India Company and the feudal state, Staats allied himself with the former party, which he could honorably do as he was a free man and no longer bound by oath to the patroon. His interest in the fur trade no doubt influenced his choice.

The threat of war with the Mohawks in 1650 prompted the commissary of Fort Orange to request the loan of the patroon's cannon, which commanded the passage of the Hudson from an island in the river, to augment the defenses of the fort. Van Slichtenhorst foolishly agreed. It seems highly probable that Staats had a hand in this conspiracy. Having been appointed surgeon to the garrison he had become an officer of the fort. He was given the rank of captain, and made custodian of the Company's ordnance. Thus, when Van Slichtenhorst demanded the return of the cannon, the danger having passed, he received instead a letter of refusal signed by Commissary Dyckman and Captain Staats. The reason soon became clear. When Governor Stuyvesant, acting under Company orders, came up to the river in 1652 with a company of soldiers, the guns of the patroon, which might have opposed his passage, were pointing at the house of his director. Van Slichtenhorst was deposed and taken to New Amsterdam in chains, and the village of Beaverwyck, which became the city of Albany, passed out of the hands of the patroons.

In the meantime success continued for the Dutch surgeon. His business prospered, and he became the owner and skipper of a yacht, the Claverack, plying between Fort Orange and New Amsterdam. In one year he shipped 4,200 beaver skins to the Manhattans. As a pelt was valued at eight guilders and a guilder worth forty cents, the total shipment amounted to $13,440.

In the wilderness haunts of the Mohicans on the eastern shore of the river below Fort Orange, the trader-surgeon explored, and purchased from the natives a tract of land at the confluence of the great kills; here, in the intervals of a busy life, he built his home.

The area lay within the vast estate granted to the old patroon under the Charter of Freedoms and Exemptions, and Staats' title was the first of the Kinderhook patents issued to small landholders by the jealous Company. The cumulative effect was to divide the Van Rensselaer holdings on the east side of the river into upper and lower manors.

Belatedly the manor lord constructed a small fort on the southern shore of Stockport

Creek, opposite the lands of Abraham Staats, to prevent further encroachment in that direction on his domain.

The surgeon seems to have divided his time between his bowery and Fort Orange, where he was prominent in the affairs of the community. On the formation of a court of justice for Fort Orange and Beaverwyck, distinct and apart from Rensselaerwyck, he was twice appointed to its bench. When Governor Stuyvesant called on the most prosperous and loyal citizens for assistance to repair the defenses of Manhattan, Staats contributed 200 guilders toward the work.

In 1658, during the Indian outbreak known as the First Esopus War, Staats was appointed captain of the burgher guard and overseer of the construction of an 8-foot board fence around the village of Beaverwyck for defense against the savages. The town, however, never suffered an attack, as the Mohawks refused to join in the conspiracy, choosing instead to act as mediators of the peace.

In July of 1664, the fury of an Indian war having burst a second time upon the Catskills, a mixed band of savages ravaged the east side of the river, killing cattle at Greenbush and burning the house of Abraham Staats. In September the English took possession of the province.

Little is heard thereafter of the Dutch surgeon. His death was not recorded and his place of burial is unknown. He was the father of four sons, the eldest of whom inherited the yacht and bowery, and the youngest, following in the footsteps of his parent, was surgeon to the garrison at Albany from 1698 to 1708. A second house soon rose above the ashes of the first and is standing to this day on the point of land formed by the Hudson and the northern shore of Stockport Creek.

Columbia County was created by an act of the Legislature in 1786, by separation from Albany County, of which it formed a part in colonial times. The present population is a mixture of several racial stocks. The Dutch, who were the first settlers, took up land along the river and the major streams. A colony of Swedes arrived soon after. Although the patroons had claimed the territory by purchase and charter, their title to the Lower Claverack Manor was not confirmed until 1704. The Palatines were settled in the Livingston Manor in 1708. By the middle of the century the New England Yankees began to cross the mountain range that separates New York from Massachusetts to occupy the eastern plateau. The close of the Revolution brought a mass movement of Quakers from Nantucket and Rhode Island to found the city of Hudson, which being incorporated in 1785, is, in point of time, the third city in the State. The Irish potato famine sent its throngs of immigrants in the decade after 1850, and the last years of the century marked a considerable German immigration. The Negroes had been in the county from the beginning, as slaves of the Dutch, whose patronyms they took. The last of the Mohicans left in 1785.

The economy of the county is predominantly rural, with the dairy industry and fruit farming the major occupations. Hudson is the only city. The excellent streams furnish power to paper and cotton mills, and cement plants have taken advantage of the limestone outcroppings. From the forest-covered highlands of its eastern borders the land descends in broad terraces to the river, where it terminates in bold shores or bluffs.

One hundred and fifty years ago "An Act to incorporate Medical Societies for the purpose of regulating the practice of physic and surgery" was passed by the New York State Legislature. This Act contained the following provisions:

1. It authorized physicians and surgeons to form medical societies in the several counties of the State and to elect presidents and other officers.
2. It directed that a State medical society be formed, consisting of one delegate from each county society.
3. It authorized the said county so-

cieties to examine students and to grant diplomas in medicine and surgery.

With the signature of Governor Morgan Lewis, this Act became the law of the State on the April 4, 1806.

On June 3, 1806, nine physicians of Columbia County met on the courthouse steps at Hudson for the purpose of organizing a medical society. The names of these men are worth noting: from the city of Hudson, Dr. Samuel White, Dr. John Mann, Dr. John Talman, and Dr. Henry Malcolm; from Claverack, Dr. George Monell, Dr. William Bay, and Dr. George Birdsall; from Kinderhook, Dr. Noah Wells and Dr. Henry Van Dyck. Dr. Monell was chosen moderator.

Agreeable to the law of April 4, they elected the following doctors: William Wilson as president and Thomas Broadhead as vice-president, both from Clermont, neither of whom attended the meeting; William Bay, secretary, and Henry Malcolm, treasurer. John Mann, Henry Malcolm, and Samuel White were delegated to draft bylaws to be presented at the next meeting, which was set for the first Tuesday in October, in the city of Hudson, at 10:00 A.M., and it was resolved that this should constitute the annual meeting. The secretary was directed to inform the president and vice-president of their election and to request the president to prepare a dissertation of a scientific nature.

The first regular meeting then took place at the Court House on October 7, 1806. President Wilson made his address and three important resolutions were passed: (1) that the number of censors be five, (2) that a majority of the censors shall constitute a board, and (3) that censors and delegates be elected by ballot.

Henry Malcolm, Thomas Broadhead, John Mann, Samuel White, and William Bay were elected censors and Dr. Mann was elected delegate to the State Convention. Dues for members were set at $1.50, paid twice a year, and the first Tuesday in May, 1807, was chosen as the date of the next meeting.

Prior to 1806, licenses to practice medicine were granted by a judge of a State court, without examination, on proof of two years study. It was to correct the abuses inherent in this system that the Act of 1806, providing for the establishment of medical societies, conferred on the Societies the power of licensure. Under this new procedure, the applicant studied physics or surgery with one or more respectable practitioners for a term of three years. He attended a course of lectures in New York, admission to which required a recommendation from the president of his county society; and finally, he appeared before the board of censors at a regular meeting of the Society, delivered an address on some scientific subject of his choosing, and then submitted to the censors' examination on his knowledge of his specialty. At their discretion, a diploma to practice medicine and surgery was granted under the hand of the president and secretary of the society. The license, which cost $2.00, was recognized in any part of the State.

The first annual meeting of the newly organized Medical Society of the State of New York was held at Albany on February 5, 1807. The second or semiannual meeting of the county society was held at Hudson in May, 1807, but as only four members were present it adjourned after passing a resolution that hereafter the secretary advertise all meeting dates in the Hudson paper two weeks in advance. This custom prevailed until 1834, when the secretary was instructed to send out notices by mail.

The adjourned meeting was held on June 2. Dr. William Wilson was re-elected president, and a resolution was passed that the treasurer pay Dr. Mann $10 for his expenses at Albany. This continued to be the standard of compensation until the annual meeting of 1811 when Dr. Wilson presented a bill of $18 for his expenses as delegate that year. The members were revolted by this unwarranted extravagance on the part of their first president. After due deliberation, he was allowed $12 toward his bill, and a motion was carried that in the future a sum not exceeding $10 be allowed to each delegate.

The second annual meeting took place on October 6, 1807. Eight more members had been added, bringing the total of the fledgling Society to nineteen.

Of the eleven men who were the founders of the Columbia County Medical Society, William Wilson became president of the State Society in 1812 and also served a term in the State legislature. He died in 1829. William Bay moved to Albany in 1810 and died in 1865 at the age of ninety-two. John Milton Mann, as the first delegate to the State convention, was one of the founders of that Society as well. A physician of great promise, he was drowned while crossing the Hudson River on the ferry boat in 1809, being knocked overboard by the boom. He had been the first to introduce vaccination into Columbia County. Samuel White founded and operated an insane asylum in Hudson, from 1830 to 1858, when the first State asylum was opened at Utica, New York. He was an able surgeon, and for many years he was Professor of Surgery at the Berkshire Medical College in Pittsfield, Massachusetts. In 1843 he was elected president of the Medical Society of the State of New York. He died in 1845 at the age of sixty-eight.

For the first three years of its existence the Society held its regular meetings at the Hudson Court House. But on October 3, 1809, they met at the Eagle Tavern in the city, and for three decades and under four proprietors its hospitable walls served as the forum of their deliberations. Lest some presume their choice was dictated by their intemperance, the minutes of October, 1827, contain a resolution expressly condemning "both the use and the abuse of ardent spirits BY THE PUBLICK."

For a long time membership in the county society was drawn chiefly from the city of Hudson and the larger villages, but the distance and imperfect roads may have been the reason why many physicians in the outlying townships did not join. Nevertheless, pressure was brought to bear on these delinquents in several ways.

The minutes of 1819 take cognizance of an act of the State Legislature of that year—that any physician or surgeon in the county who is not a member of his society be notified by newspaper that the law imposes membership upon him, or a tax—"which this society," the secretary adds "is determined to collect." This assessment amounted to a dollar a year. At the annual meeting on October 9, 1823, the names of each delinquent and the amount owed were recorded in the minutes, and Dr. John Vander Poel of Kinderhook was appointed the collector.

Despite this threat of drastic action, the problem remained; nor is it clear how the resolution was to be enforced. At the meeting of June, 1828, a different tactic was tried. It was resolved that the president himself should personally write to every physician in the county who was not a member, urging him to apply and receive a certificate of membership within sixty days. Resistance to subscription apparently continued, for at the annual meeting of October 2, 1838, a resolution was carried directing the secretary to publish a list of the members in good standing, to which the following notice was appended: "That all such persons as are practicing medicine in the County whose names are not on this list, are illegal practicioners."

The stubborn resistance of the county physicians to dues and taxes paralleled that of the citizens on the great estates. The system of land tenures established by the first patroon had survived into the nineteenth century. When the Medical Society was founded in 1806, the heirs of Killian Van Rensselaer and Robert Livingston held manorial rights to half the county, where they ruled as petty tyrants over a semifeudal tenantry, bound by a perpetual lease and the payment of an annual rent. In December of 1844 the long resentment of an oppressed class broke out in open revolt.

A band of calico Indians, in war paint and plumes, assembled at Copake to protest the eviction of a delinquent tenant. The leader of the insurrection rejoiced in the epithet of Big Thunder, a tribute to his powers of oratory. The sheriff was overawed by numbers, and the eviction notice publicly burned.

A week later a rally was held at Smoky Hollow in the town of Claverack. Big Thunder was again the principal speaker. He was received with great applause, and a demonstration began. At the height of the excitement pistol shots were fired, and a spectator was killed. The meeting broke up in confusion. The sheriff now arrived with deputies, and Big Thunder was subdued and lodged in the Hudson jail. With his paint and feathers washed off, he was exposed as Smith Boughton, a physician.

His arrest was the signal for the uprising called the Anti-Rent War. The farmers took up arms to free Big Thunder, and Hudson was placed in a state of seige by the rest of the county. Within the beleaguered city the burghers rallied to the defense of their homes. Patrols were organized, and vedettes were posted. The governor of the State sent troops, and artillery commanded the approaches to the town.

But the attack failed to materialize. Big Thunder, charged with being an accessory to the murder of one Rifenburgh, resisting an officer in the performance of his duty, and inciting a rebellion, was tried, found guilty, and sentenced to imprisonment for life.

The controversy, however, had become a political issue in the State. An Anti-Rent party was organized, and a new governor, favorable to their interests, was elected in 1846. His first act was to pardon Big Thunder, who promptly left the county for good. The repeal of the rent laws in 1852 blotted from the statutes the last relic of feudalism in the United States.

It might be noted that the sovereignty which the first surgeon of the county upheld and abandoned was brought to an end by the muddled efforts of another physician two hundred years later.

One may observe in the growth of one medical society a replica of all societies. At the beginning of the era the quality of medical care, by today's standards, was poor indeed. Specialties were unknown. In surgery the criterion was speed, for they worked without anaesthetics. In their ignorance of asepsis, the body cavities were forbidden ground. Medicine was shackled to outworn postulates. In the long list of human disorders, fever was noted in nine cases out of ten; in mortal illnesses, with the exception of those who died by violent death or of old age, all succumbed to fever. Hyperpyrexia was therefore looked on as a general disease; tradition placed its point of origin in the blood, and hence phlebotomy was thought to be the first step in its relief.

Fevers were classified as (1) intermittent, in which the fever ceases at intervals; (2) remittent, in which the fever subsides or abates at intervals; and (3) continued, or synochus, which neither remits nor intermits.

Rather than assume that pneumonia, for instance, gave rise to fever, the theory held that a continued fever sometimes resulted in pneumonia.

In treatment, indiscriminate bloodletting was the rule. The pharmacopeia was cluttered with numerous herbs of doubtful value. Opium was used and abused. Digitalis was employed for its diuretic effect, without a clear understanding of its indications. Emetics and purgatives were recommended in heroic doses, and homeopathy was in part a revolt against such extremes. Blisters, issues, and setons were regularly prescribed. An issue was an area of ulceration induced by scarification or caustics. The seton, sometimes called a rowl, was a thread or wick passed through a buttonhole in the skin. A knot was tied in each end, and the string pulled alternately to the limit of either knot; in both cases the appearance of laudable pus indicated success in drawing the poison from the blood.

Still, medical science has made more progress in its last one hundred and fifty years than in all the centuries since Hippocrates, and it is more than coincidence that this development parallels, in time, the growth of medical societies.

In colonial days medical organization was of the loosest, standards of practice varied from place to place, and the powers of licensure were vested by law in a corrupt or careless magistrate. With the formation of medical societies, a community of interests promoted free discussion and the interchange of ideas. The result of that interchange was progress. Consultation between the members of the society and correspondence between societies permitted them to adopt proved and to discard ineffectual measures. By organization the profession was kept free of the charlatan and the visionary, and the future of medical science in America was assured by the integrity of the few against the incompetence of the many.

The Minute Book, from which many of the foregoing notes were taken, ends with the year 1859, and in the decade before the Civil War the homeopathic controversy, that almost succeeded in wrecking the Society, occupies a large portion of its pages. The excellent penmanship and careful reporting of the earlier minutes degenerates into a penciled scrawl and a few hurried lines, and for a period of four years the Medical Society ceased to exist. In 1861 the Columbia and Green County Homeopathic Society was formed.

Homeopathy had been introduced into the county by Dr. George Cook of Stockport, a former officer of the old Society who had deserted to the new school. At the annual meeting of October, 1836, it had been resolved that the Society select one of its members to procure and keep constantly on hand a supply of genuine vaccine virus, to be furnished to the doctors of the county at seventy-five cents per person, and to out-of-county physicians at $1.00. Dr. Cook was elected to be the vaccine officer. In the 1840's Dr. Cook, attracted by the theory of homeopathy, subscribed to its tenets and began actively promulgating its doctrine in the county. His expulsion from the Medical Society followed, but the germ he had implanted spread, and many of the old school practitioners became infected with the heresy.

The Society was reorganized in 1863, with Dr. Joseph Bates of New Lebanon as president. The breach with the homeopaths ultimately healed, and they were absorbed into the parent organization. Unfortunately, the minutes for the succeeding fifty years have been destroyed.

During the last half of the nineteenth century, the standard of medical practice in the county simulated the general progress of the art, in spite of some who still clung to the old ideas and the old ways. The smallest hamlet then had its general practitioner, adept in the treatment of fevers, skilled in kitchen table surgery, abrupt in manner, tireless in execution of his duties—alive, an oracle, and dead, a tradition. A little color has gone out of the profession with the passing of this early practitioner—stubborn independence has been replaced by modern efficiency and conformity.

At this period there flourished Dr. Greene of Ghent, of whom it was said, "That he couldn't cut, set, or sew, but he was a crackerjack on fevers!" Alas! His sovereign febrifuge died with him. There was Dr. Coffin of New Concord, whose panacea was opium and its tinctures; long after his decease his aging clientele kept to their daily regimen of laudanum and paregoric, till death, or the Harrison Narcotic Act, ended their cravings. There was also Dr. Washburn of Chatham, who, when summoned one wintry day to a far corner of the county to treat an elderly female with retention, discovered that for the first time in forty years he had neglected to put a catheter in his bag; he solved the problem with a stalk of oat straw from the barn.

A prescription for the relief of colds and fever, attributed to Dr. Mesick of Spencertown, and showing perhaps a homeopathic origin, is much in use as a home remedy today, the directions being: "To one half glass of water add 10 drops Tincture of Belladonna, and to another a like amount of Tincture of Aconite: the dose, 1 teaspoon every hour, taken alternately, first one glass, then the other."

The twentieth century has witnessed two fundamental changes in the character of medical practice in the county. The first is the congregation of physicians in the city and larger villages, a move made possible by the agency of the automobile, the improved highway, and the snow plow, so that one physician centrally located now serves an area formerly attended by many dispersed. This reduction in the number of practitioners in the county has been accompanied by a gain in membership in its medical society, whose roster, now totalling some 50 members, comprises practically 100 per cent of the county's physicians.

The second change is in the increased hospitalization of patients, particularly for surgical, obstetric, and diagnostic procedures.

The Hudson City Hospital was incorporated in 1889, and opened its doors on June 1, 1893, in a converted dwelling at the corner of 5th and Washington Streets. On May 1, 1900, it moved to its present location on Academy Hill, overlooking the historic river and the city that bears its name. Since then, several additions have been made to the original unit, by far the largest in May, 1953, at which time the name was changed to Columbia Memorial. A cancer detection center was inaugurated in 1947, a blood bank was established in 1950, a physiotherapy service was added in 1956, and the following year saw one of the first cobalt radiation units in the State in operation.

The Columbia County Tuberculosis Sanitarium was erected in Philmont in 1920, and in 1925 a Rehabilitation Hospital was established for tuberculous patients in the town of Livingston.

A County Health Department was organized in 1933, with Dr. Louis Van Hoesen of Hudson as its first Commissioner.

In the war years of 1942 to 1945, approximately one-third of Columbia County's physicians volunteered and served in the Armed Forces.

On the night of December 5, 1956, the Society celebrated its one hundred and fiftieth anniversary. A public meeting took place in the auditorium of the Hudson High School. The incumbent president, Dr. Carl Whitbeck of Hudson, presided. The members of the Women's Auxiliary to the County Society acted as hostesses for the event. The progress of medicine was shown in the displays of 19 exhibitors. Dr. Louis Bauer, Surgeon General of the World Health Association, was the principal speaker. Scrolls commemorating thirty years or more of active membership in the Society were presented to Dr. Lawrence Early, Dr. Frank Maxon, Dr. Harry Pattison, Dr. Clarke Rossman, Dr. Louis Van Hoesen, and Dr. John L. Edwards. Dr. Edwards was for many years named Chief of Staff of the Hospital, and in 1952 he was elected Vice-President of the Medical Society of the State of New York.

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SPECIAL ARTICLE

Progressive Patient Care—Planning and Research

EDWARD J. THOMS, MANCHESTER, CONNECTICUT

(*From the Manchester Memorial Hospital*)

Collisions in the air and reorganization of air traffic herald the new jet and missile age. High costs and crowded facilities may also indicate a new era in hospital reorganization. Even now we may be attempting to run our hospitals by "piston-engine" methods, while in reality we are already dealing with "jet-engine" hospitals.

Recognition of our plight is the first major step toward reorganization. Immediately following comes a sustained brainstorming effort which attempts to lay a broad base of "jet-engine" ideas on which we may solidly approach the jet era in hospitals. Progressive patient care represents a practical zoned-care approach to a patient-oriented program of hospital management.

The Civil Aeronautical Association in dealing with air-traffic problems is compelled to act in situations which are a matter of life and death. Indeed, tragedy has already struck. Let us not allow this tragedy to occur in the hospital field before real remedial action can take place. We must break the "sound barrier" in hospital management by creative effort and solid support in order that "jet-engine" improvements can be accomplished.

Just as a missile requires a coordinated three-stage effort to place it in orbit, so the broad field of hospital management requires a team-work approach of doctors, nurses, and administration to effect a smooth-running organization directed toward a higher level of patient care. Progressive patient care emphasizes this by improving the doctor-hospital-trustee relationship.

It has been said that a research department should be available in every hospital. A persuasive approach toward the accomplishment of the main aim of all hospitals—better patient care—is progressive patient care. It offers a practical program based on modern scientific research methods.

Dr. Ernest Dichter, Director of the Institute for Research in Mass Motivations, has stated: "The study of the attitudes and motivations of the patient has, actually, just begun. And the reasons are simple.

"Almost all major advances in medical-hospital procedures have been in the area of physical technics. The hospitals have given relatively little thought to the deeper psychologic demands of the average adult patient, either upon entering, post-operatively, or in convalescence. As a result, the hospitals judge themselves entirely on formal, nonpsychologic levels: the number of beds, specialists, procedures, the modernization of buildings and equipment, the size of the budget, etc. Yet the fact is that the patient almost never reacts to such statistical aggregates. Once in a hospital he seeks satisfaction for his very special and private emotional needs. Even before he enters the hospital, he is seeking for emotional assurances on all sides.

"We are today in the age of the extensive utilization of trained psychologic insights. They are at work industrially, commercially, at the military level, in the political and propaganda sphere, as well as clinically and therapeutically. It is therefore odd that in the profoundly emotional and complex world of the hospital, psychologic 'self-evaluation' should begin so late."

After twenty-one months of operation of an obviously successful progressive patient-care program at Manchester Memorial Hospital, any studies on acceptance of this program on the part of physicians, patients, and nurses appear unnecessary. Let us now consider the program of progressive patient care, recognizing that skepticism, even from scientific sources, should not discourage honest and courageous efforts.

Presented at the meeting of the Joint Commission in New York State for Improvement of Care of the Patient on March 20, 1959, at New York City.

Definition of Progressive Patient Care

By definition, progressive patient care is the systematic classification of patients according to their medical needs. These are the needs which can be met primarily by the physician, the nurse, and the facilities of the hospital.

Progressive patient care provides for these needs by zoning care which follows the pattern of illness from critical phase to complete recovery. The patient may enter at any zone and progress according to his medical need in any direction.

Four main divisions of progressive patient care have evolved:

1. Special care unit for patients who are seriously ill.

2. Intermediate care unit for patients who are ill, but not dangerously so.

3. Self-service unit for ambulatory patients who need either a complicated work-up or early ambulation. It provides an opportunity for patient teaching, adjustment, and transition to the hospital or home environment. Nursing care is planned around the patient progressing toward full recovery. The physician, the nurse, and the patient become partners in planning for his care.

4. Continuation care, the systematic classification of patients requiring daily medical and nursing care, plus other facilities, of a general hospital. These patients are considered to have an unpredictable length of hospital stay and, in general, will require thirty plus days of hospitalization. The patient is expected to benefit beyond the care that could be given by a so-called convalescent or nursing home.

Continuation care is differentiated from the area of intermediate care in which the patients generally are considered to have a predictable hospital stay, that is for an appendectomy or hernia, routine fracture with cast application, and so forth.

These divisions represent broad areas of patient care, but in practice they shade into one another and form a continuum of care based on medical need.

Steps Taken to Establish the Program of Progressive Patient Care

I would now like to recount for you the steps taken to establish the program of progressive patient care at Manchester. Most worth-while undertakings in life go through three stages—first, the mental image or dream; second, the plan; and third, the crystallization of the dream into an actual reality.

For many months I had visualized the dream of progressive patient care. The rapid developments in medical science, the increased cost of hospital care, and the shortage of highly trained hospital personnel all pointed to the necessity for trying a new management approach. Gradually the dream entered the second stage where it grew, and plans for putting it into operation began to develop. It became obvious that if the progressive patient care idea were ever to develop into the third stage of actual reality, it would be through teamwork involving the greatest possible understanding and patience.

It was at this point that Dr. Lane Giddings, our hospital pathologist, was called in to discuss with me the possibilities of such an idea. He was selected because of his deep interest in research, not only in medicine, but in hospital organization and operation. He began to grasp the program as visualized, and from the day of that conference the program has been known as progressive patient care.

After preliminary organization of the proposal, a few selected physicians were called into informal session to hammer out the practical possibilities of such a program at the Manchester Memorial Hospital. The unanimous support of the entire medical staff was obtained after several remarkable incidents of medical staff democracy-in-action. This maneuver directly and indirectly involved the 24 members of the Board of Trustees of the hospital. The discussion which then soon developed between representatives of the medical staff and the Board of Trustees brought into being a very important sociologic concept which might be termed "convincing through involvement."

The administrator and the pathologist persuaded influential members of the medical staff and the director of nurses to go with them on visits to hospitals where it was understood there were intensive care units, to learn what experience had been gained through the operation of such units. Gradually more and more individuals were interested and involved at Manchester Memorial Hospital, sitting in on planning sessions and helping to work out the many details of the program. When the plan finally went into operation one year after conception, all of those involved were emotionally committed to make it work.

Another factor of possible significance in persuading others was the gradualness with which the plan was initiated. Emphasis was placed on training of personnel, not on money. Old nursing units were utilized with modest renovations, although these rooms were recognized as being far from ideal. The hospital accepted a low financial return on its self-service unit, hoping to persuade third party payers to go along with the experiment. Importance might also be given to the fact that the medical staff succeeded in getting influential citizens to accept care on the new units. As other citizens and some reluctant members of the hospital staff observed the success of this effort, their own hesitations were gradually overcome.

On April 1, 1957, three phases of progressive patient care were begun at Manchester Memorial Hospital. They consisted of special care, intermediate care, and self-service care. Administrative changes were made as experience dictated. On January 1, 1958, three private rooms in the self-service unit were converted to semiprivate accommodations to determine patient acceptance. On August 1, 1958, the fourth phase of progressive patient care, called continuation care, was established. A fifth phase, home care, remains to be developed.

Certain important administrative changes were necessary to launch the program of progressive patient care. Some examples of these changes are: that the physician admit patients directly to the special care unit; that the radiology and pathology departments make their services available on Sunday mornings; that patients from the self-service unit receive their meals by going through the hospital cafeteria line; that the special care unit be set up as a self-sustaining unit with its own drugs, supplies, and equipment; and that the specific policies which affect admissions and nursing routines be established for the special care unit.

Purpose and Methods of the Research Program

As I have already stated, progressive patient care began in April, 1957, with three zones of patient care (special care, intermediate care, and self-service care). Three months later Manchester Memorial Hospital was chosen by the United States Public Health Service as a pilot plant intramural project of the research branch of the Division of Hospital and Medical Facilities. The research team was charged with the responsibility of making a descriptive study of the phases of progressive patient care being carried out at Manchester Memorial Hospital. Evaluation of the program was to determine if positive effects attributed to progressive patient care were essentially owing to this type of hospital organization or to other factors.

The following five major management problems were under study by the public health service research team between October, 1957, and June, 1958: (1) patient recovery patterns, (2) acceptance by patient, family, community, and hospital personnel of this type of hospital organization, (3) effective utilization of medical and nursing personnel, (4) hospital costs to patients and the hospital, and (5) the type of hospital facility that best meets over-all patient needs.

In the absence of available data for baselines, the research team simply came up with a description of Manchester Memorial Hospital prior to and after the establishment of progressive patient care. As a morale booster for the team and in order to help create a proper research environment, the following work problems were attempted: management profile studies; refined cost studies; nursing function studies; and medical records studies, including redesigning of patients' disease index cards and listing of comparisons based on clinical records three months before and after progressive patient care was instituted.

After the first year of observation at Manchester by the research team, six research proposals evolved which indicated a need for more intensive study in order to measure adequately the effects of progressive patient care on an operating hospital. Three of these proposals were given priority for intramural research in the coming year:

1. Allocation of beds for progressive patient care units and setting up of a hypothetical hospital embodying such allocations.
2. Staffing patterns and nursing criteria required in progressive patient care and evaluation of these effects on patient recovery.
3. A continuing detailed study of cost patterns based on bed allocations and staffing patterns.

Final reports on these projects are scheduled for completion in June, 1959.

Advantages Arising from the Program

Some of the main advantages attributed by the public health service research team to the progressive patient care program may be illustrated by the following two case histories. Dr. Howard J. Lockward, a Manchester physician, and one of the developers of the progressive patient-care program, has given me the following accounts from his own experience:

"At 3:00 A.M. on a recent spring morning a young business executive came out second best in an argument over the right of way with a tree. The steering wheel pushed forcibly into his chest and he suddenly lost consciousness. At the same time he received various and sundry other injuries. In the due course of time he arrived at the Manchester Hospital by ambulance and was admitted directly to the special care unit. There, fortunately for him, the nursing staff, physicians, and proper equipment were ready and able to provide an answer for his many problems.

"For two days his life hung in the balance. He was moved to the operating room for chest surgery. About 5:00 P.M., after his return to the special care unit he suddenly choked and lapsed into shock. His physician was called to the bedside, performed a tracheotomy in three minutes, and placed a tube into his chest with immediate beneficial effect. He remained on the special care unit in a critical condition for approximately three weeks. He gradually responded and was moved to intermediate care for another three weeks. At home he eventually made a complete recovery, marred only by various complicated legal proceedings!"

This case points up the ability of the special care unit to buffer the remainder of the hospital during the night when staffing is short, so that serious cases will not effect a change on the level of nursing care in the intermediate wards. It also points up the fallacy of the length of a patient's stay as a criterion for evaluation of unit function. Here a patient should have died, but survived, according to his physicians, only because adequate facilities and nursing care were immediately available to answer his many medical and surgical needs. Ordinarily, he would have lived only a fraction of a day or two at the most. His three-week stay on the special care unit points out the severity of his illness, but also considerably increases the total length of patient days on the unit.

Here is another case history:

"A middle-aged, recently widowed matron visited one of our local physicians, who, during the course of a physical examination, noted that she had sugar in her urine. For a period of ten days he was unsuccessful in regulating her diet and medications. Consultation with the hospital dietitian on an outpatient basis was of no avail. The patient was too emotionally upset to comprehend the changes necessary to her new way of life.

"However, her condition rapidly improved when she was admitted to the self-service unit. Her physician ordered necessary studies and visited her daily. The dietitian helped her select her own diet as she went through the hospital cafeteria line. Each afternoon any diet errors were reviewed and she received direct counsel while planning and constructing her diet for the next day. The nurse stationed at the self-service unit trained her in the necessary procedures to handle her illness. The homelike atmosphere gave the patient the essential emotional support so necessary in the face of her recent bereavement. In ten days she was back on full-time work in the hospital as one of our own night nursing supervisors."

After recounting these case histories illustrating the main advantages of progressive patient care, I realize that great concern still exists in relation to interunit transfers and movement of patients from one zone to another.

Dr. William Kaufman, an internist and national science writer, who delivered a scientific paper at the annual memorial lecture meeting of our medical staff recently, was so impressed with the advantages of progressive patient care to the patients that he has written and had accepted for publication an article describing our program. It seems to me that the following paragraph from his manuscript adequately answers the question of the transfer of patients. I quote:

"For one thing, in addition to the advantages already mentioned, patients have a bonanza psychologic benefit from the progressive patient-care program. Serious illness is always upsetting, frightening, and depressing, and a patient benefits from the emotional support of others, which gives him hope and helps him to develop confidence that he will recover from his ailment. When a patient is admitted to the special care unit, he quickly senses that everything possible is being done to help him get well. He is under constant observation of the nurses, and the emotional climate is one of hopefulness, kindliness, and efficiency. All this is relaxing and reassuring to a frightened, sick patient and aids his fight against ill health. Emotionally the patient gets a lift when he recovers sufficiently to be moved from the special care unit to the intermediate care unit, since he knows this means he has made substantial improvement. His continuing recovery is dramatized further when he is moved from the intermediate care unit to the self-service unit. Also, during the process of recovery, many patients develop an unusual esprit de corps and without realizing it help one another to get over many of the rough emotional hazards which accompany physical illness, and which must be overcome successfully if the patient is to recover without protracted psychologic invalidism."

Collateral Developments Which Have Occurred as a Result of the Program

Collateral developments often occur as the result of a research program. From the hospital standpoint by far the most impressive collateral development of progressive patient care is patient satisfaction. In answer to several types of questionnaires, patients have praised the program. The mail, instead of continual gripes and criticisms, shows voluminous endorsement of all phases of the program of progressive patient care. The self-service unit is especially well-thought of by the patients who have used it.

Another of the highlights is the continued interest and cooperation of the intramural research activity, division of Hospital and Medical Facilities of the United States Public Health Service.

In the embryo stages of the development of our program one of our major tasks is to develop a philosophy of costing which would be applicable to our progressive patient-care program. The primary goal of progressive patient care is not only to reduce over-all costs but also to provide a higher level of patient-care at the least possible cost for that degree of care. At present it is in the realm of academic discussion whether our over-all hospital costs are lower, because a preponderance of self-service type patients more or less automatically produces savings. Our experience gained so far with progressive patient-care units has indicated that we are able to establish more accurate departmental cost data that are allowing our Board of Trustees to initiate intelligent policy decisions regarding charges. Our ultimate goal in our cost philosophy of progressive patient care is to assign the patient his proportionate share of hospital cost, and, finally, to develop agency costs.

Remarkable developments have occurred in many of the hospital departments. The medical records department has been completely overhauled. Coordination and communication on patients' transfers has been reorganized. The pediatrics department is now using the facilities of the special care unit for selected cases, and plans are now cooperatively on foot to establish a self-service unit. Of tremendous impact is the publicity and prestige presently afforded Manchester and its hospital.

Summary

I have endeavored to outline, first, what progressive patient care is; second, the steps taken to establish the program of progressive patient care; third, the purpose and methods of the research program; fourth, the advantages arising from the program; and, finally, the collateral developments which have occurred as a result of the program.

In a system which is growing ever larger and more complex, there is always a danger of becoming so involved in organizational procedures that the main purpose of all our efforts—better care of the sick—will be overshadowed. Under the progressive patient-care program, the needs of the patient, both physical and emotional, can be met more readily. We feel that the inherent right of every human being to be regarded as an individual can be maintained more effectively under progressive patient care.

Let me leave this final thought with you: Cooperation is the keystone of success. The essence of progressive patient care is that doctors, nurses, trustees, and administrators unite to develop their potential as individuals, providing an opportunity for individual expression and individual development, strengthening their creative ability, and utilizing the best of their personal potential, each contributing to a higher level of patient care.

MONTH IN WASHINGTON

Congress went into the final months of this session with a heavy workload of appropriation bills and foreign aid legislation to be acted upon before adjournment.

Congress must act upon the appropriation bills before adjournment to provide money for operation of the Federal government during the 1960 fiscal year. Foreign aid legislation also is generally put in the "must" category now.

With so much "must" legislation requiring action and Congress hoping to adjourn by late August or maybe earlier, many bills of varying importance will be left for further consideration next year.

An upsurge in the national economy strengthened the position of the Administration and economy-minded members of the House and Senate in their opposition to big-spending bills. Supporters of a Senate-approved $465 million airport bill conceded in advance that a House-Senate conference committee would approve a figure closer to the $297 million version which the House passed.

Substantial gains in industrial production, corporate profits, employment, and other key economic factors raised Administration hopes for only a small deficit, if not a balanced budget, in the fiscal year 1960 which began July 1. There also was some talk in influential quarters of a possible tax cut next year, but at this stage, it was highly speculative. It appeared most likely that if there is one, it will be small.

During the first five months of this session, Congress completed action on only two appropriation bills. They provided funds for operation of the Treasury and Post Office Department in fiscal 1960, and additional funds for various government activities during 1959.

Early in June, the House approved, 393 to 3, a $38,848,339,000 Defense Department appropriation which included $88.8 million for care of certain dependents of military personnel in civilian hospitals. In recommending the Medicare appropriation, the House Appropriations Committee commended the Defense Department "for its response to the intent of Congress . . . that dependents of military personnel have the benefit of prompt and adequate medical treatment at all times wherever they may be."

This contrasted with the Committee's criticism about two months ago. The Committee then expressed concern at what it termed "the high costs of care for military personnel and their dependents in civilian hospitals and the high fees allowed in the program."

In another Medicare development, the Surgeon General of the Army ruled (ODMC Letter No. 7–59) that a patient under the program who has a suspected or proved malignancy is acutely ill and qualifies for care. The government will pay for urgently required treatment in such cases when certified by the attending physician, but it was made clear that payment would be based "solely on the medical requirement for immediate hospitalization." Qualifications of urgency cannot be based on mental anguish, emotional attitudes, or socioeconomic factors.

The Defense Department rejected two proposals of the Florida Medical Association for changes in the Medicare program. The Florida Medical Association proposed that a health insurance program be provided for dependents of military personnel or that control of the Medicare program be transferred to the Department of Health, Education, and Welfare.

Dr. Frank B. Berry, Assistant Secretary of Defense for Health and Medicine, said the present program could be handled best by the military service because military dependents "are a highly transient population."

Dr. F. J. L. Blasingame, executive vice-president of the American Medical Association, suggested to the House Subcommittee on Administration of the Social Security Laws that it consider the advisability of a single Public Assistance medical program at the prerogative of individual states. There are now four such programs covering the blind, the aged, dependent children, and the permanently and totally disabled.

In a letter to Rep. Burr P. Harrison (D., Va.) Chairman of the Subcommittee, Dr. Blasingame also suggested consideration of: Whether the medical staff of the Bureau of Public Assistance is now sufficient to provide adequate counselling to states on their individual programs, and whether "sufficient liaison has been maintained with the various professional organizations actually providing medical care.

Dr. Blasingame also suggested that a special medical advisory committee might be established in view of the fact that there are no physicians on the recently-appointed Social Security Advisory Committee.

Prepared by the Washington Office of the American Medical Association, Washington, D.C.

LETTERS TO THE EDITOR

Hospital Staff Problem

To the Editor:

I am sure physicians everywhere must be painfully conscious of the knotty question pointed up by Smith and Blinder in their paper, "The Critical Problem of Obtaining House Staff and Visiting Staff in the Nonuniversity Municipal Hospital," which appeared in the May 1, 1959, issue of the NEW YORK STATE JOURNAL OF MEDICINE. But if I interpret the tone of their paper correctly as well as three of the four proposed solutions to the intern and resident problem, I believe that they are guilty of a serious, although not uncommon, misinterpretation of the purpose of internship and residency programs.

The critical problem they cite is that of patient-care, which is the obligation of every hospital and the purpose for which most were created. The internship and residency, however, were created for educational reasons. The provision of service by such graduate students may be a part of the educational program but is not the reason for its creation. Since the earliest statements by the American Medical Association Council on Medical Education in the 1920's through the most recent publications in the 1950's the Council has emphasized that service must be secondary to education in approved internship and residency programs. It recommends that those hospitals which cannot accept this order of priority should not engage in house staff training. Although this principle may seem to have been honored in the breach more often than in the observance, it nonetheless remains a guiding philosophy.

Of the several solutions to the problem of adequate coverage of a hospital by house staff, Smith and Blinder suggest only one which indicates acceptance of this purpose of the internship. The student intern plan, the two-year internship plan, and the proposal to limit the number of interns any hospital can appoint are unmistakably based primarily on service needs. In the fourth proposal, which suggests that internships be discontinued in nonuniversity-affiliated municipal hospitals, the following appears: "Secretaries and dictaphones could be utilized by these residents for the time-consuming clerical work heretofor performed by the intern. Much of the intern's nonmedical work could be assigned to laboratory technicians, clerical workers, and specialty-trained nursing personnel." This reveals with devastating clarity how far an internship can depart from its educational purpose.

We cannot deny the problem of patient-care which these authors describe. Let us find a solution that is realistic and not one which is a tacit denial of the purpose of the graduate program of internship and residency.

GEORGE E. MILLER, M.D.
Director of House Staff Education

The Buffalo General Hospital
100 High Street
Buffalo 3, New York

Reply by Author

To the Editor:

We have read Dr. Miller's communication concerning our article, "The Critical Problem of Obtaining House Staff and Visiting Staff in the Nonuniversity Municipal Hospital," and we appreciate his interest and comments.

Our article points up the growing shortage of visiting staff as well as house staff in municipal hospitals. An inadequate visiting staff would definitely reduce the quality of patient care.

We recognize that the primary purpose of an intern and resident program is that of education. We therefore recommended in our article that full-time coordinators of house staff education and full-time directors of the major services with teaching and research backgrounds be employed by municipal hospitals.

Regarding the matter of patient care and house staff training, we would like to point out that the

Report of the Advisory Committee on Internships by the Council of Medical Education published in 1953, while reconfirming that "educational benefits to the intern are of paramount importance and service benefits to the hospital of secondary significance" also states that "we do not mean that the hospital which offers outstanding educational opportunity to the intern should receive no services from the intern in return." The report further states: "In trying to describe the type of hospital appropriate for internship training, we all have the feeling that good education and good patient-care are by no means contradictory."

In the Essentials of An Approved Internship, published by the Council on Education in 1953, it is stated "a well-organized, effective educational program inevitably results in better patient-care." We therefore feel that there is no incompatability between our concern with good patient-care and our conviction that the municipal hospital, with its wealth of service cases, offers an opportunity for house staff education. It should be recognized that with the shrinking number of service cases in nonmunicipal hospitals, due to health insurance plans, etc., the municipal hospital remains one of the remaining reservoirs of teaching material.

We believe that the number of interns a hospital should appoint is based on the ratio of 15 to 25 beds per intern, as recommended by the Council on Medical Education. The Council states that fewer than 15 beds per intern "will often result in a workload insufficient to stimulate and hold the intern's interest."

In conclusion, it is gratifying to know that while our approach to the problem may differ to some degree, our goal is identical, and an exchange of ideas will result in better intern and resident training (and if we may say so, in better patient care).

NATHAN SMITH, M.D.
Senior Medical Superintendent

Morrisania City Hospital
168th Street and Gerard Avenue
Bronx 52, New York

Poliomyelitis Immunization

To the Editor:

The interesting recent report by Boek *et al.** on the poliomyelitis immunization levels of two sparsely populated areas prompts this brief communication of our experiences in an urban sector. In 1956 and 1957 we collected poliomyelitis immunization data as part of a broad study of a randomly selected "normal" population in Syracuse, New York. In May, 1958, and April, 1959, 83 per cent and 87 per cent respectively of the persons interviewed in June through July, 1957, were requestioned for changes in their poliomyelitis immunization status. The data are summarized briefly in Tables I and II.

Table I illustrates the increase between July, 1956, and April, 1959, in the portion of the population that had received at least 1 immunizing dose. For those under twenty years of age this level has been attained by more than 90 per cent, and between twenty and twenty-nine years 83 per cent of the males and 63 per cent of the females have achieved the same level. Relatively few persons over forty years of age have been immunized. Our population samples were drawn from upper and lower economic

TABLE I.—POLIOMYELITIS IMMUNIZATION AMONG RANDOMLY SELECTED "NORMAL" SYRACUSE POPULATION (BY HISTORY)

	Per Cent with 1 or More Immunizations									
Age (Years)	July–August 1956		January–February 1957		June–July 1957		May* 1958		April† 1959	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0–9	46	49	71	67	75	79	84	88	97	96
10–19	39	22	76	55	97	89	93	91	100	94
20–29	0	4	0	36	67	33	71	46	83	63
30–39	0	8	5	18	35	48	44	65	40	70
40–49	0	0	0	0	0	5	0	5	9	28
50+	0	0	0	0	5	10	6	0	5	6
TOTAL (per cent)	19	17	37	34	53	56	57	63	65	72
Total number interviewed	177	182	250	273	160	174	142	152	150	158
Total number interviewed	359		523		334		294		308	

* June–July, 1957, group reinterviewed May, 1958, with 83 per cent positive response.
† June–July, 1957, group reinterviewed April, 1959, with 87 per cent positive response.

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* Boek, W. E., Patrie, L. E., and Huntley, V. M.: Poliomyelitis vaccine injection levels and sources, NEW YORK STATE J. MED. **59**: 1783 (May 1) 1959.

TABLE II.—Three or More Poliomyelitis Immunizations Among Randomly Selected "Normal" Syracuse Population (by History)

Age (years)	Number and Per Cent with 3 or More Immunizations									
	July–August 1956		January–February 1957		June–July 1957		May* 1958		April† 1959	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
0–9	0	0	29	17	50	39	81	73	73	79
10–19	3	6	17	24	29	53	40	80	67	84
20–29	0	0	0	0	0	0	6	30	10	71
30–39	0	0	0	0	0	0	12	31	21	50
40+	0	0	0	0	0	0	0	0	8	10
TOTAL	3	1	46	12	79	24	139	49	179	58

* June–July, 1957, group reinterviewed May, 1958, with 83 per cent positive response.
† June–July, 1957, group reinterviewed April, 1959, with 87 per cent positive response.

levels (on the basis of census tract data); a larger proportion of the former has received the vaccine.

Among those who have received 3 or more vaccine doses (Table II), 67 of the 80 (84 per cent) persons in the ten- to nineteen-year age group who recently were reinterviewed reported that they have completed their immunization programs. Almost as many (79 per cent) of the 92 children under ten years of age have received 3 doses, but some of the younger ones are still being immunized. Almost three quarters of the twenty- to twenty-nine-year and one half of the thirty- to thirty-nine-year age groups have received 3 immunizations.

Nine per cent of 200 persons under twenty years of age had received a fourth vaccine dose by April, 1959. Eight times as many of those who received the fourth immunization were from the higher income areas of the city. There was only 1 person over twenty years of age who reported a fourth immunization dose.

These data suggest that while considerable progress has been achieved in the poliomyelitis immunization program in this city, the results are somewhat spotty both for age and economic levels.

THOMAS W. MOU, M.D.
HARRY A. FELDMAN, M.D.

DEPARTMENT OF PREVENTIVE MEDICINE
STATE UNIVERSITY OF NEW YORK
UPSTATE MEDICAL CENTER
766 Irving Avenue
Syracuse 10, New York

Physicians Travel Far for Postgraduate Classes

Physicians are willing to travel great distances—even more than 300 miles—to attend postgraduate medical education courses, a new American Medical Association study shows.

The study, conducted by the A.M.A. Council on Medical Education and Hospitals, is reported in the current May 9 *Journal* of the *American Medical Association*. It deals with 20,432 physicians who enrolled in postgraduate courses between September 1, 1956, and August 31, 1957.

The study showed that physicians traveled from one-half mile to more than 300 to attend courses. A third of them traveled from 50 to 200 miles. The distances traveled were greatest in the western part of the country. In all regions, however, physicians traveled much farther to enroll in postgraduate courses than had previously been assumed.

It appears that the kind of course has greater importance in attracting enrollment than does the distance the doctor has to travel. Courses offered by medical schools are most popular.

In view of the apparent willingness of doctors to travel long distances, reconsideration might be given to the way postgraduate courses are set up. The report recommended that course planning not be limited only to state areas, but be done on regional bases.

SUMMARY OF COUNCIL MINUTES

April 9, 1959

The Council of the Medical Society of the State of New York met at the Society's headquarters, 750 Third Avenue, New York City, Dr. Leo E. Gibson, president, presiding.

Executive Committee

Communications.—W. P. Anderton, M.D., secretary, reported on communications acted on by the Executive Committee and recommended the following: (1) that the Council grant permission to the Radiology Society of the State of New York to meet in the Council Chamber; (2) that Joseph Witt, M.D., and Frank Reynolds, M.D., represent the Society at a meeting in Washington in June sponsored by the Joint Council to Improve the Health of the Aged; (3) that the Ad Hoc Committee on Nursing Homes and the Subcommittee on Aging of the Public Health and Education Committee be merged to become a subcommittee of the Public Health and Education Committee.

The Council *approved* the actions of the Executive Committee.

Dues Remissions.—The Council *voted* to remit annual State dues of 11 members for 1959 because of illness; 5 members for 1959 because of military service; and 3 members for 1959 because of financial hardship.

Secretary's Report

The Council *approved* the report of the secretary which detailed the implementation of the actions of the council at its previous meeting and the meetings and conferences in which he had participated.

Treasurer's Report

Maurice J. Dattelbaum, M.D., presented the treasurer's report which *was approved* by the Council.

Executive Director's Report

Herbert T. Wagner, M.D., reported his activities during the preceding month and meetings he was scheduled to attend during April. The report included a detailed account submitted to Walter W. Mott, M.D., chairman of the Board of Trustees, concerning the Executive Director's visit to Harrisburg in March to study the Pennsylvania Educational and Scientific Trust.

Reports of Committees

Constitution and Bylaws.—Ezra A. Wolff, M.D., chairman, reported on revisions of the constitution and bylaws of the Cattaraugus County Medical Society.

The Council *approved.*

Cults.—James M. Blake, M.D., chairman, reported on the activity in opposition to the chiropractic bill which was not reported out of committee in the State Legislature.

The Council *approved* the report and gave a vote of thanks to Dr. Blake for his work.

Economics.—John C. McClintock, M.D., chairman, presented the second annual progress report on the Medicare program which stated that since its inauguration on December 7, 1956, 6,764 physicians in New York State had participated in the program, and that during the year ending December 31, 1958, the total amount paid to physicians was $1,558,151, representing 20,772 claims for an average payment of $75.01. It was pointed out that this is not the total physician's fee per case, because fees for assistants, anesthesiologists, and others may be smaller but each counts as one physician's claim.

The Council *voted* to accept the report.

Dr. McClintock outlined the plans of the Economics Committee to urge the Blue Shield Plans in the State to develop a program of insurance for persons over sixty-five years of age.

The Council *approved* the report.

Veterans Administration, Liaison Subcommittee with.—John C. McClintock, M.D., reported that the Subcommittee on Liaison with the Veterans Administration was renegotiating the contract with the Veterans Administration and that the agreement would be presented to the Veterans Medical Service Plan of New York, Inc., and would continue through June 30, 1960.

The Council *approved* the report.

Hospital and Professional Relations.—Raymond S. McKeeby, M.D., chairman, reported on a meeting of the Permanent Policy Committee consisting of representatives of the Committee on Medical Relations of the Hospital Association of New York State and the Hospital and Professional Relations Committee of the Medical Society of the State of New York and described items which were discussed by the group including: (1) the establishment of a Joint State Committee on Mediation; (2) a suggestion that a liaison group to include the State Medical Society, the State Hospital Society, and the representatives of the medical schools be established; (3) the Forand Bill; (4) the advisability of approving suggested temporary licensing of foreign interns by the State Education Department.

The Council *approved* the report.

Industrial Health.—Peter J. Di Natale, M.D., chairman, reported that in cooperation with the Commerce and Industry Association of New York a small plant survey had been conducted which indicated that many plants of less than 500 employes utilize the facilities of local physicians when they have no actual medical facilities on the premises. He announced that a survey of industrial health activities in a small county was being planned for next year.

The Council *adopted* the report.

Labor Union and Industrial Health Centers.—Joseph A. Lane, M.D., chairman, reported that the committee had met with Mr. Harold Hanover, president of the State AFL-CIO, and that future joint meetings were being planned.

The Council *adopted* the report.

Legislation.—James M. Blake, M.D., chairman, reported on the activities of the Committee on Legislation in opposition to numerous bills introduced into the Legislature which affected the health and medical care of the people of the State. He announced that the office in Albany of the Legislation Bureau would be discontinued as of April 30.

The Council *approved* the report.

Federal Legislation Subcommittee.—John F. Rogers, M.D., chairman, reported on legislation under consideration in Congress of interest to the members including the Keogh-Simpson and the Forand Bills. He recommended that the State Society cooperate for the enactment of the Hill-Humphrey-Fogarty bill establishing an Institute of International Medical Research and that Senator Humphrey be so notified. He also proposed a resolution of condolence on the death of Representative Daniel A. Reed of Dunkirk, a representative in Congress of the 43rd Congressional District since 1918.

The Council *approved* the report.

Office Administration.—John J. Masterson, M.D., chairman, reported on routine matters which had been considered by the committee including: (1) the resignation of Miss Grace I. West of the JOURNAL Advertising Department as of July 1, 1959; (2) the annual staff outing the latter part of June, and (3) the receipt of the new addressograph equipment.

The Council *approved* the report.

Publication.—Alfred P. Ingegno, M.D., chairman, reported on routine matters discussed by the committee and recommended that the present policy of excluding proprietary hospitals from listing in the *Medical Directory* be continued.

The Council *approved* the report.

Public Health and Education.—Normal S. Moore, M.D., chairman, reported on the following: (1) the Subcommittee on Maternal and Child Welfare plan to conduct an analysis of maternal deaths in the State each year;

(2) the project of the Subcommittee on Heart Disease to publish a series of articles in the NEW YORK STATE JOURNAL OF MEDICINE on problems connected with heart disease. The Subcommittee recommended that the "Fight Food Faddism" campaign in which the A.M.A., the Food & Drug Administration, and the National Better Business Bureau are participating be approved; the Subcommittee approved a resolution to be presented to the House of Delegates concerning the employment of the cardiac in industry;

(3) the Subcommittee on Epilepsy recommended that, if a person with a history of a single isolated convulsive seizure has normal neurologic findings, a normal electroencephalogram, and no demonstrable relevant pathology in skull x-rays, he may, after one year, be issued a three-year license subject to review each six months for a duration of two years—after which, if there is no further evidence of convulsive seizure on the part of the licensee, no further review of the license will be required until the next regular renewal date;

(4) 18 postgraduate meetings had been arranged since the last report to the Council.

The Council *approved* the report

Public Relations.—John F. Rogers, M.D., chairman, reported that preconvention publicity, general preparation for the annual convention, and intensified efforts in the Society's opposition to chiropractic licensure were among the activities carried on by the Public and Professional Relations Bureau during the previous month; a special 8-page edition of the *Newsletter* in color devoted entirely to the 1959 convention in Buffalo was published. Activities of the Bureau included also the annual meeting of the Subcommittee on Cooperation with Media of Information with representatives of the New York State Bar Association to re-evaluate the "Standards of Practice for Doctors and Lawyers"; assistance to local radio, television, and news personnel; the third session of the Speakers Panel, and work with the Woman's Auxiliary. Dr. Rogers recommended that a suitable certificate of commendation be awarded to the Health Insurance Council in recognition of the preparation and distribution of a simplified insurance form.

The Council *approved* this report.

In executive session it *was voted* to report to the Council the recommendation that the Executive Director be authorized to recommend reorganization of the Bureau of Public and Professional Relations with assistance of such committees and members of the Society as may be required.

The Council *accepted* the report.

Resolution 58-49: Medical Care, the Job of the Medical Profession.—George J. Lawrence, Jr., M.D., chairman, presented a progress report on the results of the questionnaire sent in January to each county medical society which indicated that free choice of physician was favored over closed panel practice and recommended that a strong campaign be waged by the State Society to get proprietary hospitals accredited so that the public can expect the best possible medical care, and that the committee be continued awaiting the report on nonprofit prepayment plans in New York State now being developed by Ray Trussell, M.D., of the School of Public Health and Administrative Medicine, Columbia University.

The Council *approved* the report.

Rural Medical Service.—Edward C. Hughes, M.D., chairman, reported on a meeting of the committee held March 16 in Syracuse at which it was decided that the survey program should be attempted in Onondaga, Oswego, and Cortlandt Counties.

The Council *approved* the report.

Woman's Auxiliary, Advisory to.—Thurman B. Givan, M.D., chairman, reported on activities of the various county auxiliaries and of the State Auxiliary.

Workmen's Compensation—Gerald D. Dorman, M.D., chairman, reported on various details concerning the new Workmen's Compensation fee schedule which were being discussed.

The Council *approved* the report.

New Business

President Gibson.—The Council gave a *rising vote of thanks* and appreciation to Dr. Gibson for his outstanding leadership during the past year.

Secretary Anderton.—The Council gave a *rising vote of thanks* to Dr. Anderton for his long and faithful service as secretary and general manager of the Society and *voted* to invite him to be the guest of the Society for all the activities of the 1959 convention in Buffalo.

Chairman of Trustees Mott.—The Council gave a *rising vote of thanks* to Dr. Mott, chairman of the Board of Trustees, for his long service, particularly in getting the new headquarters for the Society.

Time of Council Meetings.—Norman S. Moore, M.D., suggested that serious consideration be given to changing the date for the monthly meetings of the Council and the Board of Trustees from the second Thursday of the month to the fourth Thursday.

The meeting adjourned at 12:15 P.M.

The nearest way to glory is to strive to be what you wish to be thought to be.—SOCRATES

NECROLOGY

Eugene A. Dupin, M.D., of New York City, died on May 2 at the age of seventy-eight. Dr. Dupin graduated in 1910 from Columbia University College of Physicians and Surgeons and interned at Bellevue Hospital. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry Field, M.D., of Herkimer, died on June 5 at the age of ninety-three. Dr. Field graduated in 1896 from Albany Medical College. He was a member of the Herkimer County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frederick Arlington Finch, M.D., of Amagansett, died on February 12 at the age of eighty-three. Dr. Finch graduated in 1899 from Baltimore University School of Medicine.

William E. Glanville, M.D., of Southampton, died on January 13 at the age of seventy-one. Dr. Glanville graduated in 1911 from Cornell University Medical College. He was a consulting physician at Southampton Hospital Association.

Ber Jakobson, M.D., of Rome, died on February 4 at the age of sixty-nine. Dr. Jakobson received his medical degree in 1914 from the University of Charkov. He was a member of the Mohawk Valley Neuropsychiatric Society.

Charles Andrew Keil, M.D., of the Bronx, died on May 19 at the age of sixty-eight. Dr. Keil graduated in 1918 from Fordham University School of Medicine.

Hans W. Liepmann, M.D., of Central Valley and Monroe, died on May 6 at the age of fifty-six. Dr. Liepmann received his medical degree in 1925 from the University of Freiburg. He was an attending physician at Cornwall Hospital and one of the school physicians for the Monroe-Woodbury Central School District. Dr. Liepmann was a member of the Orange County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Cooley McGarrahan, M.D., of Cohoes, died on June 4 at his home at the age of sixty-two. Dr. McGarrahan graduated in 1921 from Harvard University Medical School. He was an examining physician for the Workmen's Compensation Board.

Reginald Walker MacIntyre, M.D., of New York City, died on May 31 in St. Luke's Hospital at the age of seventy-eight. Dr. MacIntyre graduated in 1907 from the University of Toronto Faculty of Medicine. He had retired in 1949.

James Andrew Mathers, M.D., of Kingston, died at his home on May 19 at the age of sixty-five. Dr. Mathers graduated in 1917 from the University of Toronto Faculty of Medicine. He was an attending in psychiatry at Benedictine Hospital and was a member of Ulster County Medical Society and the Medical Society of the State of New York.

August H. Meise, M.D., of the Bronx, died at his home on June 12 at the age of seventy-five. Dr. Meise graduated in 1909 from Fordham University School of Medicine. On June 10 he had attended commencement exercises at Fordham University where he was one of the four graduates of the golden jubilee class of the Fordham Medical School who received testimonial scrolls from Cardinal Spellman. He had pioneered in the introduction of spinal anesthesia in this county.

Stephen Julian Meisel, M.D., of New York City, died on May 15 at the age of sixty-two. Dr. Meisel received his medical degree in 1922 from the University of Berlin. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Franklin Plumley, M.D., of St. Petersburg, Florida, formerly of Rochester, died on May 24 at the age of eighty-one. Dr. Plumley graduated in 1902 from New York University and Bellevue Hospital Medical College. He was a member of the Monroe County Medical Society and the Medical Society of the State of New York.

Frieda Rath, M.D., of Elmhurst, died on December 27, 1958, at the age of fifty-one. Dr. Rath received her medical degree in 1933 from the University of Munich.

Giovanni Santillo, M.D., of Tompkinsville, died at his home on June 15 at the age of sixty-two. Dr. Santillo received his medical degree in 1923 from the University of Rome. He was founder and owner of Sunnyside Hospital, Staten Island. Dr. Santillo was a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frederick William Schnitzler, M.D., of Woodmere, died on May 21 at the age of seventy. Dr. Schnitzler received his medical degree in 1912 from the University of Freiburg. He was an assistant attending physician at St. Joseph's Hospital, Far Rockaway. Dr. Schnitzler was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Irwin Lawrence Turque, M.D., of Brooklyn, died on May 17 at the age of fifty-nine. Dr. Turque graduated in 1925 from Long Island College Hospital Medical School.

Werner Philipp von Stokar-Sielentz, M.D., of Great Neck and Port Washington, died on April 18 at the age of sixty-two. Dr. von Stokar-Sielentz received his medical degree in 1927 from the University of Leipzig. He was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Antarctica-Based Men Suffer Tension Headaches

Men stationed in Antarctica during the recent geophysical year frequently suffered from headaches but not because of the cold, according to a Navy psychiatrist. The headaches apparently were of emotional origin, Capt. Charles S. Mullin, Jr., Philadelphia, said in the May 9 *Journal of the American Medical Association.* He explained that the men, living in very close quarters for a year, realized that they must control their aggression and hostility. The resulting tension caused the headaches.

Station medical officers felt that few if any of the headaches could be attributed to eye strain, poor ventilation, fatigue, cold, hunger, sinus trouble, or other common causative factors. Most of the headaches occurred during the winter months when there was comparatively little outside activity.

It was striking, Captain Mullin said, that at small stations there was a "remarkable absence of either physical fights or hostile-angry arguments." The explanation apparently lies in the fact that the men recognized the need for control and for avoiding open breaks. Each man realized that he was dependent on the good will of the "next man" and of the group as a whole in this "tight little world." This abnormal control effort could not be achieved without some tension.

Studies showed that the civilian-officer group suffered more headaches than the enlisted group. The enlisted men were perhaps more fortunate in having more varied methods of handling the problem, Captain Mullin said. For example, there were violent swearing, vigorous horseplay, and "an interesting technic of exchanging frank and fearful insult, often quite personal and to the point but apparently rarely reacted to with much if any anger."

"The more sophisticated scientist-officer group were more limited in the effective technic available and were perhaps under greater self-imposed necessity for careful control of their aggressions: hence their preponderance of headaches."

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With Plaquenil or Aralen alone 62% grade I and II improvement. (Scherbel, A.L., Harrison, J.W., and Atdjian, Martin: Cleveland Clin. Quart. 25:95, April, 1958. Report on 805 patients with rheumatoid arthritis or related diseases.)

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MEDICAL NEWS

Van Meter Prize Award—The American Goiter Association again offers the Van Meter Prize Award of $300 to the essayist submitting the best manuscript of original and unpublished work concerning goiter, especially its basic cause. The studies may relate to any aspect of the thyroid gland in its functions in health and disease.

The award will be made at the Fourth International Goiter Conference in London, England, July 5 through 9, 1960. A place on the program will be reserved for the winning essayist if he is able to attend. The 1960 recipient of the award will receive consideration for an award of a travel honorarium.

Essays may cover either clinical or research investigations, should not exceed 3,000 words, and must be presented in English. Duplicate typewritten copies, double spaced, should be sent to the secretary, John C. McClintock, M.D., 149$^1/_2$ Washington Avenue, Albany 10, New York, not later than January 1, 1960.

Course in Radioactive Isotopes—The Queens Hospital Center will hold a course devoted to laboratory technics in the use of radioactive isotopes. The course, limited to 10 members, will consist of 8 sessions of four hours each (1:00 P.M. to 5:00 P.M.), Wednesday afternoons, starting September 30 and ending November 25.

Requests for applications should be sent to Philip Kahan, M.D., supervising medical superintendent, Queens Hospital Center, 82–68 164th Street, Jamaica 32, New York.

Doctor's Orchestral Society—On May 21 the Doctors' Orchestral Society of New York presented a benefit concert for the National Cystic Fibrosis Research Foundation. Dr. Harvey Solomon is president of the Society and Mr. Norman Masonson, conductor.

Physicians, dentists, and members of allied professions are invited to become members of the society. Rehearsals, which will be resumed in the fall, are held Thursday evenings at 8:30 P.M. in the auditorium of Stuyvesant High School, 15th Street and First Avenue, New York City.

For further details contact Benjamin A. Rosenberg, M.D., 909 President Street, Brooklyn 15, New York, NEvins 8–2370.

Northeastern New York Radiological Society—At the May 16 meeting of the Northeastern New York Radiological Society the following officers were elected for 1959–1960: Sidney I. Etkin, M.D., Albany, *president;* Everett Jacobs, M.D., Hudson, *vice-president;* Irving Van Woert, Jr., M.D., Albany, *secretary-treasurer.*

Institute of Existential Analysis Formed—The Institute of Existential Analysis has recently been formed. Newly-elected president of the Institute is Herbert Holt, M.D.

Inquiries with reference to the Institute may be addressed to Dr. Holt at the Institute's offices, 49 East 78th Street, New York 21, New York.

Physician Serves as Consultant Cardiologist—Burton L. Zohman, M.D., clinical professor of medicine, State University College of Medicine at New York City, served as consultant cardiologist to the annual physical examination program for physicians at the 108th annual meeting of the American Medical Association in Atlantic City, June 8 through 12. The examination program is sponsored by the American Academy of General Practice, the American College of Cardiology, The National Heart Institute, and the National Tuberculosis Association.

Integration of Units at Kings County Hospital Center—The Board of Hospitals of the City of New York has adopted a resolution that as of July 1, 1959, the professional services of the Kings County Hospital Center in Brooklyn be integrated with the teaching services of the affiliated medical school, the Downstate Medical Center of the State University of New York.

The Board's action, which brings to an end the separate operation of the professional units, was taken in order to strengthen the joint effort of the City and the State in the care of patients, teaching, and research in health fields.

Institute Formed to Study Gravitational Strain—The Institute for Gravitational Strain Pathology, Inc., has been founded to study the specific and general ill effects of gravitation on man. The institute is a nonprofit organization, incorporated in the State of New York, and supported by philanthropic funds. The Institute's present topic of investigation is the "low back problem." Reports on the

[Continued on page 2794]

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[Continued from page 2792]

institute's work will be published.

For information write to Martin Jungmann, M.D., director, Institute for Gravitational Strain Pathology, Inc., 1384 Third Avenue, New York 21, New York.

Sister Elizabeth Kenny Foundation Scholarships—The Sister Elizabeth Kenny Foundation has announced the continuation of its program of postdoctoral scholarships to promote work in the field of neuromuscular diseases. These scholarships are designed for scientists at or near the end of their fellowship training in either basic or clinical fields concerned with the broad problem of the neuromuscular diseases.

The Kenny Foundation scholars will be appointed annually. Each grant will provide a stipend for a five-year period at the rate of $5,000 to $7,000 a year depending upon the scholar's qualifications. Candidates from medical schools in the United States and Canada are eligible.

For details concerning the program write to E. J. Huenekens, M.D., medical director, Sister Elizabeth Kenny Foundation, Inc., 2400 Foshay Tower, Minneapolis 2, Minnesota.

American Association of Doctor's Nurses—The American Association of Doctor's Nurses, a new, nonprofit association, has recently been incorporated and has assumed the membership of the old American Registry of Doctor's Nurses. Membership in the association is composed of nurses whose experience has been entirely in physicians' offices, and trained and practical nurses who are now serving in physicians' offices rather than in hospitals.

For information contact the American Association of Doctors' Nurses, Suite 800 American Building, 1317 F Street, N.W., Washington 4, D.C.

Frank H. Rowe Memorial Fellowship Established—The newly-established Frank H. Rowe Memorial Fellowship in Rehabilitation in the United States for an Australian physician will be given by the World Rehabilitation Fund, Inc., in cooperation with the Australian Advisory Council for the Physically Handicapped, the International Society for the Welfare of Cripples, and the Smith Kline and French Foundation.

The fellowship is for a minimum of one year and is subject to renewal. The training will be given at the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, New York City.

Book on Industrial Health—A report of the 1959 National Health Forum has been published in book form, entitled *The Health of People Who Work*, edited by Albert Q. Maisel. Of value to physicians interested in industrial health, the report discusses absenteeism, accident prevention, the improvement of hiring and retirement policies, and the lowering of production costs. Copies may be ordered from the National Health Council, 1790 Broadway, New York 19, New York.

Falkirk Hospital Approved—The Central Inspection Board of the American Psychiatric Association, Washington, D.C., has announced that Falkirk Hospital, Central Valley, Orange County, has been fully approved.

Medical Society Counsel Moves Office—The office of Martin, Clearwater and Bell, legal counsel to the Medical Society of the State of New York (Mr. William F. Martin, counsel; Mr. Robert Bell, attorney) announce the removal of their offices as of July 2, 1959, to 355 Lexington Avenue, New York 17, New York. The new telephone number is OXford 7-3122.

John A. Hartford Foundation Reports—The John A. Hartford Foundation reports that during 1958 it appropriated $5,585,066 and paid out $3,945,813 primarily for 67 new or continuing grants to 54 medical institutions. In the first formal report in its thirty-year history the foundation revealed that in the seven years following the founder's death in 1951 grants totaling more than $18 million were made.

The grants, which run from one to three years, are not limited to equipment or fellowships but frequently provide support for professional, technical and other personnel, laboratory expenses, training expenses, travel expenses, hospital care of selected test patients, and institutional overhead.

Personalities

Retired

Samuel M. Gordon, M.D., as director of research of Endo Laboratories, June 30.

Awarded

Edith M. Lincoln, M.D., New York City, the Trudeau Medal. . .Eric P. Mosse, M.D., New York City, awarded best in show at the American Physicians' Art Association's twenty-second annual exhibit.

[Continued on page 2796]

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[Continued from page 2794]

Honored

Leona Baumgartner, M.D., New York City Commissioner of Health, with an honorary degree of Doctor of Laws from Skidmore College.

Appointed

William J. Pyles, M.D., New York City, as medical director of the New York Heart Association . . .Norman Simon, M.D., New York City, as a consultant to the newly-formed Medical Nuclear Consultants, Inc. . . .Harry E. Ungerleider, M.D., New York City, as consulting medical director of North American Reassurance Company.

Elected

Louis F. Bishop, Jr., M.D., New York City, as president-elect of the American College of Cardiology. . .Donald A. Covalt, M.D., as president of the American Academy of Compensation Medicine. . . Caldwell B. Esselstyn, M.D., Hudson, as second vice-president of the Group Health Association of America. . .Walter Levy, M.D., Albany, as president of the New York State Public Health Association. . . H. McLeod Riggins, M.D., New York City, as president of the National Tuberculosis Association . . .Harold G. Wolff, M.D., New York City, as president-elect of the American Neurological Association.

Speakers

Norton S. Brown, M.D., New York City, before the annual meeting of the Medical Society of the County of New York, May 25. . .R. A. Herfort, M.D., White Plains, before the second Pan-American Congress on Rheumatic Diseases, June 6. . . Herman E. Hilleboe, M.D., New York State Health Commissioner, at the annual health conference at Lake Placid, May 26. . .Carlyle Jacobsen, M.D., Charles Janeway, M.D., New York City, at a conference at the State University Upstate Medical Center, June 18, concerning the study of American medical education policies and methods. . .Albert A. LaVerne, M.D., New York City, at the second annual convention of Alcoholics Anonymous, June 6. . . George T. Pack, M.D., New York City, the twelfth annual Hale-McMillan lecture, April 30, at the Meharry Medical College of Nashville, Tennessee; at the Sequoia Hospital Seminar on recent developments in the field of cancer, May 9; and at the annual cancer day of the Genesee County Medical Society, Flint, Michigan. . .Herbert Pollack, M.D., New York City, at a conference on the prevention of obesity sponsored by the American Heart Association, May 26. . .Arthur Sawitsky, M.D., Jamaica, at a clinical conference at Forest Hills General Hospital, June 15.

New Drug for Parkinsonism Symptoms

A new drug has been found to be of "positive value" in the treatment of Parkinson's disease, or "shaking palsy," according to two New York City doctors.

The drug is chlorphenoxamine hydrochloride, a derivative of diphenhydramine hydrochloride, which is an antihistaminic and an antispasmodic.

Chlorphenoxamine is especially useful for the relief of muscular rigidity, loss of motor function, fatigue, depression, and weakness, all symptoms of Parkinson's disease. It is less effective against tremor, the most outstanding symptom of the disease.

However, it provides the patient with more energy and strength, greater freedom of motion and longer duration of activity than most current remedies, Drs. Lewis J. Doshay and Kate Constable of Columbia University said in the May 2 *Journal of the American Medical Association.*

Chlorphenoxamine is "a valuable addition to the armamentarium of drugs" for use in patients with Parkinsons's disease, they said. Most patients with Parkinsonism need more than one drug to control all the symptoms of the disease, and chlorphenoxamine can be combined with other drugs that are effective against tremor.

The doctors noted that the side-effects of the drug are minimal and that it does not appear to lose its effect after the patient has been using it for some months. The drug was given to 161 patients by the New York City doctors and 53 per cent were benefited.

MEDICAL MEETINGS

Sports Medicine Congress

A sports medicine congress will be held in conjunction with the 3rd Pan American Games to be held in Chicago, August 27 through September 7. The congress will meet on the Chicago campus of Northwestern University September 1 and 2. Experts in the fields of athletic training, care of injuries, diet, cardiovascular effects of sports activity, and many other facets of the sports medicine field, will be featured.

Among the speakers will be Paul Dudley White, M.D., Boston, and Allen J. Ryan, M.D., Meriden, Connecticut.

For information concerning the congress contact T. R. Van Dellen, M.D., Pan American Games, Inc., 310 South Michigan Avenue, Chicago 4, Illinois.

American Institute of Ultrasonics in Medicine

The American Institute of Ultrasonics in Medicine will hold its annual meeting September 2 at the Leamington Hotel, Minneapolis, Minnesota. For further information write to John H. Aldes, M.D., secretary, American Institute of Ultrasonics in Medicine, 4833 Fountain Avenue, Los Angeles 29, California.

North American Federation, International College of Surgeons

The twenty-fourth annual congress of the North American Federation, International College of Surgeons, will be held in the Palmer House, Chicago, September 13 through 17. Alexander Brunschwig, M.D., New York City, has been chosen to be general chairman of the meeting.

Those who wish to present papers should write to Peter A. Rosi, M.D., International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois. For hotel reservations write to the reservation secretary at the above address.

American College of Surgeons

The American College of Surgeons will hold its forty-fifth annual clinical congress in Atlantic City, September 28 through October 2.

For information write to the American College

[Continued on page 2798]

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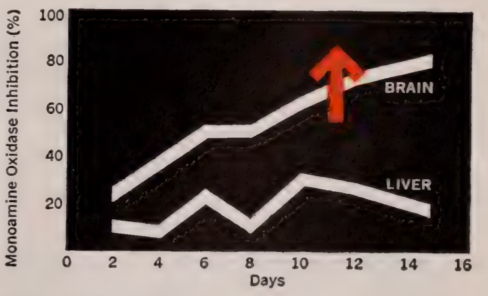

Horita, A.: Report, Mar. 17, 1959

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of Surgeons, 40 East Erie Street, Chicago 11, Illinois.

American Rhinologic Society

The American Rhinologic Society will hold its fifth annual meeting in the Belmont Hotel, Chicago, October 10. The meeting will be preceded by a surgical seminar in the Illinois Masonic Hospital, Chicago, October 7 through 9.

Richard B. Hadley, M.D., Rye, will introduce a new color and sound film entitled, "The Human Nose." John J. Conley, M.D., New York City, will speak on, "Surgery of Nasal Malignancies."

For further information write to Robert M. Hansen, M.D., secretary, 1735 North Wheeler Avenue, Portland 12, Oregon.

Academy of Psychosomatic Medicine

The sixth annual meeting of The Academy of Psychosomatic Medicine will be held October 15 through 17 at the Sheraton-Cleveland Hotel in Cleveland. The meeting will be oriented and directed to fit the needs of nonpsychiatric physicians. Everyday office management of psychosomatic problems and emotional disturbances will be dealt with in formal papers, symposia, panel discussions, and small study groups.

The meeting will be open to all scientific disciplines, as well as psychologists, social workers, and nurses. Information may be obtained from Bertram B. Moss, M.D., Suite 1035, 55 East Washington Street, Chicago 2, Illinois.

Eastern Psychiatric Research Association

The fourth annual meeting of the Eastern Psychiatric Research Association, Inc., will take place on Friday and Saturday, October 23 and 24, at the Waldorf-Astoria Hotel, New York City. A feature of the meeting will be a panel discussion on the topic, "Neuropsychiatric Aspects of Space and Depth Medicine."

For further information concerning the meeting write to David J. Impastato, M.D., 40 Fifth Avenue, New York City.

Mid-Atlantic Meeting, International College of Surgeons

The Mid-Atlantic Meeting of the International College of Surgeons will be held at the Homestead Hotel, Hot Springs, Virginia, November 16 through 18. All physicians are invited to attend.

American Academy of Dental Medicine

The American Academy of Dental Medicine will hold its mid-annual meeting in New York City at the Hotel Sheraton-McAlpin, December 6. Members of the Academy and other interested dentists and physicians are welcome to attend. For further information write to Dr. Andrew J. Cannistraci, 2152 Muliner Avenue, New York 62, New York.

Second International Meeting of Forensic Pathology

The second international meeting of forensic pathology will be held in New York City, September 18 through 21, 1960. Dedication of the new building for the office of the Chief Medical Examiner, City of New York, will take place during the meeting.

For information concerning the meeting write to Milton Helpern, M.D., 55 East End Avenue, New York 28, New York.

Conduct is three-fourths of our life and its largest concern.—MATTHEW ARNOLD

BOOKS RECEIVED

(The following books were received during the month of May, 1959)

A Textbook of Medicine. Tenth edition. By Russell L. Cecil, M.D., and Robert F. Loeb, M.D. Octavo of 1665 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $16.50.

Your Mind Can Make You Sick or Well. By Curt S. Wachtel, M.D. Octavo of 244 pages. New York, Prentice-Hall, Inc., 1959. Cloth, $4.95.

Care of the Patient with a Stroke. By Genevieve W. Smith, R.N. Duodecimo of 148 pages, illustrated. New York, Springer Publishing Co., 1959. Paper, $2.75.

The Functions of the Endocrine Glands. By Peter F. Hall, M.D. Octavo of 290 pages, illustrated. Philadelphia, W. B. Saunders Co. 1959. Cloth, $5.75.

Hypertension. By John Moyer, M.D. Octavo of 790 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $14.

Orthopaedics. Principles and Their Application. By Samuel L. Turek, M.D. Octavo of 906 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1959. Cloth, $22.50.

Patient Care and Special Procedures in X-Ray Technology. By Carol H. Vennes, R.N., and John C. Watson, R.T. Octavo of 203 pages, illustrated. St. Louis, The C. V. Mosby Co., 1959. Cloth, $5.75.

Surgery of the Ear. By George E. Shambaugh, Jr., M.D. Quarto of 669 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $27.50.

Psychodrama. Foundations of Psychotherapy. Second Volume. By J. L. Moreno, M.D. Octavo of 238 pages, illustrated. Beacon, N.Y., Beacon House, 1959. Cloth, $7.75.

Year Book of Neurology, Psychiatry and Neurosurgery. 1958–1959 Series. By Roland P. Mackay, M.D., S. Bernard Wortis, M.D., and Oscar

[Continued on page 2800]

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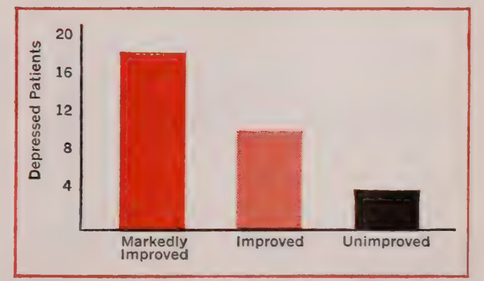

1. Agin, H. V.: in A Pharmacologic Approach to the Study of the Mind, Springfield, Ill., Charles C Thomas, in press.
2. Agin, H. V.: Conference on Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958.

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56559-A

Sugar, M.D. Duodecimo of 623 pages, illustrated. Chicago, The Year Book Publishers, 1959. Cloth, $8.50.

Progress in Psychotherapy. Volume IV. Social Psychotherapy. By Jules H. Masserman, M.D., and J. L. Moreno, M.D. Octavo of 361 pages, illustrated. New York, Grune & Stratton, Inc., 1959. Cloth, $8.75.

Biological Psychiatry. By Jules H. Masserman, M.D. Octavo of 338 pages, illustrated. New York, Grune & Stratton, Inc., 1959. Cloth, $9.75.

Dynamic Psychopathology in Childhood. By Lucie Jessner, M.D., and Eleanor Pavenstedt, M.D. Octavo of 315 pages, illustrated. New York, Grune & Stratton, Inc., 1959. Cloth, $8.75.

Insulin Treatment in Psychiatry. By Max Rinkel, M.D., and Harold E. Himwich, M.D. Duodecimo of 386 pages, illustrated. New York, Philosophical Library, 1959. Cloth, $5.00.

A Manual of Anaesthetic Techniques. By William J. Pryor, M.B. Octavo of 228 pages, illustrated. Baltimore, Williams & Wilkins Co., 1959. Cloth, $7.00.

The Medical Clinics of North America. New York Number. Volume 43, No. 3. May, 1959. Diseases of the Skin. Monthly book series. Octavo of 335 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $18 per year.

Voyage from Lesbos. By Richard C. Robertiello, M.D. Duodecimo of 253 pages. New York, The Citadel Press, 1959. Cloth, $4.00.

501 Questions and Answers in Anatomy. By Stanley D. Miroyiannis, Ph.D. Duodecimo of 332 pages. New York, Vantage Press, 1959. Cloth, $5.00.

Home Swimming Pool Hazards Outlined

Potential danger is lurking in the American back yard. The culprit is some 125,000 home swimming pools. The danger is further aggravated by almost one million small, plastic playpools which have been placed in the nation's yards for small fry.

These facts were reported in the June issue of *Today's Health*, a publication of the American Medical Association. The article said that with tremendous numbers of children and adults swimming in their own or neighbor's back yards, more people than ever face the possibility of accident.

In the past ten years the number of home swimming pools has increased from 2,500 to 125,000. A substantial increase in expected again this year.

In addition to drownings, doctors attribute many colds, ear-nose infections, skin troubles, and other diseases to home swimming where the basic principles of water sanitation are not observed. To overcome many of the potential dangers:

—Situate the pool near the house for convenience and to permit a view of the youngster's activities.

—Fence the pool or the whole area in which it is located; use a tamper-proof lock.

—Install an alarm that is set off by any sudden water displacement, such as occurs when a person splashes into a pool.

—Keep some sort of rescue device handy at all times. This may be a buoy or a pole.

—Make sure all pool users know how to swim.

—Run buoy lines across the pool, or build a divider or barrier, to define shallow and deep sections.

—Keep the pool clean. The swimming water should test as pure as tap water.

—Use a filter. It should be backwashed and flushed out every week.

—Add some form of chlorine to the water. Even with fresh water every day, diseases spread without chlorine.

—Water in splash pools and the smaller portables should be changed daily.

—See to it that some member of the family knows how to administer first aid, especially artificial respiration, and keep a first aid kit on hand near the pool.

—Have the pool constructed by a builder who carries guaranteed equipment, and who knows local health, building, and plumbing ordinances.

The article was written by Beatrice Schapper, an instructor at New York University.

BOOKS REVIEWED

The Medical Assistant. By Miriam Bredow, Dean of Women, Eastern School for Physicians' Aides. Octavo of 430 pages, illustrated. New York, McGraw-Hill Book Co., 1958. Cloth, $7.50.

This product of an essentially commendable, but overambitious and unrealistic undertaking shares the generic shortcomings of most one volume compendiums which never quite reconcile multiple objectives of comprehensiveness, clarity, and correctness. In part, this failure to achieve the nearly impossible, reflects the comparable delusion of discovering (not to mention affording) an office assistant who is a supersynthesis of receptionist, secretary, accountant, psychiatric social worker, nurse, and laboratory technician—the ultraembodiment of good grooming, intelligence, and tactful efficiency which all but the plushest practices require of a one-girl "staff." Although no pretense is made to the illusory existence of such a paragon, and the book is directed to young women who might be expected to serve in only one of these capacities, there is a redundant implication of rare scope and of potential for unique versatility in the offering, if not the acceptance, of this mass of material. The inaccuracies and questionable statements which creep into all texts seem somehow more evident here—doubtless because of the breadth of subject matter included. More than the basic information discussed, there is reason to be concerned about both some of the specific procedures recommended (e.g. sterilization of office equipment) and, particularly, impressions provided concerning the physician's professional relationships (e.g., "Prescription blanks are often supplied by a pharmacy close to the doctor's office and the patient is usually sent to this pharmacy"). Notwithstanding these limitations, the book has specific practical merit. It is well organized and contains an excellent vocabulary of medical terms, which might be improved by the elimination of arbitrary division into "speciality" groups. The experienced as well as the aspiring office assistant will find certain of these sections (perferably omitting chapter 5), valuable, providing she is alerted to the availability of, and the need to consult, other more authoritative sources of predominantly medical and related scientific information.—Robert W. Hillman

[Continued on page 2802]

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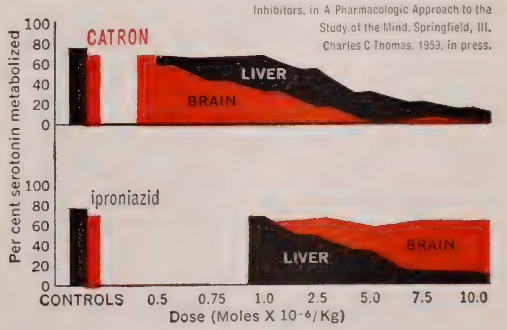

Horita, A.: The Pharmacology of the Monoamine Oxidase Inhibitors, in A Pharmacologic Approach to the Study of the Mind, Springfield, Ill. Charles C Thomas, 1959, in press.

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[Continued from page 2801]

Surface and Radiological Anatomy. Fourth edition. By W. J. Hamilton, M.D., and G. Simon, M.D. Octavo of 355 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $9.50.

In the first edition of this book which was published in 1938, the original authors described it as an introduction to the study of features which are accessible to examination in the living subject. To the time-honored methods of physical examination they added the use of radiology, for an analysis of the normal is indispensable as a background to the proper utilization of x-rays for clinical purposes.

In the present edition, many of the original radiographs have been replaced by new ones and a number of new illustrations have been added. The book covers general anatomy, skin, nerves, muscles, skeletal structures, vessels, and the organs and regions of the body. It improves on the usual textbook chart and photograph by the profuse use of radiographs. The constant correlation of anatomy with its associated radiographs not only emphasizes the anatomic findings, but also gives the reader a satisfactory groundwork in basic normal radiology.

In addition, the introductory chapters discuss the technical considerations of radiology, and the appendices have tables of ossification and of muscle innervation.

This is an excellent book at the student level. —EMANUEL MENDELSON

Epilepsy. By Manfred Sakel, M.D. Duodecimo of 204 pages. New York, Philosophical Library, 1958. Cloth, $5.00.

The author, now deceased, was the originator of the insulin shock therapy for schizophrenia. This empiric treatment has been accepted as a valuable addition to the armamentarium of the psychiatrist. In the present volume, the author attempts to extend his theories concerning the pathophysiologic processes associated with insulin therapy to the idiopathic epilepsy and explain its pathogenesis. In this he has not succeeded. The book offers no solid evidence which could support the author's thoughts on epilepsy. It abounds with instances where no distinction is made between facts and theories or proofs and assumptions. The preface, by Professor Otto Poetzl of Vienna, at whose clinic Dr. Sakel applied the insulin treatment for the first time, does not help the book either. It is a poorly translated and organized, lengthy pseudoscientific discourse, the topic of which is probably electric activity of the brain—one cannot be entirely sure. Its relation to Dr. Sakel's ideas or work could not be detected by this reviewer.

There are no documented references in the whole book. A historian compiling all theories and thoughts about epilepsy may find this volume within the realm of his interest, as the publishers seem to imply in their introductory note. As a source of information about epilepsy, the book cannot be recommended.—LADISLAV P. HINTERBUCHNER

Centaur. Essays on the History of Medical Ideas. By Felix Martí-Ibánez, M.D. Octavo of 714 pages. New York, MD Publications, 1958. Cloth, $6.00.

This book is a collection of essays, the general subject of which is defined as "phantasm notion species, or whatever it is which the mind can be employed in thinking," in the development of medical ideas. The collection is based upon leaves from the notebook of a restless editor. Books of this sort will do much to relieve the physician's tensions and elevate his cultural horizon. One marvels at the many subjects it covers so eloquently. The book is a gold mine of information and contains an excellent bibliography and index. The only fault I could find with the book is that too many words were crowded on the printed page. Reviewing this book was a pleasant experience. My hope is that the forthcoming companion volumes will not be too long in making their appearance.—LEW A. HOCHBERG

Poisoning. A Guide to Clinical Diagnosis and Treatment. Second edition. By W. F. von Oettingen, M.D. Octavo of 627 pages. Philadelphia, W. B. Saunders Co., 1958. Cloth, $12.50.

This edition brings the subject of poisoning up to date with the addition of many recent toxic materials and drugs. As in the previous edition, a large section of the book discusses the pharmacology, toxicology, and treatment of each poison, which makes it valuable for quick reference. In addition, there is a detailed classification of the various poisons grouped according to common signs and symptoms, and also according to various anatomic structures involved, which would be valuable in differential diagnosis. The laboratory section discusses the latest procedures used in detection of various poisons, and is quite complete. Also included are the biochemical changes occurring in the blood and urine as a result of poisonings. To make the book more useful, there are short chapters of general discussion on classification and diagnosis of poisoning, medico-legal responsibilities, and emergency measures and equipment.

As with the first edition, this book is of value in the field of poisonings and should prove helpful to the medical practitioner as well as to those specializing in the subject.—NATHAN MILLMAN

[Continued on page 2806]

withdrawn apathetic rejected gloomy
remorseful hopeless listless despairing
forlorn somber defeated
bitter crushed

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Dosage of CATRON must be individualized according to each patient's response. The initial daily dose should not exceed 12 mg. and should be reduced as soon as the desired clinical effect is obtained. In severe depressions some clinicians desire rapid results and begin treatment with 24 mg. daily: this dosage should not be continued for more than a few days. A single daily dose in the morning is recommended. A continuous or interrupted schedule may be used, the latter during the maintenance period.

DEPRESSION (Endogenous, Reactive, Postpartum, Involutional and Depression Secondary to Schizophrenic or Neurotic Reaction): initially, 12 mg. once daily for approximately 2 weeks, or less if improvement appears. Dosage is then reduced to 6 mg. daily. As improvement continues, maintenance dosage of 6 mg. every other day or of 3 mg. daily often proves satisfactory. An interrupted dose schedule is recommended for long-term therapy.

ANGINA PECTORIS—3 to 6 mg. daily in most cases. Relief of pain and elevation of mood may be dramatic. Victims of angina pectoris who respond in this manner should be cautione against overexertion induced by their sense of well-bein

RHEUMATOID ARTHRITIS (Adjunctive Therapy—in severely di abling forms, particularly when accompanied by depre sion): 9 to 12 mg. daily for 3 days, then 6 mg. daily, reducin further to 3 mg. daily on signs of improvement. If a co ventional antiarthritic agent is used, lower doses of eac are indicated.

CAUTION

Certain circumstances should be watched carefully whe using CATRON.

DRUG POTENTIATION—The list of drugs which CATRON potent ates is not yet complete. CATRON should not be used co comitantly with any other drug unless, (a) it has bee ascertained that the two drugs bear no qualitative relatio ship, or (b) potentiating action is being sought, as may b the case with tranquilizing drugs including reserpine ar the phenothiazines, and with the amphetamines, barbit rates and hypotensive agents.

HYPOTENSIVE EFFECT—All normotensive patients receivin CATRON, but especially elderly patients, should be warne about the possibility of orthostatic hypotension during th initial period of higher dosage. In the few instances whe this may occur, lowering of the dose will usually perm continuation of therapy.

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Psychoactive Agent

3rightens mood, diminishes apathy and confusion, curbs nptoms of withdrawal, self-pity, inadequacy, despair.[1,2]

\cts selectively on brain at doses having little no effect on liver.[5-7]

/aluable in depressions associated with ronic diseases such as angina pectoris,[8] severe ɜumatoid arthritis.[9]

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ded therapy with CATRON. Discontinue the drug if such ınges occur.

MALS, NEUROLOGIC SIGNS—In toxicity studies with animals, ıeurologic syndrome has been observed characterized tremors, muscle rigidity and difficulty in locomotion. hough extensive clinical experience has not shown such ctions to be a problem in humans in recommended ;age, should a similar neurologic disturbance occur, the ;sibility of drug action should be considered.

E EFFECTS—Major side effects requiring cessation of rapy are infrequent. Other side effects—constipation, ay in starting micturition, increased sweating, hyperlexia, ankle edema, blurring of vision, dryness of the uth—are usually readily controlled by lowering the dos-. Rash, observed in a few patients, cleared up rapidly ɔn discontinuing therapy.

RNING: Pharmacologic studies show that with proper dos- CATRON will inhibit monoamine oxidase in the brain hout influencing this enzyme in the liver. This is in ıtrast to previous inhibitors, which depress monoamine dase activity in the liver before affecting this enzyme the brain.

hough the evidence suggests that serious life-threaten- hepatitis seen with other MAO inhibitors should not :ur with CATRON in the recommended dosage, it has ɜn reported on rare occasion with dosages in excess of recommended levels.

Following Precautions are Recommended:

1. In all instances daily dose should not exceed 12 mg.
2. Reduce daily dose as soon as response is established, usually in a matter of 1 to 2 weeks.
3. Do not prescribe to a patient more than sixteen 6 mg. tablets or thirty-two 3 mg. tablets of CATRON at one time.
4. Patient should return for observation before additional CATRON is prescribed. For this reason, prescriptions for CATRON should be marked, "not refillable."
5. Perform regular liver function tests.
6. Do not use the drug in patients with a history of viral hepatitis or other liver abnormalities.

CATRON is the original brand of β-phenylisopropyl hydrazine. It is supplied as the hydrochloride in tablets of 3 mg. and 6 mg., bottles of 50.

(1) Agin, H. V.: The Use of JB-516 (CATRON) in Psychiatry, Conference on Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958. (2) Bercel, N. A.: A Pharmacologic Approach to the Study of the Mind, Springfield, Ill., Charles C Thomas, 1959, in press. (3) Kinross-Wright, J.: Panel Discussion of Psychic Energizers, *ibid.* (4) Kinross-Wright, J.: Experience with JB-516 (CATRON) and Other Psychochemicals in Clinical Practice, Conference on Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958. (5) Horita, A., and Parker, R. G.: Comparison of Monoamine Oxidase Inhibitory Effects of Iproniazid and Its Phenyl Congener, Proc. Soc. Exper. Biol. & Med. 99:617, 1958. (6) Horita, A.: *Beta*-Phenylisopropylhydrazine, A Monoamine Oxidase Inhibitor, Fed. Proc. 17:379, 1958. (7) Horita, A.: The Pharmacology of the Monoamine Oxidase Inhibitors, in A Pharmacologic Approach to the Study of the Mind, Springfield, Ill., Charles C Thomas, 1959, in press. (8) Kennamer, R., and Prinzmetal, M.: Treatment of Angina Pectoris with CATRON (JB-516), Am. J. Cardiol. 3:542, 1959. (9) Scherbel, A. L., and Harrison, J. W.: The Effects of Iproniazid and Some Other Amine Oxidase Inhibitors in Rheumatoid Arthritis, Conference on Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958.

56559-E

[Continued from page 2802]

Head Injuries. Mechanisms, Diagnosis and Management. By E. S. Gurdjian, M.D., and J. E. Webster, M.D. Octavo of 482 pages, illustrated. Boston, Little, Brown & Co., 1958. Cloth, $14.

This book is a compilation of the vast clinical and experimental data obtained by two neurosurgeons over a period of many years. The experimental data consists of material gained through personal experience.

The book begins with an interesting historical account of head injuries. Included is a chapter of practical importance on anatomic considerations which is brief and to the point. For those not well versed in the anatomy of the head, it clarifies the language of the neurosurgeon and neurologist and will be of great value in understanding the chapters which follow. The portion of the book dealing with the clinical aspects of head trauma (that is, diagnostic technics, clinical signs and symptoms, and complications of head trauma) is well written and brief. It covers the common experiences encountored in the management of head trauma. There is a short section on the special aspects of head trauma in infants and children. There are two very brief but interesting and important chapters on head injuries in sports and medicolegal aspects. The latter chapter will be of especial interest in the present-day flurry of court procedures. The book ends with two rather complete chapters on the treatment, both surgical and nonsurgical. Complete bibliographies are found at the end of each chapter.

This book will be of much value to the general practitioner and surgeon who cannot readily obtain specialist consultation. There are many fine points present in the book which will be of interest to all dealing with the management of head trauma.—Harry A. Kaplan

Annual Review of Medicine. Volume 9. By David A. Rytand, M.D., and William P. Creger, M.D. Octavo of 530 pages, illustrated. Palo Alto, California, Annual Reviews, Inc., 1958. Cloth, $7.00.

As its predecessors did, this book includes all the advances which took place in the year prior to publication. It is divided into topics, each of which covers an important system of the human body. As in the past, a prominent worker in the field authors the specific section in which he is most proficient.

This book contains many important ideas as advanced during the year in such phases of medicine as the enzymes, endocrinology, gastroenterology, hematology, and atherosclerosis. A yearly reading of this volume will keep the internist abreast of his field.—Julius E. Stolfi

Viral and Rickettsial Infections of Man. Third edition. By Thomas M. Rivers, M.D., and Frank L. Horsfall, Jr., M.D. Octavo of 967 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1959. Cloth, $8.50.

Since the publication of the last edition of this book, the investigations concerning virus and rickettsial diseases have revealed many and varied facts which amply justify the need for a new edition. The individuals who contribute to this volume are greatly responsible for the advances in this field which make the book authoritative. In this edition, new chapters are added and the text is rewritten and rearranged. Three new chapters deal with basic characteristics of viruses: "Biochemistry of the Virus-Infected Cell," "Virus-Host Cell Relation," and "Chemotherapy of Virus Infection." The echo and adenoviruses which were discovered after the last edition are discussed in two chapters. Four chapters on arthropod-borne animal viruses replace the earlier one on viral encephalitides. Poliomyelitis is discussed in three chapters and another chapter on hemorrhagic-fever has been added.

This book gives comprehensive information on all phases of viral and rickettsial diseases which is absolutely essential to present-day practitioners in every branch of medicine.—E. Singer

The Central Nervous System and Behavior. Transactions of the First Conference, February 23, 24, 25 and 26, 1958. By Mary A. B. Brazier, Ph.D. Octavo of 450 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1959. Cloth, $5.25.

This book contains the transactions of the First Conference on the Central Nervous System and Behavior. It includes a complete discussion and comparison of recent advances in this field in the Soviet Union and in the United States.

The participants of the conference are outstanding workers associated with various institutions throughout the United States. The presentations are informal, including each individual's own research, and all questions, remarks and comments are also included.

The first third of the book is devoted to a presentation of Russian contributions to an understanding of the central nervous system and behavior by means of a pictorial survey. Then follows a discussion of the nineteenth century background of the Russian neurophysiologists and Sechenov. The latter's fame rests on his book, *Reflexes of the Brain,* in which he used the reflex principle to explain the activity of the higher nervous centers. Subsequent chapters are devoted to other Russian neurophysiologists, especially Pavlov and Bech-

[Continued on page 2810]

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  Legislation Bureau
  Bureau of Medical Care Insurance
  Membership
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Selected Bibliography:
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[Continued from page 2806]

terev. In addition to the reflexes which are inborn and unconditioned, Pavlor described another series of reflexes which are dependent on education and training, which he called "conditional reflexes." The latter are mediated primarily by way of the cerebral cortex.

Up to this point, the discussions have attempted to explain what goes on in the brain during conditional reflexes, by observations of external behavior. This is indirect. In the balance of the conference, work is presented based on observations of direct studies of the brain during the learning process. These include brain stimulation and conditional responses, electroencephalographic studies of conditioned learning and electrical correlates of conditioned learning.

In the summation, one of the discussants expresses his dissatisfaction with the materialistic or behavioristic thesis, in that there is a scientific disregard of the subjective properties of the brain process. Another points out that there is an unexplored realm of perceptual conditioning.

This reviewer received great stimulation from reading these transactions and urges a perusal by every physician.—Stanley S. Lamm

Hemophilic Arthropathies. By Henry H. Jordan, M.D. Octavo of 255 pages, illustrated. Springfield, Ill., Charles C Thomas, 1958. Cloth, $8.50.

Hemophilia has a markedly destructive tendency on joints, with resulting deformities and contractures. In the last decade research in hematology has shown the importance of the use of fresh whole blood to stop bleeding in hemophilia temporarily and has developed a quick frozen antihemophilic plasma. Because of these technics, hemophilics were made to live longer, but by the same token, the tendency for crippled joints became more apparent.

Open surgery and the usual methods of correction are not feasible for sufferers of hemophilic arthropathies.

Through the establishment of The National Hemophilia Foundation an attempt has been made to seek out and organize hemophilia sufferers throughout the country.

The author with the cooperation of this organization, has had the opportunity to study 110 hemophiliacs. This monograph is the result of this experience.

The author has shown the feasibility of conservative correction of hemophilic joint deformities.

This interesting book should be of especial value to orthopedic surgeons.—Carmelo C. Vitale

Modern Chemotherapy of Tuberculosis. By Roger S. Mitchell, M.D., and J. Carroll Bell, M.D. Octavo of 109 pages, illustrated. New York, Medical Encyclopedia, Inc., 1958. Cloth, $4.00.

The need for a current review and statement of the principles of chemotherapy of tuberculosis by an author with authority has been met by this short monograph. Although brief, it has been composed with critical thought, precise comment, and comprehensive discussion. The choice of drugs to be best used, their modes of action, the method of their administration, and the underlying principles of their use for various stages and degrees of tuberculosis are described on the basis of well-established experience. The toxicity of each drug is given an adequate description.

An important section of the book gives an excellent and authoritative review of the bacterial resistance to chemotherapy. The clinical significance of this problem is thoroughly discussed.

The book is recommended for all who manage and treat patients who have pulmonary tuberculosis. It is a highly satisfactory explanation and exposition of the modern chemotherapy of pulmonary tuberculosis. The book serves a valuable purpose in dispelling the unfortunate "popular concept" and almost unexplained overenthusiastic acceptance by many of the medical profession that all that is needed is a "handful of pills to cure tuberculosis." The complexity of the actual problem of the treatment is comprehensively and clearly stated, and in so doing, the principles of chemotherapy are clarified. Some areas for disagreement may arise from the criteria used for resectional therapy and steroid therapy.—Harold A. Lyons

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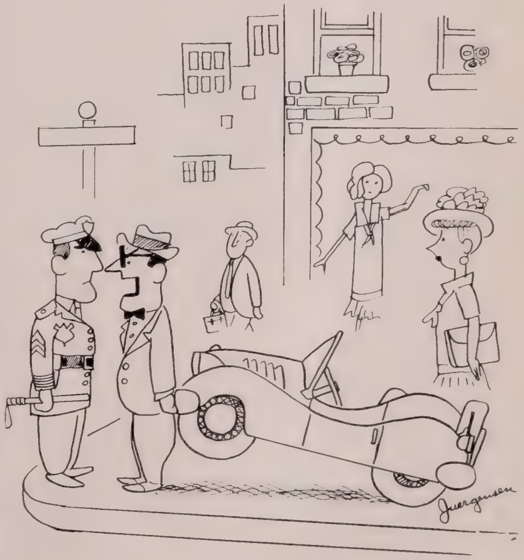

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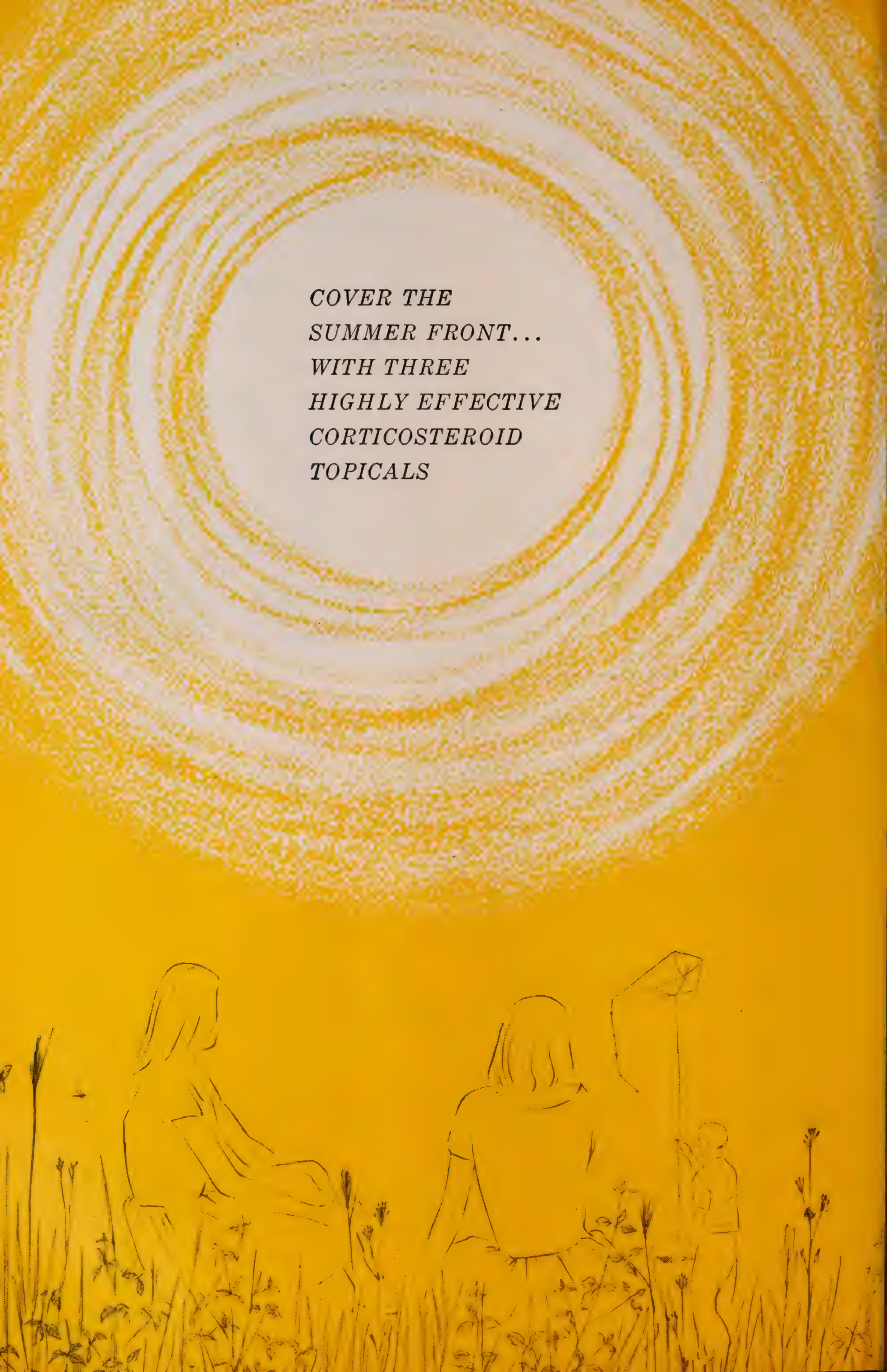
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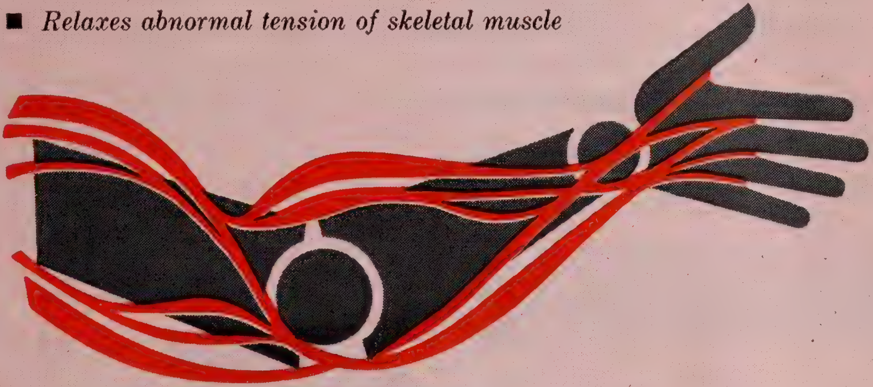

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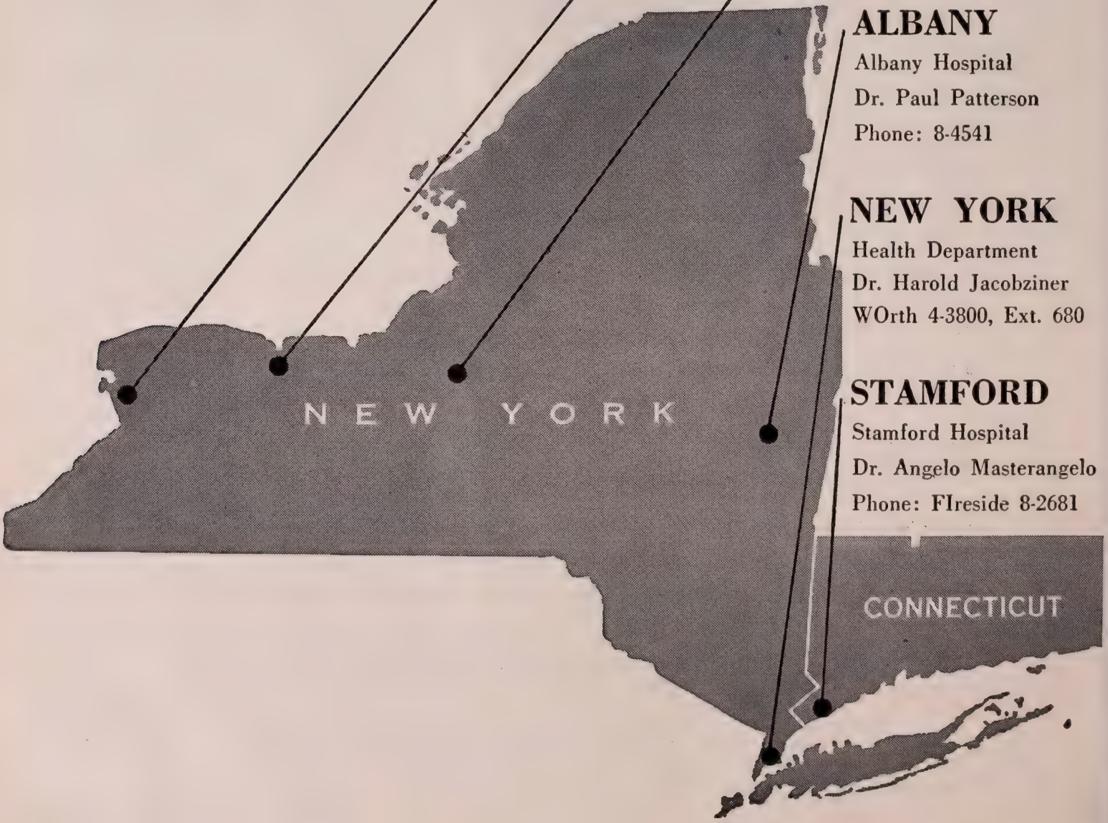

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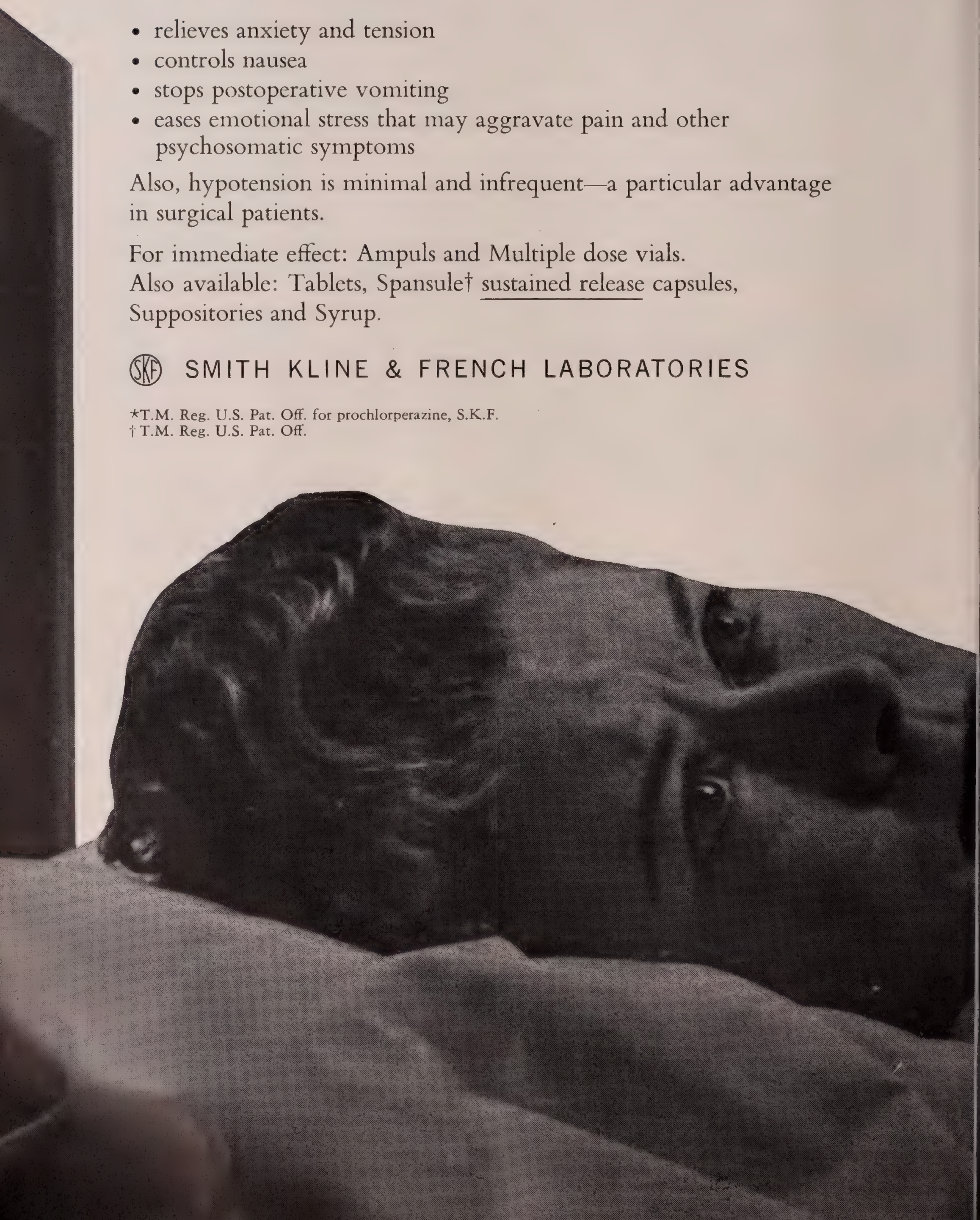

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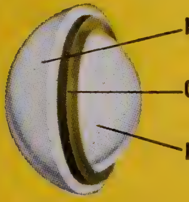

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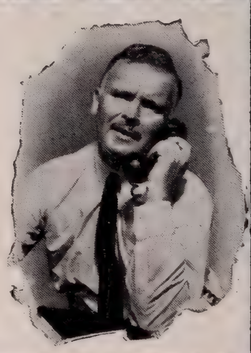
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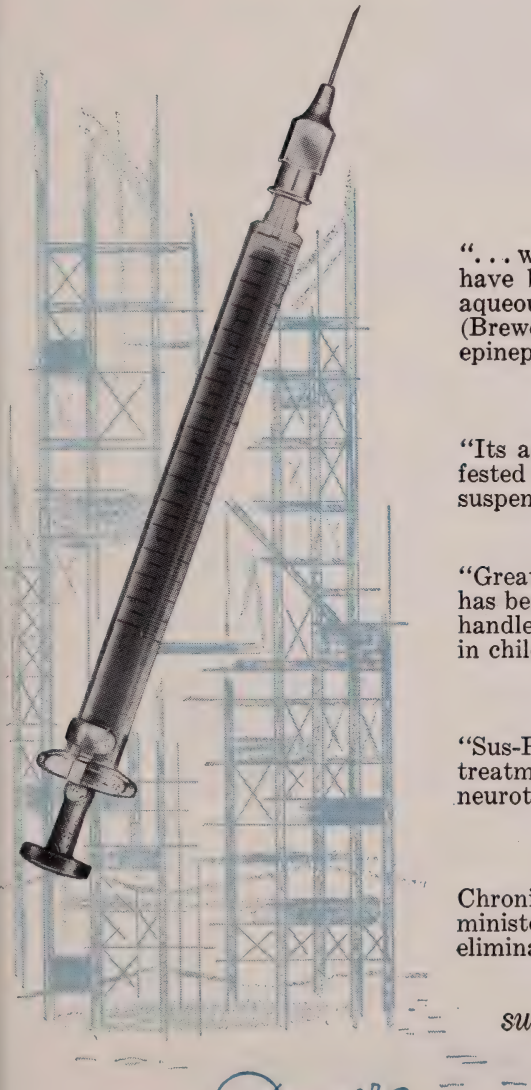

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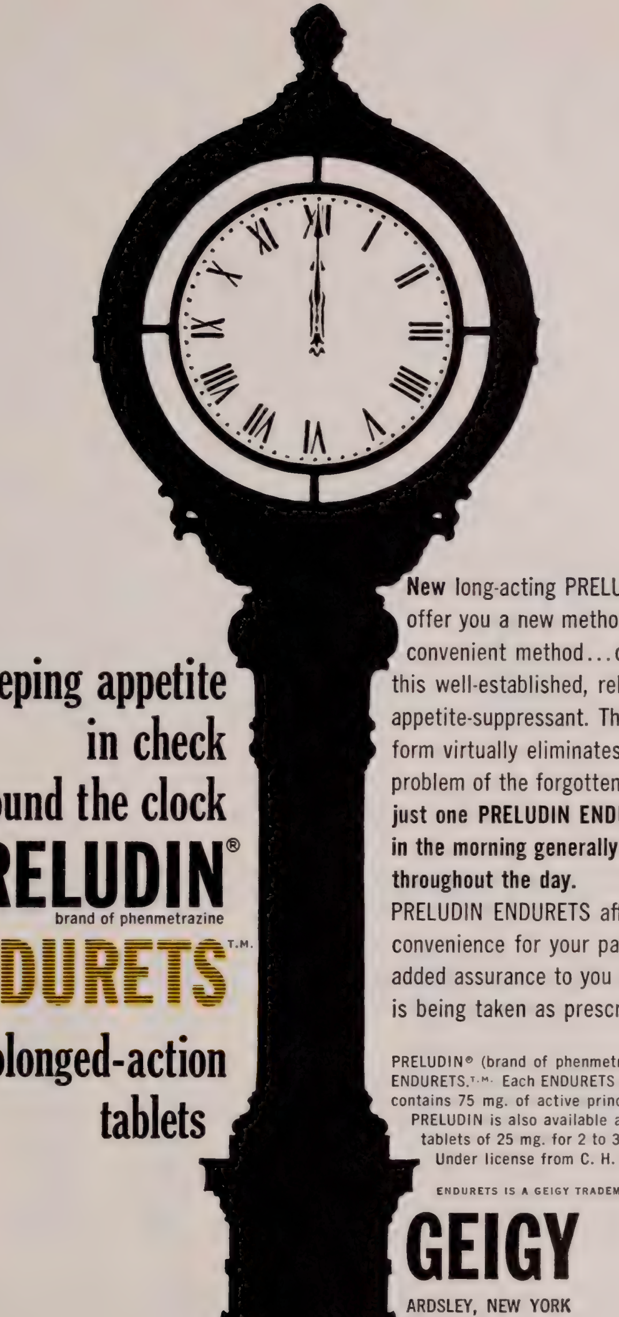

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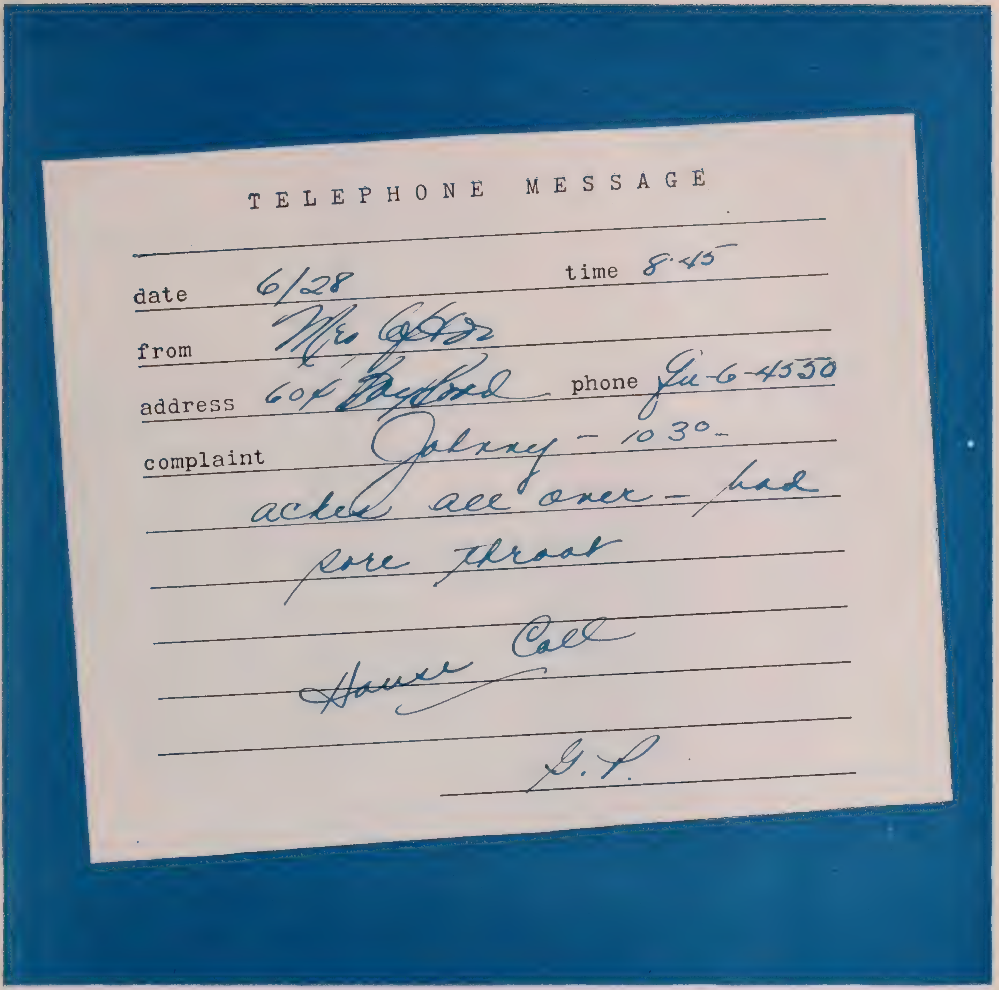

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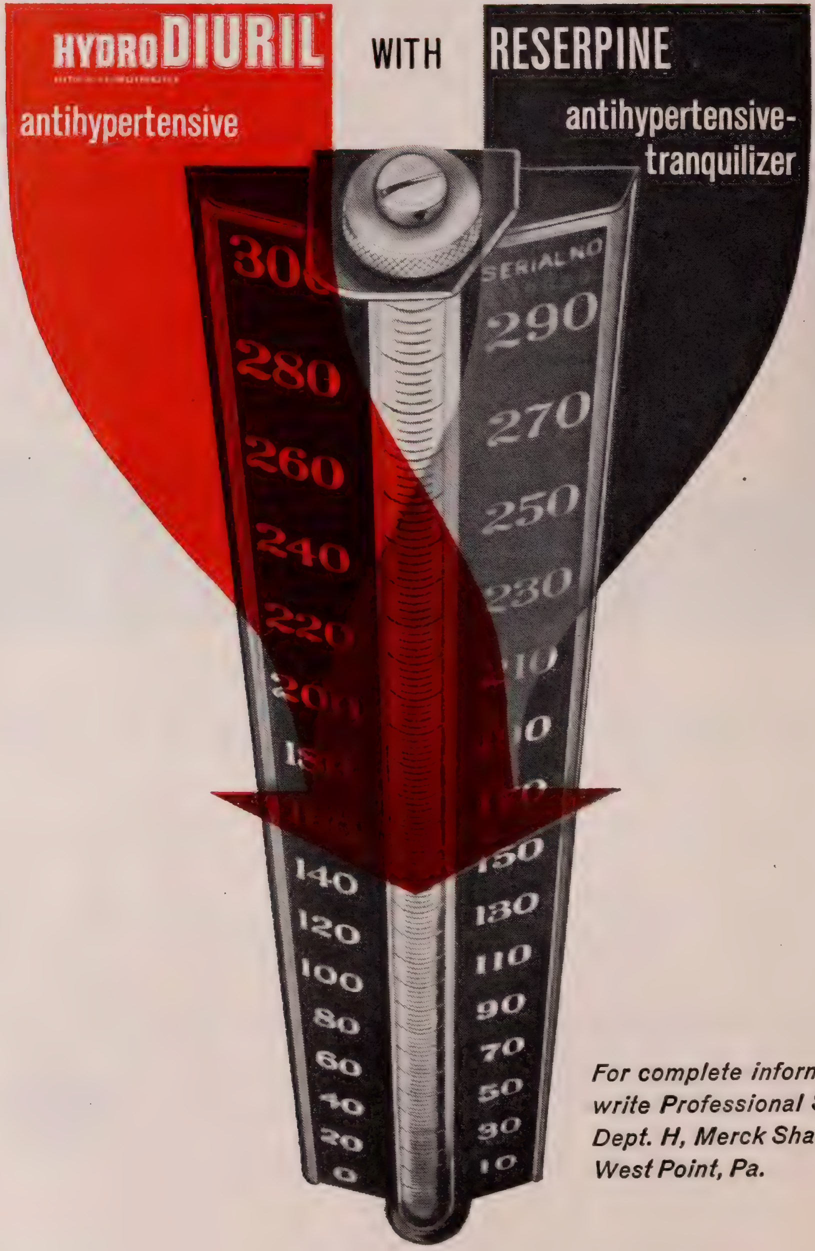
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80
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40
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SERIAL NO
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270
250
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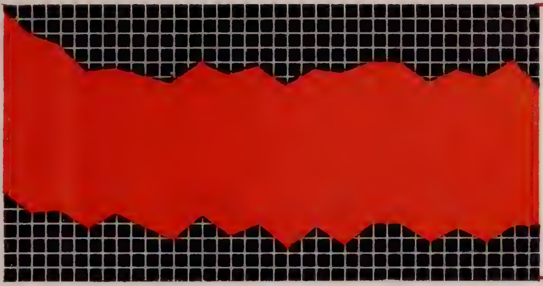
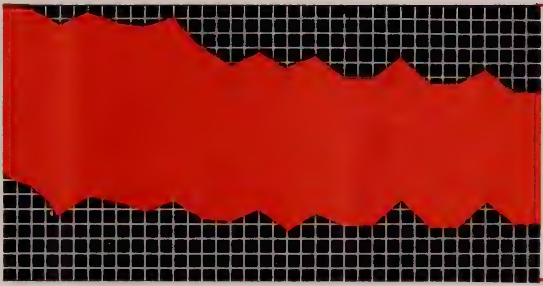


HYDRODIURIL alone



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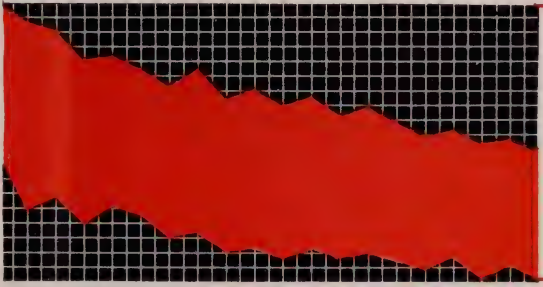

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much more effective
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- Effective by itself in a majority of patients. Provides smooth, more trouble-free management of hypertension.
- Since HYDRODIURIL and reserpine potentiate each other, the required dosage of each is lower when given together as HYDROPRES than when either is given alone.
- HYDROPRES provides the needed and valuable tranquilizing effect of reserpine. Lower dosage may reduce such side effects of reserpine as excessive sedation and depression.
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- Headache, dizziness, palpitations and tachycardia are usually promptly relieved. Anginal pain may be reduced in incidence and severity.
- With HYDROPRES, dietary salt may be liberalized.
- Convenient, controlled dosage.

HYDROPRES-25

25 mg. HYDRODIURIL, 0.125 mg. reserpine.
One tablet one to four times a day.

HYDROPRES-50

50 mg. HYDRODIURIL, 0.125 mg. reserpine.
One tablet one or two times a day.

If the patient is receiving ganglion blocking drugs or hydralazine,
their dosage must be cut in half when HYDROPRES is added.

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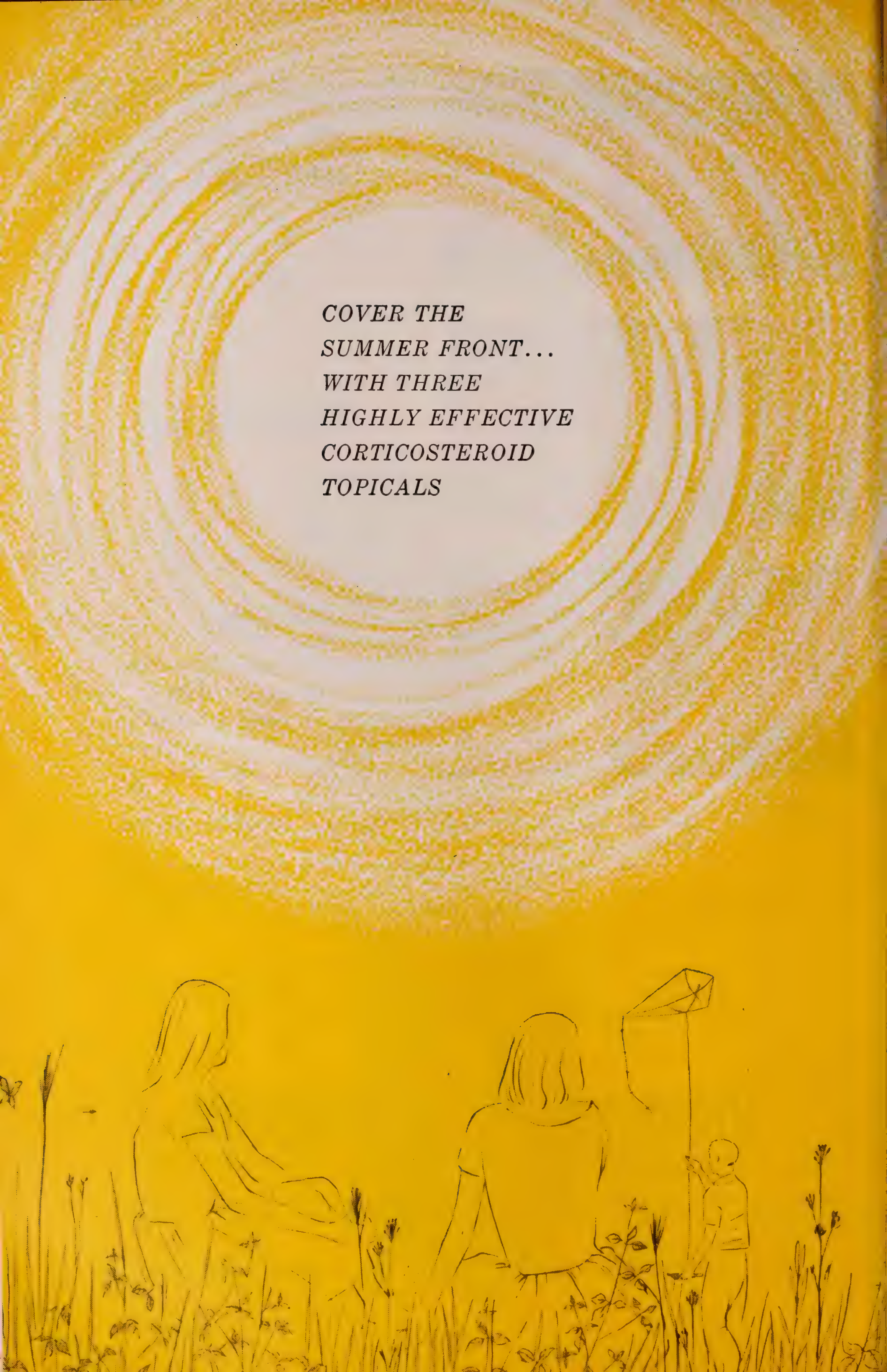

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Triamcinolone Acetonide 0.1%
TUBES OF 5 GM. AND 15 GM.

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TUBES OF 5 GM. AND 15 GM.

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The leading site of cancer today is the colon and rectum. In 1958, 58,000 new cases were diagnosed.

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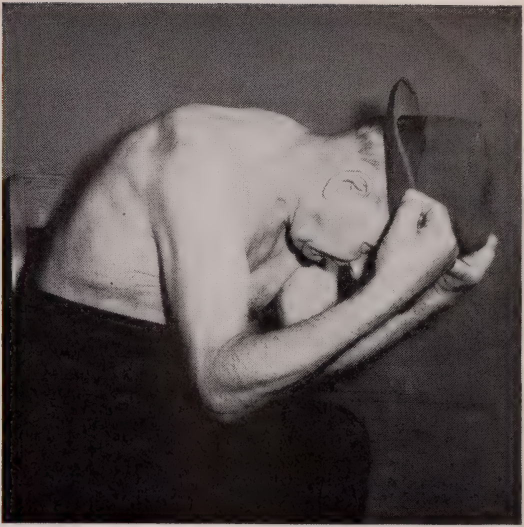
With your assistance, doctor, in persuading patients to accept these uncomfortable, time-consuming procedures, the gap between actual and possible survival rates could be rapidly closed.

AMERICAN CANCER SOCIETY ®

For arthritic M.S.: full corticosteroid benefits from new Gammacorten™



Patient M.S., 81, at the time of the first visit was in severe pain and very uncomfortable. Complained of swelling of wrists, legs and various joints; pain and stiffness in cervical area and lower spine; pain, swelling and limited motion in the fingers; slight ulnar deviation of the hand. M.S. demonstrates position necessary to put on his hat (motion was so restricted that he could not comb his hair).

Treatment and Result: After 36 hours of GAMMACORTEN therapy, M.S. had "complete relief." Joint swelling had decreased, pain was almost absent, range of motion had increased dramatically. At the end of the first week of GAMMACORTEN he was free of discomfort and able to return to his job as a porter. M.S. could put on his hat normally, could comb hair; joint function near-normal after first week.

Gammacorten T.M.

(dexamethasone CIBA)

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- profound anti-inflammatory activity
- minimal side effects

From the files of a practicing physician. Photographs used with permission of the patient.

SUPPLIED: GAMMACORTEN Tablets, 0.75 mg. (pink, scored).

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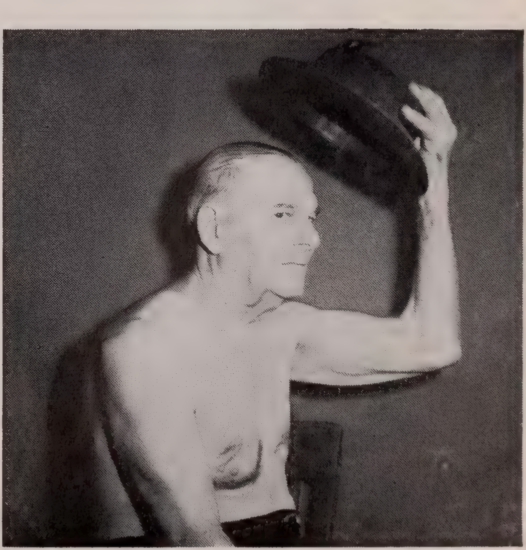

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in Turkey,
it's called the 'Turkey trot'

diarrhea by any name

GASTROENTERITIS
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DIARRHEA OF THE NEWBORN
NONSPECIFIC DIARRHEA
"SUMMER COMPLAINT"

usually responds rapidly to

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NEOMYCIN-SULFASUXIDINE®-KAOLIN-PECTIN SUSPENSION

for *rapid* relief of virtually all diarrheas

*fruit-flavored, readily accepted by patients of all ages**

Neomycin—rapidly bactericidal against most intestinal pathogens, but is relatively ineffective against such diarrhea-causing organisms as Shigella.

SULFASUXIDINE®—an ideal adjunct to neomycin because it is highly effective against Shigella and certain other neomycin-resistant organisms.

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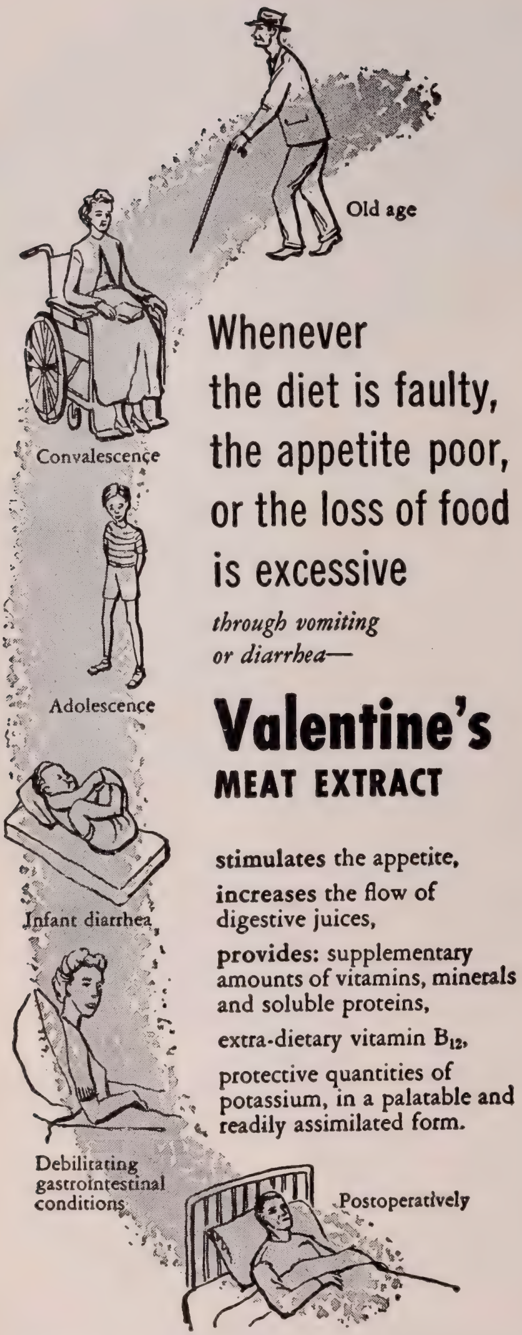

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through vomiting or diarrhea—

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MEAT EXTRACT

stimulates the appetite,
increases the flow of digestive juices,
provides: supplementary amounts of vitamins, minerals and soluble proteins,
extra-dietary vitamin B_{12},
protective quantities of potassium, in a palatable and readily assimilated form.

Supplied in bottles of 2 or 6 fluidounces.

DOSAGE *is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy.*

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250 mg./5 cc

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Recommended dosage: First-day dose is 1 teaspoonful (250 mg.) for each 20 lbs. body weight up to 80 lbs. For each day thereafter, ½ teaspoonful for each 20 lbs. For 80 lbs. and over use adult dosage of 4 teaspoonfuls (1.0 Gm.) initially, and 2 teaspoonfuls (0.5 Gm.) daily thereafter. Administer after a meal.

Supplied: Each teaspoonful (5 cc.) contains 250 mg. of sulfa-methoxypyridazine activity. Bottles of 4 and 16 fl. oz.

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WITH THREE SULFONAMIDES
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A quick reference to the pages on abbreviations would show you that *Dr. John Paul Doe* is a Diplomate American Board of Ophthalmology (D-O), Diplomate American Board of Otolaryngology (D-OL), his qualifications under the New York State Workmen's Compensation Law are Ophthalmology, Laryngology, Rhinology, Otology (SEF), he is a Fellow of the American College of Surgeons, he is a Member of the American Academy of Ophthalmology and Otolaryngology, he has completed service at Bellevue Hospital, he is Senior Otolaryngologist at Strong Memorial Hospital and Assistant Attending Physician Ear, Nose and Throat at General Hospital.

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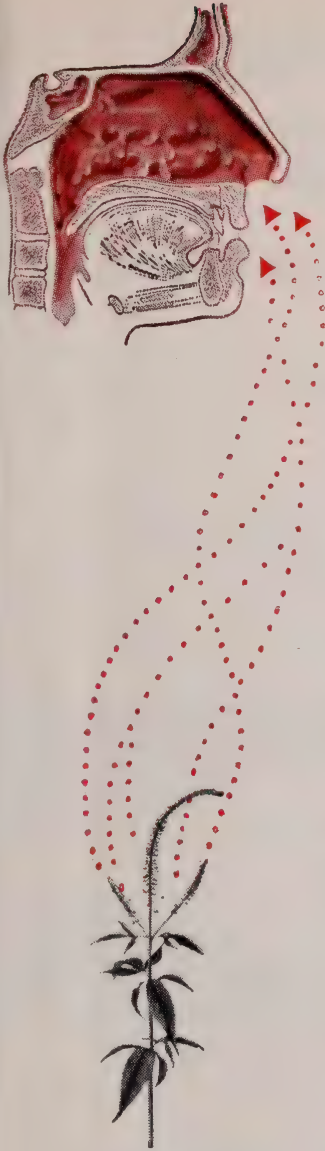

when pollen allergens attack the nose...

Triaminic provides more effective therapy in respiratory allergies because it combines two antihistamines[1, 2] with a decongestant.

These antihistamines block the effect of histamine on the nasal and paranasal capillaries, preventing dilation and exudation.[3] *This is not enough;* by the time the physician is called on to provide relief, histamine damage is usually present and should be counteracted.

The decongestive action of orally active phenylpropanolamine helps contract the engorged capillaries, reducing congestion and bringing prompt relief from nasal stuffiness, rhinorrhea, sneezing and sinusitis.[4, 5]

TRIAMINIC is orally administered, systemically distributed and reaches *all* respiratory membranes, avoiding nose drop addiction and rebound congestion.[6, 7] TRIAMINIC can be prescribed for prompt relief in summer allergies, including hay fever.

References: 1. Sheldon, J. M.: Postgrad. Med. **14**:465 (Dec.) 1953. 2. Hubbard, T. F. and Berger, A. J.: Annals Allergy p. 350 (May-June) 1950. 3. Kline, B. S.: J. Allergy **19**:19 (Jan.) 1948. 4. Goodman, L. S. and Gilman, A.: Pharmacol. Basis Ther., Macmillan, New York, 1956, p. 532. 5. Fabricant, N. D.: E.E.N.T. Monthly **37**:460 (July) 1958. 6. Lhotka, F. M.: Illinois M.J. **112**:259 (Dec.) 1957. 7. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958.

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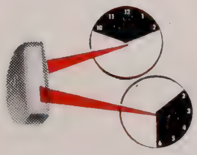
TRIAMINIC provides around-the-clock freedom from hay fever and other allergic respiratory symptoms with just one tablet q. 6-8 h. because of the special timed-release design.



Each TRIAMINIC timed-release tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

Also available: TRIAMINIC SYRUP for those patients of all ages who prefer a liquid medication. Each 5 ml. teaspoonful is equivalent to ¼ Triaminic Tablet or ½ Triaminic Juvelet. TRIAMINIC JUVELETS provide half the dosage of the Triaminic Tablet with the same timed-release action for prompt and prolonged relief.

STOP *running noses* *and open stuffed noses orally*

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'CORTISPORIN'®
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Combines the anti-inflammatory effect of hydrocortisone with the comprehensive bactericidal action of the antibiotics.

Ointment: Tubes of ⅛ oz. and ½ oz. (with applicator tip) for ophthalmic or dermatologic application.
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NEW { **Lotion:** Plastic squeeze bottles of 20 cc.
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Offers combined antibiotic action for treating conditions due to susceptible organisms amenable to local medication.

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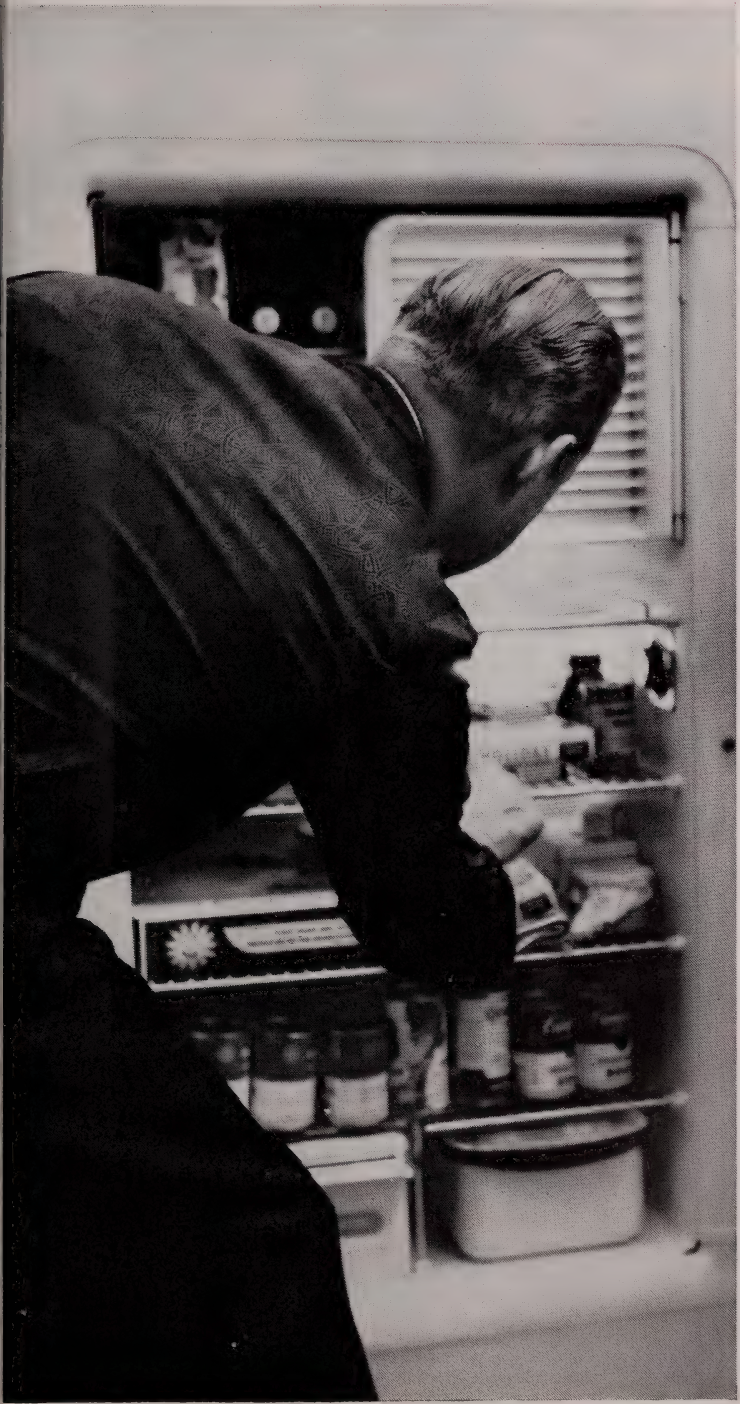
brand of chlorpropamide

tablets | once-a-day dosage

"With it [DIABINESE] *a better control can be obtained in that large segment of the diabetic population that does not fully cooperate in the dietary management."*[1]



The specific pharmacologic properties of DIABINESE – high activity, freedom from metabolic degradation, and gradual excretion – permit (1) prompt lowering of elevated blood sugar levels *without a "loading" dose,* and (2) smooth, sustained maintenance "devoid of... marked blood sugar fluctuations"[2] on convenient, lower-cost, once-a-day dosage. This is the consensus of extensive clinical literature.[1-11] Widespread use of DIABINESE since its introduction has confirmed the low incidence of side effects reported by the original investigators.

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1. Handelsman, M. B.; Levitt, L., and Calabretta, M. F.: Ann. New York Acad. Sc. 74:632, 1959. 2. Greenhouse, B.: Ibid., p. 643. 3. Dobson, H., et al.: Ibid., p. 940. 4. Forsham, P. H.; Magid, G. J., and Dorosin, D. E.: Ibid., p. 672. 5. Beaser, S. B.: Ibid., p. 701; New England J. Med. 259:573, 1958. 6. Bloch, J., and Lenhardt, A.: Ann. New York Acad. Sc. 74:954, 1959. 7. O'Driscoll, B. J.: Lancet 2:749, 1958. 8. Hadley, W. B.; Khachadurian, A., and Marble, A.: Ann. New York Acad. Sc. 74:621, 1959. 9. Duncan, G. G.; Schless, G. L., and Demeshkieh, M. M. A.: Ibid., p. 717. 10. Hills, A. G., and Abelove, W. A.: Ibid., p. 845. 11. Drey, N. W., et al.: Ibid., p. 962.

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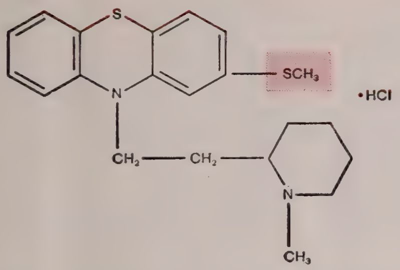

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CH₂
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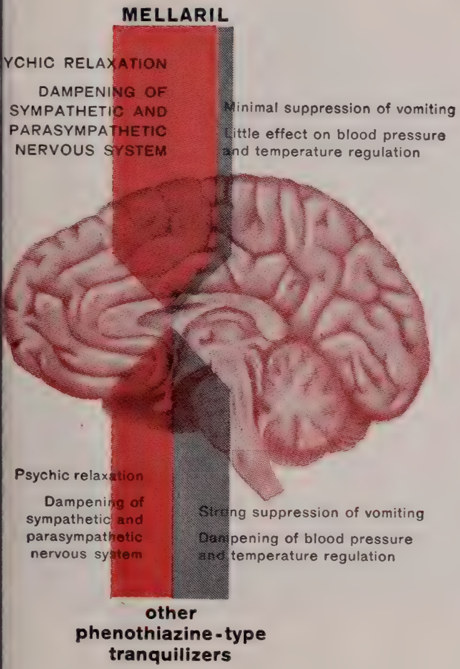
The presence of a thiomethyl radical (S-CH$_3$) is unique in Mellaril and could be responsible for the relative absence of side effects and greater specificity of psychotherapeutic action. This is shown clinically by:



MELLARIL
YCHIC RELAXATION
DAMPENING OF SYMPATHETIC AND PARASYMPATHETIC NERVOUS SYSTEM
Minimal suppression of vomiting
Little effect on blood pressure and temperature regulation
Psychic relaxation
Dampening of sympathetic and parasympathetic nervous system
Strong suppression of vomiting
Dampening of blood pressure and temperature regulation
other phenothiazine-type tranquilizers

1 A specificity of action on certain brain sites in contrast to the more generalized or "diffuse" action of other phenothiazines. This is evidenced by a lack of appreciable anti-emetic effect.

tranquilization
anti-emetic

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3 A notable absence of extrapyramidal stimulation.

4 Lack of impairment of patient's normal drive and energy.

5 Virtual freedom from such toxic effects as jaundice, photosensitivity, skin eruptions, blood forming disorders.

Indication	Usual Starting Dose	Total Daily Dosage Range
ADULTS: Mental and Emotional Disturbances:		
MILD—where anxiety, apprehension and tension are present	10 mg. t.i.d.	20-60 mg.
MODERATE—where agitation exists in psychoneuroses, alcoholism, intractable pain, senility, etc.	25 mg. t.i.d.	50-200 mg.
SEVERE—in agitated psychotic states as schizophrenia, manic depressive, toxic psychoses, etc.:		
Ambulatory	100 mg. t.i.d.	200-400 mg.
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feld, A. M.: Scientific Exhibit, American Academy
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"During the initial week of therapy, when the dose of nitrofurantoin was 100 mg. four times a day, the urine became free of pus and bacteria. Symptoms of urinary frequency, urgency, and dysuria were relieved."[2]

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REFERENCES: 1. Stewart, B. L., and Rowe, H. J.: J. Am. M. Ass. **160**:1221, 1956. 2. Lippman, R. W., et al.: J. Urol., Balt. **80**:77, 1958.

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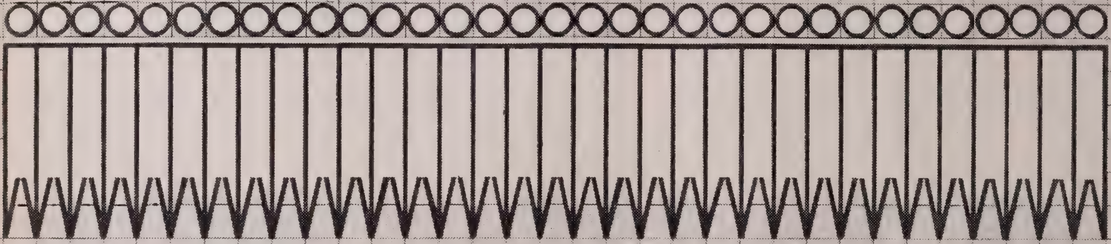
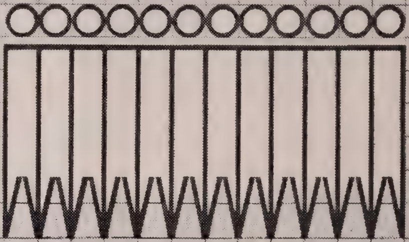
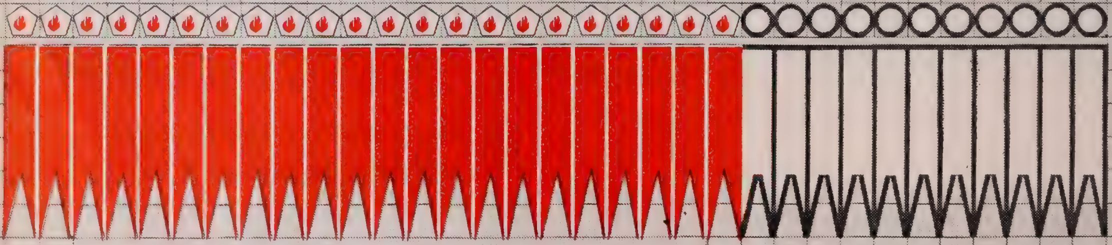
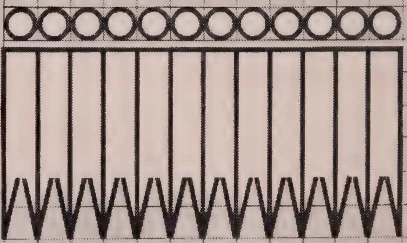


Of 45 arthritic patients who were refractory to other corticosteroids*





22 were successfully treated with Decadron [1,2]



1. Boland, E. W., and Headley, N. E.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.
2. Bunim, J. J., et al.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

*Cortisone, prednisone and prednisolone.

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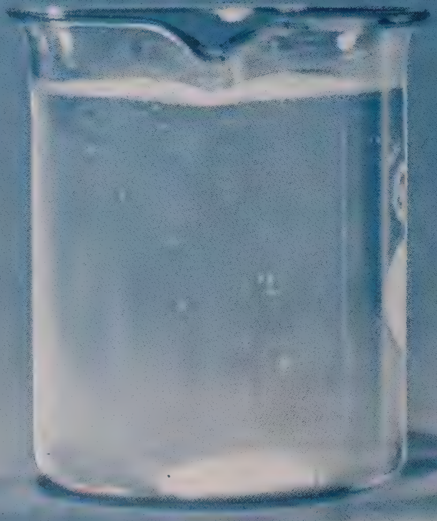
Chief among the drawbacks to aspirin usage is gastric intolerance. This ranges from mild upset and "heartburn" to severe hemorrhagic gastritis.[1-10] Studies performed in conjunction with gastrectomy[4,5] and gastroscopy[2] have shown insoluble aspirin particles firmly adherent to the gastric mucosa and imbedded between rugae. Reactions varying from mild hyperemia to erosive gastritis have been reported to occur in the areas immediately surrounding these adherent particles.[2,4,5] This is reported to be particularly true in patients with peptic ulcer.[4]

CALURIN is the freely soluble, stable calcium aspirin complex Its high solubility forestalls gastric irritation or damage

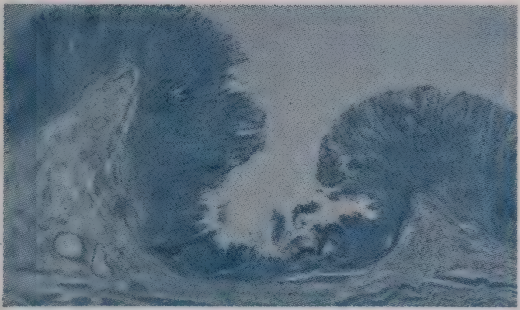


Regular aspirin crystals 24 hours after being mixed into water.

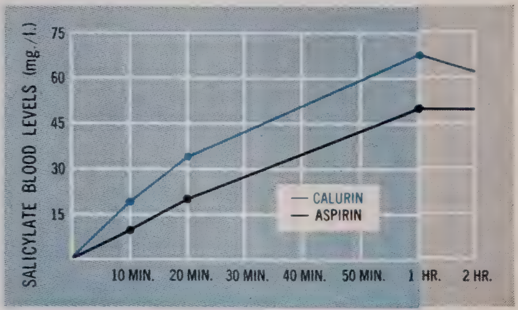
Calurin crystals in solution one minute after being mixed into water.

CALURIN*

STABLE SOLUBLE CALCIUM-ACETYLSALICYLATE-CARBAMIDE



Particle-induced ulceration — section through lesion found in gastrectomy specimen. An aspirin particle was found firmly imbedded in this undermined erosion. Such lesions may be associated with the relative insolubility of aspirin, which remains in particulate form after dispersion in gastric contents.



Calurin, being freely soluble, is promptly available for absorption into the systemic circulation. Salicylate blood levels in 12 subjects receiving both Calurin and plain aspirin were found to rise more than twice as high within ten minutes following Calurin. Also, these levels persisted higher for at least two hours.[11]

CALURIN is the aspirin of choice, especially when high-dosage, long-term therapy is indicated:

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2. Produces high salicylate blood levels rapidly for prompt analgesic, anti-pyretic, anti-arthritic effect.
3. Sodium-free — for safer long-term therapy.
4. Flavored: can be chewed or dissolved in the mouth without water if desired — an advantage for patients requiring aspirin administration during the night and for pediatric patients.

Dosage: Each tablet of Calurin is equivalent to 300 mg. (5 gr.) of acetylsalicylic acid. For relief of pain and fever in adult patients, the usual dose of Calurin is 1 to 3 tablets every 4 hours, as needed; in arthritic states, 2 or 3 tablets 3 or 4 times daily; in rheumatic fever, 3 to 5 tablets 4 or 5 times daily. For children over 6 years, the usual dose is 1 tablet every 4 hours; for children 3 to 6 years, ½ tablet every 4 hours, as required. Not recommended for children under 3.

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more manageable corticosteroid dosage

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... simple, flexible dosage schedule

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Composition

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Acetylsalicylic acid	325 mg.
Aluminum hydroxide	75 mg.
Ascorbic acid	20 mg.

Packaging: SIGMAGEN Tablets, bottles of 100 and 1000.

References: 1. Spies, T. D., et al.: J.A.M.A 159:645, 1955. 2. Spies, T. D., et al.: Postgrad. Med. 17:1, 1955. 3. Gelli, G., and Della Santa, L.: Minerva Pediat. 7:1456, 1955. 4. Guerra, F.: Fed. Proc. 12:326, 1953. 5. Busse, E. A.: Clin. Med. 2:1105, 1955. 6. Sticker, R. B.: Panel Discussion, Ohio State M. J. 52:1037, 1956.

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EDITORIALS

How to Murder "Free Choice"

The concept of free choice of doctor once faced its greatest threat from the fringes of the profession or from without. It now meets a more dismaying challenge: erosion from high places within the ranks of medicine. The propaganda against free choice seemingly has broken through lines of defense once thought impregnable. Does it necessarily bespeak an intelligent, broad-minded, and reasonable approach to present-day sociomedical problems pliantly to surrender all along the line? To some the concept of free choice of physician has become a shibboleth, a cliché, a mere slogan. The enemies of free choice have handed the dagger for its assassination to those who should be its friends, and may yet hypnotize them into using it. So well have the promoters of closed panel plans done their job!

The issue was not helped by the question propounded by the reference committee to the A.M.A. House of Delegates at its Minneapolis meeting in December, 1958:[1] "Acknowledging the importance of free choice of physician, is this concept to be considered a fundamental principle, incontrovertible, unalterable, and essential to good medical care without qualification?" An unqualified yes or no answer to this could be viewed justifiably as unintelligent and even ridiculous. The question, with its unfortunate and "loaded" wording, may well earn an immortal place beside that hoary old query, "Have you stopped beating your wife?"

The recent implication that if a third party pays the bill free choice need no longer apply was also confusing:[2] as though the third party (employer, union welfare fund, government, or insurance company) were generously and charitably distributing largesse, rather than merely channelling earned, negotiated, or contributed funds. Do individuals automatically lose their rights when they choose to accept part of what is due them in the form of medical care insurance?

In refreshing contrast is the dynamic reiteration of free choice by the House of Delegates of the Medical Society of the State of New York at its recent meeting.[3] The delegates obviously do not consider it relevant to the issue that the soldier wounded in battle, the mangled victim of a highway accident, the occupant of a charity ward, the resident of a one-doctor geographic area, is unfortunately unable to exercise free choice. The delegates made it clear that not only were they in vigorous opposition to unwarranted restraint where it now obtains, but that free choice should be extended further to include areas where it is now feasible but is denied. Above all it should be abundantly evident that a third party concerned in the payment scheme does not by that fact acquire the right to abrogate free choice.

A maneuver that only befuddles the issue is the shifting of emphasis to "good medical care," making it seem that the point at issue is free choice *versus* good medical care, and not free choice *and* good medical care. The standards of medical care delivered under either system may be good or bad, but with free choice good medical care becomes even better; with closed panels bad medical care becomes even worse. When there is poor medical care in a closed panel the patient is trapped. With free choice he can at least extricate himself. And it is not true that an insuring agency can impose and enforce better standards of excellence than can the doctors themselves.

Those of us high or low whose belief in free choice has wavered should bear in mind that firmness on this and other fronts at issue is vital to the medical future of both our patients and the profession. A cliché, after all, may be a basic truth clothed in familiar terms. It may properly epitomize a serious, important, and worth-while issue. No war was ever won by surrendering in every battle. Let us not lose this one!—A.P.I.

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2. Hess, E.: Free choice—for whom? For paying patients only! M. Economics **36**: 127 (Mar. 16) 1959.

3. Action of House of Delegates of the Medical Society of the State of New York at its meeting in Buffalo, New York, May 9 to 11, 1959. The House approved Resolution 59-10 entitled "Reaffirmation of the Concept of Free Choice of Physician," introduced by the Medical Society of the County of Queens.

Radioactive Rock and Congenital Malformations

Results of an epidemiologic study of congenital malformations in upstate New York appeared in the April, 1959, issue of the *Journal of the American Public Health Association.** This study indicates a relationship between the rate of congenital deformities in babies born during 1948 to 1955 and the levels of radioactivity emanating from bedrock in various areas in New York State.

Malformation rates of 20 per 1,000 live births were found in the 186 townships located in areas of igneous bedrock, which have increased levels of radioactivity. This rate contrasts with the State-wide malformation rate of 13.2 per 1,000 of the 2,242,744 live births studied.

The average uranium equivalent in igneous rock in the areas studied ranges from .003 to .004 per cent; adjacent areas without igneous rock had a uranium equivalent of .001 per cent.

Authors of the paper are Dr. John T. Gentry, Syracuse Regional Health Director, Elizabeth Parkhurst, Principal Biostatistician, New York State Health Department, and George V. Bulin, Department of Geology, Syracuse University. The trio conducted their investigation by determining the number and rate of congenital malformations reported on birth and death certificates in geographic areas and comparing the results with the type, amount, and distribution of rock formations found in each area. Excerpts from the report state:

"If geology is a factor in the incidence of malformation, one would expect the association to be less marked in the urban areas than in the rural areas where there should be greater exposure to natural materials. (Our study). . . shows that this is the case with rates for the 'probable' and the 'unlikely' (i.e., 'high igneous rock areas' and 'low igneous rock areas') rural areas being 15.8 and 12.9, as compared with the corresponding urban rates of 14.1 and 12.8.

". . . .Neonatal mortality for 1952 was higher in the high rate area (24.2 vs. 19.0 per 1,000 live births) entirely because of the higher death rate from malformations. The associations noted are statistical in nature and represent a first step in establishing possible cause-effect relationships.

". . . .The data upon which this report is based relate to such a substantial number of births that most of the differences indicated would be statistically significant by whatever tests devised. However, the real significance lies in the overwhelming consistency of the pattern which is shown in the relationship of malformation rates to geology.

". . . .The association of increased malformation rates with residence in areas containing materials with relatively high levels of radioactivity strongly suggests radiation as a primary etiological agent. . . . Until such time as the existence of an alternate agent can be elicited, it would appear to consider radiation as a causal agent."

Dr. Herman E. Hilleboe, State Health Commissioner, commented on the study:

"On the basis of these preliminary findings, there is certainly no indication that ways of living or place of living should be changed by people living in those areas where increased levels of radioactivity occur in rock formations.

---

* Gentry, J. T., Parkhurst, E., and Bulin, G. V.: American Journal of Public Health **49**: 4 (April) 1959.

"The findings are of primary interest to research workers in this field and, as in all scientific studies, will have to be verified and extended by other workers before their full significance can be assumed. Extensive radiological measurements in the areas under study will be necessary before meaningful estimates of the significance of this study can be made.

"Within the limits of modest funds available to us for this purpose, our staff members will continue studies in the hope of adding to the scientific knowledge of the long-range effects on man of low-level radiation from environmental sources."

Medicine and the Courts

In the complex development of our civilization the practice of medicine and the actions of ancillary groups, such as the pharmaceutical and biological manufacturers, are raising many legal questions for determination by the courts. These questions are becoming increasingly knotty as exemplified by a recent action which seemingly is without precedent. According to *New York Medicine*,* the distinguished and venerable American College of Physicians has joined Cutter Laboratories in an appeal from the Superior Court of Alameda County, California, where the court awarded damages to two children for polio infections allegedly resulting from a lot of Salk vaccine produced by the pharmaceutical company.

The verdict of the jury in this trial was that the Cutter Laboratories were not negligent in this matter. Nevertheless an award for damages was made by the court.

The American College of Physicians, in its amicus curiae brief for appeal, noted that ". . . the creation of an absolute liability concept would greatly impair future progress (in medical research). The introduction of new products and procedures would be stifled and mankind would be denied the continual advancement of medical science. . . . We believe that when, as in the cases before this court at this time, a biological is made according to strict governmental specifications and complies with the best scientific and productive knowledge available, and when the manufacturer is absolved of all possible negligence by the jury, as this defendant was, no liability should be incurred when an injury occurs because of the user's own peculiar susceptibility or because of insufficient scientific knowledge at that time.

"We do not feel we are overdramatizing these results for it is clear that researchers would be unwilling to try new drugs on patients, practicing physicians would be afraid to avail themselves and their patients of the new wonder drugs, and pharmaceutical houses would not be willing to manufacture new products should this concept be applied, for it holds the defendant liable without fault and liable for the unknown. . . .

"How can any scientist, physician, hospital or pharmaceutical producer become involved in any forward steps in medicine, no matter how surrounded by standards, if he is to be held responsible for knowledge that does not, and cannot, exist until the future unfolds."

We are in complete agreement with this opinion of the American College of Physicians. The creation of an "absolute liability" concept would seem to us to be against public policy, contrary to the public interest as unduly restrictive of progressive therapy, and somewhat confusing in concept—with all due respect to the Superior Court of Alameda County, California.

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* New York Med. **15**: 311 (Apr. 20) 1959.

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G. D. Searle & Co., Chicago 80, Ill. *Research in the Service of Medicine.*

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I can't sleep..."

in the depressed, unhappy patient

PROMPTLY IMPROVES MOOI

without excitation

- **Acts fast to relieve depression and its common symptoms:** sadness, crying, anorexia, listlessness, irritability, rumination, and insomnia.
- **Restores normal sleep**—without hang-over or depressive aftereffects. Usually eliminates need for sedative-hypnotics.

EFFICACY AND SAFETY CONFIRMED IN OVER 3,000 DOCUMENTED CASE HISTORIES.[1, 2, 3]

Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

Composition: Each light-pink, scored tablet contains 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate.

References:

1. Alexander, L.: J.A.M.A. 166:1019, March 1, 1958.
2. Current personal communications; in the files of Wallace Laboratories.
3. Pennington, V.M.: Am. J. Psychiat. 115:250, Sept. 1958.

for depression

†Deprol

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CD-

SCIENTIFIC ARTICLES

*Tranquilizers in the Office Practice of Medicine**

HELEN SINGER KAPLAN, M.D., PH.D., NEW YORK CITY

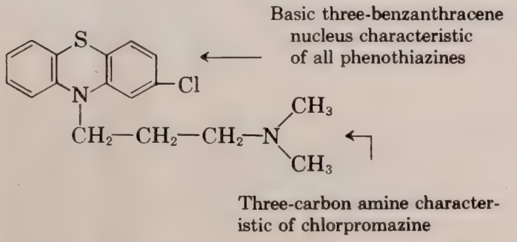
(From the Department of Psychiatry, New York Medical College, Flower and Fifth Avenue Hospitals)

TRANQUILIZING agents have heralded a new therapeutic era in medicine and psychiatry.[1–7] Their unique pharmacologic actions have been utilized in the management of a wide variety of medical and psychiatric conditions that are seen by the generalist in his everyday practice. Since the advent of antibiotics there probably has been no advance in medicine that has had such a uniquely wide and revolutionary application as that of the tranquilizer drugs.

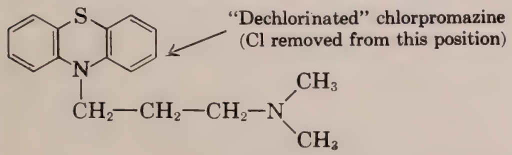
PHARMACOLOGIC CLASSIFICATION OF TRANQUILIZERS

PHENOTHIAZINE DERIVATIVES

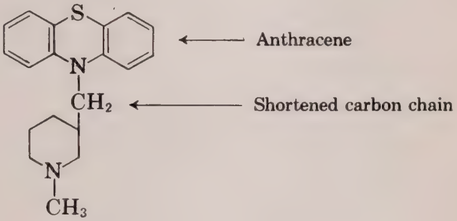
Chlorpromazine[8–16] (Thorazine, Smith, Kline & French Laboratories)


Basic three-benzanthracene nucleus characteristic of all phenothiazines
S
N
Cl
CH₂—CH₂—CH₂—N
CH₃
CH₃
Three-carbon amine characteristic of chlorpromazine

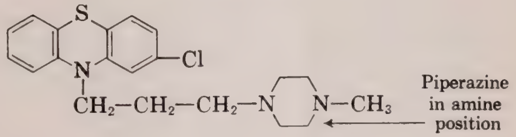
Promazine[17–19] (Sparine, Wyeth Laboratories)


"Dechlorinated" chlorpromazine (Cl removed from this position)
S
N
CH₂—CH₂—CH₂—N
CH₃
CH₃

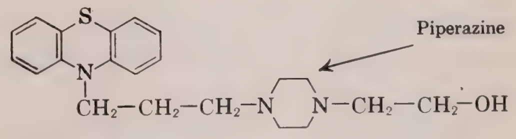
Mepazine[20–22] (Pacatal, Warner-Chilcott Laboratories)


S
N
Anthracene
CH₂
Shortened carbon chain
N
CH₃

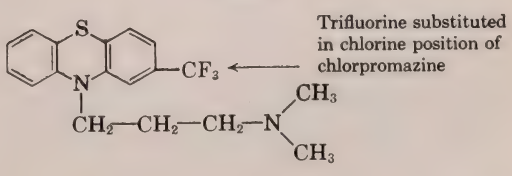
Prochlorperazine[23–25] (Compazine, Smith, Kline & French Laboratories)


S
N
Cl
CH₂—CH₂—CH₂—N
N—CH₃
Piperazine in amine position

Perphenazine[26,27] (Trilafon, Schering Corporation)


Piperazine
S
N
CH₂—CH₂—CH₂—N
N—CH₂—CH₂—OH

Triflupromazine[28,29] (Vesprin, E. R. Squibb & Sons)


Trifluorine substituted in chlorine position of chlorpromazine
S
N
CF₃
CH₂—CH₂—CH₂—N
CH₃
CH₃

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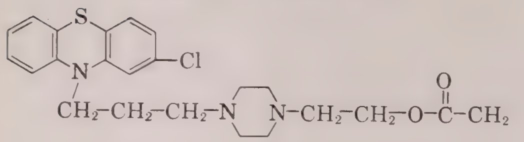
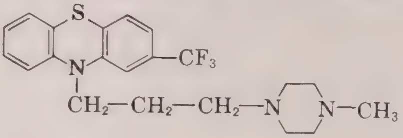
* Awarded first prize in the 1958 National Medical Student Essay Contest sponsored by the Schering Corporation and published with its permission; written while the author was a fourth-year medical student.

Thiopropazate[39]
(Dartal, G. D. Searle & Co.)



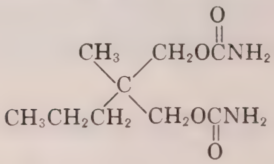
Trifluoperazine[31,32]
(Stelazine, Smith, Kline & French Laboratories)



SUBSTITUTED ALKANEDIOLS

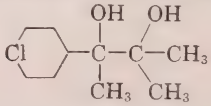
Propanediols

Meprobamate[33–42]
(Equanil, Wyeth Laboratories;
Miltown, Wallace Laboratories)



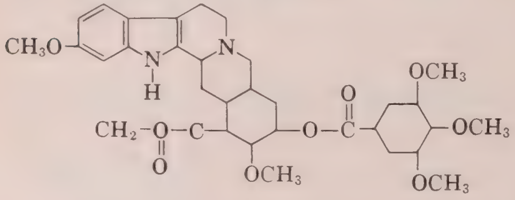
Butanediols

Phenaglycodol[43–45]
(Ultran, Eli Lilly & Company)



RAUWOLFIA DERIVATIVES (RESERPATES)

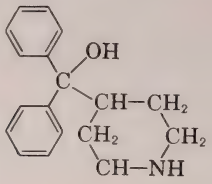
Reserpine (Serpasil,[46–49] Ciba Pharmaceutical Products Inc.)



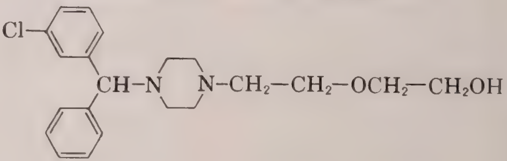
Other Rauwolfia derivatives are rescinnamine (Moderil, Pfizer Laboratories) and deserpidine (Harmonyl, Abbott Laboratories).

DIPHENYLMETHANE DERIVATIVES

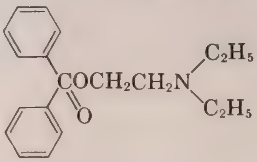
Azacyclonol hydrochloride[50–53]
(Frenquel, The Wm. S. Merrell Co.)



Hydroxyzine hydrochloride[54,55]
(Atarax, J. B. Roerig & Company)

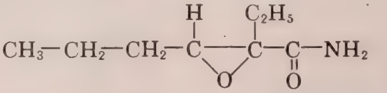


Benactyzine hydrochloride[56–58]
(Suavitil, Merck Sharp & Dohme)

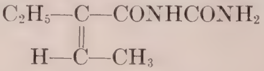


MISCELLANEOUS

Oxanamide[59,60]
(Quiactin, The Wm. S. Merrell Co.)



Ethylcrotonylurea[61,62]
(Nostyn, Ames Company, Inc.)



$$C_2H_5-\underset{\underset{\displaystyle H-C-CH_3}{\|}}{C}-CONHCONH_2$$

MEDICAL APPLICATION OF TRANQUILIZERS

Although the term "tranquilizer" implies a psychologic application, these drugs have significant medical uses, which will be briefly outlined. Tranquilizing agents have found a wide variety of uses in medicine and surgery. Some of these are as follows:

Application of Drugs	*Pharmacologic Activity*
RESERPINE	
1. Hypertension 2. Hypertensive crisis 3. Toxemia of pregnancy	Antihypertensive agent
4. Mitral valvular disease 5. Myocardial infarction 6. Cardiac arrythmias 7. Thyrotoxicosis 8. Excitement and effort syndromes 9. Aging myocardium	Bradycardic agent
MEPROBAMATE	
1. Chronic rheumatic disease 2. Fibrositis 3. Cervical myositis 4. Osteoarthritis 5. Leg cramps of pregnancy 6. Musculoskeletal and central nervous system disease associated with muscle spasm *a.* Low back strain *b.* Cerebral palsy *c.* Hemiplegia *d.* Paraplegia *e.* Acute poliomyelitis *f.* Multiple sclerosis	Muscular relaxant[38,40]
7. Epilepsy (petit mal and myoclonic seizures)	Anticonvulsant[33]
PHENAGLYCODOL	
Epilepsy (petit mal)	Anticonvulsant[43–45]
PHENOTHIAZINES	
1. Nausea and vomiting associated with gastroenteritis, radiation therapy, drug therapy, pregnancy, postoperative states. 2. In patients with terminal diseases due to malignancy or renal pathology, phenothiazines help to produce relaxation, detachment, and antiemesis. These drugs are also useful in intractable pain.	Antiemetic (apparently exert direct effect on the emetic trigger zone in the medulla)[64]
3. Potentiate action of narcotics in cancer patients. 4. Potentiate effects of local and general anesthesia as well as premedication. 5. Amnesic in obstetrics.	Potentiate narcotics, anesthetics, and hypnotics[10–13]

PSYCHIATRIC APPLICATION OF TRANQUILIZERS

Role of Anxiety in Emotional Disorders

Tranquility may be defined as a state of being "free from agitation or disturbance,"[65] characterized by calmness, serenity, and, especially, the absence of anxiety. The search for a means of achieving this psychologic state of mind has long been the goal of psychiatry and medicine. The concept of anxiety as encountered in neurosis and psychosis is given a central and primary etiologic, symptomatic, and dyamic role by most psychiatric investigators.[66–70] In addition, it has long been accepted that cure or permanent alleviation of emotional disturbance can be effected only by means that will significantly, consistently, and permanently reduce the anxiety level of the patient.

Anxiety, an omnipresent phenomenon of our time, may be defined as an unpleasant emotional state of fear, the source of which is often obscure to the individual.[70] Usually the fear is a consequence of strong inner impulses, and the anxiety is related to conflict and is thought to function as an emotional danger signal. The physiologic accompaniments of anxiety may include increased pulse rate, blood pressure, and sudomotor activity as well as alterations in hormonal functioning, distribution of blood supply, and smooth muscle activity.[71] Anxiety operates as a powerful drive, compelling the individual to defend and protect himself. Psychologic defenses against anxiety encompass various compensating and withdrawal mechanisms available to individuals in our culture. Among these are constructive efforts to correct or withdraw from a conflictual situation or indirect measures, such as resolving the conflict by substitutive and sublimative measures.[72–74]

At times the anxiety is excessively severe or prolonged, either because the conflict is continuous and unavoidable or because the individual's psychologic defenses are inadequate to cope with the situation. Then, instead of anxiety serving as a momentary signal, it becomes a massive psychoparalytic phenomenon which may lead to psychiatric and psychosomatic symptom formation.[70]

Because of the great number of emotional conflicts facing everyone today, it is not infrequent for even a relatively healthy individual to experience anxiety of a transient and temporary nature due to relatively superficial emotional problems. These problems may eventually resolve themselves spontaneously or lend themselves to relatively simple solution; nevertheless, while they press the individual for solution, they may be accompanied by continuous excessive anxiety. Not only may such anxiety produce psychologic and physical (that is, psychosomatic) complaints, but it may serve to paralyze the individual, preventing him from solving the underlying emotional problems that are generating emotional tension. This produces a vicious cycle:

Psychic conflict → anxiety → psychic paralysis → symptom → increase of psychic conflict → increase of anxiety → further exaggeration of psychic conflict[68,70]

Psychiatry has long sought a means of breaking this cycle so that emotional conflict could be faced and resolved. The chief psychiatric technics used in the past to ameliorate anxiety have been psychotherapy and psychoanalysis, modalities in which emotional conflict is treated by psychologic means. Psychotherapy seeks to attack the psychologic elements of emotional conflict by bringing about an intellectual and emotional understanding of its manifestations. As an example, if the individual has disturbed interpersonal relationships, they must be understood in order to be corrected. It is universally accepted that the various forms of psychotherapy are still the cornerstones of the proper treatment of illness that is psychogenic. However, certain limitations inherent in psychotherapy have at times hindered its proper application by generalists and even by psychiatrists. These limitations suggested the need for pharmacologic agents that might aid the generalist in the management of his anxious patients.

Role of Tranquilizers in the Treatment of Mental Disorders

The introduction of pharmacologically heterogeneous tranquilizing drugs into the psychotherapeutic armamentarium generally allows for a more immediate alleviation of anxiety and its manifestations than does psychotherapy. In contradistinction to psychotherapy, whose superficial technics could be utilized by the generalist but whose deeper and more formalized technics are strictly limited to psychiatrists, tranquilizers are a tool that could be used by the psychiatrist and the generalist alike. In fact, tranquilizers serve to facilitate psychotherapy and to solve what had been a major problem in the application of psychotherapy. For example, anxiety, which is the major symptom of emotional disturbance, often paralyzes psychotherapy by preventing proper communication between patient and doctor. Anxiety may cause the patient to withdraw, create a block to his associations, or even prevent him from translating new insights into new behavioral patterns. The introduction of tranquilizers makes available drugs that can quickly reduce anxiety and thereby enable psychotherapy to progress. In addition, since psychotherapy is usually a prolonged process, it is often necessary for the patient to sustain varying amounts of anxiety for extended periods of time before significant improvements are perceived; with tranquilizers properly used and given at appropriate times, anxiety can often be reduced quickly and discouragement turned to hope and comfort.

The question might now be asked: how is the tranquilizer unique? Does not the barbiturate alleviate anxiety by clouding or suspending consciousness? In answer to this question lies the uniqueness of tranquilizers; they specifically decrease anxiety or tension without clouding the sensorium hypnotically.* [75,76] Tranquilizers ideally leave the patient calm, alert, and cooperative, whether the patient be psychoneurotic or psychotic. At present, it is postulated by many investigators that emotions commence neurophysiologically in the lower anatomic levels of the brain (the subcortex, or the centrencephalic system, including the septal nuclei; the Papez circuit, consisting of the anterior thalamus, cingulate gyrus, hippocampus, fornix, and hypothalamus; and the reticular activating system) and reverberate between the cortex and subcortex.[77–82] These investigators feel that in many emotional disorders, particularly in psychoses such as schizophrenia, there is a disturbance in these circuits. Some investigators consider this disturbance to be primary and inborn; others consider it secondary to psychic and environmental stress. Most investigators suggest that tranquilizers modify these circuits chemically and physiologically so that the emotional upset, tension, or anxiety is damped, permitting its causes to be attacked more readily through psychologic means.† By physiologically breaking the vicious cycle of anxiety generation and thereby reducing anxiety, they render the psychiatric patient more comfortable and socially responsive and better able to participate in and benefit from psychologic therapy.

However, although tranquilizers are a remarkable adjuvant, they offer no substitute for the compassion and understanding of the physician, be he psychiatrist or generalist, in his efforts to help the patient solve the emotional difficulties that are constantly generating an overflowing tide of anxiety.

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* Aliphatic depressants, such as barbiturates and chloral hydrate, have been of only limited help to psychiatric patients because they produce in an effective dose such a high degree of sedation that the patient falls asleep or communicates poorly with his environment. Pharmacologically their chief action is on the cortex; with increased dosage there is an irregularly descending depression of the neuraxis.

† It has been suggested that mental illness may at times be related to disturbances in the cerebrohormone levels. Serotonin and nor-epinephrine appear to be the important chemicals. Brain content as well as activity of these substances seem to be influenced by certain tranquilizers. The correlations of serotonin activity with certain behavioral variables and with the action of drugs in the tranquilizer, as well as "psychic energizer" group are exciting and promising areas of research, but as yet no definite conclusions can be drawn.

And it should be remembered that not only are the effects of tranquilizers transient but also that they do not teach the patient to modify his neurotic actions.

Diagnosing and Treating Psychologic Disturbances in Medical Practice

The most effective use of tranquilizers in medical practice is in conjunction with psychotherapeutic intervention. This can be done only when the doctor has a thorough knowledge of the patient's physical and mental status. The patient should receive a total evaluation, including a careful medical history, physical examination, laboratory work-up, and psychologic study. During the routine medical history, the physician must examine the emotional, social, and environmental factors surrounding the patient's disorder. He must question the patient about his life situation and about the psychologic factors surrounding the onset, exacerbation, and remission of his symptoms.

The physician must be sensitive to symptoms in organic areas that may suggest significant psychologic disturbance, such as the following:[72]

Symptoms that are frequently psychologic in origin—

Bone and Joint: Arthralgia, back pains, growing pains.

Cardiovascular: Chest pain, dyspnea, heart pounding, orthopnea, palpitation, bradycardia, tachycardia.

Gastrointestinal: Abdominal pain, abdominal cramps, anorexia, belching, bulimia, dysphagia, constipation, diarrhea, dyspepsia, flatulence, flatus, nervous stomach, nausea, tenesmus, vomiting, heart burn, borborygmi.

Genitourinary (Female): Amenorrhea, dyspareunia, frigidity, leukorrhea, menopausal syndrome, nymphomania, premenstrual tension.

Genitourinary (Male): Impotence, male climacterium, premature ejaculation, satyriasis, urinary frequency, urinary urgency, urinary burning, itching.

Muscular: Paralysis, spasm, tremor, pain, weakness, aching, breast pain, loss of weight, trembling.

Neuropsychiatric: Neuralgia, insomnia, fatigability, faintness, dizziness, anesthesia, paresthesia, numbness, tiredness, seizures, weakness, tinnitus, headaches, irritability, restlessness, jitteriness, tension, anxiety, "lightheadedness," nervousness.

Respiratory: Coughing, hyperventilation, choking, singultus, sneezing, difficulty in catching one's breath, breathlessness.

Psychosomatic or functional disorders in which psychogenic etiologic factors are frequently discernible, such as—

Angina pectoris, severe allergic reactions, anorexia nervosa, biliary dyskinesia, bronchial asthma, cardiospasm, cardiovascular neurosis, colitis (atonic, mucous, spastic, and ulcerative), coronary heart disease, diabetes mellitus, essential hypertension, globus hystericus, hay fever, hyperthyroidism, migraine and other headaches, neurocirculatory asthenia, nervous stomach, obesity, peptic ulcer, pruritis ani, pylorospasm, Raynaud's disease, rheumatoid arthritis, regional ileitis, skin diseases (such as eczema, neurodermatitis, warts, angioneurotic edema), tuberculosis, urticaria, vasodepressor syncope (fainting).

In addition, the generalist must look for and be acquainted with various indicators of psychiatric disease, such as phobias, obsessive-compulsive symptoms, and conversion hysteria. These are primarily psychiatric problems and require psychiatric intervention.

After the doctor has reached a diagnosis in which psychologic factors are etiologically significant, he is ready to formulate his plan of treatment. If the patient has a serious psychiatric or psychosomatic disease, he should be referred to a psychiatrist for evaluation and consultation. This will determine whether the patient requires treatment by a psychiatrist or by the general practitioner.

The following are considered major psychologic disturbances usually requiring the intervention of a psychiatrist: (1) a severe anxiety neurosis, (2) suicidal or homicidal preoccupation or threats, (3) a moderate to severe neurosis, or neurotic symptoms, such as a phobia, obsessive-compulsive neurosis, conversion hysteria or dissociative reaction, neurotic depression, and hypochondriasis, (4) a moderate to severe character neurosis, such as a passive-aggressive, inadequate, emotionally unstable, paranoid, schizoid, cyclothymic, compulsive, and sociopathic (dyssocial, antisocial, sex deviation, alcoholism, drug addiction) personality disturbances, and (5) all psychotic syndromes—paranoid state, paranoia, involutional depression, psychotic depression, manic-depressive psychosis, schizophrenia, senile psychosis, and the symptoms of these psychotic syndromes, such as loss of contact with reality, delusions, hallucinations, illusions, ideas of reference, and feelings of depersonalization. In a broad sense, patients with these serious psychologic problems have marked difficulty in getting along with people and have a great deal of anxiety arising from this interaction. There is an occasional exception to the aforementioned indications for psychiatric intervention, as, for example, in the case of a chronic schizophrenic who is nonamenable to intensive psychotherapy but who requires long-term supportive treatment. Under certain circumstances this supportive therapy may be carried out by the generalist.[72]

If the patient's psychologic problems are of a superficial nature, the physician should be prepared to treat the psychogenic as well as any somatic factors that are present. Certain types of cases are usually adequately managed by the generalist and are particularly amenable to the therapeutic technics available to him. In this category are emotional difficulties that are of recent acute origin involving difficulties in conscious interpersonal, social, work, environmental, and marital relationships and that are of a superficial nature, particularly when the personality adjustment of the individual has been good up to the time of onset of the emotional difficulties. This category includes the group of reactions called transient situational personality disorders. These are "reactions which are more or less transient in character and which appear to be an acute symptomatic response to a situation without apparent underlying personality disturbances. In the presence of good adaptive capacity, recession of symptoms generally occurs when the situational stress diminishes." Also, patients with mild or poorly defined neurotic symptoms and syndromes may often be given a trial at superficial psychotherapy by the general practitioner. Although patients who have mild dependency and affection problems, alcohol problems, and superficial problems involving hostility, envy, jealousy, assertiveness, and withdrawal may be handled with superficial psychotherapy, those whose problems are moderate to severe should be sent to a psychiatrist for consultation.[72,73]

Once having decided that he will manage a case that has significant psychologic components, the physician must recognize that there are two major therapeutic technics available to him:

1. Superficial psychotherapy, which should form the basis for the management of all psychologic distrubances. It may be simple, consisting merely of listening to a patient and allowing him to express his feelings freely, or it may be more complicated, requiring a degree of active but limited interpretation of the emotional problems. These technics have been discussed more fully elsewhere by outstanding workers like Levine[74] and Wolberg.[83]

2. Pharmacologic means of temporarily alleviating emotional stress, motor agitation, hyperactivity, tension, and anxiety resulting from emotional problems. Anxiety-reducing drugs should be integrated with adequate psychologic management. It is the author's contention that only rarely should tranquilizers be used in conditions involving psychogenic factors without accompanying psychotherapy. These drugs are not curative but only palliative of anxiety. They do not strike at the source of anxiety, which is emotional conflict.

The author believes that the general practitioner is qualified to handle the psychologic management of most of his patients by means of the technics of superficial psychotherapy. The patient is encouraged to discuss his life experiences with the doctor in a series of interviews; this makes possible the establishment of a trusting, firm relationship and also allows the physician to evaluate the factors that are contributing to the patient's emotional conflicts. The doctor must be flexible and willing to expend the necessary time and effort. Types of superficial psychologic treatment that may be used by the physician are emotional support, ventilation, catharsis, re-education and redirection, and, occasionally, interpretation.

Indications for Utilization of Tranquilizers

During psychotherapy, tranquilizers are frequently indicated in order to diminish the patient's anxiety, tension, and agitation. The following are examples of conditions in which tranquilizers are properly indicated:

1. Tranquilizers show best results in emotional illnesses characterized by excitement, especially in those which are episodic and self-limiting.[74] The majority of these fall into the psychotic group. The anxiety associated with psychoneuroses at times appears to be eased by tranquilizers, but obsessive and phobic reactions and depressions are little affected. Thus, the largest neurotic diagnostic group for which ataractics are indicated is that of acute and chronic anxiety states. Symptoms of this condition are palpitations, sweating, feelings of tension, and apprehension. In an acute anxiety attack only a single dose of tranquilizer may be necessary. For example, Fazekas, Shea, and Sullivan[1] suggest that the administration of promazine or chlorpromazine is usually effective in inducing a state of sleep from which the patient may awake free from the acute anxiety reaction.

2. The patient's anxiety level may increase as a result of the material uncovered in psychotherapeutic talks with the doctor. At such times tranquilizing medication may be prescribed; this will frequently enable the patient to participate more effectively in psychotherapy and to face or resolve situations defined by psychiatric treatment.

3. Frequently a patient is exposed to transient problems that intensify his anxiety, such as temporary economic, vocational, or environmental pressures; painful physical examinations; operations. Although these situations, particularly in previously well-adjusted persons, are largely self-correcting and self-limiting, a tranquilizer will often be helpful in diminishing the patient's anxiety.

4. There is a large group of seriously disturbed patients who are suffering from chronic psychiatric disorders, such as schizophrenia, but who are not hospitalized. These patients require supportive help from a physician over long periods of time; when agitation and anxiety are prominent symptoms, the patients may require tranquilizers indefinitely as adjuvant therapy.

5. Patients with various psychosomatic disorders and symptoms who are suffering from an exacerbation of their symptoms associated with acute emotional stress will frequently benefit not only from psychotherapy but also from the administration of tranquilizing medication.

6. On occasion, a generalist will be consulted on an emergency basis for an acute psychotic episode associated with extreme agitation. Administration of tranquilizers is strongly indicated at these times to quiet the patient until further psychiatric consultation can take place.

7. In certain psychotic disorders of a serious nature, such as schizophrenia, the anxiety is so great that the patient is often withdrawn and isolated. The patient may be so noncommunicative that he is not amenable to psychotherapy or so agitated and excited that he is not approachable. This type of situation is usually encountered in a mental hospital or in a psychiatrist's office. Such cases obviously require a pharmacologic agent that will quickly diminish the patient's anxiety so that he becomes amenable to psychotherapy or psychiatric management of some kind. Tran-

quilizers have met this need.

8. Tranquilizers may be useful in countering anxiety, tremors, hyperactivity, combativeness, and insomnia encountered in alcoholism. Postalcoholic nausea and vomiting may also be controlled through use of certain of the tranquilizers. Pathologic intoxication, acute hallucinosis, and delirium tremens—conditions which usually require hospitalization—respond well to these medications.

9. Tranquilizers are particularly useful in the management of cases of head injuries associated with alcoholism because they do not mask intrancranial injuries, as does morphine.

10. Tranquilizers are valuable in the management of withdrawal reactions associated with drug addiction. In cases of intoxication due to the excessive ingestion of amphetamine, tranquilizers may be useful in quieting the patient.

Clinical Selection of Tranquilizers

A wide variety of tranquilizers may be used in any of the aforementioned conditions. Schiele and Benson[84] have classified the tranquilizers, according to their clinical applicability, into minor and major tranquilizers.

Generally, the minor tranquilizers—the alkanediols, the diphenylmethane derivatives, and certain of the miscellaneous ones—are indicated primarily in mild and transient tensional and neurotic states They produce less "tranquility" than the majors and have fewer side-effects but they may be habit forming. Although some investigators feel that the minor tranquilizers may be of some help in psychosis, the present author feels that they are of little or no value in this type of mental disorder.

The major tranquilizers include the phenothiazines and reserpates. These drugs are specifically indicated in the psychoses. They give a degree of calmness that is qualitatively and quantitatively greater than that of the minors. Unfortunately they can produce an extrapyramidal syndrome, with rigidity and tremors, as well as severe and dangerous side-reactions, such as jaundice and agranulocytosis. However, on the positive side of the ledger is the fact that the majors do not produce addiction or habituation. In the utilization of the majors, two trends are noticeable:

1. The Rauwolfia alkaloids, in addition to being especially useful in certain medical conditions, such as hypertension, parallel the phenothiazines in their indications. However, because they are somewhat less effective than the phenothiazines in these psychologic conditions and potentially aggravating in some of them, their use and popularity are diminishing.

2. Among the phenothiazines, the newer, less toxic, more potent derivatives, such as those with piperazine (among them perphenazine), seem more efficacious and are increasing in use. The three most widely used phenothiazines seem to be chlorpromazine, prochlorperazine, and perphenazine. The latter two, which are piperazine phenothiazines, have a marked paucity of side-reactions. Table I gives the correlation of the chemical structures of the various phenothiazine derivatives with their clinical efficacy. Many pharmaceutical companies and some investigators have recommended that the major tranquilizers, particularly certain of the recently synthesized phenothiazines, should be utilized in neurotic patients, even by physicians relatively inexperienced in their actions and effects. The present author feels that the toxicity of all phenothiazines is such that they should be used with care and preferably should not be used in the management of neuroses.

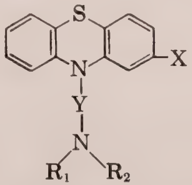
Choosing the proper tranquilizer in each case can often be a confusing and frustrating task. Table II lists all the major tranquilizing drugs, their dosage, indications, contraindications, side-effects, and site of action. In reference to this table, in which various criteria that should determine the clinical selection of tranquilizers are listed, several points are noteworthy.

1. Various combinations of tranquilizers

TABLE I.—CORRELATION OF CHEMICAL STRUCTURE OF PHENOTHIAZINES* WITH THEIR CLINICAL EFFICACY[85,86]

Correlating Factors	Thorazine	Sparine	Pacatal	Compazine	Trilifon	Vesprin	Dartal	Stelazine
Key modifications in chemical structure	X–Cl Y–3C† R–$(CH_3)_2$	X–H Y–3C R–$(CH_3)_2$	X–H Y–C Piperidine side chain	X–Cl Y–3C R–piperazine ring**	X–H Y–3C R–piperazine ring	X–F†† Y–3C R–$(CH_3)_2$	X–Cl Y–3C R–piperazine ring	X–F Y–3C R–piperazine ring
Relative therapeutic results in schizophrenic psychoses (per cent)	68	40	30	60	70	65	62	60

* Model Phenothiazine structure:



† 3-carbon side chain is optimal length at Y position.
** Piperazine substitution is more potent than dimethyl at R position.
†† Potency increases from H → Cl → F in X position.

have been marketed by certain pharmaceutical companies and have been recommended as being better than the individual drugs. For example, chlorpromazine and reserpine, chlorpromazine and mepazine, and meprobamate and benactyzine have been combined and utilized for a variety of mental disorders. There is no conclusive evidence that any of these combinations offers an improvement over the single drug.

2. The dosages that have been suggested in Table II are approximate average total daily doses. Initial doses should usually be smaller and should be increased over a period of several days until desired clinical effects are achieved. There is wide variation in the effective dose required by different patients; such variation results from differences in clinical status and diagnosis, age, weight, sex, and individual sensitivity to the drug. The optimal dose must be determined for each patient and can be determined only by careful clinical observation. As an example of one variable determining the dosage of phenothiazines, Table III lists the average doses of these drugs, as suggested by Ayd,[85] in various mental disorders.

PRECAUTIONS

Tranquilizers are powerful drugs that are still relatively new. Much remains to be learned about them, and care and judgment must be exercised in their use. Table IV lists the major side-effects encountered with phenothiazines.

Two major side-effects noted with the phenothiazines and demanding caution in their use are jaundice and agranulocytosis.* [11,12] The jaundice encountered seems to be a benign obstructive allergic type and can readily be controlled by cessation of the drug. However, for medicolegal as well as for therapeutic reasons, it is wise to anticipate this complication by having regular urinalyses performed every two weeks to once a month for urobilinogen and bile, an increase of which may indicate incipient jaundice. The patient should be warned of the possibility of jaundice and cautioned to watch for yellow skin, pruritis, yellow stool, dark urine, and so forth.

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* It is interesting to note that the incidence of side-effects is two to ten times greater in females than in males. Rate of recovery from psychiatric illness is 2.2 times greater in females than in males on tranquilizers.[8]

Agranulocytosis is a serious complication of the phenothiazines and may be fatal. Therefore, the patient should be warned about early symptoms of this condition, such as mouth ulcers and sudden rise in body temperature. Frequent blood counts should be carried out. If agranulocytosis occurs, the patient requires active medical therapy (antibiotics, ACTH, blood transfusions, etc.) and immediate cessation of the phenothiazine.

The extrapyramidal syndrome encountered with certain tranquilizers can be treated with antiparkinsonian drugs (Cogentin, Artane, etc.). Convulsions can be controlled with anticonvulsant medication, such as Dilantin. Skin reactions can be managed with appropriate medication, such as topical or systemic cortisone.

Patients must be cautioned about exposing themselves to sunlight where photosensitivity is a problem (as it is with the phenothiazines), driving a car, and drinking alcohol while on these drugs. Lemere[35] and others have reported that with meprobamate a dependency may develop, with the appearance of convulsions on withdrawal. This has not been demonstrated with other tranquilizers.

It should be noted that little is known about the long-term effects of continued exposure to tranquilizers, and this remains to be demonstrated in future studies. At this writing, no adverse effects have been reported in the literature.

SUMMARY

The medical and psychiatric use of tranquilizers in the office practice of medicine is discussed. These drugs are classified pharmacologically into five groups: the phenothiazine derivatives, substituted alkanediols, Rauwolfia alkaloids, diphenylmethane derivatives, and a miscellaneous group. Although pharmacologically heterogeneous, tranquilizers are designated as a group because of their uniform homogeneous psychologic effect of decreasing anxiety or tensions without clouding the sensorium hypnotically. Their proper application in medical practice is reviewed, and it is concluded that in psychiatric disorders they should be used by internists and generalists primarily in transient anxiety states in conjunction with superficial psychotherapy. Their use in psychotic or severe neurotic states requires close psychiatric supervision. Indications for the use of tranquilizers as well as their dosage, site of pharmacologic activity, contraindications, and side-effects are discussed.

57 EAST 88TH STREET, NEW YORK 28

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TABLE II.—CLINICAL SELECTION OF TRANQUILIZERS

Tranquilizer and Pertinent Information	Site of Pharmacologic Activity	Published Indications	Contraindications or Caution	Side-Effects
PHENOTHIAZINES *Chlorpromazine* Average dosage: about 500–600 mg. daily; above 600 mg. side-effects increase. Painful on intramuscular injection. First phenothiazine used; still widely used in psychoses. Women usually require higher dosages than men. In alcoholism, small dosage (25–50 mg.). *Promazine* Average dosage: about 400–600 mg. daily (maximum dose: 1,000 mg.). Same status as chlorpromazine except for lesser toxicity (hepatic, etc.) and therefore preferred for office patients. Particularly useful with acute alcoholic psychoses. Can be given intravenously; creates no muscle irritation when given intramuscularly. Not very effective for chronic conditions. *Mepazine* Average dosage: about 50 mg. 3 times daily; some suggest dosage of 100–600 mg. daily.[75] Certain side-effects are particularly disturbing (blurring of vision, dry mouth). Seems less effective than other phenothiazines. *Prochlorperazine* Average dosage: about 50–150 mg. daily. Most common side-effect is extrapyramidal syndrome; no vasomotor effects, grippe syndrome,	1. Central nervous system depressants, particularly on the subcortical areas; depress reticular activating system as well as the diencephalon. 2. Do not reduce total cerebral oxygen consumption. 3. Potentiate action of barbiturates. 4. It has been suggested that chlorpromazine interferes with utilization of adenosine triphosphate. 5. Influence on the serotonin level of the brain has been theorized as of some importance in action of these drugs. 6. Autonomic effects due to peripheral adrenolytic effects.	1. Hyperactivity, assaultiveness; excess motor activity; anxiety of psychoses; also delusional hallucinatory states: *a.* schizophrenic reaction, paranoid and catatonic types. *b.* manic depressive reactions. *c.* senile psychoses. *d.* agitated depressions. *e.* organic psychoses. 2. Psychosomatic symptoms and diseases. 3. Neuroses with anxiety and agitation. 4. Personality disorders, such as alcoholism, addiction. Of value in postalcoholic state with anxiety, agitation, and tremor. 5. Transient psychologic disturbances and physical symptoms, such as, anorexia, insomnia. 6. Preoperative, operative, and postoperative anxiety. 7. Of questionable use in pure depression, phobia, obsessive-compulsive neurotic states. 8. Head injuries.	1. Endogenous depression. 2. Coma due to central nervous system depressants (alcohol or narcotics). 3. Cardiovascular disease in which drop in blood pressure is dangerous. 4. Liver disease or jaundice history. 5. Patients receiving electroshock treatment. 6. Patients on barbiturates or narcotics. 7. Patients with epilepsy. 8. History of toxic reaction to phenothiazines. 9. Leukopenia or bone marrow depression.	1. Orthostatic hypotension; possibility of cerebral thrombosis. 2. Extrapyramidal syndrome; more with prochlorperazine and perphenazine than with others. 3. Photosensitivity. 4. Allergic jaundice (cholangiolitic obstructive type), most often with chlorpromazine. Not frequently encountered with newer drugs. 5. Agranulocytosis, which occurs almost exclusively in females; mostly during the first week of treatment; probably an allergic reaction. 6. Allergic skin reactions. 7. May aggravate pre-existing depression. 8. Somnolence, fatigue, dry nose, stuffed nose, blurred vision, change in body temperature, hyperthermia or hypothermia, nausea and vomiting, epistaxis. 9. Grippe syndrome. 10. Circulatory collapse with electric shock. 11. Convulsive states; particularly with promazine and mepazine, less often with chlorpromazine, least often with prochlorperazine and perphenazine. 12. Tachycardia or bradycardia.

jaundice, or photosensitivity. Smaller doses required. Seems to have a unique alerting effect. Can be used with electric shock treatment. *Perphenazine* Average dosage: about 2–4 mg. 3 times daily (rarely above 16–24 mg. daily); for those moderately disturbed: 4–6 mg. 2 to 4 times daily (avoid going over 64 mg.). Less somnolence than chlorpromazine, potent in smaller doses. No agranulocytosis or hypotension reported. Frequent dramatic results in acute psychoses. *Thiopropazate* Average dosage: about 5 mg. 3 times daily. Extrapyramidal symptoms more common; no jaundice or agranulocytosis. Smaller dosage required than chlorpromazine. *Triflupromazine* Average dosage: in psychoses about 25 mg. 3 times daily, orally (not over 300 mg.). Extrapyramidal symptoms common; no jaundice observed. A fatal single case of fatal agranulocytosis reported.[29] *Trifluoperazine* Average dosage: 2–5 mg. 4 times daily; up to 30 mg. 4 times daily.[31] Extrapyramidal complications high. Best drug in withdrawn, regressed schizophrenics because of minimal sedative effects.	13. Hypertension may develop. 14. Breast engorgement and secretion. 15. Increased dreaming, confusional states, feelings of unreality and depersonalization; dissociative psychotic states.

(*Continued*)

Table II (Continued)

Tranquilizer and Pertinent Information	Site of Pharmacologic Activity	Published Indications	Contraindications or Caution	Side-Effects
SUBSTITUTED ALKANEDIOLS				
PROPANEDIOLS				
Meprobamate Average dosage: about 400 mg. 3 times daily; at times may be increased up to 4,000 mg. daily. Resembles barbiturates so greatly that some workers feel this drug offers little improvement over phenobarbital.	1. By accelerating acetylcholine breakdown at synapse, they depress multineuronal reflexes in spinal cord and brain. 2. Act selectively on thalamus; block afferent stimuli in interneuronal circuits, especially those between cortex and hypothalmus. 3. No autonomic effects. 4. Causes peripheral muscle relaxation.	1. Anxiety and agitation in neuroses. 2. Psychosomatic conditions. 3. Severe insomnia. 4. Tension headaches. 5. Some investigators feel propanediols are indicated in psychoses.	1. Previous sedatives or alcohol. 2. Coma due to sedatives.	1. Sedation. 2. Allergic skin itching. 3. Abdominal discomfort, nausea, vomiting. 4. Convulsions on withdrawal. 5. Possible dependency and addiction.
BUTANEDIOLS				
Phenaglycodol Average dose: about 300 mg. 3 or 4 times daily.		1. Emotional instability. 2. Anxiety, tension states. 3. Functional disorders.	1. Depression.	Mild side-effects.
RAUWOLFIA ALKALOIDS				
Reserpine Average dose: about 2 to 4 mg. per day.	1. In small doses stimulates reticular activating system; in large doses depresses posterior hypothalamus as well as reticular activating system. Total effect: depression of autonomic nervous system. 2. Some feel that reserpine lowers serotonin at cerebral end organs and thereby influences behavior.	1. Anxiety and agitation in neuroses and psychoses, alcoholism, addiction, etc. 2. Psychosomatic disease.	1. Endogenous depression. 2. Peptic ulcer. 3. Cardiovascular collapse may occur when given during electric shock treatment.	1. Dizziness, headaches, diarrhea, lassitude. 2. Hypotension common. 3. Extrapyramidal syndrome. 4. Nasal stuffiness, mucus accumulation. 5. Peptic ulcer perforation, and so forth. 6. Hypothermia

DIPHENYLMETHANES				
Hydroxyzine hydrochloride Average dosage: about 75 to 300 mg. daily.	Site of activity unknown.	1. Mild anxiety and neurotic states. 2. Psychosomatic states 3. Nonpsychotic hyperemotivity.	Minimal.	Minimal.
Azacyclonal hydrochloride Average dosage: about 150 to 400 mg. daily. (Many investigators have questioned the efficacy of this drug and feel it is of little or no psychopharmacologic value.[87])	Cerebral stimulant; site of activity unknown.	1. Acute schizophrenia with hallucinations. 2. Alcoholic psychoses. 3. Noisy confusion, paranoid fears, hallucinations.	Minimal.	Minimal.
Benactyzine hydrochloride Average dose: initially 1 mg. 3 times daily for two to three days, increasing to 3 mg. 3 times daily; maximum dosage: 10 mg. daily.	Anticholinergic which raises emotional threshold for disturbing environmental stimuli by blocking certain nerve impulses in the hypothalamus to protect higher brain centers against psychic stress. Biochemically this is accomplished by inactivating acetylcholine.	1. Psychosomatic disorders. 2. Anxiety reactions. 3. Obsessive-compulsive. 4. Depressive reactions. 5. No reports on use in psychoses.	1. Frankly hostile patients. 2. Glaucoma. 3. Patients receiving electric shock treatment.	1. Diminution in ability to communicate and sense of depersonalization. 2. Excessive muscular relaxation with clumsiness and paresthesia of limbs. 3. Atropine-like effects: dryness of mouth, blurred vision. 4. Nausea. 5. Nervousness and dizziness.
MISCELLANEOUS				
Oxanamide Average dose: about 400 mg. times daily.	Yields subjective pleasure in addition to tranquility; site of activity unknown.	Tension and anxiety states		1. Dizziness. 2. Irritation, drowsiness, inertia. 3. Nausea, gastric irritation.
Ethylcrotonylurea Average dose adults: about 150 to 300 mg. 3 or 4 times daily during the day; children: about 150 mg. 3 or 4 times daily. Advantages are its gentle action and wide margin of safety.	A neurosedative empirically resembling diphenylmethanes and meprobamate. Site of activity unknown.	1. Tension, anxiety, and apprehension. 2. Psychosomatic disturbances. 3. Primarily useful in neurotic disturbances.	No contraindications reported.	No significant side-effects except for an infrequent skin rash.

TABLE III.—EFFECTIVE INITIAL DAILY DOSE RANGE (MG.) WITH PHENOTHIAZINES[85]

Disorder	Thorazine	Sparine	Pacatal	Compazine	Trilafon	Vesprin	Dartal	Stelazine
Schizophrenic psychoses	300–800	500–1,000	500–1,000	75–100	32–64	100–300	50–100	10–60
Senile psychoses	30–100	50–150	50–150	10–40	4–12	30–75	10–40	2–8
Psychoneurotic disorders	100–300	150–400	150–100	15–60	8–24	30–150	15–60	4–20

TABLE IV.—MAJOR SIDE-EFFECTS WITH PHENOTHIAZINES (PERCENTAGE)[85]

Side-Effects	Thorazine	Sparine	Pacatal	Compazine	Trilafon	Vesprin	Dartal	Stelazine	Functional Radical
Extrapyramidal reactions	18	2	0.5	61	20	30	60	62	Piperazine at amine
Dermatitis	6	4	6	0.5	0	8	0	0	$(CH_3)_2$ at amine
Seizures	0.5	4	5	0.5	0	0	0	0	$(CH_3)_2$ at amine
Jaundice	Yes	Yes	Yes	No	No	No	No	No	Halogen at anthracene
Agranulocytosis	Yes	Yes	Yes	No	No	No	No	No	Halogen at anthracene
Sedation hypotension	———	Most———	———	———	———	———	Least———	→	

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Gratitude is a lively sense of future favors.—SIR ROBERT WALPOLE

Tonsillectomy and Allergy

MARY F. LERNER, M.D., AND HARRY MARKOW, M.D., BROOKLYN, NEW YORK

(From the Department of Allergy, Beth-El Hospital)

TONSILLECTOMY is a very frequently performed operation and constitutes 25 to 30 per cent of all surgical operations. The vast number of these operations together with their aftermaths have suggested the importance of a re-evaluation of their necessity in all allergic and in many nonallergic individuals. In comparing a large number of patients whose tonsils have been removed with control patients in whom there have been no tonsillectomies, Kaiser[1] noted only four positive benefits over a ten-year period: reduced infection, less cervical adenitis, fewer attacks of rheumatic manifestations, and lower incidence of scarlet fever. Badger,[2] minimizing the benefits of tonsillectomy in respiratory allergies, stated "I will not waste time on a discussion of the benefits of tonsillectomy in such varied conditions as anorexia, mental deficiency, nosebleeds, pyelitis, the respiratory allergies, and cyclic vomiting."

This study was made to emphasize the effects of tonsillectomy in a group of allergic and clinically nonallergic patients. The subjects under study were chosen from patients now attending the allergy clinic of the Beth-El hospital, Brooklyn, New York, for the treatment of various types of allergies, and were included in this study for the reason that sufficient information concerning the tonsillectomies was obtainable. Other patients with tonsillectomies were omitted from this study because information was either unreliable and vague or because they had discontinued clinic treatment and further information was not obtainable.

Let us begin by saying that we have reviewed and analyzed the histories of 70 allergic patients (Fig. 1) who have been attending the allergy clinic for the past five years; these consisted of 29 cases of bronchial asthma, 34 cases of allergic rhinitis, and 26 cases of hay fever. All of these patients have had tonsillectomies performed at some time prior to admission to our clinic. Some patients presented more than one manifestation of allergy.

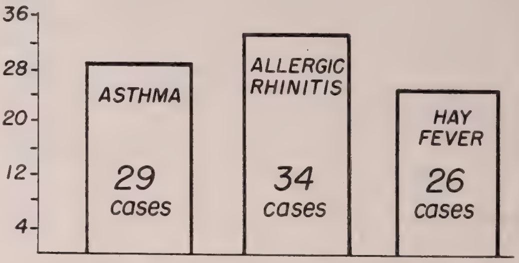

Fig. 1. Present clinical manifestations of allergy in 70 patients.

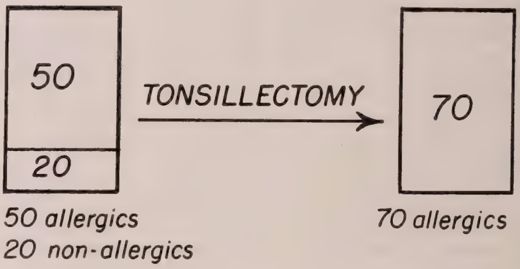

Fig. 2. Incidence of allergy in 70 patients before and after tonsillectomy.

At the time of tonsillectomy, this group was composed of 50 clinically allergic individuals and 20 clinically nonallergic individuals. After tonsillectomy, this group now consists of 70 allergic patients (Fig. 2).

Our interest in this study is to note the results of tonsillectomy on a group of allergic and nonallergic individuals; to note any beneficial effects on the allergic status; to note the relationship of tonsillectomy to the de-

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Presented at the Annual Meeting of the American Academy of Allergy, Chicago, Illinois, February 11, 1959.

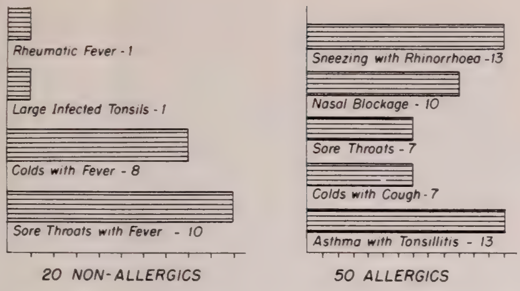

Fig. 3. Comparison of symptoms in 50 allergic and 20 nonallergic patients before tonsillectomy.

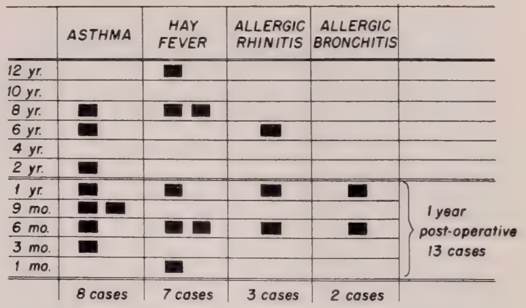

Fig. 4. Time of appearance of allergy in 20 nonallergic patients after tonsillectomy.

velopment of allergy in clinically nonallergic individuals; and to discover any evidence that may suggest that the development of postoperative allergic symptoms may be related somehow to the inheritance factor which appears to control much of the development of allergy in the growing child and youth.

Why were the 20 nonallergic patients subjected to tonsillectomy, as compared to the 50 allergic patients? Figure 3 illustrates the patients' complaints in both groups prior to tonsillectomy. It is evident that the 20 nonallergic patients suffered from symptoms which, in many cases, were typical of those found in patients in an average otolaryngologist's office, but which may simulate those of allergic patients. On the other hand, the symptoms in the allergic patients were typical of those seen in patients who visit an allergist's office, such as asthma, sneezing, rhinorrhea, nasal blockage, cough, and sore throat. It must be remembered that symptoms of allergy of the upper respiratory tract may strongly simulate symptoms of infection of the tonsils and adenoids. If one must differentiate between the allergic and infective episodes, the one procedure that will give the best clue is the examination of the respiratory secretion for the presence of eosinophils or neutrophils, repeated neutrophilic smears indicating infection, and repeated eosinophilic smears indicating allergy.[3] This has no bearing on the indications for tonsillectomy; it merely steers the proper patient toward surgery.

What was the result of tonsillectomy in the 20 clinically nonallergic individuals? While it did relieve 10 patients of attacks of sore throat and high fever, all eventually developed allergies within a period of from one to twelve years (Fig. 4). Eight developed asthma (6 within a period of three months to two years); 7 developed hay fever (4 within a period of one month to one year); 3 developed allergic rhinitis (2 within the period of one year); and 2 developed allergic bronchitis, both within a period of one year, and are now asthmatic. Did the inheritance factor play any part in the early onset of these allergies since 95 per cent of the patients in this study had a positive family history of allergy? The only answer to this question will be the results of a study of the effect of tonsillectomy on a group of nonallergic patients with negative family histories. This will be studied and reported at some future date.

Of the 50 allergic patients, tonsillectomy improved only 2, and those were under continuous allergic management before surgery. In 7 others, improvement was short-lived and symptoms recurred within two to four years postoperatively. In the other 41 cases there was no change in 16; 8 were worse; and in the remaining 17 who had some allergies before tonsillectomy, additional forms of allergy developed, 50 per cent within one year and 90 per cent within three years. It is interesting to note that, while there were 13 asthmatic patients in this group before tonsillectomy, there were now 8 more, or 21 asthmatic patients post-

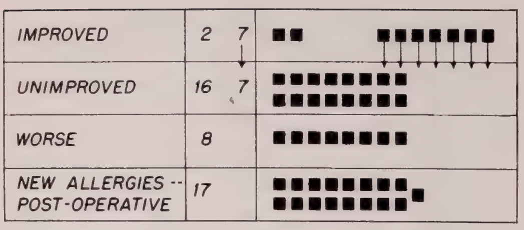

Fig. 5. Seven patients showing improvement had recurrences of allergy in from two to four years. Seventeen patients developed additional allergic symptoms, 50 per cent in one year and 90 per cent in three years.

operatively; this number added to the 8 who developed asthma postoperatively in the nonallergic group results in the surprising fact that 16 out of a group of 57 tonsillectomized nonasthmatic patients developed asthma following tonsillectomy, and that 13 who were asthmatic prior to tonsillectomy remained asthmatic postoperatively (Fig. 5). This survey should give the doctor cause for hesitation before advising tonsillectomy in those children in whom there has not been clearly established, at the time of operation, the absence or presence of an allergic state.

Comment

The indications for tonsillectomy have been accepted as being similar in allergic and nonallergic children. However, too often tonsillectomy is performed with disastrous results because time was not taken to diagnose definitely the complaints as nonallergic. As Sobel[4] states, and as our study bears out, it will not benefit the patient with truly allergic manifestations. Allergy per se cannot be considered an indication for tonsillectomy, and too often tonsillectomy is performed for the relief of allergic symptoms. It may be possible that our 20 nonallergic patients who became allergic after tonsillectomy may have been allergic all the time, since we found no evidence that any attempts to diagnose the presence or absence of allergy were made prior to tonsillectomy. Eosinophilic nasal or bronchial smears are good indicators of allergy, and neutrophilic smears, of infection; these procedures should be used repeatedly in every case before a decision for tonsillectomy is made. Of the preoperative allergic patients, only 2 had the benefit of proper allergic management, and these did well; in 48 others, tonsillectomy was performed without the benefit of preoperative allergic management and all did poorly. It is therefore essential to diagnose the presence of allergy and to treat it before and after subjecting the patient to surgery.

It is also of interest that there was a family history of allergy in 64 of the 70 cases, and this factor may have predisposed the so-called nonallergic children to the development of allergy; it merely took a shock reaction like a tonsillectomy to induce the onset of allergic symptoms, just as a hayride may precipitate hay fever and asthma symptoms in a previously clinically normal individual who either had false-positive pollen skin reactions or had an intense family history of allergy.

It is necessary merely to mention that Peshkin,[5] Bullen,[6] Clein,[7] Sobel,[4] and Glaser[8] all feel the same way about the results of tonsillectomy in allergic children. We agree with Glaser[8] who summarizes the situation by saying that if allergic children require tonsillectomy, the pollinating season should be avoided in pollen-sensitive patients to prevent the precipitation of asthmatic symptoms, and that, contrary to opinion as expressed by Chobot,[9] an allergic state should be suspected when repeated tonsil excisions are necessary and where tonsillectomy appears necessary before the age of three.

If tonsillitis is purely infectious, tonsillectomy should be indicated in cases of repeated attacks. Of special interest is Kaiser's report[1] that in about 50 per cent of 4,400 tonsillectomies there followed less sore throat, fewer head colds and ear infections, and less accompanying fever. But the poor results in the other 50 per cent indicate that these patients may have been allergic, and that such common allergic symptoms as sneezing, rhinorrhea, nasal blockage, bronchitis, and asthma are no indications for tonsillectomy. In fact, in some cases of asthma, tonsillectomy is contraindicated. The size and appearance of the tonsils cannot be used as a criterion for tonsillectomy. Sobel[4] warns that in patients with repeated attacks of infectious asthma, tonsillectomy was followed by recurrence of asthma in 82 per cent within one year and in 100 per cent within four years. It seems to us that in order to avoid such complications following tonsillectomy, all candidates for this operation should have a thorough study of their personal and family histories for allergy, a study for the presence of an increase of peripheral blood eosinophilia, and repeated cytologic studies of the respiratory secretions so that allergy may be distinguished from a purely infectious process. Whenever the two conditions coexist, the decision for surgery should be made only after a trial period of allergic management. If, after such a period, the allergy improves but the infective state remains as indicated by repeated neutrophilic smears, tonsillectomy may be considered if the preoperative allergic management is continued postoperatively and if the operation is performed at times other than pollinating seasons.

Summary

The case records of 70 patients who had tonsillectomies were studied. Fifty of these patients manifested some type of allergy prior to tonsillectomy, and 20 were clinically nonallergic prior to tonsillectomy. Only 2 preoperatively allergic patients showed postoperative improvement, and these were under allergic management prior to and following the tonsillectomy.

Of the 20 who gave no clinical evidence of allergy prior to their tonsillectomies, all developed some manifestations of allergy following surgery. Of the 70 cases in this series, 16 developed asthma following tonsillectomy, and the 13 preoperative asthmatic patients were unchanged postoperatively.

Asthma and nasal allergy per se are no indications for tonsillectomy. Tonsillectomy not only will not cure allergic diseases but may also induce new allergic manifestations in patients who are already allergic. The continued presence of neutrophils in the respiratory secretions is indicative of an infective process alone or superimposed on an allergic reaction of the tissues. The greater the eosinophilia in these secretions, the greater the possibility that one is dealing with an allergic reaction and surgery should not be done or should be postponed until the allergy is under control.

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Make haste slowly.—EMPEROR AUGUSTUS

Povidone-Iodine Shampoo for Seborrheic Dermatitis and Pyodermas

LAWRENCE FRANK, M.D., BROOKLYN, NEW YORK

(*From the Department of Dermatology, State University of New York College of Medicine*)

THE effectiveness of iodine as a germicide and fungicide is well known. Zintel,[1] comparing many preparations including hexachlorophene, merthiolate, zephiran, and alcohol, considered iodine the most effective agent used. However, iodine has several disadvantages which limit its use topically. Free iodine, which is the active form, is only slightly soluble in water (0.355 Gm. per liter). A solvent such as ethanol produces much stinging. Free iodine stains the skin, is unstable, and is a primary irritant.

All these difficulties experienced with iodine have been overcome by complexing iodine with povidone (polyvinylpyrrolidone) a water-soluble and physiologically acceptable polymer. The povidone-iodine complex resulting from this combination is a brown powder, readily soluble in water[2] and having all the germicidal properties of elemental iodine.[3] The aqueous solution of povidone-iodine is nonstinging, nonstaining, and more stable than tincture of iodine or Lugol's solution. In contrast with elemental iodine, povidone-iodine is neither irritating nor sensitizing. Percutaneous studies on intact and damaged skin on over 300 patients elicited no subjective complaints and no visible reactions. Known iodine-sensitive patients were also patch-tested and manifested no reaction.[4] Because of the safety of povidone-iodine and its enhanced properties, it was felt that iodine in this form could be used effectively in the treatment of seborrheic dermatitis of the scalp. Accordingly, a suitable shampoo* was used, incorporating 7.5 per cent of the povidone-iodine yielding 0.75 per cent available iodine. This shampoo met the requirements of the Draize rabbit eye irritation technic. Repeated insult patch tests on 200 volunteers (100 males and 100 females) indicated that povidone-iodine shampoo is neither a primary irritant nor a sensitizer. At the conclusion of percutaneous absorption studies in rabbits, the preparation was considered safe to use in contact with the skin as a shampoo or as a general germicidal skin cleanser without any danger of systemic toxicity resulting from absorption.[5]

Clinical Studies

One hundred fourteen patients with seborrheic dermatitis of the scalp were treated with povidone-iodine shampoo for a minimal period of six weeks. Patients were instructed to apply two teaspoonfuls to the scalp, lather, and then rinse. This was to cleanse the hair. As a treatment, two teaspoonfuls were again worked into the scalp, left on for five minutes, and then thoroughly rinsed out. This procedure was repeated twice a week for six or more weeks.

Two control groups, A and B, of 10 patients each were also employed. Control group A used a detergent shampoo, followed after rinsing by the application of an aqueous solution of povidone-iodine† (1 per cent available iodine). A quarter of an ounce was used, equivalent to the same total amount of povidone-iodine as was used in the experimental treatment. The solution was left on the scalp for five minutes and then washed out with the detergent shampoo. Control group B shampooed twice with the detergent shampoo and left it on the scalp for five minutes between rinses. No povidone-iodine was used by control group B. Twenty-one patients with pyoderma of the skin and recurrent furunculosis were in-

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* Supplied as Betadine Shampoo by Tailby-Nason Co., Inc., Dover, Delaware.

† Supplied as Betadine Antiseptic by Tailby-Nason Co., Inc., Dover, Delaware.

Table I.—Effect of Povidone-Iodine Shampoo on Pyodermas

Condition Treated	Duration of Condition Before Treatment	Previous Treatment	Concomitant Therapy	Response*
Recurrent furunculosis	5 Months	Antibiotics, systemically	Antibiotics, systemically in acute stage	Good
Recurrent furunculosis	6 Months	Sulfa drugs	None	Good
Recurrent furunculosis	1 Year	Antibiotics, systemically	Antibiotics, systemically in acute stage	Good
Recurrent furunculosis	8 Months	Antibiotics, systemically	None	Good
Recurrent furunculosis	7 Months	Antibiotics, systemically	Antibiotics, systemically in acute stage	Good
Recurrent furunculosis	8 Months	Antibiotics, systemically	Antibiotics, systemically in acute stage	Good
Recurrent furunculosis	6 Months	Sulfa drugs, antibiotics in acute stage	None	Good
Pyoderma, generalized, secondary insect bites	4 Weeks	Proprietary ointments	None	Good
Pyoderma of body	4 Weeks	Proprietary ointments	None	Good
Impetigo and generalized pyoderma	10 Days	None	None	Good
Impetigo and generalized pyoderma	3 Days	None	None	Good
Impetigo of scalp	2 Weeks	None	None	Good
Impetigo	9 Days	Proprietary ointments	None	Good
Ecthyma of legs	2 Months	Proprietary ointments	None	Improved
Folliculitis of face and scalp	7 Months	Extensive antibiotics, systemically	None	Improved
Folliculitis of face and scalp	$2^{1}/_{2}$ Years	Antibiotics, topically, systemically	None	Improved
Folliculitis of face	4 to 5 Years	X-ray, antibiotics, systemically and topically	None	Improved
Folliculitis of face	3 Weeks	Proprietary ointments	None	Good
Folliculitis of face and scalp	7 Months	Penicillin and topical ointments	Vaccine therapy	Good
Folliculitis of scalp	6 Weeks	None	None	Good
Folliculitis of face	5 Days	None	None	Good

* Good response indicates no evidence of reinfection after four weeks. Improved indicates some infection still present, but primary condition markedly improved.

structed to shampoo the entire body daily with povidone-iodine shampoo, leave it on for five minutes, and then rinse. This regimen was followed for a six- to eight-week period when indicated.

Results

Complete control of the seborrheic dermatitis was obtained in 102 of the 114 patients treated with the povidone-iodine shampoo. This group showed no evidence of excessive scaling or exfoliation, and patients were completely asymptomatic at the end of the six-week period. The remaining 12 patients showed from mild to moderate improvement on this regime, but evidence of scaling was still present.

Control group A using the povidone-iodine solution on the scalp, preceded and followed by a simple detergent shampoo, responded as well as the test group using the povidone-iodine shampoo. In control group A, 9 cases were asymptomatic and 1 was improved at the end of the test period. However, patients found the povidone-iodine solution less esthetic than the providone-iodine shampoo. Control group B using the detergent alone did not respond as well. Although oiliness and scaling were diminished, complete control of the seborrheic dermatitis was not obtained in 7 of 10 patients treated in this manner.

The pyodermas of the skin showed improvement on the prescribed regimen (Table I). The severe pyodermas required concomitant therapy with antibiotics. In recurrent furunculosis, povidone-iodine shampoo was particularly effective in minimizing and preventing reinfection.

None of the patients treated showed any

toxic or adverse effects from the preparation used.

Summary

One hundred two out of 114 (89 per cent) patients with seborrheic dermatitis of the scalp responded promptly to the povidone-iodine shampoo. Nine out of 10 patients responded promptly to the povidone-iodine solution preceded and followed by a detergent shampoo. Use of the detergent shampoo alone proved effective for complete control of seborrheic dermatitis in only 3 out of 10 patients (30 per cent). The prompt response of seborrheic dermatitis to a topical antiseptic supports present concepts of the infectious origin of this condition. The shampoo appears to be effective adjunctive therapy in the treatment of severe pyodermas of the skin.

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Constipation Related to Sudden Death Caused by Blood Clot

Vascular thrombosis leading to sudden death may result from excessive bathroom straining by constipated individuals.

A team of researchers, Alfred Halpern, Ph D., David Selman, M.D., Saul S. Samuels, M.D., Herbert Shaftel, M.D., all of the Stuyvesant Polyclinic Hospital, New York City, Norman Shaftel, M.D., Kings County Hospital, Brooklyn, and Paul H. Kuhn, M.D., New York University Post-Graduate Medical School, reporting their findings in the *American Journal of the Medical Sciences*, April, 1959, emphatically state that the reduction of straining effort is essential if these tragic episodes are to be avoided.

This may be accomplished by the administration of a constipation corrective which effectively reduced the incidence of high and excessive straining, thereby favorably modifying these critical responses of the peripheral vascular system.

On the basis of hundreds of patient observations, they noted that certain of the changes caused by straining are of sufficient intensity and duration to bring on an automatic cycle of extreme variations in peripheral blood pressure and blood flow—known as the Valsalva maneuver.

The Valsalva maneuver is a phenomenon which occurs during straining when the pressure in the chest cavity is forcibly raised to a degree of at least 40 mm. of mercury and sustained for eight to ten seconds. Under these conditions, there results in sequence a series of reflex circulatory changes including sharply rising and falling arterial and venous blood pressures.

The study which directly measured the changes in venous pressure and the arterial circulation in the extremities during actual bowel function of normal and constipated males and females showed that straining initiated marked elevations. These changes increased with the severity of the straining.

The venous pressure increased dramatically during the strain period, as high as 40 to 50 mm. over the resting period and abruptly dropped to the base level with the sudden release of the strain. This action, they cautioned, "is capable of causing a suction action which is capable of detaching a bland thrombus and could cause sudden death if the blood clot became lodged in the lungs or heart." They further warned, "that from 50 to 60 per cent of all normal adults of middle age or over harbor silent detachable clots (clots producing no symptoms) in the veins of their feet or calves."

A similar but opposite set of circulatory variations were observed in the arterial circulation during straining associated with bowel functioning, while the venous pressure increased, the blood flow in the peripheral arteries was reduced by approximately 95 per cent. This reduced blood flow was accompanied by a vasoconstriction which increased the peripheral resistance to blood flow. The toes were most often affected and showed an increase of 400 peripheral resistance units. The possibility that this phenomena is an initiating factor of the commonly observed peripheral gangrene in the toes, was advanced by the scientists.

An Artery Scissors and Thumb Forceps*

LESTER BLUM, M.D., NEW YORK CITY

(From the Surgical Service, Beekman–Downtown Hospital)

Most vascular instruments are modifications of those in general use. The two described herein are no exception to the general rule. They represent adaptations to the technical problem of suture in diseased arteries and are particularly helpful in the placement of bypass grafts.

The arterial thumb forceps (Fig. 1) is directly patterned after the typical implement of this type. It differs in two respects. First, the working tips end in right-angle feet, 3 mm. in length. This allows their use as an arterial hook when apposed. The instrument thus serves as a combination thumb forceps and hook. This is convenient and time-saving during the suture of a smaller vessel. It is at no time necessary to switch from forceps to hook as the suture line is in progress. Furthermore, the vessel wall need not be grasped since the fine right-angled feet when spaced slightly apart brace the arterial wall by counter pressure as the needle point is passed through between them.

Second, there are no serrations on the grasping surfaces of the forceps. The smooth grip is sufficient for holding a plastic graft and minimizes the harmful effect if the vessel wall should be grasped.

The artery scissors shown in Figure 2 are designed to cut when held with the curved blades pointing to the operator's left. When grasped in this fashion, the lower blade possesses the cutting edge.

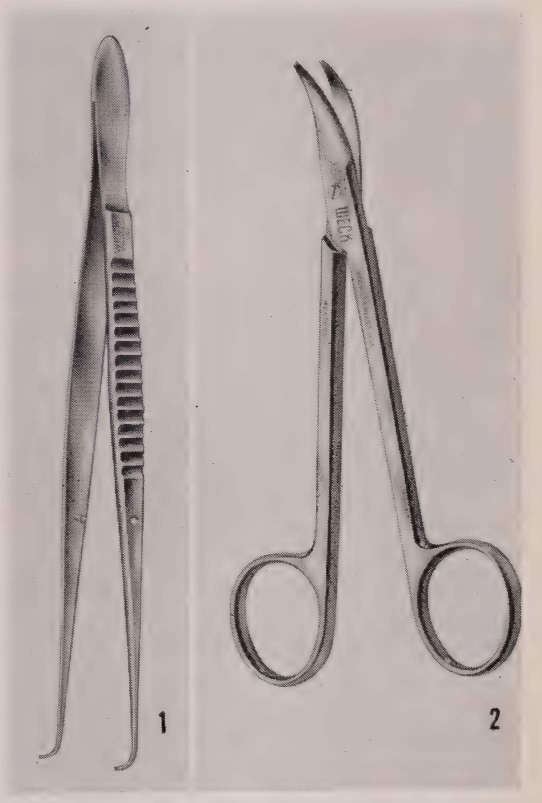

Fig. 1. Arterial thumb forceps. Fig. 2. Artery scissors.

This instrument is designed for the trimming of the arterial wall in the formation of a stoma for anastomosis with a bypass graft. The cutting edge is applied to the intima. This delicate membrane is thus cleanly cut through as the heavier outer blade bites through the substance of the midarterial wall containing plaques or fibrous matter. In this way the stripping of the intima that frequently follows the use of conventional scissors on arteriosclerotic vessels can be avoided.

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* Manufactured by Edward Week & Co., Brooklyn, New York.

Myocardial Infarction During Gastrointestinal Hemorrhage

ROBERT A. MANDELBAUM, M.D., AND ALVIN H. BRACKUP, M.D., BROOKLYN, NEW YORK

(*From the Department of Medicine, The Jewish Hospital of Brooklyn*)

We have recently had the opportunity to care for 2 critically ill patients in our wards who were admitted with gastrointestinal hemorrhage complicated by myocardial infarction. We are reporting these 2 cases in order to re-emphasize to the clinician the frequency of cardiac complications in gastrointestinal hemorrhage and to stress the great importance of detecting these cardiac abnormalities early in the course of the illness. In many instances of gastrointestinal bleeding, vigorous, correct medical therapy can prevent the occurrence of the myocardial ischemia which could eventually prove fatal to the patient.

In a review of 103 consecutive cases of moderate or severe hemorrhage by Master *et al.*[1] there were 95 instances of gastrointestinal bleeding. These authors demonstrated conclusively the high incidence of acute coronary insufficiency during severe bleeding. Fifty-nine cases (57 per cent) presented clinical or electrocardiographic evidence of acute coronary insufficiency; of these, 32 showed electrocardiographic changes alone, 6 only clinical findings, and 21 had both clinical and electrocardiographic evidence. The age of the patients who developed coronary insufficiency ranged from eighteen to seventy-nine years. Twenty-two patients died; 18 of these presented clinical or electrocardiographic features of acute coronary insufficiency. In 4 of the 13 autopsied cases, pathologic examination disclosed subendocardial myocardial necrosis in the absence of recent artery occlusion. The electrocardiographic changes these authors noted in 53 of the 103 cases consisted of flattening or inversion of the T wave, with or without depression of the RS-T segment. The RS-T segment depression when correlated clinically appeared to indicate a more profound degree of coronary insufficiency. Deep Q waves occurred in only 3 cases, and RS-T elevation was observed infrequently in lead III. The finding of Q waves and RS-T elevation resulted in the electrocardiographic diagnosis of myocardial infarction due to acute coronary artery occlusion in distinction from the diagnosis of acute coronary insufficiency.

The clinical concept of acute coronary insufficiency was shown to be a definable pathologic entity by Horn *et al.*[2] in a study of 25 hearts which demonstrated subendocardial necrosis predominantly in the left ventricle. There was no acute coronary artery occlusion, and these myocardial changes occurred presumably from a discrepancy between the requirements of the myocardium and its available blood supply. This situation may be transient and reversible or myocardial necrosis may occur when the precipitating factors persist. Coronary insufficiency may occur in a normal heart, but hearts with intrinsic disease are certainly more vulnerable to sudden changes in coronary artery blood flow. The pathologic changes in the hearts described by Horn *et al.*[2] varied in extent from a few scattered microscopic foci to widespread disseminated grossly visible areas and were confined to the subendocardial musculature and papillary muscles of the left ventricle. These changes noted in the absence of coronary artery thrombosis occurred in cases of acute heart failure, acute tachycardia, acute hemorrhage, pulmonary embolism, dissecting aortic aneurysm, postoperative shock, and severe infection.

The principal causes of cardiac involve

ment in extensive gastrointestinal hemorrhage are the shock and acute anemia that accompany this process. Animal experiments by Case, Berglund, and Sarnoff,[3] using direct blood flow measurement, showed that hypotension existing for any length of time results in reduced coronary blood flow. Acute anemia by itself, without any drop in systemic blood pressure, is a treacherous enough situation, causing a decrease in the ability of the myocardium to meet its nutritional needs. Active bleeding causes a fall in cardiac output in the presence of tachycardia.[4] Only after the phase of active bleeding has stopped does the anemic individual respond to the situation with an increase in cardiac output, providing the myocardium is healthy enough to respond to the need. Recently Turpini and Stefanini[5] have reported the occurrence of intravascular thrombosis as a direct effect of hemorrhage on the coagulating factors in the blood. This state of hypercoagulability is rapidly reversed by whole blood replacement.

Case Reports

CASE 1.—A seventy-year-old white female clothing worker entered the Jewish Hospital of Brooklyn on July 15, 1958, because of severe crushing chest pain of five hours duration. The patient had been complaining of increasing anginal-type pains for three weeks prior to admission. These were accompanied by progressive dyspnea, orthopnea, and peripheral edema. She received nitroglycerin, Peritrate, and Mercuhydrin during the period. On the night of admission she began to complain of severe pressing precordial pain radiating into the neck, gums, and down the left arm. She complained of shortness of breath and perspired profusely. On questioning it was ascertained that the patient had had repeated episodes of diarrhea reportedly black in color accompanied by abdominal pain during this period. There was no history of oral iron intake. Remaining history was noncontributory.

On physical examination, the patient was found to be an obese female who was pallid, cold, and perspiring profusely. Her temperature was 100 F., the blood pressure was 110/80, pulse was 120, and respiration was 40. Pertinent findings revealed neck veins which distended at 25 degrees from the horizontal and which filled from below. There were basilar crepitant rales bilaterally. The heart tones were distant. There was no cardiac enlargement on percussion. Aortic second sound equalled pulmonic second sound, and first mitral equalled second mitral. There was 2 plus bilateral pretibial pitting edema. A gentle rectal examination revealed a brownish-black stool—4 plus guaiac. The hematocrit at this time was 18.

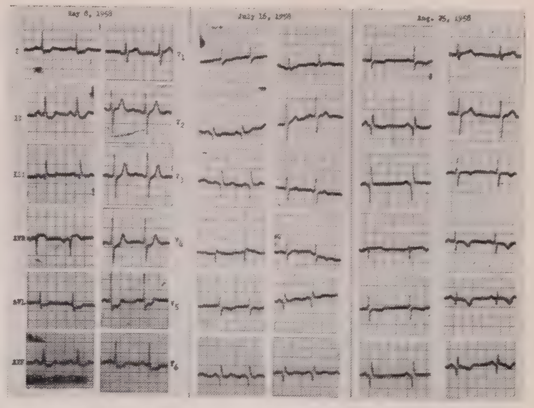

FIG. 1. An electrocardiogram showing acute posterior lateral wall infarction.

An electrocardiogram on July 16, 1958, showed a Q wave in leads II, III, aVf, V_5, and V_6; depressed S-T segment in I, II, aVl, V_2 to V_4 and biphasic T waves in I, II, aVl, V_3 to V_6. The interpretation was that of an acute posterior lateral wall infarction (Fig. 1).

The patient was given 4 units of packed cells slowly, oxygen, and sedation. The hematocrit was 29 on the following day. The blood pressure was subsequently maintained at about 100/70 with blood and intravenous fluids as required with hematocrit at level of about 31.

On August 13 the patient was allowed to dangle, and on August 28, with her condition stable, the gastrointestinal work-up to determine the cause of bleeding was started. The gastrointestinal series revealed a large hiatus hernia and a large bowel polyp.

Bleeding gradually subsided spontaneously, and in view of the patient's recent myocardial infarction, no active therapy was undertaken. She was discharged on September 12 after stabilization of the infarct. Her blood chemistries are depicted in Table I.

The electrocardiogram of August 25, 1958 (Fig. 1) showed a T-wave inversion in leads I,

TABLE I.—Blood Chemistries of a Patient with Acute Myocardial Infarction

Blood Chemistries	July 16	July 17	July 18	July 19	July 29	August 26	September 12
Urea nitrogen	29	36	25	28		20	
Fasting blood sugar		188			122		107
Carbon dioxide	20.1	24.8	27.4	28.2	25.9		
Chloride	99	101	92	93	98		
Sodium	126	131	133	137	139		
Potassium	5.4	3.9	3.2	3.2	4.4		
Calcium			9.2				
Serum glutamic oxalic transaminase			135			15	
C-reactive protein	Negative				4+		1+
Serology					Negative		
Hematocrit	29.1	26	31	30	32	33	37
White blood count						5,400	5,800
Corrected sedimentation rate						27	11
Total protein						6.8	
Albumin						4.0	
Globulin						2.8	

II, aVl, aVf, and V_3 to V_6. Deep Q waves persisted in leads II, III, aVf, V_5 and V_6. The interpretation was that of a healed posterior lateral wall myocardial infarction.

Comment

Because of the alert detection of the anemic state, blood transfusion replacement therapy was given early in the treatment of this patient with acute myocardial infarction. The provision of essential nutrition to this anoxic myocardium probably enabled successful recovery from the acute injury.

Case 2.—A sixty-eight-year-old white widowed housewife was admitted to the Jewish Hospital of Brooklyn for the first time on October 25, 1958, because of two episodes of syncope. There was no chest pain. On October 23, two days prior to admission, the patient fainted while sitting and watching television. On October 24 she had an episode of nausea with hematemesis, and on the day of admission she had another syncopal attack. A physician called to her home found tarry stools on rectal examination, and she was admitted to the hospital for a work-up for gastrointestinal bleeding. The patient had been taking analgesics for arthritis for a long period of time and had been placed on Meticorten for three weeks prior to the onset of the syncope. Her previous gastrointestinal history indicated fatty food intolerance with heartburn and excessive eructation. She had never observed the color of her stools. She acknowledged no symptoms of cardiac disease previously, but had been treated on occasion with a low-salt diet for moderate hypertension. Except for diabetes mellitus controlled by diet, the remainder of her history was essentially negative.

On examination the patient appeared as a well-developed, well-nourished white female who was in moderate distress. Her skin was warm and dry, and there was a 2 by 3 cm. area of telangiectasia on left malar eminence. Blood pressure was 160/100 and respiration was 36. Significant findings revealed moist inspiratory rales at both lung bases posteriorly. There was moderate cardiac enlargement to the left on percussion, with a sinus tachycardia of 156 per minute with occasional premature contractions. There was a grade IV harsh systolic murmur heard throughout the precordium but best at the apex. The abdomen was soft, nontender, and no masses were palpable. There was a 1 plus bilateral pretibial pitting edema. On admission the hematocrit was 24.

A Levin tube was passed and revealed gross blood in the stomach. The stool was black and gave a 4 plus reaction with guaiac. Bleeding work-up showed coagulation time (Lee White method) of 9.5 minutes, bleeding time (Duke method) of 4.5 minutes, negative Rumpel-Leede sign, adequate platelets on smear, and prothrombin time of 16 with a control of 18.4 seconds.

The patient was kept on intermittent suction via nasogastric tube, a cutdown was started in the right leg, and whole blood was instituted.

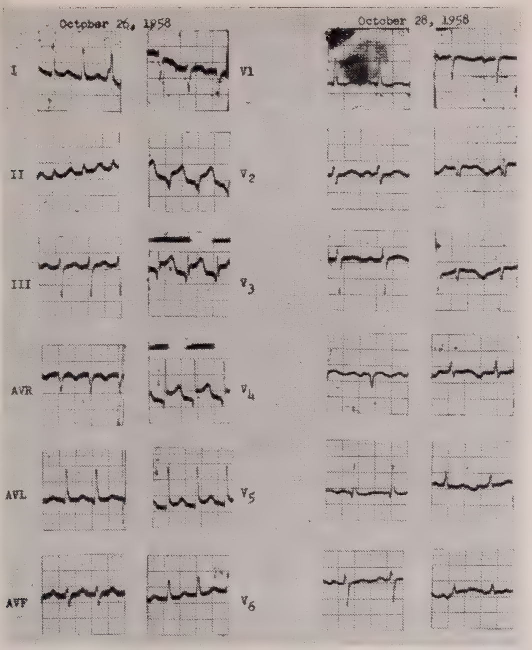

FIG. 2. An electrocardiogram showing a recent anterior wall infarction.

The patient continued to vomit both fresh blood and coffee ground material intermittently, and two hours after admission the blood pressure dropped to 70/40 at which time Levophed was started. The rate of administration was regulated so that the blood pressure remained at about 120/70. Four hours later the patient again vomited about 200 cc. of bloody material, and the blood pressure again dropped to 60/40. After an additional 1,000 cc. of whole blood and Levophed the blood pressure was raised to 120/80 where it was stabilized. The hematocrit at this time was 32, blood urea nitrogen was 40 mg. per cent, blood sugar was 268 mg. per cent (with intravenous fluids running), carbon dioxide was 24.4 mEq. per L., chlorides 102 mEq. per L., sodium was 141 mEq. per L., and potassium was 4.5 mEq. per L. An electrocardiogram taken at this time showed a semihorizontal position, a supraventricular tachycardia with a rate of 180 per minute, generally small complexes showing a Q wave in leads aVl, V_2 to V_5, together with S-T segment elevation in leads V_2 to V_5. The interpretation was that of a recent anterior wall infarction (Fig. 2).

Because of evidence of congestive heart failure digitalization was started with 0.5 mg. of digoxin intramuscularly, followed by 0.25 mg. every six hours. Two cc. of Mercuhydrin were also given intramuscularly.

On October 27, after thirty-six hours, with the hematocrit stable at 31, blood pressure of 120/70, pulse of 106, and no further vomiting, the nasogastric tube was removed and the patient was started on the first day of sippy diet. Because of the presence of premature contractions, quinidine was added to the regimen. At 5:30 P.M. the patient vomited a small amount of sanguinous fluid and another unit of whole blood was given. Blood chemistries on this day showed a blood urea nitrogen of 31, blood sugar of 87, carbon dioxide of 25.5, chlorides of 102, sodium of 139, and potassium of 3.8. Mazzini test was negative. Urinalysis showed specific gravity of 1.014, acid reaction, no albumin or acetone, and 3 plus sugar. The microscopic slide revealed 0 to 1 leukocytes and red blood cells and occasional epithelial cells. On October 28 the patient developed a cellulitis in the area of the cutdown in the right leg and was started on tetracycline which was later changed to penicillin, Chloromycetin, and streptomycin. Vital signs remained stable with a blood pressure of 120/60, pulse of 100, and hematocrit of 33. The total white blood cells were 5,000 cu. mm. and a corrected sedimentation rate was 14 mm. Chemistries showed a total protein of 5.9 Gm. per cent with 3.8 Gm. per cent albumin and 2.1 Gm. per cent globulin, cephalin flocculation of 0, thymol turbidity of 2.8, and an icterus index of 5.7. The bromsulphalein test showed 12.6 per cent of dye retained in 45 minutes. The serum glutamic oxalic transaminase was 35 units and the C-reactive protein was 2 plus. Total cholesterol was 168 mg. per cent. The electrocardiogram (Fig. 2) appeared more normal, the S-T elevations were less marked, and the Q waves could be found in only aVl and V_2. The R-wave amplitude was strikingly diminished in the precordial leads. Blood cultures were sterile.

The patient remained stable and essentially unchanged until 4:30 P. M. on October 30 when she was found to be in extreme congestive heart failure with moist rales throughout the lung fields and froth present at the mouth. Blood pressure at this time was 80/40; pulse was 150, and heart tones were poor. Treatment with morphine, atropine, aminophylline, oxygen, and dry alternating phlebotomies was instituted. This was supplemented by Levophed, and the blood pressure rose to 100/40. The electrocardiogram demonstrated an idioventricular rate of 50 per minute. This was followed by asystole. No cardiac function could thereafter be restored.

Comment

This patient died of myocardial infarction several days after her bleeding had been well controlled and her hematocrit stabilized. If the diagnosis of gastrointestinal hemorrhage could have been made earlier and blood replacement given sooner, it is probable that the fatal myocardial infarction could have been prevented. It is interesting that this patient had no symptoms suggesting cardiac infarction and this diagnosis was made on routine admission electrocardiogram.

Treatment and Prevention of Cardiac Complications in the Bleeding Patient

Since anemia and shock are the principal precipitating causes of myocardial necrosis in hemorrhage, the correction of these two factors is the cornerstone of therapy. Under no circumstances should blood or pressor agents, such as levarterenol, be withheld in the gastrointestinal bleeder when they are indicated. Circulatory stabilization will usually occur after rapid infusion of 1,000 or 1,500 cc. of whole blood, and blood may be given more slowly after this to regain hematocrit. In the treatment of the bleeding patient, it is important to estimate the rate of bleeding. According to Maloney,[6] the loss of 20 per cent of the circulating blood volume may be expected to produce tachycardia, narrow pulse pressure, and mild hypotension, provided this loss of blood occurs in a period of less than three hours, so that it cannot be compensated for by hemodilution. Therefore, a 70-kilogram patient who demonstrates this syndrome of mild shock will have lost 1,000 cc. of blood. Larger, acute blood loss produces a greater tachycardia and a more profound fall in arterial blood pressure. It is important to replace the blood fairly rapidly in order to restore circulatory signs to normal. If congestive heart failure is impending, the blood must be given slowly and the blood pressure maintained by simultaneous intravenous pressor amines. Small doses of morphine sulfate given subcutaneously before blood transfusions are helpful in the prevention of pulmonary edema.

There is no doubt that a small percentage of patients have such extensive and medically uncontrollable hemorrhage that only early surgical intervention can be curative. If circulatory stabilization does not occur after administration of 2,500 cc. of blood, it may be assumed that bleeding is continuing and that immediate operation is required. Bleeding that continues massively and persistently usually results in death only because surgical intervention is withheld.

Throughout the period of active bleeding the clinician must be aware of the cardiac status of the patient. Arrhythmias should be detected early and specific drug therapy should be instituted. Electrocardiographic studies should be frequent; if myocardial infarction or coronary insufficiency occur, nonvital procedures such as intubation and x-rays should be avoided. Frequent observation to detect the early signs of congestive heart failure, such as orthopnea, pulmonary edema, diastolic apical gallop, and pulsus alternans, should be performed. If such signs occur, digitalis is administered rapidly. Cardiac studies should be as frequent as hematocrit and blood pressure determinations in these patients.

Oxygen therapy is hardly ever given to a patient with gastrointestinal bleeding. However, hypotension is an indication for oxygen therapy. Harris *et al.*[7] have given oxygen under high tension to dogs with experimentally induced myocardial infarction, and have noted a significant rise in blood pressure in all these animals. These authors refer to a vasodilatory or hypotensive reflex which is based on anoxia and which is correctable by oxygen under pressure. It is therefore probably worth while to give oxygen by mask to patients who are elderly and have hypotension or tachycardia due to bleeding.

When should intravenous pressor amine therapy be begun? Drugs such as levarterenol should be used promptly when signs of hypotension are detected. In hypertensive patients, a fall in systolic blood pressure to 120 mm. Hg may result in sufficient diminution of coronary artery blood flow to set off the chain of events that occurred in our patient who died of myocardial necrosis. Once evidence of myocardial infarction or coronary insufficiency is detected in a gastrointestinal bleeder, adequate maintenance of blood pressure must be accomplished.[8] The clinician must be aware also that some of the shock mechanism may be "cardiogenic" in origin, that is, not due to peripheral blood loss, but owing to myocardial failure in these anemic, arteriosclerotic patients. Just when to begin digitalization requires careful observation.

As soon as levarterenol is begun, it is wise to insert a urinary catheter and measure the flow of urine in cc. per minute. The flow rate of urine of $^1/_2$ cc. per minute suggests a satisfactory response to pressor amine therapy correlating well with the rise in systolic blood pressure and the widening of the pulse pressure to 20 mm. Hg.[9]

Summary

The high incidence of dangerous cardiac complications in extensive gastrointestinal hemorrhage has been stressed. The various causes for these complications and the proper means of medical management to treat as well as to prevent them has been discussed.

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Nature does not proceed by leaps.—LINNAEUS

Triad of Socio- and Psychopathology Among Institutionalized Children with Behavior Disorders

Illegitimacy—Illiteracy—Illegality

JOHN LANZKRON, M.D., MIDDLETOWN, NEW YORK

(From Middletown State Hospital)

ALMOST two thirds of the population of our residential treatment center in Middletown State Hospital for boys between ten and sixteen years of age have been diagnosed "primary behavior disorder in children, conduct disturbance." As you will remember the diagnosis "primary behavior disorder, conduct disturbance" describes children whose clinical manifestations are characterized by acting-out behavior such as disobedience, lying, fighting, truancy, cruelty, running away, sexual misbehavior, or, in other words, by passive or active resistance to the laws of our society. The manual of mental disorders of the American Psychiatric Association classifies this disorder as "adjustment reaction of childhood, conduct disturbance."

Among the diagnostic group of "adjustment reaction of childhood, conduct disturbance" which is due mainly to psychogenic factors, a new clinical entity has recently captured our attention because the number of children presenting this triad of socio- and psychopathologic phenomena is steadily increasing and the treatment of these children is a great challenge to the therapeutic efforts of our residential treatment center.

The triad of socio- and psychopathology—illegitimacy, illiteracy, and illegality—might be interpreted as follows:

1. Illegitimacy or coming from a broken home as a contributing factor.
2. Reading disability as a predisposing factor (borderline I. Q.).
3. Delinquent or illegal behavior culminating in commitment.

This triad is listed in chronologic order because such an enumeration suggests the genetic dynamics of the disorder. It is the experience of the author that the delinquent behavior which finally leads to the admission or commitment to our unit is the result of frustration over reading disability often combined with other learning difficulties in a child suffering from the additional stress of defective family relationship. According to Noyes and Kolb:[1] "At the present time approximately 12 per cent of all the children in the U. S. A. fail to read as well as the average."

The process of reading involves a great number of neuron channels.[2] The final oral reading is the result of a complex visual-muscular feedback system composed of a considerable number of neurons. The Braille system for blind people has demonstrated that the visual pathways can be excluded. Inhibition of cerebral synaptic transmission at any synapsis of the complicated interconnected neuron pathways involved in the reading process may cause alexia or dyslexia; it is noteworthy that our schizophrenic as well as our neurotic children are, in general, good or excellent readers. The schizophrenic children have a high verbal and poor performance skill in contrast to the group we are discussing in this paper.

A child with reading disability may fall back in his frustration on his secure, reassuring family environment, and often overcomes his difficulties with extra help such as remedial reading by a special teacher or by sustained support from a member of his family. This is especially effective if the reading disability is due to our modern method of teaching, as stated by Noyes and Kolb:[1] "Another group of children suffers from an inability to learn as a consequence of the newer methods of teaching reading. By these methods children are taught to read whole words, phrases, and sentences with an analysis of individual words into phonic sounds and letters undertaken only secondarily. Because of their particular perceptual capacity some children are unable to learn to read or spell by this method of pedagogy. In such children the emotional expressions of fear and anxiety because of failure to meet the standards of the family or class, and a hostility resulting from feelings of rivalry and jealousy, tend to imbue concepts of personal inferiority and to encourage behavior disturbance."

The difficulty of overcoming reading disability in a child with lag of maturational development becomes insurmountable if there is the additional stress of the illegitimacy of the child or if a broken home results in severe emotional deprivation. These children often spontaneously report that their difficulties began when the other children called them "stupid, dumbbell," and so on; they feel that they are unable to compete with the other children in their classes and they often have to repeat the same grade exposed to the ridicule of their younger schoolmates. This situation with the additional emotional deprivation—these children often have been placed in foster homes or institutions since early childhood—leads to the development of frustration, anger, hostility, aggressive acting-out behavior, delinquency, and finally to commitment to our unit.

Let us look at 4 typical cases who present such a problem in our contemporary American society with its ever-increasing cultural and social complexity.

Case Reports

Case 1.—A fourteen-year-old Negro boy was admitted to our unit when he was thirteen years of age. He was the second child born to his mother out of wedlock and she had abandoned him two months after birth. The relationship between the mother and the alleged father had been a casual one and she had not informed him of her pregnancy. The patient's abandonment resulted in placement in the New York Foundling Hospital where he remained until he was two years old. He was later placed in foster homes. This illegitimate Negro boy functions on a borderline level of intelligence with a Wechsler-Bellevue full-scale I.Q. of 73, verbal I.Q. of 62, and performance I.Q. of 90. His performance is quite in excess of verbal ability suggesting good manipulative skills. The patient has marked reading disability and on admission at thirteen years of age he was reading on a first grade level. His arithmetic was not much higher. He became frustrated about his inability to understand his schoolwork and had feelings of insecurity with other children because they made fun of him. The patient's frustration caused anger, hostility, and aggressiveness which he was unable to control. Besides the reading disability there were the clinical manifestations of the "adjustment reaction of childhood, conduct disturbance" such as truancy, disobedience, aggressiveness, destructiveness, and stealing which finally led to his commitment.

Case 2.—A thirteen-year-old boy of Puerto Rican extraction comes from a broken family; the father left the mother during the patient's infancy. The patient functions on the level of borderline intelligence. The Wechsler-Bellevue full-scale I.Q. was 85 with a verbal I.Q. of 76 and a performance I.Q. of 97. On admission he was illiterate for practical purposes although he had attended special classes in New York for several years. In middle childhood he had once had an abnormal electroencephalogram record which is now normal. The patient's frustration about his inability to learn and his emotional deprivation resulted in anger, hostility, and aggression. He was finally admitted because of his "adjustment reaction of childhood, conduct disturbance" such as truancy, hostility, aggressive behavior, and stealing. His reading disability is due to a maturation lag in addition to socioeconomic, cultural, and educational determinants such as those often seen in the boys of Puerto Rican extraction we receive in our unit. After enrolling this boy in a remedial reading class he started to read and his behavior subsequently improved.

Case 3.—A thirteen-and-one-half-year-old white boy was admitted at the age of eleven because of behavior problems at home and at school for years. The incident which led to his hospitalization was setting fire to the coats of other children at the school he was attending. His father was unknown, and his mother was in a state hospital with the diagnosis of dementia praecox. He had lived in different foster homes since infancy, was difficult to manage, and was rejected by foster mothers. He started kindergarten at four and one-half years, was unmanageable at school, and was expelled in 1951. He was finally admitted to our hospital on January 20, 1956. An electroencephalogram showed a moderately abnormal record. On admission the patient was reading on about the first grade level. In 1956 the patient functioned on a full-scale I.Q. of 81 with a performance I.Q. of 69 and a verbal I.Q. of 95. His reading has improved since his hospitalization.

Case 4.—A fourteen-year-old white boy was admitted to our hospital at the age of twelve. The patient's father was an intemperate drinker and the parents were finally divorced. The patient's mother was alcoholic and promiscuous and has never shown interest in the patient. The patient has been suffering from emotional deprivation since infancy. He functions on a borderline level of intelligence. He was illiterate for practical purposes. His full-scale I.Q. was 73, his verbal I.Q. was 74, and his performance I.Q. was 78. There were some abnormal electroencephalographic records before the patient's admission. The patient was finally admitted to the hospital because of temper tantrums, disobedience, and fire setting. His reading and writing disabilities have improved. He now reads at the second grade level and his arithmetic is near the third grade level. He still has a low tolerance for frustration and at times acts out his aggressive impulses.

About 50 per cent of the children admitted with the diagnosis of "adjustment reaction of childhood, conduct disturbance" belong to the same category. Since the cause of this new constitutional-ecologic clinical entity which I have described is multifactorial, the treatment approach has to be multidisciplined, creating a therapeutic milieu. The treatment will converge from three directions: psychologic, somatic, and social.

Individual and Group Psychotherapy

Individual.—Within a therapeutic relationship with an interested, understanding, relatively mature adult, a corrective emotional experience is provided for the individual. There must be an opportunity for identification with the therapist. Because of the importance of identification for these children with defective superego formation, a male nurse or attendant in charge with a mature personality and leadership qualities is of utmost importance. In group psychotherapy one of the patients acting as a catalyst is very valuable to balance the therapist's authority figure. Group homogeneity with exclusion of psychotic boys is desirable in order to foster group identity and understanding of common problems.

Somatic Treatment.—Somatic treatment must be individualized. In cases of overactivity we have found that treatment by thorazine Spansule capsules of 150 mg. at 8:00 a.m. and at 8:00 p.m. often combined with one tablet of 50 mg. in the morning is the most effective way to create a therapeutic milieu. If the patient becomes too drowsy Ritalin hydrochloride 5 to 10 mg. once or twice daily may be added. In cases with abnormal electroencephalograms without clinical evidence of epilepsy, anticonvulsive medication sometimes combined with tranquilizers may be helpful; some cases with organic features improve with amphetamine. Hydrotherapy in the form of cold showers is used routinely with excellent results in acute aggressive outbursts and is not resented by the boys as is the case, for example, with an intramuscular injection of Thorazine.

Social Activities.—Our school program provides at least one hour of remedial reading daily with small groups of four or five students with the same problem, in order to avoid the competition and ridicule by better-endowed classmates. Occupational therapy is especially important for these boys whose performance skills on the Wechsler-Bellevue tests are always higher than their verbal ones.

Recreational therapy with its daily physical activities including swimming, bowling, and so forth, is part of the program. In addition there are social activities in the evenings such as parties for the boys with dancing for the adolescents. Our student nurses play Scrabble or other word games with these patients and the patients win prizes for best and second-best achievement.

In general the treatment should be kind, showing acceptance, promotion of self-esteem, and warm interpersonal relationship. The approach should remain firm and consistent with a certain amount of authority. With improvement of the reading ability, the behavior improves. The reading disability is one of the main causes of frustration in these children.

The therapist also should use the occurrence of a physical illness to demonstrate his interest in the child's physical well-being. It often brings about an unexpected warm interpersonal relationship which otherwise might have been impossible because of the deep distrust of these patients and their rebellion against all authority.

The therapist will often be discouraged by a running away or an aggressive acting-out of the patient. This is often only an attention-getting device and should be evaluated and treated accordingly. One has to "polish the ego" of these frustrated children by rewarding them for every achievement in school, occupational therapy, or sports. That will help them to strengthen their egos and to sublimate their aggressive impulses with resulting better adjustment to society.

Kierkegaard once observed: "Life is so difficult because it must be lived forward, but it can only be understood backward." I would like to modify this statement by saying that if we help the patient understand his difficulties in the past, we will be able to help him to adjust better in the future.

Conclusions

A new clinical entity of " adjustment reaction of childhood," a triad of the socio- and psychopathologic phenomena of illegitimacy, illiteracy, and illegality, was presented. The fulcrum of treatment-endeavor for these children with high performance and low verbal skill rests on remedial reading within the therapeutic milieu of a residential treatment center structured to their needs. As Bender[3] summarizes: "If the reading disability becomes fixated with a general education retardation and compensatory asocial behavior, only specific forms of intensive remedial tutoring, psychotherapy, and social rehabilitation may be successful."

P. O. Box 1453

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Necessity knows no law.—St. Augustine

Office Treatment of Depressive States with a New Drug (Imipramine)

HANS STRAUSS, M.D., NEW YORK CITY

(From the Neurological Service of the Mount Sinai Hospital)

KUHN [1,2] has reported that many depressive states can be controlled within a short time by treatment with imipramine (Tofranil). Because imipramine does not cause any important side-effects, it seemed appropriate to try it on ambulatory patients in psychiatric office practice, particularly since the results reported by Kuhn have been confirmed by Azima and Vispo[3] and by Freyhan.[4]

The use of a drug in office practice calls for certain properties which are not so important in a drug used in a psychiatric hospital. Its application should not necessitate bed rest, constant supervision for side-effects, or many laboratory procedures. In nonhospitalized patients with depression the drug should control the depression rapidly in order to eliminate the constant supervision of possibly suicidal patients. The same rapid control is also important for those patients who keep their positions and continue their work in spite of all the difficulties caused by their depression, and who fear with good reason that they will have to give up if they are not quickly restored to their usual working capacity. Similar considerations are valid for housewives on whose well-being depends the welfare of a whole family.

With these factors in mind, we have investigated imipramine in the treatment of 102 office patients. As indicated in Table I, it was possible to evaluate the effect of the drug in 65 of these patients. Treatment was started as a rule with 75 mg. of imipramine daily in divided doses; if no improvement was obtained within three to four days, treatment was continued with as much as 150 mg. daily. Only 1 patient received a higher dose (200 mg.). No other drugs were given during the daytime, but many patients with sleeplessness were given 0.05 to 0.1 Gm. of pentobarbital at bedtime.

TABLE I.—SURVEY OF CASES TREATED WITH IMIPRAMINE

Diagnosis	Number of Patients
Depressive psychoses	36
Anxiety and compulsive neuroses with depressive features	13
Other psychiatric disturbances	10
Paralysis agitans	6
Total evaluated	65
No evaluation possible	37
TOTAL TREATED	102

Depressive Psychoses

Thirty-six of our patients suffered from depressive psychoses. Thirty-two had had previous depressive episodes, and electroshock treatment had been employed previously in 22. Twenty-four patients showed the typical picture of the depressive phase of manic-depressive psychosis, with motor and psychic retardation, self-accusations, suicidal ideas, disturbance of sleep and appetite, and loss of weight. Six patients had agitated depressions, 2 of them with severe hypochondriac traits. Such traits without agitation were present in 3 others. Two patients, both in the older age group, had pronounced paranoid trends, and 1 other patient had a depressive stupor.

The results of treatment were considered on the basis of its effect within three weeks. If the depressive episode had not disappeared or considerably improved during this time,

TABLE II.—Response of Depressive Psychoses Treated with Imipramine

Type of Depression	Number of Patients Remission	Improved	Unimproved	Total
Typical	13	6	5	24
Atypical				
Agitated	3	1		4
Hypochondriac	2	1		3
Agitated and hypochondriac			2	2
Paranoid	1	1		2
Stuporous	1			1
Totals	20	9	7	36

the case was listed as a failure and electroshock treatment was given. Furthermore, cases were listed as treatment failures after only one week or less in several instances when patients were known to respond rapidly to electroshock.

The response of the 36 patients to imipramine is presented in Table II. During the three-week observation period the depressive episode disappeared entirely in 20 patients, and 9 patients were considerably improved. Thus imipramine alone had a favorable effect in 29 patients, or about 80 per cent. The percentage of good results was slightly lower (79 per cent) in patients with typical depressions than in those whose depressions exhibited atypical features (83 per cent). Among the latter, 2 patients with agitated hypochondriac states both failed to show a favorable response.

Therapy appeared to be equally effective in both male and female patients. As to the significance of age, the results seem to be essentially the same in the various age groups with the exception of the group aged forty to forty-nine years, where the percentage of favorable results was lower than in other age groups. However, the number of cases is too small to permit of any valid conclusions.

The 22 patients who had previously received electroshock treatment represent a very important control group for evaluating the efficacy of imipramine, especially since they include patients who had been given long series of electroshock treatments before a cure was obtained. Eighteen of the 22 patients responded well to imipramine alone, and 4 others who might have responded were given electroshock treatment after no more than one week of treatment with imipramine, because it was known from previous attacks that these patients reacted very promptly to electroshock. To cite a few examples: a woman of thirty-one had received 27 electroshock treatments for a depression two years before at another place and now got well on imipramine alone within ten days. Her aunt, who was in a depressive stupor, got well on imipramine within three days; she had had two series of electroshock treatment ten years before in France for a depression extending over a period of ten years. One patient had been under my care for fifteen years and had recently required increasingly long series of electroshock treatments, 26 treatments during the last episode. She recovered completely within three weeks under treatment with imipramine. The same is true of another patient, who had formerly received 17 electroshock treatments.

All patients who failed to respond to imipramine alone after three weeks were given electroshock treatment. One to five treatments resulted in some improvement, after which imipramine was continued. Since this schedule of treatment resulted in a cure in 2 patients who had previously required a series of 17 to 27 electroshock treatments, it is evident that imipramine may reduce the number of electroshock treatments necessary for cure, even when the drug alone is inadequate.

The number of cures or improvements does not reflect sufficiently the benefit obtained by the application of this drug. While we have spoken of an observation period of three weeks in evaluating the drug, improvement was obtained in 5 patients within three days, and complete cure in 9 patients within two weeks.

One patient who had previously had several courses of electroshock treatment reported the following: "I took the first pill at 4:00

P.M. In a few hours my depression was gone. It was really like a miracle. I felt as though I broke through boundaries that held my own happy self. I again felt that I held the reins of my life."

Another patient stated after two days of treatment: "It is fantastic. One feels resurrected. There are no problems. One can get over what could not be handled before. I have an entirely different contact with human beings. I am suddenly liberated from agony."

Many similar statements were made, all of them spontaneously. One patient stated that after two days her depression had disappeared though she had no initiative yet. One patient, whose most disturbing symptom had been almost complete insomnia in spite of the use of various sedatives, regained his sleep without any medication after ten days. Several patients stated that they had not felt so well in years. The families, as a rule, confirmed the rapid improvement. Such results are in considerable contrast with those of electroshock treatments, where many patients later complain about the side-effects of the treatment, as for example lack of memory, dizziness, headache, and muscle pain.

After the observation of a rapid cure in some of my first cases, I discontinued treatment immediately after the disappearance of all symptoms, sometimes after periods as short as from three to ten days. This, however, resulted in some cases in a recurrence of the symptoms after a few days. Therefore it has become customary to continue the patients on imipramine over a period of at least six to eight weeks, gradually diminishing the dosage, and increasing the dosage again if any symptoms recur. This may be necessary in some cases for a period of from three to six months. In 3 cases symptoms that recurred after early cessation of treatment were eliminated again only after much longer treatment than had been necessary originally to bring about a response. Interestingly, similar observations were made when electroshock treatment was discontinued after a rapid cure.

The possibility of a manic phase during treatment is a factor which has to be considered in determining the duration of treatment. In 4 patients the depression was followed rapidly by a manic state. One patient with a history of manic episodes, who had been inactive in bed for several weeks with a severe depression, became manic after three days of treatment with imipramine and went on a shopping spree. She was controlled by large amounts of chlorpromazine. A second patient who had had manic episodes became slightly hypomanic, with awareness of his own increased activity and optimism. Another patient who had had severe manic episodes previously, had been depressed for four months. His depression disappeared after six days of treatment with imipramine. Although his treatment was discontinued after four weeks, he became manic one week later. A fourth patient, who had no previous manic episodes, developed a manic state of moderate intensity.

Other undesirable psychiatric effects were not seen. In particular, no increase of agitation was observed in patients with agitated depressions.

In summary, there is no doubt that imipramine produces a beneficial effect on depressive states. A complete cure was obtained within three weeks in 20 of 36 patients (about 55 per cent), and considerable improvement in another 9 (about 25 per cent). The dosage has to be adjusted to the requirements of the patients and with attention to possible side-effects, as will be discussed. Medication should never be discontinued suddenly but should be reduced gradually, under constant psychiatric supervision.

Anxiety and Compulsive Neuroses

Thirteen patients with anxiety and compulsive neuroses who had some depressive traits as a reaction to their anxiety and compulsive symptoms were treated with imipramine. An excellent result was obtained in 1 case, and some improvement in 8 others. One patient lost entirely her anxiety of many years duration and explained that everything now seemed "so light and easy." The others still had their fears but were much less depressed. One of them returned to work which she had previously given up. Two housewives resumed many more of their duties than they had previously been able to perform. I feel, therefore, that a trial with imipramine is indicated in patients with such anxiety and compulsive neuroses.

Other Psychiatric Disturbances

Considerable improvement was obtained in 1 case of reactive depression with severe sleeplessness. However, 9 other patients with a variety of neuroses (hysteria, chronic hypochondriac states, and so forth) and schizophrenic psychoses were given imipramine without success.

Paralysis Agitans

Imipramine was used in 6 cases of paralysis agitans. It was tried first in a physician who, like many such patients, was severely depressed about his condition. He stated after three days that he felt better than he had in a long time. Although the tremor and akinesia did not improve in any of the 6 cases of Parkinsonism which I treated, 5 of them profited greatly from the use of the drug. One patient explained that he was "in much better spirits and not desperate any more." Another patient said he was more hopeful and had no more ideas of death. A truly startling result was obtained in 2 elderly women. One had secluded herself entirely, did not want to see anybody, and complained constantly. She became active, said she was better than she had been in four years, and began to see her friends. The second woman had been severely depressed, did not want to talk or do anything, refused her food, and lost 30 pounds in three months. On imipramine she became cheerful and active, and her eating and sleeping became normal. Her husband wrote ten days after the onset of treatment: "My wife had lost interest in all events with the exception of her constant preoccupation with the symptoms of her sickness. She spent the nights without sleep and was very restless. Now she laughs again, eats, and sleeps ten hours a night. In short, she is again my old wife."

While I am fully aware of the great suggestibility of patients with Parkinsonism, I believe that the improvement seen in these patients represents a true pharmacologic effect of the drug, especially since all these patients had received many other drugs and various forms of physiotherapy without any appreciable result. Therefore, I feel that imipramine should be tried in all patients with Parkinsonism when depressive symptoms are present. While no improvement in neurologic status can be expected, these patients may benefit considerably from this medication in their general attitude and feeling of well-being.

Side-Effects

Dangerous side-effects were not observed in any case. The most frequent complaints were dryness of the mouth and excessive perspiration. These were never severe enough to make it necessary to reduce dosage. Such side-effects as blurred vision, slight tremor of the hands, and vomiting were not seen, although they have been reported by Freyhan.[4] Some of the neurotic patients complained of increased restlessness and disturbance of sleep. This was not seen in the depressive psychoses. Constipation was seen rarely and was promptly relieved by a mild cathartic. One elderly man complained of some difficulty in starting the urinary stream. A few patients complained of sleepiness. Faintness was described by 3 patients. One patient who fainted once on getting out of bed had fainted on similar occasions before taking imipramine. In 1 case the medication was discontinued because of a severe feeling of faintness not associated with a drop in blood pressure. These attacks of faintness are the only relatively serious side-effects that I have seen, and it has become my habit to instruct all patients to rise slowly from a sitting or recumbent position, particularly when getting up in the morning. It can therefore be stated that imipramine has no dangerous side-effects and that other side-effects rarely force treatment to be discontinued.

Summary

Imipramine, an antidepressive drug, was used with excellent results in depressive psychoses, in which 80 per cent of 36 patients were improved within three weeks; the drug was substituted for electroshock treatment in many instances. Imipramine was equally effective in depressive states associated with paralysis agitans and was beneficial in some patients with anxiety neuroses. No dangerous side-effects were observed in a total of 102 patients treated.

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History of Cataract Surgery

The first authentic record of an operation for cataract can be traced to about 1000 B.C. This record is found in a treatise on surgery written by Susruta, a surgeon of ancient India.

One writer acclaims Susruta as "The Father of Cataract Operations," but admits it is possible his forefathers at the dawn of civilization had performed cataract operations. Susruta's method of operating was called "couching" and it was the only form of operating on cataract until about two hundred years ago.

Couching consisted of inserting a needle-like instrument into the eye and pushing the cataract into the posterior portion of the eye. Susruta advocated no medical treatment for cataract outside of couching the cataractous lens when it was mature. Unripe cataracts, he said, were unfit for couching.

Physicians today recognize Susruta's observations were correct. Couching is unsuitable for the unripe cataract, but most suitable for the soft mature and the hard, or hypermature, cataract, described as pearl-shaped, shining, and glistening by Susruta.

There are no reports to indicate how many cases were successful, but Colonel Henry Smith of Calcutta wrote in 1928 that after couching of a mature soft cataract, good vision returned for as long as seven years, while after a hard cataract there was seldom useful vision for more than three years. Simple progressive atrophy of the optic nerve resulted, or the dislocated lens would float forward into the aqueous humor and obstruct sight.

There are numerous references to cataract couching by ancient surgeons in Arabia, Bagdad, Egypt, Alexandria, Jerusalem, Athens, and Rome, and often one practitioner had some variation in technic according to his skill and knowledge. Celsus of Rome in 10 A.D. made a change as did the great Grecian surgeon, Galen, in the second century.

Several surgeons contributed to improved technics during the Middle Ages, but in the so-called Dark Ages the practice of couching degenerated into the hands of quacks with bad results in most cases.

The first "modern" approach to cataract surgery was made in 1745 by Daviel of France who devised the capsulotomy method. The lens is encased in a capsule or "pod." Daviel opened the front of the eye, made an incision in the pod, and removed the lens. This is called the "extracapsular" method. Since this was done in the days before anesthesia, it is hard to imagine what pain was felt when the surgeon cut the cornea of the eye which is the most sensitive tissue in the body.

With the discovery of anesthesia about one hundred years ago and an understanding of antiseptics, the cataract operation has become much safer.

Since Daviel's time, surgeons developed the "intracapsular" method of cataract surgery, removing the entire capsule with the lens. One method of removal involves use of an instrument with a suction cup on one end. The suction end is attached to the lens and the surgeon attempts to pull it out of the eye. Sometimes the bands or "zonules" holding the pod in place are very tough or the capsule is thin and ruptures. A few drops of alpha chymotrypsin minimize this problem.

RECENT ADVANCES IN MEDICINE AND SURGERY

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Nutrition for the Noningesting Patient

WILLIAM E. ABBOTT, M.D., HARVEY KRIEGER, M.D., AND STANLEY LEVEY, PH.D., CLEVELAND, OHIO

(*From the Departments of Surgery, Western Reserve University School of Medicine and the University Hospitals*)

THE majority of patients with a serious illness usually take only small amounts of nutrients orally during and immediately after the period their illness is in its most serious phase. A decrease or even a total lack of food intake for several days will probably not cause serious effects unless the patient is nutritionally depleted.[1] However, if an inadequate or starvation regimen is continued for a longer period of time, untoward effects might occur. Cannon[2] very clearly has shown that there is an increased incidence of infections and other complications in protein-depleted patients and that protein depletion is one of the common results of severe undernutrition. A patient who does not eat because of psychogenic or neurologic reasons or because of an operation, infection, or gastrointestinal difficulties should be supplied with adequate nutrition by either tube feedings or intravenous alimentation.

The Food and Nutrition Board of the National Research Council of the United States suggests that normal men and women receive about 1 Gm. of protein and 35 to 38 calories per kilogram of body weight per day. These suggested intakes are for healthy individuals leading a sedentary life. One would expect that the depleted or seriously ill patient may have even greater requirements. In fact, Rhoads[3] suggests that patients undergoing major surgery receive about 0.3 Gm. of nitrogen (1.88 Gm. of protein) and approximately 30 to 40 calories per kilogram per day. A patient who is receiving only token amounts of nutrition (for instance, one who sips on an ice cube or takes a few ounces of clear broth, tea, or ginger ale) still has normal or perhaps even an increased demand for most nutrients. Unless these requirements are met, the patient soon will develop increasingly large deficits which may in time become severe enough to upset the normal physiologic pathways; for example, water and electrolyte deficits, if they become large enough, can induce hypovolemia which in turn is responsible for oliguria, hypotension, and shock.

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Nonoral Methods of Alimentation

There are two general routes for providing nutrition in an adult patient who is receiving nothing by mouth: (1) tube feedings and (2) the intravenous route. Hypodermoclysis is not considered a desirable, safe, or effective route for providing parenteral nutrition.[4–6] If the solutions given subcutaneously are low or devoid of electrolytes, they may induce hypotension, oliguria, or even shock by causing a reduction in the plasma volume and effective interstitial fluid volume. These changes are most marked in patients with pre-existing water electrolyte or blood deficits. The plasma volume deficit is caused in part by a shift of electrolytes into the mass of sodium-free or deficient fluid given by means of hypodermoclysis. This results in a decrease in the osmolarity and sodium concentration of the extracellular fluid. In order to restore osmotic equilibrium between the intracellular and extracellular phases there is then a shift of water intracellularly, with a further decrease of the plasma volume. If fluids low or devoid of sodium are given and spread more rapidly through the tissues because hyaluronidase has been employed, the rate and magnitude of this reaction will be increased; therefore, the use of this enzyme is best avoided.[6] A sufficient amount of nutrients in salt-containing solutions cannot be administered to make this procedure worth while for an adult.

Tube Feedings.—Tube feedings can be administered through the nasogastric route or through a gastrostomy or jejunostomy. The use of an indwelling gastric tube or a fine bore plastic tube is an effective method of supplying nutrients for a week or so, especially to patients who cannot or will not eat but who are able to absorb food from the gastrointestinal tract. The route created by gastrostomy or jejunostomy avoids nasopharyngeal or esophageal irritation and does not interfere with respirations or coughing. It is therefore preferable to a nasogastric tube when long-term tube feeding is anticipated.

Mixtures which are used for tube feedings should have certain definite characteristics. They should be easily prepared liquids containing all the necessary nutrients. One must balance the desire to supply large amounts of nutrients in a small volume against the fact that hypertonic solutions tend to cause diarrhea. If the tube is in the small intestine, a hypertonic mixture may produce symptoms similar to those associated with the dumping syndrome (nausea, weakness, feeling of fullness, palpitation, hypotension, and even fainting). There are numerous simple formulas which can be used.[7,8] Such mixtures usually contain either powdered milk or some prepared dietetic foods which have been fortified with vitamins and minerals. Most prepared formulas yield 30 to 40 calories per fluid ounce and about 1 to 3 Gm. of protein. Approximately 2,200 ml. of such mixtures will provide 2,200 to 2,500 calories, thus meeting the daily nutritional needs of most adult patients. Individuals with higher nutritional requirements may need larger amounts per day. Usually small aliquots of the mixture are given through the tube periodically during the day. The Barron food pump has many advantages in administering nutrients through indwelling tubes.[9] This rather simple device allows the mixture to be kept on ice and pumps a small amount of formula through the tubing into the patient's stomach continously throughout the entire day. Barron and Fallis[9] report that a few problems are encountered when the food pump and standard dietary foods which have been homogenized by an electric blender are employed. These authors believe that natural foods are better tolerated than synthetic mixtures and that they prevent deficiencies of any one specific nutrient.

In addition to the ill-effects (diarrhea, nausea) induced by the hypertonicity of the mixture, difficulties occasionally may arise because of bacterial growth in the mixture. These mixtures are excellent media for the growth of bacteria; if the mixtures are not kept refrigerated or used soon after they are prepared, there often will be an active growth of organisms in the material. Bottles containing tube feeding mixtures should not be allowed to stand at room temperature for more than an hour or two. Many of the undesirable side-effects associated with tube feedings may be avoided if the aforementioned precautions are taken. Thus, for long-term nutritional maintenance, tube feedings are preferable to parenteral alimentation in noningesting patients when there is no contraindication to using the gastrointestinal tract.

INTRAVENOUS ALIMENTATION.—There is a large group of patients who, for various reasons, are not permitted to receive anything via the gastrointestinal tract. This group consists mainly of patients who have disorders of the gastrointestinal tract or peritoneal cavity (obstruction, paralytic ileus, diarrhea, peritonitis, etc.). Such patients can be provided with an adequate nutritional regimen by intravenous alimentation. With the nutrients that are currently available for intravenous use it is possible to provide the noningesting patient's daily requirements of water, protein, inorganic substances, vitamin B complex, and ascorbic acid. Protein hydrolysates can supply utilizable nitrogen, and the carbohydrates and alcohol or fat emulsions, which can be given intravenously, may be used to supply the necessary calories. The protein hydrolysates usually contain carbohydrate (glucose, invert sugar or fructose) and yield from 400 to 600 calories per liter of solution. In addition, such solutions contain approximately 15 mEq. of potassium and from 10 to 50 mEq. of sodium per liter. By increasing the hexose (dextrose or fructose) content of such solutions to 10 to 13 per cent and adding 2 to 3.5 per cent of ethyl alcohol, the caloric value can be raised to 800 to 1,000 calories per liter. The incidence of untoward reactions following the use of these preparations is negligible and is essentially no greater than that noted with the use of 5 or 10 per cent sugar solutions alone. By minimizing the number of venipunctures (the venipuncture used to obtain blood for analysis should be used to administer fluids) and avoiding venostasis and extravasation, it is usually possible to give fluids intravenously for a prolonged period of time.

By intravenous alimentation the clinician can correct and maintain the acid-base, water, and electrolyte balance, and simultaneously provide an adequate supply of vitamins, calories, and nitrogen to correct or prevent nutritional deficiencies. A good state of nutrition and proper fluid and electrolyte balance are dependent on each other, and therefore both types of therapy should be given. Each phase will be considered separately: first, the supplying of adequate calories and nitrogen by intravenous feeding and second, the use of various solutions in the treatment of fluid and electrolyte imbalances.

Nitrogen and Calories

Nitrogen, which is the most characteristic substance in proteins and in various protein hydrolysates, is present almost entirely in the form of amino acids. The patient who receives nothing by mouth can be supplied with utilizable nitrogen by vein if he is given a protein hydrolysate, blood proteins in the form of whole blood, plasma transfusions, or concentrated albumin solutions. Transfusions of whole blood is the treatment of choice for hemorrhagic shock or chronic blood loss. Allen and associates[10] advocate plasma infusions as a source of protein nutrition, but since there usually is less than 6 Gm. of protein per 100 ml. of citrated plasma, this method of supplying protein is both impractical and wasteful. Because repeated transfusions of blood, plasma, or albumin may cause hemolysis, anemia, hypervolemia,[11] and virus hepatitis,[12] it is considered inadvisable to employ these solutions unless they are indicated to correct a blood or plasma deficit. Also, because an equivalent amount of plasma supplies less calories than an equal volume of a solution containing 5 per cent protein hydrolysate and 5 or 10 per cent carbohydrate, it is likely that most of the infused plasma protein would ultimately be burned for energy and not be used for tissue synthesis. Concentrated albumin provides a patient with more protein in a smaller volume than plasma or the protein hydrolysates. However, since it may produce hypervolemia and its cost is excessive, it is rarely indicated. The use of albumin is only practical when there is a deficit of circulating albumin. However, the intravenous administration of albumin is usually of only transient benefit because deficits occur most frequently when there is a loss of albumin through the kidneys (nephrosis and nephritis) or an increased transudation of albumin across the capillaries (injuries, infections ascites, etc.). If hypoproteinemia in the preoperative patient exists in conjunction with anemia, it is preferable to correct the anemia with whole blood and then replenish the body protein stores with proteins and an adequate caloric intake administered orally. On the other hand, if little or no food can be taken by mouth, restoration should be made by intravenous alimentation with protein hydrolysates which contain 10 per cent sugar. The use of protein hydrolysates is the simplest method of routinely supplying the noningesting patient with utilizable nitrogen intravenously. The hydrolysates are derived from nutritionally adequate proteins (casein, fibrin, and plasma, which contain all the essential amino acids) and thus supply the amino acids needed for the fabrication of tissue proteins. In order to build tissue the body needs the essential components (protein, potassium, etc.), and for best utilization they must be available at the same time. When protein hydrolysates are being employed it is advisable to give them in conjunction with sugar. When protein-free solutions are given (sugar, fat emulsions, or alcohol), they should be infused prior to the protein hydrolysates so that the latter will not be used to supply energy. The synthesis of protein is also an energy-requiring process. Thus, by giving protein hydrolysates in solutions containing sugar, as a source of calories plus electrolytes, one provides the body with most of the essential ingredients needed for protein synthesis. Although the protein hydrolysates usually provide some magnesium, iron, copper, etc., these and other needed constituents are usually available from body stores. In addition, since vitamin requirements are coupled with protein and carbohydrate metabolism, adequate amounts of these substances should be supplied. When oral intakes are not possible, vitamins of the B complex and vitamin C may be added to the intravenous preparations or may be administered intramuscularly.

Many postoperative patients who are unable to eat are given only 1 to 3 L. of glucose solution daily, some of which may contain sodium chloride. Such a feeding program provides the patient with only 200 calories per liter of fluid if a 5 per cent solution is used or 400 calories per liter if a 10 per cent solution is given. Thus, such regimens provide a maximum of 1,200 calories per day without nitrogen or electrolytes other than perhaps some sodium chloride. In most instances it has been noted that patients who are not eating receive only 400 to 600 nitrogen-free calories per day. Patients who are being treated for obesity by a stringent reduction diet are provided adequate amounts of protein and vitamins. Such nutritional precautions are not usually met when the postoperative or seriously ill patient is being maintained solely on an intravenous regimen. When intravenous alimentation is necessary for more than several days, one should provide sugar solutions which also contain protein hydrolysates and the necessary vitamins and minerals. In this manner a fairly complete nutritional regimen can be supplied without overloading the average patient with water. The protein hydrolysates contain approximately 6 to 6.5 Gm. of nitrogen (equivalent to about 37 Gm. of protein) per liter, with carbohydrates and possibly alcohol yielding between 550 and 1,000 calories per liter.

The postoperative patient had been reported to develop large nitrogen deficits due to the trauma of surgery[13–15]; however, the patients included in these reports had grossly inadequate nutritional intakes during the early postoperative period. When male patients undergoing a partial gastric resection were given only 5 per cent glucose and water on the day of operation and during the next four days, they showed moderate weight and electrolyte losses and developed a five-day cumulative nitrogen deficit of approximately 60 Gm. Male patients undergoing a comparable operation who were given 10 per cent hexose (dextrose or fructose) without nitrogen had essentially the same deficits.[16] Daily deficits of this magnitude occurred in normal nonoperated males who received no nutritional intake (that is, who were on a starvation regimen),[17] and almost as large significant nitrogen deficits still occurred when 200 to 1,600 nitrogen-free calories were given.[17,18] The cumulative five-day nitrogen deficit was 30 to 40 Gm. in another group of male patients undergoing a comparable operation who were given protein hydrolysates containing carbohydrate which yielded 900 to 1,200 calories and 6 to 9 Gm. of nitrogen per day. Thus, by supplying the patients with suboptimal nitrogen and caloric intakes, the nitrogen deficit was reduced by one-half to one-third.

Desirable amounts of utilizable nitrogen (0.2 to 0.3 Gm. per kilogram) can be readily supplied intravenously to most patients regardless of weight. On the other hand, until recently it has been difficult to provide an adequate caloric intake (35 to 45 calories per kilogram) intravenously without giving excessive amounts of water. A fat emulsion which can be given intravenously allows the administration of a high caloric intake in a small volume of fluid. Such a preparation is now available and can be given to adult patients with a negligible incidence of untoward reactions.[19,20] This emulsion is made of vegetable fat (cottonseed oil) and provides 1.5 calories per milliliter. The advantage of giving fat emulsions intravenously is that such a solution supplies calories in a more concentrated form. No other nutritional advantage is attributed to such emulsions. It is now possible to provide the caloric and nitrogen intake which has been advocated for patients undergoing serious surgical procedures (0.3 Gm. of nitrogen and 30 to 40 calories per kilogram of body weight per day) by giving a bottle containing 500 of a 15 per cent fat emulsion and 4 per cent dextrose (755 calories), preferably before administering solutions containing protein hydrolysates, vitamins, electrolytes, and carbohydrates. Another group of male patients undergoing partial gastrectomy were given intravenously 12 to 18 Gm. of nitrogen (equivalent to 75 to 115 Gm. of protein) and a caloric intake which ranged from 2,000 to 2,500 calories per day. The five-day cumulative nitrogen balances of these patients ranged from equilibrium to a deficit of 14 Gm. When female patients underwent a subtotal gastrectomy, their nitrogen deficits and weight loss over a comparable five-day period were about half that noted in the male patients when they were maintained on one of the aforementioned regimens. The female patients who were provided with a nutritionally adquate intake frequently had a positive nitrogen balance and slight gain of body weight.

More recently, there have been reports of more serious reactions (hemolysis, hemorrhagic diathesis, impairment of liver function, and unexplained hyperthermia) following the daily infusion of a fat emulsion for ten to fifteen days or longer.[21,22] While these reactions may be a direct result of the fat emulsion, it is also apparent that in most instances either excessive amounts of fat were given intravenously and/or orally (more than 3 Gm. per kilogram of body weight per day) or the nutritional intake was deficient in essential nutrients, (protein, minerals, and vitamins).[21–24] Therefore, the final evaluation of these reports has to await more complete studies. From the widespread use of fat emulsions over the past several years, certain conclusions as to their value and limitations can be drawn. It has been shown that they provide a source of utilizable calories. To date, this is the only benefit that has been demonstrated. Studies in afebrile patients have established the fact that when adequate calories are provided in the form of carbohydrate and fat in conjunction with orally ingested protein or intravenously administered protein hydrolysate solutions, protein synthesis and a minimal nitrogen deficit or a positive nitrogen balance will result. Fat emulsions may be harmful if they are given in amounts exceeding 3 Gm. of fat per kilogram of body weight per day and are of little value if other nutrients are not provided. A decreased fat tolerance may occasionally exist in some individuals or result because of disease of injury. It has been shown, however, that twenty-four hours after a fracture, rats do not have an impairment of oxidation of intravenously administered fat emulsions. When fat tolerance is impaired and lipemia persists for eighteen to twenty-four hours or more, the infusion of fat emulsion should be discontinued for several days until the metabolic processes return to normal.

Thus, it appears that it is not the rule for the postoperative patient without complications to develop large nitrogen deficits.[16,17,25] In fact, it is believed that the major portion of the nitrogen deficit which occurs in the postoperative patient without complications is the result of underfeeding during the early postoperative period. This does not mean that the endocrine glands play no part in the postoperative nutritional imbalance but rather that the loss of body weight and breakdown of body tissue, as reflected in the negative nitrogen balance, are mainly the result of a poor nutritional intake. Fever or the presence of necrotic tissue should be eradicated as quickly as possible since these complications greatly accelerate catabolism and increase the caloric needs. Although it has not been shown that a modest nitrogen and potassium deficit is harmful to the average postoperative patient (except in those with pre-existing deficit), no advantage can be attributed to a period of starvation and weight loss.

Certain hormones (testosterone and the growth hormone of the anterior pituitary gland) have an anabolic effect on body metabolism. The steroid hormone, testosterone, and some of its derivatives have been utilized in an attempt to reduce the nitrogen deficits which develop after an accidental trauma or operation.[26–28] Such hormones are effective when given in conjunction with an adequate quantity of nitrogen and a modest or good caloric intake. A group of male patients undergoing partial gastrectomy were given 250 mg. of Depo-testosterone cyclopentylpropionate a day or two before they were operated on. With a nitrogen intake of 12 to 18 Gm. and approximately 1,500 calories, it was found that these patients exhibited only a small cumulative five-day postoperative nitrogen deficit (5 to 7 Gm.).[28,29] Many female patients maintained on a comparable regimen showed a positive nitrogen balance following major abdominal surgery. The Depo-testosterone cyclopentylpropionate was effective for twelve to fourteen days after a single injection. No significant androgenic changes were noted in male or female patients who were given one intramuscular injection of 250 mg. of this preparation.

The purpose of feeding the noningesting patient by means of a tube or the intravenous route is to supply the patient's daily requirements and not to provide excessive intakes (force feeding). The large nitrogen deficits which follow thermal burns can be greatly reduced by oral force feeding of mixtures high in nitrogen and calories, but if such a regimen is begun during the first three to seven days it is believed to be detrimental. Thus, force feeding during the acute stages following trauma and serious infection is to be avoided, but the administration of moderate amounts of all nutrients is desired.[30–32]

SOURCE AND VOLUME RANGE OF LOSS		Approximate Loss				Day 1				Day 2			
		Volume	mEq./L.										
			Na	K*	Cl	H_2O	Na	K	Cl	H_2O	Na	K	Cl
BASIC	Respiratory	400 - 1600	0	0	0								
	Sweat	400 - 6000	40	5	30								
	Urine	0 - 3000	(2 to 200 mEq)										
EXTRARENAL	Gastric	100 - 4000	60	10	130								
	Bile	50 - 800	145	5	85								
	Pancreas	100 - 800	140	5	75								
	Duodenum	100 - 2000	140	5	80								
	with Gastric	100 - 3000	135	5	100								
	Ileum	100 - 9000	140	5	100								
	Colon	100 - 9000	60	30	40								
Transudates and Exudates		100 - 9000	140	4	100								
TOTAL													
Blood		500 - 5000 Replace vol. for vol.				______ ml.				______ ml.			

Calories (Including N)	Kg. wt. ______ x 30 = ______ Approximate Daily Caloric Needs
Nitrogen Wt. x 0.3 x 6.25 = Daily Protein Needs	Kg. wt. ______ x 0.3 = ______ Approximate Daily Nitrogen Needs
Vitamins	Two to ten times minimum daily requirements

* To replace potassium loss the adult patient should receive 80 mEq. of potassium, which would represent an adequate daily intake plus the amount lost from extrarenal sources; this can be given as potassium diphosphate or chloride (depending on the chloride needs) and should not exceed 35 to 40 mEq. of potassium per liter of fluid.

FIG. 1. Approximate basic electrolyte losses (per liter) from various sources in an average individual, with sample of a chart for a daily record of patient's electrolyte losses, and formulas for determining essential nutritional needs.

Water and Electrolytes

Aberrations in water and electrolyte metabolism result from an inadequate intake, uncompensated external losses, internal shifts, or a combination of these factors. All individuals have basic water and electrolyte requirements. These consist of fluid lost in the expired air (insensible fluid loss), perspiration, and urine. Although electrolytes are not lost in the expired air, the amounts of sodium, potassium, and chloride in sweat and urine are significant. The approximate electrolyte losses per liter of sweat are shown in Figure 1. To keep the patient from developing ever-increasing deficits, the basic losses must be replaced; when the losses from any of these routes are increased, additional quantities of fluid and/or electrolytes must be given.

Abnormal water and sodium losses may be renal or extrarenal, while the major deficit of potassium usually results from the elimination of this ion by the kidneys. Vomitus, gastric or intestinal tube drainage, losses from fistulas, and diarrhea are all examples of external water and electrolyte losses. Abnormal kidney function may also lead to increased losses of both fluids and electrolytes (sodium wasting, diabetes insipidus, primary aldosteronism, and so forth). Sometimes the loss by one route influences that by another. For example, when there is a loss of gastric fluid, approximately two to three times as much chloride is lost by this route than sodium plus potassium;[33] under such circumstances, in attempting to maintain acid-base equilibrium the body eliminates sodium and potassium through the kidney. While the total amount of fixed base lost in the vomitus or gastric drainage plus that in the urine is less than the chloride deficit, such patients may lose 50 to 150 mEq. of potassium and 70 to 250 mEq. of sodium per day. Thus, in considering replacement therapy for individuals losing fluid and electrolytes by gastric drainage, compensatory kidney losses should also be considered. Excess chloride deficit as compared to total base (hypochloremic alkalosis) is usually best corrected by giving both sodium chloride and potassium chloride. Since these patients frequently have marked dehydration as well as acid-base imbalance, normal saline-containing solutions plus extra water and potassium chloride are preferable to ammonium chloride.

In small or large bowel obstruction, the fluid lost externally by long-tube drainage or by surgical decompression of distended intestinal loops has a composition comparable to that of interstitial fluid.[33] Therefore, losses of such fluid usually do not cause appreciable changes in serum electrolyte concentrations, and very large deficits of water and electrolytes may develop without being reflected by the usual laboratory tests. On the other hand, the deficits which occur in patients with diarrhea are characterized by somewhat larger losses of potassium in the diarrheal fluid (15 to 35 mEq. of potassium per liter) than in the fluid lost from the stomach or small intestine (5 to 15 mEq. per liter). Even though fairly large amounts of potassium are lost in diarrheal fluid, considerable potassium may also be lost in the urine, especially during the earlier phase of dehydration and sodium depletion. In such patients sugar solutions containing about 0.45 per cent sodium chloride or a half-strength Ringer-lactate solution are given until an adequate urine flow is demonstrated. Then potassium chloride or diphosphate is added to provide 30 to 40 mEq. of potassium per liter of solution administered. It is usually our practice to give 120 to 150 mEq. of potassium daily to adult patients who are having daily losses of a liter or more of any gastrointestinal fluid. After the first day the potassium intake is reduced to 60 to 120 mEq. per day with the patient receiving intravenous alimentation, and the gastrointestinal fluid losses range from 0 to 1,500 ml. daily. Most of the intestinal fluids contain electrolytes in amounts equal to, or only slightly less than, plasma or interstitial fluid. In addition, the patient is also losing markedly hypotonic electrolyte fluids from the respiratory tract and sweat glands; therefore, most untreated dehydrated patients will be admitted to the hospital with a greater water than electrolyte deficit. Such a state usually will result in serum sodium and potassium values that are near normal or greater than the accepted normal concentrations. Such patients must be given hypotonic electrolyte solutions to correct their dehydration and electrolyte deficit. However, it should also be remembered that dehydration in such patients is also accompanied by mineral deficits and therefore that such a state cannot be corrected until the essential extracellular and intracellular cations (sodium and potassium respectively) are provided. Even though large volumes of water without electrolytes are provided, tissue dehydration cannot be corrected until electrolytes are given. In fact, electrolyte-free solutions given to normally hydrated or mineral- and water-deficient patients will lead to dehydration by promoting further electrolyte losses through the sweat glands and kidneys or may result in water intoxication.

After infection and trauma there is a shift of fluid and electrolytes into the inflamed or traumatized area. Such shifts readily can be seen in blisters following a second degree burn and are also present as edema in the mesentery and in the bowel following surgical procedures. Such an abnormal collection of fluid has been termed the "third body fluid space" by Randall.[34] Although the total amount of extracellular fluid and electrolytes in the body may not have changed when a third space is formed, the amount of water and salts in the third space leads to a diminution of the plasma volume; such translocations, if large enough, may result in hypotension and oliguria. If one uses maintenance or gain in body weight as an indication to reduce the fluid and electrolyte intake, oliguria and anuria can result if amounts of fluid and electrolytes equal to that which has shifted into the inflamed or injured area are not given. The rapidity and magnitude of third-space formation is illustrated by the following case.

A well-nourished, well-developed man was admitted to the University Hospitals of Cleveland with a four-hour history of abdominal pain, nausea, and vomiting. Until four hours prior to admission, he had been in excellent health. Three hours after retiring he was awakened by severe abdominal pains. He vomited approximately 250 ml. in the hospital and stated that he had vomited a comparable amount at home prior to admission. He had passed no flatus or stools and had not voided since retiring. At the time of admission his temperature was slightly subnormal, pulse 120 per minute, and blood pressure 84/50. On catheterization a small volume of urine was obtained from the bladder; it was essentially normal except for a trace of albumin and a high specific gravity. Over the next few hours the urine output was only a few milliliters per hour. The patient was given 5 per cent dextrose in normal saline and blood. Because of the severity and persistence of the pain, an exploratory laparotomy was performed as a result of which a strangulated closed loop small bowel obstruction was found. Over 400 ml. of serosanguineous fluid was removed from the peritoneal cavity. Because the distention of the small bowel was so great, it was feared that the bowel inadvertently, therefore, might be perforated; it was decompressed and over 4 L. of fluid were removed. From the extent of the edema of the mesentery, omentum, and intestinal walls, the fluid that had been vomited and removed from the bowel and peritoneal cavity, and the fluid remaining in the lumen of the stomach and upper intestinal tract, it was estimated that this patient had translocated more than 9 L. of fluid in ten hours. He was given 1,500 ml. of blood, 4,500 ml. of 5 per cent dextrose in normal saline, 1,500 ml. of one-sixth molar sodium lactate, and 2,000 ml. of 5 per cent dextrose in water during the first sixteen hours after admission. His blood pressure and pulse rate returned toward normal, and the urinary flow increased significantly during the sixteen-hour period. It was believed that the patient's critical condition within four hours after the onset of the illness was due to a rapid translocation of fluid from the extracellular space into the peritoneal cavity and gastrointestinal tract. This shift of fluid led to a decreased plasma volume, oliguria, and shock. These internal shifts in the form of a third space must be estimated and replaced in order to prevent the patient from developing irreversible changes.

The fluid and electrolyte therapy in a patient in whom a third space has developed should consist primarily of Ringer-lactate solution or an electrolyte solution comparable to that of interstitial fluid. In addition, extra water containing a 5 or 10 per cent carbohydrate should be given to provide water for insensible fluid loss and urine formation. In order to provide free water and the necessary electrolytes and calories, approximately 75 mEq. of sodium chloride and 30 mEq. of sodium lactate to each liter of 5 or 10 per cent glucose in water is added. Potassium should not be used until a good urine flow is established. During the early phase of the catabolic reaction, potassium is being liberated from the intracellular fluid compartment and should not be given until the difficulty is corrected or subsiding and it is evident that a good urine flow will continue. Fairly large quantities of potassium are also present in the stored blood which may be given and lesser amounts in the translocated fluid which will be reabsorbed. Calories, vitamins, and protein hydrolysates should be given intravenously soon after the water and electrolyte shift has stopped or its cause has been eliminated until nutrients can be taken by mouth.

The problem of the quantitive and qualitative replacement therapy of water and electrolytes for patients is considered complex and difficult by many physicians. This might well result from the fact that too much emphasis is placed on laboratory data in planning replacement therapy. Blood and serum determinations, as stated earlier, may often fail to indicate the loss of significant amounts of fluid and electrolytes, either externally or during the formation of a third space. Hematocrit determinations may be misleading when fluid and electrolyte depletion is associated with hemolysis, chronic anemia, or sludging or clumping of red cells in or near the area of trauma or inflammation. Serum and blood values represent only the concentration of a specific substance and therefore usually give no indication per se as to the body content.

Although blood and plasma volume determinations are important research tools, they have limited value in the routine treatment of acutely ill patients with disorders of fluid and electrolyte metabolism. For instance, an estimation of the patient's normal volume from surface area or weight can deviate 10 to 20 per cent from the patient's true plasma volume. These determinations are also unreliable in many patients who are bleeding or in those who have an increased capillary permeability due to infection or injury since the dye or isotope coupled with albumin is being lost at an abnormally fast rate, a situation leading to a false high estimate of volume. Even if these determinations were accurate, they would only record the change at the time of occurrence, giving information neither as to whether the changes were stopping or increasing nor the state of the interstitial and intracellular fluid volumes. If the blood or plasma volume is depressed sufficiently, the physician should be able to detect this by clinical signs and symptoms. Routine laboratory data are of more value when serial determinations are obtained since they indicate trends which should be correlated with the patient's clinical course.

It is our belief that water and electrolyte replacement therapy can best be accomplished by estimating the basic daily requirements and internal fluid and electrolyte shifts, measuring all external losses (such as gastric bile, pancreatic or ileal drainage, vomitus, and diarrhea), and then replacing these amounts. Figure 1 includes a sample form for a daily record of these data. If one knows the amounts of fluid a patient loses by these routes, estimates the sweat loss and internal shifts, and then refers to a chart, such as in Figure 1, which provides the usual electrolyte content of the various body fluids, it is possible to calculate the replacement therapy needed. By frequently observing the patient's response to therapy (pulse, respiration, venous and arterial blood pressure, skin turgor, and urinary output), the estimated needs can be periodically revised to avoid excesses or deficits, thus meeting the patient's changing condition. It should be remembered that the normal adult usually consumes approximately 70 to 140 mEq. of both sodium and potassium a day so that it is usually desirable, if there are no contraindications, to provide such amounts of these two ions daily and larger quantities if extrarenal deficits exist.

Summary

The patient who cannot or will not take oral nutrients for more than a day or so should be maintained by the use of either tube feedings or parenteral nutrition. In order to provide complete nutrition it is necessary to supply all the constituents needed to form new tissue. These include water, calories, protein or protein hydrolysates, electrolytes, and vitamins.

For the noningesting individual who has no defect in the gastrointestinal tract which would preclude the presence of foods, such materials can be given either by nasogastric tube or, if it is necessary to feed such a patient for a long period of time, the routes created by a gastrostomy or jejunostomy.

For individuals who cannot be fed via the gastrointestinal tract, intravenous feedings should be employed. Fluid and electrolyte abnormalities usually are best treated by this method. With modern nutritional preparations it is now possible to supply a patient with adequate amounts of nitrogen, calories, water, and electrolytes solely by the intravenous route.

It is possible to predict quite accurately the fluid and electrolyte requirements of a patient by taking a careful history, frequently observing the patient, measuring external losses, estimating internal shifts, and calculating the fluid and electrolyte needs from these data plus those of a chart comparable to that shown in the text (Fig. 1).

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American Families Growing in Number and Size

American families continue to grow in number and size.

There were about 38 million husband and wife families in the United States in March, 1958, a gain of 5.75 million, or 18 per cent, during the past decade. In the same period, the number of families with three children under age eighteen increased 68 per cent, and those with four or more dependent children increased by 59 per cent.

The increase in family size comes at a time when the chances of premature death of the father or mother have declined markedly. Nevertheless, the probability of orphanhood still is appreciable.

Currently, the chances are 40 in 1,000 that a white father aged twenty-five will die before his newborn child reaches age eighteen. The likelihood of orphanhood rises rapidly with the age of the father at the time the child is born. The chances mount to 59 at age thirty, to 93 at age thirty-five, to 146 at age forty, to 221 at age forty-five, and to 323 at age fifty.

The newborn child is not nearly as likely to lose its mother before reaching age eighteen. The chances are 15 in 1,000 if the mother is twenty when the child is born; then climb to 22 at age twenty-five, to 33 at age thirty, to 50 at age thirty-five, to 76 at age forty, and to 115 at age forty-five.

"Orphanhood generally imposes many disadvantages on children, particularly those at the younger ages," the Metropolitan statisticians conclude. "In cases where the breadwinner of the family dies, the child is often deprived of the mother's care because she needs to find gainful employment. The orphaned youngster may also have to forego the benefits of a higher education which had been planned for him. Fortunately, the American people are increasingly making provision to meet the contingency of premature death through life insurance, systematic saving, and other means. At the end of 1958, about 112 million policyholders in the United States owned nearly 500 billion dollars of life insurance in private companies."

CLINICOPATHOLOGIC CONFERENCE

ROSWELL PARK MEMORIAL INSTITUTE

BUFFALO, NEW YORK

Conducted by JOHN W. PICKREN, M.D., MAY 18, 1959

Discussed by ROBERT TARAIL, M.D.

Case History

DR. JOHN W. PICKREN: A sixty-four-year-old male entered the hospital with complaints of swelling of the left leg, weakness, and fatigue. Over a period of eight years he had had stones in the kidneys on four different occasions, the last time two years before admission. Four months before admission, pain in the left tibia developed as a slight, dull ache, gradually becoming more intense. The patient stated that he repeatedly traumatized his leg in his occupation as a waiter.

Physical examination gave essentially normal findings with the exception of a fusiform, tender swelling in the mid-third of the left tibia. On several occasions the serum calcium was elevated as high as 16 mg. per cent. Other laboratory findings were: serum phosphorus 2.5 mg. per cent, serum phosphatase 17.4 acid King-Armstrong units and 24 alkaline King-Armstrong units, blood sugar 99 mg. per cent, nonprotein nitrogen 26 mg. per cent, albumin 4.29 Gm. per cent, and globulin 2.29 Gm. per cent. A Sulkowitch test result was positive. Roentgenograms showed no evidence of calculi in the kidneys. The excretory urogram was normal. A somewhat circumscribed shadow of increased density, measuring $1^1/_2$ cm. in diameter, was found in the region of the urinary bladder. An osteolytic lesion in the left tibia and three osteolytic lesions in the left fibula were considered indicative of metastatic cancer. Posteroanterior and lateral films of the chest showed slight indentation in the mid-portion of the trachea with a soft tissue mass on the right side, consistent with thyroid enlargement. An enlarged prostate was firm on the right side. A punch biopsy of the prostate was reported to reveal hypertrophy. An operation was performed.

Discussion

DR. ROBERT TARAIL: The most glaring abnormality noted in the case history is the concentration of serum calcium. The upper limit of normal for serum calcium in this laboratory is about 11.5 mg. per cent. This patient, with a serum calcium of 16 mg. per cent, presents a picture of distinctive and severe hypercalcemia, and, therefore, the differential diagnosis includes a large number of diseases which may cause hypercalcemia. Most of the causes can be readily excluded. Before we consider these possibilities, however, I would like to see the roentgenograms.

DR. RU-KAN LIN: A chest film shows a slight indentation of the right side of the trachea (Fig. 1). Enlargement of the thyroid, parathyroid, or paratracheal lymph nodes may produce this change. A flat

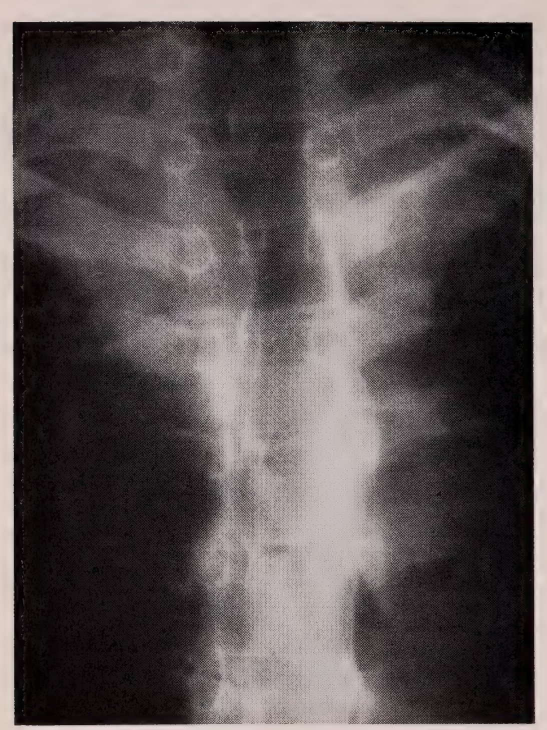

Fig. 1. Indentation of trachea on right side.

film of the abdomen shows calcific density in the region of the bladder. In the region of the kidneys I am unable to see anything that suggests renal stones. The kidney shadows are not enlarged. Roentgenograms of the skeleton reveal osteolytic lesions in the ilium, fibula, and tibia (Fig. 2). Such changes are not typical of benign or metastatic cystic involvement. Additional roentgenograms of the skeleton show cystic lesions in the mandible and proximal phalanges.

Dr. Tarail: Is there any evidence of osteoblastic activity in any of the bone lesions?

Dr. Lin: There is none.

Dr. Tarail: In your experience do metastases from carcinoma of the prostate usually show osteoblastic lesions?

Dr. Lin: Practically always.

Dr. Tarail: As I noted previously, there are a large number of diseases and circumstances that produce hypercalcemia. Let us first consider some of the less likely possibilities.

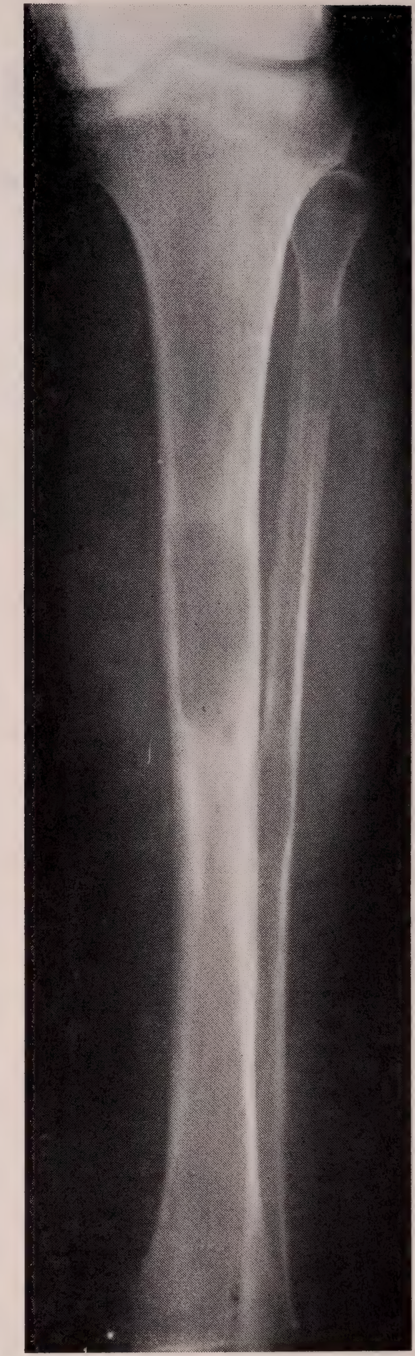

Fig. 2. Osteolytic lesions of tibia and fibula.

Medication.—Hypercalcemia can occur in the course of injection or ingestion of large doses of calcium given for therapeutic purposes, but there is no such history in this case.

Bed Rest.—If a child or an adult is immobilized, there is a tendency for increased transfer of calcium from the bones into the extracellular fluid and into the urine. Under certain circumstances bed rest may lead to hypercalcemia, particularly in children. We can dismiss this possibility of acute bone atrophy since there is nothing in the case history to suggest immobilization.

Milk and Alkali Syndrome.—About ten years ago some observers described the milk and alkali syndrome that occurs in patients who over long periods of time ingest large quantities of milk and alkaline material as part of the therapy for peptic ulcers.[1] These patients may develop impressive hypercalcemia, striking nephrolithiasis, with normal or elevated serum phosphorus content, mild alkalosis, and renal damage. In Australia some aborigines drink huge quantities of milk, and some have developed a similar syndrome except for the alkalosis. This milk and alkali syndrome must be considered in patients with hypercalcemia, but, again, the present history is devoid of this type of habit.

Excess Vitamin D.—Excess administration of vitamin D concentrate, used so much for arthritis ten or twenty years ago, may cause intoxication in a fair fraction of patients, resulting in bone lesions, metastatic calcification, hypercalcemia, and nephrolithiasis. In this patient there is no evidence of excess vitamin D ingestion, and, furthermore, his serum inorganic phosphorus is decreased.

Hormone Therapy for Carcinoma.—The administration of testosterone or of estrogenic compounds in the therapy of cancer with bony metastases may induce hypercalcemia and correlative nephrolithiasis. There is, however, nothing in the history suggesting this therapy for a previously diagnosed carcinoma.

Metastatic Carcinoma.—Primary tumors of the breast, kidney, bronchus, thyroid, and prostate often give rise to bone metastases. After eight years of hypercalcemia on the basis of metastatic carcinoma, one would expect the primary tumor to have been discovered if it were a case of carcinoma of the bronchus or breast. Hypernephroma is one of the classic lesions that may present itself as a bone lesion with a silent renal lesion, but eight years of silence would be extraordinary. Furthermore, the roentgenogram of the abdomen and an excretory urogram do not show a mass in the region of the kidneys. Serum chemical findings (high alkaline phosphatase, elevated calcium, and reduced phosphorus) are consistent with metastatic cancer but atypical. Similar reasoning can be used with regard to thyroid carcinoma. The thyroid enlargement, I think, is a "red herring." The picture is most bizarre for thyroid cancer.

The prostate may pose a greater problem. This patient had pelvic bone involvement as well as involvement of the bones of the lower extremities. Prostatic carcinoma may cause these bone lesions, although there is no evidence of osteoblastic activity. Carcinoma of the prostate would account for the high acid phosphatase and the rectal findings, but it would be most unlikely for carcinoma of the prostate to metastasize to bone and produce hypercalcemia, hypercalciuria, and nephrolithiasis for a period of eight years. Finally, the biopsy finding was negative; although this is not conclusive, it does suggest another diagnosis.

Howard and his group at Hopkins[2] and others, including ourselves, recently have seen patients, particularly those with pulmonary carcinoma, with authentic and striking hypercalcemia who have no demonstrable metastases to bone. The present patient would not fall into this category, but this rare possibility is worth keeping in mind in the differential diagnosis of hypercalcemia.

Myeloma.—Multiple myeloma can be very difficult to differentiate from primary hyperparathyroidism. Patients have been examined in excellent clinics because of supposed primary hyperparathyroidism only to have the patient turn out to have myeloma. In this particular patient the fact that there is no mention of bone marrow involvement and no hyperglobulinemia is inconsistent with multiple myeloma. The chemical findings in this instance are possible in multiple myeloma—the high calcium, low phosphorus, and high phosphatase. The latter finding, however, is classic for hyperparathyroidism and only possible for multiple myeloma. Patients with multiple myeloma may develop nephrolithiasis on the basis of the hypercalcemia. They may have cystic changes in the bone and/or osteoporosis. They may have generalized decalcification as well, and a single aspiration from the sternal marrow may not disclose myeloma cells. I will risk the exclusion of myeloma.

Sarcoidosis.—Sarcoidosis may very closely simulate primary hyperparathyroidism. In fact, in Albright and Reifenstein's monograph,[1] at least one report concerns a patient whose neck was explored very thoroughly by Dr. Cope at the Massachusetts General Hospital with only sarcoid found. I prefer to try to find a single diagnosis which will explain all or almost all of the clinical features listed in the case history rather than to seek two or three major diagnoses. If one approaches the problem from that point of view I think that sarcoid becomes unlikely. For one thing, this patient had an eight-year history of renal stones; although nephrolithiasis can occur in sarcoid, it is unlikely that after eight years of bone lesions there should be no evidence of dermal, pulmonary, or lymph node lesions consistent with sarcoid. In addition, the diagnosis of sarcoidosis would not fit in nearly as neatly with the findings of the cervical mass described by Dr. Lin. Finally, there is no hyperglobulinemia; although one may see hypercalcemia without apparent hyperglobulinemia in sarcoid, it is much more common in the presence of hyperglobulinemia. Intuitively I would tend to eliminate this possibility in the present case but I am cognizant of the fact that on occasion the exclusion of sarcoid, especially in the differential diagnosis of hyperparathyroidism, can be very difficult.

Primary Hyperparathyroidism.—I think you sense from my remarks that many of the features in the case history are consistent with the diagnosis of primary hyperparathyroidism. The patient had nephrolithiasis, evidence of generalized bone involvement, and discrete bone lesions. The chemical findings are classical: increase in serum calcium, diminution in the concentration of serum inorganic phosphorus, and elevation of alkaline phosphatase. These are the textbook findings of patients with uncomplicated primary hyperparathyroidism. The weakness and easy fatigability, of course, are very nonspecific symptoms but they are consistent with the presence of hypercalcemia. I do not know whether this man was tested for his ability to hyperflex, but some patients with hyperparathyroidism and hypercalcemia are sort of circus "freaks" in that they have hypotonia and can wrap their legs around their necks with great facility.

In the case history it is stated that a mass in the neck is consistent with thyroid enlargement. It would also be consistent with a number of other findings in the neck including a parathyroid tumor, as Dr. Lin has pointed out.

Sulkowitch Test.—The Sulkowitch test consists of adding urine to a solution containing oxalate salts. If the urine contains a certain quantity of calcium, calcium oxalate precipitates to form a cloud; the intensity depends on the degree of hypercalciuria so that it is a qualitative test. In a patient with renal stones a negative Sulkowitch test result tends to exclude hypercalciuria. Of course, at certain stages of the disease, when there is sufficient renal damage to impair excretion of calcium, the test result might be negative in the presence of hypercalcemia and renal stones. A positive Sulkowitch test result may mean any one of a number of things. It may mean a very concentrated urine or that the patient is a milk drinker; it does not in itself prove the presence of abnormal hypercalciuria. In general, the Sulkowitch test probably is of much more value after certain kinds of calcium and vitamin D therapy than in the determination of the differential diagnosis since a positive or negative Sulkowitch test result may occur in the presence or absence of hyperparathyroidism.

Elevation of Acid Phosphatase.—The elevation of the acid phosphatase does not fit into the usual picture of hyperparathyroidism. In our laboratory the upper limit of normal is perhaps 3, 4, or 5 King-Armstrong units of acid phosphatase, and this patient is said to have a serum acid phosphatase of 17.4 King-Armstrong units. This might be a laboratory maverick or it might be that the acid phosphatase was measured shortly after a vigorous rectal examination. It is well known that patients with benign prostatic hypertrophy after a vigorous rectal examination can have a significant elevation in the concentration of serum acid phosphatase. Hemolysis also may tend to elevate the acid phosphatase. A distinct elevation of the serum acid phosphatase has been reported in Paget's disease (osteitis deformans) and metastatic carcinoma to bone. As a matter of fact, serum acid phosphatase may be somewhat elevated, on occasion, in many types of bone disease (other than metastases from prostatic cancer) including hyperparathyroidism. Finally, the patient may have a coincidental carcinoma of the prostate.

Nephrolithiasis.—Albright and his group[3] published a then revolutionary paper claiming that a substantial fraction of patients with nephrolithiasis had primary hyperparathyroidism. Another group, from the Mayo Clinic, proceeded to confirm these findings.[4] They surveyed a large number of patients with nephrolithiasis and came to the conclusion that the incidence was far less than that given by Albright. However, Keating and Cook,[5] about five years later, also studied, in a somewhat different way, the charts of patients from the Mayo Clinic who had nephrolithiasis. They came up with a substantial incidence and, in fact, found hyperparathyroidism in some of the patients who were placed in the negative group by the previous investigators. The lesson learned is that one cannot exclude or even prove the diagnosis of hyperparathyroidism simply on the basis of performing on every patient with stones routine serum calcium, phosphorus, and alkaline phosphatase tests and following only those patients with initially suspicious levels. Much more careful observation is required.

Protean Manifestation.—I should like to recommend a paper that was recently published in the *American Journal of Medicine* from Duke University on hyperparathyroidism.[6] It attempts to point out that primary hyperparathyroidism can be a disease of protean manifestation. The authors report patients who developed pulmonary infarctions and thrombophlebitis on the basis of calcification of the blood vessels. They report experiences with hyperparathyroidism in patients who were found on the psychiatric service because of so-called psychoses. They reiterate the well-known coincidence of peptic ulcer in patients with hyperparathyroidism. In some of the case histories that they present, it is amazing how variegated are the complaints of patients with primary hyperparathyroidism.

Patients with recurrent cystic problems related to the jaw often turn out to have primary hyperparathyroidism. Albright and coworkers[3] mention another point that is worth considering: On occasion patients with giant cell tumors of the bone even have had amputations of extemities because this kind of metabolic disorder was confused with neoplastic disease of the bone.

My diagnosis is primary hyperparathyroidism. The most common cause of hyperparathyroidism is one or more adenomas. Because of its statistical frequency and because there is something in the patient's neck which is consistent with a tumor of the parathyroid, I feel that the underlying disorder is an adenoma. Hyperplasia, or, as Albright would prefer to call it, hypertrophy of the parathyroid, is much less common. There are only a handful of cases of carcinoma of the parathyroid. In summary, the patient has primary hyperparathyroidism, probably a chief cell adenoma, and benign prostatic hypertrophy.

Dr. James Holland: Is there any way to tell by the roentgenographic pattern whether an osteolytic lesion is caused by a metastasis, giant cell tumor, or hyperparathyroidism?

Dr. Lin: In a solitary cystic lesion in the long bones one cannot make an absolute diagnosis by the roentgenologic picture alone. However, the border of the cystic lesion may give a clue. A sharply defined lesion without reactive peripheral changes is indicative of a benign process.

Dr. Eugene R. Studenski: Dr. Tarail, would you comment on differences found in values of acid phosphatase with the use of different substrates.

Dr. Tarail: That is an important point that I don't know too much about. All I can say is that the Bodansky method is more specific for the acid phosphatase of prostatic tissue than the King-Armstrong. Actually, there is not one acid phosphatase but several. It may be that the acid phosphatase measured in this patient is not that of prostatic tissue.

Diagnoses

Clinical.—*Adenoma of parathyroid with hyperparathyroidism.*

Dr. Tarail.—*Adenoma of parathyroid with hyperparathyroidism.*

Anatomic.—(1) *Multiple adenomas of parathyroids with hyperparathyroidism*; (2) *nontoxic nodular goiter.*

Pathologic Report

Dr. Pickren: The first piece of tissue removed by the surgeon was from the fibula. On examination of a frozen section a diagnosis of benignancy was made. The tissue was vascular and contained numerous giant cells and relatively little fibrous tissue. Second, the surgeon removed a portion of thyroid. In the thyroid a large nodule was composed of irregular follicles lined by flat and cuboidal cells. There was no evidence of malignancy. Third, the surgeon removed the isthmus of the thyroid along with two oval nodules that were dissected from the lower poles of the lateral lobes. These masses are light brown and well circumscribed and showing several indentations of the capsule (Fig. 3). Histologically these nodules are composed of large, clear, and columnar cells which are arranged to form nests and small glands, each group surrounded by a network of capillaries (Fig. 4). The individual nuclei vary greatly in size, shape, and staining intensity. Certainly

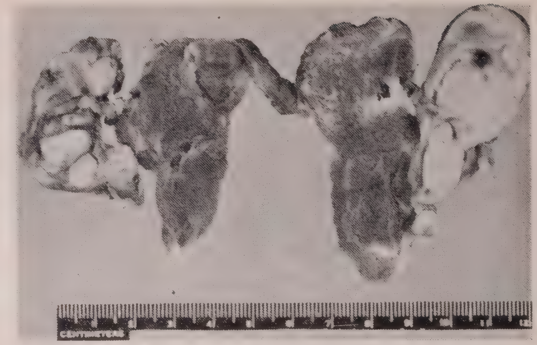

Fig. 3. Two large parathyroids, attached to thyroid isthmus, with uniform cut surfaces but both showing indentations of capsule.

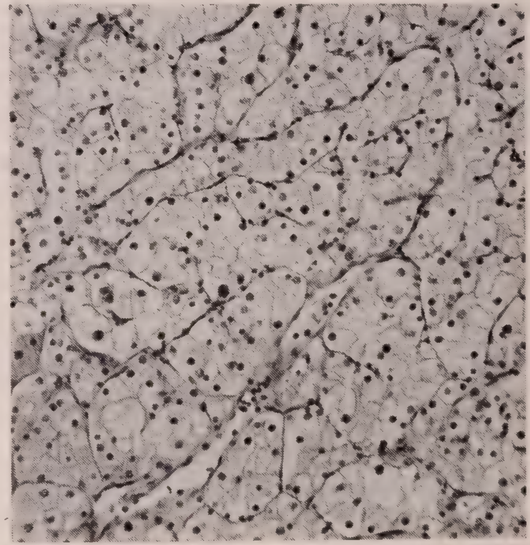

Fig. 4. Water-clear cells of parathyroid adenoma.

this lesion is primary in the parathyroids, and an adenoma or hyperplasia must be considered in the differential diagnosis.

Such differentiation is not always precise. However, a number of findings in this patient suggest that the lesion is neoplastic. They are: the light brown color of the masses, lack of involvement of all the parathyroids, lower location of the involved parathyroids, absence of pseudopods, variation in size of the nuclei, the degree of elevation of the alkaline phosphatase,[7] and the cylindric shape of the cells. Against this diagnosis are the indentations of the capsule and the single-cell type of water-clear cells. Furthermore, a word of warning should be given concerning the location of the involved parathyroids. Not infrequently the lower parathyroids may be aberrant in their location in that they descend into the mediastinum. In such patients an upper parathyroid may appear to be located in the position of the lower parathyroids because of the size of the glands. Locating the source of the blood supply of the parathyroids may be helpful in distinguishing their true positions.

Multiple adenomas occur in about 7 per cent of reported tumors, which is about the same relative frequency as in primary hyperplasia. Carcinoma of the parathyroids is rare. Great variation in the size, shape, and staining intensity of the nuclei does not indicate malignancy of a tumor in this organ; this is also true of other endocrine organs. To make the diagnosis of malignancy one needs to find metastases or extension of the tumor into the neighboring structures. Since these features are absent in this patient, I conclude that the tumors are benign adenomas.

Following the operation the patient's calcium levels fell to 7 mg. per cent but subsequently rose to 9.2 mg. per cent. This fact substantiates to some extent that only two of the parathyroids were abnormal. The remaining two functioned properly.

Question: What was the acid phosphatase level postoperatively?

Dr. Pickren: The phosphatase levels postoperatively were 2.3 acid units and 12.1 alkaline units. This determination was done about one and one-half years after the operation. Will you show the postoperative films, Dr. Lin?

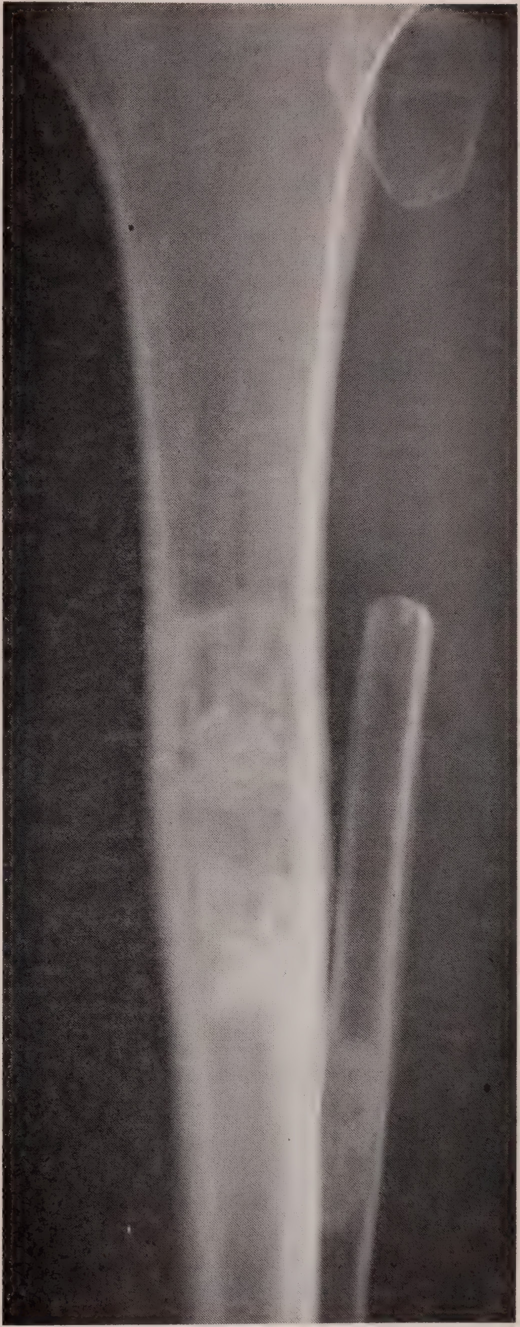

Fig. 5. Recalcification of tibia and fibrotic lesions after removal of parathyroid adenomas.

Dr. Lin: There is recalcification of the original cystic lesion (Fig. 5). Such healing is fairly typical for hyperparathyroidism following resection of the adenoma.

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Offer Hints for a Successful Suntan

Clockwatching is not advocated in business, but it is suggested for the worker and his family who want to acquire a suntan. The June issue of *Today's Health,* reports that clockwatching can be the difference between acquiring an attractive tan or a painful burn. Such clockwatching establishes a timetable of gradual exposure which minimizes sunburn and allows enough time for the skin to tan evenly without excessive peeling.

The suggested timetable is:

—First day, expose the skin to the sun from fifteen to twenty minutes. This means you are entitled to the same length of time on both your stomach and back.

—Second day, increase the time exposure by one third. This would mean to approximately thirty minutes.

—Third day, again increase the time spent in the sun by one third, or to about forty minutes.

The article said that this same exposure timetable should be continued day after day. By the fourth day, new pigment should begin darkening the skin. After a week of continual exposure, the skin should be sufficiently thickened and pigmented to provide considerable protection against burning sunshine.

The author, Donald G. Cooley, Scarsdale, said that the timetable method is practical since there is no need for suntan preparations. These preparations can be valuable, but they do not in any way increase the speed of one's natural tanning.

"It is theoretically possible to get a bad sunburn, despite lavish use of one of these preparations, if you stay long enough in the hot sun. Protection is usually better if one coating is applied, allowed to dry, then followed with a second coat." Mr. Cooley also warned of the effects of sun on the eyes. He pointed out that bright, glaring, dazzling sunlight can lower the sensitivity of the eyes to dim light, thereby contributing to accidents.

"The simple remedy is to wear dark glasses when you are going to be exposed to exceedingly dazzling sunshine," he concluded.

NUTRITION EXCERPTS

Prepared with the cooperation of the Faculty of the Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.B., B.S., *Editor*

The Span from Rat to Man

RICHARD H. BARNES, PH.D. ITHACA, NEW YORK

EMPHASIS has long been given to the important advances in medical science that have stemmed from animal experimentation. It cannot be denied that the great majority of medical discoveries have been dependent, at one step or another, on observations made in some animal species other than man. On the other hand, how familiar are we with the frequency of lack of correlation between man and his experimental model?

The fact that a nutrient effect of a biologically active compound isolated from nature cannot be demonstrated by animal experimentation may not rule out the possibility that this compound will possess activity in the clinical patient. The absence of serious toxic manifestations of a new drug in animal chronic toxicity studies should never lead the clinical investigator into a feeling of security that the drug will be completely safe when used in man. The demonstration of important therapeutic actions of new drugs or nutritional regimens in animal studies may receive wide publicity in the lay press, but the ultimate transposition to the human subject frequently is extremely disappointing. Sometimes research progress on a medical problem is seriously delayed by recognized biochemical differences between species. Perhaps a few isolated examples that illustrate certain of these points will help focus the physician's attention on this realm of medical research and provide a better understanding of the difficulties and disappointments that occur between the laboratory and the clinic.

Many classic examples of species differences are familiar to all of us. Three well-recognized illustrations in the nutritional field are: (1) the relative absence of a requirement of ascorbic acid by certain animal species,[1] (2) the lack of toxicity of staphylococcus food-poisoning toxins in experimental animals,[2] and (3) the inability of a diet completely devoid of vitamin D to produce rickets in the rat if the ratio of phosphorus to calcium is sufficiently high.[3]

In the clinical exploration of new drugs unexpected toxicities, including sensitivity reactions, all too frequently are seen. Sometimes these may be due to pharmacologic properties which, although easily demonstrated in the human subject, require a highly specialized and specifically oriented search in the animal. An example is the well-recognized eighth cranial nerve damage caused by streptomycin, which originally was believed to be caused by the disease being treated rather than by the drug.[4] Hypersensitivity has never been adequately forewarned by animal experimentation. Blood dyscrasia, particularly agranulocytosis (as found with such compounds as amidopyrine[5]) and occasionally hepatotoxicity (as found with chlorpromazine[6]) cannot be demonstrated in chronic toxicity studies even with several different animal species.

The reverse is also true. Instances may be cited in which inability to demonstrate a requirement for an essential nutrient in human studies has led to the assumption that man differs from the laboratory animal in his nutritional needs. The danger of such an attitude is well illustrated by the unfortunate circumstances—the use of a proprietary formula in which the pyridoxine content had been inadvertently lost in the processing—that led to the discovery that pyridoxine is required by the human infant.[7] The essentiality of this vitamin for many animal species had been recognized for years. In the case of essential fatty acids, years of work culminating in an actual demonstration of eczematous lesions in infants who were maintained on low-fat diets and the establishment of the linoleic acid requirement must have finally convinced the skeptic.[8] Yet the need for the essential fatty acids by experimental animals had been clearly established since 1929.[9]

Animals do differ in their nutritional requirements and in many instances these differences are well documented. The ruminant animal obviously can take care of its need for many organic nutrients by synthesis within the intestinal tract. Chickens require certain amino acids in widely different proportions from those needed by mammals. However, not all species differences can be attributed to fundamental biochemical or metabolic variations. For example, avian species require certain vitamins, such as biotin, vitamin K, and folic acid; the rat, on the other hand, must be fed antibacterial agents or specific blocking agents, such as egg white or Dicumarol, in order to give evidence of a deficiency. In this particular instance it has been shown that the difference between the rat and the chicken is not one of tissue requirements or intestinal synthesis but lies in the fact that the rat obtains these vitamins by the practice of coprophagy. The chicken that is maintained in a raised wire screen-bottom cage does not eat its feces to any appreciable extent, and presumably those vitamins that intestinal bacteria synthesize cannot be utilized directly by either animal.[10]

One of the most important medical problems being studied today is seriously hampered by an unusually large number of species differences. Among the key points of attack in the investigation of the causes of coronary heart disease is the lack of correlation between findings in man and those in a host of experimental animals, a circumstance which has become the rule rather than the exception. The morphologic features of the atheromatous plaques that are produced by extreme elevation of blood cholesterol in the experimental animal do not reflect in all details the condition found in man.[11] The development of a thrombus at the site of the atheroma has not been accurately reproduced in the laboratory animal.[11] The intricate biochemical steps in the blood-clotting and plasmin systems in man differ in important ways from those in other animals.[12] The pattern of lipoproteins, particularly the ratio of the so-called α and β fractions and the influence of dietary fat on these fractions, are not the same for man and his laboratory counterpart.[13] The effect of fat ingestion and the influence of the degree and type of unsaturation of the fat on the level of blood cholesterol frequently does not follow the same pattern when one moves from man to various other animal species.[14]

Such examples as these emphasize some

of the difficulties in transposing laboratory findings to the human subject. If we seek an understanding of a disease process or a treatment of that disease, the final answer can only come from the clinical patient. This must not be interpreted as a justification to abolish or reduce animal experimentation. Rather, these examples of lack of correlation should emphasize the need for the investigator to establish firmly the fundamental cellular or subcellular biochemical metabolic phenomena that are involved. Then, as he utilizes the intact animal to seek out nonmetabolic possibilities that might cause species differences, he can extend his studies to a wider assortment of animals in the hope of finding parallelisms that will be helpful. However, he should always tread cautiously in interpreting the results he obtains in the laboratory.

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(Number six in a new series of Nutrition Excerpts)

Michael Reese Researchers Recommend Polio Boosters

At least one and possibly two booster shots of polio vaccine at yearly intervals are desirable, according to a group of researchers at Chicago's Michael Reese Hospital. Writing in the June 6 *Journal of the American Medical Association,* they reported giving a Salk-type polio vaccine to 4,000 children during a five-year period. In producing the vaccine, the viruses were "killed" through exposure to ultraviolet rays.

A study of the children showed that twelve to thirty-six months after they had received their first three shots, their levels of immunity had dropped from what they had been immediately after receiving the shots.

After a booster injection, the levels reached a higher level and fell less than after the primary immunization; after a second booster there was an even better response.

It seems possible, they said, that polio antibodies once produced are present for life, although at very low levels, and that the host will display a rapid anamnestic reaction to either booster injection or actual virus exposure. By anamnestic reaction, the authors mean that antibodies that have once been present but have disappeared will be produced by the body when it is "reminded" by a shot or exposure to polio. Thus, the person who has once shown antibodies is probably immune. Nevertheless, a persistence of demonstrable antibodies is to be preferred, and booster shots will help provide them.

The researchers are Albert M. Wolf, M.D.; Howard J. Shaughnessy, Ph.D.; Martha Janota, M.S.; James W. Chapman, M.D.; Ruth E. Church, M.D., and Mildred Moore, B.A.

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ELIZABETH J. CRAWFORD, M.D.
LESTER C. MARK, M.D.
VALENTINO D. B. MAZZIA, M.D.
GEORGE RUBENSTEIN, M.D.

Cardiovascular Collapse During Transurethral Procedure

Too often one is apt to treat a complicating symtom that may arise during a surgical intervention without being able to verify the true pathologic condition. Many times such symptomatic treatment is beneficial. Occasionally, however, it is liable to mask the cause or even to aggravate the existing complication, a situation which occurred in the following case.

Case Report

A fifty-seven-year-old male had carcinoma of the bladder with involvement of the left ureteral orifice and a nonfunctioning left kidney. Except for this condition his physical examination gave essentially normal findings. It was proposed to fulgurate the bladder tumor through a transurethral approach.

For preoperative medication he was given 50 mg. of Demerol combined with 0.4 mg. of atropine by intramuscular injection. Prior to anesthesia and surgery the patient's arterial blood pressure was 140 mm. Hg systolic and 80 diastolic. His pulse rate was 100 per minute with a regular sinus rhythm. His respirations appeared normal at a rate of 20 per minute. Anesthesia was produced by means of spinal analgesia with 10 mg. of Pontocaine combined with 100 mg. of glucose. A few minutes later a sensory level of analgesia was established up to the ninth thoracic dermatome. The patient's blood pressure was then 120/80 with a pulse rate of 100 per minute.

After fifteen minutes of surgery the arterial blood pressure diminished to 80/60 without change in the pulse rate. The sensory spinal analgesia level was rechecked and found to be at the seventh thoracic dermatome. Oxygen by mask was given immediately, and ephedrine 10 mg. was injected intravenously. When there was no change in the blood pressure two minutes

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Discussed at a conference held at Bellevue Hospital, New York City, April 6, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

later, an additional 30 mg. of ephedrine were injected intravenously. Three minutes later the patient suddenly complained of severe precordial pain with radiation to the left side of his neck and left shoulder. He became restless and uncooperative. It seemed that he had suffered a possible myocardial infarction. The arterial blood pressure at this time had risen to 110/80 and the pulse rate was 120 per minute.

To complete the surgery while the patient was so restless, it was deemed advisable to produce general anesthesia. This was accomplished by starting an intravenous drip infusion of sodium thiopental in a 0.4 per cent concentration combined with nitrous oxide and oxygen in equal concentrations in a semiclosed system. The operation was completed hurriedly during the next five minutes. The patient was allowed to awaken, and oxygen therapy by mask was maintained. The blood pressure fell back to 80/60 with a pulse rate of 120.

An intravenous drip of Neo-Synephrine was started, and during the next twenty minutes the patient's blood pressure rose to 130/90. His pulse rate remained at 120 per minute, and his respiratory rate was 36 per minute. The patient now became pale, cold, and clammy. He complained of severe paraumbilical pain. A diagnosis of perforated bladder and shock was entertained at this time, and it was proposed to perform a cystotomy.

The patient was reanesthetized with cyclopropane and oxygen. A cardioscope was connected to the patient, and it showed normal complexes but very low voltage. An intravenous infusion of 500 cc. of 6 per cent dextran was started and administered rapidly, but ten minutes later neither the patient's pulse or blood pressure could be obtained. A cystogram which had been performed revealed extravasation around the urinary bladder. The patient appeared moribund at this time. Oxygen by endotracheal tube and 500 cc. of blood administered rapidly under pressure failed to cause any change in the patient's condition. The electrocardioscope soon showed no evidence of any cardiac activity, and the patient was pronounced dead.

An autopsy was performed which showed the cause of cardiovascular collapse in this case but the findings are deferred (as they were when this case was discussed by the members of the Anesthesia Study Committee) until after presentation of appropriate discussion.

Comment

The sequence of complications that occurred in this case were rapid and significant. The first complication developed fifteen minutes after the start of surgery when the patient's arterial blood pressure was noted to have diminished from 120/80 to 80/60 mm. Hg with the pulse rate remaining unchanged at 100 per minute while the level of sensory spinal analgesia had risen from the ninth to the seventh thoracic dermatome. There was no specific criticism expressed for treating this arterial hypotension during spinal anesthesia by means of intravenous ephedrine although some stated that they would have waited a while longer before treating this complication with a vasoconstrictor. It was pointed out that a sensory level of spinal analgesia up to the seventh thoracic dermatome is not too high a level, that this usually leaves enough unanesthetized area to be able to maintain a normal blood pressure by means of compensatory vasoconstriction in the unanesthetized area, and that if enough sympathetic components are paralyzed to produce arterial hypotension the resulting effect of such sympathetic paralysis is a coinciding bradycardia rather than persistence of the heart rate at 100 per minute. Because of these reasons it was felt that it would have been preferable to wait another few minutes to better determine the cause of the arterial hypotension.

When three minutes later the patient suddenly complained of severe precordial pain radiating to his left shoulder and left side of his neck and became restless and uncooperative, one could well presume that the patient had suffered a myocardial infarction or coronary occlusion. Relief of pain and administration of oxygen were well justified. However, it was noted at this time (three minutes after the administration of ephedrine) that the patient's blood pressure had risen to 110/80 with an increase in the pulse rate to 120 per minute without any cyanosis developing. All were in agreement that induction of general anesthesia with administration of high concentrations of oxygen was good therapy at this time. Some expressed the opinion that the presumed cardiac complication should have been treated by the intravenous administration of Aramine by slow drip to maintain a normal blood pressure. Others would have preferred to wait and watch a little longer. As it turned out, the operation was quickly terminated; when the patient's blood pressure again fell to 80/60 with a pulse rate of 120 per minute, he was given an intravenous drip of Neo-Synephrine which resulted in return of the blood pressure to normal.

When twenty minutes later the patient suddenly complained of paraumbilical pain (after recovering from general anesthesia) and presented a picture of surgical shock, it was well to think of the possibility of a perforated bladder. The suggestion of one of the members of the surgical team to do an immediate cystotomy was good. The patient was reanesthetized but instead of doing an exploratory cystotomy it was decided to do a cystogram with the patient treated for shock by the intravenous administration of dextran and blood. By the time the cystogram revealed extravasation around the urinary bladder the patient was too far gone. Perforation of the bladder does not usually cause such a severe shock picture with rapid fatal outcome. Had the patient really suffered a fatal cardiac complication?

Autopsy Findings

An autopsy was performed which showed:

1. Massive intraperitoneal hemorrhage due to perforation of the internal iliac artery.
2. Perforation of the bladder posteriorly in the vicinity of the left ureteral orifice.
3. No evidence of myocardial infarction or coronary occlusion.

(Number sixty-nine in a series of Clinical Anesthesia Conferences)

Hawaii Has Excellent Health Record

Hawaii, our newest state, is bringing an excellent health record into the union, it is reported by statisticians of the Metropolitan Life Insurance Company.

Advances in medical practice, improvement in environmental sanitation, and a general rise in living standards are given much of the credit for the good record of the islands. An especially bright feature, the statisticians say, is the marked degree of control gained over the infectious diseases.

For example, tuberculosis mortality in the civilian population of Hawaii was down to the very low rate of 3.1 per 100,000 in 1957, a decrease of more than 50 per cent in two years and of about 95 per cent since 1940. The 1957 death rate from influenza and pneumonia was only 25.6 per 100,000—half that of 1940. At the same time, the principal communicable diseases of childhood (measles, scarlet fever, whooping cough, and diphtheria) and typhoid fever have been practically eliminated as causes of death.

Striking progress has been made in safeguarding infant life and making childbearing safer in Hawaii. The infant mortality rate in 1957 was 24 per 1,000 live births, compared with 44 in 1940. Currently three fourths of the infant deaths occur in the first month, when mortality is most difficult to control; the comparable proportion in 1940 was three fifths. Over the same period, maternal mortality has dropped from 2.4 per 1,000 live births to 0.4.

Leading causes of death in Hawaii are much the same as those in continental United States, with heart disease first and cancer second. Next in order were diseases of early infancy, cerebral hemorrhage, accidents, and influenza and pneumonia. Accidents are the leading cause of death in the one-to-twenty-four-age group, nearly 45 per cent of the fatal accidents in this age group resulting from motor vehicle mishaps.

Longevity in Hawaii compares very favorably with that for continental United States. According to the life table for 1949–1951, the latest available for Hawaii, the average length of life for males was 67.76 years, or $2^1/_4$ more than for males on the mainland. The average for females was 71.29 years, slightly above that for females in the United States.

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Attempted Suicides and Other Emergencies

THE following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Barbiturate	24 years	Female

The patient ingested an unknown quantity of barbiturate tablets with suicidal intent. She was taken to the hospital in coma. Her stomach was lavaged with saline in the emergency room, and she was admitted to the inpatient service with a diagnosis of barbiturate poisoning. The patient was treated in the hospital and referred for psychiatric observation.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Nonbarbiturate Sedative	53 years	Female

This patient is the mother of the patient cited in Incident 1. She took 20 methyprylon tablets (a nonbarbiturate sedative) with suicidal intent six months after her daughter had attempted suicide. She was admitted to the hospital, where she was treated and observed and finally discharged "on contract" to her daughter.

The release of an emotionally disturbed person to an equally disturbed daughter is not very wise. Had adequate social and mental hygiene services been available, this secondary case might have been prevented.

A careful perusal of the reported incidents revealing the frequent attempts at suicide both in adolescents and young adults emphasizes the need for preventive mental health services for emotionally disturbed adolescents and young adults.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Anticonvulsant	35 years	Male

The patient is an alcoholic who had been suffering from what was presumably diagnosed as epileptiform seizures for which diphenylhydantoin, an anticonvulsant, was prescribed. During a drinking bout, which lasted for several days, he allegedly ingested 20 tablets, dosage unknown. He became disoriented, and while walking, he fell and struck his temple.

He was admitted to the hospital, where gastric lavage was done. Surgical repair of the lacerations was also performed. He was then admitted to the inpatient service. The blood count and urinalysis findings were both normal. After nine days in the hospital and appropriate therapy, the patient was discharged as improved.

The large number of poisonings reported in individuals with convulsive seizures for whom anticonvulsants are prescribed indicates the need for greater caution by physicians when prescribing a drug for such individuals. Often such individuals carry very large amounts of medication on their person. Both the patient and the guardian should be adequately warned about this unsafe practice.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Barbiturate	44 years	Male

The patient ingested 30 tablets of $^3/_4$ grain of amobarbital, at the same time turning on the gas jets with his head in the unlighted oven. He was found in a comatose condition, with an empty pill bottle on the floor. The exact time of the occurrence is unknown.

According to the physician the patient was in coma and in bad respiratory arrest when he first saw him, at 7:00 P.M. The physician mentioned in his report that the pinkness of carbon monoxide poisoning was not observed. The patient responded to adrenalin and aminophylline given intramuscularly, and he soon started to breathe. He was taken to the hospital, where he was treated with glucose intravenously and oxygen; he remained in the hospital for four days.

In view of the fact that natural gas, which has now replaced manufactured gas containing carbon monoxide, was emanating from the gas jets, the failure to note the classic pink symptom of carbon monoxide poisoning is quite understandable. Many physicians have as yet not been educated to this change in gas technology; they do not recognize that the absence of carbon monoxide in natural gas does not preclude carbon monoxide poisoning, for carbon monoxide is produced in the gas appliance by incomplete combustion. The failure to recognize such facts often leads to mistaken diagnosis and inappropriate therapy which may result in needless fatalities.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Barbiturate	29 years	Male

This patient took 24 secobarbital tablets. He was taken in comatose condition to Mount Sinai Hospital, where his stomach was lavaged in the emergency room. He was then admitted to the inpatient service. He was in deep coma for three days. He was treated with supportive therapy, and an emergency tracheotomy had to be performed. Recovery was very gradual. After three months on the medical ward, the patient was transferred to the psychiatric service for further detailed psychiatric study.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Nonbarbiturate Sleeping Pills	32 years	Female

The patient took 52 sleeping pills, for which no prescription is required, in a suicidal attempt. She was taken to the hospital emergency room shortly after ingestion, where her stomach was lavaged. She was then transferred to Bellevue Hospital, about four hours following ingestion, where a repeat lavage was done. The mildness of the symptoms presumably was due to the promptness with which lavage was first instituted.

Numerous unsuccessful suicidal attempts with "over-the-counter" sedative preparations have been reported to the Center.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Antihistamine	24 years	Female

This patient ingested 15 tripelennamine tablets in a suicidal attempt at 1:00 P.M. She experienced dizziness and was taken to the hospital, where her stomach was lavaged several hours after ingestion. She was also given milk and supportive therapy. She remained in the hospital for two days.

This incident is cited because of the favorable outcome despite the large dose ingested. An identical dose in a child, in an incident reported to this Center, proved fatal.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Insecticide	16 years	Male

The patient ingested 1 "swallow" of an insecticide. It was a brown liquid, stored in a soda bottle at the gas station where the patient was employed. After swallowing the insecticide he vomited and was told by another employe that there was poison stored in the bottle.

He immediately drank a quart of milk and vomited spontaneously five minutes after ingestion. One and one-half hours after ingestion his stomach was lavaged with water and magnesium sulfate, given as a purge. The presenting symptoms were abdominal pains, nausea, and vomiting. In addition to gastric lavage, antibiotics were also given at the hospital.

Aspiration following the ingestion of petroleum distillates occurs far more frequently in children than in adults. Many incidents reported to this Center substantiate this conclusion.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Stimulant Tablets	2 years	Male

This child ingested 10 proprietary stimulant tablets for which no prescription is required, each tablet containing $2^1/_2$ grains of caffeine. The only symptom was pallor. He was taken to the hospital emergency room, where no therapy was given because he vomited spontaneously. The patient was sent home after a short period of observation; it was noted at that time that outside of unusual pallor he appeared normal.

According to Goodman and Gilman,* the fatal oral dose of caffeine for adults is estimated to be about 10 Gm.; no deaths from caffeine, however, have been reported. The authors claim that untoward reactions may be observed occurring after the ingestion of 1 or more Gm. of caffeine. The symptoms are mainly referable to the circulatory and central nervous systems. Restlessness and excitement are the earliest symptoms, and these may progress to mild tremors, convulsions, and hallucinations. Sensory disturbances, such as ringing in the ears and flashes of light, are common. Tachycardia and extrasystoles are commonly encountered and respirations are rapid.

The central nervous system symptoms of caffeine poisonings are usually controlled by the administration of depressants. Short-acting barbiturates are said to be effective in the treatment of caffeine poisoning.

INCIDENT 10

Toxic Agent	*Patient*
Caffeine Tablets	Dog

The Poison Control Center was contacted about the treatment of a 30-pound Labrador retriever who had shortly before ingested 30 $2^1/_2$-grain caffeine tablets, a proprietary stimulant for which no prescription is required. Because of the fact that a canine fatality with the same product previously was reported to the Center, the veterinarian was advised of possible serious results.

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* Goodman, L. S., and Gilman, A.: The Pharmacological Basis of Therapeutics, 2nd ed., New York, Macmillan Company, 1955, p. 347.

The follow-up revealed that the dog on admission exhibited symptoms of extreme excitability, and it was reported that it took three individuals to hold the dog down. The dog was given sedation. Vomiting was induced by the veterinary technic of dissolving a tablet of apomorphine in the ocular mucosa. Undoubtedly, many pediatricians often wish they could resort to a similar technic when confronted with the clenched mouth of a resistant child.

INCIDENT 11

Toxic Agent	*Patient*
Sheep Laurel	Cat

The Center was consulted by the owner of a black-haired cat who had died in the horrible convulsive agonies of what the owner was sure was strychnine poisoning. The cat drank the water contained in a silver bowl of roses and apparently ate some parts of the rose itself. These flowers had been purchased from the cart of an itinerant flower vender.

The autopsy finding of the family veterinarian confirmed the suspicion of strychnine poisoning (no analysis). This Center was consulted because the owner felt that this chemical had been used as a preservative on the flowers. This diagnosis was seriously doubted at the Center, and the suggestion was made to inject a laboratory animal with the water extract of the plants to substantiate the diagnosis.

The next day the owner called to relate that an inspection of the bunch of roses disclosed a sprig of greenery which he and the veterinarian recognized as sheep laurel and that the stomach contents of the cat contained similar-looking material. The symptoms of poisoning from sheep laurel were consistent with those exhibited by the family pet.

This incident illustrates the hazards lurking in florists' shops and household plants. In view of the serious poisonings from household plants and flowers reported in the literature, although not to the Center, the eating of plants and flowers should be strongly discouraged by parents.

Deaths to cattle in the Northeast from ingestion of this type of laurel are not infrequent.

(*Number thirty-five in a series of Accidental Chemical Poisonings*)

Voluntary Health Insurance: 1953 and 1958

The proportion of the United States population covered by voluntary health insurance is still increasing, although the rate of expansion is somewhat slower than in former years. Between 1953 and 1958 there was a rise from 63 to 69 per cent in the proportion of families with at least one member protected under some form of voluntary health insurance.

Although the increase applied to nearly all forms of health insurance, it was especially rapid for coverage of surgical or medical costs in the hospital, and for major medical insurance. Both the private insurance companies and Blue Cross-Blue Shield increased their coverage of the population; the private companies still insure more people.

Expansion in coverage was highest among families in the middle- and upper-income groups, thus widening the already existing gap between them and the lower-income third of the population. On the other hand, a large increase in coverage was also shown by persons age sixty-five and older; the gap between this group and the rest of the population is now narrower than it was in 1953, the year of the earlier survey.

These and other findings about voluntary health insurance in 1958 come from a joint survey by Health Information Foundation and the National Opinion Research Center, University of Chicago.

CANCER ALERTS

A series of radio talks for the practitioner
presented over Station WNYC-FM under the sponsorship of the

New York Academy of Medicine
with the cooperation of the
New York City Cancer Committee

Evaluation of Operative Risk in Patients with Cancer

JOHN S. LA DUE, M.D., PH.D., NEW YORK CITY

(*From the Department of Medicine, Memorial Center for Cancer and Allied Diseases*)

OPERATIVE risk can be defined as the percental chance of the patient's surviving a surgical procedure. In a broader sense it must also include an estimation of probable complications, length of convalescence, and loss of function as a result of surgery. The operation affects the risk according to the magnitude of the strain or stress that is put on vital systems. Such strain is influenced by the duration of the operation, the anesthetic, the surgical technic, and alterations in anatomy, physiology, and function resulting from the surgical procedure.

A comprehensive history and a careful, skillful physical examination almost always uncover the presence or probability of complicating disease. It is difficult to exaggerate the importance of the information so obtained. Exact knowledge must be available not only with regard to the nature and extent of the cancer but also concerning the patient's nutritional status, the soundness of his circulation, and the adequacy of renal and respiratory function. Minimum laboratory procedures usually needed for evaluation of the operative risk for the patient with cancer who is to have major surgery include: (1) a complete hemogram, (2) urinalysis, (3) estimations of the blood urea nitrogen, chlorides, cholesterol, protein, sugar, bilirubin, sodium, and potassium content of the blood, (4) prothrombin time, (5) a chest x-ray, and (6) an electrocardiogram. Further studies or function tests will be needed to evaluate the severity of any associated diseases thus uncovered.

The presence of nutritional deficiency should be suspected in all patients with cancer, and it is therefore important to know what types of food the patient has eaten, his actual weight loss, and the percentile weight loss. Some patients may have lost a great deal of weight but nevertheless may have maintained an adequate protein intake, while others may have maintained their weight but because of the distaste so many cancer patients have for protein may have a significant protein deficiency. If a patient loses 10 per cent of his body weight, five to seven days are usually required to prepare him for major surgery; if he loses 20 per cent, ten to twelve days; and when more than 25 per cent has been lost, fifteen to thirty days may be needed to correct obvious protein, blood volume, and other abnormalities.

Vitamins are given routinely. It is our custom to administer 500 mg. of vitamin C daily, five to six times the daily requirement of the B complex, comparable amounts of vitamins A and D, and vitamin K when indicated. This not only replaces preoperative deficiencies but also promotes wound healing. The presence of a beefy red tongue, purpura, unexplained edema, and certain skin lesions familiar to all physicians should suggest vitamin deficiencies.

Routine blood counts and hematocrit determinations may sometimes give misleading information relative to red blood cell mass and plasma volume. It has been demonstrated that 70 per cent of patients with cancer coming to surgery have a deficiency in the blood volume, usually in the red blood cell mass, although the ordinary red cell count, hemoglobin content, and hematocrit determination may be well within normal limits. When blood volume determinations are not available, approximation of this deficiency can be arrived at by the weight loss (assuming the normal blood volume to be 85 cc. per kilogram of body weight). Thus, if the patient has lost 10 Kg. of weight, it can be estimated that he will need 95 cc. of blood per kilogram of weight loss; a transfusion of 850 cc. would therefore be indicated preoperatively. The importance of this chronic shock syndrome has been emphasized and proved by Lyons, Randall, and others. A history of significant weight loss and inadequate food intake should lead the clinician to suspect blood volume abnormalities.

Protein deficiencies are found in 60 per cent of patients with gastric carcinoma and in 20 per cent with carcinoma of the colon. It is impossible to replace such protein deficiency unless any red blood cell mass abnormality is first corrected. Then the daily administration of 100 to 150 Gm. of protein orally, or parenterally if necessary, in the form of plasma or protein hydrolysates may be attempted. One liter of plasma will only raise the blood protein level 1 Gm. per cent, and this elevation may be temporary.

Diabetes per se is not a serious hazard to surgery if care is taken to insure 75 to 100 Gm. intake of glucose daily. Such amount of glucose can be given intravenously together with 1 unit of regular insulin per 2 to 3 Gm. of sugar. Recently the administration of fructose has proved useful in preventing acidosis, and this sugar does not require insulin for its metabolism.

Masked hypo- and hyperthyroidism often result in fatalities at the operating table or in the immediate postoperative period. These conditions can be recognized by a careful history and physical examination and by attention to the levels of the blood cholesterol. Diagnosis can be established by the basal metabolic rate or protein-bound iodine.

Adrenal and pituitary deficiency may be suspected in the patient who is sensitive to cold, who has low blood pressure, and whose electrolytes preoperatively are not normal. Such patients, once considered almost prohibitive operative risks, can now be satisfactorily prepared by replacement therapy with ACTH or cortisone.

The presence of liver disease preoperatively increases the operative risk. A definite contraindication to major surgery is the presence of active hepatitis. When measurements of liver function indicate severe parenchymal damage, one should hesitate about surgery and should consider the possibility of metastatic disease in the liver. Thymol turbidity levels of 10 units or more, Bromsulphalein retention of 50 per cent or more, concomitantly low cholesterol and cholesterol esters, depression of the albumin-globulin ratio, cephalin flocculation of 3 or 4 plus, and a prothrombin time that fails to rise to normal limits after the administration of vitamin K indicate parenchymal liver disease severe enough to contraindicate major surgery. Sometimes proper hydration, replacement of blood volume deficiencies, vitamin supplements (especially of B complex), and high protein intake may result in a significant reversal of these abnormal values of liver function; the patient can then be considered as a suitable risk for major surgical procedure. Most important in the prevention of liver failure is the insistence on a daily postoperative intake of 100 Gm. of glucose, 60 to 80 Gm. of protein, and four to six times the daily requirements of vitamin B complex, C, and K, given intravenously when a patient cannot take adequate amounts orally.

Heart disease increases the chances of both operative mortality and postoperative complications; unless recognized and adequately treated preoperatively, it is associated with prohibitive risks. Individuals who have had myocardial infarctions within three months, nocturnal dyspnea as a result of hypertensive cardiovascular disease, status anginosus, active myocarditis or pericarditis, aortic disease, and marked cardiac enlargement are notoriously poor risks, since at operation such patients are subject to sudden falls in blood pressure, arrhythmias, and fresh myocardial infarctions and tend to be subject to serious postoperative complications. Of less serious import is the presence of heart block, aneurysm of the aorta sinus, tachycardia, healed myocardial infarct, and controlled auricular fibrillation. Active myocarditis is a positive contraindication to any but the most urgent surgery.

Arrhythmias too often go unrecognized and untreated preoperatively, as found in the elderly individual with an irregular pulse which is not markedly so and with a normal heart rate who proves to have auricular fibrillation if an electrocardiogram is taken When such patients are operated on, their pulse rate may rise excessively and they may develop acute pulmonary edema and succumb either at surgery or in the immediate postoperative period. The presence of multiple extrasystoles preoperatively is a forewarning of paroxysmal arrhythmia developing during surgery or the postoperative period.

Patients with chronic cor pulmonale are extremely bad risks because they have heart disease as the result of extensive lung disease. These patients frequently have polycythemia. Should the hematocrit determination be 55 or more, a phlebotomy as preoperative preparation gives a better result. Transfusions must be given sparingly during the operative and postoperative periods and oxygen should always be given intermittently and not continuously.

Patients with heart disease are susceptible to postoperative complications. Congestion in the vascular tree may precipitate pulmonary, renal, or cerebral complications. These patients are also less tolerant of complications once the complications develop. The presence of atelectasis or mild pneumonitis may lead to irreversible heart failure. Such patients should have parenteral fluid given sparingly. It is not uncommon for acute left ventricular failure or pulmonary edema to develop in the patient who has been given injudicious amounts of blood, parenteral fluids, and saline. Intelligent use of digitalis, diuretics, and oxygen are often lifesaving.

The postoperative mortality reported for patients with different types of heart disease varies considerably: 0.6 to 2.1 per cent for rheumatic heart disease, 0 to 3.4 per cent for hypertensive cardiovascular disease, 0 to 29 per cent for arteriosclerotic heart disease, 0 to 39 per cent for angina pectoris, 5 to 20 per cent for healed infarction, 0 to 20 per cent for congestive failure, and about 10 per cent for luetic heart disease.

These data show that it is difficult to evaluate the operative risk in a patient with heart disease. Obvious abnormalities, such as status anginosus or congestive heart failure, myocardial infarct, uncontrolled arrhythmias, and acute myocarditis all make the patient a poor preoperative risk. Many cardiac abnormalities, however, increase the risk but slightly.

Bundle branch block does not necessarily represent a contraindication to major surgery for cancer. Of 59 such patients, only 3 died as a result of the cardiac disease, a mortality of 5 per cent, which certainly does not represent a prohibitive risk since the patients in a similar age group without heart disease have mortalities of 3 to 5 per cent.

It was also found that healed myocardial infarction was not a contraindication to major surgery. Fifty-eight such patients were operated on at Memorial Center with a mortality rate of 5.2 per cent. Fourteen of these patients were alive two or more years after the removal of their cancers, and sixteen have survived one or more years, a 51 per cent salvage rate. Such a preoperative cardiac status, however, requires meticulous attention preoperatively, during surgery, and in the postoperative period.

Fifty-four instances of cardiac arrhythmia developed as an operative or postoperative complication with no preoperative evidence of cardiovascular disease in 42 per cent of these cases. The remainder had hypertensive and/or arteriosclerotic heart disease. Abnormal electrocardiograms were found preoperatively in 31 per cent, and an additional 10 per cent had premature contractions. The importance of prompt control of this complication is manifested by the fact that of the 12 patients in whom the arrhythmia persisted, 5 succumbed to the complication. Prompt administration of digitalis and/or quinidine to patients developing supraventricular tachycardia is recommended. If unsuccessful, a trial of procaine amide is justified. An additional series of 60 patients with auricular fibrillation which was adequately controlled preoperatively survived major surgical procedures with a mortality of only 4 per cent.

Pulmonary disease increases the operative risks. Estimations of ventilatory function can be done very simply with an ordinary gas meter, standardized in cubic centimeters; the vital capacity and the maximum breathing capacity may be simply obtained with this inexpensive equipment. When the maximum breathing capacity is less than 34 L. per minute, any chest operation is believed to be contraindicated. Other surgery is fraught with great danger. Patients with limitation of pulmonary function due to bronchial asthma, pulmonary emphysema, and pulmonary fibrosis do not tolerate infection in the lung. Mild bronchopneumonia may lead to respiratory distress or precipitate heart failure as a result of the associated anoxia. Preoperative use of aerosol and parenteral penicillin is recommended in the preparation of patients with pulmonary disease for major surgery. In fact, it is common practice to give penicillin twenty-four to thirty-six hours prior to major surgery of any kind.

Renal disease, or at least some symptom causing suspicion of it, is not uncommon in individuals with gastrointestinal cancer because such individuals have lost fluid and electrolytes from vomiting or diarrhea. Such patients may have urea nitrogen of 70 or 80 mg. per cent, correctable by the proper administration of fluids and electrolytes preoperatively. On the other hand, a patient without any serious preoperative symptoms having a blood urea nitrogen of 33 mg. per cent or more, a fixed specific gravity of the urine, a phenolsulfonphthalein excretion of 20 per cent or less, and a urea clearance of 30 per cent or less must be considered a hazardous operative risk. Patients with acute glomerulonephritis or the nephrotic syndrome do not tolerate surgery well, frequently going into irreversible oliguria postoperatively.

The type of anesthesia per se is less important than the ability of the anesthetist to prevent hypoxia, anoxia, or blood pressure fall. During the operative procedure blood losses should be replaced and crises should be promptly managed, chiefly the cardiovascular variety associated with fall in blood pressure, arrhythmia, and cyanosis. It is important that the use of opiates be curtailed for pre-anesthetic medication. These drugs may depress the cough reflex and the ciliary action for an undetermined period of time and be responsible for the development of atelectasis or bronchopneumonia.

In a group of 161 patients seventy years or older to whom various types of anesthesia were administered, the mortality rate and the postoperative complications did not vary significantly with the type of anesthesia—spinal, Pentothal, or inhalation. In the postoperative period the combination of atelectasis, bronchopneumonia, and heart failure accounted for the highest percentage of operative deaths. Care in preanesthetic medication, frequent tracheal aspirations, intelligent use of antibiotics and cardiotonic drugs, and prompt attention to fluid and electrolyte imbalance and surgical complications played a major part in the survival of these patients.

Two thirds of postoperative deaths occur in patients fifty-five years of age or more, emphasizing the importance of estimating the physiologic age of the patient. Elderly patients tolerate major surgery surprisingly well, as suggested by the fact that of 161 patients seventy years or older subjected to 188 operations only 20 (12.4 per cent) died and only 31 had significant postoperative complications. Although 66 succumbed to their cancer or intercurrent disease, 75 are living and well to date, six months to three years postoperatively. Gastric resection was associated with the highest mortality (28 per cent), with a death rate for resection of the colon of 12.2 per cent.

An infrequently emphasized fatal complication encountered in these patients seems worthy of attention. Of the patients who died, 33 per cent had cerebral vascular accidents. It is well known that individuals with evidence of arteriosclerotic disease of the brain are prone to develop further brain damage following a major surgical procedure. Of 6 such patients, 2 had such a history. Another 2 had very definite evidence of senility. When these abnormalities are defined preoperatively, we believe that nothing but the most emergent surgery should be performed and then with the patient under adequate anticoagulant therapy.

Postoperative management must be mentioned briefly, and a few high lights should be considered. Certainly the proper use of antibiotics and adequate nursing are essential. Most important of all is a physiologic explanation for, or at least curiosity regarding, any sudden rise in temperature, change in pulse, blood pressure, or respiratory rate, or alteration in the urinary output; much less important is the care of the wound itself. In no other field is the cooperation of surgeons, internists, and other consultants more richly rewarded than in the care of the patient subjected to major surgery. The problems encountered demand the combined skill of a trained team.

It might be well to consider the patient who has been doing well but is unable to take fluids or food by mouth and may or may not be receiving parenteral fluids. The sudden appearance of marked weakness, listlessness, tachycardia, and dry skin would suggest hypochloremic, hypokalemic alkalosis. The electrocardiogram in the undigitalized patient will help to clarify the diagnosis, for prolongations of the QRS and the Q-T interval are common findings. Other changes that are characteristic are depression of the S-T intervals and variation in the size and shape of the T waves from those observed preoperatively. When blood sodium and potassium levels are determined, the sodium is usually normal with the potassium being 3 mEq. or less. The chlorides are 90 mEq. or less, the carbon dioxide 60 to 90 volume per cent, and the blood urea above 30 mg. per cent. Such patients respond dramatically to the administration of 60 to 200 mEq. of potassium chloride intravenously. The patient who "couldn't lift a finger" in the morning may be sitting up in the afternoon reading his daily newspaper and expressing a desire for food. Many of the unexplained deaths in the past—when the operation was a success but the patient died—were due to this complication.

Many patients with cancer cannot take food and fluids postoperatively. Daily measurements of the urea nitrogen, chlorides, carbon dioxide, hematocrit, and protein content should be taken so that electrolyte balance can be maintained. It is desirable to keep the fluid intake at or near 1,000 to 1,500 cc. of fluid over and above the measurable output. The type of electrolytes given will depend on their concentration in the blood; however, unless a patient has renal dysfunction 20 to 60 mEq. of potassium chloride should be added to each daily infusion since this amount is excreted by the kidney each day (it being unable to conserve potassium).

Many patients with cancer of the gastrointestinal tract are unable to take adequate nourishment orally and become definite nutritional problems. In such instances, 1,500 to 2,000 calories may be given intravenously in the form of glucose or protein hydrolysates together with vitamin supplements. Too little use is made of intubation for maintaining food and fluid requirements. When patients are unable to take adequate nourishment by mouth, a tube should be passed through the stomach into the duodenum so that formula feedings, water, and electrolytes, as desired, may be given both pre- and postoperatively.

Patients with cancer are much more likely to develop thrombophlebitis with the dreaded sequel of pulmonary infarction. Unless these patients are carefully examined every day, this complication may be undetected. Prompt administration of heparin and/or coumarin compounds is the treatment of choice for thrombophlebitis or phlebothrombosis; the treatment should be maintained for seven to fourteen days after the condition has subsided.

Early ambulation is desirable, not so much as an aid in preventing thrombophlebitis but more for its beneficial effects in preventing pulmonary complications, promoting return to normal of gastrointestinal function, and shortening the hospital stay.

Our methods for estimating the operative risk are still crude. This situation emphasizes the need for detailed studies of clinical data if we are to understand what the stress of surgery may represent. In this way we can devise improved methods of determining the operative risk.

115 East 61st Street

(*Number twenty-eight in a series of Cancer Alerts*)

Grant us brotherhood, not only for this day but for all our years—a brotherhood not of words but of acts and deeds. We are all of us children of earth—grant us that simple knowledge. If our brothers are oppressed, then we are oppressed. If they hunger we hunger. If their freedom is taken away our freedom is not secure.—Stephen Vincent Benet

Chester Averill and the Chlorination of Drinking Water

ELLIS KELLERT, M.D., SCHENECTADY, NEW YORK
(*From the Ellis Hospital Laboratory*)

Chlorine was discovered by the Swedish pharmacist Karl William Scheele in 1774, identified as an element by Edmund William Davy in 1823, liquefied by Michael Faraday in 1823, and finally made available in cylinders in 1910. The use of chlorine was probably the most important single advance in public health since the introduction of smallpox vaccination by Edward Jenner in 1798.

The rapid growth of American cities and their careless disposal of sewage were accompanied by a high incidence of enteric disease, particularly cholera and typhoid fever. As the population increased along our rivers and lakes, little attention was given to sewage control, and few people followed the wise injunctions regarding the drinking of raw surface waters or even the simple rules contained in the Mosaic law such as the washing of the hands before eating.

In the early years of the nineteenth century, conditions in Schenectady were very much like those in many other communities along the Atlantic seaboard. Not until 1832 did the town have a health officer, who was engaged on a part-time basis at a salary of seventy-five dollars per annum.[1] There was no hospital nor even a simple dispensary. At that time the population of Schenectady numbered but 4,300 inhabitants and the entire county had only 12,000 residents. There were 20 licensed physicians and probably some "irregulars."

Medical practice consisted largely of treatment of infections of the respiratory tract and intestine, accidental injuries, and the problems incidental to childbirth. So prevalent were cholera and typhoid that repeated investigations were conducted to determine some means of controlling those diseases. Drinking water was obtained largely from private wells and the few public wells located at certain corners where the squares met. A pump was set at these intersections on a wooden platform over a dug well. Because of the convenience, it was common practice for nearby residents to take their clothing and bedding to the well for washing, and the means of contamination are readily seen. As early as 1670 the following record appears: "The well masters of both wells are hereby ordered and strictly enjoined to see to it that no water is poured out near the wells and that no rinsing is done there in the space around the wells, which is to be paved."[1] This circumstance may account for the high consumption of beer by the residents of the Mohawk Valley who suspected that the drinking water was no longer of pristine quality and therefore potentially harmful.

Prior to this period a primitive water system existed in the town. It consisted of a few wooden mains having small bores which carried water from a nearby spring. In 1835 a more elaborate system was constructed. This too consisted of wooden pipes or logs with holes bored through them of about two or three inches in diameter. The water was obtained from a spring on Engine Hill, now known as Crane Street.[2] After several abortive attempts to obtain capital, a water company, organized in 1867, was able to start work in 1869 and completed a system by 1871. This was called the Holley System and comprised a pumping house situated at the lower end of Ferry Street adjoining the Mohawk River. The raw water was pumped into an underground cistern. The water company soon contracted with the city to furnish water for the extinguishment of fires. A comment of that period states that "much valuable property has been saved and no fire extended beyond the building in which it originated." There was no word about the prevalence of intestinal infections or the possible influence of the drinking water on their occurrence.

In those days terms such as putrefaction and disinfection were commonly used, although the causative organisms of disease were yet unknown. Analysts who examined suspected well water at that time usually found it "free from impurities," meaning, of course, free from harmful minerals or excess organic matter, since the germ theory of disease was unknown, and the science of bacteriology was not yet established. It is well-known that the white man brought with him more than one pestilence to afflict the Indians as well as himself. As he pushed westward he carried along the water routes the germs of intestinal infections which proved to be such a serious handicap in the construction in 1817 of "Clinton's Ditch," as the Erie Canal was then known. It may be of interest to note that General Lafayette was one of the first canal boat passengers in 1825, the year of completion of the canal, when he made the passage from Syracuse to Schenectady.

The incidence of cholera among the canal workers was very high. Despite the frequent outbreaks of cholera and the prevailing suspicion that it might, in some manner, be associated with the drinking water, it seems strange that nothing was done to make the water potable by the simple expedient of boiling. This method was greatly in vogue among householders with milk in the prepasteurization era and was highly effective.

The following item, dated July 27, 1832, is taken from the diary of Samuel William Jones and is now in the collections of the Historical Society of the County of Schenectady: "This year is also remarkable for the breaking out of a disease called the malignant cholera morbus. The Physicians dispute whether it is our old disease rendered more malignant than usual by the state of the individual attacked or by the air which he breathes, etc. Last week there died of it in New York 736—it is also very prevalent in Albany—we have hitherto escaped its influence, only two deaths having taken place here and they were both strangers no doubt infected when they arrived. Never was there so universal a dread of calamity so apparent as that which now pervades all the country from Maryland to Maine and throughout Canada."

In September, 1832, cholera broke out in Schenectady. Among the residents was one Chester Averill, a teacher of chemistry and ancient languages at Union College whose life was so well recorded by Reed in 1837.[3]

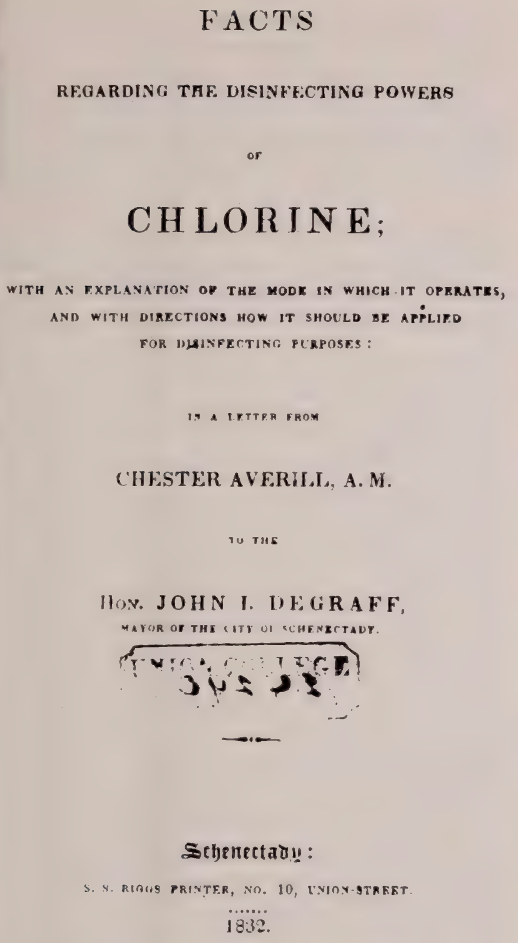
Chester Averill was born in Washington, Connecticut, in 1804, and spent the first seventeen years of his life on the farm. He became a freshman at Union College in 1824 and graduated in 1828 with the degree of A.B. Subsequently, he became an instructor and finally a professor of chemistry and ancient languages at Union College. He also lectured on botany and mineralogy. Averill died in 1836, apparently of consumption which first became evident in 1820.

Averill was but thirty-two years old when he died, yet in that brief period he had attained an excellent classical education and had developed the habit of preserving and arranging systematically all his papers. He wrote compositions of real merit in a somewhat flowery style. As an instructor and even as a full professor in 1832 his pay was so small that he had to practice the most rigid economy. Nevertheless, he decried all forms of commercialism and agreed with many a present-day idealist when, as the first orator before the newly organized branch of the American Association for the Promotion of Literature and Science, he deplored "the tendency amongst us to sacrifice everything that is truly valuable, to the acquisition of wealth." Although his life was brief, his demeanor and speech were so earnest and his knowledge was so comprehensive that he exerted a profound influence on the students in his classes. He wrote little, but what he permitted to be published was truly valuable.

To illustrate the character of Chester Averill the following excerpts from his writings may be of interest:

> "We are often blinded by credulity and are slow in learning even the lessons of experience."
>
> "We are all creators of self-interest."
>
> "Unfounded but noisy pretension may often rise over real merit, and mankind may be tardy in turning from empiricism to real worth."
>
> "The same doom awaits the literature of our age which has befallen that of every other."
>
> "It is easier to dream of a golden age, than to provide securities against the evils, or evil tendencies of our own."
>
> "Now it is acknowledged that public favor is the great incentive to human action."

Averill's power of analysis was very uncommon and, according to Reed,[3] of all voluntary enterprises undertaken by the students for their improvement, he was either the originator or promotor.



FACTS

REGARDING THE DISINFECTING POWERS

OF

CHLORINE;

WITH AN EXPLANATION OF THE MODE IN WHICH IT OPERATES,
AND WITH DIRECTIONS HOW IT SHOULD BE APPLIED
FOR DISINFECTING PURPOSES:

IN A LETTER FROM

CHESTER AVERILL, A. M.

TO THE

HON. JOHN I. DEGRAFF,
MAYOR OF THE CITY OF SCHENECTADY.

Schenectady:
S. S. RIGGS PRINTER, NO. 10, UNION-STREET.
1832.

Fig. 1. A photostat copy of the front page of a pamphlet on the disinfecting powers of chlorine (1832).

Averill was greatly impressed by the prevalence of enteric disease and by the research on the control of putrefaction then going on in Scotland and France. These investigations were known to him, and when Mayor John I. De Graff formally requested Averill to assemble information on the use of chlorine as a disinfectant and antiputrefactive agent, Averill returned a very prompt reply in great detail. The answer was issued in pamphlet form with the following caption: "Facts Regarding the Disinfecting Powers of Chlorine with an Explanation of the Mode in which it Operates and with Directions How it Should be Applied." The item was printed in Schenectady by S. S. Riggs in 1832 and is dated one day after the date in the Mayor's letter[4] (Fig. 1).

In his article Averill gives a lengthy discussion of the use of chloride of lime for the control of putrefaction and its employment in the prevention of contagious diseases in prisons and aboard ships. He recorded the background of its use in Europe, the clear-cut proof of its antiputrefactive properties, its comparative harmlessness, cheapness, and remarkable efficiency. In his argument he logically set forth the published studies and observations by Dr. Andrew Ure of Glasgow and by several writers in France, all of whom praised the efficiency of chloride of lime as an antiputrefactive agent. Even the famous Faraday was brought into the picture because of his instructions for the preparation of chlorine and his successful fumigation, with this agent, of the general penitentiary at Millbank, England.

In the pamphlet we find the following final directions: "When it is desired to purify the water of a cistern—dissolve 8 ounces of the chloride of lime in a pailful of water and disperse it into the cistern." What could be more simple? Yet the very simplicity of the method resulted in its being ignored. Apparently in those days, even as now, a remedy was held in low esteem unless it had a long name, a bright color, or induced a pronounced reaction.

Approximately one hundred years after Averill's pamphlet was published, the following item, also in the form of a letter, appeared in 1928 in Health News, a publication issued by the Department of Health of the State of New York: "The most readily available method of disinfecting or sterilizing wells is by means of chloride of lime. For the average size dug well (about 4 feet in diameter and 15 feet of water) one 12 ounce can of chloride of lime would be sufficient to disinfect the water." The letter was signed by Charles A. Holmquist, Director of the Division of Sanitation.

Although local authorities did nothing following the publication of Averill's article, nevertheless his paper was highly commended by Professor Benjamin Silliman of Yale University, probably the foremost scientist in America at the time. Averill's pamphlet must have stirred up some interest in health matters in Schenectady, for in 1833 the Common Council appointed a Board of Health to assist the mayor to carry into effect existing laws relating to the prevention and introduction of infections and pestilential disease.

It may be contended that since disease germs were unknown in 1832, the advocacy of chlorine for controlling outbreaks of contagious disease had no sound basis. Nevertheless, such terms as disinfection were in common use. A disinfectant is defined as a chemical agent that frees from infection which could only mean, medically, a germ disease. For many years we talked freely about viruses as a living entity, long before viruses were made visible by means of the electron microscope.

Averill stated that the use of chlorine as a disinfectant is "founded in Science and is the result of deduction from observation. I have not sought to prove that chlorine can destroy the particular infection, if it be infection, that causes the cholera—I have sought to convince all of what I firmly believe, that chlorine may be employed with great advantage as a disinfecting agent—*at the present juncture it ought to be considered indispensable in and about every house in our populous cities.*"

Had Averill been able to prevail on the city authorities to treat the wells in the manner he suggested, it would have made an interesting speculation regarding the morbidity and mortality that would have been spared the city. At that time the successful demonstration of the value of chlorination would have led promptly to its use in most American communities with resultant saving of many thousands of lives and enormous economic loss during the intervening period.

The first recorded attempt to disinfect any city drinking water was in 1896 when George W. Fuller[5] added chloride of lime to the raw water flowing over rapid sand filters at Louisville, Kentucky. The results were quite favorable. After this experiment chlorine was added to drinking water for the prevention of intestinal infections increasingly throughout the civilized world. This method was responsible for the precipitous decline in the typhoid-cholera morbidity rates.

The corner wells and most of the private wells were abandoned in 1871 when a system of wooden pipes made of hollow logs was laid throughout the city and the water pumped directly into them from the Mohawk River. However, a relatively high incidence of intestinal infections continued. In 1897 this system was abandoned, and a series of large wells dug in the adjoining township of Rotterdam were used as the source of Schenectady water. This water, apparently, came from an enormous gravel bed deep in the Mohawk Valley, and daily testing of the well water showed it to be practically sterile so that chlorination was seldom necessary and then only in the spring season during periods of flood when river water might seep into the wells. As water mains and the handling of water improved, cholera vanished; typhoid and dysentery became so rare as to constitute a curiosity. The factor most responsible for this admirable state was the filtration and chlorination of water, the latter first advocated in this country in 1832 by Chester Averill of Schenectady.

Despite Averill's convincing exposition of the value of chlorination, we find that at the meeting of the Medical Society of the County of Albany held on June 12, 1849, a resolution was introduced by Alden March,[6] a founder of the Albany Medical College, as follows: "Whereas, in the opinion of this Society, neither lime nor chloride of lime possesses any power to prevent the introduction and spread of cholera, resolved, as the sense of this Society, that the practice of spreading lime on our streets is not only useless, but indirectly injurious to the health and happiness of the citizens and highly detrimental to the business interests of our City." In the discussion the question arose whether lime or chloride of lime were disinfecting agents or not. This matter was referred to a committee of three consisting of Theodric R. Beck, Thomas Hun, and Howard Townsend who made a report at the meeting held one week later, but their conclusions are not contained in the record. Apparently, the members were unfamiliar with the statement in Silliman's letter to Averill of July 19, 1832: "It would be, indeed, a most unfortunate retrograde step to abandon the use of chlorine or its preparations."

Public health activities on a large scale began about 1890 and have steadily increased with enormous benefit to the public. It is quite true that the health status of a community is in direct proportion to the amount of money expended for the prevention of disease. For over half a century the New York State Department of Health has had for its masthead the slogan: "Public health is purchasable. Within natural limits any community can determine its own death rate." Certainly this was true when so many infectious and contagious diseases were controlled by means of vaccination, sterilization of water, and pasteurization of milk. Yet in the beginning, as we have seen, voices were raised against these innovations even as today we note opposition to fluoridation of public drinking water and food control. How many present-day medical students are able to see a single case of smallpox, typhoid fever, scarlet fever, diphtheria, or lobar pneumonia? Such diseases have almost vanished. No intelligent person today would dream of restricting the activities of health departments. And who is the authority to state where public health ends and individual health begins? One cannot but express the wish that there were more citizens at all times with the knowledge, the vision, and the humanitarianism of Chester Averill.

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3. Reed, T. C.: A Discourse on the Character of the Late Chester Averill, Schenectady, S. S. Riggs, 1837.
4. Averill, C.: Facts Regarding the Disinfecting Power of Chlorine, Schenectady, S. S. Riggs, 1832.
5. Prescott, S. C., and Horwood, M. C.: Sedgwick's Principles of Sanitary Science and Public Health, New York, The Macmillan Company, 1935.
6. Willard, S. D.: Annals of the Medical Society of the County of Albany, Albany, J. Munsell, 1864, p. 200.

Penicillin Found Effective Against Syphilitic Psychosis

More than 80 per cent of persons whose brains are damaged by syphilis can return to work if they receive penicillin in the early stages of the brain damage. Even the severely affected or institutionalized patient has one chance out of three for improvement and rehabilitation if given penicillin, a new study has shown.

The study, dealing with 1,086 patients suffering from brain damage covered more than five years and was conducted in eight major hospitals. The report, written by 13 researchers, appears in the May *Archives of Neurology and Psychiatry.*

Penicillin is the standard treatment for syphilis and if given early will prevent paresis all together, the report said. None of the 1,086 patients had received penicillin for early syphilis. Paresis strikes most frequently during life's most productive years, after an incubation period that usually ranges from ten to twenty-four years. The symptoms range from tremors to serious psychosis. Without treatment, the outlook for a person with paresis is "dire"—with death occurring within five years after onset. When penicillin is given in the early stages of paresis, the death rate is cut immensely.

The study showed that only 9 per cent of patients are dead from neurosyphilis ten years after treatment. However, the death rate for paretics is about four times higher than for persons of comparable age, sex, and race because the paretics usually suffer from such other conditions as alcoholism or heart disease.

In most instances only one course of treatment with penicillin is necessary to favorably affect the course of paresis. Retreatment appears to exert little effect.

The study also indicated that the use of fever therapy, in which the patient is made to have a feverish disease such as malaria, is probably unnecessary. Fever therapy was long used alone and then combined with penicillin in the treatment of paresis. However, the use of penicillin alone seems to accomplish the same thing as the combination.

The effect of penicillin on individual symptoms and signs of paresis are, in general, "strikingly beneficient," the report said. Disorientation, depression, convulsions, tremors, incontinence, impaired handwriting, and other symptoms were greatly improved by the use of penicillin. However, impairments of speech, insight, calculation, judgment, and general information do not entirely disappear. Nevertheless, many patients with paresis can be rehabilitated and returned to work. The sooner the diagnosis is made and treatment begun, the better the chances of the person returning to a fairly normal life.

The senior author of the report was Dr. Richard D. Hahn, of Johns Hopkins Hospital, Baltimore.

SUMMARY OF COUNCIL MINUTES

May 11, 1959

THE Council of the Medical Society of the State of New York met at the Hotel Statler Hilton, Buffalo, Henry I. Fineberg, M.D., president, presiding.

Secretary's Report

The report of W. P. Anderton, M.D., secretary, was read by William L. Wheeler, Jr., M.D., newly-elected secretary, detailing meetings attended.

Dues Remission.—The Council *voted* to remit annual State dues for one member for 1958 and four members for 1959 because of illness; three members for 1959 because of military service; and one member for 1959 because of financial hardship.

The Council *adopted* the report.

Treasurer's Report

Maurice J. Dattelbaum, M.D., presented the treasurer's report and several invoices for which he requested approval for payment.

The Council approved the report.

Executive Director's Report

Herbert T. Wagner, M.D., reported attendance at committee and other meetings, including participation in the American Medical Association's First Regional Meeting on Aging held in Salt Lake City.

Reports of Committees

Public Health and Education.—Norman S. Moore, M.D., chairman, proposed that the Council authorize the Medical Society of the State of New York to join with the New York State Health Department in presenting an annual award of $500 to recognize the significant contribution to public knowledge and understanding of health and medicine made by reporters and their newspapers, and to encourage the further development of sound medical reporting in New York State. Any member of the editorial staff of any newspaper published five or more times a week in the State of New York may be nominated to receive the award either for a single article or for a series of articles published in that paper.

The Council *approved* the recommendation.

Dr. Moore also recommended that Carlton E. Wertz, M.D., Buffalo, be designated the official representative of the State Medical Society to the Empire State Health Council.

The Council *approved.*

Staphylococcal Infections.—James Greenough, M.D., chairman, reported on the suggestion that staphylococcal infections be included in the Sanitary Code as a reportable disease.

Legislation.—James M. Blake, M.D., chairman, recommended that the idea of a basic study of the various ancillary groups of medical practice and the preparation of legislation that might be necessary to control such properly be approved.

The Council *approved* the recommendation.

Workmen's Compensation.—Gerald D. Dorman, M.D., chairman, reported that Mr. Solomon Senior, chairman of the Workmen's Compensation Board, had announced the appointment of an Advisory Committee on Workmen's Compensation Matters. Dr. Dorman and Anthony A. Mira, M.D., director of the Bureau of Workmen's Compensation and Industrial Health, will represent the State Society on the committee.

New Business

1961 Annual Convention.—In view of the action of the House of Delegates that conventions be held in New York City, Alfred P. Ingegno, M.D., requested clarification on the commitment for Rochester in 1961.

The Council *voted* that the 1961 convention be held in Rochester.

New Appointments.—President Fineberg distributed lists of proposed committee appointments for the coming year.

Election of Councillor.—The Council *elected* George Burgin, M.D., Herkimer, as councillor to fill the term of Norman S. Moore, M.D., the new president-elect, until the 1960 meeting of the House of Delegates.

The Council also *elected* Alfred P. Ingegno, M.D., Kings, to succeed himself for another term of one year as councillor until the 1960 meeting of the House of Delegates.

The meeting adjourned at 2:45 P.M.

Woman's Auxiliary

to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

State Fair

THE Woman's Auxiliary to the Medical Society of the State of New York will welcome you at the State Medical Society's new area at the New York State Fair this fall. The opening day is Friday, September 4, and the Fair will continue through Saturday, September 12.

Auxiliary members from surrounding counties will be there to greet you and they will welcome your visit. The Auxiliary members will be there from 10 A.M. until 6 P.M.

The theme of the Fair this year is "Opportunity." As has been proved many times, the Medical Society of the State of New York with the help of the Auxiliary has created a wonderful "opportunity" to meet the public and to give out literature which should encourage people to better health. Women, especially, are very interested in the health of their families as well as their own. Thus, having the Auxiliary theatre in the Women's Building is particularly advantageous.

This year the director of Women's Activities for the New York State Fair and Dr. Granville W. Larimore, New York State Department of Health, proposed an "Aisle of Health" be located in the annex of the Women's Building to draw the societies together and reduce confusion and repetition. The booths in this area have agreed to distribute free tickets to the movies we are presenting this year. The Medical Society's exhibit will be on the second floor directly over the reception room on the main floor. Here will be the theatre, a large area in which there will be benches and a large table on which the pamphlets to be distributed will be placed.

The movies will be short and in color, educational yet amusing. Supplementing them will be brochures, pamphlets, and magazines which will be of general interest to the public. Many old friends will return to get their annual copy of *Today's Health*. The literature covers a wide range of subjects—advice on home nursing, public health, accident prevention, weight control, x-ray, diabetes, and many other important items.

Auxiliary members from the Counties of Cortland, Madison, Oneida, Oswego, Onondaga, Jefferson, Broome, and Cayuga will be on hand to meet you at the Fair and help you with this "opportunity" to spend a pleasant day.

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MEDICAL NEWS

New Approach by the City of New York to the Problem of Drug Addiction—At the request of the chairman of the New York State Interdepartmental Health Resources Board, a study has recently been made by a research group from the School of Public Health of the results of treatment of adolescent drug addicts at the Riverside Hospital on North Brother Island.

The report reveals that virtually every patient relapsed after discharge in spite of the conscientious efforts of the hospital director and his staff, all of whom were accredited by the University with outstanding cooperation during the study.

A meeting of experts was called on May 20 to consider the findings of this report. Representatives of the Medical Society of the State of New York, several county medical societies, the New York Academy of Medicine, the New York State Interdepartmental Health Resources Board, the State Departments of Health and Mental Hygiene, the City Departments of Hospitals and Health, and several medical schools, agreed unanimously that the project on North Brother Island had been unsuccessful and that it is now necessary to approach the problem from an entirely new direction.

They proposed that arrangements be made as soon as possible for the care of adolescent narcotic addicts on one or more teaching services of municipal and/or voluntary hospitals where scientific staff and facilities are available for research designed to develop more effective methods of medical cure and social rehabilitation. They also proposed that as soon as these arrangements are made, the patients in Riverside Hospital be transferred and North Brother Island be reassigned to the Department of Correction, and that beds in municipal hospitals be allocated for the voluntary admission of adult drug addicts for detoxification.

These proposals were incorporated in a resolution that was adopted by the Board of Hospitals at its May 20 meeting.

New York Physician to Speak in Jerusalem—Jacob Buckstein, M.D., consultant in gastroenterology, Trafalgar Hospital, has accepted the invitation of the dean of the medical faculty of the Hebrew University-Hadassah Medical School in Jerusalem to deliver a lecture to the staff of the medical school and general medical public of that city. The subject of his lecture will be "The Small Intestine—Normal and Abnormal. A Clinical and Roentgenological Study."

Postgraduate Courses at Montefiore Hospital Listed—A booklet is available listing postgraduate courses in clinical medicine to be given at Montefiore Hospital in affiliation with Columbia University, September, 1959, to June, 1960.

Some of the courses are open to general practitioners and others only to physicians who have had adequate preliminary training and experience in the related specialty. To be eligible for the courses applicants must be graduate physicians, licensed to practice medicine in some state in the United States.

For a copy of the booklet write to: Secretary for Medical Instruction, Montefiore Hospital, 210th Street and Bainbridge Avenue, New York 67, New York.

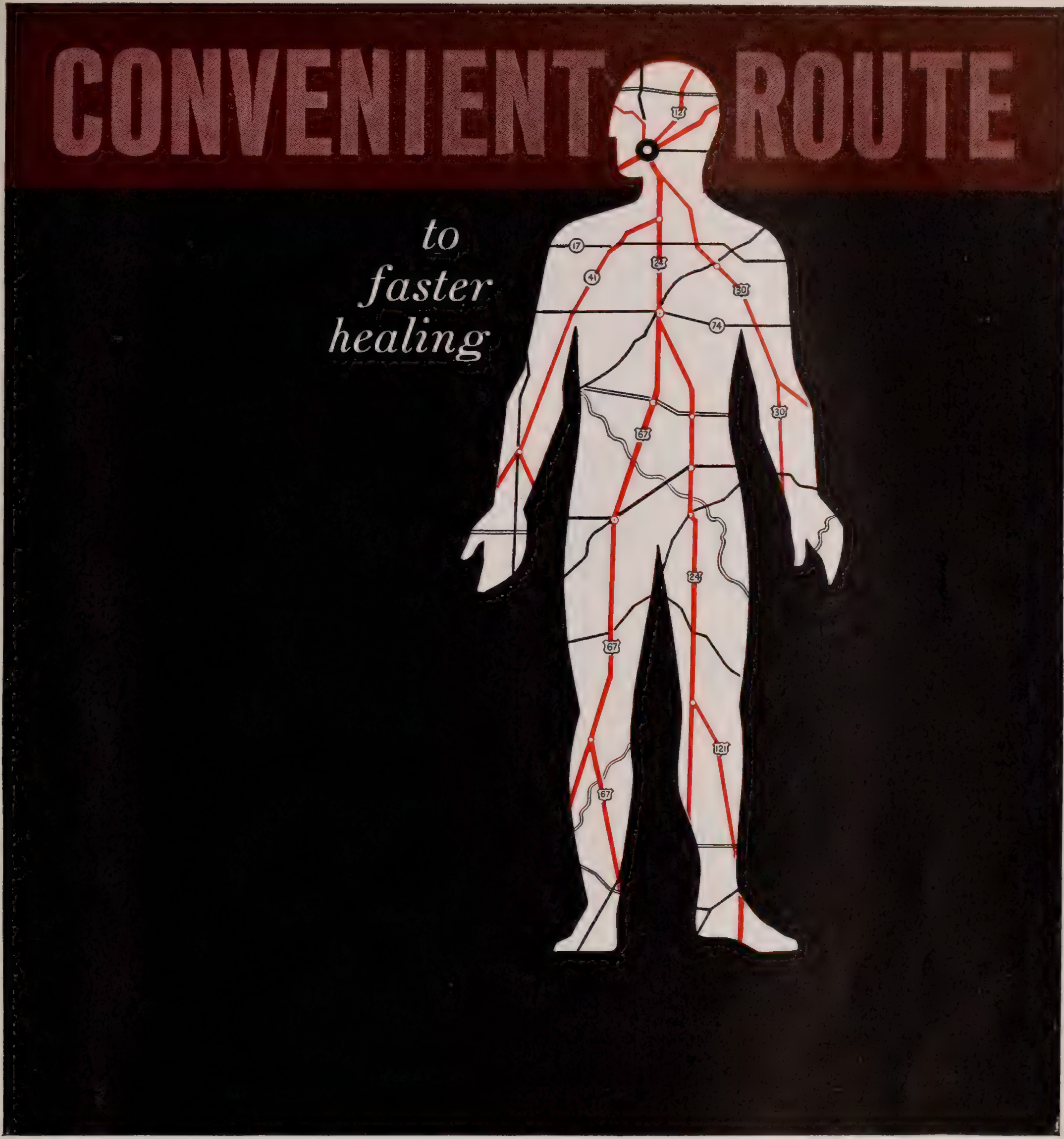
New York Academy of Gastroenterology Elects Officers—The New York Academy of Gastroenterology elected the following officers at their annual meeting on May 11: Michael Weingarten, M.D., president; Joseph R. Van Dyne, M.D., president-elect; Hyman M. Robinson, M.D., first vice-president; Henry Colcher, M.D., second vice-president; Edward J. Nightingale, M.D., secretary; Jerome Weiss, M.D., recording secretary; and William C. Jacobson, M.D., treasurer.

NYU Offers Course in Gynecologic Endocrinology—New York University Post-Graduate Medical School will present a full-time course in gynecologic endocrinology October 12 through 16, under the direction of Herbert S. Kupperman, M.D.

A practical, didactic, and clinical presentation will be offered with emphasis on the therapeutic management of endocrine disorders in the female, including a discussion of intersex. Endocrine therapy for menstrual abnormalities and ovulatory defects will be discussed. Emphasis will be placed on adrenocortical, thyroid, ovarian, and pituitary abnormalities. Practical diagnostic tests and the therapeutic use of the newer progestational steroids will be discussed and demonstrated.

For further information write to the office of the associate dean, New York University Post-Graduate

[Continued on page 2956]



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[Continued from page 2954]

Medical School, 550 First Avenue, New York 16, New York.

Virus-Like Agents to be Studied—Two researchers at Roswell Park Memorial Institute, Buffalo, have been awarded $191,826 by the United States Public Health Service to investigate virus-like agents from human and animal tumors.

James T. Grace, Jr., M.D., assistant director of Roswell Park Memorial Institute, and Dr. Edwin A. Mirand, cancer research scientist, will conduct the investigation.

Society's Legal Counsel Moves Offices—The firm of Martin, Clearwater and Bell, legal counsel to the Medical Society of the State of New York, (Mr. William F. Martin, counsel; Mr. Robert Bell, attorney) has moved its offices to 355 Lexington Avenue, New York 17, New York. Telephone OXford 7–3122.

Physicians to Study Russian Progress in Plastic Research—Herbert Conway, M.D., New York Hospital and Cornell University Medical College, and Clarence R. Straatsma, M.D., New York Medical College, are currently visiting Russia with a group of American plastic surgeons, to study Russian progress in plastic surgery.

School Named for Dr. Winslow—A new 600-pupil elementary school in Henrietta will be named in honor of the late Floyd S. Winslow, M.D., former teacher, county coroner's physician, and town health officer. Dr. Winslow was president of the Medical Society of the State of New York in 1936 and 1937, a member of the Council, chairman of the Public Relations Committee, and an A.M.A. delegate for many years.

Upstate Medical Center Receives Grant—The United States Public Health Service has made a $41,860 research award to the State University Upstate Medical Center for a study of the factors involved in fetal death.

The grant was received by Edward C. Hughes, M.D., director of the Pre-Pregnancy Diagnostic and Treatment Clinic of the Medical Center and chairman of the Department of Obstetrics.

Booklet Available for Parents of Crippled Children—A new, 32-page booklet entitled *You Are Not Alone*, written by Lawrence J. Linck, is available for parents of crippled children. The fourth in a series, *You Are Not Alone* outlines the many types of assistance through professional persons, voluntary agencies, and Federal services which are available to give help to the physically handicapped.

A copy of the booklet can be secured for a nominal sum from the Publications Section, National Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago 12, Illinois.

Personalities

Appointed

Goodwin M. Breinin, M.D., as chairman of the Department of Ophthalmology of New York University-Bellevue Medical Center . . . Alfons Busza, M.D., as assistant director of the New York State Rehabilitation Hospital at West Haverstraw . . . John N. Edson, M.D., as director of the Department of Medicine, Long Island College Hospital, Brooklyn . . . Irvin Klein, M.D., as medical director of the Workmen's Compensation Board . . . Robert A. Mainzer, M.D., director of the Department of Surgery, Long Island College Hospital, Brooklyn.

Relocated

Lawrence H. Gahagan, M.D., has moved from New York City to Beverly Hills, California, where he heads the Department of Psychiatry and Neurology at the Beverly Hills Medical Clinic. Louis M. Lipton, M.D., has assumed Dr. Gahagan's New York practice.

Elected

Marion B. Sulzberger, M.D., professor and chairman of the Department of Dermatology and Syphilology, New York University-Bellevue Medical Center, as president of the American Dermatological Association.

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NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Elected—Dr. Clarence F. Ackerknecht, Schenectady, class of 1923, has been elected to a three-year term as alumni trustee.

Promoted—Dr. Simon Propp, head, Sub-department of Hematology, and Dr. Thomas F. Frawley, head, Sub-department of Endocrinology and Metabolism, from rank of associate professor to professor in the Department of Medicine.

Research Fellowships—Various health agencies and drug houses have contributed $28,300 in support of summer fellows for 1959. This will benefit a record 47 students, with most of the fellowships in the amount of $600. Health agencies and drug firms contributing this year are U.S. Public Health Service, American Cancer Society, National Foundation, Albany County Heart Association, Parke, Davis & Co., National Science Foundation, Lederle Laboratories, Albany County Tuberculosis Association, Arthritis and Rheumatism Foundation, Tobacco Industry Committee, and National Association for Retarded Children.

Albert Einstein College of Medicine

Commencement—Fifty candidates received their degrees at the first commencement exercises in June.

Among those receiving honorary degrees of Doctor of Humane Letters was Dr. Abraham White, associate dean of the College.

Cornell University Medical College

Appointed—Dr. Roy Craig Swan, Jr., associate professor of physiology, has been named professor and head, Department of Anatomy. Dr. Swan received his medical degree in 1947 from the College.

Grant—The Samuel J. and Evelyn L. Wood Foundation of New York has awarded a grant of $1,600,000, which with a matching grant of $1,300,000 from the United States Public Health Service, will be used toward the construction of a research and library building for the College.

University of Buffalo School of Medicine

Allergy Scholarship—Mr. Edgar Jerome Rothenberg, who has completed his third year, has been awarded a $500 scholarship for research and clinical training for the summer in the field of the allergic diseases by the Allergy Foundation of America. Mr. Rothenberg is working under the supervision of Dr. Carl E. Arbesman, assistant clinical professor of medicine, and director, Allergy Laboratory, Buffalo General Hospital, on "Studies in Insect and Horse Serum Allergens."

New York University—Bellevue Medical Center

Appointed—Dr. Goodwin M. Breinin, the first incumbent of the Daniel B. Kirby professorship of research ophthalmology, has been appointed professor and chairman, Department of Ophthalmology, and director of the eye services of University and Bellevue Hospitals and consultant to the New York Veterans Administration Hospital. Dr. Breinin succeeds Dr. Arthur G. DeVoe who will become chairman, Department of Ophthalmology, Columbia University College of Physicians and Surgeons.

[Continued on page 2960]

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[Continued from page 2958]

University of Rochester School of Medicine

Appointed—Dr. Alastair J. Gillies, New Haven, Connecticut, became professor of anesthesiology and chairman, Division of Anesthesiology on July 1. Dr. Gillies succeeded Dr. D. Vernon Thoms.

State University of New York Downstate Medical Center

Alumni Officers—Dr. Abraham Jablons, New York City, was elected president of the Alumni Association; Dr. Albert W. Cook, vice-president; Dr. Robert J. Hubbard, secretary; Dr. Benjamin Burbank, treasurer; Dr. Dennis J. Fiorentino, historian; and Dr. Stanley D. Berliner, associate historian. Twelve councillors elected were: Drs. Frank X. Giustra, Alfred P. Ingegno, Walter J. O'Connor, and Jules D. Gordon, who will serve through 1960; Drs. Leon Stamatis, Leslie H. Tisdall, Harry Z. Mellins, and William F. Rexer, who will serve through 1961, and Drs. Benjamin Zohn, Francis V. Mitchell, George Liberman, and A. W. Martin Marino, Jr., who will serve through 1962.

Appointments—Drs. George T. Mills, Glasgow, Scotland, and Jacques M. Singer, Yonkers, have been appointed associate professors in the Department of Medicine; Dr. Evelyn E. B. Smith has been named assistant professor of medicine; Drs. William Pomerance and Irving Hirshleifer have been named to the posts of clinical associate professor of obstetrics and gynecology and clinical assistant professor of medicine.

Promoted to full professor were Drs. Robert W. Hillman and Morris Siegel, associate professors of environmental medicine and community health; Dr. Karl E. Karlson, associate professor of surgery; and Dr. Leon C. Chesley, associate professor of obstetrics and gynecology; Dr. Sidney R. Weinberg, assistant professor of urology to associate professor, and Dr. Moses Silverman from clinical assistant professor in dermatology to professorial lecturer.

Raised to assistant professorships were: Dr. Herbert W. Cox, from instructor in microbiology; Drs. Elaine T. Feldman and Eleanor Z. Wallace, from instructors in medicine; Drs. Norbert Freedman and Leon Hankoff, instructors in psychiatry; Dr. Ladislav P. Hinterbuchner, from instructor in neurology; Dr. Melvin P. Mohn, from instructor in anatomy; Drs. Philip N. Sawyer and Gerald Shafton, instructors in surgery; Dr. Irving Shapiro, from clinical instructor in environmental medicine and community health; Dr. Stanley W. Weitzner from instructor in anesthesiology, and Dr. Harold Zarowitz from clinical instructor in medicine to clinical assistant professor.

Resigned—Dr. A. Stark Wolkoff, assistant professor of obstetrics and gynecology, has accepted an appointment as assistant professor of obstetrics and gynecology at the University of North Carolina School of Medicine, Chapel Hill, effective August 1.

State University of New York Upstate Medical Center

Research Grant—Dr. David B. Jones, associate professor of pathology, received a grant of $31,595 for research in kidney disease from the National Institutes of Health.

Allergy Scholarship—Mr. Ralph Reichert, a third-year student, has been awarded $500 for research and clinical training in the field of the allergic diseases by the Allergy Foundation of America. Mr. Reicher is studying under the supervision of Dr. William G. Woodin, clinical associate professor of medicine, and Dr. Paul F. Wehrle, assistant professor, Department of Pediatrics, on "The identification of sensitizing antibody by tissue culture technics—a simplified procedure for the clinical practice of allergy."

Shall we make a new rule of life from tonight: always try to be a little kinder than is necessary?—Sir James Matthew Barrie

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NECROLOGY

James Bernstein, M.D., of Brooklyn, died on June 28 at his home at the age of eighty-four. Dr. Bernstein graduated in 1898 from Eclectic Medical Institute of New York, Rochester, and Long Island College Hospital Medical School in 1911. He was a former representative in Europe of the Hebrew Sheltering and Immigrant Aid Society and during World War II was European director of HIAS (now United HIAS Service). He was a member of the Paris Post No. 1 of the American Legion and a founder of the Maimonides Hospital in Brooklyn.

Alphons Scheibe, M.D., of New York City, died on June 7 while on vacation in Jerusalem at the age of fifty-nine. Dr. Scheibe received his medical degree in 1924 from the University of Munich. During World War II he served four years as an officer with the Army Medical Corps. Dr. Scheibe was a Diplomate of the American Board of Psychiatry (Psychiatry) and a member of the American Psychiatric Association, the New York County Medical Society and the Medical Society of the State of New York.

Millard Moon Slocum, M.D., of Utica, died on June 22 at his home at the age of eighty-seven. Dr. Slocum graduated in 1895 from Long Island College Hospital Medical School. For many years he was the head of the medical staff of St. Joseph's Hospital, Far Rockaway, and was a cofounder of the Slocum-Dickson Medical Group in Utica, as well an honorary member of the staff of St. Elizabeth's Hospital. Dr. Slocum was a member of the Utica Academy of Medicine, the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William James Swart, M.D., of Schenectady, died on April 6 at the age of eighty-six. Dr. Swart graduated in 1898 from Albany Medical College. He was a member of the Schenectady County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Need for Hospital Facilities and Physicians

Can the average American be sure of adequate medical care when he's ill? More hospital facilities and physicians are required to help take care of our health needs, according to a recent issue of *Patterns of Disease,* prepared by Parke, Davis & Company for the medical profession.

On a national basis, close to 70 per cent more hospital beds than those presently available are needed, according to government health authorities. Currently the number of hospital beds in the U.S. per 1,000 persons averages 7.8, but 5.3 additional beds are needed "to bring the number available to the ratio prescribed in the Public Health Service Act." In nursing homes, close to 3 times as many beds are required to meet the prescribed ratio.

Of beds needed, *Patterns* adds, about 42 per cent are earmarked for mental hospitals, about 16 per cent for chronic disease hospitals, 37 per cent for general hospitals, and the remainder for tuberculosis hospitals.

In addition, our population growth will call for an increased supply of physicians. In 1955, there were approximately 132 physicians per 100,000 persons in this country. However, it is estimated that our population will increase to such an extent by 1975 that the physician-population ratio will drop below that for 1955. To maintain this ratio, the equivalent of 20 new medical schools is needed, *Patterns* states. "Only in this way can the number of new physicians entering practice keep pace with expected population growth between 1955 and 1975."

Facilities for medical care vary from state to state. In general, facilities are most adequate in the northeastern states. Washington, D.C., Delaware, and New York, respectively, have the greatest number of hospital beds available per 1,000 population and "of all states, New York has the most favorable ratio" of physicians to population—1 physician per 683 persons.

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MEDICAL MEETINGS

Second World Conference on Medical Education

The second world conference on medical education will be held in Chicago, August 29 through September 4. Medical educators from fifty countries will take part in the meeting which is being sponsored by the World Medical Association, the World Health Organization, the Council for International Organizations of Medical Sciences, and the International Association of Universities.

Association for the Advancement of Psychoanalysis

The Association for the Advancement of Psychoanalysis, Inc. will hold its regular meeting on Wednesday, September 30, at the New York Academy of Medicine, 8:30 P.M.

Harold Kelman, M.D., will present a paper entitled "Separateness and Togetherness." The discussants will be Jack L. Rubins, M.D., and Abe Pinsky, M.D.

American Association of Medical Assistants

The American Association of Medical Assistants will hold its third annual meeting October 16 through 18 at the Benjamin Franklin Hotel, Philadelphia. Medical assistants and physicians are invited to attend.

For information write to the American Association of Medical Assistants, 510 North Dearborn Street, Chicago 10, Illinois.

Fourth International Goiter Conference

The fourth international goiter conference will be held in London, England, July 5 through 9, 1960. Abstracts of American papers to be considered for presentation should be sent to J. E. Rall, M.D., National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda 14, Maryland. All abstracts must be received by Dr. Rall by December 1, 1959. They should not exceed 400 words and should be submitted in quintuplicate.

Presentation of papers will be limited to fifteen minutes. A copy of the final paper must be sent to the London secretary, Selwyn Taylor, M.D., 3 Roedean Crescent, Roehampton, London, S.W. 3, England, two weeks prior to the meeting.

For further information write to John C. McClintock, M.D., secretary, American Goiter Association, 149$^1/_2$ Washington Avenue, Albany 10, New York.

BOOKS REVIEWED

Treatment of Cancer and Allied Diseases. Second edition, volume II. Tumors of the Nervous System. By George T. Pack, M.D., and Irving M. Ariel, M.D. Octavo of 316 pages, illustrated. New York, Paul B. Hoeber, Inc., 1959. Cloth, $15.

In this edition the subject matter has been greatly expanded and revised to include current nomenclature and methods of diagnosis and treatment.

Following an introductory chapter concerning the classification of neoplasms of the nervous system, the early chapters deal with methods of diagnosis, anesthesia, preoperative and postoperative care, and general considerations of irradiation. The remaining major part of the book deals with specific neoplasms of the nervous system. The last two chapters take up the relief of pain due to cancer. The book, although covering much material, is concise, well written, and profusely illustrated with excellent photographs, drawings, and diagrams.

The confusion in nomenclature of neoplasms of the central nervous system has been somewhat clarified in recent years by classifying them on their histogenesis. While presenting such a classification in the first chapter, it is perhaps unfortunate that the editors did not adhere more closely throughout the volume to this simplified terminology.—Philip G. Cabaud

Lipidoses. Diseases of the Intracellular Lipid Metabolism. Third revised and enlarged edition. By Siegfried J. Thannhauser, M.D. Octavo of 600 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $19.75.

This third edition remains the standard text for the lipidoses. It has additions in familial, essential, hypercholesteremic xanthomatosis. The author asserts his belief that only in this disease is cholesterol the materia peccant and primarily responsible for xanthomatosis. The chapter on idiopathic and secondary hyperlipemia is extended. New adult cases of Niemann-Pick's disease are added. The tenor of Thannhauser's theme suggests that equanimity be maintained by the proponents of complete cholesterol conviction.—Bernard Seligman

Treatment of Breast Tumors. By Robert S. Pollack, M.D. Octavo of 147 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $6.00.

This is a well-written, interesting book which can be highly recommended to anyone interested in breast tumors.

There is a good section on the surgical technic of radical mastectomy as well as a discussion of the role of radiation, hormones, and palliative surgery.—Robert E. Gordon

The Esophagus. By Edward B. Benedict, M.D., and George L. Nardi, M.D. Octavo of 390 pages, illustrated. Boston, Little, Brown & Co., 1958. Cloth, $15.

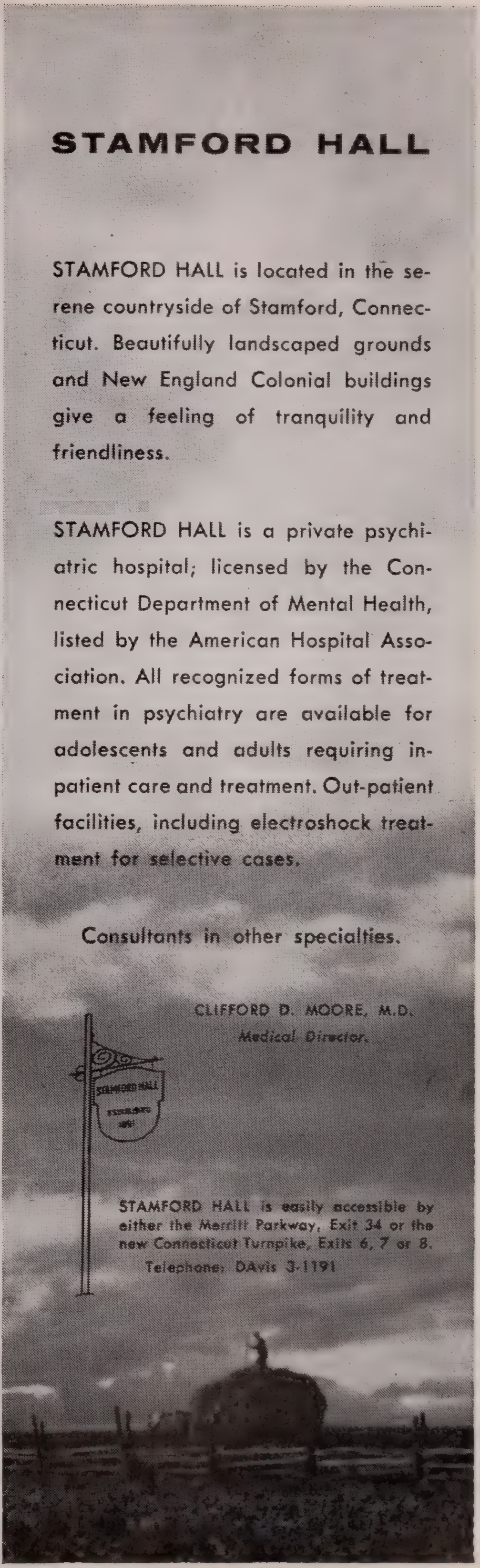
The authors authoritatively describe present diagnosis and management of diseases of the esophagus. This book is based both on the authors' experience at the Massachusetts General Hospital and Harvard Medical School as well as important contributions of others in this field.

A comprehensive discussion of the anatomy and physiology of the esophagus is presented. Newer radiographic and endoscopic diagnostic methods are amply discussed and well illustrated. A host of important clinical material is reviewed.

Several chapters are devoted to diagnosis, methods of treatment, and surgical principles in lesions of the esophagus. It is stressed that medical treatment should always be explored fully before surgery is considered. The advantages and disadvantages of present and former operations are thoroughly discussed.

This compact volume is highly recommended as a ready source of reference to our present knowledge

[Continued on page 2966]



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[Continued from page 2965]

of both diagnosis and management of esophageal diseases.—MILTON J. MATZNER.

The Doctor Business. By Richard Carter. Octavo of 283 pages. Garden City, New York, Doubleday & Co., 1958. Cloth, $4.00.

The clever, capable author of this indictment of the hierarchy of organized medicine and its minions concedes optimistically that it will be considered "controversial, if not offensive." Actually, many will charge outrageous distortion of isolated incidents and biased misinterpretation of out-of-context quotations, but unfortunately much of the much-raked evidence supporting his allegations can neither be denied nor defended.

Private medical practice is depicted as an anachronistic cul-de-sac, aloof or resistant to the mainstream highway of socioeconomic changes that have accompanied contemporary progress. Instead, closed-panel, consumer-controlled, or compulsory health insurance is advocated. Reportedly, "union officials see it as recommended reading." The physician too had best be made aware of the accusations stipulated in this convincing bill of particulars lest, lacking rebuttal, it become convicting.—MILTON B. SPIEGEL.

Etiology and Treatment of Leukemia. Proceedings of the First Louisiana Cancer Conference. By Walter J. Burdette, M.D. Octavo of 167 pages, illustrated. St. Louis, The C. V. Mosby Co., 1958. Cloth, $4.00.

This short volume is essentially a meeting of the minds in the field of leukemia. There are two parts: (*a*) The etiology and diagnosis, and (*b*) the treatment of leukemia.

It is interesting to see the marriage of the basic scientist to the clinician. And this is what makes this volume worth-while.—MAURICE MORRISON.

Clinical Obstetrics and Gynecology. Volume 1, No. 4. December. Operative Obstetrics, by J. Robert Willson, M.D., and Genital Cancer, by Daniel G. Morton, M.D. Octavo 282 pages, illustrated. New York, Paul B. Hoeber, 1958. A quarterly book series. Cloth, $18 per year.

This volume contains ten well-written but rather superficial articles on operative obstetrics and 13 similar but slightly more rewarding articles on gynecologic carcinoma.—ROBERT E. GORDON.

Physical Examination of the Surgical Patient. By J. Englebert Dunphy, M.D., and Thomas W. Botsford, M.D. Fourth edition. Octavo of 375 pages, illustrated. Philadelphia, W. B. Saunders Co., 1958. Cloth, $8.00.

The contents of this small book on physical diagnosis are the results of years of perceptive experience in general surgery. The text is terse but informative. There are many simple and apt illustrations.

The chapter on examination of the abdomen considers physical signs in the various surgical conditions commonly encountered and is an excellent simple manual on differential physical diagnosis of these entities. A great deal can be discovered by observation, palpation, and auscultation.

Many useful simple tests are described, which are at the command of the examining physician. The other chapters covering other phases of physical examination, cancer detection, examination of the extremities, and peripheral blood vessels, for example, are equally well presented and informative.

The book brings patient and doctor closer and somehow make the laboratory important as it is, recede, but not to anyone's disadvantage. It can serve as an interesting review and then later as a short but valuable reference text.—WILLIAM I. SHEINFELD

Nutrition and Atherosclerosis. By Louis N. Katz, M.D., Jeremiah Stamler, M.D., and Ruth Pick, M.D. Octavo of 146 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $5.00.

This is a brief review of the varied research done in this field. It gives due credit to all groups, institutions, and workers who contributed to the present knowledge leading to the basic facts in the treatment and prevention of this organic malady.

The authors appeal for a continued research and have outlined the direction in which such additional research and study could be maintained during the next decade.

The suggestions for the immediate application in handling the treatment and prevention is based upon the conclusions reached from these studies in the following importance.

1. The use of unsaturated fats instead of the saturated.
2. The importance of weight reduction in the obese, especially those indicating a high risk, according to statistical evaluations.
3. The application of the rules and moderation by hygiene, nutrition, and exercises, especially in the patients showing hypercholesterolemia, hypertension, renal damage, diabetes, hypothyroidism, and smoking.
4. The hormonal relationship of the estrogens and androgens in the metabolism of cholesterol and lipids is evaluated but the use of these modalities is wisely left to additional research and a better understanding.—MORRIS ANT

[Continued on page 2968]

SUDDENLY

"...after 30 years my headaches returned..."

When migraine that has beset a patient in her twenties suddenly returns in her fifties, a "little stroke" should be suspected.[1] In such migraine attacks, when ushered in by one or more "little strokes," pain may be minimal and the dominant feature may be spells of nausea, dizziness, depression, retching, fatigue, abdominal pain or transient blindness.[1] ■ Early detection of "little strokes" resulting from capillary fragility can gain vital therapeutic time to support capillary resistance and repair.[2]

1. Alvarez, W. C.: Geriatrics 13:647, 1958.
2. Gale, E. T., and Thewlis, M. W.: Geriatrics 8:80, 1953.

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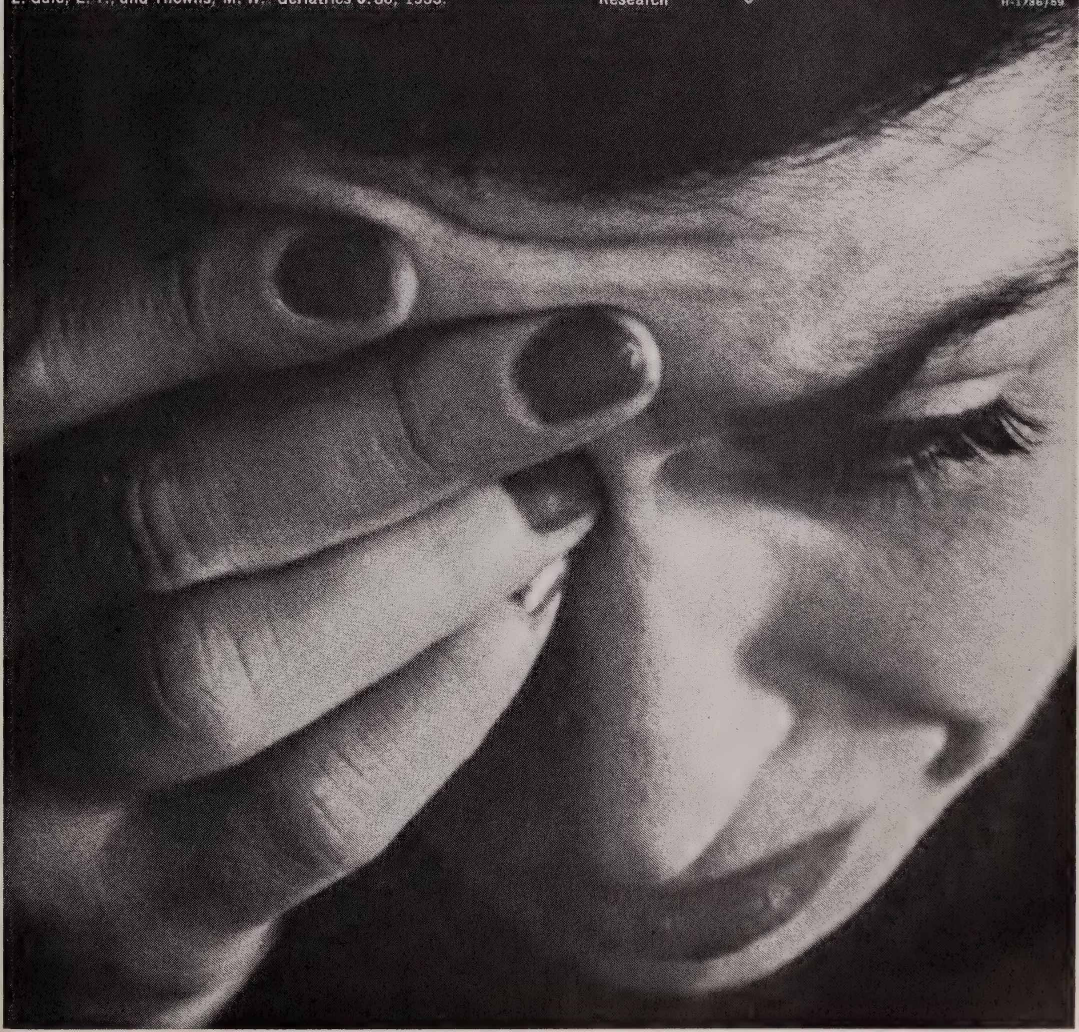

[Continued from page 2966]

Myasthenia Gravis. By Kermit E. Osserman, M.D. Octavo of 286 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $10.

This monograph presents a summary of current knowledge of the mysterious malady known as myasthenia gravis. From the initial description of the symptoms of muscular fatigue by Thomas Willis in 1672 to the introduction of ephedrine sulfate as a specific medication in 1930 little was known about the disease. From 1930 to the present time there has been an ever-increasing literature and clinical experience without, however, achieving definitive answers. For many years the author has been in charge of the Myasthenia Gravis Clinic at Mount Sinai Hospital, New York City. The rich clinical experience gained in treating more than 300 patients at this clinic has furnished a background against which an evaluation of the work of others gains significance for the reader.

The monograph contains excellent discussions of the history, physiology, pathophysiology, and clinical aspects of the treatment and management of myasthenia gravis. A discussion of the pathology of the disease by Mendelow presents much relatively new information. Other considerations, such as the relationships between myasthenia gravis and various endocrine glands and hormones, the obstetric significance, the differential diagnosis, and so forth are also included in the text.

A major contribution of the author and his coworkers was the introduction of tensilon chloride as a rapid diagnostic test for myasthenia gravis in 1952. The use of this drug is thoroughly discussed.

On the basis of his extensive experience, the author has outlined a clinical classification which should prove valuable in anticipating the natural course of the disease as well as the results of varying therapeutic regimes. He has proposed a division between a "pediatric" and an "adult" form of this disease. The pediatric group includes a "neonatal" form which is a transient myasthenic condition responding to anticholinesterase drugs and which appears shortly after birth in some infants born of myasthenic mothers. The "juvenile" form includes those individuals born of nonmyasthenic mothers, whose symptoms begin at any time during childhood, and who tend to be permanently myasthenic. The adult group of myasthenic patients contains five subdivisions broadly based on clinical syndromes. The course associated with these five subgroups shows significant differences both with respect to prognosis and to response to treatment, whether surgical or medical.

Although the incidence of this disease has been variously estimated to range from 1 per 2,000 population to 1 per 15,000 to 20,000 population it is probable that at least as many other patients with myasthenia gravis escape diagnosis. The many ways in which the disease can present itself makes it mandatory for the medical practitioner to maintain a high degree of diagnostic suspiciousness. This monograph provides the information necessary to sustain the suspiciousness. It also provides a welcome addition to the medical library of all medical specialties.—HAROLD H. GOLDBERG

Clinical Obstetrics and Gynecology. Volume 1, No. 3. Special Diagnostic Aids by C. Paul Hodgkinson, M.D., and Abnormal Uterine Bleeding by John I. Brewer, M.D. Octavo of 852 pages, illustrated. September, 1958. Quarterly book series. New York, Paul B. Hoeber. Cloth, $18 per year.

This book contains nothing new but attempts to evaluate the many available diagnostic aids.

There is one excellent section by Gusberg on Developmental Stages of Uterine Cancer which is well worth-while —ROBERT E. GORDON

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn 16, New York. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selections for review will be based on merit and interest to our readers.

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Source: Skilboe, B.: Am. J. Clin. Path. *30*:252, 1958.

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(1) Beckman, H.: Drugs: Their Nature, Action and Use, Philadelphia, W. B. Saunders Company, 1958, p. 425.
(2) Biliary Tract Diseases, M. Times *85*:1081, 1957.

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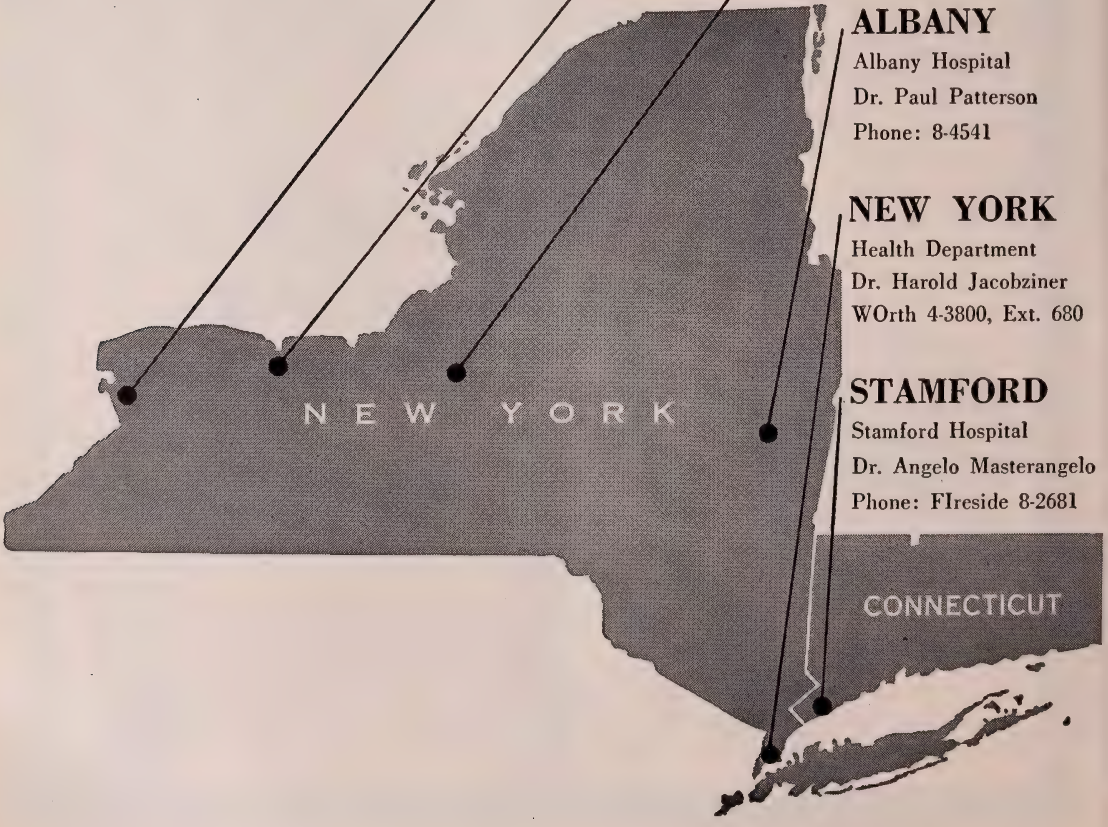

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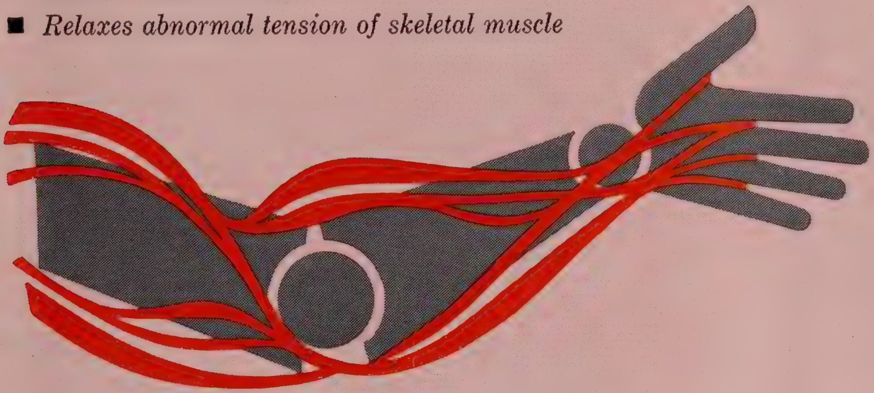

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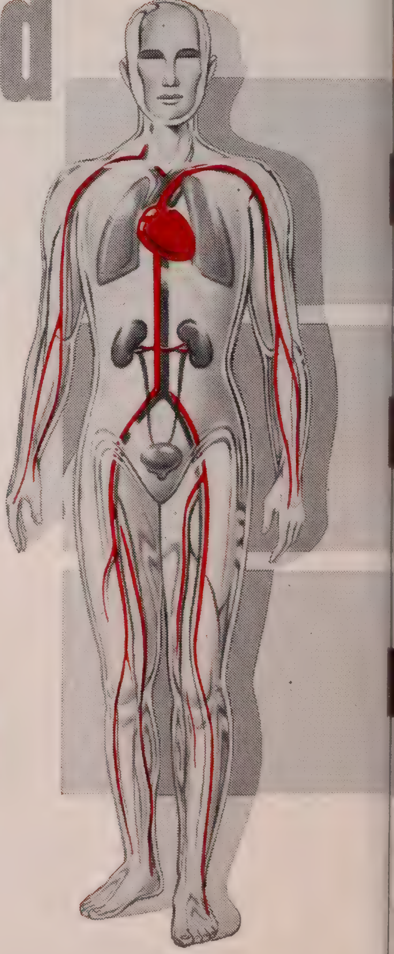

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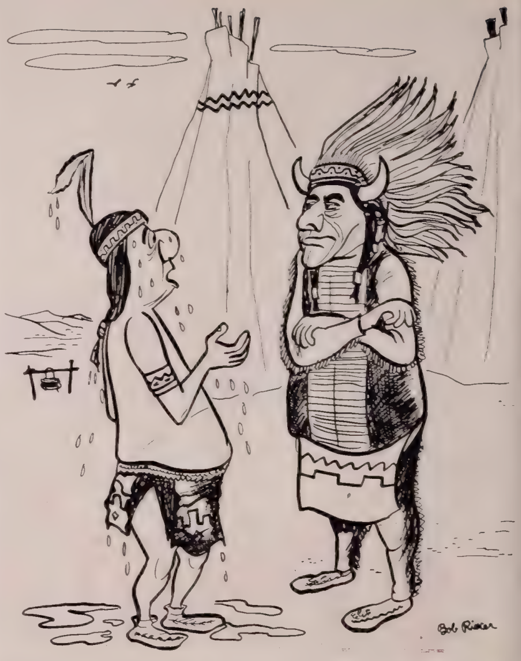

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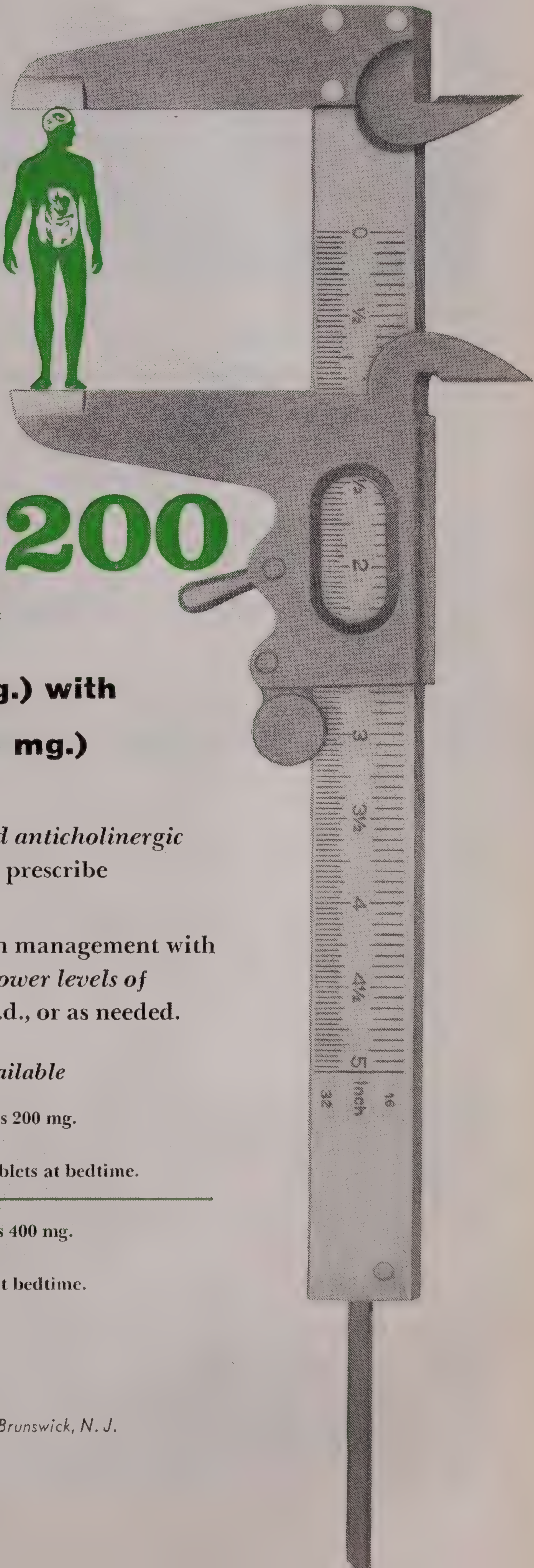

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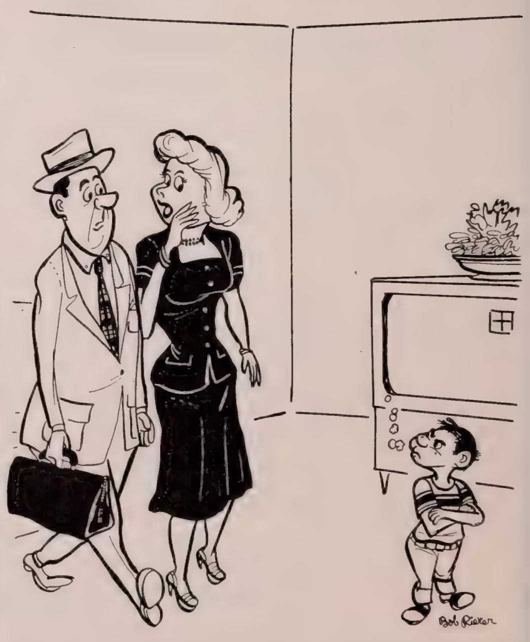

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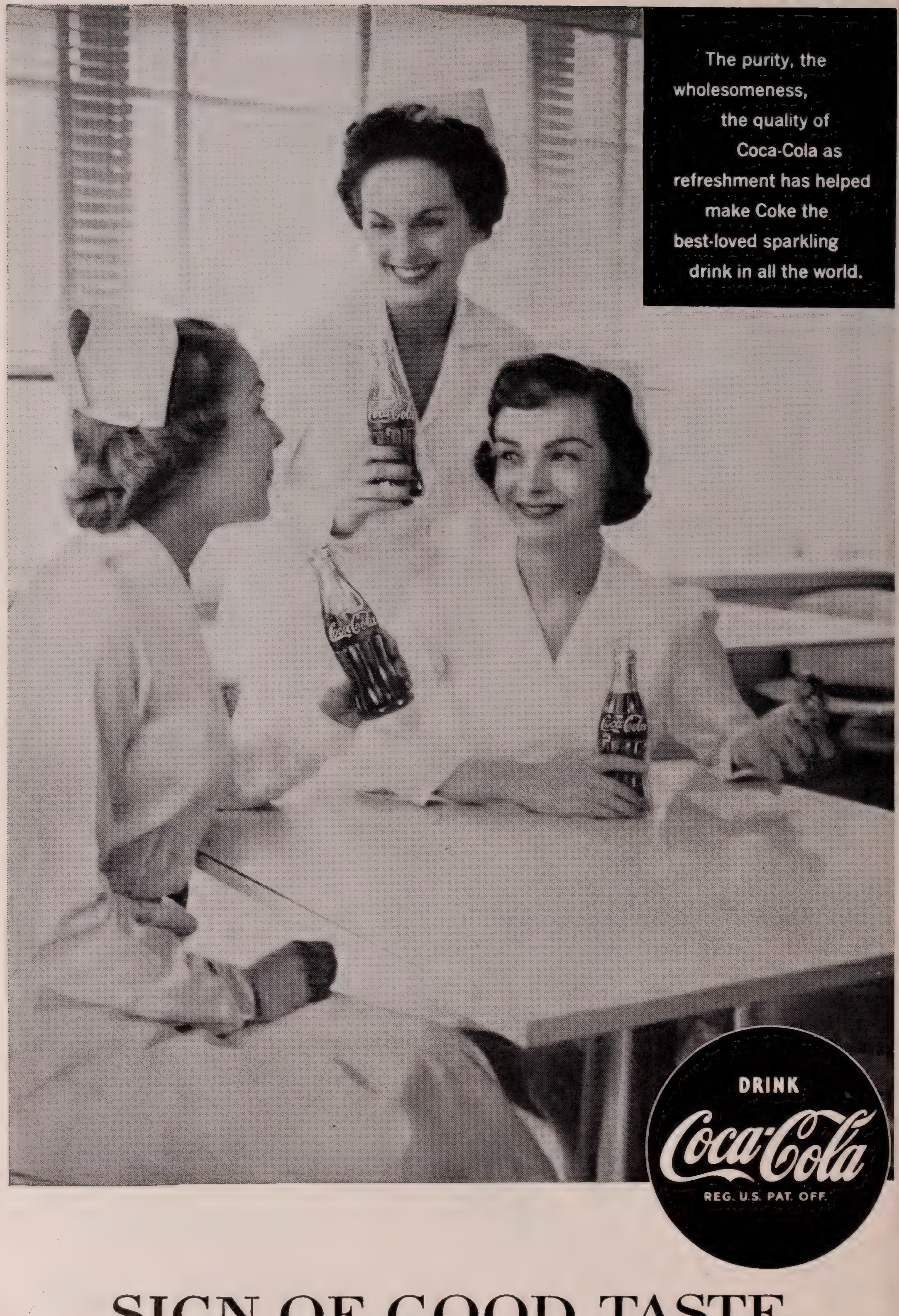
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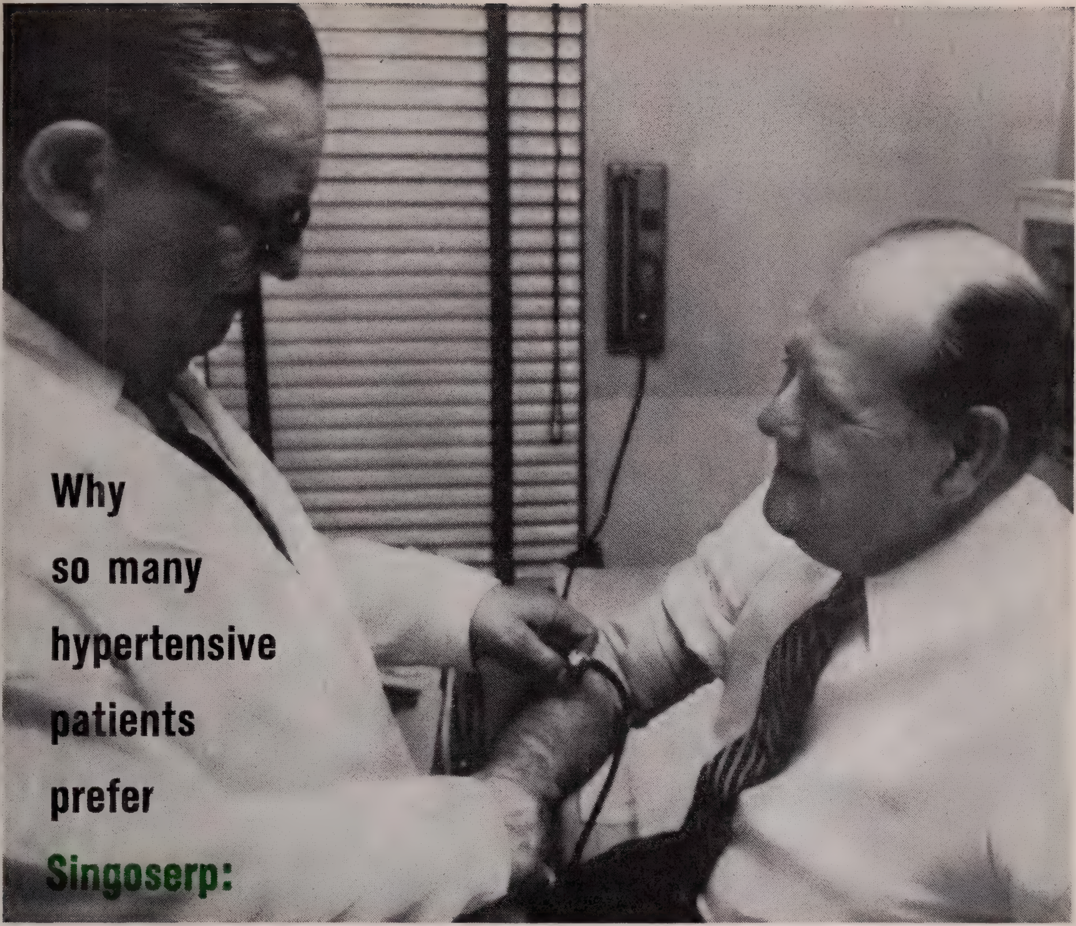

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*Herrmann, G. R., Vogelpohl, E. B., Hejtmancik, M. R., and Wright, J. C.: J.A.M.A. **169**:1609 (April 4) 1959.

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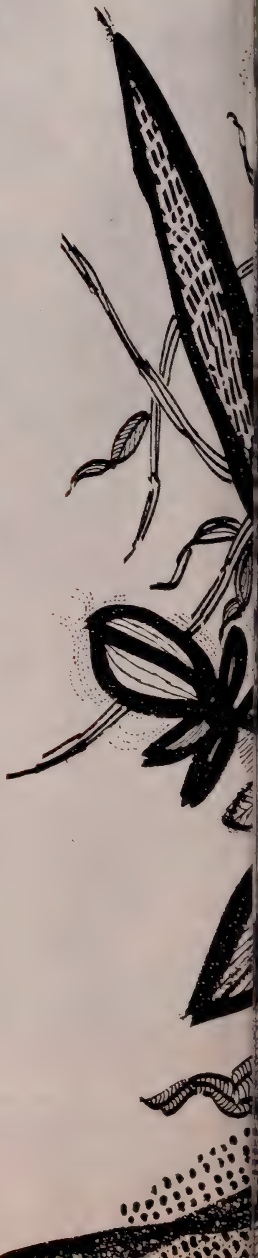

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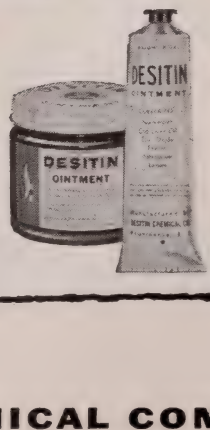

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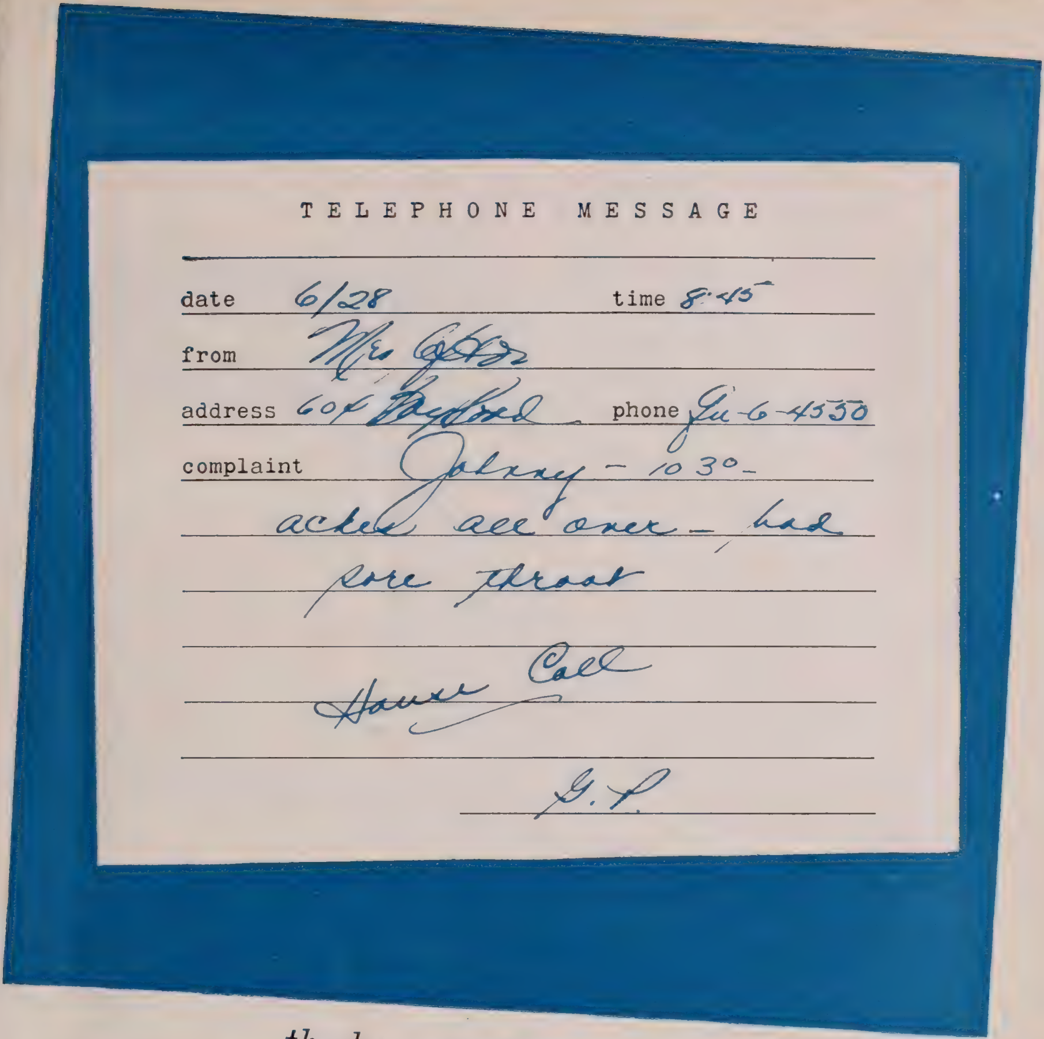

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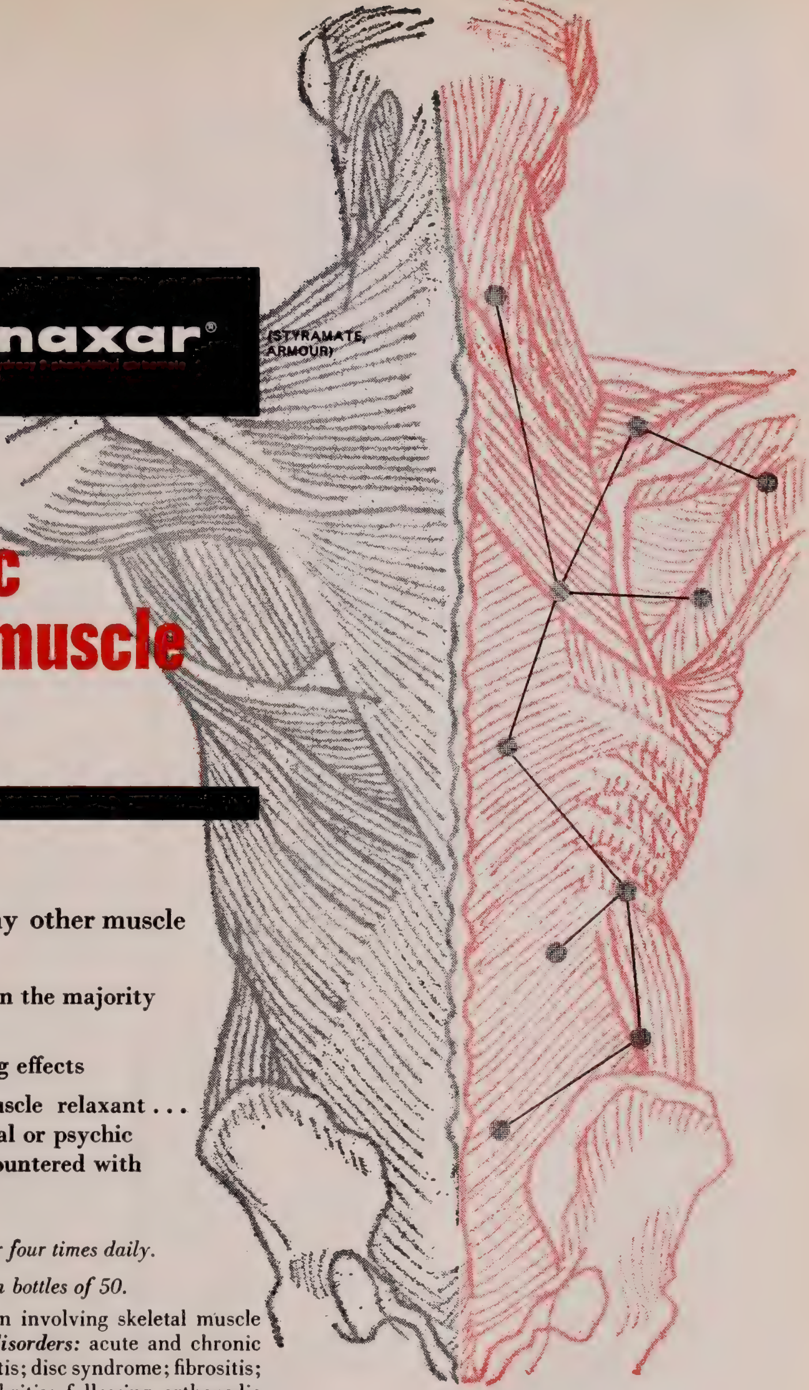

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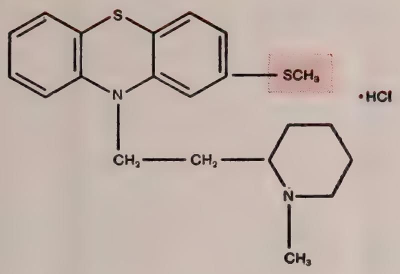

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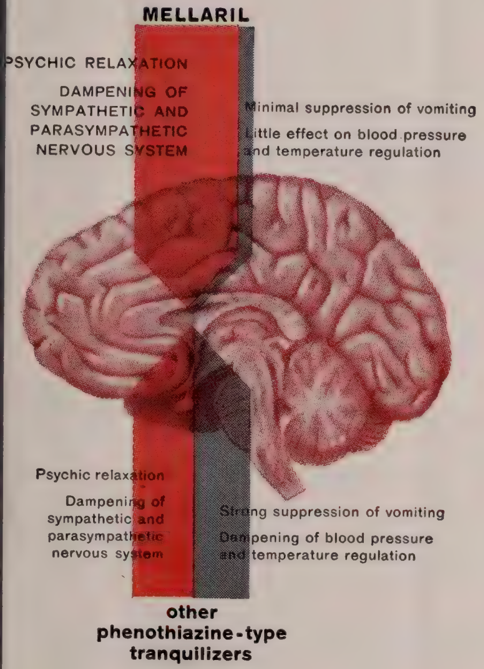
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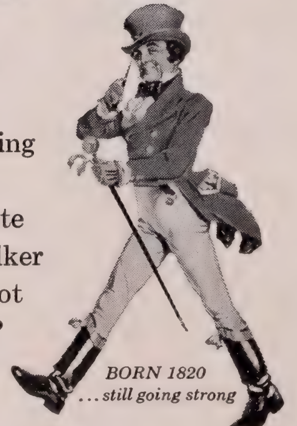
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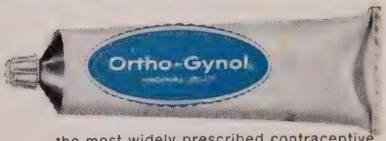

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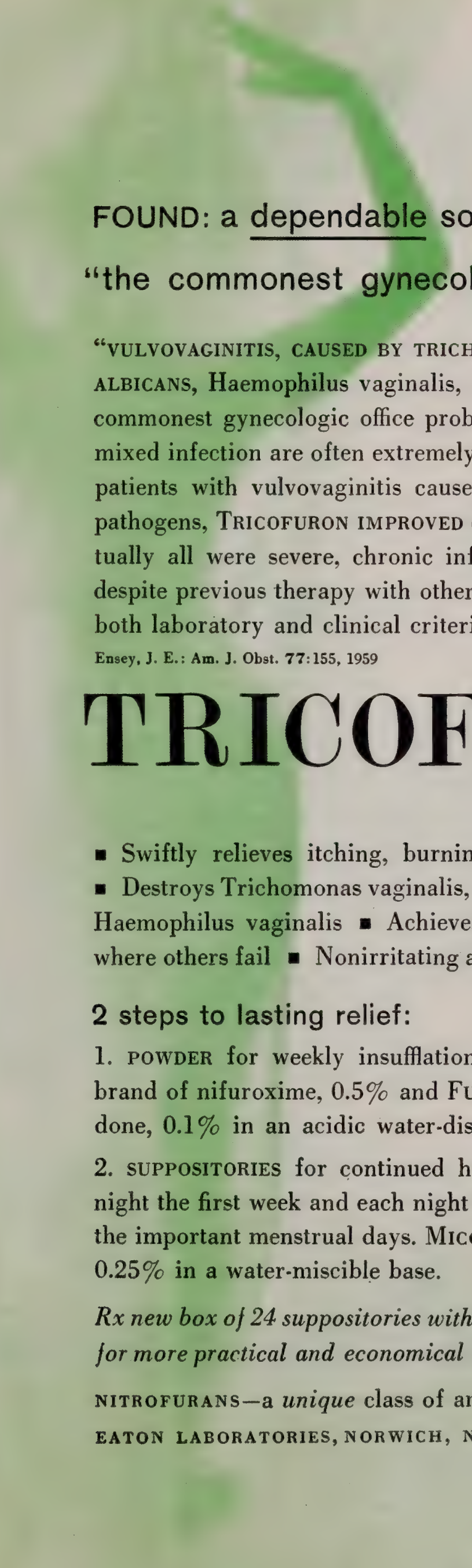

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References: 1. Finkelstein, M., et al.: J. Pharmacol. & Exper. Therap. 125:330 (April) 1959. 2. McHardy, G., et al.: Postgrad. Med., in press. 3. Winkelstein, A.: Amer. J. Gastroenterol., in press. 4. Finkelstein, M., et al.: Presented at Fall Meeting, Amer. Soc. Pharmacol. & Exper. Therap., 1958. 5. Leming, B.: Clin. Med. 6:423 (March) 1959.

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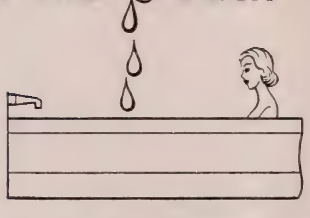

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1. Spoor, H. J.: N. Y. State J. Med., Oct. 15, 1958

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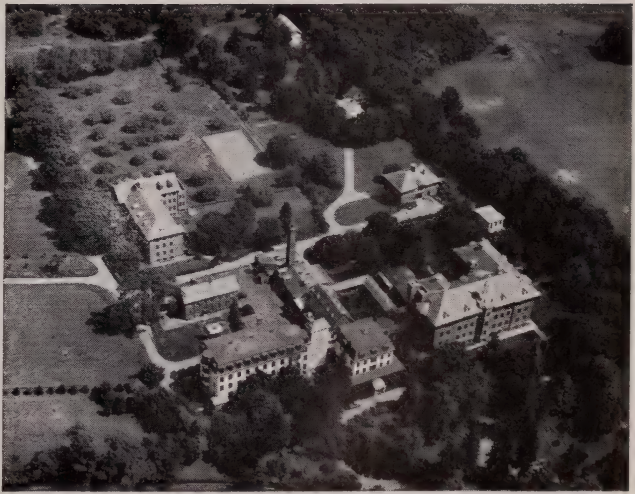

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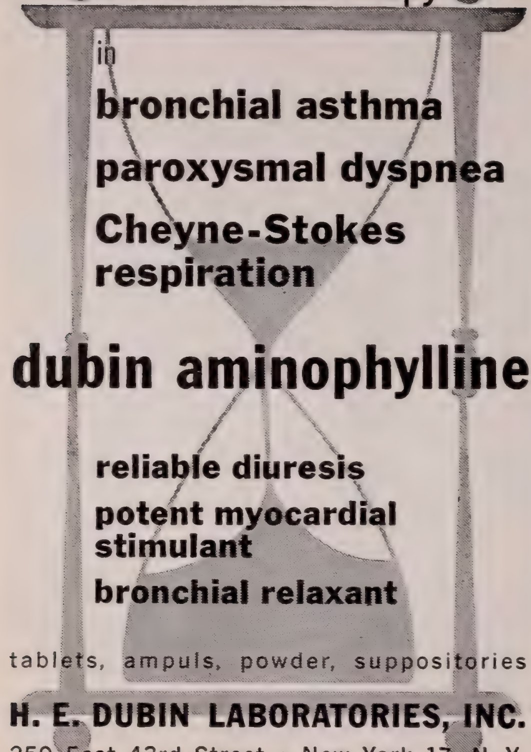

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NIAMID*

the mood brightener

Lifts the burden of depression... opens the way for a sunnier outlook

New areas of therapy

NIAMID is clinically effective in a broad range of depressive states, including: involutional melancholia senile depression, postpartum depression, reactiv depression, the depressive stage of manic-depressive disease, and schizophrenic depressive reaction.

A wide variety of phychoneurotic depressions seen i general practice also respond effectively to NIAMID Depression associated with the menopause and with postoperative states, and depression accompanyin chronic or incurable diseases such as gastrointestina and cardiovascular disorders, arthritis, and inoperable cancer, can now be treated successfully with NIAMID.

NIAMID is also strikingly effective for many complaints, mild or severe, vague or well defined, wher due to masked depression rather than to organi disease. This masked depression may take the form of guilt feelings, crying spells or sadness, difficulty i concentration, loss of energy or drive, insomnia, emotional fatigue, feelings of hopelessness or helplessness loss of interest in normal activity, listlessness, apprehension or agitation, and loss of appetite and weight.

While tranquilizers have had some measure of effectiveness in many of these areas, NIAMID now give the practicing physician a new, safe drug for th specific treatment of depression without the risk o increasing the depressive symptoms.

New safety

The outstanding safety of NIAMID in extensive clinical trials eliminates the hepatotoxic reactions observe with the first of the monoamine oxidase inhibitors These reactions have not been seen with NIAMID.

Acute and chronic toxicity studies show this distinctive freedom from toxicity. Moreover, during th extensive clinical trials of NIAMID by a large numbe of investigators, not only has no liver damage bee reported, but only in a very few isolated instance have hypotensive effects been seen.

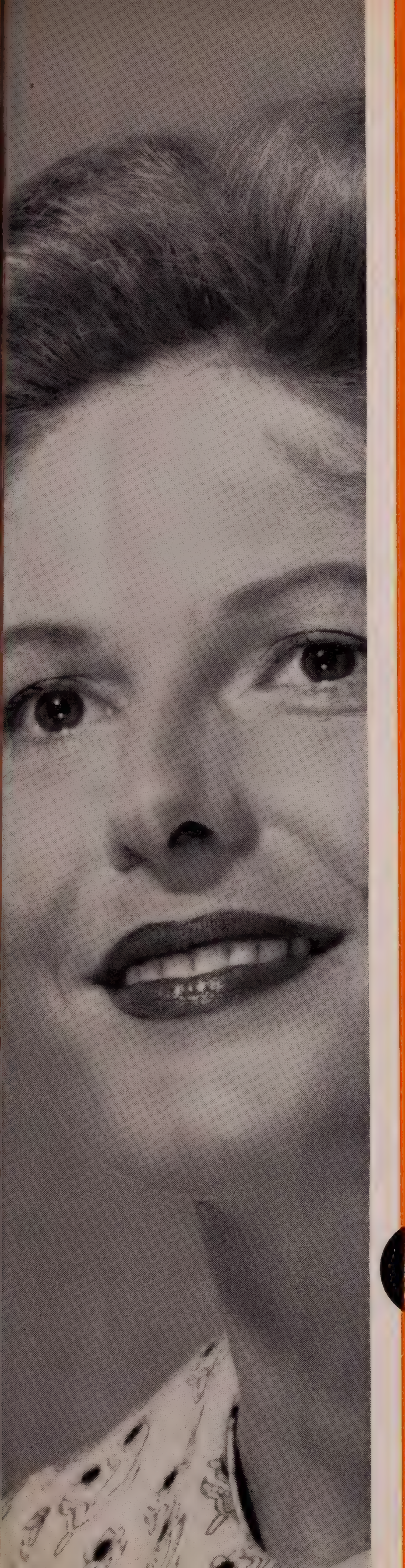
The absence of toxicity may be the result of th unique carboxamide group in the NIAMID molecule This structure may explain why NIAMID is excrete largely unchanged in the urine, with only insignificant quantities of potentially free hydrazine bein formed. Previously, where a monoamine oxidase inhibitor had been associated with hepatic toxicity there was some evidence that substantial quantitie of free hydrazine were formed in the body.

Background of NIAMID

A major advance in the treatment of mental depression came with a newer understanding of the influence of brain serotonin and norepinephrine on th mood. Levels of both these neurohormones are decreased in animals under experimental condition analogous to depression; relief of these model depressions is seen with a rise in the levels of both serotoni and norepinephrine.

A second advance came with the development of monoamine oxidase inhibitors, substances which raise th cerebral level of both serotonin and norepinephrine The first of the amine oxidase inhibitors raised th cerebral level of serotonin, but did not appear t raise norepinephrine levels proportionately.

*TRADEMARK FOR BRAND OF NIALAMIDE



Attention at Pfizer Research was then directed to a new drug that would overcome this disadvantage. NIAMID significantly raises the cerebral level of *both* serotonin and norepinephrine under experimental conditions.

The dramatic discovery of NIAMID now makes available an extremely effective, safe antidepressant for the successful treatment of a full range of depressive states.

Precautions

Side effects are most often minor and mild manifestations of central nervous system stimulation, modifiable by a reduction in dosage; these may take the form of restlessness, insomnia, headache, weakness, vertigo, dry mouth, and perspiration. Care should be taken when NIAMID is used with chlorothiazide compounds, since hypotensive effects have been noted in some patients receiving combined therapy—even though hypotension has rarely been noted with NIAMID alone. There has been no evidence of liver damage in patients on NIAMID; however, in patients who have any history of liver disease, the possibility of hepatic reactions should be kept in mind.

Dosage and Administration

Start with 75 mg. daily in single or divided doses. After a week or more, revise the daily dosage upward or downward, depending upon the response and tolerance, in steps of one or one-half 25 mg. tablet. Once satisfactory response has been attained, the dosage of NIAMID may be reduced gradually to the maintenance level.

The therapeutic action of NIAMID is gradual, not immediate. Many patients respond within a few days, others satisfactorily in 7 to 14 days. Some patients, particularly chronically depressed or regressed psychotics, may need substantially higher dosages (as much as 200 mg. daily has been used) and prolonged administration before responses are achieved.

Supply

NIAMID is available in: 25 mg., pink, scored tablets in bottles of 100; and 100 mg., orange, scored tablets in bottles of 100.

References

Complete bibliography and Professional Information Booklet are available on request.

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the mood brightener

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can be sucked and will dissolve like a lozenge

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Vitamin C	75 mg.
Vitamin B_1	3 mg.
Vitamin B_2	3 mg.
Vitamin B_6	2 mg.
Niacinamide	25 mg.
Calcium Pantothenate	3 mg.
Vitamin B_{12}	5 mcg.

Available in Rx-size bottles of 30 and 90.

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Fostex provides essential actions necessary in treating acne. It degreases, dries and peels, and degerms the skin while the patient washes.

Fostex is well-tolerated and easy to use. Instead of using soap, patients wash with Fostex Cream or Cake, following this simple routine two or four times a day—

> Wet face and other affected areas with warm water. Massage Fostex lather into the skin for 5 minutes. Rinse and dry.

FOSTEX CREAM . . . for therapeutic washing in the initial phase of oily acne treatment. In 4.5 oz. jars.

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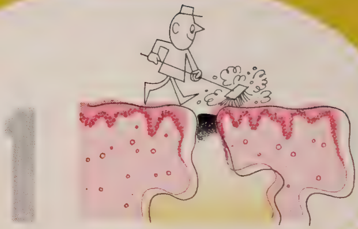
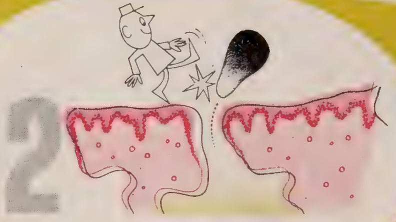
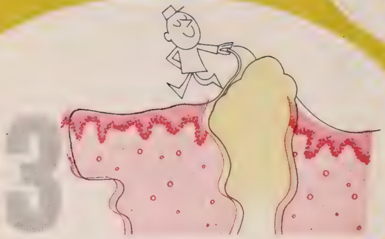
this is how Fostex works IN ACNE



Degreases the skin



Helps remove blackheads



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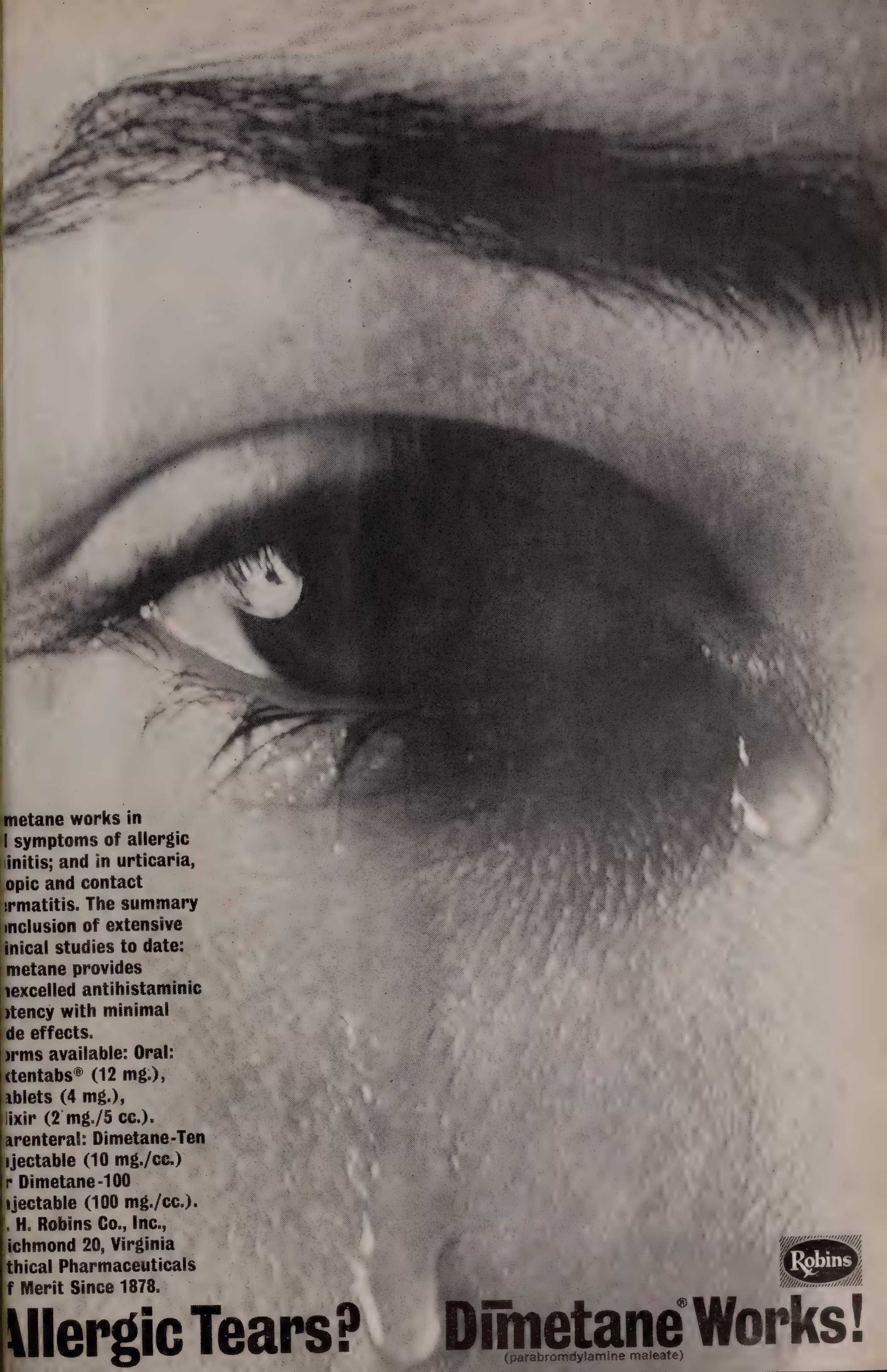

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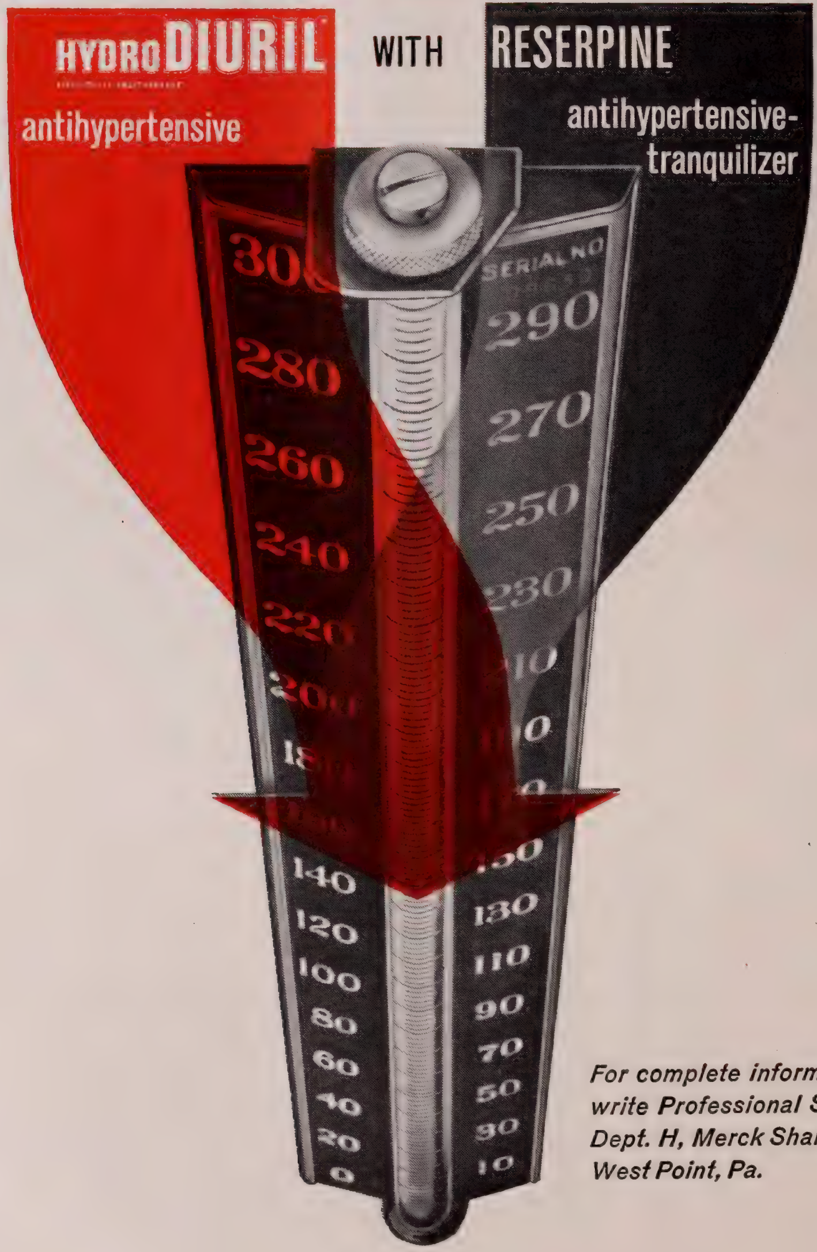
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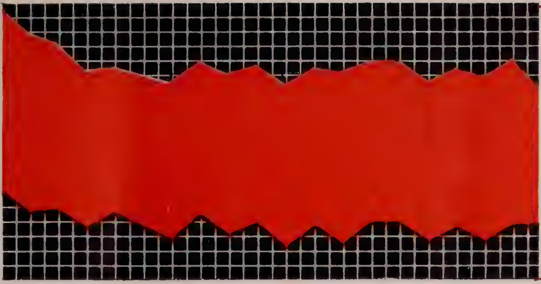

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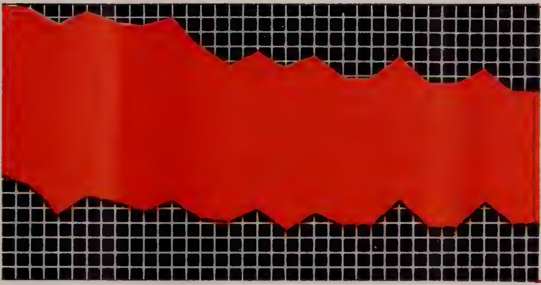

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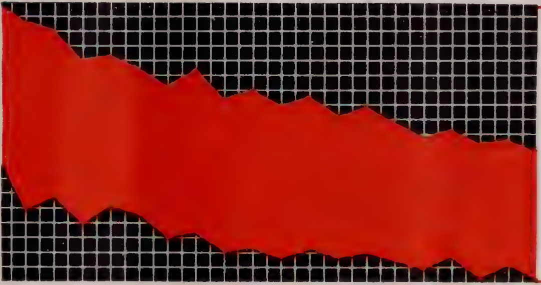

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25 mg. HYDRODIURIL, 0.125 mg. reserpine.
One tablet one to four times a day.

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50 mg. HYDRODIURIL, 0.125 mg. reserpine.
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their dosage must be cut in half when HYDROPRES is added.

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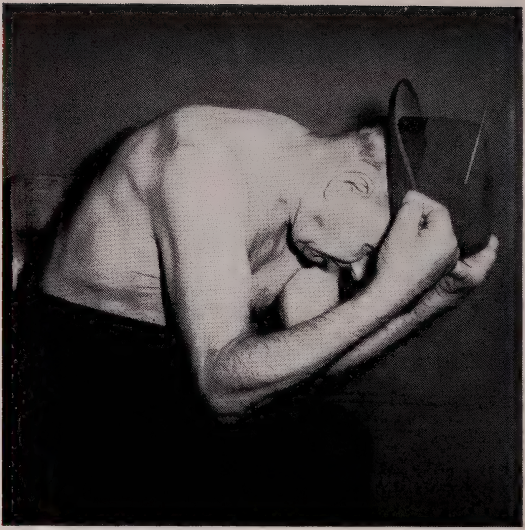

Patient M.S., 81, at the time of the first visit was in severe pain and very uncomfortable. Complained of swelling of wrists, legs and various joints; pain and stiffness in cervical area and lower spine; pain, swelling and limited motion in the fingers; slight ulnar deviation of the hand. M.S. demonstrates position necessary to put on his hat (motion was so restricted that he could not comb his hair).

Treatment and Result: After 36 hours of GAMMACORTEN therapy, M.S. had "complete relief." Joint swelling had decreased, pain was almost absent, range of motion had increased dramatically. At the end of the first week of GAMMACORTEN he was free of discomfort and able to return to his job as a porter. M.S. could put on his hat normally, could comb hair; joint function near-normal after first week.

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(dexamethasone CIBA)

- potent, effective corticosteroid
- profound anti-inflammatory activity
- minimal side effects

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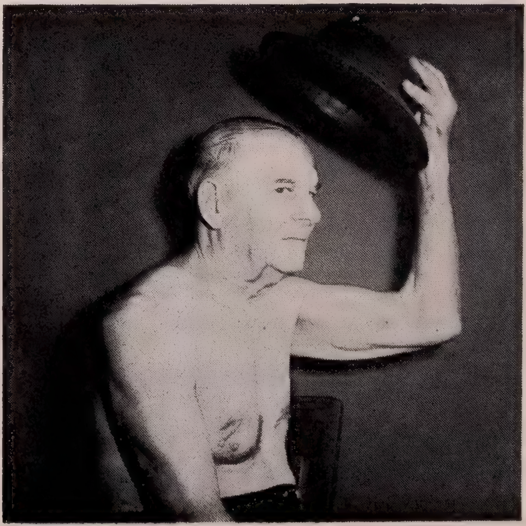
SUPPLIED: GAMMACORTEN Tablets, 0.75 mg. (pink, scored).



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Resume of Clinical Studies
Infants Satisfactorily Fed on Lactum or Dextri-Maltose®* Modified Formulas Essentially Similar to Lactum

No of Infants	Investigators	Comments
180 (newborn)	Hatfield, Simpson and Jackson[1]	All infants vigorous; made satisfactory progress.
57	Frost and Jackson[2]	Mean height and weight curves slightly above normal; normal or superior general development.
190 (sick & well infants)	Henrickson[3]	Satisfactory results. Average hospital stay: 5.5 days; average daily weight gain: 3 ounces.

*Maltose-dextrins formula modifier, Mead Johnson

1. Hatfield, M. A.; Simpson, R. A., and Jackson, R. L.: J. Pediat. 44: 32-45 (Jan.) 1954. 2. Frost, L. H., and Jackson, R. L J. Pediat. 39: 585-592 (Nov) 1951. 3. Henrickson, W. E.: GP 8: 51-56 (Oct.) 1953. 4. Litchfield, H. R.: Arch. Pediat. 61: 617 (Dec.) 1944.

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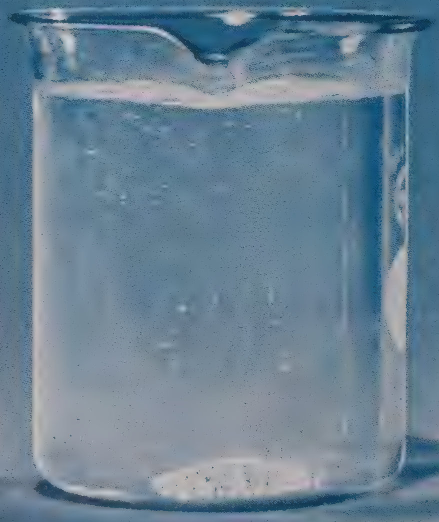
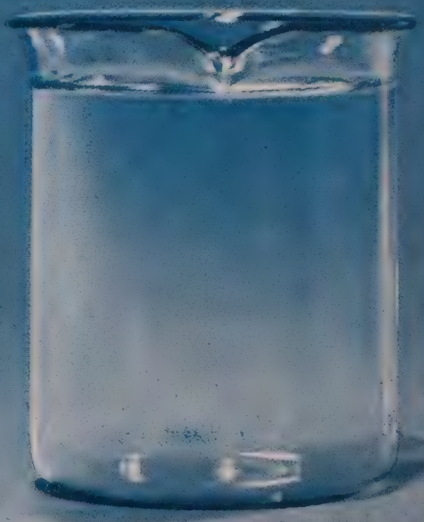
avoid the risk of insoluble, irritating aspirin particles

Chief among the drawbacks to aspirin usage is gastric intolerance. This ranges from mild upset and "heartburn" to severe hemorrhagic gastritis.[1-10] Studies performed in conjunction with gastrectomy[4,5] and gastroscopy[2] have shown insoluble aspirin particles firmly adherent to the gastric mucosa and imbedded between rugae. Reactions varying from mild hyperemia to erosive gastritis have been reported to occur in the areas immediately surrounding these adherent particles.[2,4,5] This is reported to be particularly true in patients with peptic ulcer.[4]

CALURIN is the freely soluble, stable calcium aspirin complex. Its high solubility forestalls gastric irritation or damage



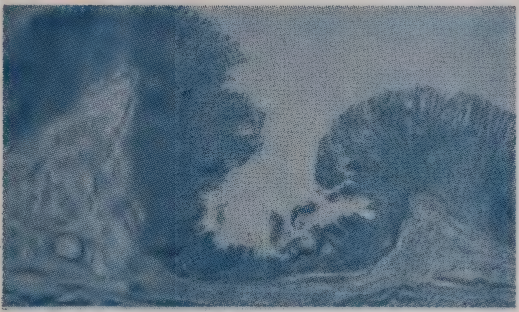
Regular aspirin crystals 24 hours after being mixed into water.



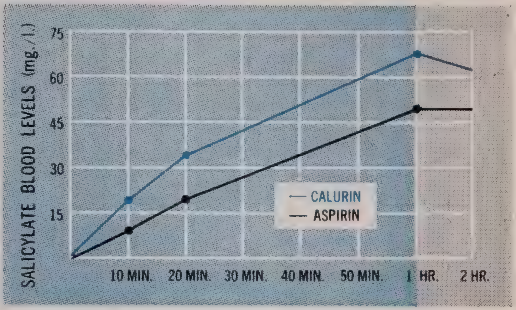
Calurin crystals in solution one minute after being mixed into water.

CALURIN*

STABLE SOLUBLE CALCIUM-ACETYLSALICYLATE-CARBAMIDE



Particle-induced ulceration — section through lesion found in gastrectomy specimen. An aspirin particle was found firmly imbedded in this undermined erosion. Such lesions may be associated with the relative insolubility of aspirin, which remains in particulate form after dispersion in gastric contents.



Calurin, being freely soluble, is promptly available for absorption into the systemic circulation. Salicylate blood levels in 12 subjects receiving both Calurin and plain aspirin were found to rise more than twice as high within ten minutes following Calurin. Also, these levels persisted higher for at least two hours.[11]

CALURIN is the aspirin of choice, especially when high-dosage, long-term therapy is indicated:

1 High solubility forestalls gastric irritation or damage. This advantage is of special importance in arthritis and other conditions requiring high-dosage, long-term therapy.

2 Produces high salicylate blood levels rapidly for prompt analgesic, anti-pyretic, anti-arthritic effect.

3 Sodium-free — for safer long-term therapy.

4 Flavored: can be chewed or dissolved in the mouth without water if desired — an advantage for patients requiring aspirin administration during the night and for pediatric patients.

Dosage: Each tablet of Calurin is equivalent to 300 mg. (5 gr.) of acetylsalicylic acid. For relief of pain and fever in adult patients, the usual dose of Calurin is 1 to 3 tablets every 4 hours, as needed; in arthritic states, 2 or 3 tablets 3 or 4 times daily; in rheumatic fever, 3 to 5 tablets 4 or 5 times daily. For children over 6 years, the usual dose is 1 tablet every 4 hours; for children 3 to 6 years, ½ tablet every 4 hours, as required. Not recommended for children under 3.

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a fast-acting antihistamine, Histadyl™, to provide relief usually within fifteen to thirty minutes.

a long-acting antihistamine, Pyronil®, to maintain relief for eight to twelve hours.

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Negligence Statute of Limitations

A recent Court of Appeals decision in a hospital case will most likely have a significant effect on malpractice actions insofar as the Statute of Limitations is concerned. In this case (*Gautieri* v. *New Rochelle Hospital Association*) it was claimed that the hospital, by its act of accepting a patient for a fee, impliedly agreed to furnish proper and competent help, but it failed to do so. The claim was couched in terms of breach of contract because the three-year negligence Statute of Limitations had already expired and it was hoped that the six-year Statute of Limitations applicable to contract actions would be held to apply. The Court of Appeals, however, affirmed the determination of the Appellate Division that when the so-called implied contractual duty is the same as the common law duty (in this case, the duty to use care) the action is governed by the negligence Statute of Limitations.

In malpractice actions, plaintiffs who have failed to start a suit in the two-year period within which such suits must be brought have frequently attempted to plead their claim so as to gain the benefit of the six-year breach of contract limitation period. The Court of Appeals had already held that a specific contract in which it was alleged that the doctor agreed to cure a person or achieve some special result was properly a cause of action for breach of contract, and the plaintiff, therefore, had six years in which to sue (*Robins* v. *Finestone*, 308 N.Y. 543). However, there had been no Court of Appeals decisions on the breach of a so-called implied contract concerning the physician-patient relationship.

The implied contract is not any specific agreement between two parties but rather an agreement which is implied by law from the relationship between the parties. That is, the fact that a physician undertook to treat a patient for a fee could lead to the implication that the physician thereby agreed to do certain things, and if he failed to do them he could be sued for a period of six years on the basis of a breach of contract. Thus in another case (*Conklin* v. *Draper*, 229 App. Div. 227) it was held that a plaintiff had six years to sue a doctor for failing to remove an instrument from his body because the physician thereby breached a contractual obligation to remove all instruments in the course of the operation; the contract of course, was implied from the physician-patient relationship.

The practical effect of a decision as in the Conklin case is to permit a patient to sue a doctor for malpractice after the two-year period has expired merely by calling his action something else, that is, breach of an implied contract. A plaintiff would assuredly avail himself of this opportunity even though his damages in a contract action would be limited to out-of-pocket expenses and he could not be compensated for pain and suffering.

In the Gautieri case it was argued that the plaintiff should not be allowed to obtain the benefit of the six-year Statute because the so-called contractual duty to use care was the same duty which the hospital had had initially in the absence of any contract, expressed or implied. The opinion of the Appellate Division supported this contention by saying that "since the common-law duty and the implied contractual obligation. . . are one and the same, the suit, however labeled, is one in negligence, at least for time limitation purposes."

It is apparent that the same rule would apply to the physician-patient relationship. Thus a physician's alleged failure to use care in treating a patient would not be considered a breach of contract but rather an act of malpractice insofar as the time limitation period is concerned because the physician always has a duty to use care in treating a patient and the failure to do so would render him liable for malpractice.

The Gautieri case may well sound the death knell for the malpractice action which is brought under the guise of an action on an implied contract to avoid the two-year malpractice Statute of Limitations.

The Court's decision is eminently fair. Any other result would make a mockery out of the clause of the Statute of Limitations which is specifically applicable to malpractice cases.

Foreign Physicians Stretch E.C.F.M.G. Facilities

According to a recent release of information by the Education Council for Foreign Medical Graduates sponsored by the American Medical Association, the American Hospital Association, the Association of American Medical Colleges, and the Federation of State Medical Boards of the United States, the number of foreign-trained physicians taking the qualifying examination of the Education Council for Foreign Medical Graduates is rapidly increasing.

Only 298 took the first examination in March, 1958; 844 in September, 1958; 1,772 in February, 1959; and more than a thousand have already registered for the next examination September 22, 1959.

The Council, with offices in Evanston, Illinois, aids graduates of foreign medical schools in establishing their qualifications for assuming internships or residencies in United States hospitals.

According to Dr. Dean F. Smiley, executive director of the Council, the number of centers where foreign medical graduates can take the examination overseas has increased greatly. There were no foreign centers for the first examination, 30 for the second, and 44 for the third. For the next examination there will be 15 centers in Latin America, 14 in the Far East, 7 in the Near and Middle East, 13 in Europe, and 1 in Africa. In addition, examinations are held at various places in the United States.

Many foreign-trained physicians without examination centers set up in their own country have been willing to fly to examination centers set up in neighboring countries, Dr. Smiley said. Since a number of Polish physicians have requested it, plans are being made with the hope of setting up an examination center in Poland.

In the first examination, 51 per cent of the 298 candidates won standard E.C.F.M.G. certificates based on a score of 75 per cent or better. No temporary certificates were issued since the language problem was not then recognized to be as great as subsequent examinations have proved it to be.

In the second examination, 49.5 per cent of the 844 candidates won standard E.C.F.M.G. certificates. Another 26.8 per cent won temporary two-year certificates based on scores of 70 to 74 per cent.

In the third examination, 43.4 per cent of the 1,772 candidates won standard E.C.F.M.G. certificates. Another 25.5 per cent won temporary two-year certificates.

There was considerable evidence that inadequate command of English played a major role in producing failure in the qualification examination in some of the foreign examination centers, Dr. Smiley said. There was one center in which three out of five candidates either failed or did very poorly on the E.C.F.M.G. English test, and there were two centers where approximately half of the candidates either failed or did very poorly on the English test. In the whole group of 494 physicians taking the examination in foreign centers, 45 showed serious inadequacy in their command of English. In contrast, among the 1,278 foreign-trained physicians taking the English test in examining centers in the United States none failed and only three did poorly.

This information should be of interest to our members since presumably a large number of other foreign physicians qualifying under this program may be expected to turn up eventually as interns or residents in the hospitals of this State. Since those with an inadequate command of English will presumably not qualify at least one major difficulty previously encountered will be eliminated or at least ameliorated. The improvement should be a source of satisfaction to all concerned.

Progress on the Staphylococcal Front

Concern over staphylococcal infections in hospital populations runs high and rightly so. The responsible bacteria pose the twofold threat of high antibiotic resistance and of the ever-present danger of assuming epidemic proportions.

New antibiotics and chemical changes in old ones along with improved understanding of the mechanism of host resistance and ways to reinforce this will ultimately control the first threat.

While we await the break-through here the second threat can be attacked by the use of tried and trusted preventive technics. Each hospital should have an infection committee with full authority to study all phases of hospital operation including importantly the nonprofessional. The committee should be empowered to see that changes are made where necessary.

Floor care is one important point of attack. Estimates of settling velocities of bacteria-laden particles made by comparing volume air cultures and fallout plates in wards, operating rooms, and laundries show the predominance of rapidly settling material and indicate that the bacteria are dust-associated rather than droplet nuclei. Conventional methods of mop and pail floor care succeed only in painting the floor with bacteria. However wet-flooding of floors with disinfectant-detergent, wet dusting, and vacuum cleaning reduce bacteria counts to below 10 organisms per square centimeter.

New information in regard to carriers shows that while coagulase positive hemolytic staphylococci are present in the noses of 40 to 60 per cent of healthy hospital personnel only a small percentage carry the phage type 80/81 which is the troublemaker and is responsible for 70 per cent of the infections. When these individuals have a clinical infection they have a 70 per cent carrier rate of 80/81 organisms and also show a high percentage of the skin carrier state. Here is a problem in screening for the committee.

Indiscriminate use of the dressing cart is a break in technic and seldom occurs. A nurse trained in rigid aseptic technic assigned to the dressing cart and going with it at all times has proved effective.

It goes without saying that antiseptic soap is no substitute for the adequately timed scrub.

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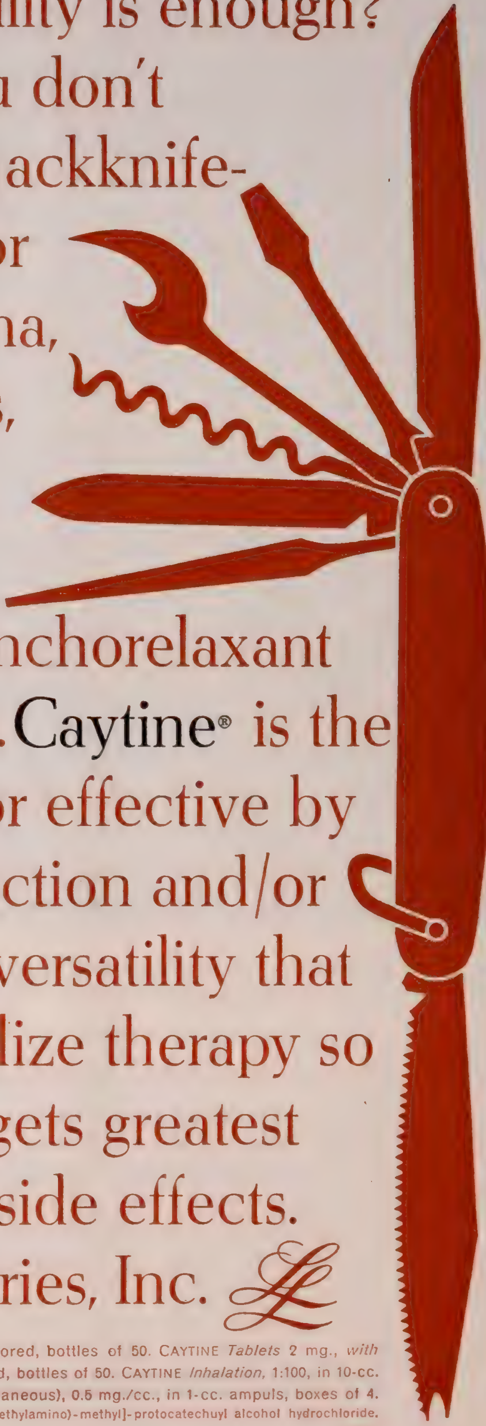

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Measurement of Gonadal Radiations During Treatment for Tinea Capitis

ANTHONY C. CIPOLLARO, M.D., AND ANDREW KALLOS, M.D., NEW YORK CITY, AND JOHN P. RUPPE, JR., M.D., RIVERHEAD, NEW YORK

(From the Department of Dermatology and Syphilology, New York Polyclinic Medical School and Hospital)

This is the third time we have appeared before this section to present a paper on ringworm of the scalp. The first time was on May 10, 1944.[1] The next time was on May 12, 1950.[2] And today we shall discuss tinea capitis once more. In both previous presentations we advocated the use of roentgen rays for treating tinea capitis. We also urged segregation of infected children from those not infected. We still adhere to the principle that tinea capitis in epidemic proportion should be the concern of the local health authorities.

Epidemics of tinea capitis exist in various parts of the world. We do not know exactly how many cases of ringworm of the scalp there are in existence throughout the world because this disease is not necessarily reported by most health authorities. Yet it is a disabling disease and it is costly to the community. For decades France, Russia, and some central and southern European countries were known to have epidemics of scalp ringworm. The problem was so severe in some European cities that it was necessary to set up special schools for children with infected scalps. The first major epidemic of ringworm of the scalp in the United States was reported from New York City by Lewis *et al.* in 1944.[1] Since then reports have filtered in from various American cities reporting large numbers of cases of tinea capitis. During the past year (1957) there were enough cases in Washington, D.C., to merit headlines and considerable space in the daily press of that city. Even now in and around New York City there are outbreaks of large numbers of cases of ringworm of the scalp in places where children congregate or in which the children live under substandard health conditions. Casper and Malone[3] reported a series of 40 cases on the Pediatric Division of Sea View Hospital, and Morse[4] in a personal communication stated that there are many cases of tinea capitis at the Shelter for Children. One of us has seen numerous cases amongst the offspring of farmers in Suffolk County, New York. MacGregor[5] of Hamilton, New Zealand, wrote to one of us in 1949 and stated that there was a large outbreak of tinea capitis in New Zealand. The outbreak of ringworm of the scalp in 1943 in New York City was so extensive that the editor of the *Journal of the American Medical Association* took cognizance of this fact by writing an editorial[6] about it. In the San Francisco-Santa Rosa area of California there were sufficient cases treated to warrant an article by Crossland.[7] Pipkin[8] in 1952 brought to the attention of derma-

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tologists the great incidence of tinea capitis in adults caused by the crateriform group of Trichophyton. Dozens of other reports emanating from various sections and cities in the United States confirm that tinea capitis is still rampant.

More spectacular are the large numbers of cases of ringworm of the scalp reported from the Near East countries. Much of this information has reached the outside world through the World Health Organization of the United Nations. In a World Health Organization newsletter[9] is a report indicating that there are over 40,000 cases of ringworm of the scalp among Syrian children. Since March of 1955 about 30,000 children have been examined and about 7,000 were treated. In some villages in the northern part of Syria, every child is a victim of scalp ringworm. Mobile x-ray units are employed to cover remote rural areas. The work in Syria is now being carried out by Syrian personnel.

Even more startling is the fact that Raguet[10] estimated that there were over 500,000 active cases of ringworm of the scalp in Morocco in 1951. The overwhelming incidence of infected children necessitated the creation of classes in Moroccan schools for noninfected children so that they might be protected against infection. Levy-Lebhar[11] treated about 15,000 cases with roentgen rays in Morocco between 1947 and 1956. Reports indicate a high incidence of scalp ringworm in Algeria, Tunisia, and Egypt. Spain and Italy also report large numbers of cases. In Yugoslavia, by employing mobile units, cases are being cured through temporary depilation with x-rays.

It is regrettable that public health authorities throughout the world have not attacked this problem in realistic fashion. In New York City the health regulations permit infected children to mingle with those who are not infected in our public schools. We are opposed to this practice and advocate a return to regulations which existed ten years ago which required segregation of infected children until they are cured. The disease should be reportable and every elementary school child should be examined under the Wood's light by the school nurse at the beginning of each school year. We believe that treatment centers should be set up and manned by properly trained personnel and should include treatment with roentgen rays. It is essential that we be as vigilant in the United States to prevent the extensive spread of this horrible, disfiguring, and contagious disease as has been the case in other parts of the world.

The fact that the major epidemic in New York City which occurred in 1943 was quickly controlled is testimony to the contention that epidemics of ringworm of the scalp can best be controlled or reduced to the vanishing point by proper diagnostic and therapeutic procedures. We believe that ringworm of the scalp can be quickly and safely eradicated if those in a position of responsibility will face the problem realistically and make available treatment by x-ray epilation and by chemotherapy.

Treatment

It is not the purpose of this paper to describe in detail the various methods of treating scalp ringworm. That has been adequately covered in many previous publications. However, the type of treatment varies with the infecting organism. All patients who have clinical evidence of tinea capitis should be examined under the Wood's light and the hair stumps from infected areas should be cultured. Infection with Microsporon canis yields readily to simple topical remedies whereas such organisms as Trichophyton tonsurans, Microsporon audouini, and Achorion schonleini are extremely resistant and are best treated with roentgen rays. The results obtained by using topical remedies, injecting or ingesting hormones, waiting for puberty to develop, or waiting for natural immunologic forces to take over are inconsistent, poor, and unpredictable. Waiting for ringworm of the scalp to cure itself or to burn itself out is as illogical as to deny penicillin to a patient with a streptococcemia. Our experience leads us to the belief that thallium salts are so dangerous that they may cause death. Such a toxic drug is not recommended under any condition. The fact that there are dozens of different fungicides for topical application is proof in itself of their inadequacy. Mycostatin can be considered a specific remedy for infections with Candida albicans of the glabrous skin. However, the scalp is secondarily involved only in those cases where this infection is overwhelming and generalized. Soon there will become available for oral administration an antibiotic (griseofulvin) for mycotic infections of the skin.

Cure rates of M. audouini infections of the scalp treated with topical remedies have varied widely. Miller, Lowenfish, and Beattie[12] reported a cure rate of 10 per cent; Steves and Lynch,[13] 25 per cent; Shapiro and Rothman,[14] 27 per cent; Scully, Livingood, and Pillsbury,[15] 55 per cent; and Felsher,[16] 70 per cent. The treatment was prolonged in most cases. Felsher was unable to cure a single case in less than three months and took fourteen months to effect his cure rate of 70 per cent with an average treatment time of six and a quarter months in his series of 150 cases. Wilson[17] was able to cure some cases of tinea capitis by manual epilation alone. Hopkins *et al.*[18] studied the effects of manual epilation combined with topical remedies for the treatment of tinea capitis. About 60 per cent of the cases were cured in three months, but the remaining 40 per cent were treated for many more months. We hardly share their great enthusiasm for this procedure. Treating tinea capitis with topical remedies is not only time-consuming but it is also costly and affords greater opportunity for the dissemination of the infection among other children. Other serious drawbacks to these ineffectual methods are the psychologic and emotional impacts to both parents and children. It takes a very long time for some children to overcome the effects of being stigmatized by an unclean disease. The application of topical remedies are often painful and nerve-racking to both the patient and the parents. The procedure of manual epilation is not an easy one. It has to be carried out in a dark room under a fluorescent Wood's light. The child squirms and fusses because of the pain and the operator becomes impatient trying to obtain the necessary cooperation.

Swift cure of tinea capitis is the best barrier we have against the spread of infection from one person to another. Fragmentary statistics which are available including those from southern Europe, the Arab countries, and South America indicate that well over 200,000 cases of tinea capitis have been treated with roentgen rays. Some physicians have been hesitant to recommend x-rays for the treatment of scalp ringworm because of unfounded fears which have been enumerated by Crossland.[7] These include fear of permanent epilation, fear of brain damage, and fear of medico-legal complications. To these may be added the fear of genetic mutations.

It is our conviction that x-ray depilation is the treatment of choice in resistant tinea capitis unless griseofulvin is as effective as present reports indicate. Complications from x-ray therapy do not occur when the technic and other details of treatment are carefully carried out. The therapeutic results are often perfect. Thus Crossland reports a cure rate of 100 per cent. Over the years, our cure rate is 98 per cent, and cure is obtained in an average time of six weeks. Felsher[19] treated 925 cases with a cure rate of 98 per cent. Carrick,[20] Lewis,[21] Combes and Behrman,[22] and others have reported similarly good results using roentgen rays for the treatment of tinea capitis. Of all the cases which we have treated, we have never seen permanent or partial alopecia result; we have never seen any permanent changes in the color, quality, or quantity of hair; we have never seen any brain damage, genetic changes, or any other deleterious effects. Sometimes bad irreversible results are seen and they are generally caused by improper apparatus,

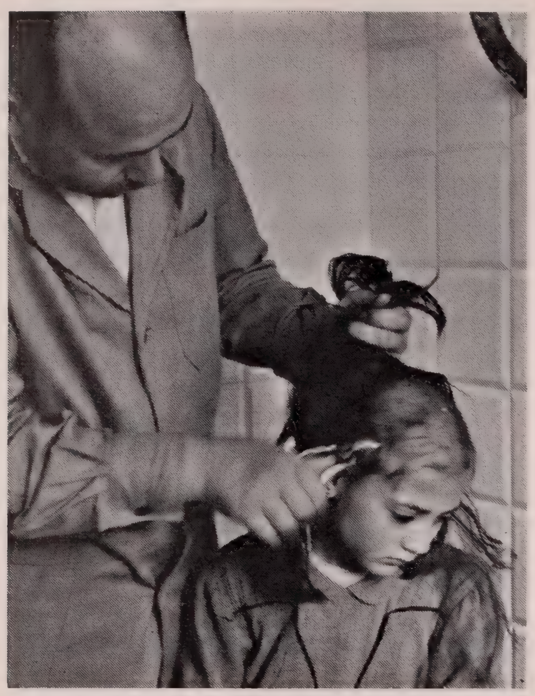

Fig. 1. Hair being clipped prior to x-ray depilation (Courtesy of World Health Organization).

faulty meters, uncontrolled electric line surges, faulty technic, overexposure, improperly calibrated apparatus, or failure to correlate physical and biologic measurements. Among other causes for untoward reactions may be mentioned uncooperative patients, uncooperative parents, and improper care after the epilating dose of roentgen rays has been administered. The procedure of x-ray depilation is safe provided a qualified and trained physician performs the procedure and provided the apparatus is properly designed and calibrated for this work.

The details of using the Kienböck-Adamson technic of roentgen-ray epilation of the scalp have been fully described.[23] However, it would not be superfluous to mention here the main points of the technic. The hair is clipped short (Fig. 1), the scalp is measured, and the five focal points are marked off. The distance between all focal points is the same and measures one-quarter the circumference of the scalp. From 300 to 350 r are given to each point. All five points are irradiated at one sitting. The voltage employed is in the neighborhood of 80 to 100 kilovolts and the half value layer varies from 0.5 to 1.0 mm. of aluminum. Nonhairy parts about the head are protected with lead foil as are all other parts including the gonads where scattered radiation might reach. This whole procedure consumes about forty-five minutes. The scalp itself is not shielded, thus the intermediary areas receive more roentgen rays than the focal points. This overlapping is calculated and allowed for. Patients are then carefully followed and seen weekly. They are instructed to wash the scalp daily with soap and water and to wear a skull cap to prevent loose infected hairs from contaminating other children, articles of clothing, furniture, and other intermediary objects. At the fourteenth day, the hair begins to loosen and all loose hair is removed with adhesive strips. All hair should be out by the twenty-first day. The remaining fluorescent infected stubs should be removed by manual epilation under Wood's light. Every infected hair must be removed otherwise new hairs become infected as they grow in.

When the defluvium is complete a mild fungicidal ointment is applied and daily washings of the scalp are continued. In two months the hair is regrowing vigorously. At first it is patchy and later it grows uniformly all over the scalp. By the fourth month, most scalps begin to look normal.

This method of treating ringworm of the scalp is simple, safe, fast, and effective in almost 100 per cent of cases. It has been used on hundreds of thousands of cases during the past half century. Children and parents have been duly grateful and this procedure has saved physicians time and effort in clearing up widespread epidemics. It is noteworthy that the mobile x-ray apparatus has made it possible for teams of physicians and technicians under the aegis of the World Health Organization of the United Nations to clean up old and dense epidemics in remote parts of the world par-

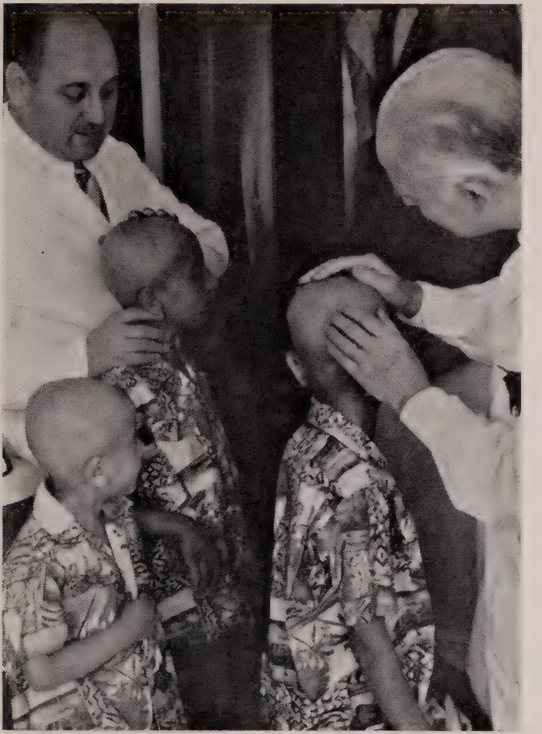

FIG. 2. Dr. F. Nousitou of Argentina, leader of W. H. O. team, and Dr. A. Fakir of Syria examine the scalps of three boys after epilating doses of x-rays had been administered (Courtesy of World Health Organization).

ticularly in the Middle East (Fig. 2). The method has proved to be effective there under conditions other than ideal. You can imagine how much more effective such procedures become when used under ideal conditions which can be obtained in most cities of the United States where medical centers and facilities exist in great abundance. Properly handled, there should be no more than a sporadic case of ringworm of the scalp in any city of the United States. If an epidemic should occur in any locality, then the best methods of treatment including x-ray depilation should be employed to bring a quick end to a rapidly spreading disease.

Study of Radiation Effects

The use of roentgen rays for the treatment of tinea capitis has been decried by geneticists and some pediatricians because of the potential harmfulness to the gonads. We are acutely aware of this possibility. We are also acutely aware of the possibility of other harmful effects resulting from radiation therapy. Therefore, we undertook some special studies and our general conclusion is that x-ray depilation of the scalp is safe to the gonads and other organs and does not lead to any deleterious effects provided the physical factors used are those mentioned here and in authoritative articles and books and provided that an experienced and qualified expert administers the treatment. There is far more danger in many of the drugs used for treating many infections and inflammations which are less severe than tinea capitis than there is in the proper use of roentgen rays for the treatment of tinea capitis.

Today we are living in an atomic era. Everyone appears to be familiar with many of the mysterious actions of ionizing radiations. Unfortunately, the pseudo-scientists and some newspapers and columnists have done much to create in the minds of people a horrible and unfounded fear of x-rays employed for diagnosis or treatment. The geneticists and some physicians have added to these fears. There is no denying the fact that unless ionizing radiations are well harnessed they are capable of doing harm of an irreversible nature that can be carried on to future generations. But we are not concerned here with the indiscriminate use of roentgen rays in the hands of those who are not experts and who are not experienced in every detail of these radiations. The primary concern of the geneticists is the harm done by ionizing radiations reaching the gonads. These radiations may cause genetic mutations which are harmful to future generations. It has never been determined how much radiation is harmful to the gonads. The contention of some geneticists is that any amount of ionizing radiations reaching the gonads is harmful. This cannot be substantiated because the human race has been subjected to bombardment by small amounts of ionizing radiation since the beginning of time. Those living in higher altitudes have been exposed to radiation from natural soil sources as well as from cosmic rays to a degree greater than those living at sea level. It has been impossible for geneticists to correlate with any degree of accuracy the role played by these natural radiations with the causation of any one of the many congenital anomalies that are so prevalent in the animal kingdom. It is our belief that human beings can coexist with some small amounts of naturally occurring ionizing radiations. We agree with the views of Crossland[24] on this point.

When epilating the scalp of a child afflicted with tinea capitis, a small amount of radiation reaches the meninges, the brain, and even the gonads, especially those of boys. Fewer reach the ovaries since these structures are well protected deep in the pelvis. Many articles have been published in regard to the amount of radiation reaching the meninges and the brains of children treated with x-rays of varying qualities. Taking the average of all children between the ages of two and sixteen years and using radiations generated with 80 kilovolts having a half value layer of 0.5 mm. of aluminum, no more than 5 per cent of the air dose reaches the meninges. This amount of radiation is insufficient to produce any temporary or permanent changes of the meninges or brain. The test of time is ample proof of the harmlessness of this amount and of this quality of radiation when used for the treatment of tinea capitis. Strauss and Kligman[25] found in their experiment that with 120 kilovolts at 20 cm. skin target distance and a half value layer of 1.6 mm. of aluminum about 25 per cent of the air dose reaches the meninges. With the higher voltage and higher half value layer, the depth dose would be greater. For adequate epilations, the quality of radiation need not be greater than that of between 0.5 and 1.0 mm. of aluminum. During the recent past we have been studying electroencephalograms of children before and after roentgen-ray epilation of the scalp. Not enough cases have been studied to draw conclusions. Based on clinical experience there were no subjective or objective symptoms indicating meningeal or cortical irritations.

There are not many articles published bearing on gonadal doses. Ten years ago Callaway, Moseley, and Barefoot[26] were the first to measure the amount of radiation reaching the gonads when conventional superficial roentgen rays were used for the treatment of acne vulgaris in young adults. For each 75 r given to the side of the face, a reading of 34 milliroentgens was obtained in the region of the pubis. This figure compares well with some of those recently published and with those which we are about to report.

Measurement of Radiation to Gonads

To obtain our data, we employed a Victoreen ionization meter and appropriate large chamber especially designed and calibrated for measuring scattered radiations in the range of 0 to 250 milliroentgens. We made our measurements on children treated with modern, shock-proof, and shielded apparatus of approved design. The subjects were 12 patients with tinea capitis, 8 boys and 4 girls with an average age of eight years. The kilovoltage employed was 100 and the half value layer was 0.7 mm. of aluminum. The skin focal distance was 25 cm. The scalp was then marked off in conventional fashion, employing the five-point Kienböck-Adamson technic. The child was placed in position and the face and body were covered with 1.0 mm. of lead foil. The ionization chamber was placed between the thighs close to the genitals. A dose of 320 r measured in air was applied to one of the focal points. A reading of the scattered rays was made and recorded. The same was done with the other four points. These readings were added and averaged. It was found that for each epilating dose applied to each point the gonads received from 2.6 to 6.3 milliroentgens. For a complete epilation, the total dose reaching the gonads was 20.5 milliroentgens. In the female less than this reaches the gonads owing to absorption of these soft radiations by the tissue between the surface of the body and the ovaries. In subsequent experiments the gonadal dose was reduced practically to zero by angulating the tube away from the gonads, using a cone, decreasing the skin focal distance from 30 to 20 cm., and by covering the gonads with 4 millimeters of lead foil.

In the present state of our knowledge we conclude that the amount of radiation reaching the gonads during the temporary depilation of the scalp with x-rays is insufficient to cause any mutations. Even when using fruit fly eggs, we are not convinced that the geneticists have shown that radiations of this order in quality and quantity have been capable of producing harmful mutations. We have, therefore, herewith presented scientific evidence to support the contention that the use of roentgen rays for the treatment of tinea capitis is harmless to the meninges, brain, gonads, or to the scalp itself.

Those who contend that ionizing radiations should be employed only for the treatment of malignant diseases would deny the public the benefits of a most valuable diagnostic and therapeutic agent. We need not fear harm from the proper use of x-rays for diagnosis and treatment by qualified physicians and physicists, but rather from unqualified personnel and from the explosion of nuclear weapons, improper disposal of atomic waste, and other misuses of ionizing radiation. We cannot help but agree with the views expressed by some scientists that deaths from bone cancer and leukemia could stem from radioactive poisons released by the explosion of atom and hydrogen bombs. The very milk that our children drink is contaminated with radioactive substances. There is already evidence to show that the amount of radioactivity of human bones has increased appreciably since the start of atom and hydrogen bomb testing. These are the real hazards which unfortunately are beyond the control of physicians. Only by Divine Wisdom can the leaders of the world be persuaded to divert the enormous energy released by nuclear fission to peaceful uses.

Summary

In conclusion, we wish to point out (1) that tinea capitis is prevalent in epidemic form in many centers throughout the world including some cities of the United States; (2) that the best way of quickly controlling these epidemics is by treating all patients resistant to topical and oral remedies with x-ray epilations; (3) that patients so afflicted should not mingle with well children; (4) that roentgen rays when properly used have no immediate or late harmful effects to the scalp, the meninges, the brain, or the gonads; (5) a method of measuring the amount of radiation reaching the gonads has been described; (6) the quantity of radiation reaching the gonads has been determined; (7) the methods for reducing this amount to the vanishing point have been given; and (8) there is far more danger to the peoples of the world from testing atom and hydrogen bombs than there is from the proper use of x-rays for diagnosis and treatment of both malignant and benign diseases by qualified physicians and physicists.

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New Radioactive Test Shows Liver Damage

A new test using radioactive dye to measure the function of the liver was described in the July 4 *Journal of the American Medical Association.*

The test, which is much simpler than older tests, opens many new possibilities in the study of liver disease and damage, according to Robert A. Nordyke, M.D., and William H. Blahd, M.D., University of California Medical Center, Los Angeles. The test is used for cirrhosis, hepatitis, alcoholism, and common bile duct obstructions.

Radioactive rose bengal is injected into the blood stream. The speed with which it disappears from the blood indicates the degree of liver damage or disease. The liver plays a role in removing the dye from the blood. Its disappearance is measured by a standard radiation counting device held against the head behind the ear.

The head was chosen as the site of measurement because it contains a rich and stable blood supply which is distant from the large and changing concentrations in the abdomen.

Older tests using rose bengal and other substances necessitated the withdrawal of blood from the veins for checking the color of the blood. The value of these tests are restricted, the doctors said, to liver disease without jaundice because of difficulty in reading color changes and because of possible injury to an already damaged liver by large doses of dye.

The new test circumvents these problems, the doctors said. Since detection of changing concentrations of dye depends on levels of radioactivity rather than color, valid results are extended to all types of liver damage despite the presence of jaundice. In addition, the minute quantities of both radioactivity and dye allow multiple tests to be done without harm.

Permanent Tubeless Tracheal Vent for Cough Syncope and Pulmonary Insufficiency Due to Emphysema

With an Analysis of Treated Cases and Emphasis on Late Results

EMIL A. NACLERIO, M.D., NEW YORK CITY

(*From the Departments of Thoracic Surgery, Columbus Hospital and Harlem Hospital*)

POSTTUSSIVE syncope and irreversible pulmonary insufficiency due to chronic emphysema constitute excellent indications for a permanent opening in the trachea. The creation of a permanent vent in the cervical tracheas of a group of patients with such conditions has resulted in dramatic improvement with impressive long-term results.

The purposes of this paper are: (1) to give the rationale for the creation of a permanent tracheal vent in cases of cough syncope and chronic pulmonary emphysema and (2) to emphasize the benefits of the *tubeless* permanent tracheal vent in such cases. The pertinent physiopathologic and clinical features of the two disease entities are briefly outlined, since these characteristics are the basis for the proposed therapeutic concept. Major technical aspects of the operative procedure are included. In addition, there are details for the application of a hollow nylon tracheostomy button and pocket-size portable self-aspirator, both designed by the author. Illustrative cases treated three and a half, two years and two months, two years, and one year and three months ago are presented. Experience gleaned from 4 additional cases of pulmonary insufficiency due to chronic emphysema treated surgically during the past year is evaluated.

Evolution of Indications for Permanent Tracheal Vent

Tracheostomy has been used for centuries in desperate situations of upper respiratory obstruction. During the past two decades the indications have broadened to include secretional obstruction in the lower airways, injuries to the chest and head, comatose and debilitating states, and paralyses. In severe injuries to the chest, tracheostomy not only facilitates management of tracheobronchial secretions but also reduces respiratory dead space and appreciably decreases resistance to airflow.

More recently, tracheostomy has proved of value when used as a vent to decrease intracranial pressure (in patients with injury to the brain from trauma or operation),[1] to prevent aspiration of secretions from the pharynx (in respirator patients with bulbar poliomyelitis),[2] and to diminish closed-glottis pressure (to prevent disruption of a precarious bronchial stump closure).[3]

The author has obtained excellent results with tracheostomy when it has been used as a vent to diminish closed-glottis pressure in patients with pneumomediastinum caused by lacerations in the tracheobronchial tree and in patients with massive progressive subcutaneous emphysema following pleuropulmonary injuries.[4]

For surgical patients with limited pulmonary reserve and inability to cough effectively, tracheostomy may prove helpful in tiding them over acute situations which may develop during operative or postoperative period.

Long-term tracheostomy is of value in chronic secretional states of the lower airways, as seen in seriously ill patients with extensive bilateral bronchiectasis who are not candidates for surgery. In these cases tracheostomy provides a ready means for aspirating the troublesome secretions which continually accumulate in the lower respiratory tract.[5]

In patients with incurable obstructive lesions of the upper respiratory airways and serious interference with airflow, a permanent bypass is mandatory. The construction of some type of permanent tracheostomy will restore unimpeded ventilation and diminish the respiratory effort.

A thorough study of mechanical and physiologic advantages that follow a tracheostomy in various disease states has induced the author to extend the indications and uses for tracheostomy to include cough syncope and pulmonary insufficiency due to diffuse obstructive emphysema.[6]

Physiopathologic and Clinical Features

Cough Syncope.—Fainting that is preceded by cough occurs in a specific clinical situation which has been identified by a variety of names; some of the preferred terms are cough syncope, posttussive syncope, and tussive syncope (Cases 1 and 3).[7] Affected patients frequently are robust men of middle age who often are victims of chronic pulmonary emphysema. A major complaint is cough, usually chronic and nonproductive and not infrequently violent and paroxysmal.

Cough syncope may result in serious injuries (Case 1). If cardiovascular disease exists, the circulatory effects may prove disastrous. The prognosis of this syndrome as to future attacks is uncertain and is dependent on the cause of the underlying disease responsible for the cough.

The mechanism of cough syncope is explained on the following basis: Normally during cough the glottis closes to allow for the development of positive intrathoracic pressure. With forced coughing the pressure rises precipitously, measuring anywhere from 50 to 150 mm. of mercury. In the patient prone to cough syncope, with a series of coughs (a Valsalva-like phenomenon) intrathoracic pressure greatly increases. Consequently, venous return to the thorax is decreased. This results in diminished cardiac output, insufficient blood flow to the brain, and subsequent fainting (Cases 1 and 3).

Chronic Pulmonary Emphysema.—A review of the literature reveals that there are numerous types of pulmonary emphysema and many different classifications of these types. The most important clinical type is known as diffuse obstructive emphysema, often referred to as the so-called pure form despite its relation to many other pulmonary diseases. Chronic pulmonary emphysema is a disease of diverse and, at present, questionable etiology. Also, little is known regarding the exact nature of its pathogenesis. For these reasons it has been grouped with the so-called degenerative diseases. The term "degenerative process" implies the breakdown or functional alteration of structure that accompanies the wear and tear of living, with its organic infections, mechanical traumas, and other stresses.[8]

Chronic pulmonary emphysema can be defined as the diffuse, progressive, obstructive, hypoxic type of chronic emphysema in which pathologic distention of the alveoli has persisted for some time.[9] The outstanding physiologic change that characterizes this condition is the marked increase of airway resistance (obstruction) in the smaller bronchi and bronchioles, occurring especially during and at the end of expiration. The resistance, which is exaggerated with exertion, forced breathing, and especially cough, is largely responsible for the reduced ventilation reflected in a lowered rate of airflow from the lungs. Airway obstruction invariably results in the trapping of air in the lungs and significantly increases the work of breathing, because greater time and effort are needed to expel air. Since expiration can only be performed slowly, maximal breathing capacity is markedly decreased.

Despite numerous physiologic studies there still is doubt as to the exact method by

PNEUMODYNAMICS OF EMPHYSEMA

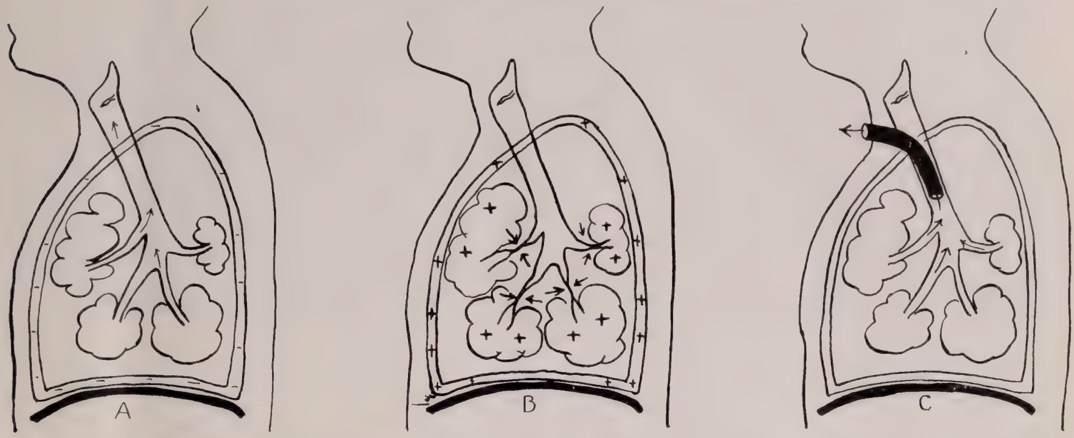

FIG. 1. (*A*) Normal lung at end of expiration or cough. Elasticity of normal lung continues to maintain negative intrapleural pressure that helps to maintain patency of bronchioles even at end of expiration. Outflow of air through opened glottis precludes higher pressures attainable in cough, which is begun with glottis closed. (*B*) Emphysema at end of expiration or cough. Intrapleural pressure becomes positive rather than negative during expiration. With forced breathing or cough the intra-alveolar pressure is increased to such a degree that it compresses the bronchioles. The presence of mucus, bronchiolitis, or bronchospasm further predisposes to bronchiolar collapse. This phenomenon is referred to as an expiratory "check-valve" mechanism. (*C*) Emphysema at end of expiration or cough with tracheostomy. Creation of a permanent vent in the cervical trachea greatly reduces closed-glottis pressure and build-up of intra-alveolar pressure. This diminishes or even prevents bronchiolar narrowing or collapse (airway obstruction).

which expiratory obstruction develops. In this regard, Dayman[10] performed extensive airflow resistance studies, using a modified pneumotachograph, on patients with chronic pulmonary emphysema. He concluded that a premature collapse of the smaller bronchi was in part responsible for difficulty in eliminating secretions during coughing. This is in essential agreement with the conclusions of Proctor and his group.[11] They also maintain that especially during forced expiration or cough intra-alveolar pressure is increased to such a degree that it compresses the surrounding normal alveoli and bronchioles.

The phenomenon of bronchial collapse has been observed bronchoscopically by this author. Also during bronchoscopy this author has observed that not infrequently the membranous portion of the trachea protrudes into the lumen, on occasion completely occluding it. This phenomenon is referred to as an expiratory "check-valve" mechanism. Expiratory airway obstruction may be caused by intraluminal secretions or bronchiolar spasm, but usually it is the result of the check-valve mechanism. Because of loss of elastic tissue in the bronchioles, these airways become poorly supported and tend to collapse on forced expiration or cough (Fig. 1).

Bronchiolar collapse initiates a vicious cycle, and further alveolar distention and damage follow. The progressive increase in lung volume encroaches on the surroundings; it depresses the diaphragm and invades the mediastinum. These developments interfere with blood flow, hinder exchange of gases, increase dead space, and, even more striking, effect an increase in residual air.

Chronic pulmonary emphysema is a disabling and relentlessly progressive disease, characterized by long-standing nonproductive cough and exertional dyspnea. There is a tendency for the cough to become more troublesome, more persistent, and readily initiated by various nonspecific irritants, such as cold air, wind, fume, dust, and smoke. Expectoration, while often scanty, may be abundant, purulent, and occasionally bloody. Secondary distressing symptoms that may be associated with cough are physical and mental exhaustion, headaches, insomnia, and pain and soreness in the lower part of the chest or abdomen. In some patients the coughing habit persists even after the cause has been removed. Syncope may follow a severe or continuous coughing paroxysm. These patients often complain of "blackouts," or brief periods of fainting sensations; these must be considered abortive forms of cough syncope (Cases 1, 2, and 3).[12] Fatigue, weakness, anorexia, indigestion, flatulence, constipation, and weight loss are other common features.

In the advanced stages of the disease the symptoms are more severe, with easy fatigability, dyspnea at rest, orthopnea, and cyanosis. There may be evidence of heart failure. The disturbances in pulmonary ventilation are such that hypoxia and hypercapnia follow, and the patient may complain of headache, confusion, or irritability. As the pulmonary capacity further diminishes, the clinical picture becomes one of marked ventilatory impairment. Any slight interference with ventilation during this stage, even mild respiratory catarrh, may lead to cough failure. The patient then is no longer able to expectorate secretions adequately, and severe dyspnea ensues. Any additional aggravation (such as a complicating infection, adverse effect of a drug, mechanical trauma, other stresses, or heart failure) is apt to result in acute ventilatory insufficiency. These situations are extremely serious, and despite adequate treatment a significant number of patients die. Fortunately, in many instances the factors precipitating acute ventilatory insufficiency are reversible, and the patients are restored to their previous state of hypoventilation and continue to live within the limitations of their low pulmonary reserve. Recurrent attacks continue to aggravate the condition, until a critical state of pulmonary insufficiency develops.

All too often in the advanced stages of emphysema both physician and patient become aware of the limitations in the accepted forms of therapy. Since most of the symptoms and physiologic abnormalities result from airway obstruction (bronchiolar spasm, narrowing, inflammation, or collapse), physicians continue to direct their therapy at the smaller bronchi and bronchioles. Therefore, bronchodilators continue to be their most useful therapeutic modality but obviously one of limited value. Pursed-lip breathing and intermittent positive-pressure breathing are other recommended measures. The former, a maneuver which is often performed spontaneously, is, in effect, similar to positive-pressure therapy.

The creation of a vent in the cervical trachea, preferably a tubeless one, as advocated here, constitutes another method of treatment designed to prevent narrowing of the bronchi and their premature collapse during the expulsive phase of coughing; in this way, the effectiveness of cough is increased.

Rationale for Permanent Tracheal Vent

Briefly stated, the marked clinical improvement obtained in the cases here presented (Cases 2 to 4) and several subsequent ones of cough syncope and pulmonary insufficiency due to diffuse obstructive emphysema may be attributed to the mechanical and physiologic advantages that follow permanent tracheostomy. These may be summarized as follows:

1. The permanent tracheostomy acts as a vent, thereby greatly reducing closed-glottis pressure and the build-up of intra-alveolar pressure (Fig. 1). This diminishes or even prevents bronchiolar narrowing or collapse (airway obstruction), a factor which seriously reduces ventilatory efficiency. In this way, secondary distressing symptoms associated with cough in the patient with chronic emphysema are practically eliminated. Prevention of bronchiolar collapse also enables these patients to clear their air-

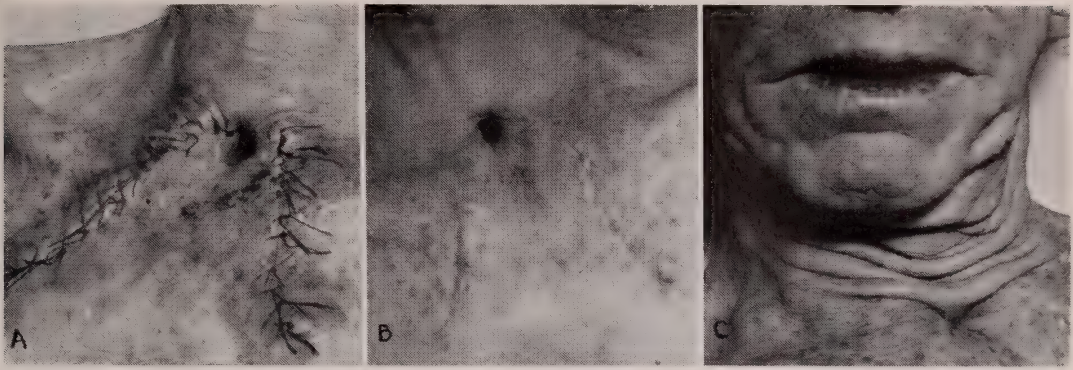

FIG. 2. (*A*) Tubeless mucocutaneous tracheostomy before removal of sutures (sixth postoperative day). (*B*) Tubeless mucocutaneous tracheostomy two months after surgery (note excellent wound healing). (*C*) Tilting head forward with slight tensing of cervical muscles naturally tends to occlude opening, thereby facilitating phonation.

ways of secretions with far less difficulty, since bronchiolar collapse seriously undermines the efficacy of cough. Consequently in a significant number of cases a nonproductive cough is converted to a productive one. For patients prone to posttussive syncope, the presence of a vent prevents development of adverse circulatory effects which predispose to syncope following cough.

2. The permanent tracheostomy provides the patient with a ready means for removing secretions from the respiratory tract. This is important since during the stage of cough failure these patients are unable to expectorate secretions adequately.

3. The permanent tracheostomy decreases the anatomic respiratory dead-space air in the oral, pharyngeal, and tracheobronchial airways. This is significant since with low pulmonary reserve and hypoventilation the exchange of tidal air is minimal and often precarious.

Tracheostomy also provides a ready means for artificial resuscitation, since the tracheostomy tube can be easily attached to a positive-negative breathing apparatus. This type of therapy is often necessary for carbon dioxide narcosis and respiratory acidosis, more common clinical states than are generally appreciated. Tracheostomy also permits direct administration of nebulized bronchodilating drugs and antimicrobial agents into the respiratory tract when a complicating infection is present. If there is heart failure, the opening facilitates the administration of oxygen.

Technic for Creation of Permanent Tubeless Tracheal Vent

Because the metal cannula of the conventional tracheostomy may create many problems—namely irritation, increased secretions, infection, and/or hemorrhage—the author advocates the mucocutaneous tracheostomy. Results obtained with the tubeless opening (Cases 3 and 4 and several more recent cases) have convinced the author that the tubeless tracheostomy is the method of choice whenever a permanent vent is required.

The operation that is performed is essentially the one described by Bisi.[13] The procedure involves the use of a presternal flap (apron type). It is tailored into the fenestra of the tracheostomy and sutured to the mucous membrane. The operation can be performed under either local or general anesthesia.

The major technical aspects are as follows: A transverse incision approximately 3 cm. long is made midway between the cricoid cartilage and sternal notch (Fig. 2A). Two incisions, one on each side, are extended obliquely downward to the level of the second ribs. The skin flap is then undermined, thus exposing the manubrium, clav-

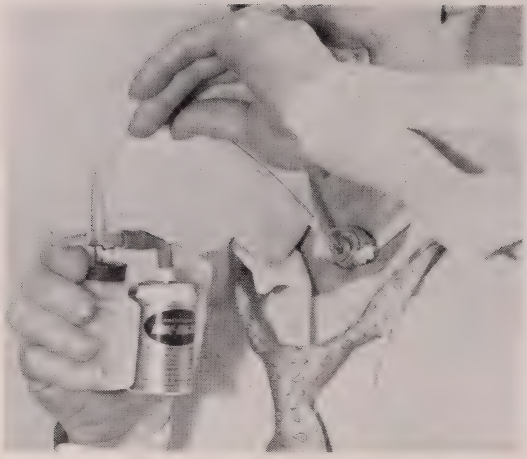

Fig. 3. Portable self-aspirator. A pressure cartridge is attached to a Venturi glass connection, with a valve on top of cartridge to create negative suction in collection bottle; catheter is inserted into trachea and bronchi.

icles, part of the pectoral region, and the lower margins of the sternocleidomastoid muscles as they insert to the sternum. The trachea is exposed by splitting the prethyroid muscles. The thyroid gland is displaced upward, and, if necessary, the isthmus is divided in the midline. At the desired level a window is made by excising two tracheal rings. The skin margins are then sutured to the edges of the tracheal opening, and the skin edges are brought together with interrupted number 00 silk sutures. A tracheostomy tube is inserted into the trachea. Vaseline gauze is placed in the wound, and the conventional dressing is applied. The sutures are removed on the seventh day, and any time between the seventh and the tenth day the metal tracheostomy tube can be removed, leaving a permanent mucocutaneous trachostomy (Fig. 2B).

Tracheal Aspiration

Aspiration of the bronchial system is necessary during the early days following tracheostomy; it is performed by the medical and nursing personnel. Within a short period self-aspiration is learned by the patient. Soon the need for aspiration lessens because a new type of expulsive effort develops, one that permits spontaneous extrusion of secretions. Within weeks the patient realizes that tracheal aspiration is often unnecessary; in many instances it may be less effective than cough efforts.

Like laryngectomy patients, however, these patients from time to time require tracheobronchial suctioning to prevent episodes of dyspnea or the feeling of suffocation. For these reasons, patients on occasion dread leaving the vicinity of a standard electrically-propelled suction machine. Therefore, the author has designed a special suction apparatus,* utilizing the Barach venturi[14] and the positive pressure of Halon (dichlorodifluoromethane) in the Nebu-Halent cartridge, previously reported by Beck[15] and Levine[16] to nebulize aerosols. On initiation the aspirator produces 300 mm. Hg negative pressure. A stop-and-go actuation is preferred to continuous aspiration. This has proved thoroughly satisfactory for self-aspiration of the trachea and bronchial system. Its advantages are that it is small, compact, and inexpensive and, most important, that it is portable and easy to handle (Fig. 3).

Nylon Button

Immediately after surgery, patients phonate by placing a finger over the metal tracheostomy tube. Following removal of this tube, phonation can be achieved by placing gauze with finger pressure over the stoma. Eventually most patients can phonate by merely tilting their heads forward (Fig. 2C). If a patient finds this maneuver ineffective, the specially designed hollow nylon button proves useful (Fig. 4A).† The patient can easily cover this device with a finger (Fig. 4B) or occlude it with a stopper (Fig. 4C) to bring about speech facility. In special situations the hollow nylon button to which a shutter valve is attached may be worn. This permits constant opening and closing of the vent by means of a control de-

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* Manufactured as the Nebu-Halent Pocket Aspirator by Thomas J. Mahon, Inc., Englewood Cliffs, New Jersey.

† Manufactured by the Surgical Development Company, Inc., New York, New York.

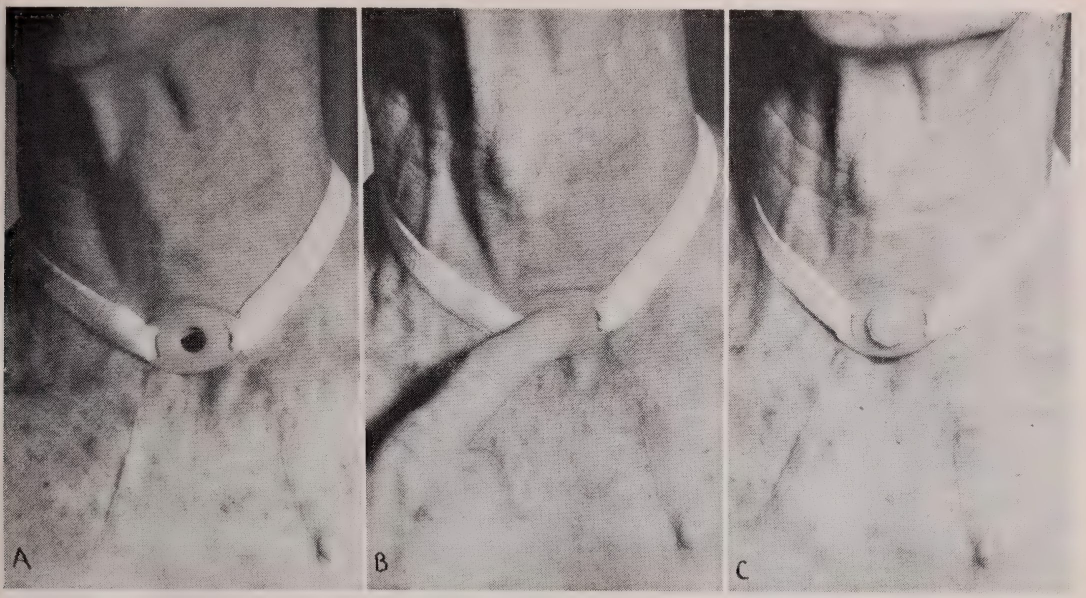

FIG. 4. Hollow nylon button used to effect speech facility (*A*) by itself, (*B*) covered with finger, (*C*) occluded with stopper.

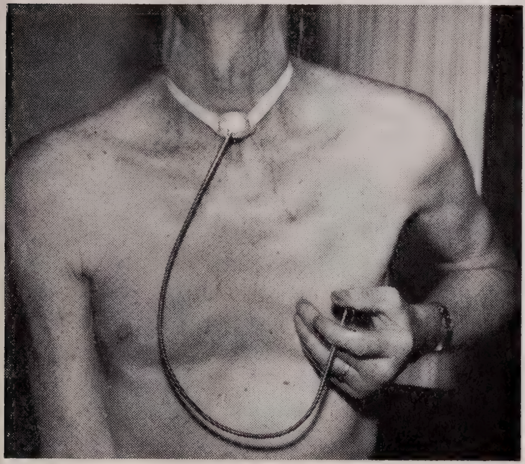

FIG. 5. Manually operated control device to permit opening and closing of vent.

vice, which can be operated manually as well as inconspicuously at any desired distance from the neck (Fig. 5).

In the author's opinion, a large stoma is not necessary; it may, in fact, function less effectively than a relatively small one. It is hoped that the optimum opening will be decided on through experience with the hollow nylon tracheostomy button. Two of the author's patients are wearing interchangeably stoppers with openings of different sizes.

*Case Reports**

CASE 1.—A forty-nine-year-old male was admitted to Columbus Hospital on January 31, 1956, because of hemoptysis, marked dyspnea, and a shadow in the right lung field. He had been apparently well for the previous fifteen years except for a chronic cough. One and one-half years previously he developed an upper respiratory infection, at which time, during a severe coughing paroxysm, he became unconscious. Since then he had had at least a dozen spells in which he had lost consciousness. Following one attack, he struck his forehead in falling; this resulted in a deep laceration of the face and scalp. The patient was a heavy smoker for the past twenty-five years, and he noticed that he was particularly susceptible to coughing spells when he smoked. On many occasions he experienced ringing in the ears and dizziness with moderate cough efforts.

Physical examination revealed a large-framed, well-built, moderately obese individual. Rales were present in both lungs, and the expiratory phase was prolonged. Percussion on the left side of the chest brought about a hyperresonant note; on the right side there was marked dullness over the midlung field.

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* Two of these patients and one more recently treated have been subjected to pulmonary function studies, conducted by Harold A. Lyons, M.D., Department of Medicine, State University of New York, Downstate Medical Center, and Pulmonary Disease Division 11, Kings County Hospital Center, Brooklyn, New York. The data are being assembled for publication.

A complete work-up, including urinalysis, blood studies (including chemistry), and electrocardiographic tracings, gave essentially negative findings. X-ray films of the chest showed a large spherical density about the size of a grapefruit in the right midlung field; the borders of the density were sharp. A medium-sized hilar density was observed on the involved side. The remaining lung fields were prominently radiolucent, with a low-fixed diaphragm. In some regions there was evidence of bulla formation. Bronchoscopy revealed marked blunting of the carina. The secretions obtained by bronchoscopic aspiration were reported as definitely positive for malignant cells by an experienced clinical cyotologist.

The patient was treated with bronchodilating and liquefying drugs. He was discharged on February 4, 1956, with a diagnosis of primary bronchogenic carcinoma of the right lung, advanced chronic pulmonary emphysema, and posttussive syncope. He was readmitted to the hospital on three occasions because of signs and symptoms of pulmonary insufficiency, hemoptysis, and severe chest wall pain. During his last hospital stay he had signs and symptoms of cerebral metastases; there was also evidence of metastases to the contralateral lung. He died on October 12, 1957.

Comment.—This patient presented the typical picture of cough syncope. Because of advanced emphysema, a permanent tracheostomy was considered, all accepted forms of therapy having proved ineffective. The presence of far-advanced primary carcinoma of the lung with evident metastases to other parts of the body, however, prevented the author from performing a permanent tracheostomy. It would have served only to prolong the patient's suffering.

Case 2.—A sixty-eight-year-old male was admitted to Columbus Hospital on June 8, 1957, in severe respiratory distress and cyanosis. He complained of wheezing, severe shortness of breath, and exhaustion. He periodically suffered from headaches and insomnia. For the past two and a half years he experienced blackouts (sensations of fainting) with severe cough paroxysms. The past history revealed that the patient was able to date the onset of his symptoms to an acute respiratory infection which he had had twelve years prior to admission. Since then he had recurrent episodes of cough and dyspnea which had become progressively worse. During the past five years marked fatigue, repeated attacks of respiratory infection, and numerous episodes of nonproductive cough forced him to give up his occupation. He was repeatedly placed on bronchospasmolytic drugs, antibiotics, cough sedatives, and various breathing exercises of inhalation therapy. These measures all proved of little help, and on occasion they were of no value whatsoever.

Physical examination revealed an elderly male sitting up in bed in a very dyspneic, distressed, and cyanotic condition. The accessory muscles of respiration were active. Rales were present in both lungs, and the expiratory phase was prolonged. The lung fields were hyperresonant, and the respiratory excursions were markedly diminished. The heart sounds were poorly elicited, and the apex beat was not visible. X-ray films of the chest showed marked transverse dilation of the chest with horizontal arrangements of the ribs and widened interspaces. There also was a lowered position of the diaphragm with increased radiance throughout. The electrocardiographic findings were suggestive of right ventricular hypertrophy. Other studies, including urinalysis, complete blood count, and blood chemistry, revealed no essential abnormalities.

In view of the history and refractoriness to therapy, a tracheostomy was performed, on June 13, 1957, which resulted in an immediate marked clinical improvement. There was a tremendous reduction in cough, and the cyanosis disappeared. Ventilation also improved greatly. He was discharged on June 30, 1957.

Comment.—This patient presented a typical picture of advanced chronic pulmonary emphysema. A major clinical feature was that of blackout. Following tracheostomy there was marked clinical improvement and the blackouts ceased. When last seen, on April 8, 1959, one year and ten months later, the patient stated that he had been "feeling better now" than at any time during the past ten years. The patient has experienced a minimum of difficulty in cleansing and maintenance of even this conventional tracheostomy with a metal cannula.

Case 3.—A sixty-nine-year-old male was admitted to Columbus Hospital on August 8, 1957,

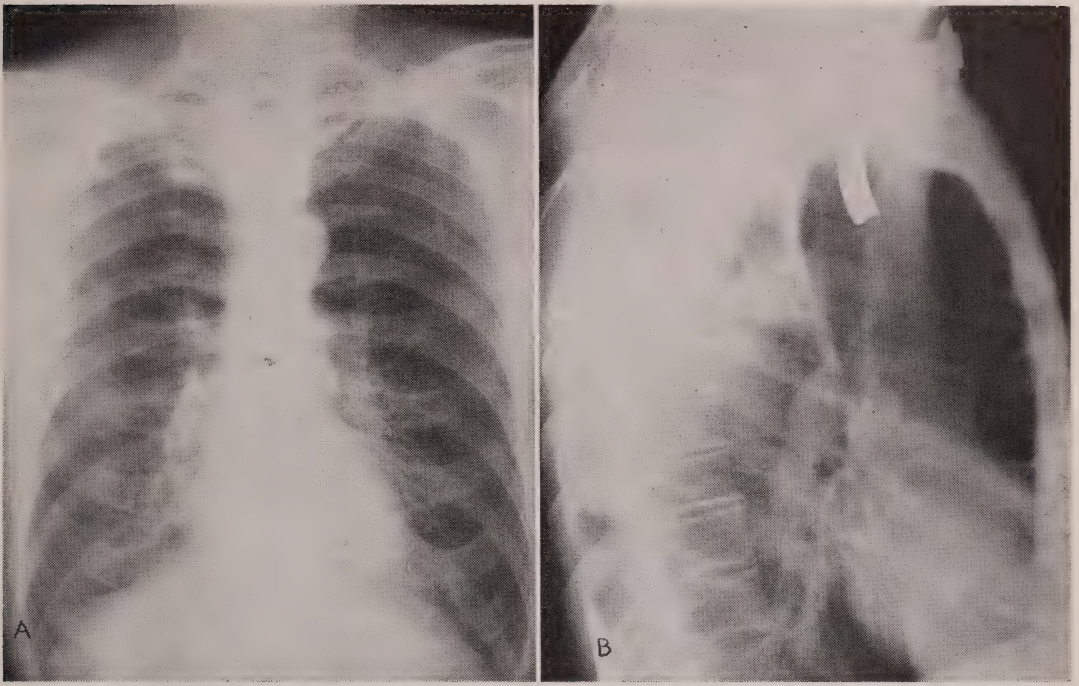

FIG. 6. *Case 3.*—(*A*) Preoperative posteroanterior view showing typical pattern of advanced chronic pulmonary emphysema. (*B*) Immediate postoperative lateral view, with conventional tracheostomy tube shown. Note distal end of tube impinging against anterior wall of trachea, which may lead to increased secretion, irritation, infection, and/or hemorrhage. The tube was removed by the tenth day, leaving a permanent mucocutaneous tracheostomy.

complaining of continual nonproductive cough, severe dyspnea, marked restlessness, and cyanosis. The past history was significant in that he had been apparently well until six years prior to admission, at which time after a paroxysm of cough he blacked out and fainted, striking his head against a kitchen chair. A work-up at that time revealed a normal heart and asthma. Since then he had been having repeated episodes of upper respiratory infection. Soon after the attack of posttussive syncope he noted that he would become short of breath, even on minimum exertion. From that time on, syncope would occur with any severe cough or continuous coughing paroxysm. This occurred on the average of two times a month. In addition, the patient complained of headaches and frequently felt indisposed and irritable.

For one year prior to admission he was regularly treated with bronchospasmolytic drugs, antibiotics, and cough sedatives. From time to time he was also placed on various breathing exercises and inhalation therapy. The dyspnea was such that oxygen was necessary almost daily, especially at night.

Physical examination revealed a white male in obvious respiratory distress, even at rest. Percussion revealed a tympanitic note over both lung fields; the breath sounds were markedly distant. Posteroanterior and lateral views of the chest revealed increased hilar markings, with changes in the lung field typical of advanced emphysema. There was flattening of both hemidiaphragms with obliteration of both costophrenic sinuses (Fig. 6).

In view of the history of chronic invalidism, especially the frequent episodes of cough syncope, a permanent tracheostomy, the mucocutaneous type, was performed, on August 9, 1957. Following this procedure there was significant clinical improvement.

Comment.—This patient presented in addition to pulmonary insufficiency the typical picture of posttussive syncope. Following the performance of a permanent mucocutaneous tracheostomy the clinical picture was greatly improved. When last seen on, June 28, 1959, a year and ten months later, the initial improvement had been sustained. More important, the patient no longer had to resort to oxygen and at no time had he suffered from posttussive syncope.

CASE 4.—A fifty-seven-year-old male was admitted to Columbus Hospital on March 24, 1958, with signs and symptoms of pulmonary decompensation. There were tremors of the upper extremities. He was very apprehensive, confused, and dyspneic. His respirations were shallow and seemed to be labored. The excursions of the chest wall and diaphragm were greatly limited. He stated that he could raise secretions only with the greatest difficulty and that the secretions were extremely viscid.

A complete work-up, including urinalysis, complete blood count, and blood chemistry studies, was essentially noncontributory. X-ray studies revealed typical findings of advanced chronic pulmonary emphysema.

The past history was significant in that he had cough and dyspnea on exertion for many years. On many occasions he experienced episodes of respiratory infection, at which times he expectorated moderate amounts of mucopurulent secretions. Because of the frequent upper respiratory infections and marked dyspnea he had to stay away from his work for periods of weeks. Two years prior to the present admission he was hospitalized for a bronchoscopic lavage (February 25, 1956). The bronchoscopy performed on February 26, 1957, revealed collapse of the bronchi during the expulsive phase. Only minimal amounts of secretions were aspirated. Bronchographic studies performed on March 1, 1957, did not reveal any changes suggestive of bronchiectasis; the findings, however, were typical of far-advanced pulmonary emphysema. He was discharged on March 2, 1957, with a diagnosis of far-advanced pulmonary emphysema.

In view of the history of marked pulmonary insufficiency, the chronicity of the condition, and the fact that the patient did not respond to any forms of treatment, a permanent tracheostomy, the mucocutaneous type, was performed on March 28, 1958. At the time of operation a considerable amount of mucopurulent material was aspirated from the lower trachea and bronchi. The patient had immediate and considerable airway relief. Anesthesia in this case was local. Postoperatively he felt very much improved. He was discharged on April 23, 1958.

Comment.—This patient presented the classic picture of pulmonary decompensation and cough failure. When last seen, one year and two months following hospital discharge, the patient stated that at no time since the creation of the permanent tubeless vent had he felt apprehensive or confused. Furthermore, he no longer found it necessary to stay away from work for health reasons.

Comment

One patient discussed herein was treated by means of a conventional tracheostomy with a metal cannula, and two were treated by means of a permanent tubeless tracheostomy (Fig. 2). Four other patients operated on were treated by the latter method. With this method the metal cannula is eliminated and there still is provision for a permanent opening. In this way many of the problems—namely, irritation, increased secretions, infection, and/or hemorrhage—that arise with the conventional tracheostomy cannot occur. The permanent tubeless tracheostomy has been adopted as the method of choice by the author and is being used for all cases in which a permanent vent is required.

Analysis of these cases indicates that the major problem in patients with advanced emphysema is not so much the presence of secretions and the need for elimination of these secretions as it is the presence of cough. Cough is a complex mechanism, designed to clear the major airways of secretions. However, bronchiolar collapse in emphysema seriously undermines the efficacy of cough.[17] In advanced emphysema, cough becomes a functionless and purposeless act because of the development of bronchiolar collapse. Furthermore, cough proves deleterious in that it precipitates three serious sequelae: (1) development of the sequence of events responsible for tussive syncope, (2) initiation of the vicious cycle which leads to further alveolar distention and damage, and (3) production of numerous secondary distressing symptoms.

The construction of a permanent vent in the cervical trachea significantly diminishes these serious sequelae. The palliative effects of the procedure are very beneficial and the clinical improvement obvious, even though there is no effect on the underlying, basically irreversible pattern of the disease.

The author repeatedly has observed that marked clinical improvement follows permanent tracheostomy. Tussive syncope and blackouts (so-called abortive forms of cough syncope) fail to recur. Many of the other distressing symptoms previously associated with cough no longer develop. There is also a marked decrease in the frequency of recurrent secondary infection in the majority of these patients. The downward course of the disease appears to be definitely alleviated.

The creation of a permanent vent in the cervical trachea should be considered primarily for patients for whom standard forms of therapy have proved ineffective.

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35 East 35th Street

Invalidism Abolished by Transforming Paroxysmal to Permanent Atrial Fibrillation

This article gives the history of a patient without structural heart disease who, having endured semi-invalidism for sixteen years due to frequent paroxysms of atrial flutter or fibrillation, was restored to normal activity by converting the paroxysmal to permanent atrial fibrillation through massive dosage of digitalis. Since 1953, when this regimen was introduced, the patient has enjoyed great improvement physically, mentally, and spiritually. The amount of digitalis taken daily is about five times the average taken by individuals who need this medicine constantly.—*J.A.M.A., February 7, 1959, Paul D. White, M.D, Boston, Massachusetts, and George C. Griffith, M D., Los Angeles, California*

Exfoliative Cytology of Gastric and Esophageal Lesions

An Aid to Differential Diagnosis of Carcinoma

HANS J. BRUNS, M.D., JOHN T. PRIOR, M.D., AND HENRY W. MAYO, JR., M.D., SYRACUSE, NEW YORK

(From the Departments of Medicine, Pathology, and Surgery, State University of New York, Upstate Medical Center)

WITHIN the last few years there has been an ever-growing interest in exfoliative cytology of the upper gastrointestinal tract, both in this country and abroad.[1–19] Abrasive technics, such as the Ayre brush[1] and the abrasive balloons,[2,8,16,18] cause discomfort to the patient, and hence poor patient cooperation, as well as potentially serious trauma. The method used may fail to cover the area of the lesion.[16] Lavage technics, therefore, have become increasingly popular. Several different irrigating solutions have been used.[3,4,12] Chymotrypsin has been said to have a mucolytic effect,[5,6,13–16] although this effect has been questioned.[4] Buffered sodium acetate reduces gastric acidity and is said to preserve cells.[4]

Material and Method

This report covers our experience from March, 1957, to September, 1958. The patients included came from the services of the State University of New York Upstate Medical Center; there were a few referred outside private patients. The patients were studied because they had abnormal or questionable lesions as found by roentgenography. At the outset, these studies were conducted by a team, consisting of a surgeon, an internist, and a pathologist. Subsequently, we have been able to train a technician to collect, process, and screen the specimens.

With some modification, we have used the method described by Rubin.[12–16] After an overnight fast, the patient's stomach is intubated with a Levin tube. This is not done through the nose but through the mouth, in order to minimize contamination with nasal cells. The patient is asked to expectorate and blow his nose. Water is used as a lubricant because oil may interfere with the adherence of cells to the slides. The stomach is emptied and its contents discarded. It is then thoroughly and vigorously irrigated with Ringer's solution until the returns are clear. This may have to be done for several days in succession in cases with pyloric obstruction; if the stomach is not clean, the specimens will be unsatisfactory.

A chymotrypsin-buffered sodium acetate solution is mixed as follows: Before the procedure is started, a 0.1 molar acetate buffer is prepared by adding 13.6 Gm. of sodium acetate and 0.6 cc. of glacial acetic acid to 1,000 cc. of distilled water. This will result in a pH of 5.6. To 500 cc. of this solution are added the contents of one Cytolav capsule containing 7,000 Armour units of salt-free chymotrypsin. This is done immediately before use. This solution is instilled into the patient's stomach until he feels full. We have been using between 150 and 400 cc. It is reaspirated after precisely ten minutes. While the solution is in the patient's stomach, the patient's position is changed from upright to recumbent; in the recumbent position the patient is rotated 360 degrees from supine to

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TABLE I.—Case Analysis

Accuracy of Means of Evaluation	Surgical				Autopsy		Clinical Only	
	Tissue Sections		Gross Findings Only					
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Correct	16	21	—	7	—	2	3	47
Incorrect	1	4	—	—	—	—	—	—
Equivocal	2	—	—	—	—	—	—	—

prone and back again to supine, so that the solution covers all areas of the stomach. Next, the gastric contents are aspirated as rapidly as possible and placed into 50 cc. plastic centrifuge tubes which are kept in ice. They are then placed immediately into a centrifuge, and spun at 5,000 r.p.m. for five minutes. In order to preserve the cells, the total time elapsed between aspiration and fixation should not be more than ten minutes. Next, the supernatant fluid is decanted off and discarded. Slides have meanwhile been prepared by spreading one drop of albumin solution on them. The sediment of each tube is transferred and smeared on a separate slide by means of a glass pipette. We thus obtain from three to ten slides per patient. Experience will teach the technician proper thickness of the smears. If the smears become dry before they are fixed the cells will deteriorate. Therefore, the cells are fixed without delay in a mixture consisting of 97 cc. of 95 per cent alcohol and 3 cc. acetic acid, and then stained by the Papanicolaou technic.

Results

We performed 125 studies in 121 consecutive patients. In 4 instances the studies were repeated and each time confirmed the previous results. In only 2 instances were the cytologic results equivocal. In 9 cases the follow-up was insufficient, and in 9 other cases the clinical picture has not been clarified sufficiently to allow any conclusions as to the accuracy of the cytologic diagnosis. This yields 101 cases for analysis. Of these, the diagnosis in 51 was proved by operation or autopsy. The results of the cytologic study were correct in 46 of these 51 cases, about 90 per cent. If one eliminates only the 18 patients in which the clinical findings were inadequate or in which there was insufficient follow-up, but includes the 2 cases with equivocal cytologic studies as unsatisfactory examinations, the following data result: In 103 patients cytologic diagnosis was correct, and it was satisfactory in 96 or 93 per cent.

Table I shows a more complete breakdown of these figures.

Discussion

While other methods for the study of the upper gastrointestinal tract give reasonably precise results, obviously, none of them is perfect. Therefore, ancillary methods of study may be of value, provided they have features such as: (1) safety and absence of significant discomfort, (2) availability and simplicity, and (3) useful accuracy.

Cytologic study of the gastric contents at least promises to fulfill all these criteria.

In spite of good clinical evaluation, good radiology, and endoscopy, there remain some patients for whose benefit any method would be welcome which might help to make a decision for or against surgery. Cytology seems to be a procedure that is precise enough for this purpose. Since errors are to be expected, however, it must be emphasized that the method ought to be considered ancillary. Cytology should not replace other established methods, and complete radiologic study in particular should precede its use. The indications for cytologic study at the present time seem to be (1) radiologically questionable lesions and (2) possibly patients in whom no lesion is found after careful study but in whom there is reasonable cause to suspect a malignant condition.

We believe that the cytologic method is too time-consuming to be used as a screening procedure. Experience increases its precision and a certain amount of enthusiasm is necessary. We embarked on this study without any previous outside training in the method, and now plan to extend the study over several years, examining hundreds of patients. Only after that will a more conclusive statistical evaluation of our results be possible. However, we feel sufficiently encouraged to make a plea for more widespread use of the procedure in almost any institution where cytology is practiced.

Summary

The technic, results, and application of 125 consecutive cytologic studies of the esophagus and stomach have been reported.

The method promises to be sufficiently safe, simple, reproducible, and precise to encourage its widespread application.

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When Johannes Brahms was asked why he was so diffident about his marvelous music he replied, "I tread so close upon the heels of my predecessors it embarrasses me."

Use of the Seminar in the Teaching of Psychiatry

WILLIAM H. WAINWRIGHT, M.D., NEW YORK CITY

(From the Department of Psychiatry, Cornell University Medical College, and the New York Hospital)

A MAJOR aim in psychiatric teaching should be to allow the student to evaluate his future role in the medical profession through the development and utilization of his individual feelings and attitudes in a scientific and practical manner. The seminar method of teaching promotes this emotional growth and enhances psychiatric knowledge through a process of group interaction.

At the Cornell University Medical College psychiatry is taught throughout the entire four years in a way that parallels the teaching of the medical school as a whole. The first year is devoted to normal personality development and function; the second, to the study of psychopathology; the third, to the clinical entities and the dynamics thereof; while the fourth year emphasizes treatment.

As part of the curriculum for the third-year medical students attending Cornell University Medical College during the academic years 1955 through 1958 a series of seminars was utilized as part of the course entitled "Clinical Psychiatry." Each class was subdivided into six groups. Each group with about 13 students received a total of thirty hours of teaching over a five-week period. This included classroom work, individually scheduled interviews with patients, presentation of selected patients by the students, and an oral examination. Seven hours were devoted to seminars in an attempt to promote the understanding of psychiatry and its broader aspects in relation to the field of general medicine.

These seminars were divided so as to revolve around the following topics: (1) Goals of Psychiatric Treatment, (2) Evaluation of a Patient for Treatment, (3) The Personality of the Therapist, (4) Demonstration of an Initial Interview (two-hour session), and (5) Demonstration of a Therapeutic Interview (two hour session). Actually these subjects evolved in a logical, natural manner from the flow of student comments. Although diagnosis and the understanding of dynamic factors were emphasized in the third-year course, the time devoted to the seminars helped prepare the students for the fourth-year course with its stress on treatment.

In each seminar the instructor stimulated the students to answer their own questions. Comments and differences of opinion were encouraged. At the start of each session a topic was formulated in general terms utilizing the instructor's summary of what had preceded. Then the student group was asked to comment. The blackboard was used frequently to help summarize the material obtained. Not until the end of each period would the instructor attempt to organize in a concise manner the topic under discussion on the basis of the group's statements. To prevent the more aggressive, spontaneous student from monopolizing the seminars, the more passive student was called on for his thoughts. To avoid irrelevant topics from entering into the session the instructor did, at times, interrupt. Otherwise, the group held free discussion until time for summation or until no further comments were forthcoming.

GOALS OF PSYCHIATRIC TREATMENT.—In the first seminar the students were oriented to the general purpose of the series: such as, an understanding and a delineation of the psychiatric concept of treatment. One

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of the students was then asked by the instructor what would be the goal of treatment for a psychiatric patient. The answer was usually "to cure." When pressed various others might mention gaining of insight or alteration of personality as goals. Rarely would the concept of function be brought up spontaneously. Still more rarely would the more limited goals, such as preventing harm to self or society through custodial care, be volunteered.

Prevention, alleviation, or modification of human suffering is an aim of all medical practice. Where intensive treatment has failed, chronic hospitalization and the establishment of a secure satisfactory life adjustment in a protected setting might indeed be the aim of psychiatric treatment for persons severely crippled by their emotions. To adjust a patient to an open or semiclosed ward rather than to a disturbed ward can indeed be a major psychotherapeutic challenge. The difference in human suffering, not to mention the burden on a hospital staff, makes this a worthy goal of treatment. Because of the cultural backgrounds, standards, and strivings of the medical student group, this concept of limited goals seemed obscure. In some of the seminars the realization that the science of psychiatry had its limitations prompted considerable hostility from the students. They commented that supportive care might be carried out by a priest, friend, or family advisor. Gradually the role of the physician as incorporating all these qualities into his scientific knowledge was defined.

As an illustration of this concept from general medical practice, the instructor gave the example of a onetime famous athlete who suffered two coronary occlusions at the age of fifty-five. The goal of treatment would not be to return him to previous athletic activity. In the medical field cure is a concept relative to type of illness, chronicity, functioning potential, and life situation. Thus, it is in psychiatry.

The instructor then presented briefly a case of a sixty-year-old woman with a twenty-year history of vague gastrointestinal complaints for which she had consulted several private physicians and had attended a number of hospital clinics without relief. Her restricted social adjustment seemed to revolve around her symptoms. No organic basis for her complaints could be found. Open discussion of goals was initiated. Psychoanalysis was frequently mentioned without regard to motivation, intelligence, psychopathology, chronicity, or financial status. By repeatedly pressing the student group a concept of variable goals gradually emerged. These included support and reassurance with a careful study of personality and life situation enabling the physician to de-emphasize the symptoms sufficiently to allow other more satisfactory modes of adjustment to reestablish themselves. Distraction through meaningful utilization of assets might allow the patient to modify an otherwise inadequate adjustment.

The fact that insight into the illness was necessary for the doctor but not for the patient in the treatment of certain psychiatric disorders was usually difficult for the student to accept. This concept did not fit into the impression previously conceived through entertainment media that "insight" would miraculously "cure" any emotional illness. This progression of thought led easily into questions of how to set a reasonable goal in the treatment of a specific case. These questions were deferred until the following seminar.

THE EVALUATION OF A PATIENT FOR TREATMENT.—In the second seminar the factors involved in the evaluation of a patient emerged more clearly. In order to organize the topic around a logical starting point the instructor asked the group for those factors which might indicate a good prognosis. The type and degree of illness would determine the individually indicated therapeutic process to be established but would not necessarily be a valid indication of prognosis. The acuteness of onset of the emotional disturbance in a setting of previous life achievement, no matter what the cultural background, was considered a more sensitive guide to therapeutic possibilities. In the evaluation of a patient certain aspects had to be considered. These were the stress under which an individual would need psychiatric hospitalization, the realistic environmental situation, the motivation of the patient, the degree of cooperation of the family, the need for protection of the individual from possible consequences of his illness, and the potential for future life satisfaction. These factors were usually brought out by the group relatively early in the seminar. The factors not usually volunteered by the group were past therapeutic failures, response to present therapy, the secondary gain of certain psychiatric disorders, the patient's ability to gratify vital needs when well, and current interpersonal relationships.

More subtle difficulties were encountered by the students in attempting to decide whether an individual would be a candidate for treatment by themselves or by another physician specializing in psychiatry. It was generally agreed that a suicidal risk or sufficient anxiety to disrupt functioning would be indications for admission to a psychiatric hospital. For those patients who could be handled on an outpatient basis, as determined by careful history and psychiatric examination, the problem of the personality of the physician encountering the patient led easily to the subject of the next seminar. In summary, the instructor reviewed the factors in evaluation of a patient for chronic hospital care, for intensive inpatient therapy, for intensive therapy (including the somatic therapies) as an outpatient, for supportive care, and for environmental manipulation without extended psychotherapeutic interviews. In this way the subject matter of the first two seminars became unified.

THE PERSONALITY OF THE THERAPIST.—It was pointed out to the group that in the two previous sessions it had become clear that each member reacted differently to the various problems posed. They were told that many of them, no matter what their specialty, would be confronted with psychiatric problems. What psychiatric problems would they choose to treat? Gradually it emerged that the decision as to referral of patients would be in accord not only with their specific training and interests but also with certain aspects of their personality and that of the patient. The concept of the "crock" was one which seemed to spring up in medical circles applying to those who demanded inordinate time and attention for "imaginary" ills. These are the patients who are rejected by one physician after another. Whether or not the doctor can cope adequately with the distressed individual who distresses others depends on how he can formulate and organize the problem and what approach he can take consistent with his own time, ability, and personality characteristics. A physician who has never satisfactorily related to his own nagging, complaining mother might possibly have difficulty trying to treat a woman with a similar personality. The physician who is impatient with illness of a chronic nature should not try to be the continuing supportive figure for a tenuously adjusted chronic patient with social and psychologic inadequacies.

Another variation on this theme is the supposed positive aspect of emotional involvement. Many a physician has difficulty in dealing with an attractive, erotic patient. After considerable discussion the students agreed that a maturity of sexual adaptation seemed an essential prerequisite for an intensive psychotherapeutic relationship not doomed to failure.

In summary, the gamut of what the individual physician may do ranges from referral of all patients with emotional problems to selecting certain problems with which he feels he can cope. It was stressed that either is acceptable, but a certain amount of self-analysis is needed to determine the decision.

DEMONSTRATION OF AN INITIAL INTER-

VIEW. For the two-hour session on the initial interview the instructor arranged with the medical resident to select a normal patient on his service. The instructor met the patient for the first time in front of the student group. The patient was told that we wished to find out how hospitalization and his illness affected him so that we could try to make his stay and the stay of others more helpful. A brief life history was obtained and a psychiatric examination performed in order to ascertain any gross psychopathology of thinking. His attitudes toward various aspects of hospitalization were elicited. How his illness would change his life situation was carefully examined. The interview was terminated in about one hour with an attempt to formulate constructive suggestions for the future for the patient. The students were then questioned for the following hour as to their impressions of the interview with special emphasis on personality features which enable the individual to cope with his difficulty.

In the selection of a normal patient only the most sophisticated medical resident would not choose the patient whom he deemed cooperative, pleasant, and uncomplaining. Yet, in the setting of physical illness those very characteristics might indicate denial of difficulty. A typical example of such a patient was that of a fifty-one-year-old successful business man recuperating from a mild coronary occlusion. Mild depression came to the fore during the interview. This was immediately handled by emphasizing the patient's assets and certain hopeful but realistic features by which he could re-establish his defenses. Many students reacted to the seminar situation by stating that the instructor was trying to point out illness in a normal individual. The accusation usually stimulated other members of the group to challenge this, sometimes with heated results. The instructor remained passive until the terminal phase of the session when he summarized the situation by a ten-minute outline of *normality* as described by Levine.*

DEMONSTRATION OF A PSYCHOTHERAPEUTIC INTERVIEW.—The last two-hour seminar was centered around an interview with a patient hospitalized for a psychiatric disorder. After a brief life history and the patient's story of the present illness, a specific aspect of the individual's personality was analyzed by directive and nondirective questioning. If possible, there was an attempt at resolution of a specific problem during the fifty-minute interview. The patient usually became unaware of the audience and expressed surprise at the passage of time. To put the patient at ease at the end of the interview he was thanked for his contribution to the teaching of the student doctors.

The group was then urged to comment on various aspects of the psychotherapeutic approach used. The purposeful production of anxiety in order to accomplish a specific goal, the rephrasing of statements to give the patient a different view of a problem, the emphasis on certain assets, the decentralization of painful life situations, and an empathy by the therapist could usually be ascertained. Many of the groups of students would at the end of the seminar give some of their ideas as to what it is that we call psychotherapy. The instructor summarized their thoughts with a definition of psychotherapy which seemed helpful in unifying their knowledge at the close of the five-week course.

Modifications of the Seminar Program for Future Students

Certain modifications of the seminar portion of the third-year course in psychiatry were effected during the 1958–1959 academic year. In order to involve each student more intensively, the starting point of each seminar is a formal presentation of an inpatient by one member of the group. Not only does he formulate a diagnosis and the dynamic factors, but also he is encouraged to give a concept of variable goals dependent on his evaluation and to discuss personality factors which might influence the physician treating the patient. Each student has an opportunity to present a case before his group. Other members of the group are called on for their impressions. The writer feels that more meaningful and dynamic group interaction is stimulated in this manner.

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* Levine, M.: Psychotherapy in Medical Practice, New York, The Macmillan Company, 1949, p. 283.

Summary

The aim of teaching psychiatry is to allow each student to utilize his own knowledge in a manner consistent with his personality. In the third-year course in psychiatry at Cornell University Medical College a series of seminars is devoted to stimulating the students to express their ideas on the methods and aims of treating a psychiatric patient. The students are urged to set reasonable limits on goals after a careful evaluation of a problem. Respect and knowledge of their own limitations are encouraged. Demonstration of some psychotherapeutic technics and observations concerning these are discussed. Through the self-expression cultivated in seminars, students become better able to apply their common sense and their human experience in a scientific way. A stimulus is provided for the first step in a realistic evaluation of their individual roles in medicine. An attempt is made to delineate the role of the psychiatrist as dealing with illness while recognizing the cultural, social, and environmental factors which may frequently be a source of confusion in treatment.

525 East 68th Street, New York 21

Isolation of Newborn Infants with Thrush Unnecessary

Isolation of newborn infants with thrush, a mild fungal infection of the mouth and throat, is unnecessary, according to four New York researchers.

Most city health regulations require the removal of infected infants from the regular hospital nursery to an isolated area. This is expensive, complicated, and unnecessary, the researchers wrote in the July 4 *Journal of the American Medical Association.*

Soft white patches appear in the mouth and throat in thrush. They are caused by the fungus Candida albicans, which also causes other human infections, including a vaginal infection during pregnancy. Thrush has commonly been believed to be an air-borne infection; however, the fungus has not been isolated from nursery and hospital air or from soil and air in general, the authors said.

The most common source of infant infection is maternal vaginal infection. Newborn infants may harbor Candida albicans in the mouth and intestine for five to six days before the disease becomes apparent and the patients are removed to the isolation nursery; thus unsuspected foci of infection are always present in a nursery.

A study of the prevalence and spread of thrush among more than 1,600 infants in the nursery at Maimonides Hospital, indicated that isolation had no effect on the prevalence or spread of the infection among infants. They concluded that isolation does not diminish the incidence of the disease among infants and that the expense of isolation is unnecessary.

The authors are Philip J. Kozinn, M.D.; Harry Wiener, M.D.; Clare L. Taschdjian, B.S., and James J. Burchall, B.S., Brooklyn.

Clinical Evaluation of Parabromdylamine Maleate in Patients with Respiratory Allergies

ALBERT M. FUCHS, M.D., AND MURRAY L. MAURER, M.D., NEW YORK CITY

(From the Division of Allergy, Department of Medicine, Post-Graduate Medical School and University Hospital, New York University–Bellevue Medical Center)

It has been approximately fifteen years since the first clinically effective histamine antagonists were identified and investigated in the United States. The two compounds, diphenhydramine hydrochloride[1,2] and tripelennamine hydrochloride,[3] were most enthusiastically received. They were the first antihistamines used in this country which were of low toxicity and still capable of antagonizing a variety of the responses to histamine. The advent of these compounds, which are still very much used, was long awaited. It had been in 1937, more than twenty-five years after histamine had been implicated as the causative agent in a variety of physiologic and pathologic processes, that Bovet and Staub[4] demonstrated that certain phenolic ethers were able to block the effect of histamine, presumably by blocking the access of the amine to the receptor substance in the effector cells. In that interval only the physiologic antagonists such as epinephrine were used to counteract the effects of histamine on both blood vessels and bronchial muscle.

An unusually large number of antihistaminic compounds have been discovered in the last ten years.[5] It had previously been obvious that the structure-activity relationship of the antihistaminic drugs was such that toxicity did not necessarily parallel antihistaminic potency. Although there is very little difference in the efficacy of the numerous preparations available, the search continues in the attempt to discover that one agent which will, particularly in the symptomatic treatment of allergic diseases, best modify the allergic and anaphylactic reactions and will at the same time exert minimal toxic and, in particular, central nervous system depressant effects.

Dimetane* (parabromdylamine maleate) is a synthetic halo alkylamine which extensive pharmacologic studies have proved to have a high histamine antagonistic action with extremely low toxicity as compared with other extensively used antihistaminic preparations.[6]

The excellent clinical results reported after the use of parabromdylamine maleate[7–11] prompted us to employ this drug as an adjunct in treating 270 clinic as well as private patients who were suffering from respiratory allergies. Their ages ranged from five to seventy-nine years, and the group consisted of 137 male and 133 female patients. Only those patients who did not have a very satisfactory result with elimination of known allergens or with hyposensitization injections alone were chosen for this study. Parabromdylamine maleate was substituted for other antihistaminic agents which were being employed. Where no antihistaminic agents had in the past been used, parabromdylamine maleate was alternated with other agents in comparable doses or with a placebo in the attempt to better judge the effectiveness of this preparation.

Materials and Method

The study was conducted through the period which encompassed the tree, grass, and ragweed hay fever seasons of 1958. The patients were encouraged to use the drug not only for the symptomatic relief of existing symptoms, but also prophylactically in anticipation of high-pollen periods.

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*The Dimetane employed in this study was supplied by A. H. Robins Co., Inc., Richmond, Virginia.

Patients were advised to take the regular parabromdylamine maleate in the dose of one 4 mg. tablet on awakening and then again at 3:00 P.M. One Extentab, a sustained-action 12 mg. tablet, was taken at bedtime. Patients were, however, encouraged to take additional 4 mg. tablets as often as every four hours for severe symptoms. In a few instances, the sustained-action tablets were taken twice daily because of the greater convenience of this method of administration. For the most part, the patients were encouraged to find their own dosage level. In some instances, the 4 mg. tablet taken four times daily and in other instances the 12 mg. sustained-action tablet taken two times daily, with or without a 4 mg. tablet added when needed, proved to be effective. Still, a dose of one 4 mg. tablet on awakening and repeated at 3:00 P.M., and then a 12 mg. sustained-action tablet taken at bedtime appeared in the largest percentage of patients to be a very satisfactory method of administration. Placebos similar in appearance to the parabromdylamine maleate tablets were given to many of the patients as controls usually for a period of one week.

Results

A total of 270 patients suffering from respiratory allergies were studied. Of them only 34 were nonpollen sensitive. These 34 patients were under treatment for perennial allergic rhinitis or vasomotor rhinitis. They were included in this study because of the poor results that had been attained prior to using parabromdylamine maleate. Of these 34 patients, 12 had other complications: 6 had bronchial asthma, 3 had sinusitis, 1 had severe conjunctivitis, 1 had headache, and 1 had angioedema. Eight of the 22 uncomplicated cases obtained excellent relief, 12 had satisfactory relief, while the remaining 2 patients were unrelieved. All of the 6 patients who also had bronchial asthma were unrelieved of their asthmatic symptoms, and only 1 of these 6 patients had satisfactory relief of his nasal symptoms. The 3 patients who also had sinusitis obtained no relief whatsoever. The patient who also suffered from severe conjunctivitis and another one who had headaches both obtained satisfactory relief, while the patient who also had angioedema obtained no relief while using parabromdylamine maleate.

Of the 34 nonpollen cases, patients with perennial allergic rhinitis or vasomotor rhinitis, 8 or 24 per cent obtained excellent relief, 15 or 44 per cent had satisfactory relief, and 11 or 32 per cent were unrelieved of their symptoms. One of the latter patients, who claimed that she felt worse from the dose of parabromdylamine maleate administered, complained even more strongly that her condition had been worsened when she was subsequently given a placebo of parabromdylamine maleate. Asthmatic symptoms when present were not relieved in any of the 6 patients who also had asthma.

The remaining 236 were all pollen-sensitive (hay fever) patients. Forty-eight of these were classified as complicated pollen cases. Of the remaining, 118 were uncomplicated hay fever patients, 114 or 60.8 per cent reported excellent relief of symptoms, 63 or 33.4 per cent obtained satisfactory relief, while in the remaining 11 or 5.8 per cent hay fever patients the results were poor.

Of the 48 complicated pollen cases, 29 had bronchial asthma during the pollen season. Excellent results were obtained insofar as asthma was concerned in only 5 of these cases. Seven had satisfactory or partial relief, while in the remaining 17 patients the asthma was not directly influenced by parabromdylamine maleate. However, the relief of hay fever symptoms in these 29 patients with asthma was excellent in 8, satisfactory in 20, and poor in only 1 patient.

Five hay fever patients also had urticaria, and all reported excellent results. Of the 3 hay fever patients who had dermatitis venenata, 1 reported excellent relief, 1 satisfactory relief, and the third had no relief.

TABLE I.—SUMMARY OF RESULTS OF TREATMENT WITH PARABROMDYLAMINE MALEATE

Allergic Complaint	Number of Patients	Excellent	Satisfactory	Poor	Side-Effects
Tree hay fever	2	2	0	0	None
Grass hay fever	5	4	0	1	None
Ragweed hay fever	94	49	39	6	4
Tree and grass hay fever	6	4	1	1	None
Grass and ragweed hay fever	64	45	16	3	4
Tree, grass, and ragweed hay fever	17	10	7	0	2
Hay fever complicated by asthma	29	8	20	1	3
Hay fever complicated by skin eruptions	9	6	2	1	None
Hay fever complicated by sinusitis	7	3	4	0	None
Hay fever complicated by severe conjunctivitis	1	0	1	0	None
Hay fever complicated by allergic headache	1	0	0	1	None
Hay fever complicated by allergic rhinitis and polyps	1	0	0	1	None
Nonpollen allergic rhinitis	22	8	12	2	1
Nonpollen allergic rhinitis complicated by asthma	6	0	1	5	1
Nonpollen allergic rhinitis complicated by sinusitis	3	0	0	3	2
Nonpollen allergic rhinitis complicated by severe conjunctivitis	1	0	1	0	None
Nonpollen allergic rhinitis complicated by headache	1	0	1	0	None
Nonpollen allergic rhinitis complicated by angioedema	1	0	0	1	None
Pollen cases	236	131	90	15	13
Per cent		56	38	6	5.5
Nonpollen cases	34	8	15	11	4
Per cent		24	44	32	11.8
TOTAL	270	139	105	26	17
Per cent		52	39	9	6.3

One hay fever patient with drug sensitivity and contact dermatitis had excellent relief. There were 7 hay fever sufferers who had chronic sinusitis. Excellent relief was obtained in 3 of these cases, and satisfactory relief was obtained in the remaining 4. One patient, sensitive to all the pollens, had the additional complaint of an allergic headache. Neither the hay fever nor the headache was influenced by the parabromdylamine maleate administered. One patient with grass and ragweed hay fever, which was complicated by severe conjunctivitis, obtained satisfactory relief of his symptoms as well as of his conjunctivitis with the usual dose of parabromdylamine maleate. One patient with grass and ragweed hay fever which was complicated by vasomotor rhinitis and polyposis had poor results.

Of the 236 hay fever patients, 131 or 56 per cent obtained excellent relief, 90 or 38 per cent had satisfactory relief, and 15 or 6 per cent had no relief. Seventeen of the 29 hay fever patients who also suffered from bronchial asthma during the pollen season obtained no relief of their asthmatic symptoms after taking parabromdylamine maleate, 8 had satisfactory or partial relief, while only 4 obtained excellent relief.

Side-Reactions

Side-reactions occurred in only 17 or 6.3 per cent of the 270 patients with respiratory allergies treated with parabromdylamine maleate. Drowsiness was reported by 14 or 5.2 per cent of the patients which in most instances was mild in intensity. Other side-effects were reported by 5 or 1.9 per cent of the patients. One patient complained of palpitation and a "cold feeling" in addition to drowsiness. One patient had a headache, another had a headache in addition to drowsiness, and 2 patients complained of dryness of the throat. Only 2 of the 17 patients who experienced side-reactions discontinued the use of parabromdylamine maleate because of severe drowsiness.

Six patients volunteered the information that parabromdylamine maleate was the best antihistamine agent they had used. A number of other patients reported that not only did parabromdylamine maleate provide more relief of symptoms than did the other previously taken antihistaminic, but also it was the only antihistaminic agent taken which caused no drowsiness. Three patients, although obtaining satisfactory relief with parabromdylamine maleate, stated that they preferred the antihistaminic agents they had used in the past.

Table I summarizes the results of treatment with parabromdylamine maleate.

Comment

Regardless of the drug being evaluated, one must always bear in mind that there are some patients who will have poor results. Particularly when the antihistamines are the drugs being evaluated, one will find that there are some patients who prefer a different antihistamine agent because habit or continued use has made them oblivious to the side-effects or perhaps because they actually find the side-effects beneficial. Some patients prefer the central nervous system depression produced by the antihistaminic agents of the aminoalkyl ether series. Any other compound which merely relieves the nasal symptoms associated with hay fever, for example, would be considered inadequate. In some instances, and particularly when administered in large doses, the antihistamines, like certain other tertiary amines and local anesthetics, can cause central nervous system stimulation. Many patients have learned to use this action too, depending on their need.

The average patient generally is pleased to receive a drug that will afford him the maximum of symptomatic relief with a minimum of annoying side-effects. It would appear that in 243 or 91 per cent of the 270 patients with respiratory allergies presented in this report, parabromdylamine maleate proved to be a most satisfactory adjunct in the treatment with only 6.3 per cent of side-effects. Parabromdylamine maleate by clinical trial has shown itself to be a most effective agent against hay fever, less satisfactory in the patients suffering from perennial allergic rhinitis or vasomotor rhinitis, and considerably less effective when used to treat asthma.[12] This would confirm the assumption that the blocking agent is more effective against histamine which reaches an effector cell through the circulation system as in hay fever than that which is released intracellularly as a result of the reaction between antigen and antibody, as it occurs in asthma. The fact that in urticaria the histamine must diffuse from its site of release to act on adjacent blood vessel perhaps also explains the effectiveness of parabromdylamine maleate in the control of these reactions.

Summary

1. Dimetane (parabromdylamine maleate) a new antihistaminic agent, was employed as an adjunct in the treatment of 270 patients suffering from respiratory allergies.
2. Ninety-one per cent of the patients with respiratory allergies obtained satisfactory relief.
3. Parabromdylamine maleate has been shown to be most effective in the treatment of hay fever (94 per cent of the patients, less satisfactory in relieving the symptoms of perennial allergic rhinitis or vasomotor rhinitis (68 per cent of the patients), and considerably less effective when used to treat asthma (34 per cent of the patients).
4. Side-effects occurred in 6.3 per cent of the patients with respiratory allergies. The most frequent complaint was mild drowsiness (5.2 per cent of the patients).
5. A dose of a 4 mg. parabromdylamine maleate tablet taken in the morning and again in the afternoon, and a 12 mg. sustained-action tablet (Extentab) at bedtime seems to be the best method of administration.
6. Parabromdylamine maleate by clinical trial has been shown to be an outstanding antihistaminic agent for the symptomatic relief of respiratory allergies with minimal side-reactions.

29 East 9th Street, New York 3

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Antibiotic Therapy: Adverse Effects in Acute Appendicitis Before Diagnosis

From their experience over a period of about two and a half years, the authors believe that patients with undiagnosed abdominal pain should not be given antibiotics until appendicitis can be definitely excluded. Their paper shows that 5 of a total of 46 patients undergoing appendectomy had been preoperatively or prediagnostically treated with sulfonamides or antibiotics, and the authors append a note on 2 additional patients similarly treated, one of whom died. The authors believe that this therapy, by obscuring symptoms, delayed and hampered the diagnosis with resultant increase in morbidity, length of hospitalization, and expense. In these cases, the number of complications was high.

Experience of this group indicates that appendicitis treated with antibiotics may lead to two clinical pictures: (*a*) patients obviously ill with masked and atypical symptoms, who require exploration on the basis of the clinical picture; (*b*) patients with symptoms so completely masked that no specific diagnosis can be made, who do not appear to require exploration on the basis of clinical findings, and who settle into chronic disability which may last months with occasional exacerbations.

In patients with abdominal pain and atypical symptoms, the physician should have a high index of suspicion and closely question the patient. If antibiotics have been given, exploration is indicated despite paucity of physical findings.—*Annals of Surgery, December, 1958, R. B. Dietrick, M.D., C. W. Byrd, M.D., and J. A. Lawson, M.D., Veterans Administration Hospital, Richmond, Virginia*

Communicable Disease Protection

WALTER E. BOEK, PH.D., ALBANY, NEW YORK, AND ROSCOE C. BROWN, JR., PH.D., NEW YORK CITY, AND ELDON R. WESTMAN, M.D., WATERTOWN, NEW YORK

(From the New York State Department of Health; the State Committee on Tuberculosis and Public Health; and the Watertown District, New York State Department of Health)

EDITOR'S NOTE: *During 1958 two interview surveys were carried on by citizen groups in cooperation with local health officers and the State Health Department. One of these was in Montgomery County and the other in Southern Jefferson County. This is the second of a series of short articles on the findings.*

Knowledge of Immunization Services

In view of the availability of immunizing agents against such communicable diseases as tetanus, whooping cough, diphtheria, and smallpox, the occurrence of these diseases raises questions about immunization coverage in our communities. The 667 families in the two interview surveys were asked where immunization against smallpox could be obtained in their community. The same question was asked about diphtheria.

Table I shows that a majority of people looked to physicians for this service while about 3 out of 10 looked to health department clinics and to school clinics. Fewer than 1 out of 10 did not know where immunization could be obtained or did not respond to the question. People living in the one city surveyed, Amsterdam, differed from the others in that fewer named private doctors as a source. The proportion considering physicians as sources in the rural towns of Montgomery County was the same as in the villages, but in Southern Jefferson County more villagers named doctors than did town residents. Also, a lower proportion of people in the lower income-education levels list schools as possible sources of immunization services.

TABLE I.—POSSIBLE SOURCES OF IMMUNIZATION FOR SMALLPOX AND DIPHTHERIA GIVEN BY FAMILY INTERVIEWS IN MONTGOMERY AND SOUTHERN JEFFERSON COUNTIES

	Per cent Giving Each Source	
	Smallpox (667 Families)	Diphtheria (667 Families)
Private doctor	51	53
Health Department clinic	34	34
School clinic	31	30
In Armed Services, hospitals, and so forth	3	3
Do not know where	7	6
No response obtained	3	1

TABLE II.—PROPORTION OF INDIVIDUALS NINETEEN YEARS OF AGE OR YOUNGER IN SOUTHERN JEFFERSON COUNTY WITHOUT IMMUNIZATION

Age (years)	Tetanus	Whooping Cough	Diphtheria	Smallpox
0 to 4	19	18	18	32
5 to 9	5	5	5	9
10 to 14	10	10	9	9
15 to 19	15	13	9	8
All ages	12	11	10	15

Age and Immunizations

In the Southern Jefferson County health survey the vaccination history of each person was obtained. Only those nineteen years of age or younger will be considered because of the difficulty older people may have had in remembering accurately about vaccinations they had as children. Probably the most significant figures are those indicating the proportion of individuals reported as not having protection (Table II). About 18 per cent of those children four years of age or less had not obtained immunization against tetanus, whooping cough, or diphtheria, and

TABLE III.—INDIVIDUALS IN SOUTHERN JEFFERSON COUNTY WHO WERE SAID TO HAVE BEEN VACCINATED FOR SMALLPOX COMPARED BY AGE AND BY LENGTH OF TIME SINCE THE LAST VACCINATION WAS OBTAINED

		Percentage Distribution of Length of Time		
Present Age (Years)	Total Number	Six Years or More	Ten Years or More	Twenty Years or More
10 to 14	107	25	. .	. .
15 to 19	87	43	24	. .
20 to 29	62	65	44	. .
30 to 39	92	*	86	37
40 to 49	80	*	83	65
50 to 59	37	*	95	84
60 to 69	53	*	89	89
70 to 79	23	*	91	91

* Data not available.

almost one-third had no smallpox vaccination. A somewhat smaller proportion had protection for the five diseases in the five to nine, ten to fourteen, and fifteen to nineteen age groups as can be seen in the table, although again, this might be due to memory problems. According to the report given by respondents, 13 per cent had had typhoid vaccine.

Another analysis concerns the length of time since the last injection of smallpox was obtained. Table III shows these data for age groups from ten years on. For example, 65 per cent of those twenty to twenty-nine have not had a smallpox vaccination during the last six years and 44 per cent had not had one during the last ten years. The proportion of older people not having an injection for ten years or more, and for twenty years or more increases as their age increases. Length of time since the last smallpox vaccination becomes especially important if smallpox is introduced into an area. Immunization to smallpox endowed by vaccine is temporary and probably does not exceed a few years in duration. Persons traveling internationally in endemic areas are required to be vaccinated every three years.*

TABLE IV.—PERCENTAGE OF INDIVIDUALS IN SOUTHERN JEFFERSON COUNTY AGED ZERO TO FOUR YEARS WHO HAD OBTAINED PROTECTION AGAINST VARIOUS COMMUNICABLE DISEASES IN THE FIVE SOCIAL CLASS LEVELS

	Social Class Level			
	I and II (8 persons)	III (44 persons)	IV (87 persons)	V (19 persons)
Tetanus	88	80	85	37
Whooping cough	88	86	84	37
Diphtheria	88	86	84	37
Smallpox	75	68	60	26

Social Class and Immunization

A fairly reliable five-class index of social stratification, which combined occupation and education, was used in Southern Jefferson County to determine how those not obtaining the protection differed from the others. There was a positive relationship between social class level and immunization status for those four years of age or younger, as may be seen in Table IV. In general, the higher the social class, the higher the proportion that had at least one injection for tetanus, whooping cough, diphtheria, and smallpox. The difference between the lowest class and the others who were zero to four years of age was particularly significant when measured statistically. When the three other age groups five to nine, ten to fourteen, and fifteen to nineteen are considered along with social class the high social class-high proportion protected holds except for the fifteen- to nineteen-year-olds where class V stood out better with tetanus and whooping cough protection than did class IV.

Typhoid vaccine, which is usually obtained only when there is a fairly direct risk, had been obtained by more of the older people. This would be expected since they had more possibilities of being at risk because of their ages and because many served in the Armed Services. The proportion covered, about one out of seven, did not vary significantly by social class.

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* Immunization Information For International Travel (1958), Washington, D.C., United States Department of Health, Education, and Welfare (Public Health Service), publication number 384, revised 1958.

TABLE V.—PERCENTAGE OF INDIVIDUALS IN SOUTHERN JEFFERSON COUNTY AGED TO NINETEEN YEARS WHO HAD OBTAINED PROTECTION AGAINST VARIOUS COMMUNICABLE DISEASES IN VILLAGES AND IN RURAL TOWNS

	Villages (188 Persons)	Towns (379 Persons)
Tetanus	84	81
Whooping cough	85	80
Diphtheria	87	84
Smallpox	79	77
Typhoid	11	14

Village and Rural Town Residence and Immunization

In Table V it can be seen that the rural residents of towns, as a group, were somewhat less protected than all the villagers except against typhoid. When age differences were investigated, this was found to be true for the age groupings zero to fourteen and fifteen to nineteen. For those five to nine the differences were very small between villagers and the others and for those ten to fourteen the rural residents were better covered.

Citizen Suggestions

To obtain an evaluative type of impression from people about the immunization services in their county, two questions were asked. The first dealt with how good they considered the immunization program to be, and the second solicited suggestions for improving the services.

Seventy per cent had a favorable attitude toward the services, 11 per cent were neutral, and 1 per cent had an unfavorable attitude. Some specific comments were: "the immunization services are good for children but they should be better for adults." "There was a slight inconvenience at first. We had to stand in a long line. Later it was satisfactory." "Average. As good as any." "We would like to see a dental service for school children with free clinics." "We have none in our community." "I have not paid too much attention. No way to get to polio clinic." "The services are available if necessary."

Only 88 of the 667 family spokesmen offered any suggestions for improving the immunization services in their communities. Some of the most frequently given ideas were to have more publicity, have more clinics, increase the age at which people could come to clinic, make the clinics more convenient, and increase citizen initiative.

A few actual ideas put forth were: "Have the same services for adults." "Amsterdam is behind other places in giving shots." "Old people should be educated." "Get more vaccine." "We never have taken advantage of the service because our children react to shots, but they have clinics frequently enough." "Have an adult clinic and more advertising." "They should publicize more of the services available." "Have an evening clinic for working adults." "Should have a mobile unit." "Provide transportation." "Have a full-time doctor for the village." "We don't have enough nurses in our city or county." "If the State helped, I think more could be done." "A night clinic for working people." "Send out cards for third shots like those for school children." "Have evening clinics in separate villages." "It's up to the individual."

Summary

The use of immunizing agents by individuals and their reaction to immunization services was presented. Some data from two interview surveys, one in Montgomery County and one in Southern Jefferson County, were analyzed. A signibcant proportion of individuals still lack protection. The families least able to stand the costs of illness are less protected than the others.

The whole of government consists in the art of being honest.—THOMAS JEFFERSON

Saint's Triad

SAMUEL N. LEVINE, M.D., ELMIRA, NEW YORK

(*From the Departments of Internal Medicine of the St. Joseph's and Arnot-Ogden Memorial Hospitals*)

THE term "Saint's Triad" refers to the occurrence of hiatus hernia, diverticulosis of the colon, and cholelithiasis in one individual. All these lesions may be found to be present either at the time of the initial study or the individual components may appear over varying periods of time.

The triad takes its name from Professor Saint of Cape Town, South Africa. During the year prior to June, 1948, in a personal communication to Muller[1] of the Department of Radiology, General Hospital, Johannesburg, he observed that this combination of pathologic conditions probably occurred more frequently than on the basis of chance alone. In the words of Muller: "Its prognostic importance in avoiding unwarranted treatment, and the wide differential diagnosis from a host of pulmonary, cardiac, and abdominal conditions, make the triad of practical as well as of academic interest."

Kleeberg and Schorr[2] in 1956 stated that: "The problem is whether the three conditions are etiologically or clinically an entity, a systemic disease, or whether such a combination is statistically an accidental finding." Foster and Knutson[3] in 1958 calculated in a recent study that the actual incidence of the triad was 8.6 times greater than chance in one series of 713 patients who were studied by cholecystograms, barium enemas, and upper gastrointestinal series, and 7 times greater than chance in another series of 58 patients who had undergone prior cholecystectomies for gallbladder disease. In the latter group only an upper gastrointestinal series and barium enema were done. In the one series of 713 patients there was a 3.4 per cent of actual incidence of the triad (24 cases) as compared with the calculated chance incidence of 0.4 per cent. In the postcholecystectomy group there was a 19 per cent actual incidence (11 cases) as compared with the calculated chance incidence of 2.6 per cent. In the series of 713 patients the actual incidence of cholelithiasis and diverticulosis of the colon was 3.2 per cent, that of hiatus hernia and diverticulosis, was 2.6 per cent, and that of cholelithiasis and hiatus hernia was 1.3 per cent.

It is frequently difficult to determine which component of the triad is responsible for the clinical picture, since the symptoms of the individual lesions may simulate each other. Unwarranted therapy, however, may be prevented by carefully attempting to determine how much each lesion is contributing to the illness.

In 1948 Muller[1] described the pain in hiatus hernia as generally in the xiphoid, substernal, and left subcostal areas and often referred to the back, left shoulder, and arm. It frequently comes on after meals or exercise and may be in the nature of a constriction, burning, or a "lump" sensation. It may be noticed particularly in the recumbent position, with relief on sitting or standing. Increased intra-abdominal pressure may precipitate an attack. Other symptoms may be heartburn, dysphagia, and vomiting. Esophagitis of the lower end of the esophagus may give hematemesis, melena, anemia, and peptic ulcer symptoms. Palpitations, dyspnea on exertion, anginal pain, and tachycardia may occur. Cough, dyspnea, and chest pain may suggest pulmonary disease. Constipation may be a marked feature.

The symptoms in diverticulosis may be flatulence, abdominal discomfort, constipation, pain with defecation, diarrhea, backache, or hemorrhage.

The symptoms associated with gallstones

may be flatulence, nausea—particularly after eating fatty foods—epigastric and right subcostal pain, and constipation. Coronary symptoms may be simulated. Pulmonary symptoms may occur, depicted by pain in the right lower chest, fever, pain with deep breathing, and respiratory distress.

As Palmer[4] said in 1951, it behooves the physician to be rather skeptical of accepting one demonstrated entity as the explanation for the patient's symptoms.[5] In 1955 he found 24 cases of Saint's Triad out of 170 patients with hiatus hernia—an incidence of 14 per cent. In 18 of the 24 cases there was a total of 30 operations. In 16 cases the first procedure was gallbladder surgery. Only 1 was cured, and 9 were not helped at all. Nine underwent a second operation, that of repair of a hiatus hernia. This time 6 were cured. So in this series gallbladder disease was suspected first—first looked for, first diagnosed, and first treated—yet it was only infrequently the cause of the patient's illness. Palmer concluded that if a patient with hiatus hernia has either gallstones or diverticulosis, there is an excellent chance that the third disease is present as well. Kleeberg and Schorr stated that we must have more complete radiologic examinations of the entire gastrointestinal tract of patients with diaphragmatic hernia or diverticulosis of the colon.

Considerable thought has been given to possible etiologic factors. Hiatus hernia may be congenital or acquired and has 1.7 to 3.5 per cent incidence. It occurs in middle to old age, in females 10 to 1, and more in fat hypersthenic individuals. Eighteen per cent of pregnancies show hiatus hernia in the last stages. Increased intra-abdominal pressure, whatever the reason, appears to be a causative factor. Late in life there is a loss of elasticity of fibrous connective tissue and fat at the hiatus with associated loss of muscular tone. Associated diseases—appendicitis, gastric ulcer, cholecystitis—may result in esophageal contracture and shortening, according to Muller.

Diverticulosis has an incidence of 11 per cent, is more prevalent in men, 2 to 1, and like hiatus hernia occurs more frequently in obese individuals. Muller believes the important causative factors are (1) a degenerative element; (2) inflammatory patches leaving weak spots; (3) a loss of submucosal and adventitial fat in older people; and (4) an increase of intracolonic pressure, such as chronic constipation.

Cholelithiasis has an incidence of 5 to 10 per cent; occurs more often in females, 5 to 1, especially in stout multipara; and causative factors appear to be sepsis, metabolic and chemical factors, biliary stasis, and constipation.

There are factors common to all three lesions. Constipation, for one, with associated straining at defecation, increases intra-abdominal and intracolonic pressures. Distention of the colon can initiate reflex stimuli to inhibit free bile flow, thus contributing to gallstone formation.[3] Constipation occurred in 50 per cent of the patients in Foster and Knutson's series of Saint's Triad, whereas the incidence of constipation in the general clinic population was 30 per cent.

Sex is a second factor. In Foster and Knutson's series, the incidence of female to male was 6 to 1. Females comprised Muller's 3 original cases. In Palmer's series of 24 cases there were 14 males to 10 females, but this may have been due to the fact that the basic group examined was composed mostly of Army personnel.

Obesity, another factor, increases intra-abdominal pressure and favors the deposition of fat in the intestinal wall, making it weak and more susceptible to diverticula formation under stress of intracolonic pressure.

Age is another factor common to these lesions. The average age for cholelithiasis, according to Bockus,[6] is forty-two and after fifty-five for the other two conditions. Diverticulosis is probably the second lesion to appear. The age range of cases of Saint's Triad in Foster and Knutson's series of cases was fifty to eighty-two, with an average of sixty-eight. In Palmer's series of cases the age range was thirty-five to seventy-three. Age is associated with fat atrophy and loss of elasticity.

Multiparity is another factor emphasized by Muller as characteristic. As with obesity and constipation, pregnancy causes increased intra-abdominal pressure. Multiparas also are known to show an increased incidence of gallbladder disease. Congenital structural weakness also may be a factor relating hiatus hernia and diverticulosis of the colon. Foster and Knutson conclude that the triad does not develop in response to any one single factor but more likely as the result of the interaction of several.

In a search of the records at the Arnot-Ogden Memorial Hospital and St. Joseph's Hospital, I was able to find 15 cases of Saint's Triad. I feel that this figure does not approach the actual number of cases. There were several instances where one or two members of the triad were found to be present, but x-ray investigation was not extended to determine the absence or presence of the other lesion or lesions. The cases were found in the records of the past ten years, and all but 3 occurred in the past three years.

The age range in this series was from forty-eight to eighty-seven, with a mean age of sixty-nine. As to sex incidence, all of the patients in this series were female. In 11 cases varying degrees of obesity were definitely present. In the other 4 obesity may have been present, but no reference was made in the record as to its absence or presence.

Four patients did not have any pregnancies, 1 patient had one pregnancy, 9 patients were multipara, and in the case of 1 patient no reference was made to the subject in the record.

Eight patients in this series had a definite history of chronic constipation. In 6 cases constipation may or may not have been present, but no mention of this symptom was made. In 1 case it was definitely stated that there was no constipation. This occurrence of constipation compares with the 50 per cent incidence of constipation in Foster and Knutson's series as mentioned previously.

In 11 cases all three lesions of the triad were found on the initial examination. In 1 patient cholecystectomy was done in 1925 at the age of forty-four, and hiatus hernia and diverticulosis of the colon were found in 1958 at the age of seventy-seven, a span of thirty-three years. In another patient gallbladder calculi were found at the age of sixty-one. The gastrointestinal series and the barium enema were negative at that time. At age sixty-six a hiatus hernia was found. At seventy-one diverticulosis of the colon was found—a span of ten years before the completion of the triad. Another patient had a cholecystectomy in 1923 at the age of fifty-two. The other two members of the triad were found in 1958, a span of thirty-five years. In contrast to the above 3 cases, where gallbladder pathology was the first to appear, another patient was found to have diverticulosis of the colon and a hiatus hernia at the age of sixty-four. At that time a gallbladder series showed negative findings. Three years later gallbladder calculi were found, completing the triad.

In this series surgery was performed in 6 cases. In 1 case a cholecystotomy was done in 1949. Four years later a cholecystectomy was performed. Symptoms continued, and further investigation a few months later revealed a hiatus hernia. Five years later a diverticulosis of the colon was found. In another patient a repair of a hiatus hernia was done, and one and one-half years later further search because of persistence of symptoms revealed cholelithiasis. Still another patient was improved by repair of a hiatus hernia after all members of the triad had been found and symptoms were thought most likely to be caused by a hiatus hernia. Another patient with all three lesions was treated with a phrenic crush. The fifth case, after the triad had been found, had a cholecystectomy. Because symptoms continued, a repair of a hiatus hernia was performed one year later. The sixth case had a cholecystectomy with apparent relief of symptoms thirty-five years before the lesions of the triad were discovered. Thus 2 of the operative cases required further surgery because of inadequate relief of symptoms following the first surgical procedure, and at least 1 other had persistence of symptoms.

Several cases had other pathologic conditions besides the lesions of the triad. One had arteriosclerotic heart disease and hypertrophic arthritis; another had esophagitis, rheumatoid arthritis, and varicose veins; another had a multinodular nontoxic goiter and a cystadenocarcinoma of an ovary; another had varicosities, duodenal ulcer, a rectal polyp, and hemorrhoids; another had hypertension, uterine fibroids, an ovarian cyst, and endometrial hyperplasia; another had hypertension and arteriosclerosis; another had diabetes, general arteriosclerosis, esophageal stricture, cerebral vascular thrombosis, cystocele, rectocele, procidentia, varicosities, toxic nodular goiter, postmenopausal osteoporosis, hemorrhoids, and a urethral caruncle; and finally another had duodenal ulcer, varicose veins, coronary thrombosis, generalized arteriosclerosis, and senile cataract of the right eye.

Conclusions

The findings in this series of cases are in accord with the findings reported by others as regards age, sex, obesity, multiparity, and chronic constipation. We physicians should investigate our patients carefully and thoroughly to avoid when possible the finding and treatment of one lesion only, when one or two other lesions may be present requiring a different procedure or approach for the improvement or cure of the patient.

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Diagnosis of Achalasia

Diagnosis of achalasia (cardiospasm, dystonia) is made partly by history and partly on the basis of roentgenographic studies and esophagoscopy. In any patient complaining of difficulty in swallowing, cardiospasm should be suspected. Presence of the classical signs of achalasia at fluoroscopy tend to be confirmed by x-ray studies with barium swallow and esophagoscopy. Definitive tests are the determination of intraesophageal pressure by balloon kymograph and the Mecholyl test of Kramer and Ingelfinger.—*Journal of the Tennessee State Medical Association, February, 1959, Sheldon E. Domm, M.D., David H. Waterman, M.D., and William K. Rogers, M.D., Knoxville, Tennessee*

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

*Treatment of Carcinoma of the Lung**

GABRIEL P. SELEY, M.D., F.A.C.S., *New York*

In an effort to estimate the risk of pneumonectomy, a bronchial blockage test was performed in 179 patients, with use of the degree of arterial oxygen saturation to estimate the functional adequacy of the remaining lung.[1] In 70 per cent of the patients the typical trend in the arterial oxygen saturation made a favorable prognosis possible. This technic was especially useful in the sixty- to sixty-nine-year age group. No deaths occurred in patients in whom the test indicated a favorable prognosis.

Suggestions made to improve chances for cure in carcinoma of the lung include chest x-ray in any adult complaining of symptoms referable to the respiratory system, periodic roentgenograms of all patients, excision of peripheral pulmonary lesions which are undiagnosed (especially in the asymptomatic patient), and radical surgical extirpation.[2] Certainly no one can dispute the use of these diagnostic and curative measures but they must be repeated so that they are widely accepted and practiced.

Evaluation of 910 consecutive cases of bronchial carcinoma was made.[3] Six months, on the average, elapsed between onset of symptoms and the patient's first visit to the clinic. Histologically 56 per cent of the carcinomas were squamous, 6 per cent adenocarcinoma, 21 per cent oat cell, and 17 per cent various types (including sphenoidal cell and anaplastic). The proportion of men to women was 13 to 1. Of the 910 patients seen, 340 had thoracotomies and 191 had radical operations. In the last four-year period of the study 720 patients were seen; 255 had thoracotomies, and 132 had radical operations, with 44 surviving three years. Thus 33.3 per cent of the patients were operated on with hope of a cure, and 6 per cent of all patients seen during that period survived three years.

In an analysis of 100 consecutive cases, studied between 1950 and 1955, 59 were found to be inoperable on admission; 20 were nonresectable; and of the 21 resected, 16 survived, but only 1 for five years.[4] If every effort is made preoperatively to determine resectability and patients are found to be inoperable, a minimal amount of disturbance of involved tissue may prevent dissemination. Routine periodic roentgen study may uncover early cases.

A study of 51 patients who survived five years postresection was undertaken.[5] Of these, 3 had gross cancer spread at operation, 14 had involved mediastinal nodes, and 34 had cancers localized to the lung. Various considerations, such as location, cell type, duration, and symptoms, were compared with the nonsurvival group and varied little from that of the latter group. The main factors of similarity among the 51 survivors were an abnormal x-ray density, confirmation of diagnosis at operation, and surgical excision of all cancerous lung tissue. Twenty-two of the lesions were located in main stem or lobar bronchi, and there was one chest wall excision.

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*Part II of an article on "Carcinoma of the Lung." The first part appeared in the September 15, 1958, issue of the JOURNAL.

In a recent report 192 resected cases surviving of 330 patients explored are discussed.[6] Ninety-three lobectomies and 127 pneumonectomies were performed, with a 10 per cent mortality in the latter and 6.4 per cent in the former. Five-year survival figures were 33 per cent in the lobectomy group and 24 per cent in the pneumonectomy group. Nodes were involved in 69 per cent of the pneumonectomies and in 36 per cent of the lobectomies. There was a 28 per cent five-year survival rate and an 18 per cent ten-year survival rate. Survey cases had a 42 per cent five-year survival rate. Thus, even with involved nodes there can be a fair five-year survival rate. The first pneumonectomy, done by Graham twenty-five years ago, was for a carcinoma of the lung with an involved node, and the patient is still alive today.

In a further discussion, with special reference to radical pneumonectomy, it was reported that there is no improvement in the five-year survival rate as a result of a radical, as compared to a simple, pneumonectomy for carcinoma of the lung.[7] However, emphasis was laid on blood vessel invasion as a most important prognostic sign. The adenocarcinoma group had 83 per cent blood vessel invasion, and the undifferentiated group had 100 per cent blood vessel invasion. Both of these types have a very poor prognosis. In discussing this paper I stressed the importance of venous spread at operation and urged ligation of the pulmonary veins prior to any manipulation of the lung bearing the tumor or of any dissection before the veins have been secured.

In discussing five-year survival rates another speaker quoted his five-year survival rate as 15 per cent for all resections, 32 per cent for curative resections, and 8.6 per cent for palliative resections. The latter is defined as one in which the carcinoma has spread beyond the lung, and he advocated resection in these cases.[8]

In another paper an analysis of 1,008 cases is presented, including 150 radical pneumonectomies.[9] The survival rates are very similar. Again the adenocarcinoma group, which has such a high blood-vessel invasion rate, had a 2 per cent five-year survival rate, once again emphasizing the poor prognosis in this group.

Advocates of radical pneumonectomy present 125 cases with 13.6 per cent postoperative deaths.[10,11] Since the radical operation was reserved for good-risk patients, it is not surprising that in 74 patients who had radical pneumonectomies the mortality rate was 5.5 per cent and the five-year survival rate with patients free from disease 27 per cent. Mention is also made of palliation, with implantation into the tumor of gold-filtered radon seeds and radioactive colloidal gold for malignant pleural effusions. These figures are almost identical with the five-year survival rates given by others who used routine pneumonectomy for the most part and are not very convincing in inducing thoracic surgeons to convert to radical pneumonectomy.[6-9]

In a series of 382 patients with primary carcinoma of the lung, there were 133 resections, 29 lobectomies, and 104 pneumonectomies, with 9 operative deaths.[12] Of 50 patients operated on five years or more ago, 20 per cent survived. The authors conclude that there is little relationship between the grade of the tumor, hilar node metastasis, and five-year survival. Of the 382 patients, 138, of which 134 were smokers, had squamous cell carcinoma.

Although there were only 249 operable cases in a series of 952 patients, the time which elapsed between symptoms and consultation was only four months.[13] In the pneumonectomy group, 93 of 118 survived operation, with 13 living more than three years and 7 more than five years. In the lobectomy group only 2 of the 27 patients lived more than three years. Of those patients operated on in 1951, 17 per cent were alive five years after operation without any symptoms, recurrences, or metastases. The selection of patients for lobectomy or pneumonectomy influences, of course, the five-year survival rate in either group.

A study of 500 resections was conducted to ascertain whether the proportion of patients requiring exploratory thoracotomy could be reduced and whether palliative resection was justified.[14] Of the 190 peripheral carcinomas, 152 were resected and 38 explored. When 724 patients with central carcinomas were reviewed, the following subgrowths were noted:

Small central	198 (154 resected)
Apical upper lobe segment, mediastinal type	44 (20 resected)
Stem bronchi	103 (63 resected)
Lobar atelectasis	233 (106 resected)
Hilar lymph nodes on x-ray	110 (35 resected)
Branch bronchus	25 (4 resected)
Main bronchus	11 (5 resected)

The percentage of resection was 32 per cent or greater. In about 11 per cent of patients with enlarged hilar nodes, the cause of enlargement was chronic inflammation, not neoplasm. It is suggested that these patients be resected, especially those with disintegrating tumors or severe inflammation peripheral to the tumor stenosis. The incidence of exploratory thoracotomy increases with roentgenologic progression of the tumor, and therefore earlier diagnosis would reduce this incidence and increase the percentage of operability. The authors condemn palliative resection because it does not increase life expectancy more than thoracotomy does and involves greater operative risk.

Cancer of the lung in Ireland is treated in a study of 404 patients.[15] In men the most common symptom was chest pain, in women cough. The average age was fifty-six years. Operations were performed on 143, and 91, or 64 per cent, had resections. Of the squamous carcinoma and adenocarcinoma cases, 50.8 per cent and 70 per cent respectively were resected, whereas only 22.1 per cent of the undifferentiated carcinoma cases were resected. Of the 91 patients who were resected, 88 were alive one month after operation, 49 per cent survived one year, 37 per cent two years, and about 35 per cent five years. Of those with squamous tumors, 41 per cent survived two years, whereas only 12 per cent of those with undifferentiated ones lived two years. These figures again show that the survival rates are very similar at two and five years after resection.

A survey of 244 patients in Italy, with reference to sex, symptoms, smoking habits, and so forth, reveals great similarity to other larger series in the United States.[16] Bronchoscopy and biopsy were found to be the most reliable diagnostic measures. Patients receiving irradiation therapy survived for an average of six months, and those not irradiated survived three and a half months after first consulting a physician. Radioactive cobalt therapy gave a somewhat longer survival period. It is obvious that surgery has more to offer than any present form of radiotherapy including cobalt.

From London a series of 2,156 patients, 2,005 men and 151 women, with bronchial carcinoma is reported.[17] Exploration was carried out in 33 per cent and resection in 21 per cent. Lobectomy is now the operation of choice provided effective removal of the tumor can be performed. The two-year survival rate was 45 per cent, and 28 per cent lived five years after resection. There were 101 operative deaths, mainly due to pulmonary deficiency or vascular lesions of the brain, heart, or lungs. Right-sided pneumonectomies resulted in almost twice the mortality rate of left-sided ones, and the same held true, but to a lesser degree, for lobectomies. The best prognosis appeared to be in right lower lobe growths. Adenocarcinoma appeared to be the most malignant type of tumor, although involvement of lymph nodes was not higher than in undifferentiated growths. Again it should be emphasized that blood vessel invasion in adenocarcinoma alters the prognosis by blood stream spread rather than by lymph node invasion.

In a series of 364 cases of histologically proved bronchial carcinoma, 253 were classified as largely undifferentiated, 103 as differentiated, and 8 as alveolar cell carcinomas.[18] This represents a much higher rate of undifferentiated tumors than is usually reported. Of the 103 differentiated carcinomas, 89 were squamous and 14 adenocarcinomas. Hemoptysis, which occurred in 43.8 per cent of the cases, was more common in small cell tumors than in the squamous variety. Tumor disintegration and intrabronchial distention are postulated as essential causes for bleeding. Phrenic nerve paralysis was most often caused by left upper lobe tumors and indicated metastases; autopsies confirmed mediastinal or mediastinal lymph node spread as the cause of the nerve paralysis. In 44 of the 500 cases examined, tuberculosis was associated with carcinoma and usually preceded its development. Only 65 of the 85 patients operated on were resectable, and most of these had squamous cell tumors.

In an attempt to gain support for resections in cases of lung carcinoma, the following results were presented[19]: In 147 cases, 143 pneumonectomies or lobectomies were done with a 97.2 per cent resectability rate, and of these 18 died in the hospital. There were 48 palliative resections, with 10 deaths in the hospital and only 19 surviving eight months or more, half of whom returned to work. The authors conclude that as long as thoracotomy remains the only certain method of deciding on operability and resection the only known cure, it seems reasonable to proceed to palliative resection in every case in which an operation is possible. There is much to be said in favor of this proposal but one must always keep in mind the mortality in palliative resections as well as the morbidity and mortality associated with exploratory thoracotomy in nonresectable tumors. These patients often run a rapidly downhill course, added to which is the pain and discomfort of a major thoracotomy in a hopeless case.

Patients eight to fifteen years post-pneumonectomy were studied and revealed varying degrees of pulmonary hypertension, from 33 over zero to 75 over 35 mm. of mercury.[20] These pressures became further elevated on mild exercise, as much as 300 per cent of normal. Pulmonary hypertension accounts for a high percentage of deaths following total pneumonectomy in older people. It is advisable to perform a lesser resection in older people, if possible, to remove all the tumor-bearing tissue. In a study of 5 patients, in an effort to find the effect of severe unilateral hypoxia on the partition of pulmonary blood flow in man, it was found that hypoxia increased the tension in the pulmonary capillaries, caused a shift in flow, and may increase pulmonary artery pressure.[21]

This is further evidence that changes in pulmonary artery pressure, in these instances as influenced by hypoxia, may determine the prognosis and survival in pulmonary surgery. In considering other factors in the survival of patients undergoing resections, a study was undertaken to evaluate the effect of position on pulmonary ventilation.[22] Adequate pulmonary ventilation was taken to be the minute volume ventilation required to maintain the percentage of carbon dioxide in the arterial blood at its preoperative level. Determinations were made on the same patient in the supine and the lateral positions before and after the intrathoracic portion of the operation. No increase in ventilation was found to be required when the patient was turned to the lateral position from the supine position. An open thoracotomy did not alter these findings when the lung was not retracted or compressed. Compression of the lung was found to be the most important factor in interference with adequate ventilation; the lung should be expanded more frequently and kept partially expanded during the procedure, if at all technically possible. This work merely adds corroborative evidence to what has been observed at the operating table by alert thoracic surgeons. In the author's experience, however, it has been found that in certain selected cases the supine position allows for easier ventilation, produces less cardiac arrhythmias and less hypotension, and makes induction of anesthesia much easier. Although the anterior approach for pneumonectomy may be more difficult for the average surgeon, in the hands of one experienced with this approach the author has found it valuable for either pneumonectomy or upper lobe lobectomy in older patients with poor respiratory reserve and/or cardiac disease.

The most important single factor in five-year survival was the absence of tumor extension beyond the lung.[23] The survival was four times greater when the carcinoma was localized to the lung. Epidermoid carcinoma had a better prognosis than anaplastic, although 4 patients with the latter type survived more than five years, 2 of whom had extension beyond the lung. Again one is reminded of the necessity for resectional surgery whenever possible and the variations in prognosis that may occur in the various cell types.

A successful resuscitation of a patient with cardiac arrest due to massive postoperative intrapleural hemorrhage is reported.[24] The right main pulmonary artery was relegated, and the heart revived one hour after pneumonectomy. Prompt recognition of the condition and immediate thoracotomy resulted in a live patient without neurologic sequelae. A careful check on the patient in the immediate postoperative phase is essential in all thoracic surgery, and prompt reoperation when indicated will give better results of this type.

Fourteen patients with resection of metastatic lesions to the lung were studied, and the survival time ranged from three to eighty-two months.[25] Ten lobectomies and four pneumonectomies were performed. The criteria which were met were unilateral pulmonary involvement, eradication of the primary malignancy, no other organ involvement, long interval of time between appearance of the primary lesion and metastasis, and suppuration with or without abscess foundation due to bronchial obstruction. In the author's experience the presence of an asymptomatic single metastasis or bronchial bleeding, especially in metastatic chorioepithelioma and hypernephroma, may also be an indication if the other criteria are satisfied.

Various treatments for secondary cancer of the lung, including radiotherapy, radioactive sodium iodide, hormones, chemotherapy, and resectional surgery are discussed in a French publication.[26] Of 10 patients operated on, 2 were in excellent condition two and one-half years after operation. Limited resection is often feasible and should be attempted for these secondary lesions.

A most unusual case of choriocarcinoma of the uterus with pulmonary metastasis treated by bilobectomy is reported.[27] A hysterectomy was performed five years before the lung resection and the patient is alive and well ten years later, thus giving further support to those who advocate surgery for selected cases with pulmonary metastases.

Results in the treatment of 6 patients with pulmonary adenomatosis are reported in a South American journal.[28] Three male patients between the ages of forty and sixty-two with far-advanced bilateral disease and metastases were inoperable, and they died of asphyxia. The other 3 patients were female; the disease in these instances was unilateral and asymptomatic, except for 1 patient with hemoptysis. Diagnosis was made by lobectomy during thoracotomy. Metastases occurred in all patients and caused death. Also included is a discussion on symptomatology, diagnosis, and duration (which varied from one year to more than four years). Early lobectomy is advocated in the absence of symptoms of metastases or bronchopulmonary complications.

The problem of the solitary pulmonary nodule is presented in two reports by the same authors.[29,30] In 215 patients, 47 per cent of the tumors were malignant with 37 per cent of them bronchial carcinomas. Minimal calcification within a solitary pulmonary nodule, especially when there is no more than a fleck or two, is insufficient grounds for assuming it to be benign. Nodules with a large central calcific core and diffuse calcific stippling, those with an inner ring or outer ring of calcium, and those completely calcified all warrant further observation because of a very slight possibility of malignancy. Bronchial carcinomas and the granulomas together accounted for 75 per cent of the solitary pulmonary nodules. Prompt resection, often a lobectomy, should result in a 75 per cent five-year survival rate in patients with small, solitary, circumscribed, asymptomatic bronchial carcinomas detected by fortuitous chest x-ray. In 71 cases of granuloma, studied with special stains, 40 were due to histoplasma, 5 to coccidiodes, and in 9 acid-fast bacilli were found. Every solitary noncalcified pulmonary nodule demands thoracotomy.

The roentgenologic aspects of 52 pulmonary tuberculomas, occurring in 41 patients, and 25 pulmonary hamartomas (20 parenchymal and 5 intrabronchial) are discussed and correlated with the clinical, surgical, and pathologic findings.[31] All tuberculomas were circumscribed and situated subpleurally. In only 4 of 41 patients were the history, symptoms, and physical signs suggestive of tuberculosis. Although most early tuberculomas are benign, this only remains true until the capsule breaks down or the cavity reopens. They then discharge their contents into the bronchial tree. All 25 hamartomas were solitary and without roentgenographic signs of perifocal reaction (tuberculomas by definition show no evidence of surrounding inflammation or spread). There were 20 parenchymal and 5 intrabronchial ones. The 20 hamartomas of the parenchyma appeared peripherally in the posteroanterior roentgenograms in 15 cases and more centrally in 5. The 5 intrabronchial hamartomas caused atelectasis of the corresponding pulmonary segment and cough and expectoration, or hemoptysis, whereas the parenchymal hamartomas were clinically silent. Hamartomas do not show up distinctly on the roentgenogram and may be present when there is a malignant lesion of the lung or elsewhere in the body. This occurred in 4 of the patients in this series. Pulmonary hamartomas of the cartilaginous type are usually subpleural and slow-growing, show frequent calcification of the punctate variety and an absence of malignant characteristics, and are composed predominantly of cartilage with epithelial and supportive tissue elements.[32] The diagnosis is never proved preoperatively but only after surgical enucleation. A chondroadenoma of the lung is composed mainly of cartilage, in contrast to an adenochondroma which is mainly glandular epithelium that has undergone extensive ossification with only islands of cartilage remaining.

Hamartochondromatosis is a benign tumor of bronchial origin which manifests itself as a globular intrapulmonary mass on x-ray examination.[33] The authors report the case of a fourteen-year-old boy with an unusual diffuse cartilage hypertrophy of the large middle and small bronchi associated with mesenchymal and epithelial proliferation that was not detected on bronchoscopic examination even though it involved the entire bronchial tree and required extensive lung resection. The typical hamartochondromatosis is a local lesion and the intrabronchial types can be detected by endoscopic examination. Treatment consists of exploratory thoracotomy and resection.

Sixteen cases of primary lymphosarcoma of the lung have been recorded.[34] This condition is comparable to lymphosarcoma of the stomach and both may be cured by local resection. Lobectomy is suggested for peripheral tumors. The prognosis for those treated by resection is better than for those with bronchogenic carcinoma. There are 11 patients who are alive and without recurrence five years and nine months post resection, 1 for twelve years and another for more than four years. Only 1 patient is known to have succumbed to recurrent lymphosarcoma.

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(*Number sixty-five in a series on Recent Advances in Medicine and Surgery*)

We must all hang together, else we shall all hang separately.—BENJAMIN FRANKLIN

CLINICOPATHOLOGIC CONFERENCE

ST. JOSEPH'S HOSPITAL

ELMIRA, NEW YORK

Conducted by ROBERT H. HUDDLE, M.D., F.A.C.S. APRIL 9, 1958

Discussed by HARRY D. KINGSLEY, M.D.,* ROCHESTER, NEW YORK

Case History

An eighty-four-year-old white male was admitted to the hospital because of a palpable mass in the abdomen. Two months prior to this admission the patient had been admitted to the hospital for two days because of constipation. At that time he stated that in order to have a bowel movement he had to press on his midabdomen and force the fecal stream from right to left; this maneuver seemed to relieve him. At that time an upper gastrointestinal series and a barium enema were interpreted as negative.

During the interim the patient had no complaints until one week before the last admission, when he noted a small lump in the region of his old right inguinal hernia. He had experienced no further difficulty with his bowels. Because of the abdominal mass, further hospital study was advised.

Past history revealed that the patient had had three previous hospital admissions one year prior to the last two admissions. These three admissions had all occurred within a period of thirty days. The first of these admissions was for right-sided pneumonitis, which responded to therapy in a few days. At that time it was noted that the patient had bilateral inguinal hernias, hemorrhoids (from which he experienced slight bleeding), and bilateral varicose veins. He was readmitted a few days later with thrombophlebitis involving the right greater saphenous vein. He was treated conservatively and discharged twelve days later. In a few days he returned for his third admission, at which time he had a ligation of the right greater saphenous vein under local anesthesia. Except for the physical impairments already mentioned, no other abnormalities were noted on these three admissions. Laboratory data revealed the sedimentation rate to vary from 26 to 40 mm. per hour and the white cell count to vary from 7,300 to 14,400. The hemoglobin values and urinalysis reports were within normal limits.

Physical examination on his last admission revealed the patient to appear younger than his chronologic age of eighty-four. His blood pressure was 140/78. The lung fields were clear throughout. Auscultation of the heart revealed a normal rate and rhythm and a soft systolic murmur at the base. The abdomen presented no scars or distention. There was a rather large mass palpable just above and to the right of the umbilicus. The mass was slightly movable and nontender and extended to the midline. There was no apparent connection between the mass and the liver. Liver, kidneys, and spleen were not palpable. Bilateral inguinal hernias were again noted. A very small, firm mass was

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* From the Departments of Surgery, University of Rochester and Strong Memorial Hospital.

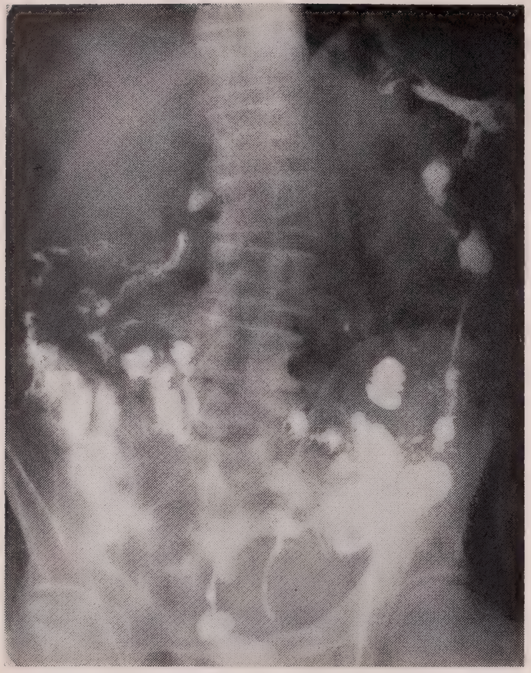

FIG. 1. Barium enema x-ray film revealing depression in hepatic flexure with gallstones noted opposite second right transverse process.

palpated in the right cord just 2 inches proximal to the right testicle. Bilateral varicose veins were noted. Rectal examination revealed internal and external hemorrhoids and a normal prostate.

Urinalysis gave the following findings: alkaline reaction, specific gravity 1.012, trace of albumin, negative for sugar, and amorphous and calcium phosphates on microscopic examination. A complete blood count showed: red blood cells 5.2 million and white blood cells 13,300, with 73 polymorphonuclears, 2 stab cells, 19 lymphocytes, 3 monocytes, and 3 eosinophils (per cent). The hematocrit was 49, and the sedimentation rate was 17 mm. per hour. The fasting blood sugar was 120 mg. per cent, nonprotein nitrogen 44 mg. per cent, and carbon dioxide combining power 52 volumes per cent.

A chest film revealed increased markings in the right base with minimal pleural thickening at the right costophrenic angle. A scout film of the abdomen revealed no significant abnormality. Gallbladder films revealed nonvisualization with several ringlike calcific shadows in the region of the gallbladder. Barium enema revealed an inability to get barium proximal to the hepatic flexure, although there was no evidence of a definite colon lesion. There was indication of partial obstruction from above, just distal to the hepatic flexure. The gallbladder, with probable stones, was noted to be contiguous to the colon in that region. A small amount of gas was noted in the small bowel (Fig. 1).

Seven days after admission the patient was taken to surgery for an exploratory laparotomy. His immediate postoperative status was fairly good, but he then ran a gradual downhill course with his temperature fluctuating between 100 and 102 F. He expired quietly fifteen days after surgery.

Discussion

DR. HARRY D. KINGSLEY: This has been a rather stimulating case to contemplate. Here we have an eighty-four year old white male who apparently was in a rather satisfactory state of preservation prior to his last admission.

First, I believe there is a significant relationship between the last admission and the one of the previous year. One so often notes that pneumonitis is a precursor of a disease process below the diaphragm. Was this pneumonitis related to the thrombophlebitis? Was this an area of pulmonary infarction?

The varicose veins could be significant. We see many elderly people who have had gradual development of varices throughout their lives. Of course, one must consider an obstructive process in the abdominal cavity related to either the caval or portal system. The only factor that comes to mind regarding the previous diagnosis of phlebitis is that of a pancreatic lesion. Since a pancreatic lesion is accompanied by migratory phlebitis, the history of a solitary varix with thrombosis is not too impressive.

The history of constipation obtained in the year of his final illness is significant to me.

In looking over some of the x-ray films I note definite ring shadows suggesting gallstones. There is an odd-shaped opaque shadow between the right second and third transverse lumbar process which I also believe is a gallstone. The impression made by the gallbladder shadow on the colon just distal to the hepatic flexure is rather remarkable. In an elderly man with this many stones I would expect to find a shrunken gallbladder. Hence, the x-rays have led me to believe that there is something other than gallstones in the gallbladder.

I occasionally have noted that in the preparation of the colon for a barium enema, constipation will be cleared up, even in the presence of a partially obstructing extrinsic or intrinsic mass. The patient will go along for a time without trouble but recurrence of the symptoms is inevitable.

The relationship of the lump in the right groin to the right inguinal hernia is intriguing. Is this a metastatic lesion? I believe that is what I am supposed to think. Perhaps the gallbladder perforated into the small bowel and a stone passed down into the inguinal hernia, but I am sure this is a nebulous offering. However, with an eighty-four-year-old patient I think we have to give some credence to such odd happenings.

Many questions have entered my mind concerning the mass. How large is the described "large mass?" Is the mass nodular, smooth, or doughy? All of these factors could influence my diagnostic thoughts. Apparently the mass could be delineated from the liver. One must consider the mass as arising in the liver, kidney, stomach, or pancreas.

At this point the flat plate and upright films should be of assistance in noting the relationship of the mass to other organs. A large quantity of fecal material is noted in the right side of the colon along with a small persistent gas bubble in the hepatic flexure. I have been advised by radiologists that this hepatic flexure bubble occurs in a significant number of patients with some type of gallbladder disease. I have seen this in pancreatitis associated with the sentinel loops and in acute cholecystitis with a paralytic ileus. The hepatic flexure appears to be in normal position, but there is considerable feces at this site with a small amount of gas distal to the flexure. Most of the gas appears to be in the colon; however, the final barium enema films revealed some small bowel gas.

The right kidney appears to be quite sharply delineated and in normal position as does the right colon; hence, I believe a retroperitoneal mass can be discounted. I believe significance should be attached to the distance factor noted in the relationship of the gallstone shadows to the gallbladder margin. A later film reveals a definite increased distance between the stone shadows and the gallbladder wall as compared to an earlier film. The distance of the stone shadow from the colon is also increased. These two findings may indicate an increase in tissue volume.

On the last barium enema only a small trickle of barium passed through the hepatic flexure. The peculiar pattern of the hepatic flexure could be secondary to an extrinsic mass. An inflammatory mass must be considered since there is an elevated sedimentation rate and an increased white count. However, this and other abnormal blood chemistries are probably associated with some dehydration. The chest film on this admission does not reveal any evidence of a metastatic lesion.

My over-all impression is that the patient had a right upper quadrant mass producing distortion of the colon with minimal bowel symptoms and no rectal bleeding. My first impression would be carcinoma of the gallbladder with extension to the colon and possible metastasis in the right inguinal canal. My second thought would be carcinoma of the head of the pancreas.

Diagnoses

Clinical: *Carcinoma of the hepatic flexure with metastatsis.*

Dr. Kingsley: *Carcinoma of the gallbladder with extension to the colon.*

Anatomic: *Primary carcinoma of the gallbladder with metastatses to the liver, omentum, and peritoneum.*

Pathologic Report

DR. ROBERT H. HUDDLE: Since our pathologist is away I shall read the autopsy findings. Initially I might state that the right inguinal mass was thickened fibrous tissue.

"At autopsy this was the body of an eighty-four-year-old, well-nourished white male appearing younger than the stated age. There was a right-sided longitudinal operative incision of the abdomen with a functioning ileostomy. The peritoneal and pleural cavities showed no free fluids. The lungs showed a few scattered foci of terminal bronchopneumonia in the lower lobes. The heart was of normal size and showed no gross pathologic changes.

"There were fibrinous adhesions between the omentum and intestinal loops. The omentum was 2 to 3 cm. in thickness and was infiltrated with grayish firm metastatic tumor. The serosa over the small and large intestines was studded with grayish white metastatic tumor nodules 5 to 10 mm. in diameter.

"The liver was normal in size and on section was brownish in color and showed several grayish metastatic tumor nodules 1 to 2 cm. in diameter in the right lobe. There was a tumor nodule 1 cm. in diameter in the undersurface of the right lobe adjacent to the fundus of the gallbladder.

"The gallbladder was greatly enlarged, measuring 15 by 8 by 6 cm. The serosa was grayish in color, and the wall was 5 to 6 mm. in thickness, firm, and grayish in color. It contained about 30 cc. of yellowish purulent-like material and four faceted greenish-black gallstones 1 to 2 cm. in diameter. There was a polypoid-like tumor mass 2 cm. in diameter protruding from the upper portion of the fundus into the lumen. The wall of the cystic duct was thickened and infiltrated with tumor and showed complete obstruction. The common and hepatic ducts were not involved.

"The hepatic flexure of the colon was densely adherent to the wall of the gallbladder and to the omentum, which caused a partial obstruction at this point. The mucosa appeared grossly normal. The pancreas was normal in size, shape, and consistency. The spleen and kidneys showed an essentially normal gross appearance.

"Microscopically an anaplastic mucinous adenocarcinoma of the gallbladder was noted, with similar microscopic lesions in the omentum, liver, and peritoneum."

Since Dr. Kingsley's diagnosis is correct, there is little to add. I should like to emphasize the point made about the distance relationship between the stone shadows and the margin of the gallbladder. This was certainly an astute observation. An ileostomy was performed at the laparotomy because of the inoperable carcinoma involving the right upper quadrant organs and an impending colon obstruction.

Happiness is the only good, reason the only torch, justice the only worship, humanity the only religion, and love the only priest.—R. G. INGERSOLL

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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B. J. CILIBERTI, M.D., *Cochairman*
ELIZABETH CRAWFORD, M.D.
VALENTINO D. B. MAZZIA, M.D.
LESTER C. MARK, M.D.
ALBERT SCHMOOKLER, M.D.

Cardiovascular Collapse Following Spinal Anesthesia

SPINAL anesthesia is known to interfere with some circulatory compensatory reactions. Positional changes imposed during spinal anesthesia may result in deficient compensatory circulatory readjustment, as illustrated in the following case report.

Case Report

A twenty-one-year-old female gave a history of obesity, hirsutism, and grossly irregular menses since her menarche at age thirteen. Abdominal examination was unremarkable except for obesity, and an adequate pelvic examination was not possible. Endocrine evaluation revealed a slightly elevated ketosteroid content which was lowered on adrenal suppression, without menses occurring. She was schedueld for a diagnostic dilatation of the uterine cervix, curettage, culdoscopy, and possible laparotomy for polycystic ovarian disease.

Examination revealed a blood pressure of 140 mm. Hg systolic and 90 diastolic. The pulse rate, respiratory rate, temperature, and blood hemoglobin content were normal. Her weight was 176 pounds, and her height was 5 feet.

For preanesthetic medication she was given by intramuscular injection 100 mg. of Seconal, 75 mg. of Demerol, and 0.4 mg. of scopolamine at 6:00 A.M. At 7:30 A.M., in the anesthesia room, she was apprehensive and crying. Her blood pressure was then 90/56 and her pulse rate 100 per minute. Two attempts at epidural puncture in the third lumbar interspace were unsuccessful because she was uncooperative and moving. On the third attempt the Huber-tip needle entered the epidural space, but there was difficulty in inserting the catheter. During further manipulation of the needle spinal fluid appeared, and it was decided to change to spinal anesthesia. Nupercaine 7.5 mg. of a 0.25 per cent solution ("heavy" Nupercaine) was injected, and this resulted in a sensory level to the fourth thoracic dermatome. The patient's arterial blood pressure dipped to 80/50, but after administration of 10

Discussed at a conference held at Bellevue Hospital, New York City, March 2, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

mg. of ephedrine intravenously and 40 mg. of ephedrine intramuscularly the blood pressure rose to 110/70, and it remained at this level during dilatation and curettage (in the lithotomy position) and culdoscopy (in the knee-chest position).

At the conclusion of culdoscopy the patient was placed prone, preparatory to being turned over for the laporatomy. While prone she suddenly became cyanotic and unconscious. Her pulse and blood pressure were not obtainable. She was quickly turned supine, and artificial respiration with oxygen via bag and mask was started. Heart sounds were faintly audible to the naked ear, but ten seconds later no heart sounds could be heard via stethoscope. Thoracotomy and endotracheal intubation were accomplished simultaneously. The heart was found to be in standstill and dilated. Following about thirty seconds of manual cardiac contractions, a weak beat occurred. Calcium chloride solution 5 cc. were injected into the left ventricle of the heart, and manual cardiac massage was instituted and maintained. A Neo-Synephrine intravenous drip (20 mg. in 500 cc. of 5 per cent dextrose in water) was started, and a blood pressure of 120 to 110/70, with occasional drops to 80 to 90/50, resulted. Spontaneous breathing resumed fifteen minutes after the cardiovascular collapse, and ten minutes later the patient began to move her head and hands. It was noted during closure of the chest skin that the patient responded to painful stimuli.

In the recovery room the patient was restless but unconscious. There was no response to verbal stimuli or to pinprick, but she did grimace on supraorbital compression. She also turned her head frequently from side to side and made grunting noises. There was conjugate movement of the eyes from side to side. The pupils were equal and reacted to light both directly and consensually. The patient's extremities moved within the restraints applied. Muscle tone increased somewhat, and all deep tendon reflexes were active but equal. Plantar response was vigorous. The impression was that the patient had cerebral irritation secondary to hypoxia. The electrocardiogram showed a normal sinus rhythm.

The patient was placed in a Thermorite mattress and was maintained there for forty-eight hours, during which time her temperature varied between 99 to 101 F. Drug therapy consisted of Dilantin 0.25 Gm. injected intramuscularly every twelve hours. Five hours after the cardiovascular collapse the patient had been given 40 Gm. of urea in 500 cc. of 5 per cent dextrose in water by intravenous drip infusion for her presumed cerebral edema; however, there was no appreciable effect from this medication. Over the next two days, consciousness and orientation gradually were restored. By this time neurologic examination revealed only equivocal plantar responses. The patient had complete amnesia from one day prior to operation to two days afterward. She was discharged from the recovery room on the morning of the third day with a temperature of 101 F. Her temperature remained between 101 and 102 F. for two days; it then gradually returned to normal during the following week. It was felt that recovery from the episode of cardiovascular collapse had been complete.

Comment

This case illustrates some problems due to postural change during spinal anesthesia. When this patient was changed from the lithotomy position to the knee-chest position, she probably sustained respiratory embarrassment and hypoxia. It is conceivable that the sensory level of spinal anesthesia may have risen unnoticed to an ever higher level than the one noted initially, at the fourth thoracic dermatome. Actually, such a sensory level was too high for a pelvic examination which may have been followed by a lower abdominal exploration. A sensory level to the tenth or eighth thoracic dermatome would have been ample. When respiratory arrest and cardiovascular collapse occurred, the prompt responses of the heart and respirations to resuscitative measures were encouraging, but the neurologic status in the recovery room required a guarded program. It was felt that while the patient's temperature never fell below 100 F. (except for the initial 99 F.) on the Thermorite mattress, it nevertheless would probably have risen higher without the artificial cooling. On this basis refrigeration was probably beneficial in contributing to a favorable outcome.

(*Number seventy in a series of Clinical Anesthesia Conferences*)

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Miscellaneous Incidents

The following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Aniline Dye	11 months	Male

This child was found by his mother playing with an envelope of powdered aniline dye. The skin and mucous membranes of his mouth had dye crystals on them. The patient was taken to New York Hospital where his stomach was lavaged and skin washed. A saline cathartic was also given. Since the patient appeared to be symptom-free, he was discharged. The mother was instructed to watch the child carefully and to return if any symptoms became manifest. The mother was contacted by telephone one day later, and it was reported that the child was feeling well and was asymptomatic.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Aniline (Pure)	30 years	Male

This patient ingested from 2 to 3 ounces of aniline in a suicidal attempt. He was admitted to the hospital in deep cyanosis with shallow respiration. Emergency treatment was given in the form of gastric lavage, cathartics, stimulants, and intravenous methylene blue. Since the hemoglobin was only 5.6 Gm., a blood transfusion was also given. The completely litmus blue appearance of the patient was extremely startling to the admitting physician in the emergency room, who hastily called the Poison Control Center for advice, which was promptly provided. After several days of hospitalization and treatment, the patient was admitted for psychiatric observation at Bellevue Hospital, where he still remains.

The most prominent feature of aniline poisoning is cyanosis, which is due to methemoglobin and sometimes to a small amount of sulfhemoglobin. There is also an accompanying anemia, since methemoglobin interferes with the binding of oxygen for normal gas transport. In addition, red blood cells at times undergo intravascular hemolysis. The methemoglobin formation is not due to the aniline itself but to the metabolic products, such as aminophenol and phenylhydroxylamine. In severe cases of aniline poisoning, liver disease may be an accompanying condition. Recovery from aniline poisoning generally follows.

The prominent symptoms usually are grayish-blue cyanosis without any signs of cardiac or pulmonary insufficiency, headaches, nausea, vomiting, and dryness of the throat. Central nervous system symptoms are also common, such as confusion, tinnitus, weakness, lethargy, drowsiness, disorientation, ataxia, vertigo, convulsions, and coma. Cardiac symptoms may also be encountered, such as heart blocks, arrhythmia, and shock. Urinary symptoms sometimes appear, such as painful micturition, hematuria, and hemoglobinuria. The renal injury, however, in most cases is mild and reversible.

The treatment consists of gastric lavage, either with water or potassium permanganate solutions, oxygen, and artificial respiration when indicated. Supportive therapy, such as transfusions and stimulants, is administered for the methemoglobinemia. However, methylene blue administered intravenously is the treatment of choice.*

The distinction between aniline and aniline dyes is again stressed. Normally even the certified colors are aniline dyes, and the ingestion of small amounts of extractable dye color, which so frequently arouses the concern of mothers and physicians, should be a matter of little concern. Incidents such as sucking on a piece of colored crepe paper and a smudge on the lips of indelible ink pencil or of writing ink are included in this category.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
6-Mercaptopurine	10 months	Male
	$2^1/_2$ years	Female

This preparation was given to the ten-month-old boy by his two-and-a-half-year-old sister. Both children were reported to have swallowed 6-mercaptopurine 50-mg. tablets; however, it is not definitely known whether such ingestion actually occurred. The children were admitted to the hospital, where their stomachs were lavaged with saline. After six days of hospitalization they were discharged in good condition.

Mercaptopurine is used for temporary remission in acute leukemia and chronic granulocytic leukemias. It is used primarily after failure of the patient to respond to folic antagonists and hormone therapy. It has been reported that large doses may produce hypoplasia of the bone marrow and of the gastrointestinal epithelium. It also lowers the nucleic acid content of the cells. The usual symptoms are anorexia, nausea, vomiting, and at times bloody diarrhea. Degenerative changes in the liver have been reported, particularly when massive doses have been ingested.

This case is illustrative of the difficulties involved in drawing conclusions from some of the cases reported to the Poison Control Center. Because the actual ingestion had not been observed, the results of the therapy or conclusions as to the toxicity of the amounts presumably ingested are naturally suspect and cannot be properly evaluated. There is danger, particularly in cases involving children, to pattern a mode of therapy related to the ingestion of any product based on reported cases to a poison control center.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Analgesic	27 years	Female

Propoxyphene was prescribed for the patient because of a back injury. The patient claims she took 6 pills because of sleeplessness and not with any suicidal intent. For the past three years she had been under the care of a psychiatrist for immaturity and depression. Following ingestion the patient was taken to the hospital, where spontaneous vomiting occurred about one-half hour after ingestion and her stomach was lavaged. On admission the patient had nausea and vomited but appeared alert and in no apparent distress. The hyperemesis was believed to be secondary to the ingestion of the drug.

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* Gleason, M. N., Gosseline, R. E., and Hodge, H. C.: Clinical Toxicology of Commercial Products, Baltimore, Williams & Wilkins Co., 1957, pp. 112–113.

This case is cited because it involves one of the newer preparations. It is the first such incident reported to this center.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Morphine Sulfate	28 years	Male

This patient is a narcotics agent who attempted to "make a buy" of narcotics in a suspect bar, in the process of which he ordered a drink. He afterwards suspected that he had been given a "Mickey" (heroin or morphine) because of the subsequent symptomatology. After leaving the bar he felt ill, and his companion, another agent, took him to the hospital in coma. He also had periodic "tremblings and twitchings."

His white blood count was slightly elevated, and the guaiac test was positive. The patient was treated with Nalline 22 mg. intravenously, and he made a very rapid recovery. The exact nature of the drug involved has not been ascertained.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Chenopodium Oil	33 years	Male

A dealer in essential oils had spent several days repacking Chenopodium oil into small containers. He frequently wiped his hands with a rag saturated with the oil. When the rag touched his fingers, pain like that of frostbite was experienced. In addition, the patient reported moderate choking sensations when coughing. That evening the Poison Control Center was consulted by his wife, who was very alarmed over his condition.

Although Chenopodium oil has resulted in fatalities on ingestion, no information could be obtained on an incident of the nature reported. By morning the symptoms had subsided. The oil of Chenopodium involved in this incident was earmarked for export. Its consumption in this country has been more or less discontinued by the modern medical practitioner. It is of interest to note that American wormseed is grown and the oil distilled in only a small area in Maryland. The active ingredient of Chenopodium is an organic peroxide (ascaridol).

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Shampoo or Lye?	3 years	Female

The Poison Control Center was consulted by a physician who asked about treatment for the ingestion of Drene shampoo, an ingestion which had just been reported to him over the telephone. This is a relatively innocuous ingestion, and the physician was so advised. A few minutes later he called back to inquire about Drano, and he was informed that this is a hazardous lye product.

This incident points up how important it is for the physician to request callers to spell out the product name. There have been a number of incidents in which the wrong product was originally reported because of similar sounding names and in which on further investigation the true product was ascertained.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Barbiturates	Unknown	Male

This patient ingested an unknown quantity of barbiturates with suicidal intent. He was brought to the hospital in deep coma; a general hyporeflexia was also noted. The patient was promptly treated with Megimide, Coramine, and oxygen but nevertheless expired eight hours following admission without regaining consciousness. The urine was positive for barbiturates, and the death was attributed to barbiturate poisoning.

This case is cited to indicate that a specific antagonist for barbiturate poisoning is still unavailable.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Lye	23 years	Male

This patient attempted suicide after an argument with his aunt, who refused to give him money to obtain heroin. His daily expenditure for heroin was reported to be $15. He experienced burning in the mouth and throat, and vomiting was induced. He was taken to the hospital, where acetic acid gargle was given. He was then admitted to the Bellevue Hospital psychiatric ward for the treatment of drug addiction.

Does this type of case contribute to the argument for controlled availability of narcotics to users and addicts?

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Aspirin	3 years	Female

This three-year-old patient was found by her brother with a bottle of 5-grain aspirin tablets at 3:00 P.M. In the evening (8:00 P.M.) the child became lethargic and irritable and she vomited. At 10:00 P.M. she vomited blood, and her parents rushed her to the hospital emergency room. She was hospitalized after a blood chemistry was obtained. The patient was treated with fluids intravenously (5 parts 5 per cent glucose in water, 2 parts saline, and 1 part sodium lactate), 60 cc. per hour for about six hours. She was also taking fluids orally. Twenty-four hours following admission the patient's blood chemistry was normal, and three days following admission no salicylate was detected in the blood. After five days of hospitalization and appropriate therapy the patient made a complete recovery.

It is most satisfying that the severity of cases involving the $1^1/_4$-grain aspirin has been remarkably reduced.

INCIDENT 12

Toxic Agent	*Age*	*Sex*
Meperidine	19 years	Male

This patient was operated on at New York Hospital for gum repair. A prescription was given for 100 mg. meperidine tablets and phenobarbital 100 mg. tablets for pain. He apparently misunderstood the physician's instructions and took all the tablets at one time. He became very sleepy and was admitted to the hospital in stupor. On admission the patient was treated intravenously with Nalline.

Nalline is used at times in the emergency room to differentiate between morphine and barbiturate coma. This possibility of a combination of drugs must be borne in mind when Nalline is used in this manner.

(*Number thirty-six in a series of Briefs on Accidental Chemical Poisonings*)

The finest music in the room is that which streams out to the ear of the spirit in many an exquisite strain from the little shelf of books on the opposite wall. Every volume there is an instrument which some melodist of the mind created and set vibrating with music.—JAMES LANE ALLEN

CANCER ALERTS

A series of radio talks for the practitioner
presented over Station WNYC-FM under the sponsorship of the

New York Academy of Medicine
with the cooperation of the
New York City Cancer Committee

Cancer Detection in the Private Office

EMERSON DAY, M.D., NEW YORK CITY

(*From the Department of Preventive Medicine, Memorial Center for Cancer and Allied Diseases*)

SINCE cancer cure depends on early treatment, which in turn depends on early diagnosis, cancer detection must be the concern of all who want to solve the problem of steadily increasing cancer illness and deaths. In New York State the annual figure for cancer deaths exceeds 30,000. Some 10,000 of these persons could have been cured. This is not a dreamt-up figure but a realistic—actually conservative—statement of what can be accomplished if new cancers are diagnosed and treated early, in other words, if we practice more detection.

A good beginning has been made in the cancer detection centers but they are not the full answer. The centers are important for development of technics and education but they obviously can do no more than a small part of the job that needs to be done.

The bulk of detection examinations must be done in the private office. Any office equipped to do a general examination is suitable. Any patient in the office is a candidate. Some may have no complaints whatsoever and come requesting a check-up, once or at periodic intervals. These persons constitute the publicized ideal type of examinee for cancer detection, allowing detection before the cancer has caused symptoms and when it is most curable.

Others may be in the office for any of myriad office problems, simple to complex, which usually do not suggest cancer. These patients also are candidates for cancer detection, particularly if they are women over thirty and men over forty. I state ages not because there are any below which detection examinations are to be discouraged but because in the press of practice it is often necessary to set load controls. The ages at which detection examinations should be encouraged will vary with available time and the demand but certainly should start in the thirties for women and in the forties for men. Generally speaking, the cancer yield will be higher the older the age group, with the upswing for women starting approximately ten years earlier than for men.

Whatever the cause of the visit, cancer detection examinations should be promoted wherever and whenever possible in private practice. The requirement is an interest on the part of the doctor, a cooperative desire on the part of the patient, and the commitment of adequate time by both. Cancer detection examinations are best performed by appointment, setting aside three quarters of an hour to one hour for an original visit and one half of an hour for the patient on whom a background history is already available. The time requirement, which is a major problem in most offices, may be reduced by systematized procedures.

Routine Procedures

The routine examination which has proved effective in the detection center consists of a history, a thorough physical examination, and laboratory tests including hemoglobin, white blood counts, smear, and urinalysis. A chest x-ray should be done at least once for every examinee and annually for all men over fifty. I shall refer later to the Papanicolaou smears for cytologic study.

The medical history should include a review of family history for cancer and a careful review of systems for the patient. This is as important for the examinee without complaints as for the patient who comes to the office with symptoms.

The technic of the complete physical examination will vary from office to office. I shall emphasize only the procedures which should be included to give maximum effectiveness in cancer detection.

Skin, Head, and Neck.—In examining the skin, the genitalia and the feet must be thoroughly checked. Removal of pigmented moles of the feet and genitalia should be advised routinely as a cancer preventive measure.

Examination of the oral cavity should include palpation of the floor of the mouth, tongue, and associated structures. Examination of the throat should include indirect mirror inspection of the hypopharynx and larynx. Careful palpation of the neck may disclose a small lymph node as the first evidence of disease or may reveal a small adenoma of the thyroid. As many as 5 per cent of solitary adenomas of the thyroid are associated with cancer which is not suspected clinically. Detection and prevention of thyroid cancer depends on a routine policy of surgical removal of all suspicious nodules.

Breast.—One of the most important parts of the cancer detection program is the examination of the female breast. The breast is the commonest site of cancer in women. Even though accessible, it still presents a major problem in cancer detection. An adequate examination takes a minimum of three to five minutes and depends on careful inspection in good light and thorough palpation with a firm but light touch of the flat of the fingers.

The breasts should be examined with the patient in both the sitting position and in the supine position. It is best to start with the patient sitting with the arms relaxed at the sides and then extended over the head in each position inspecting for any asymmetry or dimpling. The axillas are palpated with the patient's arm supported by the free hand of the examiner. In the supine position the breasts should be systematically and thoroughly palpated while spread as thinly as possible over the chest wall by extension of the arm and slight lifting of the side being examined. The nipples must be carefully examined; any secretion should be smeared for cytologic study. The purpose of examining the patient by careful inspection and palpation in several positions is to assure the detection of small tumors at an early stage. The differential diagnosis of the lump, related to functional mastopathy in women in their twenties and thirties may be aided by repeated breast examination, preferably a week following the menses. As a general rule, every discrete mass which persists must be removed and examined by a competent pathologist.

Transillumination is occasionally helpful in differentiating tensely fluid-filled cysts from solid tumors. Similarly, aspiration occasionally can give valuable information in regard to the nature of discrete masses in the breast. However, final reliance should never be placed on the results of these adjuncts to physical exaamintion. The safest working principle is that every suspicious mass should have the benefit of complete excision and careful microscopic study.

Pelvis.—In the pelvic examination there are procedures which are among the most effective in detection of early and curable cancer. Every adult woman should have the advantage of adequate pelvic examination every year. This includes Papanicolaou smears, direct visualization of the cervix, and bimanual palpation of the pelvic organs. The taking of cytologic smears is a simple office procedure, adding no more than one minute to the examination time and affording an opportunity to pick up microscopic, preclinical cancer of the cervix. Everyone who has had the experience of detecting intraepithelial cancer in a cervix that appears perfectly normal clinically would never be without the smear technic as a standard office procedure. Two smears should be made routinely, one of the material aspirated from the posterior fornix at the beginning of the examination and another of the material obtained directly from the cervical os and adjacent mucosa after introduction of the speculum. The slides are dropped immediately into the fixative, and the clinician's part of the smear preparation is completed.

Laboratory facilities for the reading of smears are limited but are on the increase throughout the State through the promotion campaigns of the New York State Bureau of Cancer Control and local divisions of the American Cancer Society. Interpretation of cytologic reports and the management of patients with suspicious or positive findings call for good clinical judgment and close cooperation between the cytopathologist and those responsible for the care of the patient.

The smear alone is never diagnostic or the basis for treatment until confirmation by biopsy. It also never replaces the need for biopsy when indicated by clinical findings during the routine examination. As in all phases of the detection examination, every suspicious area should have histologic study. The iodine-staining reaction can be helpful in identifying areas of the cervix which should be biopsied.

Occasionally the smear gives evidence of disease of the fundus or other sites in the pelvis but it is less accurate here than for the cervix, and bimanual examination and other diagnostic procedures must be relied on for detection.

Rectum–Colon.—Every patient should have a digital examination of the rectum. At this time a guaiac examination for occult blood can be made, and the prostate palpated in men. The digital examination properly performed with the patient in the lateral and supine positions does not bring more than a small portion of the rectum-colon within reach. Many early cancers of the rectum and sigmoid colon which are missed by digital examination can be detected by routine proctosigmoidoscopy. This is a reasonable office procedure and does not require elaborate equipment or specialist training. With the patient properly prepared, sigmoidoscopy takes five minutes and yields high dividends. From 4 to 5 per cent of asymptomatic examinees are found to have polyps. One in 20 of these polyps, even though appearing benign, will prove to be cancer on microscopic examination. There is good reason to believe that a substantial number of those which are benign will become malignant if not detected and removed. Thus, routine proctosigmoidoscopy followed by removal of *all* polyps result in cancer prevention as well as early cancer detection.

All persons with a rectal or sigmoid polyp should have barium enema studies to rule out lesions in the proximal colon. Similarly there may be leads for x-ray or additional diagnostic tests from other parts of the routine examination. These leads must be pursued just as they would be in the diagnostic work-up of a patient presenting an illness.

Microscopic Study.—Throughout the procedures just outlined, successful cancer detection depends on maintaining a high level of suspicion of abnormalities that may be neoplastic and adherence to the principle that the ultimate cancer test must be the microscope. Biopsy of all suspicious lesions should be performed whenever it is a reasonable office procedure. When it is not, surgical excision either in a specialist's office or in a hospital may be the plan of choice. In the case of small lesions, biopsy should in effect be a surgical excision, with removal of the entire lesion and a rim of normal tissue. Cautery destroys the opportunity for microscopic examination, which is always essential.

Conclusion

I have talked optimistically about cancer detection. It's not all easy. There are problems of time, cost, and motivation for both the public and the profession. But those of us who are connected with the detection program and see its results know that it is worth every bit of the effort in illness prevented and lives saved.

419 EAST 67TH STREET

(*Number twenty-nine in a series of Cancer Alerts*)

Anticholinergic-Ataractic Therapy in Functional and Organic Gastrointestinal Disorders

Capsules containing a combination of an anticholinergic agent and a tranquilizer were given three series of patients to evaluate their effectiveness in controlling both the psychic and organic components in gastrointestinal disorders. A total of 143 subjects were involved: 138 patients and 5 normal controls. The objectives were (*a*) to determine the antisecretory effects of the preparation; (*b*) to compare its effects with those of a placebo; and (*c*) to evaluate it in patients with symptoms commonly associated with these complaints.

On the basis of their observations the authors conclude that although the preparation does not directly cause the healing of lesions, the antisecretory and antimotility effects of the anticholinergic probably create a situation favorable to healing. Also, the tranquilizer helps relieve the tension that often seems to precede the symptoms of gastrointestinal dysfunction. This, they say, tends to avert many exacerbations that would otherwise occur. Since the medication need only be taken once or twice daily, patients are likely to cooperate. The effectiveness of the preparation is indicated by the increase in good results in patients formerly refractive to other medication.—*Pennsylvania Medical Journal, February, 1959, Charles W. Smith, M.D., and Chester G. Thomas, M.D., Harrisburg, Pennsylvania*

CASE REPORTS

Eosinophilic Granuloma of the Lung

LOUIS J. ACIERNO, M.D., BROOKLYN, NEW YORK

(From the Medical Service of the Long Island College Hospital)

THE term eosinophilic granuloma first appeared in the literature in reference to a neoplastic-like lesion of the bone that was thought to be benign. However, through the years it has become apparent that what was thought to be a benign and simple process is actually a complex affair with multiple organ involvement and having varied clinical gradations as well as manifestations.

Eosinophilic granuloma of the bone was first described in 1940 by Lichtenstein and Jaffe.[1] In the same year, Otani and Ehrlich[2] described a similar process in bone. Their analysis dealt with 4 personal cases and 3 others which they had an opportunity to observe. All of their cases occurred in young individuals who manifested signs suggestive of a primary neoplasm of the bone. The histopathologic picture in all their cases, however, was characterized by a granulomatous lesion consisting chiefly of histiocytes and eosinophils. They did not classify the granuloma, although they discussed the possibility that the lesions were probably representative of an isolated lipogranuloma. This opinion was predicated on the presence of lipophages. The inability to find doubly refractile bodies along with the benign course and lack of systemic involvement constituted their criteria for excluding this lesion from the category of the Hand-Schüller-Christian disease.

The first students to suggest the interrelationship among eosinophilic granuloma, Letterer-Siwe, and the Hand-Schüller-Christian syndromes were Galeotti and Parenti,[3] and Glanzmann.[4] Wallgren[5] in 1940 demonstrated for the first time, and rather conclusively, the fundamental relationship between nonlipoid reticuloendotheliosis and the Hand-Schüller-Christian syndrome. The way was thereby paved for the future inclusion of eosinophilic granuloma under the same nosologic entity. A year later Farber[6] did this, stating in his report that all three diseases were but variants of the same process. This was emphasized again by Green and Farber in 1942[7] in a histopathologic study of 5 cases of eosinophilic granuloma of the bone, demonstrating various evolutionary phases of the disease. It was at this time that Mallory[8] removed the Hand-Schüller-Christian disease from the category of lipoid storage disturbances and categorized it instead as an inflammatory, granulomatous process. He felt that the bony manifestations were related to eosinophilic granuloma, that cholesterol storage was but an incidental phase in the natural evolution of the disease, and that the Hand-Schüller-Christian disease was indeed but a subacute form of the Letterer-Siwe disease.

Although not described as such, the first indication of pulmonary involvement with eosinophilic granuloma can be found in the report by Currens and Popp[9] of a case of the Hand-Schüller-Christian disease with pulmonary fibrosis. The classical paper of Engelbreth-Holm, Teilum, and Christensen in 1944[10] is the first to describe pulmonary involvement as such in association with eosinophilic granuloma of the bone.

It was at this time that Jaffe and Lichtenstein[11] reversed their original concept and placed themselves on record as being in agreement with Mallory, Farber, and others.

From 1946 to 1954 a number of articles appeared dealing with the concept that the Letterer-Siwe disease, eosinophilic granuloma, and the Hand-Schüller-Christian disease were all variants of the same pathologic process.[12–28]

The histiocyte came to be regarded as a fundamental element of these syndromes. This cell is a phagocyte of the reticuloendothelial system and has as synonyms the pyrrole cell or macrophage of Metchnikoff. It is the progenitor of the epithelioid or giant cells of certain inflammatory processes.

For many years certain disturbances of the reticuloendothelial system were considered as being metabolic in nature and were grouped under the generic classification of lipoidoses or lipoid histiocytosis. These disturbances include Gaucher's disease, the Niemann-Pick disease, and the Hand-Schüller-Christian disease. However, as a more definitive knowledge evolved concerning eosinophilic granuloma, it finally came to be included by Straus,[25] under the general category of an inflammatory histiocytosis along with the Letterer-Siwe and the Hand-Schüller-Christian diseases. The term inflammatory was included on rather slim evidence that these syndromes were due to some obscure infectious process. However, the important point is that, as a result of these studies on eosinophilic granuloma, the Hand-Schüller-Christian and the Letterer-Siwe diseases can no longer be grouped under the lipoidoses. It is true that they may have a lipid metabolism disturbance, but this is a secondary phenomenon in contradistinction to Gaucher's and the Niemann-Pick diseases which represent primary disturbances of lipid metabolism. The basis for this viewpoint, as derived from the previously mentioned literature, is based on histopathologic alterations and experimental data. It is as follows:

1. The disorders grouped under inflammatory histiocytosis exhibit granulomatous lesions characterized by various phases of inflammatory reaction.
2. Induction of hypercholesterolemia in rabbits has failed to produce granulomatous inflammatory cells.
3. Familial xanthomatosis has never been seen in association with granulomatous lesions and has never manifested the characteristic destructive lesions of bone as seen in eosinophilic granuloma, and the Hand-Schüller-Christian and Letterer-Siwe diseases.
4. The storage group of lipoid histiocytosis (Gaucher's and the Niemann-Pick diseases) show a familial and racial tendency. This tendency has never been observed in eosinophilic granuloma, the Hand-Schüller-Christian and Letterer-Siwe diseases.
5. Cholesterolization in eosinophilic granuloma occurs as a secondary phenomenon, and not as a primary one.

In 1953 Lichtenstein[29] also summarized the findings up to that time and described the various entities under the generic term of histiocytosis. In so doing he attempted to eliminate the marked confusion prevailing in the literature. He felt that histiocytosis is an appropriate generic term since it connotes the one common feature of all the syndromes, namely, an inflammatory proliferative reaction. The appendage X was used to indicate the lack of knowledge concerning the etiologic agent. According to this classification, the clinical picture and prognosis depend on: (1) the exact localization or dissemination of the lesions, (2) the severity and evolutionary tempo of the disease, and (3) the degree of involvement of the various organs. Thus, the mildest form of the disease would be the restriction of the lesion to a bone or bones. This would come under the old clinical classification of eosinophilic granuloma of the bone. The best prognosis exists in this type of lesion. However, one cannot predict with any degree of accuracy whether or not the indiviudal with this type of restrictive lesion will exhibit a favorable course. If extraskeletal lesions, though unsuspected or known, are present, then the whole picture may change from one of benignity to that of a fulminating course. Only time and further observation can delineate this for us in any individual case. Age alone is also no guide to prognosis. In the past, it was thought that the older the patient, the better the outlook, but this is not true. Acute, subacute, and chronic disseminated forms can occur even in the adult.

Isolated eosinophilic granuloma of the lung was first described by Farinacci in 1951.[30] His report dealt with 2 cases in young males in whom the diagnosis was established by lung biopsy. This was followed by other papers, several of which dealt with histologic studies of biopsied specimens and their association with bony and visceral lesions.[31–37] To date, only 9 cases of presumably isolated eosinophilic granuloma of the lung have been reported, but since no autopsies have been performed, this selective isolation can only be presumed on the basis of clinical criteria.[29,31–35]

The following case report is presented not only to illustrate another case of isolated pulmonary involvement, but also to further descrip-

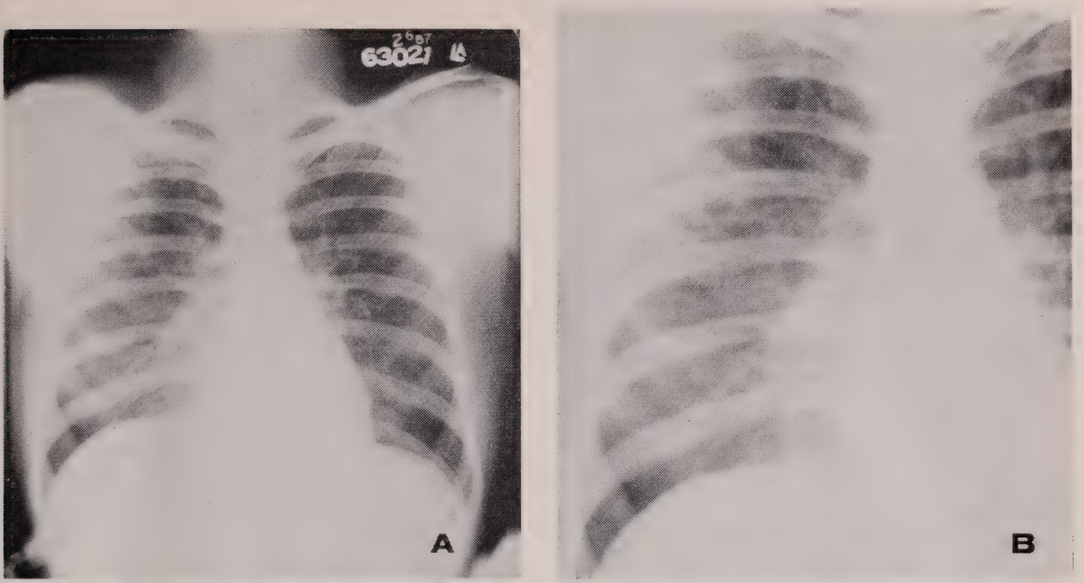

Fig. 1. A chest film showing rounded areas of increased densities scattered throughout both lung fields.

tion of rather meager existing clinical data.

Case Report

A twenty-one-year-old white male of Italian extraction was admitted to the medical service of the Long Island College Hospital on February 5, 1957, and was discharged on March 6, 1957.

Present Illness.—Six months prior to admission the patient complained of occasional and rather vague pain in the left anterior chest wall, especially during deep inspiration. Three months later, owing to the persistence of this pain, he consulted his family doctor and was given a tranquilizer, since the doctor felt the complaints were on a psychosomatic basis. The pain continued to recur. About a week prior to admission, a chest x-ray film was taken which revealed an infiltrate in the right upper lobe, and the patient was admitted for evaluation of this infiltrate. There had never been any cough, sputum production, hemoptysis, night sweats, or fever. In addition, there had been no known contact with tuberculosis, histoplasmosis, psittacosis, or coccidioidomycosis.

Past History.—There was no history of any previous significant medical illness. A heart murmur had been heard at the age of thirteen. Tonsillectomy and adenoidectomy had been performed at the age of fifteen.

Family History.—The father and mother, as well as two siblings, were living and well. He denied the existence of any familial or hereditary disease.

Social History.—The patient admitted to smoking one pack of cigarettes daily and to having an occasional alcoholic beverage.

Physical examination revealed a well-developed, well-nourished young white male, alert and cooperative, and in no acute distress. There was no peripheral lymphadenopathy. No dermal lesions were seen. The peripheral pulsations were normal and equal bilaterally. The eye, ear, nose, and throat survey was within normal limits. The blood pressure was 150/90, pulse was 120, temperature was 100 F., and respirations were 20. The thyroid was not palpable. The respiratory excursions were normal and equal bilaterally. The lung fields were clear to percussion and auscultation. There was no cardiac enlargement. Sinus tachycardia was present. The heart sounds were of good quality. The aortic second sound was less than the pulmonic second sound, and no murmurs were heard. The liver, kidneys, and spleen were not palpable. There were no areas of tenderness, nor were abdominal masses palpable. The genitalia were those of a normal male. No abnormalities of the extremities were noted.

Course in Hospital.—The initial impression was that this patient probably had pulmonary tuberculosis. The initial chest plate revealed an infiltration in the right midlung field laterally and was interpreted by the roentgenologist as being located in the anterior segment of the right upper lobe and probably due to tuberculosis. Several days later another chest film was taken, including a lordotic view. At this time rounded areas of increased densities were seen scattered throughout both lung fields, especially the upper right lung field (Fig. 1). There was no evidence of cavitation. Meanwhile 5 gastric washings were obtained, and these failed to reveal acid-fast bacilli on smear and culture. Mantoux skin tests gave negative results in dilutions of 1 to 10,000, 1 to 1,000, and 1 to 100.

In view of the negative results of the gastric washings and tuberculin skin tests, Löffler's syndrome as well as other etiologic possibilities were considered. A total eosinophil count was found to be 344, which in view of a leukocytosis of 13,800 was felt to be abnormally high. The routine laboratory data were as follows: On February 5, 1957, the red blood count was 5.20 million, the hemoglobin was 14.2 Gm., and the white blood count was 12,000 with 73 per cent neutrophils and 27 per cent lymphocytes. The fasting blood sugar was 110 mg. per cent, urea nitrogen was 14 mg. per cent, and urea was 20 mg. per cent. On February 8, 1957, the hemoglobin was 13.5 Gm., with a white blood count of 12,000, and a differential of 69 per cent neutrophils, 30 per cent lymphocytes, and 1 per cent monocytes. Mazzini, Venereal Disease Research Laboratories, and cold agglutinin determinations were all negative. There was a total protein of 6.9 Gm. per cent with serum albumin of 5.7 and serum globulin of 1.2. This was repeated a week later and the values were: total protein of 7.6 Gm. per cent, with serum albumin 5.5 Gm. per cent, and serum globulin of 2.1 Gm. per cent. Two sedimentation rates were recorded at 8 mm. per hour and 2 mm. per hour respectively. The platelet count was 282,000 per cu.mm.

During this time the patient was afebrile and had no complaints. A coccidioidin skin test was performed and was negative. Another chest film was done on March 4, 1957, and showed the same scattered densities, but at this time slight elevation of the right leaflet of the diaphragm with minimal blunting of the right costophrenic angle as well as bilateral hilar adenopathy were noted. Boeck's sarcoidosis was now considered and a skeletal survey was performed, but this survey showed entirely negative results. Two complement fixation tests performed a week apart for psittacosis showed negative results.

As a result of the various studies, it was felt that the most probable diagnosis was sarcoidosis, but to make a definitive diagnosis, thoracotomy was advised. This was performed by Dr. Maxwell Chamberlain. On entering the thoracic cavity, examination readily revealed small nodules throughout the upper and middle lobes on the right side which were spread throughout the lungs and which were firm in consistency. In addition, there were small mediastinal nodes. The anterior segment of the right upper lobe appeared to have a much larger infiltrate or nodularity than the rest of the lung exposed. Biopsies of the nodules, adjacent lung tissue, and the right hilar node were obtained.

The histopathologic description was as follows: The sections reveal a solid nodular infiltrate which obliterates the pulmonary architecture in the involved regions. There is a reaction which is almost exclusively comprised of two cell types: histiocytes and eosinophils. The histiocytic cells are arranged in sheets and are either intermingled with multitudes of eosinophils or they form rounded nodular aggregates with eosinophils in large numbers, forming a rim about the periphery of the histiocytic nodule. At the margin of the solid zones the histiocytic reaction extends into the walls of the alveoli, producing considerable mural thickening and partial atelectasis. Some of these alveolar spaces contain macrophages with hemosiderin pigment as well as fewer erythrocytes and neutrophils. The lymph node shows focal reticulum cell hyperplasia (Fig. 2.)

The patient had an uneventful postoperative recovery, and he was discharged on the thirty-ninth day of hospitalization. Since then he has had no complaints, has had no therapy, and repeat roentgenologic surveys of the chest have shown no change. This represents an eighteen-month follow-up.

Comment

Clinical Manifestations.—Eosinophilic granuloma of the lung occurs most often in males, in Caucasians, and in the age group from fifteen to forty. The duration of the disease is variable and the onset is gradual. Eighteen per cent may be asymptomatic, but in the majority (49 per cent) a cough is a prominent feature. Occasionally sputum may be produced.

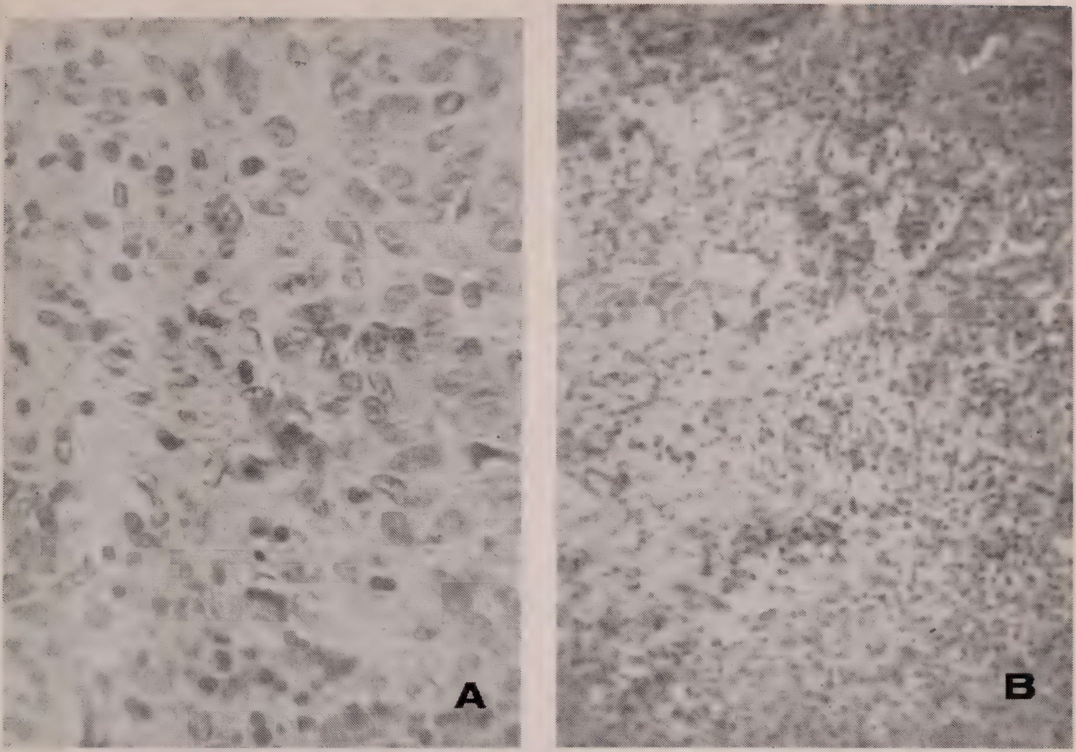

FIG. 2. Slides showing focal reticulum cell hyperplasia.

Chest pain and weight loss have been reported in 30 per cent, while the occurrence of chills, fever, malaise, and fatigue has been noted in 18 per cent. Dyspnea may be present (26 per cent), and in 5 cases a pneumothorax was present. Bronchial asthma has never been seen, but there have been reports of cor pulmonale, hemoptysis, and pleural effusion.

The x-ray film findings may simulate tuberculosis, sarcoidosis, or other granulomatous diseases. Extensive hilar and mediastinal adenopathy may be present. The leukocyte count is usually over 10,000 with a high neutrophilic and mild eosinophilic response. The sedimentation rate, albumin to globulin ratio, smears and cultures of sputum, as well as tuberculin skin test results are all negative. Bronchial washings when found to be loaded with eosinophils are of great diagnostic value.

PATHOLOGIC ANATOMY.—Auld,[38] in a classical work, has recently consolidated the histopathologic features as studied in several cases that have had thoracotomy or biopsy performed.

The lesions are of a granulomatous nature situated in the interstitial tissue of the lung. They consist of confluent masses of histiocytes in which varying numbers of eosinophils are enmeshed. The histiocytes have a fairly well-defined cellular outline, although in denser areas they may blend into a syncytial mass. May[31] reported many foam cells but Auld[38] noted only occasional vacuolization. Presumably, as a result of fusion, a few multinucleated forms are seen. Bilobed as well as immature eosinophils may be present.

Auld[38] further describes an associated arteriolitis with fibrinoid degeneration, especially of the adventitia, and edema of the intimal cells with a tendency to obliterate the lumen. In addition, eosinophils may be found in all coats of the involved arterioles.

The parenchyma surrounding the granuloma may reveal signs of interstitial inflammatory process with infiltration of the alveolar septa by such cellular components as plasma cells, lymphocytes, and monocytes. At times the granulomatous masses may communicate with the bronchi. Necrosis of the granulomas have been described. Various degrees of fibrosis with or without eosinophilia have also been reported. In addition, there may be emphysematous changes in the uninvolved portions of the lung as well as cysts lined with histiocytes. The overlying pleura may be involved by a concomitant edematous, fibrotic, inflammatory, or cystic process.

Grossly, fine adhesions have been seen involving the pleura. In those patients with a pneumothorax, cysts or blebs have been described on the surface of the lung. At thoracotomy the lungs have presented widely scattered and variously sized nodules which are generally firm but not indurated. They have indistinct margins, are not encapsulated, and on section appear greyish-white without caseation.

Usually there is no satellite adenopathy, but there has been reported massive mediastinal and hilar adenopathy.[39] Biopsies of scalene nodes, axillary and posterio cervical as well as epitrochlear, have revealed a scarcity of eosinophils but a large number of histiocytes.[38] In contrast, in 2 cases biopsied hilar nodes have demonstrated a dense eosinophilic infiltration but no granulomatous infiltration or arteriolar involvement.

The entire process seems to be one of repetitive episodes of infiltrative destruction and repair. Local granulomas appear which by virtue of their inherent structure compress and infiltrate adjacent tissue (bronchioles, alveolar ducts, and septa) and secondarily result in arteriolar involvement with luminal obliteration, necrosis of the lesion itself by autodeprivation of vascular supply, and, finally, fibrotic and cystic changes in the lung parenchyma. Histologic sections may reveal all stages in one area.

The symptomatology depends on: (1) amount of actual lung tissue being destroyed; (2) degree of fibrosis and obstructive emphysema that may ensue as a result of bronchiolar infiltration, (3) the potentiality of the emphysematous blebs to rupture, and (4) the rapidity and extent of the entire process itself with resultant complete or incomplete regression and the degree of reparative fibrosis.

Treatment.—The treatment of isolated eosinophilic granuloma of the lung has been highly unsatisfactory. The results have been variable and inconsistent. Those receiving treatment have seemed to fare no better than those without treatment. The usual modality has been radiation therapy. The results have not been striking, though some good results have been reported.[17-21,40-43] Cortisone, ACTH, and prednisone have been tried,[12,34,44,45] and even nitrogen mustard has been used.[46] Recently, antibiotic therapy has had its proponents.[47,43] Natural remissions have been reported without therapy.[18,24,42] Palliative surgery can be offered for those with mechanical complications of the lungs such as pneumothorax, bronchial stenosis or obstruction, and giant bullous degeneration of the lungs.[20,21]

Etiology.—The etiologic factor or factors are as yet unknown. Indeed, this constitutes the whole center of controversy to date. Infection, berylliosis, sarcoidosis, Hodgkin's disease, and hypersensitivity have been advanced as possible causative agents.

The evidence against infection includes: (1) negative cultures; (2) the usual absence of fever despite leukocytosis; (3) absence of reactive hyperplasia in regional lymph nodes; (4) no knowledge that the disease can be transmitted; (5) absence of inclusion bodies to incriminate a viral agent, as well as lack of hyperplasia of endothelium or lymphocytosis; and (6) lack of microscopic or clinical evidence of parasitism.

Berylliosis and sarcoidosis are unlikely in view of negative results from Kveim tests, absence of caseation, and minimal tissue eosinophilia. Moreover, in eosinophilic granuloma of the lung there is an active invasion of the parenchyma and an involvement of the adjacent interstitial tissue.

Hodgkin's disease still has its adherents, and, as yet, cannot be completely eliminated. Lack of causal relationship between eosinophilic granuloma in general and Hodgkin's disease appears to gain support in the knowledge that eosinophilic granuloma is usually benign. In addition, lymphoid tissue is primarily involved in Hodgkin's disease, whereas this is not the case in eosinophilic granuloma.

Perhaps the most important concept regarding etiology to date is the one of hypersensitivity. Auld[38] is a particularly strong proponent of this view and offers the following data in support: (1) Tissue eosinophilia has always been regarded as an index of hypersensitivity. (2) The eosinophilic infiltration of the arterioles with fibrinoid degeneration of the adventitia and endothelial cellular proliferation speak for an allergic antigen related in some way to periarteritis nodosa. (3) There are reports in the literature which describe a case of eosinophilic granuloma of the skin associated with a marked skin hypersensitivity;[34] eosinophilic granulomatous lesions in the skin in association with a panarteritis; periarteritis nodosa involving the lungs with granulomatous lesions;[6] a study of 10 autopsied cases of asthma associated with polyarteritis;[37] and the few pathologic descriptions available concerning the histologic change in Loeffler's syndrome[49,50] which describe the presence of tissue eosinophilia, granulomatous lesions, adjacent interstitial pneumonitis, necrotizing arteritis, and fibrotic parenchymal changes.

Auld[38] offers the interpretation that eosinophilic granuloma is a response to a low grade antigen. He attempts to link this with the concept of unity with the Hand-Schüller-Christian and Letterer-Siwe diseases in the following remarks: "Eosinophilic granuloma of the lung on one hand, may indicate the tissue response to an antigen in the height of its activity, corresponding to Loeffler's syndrome and periarteritis nodosa; this may be the essential feature of the first, or 'hyperplastic-proliferative stage' of the process, as outlined by Engelbreth-Holm, Teilum, and Christensen. On the other hand it may also show the granulomatous and fibrotic phases (frequently seen in the same specimen), more characteristic of the Hand-Schüller-Christian disease.

Summary

A case of eosinophilic granuloma of the lung has been presented. It can be seen that a definitive diagnosis can be made only by biopsy, and that the differential diagnosis on clinical grounds alone can be quite difficult.

The changing concepts concerning the etiology and pathogenesis of eosinophilic granuloma have been presented in an historic manner.

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Cold Foot May Indicate "Silent" Heart Attack

Coldness of one foot suddenly occurring after an operation may be a sign of a "silent" heart attack. The coldness is the result of a circulatory block in the leg, caused by a blood clot carried from the heart, according to Nathan Frank, M.D., Jersey City, New Jersey, in the July 4 *Journal of the American Medical Association.*

He believes that some sudden postoperative deaths attributed to pulmonary embolization may actually be the result of silent myocardial infarctions.

Heart attacks after surgery for some other ailment may pass unnoticed, Dr. Frank said, because the pain is thought to be associated with the surgery. Whenever a person suddenly develops a coldness of one foot four to twenty-one days after surgery, silent myocardial infarction should be considered.

In reporting 3 cases of cold foot following surgery, Dr. Frank said the syndrome had not been previously described. It is "of great clinical significance," because, if unrecognized, it may cause death, especially with the trend to early ambulation after surgery.

He recommended that patients be questioned daily about the presence of pain and coldness in the foot and calf. In addition, all patients should be given an electrocardiographic examination before surgery to determine the presence of old myocardial infarctions. If they are present, precautions against the development of embolism can then be taken.

Silent Myocardial Infarction Complicating Massive Gastrointestinal Hemorrhage

SILVIO GUGLIELMELLI, M.D., F.A.C.P., BROOKLYN, NEW YORK

(*From the Victory Memorial Hospital*)

THE incidence of silent infarction is reported as being between 3 and 10 per cent of all myocardial infarctions. The true incidence is undoubtedly greater since if it is unsuspected its presence will not be sought for. This paper is a plea for routine electrocardiography on all individuals who have suffered from shock regardless of the cause and particularly following massive hemorrhage in the aged individual. The case to be presented is one of a massive gastrointestinal hemorrhage in an aged female in whom the possibility of a silent infarction was considered and proved to exist by a series of electrocardiographic studies.

Case History

A seventy-six-year-old white Italian female had been in relatively good health up to age seventy-five when she suffered from a gastrointestinal hemorrhage. This required four whole blood transfusions of 500 cc. each. Gastrointestinal series and barium enema studies subsequently failed to reveal any pathologic conditions. Following this she was asymptomatic until March 11, 1958, at which time she complained of weakness, nausea, and tarry black stools. On March 12, 1958, she vomited a large amount of bright red blood, estimated by her daughter, a nurse, to be at least 500 cc. Shortly after this she had three copious, black, sticky bowel movements. The family physician found the patient pale, clammy, unresponsive, pulseless, and with her blood pressure unobtainable. He administered morphine and a stimulant and hospitalized her.

She came under my care approximately two hours after hospitalization. At this time her blood pressure was 160/98, and her pulse was 140, regular, and of fair quality. The heart sounds were of good quality, and there were no murmurs present. The lungs were clear, the liver not enlarged, and there was no peripheral edema. Except for a marked pallor and the patient's complaint of weakness, there were no other findings. At 3:00 A.M., one hour after admission, the blood pressure was 148/60; the pulse was 140; and the temperature was 99 F. rectally.

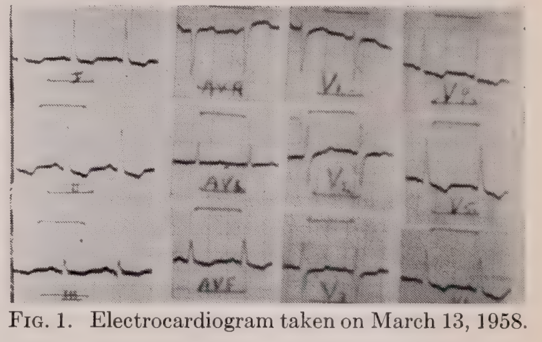

FIG. 1. Electrocardiogram taken on March 13, 1958.

She was not dyspneic or cyanotic and denied any chest or abdominal pain or discomfort. Her only complaint was weakness. Premarin was administered intravenously and she appeared to rally shortly after this. At 4:00 A.M., because of her advanced age, the history of shock following massive hemorrhage, and the persistent tachycardia, I deemed it advisable to take an electrocardiogram, (Fig. 1). (This electrocardiogram was taken three days after the onset of tarry stools, her first clinical evidence of bleeding.) The electrocardiogram revealed a sinus tachycardia with a rate of 108 per minute. The S-T segment was depressed in all limb leads and precordial leads from V_2 through V_6. A diagnosis of acute coronary insufficiency was made. This was considered to be due to acute anoxia secondary to the massive hemorrhage. On the following day the blood pressure was 152/62. The pulse was regular, ranging between 88 and 96, and the temperature was 100 F. rectally. On the third day the temperature ranged between 101 F. and 102 F.; the pulse was 96, and the blood pressure had fallen to 110/62. The patient offered no complaints and actually looked better. On March 17, 1958, scattered moist rales were heard at the lung base suggesting hypostatic congestion or early left ventricular failure. Because of the fall in blood pressure, the continuing fever, and the basal rales, it was felt that a second electro-

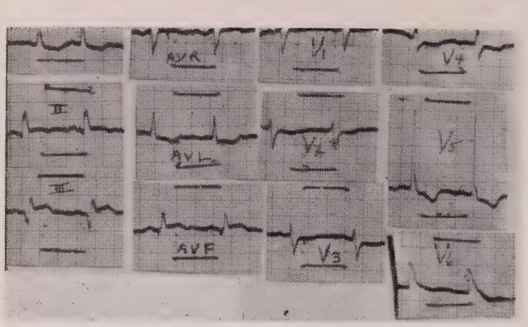

FIG. 2. Electrocardiogram taken on March 18, 1958.

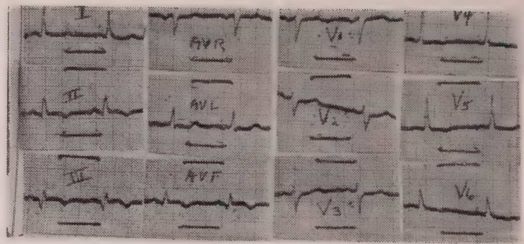

FIG. 3. Electrocardiogram taken on March 24, 1958.

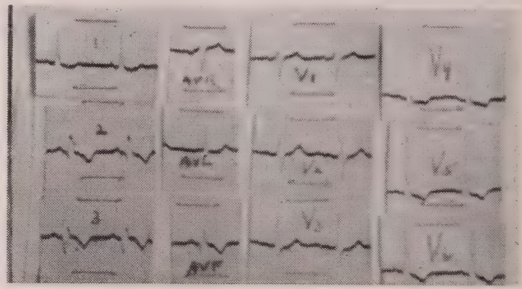

FIG. 4. Electrocardiogram taken on April 16, 1958.

cardiograph was indicated to rule out a silent myocardial infarction. On March 18, 1958, five days after admission, the electrocardiogram (Fig. 2) showed a marked change from that of the admission record. A Q wave was present in leads II, III, and aVf, and there was a moderate elevation of the RS-T segment in these leads. There was depression of the ST in leads I, and aVl and V_2 through V_6. A diagnosis of acute posterior wall myocardial infarction was made. A subsequent electrocardiogram (Fig. 3) on March 24, 1958, revealed a lowering of the S-T segment in the other leads. There was a symmetrical inversion of the T waves in leads II, III, and aVf, confirming the recency of the posterior wall infarction. The last electrocardiogram (Fig. 4) taken on April 16, 1958, showed the progressive changes in the posterior wall pattern.

Laboratory Data

The patient had group O, Rh positive blood. The blood sugar was 175 mg. per cent, and the urea nitrogen was 25 mg. per cent. The hemoglobin was 62 per cent, the red blood count was 2,950,000, and the white blood count was 16,000. Twelve hours later the hemoglobin was 60 per cent or 8.8 Gm., the red blood count was 3,010,000, and the white blood count was 16,500 with 85 segmented and 1 stab form polymorphonuclear cells and 14 lymphocytes. The hematocrit was 20. On March 15, 1958, the hemoglobin was 52 per cent or 7.5 Gm., and the red blood count was 2,520,000. On March 16, 1958, the hemoglobin was 44 per cent or 6.3 Gm.; the red blood count was 2,550,000; the white blood count was 14,200 with 62 segmented and 9 stab forms, 1 mononuclear cell, and 28 lymphocytes; and the hematocrit was 18. On March 22, 1958, the blood sugar was 117 mg. per cent, the hemoglobin was 46 per cent, the red blood count was 2,370,000, and the white blood count was 7,100. Urinalysis revealed a specific gravity between 1.010 and 1.018 with occasional traces of albumin, no sugar, a variable number of pus cells, and no red cells.

Clinical Course and Treatment

The patient was in shock prior to admission to the hospital and apparently responded to the morphine and stimulant given by the family physician. On admission her blood pressure was 160/98, her pulse was 140, and her temperature was 99 F. Premarin was administered intravenously in the hope that it would stop the hemorrhage, and the patient seemed to rally shortly after this. The pulse ranged between 88 and 96 the following day, and the temperature hovered around 100 F. On the third day the pulse was 96, the blood pressure was 110/62, and the temperature ranged between 101 and 102 F. During all this time the patient's only complaint was weakness. At no time did she complain of dyspnea, cough, palpitation, or precordial or abdominal distress. In spite of the fact that she was on prophylactic intramuscular penicillin 600,000 units twice a day, the temperature continued to hover between 100 and 102 F. for the next five days. On March 17, 1958, six days after the initial manifestation of bleeding (tarry stools), moist rales were heard at the extreme lung bases. These were believed to indicate left ventricular failure, possibly due to a myocardial infarction or hypostatic congestion. The following day a repeat electrocardiogram revealed a pattern of acute posterior wall myocardial infarction. Subsequent records showed the progressive changes in this disease. Because of the gastrointestinal hemorrhage, this patient was not put on anticoagulant therapy but was treated with transfusions, low salt–low fat diet, bed rest, and papavarine and phenobarbital as indicated. She responded nicely to treatment and suffered no complications.

Comment

It was later learned that this individual had been on Serpasil 0.25 mg. twice daily and 250 mg. Diuril once daily. Her blood pressure was said to range between 180 and 210 systolic and 100 diastolic. The Diuril had been prescribed as an anti-hypertensive rather than a diuretic agent. In view of the fact that this massive gastrointestinal hemorrhage followed shortly after she had been placed on Serpasil and Diuril, one might be tempted to attribute a causal relationship to one or both of these drugs. In view of the increasing literature on gastrointestinal hemorrhages in association with Serpasil, one cannot completely rule this out as an etiologic factor. However, this individual did have a similar episode one year prior to this when she was not taking any medication. It is noteworthy that this patient was of a type O blood group.

This case has been reported primarily to illustrate that silent myocardial infarctions can and do occur after hemorrhage from any part of the body and in association with shock conditions regardless of the cause. However, the mistake that is often made is that only one electrocardiogram is taken. In this case the first electrocardiogram taken more than twenty-four hours after the initial massive hemorrhage revealed only an acute coronary insufficiency pattern which would not be too abnormal for a seventy-six-year-old arteriosclerotic patient who had recently suffered a hemorrhage. Five days after this, however, the typical pattern of posterior wall infarction was present. This brings up the question of how soon after a hemorrhage or shock one should take an electrocardiogram. In my opinion, this should be done immediately and then repeated at more or less frequent intervals depending on the course. The results of a case should not be considered negative until at least two weeks have gone by. Where clinically suspected, the electrocardiogram should probably be studied serially for an additional two or three weeks.

In the aged, particularly the arteriosclerotic or hypertensive cardiac patient, the presence of shock regardless of the cause should alert one to the possibility of silent myocardial infarction.

Colloidal Emollient Baths in Pediatric Dermatoses

Oatmeal, popular many years for its cleansing and therapeutic properties, remains a widely used agent in dermatologic conditions. For some years the concentrated starch protein complex of oatmeal has been available. To evaluate the effects of these colloidal emollient baths as adjunctive therapy, a study was made of 152 pediatric patients suffering from various dermatoses associated with dryness of the skin. In all cases, baths of colloidal oatmeal in a super oil form proved to be excellent adjunctive therapy, combining effective cleansing powers along with remarkable soothing properties. Parents found the colloidal emollient bath easy and convenient to use. Where the child's skin showed a strong tendency to dryness, the baths were continued routinely even after the dermatoses had completely subsided.—*Archives of Pediatrics, December, 1958, Lionel A. Dick, N. Y. U.-Bellevue Medical Center*

NECROLOGY

David Harry Barash, M.D., of New York City, died on March 19 at the age of seventy-two. Dr. Barash graduated from Long Island College Hospital Medical School in 1911. He was a Fellow of the American College of Cardiology and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Barash, M.D., of New York City, died on July 7 at his home at the age of sixty-three. Dr. Barash graduated from Columbia University College of Physicians and Surgeons in 1920 and interned at Beth Israel Hospital. He was an attending in pediatrics at Beth Israel. Dr. Barash was a Licentiate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Elsworth Carter, M.D., of Jamaica, died on March 17 at the age of fifty-eight. Dr. Carter graduated from New York University and Bellevue Hospital Medical College in 1927. He was an associate in surgery at Harlem Hospital. Dr. Carter was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the Harlem Surgical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Draper, M.D., of New York City, died on July 1 at the age of seventy-nine. Dr. Draper graduated from Columbia University College of Physicians and Surgeons in 1906 and interned at Presbyterian Hospital. He was a former associate professor of clinical medicine at the College of Physicians and Surgeons, a former associate attending physician at Presbyterian Hospital, and from 1948 until his retirement in 1950 he was medical director of Burke Memorial Foundation, White Plains. A pioneer in scientific constitutional medicine and the author of several books, Dr. Draper was a Diplomate of the American Board of Internal Medicine and a member of the Association of American Physicians, the American Society for Clinical Investigation, the New York Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Walter Washington Gilligan, M.D., of New York City, died on March 21 at the age of fifty-two. Dr. Gilligan graduated from Georgetown University School of Medicine in 1934. He was an assistant adjunct in anesthesiology at Beth David Hospital. Dr. Gilligan was a member of the American Society of Anesthesiologists, Inc., and the New Jersey Society of Anesthesiologists.

Emilian Arthur Gutheil, M.D., of New York City, died on July 7 at Mount Sinai Hospital at the age of sixty. Dr. Gutheil received his medical degree from the University of Vienna in 1930. He was director of public education and supervising psychiatrist at the Postgraduate Center for Psychotherapy, Inc. Dr. Gutheil was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry), a Fellow of the American Psychiatric Association, and a member of the Association for the Advancement of Psychotherapy, the New York Society for Clinical Psychiatry, the Society for Psychopathology and Psychotherapy—"Schilder Society," the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Perry Samuel Horenstein, M.D., of Bellport, died at his home on July 14 at the age of fifty-four. Dr. Horenstein graduated from Harvard University Medical School in 1930. He was an attending in surgery at Brookhaven Memorial Hospital, Patchogue, of which he was also a founder in 1955 as well as a former president of the medical staff, a medical coordinator for Brookhaven Town Civil Defense, physician for the Bellport public school system, the Bellport lodge of Foresters of America, and the Brookhaven Fire Department. Dr. Horenstein was a member and former president of the Suffolk County Medical Society and at his death was chairman of its committee of insurance, and belonged also to the Medical Society of the State of New York, and the American Medical Association.

William Steurer-Stumpf Horton, M.D., of Lynbrook, died on June 23 at his home at the age of seventy-seven. Dr. Horton graduated from Columbia University College of Physicians and Surgeons in 1917. He was emeritus director of surgery at Long Beach Memorial Hospital. Dr. Horton was a Diplomate and a Fellow of the International College of Surgeons and a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Katz, M.D., of Clinton, died on June 28 in St. Luke's Memorial Hospital Center at the age of fifty. Dr. Katz graduated from the University of Maryland School of Medicine in 1936. He was an attending physician in obstetrics at St. Luke's Memorial Hospital Center. Dr. Katz was a member of the Oneida County Medical Society and the Medical Society of the State of New York.

Karl George M. Meyer, M.D., of New York City, died on June 7 at the age of eighty. Dr. Meyer received his medical degree from the University of Rostock in 1904. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Samuel Silbert, M.D., of New York City, died on July 10 in Mount Sinai Hospital at the age of sixty-five. Dr. Silbert graduated from Columbia University College of Physicians and Surgeons in 1917 and interned at Mount Sinai Hospital. He was a consulting surgeon in peripheral vascular diseases at Mount Sinai and Montefiore Hospitals and a former chief of the Peripheral Vascular Disease Clinic at Mount Sinai Hospital as well as an instructor in peripheral vascular disease in postgraduate courses given by the College of Physicians and Surgeons. Dr. Silbert was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lawrence Henry Sophian, M.D., of New York City, died in Roosevelt Hospital on July 8 at the age of fifty-seven. Dr. Sophian graduated from Harvard University Medical School in 1925. At his death he was medical director and vice-president of William Douglas McAdams, Inc., and from 1925 he was a member of the teaching staff of the Harvard Medical School as an instructor in pathology until 1929, when he became associate professor of pathology at the New York Post-Graduate Medical School. In 1930 he was appointed chief of pathology at Roosevelt Hospital and in 1939 he entered the Public Health Service, serving at the United States Marine Hospital, Clifton, Staten Island, as director of laboratories and research and later promoted to medical director in the Public Health Service from which he retired with the rank of captain in 1952. Dr. Sophian was a Diplomate of the American Board of Pathology (Clinical Pathology and Pathologic Anatomy), a Member of the College of American Pathologists, and a member of the American Association of Pathologists and Bacteriologists, the New York County Medical Society, and the Medical Society of the State of New York.

Abraham Stone, M.D., of New York City, died on July 3 at New York Hospital at the age of sixty-eight. Dr. Stone graduated from New York University and Bellevue Hospital Medical College in 1912. He was a consultant in urology at Sydenham Hospital and with his wife was a partner in the Marriage Consultation Center of the Community Church of New York. Dr. Stone was a member of the American Venereal Disease Association, the American Society for the Study of Sterility, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alexander V. Tolstoouhov, M.D., of New York City, died in St. Luke's Hospital on July 9 at the age of seventy. Dr. Tolstoouhov received his medical degree from the University of Kazan in 1911.

Stanley A. Wanlass, M.D., of Harrison, died on July 13 at the age of sixty-six. Dr. Wanlass graduated from George Washington University School of Medicine in 1923. He was an attending in surgery at United Hospital, Port Chester, a physician for the Harrison Avenue School, and formerly Harrison police physician. Dr. Wanlass was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

The birds are moulting. If man could moult also—his mind once a year its errors, his heart once a year its useless passions.—James Lane Allen

MONTH IN WASHINGTON

President Eisenhower's power of veto has been a powerful weapon in his fight against big spending programs of the Democrats.

His outstanding use of the power so far in this session of Congress was the veto of the Democratic, catch-all, $1,375,000,000 housing bill. Mr. Eisenhower said the measure was extravagant and inflationary. He warned that the fight against inflation could not be won "if we add one spending program to another without thought of how they are going to be paid for and invite deficits in times of general prosperity."

The housing bill included three provisions of interest to the medical profession. One provision, endorsed by the American Medical Association, would have authorized Federal Housing Administration guarantees of loans for construction of proprietary nursing homes. The second provision would have authorized direct Federal loans for housing for interns and nurses. The third would have authorized both such loans and guarantees for housing for elderly persons.

Mr. Eisenhower objected to direct loans for housing for the aged. But he directed his main attack against the legislation's public housing and urban renewal provisions.

The President also vetoed a wheat price support bill which, he charged, "would probably increase the cost of the present excessively expensive wheat program."

The threat of a veto also caused the Democrats to retreat and cut back their airport construction legislation.

These actions improved prospects for a balanced, or near-balanced, budget in the current fiscal year. Another factor working for a balanced budget is the economic upsurge which means more Federal revenue than originally estimated. But Congress voted more for medical research than the President wanted. However, all of it may not be spent because the President has the authority to hold back part of it.

The Senate voted $481 million and the House, $344 million, for the National Institutes of Health—as against $294 million requested by Mr. Eisenhower. It was mandatory that a House-Senate Conference Committee, in working out a compromise between the House and Senate figures, approve a larger amount than the President requested.

The House Ways and Means Committee held hearings on the controversial Forand bill which would finance medical and hospital care of the aged through the social security system. Witnesses for the medical profession vigorously opposed the legislation. Leonard Larson, M.D., chairman of the A.M.A. Board of Trustees, and Frederick C. Swartz, M.D., chairman of the A.M.A. Committee on Aging, presented the A.M.A.'s views.

Representatives of various state medical societies either testified or presented statements in opposition to the legislation which would be financed through higher social security taxes and which would cost about $2 billion a year.

On another legislative front, A.M.A. witnesses—George M. Fister, M.D., a member of the A.M.A. Board of Trustees and chairman of the A.M.A. Council on Legislative Activities, and Vincent W. Archer, M.D., a member of the A.M.A. House of Delegates and the A.M.A. Committee on Federal Medical Services—testified before the Senate Finance Committee in support of a House-approved bill (Keogh-Simpson) that would provide tax deferrals for self-employed persons who invest in qualified pension or retirement plans.

Dr. Fister testified that high taxes and inflated living costs make it "difficult for the self-employed person to set aside adequate funds for retirement without a tax deferment similar to that available for corporate employees."

Experts from 17 nations gave favorable reports on use of live polio virus vaccine at a week's conference sponsored by the World Health Organization and the Pan American Health Organization.

However, the 61 experts conceded in a statement summarizing the conference discussions that problems remain in use of the vaccine which is given orally. Their main concern was with "the very difficult problems in the development control and evaluation of the safety and effectiveness" of the live vaccine. They also recognized that "the use of a product that spreads beyond those originally vaccinated represents a radical departure from present practices in human preventive medicine."

An advisory committee of the U.S. Public Health Service recommended a fourth shot of Salk polio vaccine as routine for children and adults under forty years of age. The report also said that Salk vaccine shots could be beneficial for persons

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Prepared by the Washington Office of the American Medical Association, Washington, D.C.

over forty but was "less urgent" because they had polio less frequently than younger people.

Surgeon General Leroy E. Burney of the Public Health Service also issued an urgent warning that tragic polio outbreaks might occur this year if communities didn't push polio vaccination campaigns.

The Medical Society of the District of Columbia adopted a relative value scale of fees expressed in units rather than dollars. The basic unit of 1.0 is a routine office visit. The other relative values for medical services are multiples of the basic unit. For example:—an appendectomy, 30 units; allergy skin tests, 2.0 units per 10 tests with a maximum of 15 units for multiple tests; anesthesia, first half-hour or any fraction thereof, 4.0 units.

It is not mandatory that the District Medical Society members charge fees conforming to the relative value scale. It was designed to show the relative value of a physician's services, particularly for health insurance purposes.

The A.M.A. House of Delegates last year unanimously approved the study of relative value scales by state medical societies.

Prescription for Autumn Picnics: Good Planning Plus First Aid Supplies

The insatiable American family never gets enough of outings. The fall, particularly the Indian Summer, finds people in greater numbers than ever seeking a picturesque picnic spot, motoring to a favorite haunt, hiking through silent woods, or just taking advantage of a spacious back yard to get in some cool cook-outs.

As a matter of fact, fall is becoming almost as popular as the summer for outdoor activity. This is understandable, because the days are refreshingly cool and the roads and resorts less congested.

However, it also is a fact that there is a tendency for the hiker, the driver, the outdoor chef and the picnicker to be less careful because they have not been so well conditioned to the possibilities of the hazards that may occur this time of the year. Most people seem to forget that the dangers and inconveniences from poison ivy and fires and insects are just as great after Labor Day as they were before that date.

Families who go on outings during the fall should devote as much planning to their trips as they are accustomed to doing in the summer. That is the only way to help prevent any untoward event that may mar the day, or to cope with the little accidents that persist in happening despite the best laid plans.

A minimum of planning will take care of the obvious dangers; proper precautions can minimize the effects of mishaps that cannot be helped.

For instance, judicious selection of less congested roads will avoid the traffic jams that occur on beautiful fall weekends, and a quick checkup at your service station will help you avoid the possibility of an overheated car. If the trip is over a long weekend, a few minutes spent by your mechanic to test the state of your brakes, steering wheel, and tires will help avoid accidents.

Remember, overexertion can be just as serious on a cool day as during a hot one. Adults who do nothing more strenuous during the week than walking to the bus stop, train, or subway station should avoid anything more taxing on their day off than pitching horseshoes. The competition is just as keen, but far less strenuous than a ball game.

If the family is taking a nature walk or a hike, every member should be taught beforehand what poison ivy, oak, or sumac looks like. If an outdoor fire is planned, also plan to keep the children away from the fire area. The use of knives for cutting food demands constant vigilance. It's best not to handle knives with wet or greasy hands; in cutting, see that the knife moves away from, not toward, the body.

Of course, there are bound to be falls and scraped knees or elbows; someone is likely to cut himself; insects will bite, regardless of seasons, and ivy poisoning can be contracted even if it is not actually touched.

The best way to take care of such contingencies is to have on hand an all-purpose preparation like a first aid cream. It is very effective for treating cuts, burns, abrasions, insect bites, and chapped skin. Children will like to use it because there is no pain when it is applied to open wounds. The cream can be washed off and will not cake on the skin. Women will like it because it does not stain.

A first aid cream will stay in contact with the wound for a longer period of time than a liquid or powder antiseptic, which means it is more effective. It also is very handy to carry along, since it comes in an unbreakable polyethylene tube that takes up very little room in the picnic basket, rucksack, or glove compartment of the car.

Persons planning cookouts in picnic or wooded areas should plan to build fires only in authorized areas. Better yet, take along a portable grill. Presence of dried leaves makes the building of fires especially hazardous during fall months. Bring along an asbestos mitten. It doesn't take up much room and it is invaluable for preventing scorched fingers.

One final word of advice: Allow plenty of time to get to the destination and back. There's no sense in dashing around on a day off. Learn to relax. That's what outings are for.

MEDICAL MEETINGS

American Hospital Association

The sixty-first annual meeting of the American Hospital Association will be held in the New York City Coliseum, August 24 through 27. This will be the Association's first meeting in New York City since 1911.

Speakers will include M. G. Candau, M.D., director-general of the World Health Organization; Mr. Elmo Roper, public opinion analyst; Mr. Francis Boyer, chairman of the board of Smith Kline and French Laboratories; and Alexander D. Langmuir, M.D., chief, Epidemiology Branch, Communicable Disease Center, U.S. Public Health Service.

American Podiatry Association

The American Podiatry Association will hold its forty-seventh annual meeting in the Waldorf-Astoria Hotel, New York City, August 27 through September 1. Sixty-five industrial exhibits will be shown and 30 or more scientific exhibits will be presented.

Members of the Medical Society of the State of New York are invited to attend any of the exhibits or scientific sessions. Complimentary registration will be provided at a special guest desk. Scientific sessions and exhibits will extend from August 29 to September 1.

Biological Photographic Association

Newly-developed uses of medical and scientific photography will be keynotes at the twenty-ninth annual meeting of the Biological Photographic Association which will take place August 31 through September 3 at the Sheraton Mount Royal Hotel, Montreal, Canada.

Speakers will describe research and administrative developments in the use of photography and motion pictures at their particular medical and dental schools, hospitals, research institutions or science centers.

For information concerning the meeting contact: Mr. Carroll H. Weiss, director of communications, Biological Photographic Association, Inc., 160 Riverside Drive, New York 24, New York. Telephone MUrray Hill 6-3922.

District II Meeting of the American College of Obstetricians and Gynecologists

The District II meeting of the American College of Obstetricians and Gynecologists will be held in the Waldorf-Astoria Hotel, New York City, September 24 through 26. The program committee is composed of Martin L. Stone, M.D., New York City, chairman; John G. Masterson, M.D., Brooklyn; and Bernard J. Pisani, M.D., New York City.

For additional information write to: A. Charles Posner, M.D., district chairman, 51 East 90th Street, New York 28, New York.

American Medical Writers' Association

The sixteenth annual meeting of the American Medical Writers' Association will be held at the Chase Hotel, St. Louis, Missouri, October 2 and 3, under the presidency of Morris Fishbein, M.D., of Chicago.

Speakers from the New York area will include: Richard H. Orr, M.D.; Felix Martí-Ibáñez, M.D.; R. A. Peterman, M.D.; Mr. Frederick Silber; and Mr. Thomas Wainwright.

The meeting will be preceded by the twenty-fourth annual meeting of the Mississippi Valley Medical Society, September 29 through October 1.

A complete program may be obtained from Harold Swanberg, M.D., secretary, W.C.U. Building, Quincy, Illinois.

American College of Cardiology

The American College of Cardiology will hold its eighth interim meeting at the Benjamin Franklin Hotel in Philadelphia, October 23 through 25.

The scientific sessions of the College will be concurrent with the thirty-second annual meeting of the American Heart Association and a joint program has been planned. On the evening of October 23 the College will conduct fireside conferences in which members of the American Heart Association will participate. On October 25 a panel discussion on cardiac resuscitation will be presented jointly by the College and the Association's council on clinical cardiology.

A complete program can be obtained from Philip Reichert, M.D., executive director, American College of Cardiology, Empire State Building, New York City.

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[1] Kety, S. S.: A medical regimen for benign rectal disorders, *GP* 10:75, Nov., 1954.

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MEDICAL NEWS

Queens Hospital Center Course in Operative Radium Therapy—A course in operative radium therapy is to be offered at the Queens Hospital Center by the Radiation Medicine Department. The course will begin on Saturday, October 24, and will continue for eight consecutive Saturdays, from 9:00 A.M. to NOON.

The program will include the use of interstitial radiation in the oral cavity; radical insertion of radium in the neck; various applicators in carcinoma of the cervix; the Heyman applicators in carcinoma of the endometrium; radium needles in the parametria; and radon, iridium-thread, and cobalt interstitial therapy.

For information apply to: Philip J. Kahan, M.D., supervising medical superintendent, Queens Hospital Center, 82–68 164th Street, Jamaica 32, New York.

Physician-Author Interviewed on Radio—James A. Brussel, M.D., assistant commissioner, New York State Department of Mental Hygiene, was interviewed on "Cynthia and Sensible" WBAI-FM, on July 29. The interview was in connection with Dr. Brussel's suspense novel, *Just Murder, Darling*, which was released on August 3 by Charles Scribner's Sons.

Course Offered on Rehabilitation Care of the Chronically Ill Patient—The Department of Physical Medicine and Rehabilitation of the New York Medical College—Metropolitan Hospital Center will hold a one week course for physicians on rehabilitation care of the chronically ill patient.

The course will provide a review of the principles and technics that have been developed in the medical rehabilitation of the chronically ill. It will consist of lectures, seminars, clinical demonstrations, and practice workshops. The course has been developed with the intent of meeting the needs of the clinician, medical administrator, and public health physician. The teaching staff includes members of the faculty of the Medical Center.

For further information write to: Jerome S. Tobis, M.D., chairman, Department of Physical Medicine and Rehabilitation, 1 East 105th Street, New York 29, New York.

Postgraduate Course at University of Buffalo—The University of Buffalo School of Medicine will present a general postgraduate course for practitioners entitled "Recent Advances in Clinical Practice." The course will be held September 14 through 19. For further information and a descriptive booklet write to: Samuel Sanes, M.D., secretary, Committee on Postgraduate Curriculum, University of Buffalo School of Medicine, 3435 Main Street, Buffalo 14, New York.

Physicians Certified by American Board of Obstetrics and Gynecology—The following is a list of New York State physicians who were certified by the American Board of Obstetrics and Gynecology for the year 1959.

Binghamton: Drs. José Garcia-Blanco and Harry L. Mueller, Jr.; *Brooklyn:* Drs. Vincent Tricomi, Lloyd A. Watts, and A. Stark Wolkoff; *Bronx:* Drs. Norman R. Bloch, Frank M. Lester, Sidney S. Steckel, and Philip C. Suriano; *Buffalo:* Dr. Robert H. Wildhack; *Elmira:* Dr. William H. Burke; *Endicott:* Dr. Charles S. Ness; *Flushing:* Dr. Charles W. Stark; *Glen Head:* Dr. Thomas J. Sheehy, Jr.; *Hempstead:* Dr. Arthur H. Shapiro; *Levittown:* Dr. June H. Hagedorn; *Long Beach:* Dr. Sheldon G. Altman; *Long Island City:* Dr. Paul B. Shuey; *Mount Vernon:* Dr. John G. Baker; *New York City:* Drs. Albert Altchek, Thomas F. Dillon, Mary J. Gray, Anwar J. Hanania, Jerome J. Hoffman, Oliver O. Holder, Martin M. Kurzner, Albert A. Plentl, Alexander Sedlis, Anna L. Southam, and Robert J. Walsh.

Olean: Dr. Frank T. Frost; *Patchogue:* Dr. Milton Rosenberg; *Pearl River:* Dr. Thomas F. Sullivan; *Poughkeepsie:* Drs. Harry V. Hanley and George Montgomery, Jr.; *Rochester:* Drs. Ruth W. Schwartz, Henry A. Thiede, and George C. Trombetta; *Smithtown:* Dr. Justin E. Doheny; *Suffern:* Dr. James B. Loftus; *Utica:* Dr. Murray L. Nusbaum; *Valley Stream:* Dr. Jerome B. Abelman; and *Westbury:* Dr. Milton Eichler.

Also certified were the following physicians: Dr. Wendell A. Johnson, Navy, FPO, New York City; Dr. Pelham P. Staples, Jr., USAF, APO, New York City; and Dr. James F. Van Pelt, USAF, APO, New York City.

New York Academy of Medicine Postgraduate Radio Programs—The graduate medical faculty of The New York Academy of Medicine will present its forty-first series of postgraduate radio programs on Thursdays from 9:00 P.M. to 10:00 P.M., August through October. The programs will be heard on WNYC-FM, 93.9 megacycles on the FM dial.

For a booklet listing the complete radio series write to: Iago Galdston, M.D., secretary, Committee on Postgraduate Radio Program, The New York Academy of Medicine, 2 East 103rd Street, New York 29, New York.

New Journal to be Published—The Society for the Scientific Study of Sex will publish a new journal, *The Journal of Sexual Research.* The first issue will appear early in 1960. The journal is to include original articles, reviews of the literature, book reviews, and abstracts covering the range of all the learned disciplines pertinent to the study of sex. Papers should be submitted to Dr. Hugo G. Beigel, 138 East 94th Street, New York 28, New York.

Physicians Receive Certificates of Fellowship in American College of Chest Physicians—The following physicians from New York received their certificates of Fellowship in the American College of Chest Physicians on June 4: *Albany:* Dr. Frank C. Maxon, Jr.; *Amityville:* Dr. Harvey Kugler; *Astoria:* Dr. Edward A. Braunstein; *Brooklyn:* Drs. Harry A. Birnbaum, Norman S. Blackman, Philip Buchholtz, F. Vincent Burke, Sidney Dann, Max Kaplan, Milton Krinsky, Monte Malach, Bernard H. Perlman, Benjamin A. Rosenberg, Nathan H. Shackman, and H. U. Solovay; *Buffalo:* Dr. John M. Donohue; *Farmingdale:* Dr. C. Francis Cotter; *Forest Hills:* Dr. Seymour S. Balkin; *Garden City:* Drs. Ben F. Dennis, J. Grant Harrison, and John J. Sullivan; *Great Neck:* Dr. Leo M. Taran.

Hempstead: Dr. Gerard P. J. Griffin; *Jamaica:* Dr. Chong Han Kim; *New York City:* Drs. Daniel C. Baker, A. L. Loomis Bell, Maurice A. Goodwin, A. Gregory Jameson, Bernard Maisel, Louis R. Orkin, Ernest R. Pitman, Max Rakofsky, Isadore Rosenfeld, and Edgar A. Riley; *Rochester:* Dr. Charles R. Mathews; *Roslyn:* Dr. Hyman I. Miller; *Roslyn Heights:* Dr. G. E. Paley; *Rushville:* Dr. George S. Allen; *Saratoga Springs:* Dr. William F. Lee; *Staten Island:* Dr. Marie C. Rosati; *Syracuse:* Dr. Samuel T. Schlamowitz; *Williston Park:* Dr. Lindon L. Davis; and *Yonkers:* Dr. Albert E. Roberto.

Users of Plastic Bags in Upstate New York Required to Give Warning—Herman E. Hilleboe, M.D., State Health Commissioner, has announced that as of August 1 users of plastic bags in Upstate New York will be required to have a standard

[Continued on page 3112]

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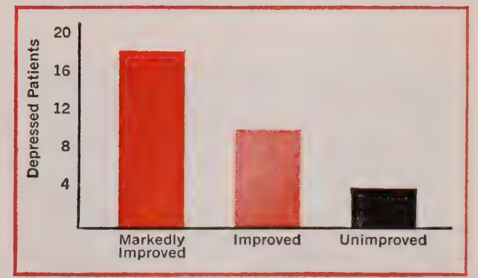

1. Agin, H. V.: in A Pharmacologic Approach to the Study of the Mind, Springfield, Ill., Charles C Thomas, in press.
2. Agin, H. V.: Conference on Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958.

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[Continued from page 3111]

warning statement on the bags.

Dr. Hilleboe said that the New York State Public Health Council has approved an amendment to the State Sanitary Code which makes it mandatory that the following warning appear on the plastic bags: "WARNING: To avoid danger of suffocation, keep away from babies and children. Do not use in cribs, beds, carriages or play pens. This bag is not a toy." The size of the print of the warning statement varies according to the length and width of the bag.

National Council to Combat Blindness Fellowships—The National Council to Combat Blindness, Inc., announces that the closing date for receipt of completed applications for "Fight for Sight" full-time research fellowships, grants-in-aid, and summer student fellowships has been designated as January 1, 1960. This change was found necessary in order to facilitate the processing of the increased number of applications being filed with the organization for review. It will also make possible notification in early spring to those applicants for full-time research fellowships where it has been established that this is essential. In such instances the commencement date of the fellowship may be in advance of August 1 but not prior to May 1.

In general, notification to applicants for full-time research fellowships and grants-in-aid will be sent in mid-July and the commencement date for awards will continue to be August 1. Applicants for student fellowships will be notified in mid-May of the action taken by the scientific advisory committee in order that they may make arrangements with their respective institutions to commence work in early summer.

Appropriate forms may be obtained from: Secretary, National Council to Combat Blindness, Inc., 41 West 57th Street, New York 19, New York.

Symposium on Tuberculosis Prevention—A symposium on the prevention of tuberculosis in children will be held on Thursday, November 12, at 2:00 P.M. in the New York Academy of Medicine Building, 2 East 103rd Street, New York City. The Tuberculosis Preventorium for Children at Farmingdale, New Jersey, is celebrating its fiftieth anniversary this year. The symposium is one of the events planned by the anniversary committee. James C. Perkins, M.D., managing director of the National Tuberculosis Association, will serve as moderator.

New York Tuberculosis and Health Association Fellowships—Fellowships and grants amounting to $100,000 are being offered by the New York Tuberculosis and Health Association. The James Alexander Miller Fellowship, named in honor of the physician who was one of the organizers and the first president of the Association, carries a stipend of $7,000 to $10,000 depending on need. This fellowship is offered to a highly qualified investigator to enable him to pursue research work anywhere in the United States in a field of interest to the Association.

Candidates of superior qualifications who do not receive the Miller Fellowship may be awarded a fellowship carrying a smaller stipend. Priority for these fellowships is given to New York City area applicants.

The Association also offers grants for the support of the work of established researchers whose studies have a potential relationship to the problems of tuberculosis. To qualify for such grants, the work must be conducted in medicine, sociology, epidemiology, or the basic sciences, and the project must be conducted in an approved university, hospital, or other institution in the New York City area.

Applications for fellowships must be made by November 15. Applications for grants-in-aid are due at least six months prior to the date when the contemplated project is scheduled to start. Forms may be obtained by writing to: New York Tuberculosis and Health Association, 260 Park Avenue South, New York 10, New York.

Medical Assistants Form Organization in New York State—Representatives of seven county associations met at the headquarters of the Medical Society of the State of New York to organize a State-wide association of medical assistants which in turn will affiliate with the American Association of Medical Assistants. The group will adopt a constitution and bylaws and elect its initial slate of officers at a meeting to be held in New York City on September 11.

John M. Galbraith, M.D., of Glen Cove, a member of the State Society's Council, will act as adviser to the new organization. He joined Herbert T. Wagner, M.D., executive director of the Medical Society of the State of New York, in addressing the representatives of the new organization.

Postgraduate Courses in Radiologic Health at NYU-Bellevue—The Department of Industrial Medicine of the New York University-Bellevue Medical Center Post-Graduate Medical School offers five courses in radiologic health starting in October. The courses are intended for persons already trained in one of the physical, engineering, biologic, or medical sciences who require a comprehensive introduction to the new technics and methods associated with radiologic hazard evaluation.

The titles of the courses to be presented are as follows: "Introduction to Radiological Health"; "Radiological Health Laboratory"; "Radiochemical Analysis"; "Medical and Public Health Control of Ionizing Radiation"; and "Radiation Hygiene Measurements."

For further information write to: Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

Course in Air Pollution—The problems of the sources, effects, and control of community air pollution will be treated in a two-week course, "Air Pollution," offered by the New York University Post-Graduate Medical School in cooperation with the New York University College of Engineering, November 30 through December 11.

The course, designed for engineers, industrial hygienists, and physicians, will review the basic toxicology of the principal air pollutants, micrometeorologic factors, effects of air pollution on agriculture and commerce, and methods for sampling and analyzing the various toxic components.

For further information contact: Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

New York Academy of Medicine Postgraduate Week—The New York Academy of Medicine will hold its third annual postgraduate week Monday, October 5, through Friday, October 9. The title of the program will be "Research Contributions to Clinical Practice."

The daily program will consist of evening lectures, an afternoon panel meeting, and a scientific exhibit. Registration is required of non-Fellows of the Academy but no fee will be charged.

For further information contact Robert L. Craig, M.D., secretary, Postgraduate Week, The New York Academy of Medicine, 2 East 103rd Street, New York 29, New York. Telephone TRafalgar 6–8200.

Physicians Awarded Wyeth Pediatric Residencies—Two out-of-town physicians have recently been awarded pediatric residencies by Wyeth Laboratories. Both Lowell A. Glasgow, M.D., Cincinnati, Ohio, and Ray C. Wunderlich, M.D., St. Petersburg, Florida, will take their residencies at Strong Memorial Hospital, Rochester, New York.

Personalities

Relocated

Saul Blatman, M.D., former chief resident at Babies Hospital, Columbia-Presbyterian Medical Center, has assumed the duties of chief of pediatrics

[Continued on page 3114]

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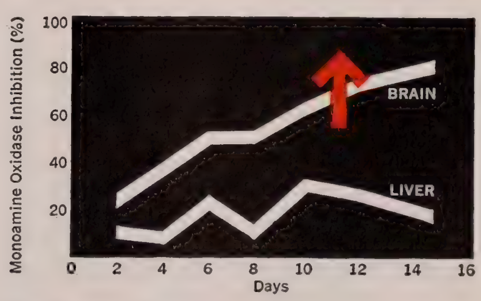

Horita, A.: Report, Mar. 17, 1959

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[Continued from page 3113]

at the National Jewish Hospital, Denver, Colorado.

Retired

Leo W. Tucker, M.D., as medical officer at the Quarantine Station in New York Harbor, U.S. Public Health Service.

Speakers

John Joseph Conley, M.D., New York City, and W. Brandon Macomber, M.D., Albany, before the International Congress on Plastic Surgery, London, England.

Awarded

George T. Pack, M.D., New York City, by the president of Peru, the "Order of the Sun," the oldest decoration in the Western Hemisphere.

Appointed

Virginia Apgar, M.D., to the medical staff of the National Foundation. . .Murray Davidson, M.D., as director of the Department of Pediatrics of The Bronx Hospital . . . George James, M.D., as First Deputy Commissioner of the New York City Department of Health . . . George M. Wheatley, M.D., as head of Metropolitan Life Insurance Company's health and welfare division.

Elected

Leonard Greenburg, M.D., New York City, as president of the Air Pollution Control Association . . . Ralph E. Snyder, M.D., New York City, as president of New York Medical College . . . Harvey J. Tompkins, M.D., New York City, as president of the Academy of Religion and Mental Health.

Emergency Management of Untoward Reactions to Drugs Used in Diagnosis and Treatment

In describing the contents and use of an emergency kit for treating drug reactions the author, Carl W. Fisher, M.D., Kaiser Foundation Hospital, Oakland, California, stresses the primary need of speed when such crises arise. He says that acute drug reactions are manifested in relatively few and easily recognized ways and may be adequately managed by a simple scheme of symptomatic treatment which may, under the circumstances, omit some of the steps of standard medical discipline.

He outlines steps to be taken in apnea, circulatory collapse, convulsions, and allergic reactions. The methods outlined are applicable to reactions caused by some of the common drugs: local anesthetic agents, barbiturates, iodized compounds used in radiographic study, and antibiotics.

If, in developing reactions, the nature and properties of the causative drug are not known, those manifestations that are a threat to life should be treated symptomatically. After the acute emergency, he says, there is time to investigate and evolve, if necessary, more specific refinements of treatment.—*Kaiser Foundation Medical Bulletin, October-December, 1958*

LETTERS TO THE EDITOR

Treatment for an Overdose of an Opium Alkaloid

To the Editor:

In reference to the article on "Accidental Chemical Poisonings in Adults" by Dr. Harold Jacobziner which appears in the June 1, 1959, issue of the New York State Journal of Medicine, I would like to comment on Incident 1 in which a twenty-year-old addict took an overdose of an opium alkaloid, was given prompt treatment at a hospital and recovered, while another patient died because no antagonist was given.

I know of at least 31 patients of Riverside Hospital who have died because of an overdose of drugs (usually heroin). Of these 31, 10 died in hospitals where adequate treatment was available. I am sure that the Medical Examiner can quote more extensive statistics than these since these apply to the addict population under twenty-one years of age only.

I also would like to state that patients who have taken an overdose of drugs and who are apparently recovered, as the one described by Dr. Jacobziner, should remain under observation for at least twenty-four hours. I have knowledge of a case in which such a patient was admitted to the hospital at 2:30 P.M., went home at 7:00 P.M. apparently recovered, and was found dead an hour or so later. It is known that one dose of an opiate antagonist may not be sufficient, and repeated injections of these drugs may be necessary before the patient is out of danger.

I would also like to comment on the fact that the decision to retain such a patient in the hospital for at least twenty-four hours should be a medical one rather than one dictated by legal considerations. The medical profession has been trying to have problems of drug addiction considered as being in their province, and yielding to other considerations would not be in keeping with such intentions.

Percy Mason, M.D.

122 East 82nd Street
New York 28, New York

[Continued on page 3116]

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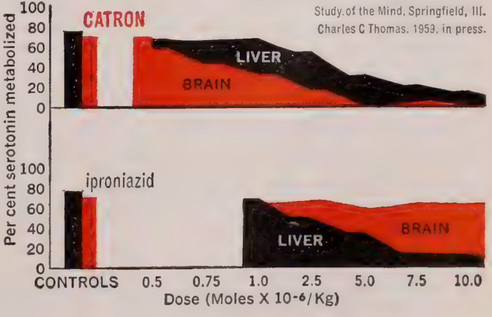

Horita, A.: The Pharmacology of the Monoamine Oxidase Inhibitors, in A Pharmacologic Approach to the Study of the Mind, Springfield, Ill. Charles C Thomas, 1959, in press.

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[Continued from page 3115]

Reply by Author

To the Editor:

I read Dr. Mason's comments with great interest. I did not mean to imply that one patient recovered because an antagonist was given and the other patient died because no antagonist was given. I merely cited a case report as it happened, as I usually do in the "Briefs on Accidental Chemical Poisonings" which appear in the NEW YORK STATE JOURNAL OF MEDICINE.

I do want to urge that antagonists be utilized promptly in the treatment of narcotic addicts. It is well known that some patients will not survive even though adequately treated but every one should at least have the benefit of appropriate and immediate treatment.

I heartily concur with Dr. Mason on the need for detaining for at least twenty-four hours patients who have taken an overdose of narcotics, and who have apparently recovered. I have stated on numerous occasions in the various "Briefs" that this is a sound practice to follow, not only in cases of narcotic poisoning but also in other types of poisonings involving ingestions of other drugs and household preparations.

A patient with severe poisoning may appear asymptomatic and be sent home from the emergency room, only to suffer severe delayed reaction later. Many patients who are thus discharged from the emergency room have to be readmitted to the hospital for further treatment.

I also agree with Dr. Mason that the decision to retain such patients in the hospital for at least twenty-four hours is a medical matter rather than one dictated by legal considerations.

To recapitulate, I have stated on repeated occasions that patients who have ingested potentially toxic drugs should be retained in the hospital for about twenty-four hours though they may appear asymptomatic on admission to the emergency room. The treatment of any patient is in the province of the medical profession.

HAROLD JACOBZINER, M.D.
Assistant Commissioner

The City of New York
Department of Health
125 Worth Street
New York 13, New York

Agranulocytosis Following Antihistamine Therapy

To the Editor:

An inference is being drawn by some from the summary of my paper "Agranulocytosis Following Antihistamine Therapy: Report of a Fatal Case" which appeared in the July 1, 1959 issue of the NEW YORK STATE JOURNAL OF MEDICINE, that parabromdylamine maleate was an etiologic agent.

This was not intended as can be seen from my comment. The patient had a normal blood count after therapy with parabromdylamine maleate was terminated. To my knowledge no case of agranulocytosis following parabromdylamine maleate (Dimetane) therapy has been reported to date.

BENJAMIN F. NORRIS, M.D.

806 Madison Avenue
Albany 8, New York

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forlorn somber defeated
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DEPRESSION (Endogenous, Reactive, Postpartum, Involutional and Depression Secondary to Schizophrenic or Neurotic Reaction): initially, 12 mg. once daily for approximately 2 weeks, or less if improvement appears. Dosage is then reduced to 6 mg. daily. As improvement continues, maintenance dosage of 6 mg. every other day or of 3 mg. daily often proves satisfactory. An interrupted dose schedule is recommended for long-term therapy.

ANGINA PECTORIS—3 to 6 mg. daily in most cases. Relief of pain and elevation of mood may be dramatic. Victims of angina pectoris who respond in this manner should be cautioned against overexertion induced by their sense of well-being.

RHEUMATOID ARTHRITIS (Adjunctive Therapy—in severely disabling forms, particularly when accompanied by depression): 9 to 12 mg. daily for 3 days, then 6 mg. daily, reducing further to 3 mg. daily on signs of improvement. If a conventional antiarthritic agent is used, lower doses of each are indicated.

CAUTION

Certain circumstances should be watched carefully when using CATRON.

DRUG POTENTIATION—The list of drugs which CATRON potentiates is not yet complete. CATRON should not be used concomitantly with any other drug unless, (a) it has been ascertained that the two drugs bear no qualitative relationship, or (b) potentiating action is being sought, as may be the case with tranquilizing drugs including reserpine and the phenothiazines, and with the amphetamines, barbiturates and hypotensive agents.

HYPOTENSIVE EFFECT—All normotensive patients receiving CATRON, but especially elderly patients, should be warned about the possibility of orthostatic hypotension during the initial period of higher dosage. In the few instances where this may occur, lowering of the dose will usually permit continuation of therapy.

COLOR VISION—A reversible red-green color defect has been reported in a few patients, chiefly hypertensives, on ex-

ᴾsychoactive Agent

3rightens mood, diminishes apathy and confusion, curbs
nptoms of withdrawal, self-pity, inadequacy, despair.[1,2]

\cts selectively on brain at doses having little
no effect on liver.[5-7]

/aluable in depressions associated with
ronic diseases such as angina pectoris,[8] severe
eumatoid arthritis.[9]

detailed information, request Brochure No. 19, CATRON

ıded therapy with CATRON. Discontinue the drug if such
anges occur.

IMALS, NEUROLOGIC SIGNS—In toxicity studies with animals, neurologic syndrome has been observed characterized tremors, muscle rigidity and difficulty in locomotion. hough extensive clinical experience has not shown such ctions to be a problem in humans in recommended sage, should a similar neurologic disturbance occur, the ssibility of drug action should be considered.

E EFFECTS—Major side effects requiring cessation of erapy are infrequent. Other side effects—constipation, lay in starting micturition, increased sweating, hyperlexia, ankle edema, blurring of vision, dryness of the uth—are usually readily controlled by lowering the dose. Rash, observed in a few patients, cleared up rapidly on discontinuing therapy.

RNING: Pharmacologic studies show that with proper dose CATRON will inhibit monoamine oxidase in the brain thout influencing this enzyme in the liver. This is in ntrast to previous inhibitors, which depress monoamine dase activity in the liver before affecting this enzyme the brain.

hough the evidence suggests that serious life-threaten hepatitis seen with other MAO inhibitors should not cur with CATRON in the recommended dosage, it has en reported on rare occasion with dosages in excess of e recommended levels.

e Following Precautions are Recommended:

1. In all instances daily dose should not exceed 12 mg.
2. Reduce daily dose as soon as response is established, usually in a matter of 1 to 2 weeks.
3. Do not prescribe to a patient more than sixteen 6 mg. tablets or thirty-two 3 mg. tablets of CATRON at one time.
4. Patient should return for observation before additional CATRON is prescribed. For this reason, prescriptions for CATRON should be marked, "not refillable."
5. Perform regular liver function tests.
6. Do not use the drug in patients with a history of viral hepatitis or other liver abnormalities.

CATRON is the original brand of β-phenylisopropyl hydrazine. It is supplied as the hydrochloride in tablets of 3 mg. and 6 mg., bottles of 50.

(1) Agin, H. V.: The Use of JB-516 (CATRON) in Psychiatry, Conference on Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958. (2) Bercel, N. A.: A Pharmacologic Approach to the Study of the Mind, Springfield, Ill., Charles C Thomas, 1959, in press. (3) Kinross-Wright, J.: Panel Discussion of Psychic Energizers, *ibid.* (4) Kinross-Wright, J.: Experience with JB-516 (CATRON) and Other Psychochemicals in Clinical Practice, Conference on Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958. (5) Horita, A., and Parker, R. G.: Comparison of Monoamine Oxidase Inhibitory Effects of Iproniazid and Its Phenyl Congener, Proc. Soc. Exper. Biol. & Med. **99**:617, 1958. (6) Horita, A.: *Beta*-Phenylisopropylhydrazine, A Monoamine Oxidase Inhibitor, Fed. Proc. **17**:379, 1958. (7) Horita, A.: The Pharmacology of the Monoamine Oxidase Inhibitors, in A Pharmacologic Approach to the Study of the Mind, Springfield, Ill., Charles C Thomas, 1959, in press. (8) Kennamer, R., and Prinzmetal, M.: Treatment of Angina Pectoris with CATRON (JB-516), Am. J. Cardiol. **3**:542, 1959. (9) Scherbel, A. L., and Harrison, J. W.: The Effects of Iproniazid and Some Other Amine Oxidase Inhibitors in Rheumatoid Arthritis, Conference on Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958.

56559-E

BOOKS RECEIVED

(*The following books were received during the month of June, 1959*)

Hypertensive Disease. Diagnosis and Treatment. By Sibley W. Hoobler, M.D. Octavo of 353 pages. New York, Paul B. Hoeber, Inc., 1959. Cloth, $7.50.

Schizophrenia. An Integrated Approach. Edited by Alfred Auerback, M.D. Octavo of 224 pages, illustrated. New York, The Ronald Press Company, 1959. Cloth, $5.50.

The New Psychiatry. By Nathan Masor, M.D. Octavo of 155 pages. New York, Philosophical Library, 1959. Cloth, $3.75.

Progress In Hematology. Volume II. Edited by Leandro M. Tocantins, M.D., with 19 contributors. Quarto of 290 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $9.75.

Synopsis of Treatment of Anorectal Diseases. By Stuart T. Ross, M.D. Duodecimo of 240 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $6.50.

Advances In Psychiatry. Recent Developments in Interpersonal Relations. Edited by Mabel Blake Cohen, M.D. Octavo of 314 pages. New York, W. W. Norton Company, Inc., 1959. Cloth, $4.95.

Surgery of the Foot. By Henri L. DuVries, M.D. Octavo of 404 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $12.50.

Squint and Allied Conditions. By George P. Guibor, M.D. Octavo of 356 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $11.50.

That the Patient May Know. An Atlas for Use by the Physician in Explaining to the Patient. By Harry F. Dowling, M.D., and Tom Jones, B.F.A. Quarto of 139 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $7.50.

Preventive Medicine. Principles of Prevention in the Occurrence and Progression of Disease. Edited by Herman E. Hilleboe, M.D., and Granville W. Larimore, M.D. Octavo of 731 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $12.

Trauma. By Harrison L. McLaughlin, M.D. Quarto of 784 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $18.

Diseases of the Nose, Throat, and Ear. Edited by Chevalier Jackson, M.D., and Chevalier L. Jackson, M.D. Second edition. Quarto of 886 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $20.

Collected Papers of the Mayo Clinic and the Mayo Foundation, Volume 50, 1958. Quarto of 791 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $13.

Textbook of Pediatrics. Edited by Waldo E. Nelson, M.D. Seventh edition. Quarto of 1,460 pages, illustrated. Philadelphia, W. B. Saunders, 1959. Cloth, $16.50.

An Atlas of Normal Radiographic Anatomy. By Isadore Meschan, M.D. Second edition. Quarto of 759 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $16.

Metals and Engineering in Bone and Joint Surgery. By Charles Orville Bechtol, M.D., Albert Barnett Ferguson, Jr., M.D., and Patrick Gowans Laing, M.D. Quarto of 186 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1959. Cloth, $8.00.

The Clinical Evaluation of New Drugs. Edited by S. O. Waife, M.D., and Alvin P. Shapiro, M.D. Octavo of 223 pages. New York, A Hoeber-Harper Book, 1959. Cloth, $7.50.

The Essentials of Roentgen Interpretation. By Lester W. Paul, M.D., and John H. Juhl, M.D. Quarto of 839 pages, illustrated. New York, Paul B. Hoeber, Inc., 1959. Cloth, $25.

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn 16, New York. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selections for review will be based on merit and interest to our readers.

re-evaluating tranquilizers?

READ WHAT CLINICIANS ARE NOW SAYING ABOUT ATARAX®

(brand of hydroxyzine)

IN GERIATRICS
"ability to decide correctly has increased, while the illogical response to anxiety has diminished."[1]

IN WORKING ADULTS
"especially well suited for ambulatory patients who must work, drive a car, or operate machinery."[3]

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"ATARAX appeared to reduce anxiety and restlessness, improve sleep patterns and make the child more amenable to the development of new patterns of behavior . . . ."[2]

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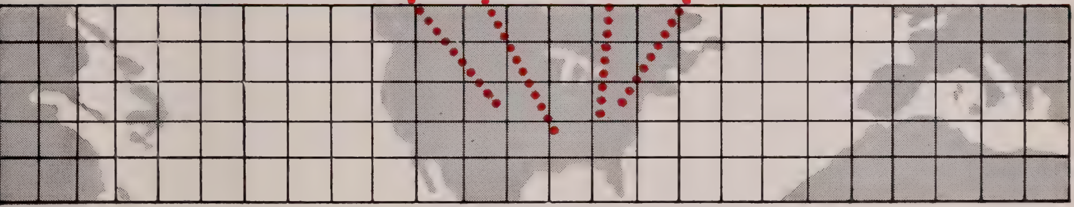
ATARAX is "effective in controlling tension and anxiety . . . . Its safety makes it an excellent drug for out-patient use in office practice."[4]



INVESTIGATORS AGREE ON OPTIMAL ATARAX DOSAGES

For childhood behavior disorders	10 mg. tablets	3-6 years, one tablet t.i.d. over 6 years, two tablets t.i.d.
	Syrup	3-6 years, one tsp. t.i.d. over 6 years, two tsp. t.i.d.
For adult tension and anxiety	25 mg. tablets	one tablet q.i.d.
	Syrup	one tbsp. q.i.d.
For severe emotional disturbances	100 mg. tablets	one tablet t.i.d.
For adult psychiatric and emotional emergencies	Parenteral Solution	25-50 mg. (1-2 cc.) intramuscularly, 3-4 times daily, at 4-hour intervals. Dosage for children under 12 not established.

Supplied: Tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution, 10 cc. multiple-dose vials.

References: 1. Smigel, J. O., et al.: J. Am. Ger. Soc., in press. 2. Freedman, A. M.: Pediat. Clin. North America 5:573 (Aug.) 1958. 3. Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957. 4. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. 5. Coirault, M., et al.: Presse méd. 64:2239 (Dec. 26) 1956. 6. Bayart, J.: Presented at the International Congress of Pediatrics, Copenhagen, Denmark, July 22-27, 1956.

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Science for the World's Well-Being

BOOKS REVIEWED

Cardiac Arrest and Resuscitation. By Hugh E. Stephenson, Jr., M.D. Octavo of 378 pages, illustrated. St. Louis, C. V. Mosby Co., 1958. Cloth, $12.

This book is an extraordinary compilation of facts concerning the incidence, etiology, diagnosis, management, and prognosis of cardiac arrest. It incorporates a complete survey of recent and historical literature concerning cardiac arrest into a concise reference book which is easily readable despite its factual contents. In addition to demonstrating a thorough familiarity with the work of others in cardiac resuscitation, the author presents his own conclusions derived from data contributed to the *Cardiac Arrest Registry* by physicians throughout the world. The 1,710 instances of cardiac arrest reported in the registry provide the factual basis for answers to such interesting questions as: What is the incidence of cardiac arrest occurring outside the operating room? What are the chances for survival if thoracotomy is performed on these patients? Will a physician who has observed but not performed cardiac resuscitation then be able to maintain cerebral blood flow in his own patient if he is obliged to massage a heart? Is it hopeless to open the chest of a patient with cardiac arrest due to acute coronary occulsion, and is epinephrine contraindicated in ventricular fibrillation?

Other interesting chapters such as The Medicolegal Aspects of Cardiac Arrest and Resuscitation, Resuscitation of the Newborn, and The Management of Postoperative Cardiac Arrhythmias written by experts in these fields are informative and accurate. An adequate index and an extensive bibliography complete this carefully prepared book.

Of course this book basically reflects the author's personal philosophy, that is, if the patient is deemed salvageable, the chest should be opened regardless of the location at which the arrest occurs, the age of the patient, and the lack of previous surgical training of the physician performing the thoracotomy. However, this viewpoint is subtly presented to the reader, gently directing him to the same conclusion and providing him, whether he is a general practitioner, dentist, or ophthalmologist, with the essential knowledge and incentive to attempt resuscitation for cardiac arrest. Surely every physician whether he is an internist, surgeon, or anesthesiologist, should read this excellent book.—Burton L. Zohman

Atomic Medicine. Third edition. By Charles F. Behrens, M.D. Octavo of 705 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1959. Cloth, $15.

This is a textbook concerning the physics of nuclear energy and the effects of this energy upon man and his environment. The first 120 pages describe the physics of the atom and of the atom bomb. The next 250 pages deal with the harmful effect of excessive radiation upon the body. In this section there is a tremendous amount of detail concerning the medical aspects of atomic warfare.

Since the book is primarily concerned with the harmful effect of atomic radiation, the diagnostic and therapeutic application of radioactive isotopes is presented in a meager 50 pages. Thus, there is too little space available to answer specific clinical problems which arise in the therapeutic application of atomic energy.

This is a source book which can be recommended to the student of nuclear biology, to the pathologist interested in the effects of excessive irradiation, and to the physician concerned with military medicine and civilian defense. Each chapter has a rather complete bibliography leading to the classic original reports in this new field.—Martin Perlmutter

And Then There Were Two. Prepared by the Twins' Mothers Club of Bergen County, N. J. Duodecimo of 52 pages, illustrated. New York, The Child Study Association of America, Inc., 1959. Paper, 35 cents.

The concept that prompted this little pamphlet is excellent and the product is of a different sort. The reviewer would not approve of many of the instructions set down for the mother of twins. e.g., the chapter on Feeding and Bathing. The mother of twins will accomplish much more by staying home and caring for her babies rather than attending club functions and complaining. For the information of any mother who may anticipate twins, the task will be no greater than if she were to have two babies one year apart (a single birth each time).

In the opinion of the reviewer, this pamphlet will serve no purpose and to be frank with those for whom this review is important, I do not endorse it.—Harry Appel

[Continued on page 3124]

PROMPT SUMMERTIME RELIEF FOR INFANT DIARRHEA!

HI-PRO
HIGH PROTEIN
LOW FAT
COW'S MILK
JACKSON MITCHELL PHARMACEUTICALS, INC.
CULVER CITY, CALIF.

AN EFFECTIVE BALANCE OF PROTEIN/FAT/CARBOHYDRATES

Protein	41.00%
Fat	14.00%
Carbohydrate	35.00%
Calcium	1.15%
Calories per ounce (3 tbsp.)	121

When summertime infantile diarrhea strikes, HI-PRO is the indicated formula for effective relief! Four easy steps, with quantities for 24-hour periods, as follows:

1. After a starvation period (with plenty of water) give:

HI-PRO	7 Tbs.	Protein	3.2%
Water	30 Ozs.	Fat	1.0%
		Lactose	2.7%
		Cal. per fl. oz.	10

2. With improvement or within 48 hours, carbohydrates may be cautiously added.

3. After 2 or 3 days increase HI-PRO concentration as follows:

HI-PRO	10 Tbs.	Protein	4.6%
Water	30 Ozs.	Fat	1.5%
Maltose-Dextrin Mixture	4 Tbs.	Carbohydrate	7.4%
		Cal. per fl. oz.	18

4. Change in about one week to a stronger formula (the following is an example):

HI-PRO	6 Tbs.	Protein	4.5%
Evap. Milk	8 Ozs.	Fat	2.9%
Water	24 Ozs.	Carbohydrate	8.4%
Maltose-Dextrin Mixture	4 Tbs.	Cal. per fl. oz.	24

Available in 1 lb. and 2½ lb. vacuum-packed cans at all pharmacies. Write for detailed literature, plus free full-size trial can or samples.

JACKSON-MITCHELL *Pharmaceuticals, Inc.*
10401-F Virginia Ave., Culver City, Calif.

TEAR OUT AND SAVE THIS PAGE FOR READY REFERENCE

[Continued from page 3122]

The Middle Ear. By Heinrich G. Kobrak, M.D. Octavo of 254 pages, illustrated. Chicago, University of Chicago Press, 1959. Cloth, $15.

The author, now deceased, was eminently qualified in the field of otology and otologic research and was for many years research otologist at the University of Chicago, and, more latterly, professor of otological research at the College of Medicine, Wayne State University. He prepared several motion pictures demonstrating the properties and physiologic characteristics of the drum membrane and ossicular chain. The subject matter is all inclusive and deals with the basic sciences as they apply to the understanding of the function of the middle ear in health and in disease. The author has prepared part 1 of this book for the medical student and otologist. This section encompasses the general discussion of the middle ear from its embryology to audiologic testing and the related fields. Part 2 consists of the new surgical procedures and has been prepared by the "Who's Who" in otologic surgery. Kobrak prepared the chapter on The Treatment of Middle Ear Deafness by Prosthesis. The subject matter is well amplified by schematic drawings, photographs, photomicrographs, colored plates, and charts. The reader will also find a very useful list of references. This book is recommended for otologists, audiologists, and research workers.—SAMUEL ZWERLING

Fracture Surgery. By Henry Milch, M.D., and Robert A. Milch, M.D. Octavo of 470 pages, illustrated. New York, Paul B. Hoeber, Inc., 1959. Cloth, $17.50.

The need for instruction in the diagnosis and management of traumatic injuries is important. In certain areas 20 to 25 per cent of all admissions to the hospital are cases of trauma. The house staff must be able to handle these cases properly.

The initial treatment is extremely important. It may make the difference between early return to gainful employment and health or long disability and possibly loss of a limb. Earning power in terms of weeks can add up to a very large sum of money. More significant is the lessening of pain and suffering.

Milch has always been an advocate of surgical principles. In this book, he maintains this thesis. Throughout the volume, the management is based on sound principles of surgery and mechanics. Applied clinical mechanics are stressed. One is impressed with the care given to essential details.

There is evidence in this manuscript of the practical clinical experience of the senior author. There are many practical suggestions and bits of advice that can only come from one of long experience. This author is guiding his readers along a path that is true.

The book will benefit the student, resident, and general surgeon who have not had too much experience. It takes considerable talent to make the book short and still fill its need. This one does just that.—ALAN A. KANE

Leukemia. By William Dameshek, M.D., and Frederick Gunz, M.D. Octavo of 420 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $15.75.

The best book in the world has one great disadvantage. Between the galley and the time the book is finally printed it may become more or less obsolete. This does not come as a surprise when one realizes the ever-increasing tempo of the current investigations accompanied by the confusion inherent in such an environment.

Nevertheless, the reviewer urges every physician and hematolgist to read this refreshing presentation of an apparently hopeless subject. Unless he reads it, he will be unaware of the trials and tribulations which the authors must have suffered to achieve such a monumental effort at bookmaking, without having anything to show for it when we come face to face with the reality of the subject. As the authors contend on page 318: "It is well to realize in these sad days when acute leukemia is apparently on the increase and there is no cure for it, that our therapeutic programs, however good they may seem to us now, are undoubtedly in their infancy and that many new and better methods will almost surely be developed in the years to come."

This may be the authors' fervent hope but we have lived with these hopes many years before this. Investigation must be permitted to go on apace aided and abetted by financial support, not only to established agencies, but also to equally assiduous workers who work without benefit of such adequate support.

There are a few omissions in this authoritative work such as mention of the Grumlée cell noted in chronic lymphocytic leukemia and its absence in lymphosarcoma. This omission becomes powerfully manifest on page 20, figure 4, intending to show a case of primary lymphosarcoma, but in actuality it is chronic lymphocytic leukemia. The figure is replete with Grumlée cells. This might alter the philosophy that some cases of lymphosarcoma finally metamorphose into chronic lymphocytic leukemia and vice versa.

In summary, this book presents a valiant effort in the face of insurmountable odds. It would have been better to delay the publication of this work until more definitive information became available.—MAURICE MORRISON

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CAPSULES—14 VITAMINS—11 MINERALS

Each capsule contains:

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Vitamin B_{12} with AUTRINIC® Intrinsic Factor Concentrate	1/15 U.S.P. Oral Unit
Thiamine Mononitrate (B_1)	5 mg.
Riboflavin (B_2)	5 mg.
Niacinamide	15 mg.
Folic Acid	1 mg.
Pyridoxine HCl (B_6)	0.5 mg.
Ca Pantothenate	5 mg.
Choline Bitartrate	50 mg.
Inositol	50 mg.
Ascorbic Acid (C)	50 mg.
Vitamin E (as tocopheryl acetates)	10 I.U.
l-Lysine Monohydrochloride	25 mg.
Rutin	25 mg.
Ferrous Fumarate	30 mg.
Iron (as Fumarate)	10 mg.
Iodine (as KI)	0.1 mg.
Calcium (as $CaHPO_4$)	157 mg.
Phosphorus (as $CaHPO_4$)	122 mg.
Boron (as $Na_2B_4O_7 . 10H_2O$)	0.1 mg.
Copper (as CuO)	1 mg.
Fluorine (as CaF_2)	0.1 mg.
Manganese (as MnO_2)	1 mg.
Magnesium (as MgO)	1 mg.
Potassium (as K_2SO_4)	5 mg.
Zinc (as ZnO)	0.5 mg.

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Stop Muscle Spasm

Disipal*

Brand of Orphenadrine HCl

in Parkinsonism

An energizing agent against weakness and fatigue... effective as a euphoriant... counteracts sialorrhea and oculogyria... lessens rigidity and tremor... well tolerated... even in presence of glaucoma.

in Low-Back Pain

Effective relief from spasm and pain in painful skeletal muscle disorders due to sprains, strains, herniated intervertebral disc, whiplash injuries, chronic osteoarthritis... No known contraindications.

DOSAGE: Usually 1 tablet (50 mg.) t.i.d.

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Northridge, California

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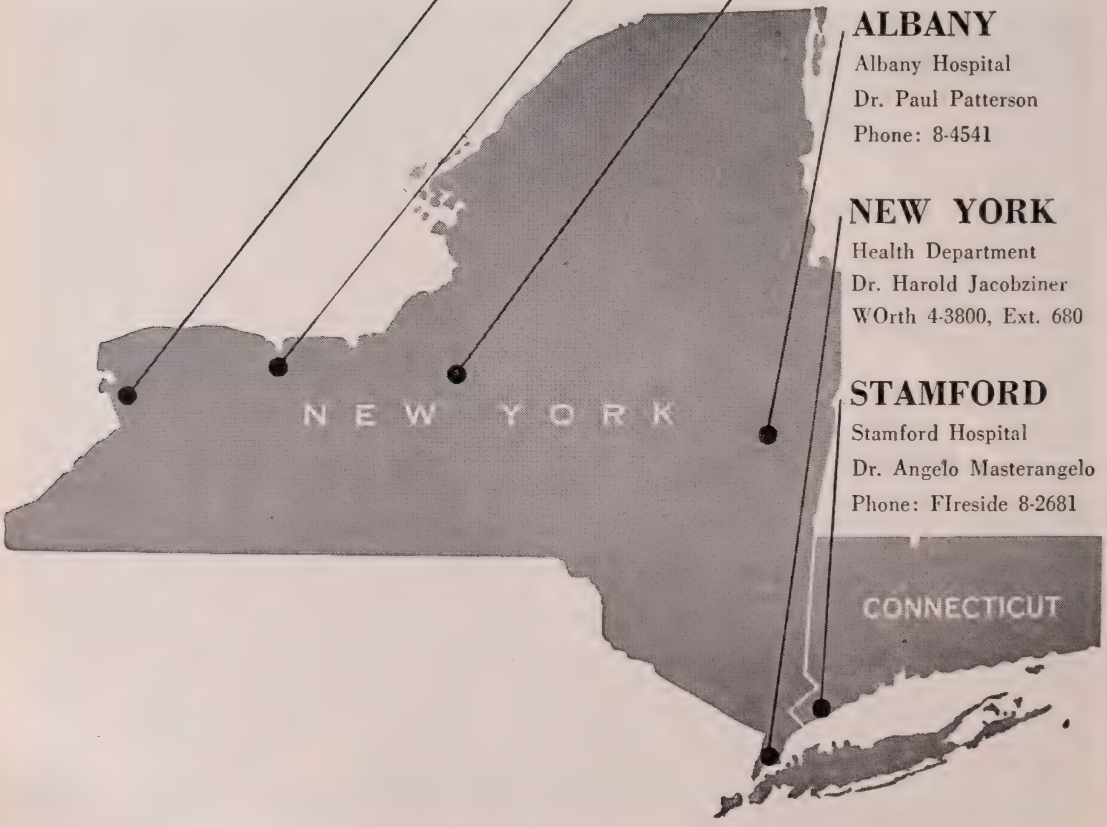

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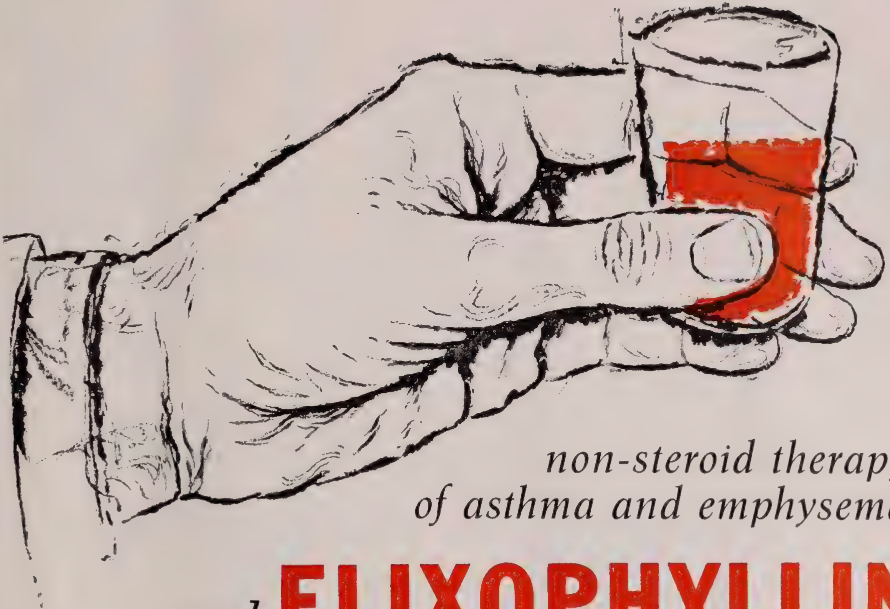

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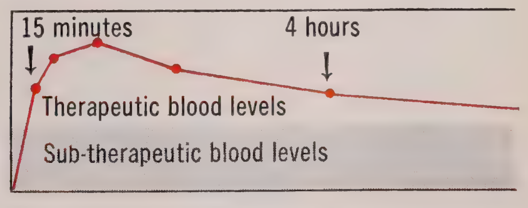
of asthma and emphysema

oral ELIXOPHYLLIN

- Just as with I.V. aminophylline,* high theophylline blood levels *reached in minutes* – from a single dose.*
- After absorption, theophylline is slowly eliminated. Therapeutic blood levels *endure for hours.**
- This predictability of blood levels permits quite constant *therapeutic blood levels night and day,* providing relief of wheezing, dyspnea, cough, and protection against acute attacks for most patients.*

DOSAGE: *First two days:*
45 cc. *(three tbsp.)* on arising;
45 cc. *(three tbsp.)* on retiring;
45 cc. *(three tbsp.)* once midway
between above doses
(about 3 P.M.)



After two days of therapy the size of doses should be slightly decreased.
Each tablespoonful contains: theophylline 80 mg., alcohol 3 cc.
Prescription only – bottles of 16 fl. oz.

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wherever there is inflammation, swelling, pain

VARIDASE®

Streptokinase-Streptodornase Lederle

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conditions for a fast & comfortable comeback

Host reaction to injury or local infection has a catabolic and an anabolic phase. The body responds with inflammation, swelling and pain. In time, the process is reversed. VARIDASE speeds up this normal process of recovery. By activating fibrinolytic factors VARIDASE shortens the *undesirable phase,* limits necrotic changes due to inflammatory infiltration, and initiates the constructive phase to speed total remission. Medication and body defenses can readily penetrate to the affected site; local tissue is prepared for faster regrowth of cells. In infection, the fibrin wall is breached while the infection-limiting effect is retained. In acute cases, response is often dramatic. In chronic cases, VARIDASE Buccal Tablets can stimulate a successful response to primary therapy previously considered inadequate or failing.

for routine use in injury and infection ...new simple buccal route

VARIDASE Buccal Tablets should be retained in the buccal pouch until dissolved. For maximum absorption, patient should delay swallowing saliva. Dosage: One tablet four times daily usually for five days. When infection is present, VARIDASE Buccal Tablets should be given in conjunction with ACHROMYCIN® V Tetracycline with Citric Acid. Each VARIDASE Buccal Tablet contains: 10,000 Units Streptokinase and 2,500 Units Streptodornase. Supplied: boxes of 24 and 100 tablets.

1. Innerfield, I.: Clinical report cited with permission
2. Clinical report cited with permission

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FORCE INJURY
severe bruises . . . swelling cleared by fifth day[2]

CHRONIC INFECTION
diabetic gangrene resolved conservatively with VARIDASE[1]

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rapidly spreading rhus dermatitis healed within a week[1]

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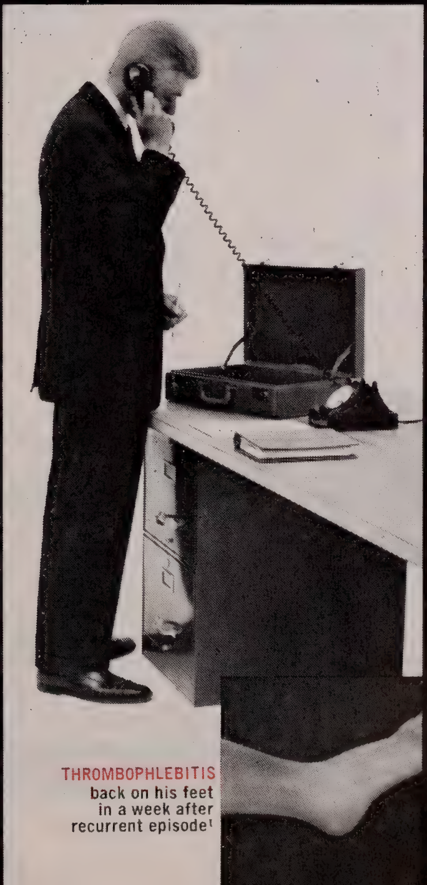
at school again with 3 days of VARIDASE[1]



THROMBOPHLEBITIS
back on his feet in a week after recurrent episode[1]

REFRACTORY CELLULITIS
normal routine resumed after 4 days of VARIDASE[1]

Officers—County Medical Societies—1959

TOTAL MEMBERSHIP AS OF AUGUST 15, 1959—24,879

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Erie	Thomas S. Bumbalo........Buffalo	Lois J. Plummer...........Buffalo	Francis W. O'Donnell......Buffalo
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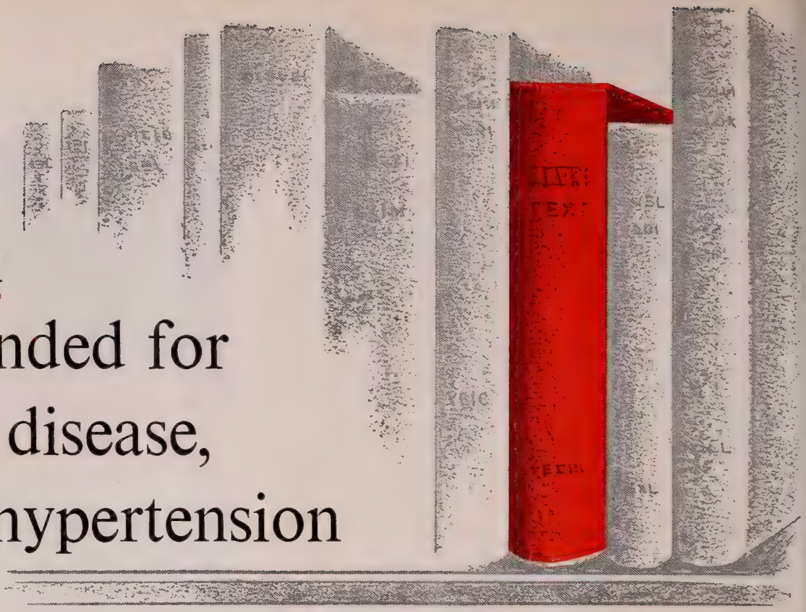

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*Paul Dudley White, "Heart Disease" 1951 (Macmillan) page 480;
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Cecil & Loeb's Textbook of Medicine, 1955 (W. B. Saunders) page 1,326;
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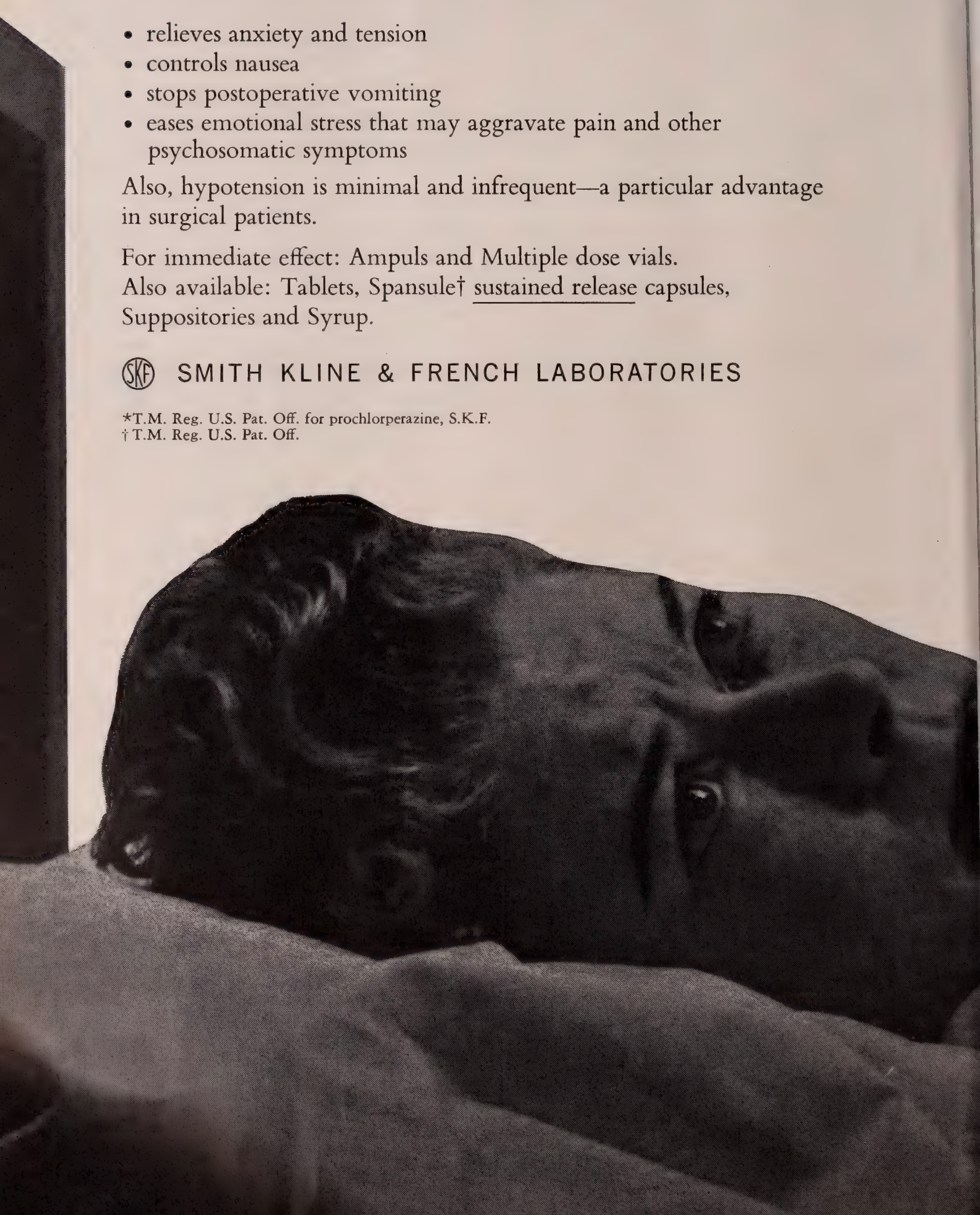

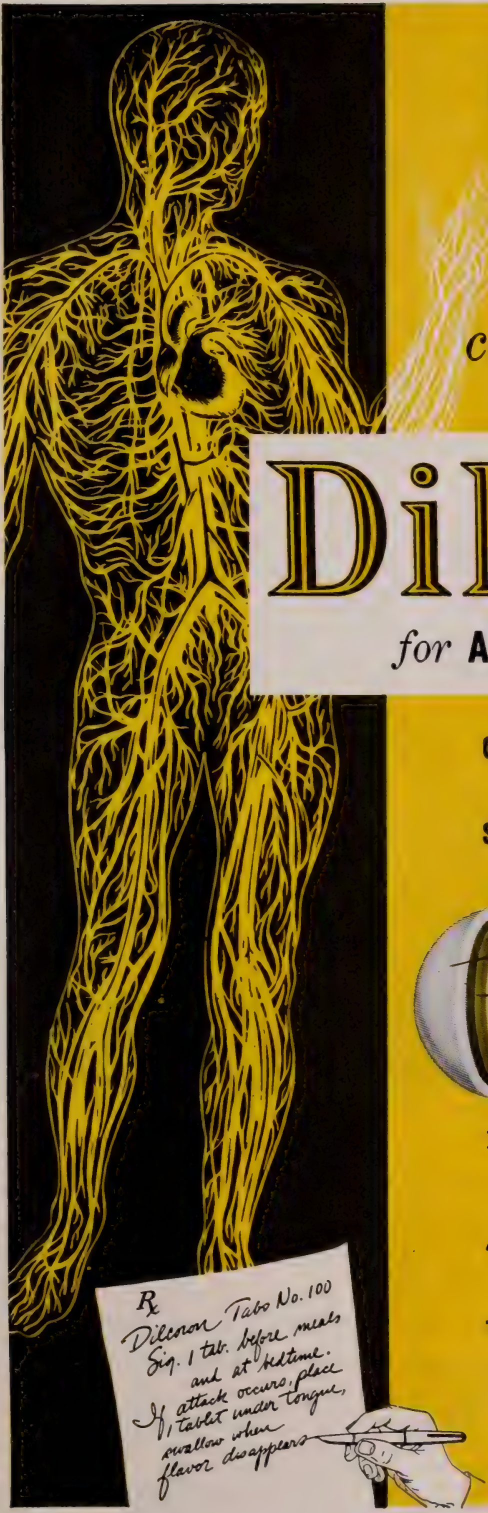
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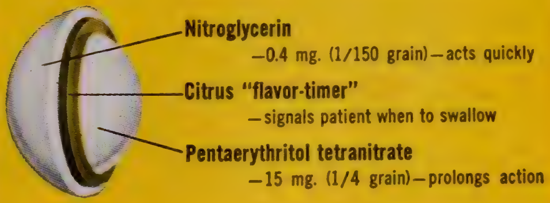
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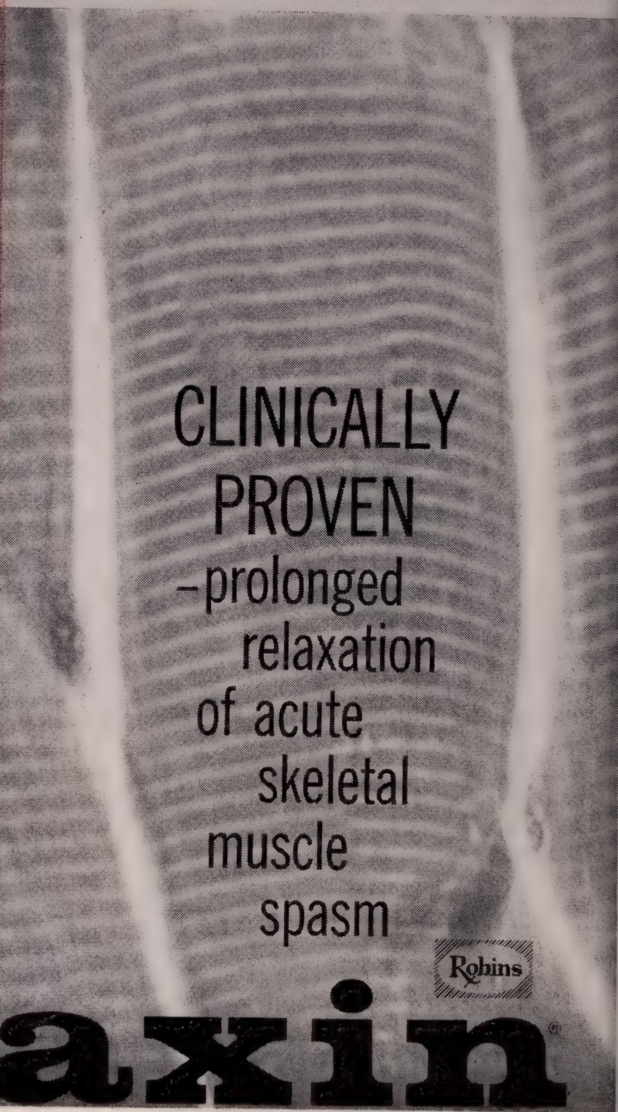

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	NO. PATIENTS	RESPONSE			
			moderate	slight	none
Carpenter[1]	33	"marked" 26	6	1	—
Forsyth[2]	58	"pronounced" 37	20	—	1
Lewis[3]	38	"good" 25	6	—	7
O'Doherty & Shields[4]	17	"excellent" 14	2	1	0
Park[5]	30	"significant" 27	—	2	1
Plumb[6]	60	"gratifying" 55	—	—	5
TOTALS	236	184 (78.0%)	34 (14.4%)	4	14

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- **In ordinary dosage, does not reduce muscle strength or reflex activity.**[1]

REFERENCES: **1.** Carpenter, E. B.: Southern M. J. 51:627, 1958. **2.** Forsyth, H. F.: J.A.M.A. 167:163, 1958. **3.** Lewis, W. B.: California Med. 90:26, 1959. **4.** O'Doherty, D. S., and Shields, C. D.: J.A.M.A. 167:160, 1958. **5.** Park, H. W.: J.A.M.A. 167:168, 1958. **6.** Plumb, C. S.: Journal-Lancet 78:531, 1958.

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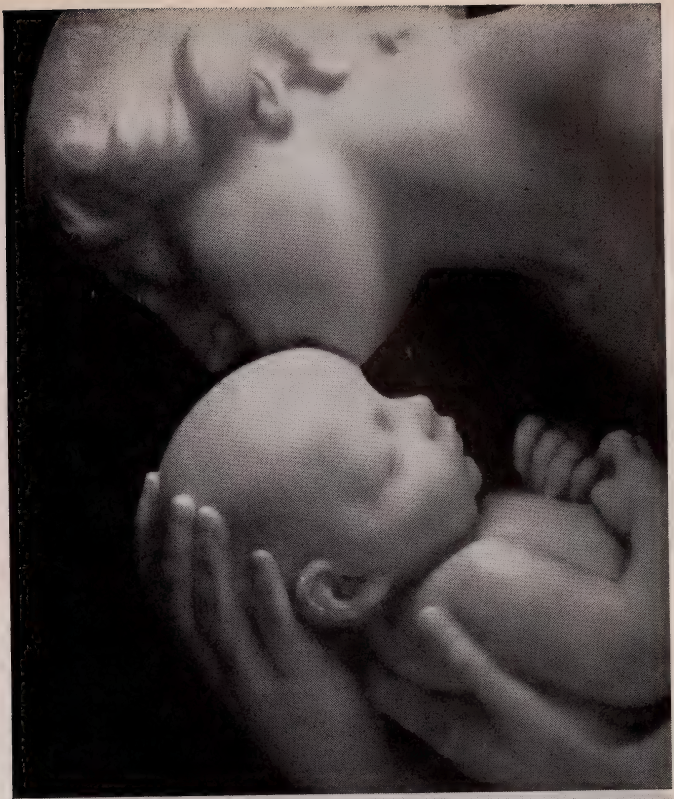

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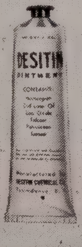

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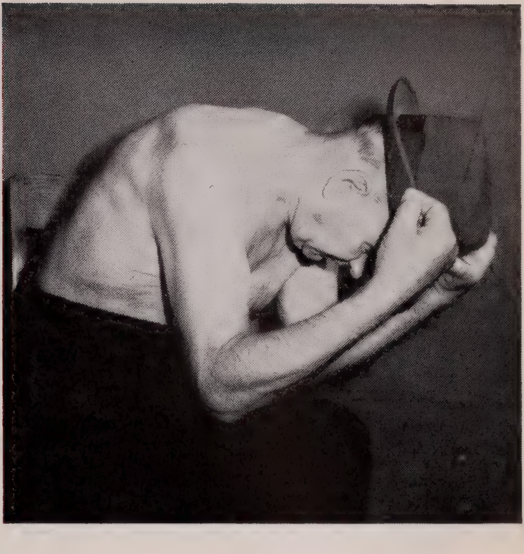

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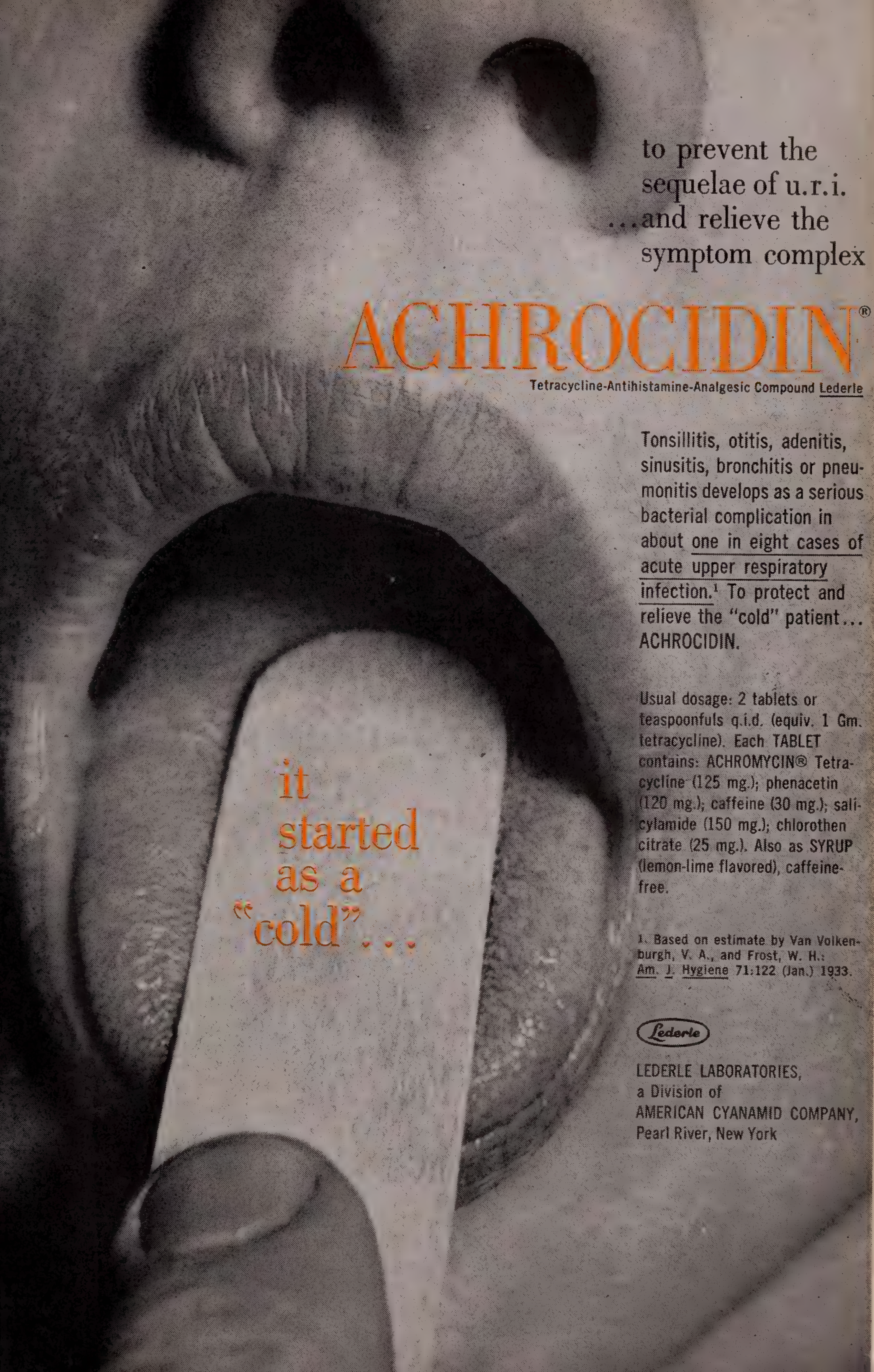

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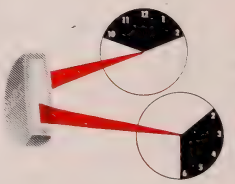

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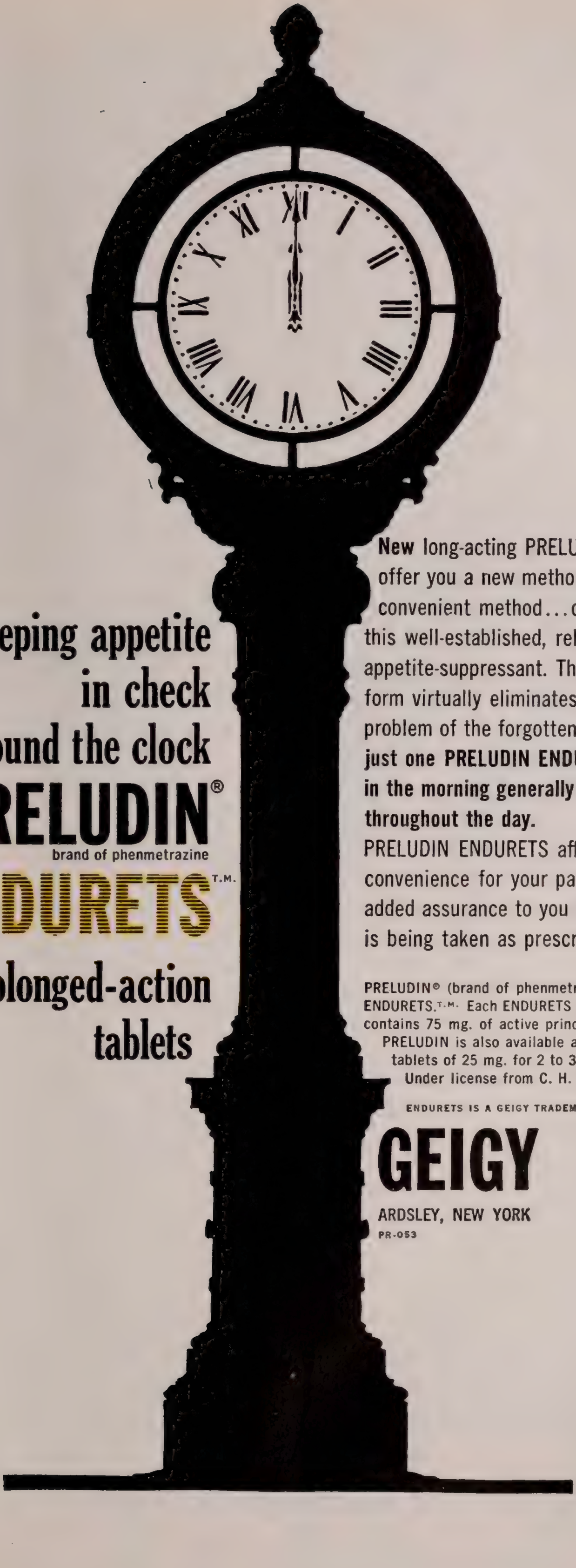

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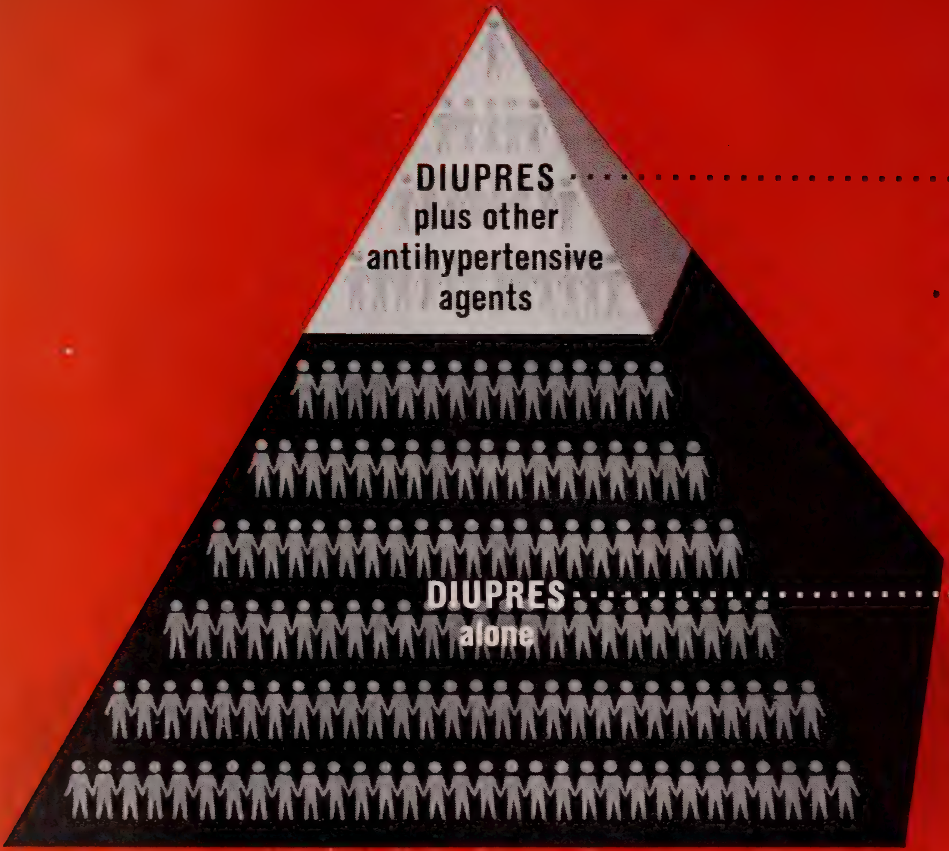
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DIUPRES PROVIDES “BROAD-BASE” ANTIHYPERTENSIVE THERAPY

. . . is effective by itself in a majority of patients with mild or moderate hypertension, and even in many with severe hypertension

greatly improved
and simplified management
of
hypertension

DIUPRES*

DIURIL® WITH RESERPINE

the first "wide-range" antihypertensive—effective in mild, moderate, and severe hypertension

- more hypertensives can be better controlled with DIUPRES alone than with any other agent . . . with greater simplicity and convenience, and with decreased side effects
- can be used as total therapy or primary therapy, adding other drugs if necessary
- in patients now treated with other drugs, can be used as replacement or adjunctive therapy
- should other drugs need to be added, they can be given in much lower than usual dosage so that their side effects are often strikingly reduced
- organic changes of hypertension may be arrested and reversed . . . even anginal pain may be eliminated
- patient takes one tablet rather than two . . . dosage schedule is easy to follow
- economical

DIUPRES-500 500 mg. DIURIL (chlorothiazide).
0.125 mg. reserpine.
One tablet one to three times a day.

DIUPRES-250 250 mg. DIURIL (chlorothiazide).
0.125 mg. reserpine.
One tablet one to four times a day.

MSD MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

*DIUPRES AND DIURIL (CHLOROTHIAZIDE) ARE TRADEMARKS OF MERCK & CO., INC.

expectations
fulfilled!

In eczematous dermatitis with secondary infection CREME AND LOTION pH 5.0

COR-TAR-QUIN™

DOME

HYDROCORTISONE • STAINLESS TAR • DIIODOHYDROXYQUINOLINE
IN ALUMINUM ACETATE VEHICLE

COR-TAR-QUIN is especially effective in those dermatoses where an inflammatory reaction is accompanied by increased scaling, lichenification, and secondary infection.

Combined hydrocortisone-coal tar therapy produces an enhanced antipruritic, anti-inflammatory response and diiodohydroxyquinoline is fungicidal as well as bactericidal. The Acid Mantle creme base of COR-TAR-QUIN helps restore and maintain normal pH of the skin. Relief is prompt and lasting.

Sig: Apply b.i.d. ½ oz., 2 oz., and 4 oz. tubes with either 0.5% or 1.0% hydrocortisone

also available without the stainless tar, as CORT-QUIN™ CREME pH 4.5

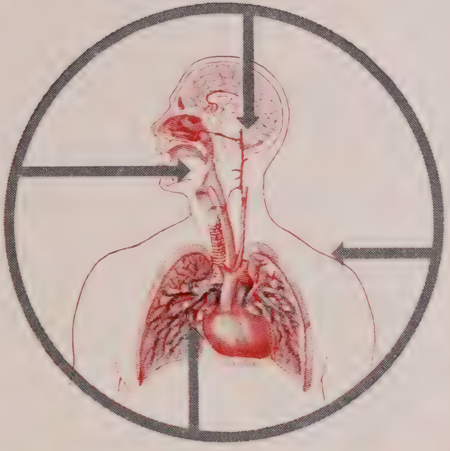
INCORPORATED IN EXCLUSIVE ACID MANTLE VEHICLE

A MOST TRUSTED NAME IN DERMATOLOGICALS

DOME CHEMICALS INC.

125 West End Avenue, New York 23, N. Y.
665 N. Robertson Blvd., Los Angeles 46, Cal.
2765 Bates Road, Montreal, Canada

Now —All cold symptoms can be controlled



Tussagesic

timed-release tablets

Controls congestion
with Triaminic,[1,2,3] the leading oral nasal decongestant.

Controls aches and fever
with well-tolerated APAP, non-addictive analgetic[4] and excellent antipyretic.[5]

Each TUSSAGESIC Tablet provides:

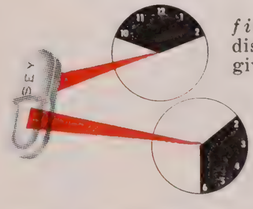
TRIAMINIC®	50 mg.
(phenylpropanolamine HCl	25 mg.
pheniramine maleate	12.5 mg.
pyrilamine maleate	12.5 mg.)
Dormethan	
(brand of dextromethorphan HBr)	30 mg.
Terpin hydrate	180 mg.
APAP (N-acetyl-p-aminophenol)	325 mg.

References: 1. Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958. 4. Bonica, J. J.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 272. 5. Dascomb, H. E.: in Current Therapy, Saunders, Phila., 1958, p.78. 6. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p.547.

Controls cough centrally
with non-narcotic Dormethan, possessing "amply demonstrated" antitussive activity,[6] as effective as codeine.

Liquefies tenacious mucus
with terpin hydrate, classic expectorant.

Prompt and prolonged relief because of this special "timed release" design:



first – the outer layer dissolves within minutes to give 3 to 4 hours of relief

then – the inner core releases its ingredients to sustain relief for 3 to 4 more hours

Dosage: One tablet in the morning, midafternoon and at bedtime. Pediatric dosage chart for Tussagesic Suspension available on request.

TUSSAGESIC SUSPENSION provides palatability and convenience which make it especially attractive to children and other patients who prefer liquid medication.

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

Old age
Convalescence
Adolescence
Infant diarrhea
Debilitating gastrointestinal conditions
Postoperatively

Whenever the diet is faulty, the appetite poor, or the loss of food is excessive

through vomiting or diarrhea—

Valentine's
MEAT EXTRACT

stimulates the appetite,
increases the flow of digestive juices,
provides: supplementary amounts of vitamins, minerals and soluble proteins,
extra-dietary vitamin B$_{12}$,
protective quantities of potassium, in a palatable and readily assimilated form.

Supplied in bottles of 2 or 6 fluidounces.

DOSAGE *is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy.*

VALENTINE Company, Inc.
RICHMOND 21, VIRGINIA

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HAVE YOUR PATIENTS EXPERIENCED THE ADVANTAGES OF ANTIPYRINE...

SAFETY

Side effects are generally absent with FELSOL . . . antipyrine causes no harmful effects to normal persons.

EFFICACY

IN THE

FELSOL is effective as an anti-asthmatic, analgesic, and antipyretic — elevating threshold in cases where prompt and enduring antipain or antifever action is required.

Felsol

FORMULA

℞	Each Powder	Each Tablet
Antipyrine	870 mg	435 mg
Iodopyrine	30 mg	15 mg
Citrated Caffeine	100 mg	50 mg

Try this safe and effective preparation for symptomatic treatment. Write for free professional samples and literature.

AMERICAN FELSOL CO., LORAIN, O.

for infants...

and growing children

Tasty "Junket" rennet-custards furnish more of the nutrients of fresh milk than typical canned "baby desserts."

junket®

RENNET POWDER

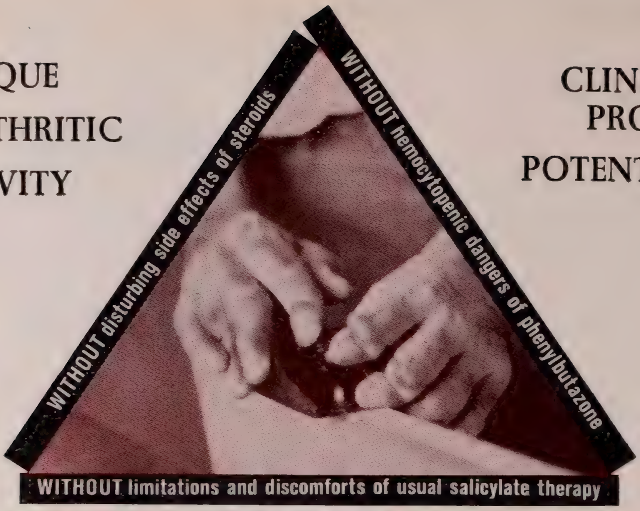
makes fresh milk into rennet-custards

—7 tempting flavors

"JUNKET" Reg. U.S. Pat. Off. for rennet and other food products mfd. by Salada-Shirriff-Horsey Inc.

UNIQUE
ANTIARTHRITIC
ACTIVITY

CLINICALLY
PROVEN...
POTENT...SAFE...


WITHOUT disturbing side effects of steroids
WITHOUT hemocytopenic dangers of phenylbutazone
WITHOUT limitations and discomforts of usual salicylate therapy

ARTHROPAN T.M. LIQUID

BRAND OF CHOLINE SALICYLATE, PATENT PENDING

"Our most striking case was that of a 55 year old white male with rheumatoid arthritis, steroid intoxication, duodenal ulcer, taking 40 mg. triamcinalone/day. He is now on Choline Salicylate [Arthropan] alone and has returned to work."[1]

"In a group of patients who habitually develop gastric distress to moderate dosages of aspirin...all tolerated the new preparation [Arthropan] exceedingly well..."[2]

"Patients who had been taking steroid preparations before using Choline Salicylate [Arthropan] were able to reduce the doses (of steroid) and in some instances to discontinue it entirely."[3]

"In no instances did gastrointestinal symptoms preclude administration of Choline Salicylate [Arthropan]."[4]

These reports have emanated from extensive clinical trials[5] in thousands of patients by more than 180 physicians.

RECOMMENDED DOSAGE: (Adults and children over 12 years) *As an anti-inflammatory agent in rheumatoid arthritis and rheumatic fever:* 1-2 teaspoonfuls, 4 times daily at onset of therapy. *As an analgesic or antipyretic:* 1 to 2 teaspoonfuls, 3 to 4 times daily.

NOTE: Unless satisfactory relief is obtained, it is advisable gradually to increase dosage by increments of 1 teaspoonful per day until maximum benefit, without side effects, is attained. *In every case the dosage should be adjusted upwards or downwards to assure full therapeutic activity up to the limit of the patient's tolerance (in the absence of gastrointestinal distress or early salicylism).*

Because of the special chemical structure of 'Arthropan', alkalies or other buffering substances are not required to protect the stomach wall and should not be administered with 'Arthropan'.

SUPPLIED: 16 and 8 oz. bottles. Each ml. of 'Arthropan' contains 174 mg. of Choline Salicylate. Each teaspoonful (5 ml.) contains 870 mg.

CITED REFERENCES: 1. Clark, G. M.: Personal Communication, 1958. 2. Feldman, H. A.: Personal Communication, 1958. 3. Scully, F. J.: Treatment of Rheumatic Disorders with Choline Salicylate (to be submitted for publication). 4. Friedland, C. K.: Personal Communication, 1958. 5. Complete data available on request to the Medical Director.

PF The Purdue Frederick Company
DEDICATED TO PHYSICIAN AND PATIENT SINCE 1892
NEW YORK 14, N.Y. | TORONTO 1, ONTARIO

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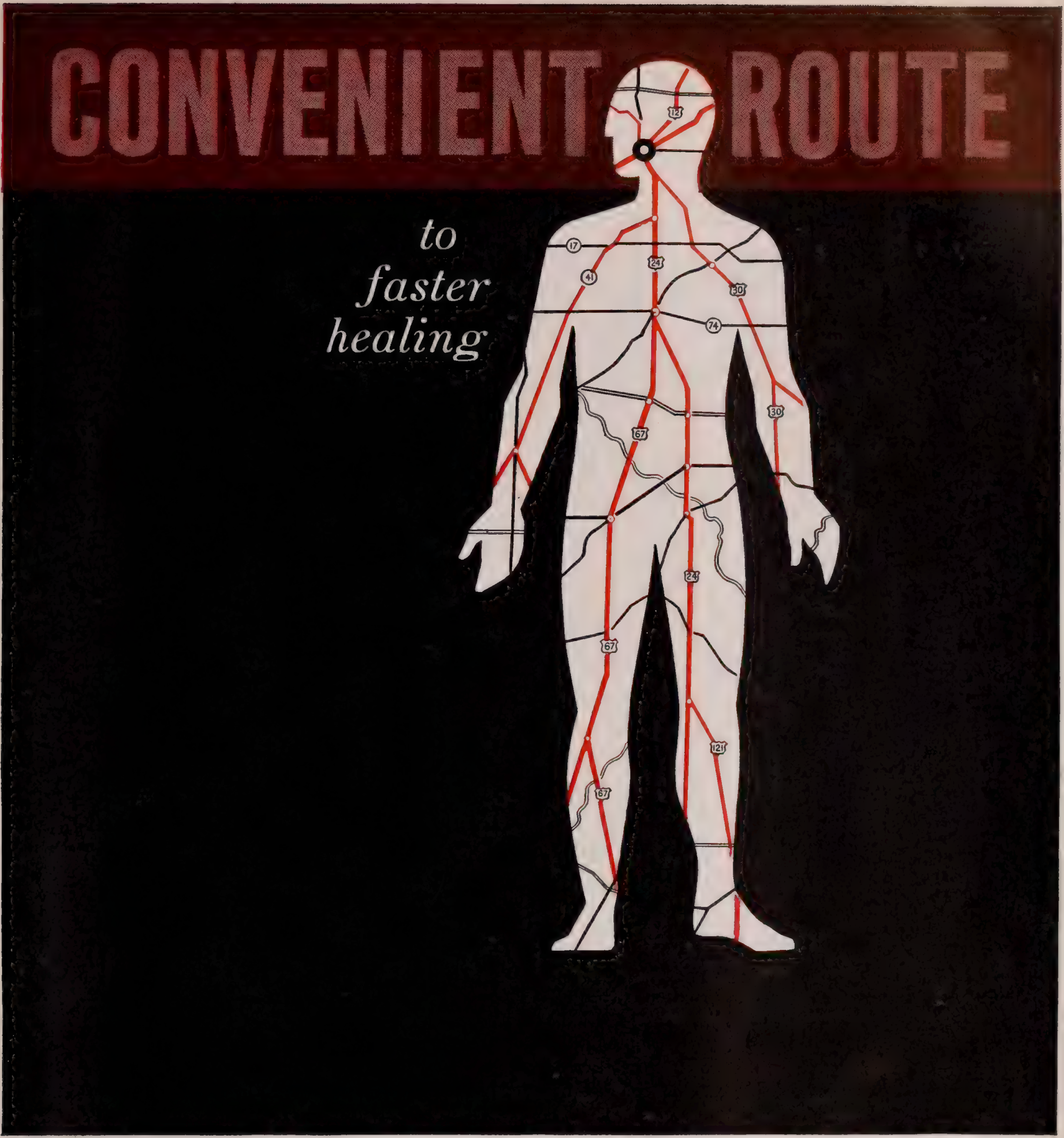


NEW: CHYMAR® Buccal

controls inflammation, swelling and pain... Chymar Buccal tablets release chymotrypsin directly into the blood stream through the buccal mucosa for rapid systemic anti-inflammatory action. Beneficial in the management of inflammatory conditions of any origin, Chymar Buccal may be used as the sole anti-inflammatory agent in many cases. In more severe conditions the vigorous anti-inflammatory response obtained with injectable Chymar—Aqueous or in Oil—can be satisfactorily maintained with Chymar Buccal tablets. *Supplied in bottles of 24 tablets containing purified chymotrypsin from mammalian pancreas. Proteolytic activity . . . 10,000 Armour Units per tablet.*

CHYMAR *THE SUPERIOR ANTI-INFLAMMATORY ENZYME*
ARMOUR PHARMACEUTICAL COMPANY • KANKAKEE, ILLINOIS/*Armour Means Protection*

What IS The Truth About Dietary Fats?

Recently a great deal of interest has been aroused on the question of a possible etiologic link between the ingestion of food fats and pathophysiologic changes in certain body tissues.

Basic research on this problem is being carried on throughout the world, the approach ranging from animal experimentation to biochemistry, to ethnological statistics.

In a number of instances the lay press has prematurely reported the findings of one research group or another, *without the benefit of unbiased competent evaluation.* Some scientific as well as lay articles have attempted to correlate inconclusive, fragmentary, and conflicting results, frequently leading to undesirable confusion.

The problem, however, is far from settled. If final results of this world-wide research establish beyond reasonable scientific doubt that fat intake is directly related to degenerative disease, accurate information should be provided for the profession so that in turn the public may be properly enlightened.

On the other hand, if conclusive evidence points to little or no etiologic relationship between fat ingestion and degenerative disease, it will become difficult for the scientific world to counteract the cumulative effects of misinformation on the public mind.

Furthermore, evidence is accumulating to indicate that lowering of the plasma cholesterol by limitation of dietary fat and by administration of unsaturated fatty acids may actually increase the deposition of cholesterol in the tissues.[1]

The obvious need at present is for basic research and proper evaluation as well as unprejudiced correlation of findings from all quarters, so that the medical profession as well as the public may be protected from the publicizing of premature and unwarranted conclusions.

---

[1] Kuhl, W. J., Jr., and Cooper, J.: Exchangeable C^{14}-Cholesterol Pool Size as an Index of Cholesterol Metabolism: Effect of Low Fat and Highly Unsaturated Fat Diets, Proc. Cen. Soc. Clin. Res., J. Lab. & Clin. Med. *52*:919 (Dec.) 1958.

STATEMENT BY NATIONAL RESEARCH COUNCIL

"A large amount of information has been made available in recent years relating fats to the causation of atherosclerosis, coronary artery disease, and other similar diseases. However, the data are so incomplete and conflicting that it is impossible to draw conclusions which are universally acceptable to nutritionists and medical authorities."

"Until it is clearer which fats are more desirable nutritionally and which, if any, are undesirable—major changes in American dietary habits are not to be recommended."

•

The Role of Dietary Fat in Human Health: National Academy of Sciences—National Research Council, Washington, D. C., Publication 575, 1958.

American Meat Institute

Main Office, Chicago...Members Throughout the United States

In the menopause...
transition without tears

Milprem promptly relieves emotional distress with lasting control of physical symptoms

Milprem®

Miltown®+conjugated estrogens (equine)

Supplied in two potencies for dosage flexibility:

MILPREM-400, each coated pink tablet contains 400 mg. Miltown (meprobamate) and 0.4 mg. conjugated estrogens (equine).

MILPREM-200, each coated old-rose tablet contains 200 mg. Miltown and 0.4 mg. conjugated estrogens (equine).

Both potencies in bottles of 60.

Literature and samples on request.

In minutes, Milprem starts to ease anxiety and depression. It relieves insomnia, relaxes tense muscles; alleviates low back pain and tension headache. As the patient continues on Milprem, the replacement of estrogens checks hot flushes and other physical symptoms.

Easy dosage schedule: One Milprem tablet t.i.d. in 21-day courses with one-week rest periods; during the rest periods, Miltown alone can sustain the patient.

WALLACE LABORATORIES, *New Brunswick, N. J.*

CMP-9224-69

when the
rheumatic
disorder
is more
than salicylates
alone
can control...

MORE
HIGHLY INDIVIDUALIZED
THERAPY
FOR THE
RHEUMATIC
"IN-BETWEEN"

...but
control
requires less
than
steroids
alone

Aristo

wider latitude in adjusting dosage

ARISTOGESIC is particularly effective for relief of chronic – but less severe – pain of rheumatic origin. ARISTOGESIC combines the anti-inflammatory effects of ARISTOCORT® Triamcinolone with the analgesic action of salicylamide, a highly potent salicylate. Dosage requirements for ARISTOGESIC are substantially lower than generally required for each agent alone. The exceptionally wide latitude of dosage adjustment with ARISTOGESIC permits well-tolerated therapy for long periods of time with fewer side effects.

Indications: Mild cases of rheumatoid arthritis, tenosynovitis, synovitis, bursitis, mild spondylitis, myositis, fibrositis, neuritis, and certain muscular strains.

Dosage: Average initial dosage: 2 capsules 3 or 4 times daily. Maintenance dosage to be adjusted according to response.

Precautions: All precautions and contraindications traditional to corticosteroid therapy should be observed. The amount of drug used should be carefully adjusted to the lowest dosage which will suppress symptoms. Discontinuance of therapy must be carried out gradually after patients have been on steroids for prolonged periods.

Each ARISTOGESIC Capsule contains:

ARISTOCORT® Triamcinolone	0.5 mg.
Salicylamide	325 mg.
Dried Aluminum Hydroxide Gel	75 mg.
Ascorbic Acid	20 mg.

Supply: Bottles of 100 and 1,000.

gesic® Capsules

Steroid-Analgesic Compound LEDERLE

Lederle

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

relief from all
cold symptoms

Tussagesic®

decongestant,
non-narcotic antitussive,
analgetic, expectorant

Each timed-release tablet provides:

Triaminic® .... 50 mg.
(phenylpropanolamine HCl......25 mg.
pheniramine maleate ....12.5 mg.
pyrilamine maleate ....12.5 mg.)
Dormethan (brand of dextromethorphan HBr) .... 30 mg.
Terpin hydrate ....180 mg.
APAP (N-acetyl-p-aminophenol) ....325 mg.

Dosage: One Tussagesic tablet in the morning, mid-afternoon and evening, if needed.

Also, for patients who prefer liquid medication:
TUSSAGESIC SUSPENSION.

SMITH-DORSEY • Lincoln, Nebraska
a division of The Wander Company

one of baby's first solid foods
is tasty "Junket" rennet-custard...supplies all the nutrients of milk and is more readily assimilable.

junket®
RENNET POWDER
makes fresh milk into rennet-custards
—7 tempting flavors

"JUNKET" Reg. U.S. Pat. Off. for rennet and other food products mfd. by Salada-Shirriff-Horsey Inc.

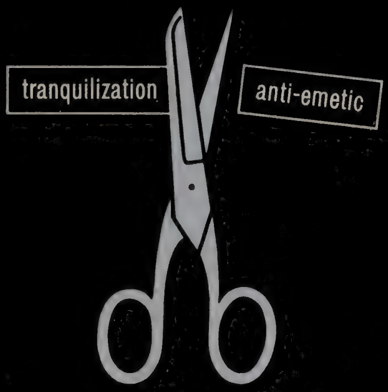
Not ONE but MANY Homes

The directors of Physicians' Home believe that elderly people are happiest living in their own familiar surroundings near family and friends and this is in accord with present-day thinking. Therefore Physicians' Home does not now maintain a physical home within four walls but provides funds so that its beneficiaries may live where they please—subject only to the limitations of a reasonable budget—whether it be a farm in the country, a flat in the city, or a cottage in suburbia.

PHYSICIANS' HOME

750 THIRD AVENUE • NEW YORK 17, N. Y.

now potent tranquilizer therapy is safer than ever



Virtual freedom of Mellaril from major toxic effects is due to greater specificity of tranquilizing action—divorced from such "diffuse" effects as anti-emetic action.

MELLARIL is virtually free of such toxic effects as

- jaundice
- Parkinsonism
- blood dyscrasia

"Thioridazine [MELLARIL] is as effective as the best available phenothiazine, but with appreciably less toxic effects than those demonstrated with other phenothiazines. . . This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."[1]

SANDOZ

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels

remarkable lack of side effects

In more than 3,000 carefully-followed patients, Mellaril has been almost completely free of such major side effects as jaundice, extrapyramidal symptoms, Parkinsonism, blood dyscrasia, dermatitis—even when given in quantities far in excess of the usual dosage.

"POVERTY" OF SIDE EFFECTS

"The most striking aspect of thioridazine [Mellaril] therapy is the poverty of side effects.... In its lack of side effects and low toxicity, it is superior to all other tranquilizing drugs tested. For this reason also it is well tolerated by patients, particularly those who are not hospitalized and who frequently discontinue their medication because of dizziness, sleepiness, increased tension or parkinsonism with other drugs."[2]

NEGLIGIBLE SIDE EFFECTS

"Side effects were negligible at all dosage levels: no incidence of parkinsonism or other extrapyramidal symptoms. Minimal sedation, on the whole lower than with other tranquilizing agents. No alteration in liver function, urine or blood. No photosensitivity. Patient acceptability was exceptional: lack of drowsiness, lethargy or 'washed out' feeling, permitted patients to carry on normal everyday activities. Orthostatic hypotension was absent. The initial 'keyed up' tense feeling common to other drugs of this type was absent.... Patients forced to interrupt treatment with other phenothiazine derivatives because of parkinsonism or other extrapyramidal symptoms were able to continue therapy with thioridazine without appearance of parkinsonism."[3]

SINGULARLY FREE OF SIDE EFFECTS

"The extrapyramidal syndrome was not encountered in any of its forms. Dizziness and sleepiness responded to a reduction in dosage. Other side effects did not occur.... It is singularly free from the side effects ordinarily seen with these [phenothiazine] compounds."[4]

ABSENCE OF SIGNIFICANT SIDE EFFECTS

"None of the following toxic effects, so common after administration of the phenothiazines, was present during the period of Thioridazine administration: Parkinsonism or Parkinson-like symptoms, photosensitivity, orthostatic hypotension, bone-marrow depression."[1]

MINIMAL SIDE EFFECTS

"Side effects such as extrapyramidal activity, jaundice and photosensitivity have not been observed in patients treated with Thioridazine [Mellaril]. Extrapyramidal side effects produced by other phenothiazines have disappeared promptly with no deterioration in the behavioral response when these patients have been shifted to Thioridazine."[5]

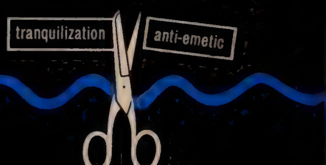
NO JAUNDICE

"No allergic reactions were observed such as skin eruptions, jaundice or agranulocytosis. Central nervous system toxicity, as manifested by extrapyramidal effects, seizures, and excitement did not occur despite the use of high doses (up to 2000 mg.) of the drug."[6]

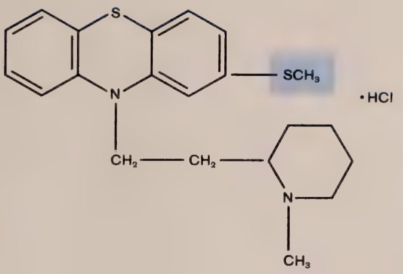
Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels

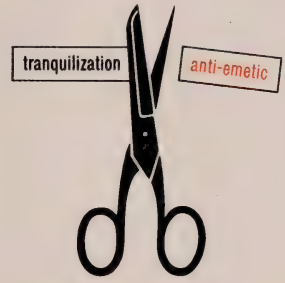


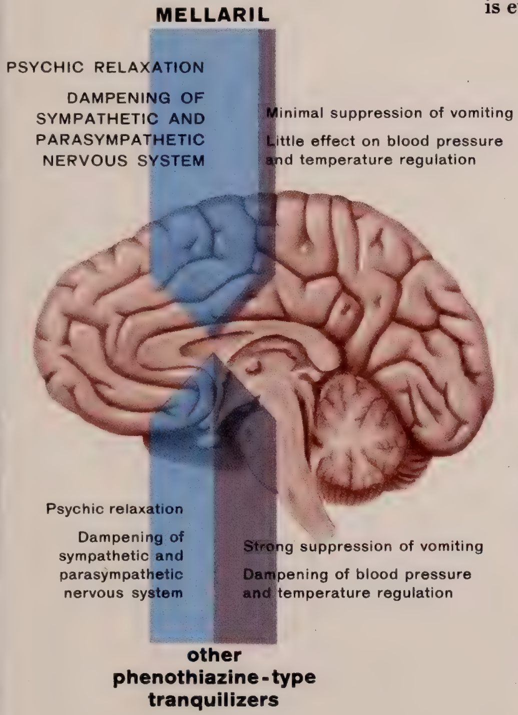
a new advance in tranquilization:
greater specificity of tranquilizing action plus fewer side effects


S
N
SCH₃
•HCl
CH₂
CH₂
N
CH₃

Of 109 phenothiazines synthesized by Sandoz, Mellaril was selected as the most promising on the basis of extensive evaluation. The presence of a thiomethyl radical (S-CH$_3$) in the position conventionally occupied by a halogen in other phenothiazines is unique and could be responsible for the relative absence of side effects and greater specificity of psychotherapeutic action. This is shown clinically by:

1 A specificity of action on certain brain sites in contrast to the more generalized or "diffuse" action of other phenothiazines. This is evidenced by a lack of appreciable anti-emetic effect.


tranquilization
anti-emetic


MELLARIL
PSYCHIC RELAXATION
DAMPENING OF SYMPATHETIC AND PARASYMPATHETIC NERVOUS SYSTEM
Minimal suppression of vomiting
Little effect on blood pressure and temperature regulation
Psychic relaxation
Dampening of sympathetic and parasympathetic nervous system
Strong suppression of vomiting
Dampening of blood pressure and temperature regulation
other phenothiazine-type tranquilizers

2 Less "spill-over" action to other brain areas — hence, absence of undue sedation, drowsiness or autonomic nervous system disturbances.

3 A notable absence of extrapyramidal stimulation.

4 Lack of impairment of patient's normal drive and energy, while achieving psychomotor control in mental and emotional disorders.

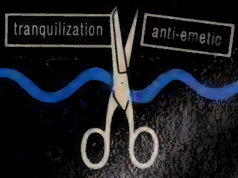
5 Virtual freedom from toxic effects — jaundice, photosensitivity, skin eruptions, disturbed body temperature regulation, blood forming disorders have been absent in reports currently available.

These properties add up to a greater margin of safety in general office practice, in ambulatory psychiatric out-patient clinics, and in hospitalized patients.

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels


tranquilization
anti-emetic

excellent clinical response

In office practice and in hospitalized patients, Mellaril has proved highly useful for a wide variety of major and minor emotional disorders (such as anxiety, tension, apprehension, alcoholism, agitated psychoneurosis, agitated psychotic states, etc.).

EXTREMELY SATISFACTORY "... produced extremely satisfactory results in the broad therapeutic range represented in this series."[3]

POTENT AGENT "... appears to be a potent agent in the symptomatic management of a variety of psychiatric states."[4]

MAJOR ADDITION TO THERAPEUTICS "This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."[1]

AN ACTIVE AGENT "Thioridazine is an active therapeutic agent.... It is effective in a variety of psychiatric disorders, including schizophrenic reactions. ... The drug is particularly advantageous for a group of schizophrenic patients who are sometimes made worse by other phenothiazine derivatives or Rauwolfia alkaloids. It should also be suitable for treating patients with psychoneuroses and chronic brain syndrome."[6]

EVEN IN VERY SEVERE CASES "Of the 152 patients treated 25 have been released and they have not suffered a relapse. This proportion is significant if we stop to consider that we are dealing only with acute cases which had been considered hopeless and obviously destined to finish their days in an asylum."[7]

EXCELLENT THERAPEUTIC RESPONSE "Patients with emotional tensions resulting from the stress and strain of life ... were treated with Mellaril at the dosage level of 10 mg. three times daily. In 94 such patients, 83 obtained an excellent therapeutic response."[8]

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tranquilization
anti-emetic

"...extremely satisfactory results..." in a clinical spectrum ranging from minor nervous disorders to severe psychotic disturbances[3]

RESULTS WITH MELLARIL IN 194 PATIENTS[3]

ACUTE PSYCHOTICS	CHRONIC PSYCHOTICS	NEUROTICS
83% satisfactory effect	68% satisfactory effect	57% satisfactory effect
Some cases had complete remission of symptoms. Most were able to return home to useful occupations.	Relief of symptoms in cases permitted easier management and a return to a more or less useful life.	Some cases, complete relief of symptoms. Other cases, partial relief of symptoms.

RESULTS WITH MELLARIL IN PATIENTS PREVIOUSLY TREATED WITH OTHER TRANQUILIZERS[3]

DIAGNOSTIC CATEGORY	IMPROVED %	VERY SATISFACTORY %	SATISFACTORY %	UNSATISFACTORY %
SCHIZOPHRENIA				
Acute	89	61	28	11
Chronic paranoid	84.2	31.6	52.6	15.8
Chronic, other	73.9	21.7	52.2	26.1
Residual	57.1	9.5	47.6	42.9
CHRONIC BRAIN SYNDROME	66.6	33.3	33.3	33.3
CHRONIC PSYCHONEUROSIS	62.5	12.5	50	37.5
CHRONIC PSYCHOSOMATIC DISORDERS	75	25	50	25

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specific, effective tranquilizer • safer at all dosage levels

a guide to administration and dosage

Dosage ranges from 10 mg. three or four times a day in milder situations to 25 mg. three or four times a day for more disturbed patients. In ambulatory psychiatric out-patients, dosages of 50 to 100 mg. three or four times a day have been found adequate. For severely disturbed hospitalized psychotics, dosages of 200 to 300 mg. three times a day may be administered.

Dosage must be individualized according to the condition and degree of response. In all cases, the smallest effective dosage should be determined for each patient.

INDICATION	USUAL STARTING DOSE	TOTAL DAILY DOSAGE RANGE
ADULTS		
Mental and Emotional Disturbances:		
MILD — where anxiety, apprehension and tension are present	10 mg. t.i.d.	20-60 mg.
MODERATE — where agitation exists in psychoneurosis, alcoholism, intractable pain, senility, etc.	25 mg. t.i.d.	50-200 mg.
SEVERE — in agitated psychotic states as schizophrenia, manic depressive, toxic psychoses, etc.:		
Ambulatory	100 mg. t.i.d.	200-400 mg.
Hospitalized	100 mg. t.i.d.	200-800 mg.
CHILDREN		
BEHAVIOR PROBLEMS IN CHILDREN	10 mg. t.i.d.	20-40 mg.

RECAUTIONS: Although possessing a unique structure nd a selectivity of action which broadens its therapeutic atio, the physician should be alert to the possibility of ntoward reactions in certain susceptible individuals. In particular, he should watch for potential hemopoietic depression, jaundice or orthostatic hypotension. As with other phenothiazines, Mellaril is contraindicated in severely depressed or comatose states from any cause.

UPPLIED: MELLARIL Tablets, 10 mg., 25 mg., 100 mg. Bottles of 100.

Ostfeld, A. M.: Scientific Exhibit, American Academy of General Practice, San Francisco, April 6-9, 1959. **2**. Kinross-Wright, V. J.: Lecture, Clinical eeting, American Medical Association, Minneapolis, Dec. 4, 1958. **3**. Kinross-Wright, V. J.: Scientific Exhibit, Clinical Meeting, American Medical Associion, Minneapolis, Dec. 2-5, 1958. **4**. Cohen, S.: TP-21, a new phenothiazine, Am. J. Psychiat. *115*:358, Oct. 1958. **5**. Glueck, B.: Scientific Exhibit, American ychiatric Association, Philadelphia, April 27-May 1, 1959. **6**. Hollister, L. E., and Macdonald, B. F.: Presented at California Medical Association; Section on ychiatry, San Francisco, Feb. 25, 1959. **7**. Remy, M.: Schweiz. med. Wchnschr. *88*:1221, Nov. 29, 1958. **8**. Freed, S. C., in discussion on Thioridazine (Mellaril) Psychiatric Patients, Hollister, L. E., and Macdonald, B. F., presented at California Medical Association; Section on Psychiatry, San Francisco, Feb. 25, 1959.

- controls neurotic and psychotic patients with anxiety, apprehension, nervous tension
- virtual absence of jaundice, parkinsonism, photosensitivity, dermatitis
- minimal sedation and drowsiness
- does not mask organic conditions such as brain tumors, intestinal obstruction, etc., because of lack of anti-emetic action
- increased specificity of action results in greater safety at all dosage levels

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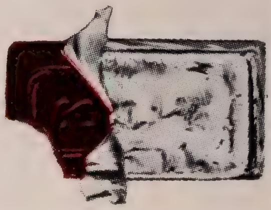

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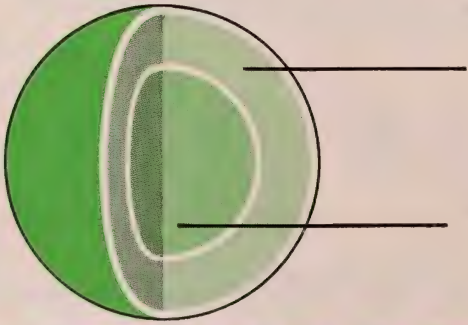

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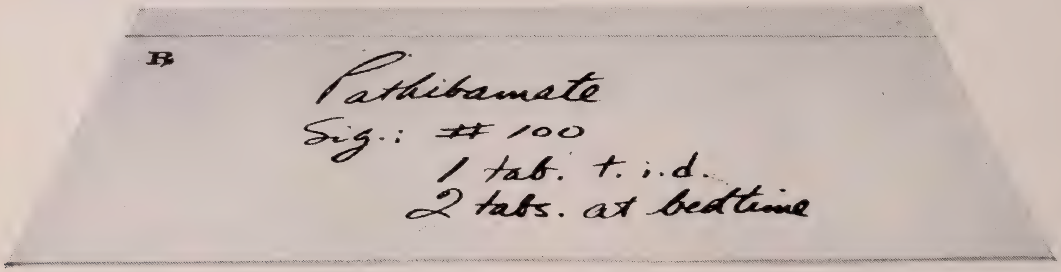

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Pathibamate
Sig.: # 100
1 tab. t.i.d.
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predictable results
in the control of
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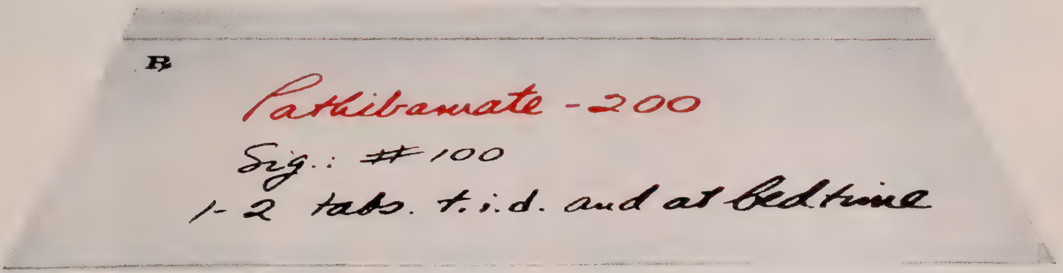

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- kills pathogens on contact
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- effective against pyoderma

1. Frank, L.: New York J. Med. August 1, 1959.
2. Spoor, H. J.: Proc. Scient. Sec. T G A No. 31, May 1959

treatment of Dandruff

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For dandruff:	Use as shampoo in shower or bath.
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GENERAL INFORMATION

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EDITORIALS

Red Cross Adopts "Mouth-to-Mouth" Lifesaving Method

The American Red Cross has announced official adoption of the "mouth-to-mouth" technic of artificial respiration for adults as well as for children. Teaching of the method in Red Cross first aid and water safety courses will begin immediately.

The technic was declared the most practical in a unanimous verdict of a committee of the National Academy of Sciences–National Research Council after a thorough review of artificial respiration data.

A. W. Cantwell, national director of Red Cross Safety Services, explained that the Red Cross delayed announcement of its adoption of the method only long enough to prepare and have published an instruction manual for use of its volunteer class instructors. Distribution of copies of this manual to the 3,700 Red Cross chapters was completed early in July. It was issued as a supplement to the most recent edition of the Red Cross *First Aid Textbook*, published in 1957.

The technic, also called "mouth-to-nose" respiration, dates back to Biblical times. The method is referred to in the Bible, in Elisha's exploit of reviving the Shunammite woman's child. It is in verses 34 to 35, chapter 4 of Second Kings:

> And he went up, and lay upon the child, and put his mouth upon his mouth, and his eyes upon his eyes, and his hands upon his hands: and he stretched himself upon the child; and the flesh of the child waxed warm.
>
> Then he returned, and walked in the house to and fro; and went up, and stretched himself upon him: and the child sneezed seven time, and the child opened his eyes.

Instructions on performing this type of resuscitation, to be started immediately on discovery of the unconscious person, are as follows:

If there is foreign matter visible in the mouth, wipe it out quickly with the fingers or with a cloth wrapped around the fingers. Then

1. Tilt the head back so the chin is pointing upward. Pull or push the jaw into a jutting-out position. These maneuvers should relieve obstruction of the airway by moving the base of the tongue away from the back of the throat.
2. Open your mouth wide and place it tightly over the victim's mouth. At the same time pinch the victim's nostrils shut or close the nostrils with your cheek, or close the victim's mouth and place your mouth over the nose. Blow into the victim's mouth or nose. Air may be blown through the victim's teeth, even though they may be clenched. The first blowing efforts should determine whether or not obstruction exists.
3. Remove your mouth, turn your head to the side, and listen for the return rush of air that indicates air exchange. Repeat the blowing effort.

There are two major differences in procedure between administering mouth-to-mouth resuscitation to a child and to an adult. One applies to the breathing itself. For a child, take relatively shallow breaths appropriate to the child's size at the rate of about 20 a minute. For an adult, blow vigorously at the rate of about 12 breaths a minute.

The other difference relates to initial failure to get air exchange. If this occurs, recheck head and jaw position. In the case of a child, upend it by holding the ankles and administer two or three sharp slaps between the shoulder blades. An adult, who cannot be lifted easily, can be turned on his side so that the blows on the back can be given in an effort to dislodge obstructing matter.

Rescuers who do not wish to come in contact with the victim may hold a cloth over the latter's mouth or nose, and breathe through that. The cloth does not greatly affect the change of air.

The Red Cross still considers manual methods of artificial respiration acceptable for rescuers who cannot or will not use the mouth-to-mouth or mouth-to-nose technic. The two methods it recommends are the Nielsen back pressure-arm lift method and the Silvester chest pressure-arm lift method.

Medical Education

A recent issue of the World Medical Association *Journal** comments editorially on a possible theme for the Second World Conference on Medical Education soon to take place. Such a theme might be the famous triad of "faith, hope, and charity." Says the *Journal* in part:

> . . . . the Conference will meet in a spirit of charity—not in the sense of dispensing material aid, perhaps with an overtone of patronage—but in the sense of concern of medical educators everywhere for the problems of their colleagues in other countries, sometimes laboring under difficulties unknown in the host country, the United States, though even there medical education is undergoing trials and tribulations. It will also meet in a spirit of faith—faith that informed and intelligent men sitting down together to discuss their problems and render mutual aid in their solution cannot fail to achieve a certain measure of success. Some will give more than they receive, and some will receive more than they can contribute, but all will benefit.

Surely it must gladden men's hearts that representatives from all over the world can sit peacefully together to discuss the betterment of medical education in the midst of political ferment and surrounded by the potential of nuclear destruction. It would seem to typify the attitude of imperturbability which the late Sir William Osler urged upon the medical profession. It would seem also to highlight the common problem of all peoples in this complex field of instruction.

The editorial says further:

> But there is a third element—hope. We have recently been reminded by the great American psychiatrist, Karl A. Menninger, in his fellowship lecture to the American Psychiatric Association this April, that hope is an essential ingredient in all medical practice and also in medical teaching. Menninger pointed out that hope is often forgotten as a potent force for survival or revival, that it is not even listed in the *Encyclopedia Britannica*, and that it is scoffed at as a therapeutic force by the mechanistically minded. Nevertheless, it is essential for the medical educators when they meet in Chicago to meet in a spirit of hope—hope that in spite of the growing complexity of the medical curriculum and the apparent confusion of voices extolling different nostrums for the ideal development of ideal physicians, it will be possible for each country to produce reasonably competent practitioners of medicine capable of passing on to their patients that hope without which, in Menninger's words, we have the sorry spectacle of "a hopeless doctor brooding over a hopeless patient."

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* World Med. J. **6**: 233 (July) 1959.

Editorial Comment

Disability Days. Data derived from a one-year nation-wide household interviewing of a representative sample of the population conducted by the U.S. Bureau of Census for the Public Health Service reveals the following figures of interest.

As a result of illness and injury workers sixty-five years of age and over lost about eleven days from work as compared with 8.4 days for those forty-five to sixty-four years and 6.3 days for those aged seventeen to forty-four.

City children lost nine days from school on the average as compared with 7.3 days for farm children.

Respiratory diseases were responsible for 40 per cent of all activity restrictions and half of all days in bed. The totals were affected by the Asian influenza epidemic but even in a normal year the respiratory diseases head the list.

Circulatory diseases, including heart disease, ranked second in terms of total volume disability, followed by injuries and their chronic effects. Digestive diseases ran a close fourth.

Oh, for the healthy country life between the ages of seventeen and forty-four!

Medical Society of the State of New York
District Branch Meetings—1959–1960

District Branch	*Date*	*Place*
I	Spring, 1960	. . .
II	November 4, 1959	Smithtown
III & IV	October 14 & 15, 1959	Grossinger
V	April 7, 1960	. . .
VI	September 23, 1959	Binghamton
VII	September 17, 1959	Rochester
VIII	October 1, 1959	Wellsville
IX	Spring, 1960	. . .

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References:

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2. Current personal communications; in the files of Wallace Laboratories.
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SCIENTIFIC ARTICLES

Some Applications of Selective Bronchography

F. RICHARD SHEEHAN, M.D., RICHARD, H. ADLER, M.D., AND FRANZ P. LESSMANN, M.D., BUFFALO, NEW YORK

(From the Departments of Diagnostic Radiology and Thoracic Surgery, Roswell Park Memorial Institute, and the Buffalo General Hospital)

Bronchography is a modality known to most clinicians but fully understood by comparatively few. Even among those interested in thoracic work bronchography is too often considered mainly in connection with the diagnosis of bronchiectasis. It is not generally appreciated that selective bronchography[1-4] may be a valuable tool in diagnosing certain obscure pulmonary lesions that remain without a definitive diagnosis despite the use of bronchoscopy, bronchial washings, sputum cultures, and other procedures short of exploratory thoracotomy.

The bronchogram, whether performed by the department of thoracic surgery or of radiology, is too often passed down the line to the most junior resident or intern. As a result, the procedure has been relegated to a position of merely another laboratory examination in some institutions. Poor bronchograms obtained through inexperienced hands have at times unfairly discredited a procedure that has considerable diagnostic value when properly employed.

After reviewing an experience with over 500 patients with bronchograms we have been impressed by the diagnostic help afforded by bronchography in certain problematic pulmonary lesions. This has been true especially with the more peripheral pulmonary lesions[5] in which the differential diagnosis between benign and malignant infiltrations remains in doubt despite bronchoscopy and bronchial cytologic studies. Twenty-eight of the most recent patients with various studies that presented diagnostic discrepancies have been selected for careful analysis. It must be emphasized that the various diagnostic procedures should always be considered together as complementing one another and not in competition. Needless to say, the diagnosis should be obtained by the easiest and most direct method with the least discomfort and expense to the patient. It is of interest, however, to consider briefly the role of bronchography in relation to the other diagnostic procedures in use in certain situations, in an effort to illustrate its value when properly employed. The purpose of this paper then is not to present a new procedure but rather to call attention to the value of selective bronchography in certain situations based on our experience.

Method

Bronchography can be done as a separate procedure or in conjunction with bronchoscopy. Although both methods have been used by us, it is our feeling that more satisfactory selective bronchograms can be obtained when they are performed as a separate procedure. Close cooperation between the bronchoscopist and the radiologist is necessary to obtain any degree of success

TABLE I.—Comparative Findings Using Various Diagnostic Procedures

Findings	Diagnosis Correct	Error in Diagnosis or Inconclusive
Neoplastic Cases (15)		
Routine films plus fluoroscopy plus laminagraphy	6	9
Bronchoscopy	1	14
Smears of sputum	6	9
Scalene node biopsy	Done in 5 cases—all were negative	
Bronchography	14	1
Inflammatory Cases (13)		
Routine	5	8
Bronchoscopy	4	9
Smears and sputum	1 false positive	
Bronchography	12	1

when bronchoscopy and bronchography are done at one time. Too often the patient becomes uncooperative or tired following bronchoscopy and an effective level of anesthesia disappears before bronchography can be completed. It is desirable, therefore, to have the bronchoscopist and the radiologist as close together geographically as possible so as to avoid loss of anesthesia during the time of transport between the two departments.

When selective bronchography is done as a separate procedure the following method has worked satisfactorily in our hands. The patient arrives in a fasting state and is given phenobarbital sodium, 0.2 Gm., and atropine, 0.0004 Gm., one-half hour before the procedure is started. In an effort to allay any apprehension, the procedure is carefully explained to the patient and any questions answered in an understanding manner. The pharynx and larynx are then completely anesthetized using 2 per cent lidocaine hydrochloride (Xylocaine hydrochloride) solution. A number 16 or 18 French rubber or métras catheter is next introduced through the oral pharynx into the trachea. At this time, an additional 1 to 2 cc. of 2 per cent lidocaine hydrochloride is injected into the trachea. The position of the tracheal tube is then checked by fluoroscopy. By properly positioning the patient, the tube is advanced and manipulated to enter the region of the desired lobar or segmental bronchus. At this time, an additional 1 or 2 cc. of 2 per cent lidocaine solution is injected through the rubber tube. This is most important because the radiopaque medium propyliodone aqueous (aqueous Dionosil) used for the bronchogram is irritating to the bronchial tree. It has not been possible to obtain satisfactory bronchograms without adequate anesthesia of the distal bronchial tree. At this time the aqueous propyliodone is injected slowly through the rubber tube into the dependent bronchus under fluoroscopic control. Serial spot films are taken as the lobar or segmental bronchus slowly fills toward its periphery. A special effort is made to avoid alveolar filling. Occasionally it is difficult to obtain satisfactory peripheral bronchial filling because of bronchospasm.[6] We have found that several deep breaths from an ampule of amyl nitrite will usually relieve the bronchospasm and allow adequate bronchial filling.

Material

From over 500 bronchograms reviewed in our files, 28 cases were selected which were diagnostic problems in that there were discrepancies among the impressions gained through the various modalities at our disposal. Of these 28 cases, 15 ultimately proved to have primary pulmonary malignant conditions and 13 had benign inflammatory processes in the lung. The comparative findings in these patients using various diagnostic procedures are outlined in Table I.

These patients were investigated in most instances by chest roentgenograms, fluoroscopy, laminagraphy, bronchoscopy with bronchial washings, and sputum cytology. In 5 individuals scalene fat pad node resections were performed. The final diagnosis was verified in all patients at a later date either by thoracotomy, autopsy, or follow-up studies in the inflammatory lesions not subjected to surgery.

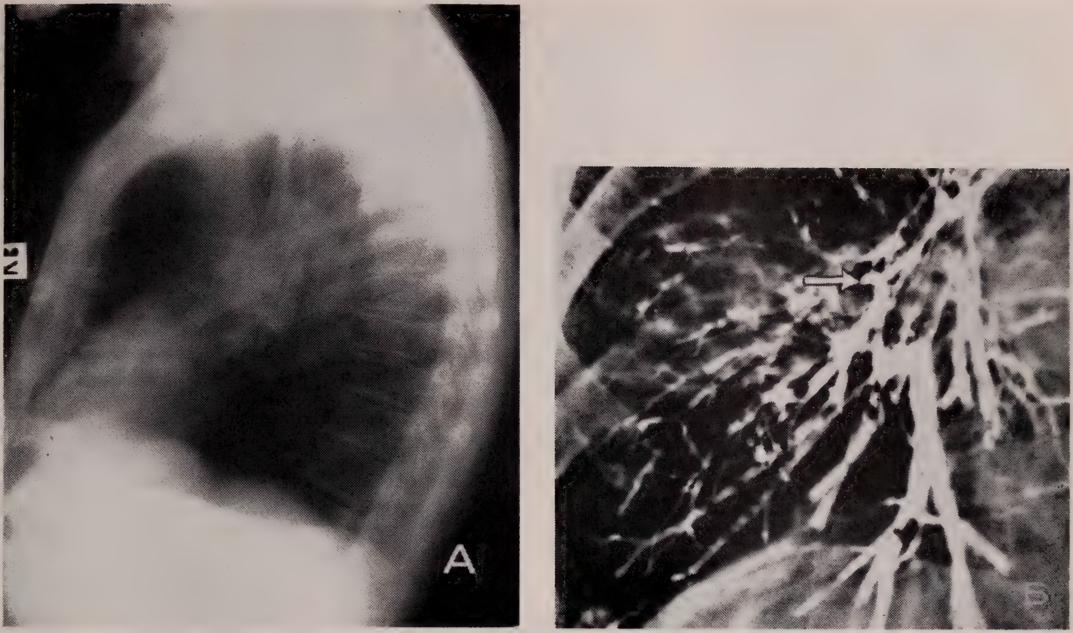

FIG. 1. *Case 1.*—(*A*) Right lateral roentgenogram of the chest showing a poorly defined area of infiltration in the lateral segment of the right middle lobe. (*B*) Bronchogram, oblique view, showing rattail type of obstruction (arrow) of the lateral segment of the right middle lobe bronchus.

Case Reports

CASE 1.—A sixty-eight-year-old white male was admitted to the hospital with a "smoker's cough" of several years duration. A chest x-ray film revealed a lesion in the more peripheral part of the right middle lobe. This appeared as a nonspecific poorly defined infiltration (Fig. 1A). Bronchoscopy revealed a patent middle lobe bronchus with slight redness and thickening in the area of the anterior basilar segment suggesting inflammatory changes. Biopsy showed only mucosa. Bronchial washings and sputum samples showed no tumor cells. Scalene node biopsy gave negative findings. The bronchogram revealed an obstructing lesion in the proximal lateral segment of the right middle lobe with the so-called rattail type of obstruction suggesting a neoplasm (Fig. 1B). For this reason thoracotomy was performed and the middle lobe resected for immediate diagnosis using a frozen section histologic examination. This revealed an early squamous cell carcinoma obstructing the lateral segmental bronchus and producing distal pneumonitis. A definitive pneumonectomy was then performed.

CASE 2.—A fifty-three-year-old white female was admitted to the hospital with a history of left pleuritic chest pain and an infiltration in the left lung thought to be pneumonia (Fig. 2A). Despite antibiotic treatment the pneumonia failed to resolve. Tuberculosis study findings were negative. Bronchoscopy, cytologic study of sputum, and bronchial washings all showed negative findings for specific organisms or tumor cells as did a scalene node biopsy. A bronchogram was performed and the lingular bronchi passing through in the area of the lesion displayed the leafless tree appearance described in bronchiolar carcinoma (Fig. 2C). A left upper lobectomy was performed which confirmed the diagnosis of bronchiolar carcinoma.

CASE 3.—A forty-one-year-old male entered the hospital with a recent history of weakness, cough, and purulent sputum which was often blood-tinged. X-ray films of the chest revealed evidence of a fairly well localized mass in the right upper lobe (Fig. 3A). Bronchoscopy revealed only purulent secretions from the right upper lobe but no tumor could be seen. Sputum and bronchial washings were negative for tumor cells and tubercle bacilli. Scalene node biopsy was not remarkable. A bronchogram was then per-

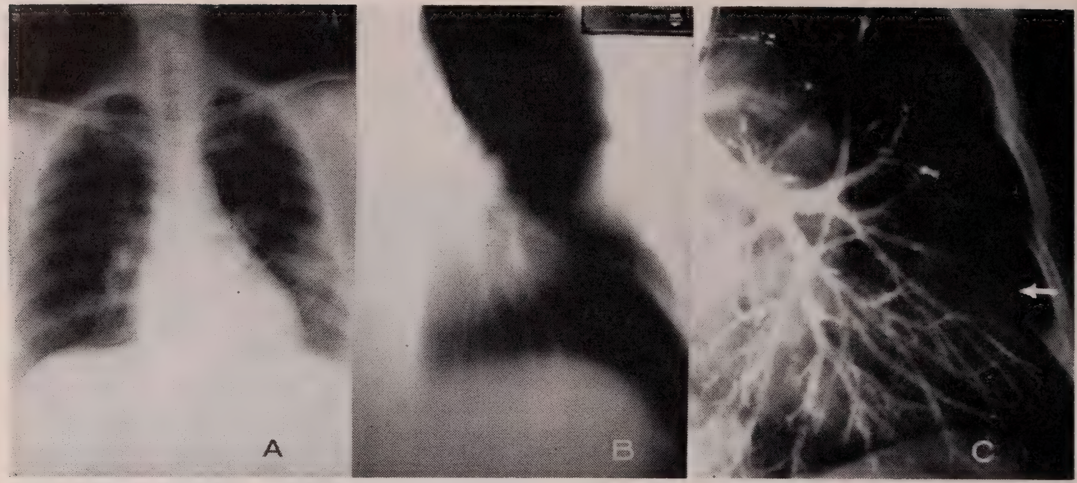

Fig. 2. *Case 2.*—(*A*) Pulpo-axial chest x-ray film showing a homogeneous infiltrate in the periphery of the anterior left midlung field. (*B*) Lesion as demonstrated by laminagrams. (*C*) Bronchograms reveal "leafless tree" appearance in the superior segment of the lingula.

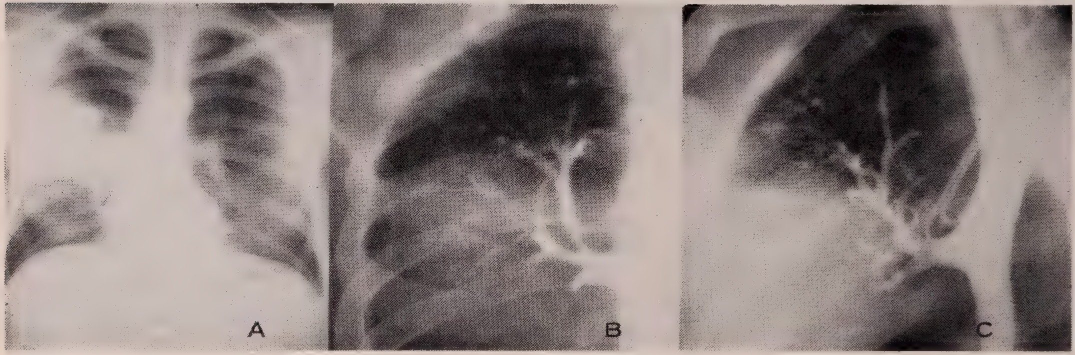

Fig. 3. *Case 3.*—(*A*) Pulpo-axial chest x-ray film showing consolidation, anterior segment of the right upper lobe. (*B*) Bronchogram showing obstruction in anterior segment right upper lobe. (*C*) Bronchogram following amyl-nitrite inhalation with contrast material passing further revealing several irregular partially obstructed branches suggesting an inflammatory reaction (see text).

formed which revealed obstruction of the anterior segment of the right upper lobe (Fig. 3B). However, following inhalation of amyl nitrite and injection of additional contrast material, there was evidence of propyliodone aqueous passage into the involved segment (Fig. 3C). These bronchi appeared irregular and distorted in a way that suggested the possibility of an inflammatory process. Nevertheless the possibility of neoplasm could not be excluded for certain. Therefore, a right upper lobectomy was performed and the lesion was found to be a lung abscess with no neoplasm.

Case 4.—A forty-six-year-old white female was admitted to the hospital with a history of chronic nonproductive cough and of recent malaise. A chest x-ray film revealed a mass in the right lower lobe (Fig. 4A). Bronchoscopy and bronchial washings for tumor cells revealed no tubercle bacilli or fungi. Skin tests for tuberculosis and fungi also gave negative findings. At bronchography the bronchi were seen to pass through the mass with only slight dilatation and irregularity suggesting that the lesion was most probably inflammatory rather than neoplastic (Fig. 4B). The patient requested surgery and the right lower lobe was resected. The lesion was found to be a well-localized chronic nonspecific infiltration probably related to lipid-containing irritants.

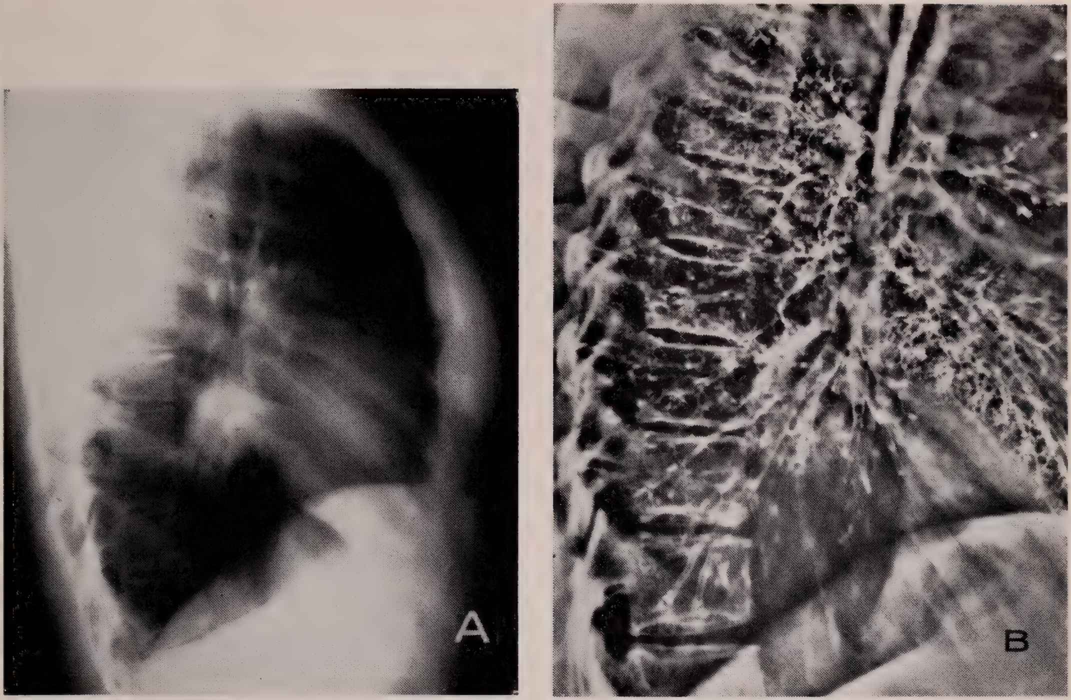

FIG. 4. *Case 4.*—(*A*) Lateral chest x-ray film showing circumscribed nodular lesion in right lower lobe. (*B*) Lateral bronchogram showing patent bronchi passing through the site of the lesion with slight dilatation and irregularity suggesting a non-neoplastic mass.

Comment

Selective bronchography will not be needed when a pulmonary lesion is obviously carcinoma on the basis of a typical roentgenographic and clinical picture. When definite histologic proof of a malignant condition is evidenced by the presence of bronchoscopic biopsy or tumor cells in the sputum or bronchial washings, there is no need for bronchography. When these modalities fail to reveal the nature of a problematic peripheral lung lesion, however, bronchography deserves strong consideration. It may be a deciding factor for or against immediate thoracotomy. Selective bronchography should prove to be of help in diagnosing a large percentage of problematic peripheral pulmonary lesions, although it is not always possible to make an absolute diagnosis by bronchography alone.

It is known that many bronchogenic carcinomas occur beyond the range of vision of the bronchoscopist.[7,8] A number of the more peripheral neoplasms fail to reveal their nature by exfoliating malignant cells into the bronchial lumen. It is not uncommon to have a small peripheral bronchogenic neoplasm obstruct a bronchus and appear on the x-ray film as an indefinite pulmonary infiltrate. Such lesions will be interpreted as pneumonitis with or without associated atelectasis. Unless the radiologist and clinician suspect underlying carcinoma this lesion may be watched unduly long as chronic pneumonia. If the over-all survival rate of bronchogenic carcinoma is to be improved, the diagnosis must be made early and the patient delivered to the surgeon during this optimum early period. In many cases a selective bronchogram, properly performed, will demonstrate an underlying obstructing bronchial lesion suggesting neoplasm, and prompt surgical treatment can be undertaken without needless delay, before an otherwise unsuspected neoplasm spreads.

In our experience, the following bronchographic appearances suggest bronchogenic carcinoma with few exceptions: (1) cut off or missing bronchus, (2) rattail type of tapering bronchial obstruction, and (3) an occasional irregular filling defect in the bronchus. Another form of pulmonary malignancy, the so-called alveolar cell or bronchiolar carcinoma, may be present in a peripheral location and resemble a localized area of inflammatory disease (Case 2). Characteristically, bronchoscopy shows negative findings in bronchiolar carcinoma and unless tumor cells are exfoliated into the bronchial lumen the true nature of the condition may be missed. As noted in the recent literature,[9] there is some evidence for optimism in the surgical treatment of this disease when it is found localized. Here bronchography may be of help in differentiating the lesion from an inflammatory infiltration. The involved area of lung characteristically presents itself on the bronchogram as the so-called "leafless tree."[10]

Bronchography may also be of help in differentiating inflammatory lesions from malignant conditions and in this way can prevent unnecessary surgery.[11] In the subacute or chronically persisting lesion when endoscopy along with bronchial washings and sputum cytologic studies are inconclusive a bronchogram may provide positive information on which to base a correct diagnosis. In our experience, the bronchi generally pass through an area of parenchymal inflammation without being completely obstructed. The bronchi may be somewhat irregular, deformed, and crowded together, but in most instances the appearance is distinctly different from that of a peripheral bronchial obstructing neoplasm. Occasionally mucosal pockets or sacculation, demonstrated by the bronchogram, may provide a clue as to inflammatory disease of the bronchi. It should be stressed, however, that when a bronchus, whether lobar or segmental, becomes strictured or obstructed as the result of bronchial inflammatory disease or from external compression by lymph nodes, it may not be possible to differentiate this condition from malignant obstruction. Case 3 illustrates an example of a lung abscess completely obstructing a bronchus and rendering the bronchogram inconclusive as a means of definitely differentiating inflammatory from malignant disease.

Other procedures may be employed short of exploratory thoracotomy to help differentiate benign from malignant pulmonary disease. In general, routine removal of the scalene fat pad when supraclavicular lymph nodes cannot be palpated has proved to be disappointing in the diagnosis of peripheral lung carcinoma. Angiograms may be of help in diagnosing peripheral pulmonary neoplasm,[12,13] but this procedure is considerably more complicated than bronchography and the equipment required may not be present in many community hospitals.

Summary

An effort has been made to draw attention to the diagnostic value of bronchography in certain peripheral pulmonary infiltrates seen on x-ray films when bronchoscopy and bronchial cytologic studies are inconclusive. In many cases a properly performed bronchogram will help differentiate infiltrative lesions of the lung by demonstrating a specific type of bronchial obstruction. In certain localized peripheral pulmonary lesions selective bronchography may be the deciding factor for or against thoracotomy when the question of a benign or of a malignant pulmonary lesion remains in doubt. Selective cases are included to illustrate certain points of reference concerning bronchography.

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Simple Paper Test Shows Antibiotic Effectiveness

A piece of paper that turns red under certain situations can now be used by doctors to decide what antibiotic to give for an infection. The simple test involves the use of filter paper impregnated with a chemical that turns the paper red when bacteria grow on it. It is described in the July 25 *Journal of the American Medical Association.*

The test works this way: The filter paper is divided into several areas. Small quantities of individual antibiotics are placed in each division. Then the paper is swabbed with infectious material from the patient. The paper is sealed in a plastic bag and heated. If an antibiotic inhibits the growth of the bacteria causing the infection, the paper remains white. But if an antibiotic does not work against the bacteria, the bacteria grow and the paper turns red.

The doctor then knows that the drug to give the patient is the one that keeps the paper white. The time required for the test depends on the number of organisms in the infectious material, but it usually ranges from three to twelve hours.

According to the authors of the article—Wayne L. Ryan, Ph.D., Howard J. Igel, B.S., and Perry T. Williams, M.D., Omaha—the test is simple and rapid enough to be used in the doctor's office, where the majority of patients with infections are treated.

The bacteria-inhibiting abilities of antibiotics are regularly tested in hospital laboratories by the use of test tube and agar plate tests, but these are time consuming, complicated, and expensive.

The authors feel that their test is easy to read, accurate, convenient, and relatively inexpensive. It was used in 100 cases of frank or suspected bacterial infections in a normal office practice. Infections included boils, tonsillitis, abscesses, sinusitis, urinary tract infections, and several others.

In 76 cases, antibiotic treatment was initiated on the basis of experience before the results of the sensitivity test were available. Treatment in the remaining 24 cases was begun after the tests were completed.

Of the 76 given immediate treatment, only 23 showed sufficient improvement within two days to warrant continuation of the first antibiotic. Fifty-three were changed to the drugs indicated by the test paper and began improving.

Of the 24 patients treated after the tests were run, 14 showed excellent to good results from the drugs indicated by the test paper. In the other 10, the test papers showed no bacterial growth, apparently because the infections were not caused by bacteria.

Symposium and Panel Discussion

RECENT ADVANCES IN SPECIAL FIELDS OF SURGERY, PART III

Moderator

FRANK GLENN, M.D., NEW YORK CITY, *Surgeon-in-Chief, New York Hospital; Lewis Atterbury Stimson Professor of Surgery, Cornell University Medical College*

Panelists

HENRY DOUBILET, M.D., NEW YORK CITY, *Visiting Surgeon, Bellevue Hospital Center and University Hospital; Associate Professor of Surgery, New York University College of Medicine*

LOUIS M. ROUSSELOT, M.D., NEW YORK CITY, *Director, Department of Surgery, St. Vincent's Hospital; Professor of Clinical Surgery, New York University College of Medicine*

FREDERICK H. AMENDOLA, M.D., NEW YORK CITY, *Chief of Surgery, Roosevelt Hospital; Director of Surgery, Lincoln Hospital, Bronx*

Introduction

FRANK GLENN, M.D.: This discussion is to be devoted to recent advances in surgery of the gastrointestinal tract. I think probably we might add "current status" since I am afraid the recent advances over the past year would not justify our devoting all of our time this afternoon to it. We also have problems that have been recurrent and they are still persisting. We thought that you would like to have some of those problems considered.

The panel this afternoon consists of Frederick Amendola, M.D., who will talk on the surgery of the stomach and the duodenum; Louis M. Rousselot, M.D., whose subject is portacaval surgery; and Henry Doubilet, M.D., who will speak on the outlet of the pancreas and the common biliary tract.

During the presentation, the more or less formal part of this session, if there are questions that cross your minds, if you'll just put them down on a piece of paper and pass them to us, we'll do our best to have them answered. The presentations will last fifteen minutes, and that will give us, therefore, about thirty-five or forty minutes to answer questions thereafter.

Now we'll start off with Dr. Doubilet on surgery of the pancreaticobiliary system. Dr. Doubilet.

Surgery of the Pancreaticobiliary System

HENRY DOUBILET, M.D.: In spite of considerable increases in our knowledge of the physiology in the biliary tract and the pancreas, surgical procedures in that region still remain difficult and dangerous. Slight

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Presented at the 152nd Annual Meeting of the Medical Society of the State of New York, New York City, General Sessions, May 12, 1958.

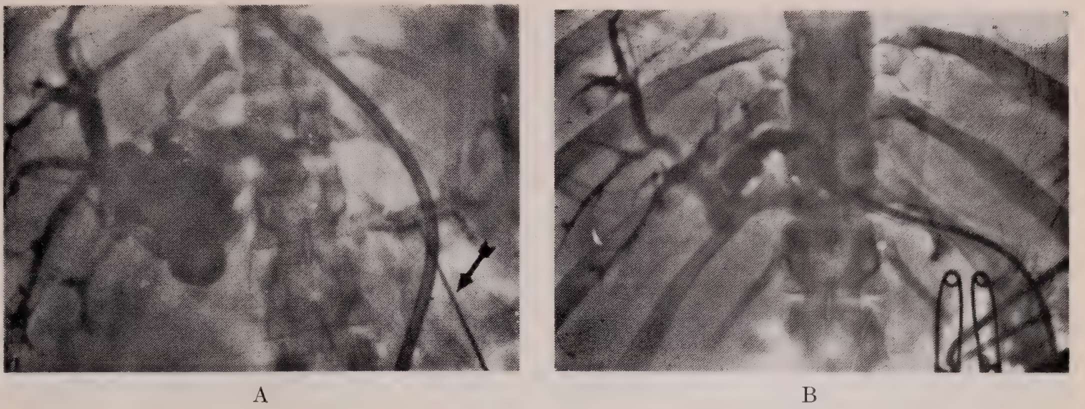

FIG. 1 (*A*). Left hepaticojejunostomy (Roux Y). This patient was explored three times for stricture of the common bile duct. The upper end of the duct could not be found. A needle (arrow) was inserted into the left lobe of the liver, striking white bile. A triangular section of the liver was removed and a defunctionalized loop of jejunum anastomosed to the main left hepatic duct over a catheter brought out through the side of the jejunal loop. Note communication between markedly dilated left and right hepatic ducts. (*B*) The same patient as in Fig. 1. Two weeks after operation, a cholangiogram study showed marked reduction in the size of the biliary tract draining into the jejunal loop.

errors in technic may result in severe morbidity and even death. Our present view is that the duodenobiliary-pancreatic system forms a single unit for the digestion of food and that dysfunction or disease of any part of this unit may produce disease in another part.

Considerable evidence has accumulated that the basic dysfunction underlying these inflammatory diseases of the biliary tract and the pancreas is spasm of the sphincter of Oddi. Hypertonicity of this muscle may convert the bile and pancreatic ducts into a common channel and permit reflux either of bile into the pancreatic ducts or of pancreatic juice into the biliary tract and gallbladder.

The presence of these digestive fluids in an abnormal location may produce either acute pancreatitis or acute cholecystitis with resulting deposition of gallstones. Under certain conditions, reflux of pancreatic juice into a dilated common bile duct may produce cholangitis with the formation of a crop of bilirubin stones in the common bile duct.

There is a growing conviction—and I should like to emphasize this point—that the presence of stones in the gallbladder requires, in addition to cholecystectomy, careful examination of the biliary tract and pancreas at operation. The biliary tract can be explored most effectively by operative cholangiography. It is not surprising that this procedure is practiced more and more often to visualize suspected choledocholithiasis, to determine accurately the size of the common duct and any abnormalities in the direction of its passage into the duodenum, and also to demonstrate reflex into the pancreatic duct. The extra amount of trouble and time needed for this procedure is well repaid by the satisfaction of doing a more thorough exploration.

Practically, we often find stones that we cannot palpate in a patient who has never had jaundice. For example, in a patient who had never had any jaundice an operative cholangiogram showed a stone in the ampulla, yet a catheter could be passed easily into the duodenum through the common duct. Exploration of the common duct for multiple stones has never been uniformly successful. Even in the best of hands it is admitted that residual stones may be left behind in a fair percentage of cases. In our experience, the best way to explore the common bile duct for multiple stones is to do a transduodenal sphincterotomy and explore from below as well as

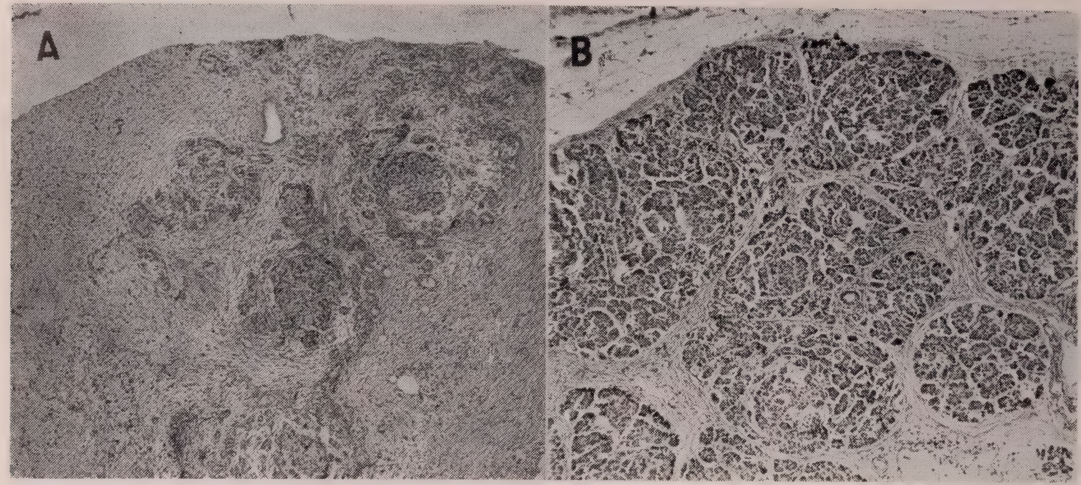

Fig. 2. Regeneration of the pancreas four years after sphincterotomy. Biopsy of pancreas (A) taken at operation one month after severe attack showed almost complete destruction of acinar tissue, with marked fibrosis and infiltration of gland. Following death of patient four years later for another condition, a histologic section (B) taken from the same area of the pancreas showed almost complete regeneration of the pancreas.

from above. This will not only result in an effective exploration, but in addition if one or more small stones are left behind they can pass into the duodenum more easily after sphincterotomy.

If the patient has had attacks of cholangitis, sphincterotomy will prevent further attacks and also prevent formation or reformation of the typical multiple bilirubin common duct stones. When a dilated common bile duct is present the postoperative administration of choleretics such as Decholin or Zanchol is a valuable procedure. The liver is flushed continually by dilute nonirritating bile, low in natural bile salts. This promotes healing and prevents stasis and infection. Stricture of the common bile duct occurs too frequently and it is a very serious problem. In our experience, end-to-end anastomosis of the common bile duct following a chronic stricture is not a very successful procedure. The best results have been obtained by a choledochojejunostomy (Roux Y). In this procedure it is important to attach the jejunum to the capsule of the liver so that there is no tension on the anastomosis and the intestine has a solid take-off base for peristaltic activity. If the upper end of the obstructed bile duct cannot be found, which happens occasionally, a Longmire type of left hepaticojejunostomy has given good results in our hands (Fig. 1 A and B).

TABLE I.—Regeneration of Pancreas After Sphincterotomy (June 15, 1950) as Demonstrated by Secretin Test

Date	Total Volume (cc.)	Total Bicarbonate (cc. N/10)	Total Amylase (Lagerlof Units)
June 14, 1950	92	48	110
Sept. 22, 1950	118	42	153
Sept. 26, 1953	123	80	246
Feb. 27, 1957	280	125	1,230

Extensive experience with sphincterotomy in the treatment of acute or chronic recurrent pancreatitis has yielded excellent results in almost 90 per cent of our cases.[1] Not only do the symptoms disappear and the patient regains his original weight and returns to work, but in addition it has been demonstrated that the pancreas can regenerate, both functionally and histologically (Fig. 2, Table I).

Sphincterotomy has been used successfully in the treatment of 31 pseudocysts, or pancreatic fistulas, resulting from drainage of

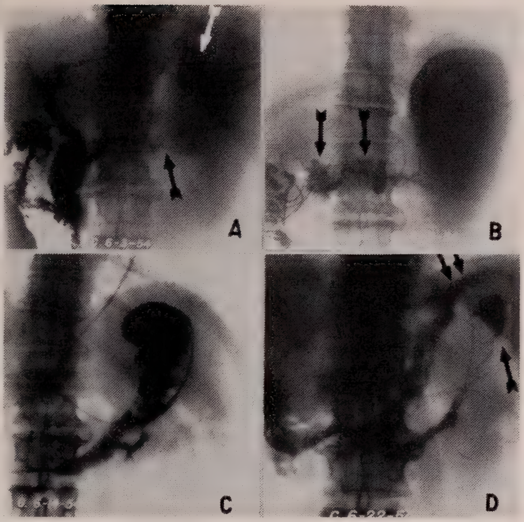

FIG. 3. Treatment of pseudocyst of pancreas At operation a huge pseudocyst was emptied through a fine plastic tube, left in situ. An operative cholangiogram (A) through the cystic duct showed a dilated common bile duct, with reflux into the pancreatic duct (black arrow), and beginning filling of the emptied pseudocyst (white arrow). After section of the sphincter of Oddi, a plastic tube was inserted into the duct of Wirsung. Pancreatographic study (B) through this tube visualized a dilated, sacculated pancreatic duct (black arrows) and permitted filling of a huge pseudocyst through a ruptured point of the duct. The tube in the pancreatic duct was removed. Eleven days later (C) injection through the fine tube left in the pseudocyst showed a three-quarter reduction in the size of the pseudocyst. Eight days later (D) reinjection through the plastic tube showed almost complete disappearance of the pseudocyst (one black arrow). The radiopaque solution flowed through the pancreatic duct into the duodenum, and refluxed up into the cardia of the stomach (two black arrows). At no time did the plastic tube, lying in the pseudocyst, drain any material.

pseudocyst of the pancreas.[2,3] The pancreatic intraductal pressure is reduced by this procedure and the pancreatic juice, instead of flowing into the pseudocyst, empties into the duodenun. As a result, the pseudocyst disappears rapidly (Fig. 3). Implicit in this procedure is the presence of an unobstructed pancreatic duct. If the pancreatic duct is obstructed by stone or stricture, the pancreas must be transected above the point of obstruction, and a two-sided pancreaticojejunostomy (Roux Y) performed. We call this operation a "split" pancreaticojejunostomy.

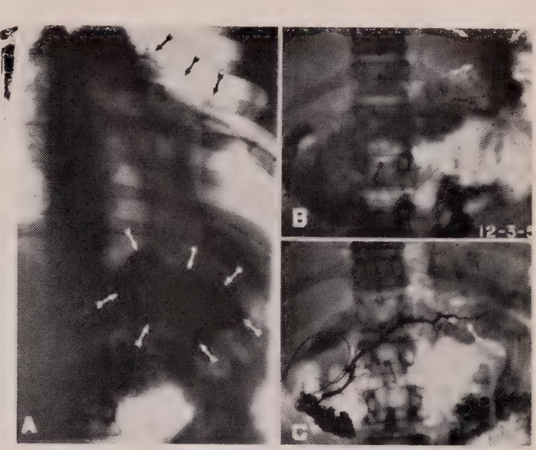

FIG. 4. Treatment of trauma of the pancreas. This patient stabbed himself in the left side of the abdomen. Lacerations of the colon and stomach were sutured, but an opening in the pancreatic duct was missed although searched for. One week later, x-ray film of the chest, taken because of the complaint of dyspnea, revealed a huge pseudocyst in the chest (A, three black arrows). Following immediate sphincterotomy, a pancreatographic study revealed rupture of the pancreatic duct with leakage of juice up into the posterior mediastinium (A, white arrows). Two days later (B), pancreatographic study showed diminution in the degree of leakage. The pseudocyst in the chest disappeared within twenty-four hours. Eleven days later (C) pancreatographic study showed complete healing of the duct.

The operation of sphincterotomy, which reduces pancreatic intraductal pressure, has been applied in the treatment of trauma of the pancreas. Instead of necrotizing pancreatic juice passing from the ruptured ducts into the peritoneal cavity or retroperitoneally, the flow is directed into the duodenum permitting healing of the ruptured ducts (Fig. 4).[4]

In advanced cases of pancreatitis with extensive destruction of acinar tissue not enough pancreatic juice will be secreted for adequate digestion. The patient will lose weight and develop steatorrhea. In our experience the best pancreatin preparation is a substance called Viokase. It is four times as potent as other preparations and is not enteric-coated. Its use permits increased food absorption from the intestine but optimal conditions are not attained since sodium bicarbonate, which is secreted in large amounts by the pancreas, is not present. Ordinarily, sodium bicarbonate, given orally, is neutralized by the stomach. This difficulty can be overcome by the administration of enteric-coated sodium bicarbonate. Its presence in the small intestine produces the proper alkalinity for optimal activity of the pancreatic enzymes, permitting complete absorption of proteins and fats.

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Dr. Glenn: Thank you very much, Dr. Doubilet. Next will be Dr. Rousselot on portacaval surgery. Dr. Rousselot.

Portacaval Surgery

Louis M. Rousselot, M.D.: Cirrhosis of the liver in all age groups has become one of the ten leading causes of death in this country. In the age groups between forty-five and sixty-four, cirrhosis is now the fourth cause of death, outranked only by cancer, heart disease, and cerebral apoplexy. Of these cirrhotic fatalities fully 30 to 50 per cent are the direct or indirect result of bleeding gastroesophageal varices.

Treatment of the primary disease, at present, remains in the province of the internist. As mentioned, probably the most serious complication of cirrhosis is the onset of severe bleeding from gastroesophageal varices in those patients who develop portal hypertension.

We shall adhere strictly to the limitations of this panel and present only newer concepts.

Diagnosis of Portal Hypertension.—Following the pioneer animal studies by Abeatici and Campi[1] and the subsequent clinical confirmation by Sherlock,[2] Leger,[3] Ekman,[4,5] and others, portal venography and splenic manometry have become accepted aids in the diagnosis and surgical management of portal hypertension.

Using local procaine anesthesia, the percutaneous puncture of the splenic pulp is accomplished. At this time splenic pulp pressure readings are obtained and the presence or absence of portal hypertension absolutely determined. Immediately following these manometric readings a radiopaque dye is injected into the pulp and serial roentgenograms are taken. Splenic pulp pressures above 290 millimeters of saline are definitely in the hypertensive range.

Direct and close correlation exists between the pressure determined in the splenic pulp and the values of actual portal pressure recorded in the same patients during operation. Some of the determinations we made were simultaneous, while others were separated by periods of time ranging from one or two days to one week. In patients with normal portal systems and in patients with different degrees of pathologic involvement of the portal system the correlation was similar.

In short, the lesson we've learned is that splenic pulp pressures are a definite, accurate, and immediate indication of the presence or absence of portal hypertension.

A typical splenic portogram taken in a twenty-two-year-old cirrhotic patient shows the pick-up of the dye which can be noted in the pulp on the left, with rapid transfer across the splenic vein. Some dye proceeds up into the liver, but a major portion is diverted over an extremely large coronary, and the large submucosal gastric vessels crossing up to equally large submucosal esophageal vessels can be seen. The area of the submucosal gastric and esophageal vessels is, of course, the critical area in which the majority of our patients bleed.

Management of Bleeding Varices.—Once the diagnosis of portal hypertension with bleeding varices is established, variables in the management of each individual case must be considered. In the practical management of these variables we have found the subsequent schema to have merit. Patients with bleeding varices seem to fall into four clinical subgroupings: group 1, patients with bleeding uncontrollable by the esophageal tamponade; group 2, those patients who may be temporarily controlled by the tamponade, but whose bleeding resumes as soon as or shortly after tamponade is discontinued; group 3, patients in whom discontinuance of tamponade is not followed by early recurrent bleeding; and group 4, those patients with mild to moderate bleeding who stop spontaneously or by means of the usual measures customarily employed in the treatment of any gastrointestinal bleeding.

The first two groups comprise patients in whom emergency surgery must be carried out as a lifesaving measure. The latter two groups allow for consideration of less urgent definitive therapy.

As for the management of patients in groups 1 and 2, a rather high percentage of patients who bleed from esophagogastric varices unfortunately fall into the first two categories. The individuals are all potential candidates, we believe, for emergency surgical procedures to arrest hemorrhage. Approximately 10 per cent of the patients with bleeding varices cannot be controlled by balloon tamponade because of the presence of gastric varices bleeding distal to the balloon. This is usually recognized by the continuous drainage of fresh blood from the gastric tube.

In order to accept the fact that balloon tamponade has failed to arrest the hemorrhage, one has to be absolutely certain that the tube and balloons are properly located and that adequate pressure and traction have been applied and maintained. Because we believe that the current means of controlling these factors were not sufficiently reliable, we have experimented extensively with new devices. At the present time we have experimented and have completed what we consider is a most satisfactory device to control and maintain adequate pressure and traction in the balloons.

This has been developed on the surgical service of St. Vincent's Hospital by Kulick,[6] one of our senior residents. It is a composite of two essential elements of the device with a formidable looking head piece which probably looks like something from the space age. It's a very light plastic headgear with a yoke that controls the vertical aluminum piece that regulates a rather direct and nontraumatic passage of the tube into the naris. This prevents the very frequent pressure necrosis that sometimes results in serious deformities of the nose due to septal or alal cartilage necrosis.

Furthermore, the linear traction can be directly, correctly measured. A single unit controls the pressure within the esophageal balloon. This controls the linear traction on one and measures on a manometer the actual pressure that is in existence in the balloon, the lateral pressure on the varices.

Finally, there are mercury switches built in which will automatically signal the nurse at the nurse station if any diminution or alteration in pressure occurs in either of the balloons.

A roentgenogram shows a properly applied Sengstaken-Blakemore tube. When the gastric balloon is adequately inflated it exerts an upward pressure against the cardia, the esophageal balloon in position, and the gastric prolongation in the stomach.

Although individuals whose bleeding is temporarily arrested by the esophageal tube, but resumes after tamponade is discontinued, are of somewhat less urgency, each patient in either of these two first categories is a major challenge to the internist and the surgeon. Since many of these patients may be salvaged by proper management, therapeutic aggressiveness appears definitely warranted.

Preoperative Measures and Evaluation.—A certain number of these patients will succumb without ever being able to be seriously considered for surgery. Others may suffer transient coma and recover following temporary cessation of bleeding and the usual measures of blood replacement, colonic irrigation, catharsis, and intestinal antibiotics. In these individuals coma is largely due to urease activity and absorption of nitrogenous products of hemoglobin breakdown and may not necessarily indicate irreversible hepatocellular damage. Usually hourly saline gastric and twice-daily colonic irrigations are utilized. Magnesium sulfate catharsis is customarily then given every twelve hours via the gastric tube. Neomycin, 2 Gm. every six hours, is also given per tube. These measures are directed toward eliminating a major source of increased serum and cerebrospinal fluid ammonia levels. The adjuvant use of glutamic acid and arginine to block the neurotoxic effects of the already absorbed ammonia may result in a greater number of survivors, but this certainly has by no means been proved.

In addition, blood volume is maintained by means of fresh, whole blood transfusions, and this means blood under seventy-two hours of age. Since the increasing ammonia content of aging banked blood is now well recognized, it is obvious that this exogenous source of ammonia must be avoided. Infusions high in carbohydrate and vitamin content are also used. The use of protein hydrolysates is, of course, contraindicated.

In all patients in whom either coma is not precipitated early by the bleeding or who recover from coma after the above measures are utilized, the possibility of emergency surgery must be seriously considered. The balloon tamponade should not exceed one or two trials of forty-eight hours each. Although the use of tamponade has been reported for as long as seven days, pulmonary and esophageal complications as well as doubtfully significant salvage rate would make questionable its routine use over such long periods.

In patients in groups 1 and 2 it is often difficult to assay accurately the operative risk of individual patients. Neither routine liver function tests nor physical findings are wholly reliable in forecasting the outcome of emergency surgery in these individuals. We have occasionally observed survivals in patients with preoperative jaundice and minimal ascites, serum albumin of less than 3 Gm. per cent, cephalin flocculation of 3 to 4 plus, and serum bilirubin greater than 5 mg. per cent. Inclusion of such patients will obviously result in a higher mortality rate; however, when bleeding is uncontrollable it becomes evident that the patient's sole chance for survival is surgery, even though the operative risk may be grave.

Emergency Operative Measures.—At present, only two surgical procedures appear to have merit in the emergency surgical treatment of bleeding varices: first, direct end-to-side portacaval shunt and second, transgastric or transesophageal ligation of the varices. Occasionally, because of the urgency of surgery, even a single-film portogram taken during operation or immediately preoperatively with a portable unit is of value in determining portal vein patency. If the vein is patent, we concur with surgeons such as Childs[7] and O'Sullivan[8] in advocating the definitive emergency procedure of portal decompression by shunt when feasible. The results have been encouraging. The Sengstaken-Blakemore tube is removed during the operation, following the establishment of the shunt, with immediate cessation of bleeding. Preoperative measures and evaluations in the elective case must be individualized.

As for elective procedures, the majority of surgeons working in this field believe that the most logical operation to correct the altered hemodynamics is a direct end-to-side portacaval shunt. If this is not feasible, then splenorenal anastomosis becomes the alternative choice. It is becoming increasingly apparent in our own follow-up studies, however, that this type of shunt along with other so-called make-shift shunts using smaller vessels is doomed to result in inevitable closure in a high percentage of cases. Finally, if neither type shunt is feasible, as a last resort we must elect to direct ablation of the varices by a resection of the lower esophagus and upper stomach and the interposition of a jejunal segment. Even though hypersplenism may be present, with the decompression of the portal system and the lowering of portal pressure the hypersplenism and congestive splenomegaly are reversed with time in the great majority of these cases.

In conclusion, then, I would like to state that newer concepts in the diagnosis and management of portal hypertension have been presented. Also, a new automatic tamponade control device for the regulation of the Sengstaken or other type balloon in bleeding varices has been described.

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Dr. Glenn: Thank you, Dr. Rousselot. Now, Dr. Amendola will concentrate on the stomach and duodenum.

Current Status of Surgery of the Stomach and Duodenum

Frederick H. Amendola, M.D.: Many phases of the surgical management of gastroduodenal lesions are still far from settled today. Hence, it seems worth while to examine periodically the more widely practiced technics and the results of their application to series of patients, as reported by various investigators.

The purpose of this paper is to review current surgical opinion on the management of chronic peptic ulcer and its acute complications, including perforation and hemorrhage.

Since effective surgery depends on an understanding of gastric physiology, this will be considered in its relationship to the more common operations performed on the stomach and duodenum.

The sequelae of gastric surgery, which include recurrent ulcer, afferent loop dysfunction, the dumping syndrome, and nutritional deficiences, will also be discussed. Although treatment of gastric carcinoma remains largely unsatisfactory, advances in our understanding of this disease can also be reported.

Inasmuch as peptic ulcer is by far the most common gastroduodenal lesion, and its surgical treatment is related to that of the other diseases of the stomach, it will be discussed first in this review.

Gastric and Duodenal Ulcer.—*Gastric Physiology and the Genesis of Peptic Ulcer.*—During the pioneer years of stomach surgery, when resection was performed almost exclusively for neoplastic lesions, the surgeon's chief concern was the security of the anastomosis by which continuity of the gastrointestinal canal was restored. The amount of stomach removed and possible distant functional complications must have been of secondary interest, judging by the scarcity of reference to these considerations in the early literature. Billroth devised his second procedure (gastrojejunostomy) only because it was safer, having found that his original gastroduodenostomy (Billroth I) was followed by too many anastomotic leaks and obstructions. Modern technics, permitting wide mobilization of the duodenum and residual gastric pouch, have now made the Billroth I resection as acceptable as the Billroth II with respect to the safety of the anastomosis.

It is difficult to tell, with certainty, how many methods have been presented for gastric resection and gastroduodenal, or gastrojejunal, anastomosis. Twenty years ago, Polya listed 37 reported procedures. There have been dozens advocated since then, and as one combines them with vagotomy the number increases considerably. The significant point to note in this development is that the variations and combinations of recent years are no longer proposed for safety alone.

Today the great goal of all these methods is the prevention of recurrence of the ulcer for which they have been performed and to accomplish this in such a manner that the patient will be able to eat normally and adequately without distressing side-effects. With this objective in mind, let us start by reviewing briefly the mechanism of gastric secretion and the current concept of the genesis of peptic ulcer.

The results of experimental investigation of the nervous, gastric, and intestinal phases of the production of gastric juice may be summarized, for the sake of simplicity, as follows:

A. The fasting continuous secretion of gastric juice in man is primarily of nervous origin. In the patient with duodenal ulcer, this secretion is greatly increased during sleep, and he may secrete 10 to 20 times as many milliequivalents of hydrochloric acid per hour as a normal person. This secretion can be abolished by division of all the vagus fibers to the stomach, but this is not accomplished if such division is incomplete. It is believed that even a small overlooked vagus branch is enough to activate the entire glandular apparatus of the stomach.

B. When distended, or stimulated by food, or activated by peristaltic contractions, the antrum of the stomach liberates gastrin, a gastric secretory hormone which no other portion of the stomach appears to produce. Removal of the antrum alone would probably eliminate completely the gastric phase of secretion. There is also some evidence to suggest that when bathed by acid chyme, the antrum elaborates a hormone that inhibits gastric secretion.[1]

Recent investigations indicate that motor impulses over the vagus nerves may induce peristaltic activity in the antrum and consequent liberation of gastrin. It is therefore likely that vagotomy reduces gastric secretion by diminishing antral motility, as well as by eliminating secretory fibers to the remainder of the stomach

C. The intestinal phase of gastric secretion is of lesser importance than the first two. The introduction of food into the upper intestine will, under certain conditions, stimulate gastric secretion. If the food is already thoroughly mixed with acid before entering the upper intestine, as it usually is, there is no stimulation of gastric secretion. Normally, then, the intestinal phase is seldom called into play.

Dragstedt[2] reminds us of the well-known fact that the antrum produces a juice that is faintly alkaline, rich in mucus, and of excellent buffering capacity. In his opinion, the protective quality of this secretion, added to the inhibitory effect of acidified stomach contents on the release of gastrin, makes the antrum a structure that should not be needlessly sacrificed. It should be remembered, however, that there is a high rate of stomal ulceration attending those gastrectomies in which the stomach is transected proximal to the pylorus and a portion of the antrum is deliberately or inadvertently left behind. Dragstedt reports the confirmation, by roentgenologic observation, that under such conditions there is a regurgitation through the duodenum and pylorus into the isolated antral pouch. This neutral mixture of food, bile, and pancreatic and intestinal secretion exerts a continuous, stimulating effect on the isolated antrum, which results in persistent secretion of gastrin, hypersecretion of gastric juice, and consequent gastrojejunal ulceration.

While hypersecretion of nervous origin is probably the most important factor in the genesis of duodenal ulcer, it seems likely that the antral phase of gastric secretion is responsible for the production of gastric ulcer. This thesis, advanced by Dragstedt, is supported by the almost certain cure that follows antrectomy for gastric ulcer and the frequent occurrence of gastric ulcer as a complication of duodenal ulcer when there is obstruction and stasis in the antrum. Additional support for this concept lies in the observation that gastrojejunal ulcer develops quite frequently in patients who have had vagotomy and gastroenterostomy performed and in whom the stoma is placed so far from the pylorus that satisfactory emptying of the stomach is not possible. In such cases the resulting gastric stasis and antral stimulation induce a persistent hypersecretion of gastric juice, in spite of complete vagotomy and proved abolition of the nervous phase of gastric secretion. This complication may be prevented if the gastroenterostomy is placed within 4 or 5 cm. of the pylorus.[3]

Operations for Duodenal and Gastric Ulcer.—The aim of all operations for peptic ulcer is twofold. One purpose is to reduce the acid-secreting potential of the stomach below levels at which recurrent ulceration might be encouraged. The second is to preserve or restore gastrointestinal continuity in such a manner that normal digestion and assimilation may proceed with minimal interference.

It is generally conceded that partial gastrectomy is a sound and satisfactory procedure for gastric ulcer. In addition to correcting gastric stasis and abolishing the antral phase of gastric secretion, the operation eliminates the ulcer. Because of the difficulty of differentiating between benign gastric ulcer and ulcerating carcinoma, not only radiologically but also often at the operating table, any operation which does not remove the lesion is, in my opinion, inadequate and ill-advised. Among such operations are combined vagotomy and gastroenterostomy (or pyloroplasty), now seldom used for gastric ulcer, and the Madlener procedure for high-lying ulcer, in which the stomach is transected below the level of the lesion, leaving the ulcer behind to heal spontaneously, as it will if it is benign. The risk inherent in the Madlener procedure is obvious and the patient should not be subjected to it except under the most unusual circumstances. By complete mobilization of both curvatures of the stomach almost all high-lying gastric ulcers can be removed, and the storage function of the stomach can be preserved by tubular resection and the formation of a greater curvature pouch. Total gastrectomy should not be performed for a high-lying ulcer unless there is histologic proof that the lesion is malignant and cannot be adequately removed in any other way. Total resection may occasionally be indicated, as described later, when ulcerogenic tumors of the pancreas are found at operation for a fulminating ulcer diathesis. All reports agree that anastomotic ulceration is rare after partial gastrectomy for gastric ulcer.

The surgical management of duodenal ulcer is quite unsettled. Vagotomy combined with a drainage procedure has found many supporters. Dragstedt,[2] who has contributed so much to our understanding of gastrointestinal physiology, now employs pyloroplasty, rather than gastrojejunostomy, as the drainage mechanism. He believes that flow of gastric content into the duodenum is more physiologic than diversion into the jejunum, and also that with pyloroplasty there is less likelihood of gastric stasis.

At Dragstedt's clinic,[3] there was failure to cure in 8 per cent of all patients who had had vagotomy and a drainage procedure. It should be noted that in half of these failures there was subsequent proof that vagotomy was incomplete. Crile[4] reports proved recurrence of ulceration in 8 per cent and probable recurrence in 9 per cent of patients treated by vagotomy and gastrojejunostomy who had been followed from five to eight years. Everson and coworkers[5] report 7.6 per cent proved recurrence and 5.3 per cent presumptive recurrence after vagotomy and gastroenterostomy, and Walters[6] reports proved recurrence in 14 per cent. In contrast, MacKelvie[7] reports excellent results in 332 patients with vagal resection and gastroenterostomy. He believes the outlook after these procedures is at least as good as after partial gastrectomy, and emphasizes that the operative mortality is appreciably lower. Farris,[8] Weinberg,[9] and others also report excellent results.

It is important to remember that many reports[10] that show a disquieting incidence of recurrent ulceration following vagotomy with gastroenterostomy include a high percentage of operations performed before the danger of postoperative gastric stasis was recognized. Proper location of the stoma close to the pylorus or replacement by pyloroplasty undoubtedly reduces the recurrence rate. However, in performing vagotomy, the possibility of incomplete division of all vagus fibers will probably always remain a distinct hazard in an appreciable percentage of patients, because of technical difficulties in some and unusual anatomic arrangement of the vagus nerves in others.

In spite of the many favorable reports on these other procedures, it must be said that the most commonly accepted procedure for duodenal ulcer is still partial gastrectomy, in which about two thirds of the stomach is resected and gastrointestinal continuity is restored by some form of the Billroth II anastomosis. There is no doubt that over the years this operation has given results which have generally been most satisfactory.[11] However, a small but significant percentage of poor results, consisting chiefly of anastomotic ulcer, dumping syndrome, and inability to maintain or gain weight, has revived the search for a procedure that might give even better results.

It has been felt for many years that because gastroduodenostomy is a more physiologic reconstruction than gastrojejunostomy, it would occasion less disturbance of digestion and absorption after partial gastrectomy.[12] It is not suprising therefore that the Billroth I operation has recently been re-examined and is now being employed with increasing frequency in many centers.[12–15] In addition to permitting bile and pancreatic secretions to enter the alimentary tract in normal sequence and to mix more fully with the food, a well-performed gastroduodenostomy eliminates the danger of duodenal stump leakage as well as the mechanical hazards inherent in a loop anastomosis, such as obstruction of either limb or volvulus. It appears to be easier for patients to maintain weight after a gastroduodenostomy, and it is believed that incidence of the dumping syndrome is diminished. However, evidence is accumulating that recurrent ulceration is more frequent when the Billroth I is employed for duodenal ulcer,[15–17] and further proof of this would certainly outweigh whatever advantages the operation may have. For gastric ulcer, however, in which recurrence is admittedly low, gastroduodenostomy is a useful procedure and is gaining favor in many centers.

It is generally acknowledged that the greatest risk in routine partial gastrectomy for duodenal ulcer is duodenal stump leakage. In difficult cases there is also the possibility of injury to the common bile duct, the head of the pancreas, and the main or accessory pancreatic duct. Usually, these complications follow attempts to remove ulcers that penetrate deep into the posterior wall or are situated in the second portion of the duodenum. It is well established, despite some opinion to the contrary, that removal of the ulcer is unnecessary as long as the resected specimen includes the pylorus and a small cuff of the duodenum.[18]

There are numerous well-known technics for securing safe and competent closure of a difficult duodenal stump.[19,20] If there is any doubt about the security of the duodenal closure, it is wise to carry a tube drain down to the region of the stump and, in addition, to thread the nasogastric tube through the anastomosis, well up into the third portion of the duodenum. Constant suction on the nasogastric tube keeps the duodenum adequately decompressed. In my own experience, I have not found it necessary thus far to create an intentional catheter duodenostomy, as suggested by Welch.[21]

The combination of vagotomy with antrectomy or partial gastrectomy is being employed with increasing frequency.[22–26] The rationale is, of course, to achieve achlorhydria and yet avoid the unpleasant sequelae allegedly due to a very small stomach remnant. Reports thus far seem to indicate that the procedure gives immediate results that are at least equal to those following a two-thirds or three-fourths subtotal gastrectomy alone, and, in addition, that recurrent ulcer is rarely seen.

Colp[26] reports a slight increase in the incidence of postoperative diarrhea (10 per cent) following the combined procedure in 217 patients, the diarrhea being incapacitating in one instance. He found the frequency of side-effects, such as dumping syndrome, to be about the same as in cases of subtotal gastrectomy alone. At the time of his report, only one recurrent ulcer had developed (0.5 per cent). In Edwards' review[27] of 294 patients treated by combined antrectomy and vagotomy, with over one-half followed for more than three years, he reports that there was not a single instance of marginal ulceration.

Should these and similar reported results be confirmed with the passage of time, vagotomy with conservative gastrectomy may well emerge as the most effective surgical procedure for duodenal ulcer. In that case, restoration of continuity by a Billroth I reconstruction, when technically feasible, may be the operation of choice.[28,29]

There will always be a place, however, for lesser procedures in the handling of poor-risk patients and in special situations. Vagotomy with simple gastroenterostomy or pyloroplasty, which carries minimal operative risk and virtually insures good results in 85 per cent of patients, would definitely seem to be indicated when there is doubt about the patient's ability to tolerate the more hazardous resection. The same procedure may likewise be extremely useful, and much safer, in any case in which extensive inflammatory infiltration about the duodenum, pancreas, and common bile duct makes dissection unduly hazardous.

In the light of these observations, there seems to be no excuse for an inflexible attitude about any operation for duodenal ulcer when the pathologic changes, as we all know, can be so varied. In the end, best results can best be achieved by the surgeon who familiarizes himself with a number of technics and employs the one that seems to fit the individual situation best.

Gastrojejunal Ulceration.—Marginal ulceration after simple gastroenterostomy has been reported to be as high as 33 per cent.[30] In the literature of the past ten years, the incidence of recurrence after various resections for duodenal ulcer has ranged from 1 per cent to 9 per cent. A recent study from the New York Hospital[31] indicates that following partial gastrectomy, ulceration recurred in 24 per cent of patients up to thirty-five years of age; this supports the belief that ulcer diathesis is more severe in the younger patient. In our series at the Roosevelt Hospital, reviewed by Thompson and Stewart,[11] the incidence of recurrence has been 4.5 per cent.

The rate reported by any observer, however, naturally depends on the diagnostic criteria he uses. Operative proof and positive roentgenologic findings are used by some surgeons. In my opinion, recurrent hemorrhage, even without a complaint of pain, is strong presumptive evidence of ulceration, though such bleeding, as we know, may occasionally result from gastritis or jejunitis, with only superficial erosions. In any event, an operation that is followed by recurrent ulceration must properly be regarded as a failure.

Current opinion regarding the management of an established gastrojejunal ulcer may be summarized as follows:

1. Recurrence following previous gastroenterostomy is treated by vagotomy and partial gastrectomy.
2. Recurrence following previous adequate gastrectomy (two-thirds to three-

fourths resection) is treated by vagotomy alone.

3. Recurrence following previous inadequate gastrectomy is treated by vagotomy and additional stomach resection.

4. Recurrence following previous adequate gastrectomy with a constricted or obstructed stoma is treated by vagotomy and such additional resection as may be required to permit satisfactory emptying of the stomach pouch.

A particularly virulent form of recurrence is that which follows, on rare occasions, a very high secondary gastrectomy, even when it has been combined with vagotomy. When it does develop, a careful search should be made for an ulcerogenic tumor of the pancreas, as described by Zollinger and Ellison.[32,33] Their findings suggest a relationship between certain noninsulin-producing tumors of the islet cells of the pancreas and the occurrence of an excessive gastric hypersecretion, which results in fulminating peptic ulceration in unusual locations. These ulcers may appear in the second or third portions of the duodenum, the upper portion of the jejunum, and in anastomotic stomas following gastric operations. The tumors, often multiple and usually malignant but slow-growing, may occur anywhere in the pancreas, although they are most frequently found in the body or tail. In one case, the tumor was found in an aberrant pancreas in the stomach wall.[32] There is evidence given in Ellison's recent review[33] that removal of the tumor may result in the return of gastric secretions to normal levels. Of 11 patients, in each of whom a tumor was found and removed at operation, 5 are living and 3 succumbed to recurrent tumor; in the remaining 3 who died of ulcer, overlooked islet tumors were found in the pancreatic remnant. Since small pancreatic adenomas are so difficult to palpate, it had generally seemed reasonable heretofore to resect the body and tail of the pancreas before a procedure as disabling as total gastrectomy was considered, in cases of recurrent ulceration in which ulcerogenic tumor was suspected. However, in a recent report, Zollinger[34] indicates that his earlier hope that a more conservative gastrectomy and excision of visible tumors might solve the problem has not been realized. Multiple small tumors are frequently overlooked, in some cases the majority of the islets are hyperplastic, and adenomatus changes, if any, are identified only by microscopic examination. This situation has produced fulminating recurrent ulceration in most recorded cases, even when an extremely modest cuff of stomach has been saved. For this reason, Zollinger now believes that total gastrectomy should be performed if the presence of an ulcerogenic tumor of the pancreas is confirmed at operation. Radical as this procedure may appear, it is safer than total pancreatectomy and will more certainly cure the voluminous hypersecretion which has proved fatal to so many patients.

The Dumping Syndrome.—The dumping syndrome, one of the fairly frequent sequelae of gastrectomy, is characterized by epigastric discomfort, nausea, palpitation, tachycardia, weakness, undue warmth, and, at times, sudden diarrhea and fainting. This distressing sequence of events comes on while the patient is eating, or about one-half to an hour later. The attack varies in severity in the same individual, and there may be periods of days or weeks when symptoms are completely absent. Various reports give the incidence of this unfortunate complication as ranging from 6 to 53 per cent, and the discrepancy is probably due to the difference in vigor with which the patient is questioned and to the variations in the criteria set up by different examiners. In any case, the complication of the dumping syndrome has been, and remains, a real and frequent threat, and many investigations into its cause have been made.[35–38]

The purely mechanical effect of the rapid emptying of the gastric pouch, with sudden jejunal stimulation and hypermotility, may be an important factor in producing local discomfort, nausea, and diarrhea. The vasomotor symptoms are probably initiated by the rapid hydrolysis of food entering the jejunum directly, which creates a hypertonic mixture in the upper intestine. To maintain the jejunal content at isotonic levels there is an outpouring of fluid from circulating plasma into the jejunum, with a resulting decrease in blood volume, at times sufficient to cause hypotension and myocardial ischemia. Because carbohydrates are easily hydrolyzed they produce these changes more readily and more effectively than proteins.

Recent studies[37] indicate that many patients with dumping symptoms show peripheral dilatation despite the fall in blood volume. This vascular response is difficult to explain except on the basis of an abnormal homeostatic mechanism. In a significant number of patients, there is an unusual postprandial blood sugar curve which starts with a steep initial rise and is followed later by a drop to subnormal levels that persist longer than in the normal person.

It is difficult to determine with any degree of accuracy whether the dumping syndrome follows one type of gastric operation more frequently than another. It is claimed that its incidence is lower after vagotomy and pyloroplasty and after the Billroth I than after the Billroth II operation, but the reported difference is not significant and the evidence for this claim is not conclusive. In our own series, we had 1 patient in whom disabling dumping was completely relieved by conversion of a Billroth II to a Billroth I. Not long afterward another patient, also disabled by dumping, was cured by conversion of a Billroth I to a Billroth II. The only common factor we could see in these two experiences was the second operation. The second operation quite possibly may have relieved an unrecognized afferent loop obstruction or other form of stasis.

As a rule, partial and, at times, complete relief of symptoms may be obtained without further surgery by alterations in the diet, which should be low in carbohydrate, moderate in fat, and high in protein.[36] Liquid intake at meals should be reduced; frequent small feedings appear to be better tolerated by the patient.

The Afferent Loop Syndrome.—The afferent loop syndrome occurs only after the Billroth II resection. It is caused by partial or recurrent obstruction of the proximal loop, which results in interference with the passage of bile and pancreatic juice from the duodenum into the distal loop.[38] Among the causative factors are adhesions, internal herniation, volvulus, and pressure from a distended transverse colon. When it occurs, the obstruction is complete for a limited time only, seldom for more than one hour, and the symptoms are completely relieved when the contents of the proximal loop are evacuated.

Patients who suffer from this disorder complain of nausea and abdominal discomfort that come on within fifteen minutes after a meal. (Weakness, sweating, and tachycardia are infrequent symptoms.) The nausea is immediately relieved after vomiting occurs, the vomitus consisting characteristically of a large amount of bile unmixed with food. Food sometimes is regurgitated later if vomiting is protracted, but it is almost always preceded by a large amount of bile-stained secretion.

The diagnosis of the afferent loop syndrome is usually made on the symptoms only. It is important, therefore, to confirm it by other means before surgical relief of the obstruction is undertaken. The roentgenographic technic of Lorber and Shay,[39] or fractional aspiration of the distal jejunal loop, as advised by Jordan,[40] are helpful in establishing the diagnosis. Although any operation that eliminates the obstruction will relieve the symptoms, it is probably better, whenever possible, to avoid enteroanastomosis between the afferent and efferent loops. Such short-circuiting procedures may increase the likelihood of marginal ulceration at the gastric stoma.

Although afferent loop obstruction is not common, it should be taken more into account than it is in the investigation of postprandial disturbances after a Billroth II gastrectomy. If the symptoms are confused with those of the dumping syndrome (generally treated by nonoperative measures) the patient with afferent loop obstruction may be denied the relief that a relatively simple operation will give him.

Nutritional Deficiences Following Gastric Operations.—The nutritional deficiencies that frequently occur after gastric operations are due, in varying degrees, to reduced intake and impaired absorption of food. It is well known that excretion of fat and nitrogen is moderately increased after gastrectomy, but it has been difficult to establish a direct relationship between this excretion and the loss of weight.[41] A more likely theory is that while malabsorption may account for some of the inability to gain weight, a more important factor is the patient's own restriction of the volume of food that he consumes. The patient who develops fullness and discomfort when he eats only moderately is not apt to eat a normal meal. Over a period of time, he adjusts his appetite to smaller portions and thus avoids any unpleasant symptoms. A study of patients who remained underweight after gastrectomy[42] disclosed that their average daily caloric intake was far below the requirements for maintenance of their preoperative weight.

Difficulty in regaining weight is common after all types of gastric operation, but it may be slightly more frequent after a Billroth II than after a Billroth I or a vagotomy with gastroenterostomy.[5,41] The amount of stomach resected in the Billroth II operation is undoubtedly related to the incidence of subsequent nutritional disturbances. In an effort to diminish the number of recurrences, larger resections of stomach (75 to 80 per cent) have been performed in many clinics, though with little effect. Instead, increased dumping and nutritional problems have followed in ever-mounting numbers. Harvey[43] reports that in treating duodenal ulcer, the most satisfactory results, from the viewpoint of recurrence and nutritional status, followed hemigastrectomy with vagotomy and the avoidance of abrupt descent of the afferent jejunal loop from the stoma.

Massive Hermorrhage from Peptic Ulcer.—Massive hemorrhage is the most lethal complication of peptic ulcer. Recognition of this fact has led to an increasingly aggressive attitude about the management of the bleeding ulcer in recent years. The definition of massive hemorrhage is not as uniform as it might be, and in addition, some surgeons[44] are more aggressive than others. Hence, the criteria for surgical intervention vary somewhat from clinic to clinic; however, they may be summarized briefly as follows:[45,46]

1. It is important that the diagnosis (of peptic ulcer, or some other lesion amenable to surgery) be established with reasonable certainty.

2. Continued severe bleeding which cannot be controlled with reasonable amounts of blood is the most compelling indication for operation.

3. Older patients, and particularly those with a known gastric ulcer, require operation earlier (within twenty-four hours of onset) than younger patients; but in no case is it wise to postpone intervention beyond forty-eight hours.

4. Recurrent severe hemorrhage in any patient, at any time after a previous episode, is an urgent indication for prompt operation.

5. Severe hemorrhage in a patient with a history of other serious complications of chronic peptic ulcer, such as perforation, pyloric stenosis, or intractable pain, is an indication for prompt intervention.

6. Acute perforation, in addition to hemorrhage, obviously requires emergency operation. This combination is not common. However, it is well to remember in such a situation that the patient may be bleeding from an ulcer other than the one that has perforated, so that more than the usual simple closure of the perforation may

be required.

For bleeding peptic ulcer, partial gastrectomy has been the operation of choice. Because of the particularly high rate of postoperative recurrent ulceration and bleeding, vagotomy should also be done if the condition of the patient permits it. During the past year or more I have performed and advised the combined procedure, especially for patients with duodenal ulcer.

Vagotomy with pyloroplasty for acute hemorrhage from duodenal ulcer has been proposed recently[47] on the basis of a limited experience with 21 patients, 7 of whom were bleeding severely at the time of operation. In each case the bleeding point was securely transfixed and the pyloroplasty completed before the vagus nerves were sectioned. The reported results were excellent and if they remain satisfactory as the series increases, this simplified approach to the problem of hemorrhage will certainly command attention. Although adequate transfixion of the bleeding point would appear to be imperative with this procedure, Mixter and Hinton[48] describe 10 patients treated satisfactorily by vagotomy alone, at a secondary procedure for bleeding, without exposure or suture of the lesion.

Identification of the lesion at operation has always seemed to me[45,46] to be an indispensable step in a successful procedure. It is therefore gratifying to note in recent reports[49,50] the widening use of gastrotomy (and duodenotomy, if necessary) for patients in whom palpation fails to reveal the ulcerated area. I have always felt that "blind" gastrectomy is not a sound procedure for two simple reasons: First, bleeding lesions beyond the limits encompassed by partial gastrectomy are left behind; and second, the gastrectomy might be performed for a lesion that does not require it.

In my own experience, bleeding lesions that did not require gastrectomy included an ulcerated leiomyoma locally excised, a small bleeding solitary polyp in the proximal fundus, and at least four short lacerations at the cardioesophageal junction treated by simple transfixion suture. A careful and systematic inspection of the interior of the stomach and duodenum through a large gastrotomy will disclose many bleeding sources that cannot be felt through the intact stomach wall. As the surgeon becomes more diligent and thorough, the search will become more rewarding; and, as a result, fewer cases will be reported in which no source of bleeding could be found.

Acute Perforation of Peptic Ulcer.—The generally accepted treatment for acute perforation of peptic ulcer, in this country, has been simple closure of the perforation. During the past few years, however, there has been considerable interest in primary gastric resection as practiced in many European clinics. The more radical approach is considered preferable for various reasons. It is well known that recurrence of symptoms after simple closure of the ulcer is quite high, in some series approaching 70 per cent. Furthermore, it is conceded that with the help of better technics of anesthesia, improved management before and after operation, and more effective control of infection, primary gastrectomy for acute perforation may be done in suitable cases with minimal risk. The mortality has been reported as lower than that of simple closure.[51–53]

Since it is generally admitted by its proponents that primary resection is reserved for favorable cases and that simple closure is performed in the poor-risk patients, it seems fruitless to continue further comparison of mortality figures for the two procedures. An objective consideration of the statistics reported does reveal, however, the gratifying fact that in properly selected instances of acute perforation, primary resection may be performed with relatively low morbidity and surprisingly low mortality.

Having once conceded this fact, we are still left with the unsettled question as to whether every patient with an acute perforation should have a primary gastrectomy rather than the simple closure, if his general condition and local abdominal findings justify the more radical operation. Although it has been established that the majority of patients who recover from simple closure are not cured of their ulcer diathesis and continue to have distressing recurrences, it is equally certain that as many as one third of the survivors of this procedure are, as far as we can tell, permanently relieved. This has been borne out by many careful follow-up studies. A current review of a series of 522 patients at the Roosevelt Hospital by Kingsbury and Pennoyer[54] indicates that 35.5 per cent of the survivors of simple closure have remained completely asymptomatic and that this percentage remained relatively unchanged in the group of patients followed up to twenty-two years after operation. The latter observation is significant since it is contrary to a widely held belief that the incidence of recurrence after perforation increases with the passage of time.

As a result of our experience with the treatment of perforated ulcer at Roosevelt Hospital we have arrived at a definite policy. This policy, with few exceptions, is to perform simple closure as an emergency measure and to urge those patients, in whom persistent or recurrent symptoms appear to justify it, to undergo more definitive surgery at a later time. We feel that a continuation of this attitude will accomplish a great deal toward preventing a radical operation in patients in whom it is not required.

Since 1950 our mortality for simple closure has been 5.2 per cent. This rate applies to an unselected group of patients of different ages suffering from gastric, duodenal, or gastrojejunal ulcerations, and with perforations of varied duration up to several days.

Malignant Lesions of the Stomach.—The widespread lymphatic involvement in advanced and nonresectable cancer of the stomach is too well known to require comment. With regard to early cancer, extensive block excision for "cure" in suitable cases, as reported in recent years by various investigators,[55–60] has added significantly to our knowledge of the pathways and depots involved in earlier dissemination. This has been a distinct and worth-while contribution despite the fact that survival may not have been appreciably prolonged by the more heroic excisions. We have at least learned something about the directions in which operative excision should be extended to encompass resectable depots of tumor.

The spread of antral carcinoma is usually not quite the same as that of lesions higher in the stomach. In the distal lesions, subpyloric lymphatic metastases that extend downward between the pancreas and duodenum into para-aortic nodes cannot be removed without radical resection of the head of the pancreas. In more proximal lesions of the stomach there may be involvement of pancreaticolineal and paracardiac nodes and a tendency toward recurrence in the gastric remnant; this makes it apparent that a sound procedure for proximal tumors should include total, or almost total, gastrectomy along with splenectomy, resection of the body and tail of the pancreas, and removal of the greater omentum.

Supraradical block excisions are being performed in many centers, but reports thus far submitted appear to indicate, unfortunately, that results have not been up to expectations. Primary operative mortality has been high and the recurrence rate has not diminished appreciably.

It would seem that the heroic operation is often doomed to failure by the nature of the disease for which it had to be devised.[57,61–63] From all available information, it seems fair to conclude that only an insignificant number of patients, not curable by a radical high gastrectomy, might be saved by the more extensive and more hazardous excisions. In this group we would include patients with high proximal lesions and those with diffuse infiltrative carcinoma of the linitis plastica type. Many surgeons believe that total gastrectomy should be performed only when it would otherwise be impossible to obtain an adequate margin of normal tissue around the lesion. Five-year survival rates after subtotal gastric resection have improved considerably in the last decade, reportedly ranging, in the absence of lymph node metastases, from 47 to 87 per cent.[59,63–65] The same observers report only 5 to 20 per cent of five-year survivals among the patients with proved lymph node involvement. There can be no doubt that more effective preoperative and postoperative care and improved surgical maneuvers have reduced operative mortality, and thus contributed significantly to the number of five-year survivors. Despite this, at least 4 out of 5 patients with cancer of the stomach are incurable at the time diagnosis is made. For the present, therefore, it seems that reasonable improvement can be anticipated only by earlier diagnosis and prompt excision. Mass screening of asymptomatic individuals by roentgenography and gastric cytology is unfortunately expensive, impractical, and not entirely satisfactory.[66–68] However, a patient with suggestive symptoms should be investigated without delay. All gastric ulcers that do not heal after three weeks of strict medical therapy should be resected. Those that do appear to be healed should be reinvestigated radiologically within two or three months. The patient with a known achlorhydria, often associated with pernicious anemia or gastritis, should be studied periodically. Unexplained anemia or loss of weight in any adult must receive special attention.

It is well to note that despite the encouraging figures for survival quoted previously for certain patients, only 1 person out of 10 affected by carcinoma of the stomach survives as long as five years after operation.

Sarcomas of the stomach constitute about 4 per cent of all gastric tumors. Although the presenting symptoms resemble those of carcinoma, it is sometimes possible to make the differential diagnosis from the radiologic picture.[69] Lymphosarcoma may appear in different guises: among them are a localized tumor with smooth, rounded margins, a diffuse involvement of the stomach simulating linitis plastica, multiple ulcerations, polypoid tumors, and giant mucosal infiltration resembling hypertrophic gastritis. Many sarcomas are resectable, with a prognosis seemingly more favorable than that for carcinoma. Marshall[70] reports 51 gastric sarcomas, 16 of smooth muscle origin and 35 that arose from lymphoid tissue. The leiomyosarcomas showed a marked tendency to bleed even when they produced little gastric distress. Of his entire group of patients with sarcoma, 44 per cent survived five years, or longer following resection. According to Marshall, although radiotherapy has little effect on leiomyosarcoma, it may have considerable value in dealing with lymphoma. He believes that radiotherapy should be used four to six weeks after resection of a lymphoid tumor and in treating all tumors of lymphoid origin that are too extensive to justify resection.

GRANULOMATOUS LESIONS OF THE STOMACH.—*Eosinophilic Gastroduodenitis.*—Although eosinophilic infiltrations of the intestinal tract are relatively rare, those that involve the stomach and duodenum are of importance as possible causes of pyloric obstruction. The infiltration may be massive, with invasion of the entire stomach wall, or it may be limited to the pyloric area. In both these forms the disease may be indistinguishable from malignant tumors in x-ray studies, but the frequent finding of a distinct and sometimes marked eosinophilia may be helpful in making preoperative diagnosis. Since 1937, 13 cases have been reported.[71] Since this lesion is benign, a conservative resection for relief of pyloric obstruction is all that need be done. A correct preoperative diagnosis or confirmation by biopsy at operation will prevent the unnecessarily radical resection that might otherwise be performed for a supposed extensive malignant lesion. Biopsy should include full thickness of the stomach wall, since the mucosa itself is not remarkable and the typical sheets and masses of mature eosinophils are found in the submucosa and muscularis.

Allergy and hypersensitivity have understandably been suggested as etiologic factors in eosinophilic gastroduodenitis, but no relationship has been satisfactorily established.

Nonspecific Granulomatous Disease of the Stomach and Duodenum.—Nonspecific regional enteritis and colitis are well-known disease entities as is the more diffuse jejunoileitis, in which the granulomatous process involves many isolated segments of the entire small intestine. Involvement of the duodenum by nonspecific granulomatous disease was described many years ago, but the first instance of gastric as well as distal disease was reported relatively recently.[72] Zeifer[73] reviews a total of 24 cases collected up to 1957.

No definite causative factor of the disease is known. The most popular concept of the etiology is that it represents a reaction to stress in a particularly vulnerable individual. The local pathologic changes in the stomach and duodenum resemble those seen in more distal areas. The structures are thickened and engorged, with regional nodes enlarged, and surrounding structures inflamed and edematous. The mucosa is red and thickened and may show shallow erosions. In the cases reviewed in the literature there was no instance of fistulization or perforation into adjacent tissues and organs.

The symptoms of this disease are essentially those of chronic high partial obstruction. In the stomach lesion, gastroscopy reveals nothing more than a superficial gastritis; and x-ray studies usually reveal an established pyloric stenosis, sometimes easily confused with carcinoma. The lesion in the duodenum shows deformity of the bulb and varying degrees of rigidity, stenosis, and abnormal mucosal patterns in the descending portion.

Surgical exploration is usually required because of the duodenal or pyloric obstruction and to determine the nature of the lesion. In cases in which excision or a short-circuiting procedure seems feasible, subsequent fistulization may be avoided if the anastomosis is made only between uninvolved tissues, as determined by frozen section studies. Surgical treatment is probably, at best, of palliative value only.

Summary.—Recent investigations in gastroduodenal physiology, as reviewed in this paper, indicate that gastric ulcer is usually caused by gastric stasis. Stasis results in prolonged stimulation of the antrum, excessive liberation of gastric secretory hormone (gastrin), and an abnormally prolonged contact of the gastric mucosa with acid chyme. Although benign gastric ulceration is cured by any surgical procedure that insures normal emptying of the stomach, it is desirable that the operation include removal of the lesion as well, because of the possible presence of unsuspected carcinoma. Partial gastrectomy, with either gastroduodenostomy or gastrojejunostomy, is therefore a most effective operation for gastric ulcer. It results in relief of symptoms, and recurrent ulceration is rare.

It is now generally believed that duodenal ulcer is caused by hypersecretion of vagal origin. Curative surgical measures are directed toward a drastic reduction of the secreting surface, as in subtotal gastrectomy, or toward elimination of the stimulating nervous mechanism, as in vagotomy with a concomitant drainage procedure. Both of these approaches to the problem of duodenal ulcer are reasonably effective, although not entirely satisfactory; both are followed by an appreciable incidence of recurrence. More recently, vagotomy, combined with partial resection of the stomach, has gained favor; and since recurrent ulceration has been negligible following this combined procedure, it may well emerge as the operation of choice. It should be particularly advantageous for patients in whom the recurrence rate usually is high; among these are included all under thirty-five years of age or those with a history of bleeding or perforation.

The effectiveness of the Billroth I procedure for duodenal ulcer has not been convincingly demonstrated. Any possible advantage derived from the more physiologic channel that gastroduodenostomy provides seems to be offset by a disquieting incidence of recurrent ulceration. The addition of vagotomy to the Billroth I operation is under trial and may prove eventually to have considerable merit. For gastric ulcer, partial gastrectomy with gastroduodenostomy is a useful and satisfactory procedure and is being employed with increasing frequency.

Vagotomy is very efficacious in the treatment of recurrent ulceration following partial gastrectomy. In instances in which recurrence of ulcer has apparently been due to inadequate gastrectomy, additional resection of stomach should be performed in addition to vagotomy. At all secondary procedures the duodenal stump should be examined carefully for evidence of residual antral mucosa. If any is found, the stump is transected distal to the pylorus and a suitable inversion is performed.

Repeated recurrent ulcerations may be associated, on rare occasions, with ulcerogenic tumors of the pancreas. For this condition, there appears to be no solution other than total gastrectomy.

The dumping syndrome develops with almost equal frequency following the Billroth I and II resections. The symptoms are usually satisfactorily controlled by dietary measures, consisting chiefly of reduction of carbohydrate food intake.

The afferent loop syndrome, occasionally seen after a Billroth II resection, is due to recurrent obstruction of the proximal limb of the anastomotic loop. This syndrome is relieved only by surgical correction of the obstruction.

Postoperative nutritional deficiencies after partial gastrectomy are generally due to inadequate intake of food rather than to malabsorption.

The criteria for early surgical intervention in massive hemorrhage from peptic ulcer are generally well established. Partial gastrectomy is the operation of choice. Wide gastrotomy and duodenotomy, if necessary, rather than "blind gastrectomy," should be performed if the source of hemorrhage cannot be identified by inspection and palpation of the unopened stomach and duodenum. Because of the high rate of recurrence following resection for bleeding ulcer, a concomitant vagotomy is advisable if it can be added to the gastrectomy without undue risk.

There has been increasing interest in primary gastrectomy for the treatment of acute gastric and duodenal perforation. It has been shown that if this procedure is employed only in carefully selected cases the mortality is surprisingly low. However, simple closure of the perforation, followed at a later date by a more definitive operation, if necessary, appears to be a more logical and desirable policy. This attitude is supported by evidence that approximately one third of all patients who recover from simple closure of the perforation remain entirely free of ulcer symptoms.

Supraradical operations for gastric neoplasms have resulted almost uniformly in an increased immediate postoperative mortality and have not affected long-term survival rates. In the majority of cases high subtotal gastrectomy, combined with splenectomy and removal of the omentum, is the most practical surgical procedure for the extirpation of gastric tumors. Total gastrectomy is employed in resecting proximal lesions when an adequate margin of uninvolved tissue cannot otherwise be obtained.

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An Observation on the Management of Nose Drop Habituation

The dilemma presented by the habitual user of nose drops or spray—iatrogenic difficulty through continued use on the one hand and discomfort and psychic stress through deprivation on the other—can be resolved by the simple stratagem of continuing the intranasal medication, but in one nostril only.

Once specific measures become effective and the vicious cycle of vasoconstriction with rebound phenomenon has been broken in the untreated nostril, the nose drops or spray can be abandoned completely. In this way, the patient's habituation can be corrected without the necessity of passing through a period of total bilateral nasal occlusion.—*Annals of Allergy, November-December, 1958, Edward C. Bressler, M.D., Los Angeles, California*

Tranquilizers in Anesthesia: Double-Blind Studies

I. Triflupromazine

ERWIN LEAR, M.D., REMEDIOS SUNTAY, M.D., ALBERT E. CHIRON, M.D., IRVING M. PALLIN, M.D., HERBERT FISCH, M.D., AND GEORGE ABRAMS, M.D., BROOKLYN, NEW YORK*

(From the Departments of Anesthesia, Jewish Hospital, Brooklyn, and Queens General Hospital, Jamaica)

THE introduction of the antihistamine drug promethazine to clinical medicine hastened the synthesis and investigation of a new series of compounds, the phenothiazine derivatives. Although the history of the parent compound phenothiazine is old, the period of successful use of the derived drugs is comparatively short yet dramatic. The phenothiazine derivatives exhibit some or all of the following properties: antihistamine, antiemesis, antipruritis, sedation, and tranquilization. The multiplicity of the pharmacologic actions of these drugs has made them potentially useful in the field of anesthesia as adjuncts to premedication, for the control of postoperative nausea and vomiting, and for their enhancement of drugs commonly used in anesthesia.

Chemistry

The dimethylaminopropyl phenothiazines were among the earliest compounds studied independently both in the United States and in France. Investigators had been studying the effects of substituting various groups at the number 2 position of the phenothiazine ring (Fig. 1). The effect of substitution at the number 3 and at the number 4 positions was also investigated.

Screening tests indicated that halogenation at the number 2 position produced the most active drugs in terms of effective tranquilization. The relative scores of unsubstituted dimethylaminopropyl phenothiazine and three "2-substituted" phenothiazines are shown in Table I.

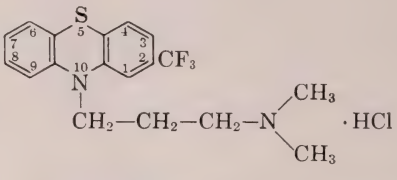

FIG. 1. Chemical formula for triflupromazine.

These data are derived from laboratory studies[1] and are intended to suggest only the effects of the changes at the number 2 position of the parent structure. The unsubstituted phenothiazine demonstrated minimal activity and was given the arbitrary designation of 1. The addition of a methoxy group (OCH_3) at the number 2 position produced a compound with an activity ratio of 3.86; substitution of the chloride radical at this position yielded a compound with an activity ratio of 4.56; substitution of a trifluoromethyl group at the number 2 position gave a compound with an activity ratio of 5.85.

The importance of the number 2 position in drug activity is emphasized by the fact that "3-substituted" chlorpromazine is only 62.5 per cent as effective, milligram per milligram, as the "2-substituted" compound. The importance of the number 2 position is even greater with the trifluoromethyl compound. The "3-substituted" triflupromazine (Vesprin) exhibits only 25 per cent of the activity of the "2-substituted" compound despite a six-fold increase in the dose.

Clinical Studies

Laboratory evidence had suggested that triflupromazine was a more potent tranquilizer than chlorpromazine without a sig-

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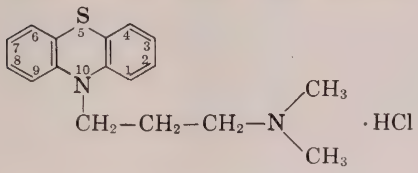
* This study was supported by a grant from E. R. Squibb & Sons, New York City. Triflupromazine was supplied as Vesprin.

TABLE I.—RELATIVE SCORES OF UNSUBSTITUTED DIMETHYLAMINOPROPYL PHENOTHIAZINE AND THREE "2-SUBSTITUTED" PHENOTHIAZINES



"2-Substituted" Group	Generic Name	Activity Ratio
None	Promazine	1.00
OCH_3	Methoxypromazine	3.86
Cl	Chlorpromazine	4.56
CF_3	Triflupromazine	5.85

nificant increase in the side-effects; because of this, double-blind studies were undertaken in our department in order to evaluate triflupromazine for clinical anesthesia. Triflupromazine was studied in unanesthetized volunteer patients to determine its actions on respiration and circulation. Other studies were designed to give information in the areas of preanesthetic medication, postoperative nausea and vomiting, and blood pressure alteration.

CIRCULATION AND RESPIRATION.—Triflupromazine was studied as an unknown factor in a series of 12 unanesthetized volunteer patients. The subjects received no medications the morning of the study, all were fully awake at the onset of the studies, and each individual served as his own control. The cardiovascular studies included venous pressure, circulation time, blood pressure, pulse, and electrocardiographic tracings. The respiratory studies were conducted with the Monaghan ventilation meter; the respiratory data included minute volume, tidal volume, and respiratory rate. The patients were permitted to become acclimated to the various procedures before the recording of data commenced.

Triflupromazine 20 mg.* was administered intravenously to the subject after control readings had been obtained; only 1 patient was investigated at a time. The dose of the drug remained constant throughout the study as the subjects chosen were of similar size and physical status.

Three patients exhibited initial restlessness following the drug administration, and although they became sedate within fifteen to twenty minutes their respiratory data were not included; 2 of these patients developed marked nasal congestion after the use of triflupromazine.

The remaining 9 patients were studied for periods of one hour. The data thus obtained are summarized in the following paragraphs.

Blood Pressure.—A transient fall in blood pressure was noted within fifteen minutes of the intravenous administration of triflupromazine. The range of blood pressure fall under these circumstances was extremely mild ranging from 5 to 10 mm. Hg. The blood pressure changes paralleled the period of maximal sedation.

Pulse Rate.—Seven of 9 patients exhibited no significant variation in pulse rate following the 20 mg. dose of triflupromazine. Two patients, however, experienced an acceleration of pulse rate ranging from 30 to 50 beats per minute. The rate change occurred within two to three minutes following injection of the drug. The rapid rates began to subside within twenty minutes, and control levels were reached in forty to sixty minutes.

Venous Pressure.—There was a rise in venous pressure which began approximately five minutes after the drug was administered and reached a peak between ten to fifteen minutes. The venous pressure then slowly declined reaching control levels at from thirty to forty minutes. The maximum venous pressure increase ranged from 30 to 110 per cent as compared with the individual control levels.

Circulation Time.—The circulation times remained within normal limits throughout the study. Five patients exhibited decreases in individual circulation times rang-

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* It should be noted that the dose of triflupromazine used here exceeds the usual clinical dose for intravenous administration. This should not be construed as a recommendation for the routine use of the 20 mg. dose, intravenously.

TABLE II.—ANESTHETIC TECHNICS

Technics	Number of Patients	
General		
Cyclopropane	70	
Nitrous oxide	65	135
Conduction		
Spinal	55	
Epidural	3	
Local	2	60
Intravenous		
Sernyl	2	
Cyclohexamine	3	5
TOTAL		200

ing from 25 to 33 per cent as compared with their control values.

Electrocardiography.—Electrocardiographic tracings which were taken throughout the study periods for each patient revealed no disturbances in rhythm.

Respiratory Rate.—There was an increase in respiratory rate noted following the administration of triflupromazine. The rate increase was in the order of 4 to 6 respirations per minute. This change was transient, and control levels were reached within ten minutes.

Tidal Volume.—A decrease in tidal volume occurred at twenty minutes following drug administration. The period of depression corresponded to the period of maximum sedation under triflupromazine. The average fall in tidal volume was approximately 25 per cent. The tidal volumes returned to within 92 to 96 per cent of control levels within one hour in 6 of 9 patients. The remaining 3 patients had tidal volumes of 75 to 85 per cent of their controls. Two of these 3 patients developed nasal congestion during the study period but were cooperative and concluded the experiments. (These patients are not to be confused with the 2 subjects previously mentioned in whom nasal congestion was also a problem.)

Minute Volume.—The minute volume of the patients in the study exhibited mild transient depression which corresponded to the period of maximum drug-induced sedation.

TABLE III.—TRIFLUPROMAZINE IN PREMEDICATION (200 CASES)

	Awake	Drowsy	Asleep	Series (Per Cent)
Calm	74	52	12	69
Apprehensive	60	2	0	31
Disoriented	0	0	0	0

TRIFLUPROMAZINE IN PREANESTHETIC MEDICATION.—Triflupromazine was studied as an adjunct to preanesthetic medication in a series of 200 unselected surgical patients. The drug ampules were coded, therefore neither the identity of the drug nor its manufacturer were known to the participants. The preanesthetic medication schedule was calculated so that the unknown drug could be ordered and administered in terms of milliliters of drug.

The preoperative dose of triflupromazine was administered intramuscularly, two hours before surgery; the range of drug given proved to be 10 to 40 mg. One hour prior to operation the patients also received meperidine 12.5 to 50 mg. and atropine 0.2 to 0.4 mg. intramuscularly. The physical status and age of the patient were the determinants as regarded the dose of premedicant drugs. The preoperative visits were directly supervised by one of us throughout the entire study to insure uniformity in premedication.

The patients in this study ranged in age from twelve to eighty-nine years. The sex distribution was approximately equal. There were 146 extra-abdominal procedures: hernia repair, transurethral resection, prostatectomy, peripheral surgery, and major orthopedic procedures. There were 54 intra-abdominal procedures: abdominal-perineal resection, cholecystectomy, colostomy, colectomy, exploratory laparotomy, gastrectomy, and total hysterectomy. The anesthetic technics employed during this study are shown in Table II.

The effects of the triflupromazine-supplemented preanesthetic medication were observed and tabulated on specially devised check-off sheets. Patients who did not receive their proper medication within specific time limits were not included in this

TABLE IV.—Triflupromazine and Preoperative Blood Pressure

Number of Patients	Age Group (Years)	Blood Pressure Fall			Significant Fall Age Group (Per Cent)
		10 to 30 mm.	40 to 60 mm.	70+ mm.	
66	12 to 40	20	5	0	7.5
31	41 to 55	12	2	1	10.0
54	56 to 70	22	5	4	16.5
49	71 to 89	20	9	3	24.5

TABLE V.—Effect of Triflupromazine on Recovery Room Blood Pressures

Admission Blood Pressure as Control Level						
Number of Patients	Age Group (Years)	Hypotension (Per Cent)			Average Duration	
		10 to 30 mm.	40 to 60 mm.	70 + mm.	(Hours)	(Minutes)
66	12 to 40	58.5	9.5	0.0	3	12
31	41 to 55	50	12.5	12.5	2	52
54	56 to 70	45.5	27.0	9.5	2	37
49	71 to 89	38.5	27.0	7.5	3	12
Averaged Data		49.5	18.0	9.0	2	58

Preoperative Blood Pressure as Control Level						
Number of Patients	Age Group (Years)	Hypotension (Per Cent)			Average Duration	
		10 to 30 mm.	40 to 60 mm.	70+ mm.	(Hours)	(Minutes)
66	12 to 40	54.0	7.0	0.0	0	37
31	41 to 55	31.0	12.5	12.5	2	20
54	56 to 70	59.0	4.5	4.5	2	32
49	71 to 89	50.0	7.5	11.5	2	7
Averaged Data		50.5	7.5	6.0	1	54

report. The preoperative psychic state of the patient was correlated with the induction of anesthesia. The results of this part of the study are shown in Table III.

The patients were also studied with regard to the effect of triflupromazine on preoperative blood pressure. The patients were divided into four general age groups in order to detect any correlation in blood pressure depression within a particular age group. The admission blood pressure was used as a baseline and was compared to the patients' preoperative blood pressure. The data thus obtained have been tabulated in Table IV. The blood pressure fall in the range of 10 to 30 mm. Hg was not considered severe as it represented changes in pressure under 25 per cent of the patients' controls. The data indicate, however, that 14.5 per cent of the study group experienced severe pressure falls of 40 mm. Hg and greater. A review of these data also emphasizes the fact that the incidence of severe pressure drop increases with the age group within the study.

TRIFLUPROMAZINE ACTIVITY IN THE POSTOPERATIVE PERIOD.—In the absence of hemorrhage or shock, postoperative hypotension as a consequence of premedication and anesthesia continues for one hour and thirty-five minutes plus or minus thirty minutes with meperidine-atropine premedication. The postoperative pressures of the study group were investigated in order to ascertain the relation of triflupromazine in premedication to postoperative hypotension.

The postoperative blood pressures (recovery room data) were tabulated according to age group and compared with (1) the admission blood pressures as controls and (2) the preoperative blood pressures as controls. These data are presented in Table V. The average duration of hypotension has been recorded for the individual age groups.

The extension of triflupromazine activity into the immediate postoperative period had been useful in diminishing the postoperative requirement for pain-relieving drugs. Fifteen per cent of the study group required a reaction dose of narcotic within the first three hours in the recovery room. A similar study with patients who had received meperidine (25 to 100 mg.) as premedication was reviewed; the incidence of postoperative pain relief requirements was 27 per cent within the first hour and one-half.

The incidence of postoperative nausea and vomiting in the recovery room population under standard premedication ranges from 26 to 45 per cent. The triflupromazine series exhibited an incidence of nausea and vomiting of 6 to 8 per cent.

Comment

Triflupromazine is a potent tranquilizing agent which has been screened utilizing double-blind technics in the anesthetic management of the surgical patient. Studies on volunteer patients indicate that the use of triflupromazine is associated with mild transient changes in blood pressure in the range of 5 to 10 mm. Hg. The addition of half-doses of meperidine as in premedication, however, causes more severe and prolonged falls in pressure. An increase in venous pressure was noted during the studies and paralleled the maximum sedation period following the administration of triflupromazine. Tachycardia occurred in 2 patients; this represents an improvement over previously tested potent phenothiazine derivatives.

The transient depression of respiration observed in our studies on the volunteer patients did not appear to be a direct effect of the drug on the respiratory centers but rather a result of sedation. The patients when disturbed by extraneous sounds, such as people talking nearby, immediately exhibited an increase in tidal volume and respiratory rate. Three patients with depressed final tidal volumes (75 to 85 per cent) were the exception; 2 of these patients had developed nasal congestion following the administration of the triflupromazine.

The clinical use of triflupromazine in preanesthetic medication indicates that this compound is capable of producing adequate preoperative sedation when combined with reduced doses of meperidine. Reference studies which combined a blank with reduced doses of meperidine indicated that meperidine in the dose range employed (12.5 to 50 mg.) was capable of producing adequate preoperative sedation in 54 per cent of the series as compared with 69 per cent for the same meperidine dose range combined with triflupromazine.

There appeared to be an enhancement of the actions of barbiturates and ether in addition to that already inferred for narcotics. The depression of undesirable reflex activity during the induction and maintenance of anesthesia must remain a clinical observation as there is no method currently in use for analyzing statistically the frequency, the intensity, or the effective prevention of these troublesome occurrences.

The incidence of postoperative nausea and vomiting in the triflupromazine study was reduced significantly. The 6 to 8 per cent incidence of this complication takes on added meaning when one considers that thiopental sodium alone is associated with an 8 to 11 per cent incidence of nausea and vomiting.[2,3] The lowest incidence of postoperative nausea and vomiting correlated to the anatomic area of surgery was found to be 15 per cent.[3] Hence it would seem that the 6 to 8 per cent occurrence of nausea and vomiting when triflupromazine is used is one of the advantages of this type of premedication.

Analgesic drugs are not required as early in the postoperative period, nor is the dosage as large when the patient has been premedicated with triflupromazine. The liberal use of postoperative narcotics is associated frequently with depression of respiration and circulation, so that these complications are minimized with tranquilizer premedication.

The routine use of triflupromazine in premedication will be challenged as was the situation with chlorpromazine. The judicious use of these compounds should evoke little difficulty. Triflupromazine in premedication should best be reserved for major surgery where reflex activity, trauma, or hemorrhage may be anticipated. This compound can also be used for unusually apprehensive patients and for those with psychiatric histories.

The data collected from our triflupromazine studies differ little from previous work with similar compounds.[4] The incidence of significant postoperative blood pressure fall following triflupromazine premedication was 27 per cent as compared with a 33 per cent incidence for chlorpromazine. Postoperative studies of hypotension are not complete at the present time but preliminary data suggest that the incidence of hypotension following full doses of preoperative narcotics (standard premedication) is remarkably less than with tranquilizer premedication.

In a series of 77 patients who received full doses of meperidine or morphine as premedication in place of a tranquilizer and reduced dose of narcotic, the incidence of postoperative hypotension was noted to be 11.7 per cent. Hypotension averaged 65.5 mm. Hg in this group as compared with 57 mm. Hg for triflupromazine and chlorpromazine. The study load was screened to rule out postoperative hypotension from obvious blood loss.

Summary

Triflupromazine was studied using double-blind technics. This drug is a potent phenothiazine derivative. Triflupromazine combined with reduced doses of preoperative narcotic produced adequate preoperative sedation in 69 per cent of the study series.

Postoperative nausea and vomiting was significantly reduced in patients premedicated with triflupromazine. The incidence of this postoperative complication was 6 to 8 per cent as compared with a range of 26 to 45 per cent with standard premedication.

Only 15 per cent of the triflupromazine series required postoperative narcotics for pain relief as compared with 27 per cent required for patients receiving standard premedication.

Postoperative hypotension with triflupromazine premedication averaged 57 mm. Hg and occurred in 27 per cent of the patients. This compares unfavorably with an 11.7 per cent incidence of postoperative hypotension averaging 65.5 mm. Hg with morphine or meperidine premedication.

The authors wish to thank Dr. Philip Kahan, Superintendent, the Surgical House staffs, and the Nursing staffs, Queens General Hospital, for their cooperation.

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More Physicians Needed

More physicians will be needed to keep pace with our population growth within the next two decades, according to *Patterns of Disease*, prepared by Parke, Davis & Company for the medical profession. In 1955, there were approximately 132 physicians per 100,000 persons in this country. It is estimated that by 1975 the population will have increased to such an extent that the physician population will drop below that of 1955.

To maintain this ratio, the equivalent of 20 new medical schools is needed. Only in this way can the number of new physicians entering practice keep pace with expected population growth between 1955 and 1975.

Evaluation of Carbethoxysyringoyl Methylreserpate as an Antihypertensive Agent

ELLIOTT S. COHEN, M.D., WOODMERE, NEW YORK

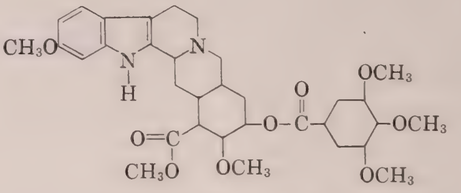
(From the Hypertension Clinic, Mount Sinai Hospital)

CARBETHOXYSYRINGOYL methylreserpate or syrosingopine (Singoserp) is derived from reserpine by hydrolysis to methylreserpate and re-esterification with carbethoxysyringoyl chloride (Fig. 1).

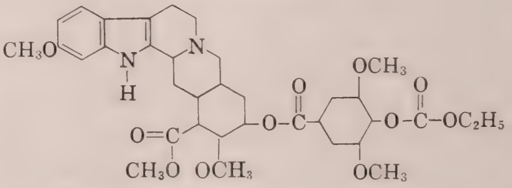
It has been demonstrated in animals that carbethoxysyringoyl methylreserpate has antihypertensive properties approximating those of reserpine but has significantly less tranquilizing effects (2 mg. per Kg. intravenously of carbethoxysyringoyl methylreserpate was found to have the same tranquilizing effect as 0.25 mg. per Kg. of reserpine in dogs). Furthermore, carbethoxysyringoyl methylreserpate was found to be 20 per cent less potent than reserpine in increasing the secretion of hydrochloric acid by the Heidenhain pouch of dogs.* This study was undertaken to evaluate carbethoxysyringoyl methylreserpate as an antihypertensive agent in human beings.

Material and Methods

Twenty patients with long-standing hypertension, whose course had been observed in the Hypertension Clinic of the Mount Sinai Hospital for periods ranging from six months to seven years, were transferred to carbethoxysyringoyl methylreserpate. These patients were started on a dose of 0.5 mg. a day (0.25 mg. twice a day). The dose was increased monthly until control of hypertension was achieved, toxic side-effects became evident, or it became apparent that the patient's hypertension was unresponsive to this medication. The total daily dose was not raised above 6 mg. A significant change in blood pressure was considered to have taken place if the systolic pressure was altered by 40 mm. of mercury and the diastolic pressure by 20 mm. of mercury. A patient was considered to be well controlled if he was asymptomatic for at least one and one-half months and his blood pressure was maintained below 180/100. Patients who were asymptomatic but had blood pressures between 180/100 and 200/110 were considered to be under fair control. The blood pressure readings shown in the accompanying figures represent an average of at least 3 blood pressure determinations in both the supine and the erect position.



(Reserpine)



(Carbethoxysyringoyl methylreserpate)

FIG. 1. Chemical formula of the derivation of carbethoxysyringoyl methylreserpate from reserpine.

Results

Ten patients previously treated with reserpine were transferred to carbethoxysyringoyl methylreserpate (Table I). Observation of the course of these patients indi-

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* Plummer, A. J., Barrett, W. E., Maxwell, R. A., Finocchio, D., and Lucas, R. A.: Hypotensive properties of syrosingopine, SU-3118, an ester of methyl reserpate, Archives International Pharmacodynamics, to be published.

TABLE I.—EVALUATION OF CARBETHOXYSYRINGOYL METHYLRESERPATE IN PATIENTS PREVIOUSLY CONTROLLED WITH RESERPINE

Time on Drug (Mos.)	Change in Status	Control of Hypertension	Blood Pressure on Reserpine	Blood Pressure on Carbethoxysyringoyl Methylreserpate
7	Improved	Good	200/110	160/100
8	Improved	Good	220/90	164/70
3	Unchanged	Good	160/90	144/82
3	Unchanged	Good	130/70	130/80
2	Unchanged	Good	160/80	170/90
1½	Unchanged	Fair	210/120	200/110
7	Unchanged	Fair	150/100	140/110
8	Unchanged	Good	180/100	160/100
3	Worse	Good	140/80	180/90
2	Worse	Good	150/80	180/100

TABLE II.—EVALUATION OF CARBETHOXYSYRINGOYL METHYLRESERPATE IN PATIENTS PREVIOUSLY CONTROLLED WITH RESERPINE-N-OXIDE

Time on Drug (Mos.)	Change in Status	Control of Hypertension	Blood Pressure on Reserpine-N-Oxide	Blood Pressure on Carbethoxysyringoyl Methylreserpate
2	Improved	Good	240/120	180/100
2½	Unchanged	Good	140/88	158/84
2	Unchanged	Good	170/80	160/80

cates that carbethoxysyringoyl methylreserpate is as effective an antihypertensive agent as reserpine.

Three patients previously treated with reserpine-N-oxide (SU-3494) were transferred to carbethoxysyringoyl methylreserpate. Observation of the course of these patients indicates that carbethoxysyringoyl methylreserpate is probably as effective an antihypertensive agent as reserpine-N-oxide (Table II). In 5 patients previously treated with reserpine in combination with another antihypertensive agent carbethoxysyringoyl methylreserpate was substituted for reserpine (Table III). The subsequent course of these patients indicates that carbethoxysyringoyl methylreserpate is as effective an adjunct to other antihypertensive agents as is reserpine.

TABLE III.—EVALUATION OF CARBETHOXYSYRINGOYL METHYLRESERPATE AS AN ADJUNCT TO OTHER ANTIHYPERTENSIVE AGENTS

Time on Drug (Mos.)	Change in Status	Control of Hypertension	Blood Pressure on Apresoline and Reserpine	Blood Pressure on Carbethoxysyringoyl Methylreserpate
Previously Treated with Hydralazine and Reserpine				
6	Improved	Good	200/100	180/80
2	Unchanged	Poor	200/120	212/112
3	Worse	Poor	170/100	170/120
Previously Treated with Ganglionic Blocking Agents and Reserpine				
6	Improved	Good	260/110	120/80
5	Unchanged	Fair	200/100	170/110

TABLE IV.—SIDE-EFFECTS OF PATIENTS TREATED WITH CARBETHOXYSYRINGOYL METHYLRESERPATE

Side-Effects	Number of Patients
Headache	2
Nervousness	1
Nasal congestion	1
Insomnia	1
Palpitation of heart	1
Total	6

TABLE V.—TOTAL DAILY DOSE OF CARBETHOXYSYRINGOYL METHYLRESERPATE IN PATIENTS UNDER GOOD AND FAIR CONTROL

Number of Patients	Total Daily Dose (mg.)
1	0.5
2	0.75
3	1
1	1.5
6	2
3	3
1	6

One patient previously treated with ganglionic blocking agents was placed on carbethoxysyringoyl methylreserpate. After two and one-half months the patient's status was unchanged and his hypertension was under poor control.

One patient previously treated with Thorazine was placed on carbethoxysyringoyl methylreserpate. During the five and one-half months he was followed his status improved and his hypertension was under

TABLE VI.—Cumulative Results of All Medications Used

Previous Medication	Improved	Unchanged	Worse	Control			Total Number of Patients
				Good	Fair	Poor	
Reserpine	2	6	2	8	2	0	10
Reserpine-N-oxide	1	2	0	3	0	0	3
Thorazine	1	0	0	1	0	0	1
Ganglionic blocking agents	0	1	. .	. .	. .	1	1
Ganglionic blocking agent and reserpine	1	1	. .	1	1	. .	2
Hydralazine and reserpine	1	1	1	1	0	2	3
Total	6	11	3	14	3	3	20

good control. Six of the 20 patients were noted to have side-effects (Table IV). None of these side-effects were severe enough to necessitate discontinuance of the medication.

Seventeen patients were either under good or fair control. The medication requirements are shown in Table V. Most of the patients were controlled by a total daily dose ranging from 0.75 to 3 mg. The most frequently used dose was 2 mg. per day.

Table VI summarizes the findings of this study. Carbethoxysyringoyl methylreserpate has been found to be as effective as reserpine in controlling hypertension both alone and in combination with ganglionic blocking agents and hydralazine.

Summary

1. Carbethyoxysyringoyl methylreserpate is as effective as reserpine in controlling hypertension both alone and in combination with ganglionic blocking agents and hydralazine.

2. Of the twenty patients studied, six had mild side-effects, none of which were severe enough to cause the drug to be discontinued. This compares favorably with reserpine.

3. In those patients whose hypertension was controlled by carbethoxysyringoyl methylreserpate, the dose varied from 0.5 to 6 mg. per day, the greatest number of patients being controlled by 2 mg. per day.

4. In this series we encountered no patients who had previously suffered either emotional depression or increased gastric acidity on reserpine. None of our patients exhibited this on carbethoxysyringoyl methylreserpate therapy.

826 Central Avenue

The house of every one is to him his castle and fortress, as well for his defence against injury and violence, as for his repose.—Sir Edward Coke

The Analytic Orientation in Psychiatry

JOSEPH H. TOOMEY, M.D., NEW YORK CITY

PSYCHIATRY is a specialty that has never fully succeeded in overcoming the problem it has always faced of achieving basic integration with the body of medicine as a whole. It can be defined as the problem, with inescapable philosophic implications, of finding a way to interpret physical and mental phenomena in terms common to both phenomenal modalities. To do this, something essential in somatic medicine and something identical in psychiatry's own basic structure must be found—something that might even seem to be a third modality. This is an observation that requires consideration at the very outset of all study undertaken to establish a valid interpretation of the phenomena of mental disorder. The fact that one is inevitably lead into philosophic reflection must be faced by any physician who intends to obtain a thoroughgoing acquaintance with psychiatry, especially in its analytic orientation. Psychoanalysis in its essential character presents an issue in methodology, and because of this rather forbidding aspect of it, its doctrine and technics are no doubt often accepted too uncritically.

Psychiatry is the only medical specialty in which patients may be treated by lay practitioners without the issue so created being met effectively by an exposition which goes to its philosophic roots. The cue for undertaking such an exposition seems to have been given by Freud himself when he said: "We do not want to see psychoanalysis swallowed up by medicine, and then find its last resting place in textbooks on psychiatry."[1] One could say that he dared to make this challenging statement because he knew how inclined the average physician is to avoid becoming preoccupied with basic medical theory.

The history of psychiatry, since the time when mental disorder came to be recognized generally as something to be dealt with in the medical field, is peculiarly instructive in what it shows of the specialty's efforts to resolve the dilemma that has continued to vex it. It presents, of course, among other things, a story of attempts at a systematic interpretation of signs and symptoms, often involving much philosophic thinking, and it pictures a succession, in fairly large variety, of therapeutic attacks that, while employing physical measures and modifications of the patient's somatic state and environment, have not possessed much systematic coherence and continuity. The measures have not been reflections of any definite rationale that derived from what could be called, if it were better known, the morbid physiology of mental disorder. The picture is as evident today in the use of such empiric therapy as, for instance, insulin coma, electroshock, and psychosurgery as it was in the use of such earlier measures as trepanation, blood transfusions, bleeding, purgation, drugging with hellbore, surgery of the gonads, and eradication of foci of infection.

But what does not seem to be perceived in its proper significance in psychiatric history, as commonly compiled and interpreted, is the occurrence at times of a kind of vitalism employed as a medical interpretation of mental disorder. It would be natural to look for evidence of its occurrence, considering the not entirely negligible part played by vitalistic theories in the history of somatic medicine. Those theories, it may be observed, attempted to show how the natural regenerative processes of the body, activated by the healing power of nature, entered into the picture of disease.

That aspect of morbidity is not, as such, given much overt emphasis in general medical practice nowadays. Its existence and effectiveness are mostly taken for granted. As yet, biology has not achieved much of an understanding of the essentials of the regenerative process that medicine can employ actively. That process, as we know, is a phase of the genetic movement in life that also is seen in such manifestations as evolution, ontogenetic development, and sexual activity. It has both physical and psychologic aspects, and that its principle and intrinsic dynamic pattern must necessarily be the same in both aspects may be postulated as the consequence of the obvious natural unity of the living organism. The nature of the movement, which really is the ultimate distinguishing characteristic of life everywhere, is still the central and pivotal problem of biology. Any exposition that professes to explain the intrinsic mechanism of the evolution of life in general, or of any species of living thing, or of any individual from conception to maturity, is claiming to reflect an understanding of the genetic process.

It may be truly said that any medical discipline which finds that the foundation of its structure must rest on a substantial interpretation of the genetic movement is destined to have an exacting and protracted career of speculation and research. Such a discipline can be said to have a distinctive orientation. In its search for terms common to the physical and psychic nature of the patient, much of present-day psychiatry, in agreement with some earlier observations in its field, has come to the conclusion that the finding of these terms requires such an orientation. This conclusion at once introduces philosophic preoccupations that one does not find distracting attention in any other medical specialty, except in oncology or in general medicine. The fact that the genetic orientation is basic in psychiatry is another consideration that enters into the problem of this specialty's integration with the body of medicine.

The question of what has happened to the genetic equilibrium of the organism inevitably introduces itself in the contemplation of neoplastic disease. The study of the carcinogenic process may concentrate on one of two main aspects of the phenomenon, the physiologic or the genetic, even if the two are not mutually exclusive. The shape that such a study is bound to take can be seen to have a close resemblance to what we would naturally expect to find presented by the structure of theoretic psychiatry even if that structure is so organized that, following Freud, it treats the genetic movement evident in the individual patient's life almost exclusively in terms of sexual activity. That structure, of course, offers to provide room for consideration of the morbid physiology of mental disease.

Genetic Movement in Psychiatry

When psychiatry speaks of its analytic orientation, it is speaking of the procedure it employs when it interprets and organizes its data as genetic phenomena and also employs a therapy consistent with it. It professes, perhaps more by implication than by plain assertion, that it has the true basic formula of the genetic movement that goes on in the mental life of the individual, and hence in his underlying physical functions as well. In so doing it departs somewhat from the relatively temperate position that oncology assumes in its understanding of the genetic process. While that specialty observes facts that may be helpful to biology in its study of the genetic movement, it does not tend to run ahead of that science and claim to have developed the formula that biology still seeks. Analytic psychiatry has the unique distinction, as a medical discipline, of erecting its structure on the basis of one of several speculative and controversial interpretations of the very essence of all vital phenomena. To assess its validity in a comprehensive way it must be examined in comparison with what has arisen out of the other modes of interpretation. It must be examined in its entirety and with adequate regard for its roots.

The position that analytically oriented psychiatry is seen to take in assuming, as it does, that it has a correct formulation of the genetic movement in life has presented psychiatry with a major issue which generally has been only vaguely recognized and understood. The fact that this kind of orientation is declared to be analytic indicates that the genetic movement is held to be susceptible to analysis which, as we know, is a reductive process in whatever category of phenomena it is employed. To employ it in a psychiatry that has declared that psychopathology is a disorder of the genetic nature of the patient is to imply that the genetic movement can be disintegrated methodically along the same lines, in reverse, as it followed in its original integrative course, that is, in a way that permits the course that the naturally developing movement followed originally, level by level, to be seen in reverse; and not this alone, but to imply also the possibility of therapeutically managing the play of the genetic dynamic and organizing factors along that course in its original direction or in reverse.

The radical position thus assumed is not biologically sound in fact or in principle. At the recent fifteenth International Congress of Zoology, the eminent biologist Sir Julian Huxley defined evolution as "a natural process of irreversible change which generates novelty, variety and increase in organization." The process in the world of living things as a whole, in the human race, or in the life of the individual cannot undergo inversion and retrace backwards the path that it has once traversed. An organic structure that has reached some level of maturity in its development, and that then undergoes decomposition, comes apart like a decomposing fabricated structure; it does not regress as does, for example, in illusion, a plant pictured cinemagraphically whose growth and development, in external aspect, is at first portrayed as a progressive movement, and is then shown in reverse in a film that is run backward. Analysis is not the means by which the historically developed product of the genetic movement, in either physical or psychic form, may be unravelled so that the intrinsic nature of the genetic operations is revealed. As Bergson says: "It is not by dividing the evolved that we shall reach the principle of that which evolves. It is not by recomposing the evolved with itself that we shall reproduce the evolution of which it is the term."[2]

An adequate understanding of the orientation problem in psychiatry requires, among other things, recognition of the significance of the distinction, as given a place in scientific doctrine, between the biologic process that is productive of a matured organic structure or a configuration of vital activity and the functions which the structure or configuration, as product, performs repetitively. The process is genetic and presents itself in the prospective and retrospective dimensions; the functioning of the completed structure or configuration is physiologic and is perceived in cross section. The process is historic in its nature; the functioning, as a physiologic phenomenon, is not. A different mode of understanding the one, as compared to the other, is necessary. Yet, while noting this distinction, which scientific methodology introduces, it is important not to lose sight of the clearly obvious natural fact that as a living organism grows and develops and matures in structure and constitution, its basic physiologic functions undergo parallel development and are operative and continue to be performed in almost every stage of the genetic process. On the other hand, a machine, in any case, must be constructed completely before it can be set in operation. Characteristically, it can be disintegrated analytically and reconstructed synthetically without any concern being given to its history.

What biology knows as the organism's genetic system comes to our attention when the distinction between genetic process and genetic product is given consideration. A feature of that system is the functional relation between the comparatively undifferentiated germinal tissue of the gonads and the highly differentiated matured tissues of the organism as a whole. The whole organism is represented in the germinal tissue, as is evident in the fact of heredity. The contrast between the two is noted when biology distinguishes somatoplasm from germ plasm in its exposition of the evolutionary process, the germ plasm seeming to pass on from generation to generation like a flowing stream depositing somatic structures as it proceeds. The way in which the germinal and somatic tissues maintain a kind of continuity and mutually affect each other is obscure. However, we can see it manifested clinically, for instance, in regenerative repair of tissue and in neoplastic disease.

This is evident when we are dealing with the individual as a physiologic object. When we deal with him as a living entity, an organic whole, managing his own existence in toto in some degree of conformity with the requirements of his physical and social environment and even of something more subtle that he perceives as a reality giving ultimate significance to his life, we have to try to understand him in terms other than physiologic: in terms of the biologic order in which occur the phenomena with which ecology and bionomics are concerned. Then we are dealing with the existential aspect of the individual, as biography does, and its peculiar concern with this aspect is another thing which distinguishes psychiatry from somatic medicine as such.

Existential Structure

It is possible to think of the existential aspect of the living individual as having a structure and as being organized in some way comparable to the way the body has been organized. Thus, in that aspect, the living being can be seen to have a developmental career. A dynamic psychiatry would need to embody such an interpretation as a basic postulate. Analytically oriented psychiatry has done so. It presents us with a description of the mechanism underlying the developmental career of the individual in his existential aspect. It thus professes to have an understanding of the genetic movement in this aspect of its manifestation. Here it sees that movement manifested characteristically in its sexual mode. The developmental process is interpreted, accordingly, in terms of the diffusion beyond the area of personal genital activity, or, conversely, of the concentration within that area of a specific fluid biologic agency known as the libido. This agency may be thought of as capable of sensitizing or energizing or otherwise conditioning bodily parts, or the complexes of the existential activity of the individual, or of being withdrawn from them. As the Freudians say, the libido may be genitofugal or genitopetal, the latter movement bringing about "genital primacy" as the normal and mature condition.

The resemblance of this portrayal of genetic activity to the more or less theoretic picture that biology gives us of the modus operandi of ontogenesis and of the regenerative process is fairly obvious, but there is a notable difference to be found in the comparison. Those biologic phenomena are unidirectional and progressive and cannot become reversible and retrogressive. Whatever the vital agency may be that effects differentiation and brings the body to maturity and brings about the restoration of damaged parts, it does not, as the libido is said to do, move backward and forward along the developmental pathway between the infantile and the mature in a fluctuating way or otherwise, withdrawing its influence and effect sometimes from the mature developments which it had already brought into being. Biology does not know of any real process of involution in the individual, somatically or existentially manifested. The genetic work of the vital agency is a commonly known empirical fact of universal human experience. Freud's idea of genetic reversibility, on the other hand, seems to have been derived from Plato's *Timeus.*

The category of vital phenomena in which the genetic process is manifested in full play seems to have always attracted explorers and interpreters who have sought widely, beyond as well as within the medical field, to organize their observations so that they present a systematic exposition of the way the process works. As is well known, such an exposition tends to place itself in some one of the few typical positions which, in the nature of things, are the only ones from which ultimately all phenomena can be viewed philosophically. The extreme antitheses recognized universally that are presented to us in such pairs of opposites as beginning and end, as subjective and objective, and even, according to some doctrines, as male and female, and the intermediating synthesis that purports to neutralize and reconcile those antitheses are in the principal ideologic positions. Analytic psychiatry may be seen to have undertaken to establish itself in one of those positions.

The conviction with which the psychoanalytic doctrine is now being applied in psychiatry should tempt perceptive and sceptical physicians to compare that doctrine critically, in terms of its orientation, to the classic examples offered by the several ideologies expounding the genetic movement that are found in the history of scientific and philosophic thinking. The three types of ideology that are most representative of ultimate orientations, and which correspond to the three positions already considered, are all that need concern us here briefly. Each one from its own standpoint gives us a more or less systematized exposition of the process that, in its view, is responsible for the origin and development, in continuity of the human being, of the whole order of living things, and even of the cosmos in totality. Each one has attempted to be exhaustive and to embrace the whole area of reality included by each one of the other two. Two of them, whose positions are at opposite extremes, are in agreement in declaring that the creation of the world was completed long ago and the phenomena that we identify as genetic are but rearrangements of what already exists, or a degradation of it, and are not manifestations of creativity in any true sense.

Ideologies

Of the three types of ideology, the one which is most familiar to us, on account of its wide dissemination in our culture, is naturalism. As is well known, it is the one which tries to show us how, in the particular developmental order to which it sees all living things belonging, in a world whose total energy is undergoing irreversible degradation, living things originate and differentiate in ascending evolutional levels out of inanimate materiality. Although the living things, as they take their places in the evolutional hierarchy, are the matured end-products of some genetic process, naturalism sees the higher and lower ones linked in genetic continuity as if between one species and another no interruption and no cessation of the genetic movement had occurred in the maturing process. We are told then that the pattern that is formed by that arrangement of matured adult living things is the dynamic pattern of the genetic process itself. The doctrine that the embryologic and maturing development of the individual patterns itself as a recapitulation of the kind of evolutional structure thus created follows easily. That doctrine, which had a place in a naturalistic genetic psychology before the advent of Freudianism, has been given a crucial place in psychoanalysis, although it has been largely discredited in modern biology.[3]

Another exposition of the genetic movement is presented in the ideology whose position is diametrically opposite to naturalism, and which teaches that living things in essence owe their origin to a reality that is psychologic and spiritual in its nature. It is the formulation of the idealistic type of ideology with which theosophies such as Gnosticism and Neoplatonism are identified. Especially in the Gnostic version—which, incidentally, has contributed much that is meaningful in the psychiatric system of Freud's former associate, Jung—do we find an extensively elaborated process of materialization described, a process of reversible creativity having a phase of degradation and a counterphase of progressive return to spiritual perfection.

The book has not been written which presents a full systematic treatment historically of the modes of understanding and dealing with the genetic movement in life that mankind has employed. It may be reasonably assumed that such treatment would not take as its starting point either the naturalistic or the idealistic position, but rather the intermediate position that can be called vitalistic in the sense that it is identified with empirical life as such rather than with something beyond it in one or the other direction. It is probable that such treatment initially would not discover that genetic phenomena had been dealt with in a scientific way but rather in the manner that is characteristic of philosophy, religion, and mythology.

Interpretations of Genetic Process

As a matter of fact the grounds for such treatment of the genetic movement are almost universally evident in the mores of ancient, oriental, and primitive cultures. In those cultures the genetic movement, seen as creativity, has been recognized as a central theme of human life and the essential object of religious interest. In those cultures the intermediate factor that is seen to link the two areas of existence in which naturalism and idealism respectively now take their positions is most vital and is sacred. The linkage is commonly regarded as sexual and erotic and may be represented as marriage. Thus, as if by instinct or intuition, and without systematic doctrinal formulation, there can be found in practice in those cultures an interpretation of the genetic process that, in principle, seems to be appropriate.

We come to essays aimed at systematic doctrinal formulation of the genetic process, deliberately undertaken, when we encounter the romanticist nature-philosophers of the early nineteenth century. Their views tend to be vitalistic. With some of them the theory of evolution began to assume clearer form. Their conception of what is organic may be comprehensive enough to include even the cosmos, and to them the sexual and erotic may possess cosmic significance. To them all that is seems to be participating in an irreversible creative movement.

Of this school of philosophy the teachings of Hegel may be regarded as presenting probably the best example of a systematized formulation of the genetic developmental process, observed academically and from the intermediate position. As is fairly well known, the formulation applies not only to man and his culture but also even to all that exists in the universe. It too, like its remote ideologic antecedents, sees two radically opposed ultimate kinds of reality neutralized by a third, evident as an intermediating factor, thus giving us the dialectic scheme of thesis, antithesis, and synthesis to explain developmental dynamics. The genetic movement thus is said to have a mechanism whose pattern is identical with the working pattern of thought of a supreme mind.

The potentiality of speculative and dogmatic interpretation of the genetic movement for creating troublesome and even tragic problems in social and national relations suggest the importance of considering the effects of such an interpretation when it is applied to the body and life of the individual after, as well as before, he becomes a patient. In the modern world the only important and influential ideologic development besides Freudianism that professes to embody a true dynamic interpretation of the genetic process is the transformed version of Hegel's philosophy that is known as Marxism—a transformation in which the tripartite dialectic process continues to be the central feature of the developmental system it expounds. Unlike Freudianism, however, Marxism does not teach that the genetic process is reversible.

Conclusions

The upsurge of Freudianism can be regarded as a kind of evidence of the urgently growing need in Western culture of a full understanding of the genetic process which, first of all, biology must be expected to provide. The same may be said of the incursion of other interpretations which seek to anticipate the biologic solution and even prescribe the orientation of biology and modify our cultural patterns prematurely. It is an interesting fact that in both Freudianism and Marxism the formulation of the genetic process is initially a psychologic one. In the latter a pattern of rational thinking which for Hegel had divine origin, is discovered by Marx to exist in physical nature as the dynamic pattern of the initial genetic process that is manifested in all subsequent evolutional progress, from the inanimate physical world to the minds of men and presumably even to those minds which reject the doctrine.[4]

No substantial extension of the formulation to the somatic sphere that adds to our understanding of embryology, maturation, and regeneration has been achieved by the adherents of either school. Nor have they given systematic physiology any enrichment. Freud, on his part, declared that psychoanalysis had to operate with essentially psychologic conceptions and "keep itself clear of assumptions of anatomical, chemical or physiological nature alien to itself."[5] In taking this position he evades engagement with the very field of organic science in which analysis is a quite valid procedure.

With its bent toward naturalism, analytically oriented psychiatry takes its position initially in the area of medical jurisdiction where the genetic healing power of nature comes into play. It is the area where, in comparison with its counterpart, the physiologic area, medical technology is least rational, specific, and systematic. It is the area where cultism often seeks to establish itself. Psychoanalysis in this position could, in a sense, be regarded as sponsoring a kind of "nature-cure," a therapy directed to the management of the biologic *natura naturans* as Freud implicitly conceived it.

In Western culture such a development should not be unexpected, or regarded as inappropriate or untimely. The genetic movement, in all its phases in human life as manifested in the individual and in mankind as a whole, has been for a long time, of all life's features, most conspicuously and relentlessly, and perhaps in a sense quite logically, the victim of our culture's technologic organization and operations. Inevitably it will be facing an ever-growing threat of still more damaging effects. Needless to say, it seems to be of prime importance for medicine as a whole to become as thoroughly acquainted as possible with the true nature of the genetic process and to improve its ability to identify illusory versions of it. The quest for an understanding of it leads to the deepest roots of medicine and ultimately even into the problem of life's origin. It does not seem to be the task of any one medical specialty.

Summary

Consideration of the question of orientation in psychiatry brings to attention the several ways in which this specialty tends, in principle, to distinguish itself from the main body of medicine, although, in practice, it has employed many kinds of physical procedure. The tendency introduces philosophic issues that are not commonly evident in somatic medicine as a whole, nor in any other specialty except one. The main issue is one of methodology and of the validity of the mode of interpretation used by psychiatry in its understanding of genetic phenomena as contrasted with the physiologic.

Dealing with motivation and trying to

trace out its dynamics, psychiatry, unlike somatic medicine, finds it should formulate its observations in genetic terms. It thus acquires an orientation and a specific one. In somatic medicine generally, however, little occasion seems to exist for any orientation to be specified and the genetic process, although its relevance is recognized, is not dealt with systematically. Somatic medicine does not claim to understand its over-all mechanism in the disease picture.

The extensive psychoanalytic movement in psychiatry offers this specialty an orientation that is said to be justified by an allegedly valid formulation of the genetic process, especially as shown in its psychosexual manifestations, although the formulation, paradoxically, is reached by analytic procedure which, in principle, is typically appropriate for physiologic processes. There is no known correspondence between the genetic process thus formulated and the genetic process commonly manifested histologically. The formulation disregards the limitations encountered by biology in its study of the genetic problem and takes a place alongside other historic essays at formulating the genetic processes conclusively that have been made by philosophic and kindred ideologies. Nevertheless, such essays are definitely in order because of the mounting stress to which the genetic process is exposed in Western culture.

5424 Arlington Avenue

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Cool Baths as an Adjunct in the Treatment of Multiple Sclerosis

Seven of 10 patients with chronic multiple sclerosis appeared to benefit from ten-minute cool baths (80 F.) given daily during a three-month initial observation period. Three of the 10 patients, the authors report, showed an immediate response to this simple therapy in improved ability to walk. Four others showed minor improvement in their ability to stand erect at parallel bars and seemed to have less heaviness in the lower extremities. Although 3 exhibited no outward evidence of improvement, they said they felt more relaxed. This feeling of relaxation and reduced muscle spasm on standing or sitting was common to the entire group of patients.

In reporting these results in the Spring, 1959 issue of the *Quarterly Bulletin of the Northwestern University Medical School,* the authors do not overlook the possibility of spontaneous remissions, but they feel that improvement of 7 out of 10 patients is statistically better than one could reasonably expect on the basis of natural remission alone.—*Ben L. Boynton, M.D., P. M. Garramone, M.D., and Josephine Buca, B.S., R.P.T., Northwestern University and Oak Forest Hospitals, Chicago, Illinois*

Long-Term Therapy of Acne with Antibiotics

LAWRENCE FRANK, M.D., AND CONRAD STRITZLER, M.D., BROOKLYN, NEW YORK

(From the Division of Dermatology and Syphilology, Department of Medicine, State University of New York, College of Medicine at New York City)

In 1957 and 1958 the authors published two papers[1,2] demonstrating the effectiveness of broad-spectrum antibiotics in a series of 585 patients with acne. This work has been continued and it is pertinent now to report our results in a group of acne patients who have been on intermittent long-term therapy (six months or longer) with a broad-spectrum antibiotic. Some of the problems posed three years ago when the effectiveness of antibiotics was demonstrated were as follows: (1) What is a practical maintenance dose taking into consideration toxicity on long-term therapy, clinical response, and expense of medication? (2) What is the possibility of a decreasing therapeutic response due to the development of antibiotic resistant strain? (3) Does long-term therapy shed any light on whether the effects of antibiotics in acne are direct or indirect?

Methods and Materials

Of a large group of patients with papular, pustular, and cystic acne, 238 patients were treated with oleandomycin* for a minimal period of six months. Most patients were on this routine for longer periods. A group of 12 patients have been on continued therapy except for periodic interruptions for two years. The daily dosage has been 250 mg. Oleandomycin was chosen because the organism associated with acne is most likely Micrococcus pyogenes. Compound antibiotics were not desired. Novobiocin had produced a higher incidence of reactions when comparable larger doses were used, and oleandomycin showed little cross resistance, particularly to erythromycin-resistant organisms.[3] Because it was not practical to treat most patients with antibiotics alone, detergent soaps, resorcinol, sulphur-tinted shake lotions, and salicylic acid tinctures were prescribed as topical adjunctive therapy. Initially patients were started with 250 mg. of oleandomycin four times a day. The dose was decreased daily by 250 mg. until on the fourth day they were taking a maintenance dose of 250 mg. daily. This was continued for two months. After two months antibiotic therapy was discontinued and the patients were observed monthly. Those patients who had an exacerbation of acne were again given a two months course of oleandomycin daily. Patients included in this series were those who had had a recurrence of exacerbation when oleandomycin was discontinued and second, third, fourth, or more courses of oleandomycin were required. A large group of patients not included in this series responded well and did not require continued treatment. Many patients were lost from observation as the study continued, and only those patients whom we could follow for at least one month after discontinuance of antibiotics were included in this study. The interrupted antibiotic regimen while on the same topical routine served as an excellent control to evaluate the effects of antibiotic therapy.

Therapy

After two courses of two months each of 250 mg. of oleandomycin daily, 72 per cent of 238 patients had an exacerbation (Table I) of their acne when oleandomycin was discontinued. Patients with papular, pustular, and cystic acne responded in a similar fashion both to the initiation and to the

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* Triacetyloleandomycin (Tao) was substituted when it became available because of demonstrated higher blood levels obtainable.

TABLE I.—RESPONSE OF ACNE PATIENTS BENEFITED BY ANTIBIOTICS TO WITHDRAWAL AND READMINISTRATION OF ANTIBIOTICS

Duration of Therapy (Months)	Number of Patients Treated	Patients Exacerbating when Antibiotics Discontinued (Per Cent)	Exacerbated Patients Responding when Antibiotics Restarted (Per Cent)
6	238	72	86
12	91	64	78
18	30	80	83
24	12	84	92

continuance of antibiotic therapy. Relapses were higher in those groups requiring antibiotic therapy for one year and for two years (80 per cent and 84 per cent respectively). Infrequent and irregular observations of some of the patients who remained well one month after discontinuance of therapy showed that many of these patients had exacerbations at a later date and short courses of antibiotics were requested for engagements, weddings, and college interviews. Toxic reactions to a daily dose of 250 mg. were minimal. Three patients developed a morbilliform eruption requiring the discontinuance of therapy. Moniliasis was not observed in any of the patients. Gastrointestinal disturbances, which occurred in a few patients at the onset of therapy, subsided when a maintenance dose of 250 mg. was taken. No hematologic complications developed.

Comments

Studies on a group of patients requiring prolonged courses of antibiotics reveal that these patients are very responsive to antibiotics but that the relapse rate is high when antibiotics are discontinued. It is our impression from comparative studies done on patients requiring short-term and extended therapy for acne that many patients respond and remain well after keratolytics and proper face hygiene habits are instituted. However, a large group have intermittent exacerbations despite local therapy, and this group is very responsive to antibiotic therapy.

The antibiotics are mainly palliative or prophylactic. Small doses are adequate in preventing exacerbations. The analogy is similar to the use of low blood levels of penicillin or Terramycin for the prophylaxis of rheumatic fever where the incidence of reinfection is markedly decreased with small dosage for extended periods. Studies demonstrating the same organism in the acne lesion and the throat of many patients may explain why suppression of the throat organism may be beneficial in the acne patient.

Bacteriologic culture and sensitivity studies done in the earlier studies[2] demonstrated that improvement was just as great in those patients harboring a resistant strain at the onset of therapy as in those who developed a resistant strain as treatment continued. In fact, the group who had required antibiotics for extensive periods of time was more responsive to antibiotics than was a group of patients at the time of initial dosage with antibiotics. This suggests that many acne patients were prone to reinfection and that sensitivity tests do not mirror the in vivo response.

The question as to whether long-term antibiotic therapy is justified in patients with acne is pertinent. Many patients with severe acne requiring long-term antibiotic therapy were tense and emotionally maladjusted. It is not easy to separate the cause from the effect here, but certainly a severe acne in a sensitive individual in this age group can be extremely traumatic. On the other hand, the increase in antibiotic resistant strains of bacteria and the epidemic of resistant staphylococcal infections in our hospitals today make it mandatory that antibiotics be used with great discrimination. Despite the very low incidence of toxicity to this small maintenance dose, the over-all effect of antibiotic use must be considered. It is our belief that with proper selection of patients, short courses of antibiotics are effective and indicated, and prolonged courses of antibiotics are justified where otherwise considerable scarring, either physical or emotional, would result.

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Air Conditioning in Dermatology

MILTON REISCH, M.D., NEW YORK CITY

ALTHOUGH the commercial air conditioner we know today was devised fifty-seven years ago* for use in the printing industry, it has been found to be of great value in the management of many skin diseases caused or aggravated by an atmosphere of high humidity.

For centuries mankind attempted to keep cool during the summer with a variety of devices. Roman emperors ordered double walls for their suburban villas and had the hollow spaces packed with ice brought down from the mountains. Leonardo Da Vinci devised a water-powered 2-ton mechanical fan for a patron. Benjamin Franklin conducted experiments in cooling by evaporation.

Combinations of fans and ice were used throughout the nineteenth century for cooling the Houses of Parliament in Great Britain and in Hungary; by Dr. John G. Gorrie of South Carolina, who invented an ice-making machine; by Alexander Graham Bell who installed a system in his Washington, D. C., home; by Navy surgeons attending the dying President Garfield; and by the managements of Wallach's Theatre and of Carnegie Hall in New York.

The air conditioning of today is a combination of controlled temperature, humidity, air circulation, and air purification.

Ten years ago, while serving in the Army of Occupation in Japan where, in the summer, the temperature ranged in the 80's, with humidity over 90 per cent, I had the opportunity of studying the effect of air conditioning on the rate of healing of various dermatoses. Patients with extensive eruptions such as exfoliative dermatitis following severe contact dermatitis required prolonged hospitalization, at times up to one hundred twenty days.

The engineering officer constructed an air conditioner using a refrigeration unit and a duct system. Three rooms were air conditioned—one above the other. Patients with severe miliaria and extensive eczemas were immediately benefited by relief of itching and a good night's rest, and the incidence of secondary infections such as folliculitis, impetigo contagiosa, and furunculosis was reduced. It was also noted after eight hours rest in an air-conditioned atmosphere that patients were comfortable during the day; the dermatoses might then become aggravated but not so severely and further relief was obtained on return to the air-conditioned room.

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* By Dr. Willis H. Carrier, July 17, 1902.

Physical factors as the cause or aggravation of many dermatoses are frequently neglected. In an average adult weighing 63 Kg. (138.6 pounds) the body surface approximates 1.8 square meters (22.5 square feet). This exposed surface of the skin is important in the maintenance of constant body temperature and accomplishes this physiologic function in the face of variable conditions.

In health the body temperature varies but little. Heat produced by metabolism usually exceeds that necessary to maintain normal body temperature. Excess heat is lost by radiation, convection, and evaporation of sweat. Since air is the common medium in which we live, its temperature, moisture content, and movement are the factors which most concern us. Constant adaptation is a basic requirement for life, yet the facility for adaptation varies in different persons under the same conditions. Sensations to heat and cold are due largely to changes in skin temperature. These alterations, occurring on exposure, are determined by the cutaneous blood circulation, the rate of perspiration, and the extent of the wetted surface. The skin temperature, rectal temperature, heart rate, and rate of perspiration increase directly with environmental temperature, relative humidity, and the amount and texture of clothing worn. Physiologists have confirmed that an elevation in humidity and temperature decreases the tolerance for physical activity.

Air movement is of prime importance to a sense of comfort. Though temperature and humidity remain constant, the increased passage of air over the body surface leads to an increased loss of heat by evaporation of perspiration and by convection from the surface. The amount of heat lost depends on the gradient between skin temperature and the surrounding environmental temperature.

Heat loss by evaporation is important in hot climates, especially when the environmental temperature approaches that of the skin, for at this point less heat is lost by convection and radiation. Thus, under such circumstances cooling of the body is largely carried on by evaporation heat loss. This type of heat dispersion is, therefore, of increasing importance in those climates in which the temperatures soar into and above 80 degrees and is directly dependent on humidity.

The ability of air to absorb moisture from a wetted surface is dependent on the degree of humidity. If the latter is low the cooling effect of dry air is great; should the moisture content of the air be high, its cooling effect will be slight. It is important, therefore, in climates where humidity tends to be above average, that air movement be maintained.

Sams,[1] in Miami, Florida, in a clinical study of four common dermatoses from January, 1933, to September, 1950, confirmed his impression of their increased frequency during the summer months when both temperature and humidity were at their highest points. Miliaria rubra had the most clear-cut seasonal incidence. Impetigo and ecthyma, more common in warm climates, also had their greatest incidence during the hot humid season. Patients with furuncules and carbuncles, as well as moniliasis and tinea versicolor, experienced exacerbations.

When the mean monthly temperature exceeds 80 degrees and the dew point exceeds 70 degrees,* and these are combined with a minimum or no air movement over an extended period, the skin will gradually lose its ability to withstand the constant exposure to excessive perspiration. The protective sebaceous film gradually diminishes and perspiration no longer collects at the openings of the sweat pores but is absorbed into the horny protecting layer. As a consequence, because of hydration, this layer becomes a better growth medium for both bacteria and fungi. The ensuing inflammatory reaction, with the edema caused by absorbed perspiration, induces closure of the sweat pores. This is followed by retention of sweat and rupture of the superficial portion of the sudoriferous ducts. If the pore closure is effected rapidly by an acute inflammatory reaction many superficial, clear vesicles (miliaria crystallina) appear. If, on the other hand, a low degree of inflammatory reaction is present, and there is sufficient time for proliferation of microorganisms, the common miliaria rubra (prickly heat) ensues.

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* Temperature at which condensation will occur if a given sample of air is cooled at constant pressure.

Should the inflammatory reaction following the miliariform dermatitis be sufficiently severe and long continued, a disturbance of the sweating mechanism ensues (anhidrosis due to fatigue of the sweat glands) which may persist for weeks. This type of temporary anhidrosis is rarely seen in civilian practice.[2]

Furunculosis, especially in children, has a definite predilection for the summer months. It is well known that any cutaneous disturbance of inflammatory nature may be followed by a series of furuncles owing, no doubt, to a lowered resistance to bacterial invasion. Furuncles often follow severe contact dermatitis and miliaria rubra also frequently precedes this follicular infection. The recent work of O'Brien[1] supports this view. In children the scalp and face are sites of election and this probably results from the higher skin temperature of these areas as contrasted with that of the extremities. Response to treatment is satisfactory but prevention of recurrence is a problem. Bulnois[1] recommended rest in the mountains. This dry mountain climate can now be simulated by air conditioning.

Acne varies in intensity with climatic condition. Several reports concern increased severity and incidence of cystic acne in tropical climates. Excessive perspiration and congestion of the skin of the face and forehead contribute to overactivity of the sebaceous glands; comedones form more quickly and become infected more readily.

Intertrigo occurring in localized areas between opposing surfaces and beneath clothing is a troublesome disturbance. If perspiration accumulates and cannot evaporate this leads to maceration and increased growth of bacteria and fungi in the secretions accumulating on the skin. Obese individuals and fat infants are often victims. Complete rest, wet compresses, and improved ventilation afford rapid relief.

Patients with generalized neurodermatitis, or generalized or universal exfoliative dermatitis, under conditions of high humidity are extremely uncomfortable, possibly because of compensatory hyperhidrosis in the surrounding areas.[3] With air conditioning, even for as short a period as eight hours, individuals are able to carry out their daily occupations.[4,5]

In pemphigus vulgaris, with almost total body involvement by bullae, crusts, and erosions, air conditioning has been of benefit by preventing fatigue of whatever sweat glands are not occluded. In the summer of 1957 I observed a patient who developed a temperature of 103 F. during a hot spell; with air conditioning his temperature returned to 99 F. and remained at this level.

Darier's disease (keratosis follicularis), which is aggravated by humidity of the summer, is benefited by vacationing in the mountains or by the use of air conditioning.

Summary

Air conditioning, by controlling humidity and temperature, produces an atmosphere that is beneficial as an adjunct in the treatment and prevention of various skin disorders and their complications.

104 East 40th Street, New York 16

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Fibrinogen Concentration in Pulmonary Diseases

J. M. SPITZER, M.D., F.A.C.P., NEW YORK CITY

(From the Department of Clinical Medicine, New York University, Post-Graduate Medical School)

The obvious prime function of respiration has naturally consumed the overwhelming attention of pulmonary physiologists and clinicians alike. Since this has been so, little attention has been given until recently to isolated investigations dealing with other interesting aspects of pulmonary function. While it is true that some of these functions are intimately related to gaseous exchange, there are still other functions which are entirely independent of ventilation.

Significant to the present study is the work of Goreczky and Kovats[1] who were able to demonstrate in 1942 that venous blood from the right heart of the dog contained a higher concentration of fibrinogen than the arterial blood obtained from the left heart. They concluded from their experiments that the lung was therefore the homeostatic organ responsible for regulating the fibrinogen level in the blood, Schulz,[2] however, in his monograph on fibrinogen published in 1953 was hesitant on the basis of his investigations to accept this conclusion completely. In 2 patients whom he studied the fibrinogen concentration of the peripheral blood remained unaltered for from two to five hours after the occurrence of a spontaneous pneumothorax. In subsequent determinations extending over many days no significant variation could be demonstrated nor was there any change noted following re-expansion of the lung. In one instance of bronchogenic carcinoma and in another case with lobar pneumonia, Schulz noted a marked increase in the fibrinogen concentration of the plasma, higher in venous than in arterial blood. From his data he was inclined to the opinion that the lung utilized or absorbed fibrinogen rather than homeostatically controlling its level in the blood. He was able to demonstrate that in various parenchymatous diseases of the lung an increased utilization of fibrinogen could be demonstrated to account for the increment in the plasma.

The fibrin-rich alveolar exudate characteristic of a lobar pneumonia would therefore appear to be an obvious explanation for the elevated plasma fibrinogen level. Why this should also be true in bronchogenic carcinoma, however, is not as apparent.

It is beyond the scope of the present study to answer directly the question concerning the specific role of the lung in controlling the plasma fibrinogen level. We sought rather to determine the alterations in the concentrations of fibrinogen in the blood in several different pulmonary disease states.

Method and Material

Initially the plasma fibrinogen concentrations were determined according to the method of Cullen and VanSlyke with the minor modifications suggested by Schulz.[2] The method is essentially a Kjeldahl determination of a fibrin clot. Subsequent determinations were made by utilizing the spectrophotometric clot density method of Losner *et al.*,[3] a modification of the Quick one-stage prothombin time test.

Six different pulmonary disease states were briefly investigated for possible alterations in the fibrinogen concentration in the plasma:

(1) pulmonary tuberculosis, (2) spontaneous pneumothorax, (3) bronchogenic carcinoma, (4) pulmonary embolism, (5) pulmonary infarction, and (6) lobar pneumonia.

Presented in part as a paper at the Annual Meeting of the Eastern Section, American Trudeau Society, Boston, Massachusetts, November 1, 1958.

Results

In 4 cases of cavitary pulmonary tuberculosis plasma fibrinogen determinations were performed at various stages of the disease. A positive sputum had been obtained in all 4 instances. In 1 case a partial bilateral pneumothorax was subsequently established. In a second case a pneumoperitoneum was the treatment of choice. The remaining 2 cases were given the benefit of bed rest along with streptomycin, paraminosalicylic acid, and isoniazid. At no time during the course of their diseases in the hospital, either before or after instituting therapy,were any abnormal plasma fibrinogen concentrations observed in these patients.

Fibrinogen levels were determined in 2 instances of spontaneously occurring pneumothorax within twenty-four hours of the accident. One patient was suffering his third episode having experienced an initial attack eight years previously while in the military service and again six months prior to the instance now studied. In neither case had there been any pre-existing nor demonstrable pulmonary disease. Both made an uneventful recovery under conservative management. The blood fibrinogen levels were found at the time of reexpansion to be essentially normal as they had been with the initial onset of the pneumothorax.

Two cases of bronchogenic carcinoma were investigated; the first patient had a migratory thrombophlebitis of the lower extremities. A large circumscribed density extending outward from the right hilum, as seen in the roentgenogram of his chest, was interpreted initially as representing a pulmonary infarct. It is interesting to note that at no time in the course of the disease was it possible to establish a predictable plasma prothrombin response to Coumadin sodium or dicumarol. Excision of a supraclavicular node finally established the true nature of the pulmonary lesion. This patient's plasma fibrinogen concentration remained elevated until his demise, with levels ranging from 720 mg. to 900 mg. per cent. The second patient with a right middle lobe neoplasm remains an enigma. A lobectomy was performed promptly. No hilar nodes were involved. The pathologists could not be certain of the cell type although they agreed that the tumor was probably primary in the lung. The patient is alive and well three years after surgery. At no time was his blood fibrinogen found elevated.

Three cases of pulmonary embolism secondary to peripheral venous thrombosis were studied. One patient was seen postpartum and the other 2 postoperatively. All 3 presented the classic symptoms of pulmonary embolism without evidence of infarction. In no case was there any elevation in the plasma fibrinogen concentration either during the illness or after recovery. Coumadin sodium was administered as an anticoagulant in each instance. Prothrombin levels were maintained between twenty-two and thirty seconds with a control time of fourteen seconds. The hypoprothrombinemia did not appear to alter the fibrinogen concentrations.

In 2 patients manifesting postoperative pulmonary infarction the fibrinogen concentration in the blood more than doubled during the first day of illness and slowly returned to normal over a period of three weeks. Fibrinogen levels had been established during the first postoperative day in a routine study. The first patient developed a pulmonary infarct of the right lower lobe on the sixth day following an appendectomy. A repeat fibrinogen determination was obtained that same day. The second patient suffered a pulmonary infarct of the right lower lobe eight days after a cholecystectomy. Blood was obtained for a second fibrinogen determination on the following day.

Four cases of uncomplicated lobar pneumonia were studied. The fibrinogen concentrations in the blood were uniformly elevated and required from four to eight weeks to return to normal levels. All 4 patients were over sixty-five years of age. Three made an unventful recovery while the fourth died in congestive heart failure secondary to arteriosclerotic heart disease one month following recovery from pneumonia.

Under investigation are the plasma fibrinogen levels at various intervals following pneumonectomy for different disease entities.

Comment

It has become increasingly apparent that the lung functions as an organ of homeostasis in controlling the leukocyte level of the circulating blood. Ambrus and coworkers[4] were able to show in their heart-lung preparations that circulating white blood cells in heparinized blood were rapidly removed by the dog lung. When a certain critical concentration is achieved, it is maintained unchanged and remains independent of the leukocyte count of the infused blood. This filtering capacity continues unaltered throughout the effective life of the heart-lung preparation.

A group of French investigators[5] rendered polymorphonuclear leukocytes fluorescent with quinacrine hydrochloride and studied their distribution in the body by obtaining blood and organ smears. They presented histologic evidence demonstrating that polymorphonuclear cells spend the greater part of their life spans outside the circulating blood stream in vascular pools. They considered that the lungs are the chief if not the only site where polymorphonuclear leukocytes are trapped during leukopenia.

Weisberger and others[6] showed that in rats large numbers of lymphocytes obtained from the lymphatic system failed to increase the number of circulating lymphocytes when injected intravascularly. They attributed this phenomenon to a specific and selective action on the part of the lungs. While the spleen and possibly also the liver and kidneys play a part in removing transfused lymphocytes, the lung is held chiefly responsible. The results of this investigation were similar to those observed when granulocytes obtained from the peritoneal cavity of rabbits were employed.

TABLE I.—NORMAL SERUM FIBRINOGEN VALUES: 200 to 400 MG. PER CENT

Diagnosis	Plasma Fibrinogen Concentration (mg. per cent)
Pulmonary tuberculosis	320
Pulmonary tuberculosis	490
Pulmonary tuberculosis	410
Pulmonary tuberculosis	415
Spontaneous pneumothorax	505
Spontaneous pneumothorax	505
Bronchogenic carcinoma	720 to 900
Bronchogenic carcinoma	440
Pulmonary embolism	385
Pulmonary embolism	415
Pulmonary embolism	495
Pulmonary infarction	805
Pulmonary infarction	880
Lobar pneumonia	790
Lobar pneumonia	310
Lobar pneumonia	880
Lobar pneumonia	805

The lung has been studied as a metabolic organ by the Germans[7,8] as well as the Japanese.[9] In this country Dannenberg and Smith[10] have investigated the proteolytic enzymes present in the lungs of rats and cattle. Of great interest has been the recent work of Udenfriend and associates[11] studying the serotonin concentration in the lungs of different animal species. Light has been thrown on the relationship between histamine and serotonin in elucidating the anaphylactic reaction in the lung.

It would appear from the data presented here that the findings established by Schulz are essentially correct. While there is a possibility that the lung functions as a homeostatic organ in controlling not only the leukocyte level but also the fibrinogen level of the blood in man, further study will be required before any definitive conclusions can be reached. In those pulmonary disease states which produce a fibrin-rich exudate the plasma fibrinogen level would appear to be generally elevated, declining again as the disease process subsides (Table I).

Summary

The fibrinogen concentration of the blood was investigated in various pulmonary diseases.

While no elevation in the plasma level could be determined in pulmonary tuberculosis, spontaneously occurring pneumothorax, and pulmonary embolism, significant alterations were found in pulmonary infarction, lobar pneumonia, and in 1 case of bronchogenic carcinoma.

The data suggesting that the lung functions as a homeostatic organ in regulating the concentration of circulating leukocytes have been briefly reviewed. The findings presented suggest that under certain circumstances the lung also exercises a homeostatic role in controlling the fibrinogen concentration of the blood.

123 East 83rd Street, New York 28

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Iatrogenic Staff Shoulders

Adjacent folds of the shoulder capsule tend to adhere to one another if the arm is held in adduction for any considerable period. Severe adhesions have been noted after as little as two or three weeks of persistent adduction. Unnecessary immobilization therefore is to be avoided insofar as possible. Although the affected areas must be held in a fixed position for healing, too often the entire arm and shoulder are immobilized for six weeks or longer in cases where the injury involves only the hand, or a forearm or elbow fracture. All patients with arm injuries but uninvolved shoulder joint should be specifically instructed to carry out exercises consisting of full shoulder motion at least two or three times daily.

In this paper, the authors report on 11 of 130 patients with hand or arm injuries seen over a period of one year at a rehabilitation center. These 11 patients, representing an incidence of about 8.5 per cent, all presented stiff shoulders although there was no known injury to the shoulder joint in any case. These stiff shoulders, the authors say, should have been prevented. Ten of them carried residual disability after therapy was completed, although in some cases therapy was prolonged for many days.—*Robert G. Thompson, M.D., and Edward L. Compere, M.D., Chicago, Illinois, Journal of the American Medical Association, February 28, 1959*

CLINICOPATHOLOGIC CONFERENCE

MONTEFIORE HOSPITAL

NEW YORK CITY

Conducted by HARRY M. ZIMMERMAN, M.D., *and*
NIKOS K. GONATAS, M.D.

SEPTEMBER 18, 1957

Discussed by LOUIS E. SILTZBACH, M.D.

Case History

A forty-two-year-old Negro housewife was admitted to Montefiore Hospital because of increasing dyspnea and a nonproductive cough of five months duration. Her illness had begun with low-grade fever, malaise, and a dry cough which lasted three days. But her recovery was not complete, for she noted increasing breathlessness and the cough did not disappear. After three months she expectorated some blood-streaked sputum on one occasion. At that time she was studied at another institution for one week. There, some rales were heard in both lungs, and a chest film was said to have shown congestion of the lung fields. Sputum and gastric specimens were later reported to be negative for acid-fast organisms on culture. In spite of her dyspnea, which was becoming disabling, she lost no weight, had no recurrence of fever, experienced no chest pain or ankle edema, and never noted enlargement of peripheral lymph nodes. There was no known exposure to noxious dust, chemicals, or fumes.

On examination there was some dyspnea, even at rest. The body temperature was normal, pulse 80 per minute, and respiratory rate 22 per minute with shallow excursions. The blood pressure was 140 mg. Hg systolic and 70 diastolic. The heart was of normal size, and there was a soft systolic murmur over the cardiac apex. The second pulmonic sound was markedly accentuated. The lungs showed widespread, persistent, and fine-crackling rales extending to the angle of the scapula bilaterally. The abdomen and extremities showed no remarkable findings. There was no clubbing of the digits. The laboratory examinations gave a normal hemogram and normal urinalysis findings. The serum globulin was elevated to 3.9 Gm. per cent and the serum albumin was 3.7 Gm. per cent. The serum calcium was 10.3 mg. per cent, phosphorus 4.5 mg. per cent, and alkaline phosphatase 3.1 Bodansky units. The Mantoux test showed a positive response to a 1:10,000 dilution of old tuberculin. The electrocardiographic tracings showed normal sinus rhythm. The chest roentgenograms showed bilateral streaking and a large density at the left hilar area.

A scalene fat-pad biopsy revealed normal lymph nodes. The Nickerson-Kveim intracutaneous test for sarcoidosis was read as microscopically positive on biopsy of the test site six weeks after injection of the testing suspension. With this finding the diagnosis of pulmonary sarcoidosis was accepted. After a four-month stay in the hospital the patient was discharged to the outpatient department. While she was at home for three weeks, the dyspnea and cough became considerably worse and a regimen of prednisone, 20 mg. daily, was instituted. In view of the positive tuberculin test result, 350 mg. of isoniazid were given along with the steroids. There was some improvement in the dyspnea on this regimen, but the patient was still disabled.

Over the next two years the patient had four more admissions to the hospital, lasting from a few days to two months. All of these were occasioned by an increase in her dyspnea and deterioration of her general condition. For various periods she remained fairly comfortable on doses as low as 10 mg. of prednisone daily, but often the dose would have to be increased to 30 mg. Lung function studies performed during one of her admissions showed a vital capacity of 1,100 cc. and a maximum breathing capacity of 68 L. per minute, indicating only moderate reduction of the ventilatory function. The arterial oxygen saturation at rest was reduced to 89 per cent and on exercise fell to 81 per cent. Diffusion studies were not performed. Nevertheless the finding of fairly well-maintained ventilatory function accompanied by oxygen unsaturation in the blood indicated a diffusion difficulty—the so-called alveolar-capillary block. It was also noted on the fourth admission, one year before her death, that she was developing evidence of cor pulmonale on serial electrocardiograms. Digoxin and occasional mercurial diuretics were administered with only fair results.

Her final admission occurred two years after her first admission. She now had frank signs of right-sided heart failure. There was marked tachycardia, cyanosis, and distended neck veins. The respiratory rate was 30 or more per minute and the respirations were shallow. The pulse rate was 130 and regular. The lungs still showed the persistent, bilateral fine basal rales without wheezing. The heart was enlarged to the right to percussion, and the liver could be felt 2 fingerbreadths below the right costal margin. The venous pressure was 210 mm. of water and the Decholin circulation time was increased to twenty-three seconds. The electrocardiogram now showed evidence of advanced cor pulmonale. She responded poorly to cardiotonics, diuretics, and corticosteroids. She expired with a picture of extreme pulmonary insufficiency and right-sided heart failure two and one-half years after the onset of dyspnea, which was the only significant symptom throughout the illness.

Discussion

DR. LOUIS E. SILTZBACH: The problem in diagnosis in this instance really centers on two of many conditions in which we find diffuse interstitial fibrosis of the lungs with the physiopathologic picture of the alveolar-capillary block. A well-maintained ventilatory function in a patient with tachypnea and oxygen unsaturation of the blood almost invariably indicates that a diffusion difficulty is the underlying physiologic defect. Two conditions were uppermost in our minds to explain the patient's illness: first, sarcoidosis and, second, idiopathic diffuse interstitial fibrosis of the lungs, sometimes designated as the Hamman-Rich syndrome. It is the latter diagnosis, not sarcoidosis, which I favor, although I am aware that without an open lung biopsy during life this differentiation can be most difficult, if not impossible, to make. At this point we can pretty well reject other conditions commonly resulting in the clinical picture which this patient presented. For example, lymphangitic carcinoma of the lung can almost be excluded in the absence of a detectable primary lesion in the stomach or elsewhere and on the basis of the long duration of the illness. Pneumonoconiosis and beryllium poisoning do not come into consideration since there is nothing to indicate occupational or other kinds of exposure. Scleroderma with systemic sclerosis is not considered likely in the absence of cutaneous, esophageal, or cardiac involvement, nor was Raynaud's phenomenon pres-

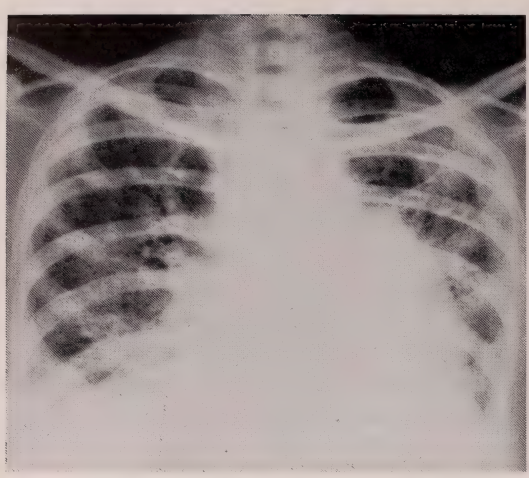

FIG. 1. Chest x-ray film, made eighteen months after clinical onset of dyspnea, showing recticulated appearance of lung fields with interspersed nodular densities, predominantly in the lower two-thirds portion; the main pulmonary artery is considerably enlarged, projecting from the midportion of the left border of the cardiac shadow.

ent. There had been no evidence of rheumatoid arthritis or any other collagen disease, nor did the bone survey reveal defects characteristic of Hand-Schüller-Christian disease. Tuberous sclerosis with lung changes was also rejected. Since the diagnosis in this case rests so strongly on the alterations of the lung fields observed in serial roentgenograms of the lungs, it would be well to have these films presented now.

DR. BERTA M. RUBINSTEIN: The admission film, dated January, 1955, is one made when the patient's dyspnea had been present for six months. There are diffuse fine reticular and nodular densities throughout both lungs. There is marked fullness of the left hilar shadow, and the main pulmonary artery segment is prominent. We felt that these findings were consistent with a diffuse interstitial process in the lungs, such as seen in many conditions which you have just heard enumerated. We thought the picture was compatible with that seen in certain cases of sarcoidosis although we did not exclude the possibility of some other underlying process. The films made of the gastrointestinal tract, kidneys, and bones disclosed no abnormality. In the succeeding lung films you will note that the nodular infiltrations become a little more prominent and the reticulation is coarser, but what is most striking is the tremendous enlargement which the main pulmonary artery has undergone in the two-year interval (Fig. 1). What is not clearly visible in the films but was most striking on sectional radiography of the lungs, performed during the last year of the patient's life, is the honeycombed cystic appearance of the lower lung fields.

DR. SILTZBACH: There are several reasons why I feel that the diagnosis of sarcoidosis is not entirely satisfactory to explain the patient's illness. You will recall that the patient's very early complaint, indeed the most consistent complaint, was dyspnea, first on exertion and then at rest. Patients with sarcoidosis generally have persistent dyspnea in two special situations. One situation sometimes arises in the relatively early phase of the illness when diffuse miliary nodulations of the lung may occur, producing an alveolar-capillary block. This miliary seeding of the lungs is often accompanied by a diffuse ground-glass appearance of the lung fields. Often, too, enlarged hilar and paratracheal nodes may still be present, although they may have receded when the miliary nodulations appear. This patient's lung fields showed no such picture of uniform miliary nodulation with veiling. In fact, as I have noted in about two dozen other cases of chronic interstitial fibrosis, one of the important clues to that diagnosis is the disparity between the paucity of roentgen changes in the lung fields and the marked dyspnea and tachypnea that these patients show. In contrast, patients with pulmonary sarcoidosis or some with advanced silicosis notoriously show surprisingly little clinical disability in the presence of substantially widespread lung densities. The second situation in which patients with pulmonary sarcoidosis complain of significant dyspnea occurs late in the disease when the epithelioid cell granulomas have fused and have undergone sclerosis and hyalinization, causing distortion of bronchi. Sometimes there are even strictures secondary to earlier granulomatous endobronchial involvement or persistent granulomas in smaller bronchi which add a ventilatory defect to an already existing diffusion impairment. The chest film at this late stage of pulmonary sarcoidosis is characterized by marked perihilar fibrosis with obstructive emphysema accompanied by bullae of uneven size which can sometimes inflate to the size of a lobe. We do not see this picture in the present case. Indeed, the cystic changes in the lungs described here are quite common findings in diffuse chronic idiopathic interstitial fibrosis, among other conditions. I believe that it is characteristic in this condition that the cysts remain small and never, at least in my experience, exceed 2 cm. in diameter. These cysts do not represent classic bullae. The bronchi and bronchioles are usually obstructed to the cystic areas. The usual patency of the small bronchi is reflected in the relatively well-maintained ventilatory function of the lungs in chronic diffuse idiopathic pulmonary fibrosis, which I have already mentioned.

I can add two more small points which seem to me consistent with idiopathic pulmonary fibrosis and against sarcoidosis as a diagnosis. I refer to the persistent fine rales at both bases, which are almost invariably present with idiopathic diffuse pulmonary fibrosis, and to the positive reaction to the intracutaneous tuberculin test in the strength of 1:10,000 old tuberculin. Usually tuberculin anergy is found in sarcoidosis; less than 10 per cent of 200 patients with sarcoidosis in a personal series showed a positive reaction to this strength of tuberculin.

The important obstacle to dismissing sarcoidosis as the diagnosis in this case is the positive response to the Nickerson-Kveim test. At this hospital the Nickerson-Kveim test is considered highly specific for sarcoidosis, with an incidence of false positive reactions of less than 2 per cent and correctly positive reactions in about 85 per cent of cases. Are we dealing here with a false positive reaction? We have just had occasion to re-examine the biopsied sites of the Nickerson-Kveim intracutaneous test areas with our pathologist, Dr. Zimmerman, and his staff. Using polarized light, as originally suggested by Dr. Joseph C. Ehrlich,*[1] the microscopic sections of the sites showed that what originally was considered to be a granuloma characteristic of the positive Nickerson-Kveim reaction was, in fact, a nonspecific foreign body granuloma containing many birefringent foreign bodies (Fig. 2). We have found that cotton lint can gain access to the testing suspensions during the processing of the test material and we now make every effort to avoid this. Other sources of foreign bodies may be particles of rubber forced into the solutions when the caps are needled for withdrawing suspensions. It is also conceivable that some of the birefringent materials may originate in the original sarcoid tissue from which the testing suspensions are made.

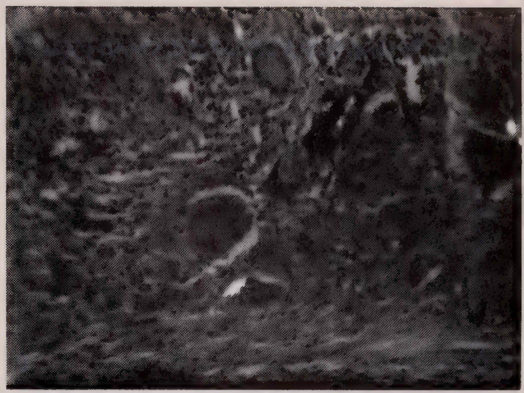

FIG. 2. Nickerson-Kveim test site, excised after six weeks and examined with partially polarized light. Two doubly refractile bodies which appear as bright elongated areas are visible within giant cells; several other giant cells and nonspecific inflammatory foci are also present. Microscopic diagnosis on review was foreign body granuloma, with the specimen giving a negative response to the Nickerson-Kveim test (× 280).

With a negative Nickerson-Kveim test reading, a major obstacle to the diagnosis of chronic diffuse interstitial fibrosis of the lung is removed. I would sum up by saying that the history and clinical course of this case, the roentgen pattern, the inconclusive re-

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* Director of Laboratories, Lebanon Hospital, Bronx, New York.

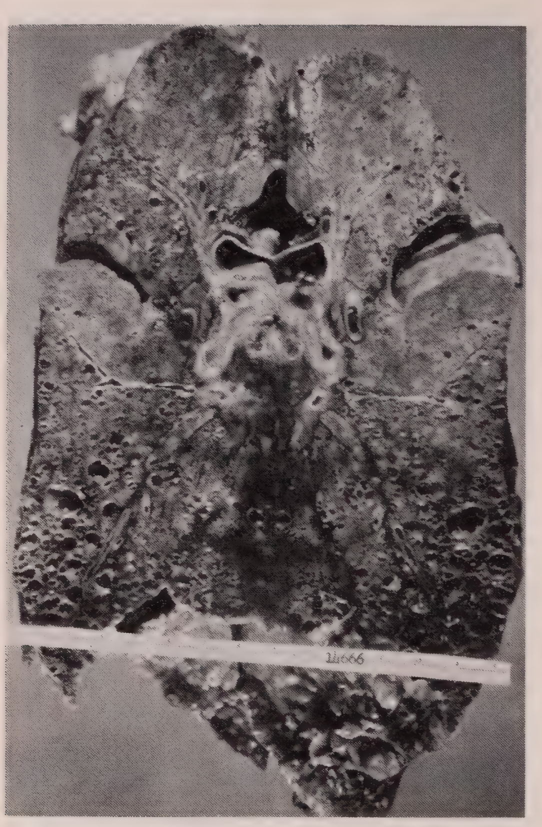

FIG. 3. Cut surface of right lung (fixed specimen). Note polycystic honeycombed appearance of lower lobe in contrast to consolidated appearance of middle and upper lobes, where only small residual islands of normal-appearing lung parenchyma are visible; the bronchial tree is of normal caliber.

sponse to steroid therapy,[2] and the outcome are quite consistent with idiopathic interstitial fibrosis. It may be further remarked that no evidence of previous hilar node enlargement, cutaneous lesions, uveitis, salivary gland enlargement, or hepatosplenomegaly, all characteristic of sarcoidosis, were found. I would close by saying that most cases of chronic diffuse idiopathic interstitial fibrosis of the lungs have a much more drawn out course than the original cases described by Hamman and Rich.[3,4] As you know, the etiology of the condition is still obscure.

Diagnoses

Clinical.—(1) *Sarcoidosis of the lungs;* (2) *cor pulmonale.*

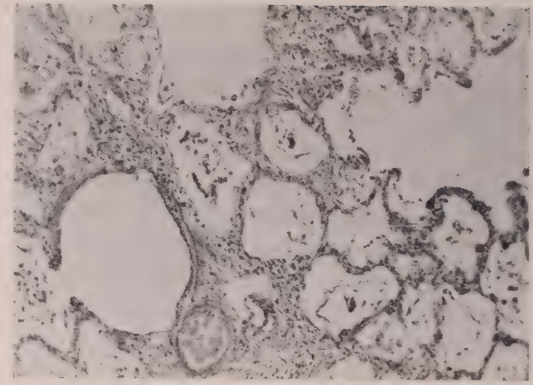

FIG. 4. Thickened alveolar septa containing fibroblasts and nonspecific inflammatory cells, mostly lymphocytes; the alveolar spaces are relatively clear, containing few desquamated cells and lymphocytes. Other areas of lung showed advanced fibrosis with obliteration of the normal parenchymal architecture. A small cystic space lined by a flattened epithelium is visible in the upper right (× 85).

Dr. Siltzbach.—*Chronic diffuse idiopathic interstitial fibrosis of the lungs.*

Anatomic.—(1) *Chronic diffuse interstitial fibrosis of the lungs;* (2) *cor pulmonale.*

Pathologic Report

DR. NIKOS K. GONATAS: The significant autopsy findings were limited to the lungs and the heart. Both pleural surfaces were smooth and glistening, and there was no fluid in the pleural spaces. Numerous pale raised nodules of hobnail appearance were noted over the lung surfaces, mainly over the lower lobes. The nodules corresponded in part to numerous air-containing cysts, the largest of which measured less than 2 cm. in diameter. On cut surface a great part of the lower lobes was involved by extensive cystic changes (Fig. 3). In contrast, the upper lobes and the hilar areas presented a gray, somewhat granular picture of consolidation with islands of aerated lung tissue interspersed. The tracheobronchial tree was unremarkable. The hilar and tracheobronchial lymph nodes were not significantly altered. The heart weighed 375 Gm., indicating hypertrophy in a patient of this small size and poor nutritional state. There was considerable hypertrophy and dilatation of the right ventricle, whose wall measured up to 0.6 cm. The right ventricle formed the entire anterior surface of the heart including the apex. The left ventricle was small and not dilated. There were no valvular abnormalities. The axillary, cervical, and inguinal lymph nodes were unremarkable, as were the abdominal organs (aside from passive congestion of the liver).

Microscopic preparations showed a marked increase of fibrous connective tissue within the interstitium of the lung. The fibrosis involved many alveolar septa and extended into the interlobular areas (Fig. 4). In many areas the normal alveolar spaces were obliterated by dense collagenous tissue scars. Irregular air-containing spaces lined by a flattened epithelium were scattered within the areas of fibrosis. There was no evidence of organization of intra-alveolar exudate; hyaline membranes were not seen. On the contrary, the almost purely interstitial nature of the process was apparent and accounted for the diffusion difficulty. A patchy chronic inflammatory cell infiltrate was noted within the fibrotic areas, the predominant cells being lymphocytes and plasma cells. No granulomas or giant cells were found nor were there any hyalinization or para-amyloid changes noted in the scar tissue, as might occur in late fibrotic sarcoidosis. The bronchi and bronchioles were unremarkable. The small blood vessels caught within the fibrotic areas showed only some subintimal thickening, as seen in pulmonary hypertension. The air cysts seen in the lower lobes were supported by a loose fibrous connective tissue stroma and were lined by a flattened epithelium. Inflammatory reaction was not noted. Foreign bodies, bacteria, acid-fast bacilli, fungi, or neutral fat were not seen with hematoxylin and eosin stains and other specially stained sections of lung tissue.

The lymph nodes showed only nonspecific reticulum cell hyperplasia. No other organs showed any abnormal findings of significance except for a chronic passive congestion of the liver. Cultures of the hilar and periportal lymph nodes, spleen, and liver were sterile for acid-fast bacilli, fungi, and bacteria.

These findings at autopsy were consistent with the diagnosis of idiopathic diffuse interstitial fibrosis of the lungs, belonging to the more chronic form of the Hamman-Rich syndrome. There was no support for the diagnosis of sarcoidosis nor for any of the numerous other conditions commonly associated with pulmonary fibrosis.

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There are two times in a man's life when he should not speculate: when he can't afford it, and when he can.—Mark Twain

NUTRITION EXCERPTS

Prepared with the cooperation of the Faculty of the Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.B., B.S., *Editor*

Nutritional Needs of Children After Infancy

KATHERINE J. NEWMAN, PH.D., ITHACA, NEW YORK

NORMAL growth in children is dependent on their intake of certain essential nutrients, but recommendations of precise amounts of the nutrients needed for normal growth of a particular child cannot be made. The problem is due partly to the fact that individual children differ from one another and partly to the difficulty of determining what is normal growth. Even so, a great deal of information regarding the nutritional needs of children is available to serve as a basis for recommendations to the physician.

Although many factors influence nutrient needs of children, those of body size and rate of growth are of especial significance when making recommendations for each age group.

The research findings on body size of American children and youth, as indicated by height and weight measurements, have been recently compiled in an excellent report by Hathaway.[1] Utilizing such data, some generalizations can be made about the size and rate of growth of the "typical child." Of course, the typical child does not exist; values cited here are, or are derived from, the mean, median, or fiftieth percentile of measurements of children for each age group.

Boys are larger than girls within each age group except during the early teens. Even at two years of age the typical boy, about 35 inches tall and weighing 29 pounds, is almost half an inch taller and more than a pound heavier than the typical girl. At age eighteen the boy is almost 69 inches tall and weighs 139 pounds, while the girl is 64 inches tall and weighs about 120 pounds. However, the typical girl is taller than the boy at ages eleven to thirteen and heavier at ages eleven to fourteen, since the adolescent acceleration of growth in height and weight occurs earlier in girls.

The rate of growth in height tends to decrease steadily between ages two and eighteen except during adolescence. For boys the annual change in height after two years is about 3 inches for the first few years; thereafter, the change decreases to approximately 2 inches annually until the thirteenth year. The crest in the acceleration of growth in height in boys is reached between the ages of thirteen and fourteen years, when the typical boy grows 3 inches. From age fourteen the annual difference in heights again decreases and becomes less than 1 inch in boys seventeen and eighteen years old.

For girls up to ten years of age the rate of growth in height is similar to that of boys, but for the typical girl the peak of acceleration of growth in height occurs in the eleventh year. The difference in heights of typical eleven- and twelve-year-old girls is 2.6 inches. From age twelve the annual rate of growth in height decreases until there is no difference in the heights of typical girls aged seventeen and eighteen years.

The amount of weight gained annually by both boys and girls increases gradually from about 5 pounds during the preschool period to 6 pounds during midchildhood. The typical boy begins to gain weight more rapidly in his eleventh year. The peak of the acceleration of growth in weight for the boy is reached in his thirteenth year when he gains almost 15 pounds. Although the amount of weight gained is only somewhat less the following year, his weight increase soon falls off rapidly until he gains less than 3 pounds in his seventeenth year.

The typical girl increases her weight more than 6 pounds annually at about nine or ten years of age and reaches the peak of her adolescent acceleration of growth in weight in her twelfth year, when she gains more than 11 pounds. The amount of weight increase becomes smaller beyond age twelve in the girl, dropping to less than 5 pounds annually in her late teens and becoming less than 1 pound in her seventeenth year.

Height-weight standards are useful guides for the physician but can easily be misused. One must remember that healthy children of the same age come in sizes both larger and smaller than that of the "typical child." Obviously, height-weight norms which provide a range of values for each age are more useful than those providing only averages. In using height-weight standards two facts should be kept in mind: (1) These standards show us what children of a given sex, age, and height have been found to weigh; they do not, and cannot, indicate

TABLE I.—RECOMMENDED DAILY DIETARY ALLOWANCES FOR CHILDREN*[2]

Age (Years)	Weight Kg.	Weight pounds	Height cm.	Height inches	Calories	Protein (Gm.)	Calcium (Gm.)	Iron (mg.)	Vitamin A (I.U.)	Thiamin (mg.)	Riboflavin (mg.)	Niacin (mg. equiv.)	Ascorbic Acid (mg.)	Vitamin A (I.U.)
Children														
1 to 3	12	27	87	34	1,300	40	1	7	2,000	0.7	1	8	35	400
4 to 6	18	40	109	43	1,700	50	1	8	2,500	0.9	1.3	11	50	400
7 to 9	27	60	129	51	2,100	60	1	10	3,500	1.1	1.5	14	60	400
10 to 12	36	79	144	57	2,500	70	1.2	12	4,500	1.3	1.8	17	75	400
Boys														
13 to 15	49	108	163	64	3,100	85	1.4	15	5,000	1.6	2.1	21	90	400
16 to 19	63	139	175	69	3,600	100	1.4	15	5,000	1.8	2.5	25	100	400
Girls														
13 to 15	49	108	160	63	2,600	80	1.3	15	5,000	1.3	2	17	80	400
16 to 19	54	120	162	64	2,400	75	1.3	15	5,000	1.2	1.9	16	80	400

* Allowances are intended for persons normally active in a temperate climate.
Taken from the table of Recommended Daily Dietary Allowances,[2] Food and Nutrition Board, National Research Council, revised 1958.

what a child should weigh. (2) Most height-weight norms are based on cross-sectional data, that is, on measurements obtained from different children at consecutive ages. The "typical child" referred to earlier is not the same child measured at each age. It would be nice to be able to say that a particular child should be so tall and weigh so much at a given age, and that he should grow by so many inches and so many pounds between that age and the succeeding one, but we do not have the evidence to support such flat statements.

The Food and Nutrition Board of the National Research Council has reviewed the evidence regarding nutritional needs and has proposed recommended allowances of the major nutrients for both children and adults. The amounts of nutrients recommended for children are presented in Table I, taken from the 1958 revision of "Recommended Dietary Allowances."[2]

If the Recommended Dietary Allowances are to be interpreted and used as intended, three points should be understood:

1. The allowances are not minimal but provide a margin of safety and are intended to cover individual variations among most normal children. As stated in the booklet, "... if utilized for purposes of dietary surveys to determine the adequacy of food intake, it must be realized that diets affording less than recommended dietary allowances do not of necessity imply nutritional deficiency."

2. On the other hand, the allowances are "for the maintenance of good nutrition in healthy persons in the United States of America," and "...are not to be considered adequate to meet the additional requirements associated with disease or for nutrient repletion in severely depleted persons."

3. "Patterns of food consumption in the United States permit ready adaptation and compliance with the recommendations." In other words, the allowances for healthy persons living in the United States generally can be provided by foods without resort to specific supplementation.

Energy needs are determined largely by physical activity. Because individual children differ widely in physical activity, recommended energy intakes can be no more than rough guides to the physician. A fairly steady gain in weight is characteristic, of course, of healthy children. Since weight is the result of the relationship between energy intake and energy expenditure, unusually active children would be expected to need a higher energy intake than relatively sedentary ones.

The allowances for protein were made with the assumption that the energy intake was adequate, since if it were not, the protein would be metabolized to provide energy—a need which has priority over the need to build tissue. The original protein allowances were based on evidence obtained from nitrogen balance studies. Although there are differences of opinion about the protein needs of children, some workers believe that intakes in this country tend to be adequate.[3–8]

The calcium allowance is 1 Gm. daily for youngsters up through the midchildhood period and is larger for children approaching adolescence and beyond. There is some reason to believe, however, that the preschool child may not require as much as 1 Gm. of calcium per day. The theoretic curve for calcium retentions considered desirable during each year of growth reaches its lowest point for children of preschool age.[9] Beal[10] found that daily calcium intakes of normal children decreased to about 0.75 Gm. between two and three years and rose again to 1 Gm. by age five.

There is no doubt that milk is a major source of calcium, as well as riboflavin, and protein for persons in this country. Since the preschool period sometimes is one of "feeding problems," perhaps it would be helpful to advise young mothers that decreased food consumption is not uncommon at this age. For the sake of good nutrition throughout the life span, it may be more important that the preschool child keep drinking some milk than to insist that he consume 3 cups of milk each day.

The allowance of 400 I.U. of vitamin D daily is the same for children of all ages. "In adolescence, the evidence indicates, the need for vitamin D is as universal and as great as in infancy." The child who is not regularly exposed to sunlight should receive vitamin D supplementation. Milk which has been fortified with vitamin D will provide the needed amount when the milk intake is adequate. If adequate exposure to sunlight is not possible or if fortified milk is not used, vitamin D is the one nutrient which may need to be provided by a special supplement. Vitamin D, like vitamin A, is not water-soluble and cannot ordinarily be excreted by the kidneys. Overdosage of these fat-soluble vitamins is possible when they are obtained from high potency, non-food sources, and should be guarded against.

In addition to the nutrients listed in the table of Recommended Dietary Allowances, vitamin B_{12} has been considered of importance in child nutrition. Quite aside from the established efficacy of vitamin B_{12} in the treatment of pernicious anemia, the claim has been made, and denied, that vitamin B_{12} is a specific growth factor for children. The evidence concerning vitamin B_{12} and the growth of children has been ably reviewed by Campbell and McLaughlan.[11] At this stage of our knowledge there appears to be no reason to believe that vitamin B_{12}, any more than any other essential nutrient, is a specific growth factor for children. Deficiency of vitamin B_{12} is considered unlikely when children consume a mixed diet which includes foods of animal origin.

Antibiotics can hardly be considered nutrients in the usual sense, yet, the effect of Aureomycin on growth of school children has been investigated in Central America.[12] The children were of lower economic levels and had a high incidence of intestinal parasites, but they did not show important clinical signs usually associated with malnutrition. The difficulties of controlling variables when studying human beings in their usual environments are many, and the effect, if any, of the antibiotic of growth was not striking. There probably would be no justification for the use of antibiotics to promote growth of children in the United States.

The Recommended Dietary Allowances represent the considered judgment of many authorities and are the best available guide for the physician responsible for maintaining health in young patients. These allowances, with the possible exception of that for vitamin D, can be met by foods of the usual American dietary pattern.

Certainly we have not yet learned all there is to know about nutrition. To be nutritionally safe, to be socially acceptable, and for the sheer fun of it, children should be encouraged to enjoy a wide variety of foods.

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(Number seven in a new series of Nutrition Excerpts)

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies in the operating room including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
BENJAMIN J. CILIBERTI, M.D., *Cochairman*
ELIZABETH J. CRAWFORD, M.D.
ALFRED F. GRANATELLI, M.D.
LESTER C. MARK, M.D.
VALENTINO D. B. MAZZIA, M.D.

Cardiovascular Collapse Prior to Neck Surgery

PATIENTS who require extensive radical surgery are usually well examined preoperatively so that proper supportive therapy may be made available. Occasionally certain important examinations are omitted; one such omission may result in a fatal or near-fatal complication, as was observed in the following case.

Case Report

A seventy-four-year-old man came to the hospital complaining of swelling and soreness in the right side of his neck. On examination he appeared thin, pale, and chronically ill. There was a fungoid growth overlaying the region of the right sternocleidomastoid with a breakdown of the affected skin surface, forming a crusted ulcer with an indurated base. A biopsy of this area proved the condition to be squamous cell carcinoma. It was proposed to do a radical neck dissection as soon as possible.

Preoperative examination revealed that the patient's arterial blood pressure was 170 mm. Hg systolic and 90 diastolic. The pulse rate was 86 per minute and the temperature 99 F. The hepatic edge was palpable 2 inches below the right costal margin. Examination of the ocular fundi revealed no abnormalities. The hemoglobin content was 10.5 Gm. per 100 cc. of blood, and the erythrocytes and leukocytes numbered 3,750,000 and 12,700 respectively per cubic millimeter of blood. The blood urea measured 43 mg. per 100 cc. of blood. The response to the Klein test was negative. The chest roentgenogram revealed prominence of the left ventricle and healed fibrous and calcific residues of tuberculosis at both apices. The electrocardiogram showed evidence of left ventricular hypertrophy and a regular sinus rhythm.

Preanesthetic medication consisted of 150 mg. of sodium amytal combined with 0.4 mg.

Discussed at a conference held at Bellevue Hospital, New York City, March 2, 1959.

of atropine sulfate administered intramuscularly. When the patient arrived in the operating room one hour later, he appeared drowsy. His blood pressure had diminished to 100/70 and his pulse rate was 98 per minute. He was anesthetized with cyclopropane and oxygen in a closed system with circle-type carbon dioxide absorption. His trachea was intubated under direct laryngoscopic vision with a number 40 anode tube. Following this, the blood pressure was 110/70 and the pulse rate 70 per minute. The upper half of the operating table was raised in order to elevate the patient's head. There was no change in either blood pressure or pulse rate following this positional change. One of the surgeons started to prepare the operative field with an antiseptic solution by means of a swab on a sponge stick. About twenty seconds later, while the surgeon was still wiping the neck area, it was observed that the patient suddenly stopped breathing. The pulse, which had been palpated with ease just previously, had become imperceptible. The blood pressure was unobtainable, and auscultation of the precordial area could not disclose any heart sounds. The chest was opened quickly through the left fourth intercostal space without bleeding in the wound resulting. When the heart was exposed, it was in standstill. Quickly it was compressed intermittently by hand. After the third compression the heart started to beat spontaneously and effectively. Bleeding became evident in the chest wound. Hemostasis was accomplished and the thoracotomy was closed. Respirations, which had been maintained artificially as soon as apnea developed, became spontaneous shortly after the heart resumed to beat. Respiratory movements were then assisted until the respiratory tidal volume became normal, when artificial assistance was suspended. Additional cyclopropane had to be added to allow closure of the wound.

When this was accomplished, there was discussion as to whether the proposed operation should be carried out at that time. The patient looked well but his blood pressure was only 88/50 with a pulse rate of 60 per minute. One of the surgeons stated that because of the nature of the pathologic condition the radical neck dissection should be done. Other members of the surgical team expressed the opinion that this elderly patient had suffered sufficient physiologic trespass to warrant postponing a further extensive surgical procedure. It was decided to call a cardiologist for his opinion. While awaiting this opinion, an electrocardioscope was connected to the patient. It revealed a sinus rhythm with occasional ventricular premature contractions. When the cardiologist arrived, he favored postponing the operation because the patient's blood pressure, which had been 170/90 preoperatively, was now 88/50. He also thought it would be worth while to investigate whether the patient had an active carotid sinus reflex since such a hyperactive reflex was common in patients with a pathologic condition in the neck. Accordingly one of the surgical assistants exerted some pressure with his finger tips over the area of the right carotid sinus. Within five seconds a marked change was noted on the electrocardioscope. The P wave disappeared with development of a nodal rhythm and the heart rate slowed from 60 to 32 per minute. At the same time the blood pressure was noted to have fallen to 40/30. It took five minutes after release of carotid sinus pressure for the circulatory signs to return to their previous state. Ten minutes later similar carotid sinus pressure was exerted on the left side, and a similar sequence of events developed, as revealed on the electrocardiogram and in blood pressure findings. The operation was cancelled. The patient awakened rapidly and his circulatory status returned to normal.

Comment

It would seem that pressure over the carotid sinus area exerted at the time of antiseptic preparation of the neck wound resulted in a hyperactive carotid sinus reflex, characterized by apnea and circulatory depression to the point of cardiac arrest. Cyclopropane anesthesia was a poor choice for such a condition since it has been shown that this agent enhances this reflex.[1]

It should be remembered that this reflex is often unusually sensitive in hypertension and arteriosclerosis,[2] as was the case in this patient. Furthermore, as the cardiologist pointed out, this reflex is often hyperactive when there is some coexisting pathologic condition in the neck region. Failure to test this reflex preoperatively in a patient who was bound to have carotid sinus pressure during a radial neck dissection was therefore a grave lack in preoperative study which nearly cost the patient his life. Had the presence of an active carotid sinus reflex been known preoperatively, the patient would have been given a larger dose of atropine (0.6 to 1 mg.) and the reflex could have been blocked by injection of a local anesthetic solution into the adventitial layer about the carotid sinus.

Since an electrocardioscope was available, it should have been connected to the patient at the start of anesthesia rather than reserving it in case of cardiovascular collapse. If used as a cardiac monitor it would have detected the initial changes of the carotid sinus reflex (prolongation of the P-R interval changing into nodal bradycardia). The concurrence of these changes with the pressure swabbing of the neck should have alerted the anesthesiologist to the presence of an active carotid sinus reflex. An additional dose of atropine could have been administered intravenously, and an attempt to block the carotid sinus could have been done. Above all, the continuation of carotid sinus stimulation could have been stopped in the initial phase by cessation of the "prepping" of the neck area, and this would have avoided progress of the reflex to the point of cardiac arrest.

Another worth-while precautionary measure in such a patient would have been to have an external artificial pacemaker device in readiness.[3] Its activation as soon as cardiac asystole occurred may have prevented the performance of a thoracotomy for the purpose of manual stimulation of the heart.

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(*Number seventy in a series of Clinical Anesthesia Conferences*)

BCG Vaccination

The changing tuberculosis picture in the United States is such that possible advantages of the use of BCG vaccine are largely offset by disadvantages. With the infection rate dropping sharply in recent years, the author, Ralph E. Dwork, M.D., State Department of Health, Columbus, Ohio, takes a dim view of proposed extended use of the vaccine by BCG proponents who, he remarks, perhaps have not been given sufficient weight to basic changes in the epidemiology of this disease. He feels that with continuing use of control methods currently employed, new infection with tuberculosis will become a relatively rare event. He concludes, "Because of the vanishing need for BCG vaccination, its limited effectiveness, and the disadvantages attendant on its use, few health officers will find situations in their jurisdictions where the risk is so high and the exposure so truly unavoidable as to warrant resorting to BCG vaccination."—*Public Health Reports, March, 1959*

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Nonbarbiturate Sedative and Other Ingestions

The following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Nonbarbiturate Sedative	22 years	Male

This patient ingested with suicidal intent 38 capsules of an "over-the-counter" sedative composed of methapyriline 25 mg. and scopolamine hydrobromide aminoxide 0.15 mg. He was taken to the hospital in stupor and his stomach was lavaged. After the patient regained consciousness he was transferred to Kings County Hospital for psychiatric observation.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Bleach	15 months	Male

The patient's mother stated that she had had a jar of bleach on the kitchen table while she was washing the baby's diapers. The patient obtained the jar and drank an unknown quantity of the bleach, most probably assuming that it was water. The child began to scream and cry immediately after drinking the bleach, and the mother rushed him to a nearby hospital. On admission the patient presented the following symptoms: nausea, vomiting, dyspnea, and a chlorine odor from the breath. In the hospital emergency room the patient's stomach was lavaged with 2,000 cc. of sodium bicarbonate, and 1,200 cc. of the "universal antidote" was administered. The patient was then transferred to Kings County Hospital for further observation and treatment.

He was given magnesium sulfate, 1 teaspoon. After a period of observation and supportive therapy at Kings County Hospital the patient improved.

The ingestion of chlorine laundry bleaches represent a major category of childhood incidents reported to this center. This is obviously because of their widespread availability in every home. This particular sample was purchased through a door-to-door salesman who delivered the product in a gallon jug. This method of distribution is apparently increasing and posing an additional hazard because the small operator very frequently uses second-hand gallon jugs (wine, cider, etc.) and fails to remove the original label. Very frequently there is no label of any kind on such containers. These incidents represent a difficult problem of treatment to hospitals or physicians not familiar with the product. The reuse of food containers for the sale of household products will be adequately dealt with in the revised New York City Health Code. Other localities would be well advised to emulate this example.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Nonbarbiturate Sedative	28 years	Female

This incident was reported from out-of-town (Suffolk County, New York). This patient ingested 80 capsules of the same proprietary product as in incident 1, but the composition of the product had been changed (December, 1957) to methapyrilene 25 mg. and salicylamide 200 mg. Several hours after ingestion the patient was admitted to the hospital in stupor. She was treated with caffeine intravenously and with benzedrine and after several days of hospitalization made an uneventful recovery.

Incidents 3 and 4 are cited to illustrate the inconstant composition of commercial products. This product is widely advertised through all available media, yet, as with all proprietary drugs, its formula is not readily obtainable from listings; the ingredients, however, are usually disclosed on the label. This product with both formulas is still available on pharmacists' shelves.

The large number of capsules ingested in the incident 3 is noteworthy. There have been no fatalities in the large series of cases reported to the Center.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Nonbarbiturate Sedative	23 years	Female

This patient ingested 11 capsules of an "over-the-counter sedative, each capsule containing 5 grains of sodium bromide and 2 grains of potassium bromide, presumably as an overdosage. She became stuporous and was taken to the hospital one hour after ingestion. Her stomach was lavaged in the emergency room with starch and water, and 1 cc. of caffeine was given intravenously. After a period of observation in the emergency room the patient was discharged as improved.

The wisdom of discharging a patient who ingested a large amount of bromide and who was in stupor after such a short period of observation is questionable.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Nonbarbiturate Sedative	12 years	Female

This child obtained the medication from a dresser and ingested 6 tablets. About one and one-half hours following ingestion she was taken to the hospital in coma where her stomach was lavaged. On admission the patient reacted to pain stimuli although the pupils reacted very sluggishly. Diplopia was also noted. After two days of hospitalization and supportive therapy she improved.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Nonbarbiturate Sedative	35 years	Female

This patient ingested 12 tablets of glutethimide. purportedly as an overdosage. An hour and a half following ingestion the patient was admitted to the hospital in deep coma and with imperceptible respiration. Her stomach was lavaged with milk. She was also given picrotoxin intramuscularly and Ritalin intravenously. The blood sugar was elevated to 138 mg. per cent, and the blood pressure was 80/60. Diplopia was present for two days.

After five days of hospitalization all symptoms had subsided and the patient made a full recovery. Diplopia was never previously noted in the large number of glutethimide incidents reported to this Center.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Aspirin	14 years	Female

This patient ingested 25 5-grain aspirin tablets with suicidal intent. The presenting symptoms were ringing in the ears, weakness, sweating, and rapid breathing. She vomited spontaneously soon after ingestion and was taken to the hospital. Because of the history of spontaneous vomiting, her stomach was not lavaged on admission. The only positive laboratory finding was a faint trace of acetone in the urine and moderate anemia (11.6 Gm.). After one day of hospitalization, observation, and supportive therapy the patient made a full recovery.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Aspirin	3 years	Female

This patient obtained the medication from the medicine cabinet and ingested 50 tablets, each tablet containing $1^1/_4$ grains. An hour following ingestion her stomach was lavaged. On admission to the hospital some hyperpnea was noted but no evidence of dehydration, acidosis, or fever. The laboratory findings were as follows: The blood showed a salicylate level of 41 mg. per cent and the urine a 4 plus acetone and a 3 plus sugar. The gastric content disclosed the presence of aspirin in the gastric fluid. After three days in the hospital and supportive therapy the patient made a full recovery.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Clinitest Tablets	44 years	Female

This patient claims that she put 2 Clinitest tablets in her bottle of "pain pills" sometime prior to this incident. One night she presumably experienced some pain and took one of these pills, thinking it was a "pain pill." After ingesting the pill she remembered that she had put the Clinitest pills in the bottle. She immediately drank some vinegar and grapefruit juice in very copious amounts. She vomited several hours following ingestion and went to the hospital.

She refused to be lavaged. No symptoms were noted on admission except an alcoholic odor of the breath. After a period of observation the patient was sent home.

The possible consequences following ingestion of this product are included in a report by Zimmerman* in which a case of esophageal stricture in a three-and-a-half-year-old child from the accidental ingestion of Clinitest tablets is included. The author states that an esophagram will confirm the clinical impression of esophageal stenosis or stricture. He also wisely recommends that when the etiology is unknown and the patient has contact with a diabetic individual, ingestion of Clinitest should be thought of as a possibility.

The sale to patients of poisonous diagnostic agents in tablet form is a "natural" for accident hazards. When physicians prescribe these agents they would do well to warn against their potential hazards and particularly to advise keeping these products away from children. A medicine cabinet apparently is not a safe place for these articles.

Numerous cases involving this product have been reported to this Center.

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* Zimmerman, C.: Esophageal stricture from accidental ingestion of Clinitest tablets, A.M.A. Am. J. Dis. Child. **97**: 101 (Jan.) 1959.

Incident 10

Toxic Agent	*Age*	*Sex*
Drano	2 years	Male

This child was found by his parents frothing at the mouth and with a can of Drano from which 5 teaspoonfuls were missing. The parents immediately took him to a hospital emergency room where his stomach was lavaged with 1 per cent of acetic acid and 800 cc. of distilled water with the aid of a plastic Levin tube. On admission several burns on the tongue, which was edematous, were noted. The child was drooling and coughing up mucous secretions. He was then admitted to the inpatient service and was treated with tetracycline for eleven days; prednisone 30 mg. per day for two days, 20 mg. per day for one day, and 15 mg. per day for seven days; and ACTH 15 units per injection on the last day of steroid therapy. Feedings were by Levin tube. The mucous secretions were diminished after twenty-four hours and the urine was normal. One week following admission the patient was esophagescoped and the Levin tube removed. There still was one 3 mm. superficial ulcer noted in the area adjacent to the oropharynx. This area showed evidence of healing. At that time the child was started on a fluid diet and progressed steadily to a regular one. After two weeks of hospitalization and treatment, as described, the patient was discharged as cured. This case was reported by Dr. Gertrude Stern from New York Hospital.

Incident 11

Toxic Agent	*Age*	*Sex*
Chlorothiazide	3 years	Male

This patient obtained the diuretic from a low cabinet and ingested 8 tablets, each tablet containing 250 mg. About one-half hour following ingestion the patient was taken to a hospital emergency room where his stomach was lavaged. On admission no apparent abnormalities were noted, and the patient was sent home after a short period of observation in the emergency room. The condition on discharge was reported as satisfactory.

This is the first incident with this product reported to the Center, but in view of the widespread use of this and similar products many accidental ingestions will undoubtedly occur. It would probably be very wise to make electrolyte studies, particularly in cases of massive ingestions by children and with regard to potassium depletion.

Incident 12

Toxic Agent	*Age*	*Sex*
Paraldehyde	50 years	Male

This patient ingested 3 ounces of paraldehyde with suicidal intent. He became comatose and was taken to the hospital. Findings on admission were deep coma, no reaction to any stimuli, and myotic pupils. In the hospital the patient was treated with picrotoxin, caffeine, and sodium benzoate. After four days of hospitalization and treatment, as indicated, he was discharged as improved.

It is well to remember that old samples of paraldehyde may contain dangerous amounts of acetic acid.

Incident 13

Toxic Agent	*Age*	*Sex*
Calamine Lotion	30 years	Female

This patient ingested 2 ounces of calamine lotion with suicidal intent. Twenty minutes following ingestion the patient vomited and went to a hospital emergency room. On admission the patient was fully alert, active, and rather talkative. The gastric contents contained milk-like fluids. She was given 2 ounces of milk of magnesia by mouth. After a short period of observation in the emergency room she was referred to Kings County Hospital for psychiatric observation.

Ingestions of calamine or combinations of calamine and phenol or antihistamines are frequently reported to this Center. No significant symptoms have been noted in the cases reported here. The usual circumstance involving ingestions of this product is that it is mistaken for some other suspension medicine of similar appearance on the medicine cabinet shelf.

INCIDENT 14

Toxic Agent	*Age*	*Sex*
Aspirin	25 years	Female

This patient purportedly ingested 200 5-grain tablets in a suicidal attempt. The case was reported from a hospital in Jamaica, New York. The patient was taken to the hospital, where her stomach was lavaged with 1,200 cc. of water. On admission she was nauseated and exhibited drowsiness. There was evidence of palpitation, and the pulse rate was elevated. No laboratory examinations were done.

With such a large amount ingested, it is regrettable that more documentary laboratory evidence is unavailable.

INCIDENT 15

Toxic Agent	*Age*	*Sex*
Stimulant-Tranquilizer	31 years	Female

The patient ingested 16 10-mg. tablets composed of methylphenidate and meprobamate with suicidal intent. She arrived at the hospital via ambulance one hour after ingestion, appearing emotionally disturbed and mumbling incoherently. Her stomach was immediately lavaged. The patient had a previous history of psychiatric care. After emergency treatment was administered, she was transferred to the psychiatric division of Abraham Jacobi Hospital, Bronx, for further observation and indicated psychiatric care.

Methylphenidate might well be useful in the treatment of overdoses of Meprobamate.

(*Number thirty-seven in a series of Accidental Chemical Poisonings*)

Nature's Center of Gravity

Chests are best percussed with the patient vertical, and indeed standing. The percussing blow should be brief and brisk and only just strong enough to get a nice note.

These principles I follow. Imagine my astonishment when, at the first tap on the axillary line of a young girl, I saw my patient totter and fall away from me. By grabbing a chair as she rocked toward the floor she just managed to save herself.

Blushing a little, she waved my anxious hand away, and took off her new shoes. Secure once more on the center of gravity which Nature had given her, she bent down and placed them on the ground, carefully balancing them on their high stiletto heels.

—*The Lancet, July 11, 1959*

CASE REPORTS

Bilateral Reduplication of Kidneys and Ureters with Associated Hydropyonephrosis and Hydropyoureter

ELIZABETH CORYLLOS, M.D., NEW YORK CITY, PETER FERRATO, M.D., CLEVELAND. OHIO, AND WILLIAM MEDL, M.D., NEW YORK CITY

(From the Fourth Surgical Division, New York University–Bellevue Medical Center, and Beekman-Downtown Hospital)

This case is presented because of its rarity and because of the interesting problem which it posed in differential diagnosis,[1-3] until surgical exploration was undertaken. In most similar cases in the literature[4] the reports have been made on autopsy material. This is a case of bilateral reduplication of kidneys and ureters discovered because of the onset of a spiking temperature resistant to antibiotics, followed by the appearance of an abdominal mass.

Campbell[5-7] in a series of 47,409 autopsy cases found bilateral reduplication of the kidneys and ureters to occur in 0.1 per cent.

In complete ureteral reduplication one of the openings is sometimes ectopic[8-10] and this usually drains the superior pelvis because the ureter from the upper pelvis almost always opens lowermost in the bladder. This, as will be seen, was the situation in the case we present.

The upper kidney is often the smaller of the two organs and is apt to be rudimentary. The vascular supply is anomalous, but in more than half the cases is dual with arterial and venous divisions to the separate reduplicated segments.

Other anomalies commonly accompany ureteral reduplication, and in the 301 cases of Campbell there were 121 associated urologic and 61 nonurologic malformations. Congenital ureteral stricture is one of the most common coexisting anomalies observed clinically in renal reduplication and may be found in one or both of the reduplicated ureters or at the point of bifurcation.

The symptoms and clinical findings in reduplicated kidneys are predominantly those of the complicating infection, obstruction, stone, and so forth.

Urography is the most important step in making the diagnosis.[4,5,11,12] There may be one ureteral orifice in the bladder and one ectopic orifice on the same side, unilaterally or bilaterally, or all ureters may be ectopic.

When one ureter is obstructed and infection exists, hemipyonephrosis or infected hydronephrosis usually develops.[5,13] In these cases Campbell has found that heminephrectomy can almost always be employed to conserve the sound half of the reduplicated kidney. His group has done this successfully in more than 50 infants and children.

A case very similiar to ours is a report by Spence[14] of a six-year-old girl with bilateral reduplication in whom an ectopic ureteral orifice draining the upper segment of the right kidney and opening at the introitus distal to the urethral sphincter was found. This was successfully treated by removal of the upper portion of the right kidney.

The rate of occurence of the type anomaly represented by the Spence case and by our case thus appears to be in the order of 0.1 per cent of the general population.

Case Report

A well-developed, well-nourished, alert, and intelligent Negro female, aged two years, had been a normal full-term spontaneous delivery with a normal antenatal history. She had always been considered a healthy child and had not been sick, except for a short episode of bronchitis at

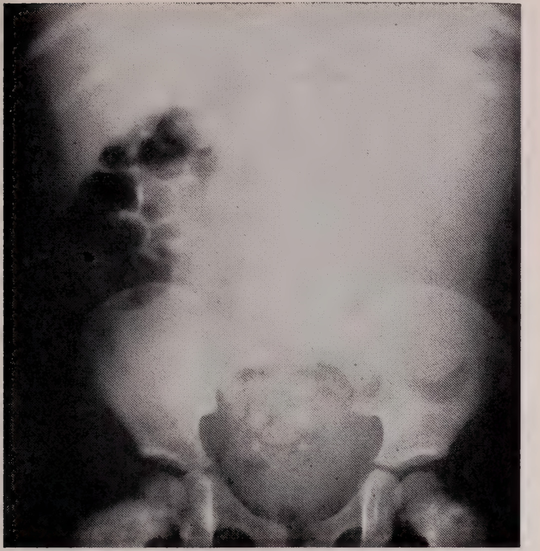

FIG. 1. Flat plate of abdomen taken preoperatively showing large soft tissue mass on left.

the age of six months, which had cleared without sequellae. Her growth and development had been entirely normal and there is no history of sickle cell anemia or other familial diseases. Her one sibling is normal and well.

Four days (on October 10, 1954) prior to her admission to the hospital the patient had had a sudden onset of nausea and vomiting, a very large bowel movement of normal color and consistency, and following this was found to have a temperature of 105 F. rectally. She was taken to her family doctor who gave her penicillin, 300,000 units, daily for three days and syrup of gantrisin, 0.5 Gm., one teaspoon every four hours. The temperature elevation persisted and on October 21 she was started on Aureomycin 50 mg. three times a day. The spiking temperature continued, and she was brought to the hospital on October 23.

Physical examination at the time of admission revealed a normal well-developed, well-nourished child in no acute distress but with a rectal temperature of 104 F. The only positive finding was a moderate pharyngitis. The abdomen findings were negative. Laboratory findings on admission were: white blood count 7,400. The differential was: immature polymorphonuclear leukocyte 1, segmented polymorphonuclear leukocytes 44, lymphocytes 36, and monocytes 19. The red blood count was 3.4 million cells and hemoglobin was 8 Gm. Urinalysis (voided specimen) findings were normal except for a trace of albumin and numerous red blood cells. Repeat catheterized urinalyses, however, failed to show any red blood cells.

The child continued to run a spiking fever,

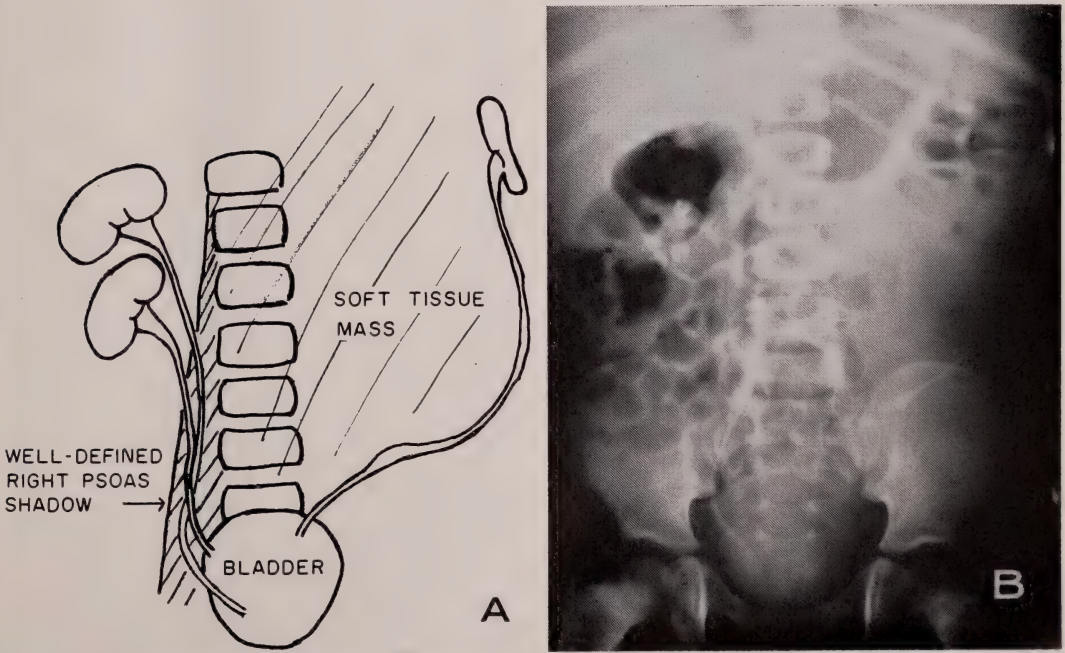

FIG. 2. (*A*) Diagram of preoperative intravenous pyelogram. (*B*) Preoperative intravenous pyelogram.

101 F. in the morning with elevation to 105 to 106 F. every evening. She was examined daily but there was no change in her physical examination. On October 27, after she had not had any antibiotics since admission, Terramycin 110 mg. four times a day was started but the febrile course continued. Nose and throat cultures showed only a normal nonpathogenic flora. Results of blood preparations for sickling were negative. Repeated blood cultures showed negative findings as did serology. Heterophil, typhoid, paratyphoid, proteus, and Brucella abortus agglutination test results were negative.

On October 30 a mass was palpated in the left lower quandrant of the abdomen for the first time. It was elongated and did not move on respiration. A flat plate film of the abdomen, (Fig. 1) taken the following morning, showed a soft tissue mass in the left upper quadrant of the abdomen that was causing some elevation of the splenic flexure. The left psoas shadow could not be visualized. These findings were felt to be strongly suggestive of a lesion in the region of the kidney. A urologic consultation was obtained and an intravenous pyelogram was done on November 2.

The intravenous pyelogram (Fig. 2A and B) showed two right kidney excretory tracts, apparently normal in size, shape, and position with two ureters going into the bladder. The left renal pelvis and calyces were twisted so that they pointed medially and were displaced far laterally and cephalad to a point just under the inferior pole of the spleen. The left ureter was displaced far laterally into the left flank and then medially to the bladder. The left psoas shadow was obliterated. A chest roentgenogram was entirely within normal limits. It was felt by the urologists that the most likely diagnosis here was that of a retroperitoneal tumor rather than a renal anomaly and the case was turned over to the general surgeons and pediatricians for further management.

The mass palpable in the left lower quadrant and flank continued to increase in size and varied from slightly to moderately tender at different times. Bowel movements continued daily. As the fever had shown no response to Terramycin, all antibiotics were discontinued on November 2. Mantoux skin tests were done with tuberculin in dilutions of 1 to 10,000 and 1 to 1,000 and the results were negative. Urine culture at this time showed negative findings. Repeat white blood count was 5,300 and urinalysis showed 2 plus albumin. The results of smears for malarial parasites were negative. Blood urea nitrogen was 12.3 mg. per 100 cc. On November 2 there was also the onset of a profuse vaginal discharge which showed no specific organisms on culture. The amount of discharge increased during palpation of the abdominal mass.

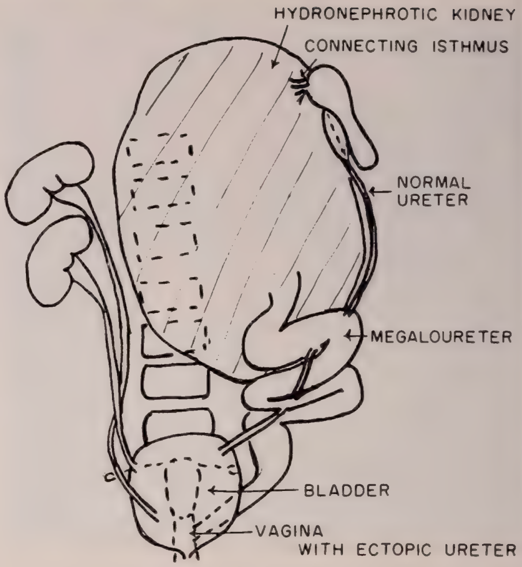

Fig. 3. Large cystic mass found at operation occupying the left abdominal cavity from the pelvis to the diaphragm.

Because of the child's gradual deterioration, surgical exploration was decided on. It was thought that delay for retrograde pyelograms and vaginoscopy was not justified.

Under general anesthesia the abdomen was entered through a left upper transverse incision from the linea alba to the posterior axillary line. The left abdominal cavity from the pelvis to the diaphragm was occupied by a large cystic mass (approximately 20 by 8 cm. in its greatest dimensions in situ) in the retroperitoneal plane (Fig. 3). The left colon was reflected medially and this and the small intestines were packed away on the right side of the peritoneal cavity. By careful blunt and sharp dissection a plane of cleavage was found around this huge mass which was then mobilized until it was established that it was intimately associated with the left kidney. It was then found that the patient had a fused double kidney, the lower one was approximately normal in size—that is 5 cm. in length—and was attached to a normal ureter. This ureter was

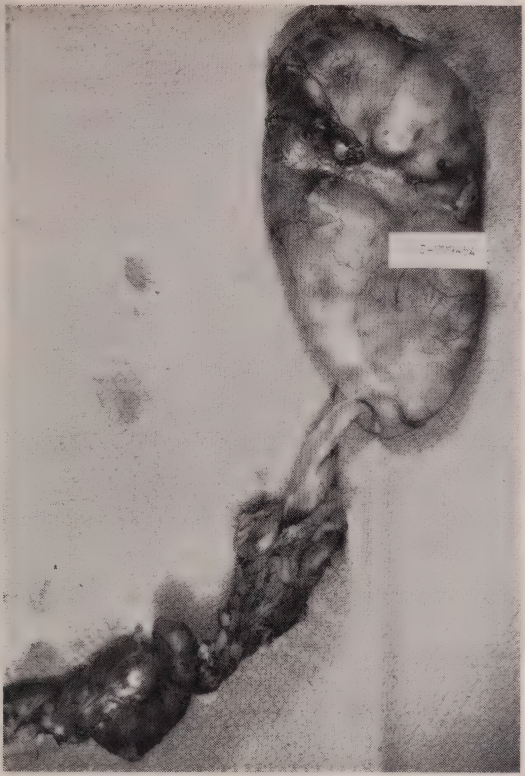

FIG. 4. Intact hydronephrotic kidney and hydropyomegaloureter.

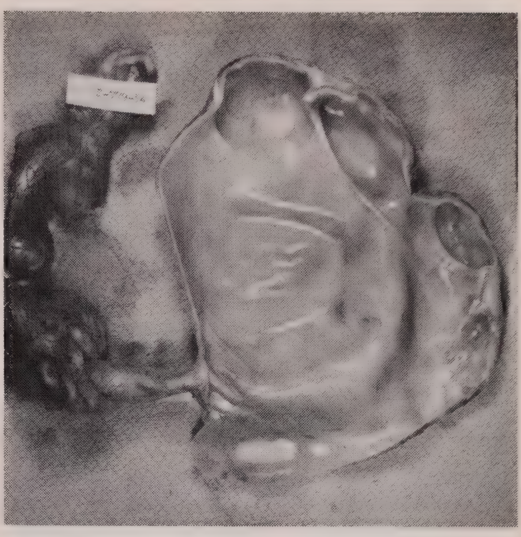

FIG. 5. Transverse section (hemisected) hydropyonephrotic kidney.

densely adherent to a large abnormal tortuous megalo-ureter that belonged to the upper abnormal left kidney. It had twisted around and down with the megalo-ureter to the ureterovesical junction where the normal ureter entered the bladder. There appeared to be a communication between the end of the megalo-ureter and the vagina but none with the bladder. The upper kidney in addition to being fused with the lower one was the site of extreme hydronephrosis, dilatation, and flattening of the cortex. An areolar tissue plane of cleavage was found between the upper and lower kidney parenchyma, except for a small isthmus ($^1/_2$ cm. in diameter) at the upper pole where the kidney tissue had to be transected to separate the two kidneys.

The blood supply to the two kidneys was dissected free, establishing an intact blood supply to the small lower kidney. The upper kidney was then detached from its blood supply and the megalo-ureter was separated from the normal ureter down to the level of the bladder, where the megalo-ureter was transected approximately 1 cm. from the bladder and ligated. The left adrenal gland was identified and left in situ. A drain was placed in the left renal bed. Anatomic relationships of the remaining lower left renal vessels and ureter were restored, the colon and small intestine were allowed to fall back over the kidney, and the abdomen was closed in layers. The drain was brought out through the left flank. Whole blood, 250 cc., was given preoperatively and 500 cc. were given during the operative procedure.

During operation and manipulation of the involved kidney the entire operating room table became saturated with the vaginal discharge material and following the operation there was no further vaginal discharge. On opening the specimen and making a smear and culture of its contents, it was found that it contained material like that found on preoperative examination of the vaginal discharge. This, together with the fact that urinalysis preoperatively never showed any pus cells, brought us to the conclusion that the megalo-ureter opened into the vagina, probably in the region of the left fornix. This was not actually demonstrated as vaginoscopy was not performed.

Gross examination of the operative specimen revealed an oval roughly kidney-shaped cystic mass 11 $^1/_2$ cm. long and 6 $^1/_2$ cm. wide (Fig. 4). A kinked, tortuous, much-dilated ureter was attached to the lower pole of this mass. The lumen of the ureter was patent 1.5 cm. in diam-

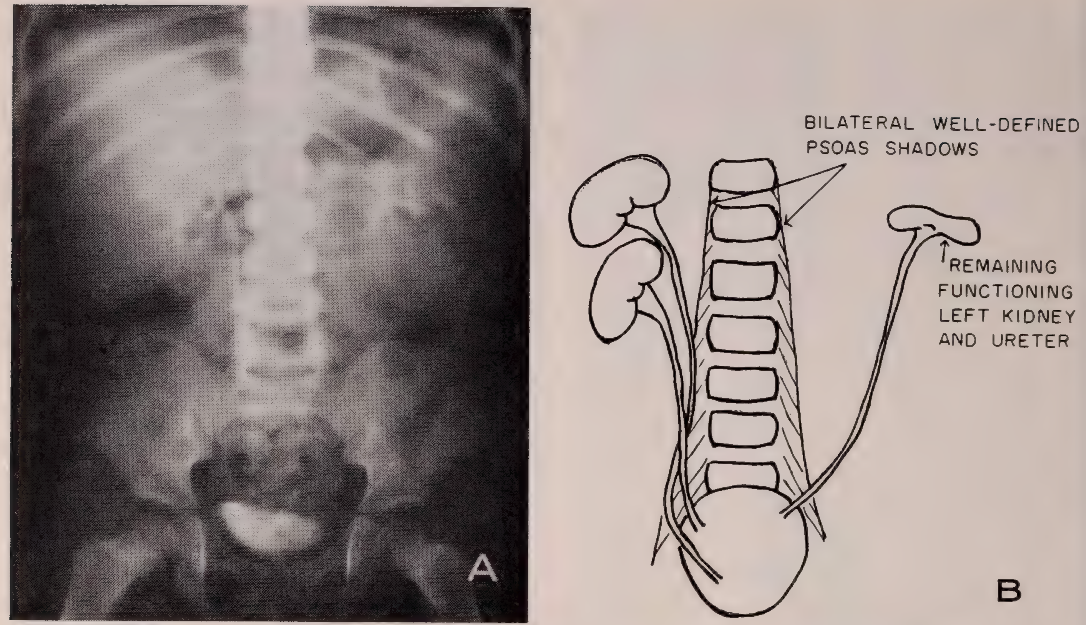
A
BILATERAL WELL-DEFINED PSOAS SHADOWS
REMAINING FUNCTIONING LEFT KIDNEY AND URETER
B

FIG. 6. (*A*) Postoperative intravenous pyelogram. (*B*) Diagram of postoperative pyelogram.

eter, and its wall was congested and 2 to 3 mm. thick. On opening the cystic mass a unilocular structure into which the ureter opened was found (Fig. 5). The upper third of this mass suggested renal tissue externally, but within the mass no renal substance could be identified and the thickness of the wall in this area was 2 to 3 mm.

Three bandlike folds on the inner surface of this portion of the cystic mass suggested greatly dilated calyces with almost complete atrophy of renal substance. The remaining two thirds of the cystic mass appeared to be a greatly dilated renal pelvis. The entire inner aspect of the cystic mass was lined with a shiny, smooth, yet somewhat opaque membrane, free of excrescences. The lumen of both the cystic mass and the ureter contained tannish-white purulent material which showed no growth on culture. No stones were found.

Microscopic examination of the specimen showed acute and chronic ureteritis and pyelonephritis, with hydroureter, hydronephrosis, and pyonephrosis.

The postoperative course was essentially benign and without any urinary or gastrointestinal difficulties. On November 9 the patient was gotten out of bed in a wheel chair. The drain was completely removed on November 12, all the sutures were out on November 15, and the wound was clean and well healed. The patient was on her feet, active, afebrile, and without complaints, and all antibiotics were discontinued.

She was discharged from the hospital on November 29 in excellent general condition. At that time the blood urea nitrogen was 9.8 and complete blood count was normal with a hemoglobin of 13.4 Gm. The urinalysis was normal except for a trace of albumen. A flat plate film of the abdomen showed normal findings, and an intravenous pyelogram now showed a somewhat smaller than normal left kidney shadow with the caliceal system pointing upward and the calices slightly dilated (Fig. 6A and B). Thorough investigation prior to discharge failed to reveal any further developmental anomalies in the genitourinary tract or elsewhere.

Since discharge the patient has been seen regularly in the surgical clinic for follow-up and has continued in good general condition with no complaints. She was last seen by me the end of March, 1955. Repeat intravenous pyelograms at this time showed good function of the two right kidneys with some decrease in dye concentration in the remaining left kidney as compared with that seen in the intravenous pyelogram taken just prior to discharge. At the time of this writing the patient continues to do well.

Thus the final diagnosis was bilateral reduplication of kidneys and ureters; in which one kidney, whose ureter opened into the vagina, was the site of hydropyonephrosis and hydropyoureter. This was sucessfully treated by means of surgical excision of the diseased kidney and ureter.

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"Social Diet" for Weight Reduction

You can diet and your friends don't even have to know about it. A "social" diet—in which you eat normally with only a few modifications—is described by Dr. Milton Plotz in the July 25 *Journal of the American Medical Association.*

The modifications include the following: Not more than one slice of bread is to be eaten at any meal. At breakfast, cereal or one slice of toast—not both—may be eaten. Variety can be added to the lean meat, green vegetable routine at dinner by small portions of rice, noodles, cracked wheat, or spaghetti, a small baked potato, or portions of peas or lima beans. No gravies are to be added to food. Portions of everything should be reduced by about one quarter, and "seconds" are not to be taken. Desserts should consist of one portion of fresh fruit, one ounce of any suitable cheese, or a small slice of angel food cake.

On this routine, almost every determined patient will lose weight according to Dr. Plotz. In 100 successive patients this routine resulted in a reduction of about 1,400 calories a day. In many instances, the patient's friends—and sometimes his family—did not know that he was on a diet.

Dr. Plotz notes that the dietary management of obesity is evolving today in much the same way as that of diabetes some twenty years ago. In the treatment of diabetes, the use of highly artificial diets with special preparations, with special or even exotically prepared dietetic foods, and food substitutes has been superseded by diets resembling normal diets as closely as possible.

A similar evolution is taking place in the management of obesity; artificial and complicated routines are being replaced by those which throw less burden on the patient's family and which enable the patient to be a more acceptable member of society.

Diets cannot be prescribed for a short time, Dr. Plotz says. The dieter must realize that he will have to change his eating habits for a long time—perhaps for life.

The dieter at first may need the help of a drug in suppressing his appetite. When newer eating habits are well established, the supportive medicine can often be withdrawn.

Dr. Plotz is associated with the State University of New York Medical Center at New York, in Brooklyn, and Kings County and Goldwater Memorial Hospitals.

Multiple Congenital Anomalies of the Genitourinary Tract

HAROLD B. HERMANN, M.D., AND FRANCESCO M. SALERNO, M.D., BROOKLYN, NEW YORK

(*From the Department of Surgery, Maimonides Hospital and the State University of New York, Downstate Medical Center*)

CONGENITAL anomalies of the genitourinary tract are not at all uncommon, but, nevertheless, they represent a fair percentage of daily urologic practice. It was only at the beginning of the present century and especially since Campbell devoted himself to the interesting field of pediatric urology that many of these entities were detected clinically and diagnosed while the patient was alive and before irreversible pathologic changes developed. A case is presented of multiple congenital anomalies in which delay in diagnosis and appropriate treatment resulted in the loss of one kidney in an eight-year-old boy.

Case Report

An eight-year-old male was first admitted to Maimonides Hospital on March 11, 1957. His chief complaint was intermittent left flank pain of six years duration. The patient was apparently well until the age of four when the mother noticed the onset of frequent recurrent episodes of left colicky costovertebral angle pain radiating anteriorly and associated with chills and fevers of 101 or 102 F. Vomiting and nausea were sometimes present. These attacks usually subsided within a few days after intramuscular administration of antibiotics under prescription of a family physician. The mother stated that the urine was always grossly clear and frank hematuria was never noticed. There was no dysuria, frequency, or enuresis. The last severe attack of left costovertebral angle pain, chills, and fever had occurred two months ago and was followed by acute urinary retention. This was the child's first episode of inability to void. The patient was brought to another hospital where he was catheterized and his urinary retention relieved; he had no further episodes of retention. He remained there two weeks and was then discharged as asymptomatic. The mother was informed that the left kidney was not functioning and that in case of a similar attack, the removal of the left kidney would be mandatory. The mother decided to seek another opinion as to the patient's renal status and consulted a urologist. An intravenous pyelogram confirmed the diagnosis of nonfunctioning left kidney; the right kidney had normal function and architecture. The episode of acute urinary retention was still not explained. The patient was admitted to the urologic service at Maimonides Hospital on March 12, 1956, for complete urologic investigation.

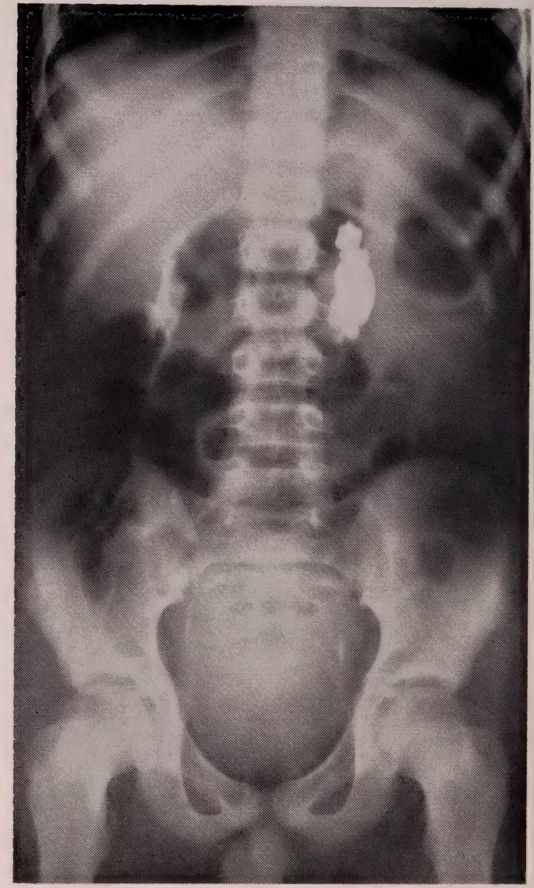

FIG. 1. Left retrograde pyeloureterogram which reveals malrotation of kidney and hydronephrosis; ureter (left) narrow and incompletely filled. On the right side there is residual dye from previous intravenous pyelogram.

On admission the patient was asymptomatic, looked well nourished and well developed. On physical examination the vital signs were within physiologic limits (blood pressure was 100/68)

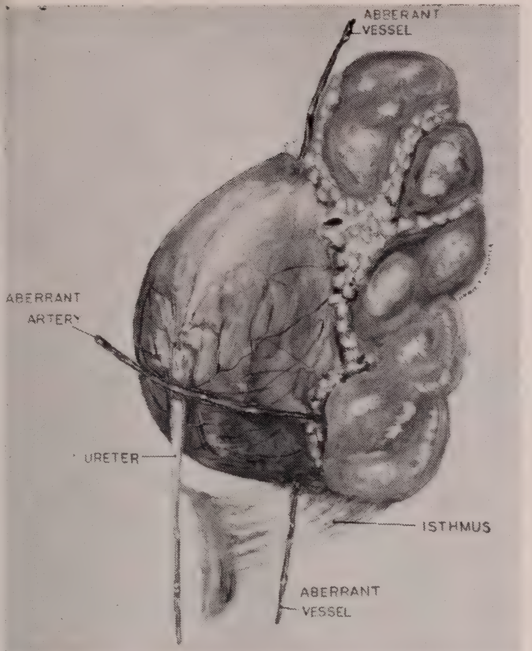

FIG. 2. Drawing of left kidney following removal.

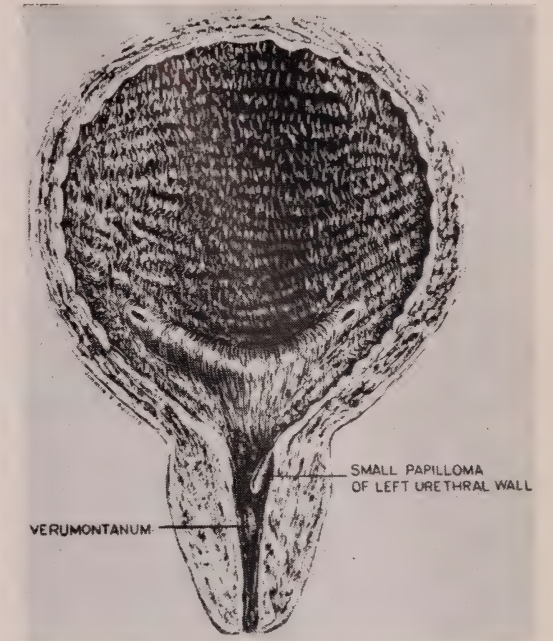

FIG. 3. Drawing showing the small papilloma of posterior urethra which produced urinary retention.

and a review of all systems and organs was essentially negative.

Laboratory Data

Urinalysis revealed only occasional white blood count and epithelial cells. Complete blood count was normal. Urine culture yielded no growth. The blood urea nitrogen was 11 mg. per cent. The fasting blood sugar was 79, carbon dioxide was 27, chlorides were 10.4 mEq., sodium was 146 mEq., potassium was 4.7 mEq., phosphorus was 4.6 mEq./L., and the calcium was 9.5.

On March 18, an intravenous pyelogram revealed prompt dye excretion on the right side outlining a normal right urinary tract. Films taken at intervals of five to ten and twenty-five minutes revealed no excretion of dye in the left kidney. Cystopanendourethroscopy and left retrograde pyelogram were performed on the same day under general anesthesia. The findings were as follows:

Bladder capacity was normal; the trigone was congested; the ureteral orifices were normal in number, shape, and position; the bladder neck was normal; the prostatic urethra was congested; a small pedunculated polyp was found on the left wall of the urethra just behind the bladder neck and proximal to the verumontanum. A Number 5 French ureteral catheter was passed with ease up to the left renal pelvis and 10 cc. of pale urine was obtained for culture; 4 cc. of 30 per cent Hypaque was injected into the renal pelvis. The pyelogram revealed a small sacculated kidney with a moderate hydronephrosis and closer to the midline than normal; the ureter had a rather high insertion, and a definite constriction was noted at the ureteropelvic junction; the possibility of a horse-shoe kidney was not excluded (Fig. 1). A diagnosis of left hydronephrosis secondary to ureteropelvic junction stricture was made, and on March 19 the kidney was explored through a left flank incision.

The findings disclosed a small, soft, sacculated kidney whose pelvis was markedly dilated and directed anteriorly; the ureter was narrow and entered the pelvis higher up than usual; an aberrant vessel crossed at the ureteropelvic junction and two other aberrant vessels were found at each pole of the kidney; the lower pole turned medially and continued toward the midline in a thin, fibrous-like isthmus which united with the right kidney. Left nephrectomy was performed after dividing all previously described aberrant vessels and transecting the fibrous-like isthmus (Fig. 2).

The pathologic report disclosed a hydronephrosis with atrophy of the kidney due to aberrant artery with obstruction at the ureteropelvic junction. Microscopic section of the isthmus revealed nephrogenic tissue.

Postoperatively the patient did well, and eight days following nephrectomy, under general anesthesia, the small papilloma in the posterior urethra previously described was resected and fulgerated transurethrally with the infant resectoscope (Fig. 3). The pathologic report of the lesion confirmed a papillary tumor of posterior urethra.

The patient was discharged two days following this procedure in good health and asymptomatic.

Comment

A history of recurrent attacks of flank pain and fever most likely representing episodes of pyelonephritis was overlooked. A complete urologic study carried out when the child first became ill would have resulted in early diagnosis of the renal lesion and probably would have obviated future nephrectomy. Incidence of horseshoe kidney at autopsy, according to Botez, is 1 to 715.1. Carliet and Gerard[1] reported an incidence of 1 in 862. In a series of 47,483 autopsies Campbell[2] reports horseshoe kidney being present in a ratio of 1 to 405. It occurs twice as often in children as in adults and twice as often in males as in females. Although there is a relatively higher frequency of horseshoe kidney in children, the anomaly is seldom demonstrated clinically; Campbell[3] found it only in four children. Embryologically, horseshoe kidney is the result of diffusion of two renal blastomas as they lie closer together at about the fifth or the sixth week of fetal life. Owing to this, there is improper ascending and rotation of the kidney with the pelvis remaining in the anterior position.

The isthmus of the horseshoe kidney is usually composed of parenchymatous tissue. Invariably it is represented by a fibrous strand; 95 per cent of the cases exhibited fusion of the lower poles with a concavity of the horseshoe pointing upward. Arteries are multiple and come directly from the aorta or the iliacs; numerous veins empty into the vena cava or the iliac vessels. Ureteropelvic obstruction of varying degrees is not uncommon. Diagnosis of a horseshoe kidney is usually made from pyelographic data, although palpation of umbilical masses may suggest the diagnosis. Gammelgaard,[4] in 1954, reported a case of a child of sixteen months in whom a horseshoe kidney was diagnosed by means of aortography.

The causes of urinary retention due to congenital anomalies of the prostatic urethra in children are: (1) congenital valves, (2) congenital hypertrophy of verumontanum, and (3) contracture of the vesical outlet.

A review of the literature reveals that urinary retention due to polyp in the posterior urethra in children, such as occurred in this case, is uncommon. Koll,[5] reported a case of a thirteen-month-old child in acute urinary retention in whom cystoscopy revealed no essential pathology, but on suprapubic exploration a polyp at the internal urethral orifice the size of a small hazelnut was found. In 1943, Ritter and Kramer[6] in a review of a congenital and acquired obstruction of the vesical neck in children, reported a case of periurethral sarcoma in a five-and-one-half-month-old female child and a case of polypoid myomatous nodule of the posterior urethra and prostate in a seventeen-month-old infant.

Summary

A case of multiple congenital anomalies of the genitourinary tract in an eight-year-old male was presented. The lesions encountered were: (1) horseshoe kidney with hydronephrosis secondary to aberrant vessels, and (2) a papilloma of the posterior urethra causing urinary retention.

The treatment consisted of left nephrectomy and transurethral resection of papilloma of the posterior urethra. The importance of early diagnosis in such a case has been stressed.

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fifty-third annual

DISTRICT BRANCH MEETINGS

Medical Society of the State of New York

SEVENTH DISTRICT BRANCH

Thursday, September 17, 1959
Sheraton Hotel, Rochester

Afternoon

1:30 P.M.—Registration
Films: "The Medical Witness"
"The Doctor Defendant"

2:00 P.M.—Address: "The Economics of Medicine: Where Are We Headed?"
Mr. DONALD R. ROBERTSON, Executive Director, Genesee Valley Medical Care, Inc.

2:45 P.M.—Recess

3:00 P.M.—Symposium: "Viral Disease"
JAMES H. ARSENEAU, M.D., Lyons, Consulting Orthopedist, Newark State School, *Moderator*

1. "The Public Health Approach"
   WENDELL R. AMES, M.D., Rochester, Consulting Physician, Rochester General Hospital
2. "New Developments"
   HERBERT R. MORGAN, M.D., Rochester, Consulting Bacteriologist, Veterans Administration Hospital, Batavia
3. "Practical Application"
   PAUL A. BUNN, M.D., Syracuse, Professor of Medicine, State University of New York Upstate Medical Center; Consulting Physician, St. Joseph's Hospital

5:00 P.M.—Business Meeting—Election of Officers

Evening

6:00 P.M.—Cocktails (courtesy Genesee Valley Medical Care, Inc.)

7:00 P.M.—Dinner (informal, for members, Auxiliary members, and guests)
Introduction of Officers

Address: HENRY I. FINEBERG, M.D., Jamaica, President, Medical Society of the State of New York

Remarks: MRS. JAMES L. MCCARTNEY, Garden City, President, Woman's Auxiliary to the Medical Society of the State of New York

Address: "New Concepts in Submarine Research"
COMMANDER GEORGE F. BOND, M.C., U.S. Navy, Officer in Charge, Medical Research Laboratory, United States Naval Submarine Base

Officers—Seventh District Branch

President	Joseph A. Lane, M.D., Rochester
First Vice-President	James H. Arseneau, M.D., Lyons
Second Vice-President	William L. Dorr, M.D., Auburn
Treasurer	Robert F. D. Gibbs, M.D., Seneca Falls
Secretary	Philip M. Standish, M.D., Canandaigua
Delegate	William L. Dorr, M.D. Auburn

Presidents—Component County Medical Societies

Livingston	John D. Mould, M.D., Geneseo
Monroe	Merle D. Evans, M.D., Rochester
Ontario	James L. Blanton, M.D., Clifton Springs
Seneca	Donald B. Polan, M.D., Seneca Falls
Steuben	Marion J. Chimera, M.D., Corning
Wayne	David Ennis, M.D., Lyons
Yates	Paul C. Johnson, M.D., Penn Yan

SIXTH DISTRICT BRANCH

Wednesday, September 23, 1959
Sheraton Inn, Binghamton

Afternoon

2:30 P.M.—Registration, Sheraton Inn Ballroom

3:00 P.M.—Panel Discussion: "Present Concepts in Infectious Disease with Emphasis on the Role of Antibiotics"

PAUL A. BUNN, M.D., Syracuse, Professor of Medicine, State University of New York Upstate Medical Center; Consulting Physician, St. Joseph's Hospital, *Moderator*

THOMAS GOCKE, M.D., Rochester, Director of Medical Education and Research, St. Mary's Hospital

DONALD LOURIA, M.D., New York City, Assistant Professor of Medicine, Cornell University Medical College; Director of Infectious Disease Service, Cornell Division, Bellevue Hospital

PAUL F. WEHRLE, M.D., Syracuse, Associate Professor of Pediatrics and Director of Virus Laboratory, State University of New York Upstate Medical Center

5:00 P.M.—Business Meeting—Election of Officers

5:15 P.M.—Social Hour

Evening

6:30 P.M.—Dinner

Introduction of Officers and Guests

Remarks: MRS. JAMES L. McCARTNEY, Garden City, President, Woman's Auxiliary to the Medical Society of the State of New York

Address: HENRY I. FINEBERG, M.D., Jamaica, President, Medical Society of the State of New York

Address: "Medical Aspects of Nuclear Propulsion"

COMMANDER RICHARD F. DOBBINS, M.C., U.S. Navy, Medical Officer of U.S.S. *Nautilus* SN-57

Officers—Sixth District Branch

President	James Greenough, M.D., Oneonta
First Vice-President	C. Stewart Wallace, M.D., Ithaca
Second Vice-President	George F. Nevin, M.D., Cortland
Secretary	Hugh D. Black, M.D., Oxford
Treasurer	George G. McCauley, M.D., Ithaca
Delegate	Norman C. Lyster, M.D., Norwich

Presidents—Component County Medical Societies

Broome	Harold C. Shulman, M.D., Binghamton
Chemung	David Kaplan, M.D., Elmira
Chenango	Thomas M. Flanagan, M.D., Norwich
Cortland	Nicholas J. Gabriel, M.D., Cortland
Delaware	Paul Kearney, M.D., Delhi
Otsego	J. Herbert Dietz, Jr., M.D., Oneonta
Schuyler	Francis C. Ward, M.D., Odessa
Tioga	Paul E. Zoltowski, M.D., Waverly
Tompkins	Edward F. Hall, M.D., Ithaca

Rocky Mountain Spotted Fever Increases in East

At one time more than 99 per cent of the cases of Rocky Mountain spotted fever occurred in the Mountain and Pacific States. But now the incidence of the disease in these areas has declined markedly and the ailment is increasingly prevalent in the South Atlantic states. It has been known to occur in Long Island, New York, since 1912.—*Patterns of Disease, Parke, Davis & Company*

NECROLOGY

George Francis Cahill, M.D., of New York City, died on July 24 in Harkness Pavilion at the age of sixty-nine. Dr. Cahill graduated in 1911 from Yale University School of Medicine and interned at Bellevue and New York Post-Graduate Hospitals. He was a consultant in urology at Presbyterian, Francis Delafield, Yonkers General, St. John's Riverside, Mount Vernon, Englewood (New Jersey), St. Agnes (White Plains), and Good Samaritan (Suffern) Hospitals. He was also an honorary urologist at Tuxedo Memorial Hospital, Tuxedo Park. Dr. Cahill was a former instructor and associate professor of urology at New York Post-Graduate Hospital and Medical School; in 1917 he joined the faculty of Columbia as an instructor in urology and continued to be a member of the faculty until his retirement in 1955, when he resigned as director of the urologic service and executive officer of the Columbia-Presbyterian Medical Center. Dr. Cahill was head of the Department of Urology at the College of Physicians and Surgeons, a former director of urology at Francis Delafield Hospital, and a past president of the medical board of Presbyterian Hospital.

A Diplomate of the American Board of Urology and a Fellow of the American College of Surgeons, he was a member of the American Association of Genito-Urinary Surgeons, the American Urological Association of which he was also a past president, the Clinical Society of Genito-Urinary Surgeons, the New York Academy of Medicine, the New York Surgical Society, the New York Society of American Urological Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Joseph Delany, M.D., of New York City, died on April 6 at the age of forty-nine. Dr. Delany graduated in 1936 from Columbia University College of Physicians and Surgeons. He was an associate in surgery at St. Vincent's Hospital. Dr. Delany was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of New York County Medical Society and the Medical Society of the State of New York.

G. Clifford Hackett, M.D., of Portville, died at St. Francis Hospital, Olean, on June 23 at the age of sixty-nine. He graduated in 1914 from Jefferson Medical College of Philadelphia. He was an attending physician at Olean General and St. Francis Hospitals. During World War I he served as an officer in the U.S. Army Medical Corps. Dr. Hackett was a member of the Cattaraugus County Medical Society of which he had been president, the Medical Society of the State of New York, and the American Medical Association.

Charles B. Horton, M.D., of New York City, died at his home on July 17 at the age of sixty. Dr. Horton graduated in 1925 from the University of Toronto Faculty of Medicine. During World War II he served with the U.S. Army Medical Corps as a major. He was a Member of the American Psychiatric Association, and belonged to the Academy of Psychoanalysis and the William Alanson White Psychoanalytic Society.

Bernard Hughes, M.D., of New York City, retired, died on July 24 at Brooklyn Veterans Hospital at the age of seventy-seven. Dr. Hughes graduated in 1909 from New York Homeopathic Medical College and Flower Hospital which presented him with an honorary diploma this year on the occasion of his fiftieth anniversary. During World War I he served in the U.S. Army Medical Corps as a lieutenant.

Nathan Bernard Jaffe, M.D., of the Bronx and Bridgeport, Connecticut, died on March 22 at the age of seventy-three. Dr. Jaffe graduated in 1917 from the University of Vermont College of Medicine. He was a Fellow of the American College of Gastroenterology and a member of the American Gastroscopic Society, the American Trudeau Society, and the Association of Military Surgeons of the United States.

Ralph Rembrandt Moolten, M.D., of New York City, died in University Hospital on July 20 at the age of sixty-two. Dr. Moolten graduated in 1919 from Columbia University College of Physicians and Surgeons and interned at New York Post-Graduate Hospital. He was a former associate clinical professor of surgery at New York Post-Graduate Medical School as well as an attending in surgery at New York Post-Graduate Hospital. Dr. Moolten was a Fellow of the American College of Surgeons and a member of the New York County Medical Society and the Medical Society of the State of New York.

William Arthur Peart, M.D., of Sanborn, retired, died on June 9 at his home at the age of eighty-seven. Dr. Peart graduated in 1905 from the University of Toronto Faculty of Medicine. He was an honorary physician at Niagara Falls Memorial Hospital where he had also served as president of the staff and for many years was health officer for the towns of Niagara and Wheatfield. He was a member of the Niagara Falls Academy of Medicine, the Niagara County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Michael Percoco, M.D., of Mount Vernon and Bronxville, died on July 27 at his home at the age of fifty-three. Dr. Percoco received his medical degree in 1934 from the University of Rome and interned at Fordham Hospital. He was a clinical assistant physician at Mount Vernon Hospital. Dr. Percoco was a member of the Bronx County Medical Society and the Medical Society of the State of New York.

Bernard Samuels, M.D., of New York City, died on July 26 at Wiscasset, Maine, at the age of eighty. Dr. Samuels graduated in 1907 from Jefferson Medical College of Philadelphia. He was professor emeritus of ophthalmology at Cornell University Medical College and a consultant in ophthalmology at New York Hospital. From 1914 until his retirement in 1942 he served as clinical instructor in ophthalmology, assistant professor, and full professor at Cornell University Medical College. From 1919 to 1925 he taught ophthalmology at the New York Eye and Ear Infirmary and in 1935 became a full surgeon from then until 1946 when he headed one of the Infirmary's six eye clinics as well as served the Infirmary as a pathologist. In 1946 he became advisory surgeon and consulting pathologist and in 1956 was instrumental in establishing the Infirmary's Institute of Ophthalmology of the Americas, designed primarily for postgraduate medical students from Latin America.

In 1949 Dr. Samuels was elected to the executive committee of the National Society for the Prevention of Blindness and in 1954 presided at the Seventeenth International Congress of Ophthalmology in New York City. Dr. Samuels was a Diplomate of the American Board of Ophthalmology and of the International College of Surgeons, a Fellow of the American College of Surgeons and of the International College of Surgeons, and a member of the American Ophthalmological Society, the American Academy of Ophthalmology and Otolaryngology, the New York Academy of Medicine, the New York Ophthalmology Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Sloan, M.D., of New Hartford, retired, died on July 13 at Oneida City Hospital at the age of sixty-seven. Dr. Sloan graduated in 1913 from New York University and Bellevue Hospital Medical College. He was a consultant in obstetrics at St. Luke's Memorial Hospital where he established the Department of Obstetrics and for many years was instructor of obstetrics in the nursing school. He was a founder of the Baby Welfare Clinic in Utica in 1917 and had served as chairman of the maternal welfare committee of the Oneida County Medical Society. Dr. Sloan was a past president of the Utica Medical Club, a charter member of the Utica Academy of Medicine, for twenty-six years had served on the staff of the old General Hospital, was on the staff of St. Luke's Hospital for forty years, and had served as an associate member of the staff of Faxton Hospital. He was a member of the Oneida County Medical Society of which he had been past president and treasurer, the Medical Society of the State of New York of which he had served as secretary of the pediatrics section, and the American Medical Association.

David Henry Weidman, M.D., of Buffalo, died at his home on July 1 at the age of fifty-one. Dr. Weidman graduated in 1932 from the University of Buffalo School of Medicine. He was an assistant in surgery at Deaconess Hospital.

Perhaps the only true dignity of man is his capacity to despise himself.—SANTAYANA

AN AMES CLINIQUICK T.M.

CLINICAL BRIEFS FROM MODERN PRACTICE

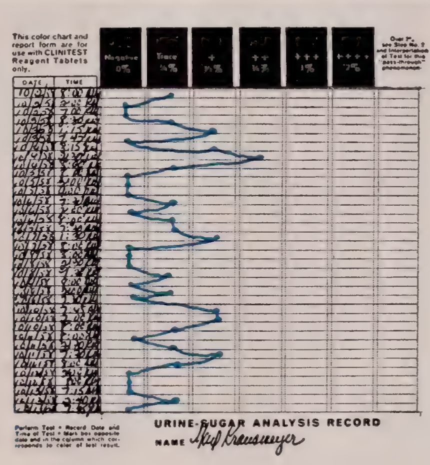
What differentiates "renal diabetes" (renal glycosuria) from diabetes mellitus?

Blood sugar levels. In renal glycosuria they are normal; in untreated diabetes, fasting blood sugars are usually 130 mg.% or over and postprandial levels 170 mg.%, or more.

Source: Joslin, E. P.; Root, H. F.; White, P., and Marble, A.: The Treatment of Diabetes Mellitus, ed. 9, Philadelphia, Lea & Febiger, 1952, pp. 701-702.

A "URINE-SUGAR PROFILE" FOR CLOSER CONTROL

The new Clinitest Urine-Sugar Analysis Set contains an improved Analysis Record form that enables even closer control of the *moderate* and the *severe* diabetic. Daily urine-sugar readings may be connected to produce a graph—a day-to-day "profile" that reveals at a glance individual trends and degree of control.



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*GP *16*:121 (August) 1957.

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MEDICAL NEWS

Postgraduate Courses at NYU-Bellevue Medical Center—New York University-Bellevue Medical Center's Post-Graduate Medical School offers the following postgraduate courses.

"Allergy": A full-time, three-week course, November 30 through December 18.

"Refresher Course in Allergic Conditions": A full-time, three-day course, March 21 through 23, 1960.

"The Management of Allergies": A part-time course of eight sessions, Fridays, 1:30 P.M. to 3:30 P.M., April 8 through June 3, 1960 (excluding Good Friday, April 15).

"Diagnostic Cardiac Auscultation": A full-time, three-and-one-half-day course, Wednesday through Saturday noon, October 28 through 31.

"The Practical Fundamentals of Clinical Electrocardiographic Interpretation": A part-time course of eighteen sessions, Wednesday, 7:00 P.M. to 9:00 P.M., November 4, 1959 through March 16, 1960 (excluding December 23 and 30, 1959).

"Electrocardiography": A full-time, five-day course, Monday through Saturday (excluding Wednesday and Saturday afternoons) November 9 through 14.

For information concerning any of these courses write to: Associate dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

Three Memorial Center Physicians to Retire—Three staff members of the Memorial Center for Cancer and Allied Diseases, retired this summer. They are: Fred W. Stewart, M.D., chairman of the Department of Pathology; Lloyd F. Craver, M.D., cochairman of the Department of Medicine; and Bradley L. Coley, M.D., chief of the bone service.

Postgraduate Courses on Diseases of the Chest—The Council on Postgraduate Medical Education of the American College of Chest Physicians will present the following postgraduate courses this fall: Fourteenth annual course, "Clinical Cardiopulmonary Physiology," Edgewater Beach Hotel, Chicago, October 5 through 9; twelfth annual course, "Diseases of the Chest," Park Sheraton Hotel, New York City, November 9 through 13; fifth annual course, "Diseases of the Chest," Ambassador Hotel, Los Angeles, December 7 through 11.

Further information may be obtained by writing to: Executive director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

Physicians Speak on Mental Retardation—Six New York physicians spoke at the first international medical conference on mental retardation which was held in Portland, Maine, July 27 through 31. They were: *Brooklyn*: Drs. E. W. Gordon and J. Wortis; *New York City*: Drs. L. Bender, L. S. James, S. Karelitz, and J. M. Tarlov.

Heart Research Grants Announced—It has been announced that a total of $1,205,510 has been allocated this year for heart research by the Life Insurance Medical Research Fund. There are 83 awards in all. Sixty-four of these are to medical research institutions in 22 states, the District of Columbia, four Canadian provinces, and Mexico. These grants range from $3,960 to $39,600 and cover periods of one to three years.

The following institutions in the New York area have received grants for research on diseases of the heart and arteries: Columbia University College of Physicians and Surgeons, New York City; New York Medical College, New York City; New York University-Bellevue Medical Center, New York City; State University of New York College of Medicine at New York City; State University of New York College of Medicine at Syracuse; and University of Buffalo School of Medicine, Buffalo.

New Booklet on Glaucoma—Herman E. Hilleboe, M.D., State Health Commissioner, has announced the publication of a new pamphlet entitled "Glaucoma." The pamphlet describes glaucoma and its development, and stresses preventive and control measures. It was prepared by the Office of Public Health Education, State Department of Health, and the Bureau of Chronic Diseases and Geriatrics.

Copies are available without cost to residents of New York State from the Office of Public Health Education, New York State Department of Health, 84 Holland Avenue, Albany 8, New York.

Rockville Centre Physician Tests New Cure—Harold Bernstein, M.D., of Rockville Centre, is currently engaged in testing a cure for keloids on the Dutch West Indies island of Aruba, off the

[Continued on page 3282]

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Average dosage, 1 teaspoonful (5 cc.) contains:

l-Lysine HCl	300 mg.
Vitamin B_{12} Crystalline	25 mcgm.
Thiamine (HCl B_1)	10 mg.
Pyridoxine HCl (B_6)	5 mg.
Ferric Pyrophosphate (Soluble)	250 mg.
Iron (as Ferric Pyrophosphate)	30 mg.
Sorbitol	3.5 Gm.
Alcohol	0.75%

Bottles of 4 and 16 fl. oz.

Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

New hope for fetal salvage
Delalutin
SQUIBB HYDROXYPROGESTERONE CAPROATE
improved progestational therapy

The results of administering Delalutin before the 12th week of gestation to 82 women with habitual abortion were reported recently by Reifenstein.[1] Every patient had experienced at least three consecutive abortions immediately preceding the treated pregnancy. More than 68% of these women were delivered successfully and uneventfully following Delalutin therapy.

Boschann,[2] in a study of pregnancies with threatened abortion, found that:

37% of 73 pregnancies were carried to term without progestational therapy
64% of 42 pregnancies were salvaged by progesterone
83% of 73 pregnancies were salvaged by Delalutin

Eichner,[3] found that with Delalutin fetal salvage of infants below term weight (1000 to 2000 gm.) was significantly improved.
108 (76%) of 142 babies of this birth weight survived without progestational therapy.
16 (100%) of 16 babies of this birth weight survived with Delalutin therapy.
A comparison study was made of a group of repeated aborters treated with Delalutin, and a group with a similar history treated with bed rest and sedation.[4] Pregnancy salvage with Delalutin was twice that of the control group. Delalutin was found to be "highly active," well-tolerated and long-acting.

Delalutin offers these advantages over other progestational agents:

- longer-acting and more sustained therapy
- more effective in producing and maintaining a completely matured secretory endometrium
- no androgenic effect
- more concentrated solution requires injection of less vehicle
- unusually well-tolerated, even in large doses
- requires fewer injections
- low viscosity makes administration easier

DELALUTIN is also potent and safe therapy for: threatened abortion; postpartum after-pains; amenorrhea, primary and secondary; dysfunctional uterine bleeding not associated with genital malignancy; infertility with inadequate corpus luteum function; production of secretory endometrium and desquamation during estrogen therapy; premenstrual tension; dysmenorrhea; cyclomastopathy, mastodynia, adenosis and chronic cystic mastitis.

Administration and Dosage: Because of its low viscosity, Delalutin may be administered with a small gauge needle (deep intragluteal injection). Complete information on administration and dosage is supplied in the package insert.

Supply: Delalutin is available in vials of 2 and 10 cc., each cc. containing 125 mg. of hydroxyprogesterone caproate in sesame oil, and benzyl benzoate.

References: 1. Reifenstein, E. C., Jr.: *Annals N. Y. Acad. Sci.* 71:762 (July 30) 1958. 2. Boschann, H-W.: *ibid.,* p. 727. 3. Eichner, E.: *ibid.,* p. 787. 4. Hodgkinson, C. P.; Igna, E. J., and Bukeavich, A. P.: *Am. J. Obst. and Gyn.* 76:279, 1958.

SQUIBB *Squibb Quality—the Priceless Ingredient*

'Delalutin'® is a Squibb trademark

[Continued from page 3278]

coast of Venezuela. Dr. Bernstein has been interested in finding an effective treatment for keloids for some time but in four years was only able to locate 75 cases at Queens General Hospital. While on a vacation cruise to Aruba in 1958, Dr. Bernstein visited public health officials and learned from them that there were hundreds of cases of keloids on the island.

Lederle International has given grants so that Dr. Bernstein can treat the keloid sufferers free of charge in order to further his search for a cure. He now visits Aruba about four times a year, spending a week or two each visit to supervise the work of the project.

Physician Presented Films in London—Morton I. Berson, M.D., has returned from London where he attended the International Congress of Plastic Surgery. Dr. Berson presented two films before the congress. They were: "Cosmetic Meloplasty—Face-lift Operation" and "Breast Reconstruction for Partial and Complete Mammectomy."

Work at Margaret Sanger Research Bureau to Continue—The work of the late Abraham Stone, M.D., as director of the Margaret Sanger Research Bureau, will be carried on by a temporary administrative committee headed by Alan F. Guttmacher, M.D., as acting medical director.

Personalities

Awarded

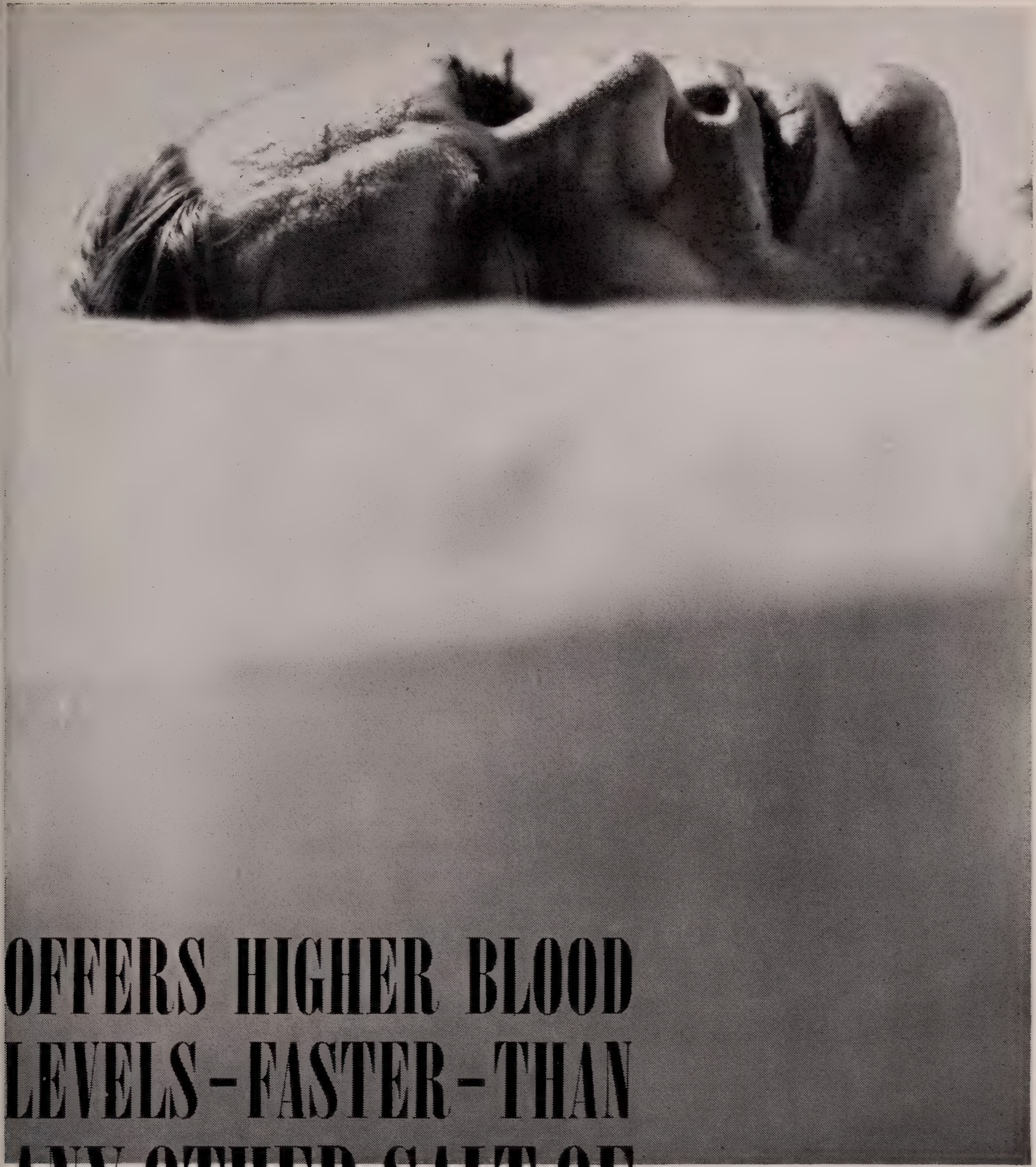
C. Andrew Bassett, M.D., and James B. Campbell, M.D., Columbia-Presbyterian Medical Center, awards from the Paralyzed Veterans of America, for their work in the field of paraplegia.

Appointed

Leonard S. Brahen, M.D., to the staff of the Pfizer Clinical Research Department . . . John W. Ferree, M.D., as executive director of the National Society for the Prevention of Blindness . . . Robert S. Graham, M.D., as an assistant medical director of The Equitable Life Assurance Society of the United States . . . Gordon K. Moe, M.D., as director of the medical research laboratory at the Masonic Foundation for Medical Research and Human Welfare, in Utica . . . James A. O'Connor, M.D., to the staff of the Pfizer Clinical Research Department . . . John H. Talbott, M.D., Buffalo, as director of the division of scientific publications and editor of the American Medical Association's *Journal* . . . George M. Wheatley, M.D., as head of Metropolitan Life Insurance Company's Health and Welfare Division . . . W. P. Shepard, M.D., as chief medical director, Metropolitan Life Insurance Company.

Hospitals Admissions Increase

The number of persons entering hospitals annually has increased nearly 150 per cent over the past two decades, according to the publication *Patterns of Disease*. During this period, length of patients' stay in all types of hospitals decreased 44 per cent. In general hospitals alone, length of stay dropped from 12.6 days to 8.9 days—a decrease of 29 per cent.



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COMPOCILLIN®–VK

Potassium Penicillin V

® FILMTAB — FILM-SEALED TABLETS, ABBOTT U.S PAT. NO 2881085

Supplied: Compocillin-VK Filmtabs, 125 mg. (200,000 units), bottles of 50 and 100; 250 mg. (400,000 units), bottles of 25 and 100. Compocillin-VK Granules for Oral Solution come in 40-cc. and 80-cc. bottles. When reconstituted, each 5-cc. teaspoonful represents 125 mg. (200,000 units) of potassium penicillin V.

in tiny, easy-to-swallow Filmtabs® in tasty, cherry-flavored Oral Solution

Doctors' Dilemma, 1959

the challenge of chronicity in genitourinary tract infections

"Aside from the disturbing increase in emergence of antibiotic resistant bacterial strains, perhaps the most challenging dilemma confronting thoughtful physicians today is the problem of chronic infection of the genitourinary tract."[1]

to control the chronic case

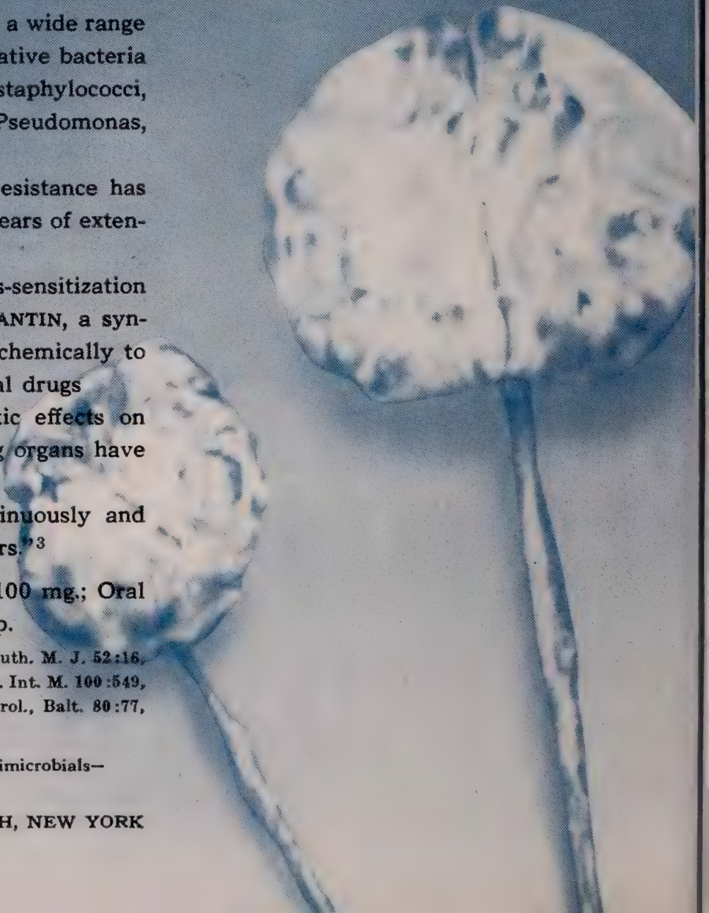
FURADANTIN®

brand of nitrofurantoin

"may be used for protracted periods for the suppression of infection in the urinary tract, even in the presence of probable obstruction."[2]

- ■ Rapidly bactericidal against a wide range of gram-positive and gram-negative bacteria including organisms such as staphylococci, Proteus and certain strains of Pseudomonas, resistant to other agents
- ■ Development of bacterial resistance has not been a problem in over 7 years of extensive clinical use
- ■ No cross-resistance or cross-sensitization with other drugs since FURADANTIN, a synthetic nitrofuran, is unrelated chemically to any other class of antimicrobial drugs
- ■ Excellent tolerance—no toxic effects on kidneys, liver or blood-forming organs have ever been reported
- ■ "The drug was given continuously and safely for as long as three years."[3]

Available as Tablets, 50 and 100 mg.; Oral Suspension, 25 mg. per 5 cc. tsp.



References: 1. Lipscomb, H., et al.: South. M. J. 52:16, 1959. 2. Jawetz, E., et al.: A.M.A. Arch. Int. M. 100:549, 1957. 3. Lippman, R. W., et al.: J. Urol., Balt. 80:77, 1958.

NITROFURANS—a *unique* class of antimicrobials—neither antibiotics nor sulfonamides

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VITERRA THERAPEUTIC—high potency formula. Bottles of 30 and 100.

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Science for the World's Well-Being

NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Promoted—Dr. Arthur A. Stein has been promoted from associate professor to professor of pathology. Dr. Stein will be in charge of surgical pathology at the College; Dr. Robert F. Scott, Vancouver, B.C., to assistant professor of pathology; Dr. Daniel L. Gilbert from instructor to assistant professor of physiology; Dr. Charles Hurwitz from associate in microbiology to assistant professor of microbiology; Dr. Rodolfo A. Florentin from assistant instructor to instructor in pathology; Dr. Boris Rotman to assistant professor of biochemistry; Dr. George A. Edwards as an associate in anatomy; Dr. Jorgen E. Fogh as an associate in microbiology; Dr. Futoshi Iida, Nagoyashi, Japan, as an assistant in pathology; and Drs. Leonard Grumbach and David W. Wylie, lecturers in pharmacology.

Research Grant—The U.S. Public Health Service has awarded a grant of $2,300 to develop evidence for the theory that specific irritants, as yet unknown, are present in the bronchial secretions of patients with lung cancer. Members of the research group are: Dr. Arthur A. Stein, professor of pathology; Dr. Samuel R. Powers, Jr., professor of surgery; Dr. Joseph V. Landau, research associate in oncology, and Dr. John J. Cincotti, assistant professor of surgery.

Fellowships—James H. Puleo, Timothy M. Harris, and Donald E. Humphrey were the recipients of fellowships for July and August from the United States Public Health Service and the Tobacco Industry Committee to perform medical research under the supervision of faculty members. Puleo was assigned to the Department of Psychiatry, Humphrey to the Department of Surgery, and Harris to the Department of Pharmacology.

Awarded Second Prize—A scientific exhibit created by Dr. Antonio Boba, assistant professor of anesthesiology, Dr. Samuel R. Powers, Jr., professor of experimental surgery, and Dr. Arthur A. Stein, professor of pathology, was awarded second prize in the laboratory research category at the annual meeting of the American Urological Association. The exhibit was based on their research investigation of technics which might be employed to reduce fatalities resulting from crushing injuries and was titled "Effects of Ganglionic Blockage on Acute Renal Damage."

Cornell University Medical College

Grant—The John A. Hartford Foundation has awarded a three-year grant for a program of gastrointestinal metabolic research. The studies will be conducted chiefly in the Cornell Laboratories of Bellevue Hospital by a group of workers led by Drs. Thomas P. Almy and Martin Lipkin.

New York University College of Medicine

Alumni Association—Dr. Bernard J. Pisani, associate clinical professor of obstetrics and gynecology has been elected president of the Association. He succeeds Dr. Maxwell H. Poppel who becomes a director of the New York University Alumni Federation.

Appointed—Dr. William N. Hubbard, Jr., associate dean, has been appointed dean of the University of Michigan Medical School.

State University of New York Downstate Medical Center

Grants—Dr. Robert F. Furchgott, professor of pharmacology, received $29,759 from the National Institutes of Health for graduate training in pharma-

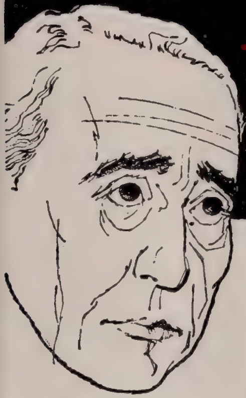
[Continued on page 3289]

In Mild Depression

Deaner®

p-acetamidobenzoic acid salt of 2-dimethylaminoethanol

Anti Depressant



Do Not confuse it with tranquilizers

'Deaner' must not be confused with tranquilizing or sedative drugs which may aggravate depression. On the contrary, 'Deaner' is often used to counteract drug-induced depression.

'Deaner' is valuable as an emotional normalizer in many situations other than depression, such as behavior problems with agitation. Nor should 'Deaner' be considered an ordinary stimulant. Its gentle action differs from that of other stimulants in that it leads to increased useful energy and alertness without the undesirable side effects of the amphetamine-like drugs.

Deaner a totally new molecule, offers a new type of alleviation in depression, fatigue states and many other emotional disturbances. Its physiologic effectiveness as a safe central nervous system stimulant is attributed to its activity as a probable precursor to acetylcholine.

Deaner leads to better ability to concentrate, increased daytime energy, sounder sleep (with less sleep needed), and a more affable mood.

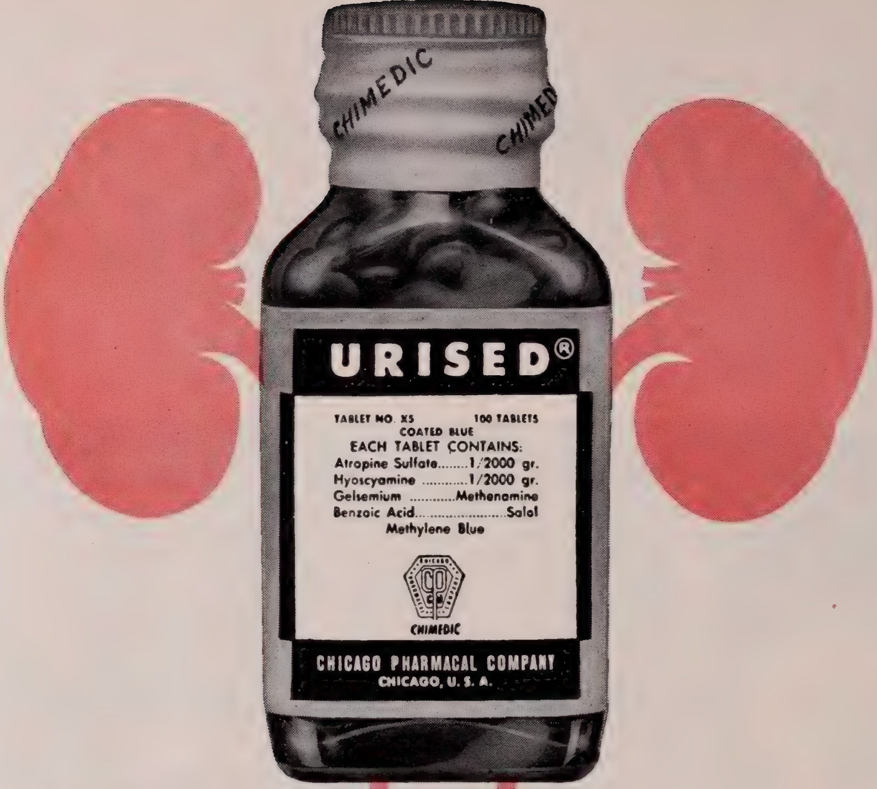
Deaner acts gently, gradually, and its effects are prolonged... without causing hyperirritability... without loss of appetite... without elevating blood pressure or heart rate... without sudden letdown on discontinuance.

Deaner is valuable in the treatment of children, especially those whose performance is impaired by behavior problems, whose attention span is too short, and who are emotionally unstable, unpredictable, and unadaptable.

Dosage: Initially, 1 tablet (25 mg.) in the morning. Maintenance dose, 1 to 3 tablets; for children, ½ to 3 tablets. Three to four weeks of therapy may be required for maximum benefit.

Literature and bibliography available upon request.

Riker
Northridge,
California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TABLET NO. X5
100 TABLETS
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EACH TABLET CONTAINS:
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Fast, *potentiated* attack on...

URINARY INFECTION

In just a matter of minutes URISED provides four way antibacterial action to relieve genitourinary irritation and smooth muscle spasm . . . to reduce pus cell count . . . to promote mucosal healing.

In just a matter of minutes URISED soothes ureteral and urethral spasticity . . . alleviates discomfort and irritation . . . restores normal urinary tonus and function.

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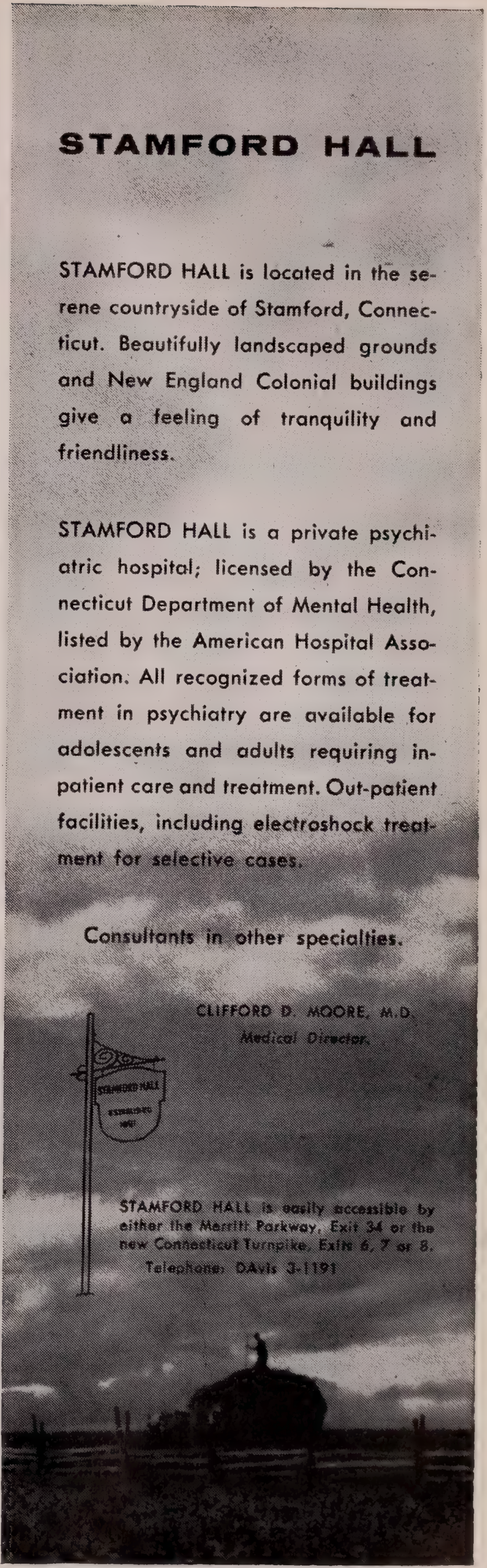
[Continued from page 3286]

cology and $6,325 for studies of the factors which influence the secretion of adrenalin and noradrenalin from the adrenal gland and the pharmacology of the tranquilizing agent, reserpine. From the Atomic Energy Commission $16,548 has been awarded to Drs. Robert Speirs and Alexander A. Fedinec, Department of Anatomy, for radioactive studies following the pathways of the spread of tetanus toxin from the site of action to the central nervous system and following the formation of antibodies against tetanus.

Other grants awarded are: Dr. Ladislav P. Hinterbuchner, instructor of neurology—$10,406 from the National Institutes of Health for studies of isolated muscle tension in dystrophic mice; Dr. Lowell M. Greenbaum, assistant professor of pharmacology—$8,740 from the National Institutes of Health for research on an enzyme called Cathepsin B; Dr. Clarence Dennis, professor of surgery—$8,316 from the National Institutes of Health for graduate training in heart surgery and $2,000 from the New York Heart Association for a study of the problems arising in cardiovascular surgery; Dr. Thomas P. Magill, professor of microbiology—$6,600 from the Army for studies of influenza virus variation; Dr. David M. Engelhardt, associate professor of psychiatry—$5,500 from Hoffmann-La Roche Inc. to investigate a compound for combating psychic depression; Dr. Frank S. Parker, assistant professor of biochemistry—$2,288 from the National Institutes of Health for studies with an infrared spectrophotometer of the chemical reactions to dextrose which take place in the body; Dr. Walter Riss, assistant professor of anatomy—$2,225 from the National Institutes of Health for studies of electrical brain stimulation and of the process involved in teaching the animal to perform certain acts to cause a repetition of the stimulation; and Dr. Arthur Shapiro, clinical associate professor of medicine—$2,400 from Warner Chilcott Laboratories for a study of the effects of various pharmaceutical agents on the symptoms of heart disease which occur during the night.

Dr. E. Jefferson Browder Honored—Twenty three out of 25 former residents who completed their training in neurosurgery at the Kings County Hospital in Brooklyn since 1934 returned on June 12 to pay tribute to Dr. E. Jefferson Browder, head of neurosurgery at the Hospital and professor of neurosurgery at the Medical Center. During a dinner at The Brooklyn Club they presented Dr. Browder with a leatherbound book entitled "The Boss," and consisting of a handwritten memoir of their experiences under him. Dr. Russell Meyers, one of the former residents and now chair-

[Continued on page 3306]



STAMFORD HALL

STAMFORD HALL is located in the serene countryside of Stamford, Connecticut. Beautifully landscaped grounds and New England Colonial buildings give a feeling of tranquility and friendliness.

STAMFORD HALL is a private psychiatric hospital; licensed by the Connecticut Department of Mental Health, listed by the American Hospital Association. All recognized forms of treatment in psychiatry are available for adolescents and adults requiring in-patient care and treatment. Out-patient facilities, including electroshock treatment for selective cases.

Consultants in other specialties.

CLIFFORD D. MOORE, M.D.
Medical Director.

STAMFORD HALL is easily accessible by either the Merritt Parkway, Exit 34 or the new Connecticut Turnpike, Exits 6, 7 or 8.
Telephone: DAvis 3-1191

IN CONSTIPATION

ELIMINATE THE ENEMA AT HOME OR IN THE HOSPITAL

"The effectiveness of the senna preparation ['Senokot'] in reducing the need for enemas...is clearly apparent..."

Kasdon, S. C., Morentin, B. O.: J. Internat. Coll. Surgeons 31:455 (Apr.) 1959.

...time and time again, gentle, natural acting 'Senokot' is cited in clinical reports as the therapy of choice in all patients with acute or chronic constipation.

'Senokot' acts uniquely, through neuro-stimulation of Auerbach's plexus in the colon, duplicating the process of normal defecation.

When therapy with 'Senokot' is substituted for enemas the difference is safe, natural physiologic correction of constipation, and increased patient comfort, as well as significant saving of time for your hospital's nursing staff.

THE EFFECTIVENESS AND SAFETY OF THE DOUBLY STANDARDIZED SENNA CONCENTRATE CONTINUE TO BE DOCUMENTED BY CLINICAL AND LABORATORY INVESTIGATIONS WHICH CONSTITUTE THE FASTEST GROWING BIBLIOGRAPHY* ON CONSTIPATION CORRECTION

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natural bowel corrective
Senokot

Small and easy to swallow, in bottles of 100.
TABLETS

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Cocoa-flavored, in 8 and 4 ounce canisters.
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STANDARDIZED CONCENTRATE OF TOTAL ACTIVE PRINCIPLES OF CASSIA ACUTIFOLIA PODS, PURDUE FREDERICK

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270 tablets
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Just one prescription for Engran "Term-Pak" (270 TABLETS)
SQUIBB VITAMIN-MINERAL SUPPLEMENT
calling for one tablet a day will carry her through term to the six-week postpartum checkup. This means you are assured of a nutritionally perfect pregnancy, and she realizes major savings.*

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Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

American Medical Education Foundation

SINCE 1955, when the Woman's Auxiliary to the Medical Society of the State of New York was invited at its fall conference to participate in the fund-raising program of the American Medical Education Foundation, our State Auxiliary has conducted an active drive to cooperate in this venture. The Auxiliary's first A.M.E.F. chairman, Mrs. Kent W. Jarvis, presented to each member the challenge of "what does your husband's medical education mean to you?" Today, in 1959, this evaluation is an even more poignant consideration, and the raising of funds for A.M.E.F. is more urgent than in 1955.

With more and more activity centered in the Federal government and many forces at work toward the concentration of power at the national level, many have come to look to the government as the provider—at what they believe is no cost to themselves. This, of course, is unrealistic thinking.

Recently Ezra Taft Benson, Secretary of Agriculture, stated: "We have seen in the past quarter century a tremendous shift from individual to governmental responsibility in many phases of economic and social life. Our phenomenal material advances have been the fruit of our freedom, our free enterprise system, our American way of life, our God-given freedom of choice. Yet these basic American beliefs, principles, and attitudes are threatened today as never before. If we lose these freedoms, it will be because we did not care enough."

How appropriately these words apply to the growing concern of the practicing physician and his family and to the financial problems of all the nation's medical colleges—not merely to each physician's own school. Thus the work of the American Medical Education Foundation becomes even more important.

Members of the Woman's Auxiliary to the Medical Society of the State of New York have given a total of $25,188.30 to the A.M.E.F. since 1955. Funds were raised by the sales of Christmas and other greeting cards, by benefit luncheons, teas, bridge parties, and fashion shows, and by other activities of the individual auxiliaries. Each year since 1955 the State Auxiliary's total contributions have been increased—and this year all efforts must be and will be even greater. We believe the responsibility is ours not only as Auxiliary members but as citizens.

Combining the theme of Mrs. James L. McCartney, president of the State Woman's Auxiliary, "Facing Our Challenge," and the theme of Mrs. Frank Gastineau, president of the Woman's Auxiliary to the American Medical Association, "Individual Responsibility for Better Community Health," we this year are accepting our individual responsibility to face the challenge of keeping our medical schools and the practice of medicine free. This privilege of freedom must not be allowed to slip away.

MRS. HENRY I. FINEBERG, *Chairman*
American Medical Education Foundation

8268 164th Street
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Of all amusements for the mind,
From logic down to fishing,
There isn't one that you can find
So very cheap as "wishing."—JOHN GODFREY SAXE

how often have you thought...

"...but how will it work in my practice?"

This most frequently asked question cannot be answered by the manufacturer, the detail man, an advertisement, a piece of mail. Only through actual experience with a product in day-to-day private practice can this question be answered.

UNITENSEN PROVED IN DAY-TO-DAY PRACTICE In office trials, Unitensen products have been proved effective therapy in the management of the hypertensive patient. These are the facts, obtained from 3,841 physicians, who used Unitensen products in their day-to-day office practice, in treating a total of 35,727 patients. In 11,093 cases (31.0%) results were "excellent"; in 51.2% (18,294) cases, "good"; "fair" results were obtained in 4,591 patients (12.9%) and in only 1,749 cases (4.9%) were results "unsatisfactory." Minor side effects were reported in 1,081 cases (3.0%).

The results mentioned above were obtained while the patients engaged in their normal daily occupations and activities. None of the patients involved in the study were hospitalized or institutionalized. And, despite such variables as dietary indiscretions, an occasional overdose, or a dose inadvertently "missed," the Proof In Practice Study shows Unitensen products to be safe, dependable, potent antihypertensive therapy . . . permitting practical office management of virtually all hypertensive cases.

UNITENSEN: BASIC HYPERTENSIVE THERAPY Although many of the patients in the Study also received diuretics and/or tranquilizers during the course of treatment, it was noted that the vasodilating effect of Unitensen was required to obtain optimum blood pressure control. Unitensen, a true hypotensive agent, is potentiated by diuretics. A combination of the two is frequently recommended for lower dosage of each drug, minimizing the side effects of either.

UNITENSEN DOES MORE THAN LOWER BLOOD PRESSURE Dr. Burton M. Cohen* makes the following observations regarding Unitensen:

"Hypotensive effect obtained through specific stimulation of afferent side of reflex pathways of blood pressure control without adrenolytic action or ganglionic blocking . . . Nausea and vomiting rare . . . No alteration of vasomotor reflexes, thus no postural collapse . . . Bradycardia, never tachycardia, may occur . . . Cardiac output not lessened . . . Renal circulation participates in reflex vasodilation . . . Cerebrovascular resistance is decreased, with improvement or maintenance of blood flow and O_2 utilization . . . No dangerous side actions have been reported."*

UNITENSEN-R® Each tablet contains cryptenamine (tannates) 1.0 mg., reserpine, 0.1 mg.

UNITENSEN-PHEN® Each tablet contains cryptenamine (tannates) 1.0 mg., phenobarbital, 15 mg.

UNITENSEN® Each tablet contains cryptenamine (tannates) 2.0 mg.

Clinical supplies available on request.

Neisler IRWIN, NEISLER & CO. • Decatur, Illinois

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*Cohen, B. M.: The Ambulatory Patient with Hypertension: An Approach to Office Management, presented at the American Medical Association Convention, San Francisco, California, June 22-27, 1958.

MEDICAL MEETINGS

New York State Society of Industrial Medicine

The scientific program of the New York State Society of Industrial Medicine, Inc., will be held on Wednesday, September 30, in the Louis XVI Suite of the Waldorf-Astoria Hotel, New York City, at 5:00 P.M.

The theme of the program will be "The Treatment of Pain Syndromes Commonly Encountered in Industry."

Speakers from New York City will be: Herbert Kupperman, M.D., on "The Physio-Dynamics of Pain"; Arnold P. Friedman, M.D., on "Headache"; and Martin L. Stone, M.D., on "Dysmenorrhea."

Interested physicians are invited to attend this scientific session.

Brooklyn Psychiatric Society

The Brooklyn Psychiatric Society has announced its program of dinner meetings for the year 1959–1960. All meetings will be held at the Brooklyn State Hospital, 681 Clarkson Avenue, Brooklyn. Cocktails and dinner will be served at 6:30 P.M. in the staff house of the Brooklyn State Hospital and will be open to members only.

Scientific sessions will be held at 8:30 P.M. in the auditorium of the hospital and are open to the profession.

The schedule of meetings is as follows: First meeting: Thursday, October 15—"Brief Communications"; Sidney L. Green, M.D., president, Brooklyn Psychiatric Society, moderator. Second meeting: Thursday, November 19—"The Meaning and Process of Existential Psychotherapy"; Rollo May, Ph.D., fellow, William Alanson White Institute of Psychiatry. Third meeting: Thursday, February 18, 1960—"Eastern Philosophies and Psychotherapy"; Harold Kelman, M.D., dean, American Institute of Psychoanalysis. Fourth meeting: Thursday, March 17, 1960—"Psychiatry and Religion: Compatible or Incompatible?"; Abraham Franzblau, Ph.D., M.D., professor of pastoral psychiatry, Jewish Institute of Religion; associate attending psychiatrist, Mount Sinai Hospital.

For information write to: Morton M. Golden, M.D., secretary-treasurer, 7 Montague Terrace, Brooklyn 1, New York.

Seventh Annual Symposium Day on Diabetes

The Clinical Society of the New York Diabetes Association, Inc. will hold its seventh annual symposium day on Friday, October 16, at Hunter College. The topic will be "Changing Basic and Clinical Concepts in Diabetes Mellitus." A special lecture on "The Action of Insulin" will be delivered by the Nobel Laureate Professor, Ernst Chain, of Rome.

Symposium day is open to physicians, students, and members of allied professions. Registration is in advance through the office of the New York Diabetes Association, Inc., 104 East 40th Street, New York 16, New York.

American Medical Association's Council on Foods and Nutrition

Infant feeding, with special emphasis on protein, iron, calcium, and phosphorus, will be the topic of an October symposium sponsored by the American Medical Association's Council on Foods and Nutrition. The symposium will be held at the New York Hospital-Cornell Medical Center, New York City, October 27.

Cosponsors will be New York Hospital-Cornell Medical Center, Cornell University Graduate School of Nutrition, New York Academy of Medicine, and the Medical Society of the County of New York.

Advance registration for the symposium may be made by writing to the Council on Foods and Nutrition, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

American Psychosomatic Society

The American Psychosomatic Society will hold its seventeenth annual meeting at the Sheraton-Mount Royal Hotel, Montreal, Canada, on Saturday and Sunday, March 26 and 27, 1960.

The program committee asks that titles and abstracts of papers for consideration on the program be submitted no later than December 1, 1959. The time allotted for presentation of each paper will be ten to twenty minutes.

Abstracts, of two or three pages, in nine copies, should be submitted for consideration to: Eric D. Wittkower, M.D., chairman, program committee, 265 Nassau Road, Roosevelt, New York.

Fourth National Cancer Conference

The fourth national cancer conference sponsored by the American Cancer Society, Inc. and the

[Continued on page 3298]

postoperative patient distress can be prevented...

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(*d*-pantothenyl alcohol, Travenol)

A Routine Procedure for the Early Resumption of Postoperative Intestinal Activity

- effectively prevents and corrects abdominal distention . . . and retention of flatus and feces
- restores normal peristaltic activity, physiologically

because COZYME supplies the active molecular component of coenzyme A—pantothenic acid—which is essential in the formation of acetylcholine, the chemical mediator of nerve impulse transmission governing intestinal motility.

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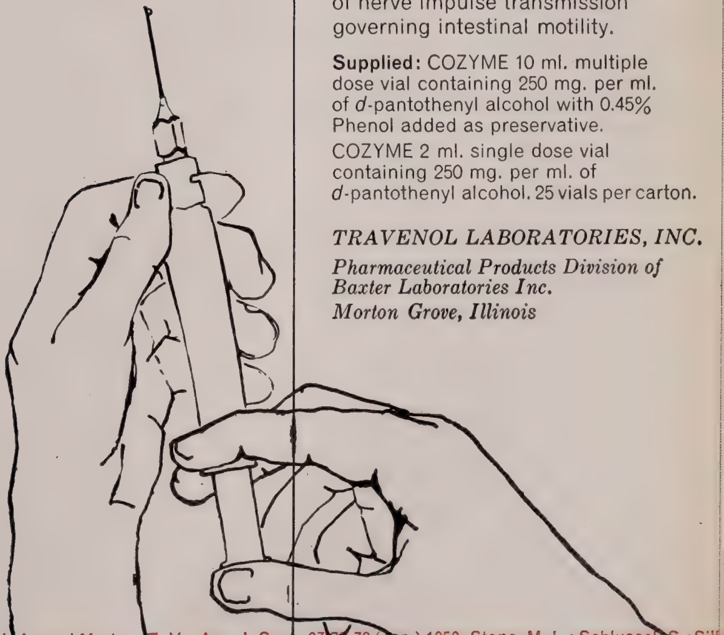

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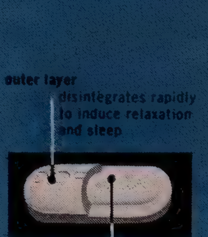
For those patients who complain

carries your patients through the middle of the night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disintegrates rapidly to induce relaxation and sleep
inner core
sleep continues smoothly as inner core dissolves

Each Nebralin timed-release tablet contains:

Dorsital* .... 90 mg.
Warning: May be habit forming

Mephenesin ....425 mg.
*Dorsey brand of pentobarbital

CAUTION: Federal law prohibits dispensing without prescription

Dosage: One or two tablets ½ hour before retiring.

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timed-release tablet

timed-release action for a full night's sleep

NEBRALIN is designed to duplicate the normal sleep pattern. It encourages muscular relaxation and induces sustained, relaxed sleep by the release of Dorsital and mephenesin in a timed-release tablet. Rapid-acting mephenesin quickly relaxes skeletal muscles to overcome "fatigue-tension" and conditions the body for sleep. Dorsital provides CNS sedation to induce sound, relaxed sleep. The initial and sustaining dosages are designed to keep the amount of barbiturate to be inactivated at any one time at a low level tapering toward morning. Evidence indicates that mephenesin is capable of producing sleep,[1] and when combined with a barbiturate enhances barbiturate action.[2,3] Moreover, the integrated action of the two components permits smaller dosages of each,[4] assuring your patients refreshed awakenings without "morning hangover."

1 Schlesinger, E. B.: Tr. New York Acad. Sc. 2:6, (Nov.) 1948.
2 Richards, R. K., and Taylor, J. D.: Anesthesiology 17:414, 1956.
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[Continued from page 3294]

National Cancer Institute, will be held at Minneapolis, Minnesota, September 13 through 15, 1960. The theme of the conference will be "Changing Concepts Concerning Cancer."

For information write to: Medical Affairs Department, American Cancer Society, 521 West 57th Street, New York 19, New York.

Population Statistics

California is expected to add more than 6 million inhabitants by 1970 and with a population exceeding 20 million will be the most populous state, according to statisticians of the Metropolitan Life Insurance Company.

Other states for which rapid population gains are predicted are: Nevada and Arizona, with increases of about two thirds, to lead all the states in rate of population growth; Florida, an increase of two fifths to bring its population to almost 6 million; and Maryland, Delaware, and Michigan, with increases of at least one third.

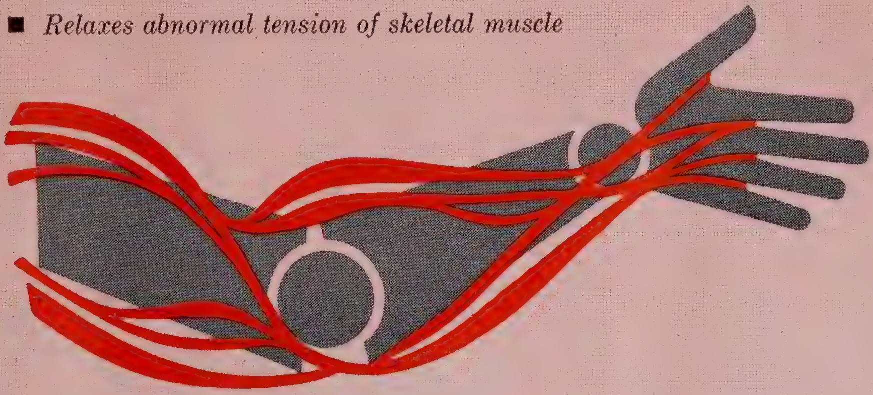
For a nation as a whole, including the new states of Hawaii and Alaska, the total population is expected to be over 208 million by 1970, with the annual increment of the intervening years averaging 1.5 per cent. The Metropolitan statisticians base these predictions in part on estimates by the Bureau of the Census.

Each of the three broad age components of the population will increase, but not in equal measure. Persons at the principal productive ages—eighteen to sixty-four years—will be the slowest growing group; their number is expected to rise only one fifth to about 115 million by 1970. The number of persons under eighteen should increase by nearly one fourth to about 74 million. At the same time the over-sixty-five population is expected to increase by a third to 19$^1/_2$ million.

Of particular interest is the outlook for the new states of Alaska and Hawaii. Although it is difficult to foretell the effects of statehood, it is likely that the future rate of population growth for each will be well above that for the country as a whole. By 1970 there may be about 290 thousand persons in Alaska and over 800 thousand in Hawaii. Also noteworthy is the relative youthfulness of the population in both these areas. Currently, only about 5 per cent of their residents are past age sixty-five, and even this low proportion is expected to decrease somewhat. On the other hand, persons aged eighteen to sixty-four are expected to continue to comprise almost 60 per cent of the population in Hawaii and about 70 per cent in Alaska.

now . . . a new way to relieve pain
and stiffness in muscles and joints

- *Exhibits unusual analgesic properties, different from those of any other drug*
- *Specific and superior for relief of* SOMA*tic pain*
- *Modifies central perception of pain without abolishing natural defense reflexes*
- *Relaxes abnormal tension of skeletal muscle*



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N-isopropyl-2-methyl-2-propyl-1, 3-propanediol dicarbamate

In back pain, bursitis, sprains, strains, and bruises, whiplash and other traumatic injuries, inflammatory and degenerative muscle and joint complaints.

RAPID ACTING. Pain-relieving and relaxant effects start within 30 minutes and last for at least 6 hours.

NOTABLY SAFE. Toxicity is extremely low. No effects on liver, endocrine system, blood pressure, blood picture or urine have been reported. Some patients may become sleepy on higher than recommended dosage.

EASY TO USE. Usual adult dose is one 350 mg. tablet 3 times daily and at bedtime.

SUPPLIED: Bottles of 50 white sugar-coated 350 mg. tablets.

Literature and samples on request.

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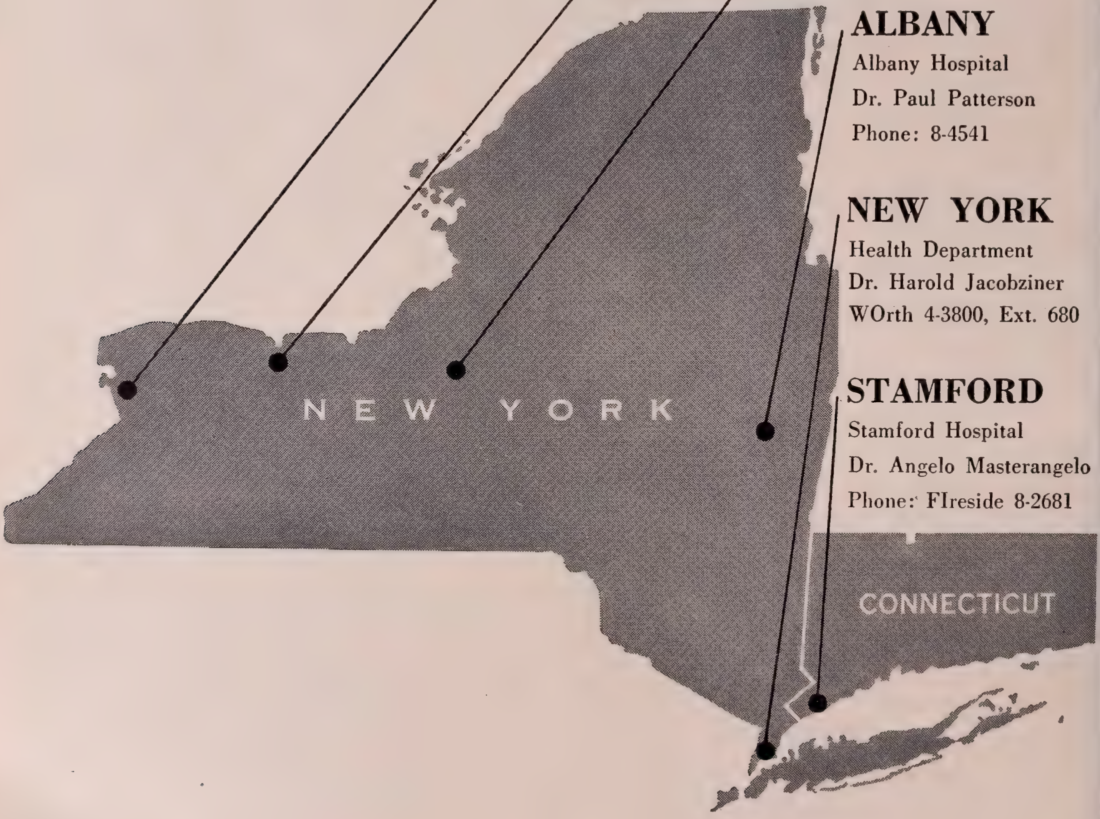

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'EMPIRIN' COMPOUND®

Acetophenetidin	gr. 2½
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Acetylsalicylic Acid	gr. 3½
Caffeine	gr. ½
Codeine Phosphate	gr. ¼

No. 3

Acetophenetidin	gr. 2½
Acetylsalicylic Acid	gr. 3½
Caffeine	gr. ½
Codeine Phosphate	gr. ½

No. 4

Acetophenetidin	gr. 2½
Acetylsalicylic Acid	gr. 3½
Caffeine	gr. ½
Codeine Phosphate	gr. 1

*Subject to Federal Narcotic Regulations

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rheumatic conditions
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(HYDROCHLOROTHIAZIDE)

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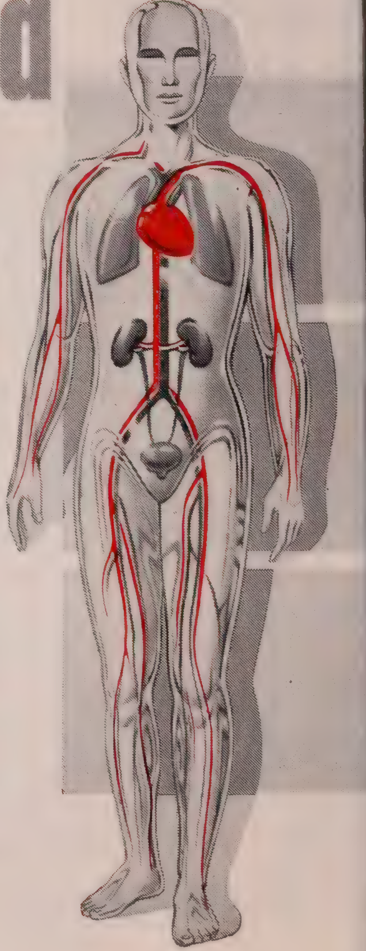

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T. M.

(HYDROCHLOROTHIAZIDE)

1 **Initiate therapy with HYDRODIURIL:** one 25 mg. tablet or one 50 mg. tablet once or twice a day. HYDRODIURIL by itself often causes an adequate drop in blood pressure over a period of two to three weeks. This may be all the therapy some patients require.

2 **Add or adjust other agents as required:** HYDRODIURIL enhances the activity of all commonly-used antihypertensive agents; thus, the dosage of other medication (rauwolfia, reserpine, hydralazine, veratrum) should be initiated or adjusted as indicated by patient condition. If a ganglion-blocking agent is contemplated or being used, usual dosage must be reduced by 50 per cent.

3 **Adjust dosage of all medication:** the patient must be frequently observed and careful adjustment of all agents should be made to establish optimal maintenance dosage.

Supplied: 25 mg. and 50 mg. scored tablets HYDRODIURIL (Hydrochlorothiazide) bottles of 100 and 1,000.
Additional literature for the physician is available on request.
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avoid the risk of insoluble, irritating aspirin particles

Chief among the drawbacks to aspirin usage is gastric intolerance. This ranges from mild upset and "heartburn" to severe hemorrhagic gastritis.[1-10] Studies performed in conjunction with gastrectomy[4,5] and gastroscopy[2] have shown insoluble aspirin particles firmly adherent to the gastric mucosa and imbedded between rugae. Reactions varying from mild hyperemia to erosive gastritis have been reported to occur in the areas immediately surrounding these adherent particles.[2,4,5] This is reported to be particularly true in patients with peptic ulcer.[4]

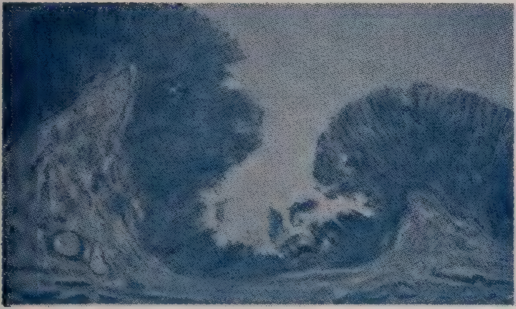
CALURIN is the freely soluble, stable calcium aspirin complex. Its high solubility forestalls gastric irritation or damage

Regular aspirin crystals 24 hours after being mixed into water.

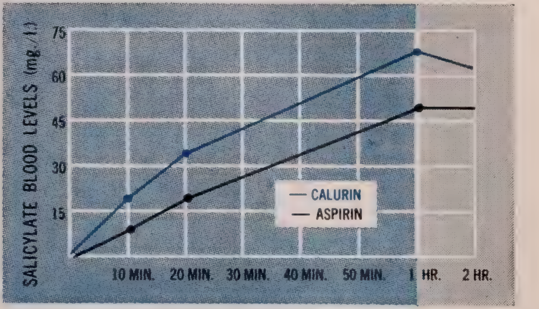
Calurin crystals in solution one minute after being mixed into water.

CALURIN*

STABLE SOLUBLE CALCIUM-ACETYLSALICYLATE-CARBAMIDE



Particle-induced ulceration — section through lesion found in gastrectomy specimen. An aspirin particle was found firmly imbedded in this undermined erosion. Such lesions may be associated with the relative insolubility of aspirin, which remains in particulate form after dispersion in gastric contents.



Calurin, being freely soluble, is promptly available for absorption into the systemic circulation. Salicylate blood levels in 12 subjects receiving both Calurin and plain aspirin were found to rise more than twice as high within ten minutes following Calurin. Also, these levels persisted higher for at least two hours.[11]

CALURIN is the aspirin of choice, especially when high-dosage, long-term therapy is indicated:

1 High solubility forestalls gastric irritation or damage. This advantage is of special importance in arthritis and other conditions requiring high-dosage, long-term therapy.

2 Produces high salicylate blood levels rapidly for prompt analgesic, anti-pyretic, anti-arthritic effect.

3 Sodium-free — for safer long-term therapy.

4 Flavored: can be chewed or dissolved in the mouth without water if desired — an advantage for patients requiring aspirin administration during the night and for pediatric patients.

Dosage: Each tablet of Calurin is equivalent to 300 mg. (5 gr.) of acetylsalicylic acid. For relief of pain and fever in adult patients, the usual dose of Calurin is 1 to 3 tablets every 4 hours, as needed; in arthritic states, 2 or 3 tablets 3 or 4 times daily; in rheumatic fever, 3 to 5 tablets 4 or 5 times daily. For children over 6 years, the usual dose is 1 tablet every 4 hours; for children 3 to 6 years, ½ tablet every 4 hours, as required. Not recommended for children under 3.

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[Continued from page 3289]

man, Department of Neurosurgery, University of Iowa, delivered the after-dinner speech on "Neurosurgery: Current Trends and the Future Development."

Grants for Student Summer Research—Eighty-eight students have received summer fellowship, traineeship, or special research grants from the Alumni and Parents Associations, the United States Public Health Service, the National Science Foundation and various private foundations, health agencies and pharmaceutical companies. In most cases they amount to $600 for the two-month summer period.

State University of New York Upstate Medical Center

Research Grants—Drs. Daniel M. Enerson and John F. Neville, Department of Surgery, have received a grant of $19,800 from the American Heart Association for a study of the function of the liver during the use of the heart-lung machine for open heart surgery. The grant is for a two-year period.

The Life Insurance Medical Research Fund has awarded a grant to Dr. John M. McKibbin, professor of biochemistry, in the amount of $18,480 for a project involving analysis of the fatty substances present in animal tissue. The grant is for a two-year study.

The Lalor Foundation has awarded a grant of $7,083 to Dr. Ross Jacobs, assistant professor of obstetrics, for a study of the production of steroid hormones by the pregnant sheep uterus. Other grants received have been: $6,000 from the National Society for the Prevention of Blindness for the study of the cause of uveitis to Dr. Harry A. Feldman, professor and chairman, Department of Preventive Medicine and $4,000 from the Arthritis and Rheumatism Foundation to determine the optimum method for performing latex fixation tests in diagnosis of rheumatoid arthritis; and $2,400 from the Williams-Waterman Fund to Dr. Myron Brin, Departments of Medicine and Biochemistry, to extend his studies on vitamin deficiency and serum enzymes, a portion of which has been earmarked for a summer student fellowship which has been awarded to David J. Albert, a second-year medical student.

Presented Papers—Dr. Julius B. Richmond, professor and chairman, Dr. Lytt I. Gardner, professor, Dr. William J. Waters, clinical associate professor, and Dr. Paul F. Wehrle, associate professor, all from the Department of Pediatrics, presented papers at the Ninth International Congress of Pediatrics. The Congress was held in July in Montreal, Canada. The subjects of the papers were: "Some Research Trends in Child Development," "Two New Variants on Congenital Adrenal Hyperplasia," "Historical Development of Cretinism," and "The Pathology of Kernicterus and the Cytotoxicity of Bilirubin."

University of Rochester School of Medicine and Dentistry

Appointed—Dr. Julius J. Cohen, assistant professor of physiology and instructor in internal medicine, University of Cincinnati College of Medicine, has been appointed associate professor of physiology which is effective September 1.

Promoted—Dr. Aser Rothstein, and Dr. Leon L. Miller associate professors of radiation biology and biochemistry, and Dr. J. Newell Stannard, associate professor of radiation biology, to full professors.

Perpetual devotion to what a man calls his business is only to be sustained by perpetual neglect of many other things.—Robert Louis Stevenson

NEW AND EXCLUSIVE . . . the only 5-action, one-tablet treatment...for comprehensive control of your asthma patients, prescribe

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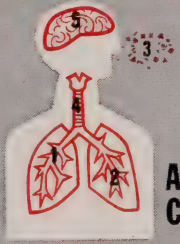

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4. Tenacious mucus	→	Expectorant	←	Glyceryl guaiacolate, 100 mg.
5. Anxiety-tension	→	Sedative	←	Phenobarbital, 8 mg.

CLINICALLY PROVEN—good to excellent results in 91% of 593 patients.[1]

WELL TOLERATED—side effects in these studies mild and temporary—incidence only 4.7%.[1]

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DOSAGE: Adults: one tablet every 3 or 4 hours, four to five times daily. Children over six: one half the adult dosage.

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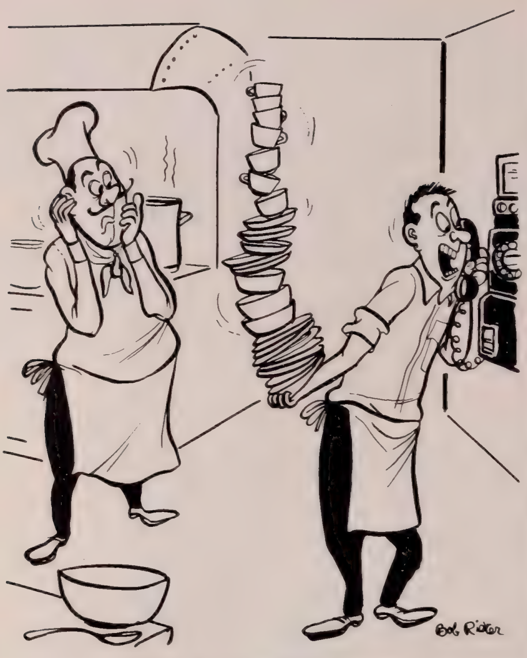
1. Personal communication. 2. Foland, J. P.: Postgrad. Med. 18:397 (Nov.) 1955.



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1. Alvarez, W. C.: Geriatrics 13:647, 1958.
2. Gale, E. T., and Thewlis, M. W.: Geriatrics 8:80, 1953.

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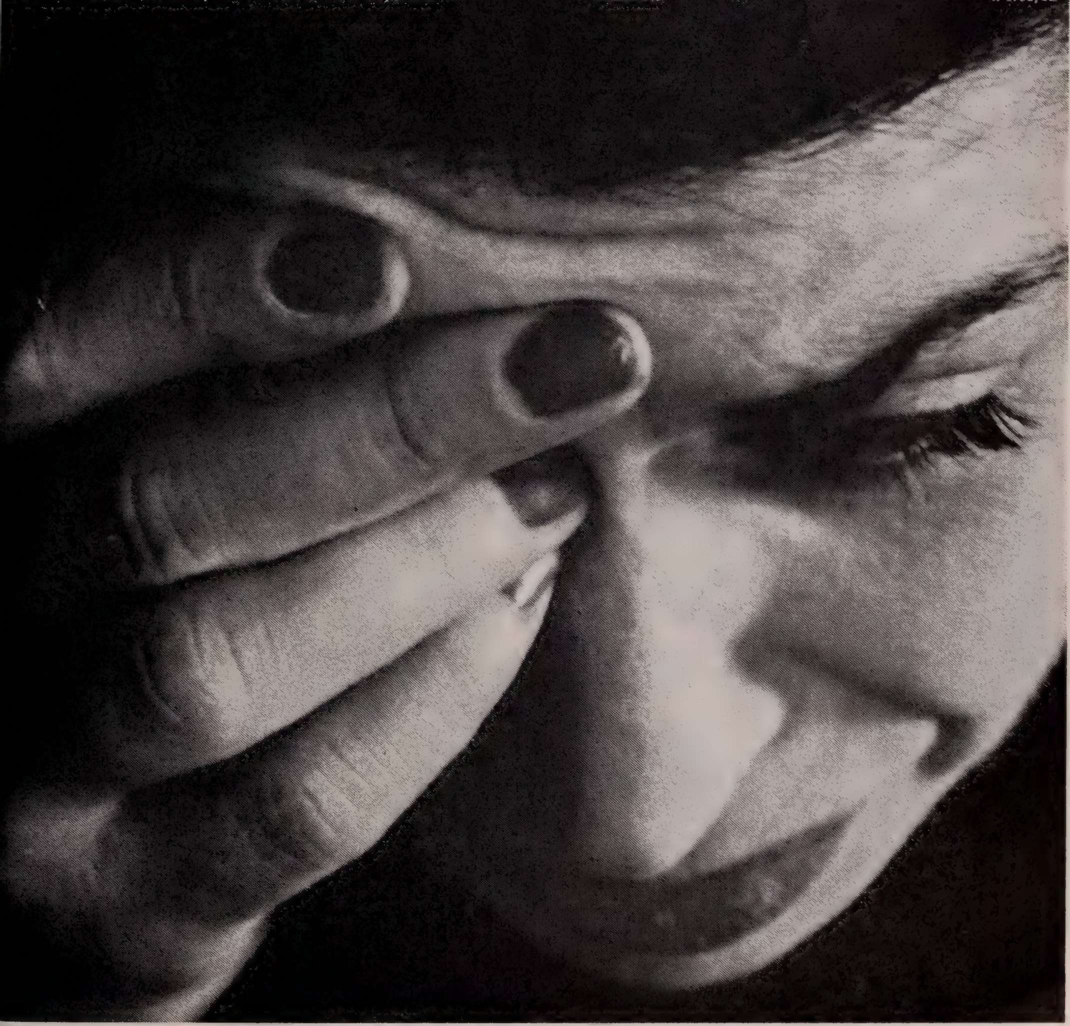

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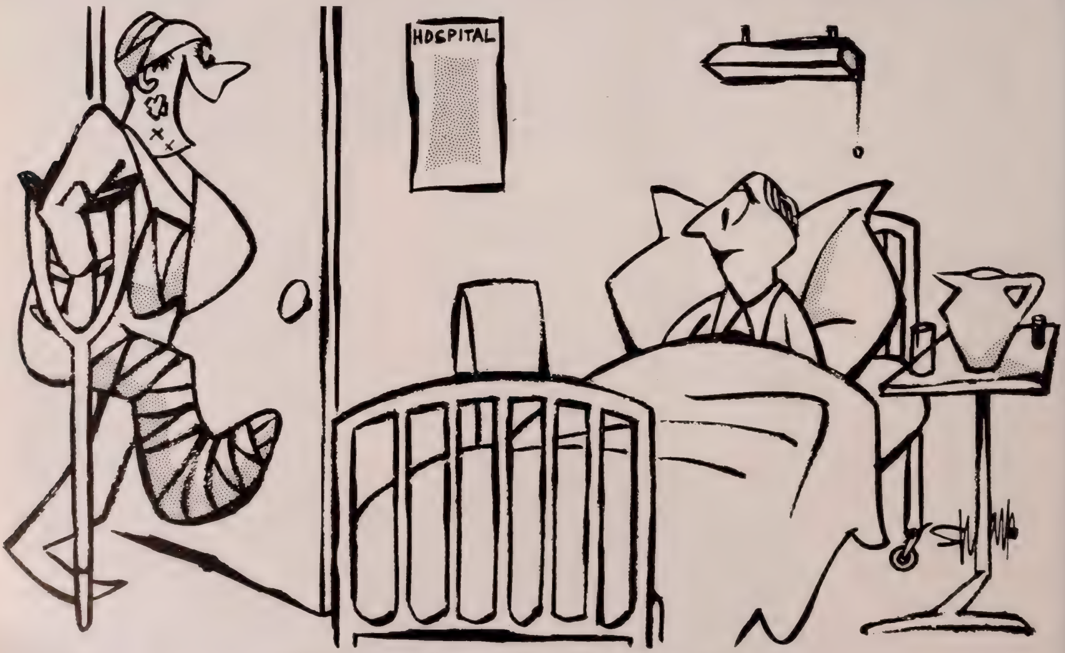

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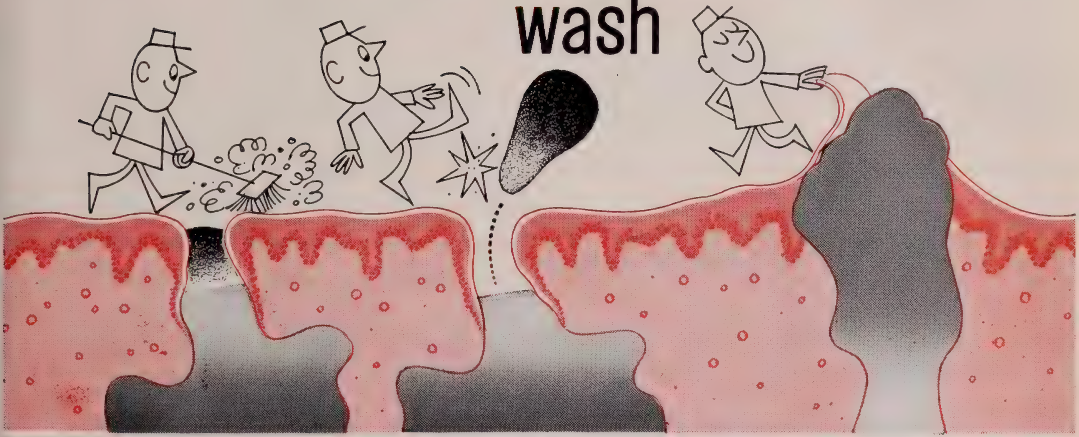

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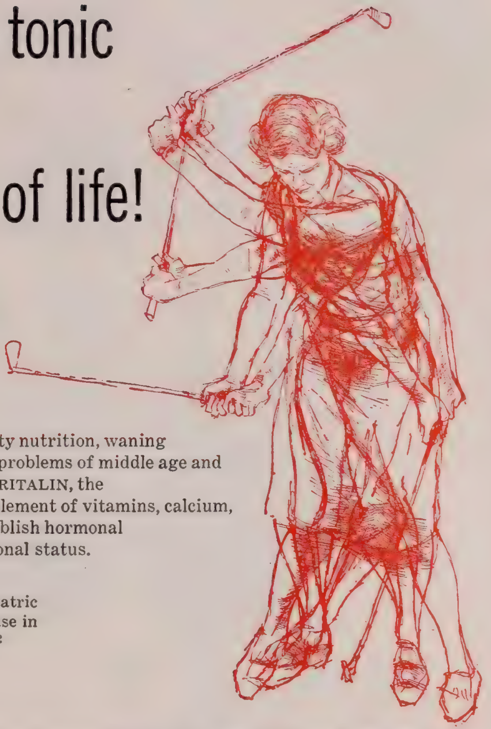

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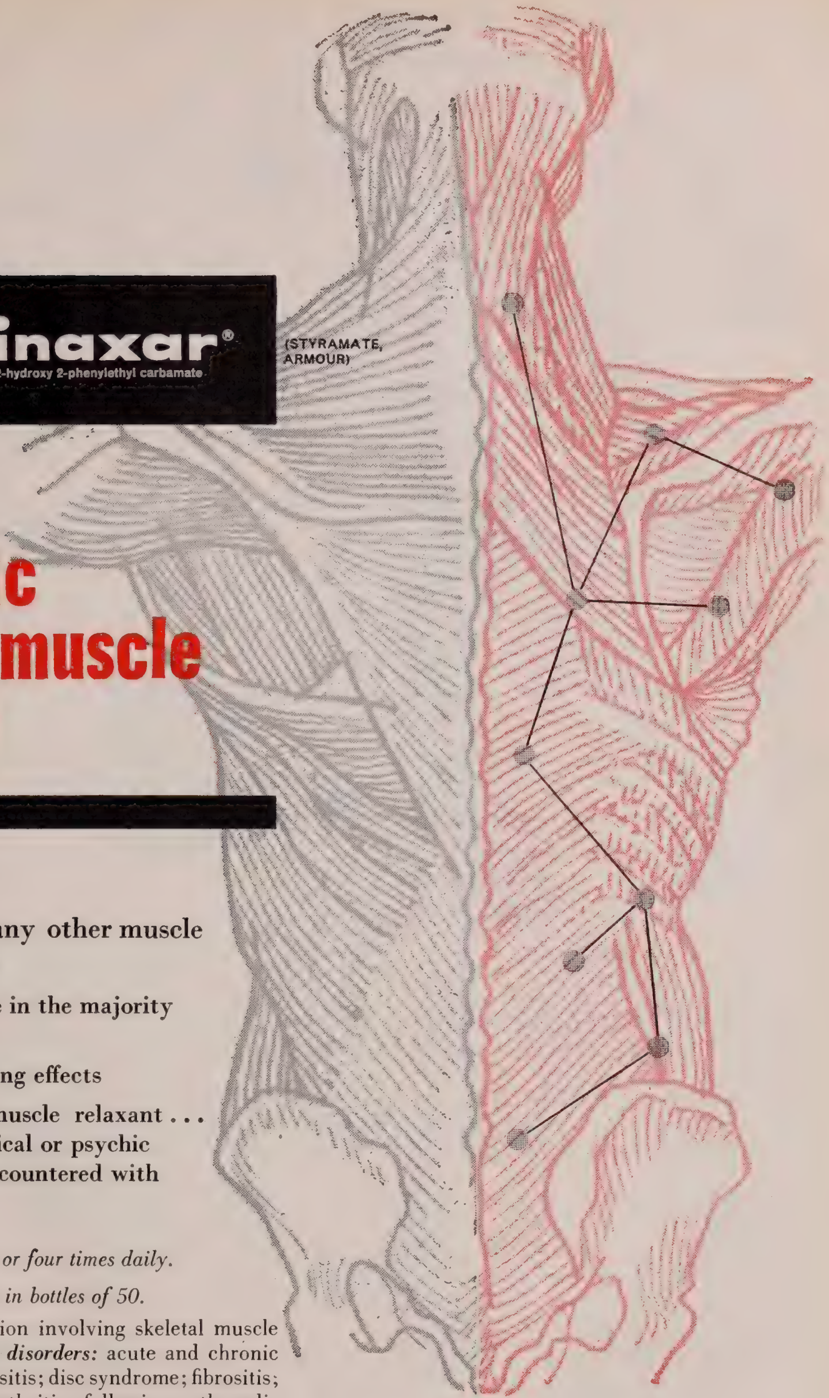

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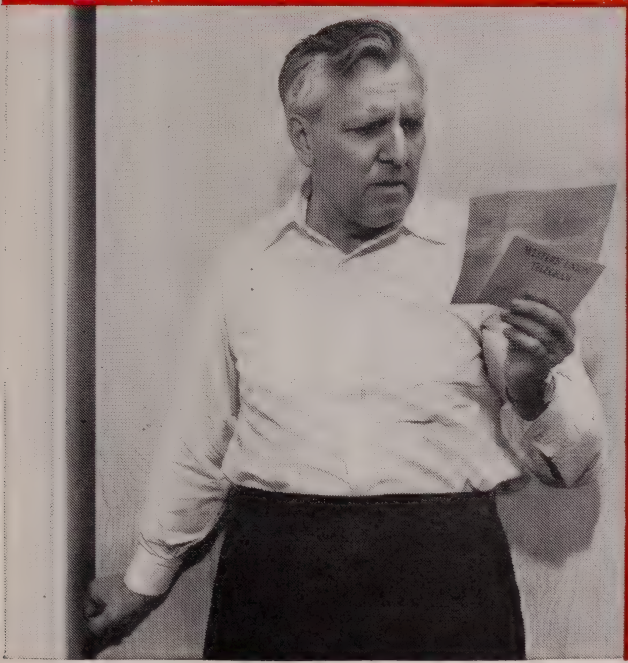

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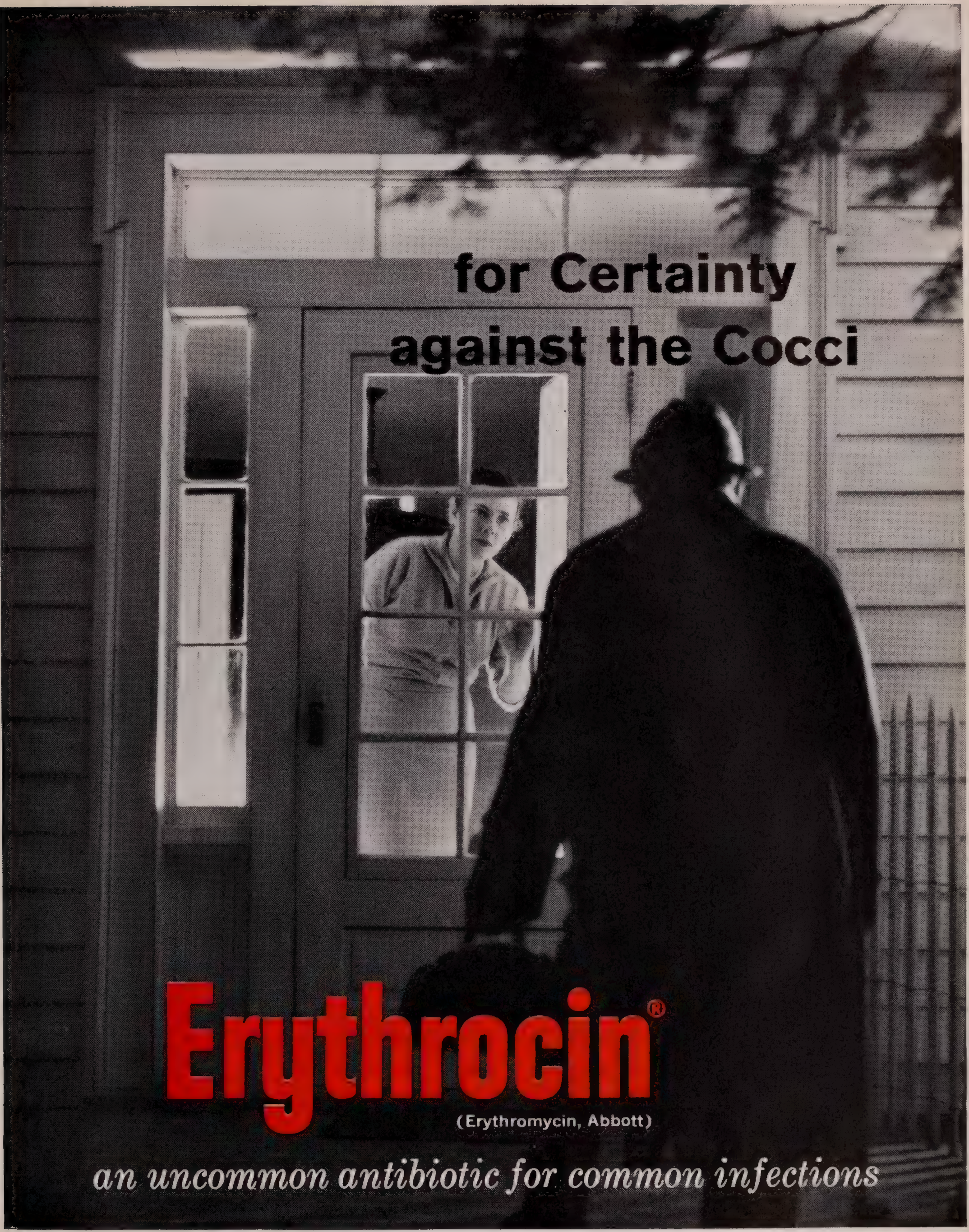
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ABBOTT

®FILMTABS—FILM-SEALED TABLETS, ABBOTT; U.S. PAT. NO. 2,881,085

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(*Continued from page 3324*)

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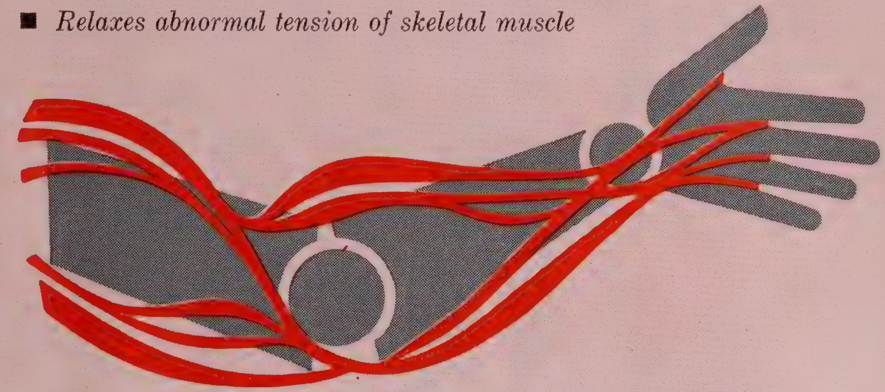
now...a new way to relieve pain and stiffness in muscles and joints

- *Exhibits unusual analgesic properties, different from those of any other drug*
- *Specific and superior for relief of* SOMA*tic pain*
- *Modifies central perception of pain without abolishing natural defense reflexes*
- *Relaxes abnormal tension of skeletal muscle*



SOMA T.M.

N-isopropyl-2-methyl-2-propyl-1, 3-propanediol dicarbamate

In back pain, bursitis, sprains, strains, and bruises, whiplash and other traumatic injuries, inflammatory and degenerative muscle and joint complaints.

RAPID ACTING. Pain-relieving and relaxant effects start within 30 minutes and last for at least 6 hours.

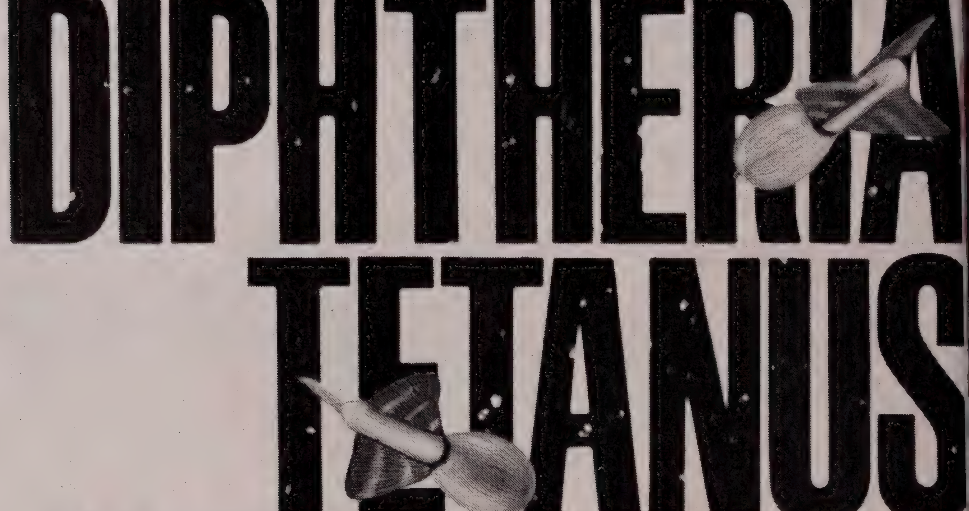
NOTABLY SAFE. Toxicity is extremely low. No effects on liver, endocrine system, blood pressure, blood picture or urine have been reported. Some patients may become sleepy on higher than recommended dosage.

EASY TO USE. Usual adult dose is one 350 mg. tablet 3 times daily and at bedtime.

SUPPLIED: Bottles of 50 white sugar-coated 350 mg. tablets.

Literature and samples on request.

WALLACE LABORATORIES, NEW BRUNSWICK, N. J.


DIPHTHERIA
TETANUS
PERTUSSIS
POLIO

NEW

nultiple antigen for pediatric use

QUADRIGEN®

phtheria-Tetanus-Pertussis-Poliomyelitis, Aluminum Phosphate Adsorbed, Parke-Davis)

mmunizes against 4 diseases

newly developed multiple antigen, QUADRIGEN is designed for
nultaneous immunization of infants and preschool children against
phtheria, tetanus, pertussis, and paralytic poliomyelitis.
ood antibody response has been demonstrated in children
munized with QUADRIGEN within this age group.*
he antigens in QUADRIGEN are adsorbed on optimum amounts of aluminum
hosphate to provide a potent and compatible product.
single dose of QUADRIGEN is only 0.5 cc. See package for dosage schedule.
ith QUADRIGEN, multiple protection can be obtained with fewer
jections at low dosage levels—a regimen that appeals
oth to patients and parents.

rrett, C. D., Jr., *et al.*: *J.A.M.A.* 167:1103, 1958;
id.; Am. J. Pub. Health 49:644, 1959.

arke, Davis & Company
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65459

Now —All cold symptoms can be controlled

Tussagesic

timed-release tablets

Controls congestion
with Triaminic,[1,2,3] the leading oral nasal decongestant.

Controls aches and fever
with well-tolerated APAP, non-addictive analgetic[4] and excellent antipyretic.[5]

Each TUSSAGESIC Tablet provides:

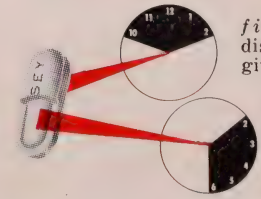
TRIAMINIC®	50 mg.
(phenylpropanolamine HCl	25 mg.
pheniramine maleate	12.5 mg.
pyrilamine maleate	12.5 mg.)
Dormethan (brand of dextromethorphan HBr)	30 mg.
Terpin hydrate	180 mg.
APAP (N-acetyl-p-aminophenol)	325 mg.

References: 1. Lhotka, F. M.: Illinois M. J. **112**:259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly **37**:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. **5**:1183 (Sept.) 1958. 4. Bonica, J. J.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 272. 5. Dascomb, H. E.: in Current Therapy, Saunders, Phila., 1958, p.78. 6. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p.547.

Controls cough centrally
with non-narcotic Dormethan, possessing "amply demonstrated" antitussive activity,[6] as effective as codeine.

Liquefies tenacious mucus
with terpin hydrate, classic expectorant.

Prompt and prolonged relief because of this special "timed release" design:



first — the outer layer dissolves within minutes to give 3 to 4 hours of relief

then — the inner core releases its ingredients to sustain relief for 3 to 4 more hours

Dosage: One tablet in the morning, midafternoon and at bedtime. Pediatric dosage chart for Tussagesic Suspension available on request.

TUSSAGESIC SUSPENSION provides palatability and convenience which make it especially attractive to children and other patients who prefer liquid medication.

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

The patient with gastrointestinal dysfunction often finds the printed page blurred like this, because of the side effects of some antispasmodics. He may be so disturbed that he abandons treatment. But you can provide safe, effective relief of pain and spasm without risk of blurred vision with...

Milpath®

®Miltown + *anticholinergic*

direct antispasmodic action plus control of anxiety and tension without blurred vision, dry mouth or loginess associated with barbiturates, belladonna and bromides.

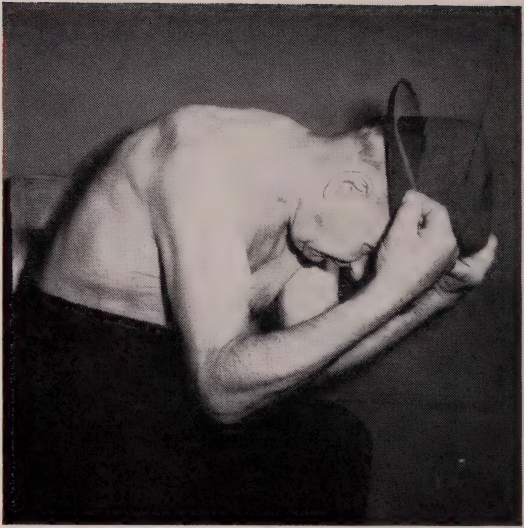
now two forms for adjustable dosage

MILPATH-400—Each yellow, scored tablet contains meprobamate 400 mg. and tridihexethyl chloride 25 mg. Bottle of 50.
DOSAGE—1 tablet t.i.d. at mealtime and 2 at bedtime.

MILPATH-200—Each yellow, coated tablet contains meprobamate 200 mg. and tridihexethyl chloride 25 mg. Bottle of 50.
DOSAGE—1 or 2 tablets t.i.d. at mealtime and 2 at bedtime.

WALLACE LABORATORIES *New Brunswick, N. J.*

For arthritic M.S.: full corticosteroid benefits from new Gammacorten™



Patient M.S., 81, at the time of the first visit was in severe pain and very uncomfortable. Complained of swelling of wrists, legs and various joints; pain and stiffness in cervical area and lower spine; pain, swelling and limited motion in the fingers; slight ulnar deviation of the hand. M.S. demonstrates position necessary to put on his hat (motion was so restricted that he could not comb his hair).

Treatment and Result: After 36 hours of GAMMACORTEN therapy, M.S. had "complete relief." Joint swelling had decreased, pain was almost absent, range of motion had increased dramatically. At the end of the first week of GAMMACORTEN he was free of discomfort and able to return to his job as a porter. M.S. could put on his hat normally, could comb hair; joint function near-normal after first week.

Gammacorten T.M.
(dexamethasone CIBA)

- potent, effective corticosteroid
- profound anti-inflammatory activity
- minimal side effects

From the files of a practicing physician. Photographs used with permission of the patient.

SUPPLIED: GAMMACORTEN Tablets, 0.75 mg. (pink, scored).

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SUMMIT, N. J.

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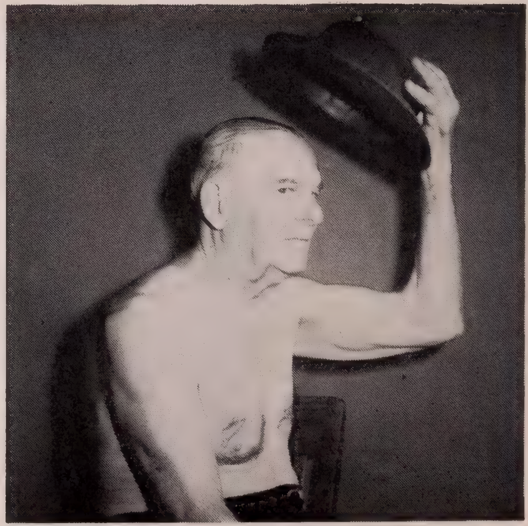
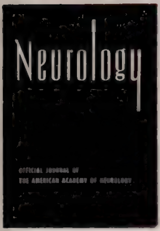


QUESTION:

What have authorities reported as to the efficacy of Fiorinal in tension headache?

ANSWERS:

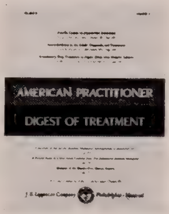
From the published reports of leading clinicians.



Neurology

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF NEUROLOGY

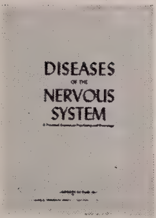
"The most effective symptomatic medication in the treatment of tension headache have been several analgesic and sedative combinations. One of the most effective is Fiorinal, which yielded relief in two out of three patients." *(Friedman, A. P., von Storch, T. J. C. and Merritt, H. H.: Neurology 4:773, Oct. 1954.)*



AMERICAN PRACTITIONER

DIGEST OF TREATMENT

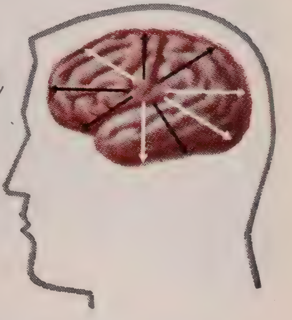
"In the treatment of tension headaches . . . [Fiorinal's non-narcotic action] offers a better opportunity for relief than some usually prescribed non-narcotic analgesics." *(Weisman, S. J.: Am. Pract. & Digest. Treat. 6:1019, July 1955.)*



DISEASES OF THE NERVOUS SYSTEM

"Fiorinal appears to be one of the most useful preparations to date for the relief of tension headaches. Easing of the head discomfort was accomplished by one or two tablets without any unpleasant side effects such as drowsiness or gastric upsets. In many cases Fiorinal appeared to temporarily relieve the discomfort from sinus trouble or acute respiratory infections." *(Kibbe, M. H.: Dis. Nerv. System 16:77, March 1955.)*

specific therapy for tension headache



Fiorinal®

relieves pain, muscle spasm, nervous tension

rapid action • non-narcotic • economical

FIORINAL TABLETS

Each tablet contains:
Sandoptal (Allylbarbituric acid N.F.X) 50 mg. (¾ gr.), caffeine 40 mg. (⅔ gr.), acetylsalicylic acid 200 mg. (3 gr.), acetophenetidin 130 mg. (2 gr.).

Dosage: 1 or 2 tablets every 4 hours, according to need, up to 6 per day.

SANDOZ

A NEW USE FOR VESPRIN

FROM: ANXIETY AND TENSION
TO: EMOTIONAL STABILITY

VESPRIN made the difference

SQUIBB TRIFLUPROMAZINE HYDROCHLORIDE

in anxiety and tension states / psychomotor agitation / phobic reactions / obsessive reactions / senile agitation / agitated depression / emotional stress associated with a wide variety of physical conditions

In the patient with anxiety and tension symptoms — Vesprin calms him down without slowing him up...and does not interfere with his working capacity. Vesprin permits tranquilization *without* oversedation, lethargy, apathy or loss of mental clarity.[4]

And Vesprin exhibits an improved therapeutic ratio — enhanced efficacy with a low incidence of side effects; no reported hypotension, extrapyramidal symptoms, blood dyscrasia or jaundice in patients treated for anxiety and tension.[1,2,3]

dosage: for "round-the-clock" control — 10 mg. to 25 mg., b.i.d.; for "once-a-day" use — 25 mg. once a day, appropriately scheduled, for therapy or prevention. **supply:** Oral Tablets, 10, 25 and 50 mg., press-coated, bottles of 50 and 500; Emulsion (Vesprin Base) — 30 cc. dropper bottles and 120 cc. bottles (10 mg./cc.). **references:** 1. Stone, H.H.: Monographs on Therapy *3*:1 (May) 1958. 2. Reeves, J.E. Postgrad. Med. *24*:687 (Dec.) 1958. 3. Burstein, F.: Clinical Research Notes *2*:3, 1959. 4. Kris, E.: Clinical Research Notes *2*:1, 1959. 'VESPRIN®' is a Squibb Trademark

Vesprin — the tranquilizer that fills a need in every major area of medical practice

SQUIBB
Squibb Quality —
the Priceless Ingredient

for COUGHS *that* DEFY *control*

a broader range of relief...

in the cough of postnasal drip and sinusitis, interfering with restful sleep night after night

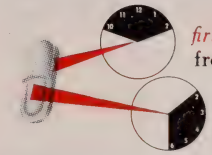
in the defiant cough, where combined decongestant-antitussive action is required to break the cough-congestion cycle

in the dangerous cough, as in surgical patients, where muscular stress might cause damage and retard healing

In Tussaminic, the leading respiratory decongestant, Triaminic, is combined with non-narcotic, antitussive Dormethan, and well-established terpin hydrate to suppress useless cough and ease productive cough.

more prolonged relief...

This special "timed release" design of the Tussaminic Tablet provides full daytime relief with the convenient dosage of 1 tablet every 6 to 8 hours, and night-long relief with 1 tablet at bedtime.



first — 3 or 4 hours of relief from the outer layer

then — 3 or 4 *more* hours from the core

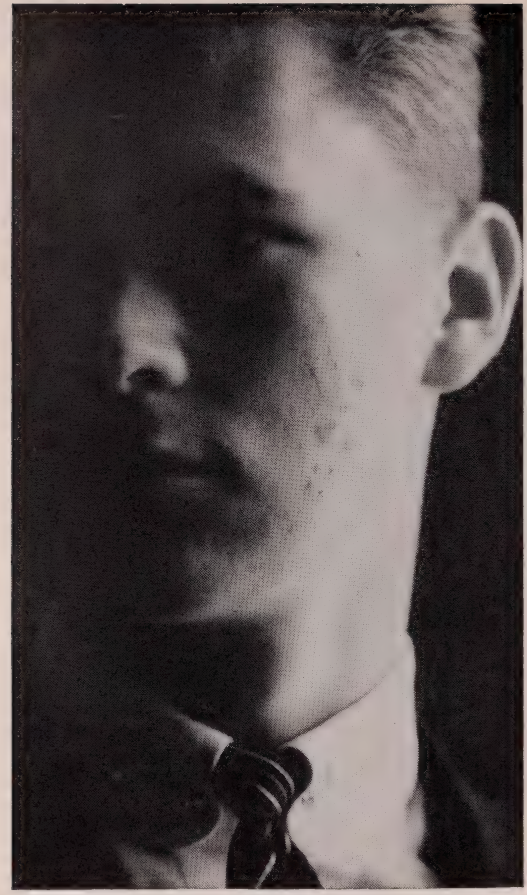
Each Tussaminic Tablet provides:

Triaminic® (phenylpropanolamine HCl, 50 mg.; pheniramine maleate, 25 mg.; pyrilamine maleate, 25 mg.)	100 mg.
Dormethan (brand of dextromethorphan HBr)	30 mg.
Terpin hydrate	300 mg.

Tussaminic®

timed-release *tablets*

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska



in Acne

Routine cleansing with pHisoHex augments standard acne therapy. "No patient failed to improve."[1] pHisoHex helps check the infection factor in acne. Used exclusively and frequently, it will keep the skin surface virtually sterile. Contains 3 per cent hexachlorophene.

pHisoHex®

(antibacterial detergent, nonalkaline, nonirritating, hypoallergenic)

tips the balance for superior results

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New York 18, N. Y.

1. Hodges, F. T.: GP 14:86, Nov., 1956.

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"R Day"

for the neuritis patient can be tomorrow

"R Day"—*when pain is relieved*—can come early for patients with inflammatory (non-traumatic) neuritis if treatment with Protamide is started promptly after onset.

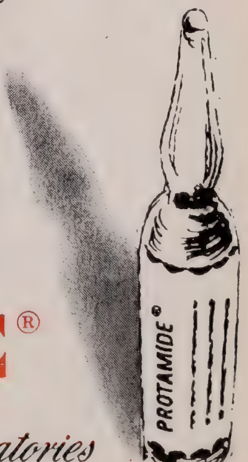
Protamide is the therapy of choice for either early or delayed treatment, but early use assures greatest efficacy.

For example, in a 4-year study[1] and a 26-month study[2] a combined total of 374 neuritis patients treated with Protamide during the first week of symptoms responded as follows:

> *60% required only 1 or 2 daily injections for complete relief*
>
> *96% experienced excellent or good results with 5 or less injections*

Thus, the neuritis patient's first visit—especially an early one—affords the opportunity to speed his personal "R Day."

Protamide is available at pharmacies and supply houses in boxes of ten 1.3 cc. ampuls. Intramuscularly only, one ampul daily.



PROTAMIDE®

REFER TO
PDR
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Sherman Laboratories
Detroit 11, Michigan

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1. Lehrer, H. W., et al.: Northwest Med. 75:1249, 1955.
2. Smith, Richard T.: New York Med. 8:16, 1952.

Doctors and Dentists agree...

NO-CAL

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Sugar-free

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Soft drink

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SUGAR FREE
NO·CAL
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Guards her figure . . . helps safeguard her teeth! NO-CAL is the happiest way in the world to spark up dull diet meals . . . or to fill in as a delicious non-fattening between-meal snack.

Only sweetening is calcium cyclamate. No sugar! No salt! No fats, proteins or carbohydrates! No derivative calories!

You can confidently tell your patients that NO-CAL is safe for diabetics and folks on salt-free, sugar-free and reducing diets.

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The Most Important
Word to Remember...

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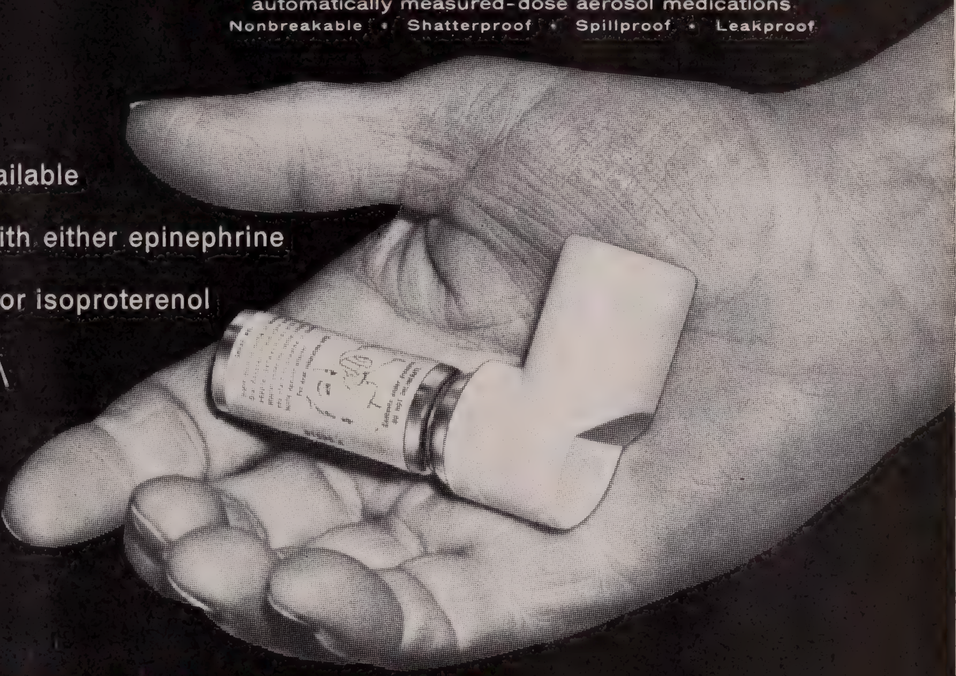
automatically measured-dose aerosol medications
Nonbreakable • Shatterproof • Spillproof • Leakproof



Available
with either epinephrine
or isoproterenol

Medihaler-EPI®

Epinephrine bitartrate, 7.0 mg. per cc., suspended in inert, nontoxic aerosol vehicle. Contains no alcohol. Each measured dose contains 0.15 mg. epinephrine.

Medihaler-ISO®

Isoproterenol sulfate, 2.0 mg. per cc., suspended in inert, nontoxic aerosol vehicle. Contains no alcohol. Each measured dose contains 0.06 mg. isoproterenol.

NOTABLY SAFE AND
EFFECTIVE FOR CHILDREN, TOO

Riker
NORTHRIDGE,
CALIFORNIA

KILLS THEM ALL

In Topical Infections, regardless of etiology, BETADINE OINTMENT destroys all pathogens present. BETADINE OINTMENT, a single topical agent, is a full-range pathogenicide—kills bacteria, fungi, protozoa, yeasts, and viruses on contact. Yet it is nonsensitizing, nonirritating, and nontoxic to normal skin tissue.

BETADINE OINTMENT • topical pathogenicide • fully effective against resistant strains • destroys gram-positive and gram-negative organisms • kills fungi, protozoa, yeasts, viruses • no development of resistant strains on prolonged use • provides protective barrier against invading pathogens • nonsensitizing . . . relieves pain • color indicates germicidal protection • applies easily . . . may be bandaged.

indications: primary and secondary skin infections including pyoderma, mycotic and bacterial infections, eczema, furunculosis, minor burns, as well as staph. aureus and pseudomonas infections.

administration: apply liberally over affected area as often as needed, bandage if desired.

supplied: one ounce tube.

BETADINE™ OINTMENT

(CONTAINS POVIDONE-IODINE)

TOPICAL PATHOGENICIDE ... KILLS PATHOGENS ON CONTACT

established in 1905 TAILBY-NASON COMPANY, INC., DOVER, DELAWARE

in Egypt,
it's called 'Gippy-tummy'
(EGYPTIAN STOMACH)

diarrhea by any name

GASTROENTERITIS
BACILLARY DYSENTERY
PARADYSENTERY
SALMONELLOSIS
DIARRHEA OF THE NEWBORN
NONSPECIFIC DIARRHEA
"SUMMER COMPLAINT"

usually responds rapidly to

Cremomycin®

NEOMYCIN-SULFASUXIDINE® -KAOLIN-PECTIN SUSPENSION

for *rapid* relief of all diarrheas – regardless of etiology

*fruit-flavored, readily accepted by patients of all ages**

Neomycin – rapidly bactericidal against most intestinal pathogens, but is relatively ineffective against such diarrhea-causing organisms as Shigella.

Sulfasuxidine – an ideal adjunct to neomycin because it is highly effective against Shigella and certain other neomycin-resistant organisms.

Kaolin and Pectin – coat and soothe the inflamed mucosa, absorb toxins, help reduce intestinal hypermotility, help provide rapid symptomatic relief.

*For infants, CREMOMYCIN may be administered in the regular bottle feeding, since its fine particles easily pass through a standard nursing nipple.

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the NEW CONTRACEPTIVE
that offers
MAXIMUM
simplicity with security

Koromex a
TRADE MARK
VAGINAL JELLY
WHEN JELLY ALONE IS ADVISED

when the "jelly-alone" method is advised, **NEW Koromex a** TRADEMARK the outstandingly competent spermatocidic agent... is now available to physicians.

ACTIVE INGREDIENTS: IN A SPECIAL BARRIER TYPE BASE
Boric Acid 2.0%
Polyoxyethylenenonylphenol 0.5%
Phenylmercuric Acetate 0.02%

ANOTHER H-R FIRST...

Large tube Vaginal Jelly, 125 gms. with patented measured dose applicator in a SANITARY PLASTIC ZIPPERED KIT for home storage (supplied at no cost)

Factual literature sent upon request.

HOLLAND-RANTOS CO., INC. • 145 HUDSON STREET • NEW YORK 13, N.Y.

even if
your
patient
is a
mud
chicken†

†surveyor, to non-engineers

he won't be mired for long once he's on

PARAFON*

ARAFLEX® + TYLENOL®

for muscle relaxation *plus* analgesia

and in arthritis

PARAFON*

with Prednisolone

McNEIL

McNeil Laboratories, Inc • Philadelphia 32, Pa.

prescribe PARAFON in low back pa
—sprains—strains—rheumatic pa

Each PARAFON tablet contains:
PARAFLEX® Chlorzoxazone‡ . . 125
Specific for skeletal muscle spasm
TYLENOL® Acetaminophen . . 300
The analgesic preferred in
musculoskeletal pain

Supplied: Tablets, scored, pink, bot
of 50.

Dosage: Two tablets three or four ti
a day.

Each PARAFON WITH PREDNISOLO
tablet contains: PARAFLEX® Chlorzo
zone‡ 125 mg., TYLENOL® Acetami
phen 300 mg., and prednisolone 1.0

Supplied: Tablets, scored, buff colo
bottles of 36.

Dosage: One to two tablets three or
times a day.

Precautions: The precautions and c
traindications that apply to all stero
should be kept in mind when presc
ing PARAFON WITH PREDNISOLONE.

*Trade-mark ‡U.S. Patent Pen

JUST ONE TABLET DAILY

provides therapeutic levels . . . for 24 hours . . . with low incidence of sensitivity reactions . . .

WHENEVER SULFAS ARE INDICATED

KYNEX®

Sulfamethoxypyridazine Lederle

0.5 Gm. TABLETS/NEW ACETYL PEDIATRIC SUSPENSION

LEDERLE LABORATORIES, a Division of
AMERICAN CYANAMID COMPANY, Pearl River, New York
Lederle

the SOLUTION for your ALLERGY problems

- Diagnosis
- Therapy

Center LABORATORIES INC.

**Complete Allergy Service
From Solution to Syringe**

Write for Booklet 101

PORT WASHINGTON, N. Y.

In Kraurosis and Leukoplakia Vulvae, Postmenopausal and Senile Vaginitis, Pruritis Vulvae et Ani . . .

HIST-A-CORT-E®

CREME pH 4.7

ACID MANTLE®•HYDROCORTISONE•ESTRONE•PYRILAMINE MALEATE•SYNTHETIC VITAMIN A

INCORPORATED IN EXCLUSIVE ACID MANTLE® VEHICLE

DOME

Stops itching instantly and completely.
Corrects thickening of skin—eliminates scaling.
Restores skin to normal softness and pliability.
Tends to negate necessity for surgery
in Kraurosis and Leukoplakia Vulvae.

THE MOST TRUSTED NAME IN DERMATOLOGICALS

Supply: With ½% hydrocortisone in ½ oz. and 1 oz. tubes
With 1% hydrocortisone in ½ oz. tubes
Sig: Apply twice daily

DOME CHEMICALS INC.
125 West End Avenue, New York 23
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*A "DRUGS OF CHOICE"**
selection for
relieving cough

"a highly effective antitussive with virtually no side effects"[1]

ROBITUSSIN

Robins

ROBITUSSIN® A-C

ROBITUSSIN WITH ANTIHISTAMINE AND CODEINE

ROBITUSSIN: Glyceryl guaiacolate 100 mg., in each 5-cc. teaspoonful.

ROBITUSSIN A-C: Glyceryl guaiacolate 100 mg., prophenpyridamine maleate 7.5 mg., and codeine phosphate 10 mg., in each 5-cc. teaspoonful. Exempt narcotic.

Both forms taste GOOD.

---

*1. Bickerman, H. A.: *In* Drugs of Choice 1958-1959, ed. by W. Modell Mosby, St. Louis, 1958, p. 562

A. H. ROBINS CO., INC
Richmond 20, Va
Ethical Pharmaceuticals
of Merit since 187

VERSATILE FURACIN

effective by intrapleural instillation[1]

the situation: Four-month-old infant with staphylococcal pneumonia and empyema resistant to most antibiotics was allergic to antibiotic chosen after sensitivity tests. Thoracentesis produced 30-40 cc. of creamy, purulent fluid. Organism was Staphylococcus aureus, coagulase positive.

then Furacin was instilled: 0.2% Solution was diluted equally with physiologic saline and 10 cc. of mixture instilled twice daily into pleural space, with suction catheter clamped off for 1 hour. Fluid almost immediately became thinner and less viscous. Twenty-four hours later infant was less irritable, voluntarily started taking food. Instillations stopped. FURADANTIN® Oral Suspension prescribed. Recovery uneventful.

1. Perkins, J. L.: Kansas State M. J. (to be published).

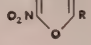
FURACIN®

brand of nitrofurazone

FURACIN has been in clinical use for more than 13 years. Today it is the most widely prescribed single topical antibacterial agent. Like other nitrofurans, FURACIN remains effective, even in pus, sera or exudates, against pathogens which have developed—or are prone to develop—resistance to antibiotics.

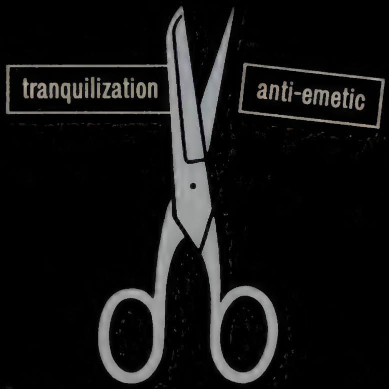
FURACIN, in a water-miscible base of polyethylene glycols, is available in a number of dosage forms. Included are Soluble Dressing, Soluble Powder, Solution and Cream. Also in Vaginal Suppositories, Inserts, and in special formulations for eye, ear and nose.

NITROFURANS—a unique class of antimicrobials—neither antibiotics nor sulfonamides



EATON LABORATORIES, NORWICH, NEW YORK

now potent tranquilizer therapy is safer than ever



Virtual freedom of Mellaril from major toxic effects is due to greater specificity of tranquilizing action—divorced from such "diffuse" effects as anti-emetic action.

MELLARIL is virtually free of such toxic effects as

- jaundice
- Parkinsonism
- blood dyscrasia

"Thioridazine [MELLARIL] is as effective as the best available phenothiazine, but with appreciably less toxic effects than those demonstrated with other phenothiazines. . . . This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."[1]

SANDOZ

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels

remarkable lack of side effects

In more than 3,000 carefully-followed patients, Mellaril has been almost completely free of such major side effects as jaundice, extrapyramidal symptoms, Parkinsonism, blood dyscrasia, dermatitis—even when given in quantities far in excess of the usual dosage.

"POVERTY" OF SIDE EFFECTS

"The most striking aspect of thioridazine [Mellaril] therapy is the poverty of side effects.... In its lack of side effects and low toxicity, it is superior to all other tranquilizing drugs tested. For this reason also it is well tolerated by patients, particularly those who are not hospitalized and who frequently discontinue their medication because of dizziness, sleepiness, increased tension or parkinsonism with other drugs."[2]

NEGLIGIBLE SIDE EFFECTS

"Side effects were negligible at all dosage levels: no incidence of parkinsonism or other extrapyramidal symptoms. Minimal sedation, on the whole lower than with other tranquilizing agents. No alteration in liver function, urine or blood. No photosensitivity. Patient acceptability was exceptional: lack of drowsiness, lethargy or 'washed out' feeling, permitted patients to carry on normal everyday activities. Orthostatic hypotension was absent. The initial 'keyed up' tense feeling common to other drugs of this type was absent.... Patients forced to interrupt treatment with other phenothiazine derivatives because of parkinsonism or other extrapyramidal symptoms were able to continue therapy with thioridazine without appearance of parkinsonism."[3]

SINGULARLY FREE OF SIDE EFFECTS

"The extrapyramidal syndrome was not encountered in any of its forms. Dizziness and sleepiness responded to a reduction in dosage. Other side effects did not occur.... It is singularly free from the side effects ordinarily seen with these [phenothiazine] compounds."[4]

ABSENCE OF SIGNIFICANT SIDE EFFECTS

"None of the following toxic effects, so common after administration of the phenothiazines, was present during the period of Thioridazine administration: Parkinsonism or Parkinson-like symptoms, photosensitivity, orthostatic hypotension, bone-marrow depression."[1]

MINIMAL SIDE EFFECTS

"Side effects such as extrapyramidal activity, jaundice and photosensitivity have not been observed in patients treated with Thioridazine [Mellaril]. Extrapyramidal side effects produced by other phenothiazines have disappeared promptly with no deterioration in the behavioral response when these patients have been shifted to Thioridazine."[5]

NO JAUNDICE

"No allergic reactions were observed such as skin eruptions, jaundice or agranulocytosis. Central nervous system toxicity, as manifested by extrapyramidal effects, seizures, and excitement did not occur despite the use of high doses (up to 2000 mg.) of the drug."[6]

Mellaril®

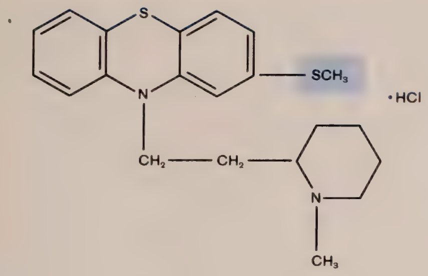
THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels

tranquilization

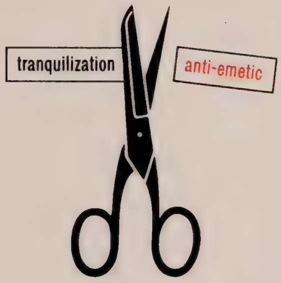
anti-emetic

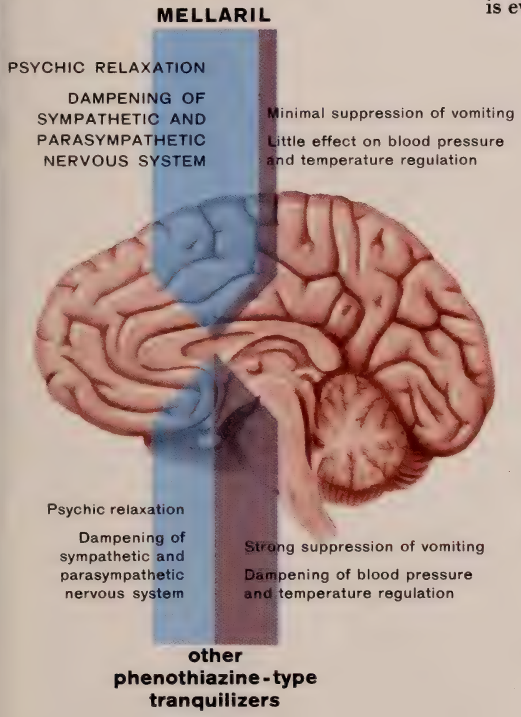
a new advance in tranquilization:
greater specificity of tranquilizing action plus fewer side effects


S
N
SCH₃
•HCl
CH₂
CH₂
N
CH₃

Of 109 phenothiazines synthesized by Sandoz, Mellaril was selected as the most promising on the basis of extensive evaluation. The presence of a thiomethyl radical ($S\text{-}CH_3$) in the position conventionally occupied by a halogen in other phenothiazines is unique and could be responsible for the relative absence of side effects and greater specificity of psychotherapeutic action. This is shown clinically by:

1 A specificity of action on certain brain sites in contrast to the more generalized or "diffuse" action of other phenothiazines. This is evidenced by a lack of appreciable anti-emetic effect.


tranquilization
anti-emetic


MELLARIL
PSYCHIC RELAXATION
DAMPENING OF SYMPATHETIC AND PARASYMPATHETIC NERVOUS SYSTEM
Minimal suppression of vomiting
Little effect on blood pressure and temperature regulation
Psychic relaxation
Dampening of sympathetic and parasympathetic nervous system
Strong suppression of vomiting
Dampening of blood pressure and temperature regulation
other phenothiazine-type tranquilizers

2 Less "spill-over" action to other brain areas — hence, absence of undue sedation, drowsiness or autonomic nervous system disturbances.

3 A notable absence of extrapyramidal stimulation.

4 Lack of impairment of patient's normal drive and energy, while achieving psychomotor control in mental and emotional disorders.

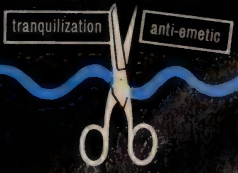
5 Virtual freedom from toxic effects — jaundice, photosensitivity, skin eruptions, disturbed body temperature regulation, blood forming disorders have been absent in reports currently available.

These properties add up to a greater margin of safety in general office practice, in ambulatory psychiatric out-patient clinics, and in hospitalized patients.

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels


tranquilization
anti-emetic

excellent clinical response

In office practice and in hospitalized patients, Mellaril has proved highly useful for a wide variety of major and minor emotional disorders (such as anxiety, tension, apprehension, alcoholism, agitated psychoneurosis, agitated psychotic states, etc.).

EXTREMELY SATISFACTORY "... produced extremely satisfactory results in the broad therapeutic range represented in this series."[3]

POTENT AGENT "... appears to be a potent agent in the symptomatic management of a variety of psychiatric states."[4]

MAJOR ADDITION TO THERAPEUTICS "This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."[1]

AN ACTIVE AGENT "Thioridazine is an active therapeutic agent. . . . It is effective in a variety of psychiatric disorders, including schizophrenic reactions. . . . The drug is particularly advantageous for a group of schizophrenic patients who are sometimes made worse by other phenothiazine derivatives or Rauwolfia alkaloids. It should also be suitable for treating patients with psychoneuroses and chronic brain syndrome."[6]

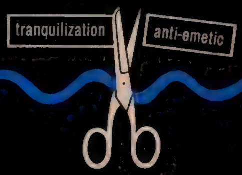
EVEN IN VERY SEVERE CASES "Of the 152 patients treated 25 have been released and they have not suffered a relapse. This proportion is significant if we stop to consider that we are dealing only with acute cases which had been considered hopeless and obviously destined to finish their days in an asylum."[7]

EXCELLENT THERAPEUTIC RESPONSE "Patients with emotional tensions resulting from the stress and strain of life . . . were treated with Mellaril at the dosage level of 10 mg. three times daily. In 94 such patients, 83 obtained an excellent therapeutic response."[8]

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels



"...extremely satisfactory results..." in a clinical spectrum ranging from minor nervous disorders to severe psychotic disturbances[3]

RESULTS WITH MELLARIL IN 194 PATIENTS[3]

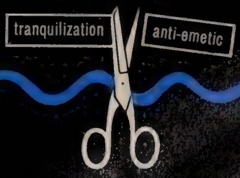
ACUTE PSYCHOTICS	CHRONIC PSYCHOTICS	NEUROTICS
83% satisfactory effect	68% satisfactory effect	57% satisfactory effect
Some cases had complete remission of symptoms. Most were able to return home to useful occupations.	Relief of symptoms in cases permitted easier management and a return to a more or less useful life.	Some cases, complete relief of symptoms. Other cases, partial relief of symptoms.

RESULTS WITH MELLARIL IN PATIENTS PREVIOUSLY TREATED WITH OTHER TRANQUILIZERS[3]

DIAGNOSTIC CATEGORY	IMPROVED %	VERY SATISFACTORY %	SATISFACTORY %	UNSATISFACTORY %
SCHIZOPHRENIA				
Acute	89	61	28	11
Chronic paranoid	84.2	31.6	52.6	15.8
Chronic, other	73.9	21.7	52.2	26.1
Residual	57.1	9.5	47.6	42.9
CHRONIC BRAIN SYNDROME	66.6	33.3	33.3	33.3
CHRONIC PSYCHONEUROSIS	62.5	12.5	50	37.5
CHRONIC PSYCHOSOMATIC DISORDERS	75	25	50	25

Mellaril®
THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels



a guide to administration and dosage

Dosage ranges from 10 mg. three or four times a day in milder situations to 25 mg. three or four times a day for more disturbed patients. In ambulatory psychiatric out-patients, dosages of 50 to 100 mg. three or four times a day have been found adequate. For severely disturbed hospitalized psychotics, dosages of 200 to 300 mg. three times a day may be administered.

Dosage must be individualized according to the condition and degree of response. In all cases, the smallest effective dosage should be determined for each patient.

INDICATION	USUAL STARTING DOSE	TOTAL DAILY DOSAGE RANGE
	ADULTS	
Mental and Emotional Disturbances:		
MILD—where anxiety, apprehension and tension are present	10 mg. t.i.d.	20-60 mg.
MODERATE—where agitation exists in psychoneurosis, alcoholism, intractable pain, senility, etc.	25 mg. t.i.d.	50-200 mg.
SEVERE—in agitated psychotic states as schizophrenia, manic depressive, toxic psychoses, etc.:		
Ambulatory	100 mg. t.i.d.	200-400 mg.
Hospitalized	100 mg. t.i.d.	200-800 mg.
	CHILDREN	
BEHAVIOR PROBLEMS IN CHILDREN	10 mg. t.i.d.	20-40 mg.

RECAUTIONS: Although possessing a unique structure d a selectivity of action which broadens its therapeutic tio, the physician should be alert to the possibility of ntoward reactions in certain susceptible individuals. In particular, he should watch for potential hemopoieti depression, jaundice or orthostatic hypotension. As wit other phenothiazines, Mellaril is contraindicated i severely depressed or comatose states from any cause.

UPPLIED: MELLARIL Tablets, 10 mg., 25 mg., 100 mg. Bottles of 100.

Ostfeld, A. M.: Scientific Exhibit, American Academy of General Practice, San Francisco, April 6-9, 1959. **2.** Kinross-Wright, V. J.: Lecture, Clinica eeting, American Medical Association, Minneapolis, Dec. 4, 1958. **3.** Kinross-Wright, V. J.: Scientific Exhibit, Clinical Meeting, American Medical Associ on, Minneapolis, Dec. 2-5, 1958. **4.** Cohen, S.: TP-21, a new phenothiazine, Am. J. Psychiat. *115*:358, Oct. 1958. **5.** Glueck, B.: Scientific Exhibit, America ychiatric Association, Philadelphia, April 27-May 1, 1959. **6.** Hollister, L. E., and Macdonald, B. F.: Presented at California Medical Association; Section o ychiatry, San Francisco, Feb. 25, 1959. **7.** Remy, M.: Schweiz. med. Wchnschr. *88*:1221, Nov. 29, 1958. **8.** Freed, S. C., in discussion on Thioridazine (Mellaril Psychiatric Patients, Hollister, L. E., and Macdonald, B. F., presented at California Medical Association; Section on Psychiatry, San Francisco, Feb. 25, 1959

- controls neurotic and psychotic patients with anxiety, apprehension, nervous tension
- virtual absence of jaundice, parkinsonism, photosensitivity, dermatitis
- minimal sedation and drowsiness
- does not mask organic conditions such as brain tumors, intestinal obstruction, etc., because of lack of anti-emetic action
- increased specificity of action results in greater safety at all dosage levels

SANDOZ

Mellaril®
THIORIDAZINE HCl
specific, effective tranquilizer • safer at all dosage levels
tranquilization
anti-emetic

running noses

and open stuffed noses orally

Triaminic®

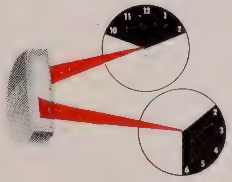
the leading oral nasal decongestant

- in nasal and paranasal congestion
- in sinusitis
- in postnasal drip
- in allergic reactions of the upper respiratory tract

safer and more effective than topical medication[1,2,3]

- systemic transport to all respiratory membranes
- provides longer-lasting relief
- presents no problem of rebound congestion
- avoids "nose drop addiction"

Relief with Triaminic is prompt and prolonged because of this special timed-release action . . . beneficial effect starts in minutes, lasts for hours



first—the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then—the core disintegrates to give 3 to 4 *more* hours of relief

Each TRIAMINIC Tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

One-half of this formula is in the outer layer, the other half is in the core.

Dosage: One tablet in the morning, mid-afternoon and at bedtime.

References: 1. Lhotka, F. M.: Illinois M. J. 112: 259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958.

TRIAMINIC JUVELETS: Each timed-release Juvelet is equivalent in formula and dosage to one-half of a TRIAMINIC tablet, for the adult or child who requires only half strength dosage.

TRIAMINIC SYRUP is recommended for adults and children who prefer liquid medication. Each 5 ml. tsp. is equivalent to ¼ of a Triaminic Tablet. *Adults:* 2 tsp. 3-4 times a day; *children 6-12:* 1 tsp. 3-4 times a day; *children under 6:* in proportion.

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

PROMPT SUMMERTIME RELIEF FOR INFANT DIARRHEA!

HI-PRO
HIGH PROTEIN
LOW FAT
COW'S MILK
JACKSON MITCHELL PHARMACEUTICALS, INC.
CULVER CITY, CALIF.

AN EFFECTIVE BALANCE OF PROTEIN/FAT/CARBOHYDRATES

Protein	41.00%
Fat	14.00%
Carbohydrate	35.00%
Calcium	1.15%
Calories per ounce (3 tbsp.)	121

When summertime infantile diarrhea strikes, HI-PRO is the indicated formula for effective relief! Four easy steps, with quantities for 24-hour periods, as follows:

1. After a starvation period (with plenty of water) give:

HI-PRO	7 Tbs.	Protein	3.2%
Water	30 Ozs.	Fat	1.0%
		Lactose	2.7%
		Cal. per fl. oz.	10

2. With improvement or within 48 hours, carbohydrates may be cautiously added.
3. After 2 or 3 days increase HI-PRO concentration as follows:

HI-PRO	10 Tbs.	Protein	4.6%
Water	30 Ozs.	Fat	1.5%
Maltose-Dextrin Mixture	4 Tbs.	Carbohydrate	7.4%
		Cal. per fl. oz.	18

4. Change in about one week to a stronger formula (the following is an example):

HI-PRO	6 Tbs.	Protein	4.5%
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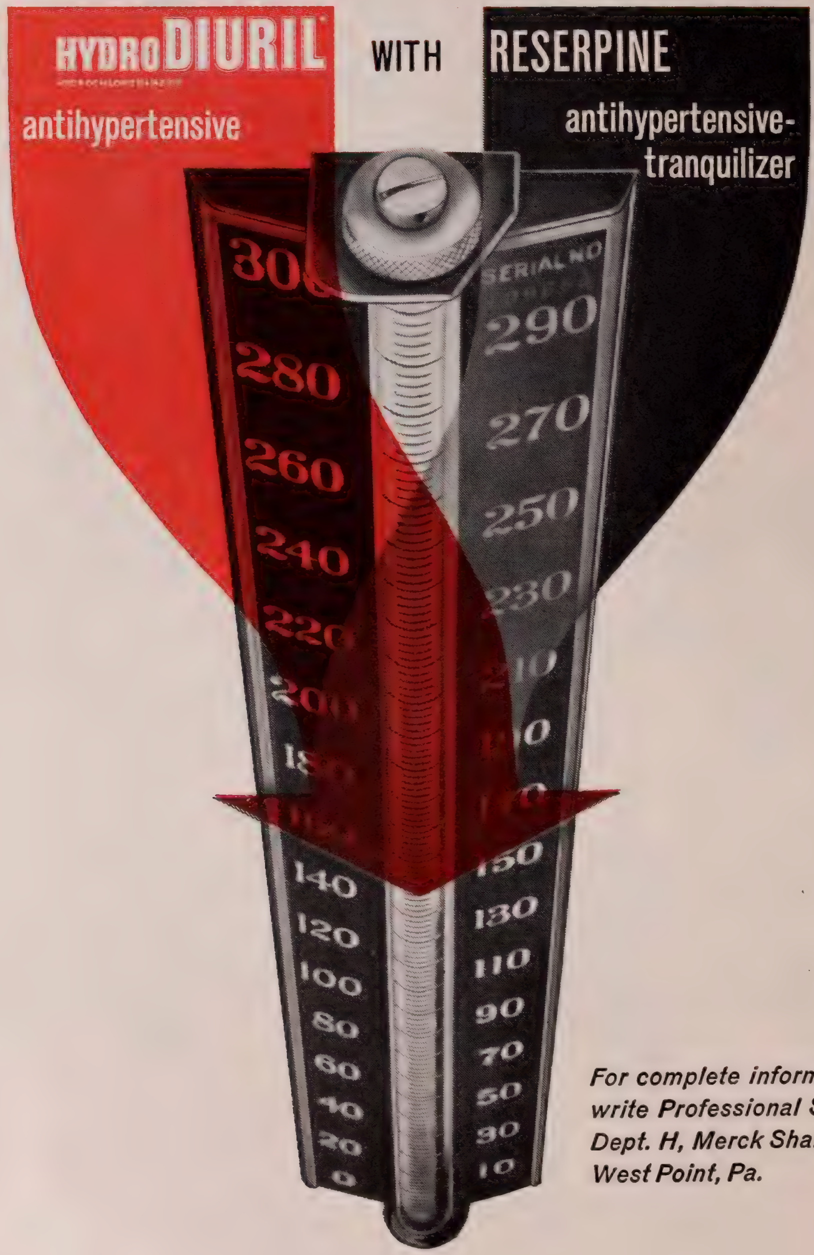
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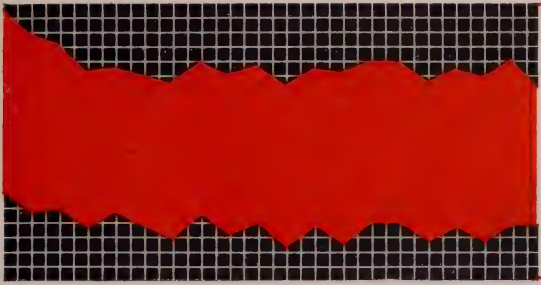

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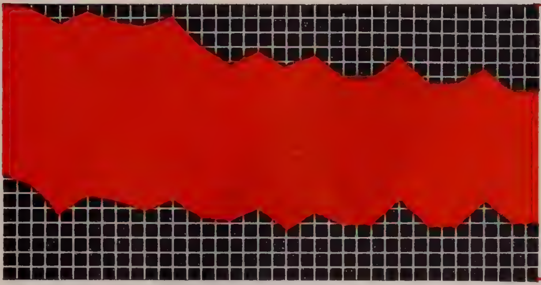

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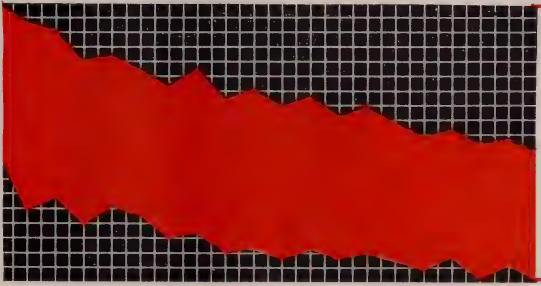

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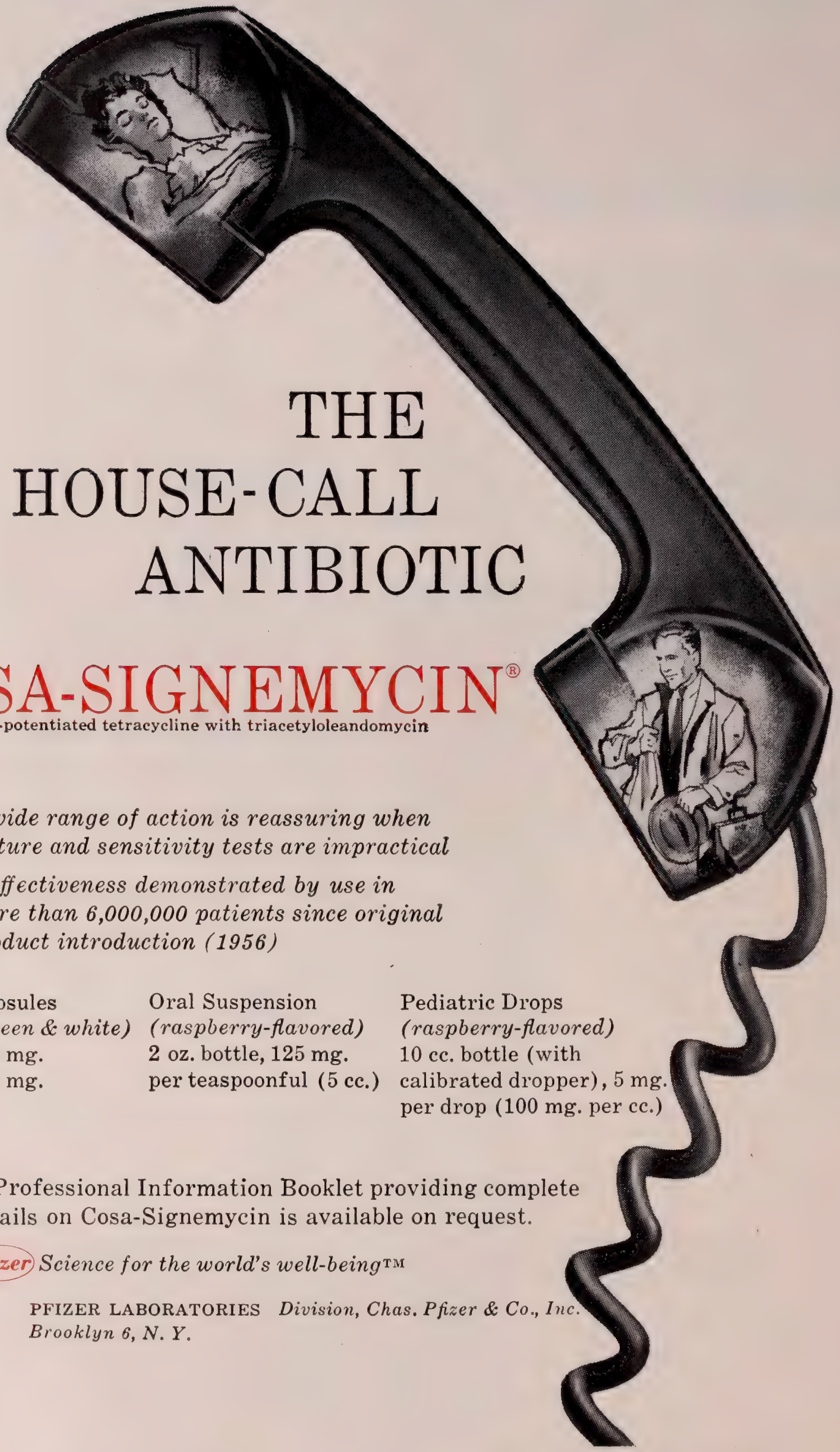

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EDITORIALS

The District Branches

With the advent of September the JOURNAL calls the attention of the membership once more to the schedule of the district branch meetings in the hope that by so doing attendance this year may be stimulated. Many of the younger members of the Medical Society of the State of New York may not realize that historically our present Society acquired these branches as a result of the reunification of the medical profession of the State in 1906. Originally designed to function partly as administrative units of the New York State Medical Association* and partly as a facility for postgraduate instruction of physicians, the branches fulfilled both purposes well between 1884 and 1906. The territory covered by each branch is approximately that of ten county societies.

With the betterment of the teaching facilities of the State, the growth of the medical schools both in stature and numbers, the rise of the specialty societies, and the expansion of medical journals, the need for the postgraduate teaching function of the branches seemed to have become less. One district branch, the First, meets only for the election of officers at the time of the annual meeting of the Society in May; most of the others continue to meet in the Fall of the year with programs of varying character from the purely social through those devoted to medical economics and some presenting scientific papers. A few hold combined meetings of two adjacent branches.

The JOURNAL will attempt to bring to the entire membership the scientific material from the various branch meetings where written papers are presented. One branch at least has made arrangements for the recording of its scientific session and discussion of the papers. It is hoped that attendance this year will be unusually good. The executive committees of the district branches have worked hard to prepare programs of wide interest.

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* History of the Medical Society of the State of New York, NEW YORK STATE J. MED. 57: 473 (Feb. 1) 1957.

History of Medicine in New York State

It should be a source of satisfaction to the Medical Society of the State of New York as it has been and is to the editors of this JOURNAL that we can publish consistently a section on the history of medicine in the State. Although prior to 1797 numerous associations of physicians existed and were locally active, that year marked the founding of the county medical societies which were later to be the components of the State Society, authorized legally in 1806 and formally organized in 1807. The historical record was carried forward thereafter by a yearly volume of the transactions of the Medical Society of the State of New York and also by the New York State Medical Association which in 1901 commenced the publication of the NEW YORK STATE JOURNAL OF MEDICINE.

Since 1906 the JOURNAL has carried the official minutes of the House of Delegates and the Council. These reflect the organizational history of the Society, the continuous thread of policy evolved through the years. In this fifty-three-year period the relationships of the Society with local, State, and Federal governments have expanded enormously, as they have with civic organizations, industry, hospitals, and a growing number of medical educational institutions in the State. The phenomenal growth of the Society from 5,857 members in 1907 to 24,370 in 1958* represents the increase in numbers of medical graduates produced by our schools and the affiliation of these graduates with county societies and the Medical Society of the State of New York.

Younger members of the Society take more or less for granted the medical institutions with which they deal; unless they interest themselves in the history of the profession they have little concept of the antecedents of our present highly developed and coordinated system of medical and paramedical structures and activities. Many of these are not new; their roots are to be found buried in the past, and only by tracing them out can one follow their complex evolution. If one does so one becomes impressed with the fluidity of the medical profession here, its adaptability to the rapidly changing requirements of the public need, and its unceasing attempt through research and experiment to create with the help of American business and industry a more favorable outlook for a healthier longevity, a closer integration with the astounding socioeconomic and political development of the country.

It is hoped the JOURNAL will continue to publish as a regular feature the historical record of the accomplishments of medicine in this State. It is a record of which all may be proud. The profession is often somewhat thoughtlessly accused of being conservative, even reactionary, by those who are not familiar with its history. One does not find this charge substantiated by the record. We urge all our readers to prove this to their own satisfaction by a study of the historical background of medicine in the Empire State.

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* NEW YORK STATE J. MED 59: 1313 (Apr. 1) 1959.

Editorial Comment

Free Choice of Physician. At its recent annual meeting the American Medical Association through its House of Delegates acted on many of the recommendations of its Commission on Medical Care Plans. Among these were some relating to free choice of physician. Of these the House said:

"The American Medical Association believes that free choice of physician is the right of every individual and one which he should be free to exercise as he chooses. Each individual should be accorded the privilege to select and change his physician at will or to select his preferred system of medical care and the American Medical Association vigorously supports the right of the individual to choose between these alternatives."

In connection with free choice of physician, the House also requested the Board of Trustees to transmit to all constituent medical associations the "far-reaching significance" of Recommendation A-7, which says:

" 'Free choice of physician' is an important factor in the provision of good medical care. In order that the principle of 'free choice of physician' be maintained and be fully implemented, the medical profession should discharge more vigorously its self-imposed responsibility for assuring the competency of physicians' services and their provision at a cost which people can afford."

The House also strongly endorsed Recommendation B-11 which declares that "Those who receive medical care benefits as a result of collective bargaining should have the widest possible choice from among medical care plans for the provision of such care."

Many of the Commission recommendations urged increased activity by state and county medical societies and the American

Medical Association in such fields as continuing study and liaison, closer attention to legal and legislative factors, and the development of guides for the relationship between the medical profession and the various types of third parties. To carry out three of the recommendations involving A.M.A. activities, the House also approved a seven-point program which it requested the Board of Trustees to transmit to the Division of Socio-Economic Activities for immediate attention.

The matter of free choice of physician under the rapidly expanding plans for the provision of good medical care by the profession where third parties are involved is one which must be resolved with a minimum loss of time. The pressure of public necessity is great and grows more compelling daily. This calls for as rapid a solution as possible of the professional, legal, and economic problems of the third party relationship. If this means a revision in the public interest of some of the concepts held previously, then it seems better to have this revision brought about actively by the medical profession rather than imposed on it from without.

The A.M.A. House of Delegates has initiated effective leadership in this field; it is now up to the state and county medical societies to follow through.

Medical Society of the State of New York

District Branch Meetings—1959–1960

District Branch	*Date*	*Place*
I	Spring, 1960	. . .
II	November 4, 1959	Smithtown
III & IV	October 14 & 15, 1959	Grossinger
V	April 7, 1960	. . .
VI	September 23, 1959	Binghamton
VII	September 17, 1959	Rochester
VIII	October 1, 1959	Wellsville
IX	Spring, 1960	. . .

PRESIDENT'S PAGE

HENRY I. FINEBERG, M.D.

A short time ago, the Nassau County Medical Society announced that it is organizing an emergency medical service for the purpose of providing immediate medical assistance in case of urgent need.

Of course, this is not a new idea. Over six years ago our State Society actively encouraged the formation of emergency medical services. In most of our counties the medical societies have instituted these programs—designed to insure the availability of a doctor of medicine to answer emergency calls at any hour. We feel that this type of public service should be established in all areas. However, much to our dismay, a survey reveals that where we have emergency medical departments they do not always operate according to plan. There have been complaints in some sections that doctors still cannot be reached at certain times of the day and week.

The Nassau plan has received a considerable amount of favorable comment in the newspapers of New York City and the adjacent counties. This form of publicity is very important and can be of great value not only to our profession but to the folks we treat. On the other hand, if the newspaper editorials and articles are to serve the purpose for which they are intended, the emergency medical services must function properly and with little deflection from the script. They must be as foolproof as possible. Planning and blueprinting without achieving the goal toward which we are striving can do more harm than good. Once the people in any community become cognizant of the fact that an emergency medical service exists, they will demand and expect competent care at all times. If this is not forthcoming, the efforts that have gone into the organization will be to no avail.

It is my hope that the county medical societies which have emergency medical services will review and re-evaluate their procedures at regular intervals to guarantee effective action. A system that works only on paper is of no value. Those medical societies which do not have emergency medical services should make every attempt to organize them.

There is no doubt but that we must convince people that they should have their own personal physicians—the doctors of their choice. When doctors find that for some reason or other they will be away, they should make individual arrangements to be covered adequately by one or more of their colleagues. But if despite all this planning a medical emergency arises and the regular family physician cannot be found, it is our responsibility and obligation to see that proper medical care is provided without delay.

At no time in our history has our profession been under as close scrutiny as it is today. Too often we are being taken to task. We can overcome much of this criticism by furnishing competent and satisfactory service whenever needed and by submitting fair and reasonable bills for this service. As we have said so often before, there must be dedication on the part of the doctor of medicine so that the time-honored, wholesome, doctor-patient relationship—so necessary to the practice of good medicine—will be maintained always.

In my first President's Page,* I promised to keep the members of our Society informed about what is taking place at our central headquarters in New York City. We are going through a period of reorganization. Some features of the Management Survey Report approved by the House of Delegates are being implemented. Better administrative and business procedures are being introduced. We are attempting to streamline the meetings of the Council without any loss of efficiency and without stifling democratic debate. Efforts are being made to effect a closer liaison between the county societies, the district branches, and the State Society. Wherever possible, the Council committees have been asked to submit their reports in writing—about two weeks before each meeting of the Council—so that they can be properly studied and evaluated before definitive action is taken. We are planning to revive those committees which have been rather dormant during the past few years. Inactive groups have no real reason for existing.

The Medical Society of the State of New York must re-establish its prestige. It must take its place among the leaders in American medicine.

This year as a pilot study we have appointed a Commission on Medical Services. This Commission consists of the chairmen of seven Council committees: Committee on Medical Economics, Committee on Questions of Ethics, Committee on Hospital and Professional Relations, Committee on Industrial Health, Committee on Medical Care Insurance, Committee on Rural Medical Service, and Committee on Workmen's Compensation. This type of organization brings together under one chairman those committees whose programs may require correlative planning. The Report states that the purpose of such a commission is to "study, investigate, and from time to time submit recommendations concerning the methods under which medical services are furnished or organized and the social and economic problems which arise in giving adequate medical care." What this Commission accomplishes will determine whether or not the commission idea should be extended to other areas, such as scientific advancement and public policy.

I am happy to report that the Governor has, on occasion, asked for our advice concerning certain of his appointments related to the fields of public health and medicine.

The Council Committee on Public Relations has taken a few forward steps. With the permission of the Council, it is sponsoring the formation of an organization of medical office assistants at State level. Meetings of the executive secretaries and the officers and committee chairmen of county medical societies are being planned. The name of the Public and Professional Relations Bureau has been changed to the Department of Communications. There is a movement on foot to bring the folks in the "grass roots" areas closer to 750 Third Avenue. These are steps in the right direction.

Henry I. Fineberg

HENRY I. FINEBERG, M.D., *President*

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* NEW YORK STATE J. MED. **59**: 2144 (June 1) 1959.

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---

1. Council on Drugs: New and Nonofficial Drugs 1958. Methallenestril, Philadelphia, J. B. Lippincott Company, 1958, pp. 477-478.
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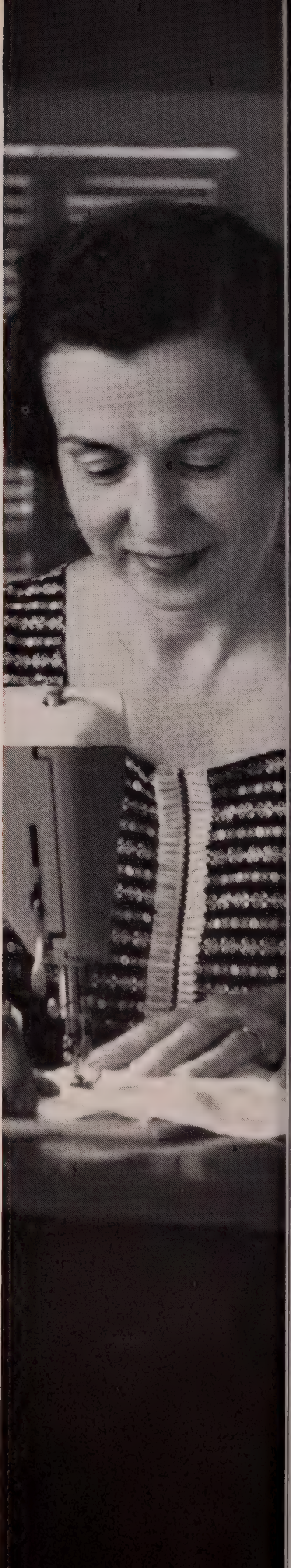

Transportation and First Aid in Patients with Spinal Cord Injuries

ERICH G. KRUEGER, M.D. AND ILDIKO MOHACSY, M.D., NEW YORK CITY

(From the Bronx Veterans Administration Hospital and New York University–Bellevue Medical Center)

During the first half of the twentieth century we witnessed a radical change in high speed transportation on the ground and in the air as part of the industrial revolution, in peace as well as in war; and also a propagation of sports, such as skiing, contact sports, swimming, and diving which all contributed to a rise in the incidence of spinal fractures with and without spinal cord injuries. Certain industries and occupations expose workers to accidental hazards resulting in a higher frequency of spinal injuries. Furthermore, the postwar "do-it-yourself" phenomenon added its share to a higher rate of spinal fractures in the home.

The military conflicts of World War II and Korea in conjunction with the simultaneous dramatic lowering of the mortality rate in patients afflicted with spinal injuries created the necessity to hospitalize thousands of these patients in so-called "paraplegic centers" of selected military and Veterans Administration hospitals. The experience since gained in these and other neurologic and orthopedic centers and the development of newer technics in first aid; transportation; medical, surgical, and nursing care; as well as in physical and vocational rehabilitation have not only given a new lease on life to many veterans but have also benefited innumerable civilian patients.

In spite of advances in methods and appliances designed for the protection of the cord in spinal injuries, there are still too many patients able to move their extremities shortly after the accident who suffer irreparable damage to the spinal cord through attempts that are made to move the patient from the scene of the accident to the hospital and from the stretcher to the x-ray table or to bed, and by faulty positioning without traction on the operating table, or by endotracheal intubation in hyperextension. Even months or years later damage can be caused by redislocations following removal of braces.

In order to prevent many of these unnecessary tragedies, vigilance must be exercised at all times by any person who comes into contact with patients who sustain severe injuries from falls or car accidents with a possibility of spinal trauma. In most instances physicians with special training are not present to administer first aid and to supervise transportation. Only an educational drive as effective as the March of Dimes campaign, using all means of communication and utilizing all other formal educational, youth, and other voluntary organizations, may succeed in educating the public at large. Knowledge in matters of first aid in spinal injuries could be made part of the examination for drivers' licenses. Road accidents are, at present, the most frequent causes of spinal injuries in the civilian population and the driver of a car is usually the first person at the scene of an accident.

The need for enlisting the cooperation of the lay public in first aid for back and neck injuries was realized long before World War II. In a pamphlet prepared by Stookey[1] and issued by the New York City Department of Hospitals, the principles of moving and transporting the patient to and within the hospital were clearly expressed together with detailed written and pictorial instructions, to wit:

> "The committee strongly feels that the lay public must be instructed in the proper method of handling suspected injuries of the spine so that further damage in moving and transportation may be avoided.
>
> "Unless there is imperative need to move an individual suspected of having a spinal injury to a zone of safety, the injured is best not moved or lifted, until medical aid reaches him."
>
> Following detailed instructions concerning the turning and placing of the patient on blanket, board, or stretcher, it was recommended "that the injured should be, thus, transported to a hospital where x-ray apparatus is available and x-rays taken without removing the injured from the stretcher or blanket and without changing his position . . . . The injured should not be taken off the stretcher or blanket until the surgeon is ready to begin treatment."

Although the requirements were, thus, clearly expressed decades ago, we are generally still lagging far behind in achieving the stated goals. Limbach[2] who deserves great credit for his contribution to safer and more efficient patient transportation recently stated "that this vital problem has simply been ignored in the average community. The most superficial study reveals amazing inefficiency and potential danger to the patient." He further added "that the average lay person has been led to believe that once he has been transported to the hospital, all further care and transfer will be quickly accomplished with the utmost scientific precision and safety. Certainly this is a misconception. Transportation within the hospital is all too often less organized and efficient than that outside its walls." A hospital survey revealed that ten transfers were endured by the average trauma patient between emergency room and bed with further injuries in some instances or at least discomfort experienced by all patients during transfers which were usually entrusted to inexperienced personnel.

This situation, still prevailing in many instances, is less understandable in view of the development of newer means and methods of litter transportation since World War II. Although elaborate transportation apparatus is now available commercially, some simple yet efficient methods will be described not only for historical reasons but also because the latter are still eminently practical and can easily be procured or, if need be, improvised in emergency situations or disaster areas.

DOUBLE LITTER METHOD.—The double litter method[3] proved most advantageous for the early care, transportation, and air evacuation of casualties with penetrating wounds of the spine during the Korean conflict. Rather than place the paraplegic or quadriplegic patient on a cot in the field hospital he was cared for on a litter amply padded with blankets. For the prone position, the padded litter was especially prepared by providing an opening for the face as well as for the catheter. The patient's position was changed every two hours by placing a second litter on top of him and turning him between the two litters which had been strapped together. In the field hospital the litters were placed on saw horses. Early treatment and later evacuation to a hospital in Japan could be achieved without transfer to other litters thus avoiding further injury as well as preventing decubitus ulcers.

STRYKER AND FOSTER FRAMES.—The Stryker frame[4,5] was originally designed as an attachment to a hospital bed for turning a patient who required treatment on a Bradford frame. This device allowed the patient to remain part of the day on his abdomen which position made him more comfortable and less liable to develop decubitus ulcers or respiratory or genitourinary complications. While the patient is on the anterior frame, his head is supported by an adjustable face piece which lies on the anterior frame and takes the weight off the cheeks and forehead. During World War II the Stryker frame became commercially available with a frame cart as a unit, allowing also the use of head traction such as that used with Crutchfield tongs. Its use was soon extended to the care and later also to the transportation of patients with spinal cord injuries. The ease with which the patient can be turned frequently by one person between the anterior and posterior frames without altering the position of the patient otherwise facilitated nursing care and prevented the occurrence of bed sores when patients were transported to neurosurgical hospitals or to the zone of the interior in ambulance, train, or airplane. Pillow padding with six soft pillows placed transversely across the frame proved to be more satisfactory than foam or air mattresses. The Foster reversible orthopedic bed, a more recent modification of the Stryker frame method, is more spacious and allows room to accommodate heavier patients. In addition, the frames can be adjusted from the flat position to various degrees of hyperextension at various points from the lumbar to the dorsal region. Traction can likewise be maintained while the litter is being turned. The Stryker frame, often in combination with the double litter method,[3] was used extensively in Korea for evacuation by plane of patients with spinal cord injuries. It is still the most satisfactory method for the transport of the paraplegic or quadriplegic patient if the transfer by airplane or train requires more than two to three hours, particularly when head traction has to be maintained simultaneously.

Radiotranslucent Litters.—The importance of making roentgen-ray examinations in spinal injuries without removing the injured person from the stretcher or board has been recognized for a long time.[1] However, radiotranslucent litters did not become available until very recently. Covalt, Cooper, Hoen, and Rusk[6] in 1953 suggested that: "The stretcher should be firm and flat since the ordinary canvas stretcher tends to cause flexion of the patient's back. A flat plywood board of sufficient strength to support a man is probably the best stretcher for these patients. If possible, it should have handles so that four to six men can carry a patient with ease. An ordinary door makes an excellent stretcher. . . . Roentgenograms of the back can be taken in the original stretcher."

A slightly more elaborate radiotranslucent litter has been designed and used by one of us since 1953 with the deliberate purpose of eliminating multiple transfers from the scene of the accident to the operating table or treatment bed, particularly for patients with spinal injuries. This stretcher consists of a $^1/_4$-inch thick ordinary plywood board measuring 65 inches in length and 20 inches in width. Oak bars 79 inches long, 1 inch in width, and 2 inches thick are screwed to the top of the board on either side. A radiotranslucent sponge mattress measuring 18 by 65 inches and encased in a plastic bag is placed between the bars which also serve as rounded 7-inch-long handle bars so that the stretcher can be carried by two persons. This litter can be placed easily on the usual ambulance stretcher, hospital stretcher, cart, x-ray table, and, if necessary, on the operating table. Since this litter takes hardly any space, any ambulance could carry this rather inexpensive adjunct; every hospital may, likewise, have a set of litters for emergency use in case of a disaster.

Mobile X-Ray Litter Table.—Another device, a mobile radiotranslucent litter table with a Bucky diaphragm, was constructed in the radiologic department of the Bronx Veterans Administration Hospital[7] for the purpose of eliminating several transfers of seriously ill or injured patients within the hospital. The table consists of a radiotranslucent top mounted on solid legs at the extreme ends and it is equipped with lock wheels. Conventional and magnification studies can be made and casettes can be brought easily into position without disturbing the patient. Magnetic casette holders can be passed along the rim of the table and an extension table permits radiographic studies of the skull. A patient with a back or neck fracture can be transferred directly with a radiotranslucent litter from the ambulance to this table. All radiologic studies can be carried out in the x-ray department, or, if need be, in the emergency room or in the ward with any mobile radiographic machine until definite treatment is instituted on the ward or in the operating room.

All-Purpose Radiotranslucent Stretcher (Transaver).—The Transaver stretcher was developed by Limbach[2] after a hospital survey in 1952 revealed the inefficiency of intrahospital transfers. This all-purpose stretcher which became commercially available in recent years reduces patient transfers by 80 per cent in the average trauma cases and appears to be ideally suited for the transportation of patients with spinal fractures by ambulance to regional hospitals. The three main equipment parts are: (1) the "litter," a strong lightweight frame with a magnesium plate and conductive rubber pad; (2) the "shuttler," a low ambulance cart on which the litter rests; and (3) the "straddler" on which the litters are placed within the hospital. Trigger handles release the legs to swing clear so that it may be rolled into place over standard, examining, operating, and x-ray tables. The patient is moved only twice, at the scene of the accident and when placed in a hospital bed, having by that time undergone clinical and radiologic examination and first aid treatment or even surgery. During emergencies the litters can serve as temporary beds. Many litters can be stored compactly for emergency use.

Positioning of Patient.—Many views,[1,8,9] often dogmatic and seemingly contradictory, have been expressed in the past concerning the best positions for transporting patients with spinal fractures. Some authors recommend transportation on stretchers in the prone position only for cervical injuries, some only for dorsolumbar injuries, and some for injuries at any level. Others favor the supine position for cervical injuries only[1] and others favor it for injuries at any level, either in the neutral position or by placing small pillows or rolls under shoulders or in the dorsolumbar area in order to maintain hyperflexion.

The guiding principles in transporting a patient are:

1. To avoid any movement in lateral or anterior direction that may increase the bony deformity and spinal cord compression. Under no circumstance should the head of a patient with a cervical fracture be moved to hand him a cigaret or glass of water or to place a pillow under his head.

2. Corrective positioning of the spine for transportation and also definitive treatment should be undertaken with a clear understanding of the mechanism of the force which produced the injury, such as a forward fall on the face in hyperextension trauma. Correction is always in the direction opposite the stress which caused the trauma. A patient with hyperflexion fracture of the thoracolumbar spine is thus transported correctly in prone position on a blanket or in the supine position on a rigid stretcher with blanket rolls maintaining lordosis. Patients with cervical injuries are best transported in the supine position on a rigid surface. Overcorrection to extension is achieved by raising the shoulders with the aid of a folded blanket or, if mild flexion is desired in case of hyperextension injury, by sliding a small flat pillow or folded piece of cotton under the head.

The application of an emergency Thomas collar or lateral fixation of the head with sandbags has been recommended.

Frequently the mechanism of the trauma and the resulting type of vertebral injury cannot be determined by the person giving first aid or before x-ray study results are available. Fixation of the spine in the neutral position appears advisable under these circumstances. The principle of traction in the direction of the long axis of the spine in the neutral position was particularly emphasized by Rogers[10] in the prevention of cord damage in cervical fractures and dislocations. This traction is applied as first aid by means of an adjustable traction neck brace which must be worn whenever the patient is being moved to the x-ray department, operating room, or during the application of tongs for skull traction. No cord injury has occurred in any of Rogers' patients during the thirteen years following the institution of this safety measure. The traction brace must be worn from the earliest possible moment after the accident until skull traction has been applied. Since the effectiveness of this brace depends on constant pressure at chin and occiput, it can be used for only a few hours following which the brace is temporarily loosened and shifted while the patient remains inactive.

In placing a patient with obvious or suspected injury to the spine on a stretcher, care should be taken to remove objects from his pockets such as wallets, keys, and knives; clothing, sheets, or blankets should be straightened so as to avoid localized pressure. In order to move a patient on a blanket, at least four persons are necessary; turning of a patient requires at least three persons—two applying traction and counter traction at head and feet and one turning the patient like a log while grasping the patient at shoulders and hips. A patient should not be lifted from the ground and should be rolled in the described manner on a board or litter.[9] Immediate transfer to a hospital equipped for specialized care and definitive treatment is of vital importance.

When the patient reaches the hospital he should not be moved from his stretcher until a quick neurologic examination or necessary corrective measures for respiratory difficulties or blood loss have been taken. A well-trained team directed by an experienced physician should then move the patient to the radiologic department, operating room, or bed, as the case may be. The transfers from the scene of accident to hospital bed have become simplified and safer when newer devices are used simultaneously.

Conclusions

The authors wish to stress again the scope and magnitude of the problem of safer extramural and intramural transportation of patients who have sustained injuries to the spine. Such injuries occur with increasing frequency in this age of industrialization and of mechanization. The prevention of additional injuries to the spinal cord during transfers cannot be achieved by neurosurgical or orthopedic specialists alone, but only by a wide dissemination of knowledge concerning the safe application of available methods and apparatus among the medical profession at large as well as to other hospital personnel, and to a great extent by enlisting the cooperation of the lay public in a concerted drive. It is with this plea in mind that the appraisal of the present status of first aid and safe transportation was undertaken.

Summary

1. The present status of first aid and transportation of patients with spinal injuries is reviewed. Although the principles of preventing additional or further damage to the spinal cord were stated decades ago, there are still too many patients who sustain such injuries in transfer.
2. The fact that inefficient methods of patient transfer still prevail results not only from a widespread lack of knowledge of the principles and technics of handling spinal fracture cases but also from unfamiliarity with modern devices of transportation among professional and lay public as well.
3. The elimination of multiple transfers by the use of the double litter method, Stryker frames, radiotranslucent litters, and mobile x-ray litter tables as well as indications for their use were discussed.
4. The principles and methods of positioning a patient with spinal fractures as well as other safeguards were again stressed.
5. A concerted drive for the dissemination of presently available information and

methods concerning the safe transfer of cases with spinal trauma is suggested.

VETERANS ADMINISTRATION HOSPITAL
130 WEST KINGSBRIDGE ROAD, BRONX 68
(DR. KRUEGER)

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Hirschsprung's Disease and Pseudo-Hirschsprung's Disease

Early surgical consultation in obstinate childhood constipation is sought more frequently since it has become known that an effective operative procedure is available for definitive treatment of Hirschsprung's disease. On the possibility that they may be surgical cases, some of those referred (a larger number, in fact, than those with true Hirschsprung's disease) are children with conditions imitative of this syndrome. In most cases, these conditions can be readily differentiated since true Hirschsprung's disease presents a clear clinical picture, radiologic findings, and unequivocal pathology.

After describing these identifying characteristics and outlining treatment of the true condition, the author, Mark M. Ravitch, M.D., Johns Hopkins University, Baltimore, Maryland, goes on to classify and differentiate the imitators. These fall into four classes: (1) Psychogenic constipation, in which unlike Hirschsprung's disease, symptoms do not appear at birth, encopresis is common (it is rare in Hirschsprung's disease), and the barium enema shows no narrowing of the distal segment. Management consists of open discussion with parent and child, assumption by the physician of full control of details of treatment and making the parent the physician's agent in carrying out the prescribed regimen. (2) Mental retardation and cerebral defect, managed by an enema regimen which may require indefinite continuance. (3) Corrected imperforate anus. Even though imperforate anus is corrected at birth, there may be residual difficulties: stenosis, imperfect innervation, or poor habit training. In the less severe cases, a regular enema regimen is indicated, establishment of bowel habits as in the first group, and possible dilation of strictures or anoplasty. (4) Cretinism. Hormone therapy to relieve the constipation of hypothyroidism and reverse radiographic changes in the colon and rectum.—*North Carolina Medical Journal, July, 1958*

Symposium

THE USE OF RADIOISOTOPES IN CLINICAL PRACTICE

Moderator

SIDNEY KETYER, M.D., ELMHURST, *Radiation Therapist, Department of Radiation Medicine, Queens Hospital Center, Jamaica, Assistant Attending Physician in Isotopes, Flushing Hospital**

Participants

GEORGE C. COTZIAS, M.D., UPTON, *Senior Scientist; Head of Physiology Division, Medical Research Center, Brookhaven National Laboratory*

HAROLD N. SCHWINGER, M.D., F.A.C.R., BROOKLYN, *Director, Department of Radiology, Unity Hospital; Assistant Clinical Professor of Radiology, State University of New York Downstate Medical Center*

WALTER T. MURPHY, M.D., BUFFALO, *Director of Therapeutic Radiology, Roswell Park Memorial Institute; Associate Clinical Professor of Radiology, University of Buffalo School of Medicine*

Introduction

SIDNEY KETYER, M.D.: Mr. Chairman, members of the Society, and guests. I don't know how distinguished we are, but since the subject is radioactivity, I hope we are "hot." The subject of this panel is the use of radioactive isotopes in clinical practice. Twelve years ago, or more, we wouldn't have had this panel. It was only with the release of radioactive isotopes by the Atomic Energy Commission after World War II that there was a generalized distribution of isotopes to the medical profession.

At the present time almost every phase of medicine is making some use of radioactive isotopes. The internist is using radioactive iodine for the diagnosis and treatment of thyroid disease. The cardiologist may use isotopes to determine circulation time and cardiac outputs. The hematologist is using isotopes for the diagnosis of pernicious anemia, for determining red cell survival, and for the treatment of leukemia and polycythemia, among other uses. The surgeon uses radiation isotopes for determining blood volumes, viability of skin grafts, and so forth. The ophthalmologist may use radioactive phosphorus for tumor localization in the eye, or he may use radioactive strontium for treatment. The radiologist has had a whole new world opened to him in the use of the various radioactive isotopes for treatment of oncology. So as we go down the list, we see that practically every sphere of medicine has some use for radioactive isotopes.

In the short time that we have available, it is very difficult for the panel to go into great detail about the various aspects. We've divided the subject into three phases: the use of isotopes in diagnosis, the use of isotopes in therapy, and finally the hazards in the use of isotopes. These talks will be surveys of the field, and we hope that there will be some subject that will interest you enough to ask questions of the panel.

Presented at the 152nd Annual Meeting of the Medical Society of the State of New York, New York City, General Sessions, May 16, 1958.

* At present Director of Radiology, St. Elizabeth's Hospital, Elizabeth, New Jersey.

Our first speaker, who will speak to us on the value of radioactive isotopes in diagnosis, is George C. Cotzias, M.D.

*Diagnostic Uses of Radioisotopes**

George C. Cotzias, M.D.: As in every other type of diagnostic endeavor nowadays one would be much safer if one started with the tools which are involved in the process of diagnosis. In the case of the use of radioactive isotopes, we have merely two tools, intellectually speaking. One is the isotope which will emit the radiation and the other is the unit which is going to receive the signal that the isotope has given out. So, in terms of these two elements in the diagnosis of disease by means of isotopes, we shall divide further our discussion today.

Most of you know what an isotope is. It might be safe to redefine it. One can actually never speak abstractly of an isotope. One has to speak of an isotope of some element. All the elements with which we are familiar from everyday practice and from courses in chemistry do have brother elements—so to speak—which have chemical characteristics identical with the familiar element, but which differ in one physical parameter. The one parameter in which they differ is ordinarily weight. The isotopes which are of interest to us differ in that they are lighter or heavier than the elements with which you are all familiar. This difference in weight, however, often conveys an instability to these elements so that they tend to break down at a characteristic rate and in so doing they release a certain packet or packages of radiation, of energy in the form of radiation which we can utilize either as a signal or as a source of energy.

I am going to dwell only on the uses of this emitted radiation as a signal and not as a form of energy for the production of useful work.

In this brief communication, an attempt is made to state some of the principles underlying the diagnostic applications of radioisotopic technics. Some illustrative examples are given from the actual clinical practice. However, no semblance of completeness is to be found in the statements pertaining either to the theoretical or to the practical aspects of this field. Since the technologic advances in this area are most rapid, the diagnostic applications have as their limiting factor only the inventiveness of the physician.[1-3] Indeed, this situation leads to the following paradox: that at times the boundaries between thoroughly accepted diagnostic procedures and those which are still properly in the investigative stage become hazy. This results from the rapidity of development of new procedures which impose an obsolescence on the already established ones.[4]

It is convenient to divide the diagnostic procedures into two classes, on the basis of whether an isotope was produced in situ in a given tissue for diagnostic purposes or whether it was conventionally manufactured and then introduced into the body. In the first instance one activates a desired stable elemental constituent of the body into a radiation-emitting state and determines its location and quantity by means of suitable radiation-sensing devices. In this case, one speaks of "activation analysis." In the second instance one introduces a defined quantity of an isotope into the tissues and thereafter one proceeds with observations. In the latter case, one speaks of "tracer technics." We shall consider both these classes in a general way.

Activation Analysis.—Theoretically, activation analysis can be performed on tissues which have not been removed from the body but which remain in situ while being subjected to suitable bombardment by means of some activating nuclear particles, such as neutrons. In practice, even in investigation, this is not yet feasible for two reasons: (1) The radiation dosages are to date such that pathologic changes will accrue, and (2) most of the elemental constituents of the body which are easily amenable to such analysis

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* This work was supported by the Atomic Energy Commission.

(such as sodium) are highly mobile and would be expected almost instantly to begin leaving the site at which they were activated.

Extensive work has been done on isolated tissue samples.[5,6] The advantages of activation analysis over all other types of tissue analysis are manifold. The technic is most sensitive so that only very small samples are needed. Therefore, such tissues as small vessels, obtained by biopsy, constitute proper objects for study by this technic. Furthermore, extrinsic contamination which plagues other types of analysis can be kept at a minimum here. The sample does not have to be destroyed so that analyses for the same or for other elements can be performed repeatedly on the same sample. Trace constituents of tissues (which are notoriously stubborn when faced with other analytical procedures) can be analyzed in this fashion. These are but a few of the advantages. The only limiting disadvantage is the high initial cost of the necessary equipment.

The technic operates as follows: A tissue sample is placed in a nuclear reactor and bombarded with neutrons of a desired energy for a predetermined period of time. The sample becomes radioactive. Its radioactivity, however, is due not only to the activation of only one tissue constituent but also to the variable activation of many elements. Thus there are two choices for the final steps in the analysis: either to sort out the desired element by chemical means[5] or to sort out the specific radiations of the element under study by physical means.[6] In both cases a comparison is made with identically treated standards.

Tracers in Diagnosis.—There are essentially only three types of questions to which radioisotopic technics might give an answer. (A) Where does it go? This is the type of question one asks prior to monitoring the body for sites of radioiodine accumulation in the search of metastases from a primary carcinoma of the thyroid.[7] (B) How fast? This type of question is exemplified by the studies of the rate of absorption of cobalt-60-labeled vitamin B_{12} from the gastrointestinal tract.[1] (C) How much? This type of question is usually inherent in all procedures of this kind and needs no specific clarification.

These three questions can be asked in many ways. This is illustrated most obviously when considering the immense numbers of available radioisotopes of a large number of elements. A further increase in usefulness can be found in the fact that a specific chemical state of an isotope may be chosen for a specific task. The primordial maneuver consists of using the isotope in its elemental form, such as radioiodine in thyroid metabolism.[8,9] However, the isotope might be combined with a micromolecule (such as vitamin B_{12})[10] or a macromolecule (such as iodinated human albumin).[11–13] In both these cases, the information one seeks is pertinent to the organic molecule and the tag is only a matter of convenience. Similarly in the use of radiochromium-labeled red cells[14] the object of the test is the red cell, and the radiochromium constitutes merely a convenience.

Considering that there are only three basic questions but many ways of asking them, what are the general areas in which diagnostic aid might be sought? This is best shown by specific examples, which follow.

Isotope Dilution.—Isotope dilution technics are in principle similar to dye-dilution technics. However, instead of measuring change in the intensity of a color, one measures the dilution of a finite number of atoms. The procedure in both cases is to place a predetermined quantity into a space of unknown dimension, to allow for mixing and to determine the dilution factor from which the size of the unknown pool can be computed. More than one isotope may be used concomitantly since the pulse-height analyzers are capable of sorting out the specific radiations. It is therefore possible to estimate in the intact man such parameters as the total body water,[3,15] total exchangeable sodium,[16] total exchangeable potassium,[16] chloride space,[3] blood volume,[13] and other parameters of diagnostic importance.

Flow Rate Technics. While the dilution technics are based essentially on the observation of a change in quantity only, with the flow rate technics the additional specification of the change in time is introduced. These technics make use of the change of a given quantity of radiation in a given locus per unit time. A simple variant of this is the observation of the rate of disappearance of Na^{24} or P^{32} from a tubular graft[3] which may be used as evidence for the vascularization of the graft. The same type of reasoning is found in quantitation of the degree of venous stasis in the legs of cardiac patients or of pregnant women.[17] This latter type of index may be used in evaluating the severity of the stasis and, concordantly, the effectiveness of treatment. In the study of arterial disease, use may be made of an automatically recording computer placed for example over the foot. If an injection of iodine-131-tagged human serum albumin is made intravenously, the graph produced by the recorder will be steep in normalcy and slowly rising in obstructive arterial disease.

An identical kind of reasoning underlies the measurements of the cardiac output by means of isotopes.[12] Arterial blood samples may be collected or the blood from an artery may be temporarily detoured and passed through a counter. If a freely mixing isotope is now placed intravenously, the arterial blood will show one large peak of radioactivity when the first portion of isotope appears and several smaller peaks will follow which show recirculation of the isotope. When mixing is complete, the record shows a plateau. The first peak is then plotted on semilogarithmic paper. The initial downward slope appears as a straight line, indicating its exponential character. This line is extended to the base line. The area under the curve measures the cardiac output. Similar recordings can be obtained by placing a highly columnated counter over the heart following the intravenous injection of a radioisotope. The shape of the first wave of radiation as well as that of the subsequent ones tends to be characteristic of specific diseases of the heart.

Similar approaches have been used in measuring the cerebral blood flow in the intact human being,[18] in tests of kidney and liver function,[19] and in other measurements[20] which utilize the blood flow as the vehicle for distribution of the tag.

Tumor Diagnosis.—The application of the radioisotopic technics to the diagnosis of tumors is based on the premise that since a tumor is obviously metabolically different from normal tissues, its avidity for some tracers might be different also. This difference in avidity might be on the positive side when the tumor will become richer than the surrounding tissues, or on the negative side when the opposite situation will prevail.

The first type of response, namely enrichment of the tumor above and beyond the normal tissues, has been utilized extensively. The localization of a tumor is greatly aided by various scanning methods. Among the most popular of these are the gamma-ray- [7,21,22] and the positron-scanning technics.[23] An example of a gamma-ray-scanning technic can be found in the localization of metastatic thyroid cancer following administration of I^{131}. With suitable recording apparatus, a permanent record can be obtained. This can be in the form of a "profile" of the body such as is made when a counter is moved parallel to the longitudinal axis of the body. Two-dimensional graphs can also be obtained with the aid of machines which place a dot on a paper directly over a spot which emits a certain number of radiations per minute. These devices survey the body automatically in two dimensions and the density of dots on the paper corresponds with a body site of high isotope enrichment.

Isotopes which are capable of positron emission produce the so-called "annihilation reaction." Positrons are positively charged electrons (beta positives) which on emission from the nucleus instantaneously combine with negatively charged electrons (beta negatives) and both particles are annihilated.

This results in the creation of two x-rays which are emitted at exactly opposite directions. This phenomenon is of considerable diagnostic usefulness for the following reason: The first of the two x-rays can be utilized by one counter as a signal to a second counter. The second counter thus counts only the second x-ray in coincidence with the first. Thus not only is a great deal of stray and background radiation discounted by the second counter but also the position of the two monitoring devices describes a straight line which leads directly through the point at which the isotope was located when it produced the annihilation reaction. Arsenic-74, copper-64, manganese-52, and potassium-42 have all been utilized in this manner. Extensive work has been done to lateralize and localize brain tumors with the aid of the annihilation reaction.[23]

Autoradiography is a technic which permits the localization of isotopes in tissue sections, both gross and microscopic. It has not yet been used extensively in the strictly diagnostic sense.[24]

Isotopic Diagnosis of Metabolic Disturbances.—The area of isotopic diagnosis of metabolic disturbances is the most rapidly expanding one in the field of radioisotopic diagnosis. The potential applications are so enormous that only the merest glimpse at the developments to date can be given here.

In the study of metabolic functions and aberrations, the fate of the tag is followed not only in terms of quantity, time, and locus but also in terms of its conversion from one chemical form to another. A number of carbon-14-tagged organic substances have been utilized in the elucidation of normal and pathologic metabolic mechanisms involved in sugar, protein, lipid, cholesterol, pigment, and other syntheses in the body.[15] Radioactive iron has been used extensively in the study of heme and hemoglobin metabolism in various anemias.[25] Vitamin B_{12} tagged with cobalt is used in the diagnosis and the follow-up of patients with pernicious anemia[1,10,26] and its complications. Iodine is the classical isotope of cardinal importance in the study of thyroxine and triiodotyrosine metabolism.[4,8,9] These and many other applications of isotopes in the diagnosis and study of metabolic aberrations render this important area inaccessible to extensive treatment here since it is impossible to deal with the isotopic applications without discussing the metabolic pathways in question as well. Therefore only one application will be dealt with in more detail, namely the assay of thyroid function by means of I^{131}.

Iodine-131 has a half-life of eight days and seems to be the most popular of the iodine isotopes in the study of thyroid disease. Prior to the actual tests, it is necessary that both dietary as well as medicinal iodine be kept at the 0.1 mg. per day level or less (normal intake 0.2 to 0.5 mg. per day). Factors which tend to increase or decrease thyroidal uptake of iodine should be eliminated prior to such tests.[3] The amount of radioiodine usually administered for uptake studies varies from 10 to 50 microcuries depending on the sensitivity of the monitoring equipment available to the physician.

A usual method of testing the thyroid function consists of giving orally a determined quantity of radioiodine and measuring the amount taken up by the thyroid after the elapse of a measured amount of time. Uptakes at the end of one, two, four, six, or eight hours are used in various centers. If repeated counts of the uptake are made, the rate of uptake can also be ascertained. This is flat in hypothyroid states and steep in thyrotoxicosis. The most widely used tests employ the twenty-four- and forty-eight-hour measurement of the radiation taken up by the thyroid. From this the percentage of the dose taken up can be computed. Uptakes of the order of 10 per cent or lower are characteristic of the hypothyroid state, while the normal state is characterized by uptakes varying from 40 to 60 per cent. In thyrotoxicosis figures as high as 75 to 85 per cent may be found. There is a considerable variation from center to center both in the details of the technic as well as in the significance of the per cents of the dose taken up by the thyroid. Most centers tend to develop their own definitions of normalcy and of disease in that regard.

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DR. KEYTER: Thank you, Dr. Cotzias. Our next speaker will speak on the therapeutic indications and results of radioactive isotopes. He is Harold N. Schwinger, M.D.

Therapeutic Indications and Results

HAROLD N. SCHWINGER, M.D.: Now that Dr. Cotzias has enlightened you as to what isotopes are and how we use them for diagnosis in various clinical matters, I should like to survey briefly the field to show how we can use them in therapy. It's a large field and one that doesn't allow for too much detailed discussion, but it is one about which we can give some brief and broad ideas.

It is approximately twenty years since artificially produced radioactive isotopes were first used in diagnosis and treatment. It is almost ten years since these substances have been made available in significant quantity so as to permit large numbers of patients to be treated and the results of this treatment evaluated. Some of the initial hopes that the artificially produced isotopes would prove to be a panacea for all of man's ills have long since waned. However, certain of the isotopes have proved to be of significant value and will, in all probability, remain in our therapeutic armamentarium for the foreseeable future. Of all of the many artificial isotopes produced, radioiodine (I^{131}) is the one substance that is most used and is the one that has the most varied clinical application.

The subject of radioiodine must be separated into different groups as its therapeutic uses vary considerably. Most commonly radioiodine is an excellent therapeutic modality in the treatment of Graves' disease. There is some dispute as to which patients are properly treated with radioiodine and which should be properly in the surgically treated group.

At present, it is felt by many that most patients below the age of forty should not be treated with radioactive iodine because of the uncertain carcinogenic effect of the localized radiation within the thyroid. I believe that as time passes this age limit will be lowered, if experience proves that this is not a warranted contraindication. Certainly, all patients over the age of forty with diffuse toxic goiter are suitable candidates for treatment with radioactive iodine as the treatment of choice. All patients with recurrent hyperthyroidism following surgical removal of the gland are suitable candidates and this may even include those patients under the age of forty.

All poor surgical risks regardless of age are suitable candidates and this is particularly true of cardiac patients. The patient with progressive exophthalmos may also be a candidate for treatment with radioactive iodine as opposed to surgical ablation of the gland; it would appear that the exophthalmos may either regress or become stationary with treatment with radioactive iodine as opposed to the occasional marked progression of this process following surgical removal of the gland.

I am a proponent of small multiple doses of I^{131}, with the initial dose varying between 2 to 5 millicuries, this dependent on the patient's toxicity, age, the size of the gland, and the duration of symptoms. The patient is followed at ten-week intervals and similar small doses are repeated as indicated. Approximately 50 per cent of the patients will be returned to a euthyroid status within a three-month period, an additional 25 per cent within an additional three-month period, and approximately 95 per cent of all treated patients within a nine-month period. It is the rare patient who proves refractory to this therapeutic regimen. The incidence of radiation thyroiditis is practically nil in this type of therapeutic schedule and the incidence of hypothyroidism of a permanent nature is less than 5 per cent. There have been no complications arising from this therapeutic schedule and the recurrence rate has been small and these have been retreated similarly with similar good results.

In the treatment of the toxic nodular goiter, the indications become somewhat less well defined. Solitary thyroid nodules are probably best removed surgically. However, if they show increased activity according to tracer studies, and if the patient is a poor surgical risk, these nodules may well be treated with radioactive iodine, although the dosage required is greater and the time consumed in achieving control is longer than would be the case with the diffusely involved gland. Those toxic nodules that arise in multinodular glands are, again, most likely best treated by surgical methods but may be treated with radioactive iodine if surgery is not deemed wise for one reason or another.

The treatment of intractable angina or cardiac failure is a most gratifying experience when I^{131} is used. Approximately 90 per cent of the patients with intractable angina become pain-free and can be returned to a modified or limited type of normal existence following a radioiodine-induced hypothyroid state. These patients require small doses of thyroid extract to be maintained in a comfortable state so that the myxedema does not prove to be as disabling as the angina was previously. Patients with intractable cardiac failure do not do as well as those with angina but here again approximately 50 per cent of the patients can be made comfortable by the administration of a course of radioactive iodine, failure being more readily controllable with the usual cardiac measures.

There is an interesting group of patients who are apparently subclinically hyperthyroid and these do fantastically well when treated with radioactive iodine. This is particularly true in the angina group where they demonstrate no obvious symptomatology for the hyperthyroid state other than the angina. These patients respond remarkably well when treated with radioactive iodine. Incidentally, these patients are best treated for hyperthyroidism rather than euthyroidism and much smaller doses of radioactive iodine are required to bring them into a clinically comfortable state.

The treatment of carcinoma of the thyroid with radioactive iodine is a limited field since only 10 to 15 per cent of the neoplasms will show any appreciable iodine avidity. Those neoplasms that will take up iodine can be best treated with I^{131} and this is particularly true of the metastatic foci which may appear in bone or soft tissue. The usual course of events is to have the thyroid gland ablated by either surgical and/or radioiodine methods and then to treat with large doses of I^{131}. There are various maneuvers to increase the uptake of the I^{131} by the metastatic lesions such as the prior administration of propylthiouracil, thyroid-stimulating hormone, or some combination of these drugs, and the results can be improved to some degree by these maneuvers.

The proper dosage schedule in the treatment of malignancy of the metastatic thyroid with I^{131} has yet to be established. Most schools of thought are utilizing large doses of I^{131} such as 100 millicuries per treatment and extending this over monthly periods for as long a period of time as the metastases show any inclination to take up the iodine. Other methods are to give smaller doses of the radioactive iodine over shorter periods of time with the idea of having a protracted type of radiation administered to the metastatic foci rather than having isolated large exposures. More experience will be required before the proper dose schedule can be ascertained. The overall results are not encouraging except for the occasional rare neoplasm which shows a high avidity for the iodine following ablation of the normal thyroid gland. However, in the approximately 10 per cent of patients who are treatable, adequate palliation can be obtained for varying periods of time.

There is one other use for I^{131} which has not been fully verified but which may be of occasional value. This is the use of radioiodine for the relief of pain in patients with multiple myeloma. The mechanism by which this achieves pain relief is uncertain and may be related to a lowered pain perception produced by the hypothyroid state. Reported results in the literature have been conflicting. However in our series, there has been better than a 50 per cent significant pain relief for varying periods of time following a course of radioiodine sufficient to produce a hypothyroid state. It would seem that this is a worth-while attempt when other accepted therapeutic measures are no longer effective. It may be that other types of metastatic bone pain may be similarly suitable for this mode of therapy when nothing else but narcotics remains for pain relief.

The next isotope for discussion is radioactive phosphorus-32 (P^{32}). This isotope is a most valuable tool in the treatment of polycythemia vera. I believe this to be the treatment of choice for polycythemia vera as it obviates the need for multiple and frequent phlebotomies and the secondary effect of the phlebotomies of stimulating the production of platelets and other marrow components. Here, again, the method of choice is the administration of small doses, titrating the dosage against the patient's disease. The average initial dose is 4 millicuries of P^{32} and this will produce a remission in the average patient for a period of anywhere between six months to two years. It requires approximately two months for the full effect of the P^{32} to become manifest and the patient then must be followed by monthly blood counts and retreated when there is an indication of a rising hematocrit.

There was, at one time, the impression that the total incidence of acute and/or chronic leukemia was increased in the patients with polycythemia when treated with P^{32}. Long-term statistics have failed to corroborate this initial impression and it is the feeling today that there is no obvious increase in the total incidence of leukemia in patients with polycythemia vera other than what would be expected in the normal course of this disease. However, there is suggestive evidence that the percentage of patients developing acute myelogenous leukemia may be increased. In the treatment of the chronic leukemias, many agents are available which produce varying effects for uncertain periods of time. External irradiation was a most satisfactory tool for many years. In recent years, there have been many chemotherapeutic agents produced, several of which have proved to be useful in the control of the various chronic leukemias. However, the use of small doses of P^{32} as a judiciously used adjuvant may prolong the clinical remission and increase the comfort of the patient with chronic leukemia. The P^{32} may be administered on a regular dosage basis, courses of 1 millicurie weekly for from four to six weeks being given at regular intervals during the year, depending on the patient's response, or may be given in single larger doses, completely dependent on the patient's clinical status. The results with either of these methods are comparable and satisfactory.

There are two radioactive colloids that are useful clinically in the control of pleural and peritoneal effusions secondary to metastatic malignant conditions. These are radioactive colloidal chromic phosphate, the phosphorus being the radioactive substance, and radioactive gold. The chromic phosphate is a pure beta emitter. This is an advantage in that it reduces the radiation hazard to the administrator of the isotope, practically excludes any nursing problem while the patient is in the hospital, and nullifies the need for any prolonged hospitalization. The radioactive gold is a mixed beta and gamma emitter and thus poses a radiation hazard until the level of activity has fallen below a permissible level, and this usually requires hospitalization of the patient and consequent nursing problems for a period of from eight to nine days. However, the gamma ray being emitted by the gold has a theoretical advantage and this may equalize its potential hazard.

Approximately 50 per cent of the patients with either ascites or pleural effusions can be satisfactorily controlled with one or more instillations of the radioactive colloidal isotopes, and each instillation of the isotope may produce control of the fluid anywhere from several weeks up to several years. Approximately 50 per cent of the patients will not be benefited by this isotopic therapy and these are probably patients who have a highly malignant and rapidly growing neoplasm whose fluid-inducing properties cannot be eradicated by the surface irradiation.

Up to this point I have discussed primarily those isotopes which can be introduced into the body either orally or intravenously. There are other substances which can be used either externally or as temporarily inserted interstitial sources of irradiation. This is a rather large subject in itself and I will merely mention briefly these substances so as to indicate the scope of the subject. Radioactive strontium has been of great value in the treatment of various diseases about the eye, such as pterygiums, cornea vascularizations, and other similar ocular lesions which are greatly aided by the beta radiation from the strontium. Radioactive cobalt and iridium have been made up as small sources and introduced as radioactive threads into various tumors within the body or body cavities such as tumors of the urinary bladder or elsewhere. These have proved to be a more satisfactory local source of radiation than the previously available radium needles since they can be made in much more versatile forms. Radioactive cobalt and cesium are made in large sources for external radiation of the higher voltage technics. Radioactive colloidal gold and chromic phosphate have been introduced interstitially in tumors of the prostate and, although this is still in the early phases of development, it may well prove to be an excellent therapeutic method in the control of this neoplasm.

There are many other isotopes with many potential uses now under investigation by many groups. Many of those currently under use today are being investigated for possible other uses and other isotopes not currently in our armamentarium are being investigated and may, possibly, in the future, prove to be of even greater value than those we currently have available.

I do not believe that the field of radioactive isotopes in medical therapy will prove to be the panacea for all of man's ills it was once hoped to be, but there is no doubt that the field of usefulness of those described today has been well established and the hopes for the future are great that others of similar or greater value will be found.

Dr. Ketyer: Thank you, Dr. Schwinger. The subject of the hazards of radioactivity is now well known not only to the medical profession but also to lay people: One reads about it every day in the newspapers, hears it on the radio, and it is of grave concern to us, especially those of us in the field of radioactive, radiation medicine.

Our next speaker will speak to us about the hazards of radioactive isotopes, both present and future. He is the well-known Walter T. Murphy, M.D. Dr. Murphy.

Hazards Associated with Radioactive Isotopes: Present and Future

Walter T. Murphy, M.D.: Some of the hazards which are associated with the clinical use of radioactive isotopes are unpredictable. The immediate complications and sequelae are well documented, while the possible late-effects on many patients will not be known conclusively for many years to come. The definite facts which are available should assist us in rationalizing diagnostic and therapeutic methods, while the possible, but not necessarily probable, late-effects should not deter us from initiating procedures which appear to be definitely indicated and apparently indispensable for more accurate diagnosis and successful treatment.

The hazards may be conveniently divided into two types: external and internal.

External Hazards.—External hazards are present in teleradiation therapy, such as with cobalt-60 or radium. These would be comparable to those hazards encountered daily in both diagnostic and therapeutic x-ray installations. The best protection to attendant personnel in such a situation is afforded by adequate shielding of the radiation source and of the room in which it is used. This would demand a relay between the door of the room and the radioactive source so that the source could not be lowered into treatment or exposing position unless the treatment room door were closed. Also, a warning light or sound device should be functioning when the radiation source is in an unshielded position. The hazards attendant on the clinical use of cobalt-60, radium, and radon for intracavitary, interstitial, or surface mold work should be well known to anyone using them. Shielding, time, and distance are again cardinal words that should always be emblazoned in the mind of the operator.

The radioisotopes just discussed are used clinically as sealed sources. This means that the radioactive material is encased in a heavy metal which prevents any radioactive contamination of personnel or instruments. Such radiation sources, however, must be periodically monitored to determine whether or not leakage has taken place through mechanical defects in the fused metal containers, and so forth.

There are innumerable radioactive isotopes used clinically that are not sealed. This fact introduces the element of both external and internal hazards to the community at large as well as to a patient and to attendant professional personnel.

The clinical success or failure with a diagnostic or therapeutic medium will be strongly influenced by the accuracy of the clinical and investigative instruments and methods used. In radioisotope work, any radioactive contamination of attendant personnel or instruments could prejudice severely the success of the procedure. Information resulting from untidy and careless technics could lead to nonindicated therapeutic procedures which might possibly endanger the very life of a patient.

The external hazards may be eliminated or minimized by the following measures:

1. An adequate knowledge of the physical characteristics of the radiation source, such as its type of emission (alpha, beta, gamma, and so forth), its physical and biologic half-lifes, and the energy of the rays.

2. The planning of all operations to afford maximum protection. Trial runs with nonradioactive material should be made in complex procedures. Good work habits should be developed.

3. The re-evaluation of the adequacy of working facilities and health-safety practices when a change is made in activity or procedures.

4. The proper lead shielding of work benches and the use of lead bricks and portable lead containers for gamma emitters. Hoods for volatile sources should be adequate.

5. The use of distance, wherein the inverse square law affords a valuable protective factor so that the intensity to the attendant personnel is less than the maximum permissible exposure. Distance may be obtained by the employment of tongs, bottle openers, remote pipettes, remote handling devices, mirrors, and so forth.

6. The use of time wherein the operator limits his exposure time in order to keep within the maximum permissible daily dose limit of 20 milliroentgens if he works forty hours a week for fifty weeks per year.

7. The use of rubber gloves when handling radioisotopes of any activity, and the wearing of special clothing when handling radioisotopes of high activity.

8. The covering of all work surfaces with absorbent paper and the use of trays to hold apparatus and equipment.

9. The routine and alert use of a portable ionization chamber survey meter, and film badges, pocket ionization chambers, or self-reading dosimeters for cumulative exposure records.

10. The enforcement of all safety measures in the nursing of radioactive patients and the handling of their excreta and possible and probable contaminated clothing, bed linens, and so forth.

INTERNAL RADIATION HAZARDS.—Internal radiation hazards may arise from ingestion, inhalation, or absorption of the radioactive isotope through the skin. Internal hazards are greater than the external hazards arising from the same radioactive source. The following reasons were given by Beierwaltes *et al.*:[1]

1. There is continuous irradiation of body tissue by the internal sources until the radioactive source decays or is eliminated.

2. In the body, the alpha and weak beta radiations are entirely absorbed by the internal tissue, whereas, if they arose from an external source, they might be completely or partially absorbed by the clothing and epidermis.

3. Some isotopes are very slowly eliminated and in most instances there is no known method for increasing the rate of elimination.

4. The actual amount and distribution of a radioactive isotope in the body cannot always be easily or accurately determined.

Ionizing radiation that is used clinically for diagnostic purposes is practically always of a type and amount from which no untoward immediate or late complications or sequelae can be expected, as ordinarily used. However, it must be emphasized that any application, even for diagnosis, can be justified only when such a radioisotope is necessary to make a diagnosis. Most therapeutic applications of radioisotopes can be expected to be accompanied by immediate side-effects and, in some instances, by late complications and sequelae. The most commonly used radioisotopes that will be discussed are iodine-131, phosphorus-32, and colloidal gold-198.

Radioactive Iodine (I^{131}).—Radioactive iodine is the most commonly used radioisotope. Where used for diagnosis, no complications have been reported from the doses commonly employed. It is of interest to note that even a diagnostic dose of 20 microcuries will deliver 27 reps to an average size normal thyroid gland of 20 Gm. Therapeutically, I^{131} may be discussed under two situations, hyperthyroidism and thyroid cancer.

I^{131} in Hyperthyroidism.—The complications resulting from the treatment of hyperthyroidism may include:

1. Thyroiditis. This occurs in about 5 per cent of patients and may last for only a very few days. It is a hazard particularly in patients with a large thyroid gland and in terminal cardiac patients.

2. Increase in the thyrotoxicosis. There is the hazard of death in a cardiac patient with increased thyrotoxicosis.

3. Hypothyroidism. Hypothyroidism may occur in about 10 to 20 per cent of patients.

4. Emotional depression in elderly people. This depression occurs infrequently but may be very trying.

5. Effect on fertility. While sterility will not result from any direct effect on the gonads, the thyrotoxicosis, or induced hypothyroidism during pregnancy, may have a deleterious effect on fertility or normal gestation. I^{131} should not be used in pregnant women.

6. Genetic effect. While sterility does not result in these hyperthyroid patients from a direct effect of the I^{131} on the gonads, it is possible that the mutation rate may be increased between 1 to 2 per cent in the offspring of treated hyperthyroid patients.[2,3] While this is not of a great order, it is enough to warrant avoiding the use of I^{131} in hyperthyroid patients under forty years of age unless the patient has a lesion that is recurrent after surgery, or there is some other unusual clinical situation present that would justify the use of radioiodine. Since there are relatively few people under the age of forty who would possibly need I^{131} for treatment, such an increase in mutation rate would have little meaning for the population at large.

7. Carcinogenic effect on the thyroid gland. There is no definite proof today that the doses of I^{131} that have been used in the treatment of hyperthyroidism are carcinogenic. The human thyroid gland is not very radiosensitive. To my knowledge, there has never been reported a true state of myxedema following teleradiation therapy to the neck region. There has been little, if any, real evidence in the literature that teleradiation therapy to the neck region of an adult may be a causative factor in the development of a thyroid cancer. Quimby and Werner[4] sent questionnaires to 70 radiologists and 31 thyroid specialists seeking information concerning the association of thyroid cancer and previous neck region irradiation. Answers led Quimby and Werner to believe that the case reports of only 3 patients presented enough evidence to indicate that even a possibility existed that the x-ray therapy could have been implicated in the production of the cancer. However, there is definite evidence in the literature that cancer of the mucosal epithelium of the pharynx and, to a lesser degree, the larynx has been causally related to irradiation of the neck region many years previously.[5]

While it is apparently true that cancer of the thyroid in some rats, medicated with methylthiouracil, can occur following I^{131} in doses comparable to those received by the thyroid of some hyperthyroid patients,[6] one cannot necessarily postulate that a carcinogenic action in human beings is probable. It is possible that as the years pass a carcinogenic effect may become evident.

It is a hypothyroid state that should be avoided since this causes an increase in thyrotropic hormone which might possibly stimulate thyroid tissue to eventual tumor formation. While some patients receive thiouracil derivatives while being irradiated with I^{131}, no definite carcinogenic effect has so far been demonstrated. Usually, such medication is of relatively short term. However, one should be cognizant of the fact that possibly there may be a potential danger in this practice. Only time will determine this.

There naturally is a direct action by the I^{131} on the thyroid epithelium itself. Any immediate or transmitted effect might render such epithelium vulnerable to a carcinogenic agent later in life. In human beings, such a situation has not yet been demonstrated.

Since it cannot be stated categorically that a carcinogenic action cannot occur, it appears judicious to avoid I^{131} therapy in patients under forty years of age unless all other therapeutic methods have failed, or when life expectancy is less than twenty years. In all instances, a minimal effective dose should be given and thyroid hormone medication prescribed as soon as it appears that a state of hypothyroidism is imminent. It has been recommended that such medication be given as soon as the clinical evidence of hyperthyroidism has disappeared. It is not thought that I^{131} is any more carcinogenic in a patient with toxic nodular goiter than in one with toxic diffuse goiter.[2]

8. Leukemogenic effect. Available published information tends to infer that to date there is apparently no significant increase in the incidence of acute leukemia following I^{131} therapy of hyperthyroidism. At a conference sponsored by the Atomic Energy Commission and held at the University of Chicago on November 8 and 9, 1956, the clinical histories of 13,000 such patients from several different centers were reviewed.[3] These patients had been followed for from one to ten years after their I^{131} therapy (65,000 patient years). Only 4 of these were known to have developed acute leukemia. Werner and Quimby[3] added 1 more patient. This resulted in an apparent incidence of 1 for 13,000 per year. The spontaneous incidence in the general population has been estimated to be about 1 per 20,000 per year.[7]

Werner and Quimby[3] felt that the mechanism by which the relatively low radiation exposures provided by I^{131} therapy in hyperthyroidism might induce leukemia were not evident. They concluded that the association of leukemia and I^{131} therapy was no more than a chance one. The true leukemogenic effect of I^{131} in the treatment of benign thyroid disease may not be revealed conclusively for many years to come.

I^{131} in Thyroid Cancer.—The complications that may result from the treatment of thyroid cancer are:

1. Thyroiditis. This is relatively rare and not predictable. It appears within a few hours to three days after the administration of the I^{131}. Beierwaltes *et al.*[1] observed it only twice in 60 patients treated. It can be successfully treated by cortisone.

2. Radiation sickness. This is comparable to the roentgen-ray sickness observed in conventional x-ray therapy. It lasts for only a few days.

3. Radiation sialadenitis. This is common and usually transient. The typical complaint of metallic taste probably results from the radiation effect on the salivary glands. Beierwaltes *et al.*[1] found no impairment of salivary I^{131} excretion three months after I^{131} treatment of thyroid carcinoma. None of their patients developed xerostomia.

4. Radiation cystitis. Any retention of urine in the urinary bladder following I^{131} therapy of thyroid cancer may create a severe radiation reaction. This may be minimized or avoided by correction of cystocele with vaginal pessary and/or indwelling catheter.

5. Radiation pneumonitis. Extensive damage to the lungs may be caused by radioactive iodine taken up by pulmonary metastases from thyroid carcinoma after therapeutic doses have been administered. Rall *et al.*[8] warned that in patients with multiple diffuse lesions, no more than 125 millicuries of I^{131} should be delivered at one time. Multiple doses should be separated by an interval of at least six months, and the dosage should depend on hematologic changes. Rall *et al.*[8] reported 15 patients with pulmonary metastases treated orally

with 107 to 355 millicuries of I^{131}. Of these, 9 were alive one and a half to eight years later; 2 died, presumably with radiation pneumonitis; and 4 had pulmonary fibrosis. Neither hypothyroidism nor hyperthyroidism appeared to affect the development of pulmonary fibrosis.

6. Epilation at tumor site. Epilation can be expected when a metastatic tumor that is situated in or under hair-producing skin takes up a sufficient dose of I^{131}.

7. Gonadal effect. There is no significant direct effect on ovarian function unless, for example, the ovaries are the site of metastatic thyroid cancer or a teratoma containing thyroid tissue. However, there can result increased mutation rates in the offspring of treated patients. Also, through myxedematous effect menstrual changes and a climacteric syndrome may result. Beierwaltes *et al.*[1] reported 2 patients (nineteen years and thirty-two years old) who gave birth to apparently normal babies following I^{131} therapy. The first patient received 362 millicuries in four divided doses over a period of eleven months for metastases to the lungs. The other patient conceived after three months of I^{131}-induced myxedema and total amenorrhea, and delivered nine and one-half months after a 100-millicurie dose. One can only conjecture as to whether or not clinical evidence of a mutagenic effect will manifest itself as these children live.

8. Depression of bone marrow function. Only temporary leukopenia usually results from a single therapeutic dose of I^{131}. When several large doses are given, persistent leukopenia may develop. One should remember that the onset of myxedema in a woman of menstrual age may result in uterine hemorrhage.[9] This will add a greater burden to the already hypoplastic marrow of the anemic, irradiated, myxedematous patient.[1] Resistance of bone marrow to irradiation is less in the elderly patient and when hypothyroidism or myxedema is present.[10,11] Beierwaltes *et al.*[1] have made the following suggestions: (1) Avoid giving single doses larger than 200 millicuries; (2) give much smaller doses if uremia is present; (3) do not retreat a patient in less than three months; (4) do not retreat a patient who has leukopenia and is myxedematous; (5) do not give a treatment dose of I^{131} within one or two weeks of a course of x-ray treatment to the neck nodes, lungs, or bones; and (6) if a real depression of blood platelets occurs, further treatment doses will probably result in the development of an aplastic anemia.

9. Leukemogenic effect. There have been several reports of patients developing leukemia after I^{131} treatment of thyroid carcinoma.[12–14] The spontaneous rate of acute leukemia may possibly be doubled by a general body dose of between 30 and 50 rads which is sometimes given in the I^{131} treatment of a thyroid carcinoma. Seidlin *et al.*[15] showed that the generalized body radiation is about 50 per cent of that received by the blood. Seidlin *et al.*[12] reported 2 patients who developed subacute myeloid leukemia in a series of 16 patients with metastatic thyroid cancer treated intensively with I^{131}. They did not claim a causal relationship but thought that there was strong presumptive evidence for a correlation. This feeling is evident in the other reports.

Radioactive Phosphorous (P^{32}).—*Carcinogenic Effect.*—Of the patients with polycythemia vera who have been treated with P^{32}, about one third of the deaths have been due to an acute form of leukemia. Wiseman *et al.*[16] stated that no death in their collected series was due to chronic leukemia. Previous to the use of P^{32} in this disease, the occurrence of acute myelogenous leukemia was rather infrequent, whereas the chronic form of leukemia was the cause of death in at least 20 per cent of the patients not treated by radiotherapeutic methods. Tinney *et al.*[17] reported that of 12 deaths in 46 polycythemia patients who had their disease for at least five years and who did not receive P^{32}, 4 died of chronic myelogenous leukemia and 2 with "leukemoid reactions." Most of the leukemias that appeared among the Japanese exposed to the atomic bomb were myeloid, and most were of the acute type.[18,19]

It is apparent from the reports in the literature that, in patients with polycythemia vera, the total number of deaths from leukemia of all types appears to be fewer in those who have been treated with P^{32} than in those who have not. Wiseman *et al.*[16] concluded that a small number of patients with chronic leukemia have been converted into the acute phase rather than that a fresh inception of acute leukemia has supervened. This argument is strengthened by the fact that the termination of chronic leukemia, chiefly myeloid in its acute phases, apparently has been more frequent since the widespread use of radiation technics of all types.

To date there has been no published evidence which would tend to demonstrate any increase in the incidence of nonleukemic types of cancer following the use of P^{32} in the treatment of polycythemia vera. In fact, Wiseman *et al.*[16] reported that carcinoma of all types was the cause of death in less than 1 per cent of such patients who were treated with P^{32}. This figure is apparently no greater than the statistical average of the normal population for this age group.

Radioactive Gold (Au^{198}).—The most common form of Au^{198} that is used clinically is colloidal in form. It has been given intracavitarily, interstitially, intrathecally, and intravenously. With any type of application, leakage or concentrated capture in normal tissue may lead to such severe reactions that extended surgical correction may be necessary. Other complications are as follows:

Intracavitary Use.—Since a small amount of the administered Au^{198} (generally less than 1 per cent) gets into the blood stream, the liver, spleen, and bone marrow receive a degree of radiation which results in a slight depression of the reticuloendothelial system. One patient with aplastic anemia following intraperitoneal injection was reported by Botsford *et al.*[20] Generally, there is only a variable, early, mild leukocytosis and distinct eosinopenia, particularly in those patients who have evidence of local inflammatory reaction after the injection.[1] A lymphopenia with a later mild depression of granulocytes and thrombocytes may occur when large doses are used. A pronounced bone marrow depression developed in a patient reported by Andrews *et al.*[21] after a total dose of 501.4 millicuries in divided doses. However, recovery occurred promptly. There is a more gradual and uniform rise in plasma radioactivity when the Au^{198} is given intrapleurally than when given intraperitoneally.[1]

Interstitial and Intravenous Use.—Practically all patients develop a degree of leukopenia. When the prostate is injected, radiation prostatitis may result. Flocks[22] reported that his group had not observed any rectal complications in the last 289 prostatic cancer patients injected with colloidal gold-198, whereas there had been 18 instances in the first 100 patients so treated. There is some free flow of radiogold into the blood stream at the site of prostatic injection, but it is variable.[23] Uptake in the liver is apparent within one minute after a significant amount of Au^{198} is present in the blood, and the main change in the liver radioactivity occurs during the operative procedure. Although most of the colloidal Au^{198} which enters the blood stream is filtered out mainly by the liver and spleen, and to a less extent by the bone marrow, lungs, and other organs, there is no general agreement as to which of these sites is the most critical in limiting the amount of Au^{198} which might enter the blood stream without irreversible damage to the organ and to the individual.[22] Root *et al.*[24] were of the opinion that early death in human patients from an excessive intravenous dose of Au^{198} would be expected to result from damage to the bone marrow rather than from liver damage.

In experimental animals, chronic liver damage and hepatomas have followed intravenous administration of gold-198.[25,26] Liver doses comparable to those given experimental animals have occasionally resulted from radiogold therapy in patients with prostatic cancer. However, Flocks *et al.*[27]

observed no patient with liver damage or clinically significant bone marrow effect following injection of the prostate gland. Hahn *et al.*[26] emphasized that the inadvertent introduction of radiogold into the blood stream during therapy would likely be well tolerated following phagocytosis by the liver. The fact, however, that chronic changes have been observed in experimental animals makes one feel that it will be necessary to re-evaluate these patients in the years to come in order to determine whether or not late changes in liver functions have occurred.

Transient erythema multiforme-like skin reactions have occasionally followed the injection of Au^{198} into the broad ligaments.[28]

Intrathecal Use.—Intrathecal use of radioactive gold to date has been infrequent. Kerr *et al*[29] reported its use for certain central nervous system tumors. The doses used have given no untoward complications.

Thorium Dioxide (Thorotrast).—Although the use of thorium dioxide is generally in disrepute, it is still on the market and presumably used by some people. In 1932 the American Medical Association Council of Pharmacy and Chemistry recommended that this substance should be excluded from general use because of the danger of its later damage to the organism.[30] It is definitely carcinogenic after a long period of latency. Apparently the tumor induction rate is rather low since the total number of patients developing tumors is small compared with the large number of people who have received the preparation.

When injected intravenously, thorium dioxide is deposited chiefly in the reticuloendothelial system of the spleen and liver and also in the bone marrow and lymphatic nodes. Thomas *et al.*[31] concluded that the main danger of thorotrast was late fibrosis and cicatrization, particularly in the liver and spleen. Looney and Colodzin[32] demonstrated that after the use of thorotrast, the architecture of the spleen was gradually destroyed, the pulp was replaced by connective tissue, and the entire organ was decreased in size.

Evans[33] calculated the liver dose of alpha radiation after intravenous injection of thorotrast to be 1.5 to 5 rems per day. Tissue containing 1 per cent thorotrast would then receive 3,000 reps or 15,000 rems in ten years. This amount is comparable to the carcinogenic dose in chronic radium poisoning.[33,34] One 25 cc. ampule of thorotrast has a dose rate, due to alpha radiation, equivalent to that produced by 0.5 to 1.0 microgram of radium. The amounts of ingested radium involved in the fatal poisoning of luminous watch dial painters was of the order of 0.5 to 2.0 micrograms. Some x-ray film studies have necessitated the use of three ampules of thorotrast, very little of which was excreted since most of it was retained in the reticuloendothelial and skeletal systems after intravenous injections. Hursh *et al.*[35] analyzed the autopsy tissue from 4 thorotrast patients. It was found that less than 1 per cent of the administered thorium was excreted in the early period, and a biologic half-life of more than four hundred years is calculated. The total body gamma ray measurements and gamma ray distribution studies gave results which were similar to the excretion results of radium isotopes. In spite of the high dose rate, apparently there have been relatively few clinical findings which could be attributed to thorotrast administration as compared with those patients who have ingested radium. Hursh *et al.*[35] stated that the explanation may depend on two important differences between the patients who received radium and those who received thorium. In the first place, the average time of retention was longer for the radium patient. The average latent period for skeletal tumor formation was about twenty-five years. Johansen[36] has suggested that an insufficient time has elapsed for the development of clinical changes in the thorotrast patients. This may be valid as far as tumor formation is concerned. The second important difference, according to Hursh *et al.*[35] is the difference in distribution of radium and thorium. Since radium is deposited primarily in the skeleton, the effects have been primarily destruction and tumor formation in the skeletal system. Hursh *et al.* suggest that the liver, spleen, bone marrow, and lungs may be more resistant to cancer induction by chronic radiation than is bone. Also, the lack of other clinical changes may be the result of greater regenerative powers of these organs or less sensitive clinical means for detecting damage.

Looney *et al.*[37] stated that no tumors had been reported in the spleen even though it might be expected that tumors would occur most frequently in this organ (greatest concentration of thorium dioxide). These authors also stated that no tumors had been observed about the dense granulomas which formed at the sites where extravasations occurred at the time of injection. However, five tumors have been reported about the ducts or sinuses into which thorotrast had been injected. Five tumors were reported in the liver. Cancers are still appearing in scattered regions of the body three decades after the use of this isotope.[34]

The employment of thorium X in the treatment of skin lesions is hazardous both to the patient and to the staff. The thoron gas may be inhaled and the thorium X and its products may penetrate the skin and be absorbed by the tissues. Patients can contaminate their hands and eating utensils resulting in ingestion of the radioisotope. Even innocent people could become contaminated through contact.

SUMMARY.—The diagnostic use of radioactive isotopes carries little if any risk to the patient, with the exception of thorium dioxide (thorotrast) which is a dangerous drug.

The therapeutic use of radioactive isotopes is associated with certain calculated immediate complications to the patient. These side-effects are usually transient and, in most instances, no more serious than those encountered daily with other therapeutic sources of radiant energy.

The use of I^{131} in the treatment of hyperthyroidism has not been reported to date as associated with a statistically significant increase in the expected spontaneous incidence of leukemia. There is, however, strong presumptive evidence for a correlation with leukemia following the use of I^{131} in the treatment of thyroid cancer. Because of the fact that future years may disclose a latent carcinogenic effect following I^{131} therapy of benign thyroid disease, it is recommended that I^{131} should be used only therapeutically in such patients who are over forty years of age, unless otherwise clinically justified.

Fewer polycythemia patients are reported as dying of all forms of leukemia since P^{32} therapy was adopted. However, the incidence of the acute form of myeloid leukemia is greater than that encountered before P^{32} was used.

While no serious late sequelae have been reported to date following the clinical use of colloidal radiogold, it is possible that long-term follow-up of cancer patients fortunate enough to survive may reveal late changes in liver function. Such a hazard would be a small price to pay for a cancer control that might conceivably not be possible with some less risky method.

It is generally believed that there is no threshold in the dose necessary for a mutagenic effect. Such an effect is cumulative and irreversible. Thus, any amount of radiation reaching gonadal tissue may exert some harmful genetic effect. In the dose range commonly employed in the treatment of benign disease, it is highly conjectural whether or not such a mutagenic effect will be clinically evident. Since there are relatively few people with benign disease in the procreative age group who would be treated with radioactive isotopes, any increase in mutation rate would have little if any significance for the general population.

All personnel working with radioactive material should be alert to the experimental, external, and internal hazards of radioactive isotopes. All should conform to the rules, regulations, and recommendations of safe practice as embodied in the Sanitary Code and National Bureau of Standards Handbooks. Present and future hazards can be kept to a justifiable minimum by the conscientious recognition that ionizing radiation can be risky to everyone involved, and that both diagnostic and therapeutic applications must be clinically indicated and competently managed.

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Intra-Articular Administration of Triamcinolone

Preliminary Report

JACK R. DORDICK, M.D., AND ZELMAN L. BERNSTEIN, M.D., NEW YORK CITY

(From the Arthritis Clinic, Beth Israel Hospital)

The clinical effectiveness of using corticosteroid compounds locally in alleviating joint manifestations as seen in patients with degenerative and rheumatoid arthritis as well as other related rheumatic states is now well established.[1-3] Hollander,[1] who pioneered in these studies, originally used cortisone and hydrocortisone. Soon other esters and analogues of hydrocortisone and prednisolone[4-7] were also found to be effective. More recently a newer steroid, triamcinolone (9-α-fluoro-16-α-hydroxy prednisolone) has shown distinct anti-inflammatory beneficial effects when given orally in skin diseases,[8,9] in rheumatoid arthritis,[10] and in numerous allergic conditions.[11-13] When a suspension of triamcinolone (Kenacort)* became available for intra-articular use, it was administered to 36 ambulatory subjects suffering from a variety of joint diseases. Since many of these patients had received other steroids intra-articularly previously, a comparison of the potency and toxicity (side-effects) was feasible.

To our knowledge this is the first report on the intra-articular use of triamcinolone.

Methods

The 36 subjects included 14 with degenerative joint disease (1 had additional cystic changes, another had congenital dislocation of the hip joint, and a third had generalized osteoporosis). The remaining subjects comprised 7 with rheumatoid arthritis, 6 with bursitis, 4 with gouty arthritis, 3 with mixed forms of osteoarthritis, 1 with psoriatic arthropathy, and 1 with calcific tendinitis (Table I). The diagnoses of the joint disease were confirmed by clinical findings, laboratory examinations (which included blood counts, sedimentation rates, studies of the C-reactive protein, latex precipitation tests, antistreptolysin titers, serum and urinary uric acids), and x-ray films of the involved areas.

Prior to the use of triamcinolone, a pilot study was performed on 6 subjects who received 1 cc. of normal saline intra-articularly. Beneficial subjective results were disclosed in 1 case (16.6 per cent). In all the others no clinical evidences of improvement were manifested.

When triamcinolone was used in cases with varied types of arthritis, it was kept refrigerated at all times and shaken thoroughly before use to prevent flocculation. The dose varied from 12.5 to 50 mg. (Table I). All involved and accessible joints, with the exception of the interphalangeal, were injected. Where fluid existed in a joint (that is, rheumatoid arthritis or traumatic synovitis) prior to the use of local triamcinolone, the joint was first aspirated until no further fluid could be removed and then the steroid could be injected. In the absence of fluid in the joint (degenerative joint disease) the steroid was injected directly.

In keeping with the recent observation of Norcross,[14] the knee and hip joints, in some cases, were injected with as much as 50 mg. of triamcinolone at one session. Concomitant therapy included continuation of physiotherapy, orthopedic supports, and salicylates (when these were previously administered). The patients with gout were

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*Triamcinolone (Kenacort) was generously supplied for this study by the Squibb Institute for Medical Research, New Brunswick, New Jersey.

TABLE I.—Summary of Results Obtained with Intra-articular Triamcinolone

Case	Joint(s) Involved	Previous Arthritic Therapy*	Dosage (mg.) Triamcinolone Into Each Joint	Concomitant Therapy	Results
Degenerative Joint Disease					
1	Shoulders and knees	Prednisolone	25	Exercise, physiotherapy	Less pain on motion. Questionable relief of stiffness and increase in range of motion. Results equal to prednisolone.
2	Shoulders	Prednisolone	37.5	Exercise	No pain after injection. Longer-lasting improvement —nine weeks as compared to four weeks with prednisolone.
3	Hips	Hydrocortisone tertiary-butylacetate	50	Exercise, physiotherapy	Minimal improvement. Same results as with hydrocortisone tertiary-butylacetate.
4	Hips, knees and ankles	Oral salicylates	25 (12.5 into ankles)	None	Less pain. Increase in range of motion. Better than oral salicylates.
5	Shoulders and cervical spine	Prednisolone	37.5 (into shoulders only)	None	More mobility than with prednisolone. Longer lasting improvement—ten weeks as compared to six weeks with prednisolone.
6	Right hip (cystic)	Prednisolone, hydrocortisone tertiary-butylacetate	50	Orthopedic support	Limp continued but pain abated in three weeks. Better than with hydrocortisone tertiary-butylacetate or prednisolone.
7	Knees (generalized osteoporosis)	Prednisolone	25	Elastic knee support	Good results. Longer lasting than with prednisolone.
8	Knees and shoulders	Hydrocortisone	25	None	No improvement. Same results as with hydrocortisone.
9	Right hip (congenital dislocation)	Prednisolone	50	Orthopedic support	No improvement. Same results as with prednisolone.
10	Knees	Prednisolone	25	None	Marked relief of pain. Better and longer lasting effect than with prednisolone.
11	Knees	None	25	None	Less pain. Increased range of motion, able to walk much better.
12	Shoulders and knees	Hydrocortisone tertiary-butylacetate	25	Exercise physiotherapy	Less pain and increase in range of motion. Able to do housework.
13	Right shoulder	None	25	Physiotherapy	Increase in range of motion. Able to return to work.
14	Knees	Physiotherapy	25	None	Less pain, no swelling. Good over-all benefits.
Rheumatoid Arthritis					
15	Hands, knees, wrists, ankles	Oral salicylates	25 into knees 12.5 into wrists	Physiotherapy	Excellent. Marked improvement in swelling, pain and stiffness

TABLE I—*Continued*

16	Wrists, ankles, knees, and shoulder	Hydrocortisone, hydrocortisone tertiary-butylacetate prednisolone	37.5 into knees	Knee "caps"	Excellent. Marked improvement in pain in knees. Effect lasted ten weeks. No effect with any other steroid in past.
17	Knee, elbow, hand	Hydrocortisone tertiary butylacetate prednisolone	25 into knees 12.5 into elbows and hands	None	Increased range of motion. Less pain. Less swelling. Better results than with previous therapy.
18	Knees, elbows, carpals	Prednisolone	25 into knees, 12.5 into carpals	None	Marked decrease in swelling and pain. No improvement with prednisolone.
19	Right knee	Oral salicylates, physiotherapy	25	None	Excellent. Completely asymptomatic.
20	Left knee	Hydrocortisone	25	None	Asymptomatic. "Able to play golf." Better results than with hydrocortisone.
21	Knees	Oral salicylates	37.5	Salicylates	Absence of swelling. Excellent results. Less pain, able to do housework.
			Bursitis		
22	Bilateral calcific shoulders	X-ray	25	Exercises	Good with improvement for nine weeks.
23	Bilateral calcific shoulders	X-ray and prednisolone	37.5	None	Good with decrease in pain. Longer duration—nine weeks as compared to two weeks with prednisolone.
24	Bilateral calcific shoulders	X-ray and prednisolone	25	Exercise	Excellent. Completely asymptomatic. Better results than with prednisolone.
25	Right subdeltoid	Prednisolone	25	None	Marked improvement. Better results than with prednisolone.
26	Olecranon (due to gout)	Prednisolone	25	Colchicine	Completely asymptomatic for ten weeks after injection.
27	Bilateral subdeltoid	Prednisolone	25	None	Excellent. Relief of pain and increased range of motion for seven weeks after injection.
			Gout		
28	Ankles	None	19	Colchicine, diet	Joint swelling decreased. Less pain. Improved walking noted one month after injection that continued indefinitely.
29	Right knee	Prednisolone	37.5	Colchicine, diet	Less pain. Increased range of motion. Same results as with prednisolone but effect lasted five weeks longer.
30	Ankles	None	12.5	Colchicine, diet	Good with decreased joint swelling permitting subject to work.

TABLE I—*Continued*

31	Ankles	Colchicine, support	12.5	Colchicine	Decrease in pain and patient was able to walk better. Treatments repeated twice at ten-week intervals.
			Miscellaneous Conditions		
32	Osteoarthritis and rheumatoid arthritis, knees	Prednisolone	25	None	Excellent. Asymptomatic for two months after injections. Much longer (four weeks) than prednisolone.
33	Osteoarthritis with traumatic synovitis, knees	Prednisolone	25	None	Excellent. Marked relief of pain. Duration eight weeks. Better than prednisolone.
34	Osteoarthritis with rheumatoid arthritis, knees	Prednisolone	25	None	Excellent. Completely asymptomatic for ten weeks after injection. Better than prednisolone.
35	Psoriasis with arthropathy of knee and shoulder	Hydrocortisone, prednisolone	50 into knee	None	Excellent. Asymptomatic after ten weeks. Better than other steroids.
36	Calcific tendinitis, right shoulder	None	25	Exercise	Good improvement in mobility, less pain. Benefits lasted nine and one-half weeks.

*All steroids given in intra-articular form.

kept on maintenance colchicine and low-purine diet.

Results

Excellent to satisfactory responses, as measured by decreased joint pain and stiffness, as well as diminution to absence of joint swelling and increased mobility or improvement of functional capacity, were elicited in 32 of 36 cases (88 per cent) (Table I). This is very much in line with the result of Hollander's extensive study[1] in which 85 per cent of 852 patients showed varying degrees of improvement. The duration of effective joint response persisted for at least four to six weeks and often as long as ten weeks. When compared to equivalent doses of hydrocortisone, prednisolone, or hydrocortisone tertiary-butylacetate received previously, the duration of improvement was longer.

Thirty-six subjects were given a total of 242 injections. In 2 cases localized pain at the site of injection developed, and in 3 a small subcutaneous hemmorhage was produced in situ. There were no evidences of allergic reactions, local infections, or thrombophlebitis.

No generalized or systemic effects were observed. In all subjects repeated instillations were necessary to maintain the functional integrity of the joint.

Comment

Although this report is only a preliminary one on 36 subjects studied during the past year, the results definitely indicate that triamcinolone when used intra-articularly is an effective antirheumatic therapeutic agent

That the presence of concomitant therapy (exercises, physiotherapy, and so forth) affected the over-all results cannot be denied or ruled out (Table I). It must be remembered, however, that this form of therapy was kept constant throughout this experiment and previously when the subjects received hydrocortisone or prednisolone.

Where poorer therapeutic results were observed, utilizing larger doses of this medication (that is, up to 50 mg. per injection) would be indicated with the hope that a more effective response would be manifested.[14] Despite the reports of some[15] that systemic results become evident after intra-articular injection, our experience does not support this view. We have also followed bone changes before and after intra-articular therapy with serial radiographs in 20 patients, and it is also our feeling that triamcinolone does not in any way alter any progressive bone changes that may be occurring.[16]

Triamcinolone, like hydrocortisone and other similar steroids, does not cure the arthritis in the joint. Even though repeated intra-articular instillations are usually indicated, this form of therapy will permit the patient to maintain improved functional integrity of his joints and carry out his work in spite of the underlying disease.

Summary

1. Triamcinolone given intra-articularly to 36 ambulatory subjects with varied joint diseases afforded transitory beneficial responses in 32 (88 per cent). In all instances repeated instillations were necessary to offset recurrent symptoms.

2. In many the benefits produced persisted for a longer time than similar therapy with prednisolone, hydrocortisone, or hydrocortisone tertiary-butylacetate.

3. The local side-effects were minimal. No systemic effects were noted.

4. Where serial radiographs were done, triamcinolone did not retard or advance any progressive bony changes that might be evident.

5. Since this is a preliminary report, further cases must be studied over a longer term before more definitive conclusions can be reached.

Addendum

Since this paper was completed, 30 additional patients have been treated with intra-articular triamcinolone acetonide (Kenalog) and have demonstrated similar beneficial responses as previously found with triamcinolone.

123 East 83rd Street, New York 28

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Timed-Disintegration Capsules of Pentaerythritol Tetranitrate in a Selected Anginal Group

MORTON KAMIL, M.D., F.A.C.A., AND IRVING KLINGER, M.R.C.S. (Eng.), L.R.C.P. (Lond.), A.F.A.C.A., NEW YORK CITY

(From the Department of Cardiology, Trafalgar Hospital, New York City, and the Departments of Medicine, Lincoln Hospital and Home and Hospital of the Daughters of Jacob, Bronx)

The significance and history of angina in acute and chronic cardiac insufficiency are generally known to all physicians. That nitroglycerine is the best medication for coronary insufficiency is also generally accepted. Since Brunton introduced nitroglycerine in 1860, no other drug has been found to be more successful in relieving angina associated with coronary artery insufficiency and to have fewer therapeutic failures. Its great disadvantage is its short duration of action for prophylactic use. The nitrites were subsequently tried and investigated. For long-acting use, the best drug yet developed is pentaerythritol tetranitrate.[1] Several investigators have reported that this drug excels in relieving angina pectoris and in its ability to produce vasodilation of the coronary vessels.[2-4] However, to maintain an adequate level of nitrite ion in the blood, multiple dosing is essential.[1,2] Timed-disintegration pellets of pentaerythritol tetranitrate* facilitate a single-dose administration technic during a twelve-hour period and thereby replace the repetitive dosing regime used previously.[3] With this medication, administered once before breakfast and again before supper, the level of blood concentration of nitrite is sustained throughout a twenty-four-hour period.[5-7]

Evaluation of Patients

This study was undertaken in April, 1956, and was continued until December, 1957. With the exception of three weeks in the summers of 1956 and 1957, the study was continuous and uninterrupted. The investigation deals with 40 patients from our private practices. Twenty-two of these patients were male and 18 female. Since our interest was to study a highly selected group, each of us interviewed the other's chosen cases. We were desirous of excluding as best we could patients who might have any pronounced emotional overlay and those with chest wall pain syndromes.[8] Those chosen in this study were well adjusted and orientated, intelligent, and none had financial worries, significant problems, or obligations. The ages ranged from fifty to sixty-six years. The weight range was 143 to $167^1/_2$ pounds. The height range $63^3/_4$ to $68^1/_4$ inches.

Since we were interested especially in the arteriosclerotic heart with angina and any coexisting arterial peripheral vascular disease, we relied on a meticulous history as well as special examinations. Only typical angina was included. Those with angina from right ventricular strain[9] and right ventricular angina[10] were excluded. Those accepted for the study were free from diabetes, hypo- or hyperthyroid, grossly enlarged heart, heart failure, glaucoma, hiatus hernia, clinical syphilis or positive serology, emphysema, polycythemia, thoracic cage deformity, known rheumatic history, or rheumatic heart disease. No patient in this series had a systolic pressure above 168 or a diastolic pressure above 98. Each patient received a complete physical examination. Laboratory tests consisted of twenty-four-hour urine samples, postprandial blood for sugar,

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* Material used in this study was kindly supplied by Amfre-Grant, Inc., Brooklyn, New York, under the trade name of Neo Corovas Tymcaps.

TABLE I.—PALPABLE VESSELS OF THE LOWER EXTREMITIES IN 40 PATIENTS

	Femoral		Popliteal		Posterior Tibial		Dorsalis Pedis	
Patient	Right	Left	Right	Left	Right	Left	Right	Left
1	+	+	+	+	+	+	+	+
2	+	+	+	+	+	+	+	+
3	+	+	+	+	+	+	+	+
4	+	+	+	+	+	+	+	+
5	+	+	+	+	+	+	+	+
6	+	+	+	+	+	+	+	+
7	+	+	+	+	+	+	+	+
8	+	+	+	+	+	+	+	+
9	+	+	+	+	+	+	+	+
10	+	+	+	+	+	+	+	+
11	+	+	+	+	+	+	+	+
12	+	+	+	+	+	+	+	+
13	+	+	+	+	+	+	+	−
14	+	+	+	+	+	+	+	−
15	+	+	+	+	+	+	+	−
16	+	+	+	+	+	+	+	−
17	+	+	+	+	+	+	−	+
18	+	+	+	+	+	+	−	+
19	+	+	+	+	+	−	−	+
20	+	+	+	+	+	−	−	+
21	+	+	+	+	+	−	−	+
22	+	+	+	+	+	−	+	+
23	+	+	+	−	+	+	+	+
24	+	+	+	−	+	+	+	−
25	+	+	+	−	+	+	+	−
26	+	+	+	−	+	+	−	+
27	+	+	+	−	+	−	+	−
28	+	+	+	−	+	−	+	−
29	+	+	−	+	+	+	+	+
30	+	+	−	+	+	+	−	+
31	+	+	−	+	+	+	−	+
32	+	+	−	+	+	−	+	−
33	+	+	−	+	+	+	+	−
34	+	+	−	+	−	+	−	+
35	+	+	−	+	−	+	−	+
36	+	+	−	+	−	+	−	+
37	+	+	−	+	−	+	+	+
38	+	+	−	+	−	+	−	+
39	+	+	−	+	−	+	−	+
40	+	+	−	+	−	+	−	−

KEY: + Palpable; − Not palpable

complete blood counts, and Mazzini's test. Chest fluoroscopy with barium swallow was included. A 12-lead electrocardiogram was taken on each patient. For greater accuracy, oscillometric readings were done on each leg by one of us at the ankle and knee level.

Eighteen patients had symptoms of arterial insufficiency of the lower extremities, such as pain, numbness, coldness, and cramps of the feet and toes. Six patients had symptoms at rest. All had their symptoms aggravated by walking. Thirteen had symptoms confined to one leg, the rest in both legs. Walking ability ranged from 1 to 9 city blocks.

Eleven patients had an occasional premature contraction; otherwise all had regular sinus rhythm. No patient had a resting pulse rate below 60 or above 88. The highest systolic blood pressure reading was 168 and the lowest 108. The highest diastolic reading was 98 and the lowest 52. The highest pulse pressure was 74 and the lowest 36. On oblique-positioned fluoroscopy 6 had slight left ventricular enlargement, 12 had some prominence and tortuosity of the aorta, and 1 case was found to have a small patch of calcification of the pericardium. The electrocardiograms showed evidence of myocardial damage in 19 patients. Eleven cases revealed premature contractions. Seven of the 40 cases had had coronary artery occlusion with infarction from three years to eight months prior to the time the study was undertaken. Of these 7 cases, 4 had posterior infarction and 3 had anterior infarction. All 7 were completely stabilized. From the electrocardiogram 1 patient showed evidence of a silent coronary occlusion with infarction.

In the urines it was noted that 23 patients had a trace of albumin, 1 urine had an occasional hyaline cast, and 1 urine had an occasional hyaline and granular cast. Of the males, none had more than a grade 2 prostatic enlargement per rectum nor more than 2 ounces of residual urine.

By the usual criteria, the retinal vessels of 17 patients showed slight arteriosclerotic changes, 6 had moderate changes, and 6 showed severe changes. None had hemorrhages or patches. The neck vessels were not remarkable.

In 10 of the females there was moderate visible pulsation of the brachial arteries. The same condition was noted in 16 males. No other abnormal findings were present in the upper extremities.

Considerable epigastric pulsation of the abdominal aorta was noted in 6 cases. Only 1 patient had a palpable liver edge just within the costal margin. This was firm and nontender. It was accepted as early nonalcoholic cirrhosis.

The palpable vessels ot the lower extremities are shown in Table 1. Of the females, 5 had very slight varicosity of the veins, 5 slight, and 2 moderate. Six males had very slight varicose veins, and 7 moderate. In this series only 3 males had slight interdigital fungous infection.

Angina was not classified by degree. It was felt that too much variation and fluctuation in pain per patient was evident on extremely careful questioning. The number of nitroglycerine tablets that each patient required per day was accepted as the best criterion. To avoid additional variables, sedatives and tranquilizers were not used in this study.

Method

The double-blind test method was used for 20 patients, with two pentaerythritol tetranitrate timed-disintegration capsules twelve hours apart, within a twenty-four-hour period. The other 20 cases received placebos which were identical in appearance. Patients were instructed to follow their customary nitroglycerine requirements as the only additional medication. Identification of drug and patient was known only to the office assistant. About 4 patients per day were seen, and appointments were regularly altered to avoid constant meetings of the same patients. At the end of twelve months, drug and patients were identified for study, and now the 20 cases on placebos were placed on time-disintegration pellets of pentaerythritol tetranitrate in a single-blind study for an additional seven and one-half months. At the same time, the original 20 were continued on pentaerythritol tetranitrate. Except for summer vacations, all patients were seen and examined weekly (several missed visits occasionally due to respiratory infections, and appointments were cancelled for five days because of the illness of the office assistant). Oscillometric readings were taken every four weeks, electrocardiograms every eight weeks, and complete urine analyses and weight records were done weekly. Complete blood counts were done every ten weeks. The patient's own record of his daily nitroglycerine requirements were recorded. All symptoms and changes referable to the cardiovascular and peripheral vascular systems were particularly stressed. The amount of nitroglycerine each patient required daily was totalled for the entire study period in order to obtain an average. It was found that the daily requirements varied from a minimum of 4 to a maximum of 11 tablets daily.

Results

From the double-blind group of 20 on timed-disintegration pellets of pentaerythritol tetranitrate:

Number of Patients	Reduced Nitroglycerine Requirements (Per Cent)
11	80 to 85
4	70 to 80
3	60 to 70
1	50 to 60
1	40 to 50

Oscillometric readings in this group were improved 62 per cent.

From the single-blind group of 20 on timed-disintegration pellets of pentaerythritol tetranitrate:

Number of Patients	Reduced Nitroglycerine Requirements (Per Cent)
9	80 to 85
3	70 to 80
3	60 to 70
2	50 to 60
2	40 to 50
1	30 to 40

Oscillometric readings in this group were improved 56 per cent.

In both groups noted, improvement became manifest between two and three weeks from the time the medication was instituted.

In the placebo group a vague, spurious improvement was claimed by 3 patients within two weeks, but rapidly dissipated itself and no change was obtained symptomatically or on oscillometric readings. No significant or permanent changes were noted in nitroglycerine requirements.

While the significance of exercise tests is fully appreciated, their application in somewhat elderly patients with definitely known damaged hearts was considered a possible hazard, however slight, and these tests were therefore omitted.

Electrocardiographic changes, though variable, showed distinct improvement in 12 cases. It was felt that these cases were graphic representations of definite coronary vasodilation.[11,12]

Only 2 patients had mild gastric distress, but withdrawal of medication was not necessary. No additional abnormal urinary findings were observed. Headache was absent from this series. No changes in ocular tension were noted. The toxicity factor in the treatment of arteriosclerotic heart disease and angina with pentaerythritol tetranitrate has been shown by several observers to be less than with any other similar medication for this condition.[2,13,14]

Another striking feature on analysis of this study was the temperamental dissatisfaction of this highly selected group of 20 patients on placebos. It required regular encouragement for them to continue with the investigation. However, when placed on our medication, resulting improvement coincided with the emotional and temperamental reaction of those on this medication from the start. The great benefit was not only physical, but also anxiety and fears were alleviated. Striking relief and reduction from the urgent need for nitroglycerine created a greater feeling of safety and a sense of well-being. This dominant feature coupled with the ability to walk greater distances with more comfort added to the patients' sense of security and optimism.

At present there is no generally accepted surgery, radioactive substance, or hormone for the arteriosclerotic heart with coronary artery insufficiency. The management of these cases is medical in its fullest sense, so that these patients are counseled, assured, and advised on habits of eating, smoking, drinking, and hygiene. A long-acting nitrite is needed and essential. In this series the excellent general improvement is attributed to regular and continuous action of pentaerythritol tetranitrate. The prominent features are (1) marked reduction in nitroglycerine requirements, (2) improved oscillometric readings, (3) ability to walk greater distances, and (4) evident general improvement in health,[3] as has been reported.

The prolonged-action nitrite is most ideally suited for patients with arteriosclerotic heart and peripheral vascular disease because precipitous hypotension is avoided and thereby reduces the likelihood of sudden major arterial thrombosis.

Summary

Twenty patients with coronary artery insufficiency and angina pectoris showed an excellent improvement by the reduction of from 50 to 85 per cent in nitroglycerine requirements when treated with 2 continuous-release pellets of pentaerythritol tetranitrate daily twelve hours apart, using a double-blind technic for one year.

Twenty patients with coronary artery insufficiency and angina, using single-blind technic for seven and one-half months, were treated with 2 continuous-release pellets of pentaerythritol tetranitrate daily twelve hours apart, showed an excellent response. Seventeen patients showed improvement by reduction of from 50 to 85 per cent in nitroglycerine requirements.

Oscillometric readings were improved 62 per cent in the double-blind study group and 56 per cent in the single-blind study group.

The ability to walk greater distances was prominent in both groups.

Twenty patients treated for twelve months on identical-appearing placebos were dissatisfied and unimproved until they were placed on the continuous-release pentaerythritol tetranitrate regime.

No toxic or significant side-effects resulted from the timed-disintegration capsules. Headaches were remarkably absent.

The medication used in this series has been shown to be remarkably more efficient for relieving angina for long periods of time than other comparable medication.

Timed-release pellets of pentaerythritol tetranitrate as used in the series reduce the intervals of anginal episodes, reduce nitroglycerine needs, improve the peripheral vascular bed, and give the patient an improved sense of well-being, thus enabling him to lead a more normal life.

Addendum

Since the completion of this paper it has been reported[7] that 60 mg. of the timed-release form of pentaerythritol tetranitrate over a period of twenty-four hours was more effective than 80 mg. of pentaerythritol tetranitrate given in divided doses of 20 mg. four times a day.

955 Walton Avenue, New York 52

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It is indeed a desirable thing to be well descended, but the glory belongs to our ancestors.—Plutarch

Routine Chest Roentgenograms: Fears and Practice

WALTER E. BOEK, PH.D., AND HENRY H. SHULTZ, M.D., ALBANY, NEW YORK, GWYNNETH D. PARK, P.H.N., ADAMS, NEW YORK, DOROTHY S. CUSHMAN, AMSTERDAM, NEW YORK, AND CAROLYN H. PARSONS, CHATHAM CENTER, NEW YORK

(From the New York State Department of Health, Jefferson County Public Health Nursing Service, Montgomery County Tuberculosis and Health Association, and State Committee on Tuberculosis and Public Health)

EDITOR'S NOTE: *During 1958 two interview surveys were carried on by citizen groups in cooperation with local health officers and the State Health Department. One of these was in Montgomery County and the other in Southern Jefferson County. This is the third of a series of short articles on the findings.*

A CHEST roentgenogram is indispensable in the diagnosis of tuberculosis and other chest diseases. It has been used to detect disease in presumably healthy persons as well as in persons who have symptoms referable to the chest. The potential hazards associated with roentgenologic procedures, however, have recently received considerable attention. The possible genetic effects, in particular, have aroused concern among medical and public health authorities. The fear has been expressed that excessive roentgen radiation to the general population might give rise to appreciable numbers of unfavorable mutations.

The Montgomery and Southern Jefferson counties survey, therefore, attempted to learn how many of the 667 people interviewed were worried about radiologic hazards and something about their chest x-ray histories.

Discussion of the Problem

From the standpoint of routine chest roentgen screening surveys, the benefits to be gained by the early discovery of intrathoracic disease must be weighed against the possible genetic hazards. It is important that screening activities be directed toward those population groups in which the prevalence of tuberculosis is known or expected to be high.

At present these groups include all adults admitted to general hospitals; people in low socioeconomic groups, particularly in urban centers; employes in certain industries; and persons in convalescent homes and other places where there is a large proportion of older people, particularly males, such as in county jails.

Since all radiation effects may be cumulative, roentgen radiation exposure should be kept to a minimum, especially in younger people. Roentgen radiation of persons beyond the child-bearing age is less important. A chest roentgenogram, even a photofluorogram, affords a minute amount of radiation to the gonads when compared with certain abdominal and pelvic roentgenograms. However, since the radiation hazard associated with photofluorography is considerably higher than that from conventional chest roentgenograms, it is obligatory that photofluorographic roentgen installations be properly shielded. Protective devices developed by the State Health Department's Bureau of Tuberculosis Case Finding consist of rectangular diaphragms which are placed over the tube outlet, 2.5 mm. of aluminum used for filtration of the x-rays, and protective lead aprons, suspended from the screen. These devices will cut down the gonadal dose from chest x-ray films with a minifilm unit from 5 to 0.4 milliroentgens or a 12-fold reduction.

The traditional large x-ray film units give an average gonadal dose of 0.25 milliroentgens.

Citizen Opinions of Value of Chest X-Ray Examinations

The 667 people in the two counties were asked to tell which one of these three statements were closest to their opinions: First, "In my opinion regular chest x-rays for adults are very important"; second, "I feel uncertain about the wisdom of regular chest x-rays for adults"; and third, "I am opposed to the practice of regular chest x-rays for adults." The results indicated that only 3 per cent of those questioned were opposed to x-ray examinations. Nine per cent were uncertain, and the rest, 88 per cent, agreed with the first statement that regular x-ray examinations for adults are important.

Most of the people offered a reason for their opinions. "To discover disease" was the most frequent reason given by those who felt that regular chest roentgenograms are very important. Comments such as these were given: "X-rays are helpful in discovering disease"; "they determine whether we have tuberculosis, cancer, and other conditions"; "I think a person should know just how his lungs are"; "because they catch so many in the beginning"; "we need x-rays to protect others as well as ourselves from T.B."; and "to make sure that if you have the germ you will know about it."

The value of regular check-ups was another reason given frequently by people who considered x-ray examinations important. One woman said, "My husband has scar tissues on one lung and has to have an x-ray every year." Other comments were: "It is good to have a health check-up," "you can never tell when you need a check-up," "it satisfies one to know whether or not one has it," and "it is better knowing than not knowing". Personal experience was given as a reason by some such as one who said: "I became worried when my cousin became ill." A few other reasons were given such as these: "It is very important because I am handling milk all the time," "sometimes a person does not know he has T.B. and he could expose others," and "for public welfare and the health of the population."

The most frequent reason given by those who were uncertain about the wisdom of regular chest x-rays films or who were opposed to them was the possible radiation danger. A few comments about this were: "Recent information shows that over-x-raying may do damage to body organs," "I feel this way because of the recent material I have read about the bearing of x-rays on fertility," "because of statements of medical authorities I believe they are harmful," "because of the radioactivity of the x-rays," "because of the newspaper reports on the effects of x-rays," "it is a tricky business," "radiation seems to be very painful and needs more study," "x-rays weaken bone structure," and "I read in a magazine that they are harmful to people."

Some of the other reasons given by people opposed to or uncertain about x-rays were: "I don't feel that x-rays prove definitely there are germs present." "They are not necessary unless you have irregular symptoms." "What you don't know won't hurt you." "They are not very accurate. I had three different x-rays. They couldn't tell what the trouble was." "Unless I had one by a doctor, I wouldn't have it." "I can't explain why I feel this way but we just don't have them." "I don't see why x-rays are necessary." "I feel the answer is in prayer so things like this don't bother me much." And "I never saw any good results from them."

A number of people felt uncertain or were opposed to the routine use of x-rays because they felt they should be used only for diagnosis after a symptom is present. For example, one asked, "Why are they necessary if symptoms of illness are not present?" Five people would not object if x-rays films were needed or if their doctors wanted them to have one taken.

A comparison of opinions of respondents by their residences showed that somewhat more of the city people were in favor of regular chest roentgenograms than those living in villages or rural towns. There were

TABLE I.—CITIZEN OPINION ABOUT THE VALUE OF REGULAR CHEST X-RAYS FOR ADULTS AND LENGTH OF TIME SINCE THEY RECEIVED THEIR LAST X-RAY

	Opinion About X-Rays			
Length of Time (Years)	Very Important 581 Persons (Per Cent)	Uncertain 59 Persons (Per Cent)	Opposed 20 Persons (Per Cent)	Total 660 Persons* (Per Cent)
Less than 1	24	20	5	22
1 to 2	23	7	15	22
2 to 3	16	10	10	15
3 to 5	11	14	5	11
5 or more	13	10	30	14
Never had one	10	36	35	13
No response obtained or do not know	3	3	..	3
TOTAL	100	100	100	100

* An opinion about x-rays was not obtained from 7 persons.

TABLE II.—CITIZENS COMPARED BY THEIR OPINION ABOUT THE DESIRABLE FREQUENCY OF ROUTINE X-RAY AND BY SOCIAL STRATIFICATION LEVEL

	Social Classes				
Desirable Frequency (Months)	I and II 45 Persons (Per Cent)	III 127 Persons (Per Cent)	IV 320 Persons (Per Cent)	V 146 Persons (Per Cent)	Total 638 Persons* (Per Cent)
0 to 5	2	..	..	..	1
6 to 11	13	20	18	30	21
12 to 23	39	47	52	48	49
24 months or more	24†	22**	13**	10	15
Do not know	15	6	11	11	10
No response obtained	7	5	6	1	4
TOTAL	100	100	100	100	100

* Social class ratings were not obtained on 29 families.
† Four per cent said three years or more.
** Three per cent said three years or more.

no significant differences when all persons were compared by their social class levels. A fairly reliable five-class index of social stratification, which combined occupation and education, was used to determine social class level.

Opinions about regular chest x-ray examinations are quite directly correlated with past behavior in relation to obtaining chest roentgenograms, as may be seen in Table I. Only one in 20 of those who were opposed had had an x-ray film taken during the past year as compared with five times that many for the other people. Nearly one half of those who considered them very important had had an x-ray examination during the past two years. For those uncertain the proportion was about one-fourth, and for those opposed one-fifth obtained one during this same time. Six out of 10 who thought x-rays important, nearly 4 out of 10 of those uncertain, and 3 out of 10 of those opposed had had a roentgenogram within three years before the interview. The same relationship exists with those never having had an x-ray study. Thirteen per cent of the 667 people reported they had never had a chest film taken. The proportion never having had one increased from one tenth of those thinking regular x-ray check-ups were important to one third of those uncertain or opposed to them.

About the same proportion in every social class level had never had a chest roentgenogram. Seventeen per cent of the town residents, 11 per cent in villages, and 10 per cent in the city had never had one. The most common length of time for city people since they had had an x-ray examination was two to three years while for village and town residents it was less than one year. However, 41

TABLE III.—CITIZENS COMPARED BY WHERE THEY HAD OBTAINED CHEST X-RAYS

Source	Number of Citizens	530 Persons* (Per Cent)
Mobile Unit	251	47
Hospital	240	45
Chest clinic in building	89	17
Doctor's office	20	4
Other sources	34	6

*Data were not obtained on 137 people or they had not had a chest x-ray.

per cent of city and rural town people had had an x-ray film taken less than two years ago, while for villagers it was 50 per cent. Also 14 per cent of those from the city, 25 per cent of villagers and 30 per cent of town people had not had one for three years or more. When length of time was analyzed along with social class level, no differences were found among them.

The two questions about opinions and reason for opinions were followed in the interviews by an inquiry as to what conditions people thought might be discovered by a routine chest x-ray study. Tuberculosis was mentioned by 84 per cent, cancer by 58 per cent, and heart disease by 27 per cent. A number of other things were listed such as respiratory conditions, fractures, blood clots, growths, breast tumors, and other intrathoracic conditions.

Opinions of the Desirability of Frequency of Chest Roentgenograms

About one fifth of the people thought everyone should have chest x-ray films taken more frequently than once a year. One-half figured it should be one to two years and one-seventh more than two years. There was a trend from the higher social classes to the lower for people to think that a shorter interval (less than two years) was desirable (See Table II for data). There also was a tendency for those who believed people should have x-ray films taken frequently to have obtained one themselves within the last year.

Citizen Rating of Community Chest X-Ray Services

The rating by citizens of chest x-ray services in their communities was as follows: 2 out of 10 said "very good," 4 out of 10 said "good," and 1 out of 10 said "fair." Only 4 per cent said "poor" or "not so good." Thirteen per cent did not know and the rest gave other answers or did not respond. Suggestions for improving x-ray services related most frequently to having more mobile units or clinics closer to those questioned. A few people wanted more publicity on the subject.

Sources of Chest Roentgenograms

Table III shows where citizens had obtained their chest films. For example, 45 per cent had obtained at least one from a mobile unit. Other sources included college, at work, and in the service.

Fears of Radiation

How much are people worried about the radiation hazards of roentgen rays? These studies showed that 3 out of 10 of those uncertain about the wisdom of regular chest x-ray films listed the danger of radiation as their reason. For those opposed, 4 out of 10 mentioned radiation. The publicity about possible radiation dangers of x-rays apparently influenced only 8 per cent of the 667 people interviewed in these two areas to the extent that they were uncertain or opposed to regular chest roentgenograms.

Summary

The essential role of the chest roentgenogram in the diagnosis of chest diseases and in the screening of people without already recognized symptoms might be weakened by publicity about roentgen radiation dangers even though protective devices have been developed. In Montgomery and Jefferson counties 667 citizens gave their opinions in a survey.

Nearly 9 out of 10 people considered regular chest x-ray examinations very important, 9 per cent were uncertain, and 3 per cent were opposed. Although the fear of radiation harm was the most frequent reason given for their opinions by those uncertain or opposed to having regular chest x-ray films taken, it was not very important on an over-all basis. Altogether only 8 per cent of the people were influenced by this concern. Other data about opinions and past x-ray histories of the citizens were presented.

The findings from this sample of people in these two areas of New York State would be quite similar to what might be found if everyone in the areas had been interviewed. They also might be quite similar to what would be found in other areas containing cities, villages, and rural people.

A New Continuous Automatic Method of Staining Cytologic Specimens[*]

KENNETH SHELDON MACLEAN, M.D., NEW YORK CITY

CARCINOMA lurks above the basement membrane from a few months to several years before invading. It could be controlled in more cases if there were a more general awareness of the ease with which the diagnosis can be made using presently available methods. In order to decrease appreciably the mortality rates the disease must first be detected in the formative or early invasive stages.

It is now recognized that carcinoma of the uterine cervix is preventable, and the family physician accepts the fact that by adequate testing at properly spaced intervals he can protect his patients against death from carcinoma of the cervix. If he is provided with simple devices, instruments, or procedures, he can endeavor to protect his patients against death from carcinomas in other sites as well. This gives meaning to the dictum: "Every physician's office a cancer-detection clinic."

As the physician and his patients become more aware of the effectiveness of these and other new diagnostic methods, there will be increasingly great demands on the pathologist for the processing and interpretation of specimens.

In anticipation of the use of these new technics, a study was undertaken to mechanize the cytologic staining procedures. The Papanicolaou staining procedure was modified in a previous study[1] to reduce the number of steps from 24 to 17.[2] In this second study the 17-step procedure was further modified to permit its adaptation to the 12-station Autotechnicon.

Methods and Materials

Many hundreds of vaginal and cervical specimens of exfoliated cells were obtained by the methods recommended by Papanicolaou,[3] Nieburgs,[4] and Ayre[5] and fixed in pure methyl alcohol. Many hundreds of abrasion biopsies were obtained using the new abrasion biopsy instruments[6-9] from the sites of origin of most of the common internal

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[*] Part of the scientific exhibit of the Cytology Institute for Cancer Research at the A.M.A. Convention held at the Coliseum in New York City in June, 1957.

TABLE I.—Cytologic Staining Procedures

Polychrome (Manual)		Polychrome (Automatic)*		Hematoxylin and Eosin (Automatic)*	
Classic Papanicolaou	Modified Papanicolaou	Routine	Alternate	Routine	Alternate
Rinse 70 per cent ethanol	Rinse distilled water	Harris hematoxylin†	Technicon BM SS23-58**	Harris hematoxylin†	Technicon FHA-4-48**
Rinse 50 per cent ethanol	Stain hematoxylin 4 to 6 minutes	0.25 per cent hydrochloric acid	Distilled water	0.25 per cent hydrochloric acid	Distilled water
Rinse distilled water	Rinse 0.05 per cent hydrochloride	Lithium carbonate saturate	Lithium carbonate saturate	Lithium carbonate saturate	Lithium carbonate saturate
Stain hematoxylin 5 to 10 minutes	Rinse tap water	Distilled water S29 dehydrant**	Distilled water S29 dehydrant	Distilled water S29 dehydrant	Distilled water S29 dehydrant
Rinse distilled water	Rinse lithium carbonate saturate	S29 dehydrant** OG6†	S29 dehydrant OG6†	S29 dehydrant Distilled water	S29 dehydrant Distilled water
Rinse 0.5 per cent hydrochloric acid six times	Rinse tap water	S29 dehydrant S29 dehydrant	S29 dehydrant S29 dehydrant	Distilled water Eosin**	Distilled water Eosin**
Rinse water	Rinse S29 dehydrant	EA50†	EA50†	Distilled water	Distilled water
Rinse lithium carbonate saturate	Rinse S29 dehydrant	S29 dehydrant S29 dehydrant	S29 dehydrant S29 dehydrant	S29 dehydrant S29 dehydrant	S92 dehydrant S29 dehydrant
Rinse water	Stain OG6 1 minute	Place in Zylol until mounting	Place in Zylol until mounting	Place in Zylol until mounting	Place in Zylol until mounting
Rinse distilled water	Rinse S29 dehydrant				
Rinse 50 per cent ethanol	Rinse S29 dehydrant				
Rinse 70 per cent ethanol	Stain EA50 3 to 5 minutes				
Rinse 80 per cent ethanol	Rinse S29 dehydrant				
Rinse 95 per cent ethanol	Rinse S29 dehydrant				
Stain OG6 1 minute	Clear in Zylol				
Rinse 95 per cent ethanol	Clear in Zylol				
Rinse 95 per cent ethanol					
Stain EA36 2 minutes					
Rinse 95 per cent ethanol					
Rinse 95 per cent ethanol					
Rinse 95 per cent ethanol					
Rinse absolute ethanol					
Rinse absolute ethanol and Zylol					
Clear in Zylol					

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* Immersion time two and one-half minutes at each station. Contents of beakers 790 ml. When first setting up procedure, use 395 ml. of OG6 and add 395 ml. of 95 per cent C_2H_5OH.

† Prepared and manufactured by the Ortho Pharmaceutical Co., Raritan, New Jersey.

** Prepared and manufactured by the Technicon Chemical Co., Chauncey, New York.

carcinomas, that is, the oral and nasal cavities, the nasopharynx, larynx, trachea, main bronchi, orifices of the segmental bronchi, esophagus, stomach, endocervical and uterine cavities, urinary bladder, and terminal bowel. All these areas, with the exception of the larynx and bronchi, can be tested by the family physician in his own office and are not restricted to the endoscopist as part of a specialized examination.

All the specimens were stained using the Autotechnicon (Table I). Detailed instructions are being published elsewhere.[10]

The polychrome stains (columns 3 and 4) were used for the vaginal and cervical specimens where the hormonal levels are important, and the hematoxylin and eosin procedures (columns 5 and 6) were used on most of the abrasion biopsies because the latter resemble surgical biopsies in quality and the hormonal levels are not pertinent. Hematoxylin and eosin stains the cytoplasm light pink rather than the blue of the polychrome, thus outlining the nucleus more starkly. This allows for easier and more accurate interpretation. Besides it is the stain with which the pathologist is most familiar.

The alternate procedures, both polychrome and hematoxylin and eosin (columns 4 and 6 respectively), use Technicon basophilic stains (BM SS23–58 and FHA–4–48). Their advantage lies in the fact that they do not require filtering or decolorizing. They are stable and may, therefore, prove of critical importance in effective electronic scanning.

Shifting from One Procedure to Another

For all four automatic procedures a stock of but 9 solutions and distilled water (in 19 beakers) is required. To shift from one procedure to another requires merely the substitution of 2 to 5 beakers on the Autotechnicon.

While there are four automatic and two manual methods of staining cytologic materials discussed here, it is recognized that the individual worker obtains the best results with the method with which he is most familiar. With the four automatic procedures color intensity can readily be modified to meet individual preference.

Conclusions

If the mortality rates from cancer are to be materially reduced, the disease must be diagnosed in its formative or locally invasive stage. The introduction of the Papanicolaou exfoliated cytologic technics and polychrome staining procedure are unquestionably in part responsible for the lower mortality rate from cervix carcinoma. The use of the abrasion biopsy instruments and automatic staining procedures may similarly aid in the reduction of mortality rates for extragenital carcinoma.

135 EAST 65TH STREET, NEW YORK 21

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The best of fame, a rival's praise.—THOMAS MOORE

Conservation of Hearing Clinic of the Albany Hospital

LEWIS W. BARTON, M.D., EDWARD W. IANDOLI, PH.D., AND PAULINE K. WINKLER, M.A.,
ALBANY, NEW YORK

(From the Albany Conservation of Hearing Center, Albany Hospital)

THE Conservation of Hearing Center at Albany Hospital has for the past several years served Albany and an area within a 150-mile radius as a diagnostic center for hearing-impaired infants, adolescents, and adults. All patients are seen only by an appointment which may be made by referring otologists, family physicians, public health nurses, school nurses, or State health agencies. Each patient is given a complete otologic examination followed by a pure tone audiometric test, both air and bone conduction. Speech audiometry is also used when necessary. When medical treatment is recommended to alleviate the condition, the patient is referred to his own private otologist or to the Ear, Nose, and Throat Clinic as governed by his financial status. On termination of medical treatment he is returned to the Conservation of Hearing Clinic for a complete recheck. More often in the cases of children, the results of this examination may indicate one of the following rehabilitative recommendations:

PREFERENTIAL SEATING IN THE CLASSROOM.—A note is sent to the school nurse requesting that children with a hearing loss of from 15 to 25 decibels be seated near the teacher or in close proximity to the source of sound. Yearly checks are made on these children.

LIP READING AND AUDITORY TRAINING.—When the loss approximates 25 to 35 decibels and difficulty exists in keeping up with daily class work, lip reading and auditory training are recommended. If the school system does not offer this service, it may be obtained at the Albany Hospital Conservation of Hearing Center.

CONSERVATION OF HEARING CLASS.—Children with a 35 to 75 decibel loss, depending on age, intelligence, and other factors, are recommended for attendance at a conservation of hearing class.

SCHOOL FOR THE DEAF.—Children whose loss exceeds 85 decibels are referred to one of the State schools for the deaf.

In addition to the rehabilitative recommendations, the child or the adult is often in need of a hearing aid. In this case, he is given an appointment for a complete audiologic evaluation. This includes pure tone air and bone conduction tests, speech reception threshold determination for individual ears, and the selection of a hearing aid best suited to his hearing loss.

For many years the Conservation of Hearing Center at Albany Hospital has been extending its services for early detection of hearing loss as well as its training program for preschool deafened children. At the same time it is offering help to the parents in the form of monthly discussion meetings. The procedures that have been successfully used at the Albany Hospital Conservation of Hearing Center will be described in a series of articles the first of which follows.

Preschool Testing Program

DETECTION OF HEARING LOSS IN THE PRESCHOOL CHILD.—In the preschool child, early diagnosis with respect to auditory impairment is imperative. The earlier the diagnosis is made, the sooner parent education and preschool training may be initiated. Many times a hearing loss among these children has been detected by the close observation of the parent, teacher, school nurse, or family physician. Often, failure to develop speech brings the parent to the Hearing Center in quest of a reason. Owing to the many articles in magazines and widespread publicity on radio and television, parents are more aware of the signs of deafness and are eager to do something about it when they suspect this handicap. This has resulted in an increasing number of younger children who are being brought to the Conservation of Hearing Center for evaluation.

Over the past few years more and more preschool children without speech have been referred. Approximately 40 per cent of these children were not diagnosed as deafened but instead as aphasic, autistic, brain-damaged, or mentally retarded. In order to screen out these conditions early, a relatively simple test to determine the "practical auditory threshold" was incorporated into the routine testing procedures for preschool children. Specifically, the main objective was to separate the normal-hearing child from the deafened child through localization of sounds. Although such a method did not indicate an exact measure of the child's hearing acuity, it nevertheless has proved to be of great value in terms of detecting "practical thresholds of hearing."

This type of differential diagnosis necessitated special equipment. Four acoustically balanced speakers were placed equidistant from a centrally located position. Sounds were then reproduced by standardized recordings, amplified, and introduced at known intensity and frequency to any one or combination of the four speakers in a sound-treated room. The child, usually accompanied by the parent, was placed in a baby tender located in a position equidistant from the speakers. The rationale is so indicated in Figure 1. The known frequency auditory stimuli were then introduced from a control room into the sound-treated room. By attenuating the intensity and selecting one or any combination of the four speakers, auditory behavioral effects could be observed through the one-way mirror by the clinician. In this manner, a practical threshold of the child's hearing could be obtained. Having eliminated normal hearing, other tests previously used to evaluate more precisely the child's hearing deficit were administered.

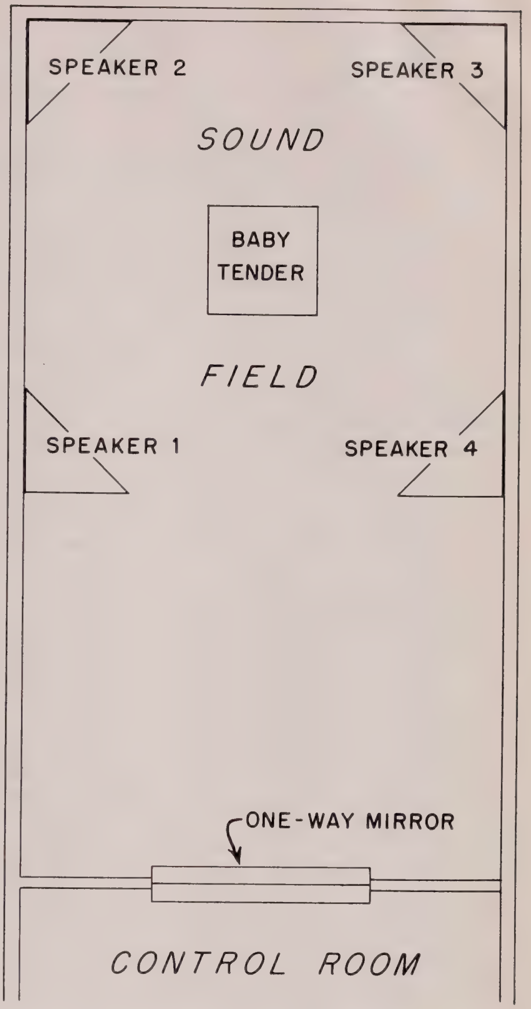

FIG. 1. Sound-treated room showing location of speakers and position of testee.

In years past, when older children were seen at the Conservation of Hearing Center, the hearing loss was determined by standard pure tone audiometric tests. As the age level decreased, the attention span was likewise shortened and reliable measurements therefore became more difficult to obtain. In an effort to arrive at the suspected hearing deficit in the critical speech frequencies (500 to 2,000 cycles per second) live voice testing at known distances was utilized to approximate the decibel loss. Later, to achieve greater accuracy the Train-Ear was substituted for live voice testing. This unit housed a record player, speaker, microphone, and headpieces. At specific distances, measured intensity could be attenuated from approximately 60 to 100 decibels. The child was placed in a baby tender and recorded march music was amplified through the speaker. Initially, intensity level was set at 100 decibels and the child was observed in terms of his auditory behavior. If response was positive, as evidenced by a turning of the head in the direction of the sound source, the intensity level was gradually decreased in 10-decibel increments, with interruptions in between, until the level of no response was reached. Sound intensity was then increased until positive reaction was again evidenced. Another test employed the "What's Its Name?" gross sound records in place of the march music. This sometimes gave an indication of whether a high tone loss was present or whether hearing at low and high frequencies was similar. To substantiate these results headpieces were used instead of speakers on retesting procedures. Subsequent tests involved standard pure tone audiometric procedures in critical speech frequencies depending on the age and ability of the child.

Five years ago the Train-Ear was replaced by the installation of a sound-treated room and calibrated equipment for free-field testing. The materials used were the same. With more acoustically reliable equipment, sound intensities could now be measured from minus 10 to 100 decibels. Psychogalvanic skin response audiometry was carried out in addition to the above tests in cases where it was indicated to complete the audiologic evaluation.

Psychogalvanic skin response audiometry is a test based on the establishment of a conditioned reflex to sound stimuli and may be used to evaluate the hearing in infants, young children, and adults. Briefly, the procedure involves the presentation of a short-duration tone through the earphones followed by a shock through electrodes. The audiometer and shocking instruments are attached to a recording device. Several trials of sound followed by shock are administered. After conditioning takes place the shock is removed. If the patient reacts to sound without shock there is evidence to believe that a threshold of hearing has been determined. It should be pointed out that it is the resistance of the skin to an electric current that is being measured. The technic, as it relates to hearing testing, "is to condition the patient to respond to sound as an emotion producing stimulus."[1] Very briefly, psychogalvanic skin response audiometry is a procedure for measuring the suspected functional hearing loss in infants, children, and adults through the resistance of the skin.

At the Albany Conservation of Hearing Center the localization method which has been described is preferred to psychogalvanic skin response audiometry in the younger child since response is spontaneous and the testing experience is not an unpleasant one.

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Love iz like the meazles; we kant have it bad but onst, and the later in life we have it the tuffer it goes with us.—Henry Wheeler Shaw

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Surgical Skin Planing

RALPH LUIKART, II, M.D., SANTA BARBARA, SAMUEL AYRES, III, M.D., LOS ANGELES, AND
J. WALTER WILSON, M.D., LOS ANGELES, CALIFORNIA

(*From the Department of Dermatology, University of Southern California School of Medicine, and the Surgical Planing Clinic, Dermatology Service, Los Angeles County General Hospital*)

SURGICAL skin planing is the process by which the epidermis and upper dermis are removed to varying depths for the purpose of eliminating or reducing scars, neoplasms, metaplasias, or disease processes contained in these tissues. These skin layers are abraded with motor-driven abrasive disks (fraises) and stainless steel wire brushes. The procedure has been developed in response to the persistent public demand for cosmetic improvement and is a significant advance over previous attempts to secure the same results by destruction of the upper layers of the skin with acids and caustics and later with sandpaper.

Until recently it was generally believed that whenever and wherever injury included the basal cell layer of the epidermis scarring must result. Approaching this process requires a mind open to a fresh concept of epidermal regeneration from adnexa without scar formation and a clear understanding of the difference between a keloid and a hypertrophic scar.

History

The historical background of this subject was meticulously presented by Blau and Rein in 1954.[1] It appears that public demand for cosmetic improvement extends far back, as testified by:

1. The Papyrus Ebers of 1500 B.C. that contains the following prescription:

℞ Water from the qebu plant
Meal of alabaster
Fresh Abt grain

Sig: Mix in honey, make into a pap, mix in human milk and anoint the face therewith.

2. Unna who in 1900 A.D., thirty-four centuries later, recommended:

℞ Cremor gelanthi
Sapon
Pulv. pumicis

Many persons investigated the problem of treating facial scars and defects, and most of these individuals made contributions that were helpful in the culmination of Kurtin's technic. Rossignol[2] introduced scarification in 1881. Acupuncture (needling, tattooing) is accredited to Variot[3] in 1888.

In 1905 Kromayer[4–8] introduced the concept of "hobeln" ("to plane"). This was a planing or leveling process performed manually with cylindrical knives on protruding lesions, such as keratoses and nevi.

He later employed rasps, dental burrs, and hand-held dental motors and made reference to the use of ethyl chloride in the procedure. He treated pigmentations, acne scars, warts, and berlock dermatitis with this technic. Later he used the "dentel-rockbohrer" (dental drill needle designed to remove tooth pulp) for the tedious treatment of dilated pores. In 1929 in a small textbook he wrote about the "leveling operation" for smallpox scars[9] and in 1933 pointed out that if this treatment was limited to the epidermis and cutis vasculosa the treated areas would heal without scarring.[10] In the same article he suggested the use of the fraise. We are told that much of this later work was done chiefly by Kromayer's nephew, Ernest Kromayer, Jr.

In 1927 Karp, Nieman, and Lerner[11] wrote on cryotherapy of acne scars with carbon dioxide slush. Janson[12] in 1935 was the first to publish an account on the wire brush technic in which powered tools were used, but this technic was only for tattoos.

Cannon[13] was really the first to combine these methods and put them to work. He published his findings in 1940, discussing scarification of acne pits and rosacea and the use of trichloracetic acid in the treatment of acne scars. He later used phenol for the same purpose. Iverson[14,15] in 1947 was the first to use sandpaper (carpenter's type numbers 0 and 00 wrapped around a roll of gauze) in the successful treatment of traumatic tattoos. McEvitt in 1948 applied Iverson's technic to acne pits.[16]

In January of 1952 Kurtin[17] announced what he called surgical plastic planing in which a motor-driven wire brush was used after ethyl chloride and a blower had produced a rigid, bloodless, locally anesthetized field. His first publication in 1953 included an appraisal of a five-year experience with 273 cases.[18] Before his death he stated that he had performed over 5,000 planings. He indicated its value in acne pits, traumatic scars, tattoos, fine wrinkles, keratoses, keloids, freckles, and other conditions.

The early technics were characterized primarily by the production of multiple minute scars in an effort to make the older and larger scars less visible. Later there were attempts made to level the protrusions and thereby to even the surface. Then caustics were used to produce damage in an attempt to replace the irregular scars with a homogeneous scar. Other methods widened and saucerized the sharply visible abnormalities. From acupuncture, scarification, leveling, cryotherapy, chemical caustics, electrodesiccation, and sandpaper abrasion emerged the technic of surgical skin planing. Surgical skin planing is preceded by excision and suturing when necessary. No doubt further improvements will continue to be evolved.

Indications

Surgical skin planing has been found to be of value in the treatment of:

1. Scars resulting from acne, chickenpox, herpes zoster, herpes simplex, smallpox, pyoderma, trauma, burns, chronic discoid lupus erythematosus, and neurotic excoriations. In matters of treatment and results, scars may be categorized as sharp-walled "ice pick," saucerized, depressed, wavy-undulating, linear, hypertrophic, or keloid. The most important point of all is to be able to determine whether the adnexa are present or destroyed in all scars of more than minimal size.
2. Premalignant metaplasias
   - *a.* Senile keratoses
   - *b.* Xeroderma pigmentosum
3. Seborrheic keratoses
4. Fine wrinkles
5. Nevi
   - *a.* Pigmented, superficial (not junction nevi)
   - *b.* Vascular
   - *c.* Nevus unius lateris
   - *d.* Adenoma sebaceum
   - *e.* Syringomas
6. Tattoos
   - *a.* Traumatic
   - *b.* Explosive powder marks
   - *c.* Artistic (very superficial and early)
7. Pigmentations
   - *a.* Ephilides

   - *b.* Lentigines
   - *c.* Chloasma
   - *d.* Posttraumatic
8. Other conditions that have been planed with some benefit reported are: rhinophyma, multiple benign cystic epitheliomata, dermatitis papillaris capillitii, hidradenitis suppurativa, chronic discoid lupus erythematosus, keratoacanthoses, vitiligo, keloids, multiple sebaceous cysts, epitheliomas, xeroderma pigmentosum, Fox-Fordyce disease, and xanthelasma.
9. Planing has been attempted in Darier's disease, atrophic radiation scars, dilated pores, rosacea, nevus syringadenomatosus, and verrucae juveniles, but with poor results.

Contraindications

The following conditions are contraindications to the surgical planing technic:

1. Conditions in which there is an absence of cutaneous adnexa (pilosebaceous and sweat units) sources of new epidermis are:
   - *a.* Severe chronic radiodermatitis (look for the presence or absence of hair and adnexal orifices).
   - *b.* Third-degree burn scars (Kurtin,[17,18] however, reported some flattening of markedly hypertrophic scars, but with slow healing).
   - *c.* Hypertrophic or broad atrophic acne scars. These are relative or absolute contraindications, depending on the size of the scars and the severity of destruction of the adnexa.
2. Excessively deep and narrow ("ice pick") acne scars preferably should be excised and sutured.
3. Insufficient scarring to warrant the procedure will vary with the psychologic status of the patient.
4. In very active acne and deep cystic acne, attempt to control activity as much as possible. Then even a week of corticosteroid therapy in adequate dosage, with or without antibiotics, may improve severe cystic acne sufficiently to permit planing. Planing through deep acne cysts (false contour) is apt to result in destruction of the adnexa in that area because of the depth of planing, with resultant scarring. Mild to moderate acne activity is not a contraindication to planing and is likely to be benefited by it.
5. Be cautious with the deeply pigmented patient. Plane a test area first.
6. Chloasma may repigment worse than before planing. Plane a test area first and observe it for an adequate period of time.
7. Be cautious with the patient who has a keloidal diathesis or psoriasis. Plane a test area first. A few have planed psoriatic patients without difficulty thus far; however, the Koebner phenomenon must be considered.
8. Dilated pores are not amenable to treatment by planing. These enlarged pilosebaceous openings evidently extend very deep, since they persist even after multiple planings for deep acne pits. It is important to point out clearly to the patient the distinction between prominent sebaceous openings (dilated pores) and true acne pitting, since both frequently coexist.
9. Systematic disorders, such as hemorrhagic diathesis, might make the procedure hazardous.

Selection of Patients and Psychologic Aspects

There are two main facets to the selection of patients. One is the purely physical one; that is, does the patient have a condition amenable to planing, and if so, what is the likelihood of improvement and to what degree? This, of course, must be balanced against the potential dangers and possibilities of complications. Obviously the greater the degree of scarring, assuming it is still amenable, the less important are the various nuisances that may occur, such as persistent erythema, hyperpigmentation, or milia; and conversely, the more minimal the defect, the more important these nuisances or complications become in terms of the patient's attitude.

It is extremely important to assay properly the psychologic status of the patient. As is well known to all dermatologists, the psychic trauma produced by acne and acne scarring may be tremendous, especially since acne usually occurs during the formative adolescent years when there are many difficult adjustments to be made even without this problem.

Thus, there are two factors: the severity of the scarring and the patient's attitude toward it.

In general, the best candidates for planing are those with from moderate to moderately severe scarring who have developed a reasonably good psychologic adjustment. Here even modest improvement will be gratefully received. However, some patients with very severe scarring (especially if broad, atrophic, or hypertrophic in type) will be likely to be disappointed and resentful because the total improvement is too limited.

The most dangerous type of patient is the one who has a perfectionistic personality but has relatively minimal scarring. This patient can aptly be referred to as the patient with the "microscopic eye." Planing such a patient is apt to lead to trouble, since there is little room for improvement and whatever falls short of the patient's conception of perfection will be blamed on the operator.

The patient who is a severe psychiatric problem, using his scarring as a crutch, is clearly seen to be abnormal even to the physician not particularly trained in psychiatry. This is the very patient who usually is not receptive to the suggestion of psychiatric consultation. Hence, more often than not the dermatologist himself concludes that surgery in these instances is inadvisable on psychologic grounds.

It is very important to be sure that the patient does not expect too much. It is always better to undersell than to oversell the procedure, even if it means losing a potential patient. One unhappy and resentful patient can more than offset the good will (and peace of mind of the operator) engendered by many successful results. One should always talk to the patient in terms of "improvement" of scars, not "elimination" or "erasing" of scars. It is better to accustom the patient to the idea of a 50 to 60 per cent improvement and actually achieve 70 or 80 per cent than have the patient disappointed or antagonistic with the reverse of this situation.

The various potential complications should be enumerated and explained so that, for example, postplaning hyperpigmentation of several weeks or months duration will not come as a shock but rather as an annoyance which was a calculated risk. We have found that in referring to the complications it is better psychologically to speak of them as nuisances. Also, the patient should have some concept of the amount of postoperative swelling and general discomfort to be anticipated and of the unsightliness of the crust. If this is glossed over before the planing, it will return afterwards in terms of anger and resentment toward the operator.

In spite of the foregoing words of caution, the morale-boosting effect of planing is in general tremendous and may exceed the actual physical improvement. In general, however, the enthusiasm of the patient parallels the degree of improvement, and if the proper precautions regarding selection of patients are observed and a skillful technic employed (for which there is no substitute), satisfied patients will be the result.

It is a source of genuine satisfaction to see the look of real hope in the eyes of many of these patients following even a modest degree of improvement and to observe the concrete evidence of psychologic adjustment as shown by improved personal relationships, marriage, and career opportunities.

Epidermal and Adnexal Regeneration (Early)

The most significant observation with respect to the entire subject of surgical planing and the reason why it is so successful is the fact that regeneration of the new epidermis following planing takes place from the remaining portions of the myriads of pilosebaceous and sweat units (adnexa) which are left behind. Microscopic studies show clearly that properly performed planing usually removes the epidermis entirely,

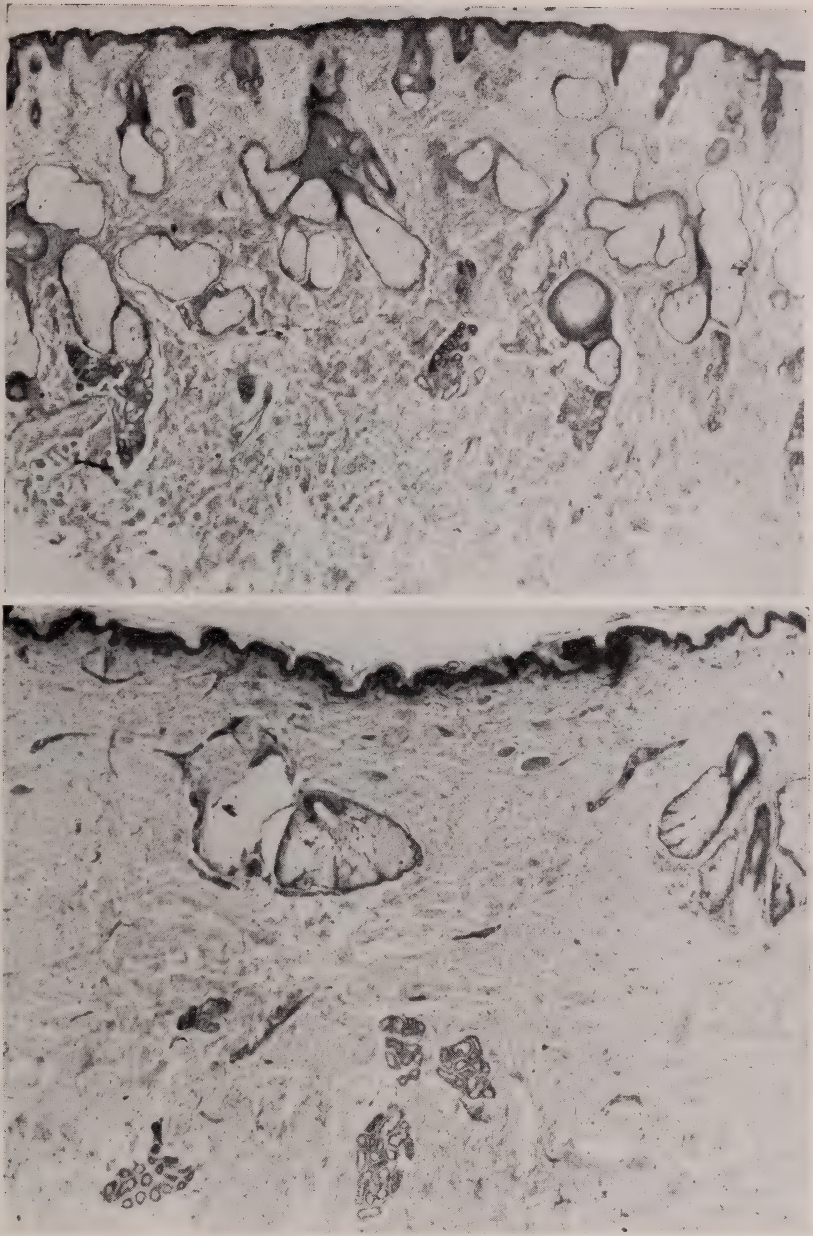


FIG. 1. Biopsies of normal skin of the face (*top*) and the back (*bottom*) to demonstrate the high concentration of adnexa in the facial skin. Both sections are approximately 4.5 mm. in thickness, excluding subcutaneous fat. (Both top and bottom are same magnification.)

as well as the upper portion of the dermis. Were this not so, insufficient tissue would be removed to effect the change of contour essential to the elimination or improved appearance of the acne pit. This, of course, explains why various desquamating procedures used previously (such as carbon dioxide slush) were so grossly ineffective. But by the same token the depth of planing should not be so great as to destroy all or most of the cutaneous adnexa, leaving as the only source of new epidermis that which is at the periphery of the planed area. The wound in that case heals by granulation, with gradual covering by epidermal cells growing in from the borders. Since the adnexa have been destroyed, the new epidermis in this situation is smooth and atrophic and devoid of the normal pilosebaceous openings and sweat pores. The

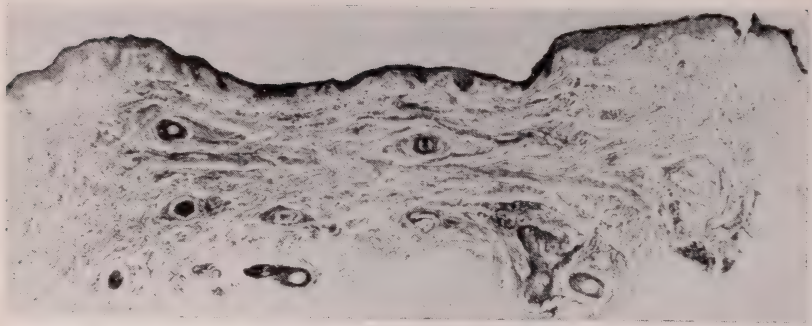


FIG. 2. Biopsy of a shallow, saucer-like acne pit of the face before planing. Adnexa are present beneath as well as adjacent to the pit.

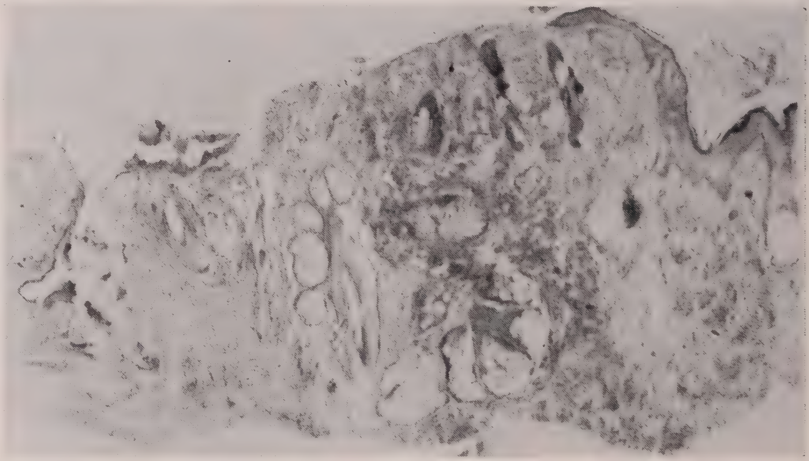


FIG. 3. Biopsy of the face (cheek) immediately after a planing of moderate depth. The epidermis and upper dermis have been completely removed in the area planed (left section). However, substantial portions of the adnexa remain. The right side was not planed and contains an average depth acne pit with a sebaceous gland apparently opening into its deepest portion. At the left side is a substantial remainder of a deep "ice pick" pit. The section measures a maximum of 2.3 mm. thick in the unplaned portion. The moderate depth pit on the right is 0.9 mm. deep. The skin remaining after planing is 1.4 mm. deep. The maximum depth of planing in this case was 0.9 mm. The moderate depth pit would have been removed by this depth of planing had it been included. The "ice pick" pit was originally 2.0 mm. in depth.

result is a scar which may be either flat, depressed, or hypertrophic, depending on the reaction of the connective tissue during the healing by granulation.

Large biopsies of the normal face compared with those of the normal back show the skin to have similar thicknesses (4.5 mm. exclusive of subcutaneous fat) but clearly indicate the much greater concentration of adnexa in the facial skin (Fig. 1). Of course, the contrast with the thinner-skinned nonseborrheic areas, such as the forearm, is even more extreme. This provides a gradient extending from the face, an area where planing (and especially deep planing) is most successful, to the areas where it is progressively more hazardous and results are correspondingly poorer.

Microscopic examination of relatively shallow and moderately deep acne pits on the face reveals the presence of adnexa in the area beneath as well as adjacent to the pits. In other words, the sources for the formation of a new epidermis following planing are present in the immediate area (Fig. 2). In contrast, a broad, flat atrophic or hypertrophic acne scar is generally devoid of adnexa, or nearly so, owing to the greater destructiveness of the acne process in these situations.

A biopsy of the face taken immediately after planing to a moderate depth shows that the epidermis has been completely removed, as well as the upper portion of the dermis in the area planed. However, substantial portions of the adnexa remain (Fig. 3).

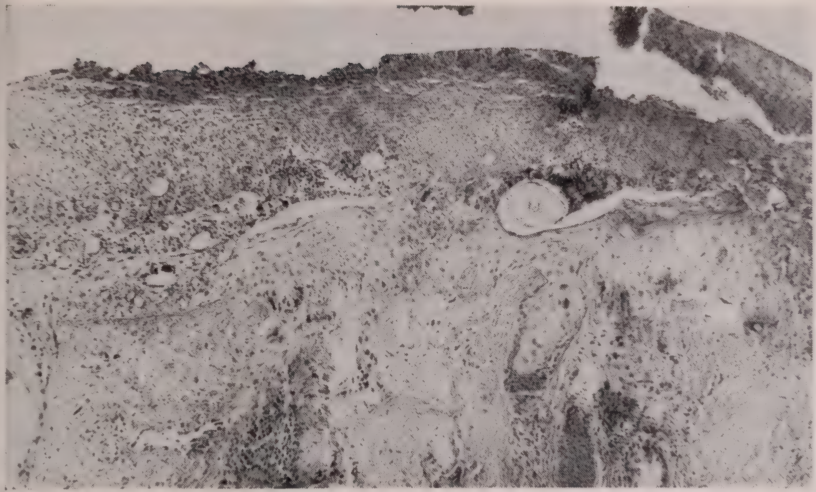


FIG. 4. Biopsy of the face three days after planing. New epidermal cells are extending out from the adnexa along surface of abraded dermis, beneath crust.

Eisen, Holyoke, and Lobitz[19] showed that twenty-four hours after planing the adnexal cells and dermal tissue immediately beneath the level of planing had become necrotic (a change which was first noted as early as four hours after planing). The adnexal cells just below this had assumed the appearance of squamous cells and appeared ". . . to be crowding the degenerating cells above them outward onto the surface of the wound." This attempt at covering the wound was also being made by the epidermal cells at the periphery, as well as the cells of the lanugo (vellus) hair follicles. This was apparently accomplished by a process of migration, because at this stage there was as yet no mitosis, hence no increase in numbers of cells.

At forty-eight hours they demonstrated that the basal cells of the sebaceous ducts and the distal portion of the external sheath of the hair follicles as well as the peripheral cells around the sebaceous glands all showed considerable mitotic activity, thus supplying cells for the formation of a new epidermis.

A biopsy of the face three days after planing shows new epidermal cells growing along the surface of the abraded dermis (beneath the crust which has formed) and extending out from the portions of the adnexa that remain (Fig. 4). At three to four days after planing ". . . the distal portion of the pilosebaceous units are forming tongue-like projections of prickle cells beneath the . . . crust,"[19] which is an agreement with our three-day biopsy. These workers also had demonstrated previously that the basal cells of sweat ducts acted as ". . . indifferent cells to produce both mature prickle cells of the epidermis and highly specialized luminal duct cells."

They showed that the epidermis had completely regenerated by the fifth day. It was emphasized that the center of mitotic activity of the pilosebaceous unit takes place within a limited proliferative zone located in the sebaceous gland ducts and ". . . in the external root sheath of the hair follicle at its junction with the epithelium of the sebaceous duct." These basal cells in the area of regeneration of the pilosebaceous apparatus have the dual potentiality of producing new prickle cells for epidermal repair and of differentiating into sebaceous cells.

A biopsy of the face seven days after planing shows a completely regenerated epidermis in continuity with the hair follicles which contributed to its regeneration. The epidermis is thinner than normal and lacks rete ridges (Fig. 5). It was observed that sebaceous glands had become partially dedifferentiated by five days after planing and almost completely so by nine days, the mature sebaceous cells having

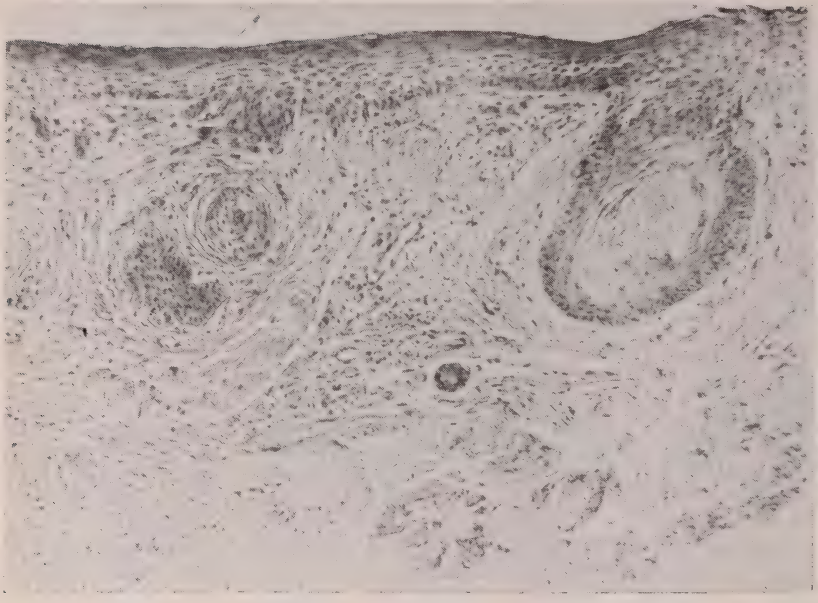


FIG. 5. Biopsy of the face seven days after planing. Epidermis has completely regenerated. It is thin, and rete ridges are absent.

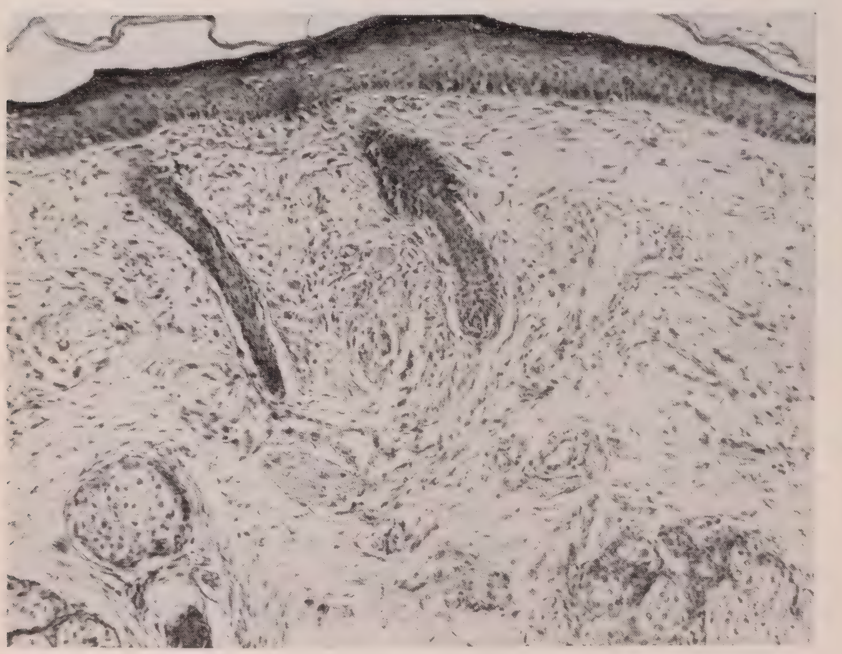


FIG. 6. Biopsy of the face two weeks after planing. Apparently new lanugo hair follicles with buds suggesting primitive sebaceous glands are developing from the new epidermis. Rete ridges are still absent. The subepidermal portion of the dermis appears to be composed of new collagen with many young fibroblasts.

been replaced by a mass of indifferent epithelial cells resulting from ". . . proliferation of the basal cells of the sebaceous glands . . . ." However, by two or three weeks after planing, they had "begun to resume their normal functions and structures."[20]

A biopsy of the face taken two weeks after planing shows the epidermis to be about ten cells thick and devoid, or nearly so, of rete ridges. There are epithelial structures resembling lanugo (vellus) hair follicles apparently developing from the new epidermis. Buds which can be seen on each side of one of these follicles are presumably primitive sebaceous gland structures (Fig. 6).

Studies showed the occurrence of these

poorly differentiated follicular structures one month following planing, and the authors point out their resemblance to the primary epithelial germ of a ten-week human fetus.[21] By two months after planing they found that a mature vellus follicle had developed with its hair and young sebaceous gland.

The milia which commonly follow planing were shown to "... be tiny cysts lined by stratified epithelium a few cell layers thick, and [containing] concentric lamellae of keratin."[22] They arise from epithelial cells from the epidermis, hair follicles, sebaceous glands and ducts, and sweat ducts which have become cut off at the time of planing and isolated in the dermis. They become dedifferentiated nests of cells in the dermis, and if they fail to rejoin the adnexa or surface epidermis, they then differentiate into milia. These authors further state that all of the cutaneous epithelial structures contain actually or potentially an indifferent or equipotential cell. Thus, "... the embryologic potentialities of the primitive epidermis persist into adult life, making possible important regenerative functions." For example, "... if the epidermis and upper corium are removed entirely by dermabrasion or by a Thiersch graft, a new epidermis will be quickly regenerated from every epithelial structure that remains; the external root sheath of hair follicles, the sebaceous gland and duct, the eccrine and apocrine sweat ducts. Through dedifferentiation there are produced from all these sources tongues of identical undifferentiated, proliferating cells, the indifferent cells, which then reform a new epidermis, clearly exhibiting an equipotentiality in this regard. Furthermore, from this completely new epidermis vellus (lanugo) hair follicles, and, in turn, sebaceous glands, may regenerate..."

Our microscopic findings on the human facial skin mentioned previously were essentially duplicated in biopsies from the backs of dogs following planing, which observations were a part of our study on the comparison of refrigerants. These microscopic observations on human beings and dogs of course correlate with the clinical observation that healing is complete beneath the crust by about seven days on the average, depending on the depth of the planing, but the manner in which this is accomplished is effectively and dramatically demonstrated microscopically.

This concept completely negates the traditional teaching that any injury or disease process which completely destroys the epidermis will of necessity result in scarring. However, it is certainly true that a process which completely destroys the adnexa will result in scarring. The obvious practical application is that there is a greater margin of safety than previously believed, and the natural abhorrence engendered at first by the idea of abrading away all of the epidermis was based on a false premise.

This does not mean that caution can be abandoned, for the increased margin of safety is still very small and failure to observe reasonable caution or a lack of technical skill resulting in destruction of the adnexa can be disastrous.

Dermal Regeneration and Late Results of Epidermal Regeneration

THREE DAYS.—Dermal regeneration is not evidenced microscopically three days following abrasion to a moderate depth, whereas epidermal regeneration has definitely begun, with umbrella proliferation of epidermal cells derived from adnexa lying at the margin of the abraded dermis. The new epidermis is seen to be covered by the heavy crust which has formed. A narrow band of amorphous material staining pink with hematoxylin and eosin is seen in some areas between the new epidermal cells and the abraded surface. Thus it appears that a cell-free exudate is present at this time in the zone where dermal regeneration subsequently appears.

FIVE TO TEN DAYS.—The early phase of epidermal regeneration appears to be virtually complete on the face in from five to

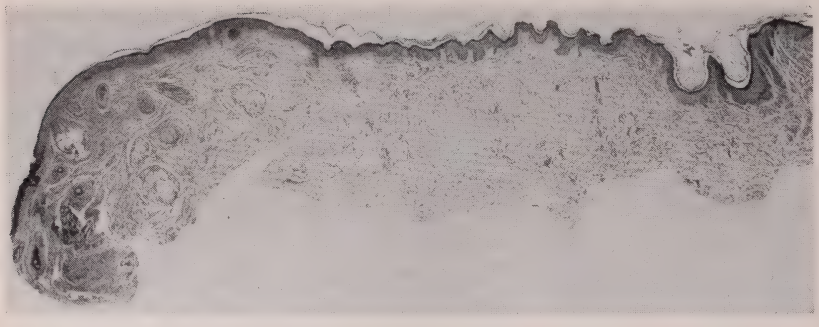


Fig. 7. Biopsy of the face two months after a second moderately deep planing for a deep acne pit. Remainder of acne pit is toward right side of section. Rete ridges are present in some areas of regenerated epidermis, absent in others. Section averages 1 mm. in thickness.

seven days and on the back in approximately ten days. At this time the process of dermal regeneration is beginning. Judging from microscopic findings, epidermal regeneration clearly precedes dermal regeneration. The rate of recovery of facial epidermis is more rapid than on the back because of the relative numbers of adnexa found in these areas. In the seven-day phase, the new epidermis is loosely attached to the underlying dermis. In some sections the epidermis may be seen to be unattached, except at the periphery of the abraded area, and these lacunae are filled with exudate containing numerous round cells. This loose epidermal attachment substantiates the practice of not changing dressings frequently following abrasion or, better still, allowing a protective crust to form in lieu of a dressing.[23,24]

Two Weeks.—The new epidermis has become firmly attached in the sections taken two weeks after abrasion. Early dermal regeneration is now conspicuous in the upper zone of the cutis, producing a sharp line of demarcation between the pale-staining newly regenerated dermal tissue containing numerous large young fibroblasts and new capillaries and the older deeper-staining collagen and elastic fibers seen below the level of abrasion. The new fibroblasts lie with their long axes almost uniformly in the horizontal plane, producing a conspicuously striated appearance. Large numbers of delicate black argyrophilic fibers are seen throughout the regenerated area with reticulum stains. These contrast sharply with the coarse reddish-brown collagen bundles which are below the level of recent abrasion. The reticulum is concentrated at the dermoepidermal junction with small upward projections exactly as in normal skin. Since reticulum is generally considered to be immature collagen,[25-27] the presence of reticulum fibers, together with young fibroblasts in the upper cutis, is clear evidence of dermal regeneration. Additional support to this concept is tendered by the transition of reticulum fibers into collagen at the level of the recent abrasion. At this stage the new epidermis contains no melanin and shows areas of marked irregular acanthosis. The first 3 mm. of the adjacent nonabraded epidermis is likewise acanthotic.

Two to Three Months.—In the microscopic sections taken two to three months after abrasion the epidermis is seen to be relatively flat and devoid of rete ridges, having lost its earlier hyperplastic structure. Delicate new elastic fibers can be demonstrated at this stage. The majority of them tend to run horizontally, whereas the adjacent nonabraded cutis shows the normal elastic fibers in the upper cutis with their usual tendency toward vertical alignment. The new dermal tissue now begins to take on the reddish-brown stain of mature collagen with a reticulum stain. This new collagen shows a horizontal striated pattern which persists at least four years after abrasion (Figs. 7 and 8).

Six Months.—Biopsies of the face of young white individuals six months after planing reveal a normal amount of epidermal melanin, as demonstrated in sections stained for pigment. Blood vessels in the

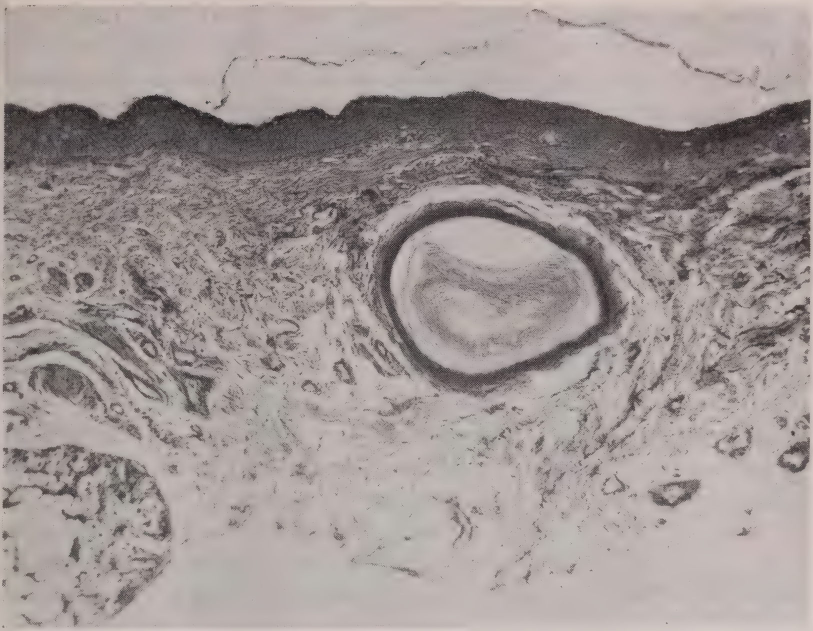


FIG. 8. Same as Fig. 7. Elastic tissue stain. Elastic tissue is diminished or absent in parts of subepidermal portion of dermis, present in others. Abnormal collagen pattern is present in some areas. A postplaning milium is present.

regenerated zone are engorged, and the cutaneous adnexa appear normal. Milia, which are normally visible after one month, can still be demonstrated in the six-month sections. While the epidermis is of normal thickness, the ridges are considerably smaller than in the preplaning control section.

TEN MONTHS.—The rete ridges appear to be well developed after ten months, and the previous increased vascularity is no longer in evidence. The elastic fibers are still virtually absent in the regenerated dermal tissue. One may conclude that reticulum appears early in dermal regeneration. This compares properly with the early reticulum seen in fetal development during the third month.[26] The regeneration of elastic fibers is found to be delayed and incomplete after planing. This correlates with the facts that elastic fibers do not appear in the fetal dermis until the sixth month and that they appear late phylogenetically.[28] Wound healing recapitulates ontogeny which follows phylogeny.[29]

Dermal tissue regenerates substantially but not completely, to the extent that when healing is completed the postabrasion skin is 85 to 90 per cent of its original thickness. Experimental abrasion to a controlled depth of 1 mm., comparable to the depth attained in abrading acne pits of average depth, shows that most of this regeneration occurs during the second and third weeks following planing.[24,29] The failure of total thickness recovery of the dermis conforms to the clinical observation that a planed groove in normal skin fails to regenerate to the level of the adjacent unabraded skin, and supports the contention that the edges of abraded areas should be "feathered." However, repeated planings result in only a moderate decrease in total thickness because of the complete epidermal regeneration and the subtotal dermal regeneration. By actual microscopic measurement of sections taken from a patient ten months after a third planing of the face, we established that the final specimen measured 3 mm. in thickness, as compared with the preabrasion skin of 4.5 mm.

"However, the fact that there is at least partial restoration of the dermis seems to explain the clinical observation that even though there may be only a slight dell remaining at the bottom of a pit immediately after planing, there may be a pit of considerable depth reappearing after regeneration has occurred in a week or two. Since, in this situation, the floor of the pit with its epidermal lining has not been removed, dermal regeneration takes place on all sides of it, and the result of this particular planing session is only a partial decrease in depth of the pit. On the other hand, if the floor of this pit with its epidermal covering is completely removed by planing, then the resulting dermal regeneration will be uniform over the area, and there will be little or no evidence of the pit. The routine use of gentian violet is of great value in visualizing the depth of pits, but some pits are too deep for complete removal by planing . . . and must be excised."[30]

Measurements for Acne Pit Planing

There is no microscopic evidence that multiple superficial planings are superior to one or two deeper ones. However, there is much to be said from a practical standpoint for planing relatively superficially when one is inexperienced, for obvious reasons. With experience the operator tends to plane more deeply at a given session when indicated by the depth of pits and their location.

Our measurements of the thickness of biopsies of facial skin (including epidermis and dermis but excluding subcutaneous fat) show variations between 2 and 4.5 mm. As would be expected, the skin is thick on the cheeks and thin on the anterior and lateral aspects of the neck.

Strauss and Kligman[20] state that when they performed what they considered very deep planing, their deepest removal of tissue was 2 to 2.5 mm., which is about half the total thickness of the skin. Their measurements showed the average acne pit to be 1 mm. or less in depth, those considered quite deep were about 2 mm., and only the very deep "ice pick" pits were deeper than this. Our findings are comparable.

Microscopic examination of a deep pit of the face which had been planed rather deeply twice and then the remainder excised demonstrates that if further planing were to be done in order to completely eliminate this pit, either destruction of the adnexa in the area followed by scarring would result, or if not, there would at least be a large and conspicuous saucer-like depression which would certainly not constitute an improvement cosmetically. (As it was, elliptical excision and closing with fine sutures produced a scarcely perceptible linear scar.)

Microscopic examination of "ice pick" pits shows the extreme depth to which these may extend and the undermining or tunnelling that may occur. This latter phenomenon may or may not be evident clinically. Strauss and Kligman[20] have pointed out the marked epithelial proliferation occurring at the bottom of many of these pits, resulting in anastomosing strands extending out into the dermis in a lattice-like network (Fig. 9).

Atrophic and Hypertrophic Scars

Broad, atrophic acne scars are either devoid of adnexa or contain but a few (Fig. 10). Hence, the chief source of new epidermis after planing is that remaining at the periphery, and only limited benefit can result from planing this type of scar by bevelling it at the periphery if there is a sharp change of contour.

Hypertrophic scars also are essentially lacking in adnexa (Fig. 11). Sometimes leveling of the hypertrophic portion by planing results in a flat atrophic scar on healing with at least some improvement in contour, but unfortunately these frequently recur as hypertrophic scars (Fig. 12).

Linear traumatic scars fall into four classes: flat atrophic, depressed, hypertrophic, and overlapping. The fundamental concepts referable to acne scars of similar types are applicable here.

Other Conditions

It is obvious that superficial to moderately thickened senile (actinic) keratoses and

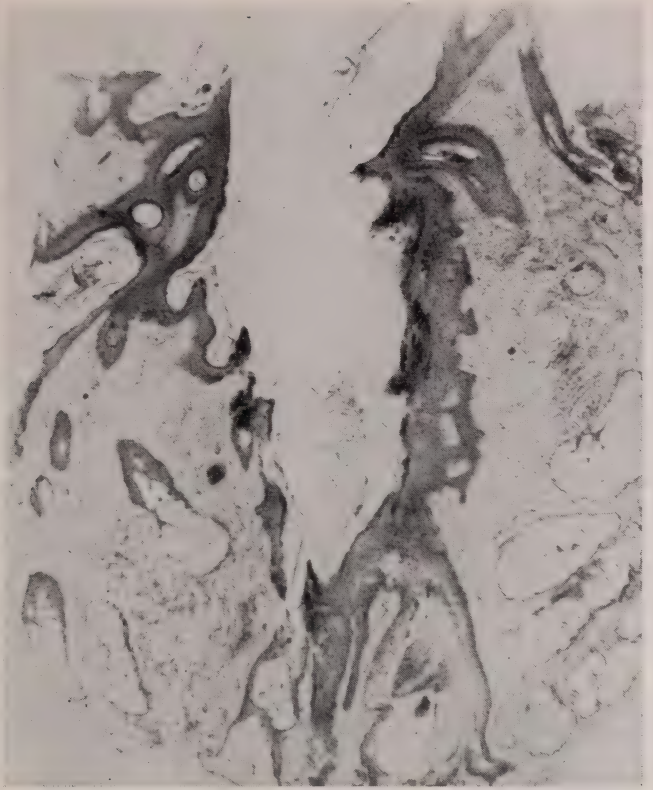
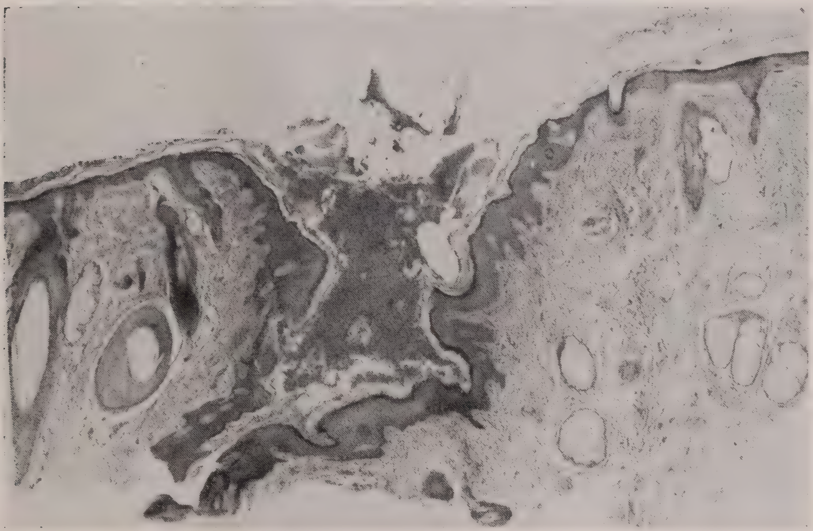


FIG. 9. (*Top*) Biopsies of "ice pick" acne pits of the bearded area of a man's cheek. Steep, narrow pit, showing its great depth (2.7 mm.) in relation to total thickness of section (2.8 mm.), which is, however, not quite full thickness of skin.



(*Bottom*) Deep pit (1.8 mm.) with lateral extensions of undermining at its depth. There is marked proliferation of its epidermal lining with extensions into the surrounding dermis. Maximum thickness of section is 2.2 mm.

seborrheic keratoses of any thickness, as evidenced by their microscopic appearance, require only relatively superficial planing. This is likewise true of persistent freckles and senile pigmented macules (senile lentigenes).

Wrinkling can be thought of as somewhat analagous to a narrow depressed linear scar. A deep wrinkle which expresses the underlying musculature is less amenable to planing than one that is relatively superficial.

In the so-called "artistic" tattoo the pigment (especially if done by a professional

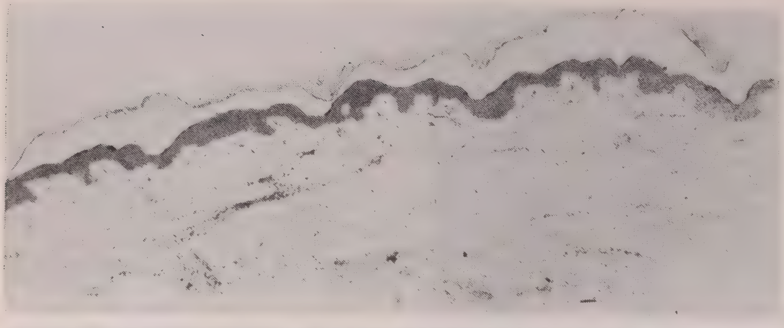
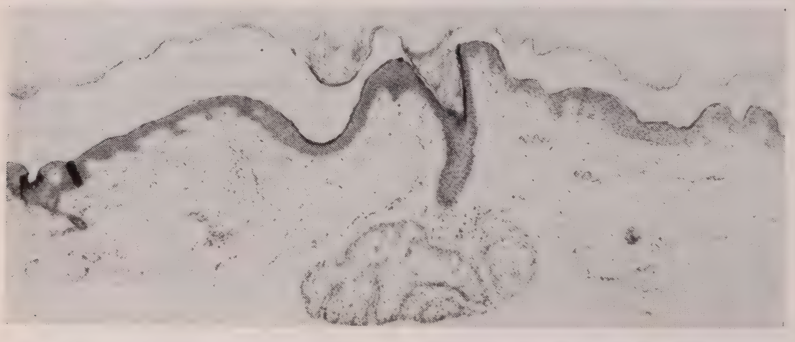
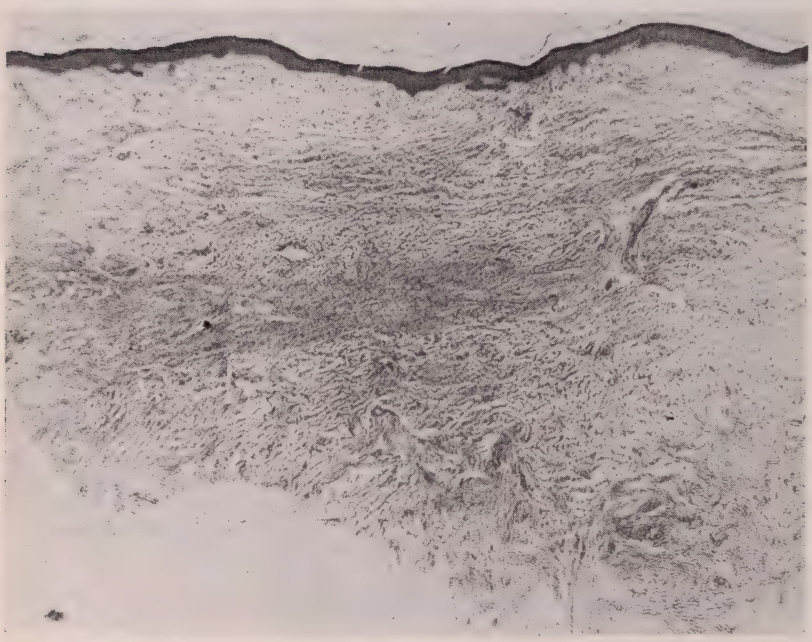


FIG. 10. (*Top*) Biopsies of atrophic scars of the back (*top and middle*). There are no adnexa present in this section.



(*Middle*) Serial sectioning reveals a single pilosebaceous unit.



(*Bottom*) Atrophic scar of the cheek. Epidermis is atrophic. Dermis is devoid of adnexa. The section is 3.5 mm. thick.

tattoo artist) is situated very deep in the dermis, even being found in the subcutaneous fat, so that it is apparent histologically that removal of all of the pigment will result in destruction of practically the entire dermis and most or all of the adnexa (Fig. 13). Hence, there will be slower healing by granulation, with the new epidermis derived chiefly from epidermal cells at the wound margins. The resultant atrophic or hypertrophic scar which would be predicted to develop on the basis of these facts has been amply demonstrated by experience (Fig. 14). On the other hand, the pigment or foreign material in traumatic tattoos is frequently relatively superficial

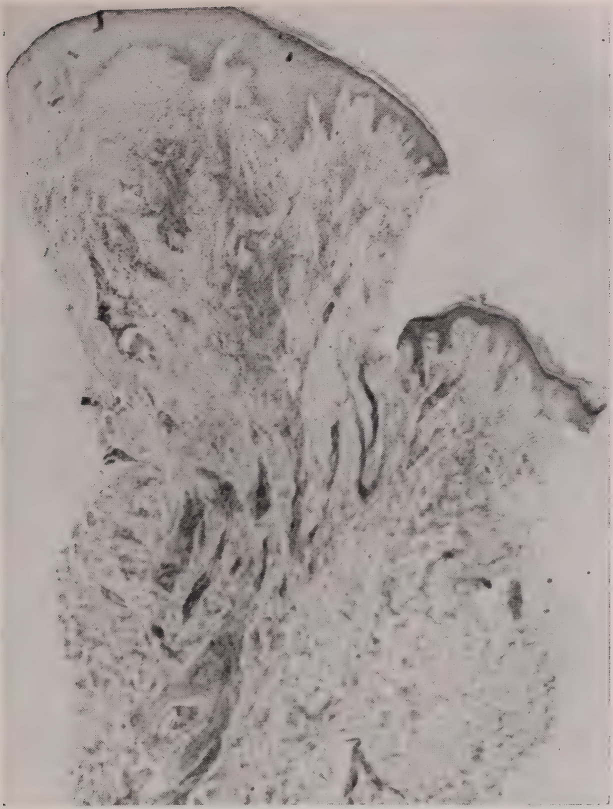


Fig. 11. Biopsy of a hypertrophic acne scar of the posterior aspect of the neck. Section is 4.5 mm. thick. There is dense fibrous tissue, a moderately heavy perivascular lymphocytic infiltrate, and a paucity of adnexa. The epidermis is acanthotic.

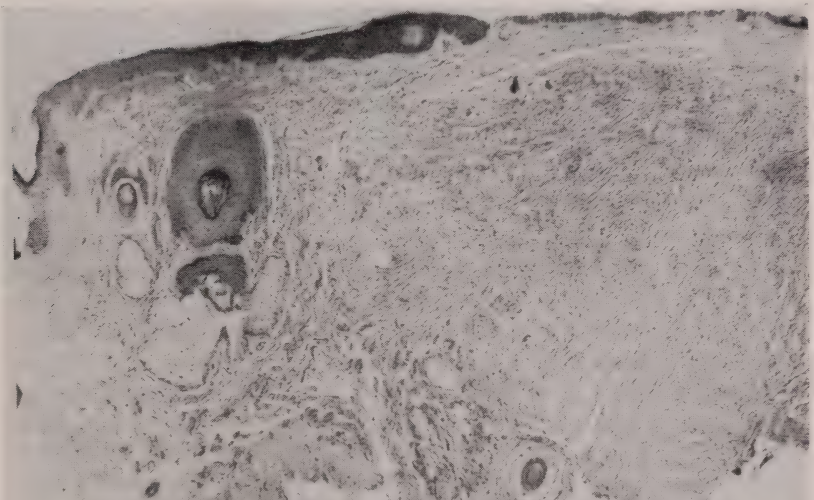


Fig. 12. Biopsy of a hypertrophic traumatic scar of the forehead. There is a sharp contrast between the normal skin, rich in adnexa, on the left, and the dense fibrous tissue of the scar, completely lacking in adnexa, on the right. The epidermis overlying the scar is markedly atrophic. The section is 3.4 mm. thick and the scar is elevated 0.8 mm. above the level of the adjacent skin. This also illustrates the picture that may result from excessively deep planing (as for tattoos) and that seen in third degree burn scars.

and in this situation can be removed by planing without going to excessive depth.

In nevus flammeus the dilated capillaries extend relatively deep into the cutis in the majority of cases; thus planing would need to be carried to excessive depth to eliminate

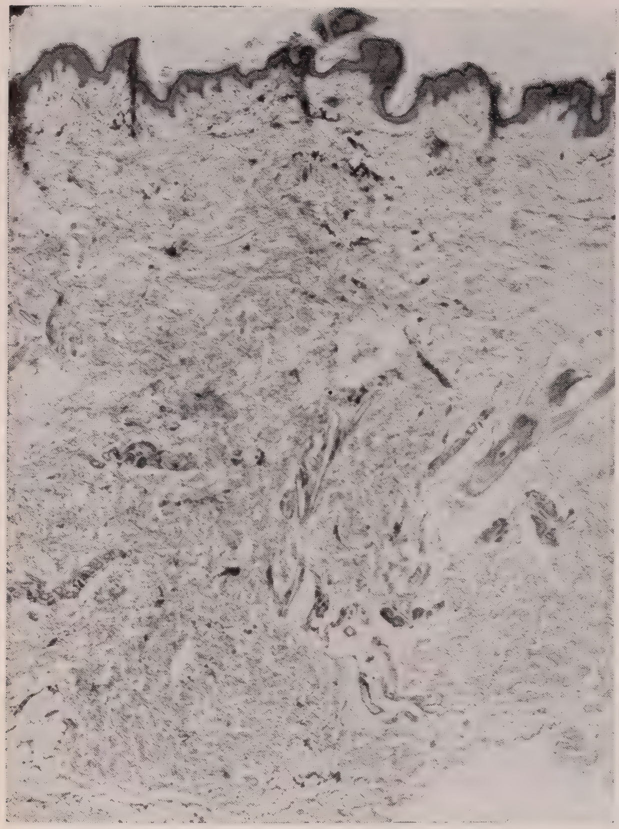


FIG. 13. Biopsy of "artistic" tattoo. The pigment is present throughout the cutis and even in the subcutaneous fat.

them. In these cases, the tattooing of flesh-colored pigment into the zone of dermis above the major portion of the capillaries, according to the method of Conway,[31] results in a permanent camouflage. In the minority of cases in which vascular elements are present, chiefly in the upper cutis and midcutis, planing is of some value (Fig. 15).

Effects of Refrigerants

Strauss and Kligman[20] observed that the skin of the human cheek could be frozen for as long as eight minutes with ethyl chloride or dichlorotetrafluoro-ethane (Freon 114, Frigiderm) without producing severe damage and that such reaction as did occur was no worse after eight minutes than after one minute of application of the refrigerant. They postulate that the great vascularity of the superficial portion of the skin prevents deep freezing and that the frozen surface itself acts as an insulator, preventing deeper penetration of the cold. In support of this they note that even heavily frozen skin was not frozen more deeply than about 2 mm., as evidenced by the presence of freely bleeding, nonfrozen skin below this depth when planed quickly and forcefully.

In experiments we carried out with freezing the skin of the backs of dogs, significant damage was observed beginning after about one minute of application of either ethyl chloride or Freon 114 (without planing), and somewhat greater damage after one and a half and two minutes. Differences between human facial skin and that of the dog's back probably account for these quantitative differences. Dichlorodifluoromethane (Freon 12) produced damage after fifteen seconds comparable to that produced by ethyl chloride or Freon 114 after one and a half or two minutes. The difference is apparently directly related to the much colder skin temperature produced by Freon 12: (Ethyl chloride minus 30 C., Freon 114, minus 36 C, Freon 12, minus 60 C.).

Experiments with mixtures of varying proportions of Freon 114 and the much colder Freon 12

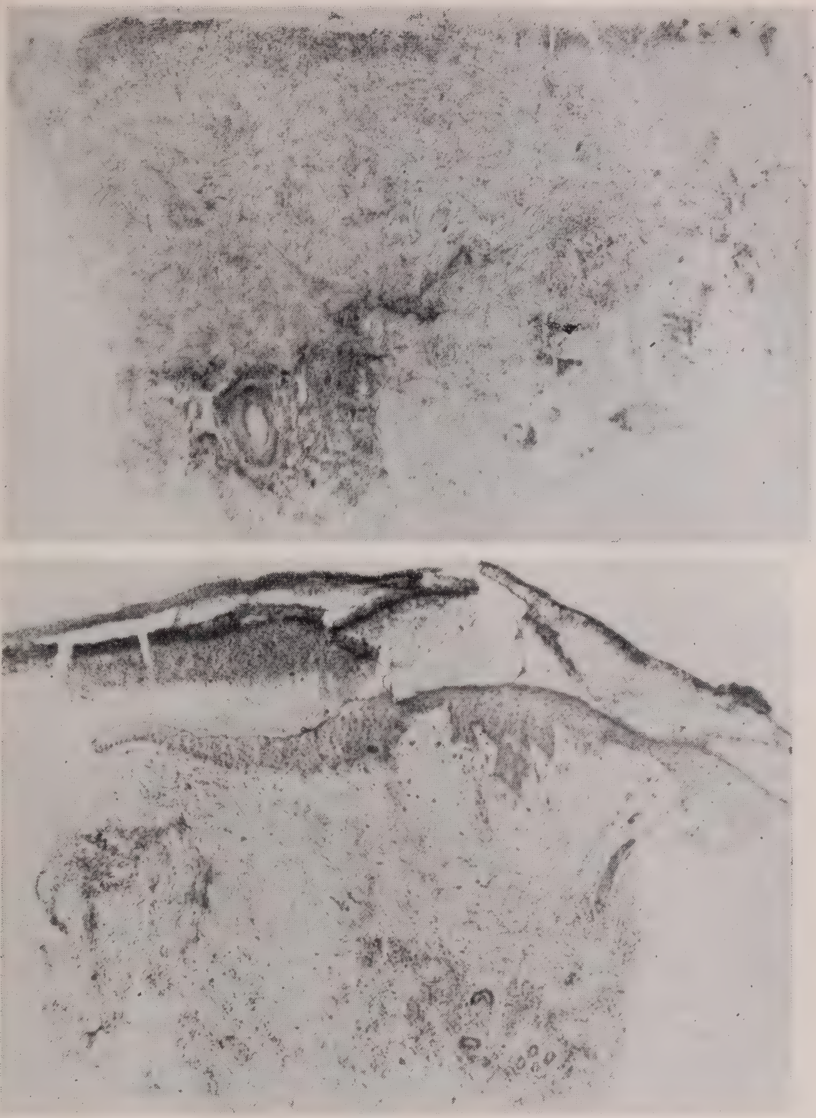


FIG. 14. Biopsies following deep planing of a tattoo on the arm, showing the slow regeneration of the skin. Compare with Figures 3, 4, and 5.

(*Top*) One week after planing there is granulation tissue covered by a crust, but no epidermal regeneration. Adnexa are sparse in the section.

(*Bottom*) Three weeks after planing there is an epidermal covering beneath the heavy crust. The epidermal cells in this situation probably came mostly from the periphery of the planed area, although the ductal cells of a sweat gland shown in the section almost certainly contributed to the regeneration.

have shown [equivocal] evidence of improved freezing capacity as compared with Freon 114 alone. However, we believe the proportion of Freon 12 must be kept relatively small (about 30 per cent) to avoid overfreezing and the danger of refrigeration necrosis. For example, a mixture of 43 parts Freon 114 and 57 parts Freon 12 was compared with pure Freon 114 by spraying on the back of the hand for twenty seconds. The colder mixture (skin temperature minus 55 C.) produced a considerably greater reaction than Freon 114 alone (skin temperature minus 36 C.).

We are in complete agreement with Strauss' and Kligman's observation that refreezing an area is not harmful. It is our belief, supported by clinical observation, that refreezing an area when necessary in order to plane it more adequately at a given session is not hazardous and is preferable to the alternative of increasing the number of planing sessions.

It is often preferable to continue planing another area while waiting until bleeding has stopped in the area considered to have been inadequately planed. After a few minutes it is much easier to refreeze this area without interference from the oozing of blood.[30]

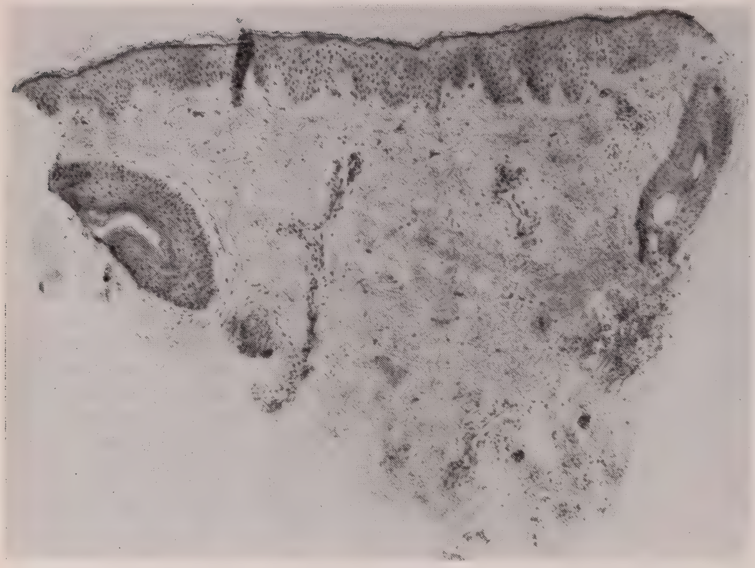


FIG. 15. Biopsy of nevus flammeus of the forehead. Several vascular spaces are shown varying from relatively superficial to very deep in the dermis.

Dermal Changes Following Abrasion of Actinically Damaged Skin

The premalignant metaplasias occurring on older skin associated with actinic damage should, when advanced,[18,32] be removed either by conventional technics or by abrasion. It is desirable to remove these lesions and to include all of the immediately adjacent epidermis in order that the newly formed epidermis be derived from the deeper adnexal cells which have received less exposure to the damaging effects of sunlight.[22,30,32–35] The removal of these lesions and immediately adjacent areas by the process of abrasion has a definite prophylactic value but has not proved as effective as was originally anticipated. Definite recurrence with the passage of years has been observed in some areas. Cosmetic problems have developed by the nature of the epidermal pigment regeneration in these older skins. While the older nonabraded skin shows hyperpigmentation and erythema in a retiform pattern, and in some areas actinic keratoses, the contrasting immediately adjacent skin which has been abraded is relatively hypopigmented and has a homogeneous appearance. Biopsies taken from the abraded portion of the older skin and from the nearby nonabraded skin reveal rather marked differences which account for the clinical variation in appearance. The melanin stain shows epidermal hyperpigmentation in the nonabraded area, whereas in the postabrasion portion of the specimen it is markedly diminished by comparison. The epidermis in the postabrasion portion is comparable in thickness to the nonabraded epidermis but the rete ridges are distinctly less prominent. The nonabraded biopsy specimen reveals severe basophilic degeneration of the collagen in the upper cutis compatible with the age and actinic exposure of the individual, in marked contrast to the regenerated collagen in the postabraded biopsy specimen.[36–38] The collagen fibers, however, in the regenerated area show a conspicuous horizontal striated pattern. The new collagen is therefore qualitatively different from the degenerated collagen which it has replaced. Judging from our four-year follow-up sections, this collagen improvement remains for at least four years after abrasion. The regenerated skin clinically has a more youthful appearance and a greater degree of elasticity on palpation. The elastic fibers in the regenerated dermal tissue are either entirely absent or very delicate even up to four years after abrasion.

However, this apparently is not clinically significant since the elasticity of normal skin is considered to be due chiefly to its collagen structure.

Inasmuch as new actinic keratoses have been observed to appear as early as eight months after abrasion it could be considered that the abrasion was incomplete, leaving islands of epidermis which have premalignant changes already in progress. However, in microscopic sections of such postabraded areas one can readily demonstrate a zone of new collagen of approximately 0.4 ml. or more in thickness between the base of the new keratosis and the level of the old collagen below the previous abrasion. This finding would indicate that the abrasion had been sufficiently deep to remove not only the epidermis but also the major portion of the zone of basophilic degeneration. Thus, it is suggested that these premalignant epidermal changes have arisen afresh. These findings are evidence against the concept held by some[24,39] that basophilic degeneration of the collagen is an important cause of skin cancer and support of Montgomery's contention that malignant epidermal changes developing in chronic radiodermatitis are not merely secondary to the dermal changes beneath.

Nevertheless, planed areas are considerably less prone to develop actinic keratoses than are the adjacent nonabraded areas, even after four years following planing. Abrasion is relatively effective in the prophylaxis of premalignant lesions but not as completely as was initially anticipated on theoretic grounds.

Mechanical Equipment

The essential mechanical equipment for skin planing includes a motor, a driving mechanism, and various types of abrading wheels.

The motor must be of variable speed type (rheostat controlled). The maximum available speed should be about 12,000 r.p.m. Speeds up to 30,000 r.p.m. are obtainable but are of questionable additional value. The power should be at least $^1/_{20}$ horse power; $^1/_{12}$ is better. If ethyl chloride is to be used as the refrigerant, the motor must be encased completely by metal and grounded to prevent sparks.

Several types of driving mechanism are available. A direct drive, such as a hand-held motor tool, serves well for light planing in small areas but if it is powerful enough for heavy planing, it is usually awkwardly heavy. A flexible shaft or cable drive is the most common type and is satisfactory, although cable breakage occurs occasionally. The belt-and-pulley drive, as used for dental instruments, works well, but the belts sometimes rub against the skin. A clutch serves to attach the abrading wheel to the shaft; there may be a friction collet operated either by pulling on the shaft or by a screw mechanism. Another is the Jacobs' type, in which a geared key for tightening is used.

Abrading wheels are of several types. Stainless steel brushes are made either with "canted" (slanted) bristles, which are capable of cutting rapidly and deeply but "dig in and gouge" rather easily, catching gauze or hairs and resulting in loss of control, accidental gouging, and broken cable shafts; or with uncanted bristles, which are less objectionable but do not cut as rapidly.[40] Abrasive wheels are satisfactory if the abrasive grains are of proper coarseness.[41] They can break into flying pieces, and they can conceivably leave abrasive grains in the skin but this is very unlikely since these wheels are intended to cut glass or steel without dislodging the grains. Abrasive paper mounted on a drum can leave abrasive grains in the skin, and it presents sharp edges. It is slower in cutting but smoother, easily avoiding "digging and gouging," and is less prone to entangle gauze or hairs. Diamond or ruby fraises, introduced by Eller[42] and Hermans,[41] abrade smoothly and are easily controlled. They seldom catch gauze or hairs objectionably. Stainless steel milled cutters are intermediate between brushes and fraises in both cutting speed and in the dangers outlined.[42] Smaller-sized "burrs" of dental type or milled metal cutters are useful in small corners and for localized areas. We use the diamond fraises for 90 per cent of our work.

Helpful accessories include a fender to prevent spattering of abraded material (spatter shield), which we find almost essential. A cup for collecting abraded particles for possible use as tiny skin-grafting islands to be sprayed on after planing has been suggested.[43] Luikart, Ayres, and Wilson[35] designed a spray tip for delivering the refrigerant from the handpiece of the planing apparatus and connected by tubing to a tank of the refrigerant. A blower or compressed-air source is necessary only when ethyl chloride is used. Kurtin[18] and LeVan[44] each have suggested a type.

Anesthesia, Analgesia, and Refrigeration

It is evident that skin planing is not as painful as it would be predicted to be by an observer of the procedure. Most experienced operators have planed areas without anesthesia and have noted a surprising degree of tolerance by the patient. It should be the goal, nevertheless, to make the procedure as free of discomfort as possible. This is particularly important because good results in skin planing may require two or more abrasion procedures, especially in severe cases. The patient's discomfort should not be sufficient to cause him to refuse repetition of the process.

An analgesic agent should be administered before skin planing of extensive areas is begun. In addition to dulling the perception of pain, it allays nervousness and apprehension. The performance of skin planing as an office procedure necessitates certain modifications over the usual preoperative measures employed in hospital practice. The deep-sleep-producing or long-acting barbiturates must be withheld until the patient has been returned home and is in bed. For the same reason morphine has not become popular. Scopolamine is considered too unpredictable. Atropine-like drugs are unnecessary. Demerol produces adequate relief without a degree of drowsiness beyond that necessary for the patient to be cooperative and be able to leave the office later with minimal assistance. The dose varies from 50 to 150 mg., according to the patient's weight and degree of apprehension, and is given subcutaneously twenty to thirty minutes before beginning planing. Some operators prefer Nisentil which acts similarly. The dose is 40 to 60 mg.

Preoperative "cold packs" are used by many operators, held against the surfaces to be planed for from fifteen to twenty minutes before abrasion is begun. This reduces pain sensibility and minimizes the shock of the application of the refrigerant later. The exact degree of usefulness is questionable. It does give the patient something to do while preparations are in progress, but we do not find the measure necessary.

Novocain and similar injectable substances are preferable when small areas are to be planed. Several points, however, must be remembered. The necessary multiple needle punctures are probably at least as painful for most persons as the actual abrasion procedure without anesthesia. Epinephrine is necessary if bleeding is to be prevented from interfering with the completion of the process, but it can be used only when small areas are to be planed because its absorption would counteract the analgesic preoperative medication and perhaps be hazardous if too large quantities were injected. The rigidity of the skin which refrigeration produces is advantageous because it enables the operator to abrade evenly and easily. Novocain injection does not produce sufficient rigidity, except perhaps on the forehead or over bony prominences.

Anesthesia by topical refrigeration has been utilized for at least seventy-five years (National Formulary, 1879, first edition).

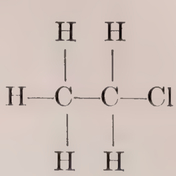
Since its inception, certain objectionable features have been emphasized repeatedly, including the inflammability and explosiveness of materials, the toxicity to patient and operator if use is prolonged, the possibility of necrosis due to overfreezing, a certain degree of discomfort (usually described as a "burning" sensation), the overrigidity of frozen tissue for many operative procedures (not, however, for planing), and the production of "frost" over the operative surface, obscuring vision. Nevertheless, we find it highly desirable.

It is necessary that the refrigerant be a low boiling point liquid. However, a liquid can produce by evaporation a degree of refrigeration far below its boiling point (water by evaporation can produce cooling to far below its boiling point). Since ethyl chloride is not cold enough unless a blower is used, its boiling point, 12.2 C. (44 F.), was selected as the upper limit of desirability in our studies. The necessity of a lower limit is also apparent, since refrigerants which are too cold (carbon dioxide, snow, and liquid nitrogen) are known to destroy tissue and produce scarring. Our early studies set this lower limit at about minus 30 C. (assuming that the cold is applied without pressure). Only chemicals of low molecular weight have low boiling points (although there is not a strict mathematical relationship). This means that only compounds composed of but a few atoms of the lighter elements can serve. Of all the millions of organic compounds, it is surprising that only about 60 have boiling points between our limits. All but six or seven of these are unsuitable because they are toxic, poisonous, irritating, cauterant, malodorous, expensive, and/or unstable chemically.

Other desirable characteristics of a refrigerant are that it be odorless, noninflammable, nonexplosive, nontoxic in any manner, inexpensive, and easily available commercially.

Ethyl chloride was the only preparation in use until 1955, although alternatives were commercially available since the early 1930's.

Its formula is:

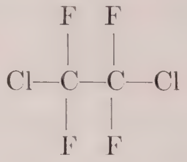


$$\begin{array}{ccccc} & H & & H & \\ & | & & | & \\ H- & C & - & C & -Cl \\ & | & & | & \\ & H & & H & \end{array}$$

The boiling point of ethyl chloride is 12.2 C. (44 F.).

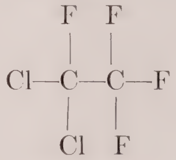
By free evaporation it can produce cold of approximately minus 25 C. Forced air draft can carry this slightly lower (blower or compressed air). The skin can withstand forty-five seconds of exposure without sustaining any subsequent slough. Ethyl chloride is explosive when mixed with air in all concentrations 2.7 to 28 per cent. (These limits exceed those for ordinary illuminating gas.) It cannot be used where open flames or cautery are employed. Sparks must be guarded against, such as might originate from motor commutators or instruments. The inflammable gas is heavy and can sink to the floor, where sparks can be caused by shoes or moving of apparatus. It can produce general anesthesia when inhaled mixed with air in concentrations as low as 2 per cent. The induction is rapid and can easily pass through the excitement stage without any evidence to the operator. Ventricular fibrillation has caused death during the induction stage. Ethyl chloride is toxic to the liver to a degree similar to chloroform). Skin planing requires more refrigerant than many other procedures and introduces a definite hazard from continued exposure, to operators especially. The "blower" or compressed air stream serves to "blow" the fumes away from the patient and operator and dissipates the percentage concentration in air (as well as produces a lower temperature). Ethyl chloride dissolves gentian violet easily and causes it to "run" to undesired areas.

Freon 114 and Genetron 114 are very similar. The chemical formula of both is dichloro-tetrafluoro-ethane, Freon 114 is largely the symmetric isomer:



$$\begin{array}{ccccccc} & & \mathrm{F} & & \mathrm{F} & & \\ & & | & & | & & \\ \mathrm{Cl} & - & \mathrm{C} & - & \mathrm{C} & - & \mathrm{Cl} \\ & & | & & | & & \\ & & \mathrm{F} & & \mathrm{F} & & \end{array}$$

Its boiling point is 3.8 C. (38.8 F.). Genetron 114 is largely the asymmetrical isomer:



$$\begin{array}{ccccccc} & & \mathrm{F} & & \mathrm{F} & & \\ & & | & & | & & \\ \mathrm{Cl} & - & \mathrm{C} & - & \mathrm{C} & - & \mathrm{F} \\ & & | & & | & & \\ & & \mathrm{Cl} & & \mathrm{F} & & \end{array}$$

Its boiling point is 3 C. (37.4 F.). Both act very similarly; Genetron 114 is apparently a little colder. By free evaporation (without forced air draft by blower) they can produce coldness to minus 31 C. approximately. The skin can withstand forty-five seconds without sustaining necrosis. Both isomers are nonexplosive and noninflammable in all mixtures with air. They cannot support combustion in any manner. They are nontoxic (animals can stay for two hours in air composed of 20 per cent without harm); they are less toxic than carbon dioxide. They are not anesthetics in any proportion or to any degree whatever. They do not easily dissolve gentian violet. We see no reason to choose one of these in preference to the other, and have found both of them to be entirely satisfactory.[45] We believe they should replace ethyl chloride entirely.

Since the introduction of Freon 114 and the realization that thereby the hazards of ethyl chloride—its explosiveness, inflammability, general anesthetic qualities, and toxicity—could be eliminated, a mixture of 25 per cent ethyl chloride and 75 per cent Freon 114 has been introduced and publicized. Although it is probable that the explosiveness and inflammability of ethyl chloride has been thus eliminated, the other two hazards must still be considered to exist even though admittedly to a lesser degree. It seems to us inadvisable to retain even 25 per cent of the hazardous compound in such a mixture[46] when the substitute in pure form (Freon 114 or Genetron 114) can accomplish the desired result equally well.

Preoperative Preparation

The anticipated results should be understated rather than overstated. Both for patient-physician rapport, and for legal protection only "some" improvement should be promised, not "cure" or "removal." The fee should be discussed in advance. Surgical and photographic consent must be read, signed, and witnessed.

We have found it helpful if the following facts are made clear to the patient by the physician or nurse: The patient will be in the office from one to two hours. Someone must come for the patient to transport him home. When the areas are extensive he will be away from work or school from eight to fourteen days; the crust will peel off in ten to fourteen days, and the erythema can be partly covered with powder immediately (it will usually fade in three to eight weeks).

Planing is not contraindicated immediately following a proper course of acne x-ray therapy.

During planing considerable histamine is released by trauma to the capillary bed. The value of pre- and postoperative antihistaminic drugs to reduce edema and erythema seems reasonable. Likewise the use of agents designed to diminish capillary fragility is being considered.

PHOTOGRAPHS.—Photographs are legally essential; in the event of lawsuit the patient usually claims that he has been made worse. A photograph is the only proof of the reverse. The courts now may accept the operator's own color photographs as evidence. However, a black and white photograph taken by a professional photographer has the advantage that he can testify that the photograph is an accurate portrayal of the patient when he saw him preoperatively and that the physician has not tampered with his negative.

Photographs are professionally essential. Patients soon forget how badly they once looked and their portraits are all retouched; therefore, it is of great help to be able to show a dissatisfied patient what he was like before. A signed consent for photography is absolutely necessary. Legal counsel has advised that a person's photograph is "sacred." Without a signed permit, the physician is liable should he ever allow anyone to see the photograph, to show it to another patient, or to publish it or place it in a scientific exhibit. The photographer must be instructed to be strictly objective for he is accustomed to "portrait" photography (making the subjects appear their very best by helpful lighting and retouching).

Associated Surgical Procedures.—Patients possessing certain types of abnormalities must have these appropriately treated some weeks before planing is carried out. It is unwise to plane through sterile or infected cysts or to attempt to "level" large nodules or protrusions. In doing so, the adnexa are completely removed from a wide area, and healing can only occur by epidermal bridging from the wound margins, resulting in a scar. Should it be decided to plane a zone containing such elevations, they should first be excised and sutured at least three weeks previously. Sutures may be left in place fourteen days to prevent any separation, which would again leave a zone without adnexa. The fine linear scar and suture marks will readily be removed with the subsequent planing.

Similarly atrophic areas without adnexa larger than 2 mm. in diameter are best excised and sutured three or more weeks before planing. In many instances borderline defects, such as unusually deep and large pits, that may or may not be satisfactorily removed by planing may be left until after the first planing in order to see clearly which are and which are not likely to diminish satisfactorily by the process. This approach, of course, is only useful in the patient with sufficient scarring to warrant more than one planing. In these instances pits that appear to be little improved may be punched out and sutured or excised and sutured three or more weeks before the second planing. Likewise, some atrophic scars can be made to be quite inconspicuous by planing the irregularly elevated edges. One may choose to try this with some patients on the first planing, keeping in mind the fact that should the result be obviously unsatisfactory after planing the excision may be done then. Iverson[14] has advocated excision and suturing of defects that will not respond sufficiently to abrasion in the dermis immediately after the first abrasion process.

Technic

The planing procedure may be done in a hospital, but this adds extra expense to the patient and we have never yet found it necessary. Many physicians prefer to operate on Friday mornings, giving the patient the benefit of both week ends for recovery and allowing him to be away from work only one week.

Strictly aseptic technic is not required for surgical planing. Kurtin[18] used washed clean gauze without difficulty, but most operators use sterile gauze. All of the equipment that is to be touched during the procedure should be wiped off beforehand by the nurse with gauze wet with 70 per cent alcohol, and the other usual surgical precautions should be observed.

In preparing the patient, preoperative medication should be administered first in order to allow time for it to take effect while other details are attended to. During this time the patient's questions are generally answered to allay unnecessary fears.

The need for postoperative sedation is estimated and appropriate prescriptions are written at this time: Tuinal, gr. iss h.s., q noc., p.r.n., No. 5; Emp. comp. with codeine, gr. ss ea., q 3 to 6 h. p.r.n., No. 20; and Neosporin ung. or Acid Mantle cream to be used on heavy crusts, q.d., beginning on the fifth day. Cold packs (prechilling packs) may be applied for twenty to thirty minutes before operating but are not necessary and perhaps not even desirable.

The patient's face is washed with Dial or pHisoHex and then scrubbed with gauze saturated with 70 per cent alcohol and allowed to dry. Using adequate cross-lighting, the areas to be planed are delineated accurately by painting them with gentian violet, using an applicator from which the excess has been absorbed by squeezing it with dry gauze and scrubbing the dye into the floor of the pits. Applying it to the pits only is equally satisfactory. Some have found gentian violet messy when used with ethyl chloride. We have not found this to be a problem because gentian violet is much more soluble in ethyl chloride than it is in Freon. When the gentian is applied the cotton-tipped applicator should first be blotted and squeezed with gauze so that only what is necessary for good visibility is applied to the skin. Petrolatum or boric acid ointment may be applied to the margins of the eyelids and to the rims of the plastic eye shields. We use eye shields known as "Sunnies." They are superior to cotton or gauze because the planing wheel will bounce off instead of "grabbing" and pulling itself into the eye.

The fraise does not "bite" as much as the brush, making the actual process smoother. The tendency to pull or grab and the hazard of "running away" is markedly reduced with the fraise. For safety's sake the beginners should use a fraise on his first attempts. Finally, the use of the fraise permits better visualization of the depth landmarks. However, the canted number 1 brush cuts faster, and many operators still prefer it for deep planing, such as for deep acne pits on cheeks. The pear-shaped fraise, attaching at its narrow end to the handpiece, is invaluable at the glabella, nasal bridge, nasolabial folds, and around the eyes as well as in small localized areas, as in the treatment of a solitary keratosis.

A good nurse is the most important accessory of all. It is best for her to wear sterile rubber gloves on both hands to protect her fingers from the cold. She should have a sterile white cotton glove on her left hand or both hands to aid in traction. She should be taught to apply tension to freeze the areas flat, to apply tension at right angles to the tension produced by the surgeon's thumb and index finger when planing, to keep constantly in mind that patients will become hysterical if their airway is obstructed even for a second, and above all at a slight signal from the surgeon when he is about to stop freezing to remove all gauze from the immediate area and to remove her hands so that the surgeon can set his left thumb and index finger without interference in preparation for the planing.

The physician should stand to the patient's right and spray the freezing agent on the patient's hand as a warning and indication what he is to expect. He begins with a lateral area anterior to ear or temple and works medially so that capillary oozing of blood from previously planed areas runs away from each new area instead of onto it. Also, the lateral areas are easier from a technical standpoint, and the operator gets the feel of the procedure before beginning more difficult areas, such as around the eyes, nose, and mouth.

The area to be frozen should be limited to about 2 inches in diameter (maximum, 3 inches). This is done by holding gauze around the perimeter and/or controlling the flow from the nozzles of the jet-spray handpiece or can of refrigerant. The operator and the nurse should exert traction in four directions so that the zone will be held flat while it is being frozen. (If a fold is frozen, the planing will be deep on the ridge and shallow in the trough.) Furthermore, as Burks[34] points out, it is possible that this indirect pressure on the skin may reduce the vascularity and, in turn, facilitate freezing.

The handle should be grasped firmly as

close to the fraise or brush as is reasonable. It should be held as one holds a safety razor and not as one holds a fountain pen.[34] It is necessary to know which way the wheel turns in order to keep constantly in mind which way it will "pull" or "run" should it get away from the physician. The procedure should be tried out on frozen pigs feet first, allowing the wheel to dig in and run, to learn how suddenly this can occur. At first the operator should choose the approach to eyes and mouth so that if the brush does dig in, it will pull itself away from them rather than toward them.

After freezing, the nurse quickly removes the gauze and momentarily keeps her hands away. The operator sets his cotton glove-covered left hand with thumb on one side and index finger on the other side of the frozen area. Patients do not seem to mind this solid pressure. The operator pulls toward his wrist and at the same time pushes out in two opposite directions with the thumb and index finger to provide traction in three directions. The nurse now provides traction in the fourth direction. With this traction the wheel will not gouge so easily or take hold and "run away" should the area thaw and soften before planing is completed. Inexperienced operators should begin with a slow speed, as controlled by the rheostat, and increase to full speed as confidence is gained. Even with experience, most operators use slower speeds around eyes and lips to avoid a sudden "gouge" and pull.

Planing is done by pulling the handle in a direction at right angles to the plane of the brush or fraise; the opposite direction produces grooving. A slight oval or rotary motion is best, keeping the wheel on the skin during both the up and down strokes. Most of the actual abrading is done on the down stroke or "pull," but holding the tool against the skin during the up stroke gives continuity and smoothness to the technic. It is well to plane the periphery of the zone first since it will thaw earlier except when "feathering" at the edges. Planing the peripheral zone as the area begins to thaw helps avoid a sudden transition between hard frozen skin, which is readily planed deeply, and the adjacent soft skin, which is not. Thus a sharp line of demarcation at the periphery is avoided.

Attention is given to the blending of adjacent segments. The depth of planing is diminished at peripheral margins ("feathered") to prevent sharp demarcations. When reasonably convenient the peripheral margin should be brought to the line of the mandible, eyebrow, scalp line, nasolabial fold, vermilion zone margin, or other facial contour lines to hide the line of differentiation as healing occurs.

Some small useful tricks are: When planing lateral lip areas, a single piece of gauze inserted into the mouth with the left second, third, and fourth fingers will stretch the lateral portions of the lips and the middle of the cheek into a firm gently-rounded dome. Both the freezing and planing must be done in this position. At the nasolabial fold the nose should be bent as far as possible toward the other cheek while the assistant pulls the adjacent cheek away, making an almost flat plaque of this area. When operating close to the eyes, the plastic eye shields are removed and the operator's or assistant's finger should be placed over the patient's closed eye. When planing the glabella, the fingers are kept similarly over the eyes while freezing as well as while abrading. With a jet-spray handpiece, the spray margin may form ice on the fraise or brush on prolonged freezing, causing it to acquire a layer of ice, and it will suddenly seem to fail to cut for the first few seconds until it thaws. Dipping it in hot sterile water quickly allows one to proceed.

Planing is usually carried deep enough to include the floor of the pits. They can be seen in the planed area by the fact that there are specks of purple color still present, and the surface under proper bright side lighting is still irregular. It is permissible to refreeze carefully and replane. We have done this often without observing any objectionable effects thus far. With deep planing caution must be exercised over bony prominences, as at the angle of the mandible. Without care one will easily remove all of the adnexa from this zone.

By observation one can delineate five depths of planing which appear progressively during the procedure. These are much more readily visualized in a thoroughly frozen field and when using a diamond fraise.

1. First the pigment vanishes, indicating that one has reached and removed the major portion of the basal cell layer. Many of the rete ridges should still be intact but it is difficult to ascertain this by inspection. If one allows the area to thaw at this stage, capillary bleeding will follow since the dermal papillae have been cut across.

2. The second level is determined by observing myriads of yellowish macules, each less than $^1/_2$ mm. in diameter. This indicates that planing has progressed down into the uppermost dermis, removing the rete ridges and allowing the pilosebaceous apparatus to become visible. This level is usually invisible with a wire brush, but is readily seen with the diamond fraise. This is because the wire brush causes "shredding" of the dermal tissue, producing linear striations, whereas the much smoother abraded surface produced by the diamond fraise enables the operator to have a clearer view.

3. The next visible level appears as a surface studded with myriads of minute yellowish papules representing the slight protrusion of the sebaceous glands.

4. If planing is carried deeper, marked resistance of the tissue to the planing tool will be encountered and progress will not be made as smoothly and as easily as before. This is primarily because one is now planing tissue below the level of penetration of freezing, as pointed out by Kligman and Strauss.[21]

5. Finally, yellow "nubbins" appear, representing herniations of subcutaneous fat. One is now below the level of the sebaceous glands and at the depth of the deepest hair papillae. Planing to this level may result in sufficient removal of adnexa to produce scar formation.

It is best to plane in one session all areas of the face which need it. The abrasion should be done boldly and deep enough, making an attempt to obtain as much improvement as possible at the first planing.

Postoperative Management

The diffuse capillary bleeding is controlled by covering the area with sterile gauze and changing the gauze once or twice; the bleeding slows to minor serum oozing in the first twenty to thirty minutes. Very small areas need no dressing at all. Larger areas are then dressed with Telfa or a similar dressing, strapped on with tape. Dependent areas are padded with extra gauze for absorption of serum if planing was heavy or if the patient must travel far to get home. Warn the patient particularly of the swelling to be expected the first night and describe the blanket method of mattress elevation.

It is not necessary to see him for six weeks. However, many operators like to see the patient in a week or two, especially if it is the patient's first planing. It gives the patient reassurance and enables the operator to remove crusts that are merely "stuck" in the lanugo hairs or beard, thus enabling the patient to return to work or school as soon as possible. At this time the operator can also re-enforce his admonition about carefully avoiding the sun for at least six weeks. Pictures of another patient taken daily postoperatively for ten days should be shown after planing. These pictures tend to eliminate the fear the patient has of what he will see in his mirror the next day.

Results

The best results are obtained on the face because it is rich in adnexa and true keloids rarely, if ever, develop on the face. The experiences that we have had with extensive planing done elsewhere than on the face

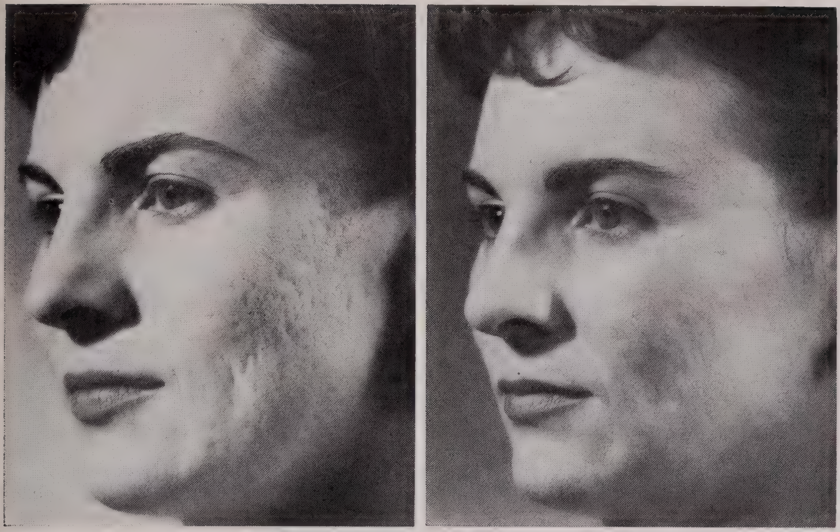


FIG. 16. Pitted acne scars. (*Left*) before planing; (*right*) six weeks after second planing.

have been reasonably satisfactory, but in no way compare with the excellent outcome usually obtained on the face. Localized shallow planing, such as for individual seborrheic keratoses on the back, may be the treatment of choice, and it may prove that planing the dorsa of the hands for extensive precancerous change is a good approach. Aside from these areas the face is the principal field. Above all it should be remembered that if there is no evidence of adnexa planing should not be done unless it is expected that the area will heal slowly by bridging in from the epithelial margins and thereby produce a scar.

On patients with a propensity to keloid formation or who possess heavily pigmented skins or any other characteristics which suggest a poor result, it is wise to plane a small test area first and observe it for several weeks before proceeding. Such a patch can be planed on the initial visit, using only local Novocain.

ACNE SCARS AND ACNE-LIKE SCARS.—Some scars are sharp and deep. These have earned the name "ice pick" scars. They are most common lateral to the mouth and on the central cheeks. Mild scarring may be improved about 80 per cent with one planing. Moderate scarring may be improved about 40 to 60 per cent with one planing and another 30 to 10 per cent with a second planing. Severe scarring may require from two to seven planings (Figs. 16 and 17).

Since the best result is obtained by complete removal of the walls and floor of the pit, it follows that deeper initial planings give better results. Gross stated some time ago that he believed that the first planing in severe acne pit scarring should be very deep. Time has taught us that he is correct. Areas more than 2 mm. in diameter which are elevated should be first excised and sutured if the elevation is such that there is danger of losing all of the adnexa in the elevation during the leveling process. Depressed atrophic areas of more than 2 mm. in diameter should be previously excised and sutured to bring the adnexa side by side before planing.

Hypertrophic scars possess few adnexa or may be devoid of them. They may be leveled with planing, but either a flat atrophic scar or a recurrence of the hypertrophic scar will result. The use of the x-ray or local injections of hydrocortisone may combat the recurrence. They may be made more susceptible to x-ray by planing. However, excision and closure is preferable. One may carefully plane an excised area in three weeks or more after closure.

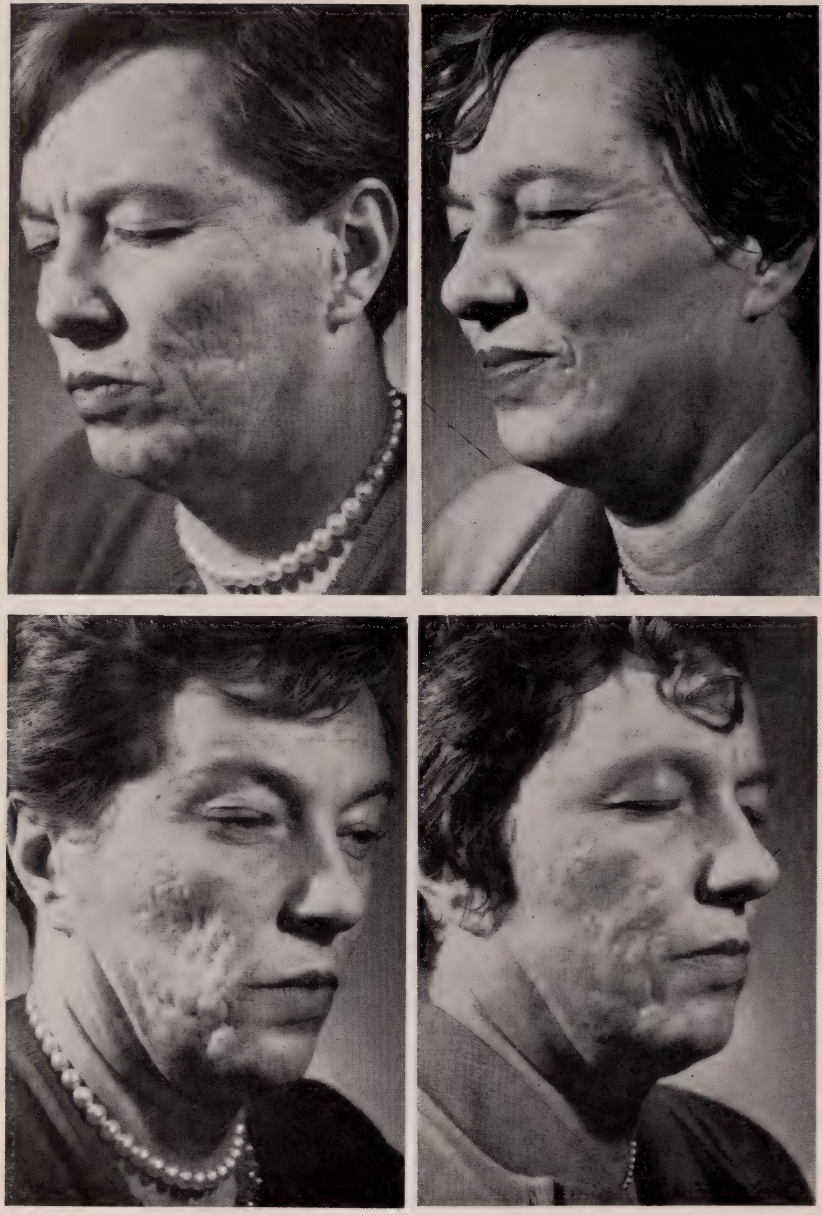


FIG. 17. Pitted acne scars and wrinkles. (*Upper left*) before planing; (*upper right*) two months after one planing; (*lower left*) before planing; (*lower right*) two months after one planing.

The wavy gently-undulating changes so often seen by tangent light on cheeks of acne patients is helped little if at all by planing. In fact, prolonged meticulous laboring over a cheek with a small planing wheel may make its appearance more undesirable. While acne papules are helped by planing, acne cysts are a contraindication. These latter result in a scar (atrophic or usually hypertrophic) when planed into. Care must be taken not to marsupialize cysts.

Occasionally there are a few pits so deep that an excessive number of planings would be required for their removal. These are best removed before the first planing. Kromayer[4-8] punched such lesions out with 2- or 3-mm. punches and found that a wound of this size usually heals spontaneously without scarring. Burks[34] is of the same

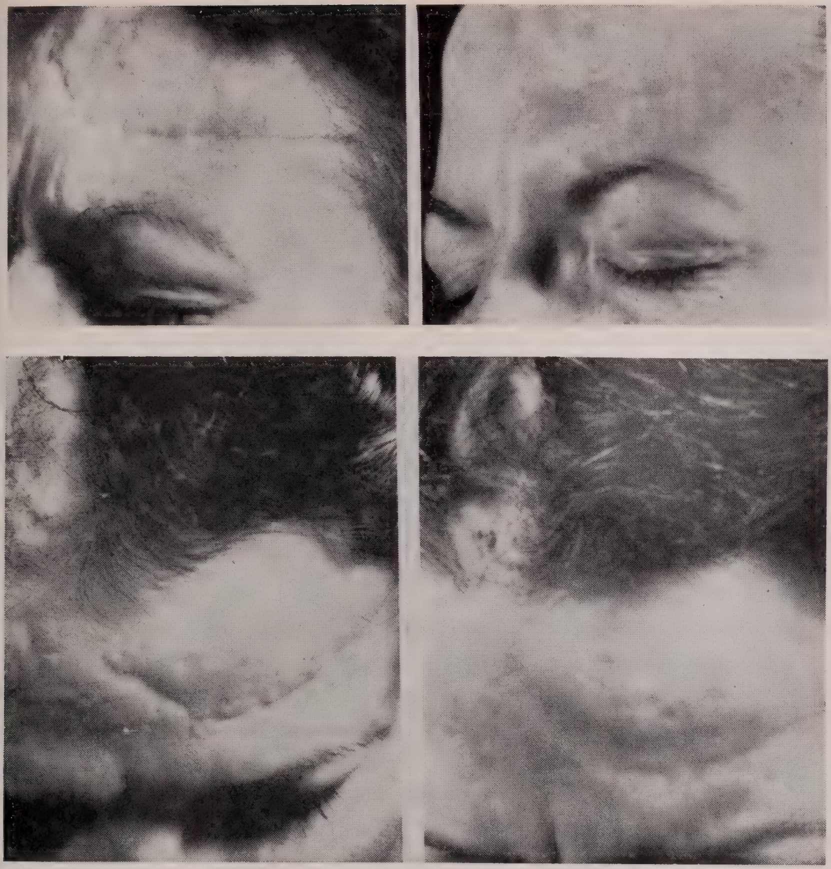


FIG. 18 Traumatic linear scars (depressed). (*Upper left*) before planing; (*upper right*) four weeks after one planing; (*lower left*) before planing; (*lower right*) four weeks after one planing.

opinion but cautions that the punch should be carried through the entire skin into the adipose tissue. We now use this technic regularly and close the punched orifice with a single suture.

For slightly larger areas that require punching or excision we formerly used the auto punch-graft technic, as described by Lowenthal and Orentreich.[47] We have discontinued it in favor of elliptic excision and suturing because the latter process is simpler. The tissue irregularities disappear after planing, and likewise the suture marks vanish. To obtain excellent results, stress should be placed on a careful examination and surgical removal before the first planing of all defects that are too large or too deep to normally be amenable to the planing process; some may be excised after the first planing.

For our purpose, scars resulting from chickenpox, herpes zoster, herpes simplex, smallpox, and pyoderma are similar to those from acne. However, compared with the acne pit scar they are relatively shallow and broad. They are properly referred to as saucer-like and are corrected readily by planing.

LINEAR SCARS.—The depressed linear traumatic or operative scar frequently does not have more than a 2-mm. gap lacking adnexa in its entire course. In these cases they respond remarkably well to even a single planing. Occasionally one edge is considerably elevated above the opposing margin. Here, incision, undermining, and flush coaptation with sutures may be necessary before planing. If the gap in the scar's course devoid of adnexa is wider than 2 mm., excision and closure of this portion first may be necessary. Linear traumatic depressed scars are exceptionally easy to plane. Only a narrow band or bands of skin need be planed. Novocain is usually feasible here (Fig. 18).

The hypertrophic linear scars are a different problem. They may recur thicker than before. A test area is advisable with this problem. It may be necessary to follow the planing with x-ray and/or localized injections of hydrocortisone.

Thermal Burn Scars.—Thermal burn scars of any real consequence are the result of a third-degree burn. The adnexa in all or most of the area have been destroyed and the scar is usually hypertrophic. It is rough and highly irregular, particularly in the chin and submental areas. A little may be accomplished by leveling down the major protrusions, but usually a better result may be achieved by referral for grafting.

Chronic Discoid Lupus Erythematosus Scars.—In the areas where the process has destroyed the adnexa and has left behind a shiny atrophic scar one can smooth up the normally rough margins, or if it is small enough one can excise, close, and later plane. On close inspection some such scarred areas will show that many adnexal orifices are still present, indicating that the disease process did not destroy all of them. These will often yield a good result with planing.

Premalignant Metaplasias.—We have long insisted that the histopathology of these lesions lying in a full bed of adnexa is such that the best therapeutic approach is their removal by a procedure that does not unduly damage the underlying tissue. After planing, the epidermis is replaced by cells arising from the adnexa. This new epidermis admittedly is not "young," but it is younger than was present previously. It has hereditary influences and age against it, but less of the years of damage by the sun. Senile keratoses seem to depend to a large measure on all three of these factors, and the amelioration of one of them by planing should logically be beneficial.

Senile Keratoses.—Planing is the treatment of choice. The middle-aged patient, prone to keratoses, will look like a patchwork quilt if over a period of twenty years many "crops" have been removed by a technic that produces scarring. If such lesions can be removed by a relatively nonscarring technic, such as planing, it is only reasonable to do so. Small keratoses can be treated as quickly and as easily with a small hand motor holding a fraise as with trichloracetic acid. The discomfort is mild enough so that the use of Novocain or a refrigerant is optional. Such small areas coagulate quickly and no dressing is necessary as a rule.

In southern areas these keratoses are a very frequent and formidable problem. We are not uncommonly faced with a patient with several early prickle-cell malignancies and 2 to 500 small keratoses. The results are spectacular after extensive facial areas have been planed. The new skin is smooth and pink; and as an extra dividend some of the fine wrinkles and some of the telangiectases have disappeared. One may consider planing the early and more advanced moderately thickened keratoses as well, as they fall in the wake of the process, and then following these areas closely to see if more need be done. Usually the area will be found to be smooth and normal after healing. Others can then be treated as indicated. These elderly patients must be planed with care and not too deeply. The epidermis is thin, the keratoses are shallow, and the collagen bed is degenerated. The older patient does not tolerate drugs or surgery as well; there is telangiectasia and he bleeds more freely. Nevertheless, with proper care the results are most gratifying.

The nose is a frequent site for advanced senile keratoses. The area is exceedingly rich in adnexa. Technically it is a problem to plane because of its shape, but the ability of this tissue to recover is remarkable, and the results in our experience have been outstanding. Local anesthetics are useful here as with all small areas.

In the several patients that we have followed from one to six years after extensive face planing for myriads of senile keratoses, occasional solitary keratotic lesions have been slowly making their appearance. It is not a lasting cure, but the gain has been well worth the effort.

The chief problem has proved to be that these aged skins have mottled pigmentation while the new skin is of an even and lighter pigment shade. Hence, the planed areas never really match the unplaned areas from a pigment standpoint. When the entire face is abraded this is not apparent.

XERODERMA PIGMENTOSUM.—From the standpoint of histopathology it appears that planing is the treatment of choice. The results are good, even though temporary. No remedy has been better, and none can be classed as permanent.

SEBORRHEIC KERATOSES.—The histopathology with all of the hyperplasia lying in and above the upper epidermis make seborrheic keratoses very admirably suited for planing. The results may be no better than those the skillful use of the curette can produce but are at least as good. A local anesthetic may be used but is not usually necessary. The areas coagulate quickly and a dressing is usually not required.

FINE WRINKLES.—Fine wrinkles respond readily to planing. Shallow planing is adequate. Much of the work is close to the eyes and mouth. These patients are older, have thin skins and poor collagen beds, and present all of the hazards of the patient with senile keratoses. The job is done for cosmetic reasons only, and if the patients subsequently look worse there is likely to be trouble.

VASCULAR NEVI.—From the standpoint of histopathology only the most superficial vascular nevi can be considered at all as suitable for planing. Furthermore, we believe that other methods, such as thorium X and tattooing of flesh-colored pigment into such areas are preferable.

NEVUS UNIUS LATERIS (KERATOTIC TYPE).—Results in 3 cases of nevus unius lateris have been excellent but temporary.[18] It appears that one can expect 10 to 40 per cent recurrence in one to three years. However, the patients have been grateful for the relief.

ADENOMA SEBACEUM.—Good results have been reported in 3 cases of adenoma sebaceum.[48] Recurrence is to be anticipated.

TATTOOS.—*Traumatic.*—If the foreign particles caused by tattooing are not situated more deeply than the adnexa extend, the result can be good.[49] One may use biopsy to help in deciding or can plane to a reasonable depth in a test area. The face responds much better than other areas. On other areas it is difficult to avoid prolonged use of dressings which promotes infection and subsequent scarring. Powder marks following explosions fall into this category and can respond well to planing.

"Artistic."—In the rare instances in which an amateur with "needle and india ink" has placed the foreign material very superficially or when the "professional" has placed the material very superficially so that most of it lies above the level of the sweat glands, planing may yield a good result.[50] Generally, however, planing is not satisfactory.

PIGMENTATIONS.—In ephilides the pigment lies in the basal cell layer and above, and such lesions are therefore easily removed. Ephilides which are evanescent are not practical for planing. Apparently some are "fixed," and two remarkable results have been reported.[34,51]

For the same reason, lentigines respond readily to planing. The only problem is to be certain that one is not irritating a lentigo maligna.

Chloasma has been successfully removed with superficial planing in several patients. These patients have been followed for a year, and one for eighteen months without relapse observed.[34] We have seen subsequent hyperpigmentation of the border surrounding the planed areas following sun exposure against advice. We do not believe it to be the treatment of choice.

Posttraumatic pigmentations that have persisted for a long time may be planed, but the results are unpredictable thus far in our experience. One patient repigments while the next does not.

Other Disorders.—*Rosacea.*—Rosacea is said to have responded to planing.[1] We have not tried it.

Rhinophyma.—Rhinophyma can be improved considerably by planing.[1] Such an area is rich in adnexa, and planing may prove superior to all other methods.

Multiple Benign Cystic Epitheliomata.—Multiple benign cystic epitheliomata has been planed with good and poor results.[52,53] As with the tattoo, the depth of the process is the determining factor.

Dermatitis Papillaris Capillitii.—Dermatitis papillaris capillitii has been repeatedly planed. There are some good results reported in the literature.[34,54] Our own results have been mediocre, but no other approach has been much better.

Active Chronic Discoid Lupus Erythematosus.—Inasmuch as phenol, freezing, and other destructive therapies have been an accepted approach in the treatment of the local manifestations of this systemic disease, it does not seem unreasonable that planing might give good results. Furthermore, less scarring can be expected from planing than from the older methods of treatment, and if the patient is seen early enough the adnexa may not yet have been destroyed, permitting rapid and scarless healing. Since the disease process may recur at the site, simultaneous antimalarial drug therapy is indicated. Most agree that although there has been some recurrence of activity following planing, the over-all results are good.[34]

Darier's Disease.—Darier's disease recurs rapidly after planing.

Vitiligo.—Vitiligo is variously reported.[55,56] In general, some pigment appears following planing first at the follicular orifices and gradually fans out. Since such results are seen only when dark hairs are present in the depigmented patch, the current postulation is that the epidermis is replaced from these adnexa, which are still capable of forming pigment.

Nevus Pigmentosus.—No dermatologist would deliberately elect this approach, but all of us have planed such lesions inadvertently. When a nevus pigmentosus lesion is planed individually, the wheel seems to gouge and the area heals with moderate scarring. When included in a wide area of deep planing, as on a cheek treated for acne pits, the more superficial nevi are completely absent after healing has taken place. Of course, black nevi, junction nevi, and changing nevi are contraindications.

Atrophic Radiation Scars.—There are no adnexa in atrophic radiation scar areas, and they are a contraindication to planing. However, a low-grade chronic radiation reaction in which numerous keratoses are developing but in which the adnexa are obviously still present makes planing advisable.[57]

Keloids.—Planing is said to be of value combined with local injections of hydrocortisone and hyaluronidase, x-ray, or freezing.[58] This agrees with our limited experiences.

*Complications**

Edema.—Postoperative edema occurs regularly and is to be expected. It has been reported to be unusually severe in a few instances but is easily combatted with cold compresses.

Milia.—Milia occur in about 50 per cent of the patients in two crops. The first appear early, are very superficial, are easily removed by a rough washcloth, and may result from the occlusion of follicular orifices in superficial planing.[34] The second crop appears the third or fourth postoperative week, are denser, may require incision or planing to remove, and represent cut-off tongues of epidermal or adnexal cells which become isolated from the surface and after dedifferentiation form cystic scars.[22] Most workers recommend incision and mechanical expression.

Hyperpigmentation.—Several instances of hyperpigmentation of the abraded areas have been reported developing one to six months postoperatively. One patient carefully avoided the sun for four months and then promptly hyperpigmented on solar exposure. Another planed in her first trimester of pregnancy pigmented heavily in her third trimester. Hyperpigmentation is not uncommon in the blue-eyed individual and may occur with minimal sun exposure. Sun seems to be the main precipitating factor. The pigmentation usually fades after several months but may last a year or more. Most workers try monobenzone (Benoquin) in ointment form and believe that it helps. Too frequently patients are allergic to this product, however.

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* In approximate order of likelihood of occurrence.

PERSISTENT ERYTHEMA.—The erythema which normally follows planing may vanish in three weeks and usually disappears in eight weeks. When it is marked and persistent beyond about eight weeks, it constitutes a problem. In one series this was so in 10 per cent of the cases, and it is postulated that it may be caused by excessive sun exposure, overcleansing, or premature resumption of topical therapy for acne.[59] It is worth while to be cautious about sun, soap, and acne therapy after planing. Excessive freezing may be a factor.

DEPIGMENTATION.—The planed areas normally repigment in from six to twelve weeks. One planing of the chin is recorded in which the pigment did not return for one year.[34] The only failures to repigment, to our knowledge, have been in Negro individuals. Our trial areas in Negro patients repigmented in six to twelve weeks respectively. However, an extensive planing left blotchy areas of hypo- and hyperpigmentation a year later.

INFECTION.—*Bacterial.*—The principle that the "mountain stream gathers no moss" applies to bacterial infection. Infections are very rare in surfaces not dammed up with dressings. While an ointment is of some value after the fourth day, to prevent cracking of heavy crusts and fissuring of the new epidermis forming beneath, we hesitate to prescribe greasy substances alone (always excellent spreaders of bacteria). We therefore straddle the issue by using Neosporin ointment, which is softening without being occlusive and is mildly bacteriostatic. Should infection develop, an oral antibiotic should be prescribed.

Monilial.—We had one patient who after using Neosporin developed minute, superficial, flaccid pustules which proved on microscopic examination and culture to be Candida albicans (moniliasis).

ECZEMATOUS REACTION.—An eczematous reaction phenomenon developing in the planed areas is variously reported to occur at first from ten days to seven weeks after the first planing, but will appear in such a patient from forty-eight to seventy-two hours after a second planing.[59,60] This suggests the probable allergic nature of this change as indicated by the delay of the first episode and the uniform abbreviation of time of development of the second. One case spontaneously developed a recurrence of this phenomenon in the same areas one year later.[61] These conditions respond readily to topical and/or oral corticosteroids.[34]

OTHER REACTIONS.—Shock symptoms following the procedure are uncommon and in all reported instances the symptoms vanished with rest alone. Transient purpuric lesions rarely appear. Postoperative hemorrhage is rare.

KELOID VS. HYPERTROPHIC SCAR.—The problem of the keloid and its differentiation from the hypertrophic scar is an important aspect of surgical planing.

Hypertrophic scars are rare and are apparently the result of absence of cutaneous adnexa in an area at the time of operation, or removal of them by the depth of planing.

The keloid is not to be confused with a hypertrophic scar. A hypertrophic scar occurs in areas where the cutaneous appendages have been destroyed and healing must therefore take place by granulation and epidermal bridging from the margins of the wound.

A keloid is a dense fibrous response of injured skin where the injury does not necessarily destroy the cutaneous adnexa, as in an incision. Keloids, which occur most frequently on the posterior portion of the neck and presternal areas, and rarely on the face, appear to be due to an idiosyncratic diathesis.

Summary

Surgical planing (dermal abrasion) is a surgical procedure for the treatment of scarring due to acne, chickenpox, smallpox, and trauma; multiple senile keratoses (sailor's or farmer's skin); fine wrinkling; and traumatic tattoos.

The planing, which is performed in the office, is preceded by Demerol; then the areas are scrubbed with alcohol; the area to be planed (about 3 inches in diameter) is then sprayed with a freezing agent, dichlorotetrafluoro-ethane (Freon 114, Frigiderm) which renders the skin temporarily rigid and locally anesthetized. The skin is then abraded or planed with a motor-driven, rotating, diamond fraise, the speed of which is controlled by a foot rheostat. The movement of the operator's hand is at right angles to the plane of the brush. The entire face, if so indicated, is usually treated at one session. A nonadherent dressing is applied which the patient removes the next day. A crust forms quickly and then separates in about one week. The initial erythema fades gradually to match the adjacent skin. The average case of moderately severe acne scarring requires two planings. Some require only a single planing, while severe cases may need three or more. The procedure may be repeated any time after four to six weeks. In most cases the results are good to excellent, and nearly all cases where planing is indicated can be helped.

Microscopic studies show that the scarred epidermis and upper dermis are removed by the procedure. The epidermis regrows in about a week from the myriads of pilosebaceous units left behind.

Contraindications are the absence of the pilosebaceous units, as in radiation damage and severe burn scars, and insufficient scarring to warrant the procedure (in the overenthusiastic patient).

Complications include bacterial infection, which is rare and is easily dealt with; milia, which are not uncommon, but are easily removed; relatively persistent erythema (rare); transient hyperpigmentation (the newly regrown epidermis should be protected from the sun); transient depigmentation; and hypertrophic scars (rare and apparently the result of excessively deep planing).

Surgical planing has several advantages over abrasion with sandpaper. For example, with surgical planing hospitalization and a general anesthetic are not required; the small fraise follows intricate facial contours, and there is no danger of silica granulomas.

The refrigerant-anesthetic, dichlorotetrafluoro-ethane, which the presenters have introduced for use in surgical planing, has several distinct advantages over the ethyl chloride which has been widely used for this procedure. In contrast to ethyl chloride, dichlorotetrafluoro-ethane is nontoxic, has no general anesthetic properties, is noninflammable, and is nonexplosive. In short, "it does the work of ethyl chloride without the danger of ethyl chloride."

In conclusion, surgical planing is, in the hands of an experienced operator, a safe and highly effective procedure for treating a number of cutaneous defects, most notably senile keratoses and pitted acne scars, a condition for which, until recently, there was no really effective treatment.

The photography was done by Avis Gregersen, F.B.P.A.

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CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and* WILLIAM B. OBER, M.D.

NOVEMBER 26, 1958

Discussed by GEORGE HYAMS, M.D.

Case History

DR. HENRY H. MURPHY: A fifteen-year-old white boy was brought to the Knickerbocker Hospital emergency room complaining of lethargy, anorexia, frequent headaches, and a 10-pound weight loss. The duration and sequence of this constellation of symptoms was never fixed with absolute certainty, since neither the boy nor his mother was an accurate observer. The patient had apparently been well until approximately three weeks prior to admission, when he developed symptoms suggestive of a generalized viral infection with rhinitis, sore throat, nausea, vomiting, anorexia, fever, and a cough productive of a small amount of yellowish sputum. He was seen by his private physician, was given penicillin, and seemed fully recovered in about one week. On returning to school he was assaulted by several other boys and received a blow over the right temporal region. Since his mother was unable to find any evidence of contusion or laceration, he was again returned to school. Over the next several days he repeatedly complained of headache and became lethargic and anorectic. His mother thought he might have been somewhat febrile as well; she was certain that his cough persisted and was mildly productive. Five days prior to admission the patient had a dental extraction which had been scheduled sometime before. The following day he seemed more ill and he was taken to the emergency room of another hospital for evaluation. The physical examination there gave apparently negative findings. At home the patient grew more and more weak and listless. He took little food or fluids and appeared apathetic. He rarely rose from bed and was noted to stagger somewhat when he did.

The patient had had an episode of pneumonia as a young child but no other serious illnesses. A review of systems uncovered only mild constipation and occasional sinusitis. The family history held no suggestive significance, and the patient had had neither surgery nor previous trauma.

Physical examination revealed a tense, malnourished young male who appeared chronically ill. Although he was fully oriented, his speech was slow and his responses vague. His blood pressure, respiratory rate, and temperature were all normal. The skin turgor was poor. The head was without evidence of trauma. The eyes, ears, nose, and mouth were free of pathology with the exception of a coated tongue and abominable teeth. The neck presented an odd nuchal rigidity which seemed in part voluntary. The neck veins were flat, and there was neither adenopathy nor thyroid enlargement. The lungs were clear to percussion but revealed rhonchi, respiratory wheezes, and coarse rales at both bases. Tactile fremitus appeared equal. The heart rate was regular at 104 and best discerned in the fifth intercostal space. There were no thrills or murmurs, but a loud pericardial friction rub could be heard in the third intercostal space to the left of the sternal border. The abdomen was without organ enlargement or other abnormalities. The extremities were equally unremarkable except for a peculiar stiffness. Neurologic examination demonstrated no loss of sensation or motor power. The cranial nerves were intact, and the tendon reflexes equal and active. Superficial reflexes were negative except for bilateral unsustained ankle clonus.

Shortly after admission the patient's temperature rose to 101 F. The initial work-up was directed toward establishing the presence or absence of meningitis, meningoencephalitis, or a head injury and evaluating what appeared to be an atypical pneumonia. A spinal tap was done and the opening pressure was found to be 400 mm. The fluid was slightly xanthochromic and contained 200 crenated red cells and 22 lymphocytes. No organisms were found, and protein, sugar, and chlorides were within the normal range. A series of skull x-rays were reported free from evidence of bone injury. The right frontal sinus was noted to be clouded. The chest x-ray revealed diffuse patchy infiltration of the middle right and lower left lung fields.

The patient's urine showed a specific gravity of 1.009 with 1 plus albumin and 12 to 20 white blood cells per high-power field. The hemoglobin was 10.2 Gm. with 3.5 million red blood cells. There were 14,600 white blood cells per cubic millimeter with 84 per cent polymorphonuclear leukocytes and 16 per cent lymphocytes. The sedimentation rate was 76 mm. per hour, and the blood sugar 133 mg. per 100 ml. The nonprotein nitrogen and creatinine were elevated to 104 and 3.15 mg. per 100 ml. respectively. A sputum smear revealed moderate numbers of gram-positive cocci and a few gram-negative and gram-positive bacilli. Serial electrocardiograms taken during his hospital stay were normal except for sinus tachycardia.

The morning after admission the patient was found to have a diminished percussion note and breath sounds together with scattered rales and areas of bronchial breathing over the entire left lower lobe. A pleural friction rub could be heard over both right and left posterior lung fields. With these increasing signs the patient's pulse and respiratory rate increased and he became dyspneic. Tetracycline was added to the previously instituted penicillin therapy, and the patient was started on intravenous fluids to correct his rather severe dehydration. Despite these measures the patient's temperature continued to climb and reached 105 F. twenty-four hours after admission. Simultaneously therewith his respiratory rate increased to 56 per minute, and the physical examination demonstrated a fulminating pneumonia involving both lungs.

A nontender cystic mass 3 by 3 cm. appeared over the right frontal bone and was incised on the third hospital day. Exploration to the underlying skull revealed the bone to be smooth and intact. Approximately 30 cc. of foul-smelling yellowish fluid was removed from the cavity and found to contain precisely those organisms previously described in the patient's sputum. Culture of both sputum and abscess grew out hemolytic Staphylococcus aureus sensitive to tetracycline and Chloromycetin but not to penicillin. Six blood cultures taken prior to this finding were all negative. A repeat x-ray of the chest was reported to demonstrate extension of the infiltrative process previously described without evidence of abscess formation. The patient's course continued hectic. Although his hydration was greatly improved with fluids administered parenterally and he became more responsive and able to take nourishment by mouth, the patient's vast pneumonia appeared unchecked, and he continued dyspneic and tachypneic and spiked daily temperatures to 104 F. On the fourth hospital day the patient's hemoglobin was 8.4 Gm. with 2.70 million red blood cells and a persistent leukocytosis. His nonprotein nitrogen had risen to 118 mg. per 100 ml. and his creatinine to 3.3 mg. The total cholesterol was 71 mg. per 100 ml., and the total protein was 5.6 Gm. with 2 Gm. of albumin and 3.6 Gm. of globulin. Electrolyte study demonstrated a sodium of 129, potassium of 3.6, carbon dioxide of 19.5, and chloride of 96 mEq. per liter.

The following day the patient's nuchal rigidity and ankle clonus disappeared. Although still febrile, he appeared more alert and better hydrated. The urinary output was good. No improvement was apparent, however, on examination of the lungs, and the patient was started on Chloromycetin in addition to his previous antibiotic regimen. His hemoglobin had dropped to 6.6 Gm. with a hematocrit of 22 per cent, and 500 cc. of whole blood were transfused. Repeated blood chemistries on the sixth hospital day confirmed the previous abnormal cholesterol, with the finding of a total value of 63.5 mg. per 100 ml. of which only 17 per cent was esterified. The total protein was unchanged as were chloride and carbon dioxide determinations. The nonprotein nitrogen and creatinine, however, had kept pace with an increased urinary output and dropped to 68 and 2.5 mg. per 100 ml. respectively.

On the following morning the patient's temperature was 103 F. Without any change in his previous physical finding he suddenly grew severely dyspneic and cyanotic, began to perspire, lapsed into shock and coma, and expired.

Discussion

Dr. George Hyams: The story in this protocol is one essentially of a solitary illness. We find that the patient was well throughout his life, there being no evidence of long-term illness or symptom complexes preceding the three weeks prior to admission. At that time he had an upper respiratory infection, not well documented, which was treated with penicillin, after which the patient felt better. This was followed by a return to school and an event which either was of considerable importance or may prove to be entirely misleading, the blow received at school in the right temporal region. This suggests the possibility of concussion, or fracture, or possibly a subdural hematoma. The mother noted no abnormalities or break in the skin of the scalp. We do not know whether there was an unconscious interlude. We have x-rays of the skull which were taken at this institution and we shall come to those presently; suffice it to say that no fracture is noted.

The patient was possibly febrile and complained of headache and nausea during the days following the school incident. At this point another event, the importance of which must be decided, occurred: the patient had a tooth pulled. I should like to ask whether Dr. Murphy knows which tooth it was; was it on the upper right side?

Dr. Murphy: Neither of these points is noted in the patient's hospital chart. It was certainly an upper tooth.

Dr. Hyams: Following the extraction he was quite ill, enough so to go to the emergency room of another hospital. From there he was sent home. His condition worsened and he was finally admitted to this hospital. On admission there were a number of positive findings: he had neurologic, pleural, pericardial, and pulmonary signs. His extremities were stiff. At this point medical staff thinking was related to the patient's central nervous system, and a spinal tap showed a pressure of 400 mm., slight xanthochromia, 200 crenated red cells, and some lymphocytes. The chemical values were normal. From here on the patient went on to a fulminating pneumonia and a septic course, developing a subcu-

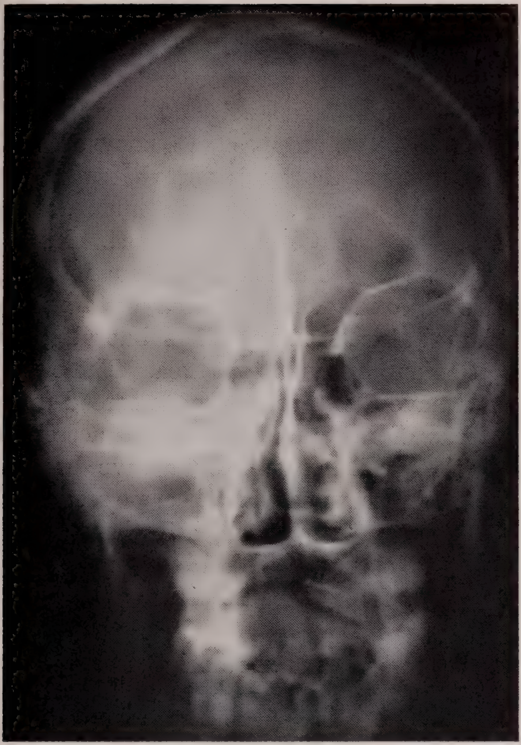

FIG. 1. Skull x-ray film showing clouding of the right frontal and ethmoid sinuses.

taneous abscess over an area of the right parietotemporal region which contained staphylococci similar to those which previously had been cultured from his sputum.

This is a perplexing problem, not because the diagnosis is impossible but because there are so many questionable features in this case. I have had an opportunity to study the films of the skull and chest, and I think that at this time I would like Dr. Moynahan to review these films for us. I would like to ask him to comment particularly on the involvement not just of the frontal sinuses but also of the ethmoid sinus on the right in both views and whether he feels there is bone destruction or at least bone involvement. Also in the chest films I would like to know whether he feels that in some of the areas there might not be evidence of early abscess formation.

DR. JOSEPH MOYNAHAN: Routine films of the skull reveal the bones of the vault to be intact. There is no evidence of fracture. The pineal is not calcified and there is no radiographic evidence of increased intracranial pressure. There is no clouding of the right frontal and right ethmoidal sinuses without definite evidence of bone destruction. Findings are compatible with sinusitis. There is a soft tissue swelling noted over the right vault without evidence of underlying bone involvement (Fig. 1).

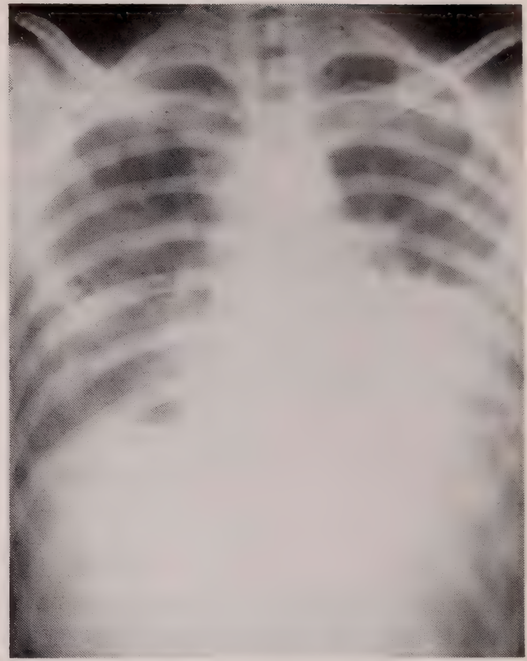

FIG. 2. Chest films showing patchy infiltrative processes in both lungs.

Examination of the chest in posteroanterior and lateral projections reveals irregular, ill-defined densities throughout the right midlung field and to a greater extent throughout the lower left lobe. The heart is not unusual. Findings are compatible with extensive bilateral bronchopneumonia.

Re-examination of the chest in posteroanterior and lateral projections made two days following the prior study reveal a moderate increase in the previously described densities, especially in the lower left lobe. Nothing is seen to suggest cavitation, and no fluid levels are apparent (Fig. 2).

DR. HYAMS: Let me begin now by saying that the importance in this case seems to me to be one not so much of a differential diagnosis as a matter of sequence of events. The possibility of a rheumatic carditis with rheumatic pneumonia and a generalized symptom complex may be entertained. However, the lack of evidence of prior cardiac disease, absence of electrocardiographic findings, the presenting neurologic picture, and the eventual discovery of staphylococci militate against this. The possibility of a collagen disease is considered and eliminated for the same reason.

Endocarditis as a nidus of the infection is to be considered. There is an absence of murmurs, and there is no evidence of previous rheumatic or congenital heart disease. It has been noted, and it was emphasized at a recent conference here, that rheumatic heart lesions and valve involvement may be present without murmurs. The absence of positive blood cultures would fit this pattern well. My reason for seeking another diagnosis therefore lies in the protocol; the entire trend and emphasis lies in the opposite direction. In this case there is one thing that I will not be able to explain in making the diagnosis, and that is the negative blood cultures. I believe that this patient had a disseminated staphylococcal infection, and now the problem we are faced with is trying to bring order and sequence to this fatal illness.

First, one must decide of what importance the initial respiratory infection was. There are no data on which to base any conclusion. It is further possible that the blow on the head did create a subdural hematoma. We will come to that in a few moments. I choose to think that the extraction of the tooth is significant, and that is why I am so interested in just which tooth it was. If it was a right upper one, it can be reasoned that ethmoid sinusitis may have simulated a dental problem. When this tooth was pulled, it is possible that bacteremia occurred; we know that this is a danger in people with rheumatic heart disease. This may have further aggravated an already infected sinus, either by contiguous extension or hematogenous spread. We seek a nidus of infection. In staphylococcal septicemia no organ need be spared, and here we certainly have two areas that we know contain the organism, the lungs and the small abscess in the scalp. Now we must decide which of three events occurred. Either there was penetration from an infected sinus into the epidural area creating an epidural abscess or into the subdural space causing an abscess of that area. There also could have been hematogenous spread from a focus of infection with an intracerebral abscess. Third, there could have been a subdural hematoma which became secondarily infected and from which further seeding may have occurred. We are presented with a difficult choice because of the spinal fluid findings.

There was slight xanthochromia and 200 red cells but no change in the chemical values. The spinal fluid findings, as has been pointed out, are protean in any of these types of intracranial involvement. With a subdural lesion, one is more likely to have pleocytosis and elevated protein. Also, one should have a more specific neurologic picture which would be less changeable. In epidural lesions the infected material separates the dura from the cranium and forms a pressure point which may spread out over a very large area. As a consequence this may present a less specific, less localized picture. It can still create some increase in cerebrospinal fluid pressure. We would not expect an increased cellularity or increased protein, which are more likely in subdural involvement.

As far as bone penetration from the sinuses is concerned, usually the most frequent sources of infection are mastoiditis or otitis. This happens about four times as frequently as with the paranasal sinuses. If the sinuses are the portal of entry, the frontal sinuses are the most frequent site followed by the sphenoid and ethmoid sinuses. The latter is rare. I therefore must balance blood cell findings in the cerebrospinal fluid against the lack of elevation of protein, the nonspecific, changing, and relatively mild neurologic pattern, the questionable neck rigidity, and the neurologic improvement that occurred several days after admission. I must attribute the xanthochromic fluid and red cells to slight bleeding caused by pressure of an epidural abscess on the small vessels of the surface of the brain and the dura. I will add that I am not entirely happy with this explanation.

We then find that the patient had pleuropericarditis and fulminating pneumonia, probably with abscesses forming in the lungs. This brings us to the problem of explaining hematogenous spread in the face of six negative blood cultures. One would expect to have at least one positive culture. However, if I were to ignore one piece of laboratory data, this would be it.

I assume that there was some kidney involvement. I further assume that the pericardium was involved and very probably the myocardium. The patient had a continuous fall in blood count and persistent leukocytosis. I attribute his anemia to the severe fulminating infectious process.

I would like also to comment on the use of antibiotics. We have too profound a faith in sensitivity studies. The fact that the laboratory is able to tell us that an organism is sensitive in vitro does not mean that it will respond in vivo. Perhaps these organisms do respond, but when they are in an inaccessible area, such as an enclosed sinus space or abscess, the bacteria are untouched by the antibiotics or at least reached only in low concentration. This may be enough to yield mutants which are resistant.

My diagnoses are: (1) staphylococcal septicemia with a focus of infection in the right frontal and ethmoid sinuses, penetrating to cause epidural abscess, (2) bilateral staphylococcal pneumonia with probable abscess formation, (3) pericarditis, and (4) renal involvement with renal abscesses. I leave the door open for the possibility of a subdural hematoma. I will not include this in the diagnosis.

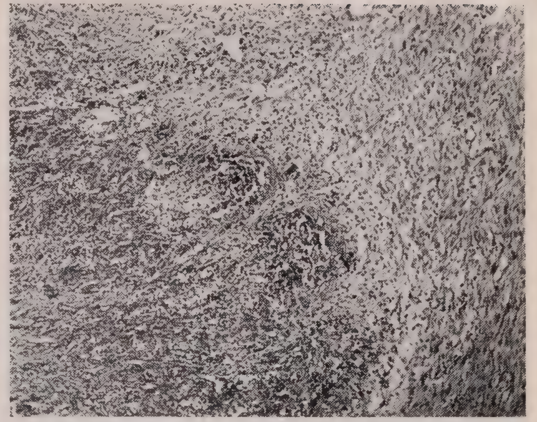

Fig. 3. Inflamed granulation tissue with newly formed collagen from the dural side of the epidural abscess.

Diagnoses

Clinical.—*(1) Staphylococcal pneumonia, multilobar, with abscess formation, (2) secondary staphylococcal abscess, right fronto-parietal region.*

Dr. Hyams.—*(1) Staphylococcal septicemia, secondary to staphylococcal frontal or ethmoid sinusitis with epidural abscess, (2) staphylococcal pneumonia, bilateral, with probable abscess formation, (3) pericarditis, (4) embolic renal abscess.*

Anatomic.—*(1) Acute suppurative ethmoid sinusitis (Staphylococcus aureus), (2) epidural abscess, right fronto-parietal area, (3) staphylococcal pneumonia with abscess formation, septic emboli, and hemorrhagic infarction.*

Pathologic Report

Dr. William B. Ober: At autopsy there was an abscess containing about 30 cc. of creamy pus at the right frontal pole in the epidural space. It had been present for some time, probably about two weeks, and its wall was composed of well-formed, somewhat collagenized granulation tissue (Fig. 3). Presumably this abscess was secondary to an acute suppurative ethmoid sinusitis on the right side, for the bone overlying the ethmoid cells gave way easily. Hemolytic Staphylococcus aureus was cultured from both the

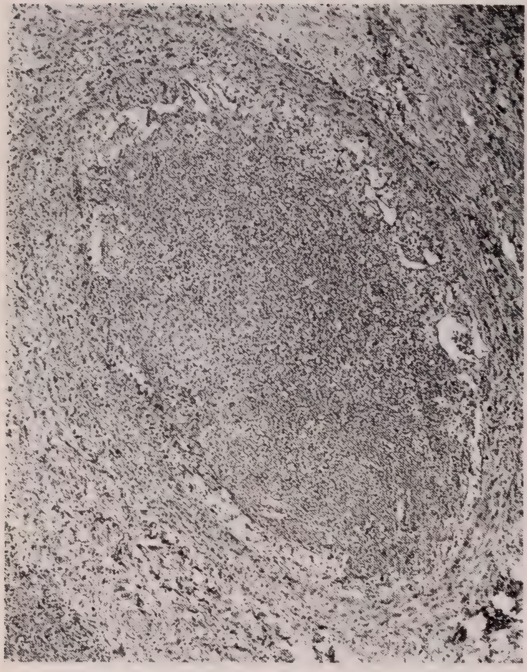
FIG. 4. Septic embolus in a medium-sized pulmonary artery with marginal organization.

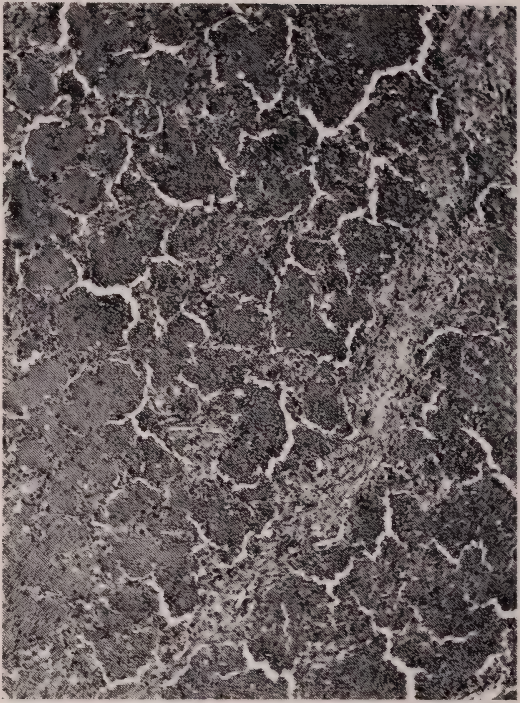
FIG. 6. An area of early hemorrhagic infarction of the lung.

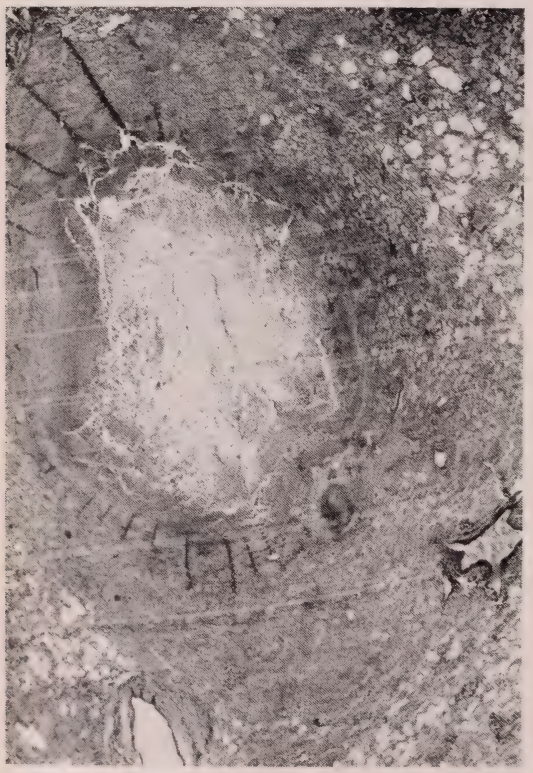
FIG. 5. A well-developed pulmonary abscess with a liquefied center and a stratified wall.

epidural abscess and the right ethmoid sinus. There were bilateral pleural effusions of 1,500 cc., and both lungs showed patchy consolidation with occasional small abscesses. Microscopic examination of the lungs showed a range of phenomena secondary to septic embolization (Fig. 4). Some of the abscesses were well developed with liquid centers and lamellated walls (Fig. 5). In other areas there was merely a pneumonic process with patchy necrosis of alveolar walls. There also were areas of fairly recent and fresh hemorrhagic infarction (Fig. 6). There was no pericarditis nor were there any renal abscesses; the myocardium was not involved. Presumably the drainage from the epidural abscess was entirely confined to the lungs and had not yet spread by way of the peripheral circulation except for the small subcutaneous abscess in the scalp, which, by the time of autopsy, was in a healing phase.

The areas of hemorrhagic infarction are similar to those produced by Jackson *et al.*[1]

in rabbit lung following endotracheal instillation of staphylococcal toxin. Apparently the initial response of pulmonary parenchyma to staphylococci is in the nature of a vascular disturbance, with hyperemia, functional ischemia, and necrosis following in short order. Exudation of fibrin and leukocytes develops a bit later, and liquefaction with abscess formation is the end stage. However, there are important differences between the injection of bacteria-free endotoxins into animals and clinical infections. In this case, for example, one can infer sequential, episodic seeding of the lung from the focus in the epidural space by both bacteria and their toxins. This furnishes us with an opportunity to observe the effects of staphylococci in varying stages in one organ. The early hemorrhagic infarcts of staphylococcal infection are entirely similar anatomically to those produced by pulmonary thromboembolic disease. However, in the latter instance infarction need not occur if the parenchyma has normal hemodynamics at the time of occlusion, whereas the bacterial endotoxins exert their pernicious effect regardless of the antecedent status of the pulmonary parenchyma.

Dr. Michael S. Bruno: A plausible explanation for some of the complexities of this morning's case can be found in some recently published experimental data. I refer specifically to the persistent negative blood cultures in the presence of obvious systemic spread of disease from an obscure primary focus. Study of the blood-stream clearance of staphylococci and the fate of virulent and avirulent strains of these organisms when injected into a variety of laboratory animals is enlightening.[2,3] Following intravenous injection of staphylococci into mice some of the organisms are quickly incorporated within circulating leukocytes while others circulate freely. The invaded leukocytes may lodge in distant viscera and set up metastatic foci of infection. Lung and kidney tissue are favored as a substrate for such embolic infection.[3]

Twenty minutes after the intravenous administration of a measured dose of staphylococci in rabbits there is a one-thousandfold reduction in this circulating antimicrobial population.[2] A low-grade bacteremia persists for a longer period of time. It is hypothesized that splanchnic trapping by the reticuloendothelial system accounts for the initial precipitous removal of these organisms from the blood stream and that saturation of this important sequestering mechanism results in a persistence of low-grade septicemia for a longer period. Obviously then an important factor to be considered to explain the persistence of septicemia in a given instance is the degree of initial infection. If a patient's initial blood-stream invasion is not sufficient to saturate the reticuloendothelial system of the splanchnic bed, all free staphylococci will be quickly removed by this mechanism. The remaining staphylococci in their protected intracellular position are spared and may disseminate into distant parenchymal foci. Here they may either be destroyed or establish local foci of disease.

This morning's case probably represents such an instance. The initial bacterial invasion probably did not overwhelm the forces of the splanchnic reticuloendothelial system, and therefore all free staphylococci were removed from the blood stream. Those organisms which penetrated into leukocytes were spared, disseminated, and set up foci of infection in various organs. The blood stream was thereby cleared of infection, and blood cultures therefore were negative. However, some of the distantly deposited staphylococci were able to survive and actually multiply, establishing foci of infection which eventually caused the patient's demise.

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CLINICAL ANESTHESIA CONFERENCE

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Cardiovascular Collapse Following Movement of an Anesthetized Patient

BECAUSE anesthesia depresses certain functions of the autonomic nervous system, a number of compensatory reflexes that are active in the unanesthetized state, such as circulatory changes incident to positional changes, may be obtunded during anesthesia. When such circulatory deficiency is produced in an individual whose cardiovascular status is already deficient, as in a patient with myocardial insufficiency, the result may be as harmful as it was in the following case:

Case Report

A sixty-nine-year-old woman was admitted to the hospital for an abdominoperineal resection of the rectum. This was her sixth hospital admission. Ten months previously she had undergone an anterior sigmoid resection for carcinoma of the sigmoid colon. Since then she developed diarrhea, and it was believed that she had a stricture at the site of anastomosis. On previous admissions she had undergone a cholecystectomy, a common duct exploration, and an appendectomy. All her previous anesthetic, operative, and postoperative courses had been uneventful.

She was treated with antibiotics, and she was evaluated over a thirteen-day period prior to surgery. Her electrocardiogram a day before surgery was essentially the same as previous electrocardiograms and demonstrated auricular premature contractions. The preoperative roentgenogram of the chest was unremarkable. Her hematocrit was 46.

On the day of operation she was given 50 mg. of Demerol intramuscularly prior to insertion of bilateral ureteral catheters. Two hours later she was given 100 mg. of sodium amytal and 0.4 mg.

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of atropine sulfate intramuscularly. On arrival in the anesthesia room she was comfortable and cooperative and moved from the stretcher to the operating table without assistance. Her preanesthetic arterial blood pressure was 140 mm. systolic and 100 diastolic, pulse rate 80 per minute and regular, and respirations 20 per minute. Induction of anesthesia was smooth and uneventful, with 75 mg. of sodium thiopental intravenously and cyclopropane-oxygen by mask. There was no difficulty with secretions. A number 36 cuffed endotracheal tube was inserted under direct vision with ease, and the cuff was inflated. The patient's blood pressure and pulse at this time were unchanged from the control levels. There was some bucking on the endotracheal tube. Following this the shawl region was noted to be cyanotic. She was placed in lithotomy position for antiseptic preparation of the abdominal and perineal skin areas. This had no ill effect on vital signs.

When the skin incision was made, the superficial blood was cyanotic. After the peritoneum was opened, traction of the pelvic organs resulted in a fall in blood pressure, from 170/110 to 100/60, but the pressure rose to 150/100 in about twenty minutes following release of traction and was well maintained at about this level for the next forty minutes of surgery. During this time the patient was in the Trendelenberg position 10 degrees, and in spite of shoulder braces she gradually slipped toward the head of the table away from the surgeon, who then pulled her back toward the foot of the table. Shortly after this the anesthetist was unable to obtain her blood pressure. There was a good carotid pulse. The patient was somewhat pale but her skin was not cyanotic. It was thought that the blood pressure cuff had slipped while the patient was moved. The cuff was checked and seemed to be in good position, but the blood pressure was still unobtainable although the carotid pulse was strong. The patient had received 1,000 cc. of whole blood at this point and a third unit had been started. The surgeon noted decreased bleeding and inquired about the patient's blood pressure. He was told it was unobtainable. Surgery was stopped temporarily. The lapse of time from initial failure to obtain the blood pressure to cessation of surgery was about three or four minutes. Carotid and aortic pulse rates were 100 per minute, but no pulse could be palpated in either arm. The patient was pale. Her pupils were small and reacting to light. She was breathing spontaneously at a rate of 15 per minute. It was felt that blood loss with hypovolemia was the cause of the hypotension. Another 1,000 cc. of blood were administered rapidly without return of blood pressure although the skin color improved somewhat. Thereafter blood was pumped continuously, and the surgeons attempted to complete the procedure as quickly as possible. The carotid pulse was palpated constantly. The anesthetic agent had been discontinued and removed from the patient. Her spontaneous respirations were assisted and oxygen was being administered. The carotid pulse was felt to cease suddenly. The surgeons were notified immediately and thoracotomy was performed quickly. The heart was seen to be in standstill. Following manual cardiac contractions a very slow regular rhythm was seen to return but no aortic or carotid pulses could be felt. Manual cardiac massage was continued with return of carotid and aortic pulsations. At no time had the patient ceased breathing. Her pupils were small and reacting to light, and she moved her head slightly. She continued to bleed in the pelvis, and blood was pumped continuously intravenously. The electroencephalogram showed an analgesic pattern. The electrocardiogram showed a nodal rhythm, but the contractile force of the myocardium remained ineffectual without manual cardiac massage.

Calcium chloride 1 Gm. and Isuprel 100 mg. were injected directly into one of the ventricles, and shortly after this the force of contraction strengthened and carotid pulsations were palpable without cardiac massage. The patient continued to breathe spontaneously; her respiratory efforts were assisted to maintain an adequate tidal volume. Her pupils remained small and her facial color was much improved with good capillary refill. Her blood pressure could be obtained for one beat at 60 mm. Hg. After thirty minutes the myocardial contractility failed again and manual cardiac massage was restarted. She was again given 100 mg. of Isuprel intracardiacly and 1 Gm. of calcium chloride intravenously, but this time the myocardium did not respond. However, she was still making respiratory efforts. The electrocardiogram showed ventricular fibrillation for a while and then the waves became flat, with no evidence of electrical activity. The heart filled poorly. Spontaneous respiratory activity ceased. An artificial cardiac pacemaker produced no effect. The pupils dilated. The patient was pronounced dead. During resuscitative efforts no adjustment of the endotracheal tube was ever deemed necessary.

The total amount of blood administered was 16 pints. The time which elapsed from unobtainable blood pressure to cardiac arrest was forty-five minutes. The time from cardiac arrest to death was two hours and forty-one minutes.

At autopsy arteriosclerotic cardiovascular disease was evident. The intima of all the coronary arteries contained numerous gritty yellow plaques that focally narrowed the lumens to pinpoint openings. The aorta and its main branches contained many gritty yellow plaques, which were most numerous in the abdominal aorta. The right renal artery showed two calcified thin saccular aneurysms 1 cm. in diameter. The cortical surface of the kidneys showed multiple pitted irregular scars measuring up to 2 cm. Microscopically there was a large fibrocalcified mass at the base of the mitral valve. The myocardium showed a few small areas of replacement fibrosis. The intima of many of the small coronary arteries showed fibrocellular thickening. There were large interstitial hemorrhages in one section of the myocardium.

Comment

The above case concerns a poor-risk patient whose status was due to coronary artery disease and silent myocardial infarction, which possibly had occurred in the week preceding surgery. Such a patient's cardiovascular system may not, and this one's could not, adjust itself to numerous surgical stresses, in this instance comprising a traumatic and lengthy surgical intervention and anesthesia complicated by traction reflexes and a jolting movement. Possibly the warning sign in this patient was the cyanosis following endotracheal intubation which failed to clear despite a free airway. The patient's arterial blood pressure fell early in the procedure with traction of pelvic viscera; it then rose. Soon after, however, following a sudden jerking movement of the patient the blood pressure became unobtainable. Cyanosis and unobtainable blood pressure persisted until the heart itself was observed to stop. The error in the management of this case lay in the failure to interpret these happenings as signs of impending disaster.

This case illustrates how careful and delicate the management of such a case should be. Depth of anesthesia is important. It was implied several times in the reporting of this case that this patient was kept in a relatively light plane of anesthesia, as evidenced by maintenance of spontaneous respirations and constricted pupils. Certainly increased depth of anesthesia would have been detrimental to such a diseased myocardium. However, when significant arterial hypotension was produced as a result of active intra-abdominal and pelvic traction reflexes, the circulatory deficiency should have been corrected at once. It would have been well to cease the surgical manipulations causing this hypotensive reflex and then to commence again in a more gentle manner. If reflex hypotension recurred, it might have been helpful to instill a local anesthetic solution in the area of manipulation. If these maneuvers were impossible or ineffectual, one might then have considered deepening the plane of anesthesia rather than persisting at so light a plane when reflex activity was high. In so doing, it would have been important to adequately assist the patient's respiratory drive so as to maintain adequate pulmonary and tissue respiration; or, it might have been advisable to maintain a light plane of anesthesia and to furnish adequate muscular relaxation as well as to depress traction reflex activity by means of a muscle relaxant. In such a case it is well to remember that the curare type of muscle relaxants is preferable since these not only produce muscular relaxation but also tend to depress autonomic reflexes, whereas succinyl-choline produces muscular relaxation without depressing autonomic reflexes.[1] In certain instances other types of pharmacologic therapy may be indicated, depending on changes that may be observed on the patient's electrocardiogram.[2] In reflex arterial hypotension due to vagal stimulation, the electrocardiogram often shows sinus bradycardia, nodal rhythm, or prolongation of the P-R interval. In such cases good therapeutic results have been observed following the intravenous administration of atropine. On the other hand, if the reflex is associated with sympathetic stimulation, the electrocardiogram may show a decrease in the duration of the P-R interval or the development of ventricular premature contractions. In such cases good results have been obtained following the intravenous administration of physostigmine. In cases without electrocardiographic alteration one may consider the cautious administration of one of the lesser toxic vasoconstrictors, such as ephedrine or Neo-Synephrine, in small quantities while the electrocardiogram is watched continuously for signs of cardiac hyperirritability, such as ventricular premature contractions or ventricular tachycardia.

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(*Number seventy-two in a series of Clinical Anesthesia Conferences*)

Food Allergy May Cause Urinary Symptoms

Food allergy may be the cause of persistent or recurring urinary symptoms when there is little or no disease in the urinary tract, three Chicago area physicians have noted.

Urinary tract allergy has been a recognized condition for nearly forty years, but it is rarely reported and the diagnosis is often missed, they said in the July 11 *Journal of the American Medical Association.* Frequently the condition may be misdiagnosed as cystitis (inflammation of the bladder), misplaced uterus, or pelvic inflammatory disease. Treatment of such conditions often gives partial relief, but the bladder symptoms usually continue.

The doctors believe that the possibility of allergy should be kept in mind in all obscure cases of cystitis, especially in persons who are otherwise allergic. They reported one case of a woman who had exhibited urinary tract symptoms for ten years. She also had a history of allergy. Skin tests indicated that she was sensitive to cabbage, peanuts, soybeans, and filberts. When avoiding these foods, her urinary symptoms disappeared. When she added them to her diet, the symptoms recurred.

The authors are Drs. Donald L. and Leon Unger, Chicago, and Francis Kubik, Michigan City, Indiana.

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Poisonings with Alarming Symptoms

The following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Methyl Alcohol	Various	Both

At 5:00 P.M. on Sunday, March 8, 1959, the New York City Poison Control Center received a call from a panicky physician at the Military Hospital in Monterey, Mexico, who anxiously sought an antidote in the treatment of a large group of patients involved in a mass methyl alcohol poisoning. This incident occurred through the theft of synthetic methyl alcohol from a damaged railroad car. Our latest information shows that 31 were reported to be dead and an additional number partially blind and severely ill. Information on current mode of therapy, such as the administration of fluids, bicarbonate, sodium lactate, and ethyl alcohol, were related to the physician.

Since the Center knew that a current study on the mechanism of methyl alcohol poisoning and metabolic products is being carried on by Dr. Jack Cooper of the Department of Pharmacology at Yale Medical School, he was contacted for special advice and guidance. Dr. Cooper suggested hypertonic glucose solution as of some value.

Incidentally, Dr. Cooper would appreciate any urinary samples of patients suffering from methyl alcohol poisoning within the first day or two of ingestion. These should be preserved with toluene or chloroform.

Within the last year two additional outbreaks were reported to this Center. One involved 27 deaths and a like number of nonfatal cases. This incident arose through the theft and diversion of synthetic methyl alcohol into bootleg liquor by some plant employes. The third outbreak (Westchester) resulted in a number of deaths and involved the ingestion of denatured alcohol by the inmates of an old men's home. The alcohol was presumably purchased in a paint store.

Even though methyl alcohol poisonings have been happening for a long time and numerous toxicologic studies on the product have been carried out, the exact mechanism of its action, the nature of its metabolic by-products, and effective therapy is still unknown. The prognosis for patients with severe methyl alcohol poisonings is grave, and unfortunately an antidote is not at hand at present. The fact that synthetic methyl alcohol cannot be readily distinguished from ethyl alcohol by odor, especially by a "thirsty" layman, is not generally appreciated. It is believed that the present labeling of tank cars and tank trucks to indicate the nature of the contents is defective. An international incident of the type described in this report (presumably a United States tank car was the source) is a strong argument for the acceptance of international warning symbols, such as have been advocated by the World Health Organization.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Barium Chloride	72 years	Male

The high insolubility of barium sulfate makes it nontoxic. Soluble barium however is a poison. The mistaken administration of the wrong barium salt occurs occasionally. The assistance of this Center was requested early this year in an interesting case of barium chloride poisoning. The attending physician reports as follows:

The patient was a seventy-two-year-old, married, white retired male who was undergoing diagnostic examinations for the presence of diverticula. The patient accidentally received a teaspoonful of the barium chloride in a half glass of water, instead of the barium sulfate, at about 10:30 A.M. Shortly thereafter he felt a peculiar sensation in his stomach, and a persistent diarrhea followed within several hours. This was accompanied by recurrent vomiting. Five hours following ingestion the physician was notified that the patient complained of weakness in his legs, and the physician prescribed 1 ounce of magnesium sulfate. The patient vomited fifteen minutes after ingestion. Although ambulatory at this time, the patient was becoming progressively weaker and he was hospitalized very shortly thereafter. On admission to the hospital the patient appeared pale and was nauseated. His pulse rate was 80 and regular, and his temperature and respirations were normal. The stools were urine-like in consistency with a moderate flocculant sediment. The reflexes were normal except that the knee and ankle jerks were diminished. Muscle strength of the extremities was normal. The remainder of the physical examination findings were normal.

The laboratory findings were as follows:

Blood Chemistry	*February 2*	*February 3*	*February 4*
Blood urea nitrogen (mg. per 100 ml.)	—	20.2	15.2
Sodium (mEq. per liter)	155	143.4	—
Potassium (mEq. per liter)	3.14	2.38	4.96
Chlorides (mg. per 100 ml.)	590	623.8	584.9
Calcium (mEq. per liter)	15.25	13.15	—
Carbon dioxide (volume per cent)	47	50	—
Phosphorus (mM per liter)	—	1.9	—

Nausea and vomiting continued intermittently for three hours following admission. The diarrhea, however, was subsiding. An infusion of 500 cc. of 5 per cent dextrose in water was given intravenously. The blood pressure at the time of infusion was 134/54 and pulse 76. Infusion was started at 6:00 P.M. and lasted until midnight. Shortly after the infusion was started the patient felt fairly well although somewhat tired. After the infusion was completed the patient claimed that he was unable to use his arms. He became cold and clammy, and his pulse rate was 80. Flexion of the left elbow and extension of the right elbow were extremely weak, and the patient was unable to lift his arms up off the bed. Sodium sulfate 20 Gm. via Levin tube were administered. This medication was retained. The rationale of administering Epsom salt obviously is to convert soluble barium chloride to insoluble barium sulfate.

During the night the patient appeared alert and without particular distress except for extreme weakness in both arms. However, he could move his legs in bed without difficulty. Since admission the patient voided only 4 ounces of urine. Administration of 1,000 cc. of 5 per cent dextrose in water was therefore begun. Several hours later, at the completion of the infusion, the patient appeared flushed and could flex his left elbow slightly but he was still unable to lift his arms off the bed. At 9:00 A.M. on the day following admission there was little change except that bicep and tricep reflexes were now barely perceptible and ankle jerks in both extremities were absent. The blood pressure was 144/62, and the pulse rate was 80. Two hours later the patient was able to extend his left elbow with little difficulty, and nine hours thereafter he was able to lift both arms off the bed. The next morning the patient had no complaints except for occasional hiccoughs, which after eating promptly subsided. The hand grip, elbow motion, and movement of all extremities were normal. The patient was able to stand up and rise on his toes. Bicep and tricep reflexes were improved but the left ankle jerk was still barely perceptible. Partially loose bowel movements occurred during this period. The next day the patient experienced constipation, but four days later a mild diarrhea or brown watery fluid returned.

The physician reports that during hospitalization no abnormal cardiac findings were noted clinically although the electrocardiogram showed transient S-T depressions which returned to normal in several days. The significant laboratory findings were an initial oliguria with slight albumin and a rare cast, a slightly elevated blood urea nitrogen, a substantial drop in potassium, and a normal blood count.

The physician reports that the outstanding features of this case were "the mental clarity and alertness of the individual and his complete freedom from symptoms except for nausea, vomiting, and diarrhea and little weakness." He continues: "The abruptness of onset and rate of paralysis was striking. It may be noticed that although his legs were weak within four and one-half hours there was a latent period of over eight hours, before paralysis of the arms began, during which no symptoms were present. This was dramatic and frightening, but no evidence of respiratory involvement was present at any time. The patient was most cooperative and was aware that he had taken barium chloride."

The attending physician deserves a good deal of credit for making his experience available to others by his comprehensive and detailed report.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Tranquilizer-Antiemetic	7 years	Female

Dr. Donald Gribetz, the Poison Control Officer of Mount Sinai Hospital reports a case of prochlorperazine poisoning:

"This seven-year-old child had a moderately severe case of chicken pox. Because of increasing restlessness and irritability which were unresponsive to aspirin and elixir of Pyribenzamine, her mother gave her a 15-mg. capsule (delayed action) of prochlorperazine on the third night of her disease. The drug had been prescribed for nausea and vomiting during the mother's recent pregnancy. She had several capsules remaining and thought it would be effective to allay the child's symptoms. On the third afternoon (at approximately 3:00 P.M.) the mother administered two more 15-mg. capsules of the same drug within one hour. That night the child slept soundly, but at noon on the fourth day (about twenty-one hours after administration of the drug) she began to have a series of muscle spasms or 'seizures.'

"The child was brought to the pediatrician's office, where intermittent spasms involving the jaw, neck, left upper extremity, and left lower extremity were observed. Her mouth went into spasm so that she could not open it. Her head turned to the left due to the neck spasm so that she could not voluntarily return it to the midline. Her left upper extremity became rigid, resembling typical carpal spasm. Similar rigidity involved the left leg. These spasms recurred every ten to fifteen minutes at first and then every twenty to thirty minutes, lasting a total duration of approximately six to seven hours. At no time did the child lose consciousness; she could talk during the spasms and explain her extreme apprehension at not being able to control the various muscles.

"Because of the repetition of the episodes and in order to rule out chicken pox encephalitis, the child was admitted to Mount Sinai Hospital. A spinal tap result was negative. According to the suggestion of a colleague, Dr. Richard Goldsmith of Somerville, New Jersey, who had had experience with several children severely depressed after prochlorperazine ingestion, caffeine sodium benzoate was administered intravenously (500 mg.). One-half hour after administration of the drug the seizures ceased entirely, and the child was discharged in twenty-four hours."

In the March 15, 1959, issue of the New York State Journal of Medicine and in previous issues, we reported several instances of prochlorperazine intoxication in which severe neurologic manifestations were present.

Incident 4

Toxic Agent	*Age*	*Sex*
Tranquilizer-Antiemetic, Sedative-Anticonvulsant	3 years	Female

Another case involving prochlorperazine was recently reported from New Jersey. This concerned a three-year-old Japanese child who presumably was in coma because of an overdose of prochlorperazine solution ingestion. Although this tranquilizer might cause drowsiness, the coma seemed a little surprising to the Poison Control Center because the outstanding characteristic in overdoses of prochlorperazine previously had been twitching, convulsions, and extrapyramidal opisthotonos. The possibility of the simultaneous ingestion of some other drug was suggested to the physician as an explanation for the unusual symptom of coma. Within a short period of time the physician called back to report that further probing had elicited the fact that the child had also taken 10 mephobarbital tablets. The coma was thus explained.

The same physician also reported to the Center that he had previously treated 2 other children for an overdosage of prochlorperazine which resulted in opisthotonos and extrapyramidal symptoms.

It may be well to bear in mind that unless there are outstanding virtues to a drug with such serious side-reactions, alternative medications should be employed.

Incident 5

Toxic Agent	*Age*	*Sex*
"Tea" (Herbs for Asthma)	39 years	Female

This patient drank one-half cup of an herb brew made from a West Indian plant sent by the patient's brother from Jamaica, British West Indies. The substance was taken presumably as a remedy for asthma from which the patient suffered. One hour following ingestion the patient became nauseated and vomited; two hours following ingestion she became incoherent. She was taken to a hospital emergency room and was admitted to the inpatient service. On admission the following symptoms were noted: nausea, vomiting, and deep stupor. The blood urea nitrogen content was 11.5 mg. per cent and sugar was 105 mg. per cent; the urine contained a trace of albumin. Eight hours following admission only mild stupor was noted and the speech became more coherent. Both pupils were dilated but reacted to light. There was also a right facial paresis and a left Babinski reflex. The pulse was elevated, but the temperature and respirations were normal. The patient was treated with 1,500 cc. of glucose and saline intravenously as well as with other supportive measures. All abnormal findings subsided within seventy-two hours.

Emergency rooms should be advised of the practice among immigrants from the Carribean areas of drinking herb tea. It is always advisable in these cases to request the patient or the relatives to bring in the herbs for microscopic identification.

(*Number thirty-eight in a series of Briefs on Accidental Chemical Poisonings*)

Weight-Reducing Agent Termed Ineffective

A widely used appetite suppressant has been found to be ineffective in helping obese persons according to a group of eastern scientists. The suppressant—phenylpropanolamine—is a common ingredient of weight-reducing drugs which are offered to the public without prescriptions. It has been estimated that about 100 million dollars is spent annually for such drugs.

This report appears in the June 27 *Journal of the American Medical Association*. Headed by Dr. Joseph F. Fazekas, Washington, D.C., the group undertook the study to determine the merits of the nonprescription drug as compared with dextro amphetamine, a prescription drug with known appetite suppressing qualities.

The authors said that any effective weight-reducing program must be administered by a physician who understands the psychologic factors which are encountered by persons undergoing treatment. To control these psychologic factors, the scientists selected 80 obese, mentally deficient subjects for their study. The subjects were physically normal and had been residents of the institution for a number of years. Their body weight had been recorded monthly since admission.

The authors explained that the subjects had never been under any dietary restriction and their daily food intake consisted of a well-balanced diet known to contain about 3,000 calories which was well above their energy requirements.

The 80 subjects were divided into four nearly equal groups and the blind procedure was employed where neither the recipient nor the administrator knew what agent was being given. The subjects were given one of the drugs under investigation three times a day, one hour before meals, for a period of six weeks. To make certain of their ingestion by the subjects the drugs were given by cottage supervisors.

According to the authors, "Phenylpropanolamine, when administered in recommended doses, and even in twice the supposedly therapeutic doses, failed to effect a statistically significant reduction in weight.

"The administration of dextro amphetamine was associated with a statistically significant reduction of weight. The weight loss apparently results primarily from a reduction of food intake due to a diminution of appetite. The results of the present investigation lend support to the concept that phenylpropanolamine does not exert a marked central nervous effect, at least insofar as appetite reduction is concerned."

The scientist concluded that in view of the many psychologic and physiologic factors involved, as well as the recognized increased incidence of certain diseases in the obese population, weight reduction should be supervised by physicians, particularly when drugs are used.

CASE REPORT

Primary Hemochromatosis with Normal Serum Iron Complicated by Hemolytic Anemia

NICHOLAS PRIMIKIRIOS, M.D., BUFFALO, NEW YORK

(*From the Division of Medicine, Roswell Park Memorial Institute*)

Abnormal iron storage in body tissues has been observed in idiopathic hemochromatosis, dietary hemochromatosis (malnutrition, pellagra, and excessive and prolonged iron therapy) transfusion hemosiderosis, and hemosiderosis associated with hemolytic anemia. Idiopathic or primary hemochromatosis has no known cause, while the etiologic factors in the various types of hemosiderosis are more or less well defined. The latter frequently is referred to in the literature as secondary hemochromatosis.

Idiopathic hemochromatosis is a rare chronic disease of unknown origin, characterized by increased absorption of iron, with subsequent storage of iron pigment in body tissues and eventual fibrosis and dysfunction of the organs most severely involved. It is manifested clinically by characteristic skin pigmentation, cirrhosis, diabetes mellitus, and often cardiac failure. Noteworthy pathologic findings include a granular type of hepatic cirrhosis, fibrosis of the pancreas, and often myocardial damage.[1-3] The serum iron is usually elevated and the iron-binding protein is saturated.[2]

Case Report

A seventy-two year-old telephone repairman was in apparent good health until January, 1956, when he first sought medical care because of progressive weakness and weight loss unassociated with any other symptoms. A blood count revealed anemia, and the patient was treated with liver injections and oral iron for a few weeks. Hemoglobin rose from 9 to 11 Gm. per cent, but there was no other improvement.

In April, 1956, he was hospitalized. Physical examination and laboratory work-up were unremarkable except for a harsh systolic apical murmur and anemia. Blood count revealed: a red blood count of 3.2 million per cu. mm., a hemoglobin level of 9.3 Gm. per cent, a hematocrit of 31, a corrected sedimentation rate of 36 mm. per hour, and a white blood count of 9,900 per cu. mm. with normal differential. The bone marrow was hypercellular with increased myeloid and erythroid elements. Hemosiderin deposition was seen in the marrow. He received 1,000 cc. of whole blood and was discharged with a diagnosis of macrocytic anemia, cause undetermined, and questionable idiopathic acquired hemolytic anemia. In November, 1956, 1 unit of packed cells was transfused because of low hemoglobin level. In March, 1957, because of clinical signs of congestive failure, he was admitted to a second hospital where needle biopsy of the liver was performed and marked hemosiderin deposition was found. He was digitalized, transfused, and placed on prednisone therapy for the presumed hemolytic anemia. He had transient subjective improvement but his need for transfusions continued. On March 10, 1958, he was admitted to the Roswell Park Memorial Institute because of extreme weakness and considerable weight loss in spite of a fair appetite. He had received a total of 8 to 10 pints of blood by this time. Review of systems revealed exertional dyspnea, nocturia four or five times a night, and ankle edema of one year's duration. Dyspnea had disappeared with digitalization, but the other symptoms persisted. He denied chest pain, exposure to fumes or heavy metals, and clinical symptoms or family history of diabetes.

His past history was unremarkable except for a heart murmur discovered in the early 1900's without a history of previous rheumatic fever and an acute attack of malaria during the Spanish-American War while stationed in Puerto Rico. This was successfully treated and he had no recurrent attacks.

Physical examination revealed a chronically ill and partially deaf white male who did not appear in acute distress. Vital signs were normal. There was marked pallor. Scattered small hemangiomata were present over the chest and abdomen, and purplish discoloration of the extensor surfaces of the hands was noted (attributed by the patient to infiltration of blood transfusions). The skin was smooth with little trichosis of extremities and chest. The sclerae were slightly icteric. There was grade I retinopathy. The tongue was beefy red but not smooth. Lungs were clear. Cardiac rhythm was normal with occasional premature contractions. A precordial thrill was noticed, and a loud harsh systolic murmur was heard over the entire precordium and transmitted to the neck and back. The liver descended 8 to 10 cm. below the right costal margin. The spleen was not palpable. The prostate was enlarged. Grade II pitting edema of legs and feet was noted. Arterial pulses were good. Except for hypoactive deep tendon reflexes, no neurologic abnormalities were found.

Blood count on admission revealed a hemoglobin level of 6.9 Gm. per cent, a hematocrit of 31, a white blood count of 13,150 per cu. mm., stabs of 9 per cent, polymorphonuclear segmented cells of 63 per cent, lymphocytes of 21 per cent, monocytes of 7 per cent, 3 nucleated red per 100 white blood cells, platelets of 322,500 per cu. mm., reticulocytes of 1.8 per cent, and corrected sedimentation rate of 3 mm. per hour. There was moderate macrocytosis, many target cells, hypochromia, and moderate aniso- and poikilocytosis. No spherocytes were seen. Subsequent white blood cell and differential counts were normal. The highest reticulocyte count was 4 per cent. The bone marrow specimen was very cellular with decrease of the myelocyte-erythrocyte ratio (0.6 to 1) and a greatly increased number of nucleated red blood cells (59.6 per cent). Although some of the immature erythroid cells appeared abnormal, they did not resemble those seen in megaloblastic anemia. Granulocytes were normal and an adequate number of megakaryocytes were seen. The fasting blood sugar was 99 mg. per cent. Oral glucose tolerance test, however, showed an abnormal curve with a first-hour specimen of 207 mg. per cent, a second-hour specimen of 274 mg. per cent, and a third-hour specimen of 288 mg. per cent. The third-hour urine specimen showed 2 plus glycosuria. The serum albumin was 3.47 Gm. per cent and the serum globulin 1.45 Gm. per cent. Free hemoglobin was not detected in the plasma. Alkaline phosphatase was normal. Urine urobilinogen was positive. One-minute serum bilirubin was 1.8 mg. per cent, and the thirty-minute value was 3.0 mg. per cent. These values returned to normal during the hospitalization. Cephalin flocculation was 2 plus; prothrombin time was 40 to 50 per cent of normal; serum glutamic oxalacetic transaminase was normal. Gastric analysis was positive for free hydrochloric acid without histamine stimulation. Other laboratory tests, including those specifically directed toward hemolytic syndromes, were within normal limits. Serum iron on one occasion was 108 micrograms per cent and later, 124 micrograms per cent (the normal range in our laboratory is found to be 50 to 120 micrograms per cent). Chromium-51 red-cell survival study showed a half life of sixteen days which was abnormally low. The electrocardiogram on admission was abnormal with nonspecific S-T and T-wave abnormalities. Absorption of vitamin B_{12} was normal. Needle biopsy of the liver revealed a large amount of hemosiderin pigment in the liver cells. The Kupffer cells were not remarkable and the portal spaces were slightly elongated. A chest x-ray film showed left and right ventricular enlargement. X-ray films of the gastrointestinal tract and skeletal survey were negative except for multiple diverticulae of the colon.

The clinical impression was iron storage disease, most probably idiopathic hemochromatosis; acquired idiopathic hemolytic anemia; benign hypertrophy of the prostate gland; and valvular heart lesion compatible with aortic stenosis, probably arteriosclerotic in origin.

Because of low hemoglobin on admission, the patient was transfused with one pint of whole blood daily during three successive days. This resulted in a rise of his hemoglobin level to 9.9 Gm. per cent, with definite subjective improvement. On the twenty-sixth hospital day 2 units of packed red cells were given. Maintenance digitalis and corticosteroids (30 mg. prednisone daily) were continued. For one month the patient was given 100 micrograms of vitamin B_{12}

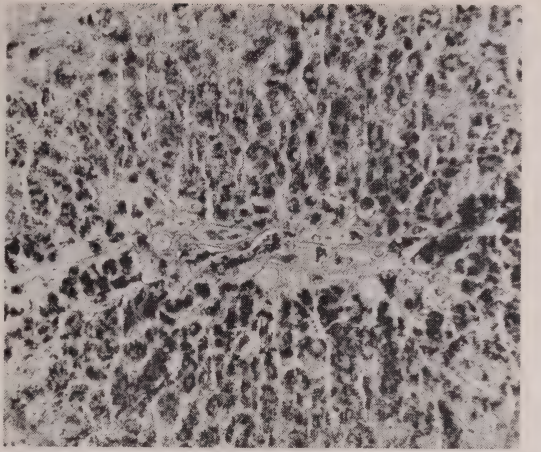

FIG. 1. Liver. Accumulation of hemosiderin in the cord cells (iron stain magnification ×50).

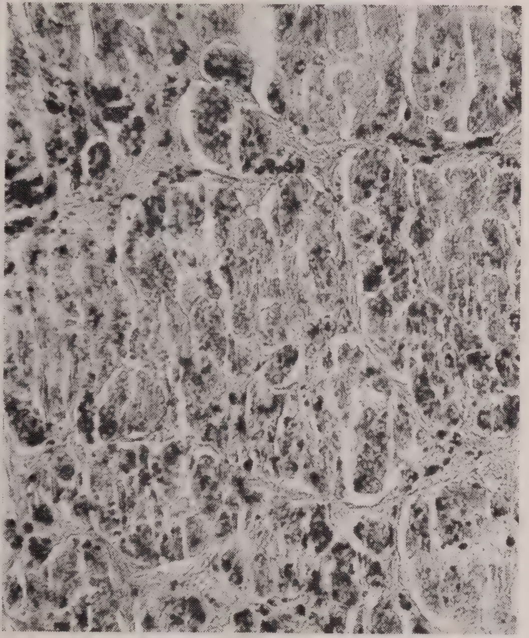

FIG. 2. Pancreas. Hemosiderin deposition both in islet and acinar cells (iron stain magnification ×50).

intramuscularly every other day. Coincident with this and with the transfusions, there was definite improvement of vigor, strength, and appetite. No response was noticed in reticulocyte counts or hemoglobin levels. The glossitis responded well to vitamin B complex.

On the twenty-second hospital day the patient suddenly developed a rapid auricular flutter which was converted to normal sinus rhythm with quinidine. Following conversion he was maintained on quinidine but digitalis was discontinued. On the thirty-seventh hospital day he developed rapid auricular fibrillation and dyspnea. Quinidine was discontinued and he was digitalized rapidly. The rhythm reverted to normal and maintenance digitalis therapy was again instituted. By the fifty-third hospital day he was doing very well and discharge from the hospital was planned when he suddenly developed another paroxysm of auricular flutter. Quinidinization was instituted. On the fifty-seventh hospital day he expired suddenly. It was thought that death was caused by ventricular fibrillation.

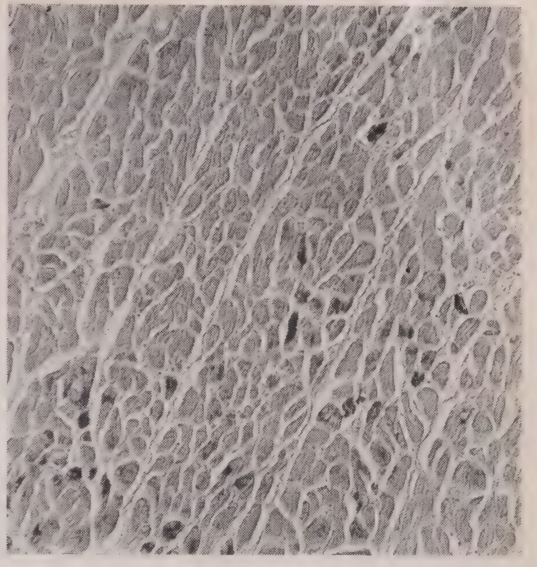

FIG. 3. Cardiac muscle. Scattered hemosiderin deposition in myocardial fibers (iron stain magnification ×50).

At autopsy gross pathologic findings included deep brown discoloration involving the mucosa of the stomach and small intestine, the liver, the pancreas, and the kidneys. The heart was enlarged to 650 Gm. with an almost completely stenosed aortic valve and evidence of atheromatous deposition in the great vessels and the coronaries. The liver weighed 2,275 Gm., the spleen weighed 100 Gm., and the pancreas, which was firm and lobulated, weighed 130 Gm. The lungs were not congested. Microscopic sections of the liver disclosed abundant hemosiderin deposition (Fig. 1) mainly in the parenchymal liver cells rather than in the Kupffer cells. Moderate portal cirrhosis was present. The pancreas was fibrotic with abundance of hemosiderin in both the acinar and the islet tissues (Fig. 2).

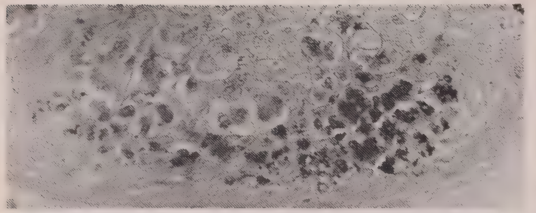

FIG. 4. Adrenal. Hemosiderin deposition in zona glomerulosa (iron stain magnification ×50).

The heart revealed extensive calcification of the aortic valve, atherosclerosis, and scattered hemosiderin deposition (Fig. 3). The reticuloendothelial system showed the following: hemosiderin deposition was seen in the Kupffer cells of the liver, there was slight increase in the bone marrow hemosiderin, and scattered deposition was noted in the spleen. The lymphoglands were entirely free of any deposition. Sections of the glomerular zone of the adrenal cortex (Fig. 4), kidneys, stomach (Fig. 5), small bowel, and choroid plexus of the brain showed abundant hemosiderin. Macrophages containing this pigment were present in the pulmonary alveoli. Stains for lipofuscin were negative in all organs. The testes were atrophic, showing only minimal spermatogenesis. Skin sections from the torso failed to demonstrate hemosiderin deposition. Unfortunately, the hyperpigmented areas of the hands were not examined microscopically.

Comment

Extensive iron storage was demonstrated unequivocally in this case. Whether the disease should be classified as idiopathic hemochromatosis or transfusion hemosiderosis merits some discussion. Characteristically idiopathic hemochromatosis occurs in males between the ages of forty and sixty years. Anemia is uncommon.[2,4] Diabetes, skin pigmentation, and manifestations of cardiac disease are frequently seen. Iron deposits are found primarily in epithelial tissues and occur in the reticuloendothelial system secondarily.[5] In transfusion hemosiderosis, on the other hand, the male-to-female ratio is approximately 3 to 2. The disease may be seen at any age. A history of anemia requiring multiple transfusions is obtained and diabetes, skin pigmentation, and heart failure are rare.[6] In transfusion hemosiderosis iron enters the tissues from three sources: (a) transfused erythrocytes, (b) destruction of the patient's erythrocytes in hemolytic anemias, and (c) absorption of iron from the intestinal tract, which may be increased in hemolytic anemia.[7,8] Iron liberated as a result of red cell destruction is taken up initially by the reticuloendothelial system and thus heavy deposits are seen in the spleen, lymph nodes, bone marrow, and Kupffer cells of the liver. Several authors believe that the difference in iron distribution between the two syndromes tends to disappear with time and that in advanced cases no distinct difference can be seen at autopsy.[2,9,10] Others, however, feel that such differences in tissue iron distribution are characteristic and may be detected even in late cases.[1,5,6]

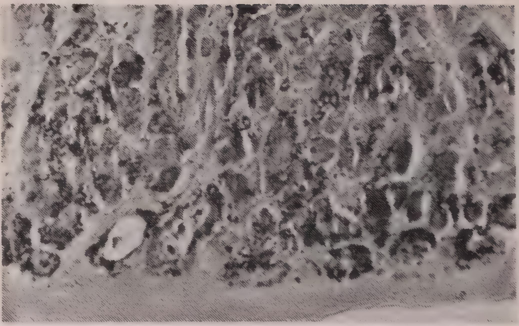

FIG. 5. Stomach. Hemosiderin deposition in epithelial cells (iron stain magnification ×50).

The duration of anemia in our case is not known. It was detected fourteen months prior to the first liver biopsy. Its classification as a hemolytic one was based on the moderate reticulocytosis, the characteristic bone marrow picture, and the abnormal chromium-51 erythrocyte survival time. In spite of an intensive work-up, the cause of this patient's anemia remained a mystery. Whether the anemia was the original abnormality and the picture of hemochromatosis was a secondary event is a question which cannot be answered with certainty. However, transfusion hemosiderosis seems out of the question since the patient has received only 1,000 ml. of whole blood and 1 unit of packed cells prior to the initial demonstration of heavy hemosiderin deposition in the liver. It is possible that an increased intestinal absorption of iron may have accompanied the hemolytic anemia. This is observed in some cases of hemolytic anemia[7,8] but not in others.[11,12] In any case, even if the anemia were associated with increased absorption of iron, the duration of this disorder seems much too short to explain the development of hemochromatosis.

The general clinical picture, the relatively brief duration of hemolytic anemia, the small amount of transfused blood received prior to the discovery of heavy pigment deposition in the liver, and the typical autopsy findings of severe pigment deposition in the epithelial cells of many organs and in muscle cells, cirrhosis of the liver, fibrosis of the pancreas, and the lack of extensive reticuloendothelial deposition appear to justify the diagnosis of pre-existing idiopathic hemochromatosis that has become complicated by a moderately severe hemolytic anemia.

It has been stated that the degree of pigmentation of the islands of Langerhans has no correlation with the diabetic status.[1,4] Our case strongly supports this concept. In spite of extensive iron deposition and destruction of the pancreas, the only evidence of pancreatic insufficiency was the abnormal glucose tolerance curve.

Serum iron is elevated in the great majority of cases of hemochromatosis. Finch and Finch[2] feel that an elevated serum iron should always be demonstrable unless infection or a malignant condition are present. Neither of these conditions were present to explain the normal values in our case. Critical deficiency of siderophilin, the β_1 globulin which transports iron to different tissues, has not been described. Assuming that in our case iron absorption was increased and siderophilin not critically affected, we have no better explanation for the normal serum iron than that the rate of intestinal absorption did not exceed the capacity of the liver and other tissues to take up and store iron.

The mode of death in this case was cardiac, most probably due to his severe pre-existing valvular heart lesion and coronary artery disease. It has been stated that the degree of myocardial damage and functional insufficiency cannot always be correlated with the amount of hemosiderin present.[2,3] It is possible that in this patient the presence of hemosiderin in the myocardium, although not striking, facilitated the development of fatal cardiac arrhythmia.

Summary

A case of idiopathic hemochromatosis complicated by hemolytic anemia has been presented. The serum iron level was normal.

The author is deeply indebted to Dr. Joseph E. Sokal and Dr. Leon Stutzman, Division of Medicine, who assisted in the preparation of the manuscript, and to Dr. John W. Pickren, chief pathologist, who provided the photomicrographs and reviewed the pathologic findings.

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You cannot run away from a weakness; You must some time fight it out or perish; and if that be so, why not now, and where you stand?—ROBERT LOUIS STEVENSON

SPECIAL ARTICLE

The Role of the Moreland Act Commission in Workmen's Compensation

FREDERICK A. PARTYKA, NEW YORK CITY

(*Associate Counsel to the Moreland Commission*)

I MUST explain that I appear before you as a private individual, rather than as a representative of the Moreland Act Commissioner, and except where I quote from his most recent report, any opinions or conclusions I may express are strictly my own.

There is such a diversity of thinking on so many aspects of Workmen's Compensation—between labor and industry among workers, the insurance companies, compensation department personnel, attorneys, and physicians—that the Commissioner must hear and weigh the representations of all before he sets down his own conclusions and recommendations to the Governor.

As I proceed, I shall make some definitions and the first of these is to define a Moreland commission. These are pro tem commissions authorized by a law which gives the Governor the power to name a commission to investigate any department of the State.

There have been a number of commissions investigating Workmen's Compensation on and off as far back as 1919. Ours is the sixth. Prior ones had uncovered and put a stop to abuses in direct settlement procedure; another dwelt on a variety of things including medical authorization and practices involving insufficient and improper treatment and prejudiced medical testimony. This brought about the blessed free choice of physician provision in the law. Another in 1944 explored improper fee-splitting and kickback practices and brought about remedial amendments. Others reviewed administrative procedures and improved these.

In the present instance the Commissioner was directed by Governor Harriman to study, examine, and investigate the cost of Workmen's Compensation and the operations and procedures of State Department boards and agencies relating thereto. It was obvious that there was no call to investigate the Workmen's Compensation Department because under Miss Angela Parisi's stewardship it was in excellent working order.

Of concern, however, was the cost of Workmen's Compensation and the share the workman received from the compensation dollars expended in such cost. Ours thus became a different sort of commission—instead of being headline-hunting investigators, we became an analytic evaluating research group. For this the Commissioner had not only legal counsel but also actuaries and a medical consultant.

Without going into means and methods, what has been accomplished? Something overwhelming in my opinion, for in his last report Commissioner Callahan was able to point out to Governor Harriman that since Governor Harriman's term of office there have been net savings in compensation cost to the industry of our State in excess of $60,000,000 per year with an over-all total including absorption of $18,000,000 in earlier benefit increase and $3,000,000 in increased hospital costs, which would have had to come and can thus be added as a savings, aggregating together with a prior reduction, some $106,000,000. This will result in $1,000,000,000 in savings to industry in our State in the next nine years and five months. Percentage-wise the cost of Workmen's Compensation in New York State has been cut some 30 per cent. The workman has gained also, for he now shares a large percentage of the compensation dollar, and if certain other rate-making changes are made, the cost of the worker's latest benefit increase will be offset by the changes suggested.

May I say that all this has been possible only through the aid and cooperation of the Workmen's Compensation Board, and efficiency is

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Presented at the Fourth District Branch Meeting in Amsterdam, New York, on October 30, 1958.

based in large degree on the Compensation Insurance Rating Board, the State Insurance Department, and a governmental philosophy that is conducive to such results.

As a roving staff member for Upstate New York, I have worked on various studies with my six legal colleagues stationed at the Commission's office in New York. In addition, my special study has been rehabilitation which has been incorporated in the Commissioner's report to Governor Harriman. In these various studies, it has been a great experience to get to every section of the State and have an opportunity to talk to many working men, industrialists, physicians, union leaders, State doctors, referees, and other Workmen's Compensation personnel, and to study many reports.

In all this there of course have turned up matters of interest to and involving the medical profession and I will touch on as many of these as time allows. Please take note of this fact before I go any further—that any criticisms reported here are of very few individuals and not of the medical profession, and in most cases the criticisms relate to relatively trifling matters. A few such individuals are to be found in every profession. If some part of this talk will pique your interest, my purpose will have been served.

One of the more valid complaints heard concerns the reluctance of many doctors to treat compensation cases. This is due in part to the advent of the age of specialization and the alleged decline of the family doctor relationship.

From labor's point of view, this has had some undesirable effects, especially where there are no hospitals with large staffs to cover the multitude of specialties. One such effect is that the majority of compensation cases are placed in the hands of plant physicians who may or may not have had special training in industrial medicine, but who do not have the family doctor relationship. The natural suspicions engendered in such a situation often give the workman a feeling that he has not received in medical treatment all that is due him. An occasional consequence is that the suspicion extends to the prognosis of full recovery, and we have a claimant who stretches out his disability for a personal check to see that something hasn't been overlooked. This is costly and even more costly where, without the sympathetic reassurance of the family doctor, some claimants become neurotic about their condition. With our knowledge of the effect of real or potential wage loss on a neurotically predisposed person we cannot castigate such claimants for succumbing to this condition.

Another undesirable effect of the reluctance of some physicians to treat compensation injuries is the creation of the "Compensation Specialist," this term being applied loosely to those who gleefully take over all the compensation practice available. Here the complaint is of overprotection and overtreatment. If such conditions exist, again we have a costly situation. The most unfortunate result, however, is that in the case of a neurotically predisposed person a consequence may be chronic invalidism.

Incidentally, based on the protestations of some insurance companies and employers, I expected to be shocked by finding great numbers of what they call "lampers" and physiotherapy machine operators. I was indeed shocked but in reverse, for as often happens, these protestors were talking one way and acting another. What I found that made this impression were plant medical dispensaries with enough such equipment to look like a commercial bakery, along with evidence of the salutary effect of such treatments in some cases. I did hear something more significant, however—that many enlightened unions pull their members out of the hands of the "over-treater" and hustle them back to work before they do become neurotic about their conditions.

Nevertheless, the labor people are concerned with the reluctance of physicians to treat compensation cases and the possible consequences of mill doctor treatment or compensation specialist overtreatment. You know about labor's efforts to get its members discounts in merchandise including the procurement of eye glasses and, I believe, dentistry. Recently I heard of labor's desire to extend this to medical care, and the reason may be this reluctance by certain doctors in certain sections of the State to treat injured workmen. Who knows what this could lead to.

Another matter deserving attention is the claim on the part of insurance companies that many general practitioners without the advantage of training and experience in industrial medicine should not handle compensation cases. With reference to certain aspects of the development of a compensation case this opinion is also held by some referees and State doctors—not, mind you, that general practitioners should not undertake treatment of such cases, but that they could contribute more to the development of a claim if they had more training. This does not entail graduate work nor any great deal of time for special training to the physician and surgeon well enough grounded in his profession to be certified for treatment of compensation cases.

I do not subscribe to the claims of the insurance companies and will not discuss them; but I do have suggestions to overcome the minor complaint concerning the need for wider knowledge of the factors involved which will bring a claim to the point where a State doctor can give a well-founded opinion and a referee a just verdict.

The physician treating workmen's injuries should indoctrinate himself with the basic philosophy of the law which is designed to give every possible protection to the workmen against a total loss of wages due to industrial accident and to give him a speedy forum to establish a claim with a minimum of technicality. The physician should also acquire a knowledge of his duties in such cases and of the mechanics of the adjudication of a claim, at least as far as they relate to medicine.

To do this, the attending physician should start from the beginning with a comprehensive physical examination and where necessary a laboratory work-up. This may seem unnecessary, in some immediate instances but if there is a prognostic possibility of related debility, a foundation has been laid for a sound opinion not only for diagnosis but also for prognosis. To give a rather overdramatic example, there was the case of a patient who had been treated for a year for an ankle injury only to have it found that his trouble was a herniated disk.

From the claim angle this study involves primarily the often troublesome question of the causal relationship between consequential disability and initial injury. It is also very important in problems involving subjective complaints and the psychiatric realities of a neurosis as against simulated symptoms.

Next is the matter of reports. Most of us live in dread of forms, but the medical forms are very simple and in a dozen or so questions make a medical foundation for a claim. These forms are receivable as evidence themselves, so if proper attention is given to these to permit a sensible evaluation of it, a doctor need not attend any hearing. With some thoroughness on three questions—history, diagnosis, and prognosis—this usually happens. If the space afforded is too little, continue the answers on the reverse side. If there are facial scars, describe them in detail.

With reference to schedule loss of fingers, limbs, or toes, it has been found that some doctors will close a case involving injuries to these where there is some compensable loss. Here too the philosophy of the law must be understood. There are sources where the thinking of the Board on such losses can advise the attending physician as to the evaluation of schedule loss. It would be very interesting to have a doctor give a future meeting of this district some advice on the technics of evaluating these factors.

With the expansion of knowledge of the effect of industrial processes and of industrial hygiene, there has been an increase of determinations of occupational disease as well as aggravations of pre-existing condition. This is another reason why thoroughness of an examination is indicated, including a thorough review of history, where the patient consulting the physician is an employed worker. This not only assists in diagnosis but also determines at once whether or not there is any relationship to the job. In recent years courts have found occupational disease in cases of rheumatoid arthritis, Bell's palsy, bursitis, Dupuytren's contracture, and of course hernia. Aggravation has been found in cases of weak back, flat feet, and even arteriosclerotic peripheral vascular disease of the feet.

There have been complaints by some carriers and employes that the free choice of physician system has been costly. One of the reasons given is that a physician called on to decide a causal relationship may be influenced by the fact that if he gives the causal relationship his fee will be paid by a solvent carrier, that he will prolong treatment, and cause the patient to imagine he is more disabled than he really is. In the instances where this complaint has been valid, disability benefits and group insurance have reduced this abasement to a nullity. Certainly there is also the other side of the coin where it is complained that carriers' doctors go too far in the other direction. Whichever side a physician is on, thoroughness in examination and report give a solid foundation in facts for a credible opinion.

I have reviewed many comparative studies of compensation medical costs in this State under the free choice system and in states which do not have it. I believe these only show our

State's high regard for its working men and the care they deserve. It may be summed up this way—some people use statistics as a drunken man uses lampposts, for support rather than illumination.

There is no time to discuss rehabilitation except to call your attention to the Second Injury Law. Its purpose is to encourage the employment of the physically handicapped. The law protects the employer who hires such people because it holds him liable only for the disabilities attributable to the second injury and provides that after payment of medical expenses and compensation for one hundred four weeks all payments made thereafter shall be made from a State-operated special disability fund.

Most employers, especially the small ones, absolutely refuse to hire such people because they are ignorant of this protection. Such protection, however, can best be given the employer when he can establish that there was pre-existing physical impairment and that the employer knew of it. Here the medical profession can play a great role, for if such employers made the small investment for a pre-employment physical so that the precise nature of the pathologic condition involved would be revealed, the employer would be protected. That precise knowledge of the pathologic condition is where physicians can help. I would like to see the medical profession set up pre-employment examination clinics to aid the small employer and, more important, to aid the physically handicapped.

There is one last point which has aroused confusion and resentment on the part of some physicians. The law specifies that no claim for specialist consultations, surgical operations, or physiotherapeutic procedures costing more than $25 shall be valid unless authorized by the employer or by the Board unless authority is unreasonably withheld or the treatment is rendered in an emergency. This law also limits x-rays and special diagnostic laboratory test fees to $10.

If you have an emergency, proceed; if it can wait, contact the employer or his carrier. They are usually understanding, but they like to be consulted. If they are unreasonable, contact the Workmen's Compensation Board and you will get action.

Also note that in a closed case no charge is valid unless approval is given by the special fund for reopened cases except in the contingencies stated. So if you submit a C-27 form to reopen a case, send along a request for authorization and you will usually receive a conditional authorization.

The Commissioner's study has been broad, and you may have a special interest in subjects examined by our medical consultant. These include medico-legal matters, occupational loss of hearing, and the cardiac problem. Copies of the report may be obtained by writing the Moreland Act Commission, 33 Rector Street, New York City.

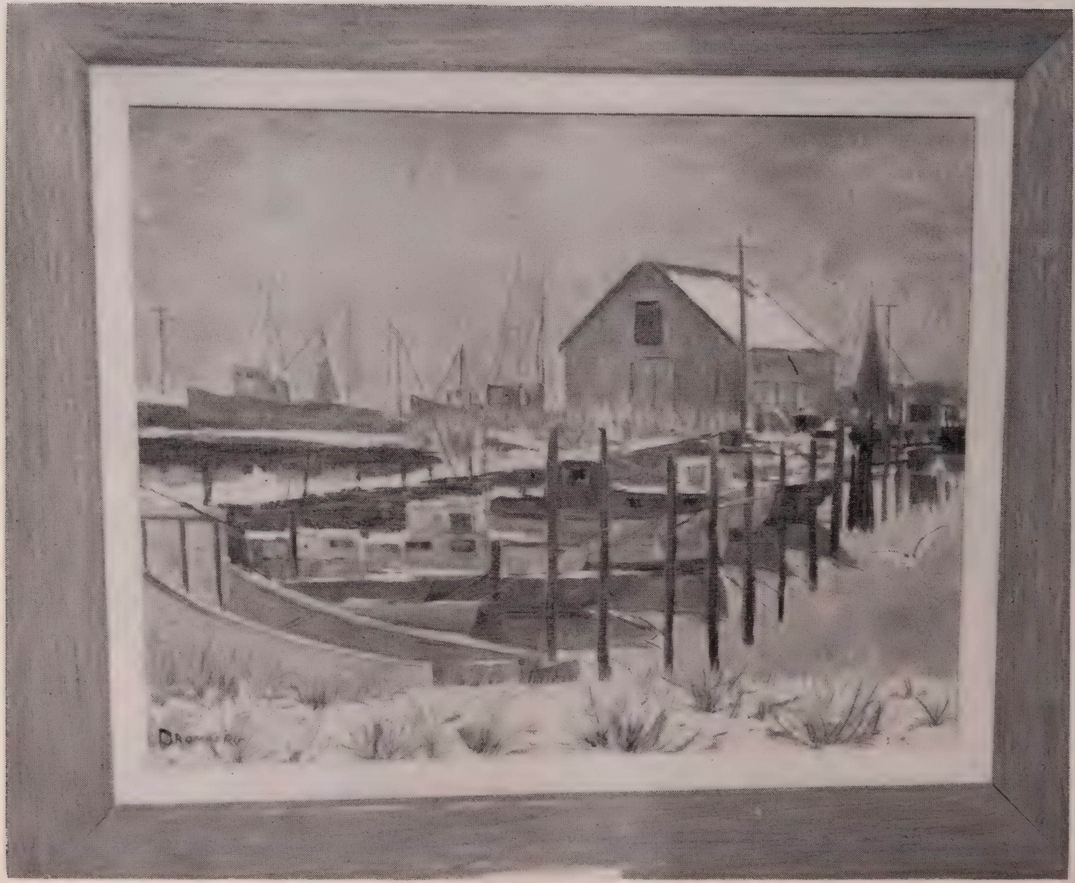
I trust I have stimulated your interest and thinking with these observations.

Bananas for Low Salt Diets

Low salt diets are now being enlivened by bananas, which, as offered on the markets, are only one millionth part salt. Nutritionists are recommending that those ordered to cut salt intake eat up to ten bananas a day to get around routine rice diets. —*Nutrition Foundation*

the Gallery

WALTER J. ALEXANDER, M.D., EDITOR



Fishing Fleet at Dock, by FRED R. BROMBERG, M.D., of Bay Shore, Long Island. This was painted at the Maple Avenue dock in Bay Shore in 1957 and was exhibited at the South Shore Arts Association annual show where it was awarded first prize in the amateur oil group.

Dr. Bromberg, who has had no instruction, has been painting for eight years and has won six awards at annual exhibits of the South Shore Arts Association. He has also won awards in oils at the Long Island State Park Commission annual show, and has received second place and several honorable mentions in exhibits of the American Physicians Art Association.

[Continued on page 3476]

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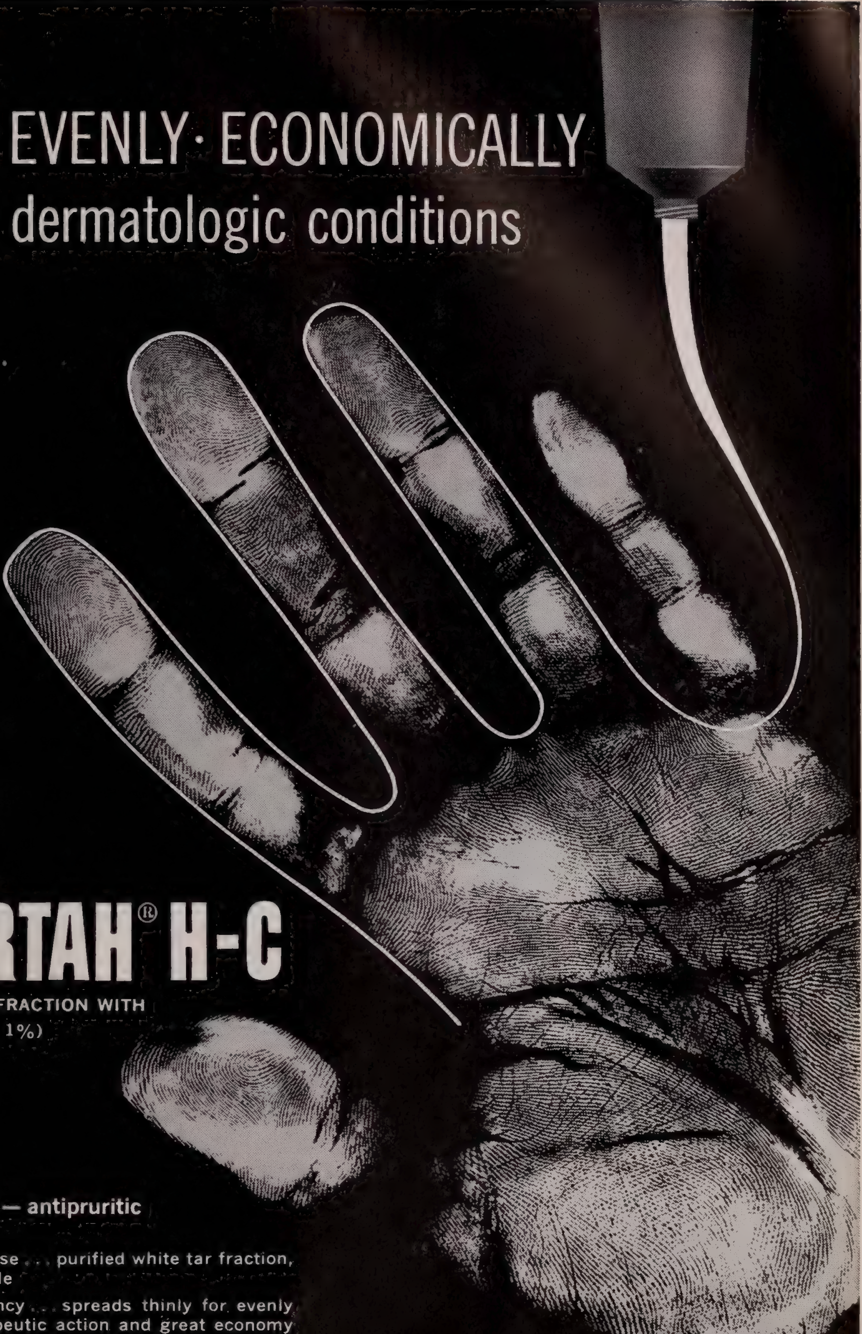

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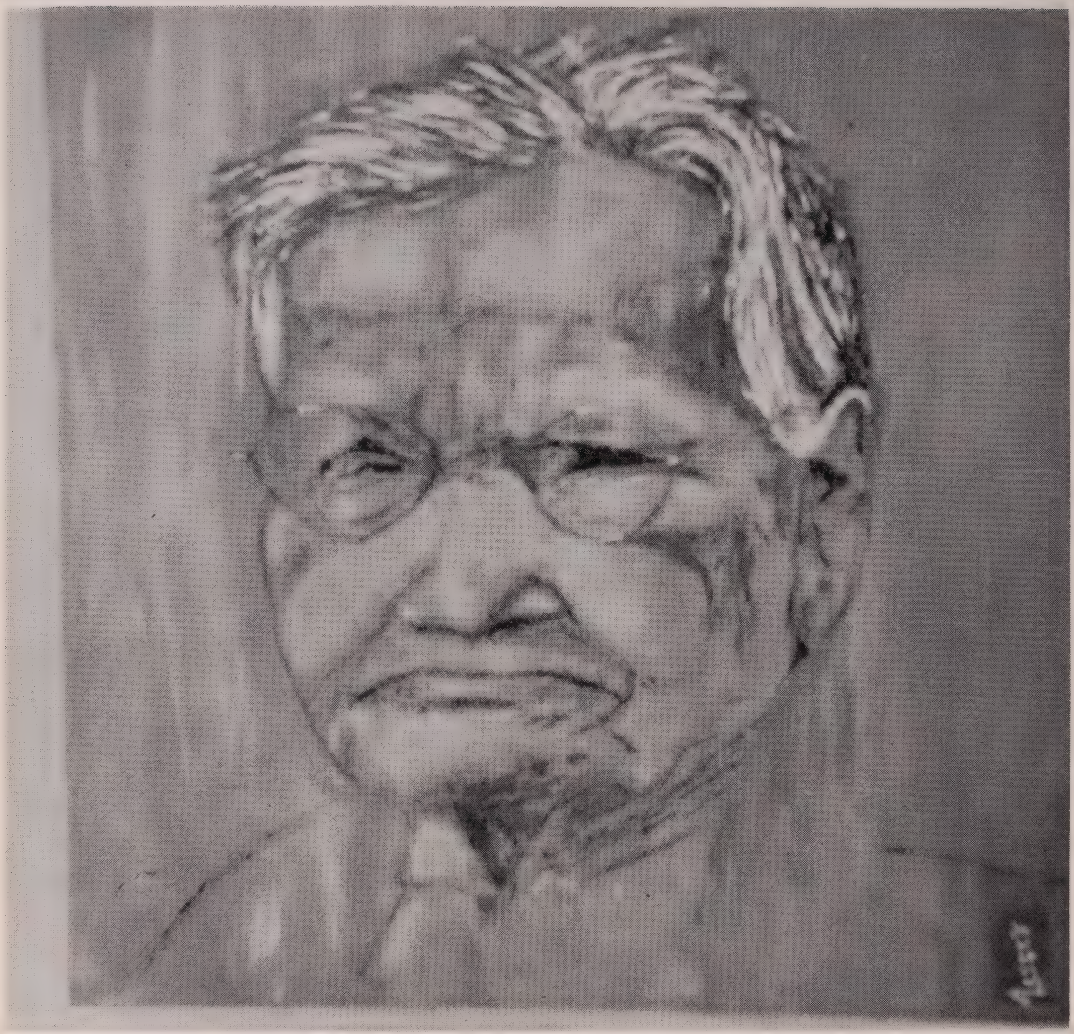

[Continued from page 3474]

Mother, by ALBERT LESSER, M.D., of Garden City. This oil portrait was painted in 1957 but has never been exhibited. Dr. Lesser has painted for three years, having started with adult education courses in New York City. A surgeon, he practices in Forest Hills.

For information about *The Gallery*, write to the editor of the feature, Walter J. Alexander, M.D., 333 Main Street, Binghamton, New York.

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DISTRICT BRANCH MEETINGS

Medical Society of the State of New York

EIGHTH DISTRICT BRANCH*

Thursday, October 1, 1959

Wellsville Country Club, Wellsville

Morning

Golfing facilities available gratis.
Handicap tournament with prizes.

12:00 NOON—Luncheon meeting of Advisory Council.

Afternoon

1:30 P.M.—Registration

2:00 P.M.—"Investigation of Sudden, Suspicious, and Violent Deaths"
MILTON HELPERN, M.D., New York City, Chief Medical Examiner, City of New York

3:00 P.M.—"Selected Patterns of Athletic Injuries"
ALEXIUS RACHUN, M.D., Ithaca, Gannett Medical Clinic, Cornell University

4:00 P.M.—"The Treatment of Hernia: Based on Over 30,000 Cases in the Past Fifteen Years"
E. EARLE SHOULDICE, M.D., Toronto, Canada, Chief, Shouldice Surgery

5:00 P.M.—Business Meeting—Election of Officers

Evening

6:00 P.M.—Cocktails

7:00 P.M.—Dinner and Dancing
Introduction of Officers

Address: HENRY I. FINEBERG, M.D., Jamaica, President, Medical Society of the State of New York

Remarks: MRS. JAMES L. MCCARTNEY, Garden City, President, Woman's Auxiliary to the Medical Society of the State of New York

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[Continued on page 3480]

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[Continued from page 3478]

THIRD DISTRICT BRANCH
AND
FOURTH DISTRICT BRANCH

Wednesday and Thursday, October 14 and 15, 1959
Grossinger Hotel and Country Club, Grossinger

Wednesday, October 14

Morning

10:00 A.M.—Registration

11:00 A.M.—Business Meetings—Third and Fourth District Branches

Afternoon

12:30 P.M.—Luncheon

2:00 P.M.—Symposium: "Staphylococcic Infections"

Glenn J. Copeland, M.D., Clifton Springs, Director of Laboratories, Clifton Springs, Sanitarium, *Moderator*

1. "Introduction"
   James Greenough, M.D., Oneonta, Chairman, Joint Committee to Combat Staphylococcal Infections, Medical Society of the State of New York
2. "Staphylococcic Infections"
   Victor N. Tompkins, M.D., Albany, Director of Laboratories, New York State Department of Health
3. "Hospital Control of Staphylococcic Infections"
   George W. Graham, M.D., Schenectady, Director, Ellis Hospital
4. "Application of Bactericidal Conditioning"
   Perry B. Hudson, M.D., New York City, Institute of Cancer Research, Columbia University College of Physicians and Surgeons

Evening

6:30 P.M.—Cocktail Party

7:30 P.M.—Banquet

Introduction of Officers and Guests

Presentation of Gavels to Past Presidents of Medical Society of the County of Sullivan

Remarks: **Herbert T. Wagner**, M.D., Bronxville, Executive Director, Medical Society of the State of New York

Remarks: **Henry I. Fineberg**, M.D., Jamaica, President, Medical Society of the State of New York

Remarks: **Mrs. James L. McCartney**, Garden City, President, Woman's Auxiliary to the Medical Society of the State of New York

9:45 P.M.—Entertainment by Grossinger staff and orchestra

Thursday, October 15

Morning

10:00 A.M.—Panel Discussion: "Medical Economics Applied to the Practice of Medicine"

Gerald D. Dorman, M.D., New York City, Chairman, Commission on Medical Services, Medical Society of the State of New York, *Moderator*

Waring Willis, M.D., Bronxville, Chairman, Council Committee on Economics

Carl R. Ackerman, M.D., Bronx, Chairman, Council Committee on Medical Care Insurance

John C. McClintock, M.D., Albany, Chairman, Council Committee on Public Relations

Anthony A. Mira, M.D., New York City, Director, Bureau of Industrial Health and Workmen's Compensation

Mr. George P. Farrell, New York City, Director, Bureau of Medical Care Insurance

Mr. Frederick W. Miebach, New York City, Director, Department of Communications

[Continued on page 3482]

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[Continued from page 3480]

Afternoon

12:30 P.M.—Luncheon

The afternoon will be free for those attending to enjoy the facilities of The Grossinger.

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Ulster	Irving J. Josephson, M.D., Kingston

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Schenectady	August B. Korkosz, M.D., Schenectady
Warren	Byron C. Tillotson, M.D., Glens Falls
Washington	Newton Krumdieck, M.D., Cambridge

New York University Study on Workmen's Compensation

Schedule of Meetings

Date	*Time*	*City*	*Place*
September 15	2 P.M.	Binghamton	Rehabilitation Services Building 204 Court Street
September 16	9 A.M.	Syracuse	Upstate Medical Center 766 Irving Avenue
September 18	9 A.M.	New York City	NYU—Bellevue Medical Center 550 First Avenue
September 23	2 P.M.	Rochester	University of Rochester River Campus
September 24	9 A.M.	Buffalo	State University 1300 Elmwood Avenue
October 2	9 A.M.	Albany	Assembly Chamber State Capitol

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NECROLOGY

Solomon S. Amelkin, M.D., of Brooklyn, died on August 8 in the Jewish Hospital at the age of fifty-seven. Dr. Amelkin graduated in 1925 from Long Island College Hospital Medical School and interned at Beth Moses Hospital. Dr. Amelkin was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Phebe Pamela Brown, M.D., of Poughkeepsie, died on July 23 in Newark Hospital at the age of eighty. Dr. Brown graduated in 1921 from the University of Buffalo School of Medicine. She was a member of the Dutchess County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Paul S. Erlanger, M.D., of Sarasota, Florida, formerly of Rochester, retired, died on July 20 in Sarasota at the age of sixty-five. Dr. Erlanger received his medical degree in 1922 from the University of Tubingen. He had been an attending surgeon in ear, nose, and throat and bronchoscopy-esophagology at Park Avenue Hospital. Dr. Erlanger was a member of the Rochester Academy of Medicine, the Rochester Pathological Society, Central New York Eye, Ear, Nose and Throat Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Armin Landsman, M.D., of New York City, retired, died in Beth Israel Hospital on July 31 at the age of eighty-five. Dr. Landsman graduated in 1900 from Cornell University Medical College. He was a consultant in proctology at Jewish Memorial Hospital where he had served as president of the medical board from 1916 to 1950. From 1916 to 1932 he was a deputy surgeon in proctology at New York Hospital and was a former instructor in pharmacology at New York University Medical College. Dr. Landsman was a member of the American Proctologic Society, the New York Academy of Medicine, the New York Proctological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Suzanne G. Renard, M.D., of New York City, died on August 3 in Geneva, Switzerland, at the age of seventy-one. Dr. Renard received her medical degree in 1922 from the University of Paris. For her nursing assistance to French troops in World War I she was made a Chevalier of the French Legion of Honor.

Cornelius Packard Rhoads, M.D., of New York City, died at Stonington, Connecticut on August 13 at the age of sixty-one. Dr. Rhoads graduated in 1924 from Harvard University Medical School. He was director of Sloan-Kettering Institute and a scientific director of Memorial Hospital. For his work during World War II Rhoads received the Legion of Merit for having "developed new methods of diagnosis and treatment for the relief of injuries due to toxic chemicals, and perfected a compound to counter the effects of blister gas. He also developed equipment for detecting gas in air, food, and water." Also during the war he was chairman of the blood-procurement program and vice-chairman of the committee on treatment of gas casualties of the National Research Council. After the war, Dr. Rhoads was special consultant on cancer to the United States Public Health Service and consultant at the Brookhaven National Laboratories of the Atomic Energy Commission.

Dr. Rhoads was a Fellow of the American College of physicians and a member of the American Association of Pathologists and Bacteriologists, the American Society for Experimental Pathology, the American Society for Clinical Investigation, the Association of American Physicians, the American Radium Society, the American Society of Tropical Medicine and Hygiene, the American Association for Cancer Research, the Society for Experimental Biology and Medicine, the American Geriatrics Society, the American Public Health Association, the James Ewing Society, the New York Academy of Medicine, the New York Society for Medical Research, the Society of Medical Jurisprudence of New York City, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Joseph Sheffield, M.D., of Frankfort, retired, died on July 19 at his home at the age of seventy-nine. Dr. Sheffield graduated in 1904 from Syracuse University College of Medicine.

[Continued on page 3490]

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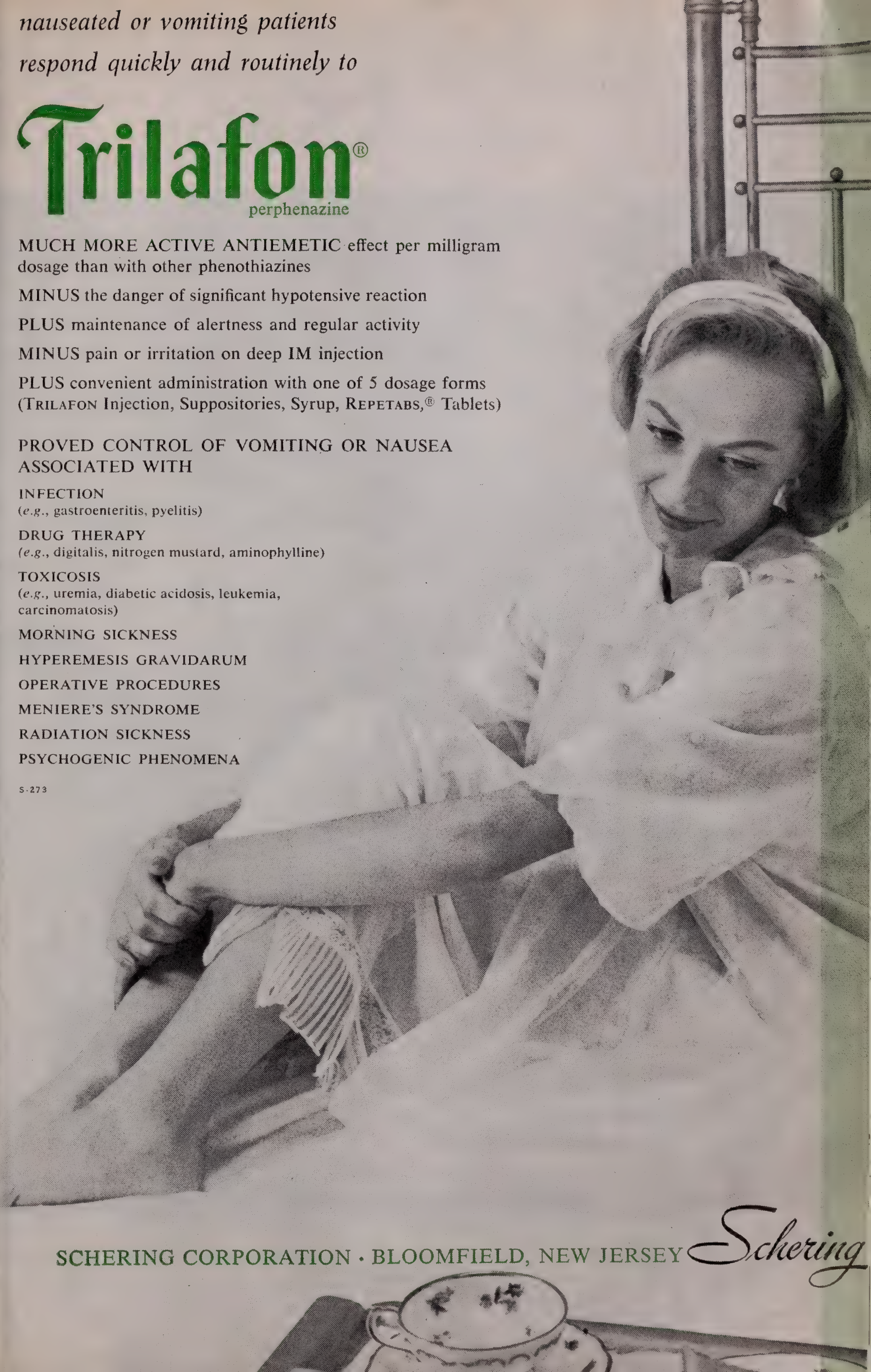

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In every arthritic state . . .

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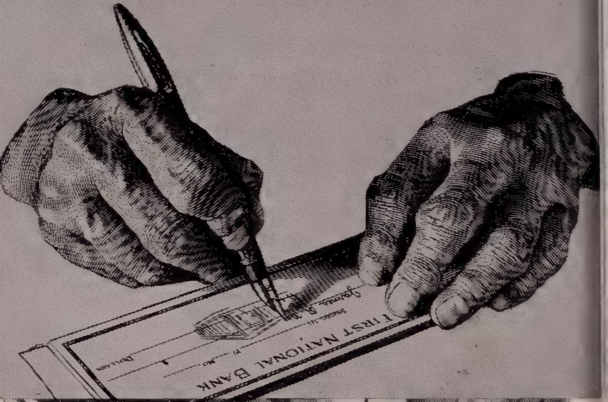
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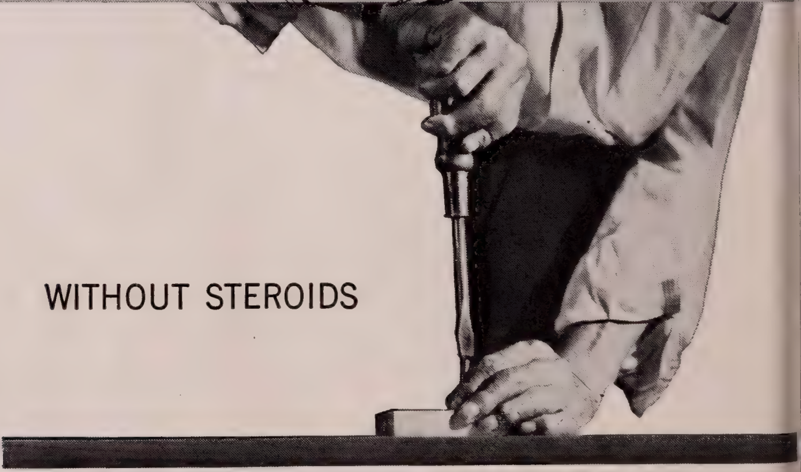

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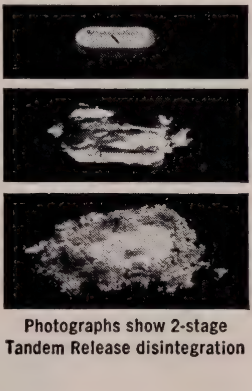
Buffered Pabirin is formulated to provide high and sustained salicylate blood levels. Each tablet consists of an outer layer containing a buffer (aluminum hydroxide), para-aminobenzoic acid, and ascorbic acid; a core of acetylsalicylic acid.

In the stomach, the outer layer quickly releases the buffer, which protects against nausea, dyspepsia and other gastrointestinal symptoms so frequently encountered with salicylates alone. The core of Buffered Pabirin then disintegrates rapidly, permitting rapid absorption of the acetylsalicylic acid for faster pain relief.



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Each tablet contains:

Acetylsalicylic acid (5 gr.)	300 mg.
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Ascorbic acid	50 mg.
Dried aluminum hydroxide gel	100 mg.

All Buffered Pabirin is sodium- and potassium-free.

Dosage: Two or three tablets 3 or 4 times daily.

References: 1. Hart, D.; Bagnall, A. W.; Bunim, J. J., and Polley, F. H.: Ninth International Congress on Rheumatic Diseases, Toronto, Ont. (June 25) 1957. 2. Report of Joint Committee, Medical Research Council & Nuffield Foundation, Treatment of Rheumatoid Arthritis, British Medical Journal (April 13) 1957. 3. Friend, D. G.: New England J. Med. 257:278 (Aug.) 1957.

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Tofrānil® a thymoleptic

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Specific in Depression

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Produce remission or improvement in 70-85% of cases

Act effectively in all types of depression

Afford equally good results in severe as in mild cases

Achieve therapeutic benefit with minimal risk of serious side reaction

Indications for Tofrānil include:

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……not a MAO inhibitor

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Inhibit monoamine oxidase either in brain or liver with its associated risks

Produce dangerous potentiation of other drugs such as barbiturates and alcohol

Act by producing undesirable central nervous stimulation leading to agitation and excitement

Cause disturbance of color vision

The efficacy of Tofrānil is attested by more than 50 published reports and confirmed by clinical experience in more than 50,000 cases.

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new modern site-of-pain relief in musculoskeletal distress

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Deeply absorbed to permeate affected sensory endings, the proven local analgesic-anesthetic agents in GER-O-FOAM give relief in minutes, lasting for hours in . . . rheumatoid arthritis, osteoarthritis, muscle sprain, fibromyositis, low back pain, etc.

IN A NEW CLINICAL STUDY[1] GER-O-FOAM gave "satisfactory" results in 85% of chronic musculoskeletal patients. Response was "striking" in certain intractable acute conditions . . . "permitting functional exercises otherwise impossible."

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1. Gordon, E. E. and Haas, A.: Industrial Medicine & Surgery 28:217, 1959.

NECROLOGY

[Continued from page 3484]

In 1912 he was named health officer for the Town of Schuyler and took on the same duties in the Town and Village of Frankfort in 1921 and the Town of Litchfield in 1930. He had served one term as Herkimer County coronor and was a past president of Herkimer County Medical Society of which he was an honorary member. Dr. Sheffield was a member of the Herkimer County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Harrington Stevens, M.D., of Tuckahoe, died in Knoxville, Tennessee, on July 18 at the age of eighty. Dr. Stevens graduated in 1905 from Columbia University College of Physicians and Surgeons. He was an attending physician and chief of the Outpatient Department at Lawrence Hospital, Bronxville, as well as the last surviving member of the first five Westchester doctors on the staff when the hospital was opened fifty years ago. He was also director of the medical aid department at Burroughs-Wellcome & Co.'s Tuckahoe plant and had served as Tuckahoe school physician and physician for Concordia Collegiate Institute until 1956, as well as a staff physician for the New York Central System. Dr. Stevens was a member of the New York Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Luther Allen Thomas, M.D., of Painted Post, died on July 18 in the Corning Hospital at the age of seventy-nine. Dr. Thomas graduated in 1906 from the University of Buffalo School of Medicine. He was an attending in surgery at Corning Hospital where he had served as president in 1945. Dr. Thomas was a member and one of the first presidents of the Steuben County Medical Society, and a member of the Medical Society of the State of New York and the American Medical Association.

Brooks Vance, M.D., of New York City, died at his home in Yonkers on August 2 at the age of sixty-one. Dr. Brooks graduated in 1923 from the University of Nebraska College of Medicine. He was an associate physician at Lenox Hill and St. Clare's Hospitals. Dr. Vance was a Fellow of the American College of Chest Physicians and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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Supplied: Tiny 10 mg., 25 mg., and 100 mg. tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution, 10 cc. multiple-dose vials.

References: 1. Farah, L.: Internat. Rec. Med. *169:* 379 (June) 1956. 2. Over 200 laboratory and clinical papers from 14 countries.

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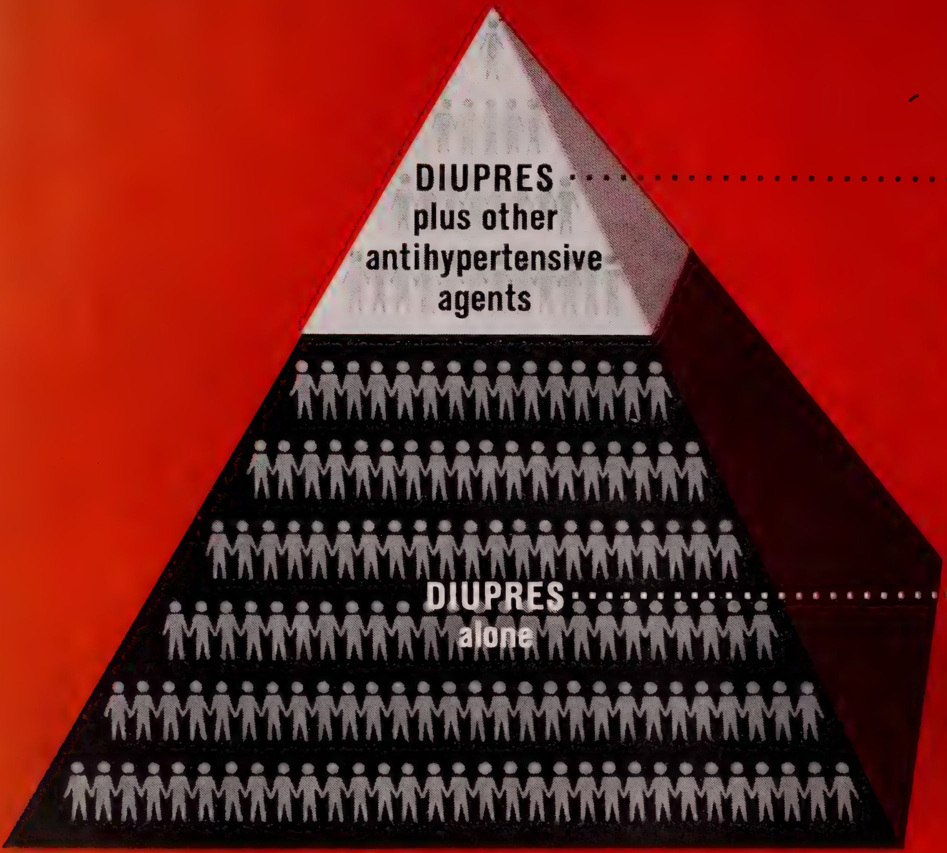
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MEDICAL MEETINGS

New York Proctologic Society

The New York Proctologic Society will meet on Thursday, October 8, at the New York Academy of Medicine, 2 East 103rd Street, New York 29, New York, at 8:30 P.M.

Physicians who will speak at the meeting are as follows: *Brooklyn:* Drs. William Hoffman, Leon Littman, and Robert Robinson; *New York City:* Drs. Henry Peskin, Benjamin W. Warner, Richard R. Warner, and Lewis Weintraub; *Patchogue:* Dr. Harry Marganoff. For information concerning the meeting contact Norman L. Freund, M.D., 163 Ocean Avenue, Brooklyn 25, New York.

Samuel E. Cohen, M.D., Fourth Memorial Teaching Day

The Samuel E. Cohen, M.D., fourth memorial teaching day will be held on Wednesday, October 14, at the Sheraton Inn, Binghamton. The subject of the teaching day will be "Vascular Disease."

Speakers and their subjects are as follows: Irving Innerfield, M.D., New York City, "Fibrinolysis and New Concepts of Its Use"; Herbert M. Stauffer, M.D., Philadelphia, "Radiologic Diagnosis of Vascular Disease"; Harry A. Kaplan, M.D., Brooklyn, "Vascular Abnormalities of the Brain"; and Gerald H. Pratt, M.D., New York City, "Vascular Surgery and Grafts."

The afternoon session will start at 2:00 P.M. and the evening session will start at 6:30 P.M., followed by a discussion and question and answer period.

Postgraduate credit is given to members of the American Academy of General Practice. Reservations for dinner should be made to: Cohen Teaching Day, Our Lady of Lourdes Memorial Hospital, 169 Riverside Drive, Binghamton, New York.

National Association for Retarded Children

The National Association for Retarded Children will hold its annual convention October 21 through 24 at the Netherland Hilton Hotel, Cincinnati, Ohio. Workshops will be held for teachers, rehabilitation workers, therapists, recreation workers, social workers, administrators, parents, and volunteers. For information and a convention program write to: National Association for Retarded Children, 386 Park Avenue South, New York 16, New York.

Eastern Psychiatric Research Association

The Eastern Psychiatric Research Association, Inc. will hold its fourth annual meeting Friday and Saturday, October 23 and 24 at the Waldorf-Astoria Hotel, New York City. Physicians from the New York area who will participate in the meeting are as follows: *Queens Village:* Dr. Lauretta Bender; *New York City:* Drs. Alexander Bearn, Ferruccio di Cori, David J. Impastato, Murray Jarvik, Franz Kallmann, William Malamud, Alfred Mirsky, Juan Negrin, Leon Roizin, and D. W. Wooley.

For information concerning the meeting contact David J. Impastato, M.D., 46 Fifth Avenue, New York City.

Omaha Mid-West Clinical Society

The twenty-seventh annual postgraduate session of the Omaha Mid-West Clinical Society will be held November 2 through 5 at the Civic Auditorium, Omaha, Nebraska.

Among the guest speakers will be two New York physicians, Simon Rodbard, M.D., Buffalo, professor of experimental medicine and director, University of Buffalo Chronic Disease Research Institute; and Louis M. Hellman, M.D., Brooklyn, professor and chairman of the Department of Obstetrics and Gynecology, State University of New York Downstate Medical Center. Both physicians will speak on several topics related to their field.

Annual Convention of Association of Military Surgeons

The sixty-sixth annual convention of the Association of Military Surgeons will be held November 9 through 11 at the Mayflower Hotel, Washington, D.C.

Paul H. Hoch, M.D., commissioner of the Department of Health for the State of New York, will deliver the Porter Lecture on "Trends in Mental Health," on November 10.

Fourth Annual Clinical Conference at Texas Medical Center

The fourth annual clinical conference of the University of Texas, M. D. Anderson Hospital and Tumor Institute, Texas Medical Center, will be held November 13 and 14. The theme of the conference will be "Tumors of the Head and Neck."

Among the guest speakers will be Glenn H. Leak, M.D., cancer coordinator, University of Buffalo School of Medicine.

For information concerning the conference write to the editorial office, M. D. Anderson Hospital, Houston 25, Texas.

MEDICAL NEWS

Physicians' Symphony Orchestras—Physicians, dentists, members of allied professions, and also nonmedical musicians are invited to become members of two doctors' orchestras in New York City.

The Doctors' Orchestral Society of New York rehearses on Thursday evenings in the auditorium of the Stuyvesant High School, 15th Street and First Avenue, New York City, at 8:30 P.M.

The Brooklyn Doctors' Symphony meets Wednesday evenings in the auditorium of the Brooklyn High School of Home Making at 901 Classon Avenue, corner of Washington Avenue, Brooklyn, at 8:30 P.M. Rehearsals of both groups will resume in the fall.

For further details contact Benjamin A. Rosenberg, M.D., 909 President Street, Brooklyn, Telephone NEvins 8-2370.

Examination for Medical Officers in United States Public Health Service—A competitive examination for appointment of physicians as medical officers in the Regular Corps of the United States Public Health Service Commissioned Corps will be held throughout the United States November 17 through 20, 1959.

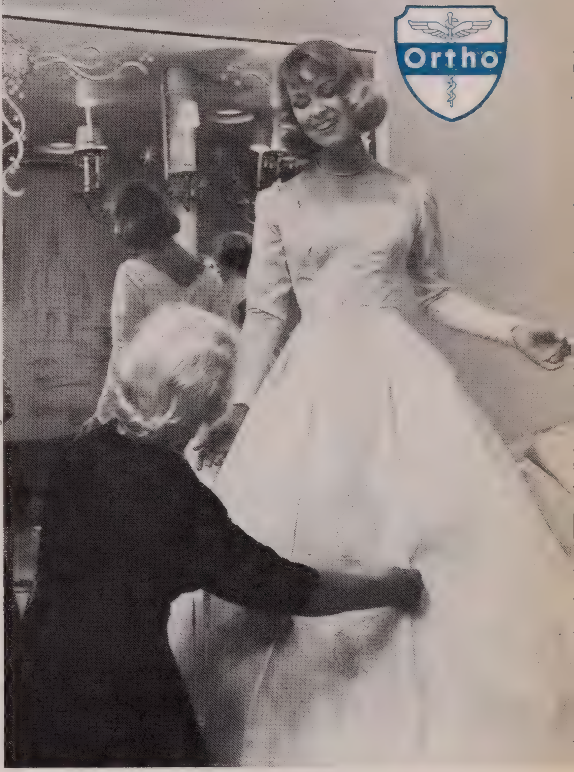
Entrance examinations will include an oral interview, physical examination, and comprehensive objective examinations in the appropriate professional fields. Requirements are U.S. citizenship and graduation from a recognized school of medicine.

Application forms may be obtained by writing to the Surgeon General, United States Public Health Service (P), Washington 25, D.C. Completed application forms must be received no later than October 9, 1959.

American Neurological Association Elects Officers—At the eighty-fourth annual meeting of The American Neurological Association held in Atlantic City in June the following New York City physicians were elected as officers for the year 1959–1960: Harold G. Wolff, M.D., president-elect; Samuel Brock, M.D., second vice-president; and Melvin D. Yahr, M.D., secretary-treasurer and editor of the transactions.

The following physicians from New York City were elected to the Association: Robert Fishman, M.D., Eli S. Goldensohn, M.D., Howard Krieger, M.D., Tiffany Lawyer, M.D., and Lewis P. Rowland, M.D.

[Continued on page 3498]



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For generations without number wine has been extolled as an "effective stimulant" and, therefore, valuable aid to treatment in various types of cardiovascular disease. It was this peculiar property, no doubt, which prompted the poet, Salerno, some 800 years ago to write—"Sound wine revives in age the heart of youth."

Now, as a result of modern research, we are obtaining concrete evidence of the favorable physiologic action of wine to lend support to the empiricism of ancient usage.

Both brandy and wine in moderate quantities have been found to substantially increase the pulse rate and step up the stroke volume of the heart.

Wine has been found to aid drug therapy in relieving the pain of angina pectoris and obliterative vascular disease.

Moreover, aside from the purely hypotensive actions of wine, its unquestionable euphoric effects help counter the depression, apprehension and anxiety so frequently present in sufferers from heart and coronary disorders.

The beneficial actions of wine appear to transcend those of more concentrated alcoholic beverages—valuable cardiotonic properties having been attributed to the aliphatic aldehydes and other nonalcoholic compounds recently isolated from certain wines and grape varieties.

It goes without saying that the use of alcohol, even in the form of wine, is contraindicated in hypertension accompanied by certain types of renal disease.

For a discussion of the many modern Rx uses for wine, write for the brochure, *"Uses of Wine in Medical Practice"* to Wine Advisory Board, 717 Market Street, San Franciscio 3, California.

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Just one 10 mg. Daricon tablet in the morning, and one at night before retiring, keeps your patient free from the pain and discomfort caused by gastrointestinal spasm, hypermotility, and hypersecretion.

Daricon is a remarkably potent and well tolerated antisecretory/antimotility agent. Its *naturally* prolonged action provides day and night relief of pain and symptoms associated with peptic ulcer, functional bowel syndrome, biliary tract dysfunctions, and other gastrointestinal disorders characterized by spasm, hypermotility, and hypersecretion.

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References: 1. Finkelstein, M., et al.: J. Pharmacol. & Exper. Therap. 125:330 (April) 1959. 2. McHardy, G., et al.: Postgrad. Med., in press. 3. Winkelstein, A.: Amer. J. Gastroenterol., in press. 4. Finkelstein, M., et al.: Presented at Fall Meeting, Amer. Soc. Pharmacol. & Exper. Therap., 1958. 5. Leming, B.: Clin. Med. 6:423 (March) 1959.

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[Continued from page 3495]

The eighty-fifth annual meeting of the Association will be held June 13 through 15, 1960, at the Statler Hotel in Boston.

Examinations for American Board of Obstetrics and Gynecology—The next scheduled examination (part 1), written, and review of case histories for all candidates, will be held in various cities of the United States, Canada, and military centers outside the continental United States, on Friday, January 15, 1960. Candidates must submit case reports to the office of the secretary within thirty days of being notified of their eligibility to part 1.

Current bulletins may be obtained by writing to: Robert L. Faulkner, M.D., executive secretary and treasurer, 2105 Adelbert Road, Cleveland 6, Ohio.

New Booklet on Cancer Offered by State Health Department—A newly-revised eight-page booklet entitled "The Truth About Cancer" has been published by the State Health Department. The booklet discusses what cancer is, the danger signs, and specific types of cancer. It is available without cost to residents of New York State from the Office of Public Health Education, New York State Department of Health, 84 Holland Avenue, Albany 8, New York.

American College of Physicians Postgraduate Courses—The American College of Physicians has announced its autumn-winter schedule of postgraduate courses. For brochures listing the courses write to: American College of Physicians, Executive Offices, 4200 Pine Street, Philadelphia 4, Pennsylvania.

Liberty Mutual to Present Symposium—A national symposium on the problem of controlling disability, especially in the areas of cardiac disease, the degenerative diseases of the aged, and psychologic disorders, will be sponsored by the Liberty Mutual Insurance Company in Boston, October 15 and 16. Key issues in medical economics will also be considered.

Among the physicians taking part in the symposium will be Howard A. Rusk, M.D., New York University-Bellevue Medical Center, and Alan A. McLean, M.D., psychiatrist, IBM Corporation.

For information concerning the symposium write to: Mr. Edward T. Chase, secretary, National Symposium on Controlling Disability, Liberty Mutual Insurance Company, Boston, Massachusetts.

St. Clare's Hospital Opens New Pediatric Unit—A new 20-bed pediatric unit was opened recently at St. Clare's Hospital, 600 McClellan Street, Schenectady. Small infants will have their own nursery of four bassinets with adjacent examination and work rooms. A second nursery has four cribs, and the older children occupy three two-bed rooms and two three-bed rooms.

Oxygen is piped into all rooms so that it will be available for oxygen tents, croupettes, incubators, and isolettes. A playroom where convalescing children can be supervised is a part of the newly-opened unit.

Postgraduate Courses at NYU-Bellevue Medical Center—New York University-Bellevue Medical Center's Post-Graduate Medical School offers the following courses in ophthalmology starting in November: "Ophthalmic Plastic Surgery for Specialists," a part-time, five-day course, 2:00 P.M. to 5:00 P.M., November 16 through 20; "Surgery of the Cornea," a full-time, five-day course, November 30 through December 4, "Neuro-ophthalmology," a part-time, five-day course, 9:00 A.M. to 12 NOON, January 18 through 22, 1960.

The Medical Center's Post-Graduate Medical School will also offer a course "For General Physicians," November 9 through 13, 1959, and again May 16 through 20, 1960, Monday through Friday, 9:00 A.M. to 5:00 P.M.

A postgraduate course "For the Experienced Clinician and Research Worker" will be offered March 14 through 18, 1960, Monday through Friday, 9:00 A.M. to 5:00 P.M.

For additional information on any of these courses contact the office of the associate dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

Physicians Win Fellowships in Ophthalmology—Two young New York physicians have been announced as 1959 winners of fellowships provided by the ophthalmology scholarship fund of the Guild of Prescription Opticians of America, Inc. Alvin H. Brackup, M.D., Brooklyn, will serve his residency at the New York Eye and Ear Infirmary, and John A. Eisenschmid, M.D., Pittsford, will serve his residency at the University of Rochester School of Medicine.

The fellowship consists of $1,800 payable in monthly stipends over the period of the three-year residency.

Columbia Offers Postgraduate Courses in Clinical Medicine—Columbia University College of Physicians and Surgeons has issued its 1959–1960 booklet on postgraduate courses in clinical medicine. These courses are intended to aid the practicing physician in renewing and continuing his educational experience in fields where medical research and daily clin-

[Continued on page 3500]

The Seventeenth Annual

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[Continued from page 3498]

ical observations present constantly changing concepts of prevention, diagnosis, and treatment.

The program is not intended to meet the needs of the physician who seeks to become a specialist, nor is it intended to provide the foreign-trained physician with a broad understanding of medicine in the United States.

Those interested may obtain a copy of the booklet by writing to Richard J. Cross, M.D., assistant dean, Columbia University College of Physicians and Surgeons, 630 West 168th Street, New York 32, New York.

Personalities

Honored

Joseph L. Camp, M.D., with a dinner given by the officials and employes of Letchworth Village on the occasion of his promotion to the post of deputy assistant commissioner of mental hygiene . . . Leo W. Tucker, M.D., at a luncheon given by the American Merchant Marine Institute's medical committee to mark his retirement as medical officer in charge of the Quarantine Station in New York Harbor, U.S. Public Health Service.

Appointed

V. Charles Ancona, M.D., New York City, as director of medicine at St. Clare's Hospital, New York City . . . William N. Hubbard, Jr., M.D., West Nyack, as dean of the University of Michigan Medical School . . . William A. Kelly, M.D., Mount Vernon, to an interim administrative committee to direct the Associated Hospital Service of New York . . . Ira A. Polisar, M.D., Brooklyn, as head of the Department of Otolaryngology of Long Island College Hospital . . . Lewis L. Robbins, M.D., Sands Point, as medical director of Hillside Hospital in Glen Oaks.

New Offices

James W. Carlin, M.D., for the practice of internal medicine, in the Erdle Building at the corner of East Avenue and Fairport Road, Pittsford . . . Thomas V. Casey, M.D., for the practice of internal medicine, at 303 3rd Street, Troy . . . Henry John Kinosian, M.D., ophthalmologist, and his wife, Mary Jane Kinosian, M.D., neurologist, at 323 Washington Street, Ogdensburg, for practice in their respective fields . . . William C. Taylor, M.D., 410 Hotel Jamestown Building, Jamestown, for the practice of pediatrics . . . Ivan J. Trembley, M.D., for the practice of internal medicine at 10 North Main Street, Pittsford.

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NIAMID is clinically effective in a broad range of depressive states, including: involutional melancholia, senile depression, postpartum depression, reactive depression, the depressive stage of manic-depressive disease, and schizophrenic depressive reaction.

A wide variety of phychoneurotic depressions seen in general practice also respond effectively to NIAMID. Depression associated with the menopause and with postoperative states, and depression accompanying chronic or incurable diseases such as gastrointestinal and cardiovascular disorders, arthritis, and inoperable cancer, can now be treated successfully with NIAMID.

NIAMID is also strikingly effective for many complaints, mild or severe, vague or well defined, when due to masked depression rather than to organic disease. This masked depression may take the form of guilt feelings, crying spells or sadness, difficulty in concentration, loss of energy or drive, insomnia, emotional fatigue, feelings of hopelessness or helplessness, loss of interest in normal activity, listlessness, apprehension or agitation, and loss of appetite and weight.

While tranquilizers have had some measure of effectiveness in many of these areas, NIAMID now gives the practicing physician a new, safe drug for the specific treatment of depression without the risk of increasing the depressive symptoms.

New safety

NIAMID, in extensive clinical trials, has not been associated with the hepatotoxic reactions observed with the first of the monoamine oxidase inhibitors. These reactions have not been seen with NIAMID.

Acute and chronic toxicity studies show this distinctive freedom from toxicity. Moreover, during the extensive clinical trials of NIAMID by a large number of investigators, not only has no liver damage been reported, but only in a very few isolated instances have hypotensive effects been seen.

The absence of toxicity may be the result of the unique carboxamide group in the NIAMID molecule. This structure may explain why NIAMID is excreted largely unchanged in the urine, with only insignificant quantities of potentially free hydrazine being formed. Previously, where a monoamine oxidase inhibitor had been associated with hepatic toxicity, there was some evidence that substantial quantities of free hydrazine were formed in the body.

Background of NIAMID

A major advance in the treatment of mental depression came with a newer understanding of the influence of brain serotonin and norepinephrine on the mood. Levels of both these neurohormones are decreased in animals under experimental conditions analogous to depression; relief of these model depressions is seen with a rise in the levels of both serotonin and norepinephrine.

A second advance came with the development of monoamine oxidase inhibitors, substances which raise the cerebral level of both serotonin and norepinephrine. The first of the amine oxidase inhibitors raised the cerebral level of serotonin, but did not appear to raise norepinephrine levels proportionately.

*TRADEMARK FOR BRAND OF NIALAMIDE

Attention at Pfizer Research was then directed to a new drug that would overcome this disadvantage. NIAMID significantly raises the cerebral level of *both* serotonin and norepinephrine under experimental conditions.

The dramatic discovery of NIAMID now makes available an extremely effective, safe antidepressant for the successful treatment of a full range of depressive states.

Precautions

Side effects are most often minor and mild manifestations of central nervous system stimulation, modifiable by a reduction in dosage; these may take the form of restlessness, insomnia, headache, weakness, vertigo, dry mouth, and perspiration. Care should be taken when NIAMID is used with chlorothiazide compounds, since hypotensive effects have been noted in some patients receiving combined therapy—even though hypotension has rarely been noted with NIAMID alone. There has been no evidence of liver damage in patients on NIAMID; however, in patients who have any history of liver disease, the possibility of hepatic reactions should be kept in mind.

Dosage and Administration

Start with 75 mg. daily in single or divided doses. After a week or more, revise the daily dosage upward or downward, depending upon the response and tolerance, in steps of one or one-half 25 mg. tablet. Once satisfactory response has been attained, the dosage of NIAMID may be reduced gradually to the maintenance level.

The therapeutic action of NIAMID is gradual, not immediate. Many patients respond within a few days, others satisfactorily in 7 to 14 days. Some patients, particularly chronically depressed or regressed psychotics, may need substantially higher dosages (as much as 200 mg. daily has been used) and prolonged administration before responses are achieved.

Supply

NIAMID is available in: 25 mg., pink, scored tablets in bottles of 100; and 100 mg., orange, scored tablets in bottles of 100.

References

Complete bibliography and Professional Information Booklet are available on request.

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1. Spoor, H.: Proc. Scient. Sec. TGA No. 31, May 1959
2. Frank, L.: New York J. Med. 59:2892, 1959

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1. Handelsman, M. B.; Levitt, L., and Calabretta, M. F.: Ann. New York Acad. Sc. 74:632, 1959. 2. Greenhouse, B.: Ibid., p. 643. 3. Dobson, H., et al.: Ibid., p. 940. 4. Forsham, P. H.; Magid, G. J., and Dorosin, D. E.: Ibid., p. 672. 5. Beaser, S. B.: Ibid., p. 701; New England J. Med. 259:573, 1958. 6. Blöch, J., and Lenhardt, A.: Ann. New York Acad. Sc. 74:954, 1959. 7. O'Driscoll, B. J.: Lancet 2:749, 1958. 8. Hadley, W. B.; Khachadurian, A., and Marble, A.: Ann. New York Acad. Sc. 74:621, 1959. 9. Duncan, G. G.; Schless, G. L., and Demeshkieh, M. M. A.: Ibid., p. 717. 10. Hills, A. G., and Abelove, W. A.: Ibid., p. 845. 11. Drey, N. W., et al.: Ibid., p. 962.

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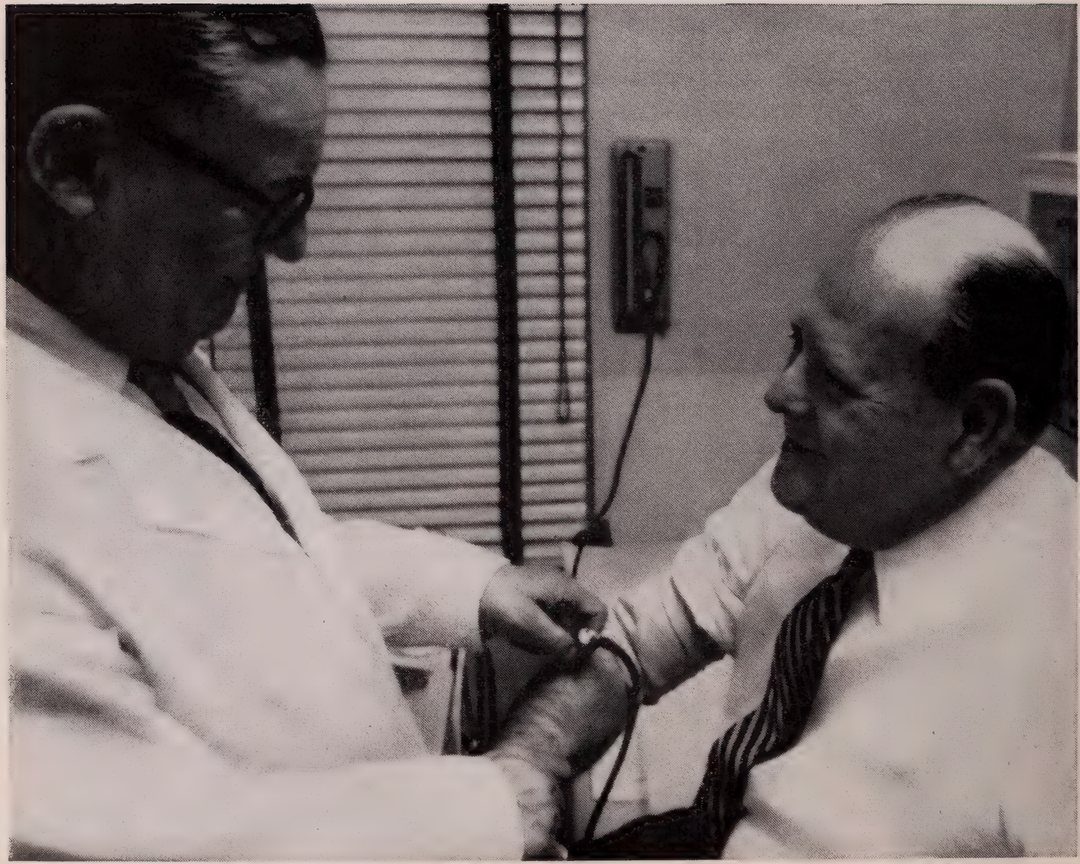

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Nasal congestion	7	7	**0**
Gastrointestinal disturbances	2	0	**2**
Conjunctivitis	1	1	**0**

*Two of the 24 patients had two troublesome side effects.

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1. Herrmann, G. R., Vogelpohl, E. B., Hejtmancik, M. R., and Wright, J C.: J.A.M.A. *169*:1609 (April 4) 1959.
2. Bartels, C. C. Clinical report to CIBA.

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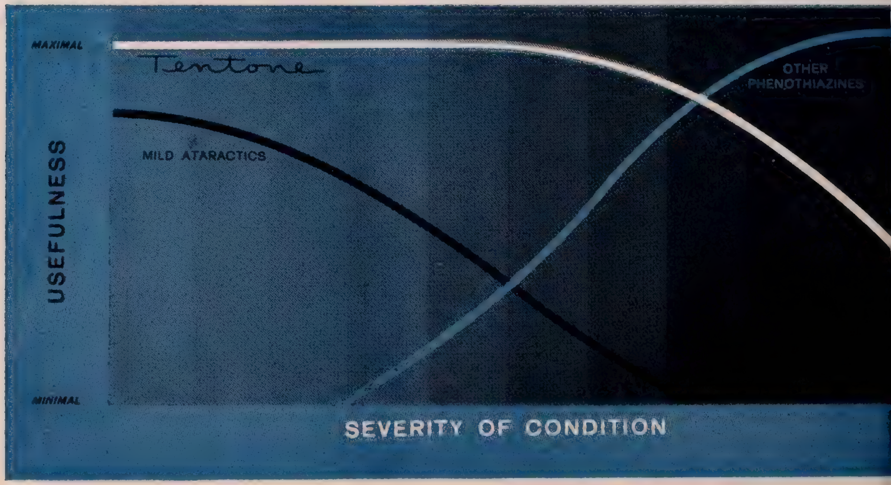

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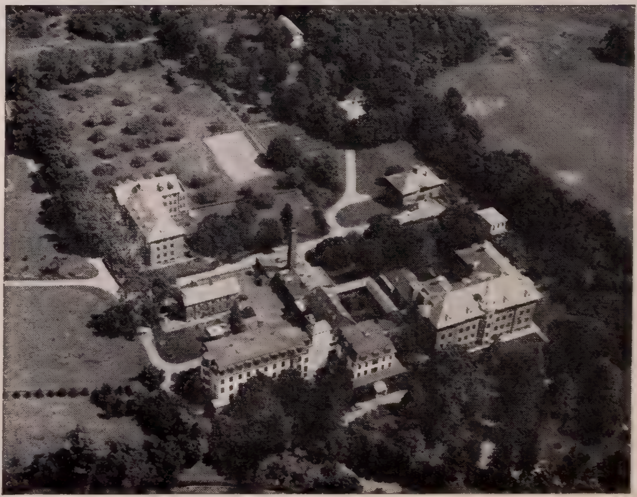

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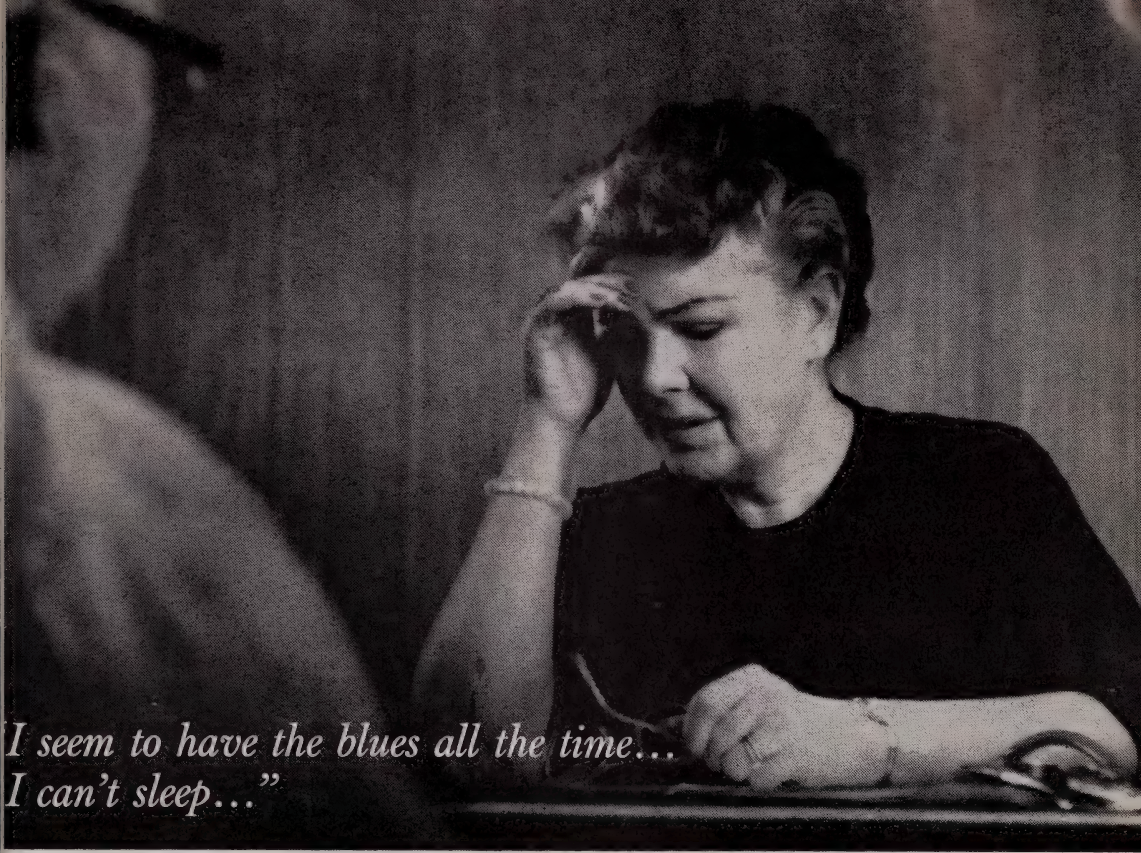
"I seem to have the blues all the time...
I can't sleep..."

in the depressed, unhappy patient

PROMPTLY IMPROVES MOOD

without excitation

Acts fast to relieve depression and its common symptoms: sadness, crying, anorexia, listlessness, irritability, rumination, and insomnia.

Restores normal sleep—without hang-over or depressive aftereffects. Usually eliminates need for sedative-hypnotics.

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Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

Composition: Each light-pink, scored tablet contains 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate.

References:
1. Alexander, L.: J.A.M.A. 166:1019, March 1, 1958.
2. Current personal communications; in the files of Wallace Laboratories.
3. Pennington, V.M.: Am. J. Psychiat. 115:250, Sept. 1958.

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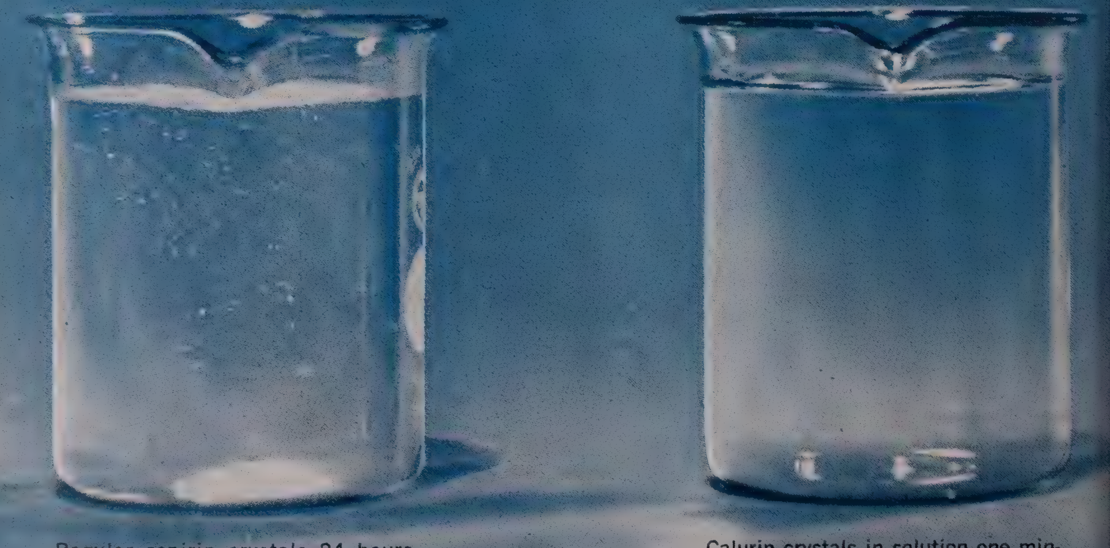
avoid the risk of insoluble, irritating aspirin particles

Chief among the drawbacks to aspirin usage is gastric intolerance. This ranges from mild upset and "heartburn" to severe hemorrhagic gastritis.[1-10] Studies performed in conjunction with gastrectomy[4,5] and gastroscopy[2] have shown insoluble aspirin particles firmly adherent to the gastric mucosa and imbedded between rugae. Reactions varying from mild hyperemia to erosive gastritis have been reported to occur in the areas immediately surrounding these adherent particles.[2,4,5] This is reported to be particularly true in patients with peptic ulcer.[4]

CALURIN is the freely soluble, stable calcium aspirin complex. Its high solubility forestalls gastric irritation or damage



Regular aspirin crystals 24 hours after being mixed into water.

Calurin crystals in solution one minute after being mixed into water.

CALURIN*

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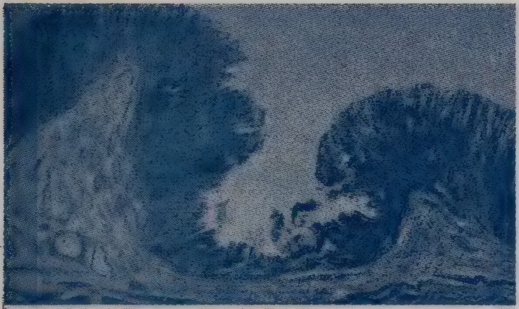
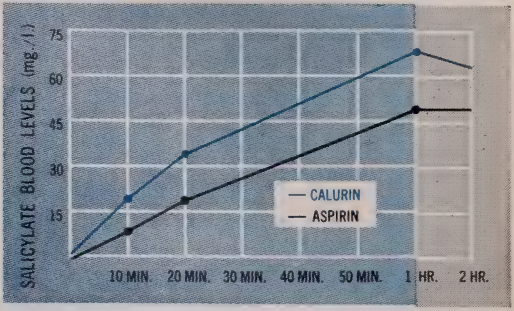


Particle-induced ulceration — section through lesion found in gastrectomy specimen. An aspirin particle was found firmly imbedded in this undermined erosion. Such lesions may be associated with the relative insolubility of aspirin, which remains in particulate form after dispersion in gastric contents.



Calurin, being freely soluble, is promptly available for absorption into the systemic circulation. Salicylate blood levels in 12 subjects receiving both Calurin and plain aspirin were found to rise more than twice as high within ten minutes following Calurin. Also, these levels persisted higher for at least two hours.[11]

CALURIN is the aspirin of choice, especially when high-dosage, long-term therapy is indicated:

1 High solubility forestalls gastric irritation or damage. This advantage is of special importance in arthritis and other conditions requiring high-dosage, long-term therapy.

2 Produces high salicylate blood levels rapidly for prompt analgesic, anti-pyretic, anti-arthritic effect.

3 Sodium-free — for safer long-term therapy.

4 Flavored: can be chewed or dissolved in the mouth without water if desired — an advantage for patients requiring aspirin administration during the night and for pediatric patients.

Dosage: Each tablet of Calurin is equivalent to 300 mg. (5 gr.) of acetylsalicylic acid. For relief of pain and fever in adult patients, the usual dose of Calurin is 1 to 3 tablets every 4 hours, as needed; in arthritic states, 2 or 3 tablets 3 or 4 times daily; in rheumatic fever, 3 to 5 tablets 4 or 5 times daily. For children over 6 years, the usual dose is 1 tablet every 4 hours; for children 3 to 6 years, ½ tablet every 4 hours, as required. Not recommended for children under 3.

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1. Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958

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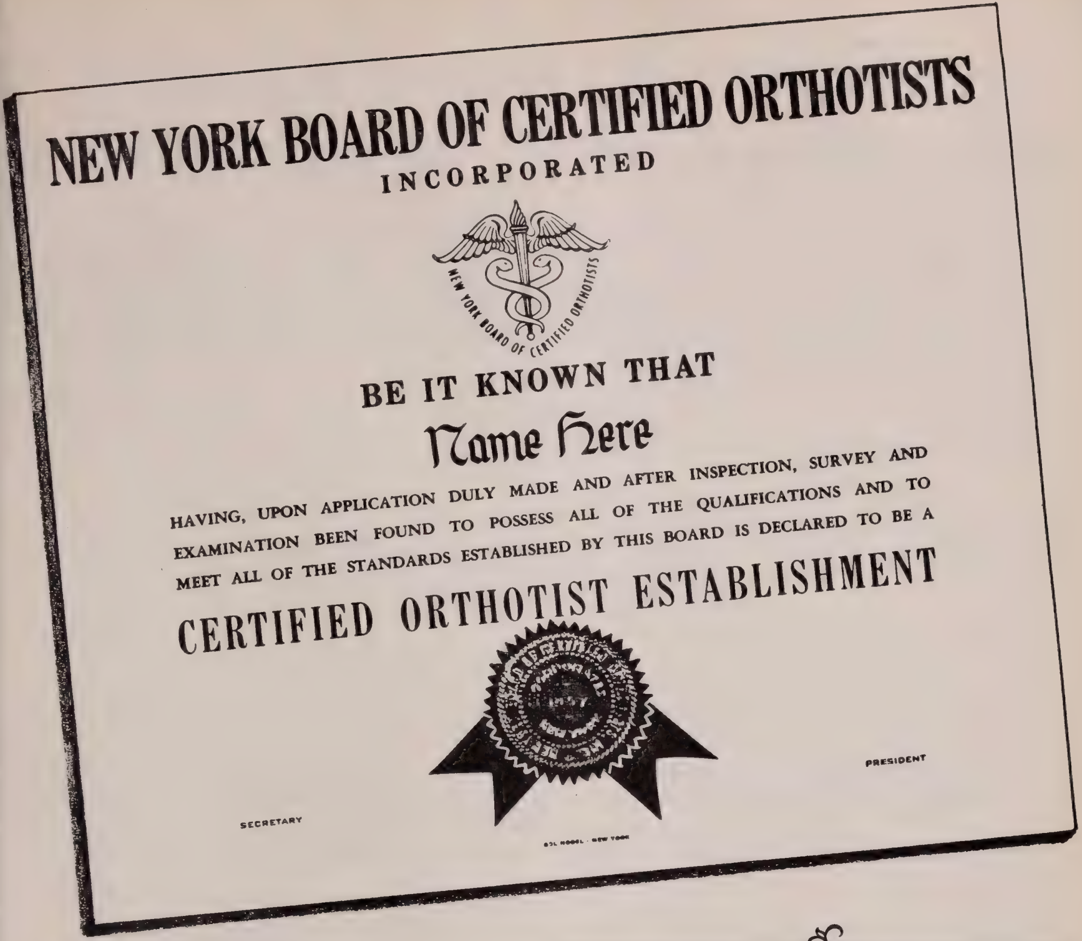

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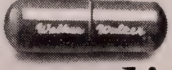
GERALIN-the  one-capsule-daily comprehensive dietary supplement: for older patients at a savings they'll appreciate!

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NEW YORK STATE JOURNAL OF MEDICINE

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VOLUME 59 SEPTEMBER 1, 1959 NUMBER 17, PART II

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Minutes of the House of Delegates, 1959

For yet another year the Publication Committee brings to the membership the minutes of the House of Delegates at its 153rd meeting at the Hotel Statler-Hilton, Buffalo, May 9 to 11, 1959, as Part II of the September 1 issue of the NEW YORK STATE JOURNAL OF MEDICINE.

This year the minutes have a special importance. Extensive revisions have been made in the Constitution and Bylaws of the Society following the survey made in 1957 to 1958 and embodied in the recommendations of the so-called "Edlund Report." These revisions permit far-reaching alterations in the administrative structure of the Society. They are therefore of the highest importance to the membership and deserve careful study and preservation.

Yearly the detailed work of transcribing the material, its editing, and verifying commence immediately after the session. This onerous task is accomplished during the summer months by the secretary's office of the Society in conjunction with the editorial staff of the JOURNAL. The systematic processing of such a large volume of material, in addition to the ordinary routine business of both staffs, is the result of long training and skill. Because of it the September 1, Part II, issue of the JOURNAL brings to the membership on time a complete transcript of the proceedings, accurate and well indexed, to be added to those volumes of previous years that form an invaluable historical record and reflect the continuing policy of the Society.

As a matter of historical record, not so many years ago these minutes were published in installments in the JOURNAL through many issues. As a result, it was difficult to find and, subsequently, to follow action taken on the various resolutions. If a member, for example, misplaced or lost an issue of the JOURNAL he might be unable to find a part of the action taken. Also, the old method complicated library indexing. Now, however, by publishing the entire proceedings in a single issue with its own excellent index, the convenience of our membership is better served.

As we have said before:*

> The membership is earnestly requested to preserve these minutes from year to year. If it becomes necessary, any member can find the origin, the action taken, and the disposition of any resolution. Except by attending the sessions of the House of Delegates, which it is the privilege of any member to do, there is no other way than by studying the proceedings by which a member can follow the fate of a resolution introduced by his own or another county society.
>
> It is the hope of the Publication Committee that the membership will preserve the supplements from year to year for handy reference. Questions constantly arise as to the policy of the Society on many topics. By consulting the index in this issue the answer may be found readily in the action taken by the House on the particular topic under consideration.
>
> This volume is the official record. Much time and effort have gone into its preparation and distribution. Newer members of the Society particularly will, it is hoped, study it to familiarize themselves with the methods of procedure and the content.

Eventually, the history of the Medical Society of the State of New York will have to be brought up to date. When this time arrives, whether twenty-five or fifty years from now, the task of the historian will, it is hoped, be simplified by having a great deal of the reference material in one place, Part II of the September 1 issue of the JOURNAL of each year.

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* Editorial: NEW YORK STATE J. MED., **57:** 8 (Sept. 1, Part II) 1957.

Medical Society of the State of New York

HOUSE OF DELEGATES

MINUTES OF THE ANNUAL MEETING

May 9 to 11, 1959

THE 153rd Annual Meeting of the House of Delegates of the Medical Society of the State of New York convened at the Hotel Statler, Buffalo, New York, on Saturday, May 9, 1959, at 10 A.M.; Joseph A. Lane, M.D., Speaker; Frederick A. Wurzbach, Jr., M.D., Vice-Speaker; W. P. Anderton, M.D., Secretary; Ezra A. Wolff, M.D., Assistant Secretary.

SPEAKER LANE: The House will kindly come to order.

We will ask the secretary for a report from the Reference Committee on Credentials.

Section 1 (See 5)

Report of the Reference Committee on Credentials

DR. CHARLES F. MCCARTY, *Kings:* There is a quorum present.

SECRETARY ANDERTON: Mr. Speaker, there are no disputed delegations, and all on our rolls are entitled to vote.

SPEAKER LANE: I hereby declare the 153rd Session of the House of Delegates open for the transaction of business.

Section 2

Memorial Tribute

SPEAKER LANE: We have to read the name of one deceased member, Irving J. Sands, M.D., of Kings County, a member of the associate editorial board of the NEW YORK STATE JOURNAL OF MEDICINE and a county delegate from 1936 to 1958. I will ask you all to rise and stand for just a second in honor of Dr. Sands.

. . . There was a moment of silence observed in Dr. Sands's memory . . .

Section 3

Invocation

SPEAKER LANE: We will now have the invocation by the Very Reverend Robert M. Shaw, Dean of St. Paul's Episcopal Cathedral, of Buffalo.

REV. ROBERT M. SHAW: Will you all rise, please?

Let us pray. Direct us, O Lord, in all our doings with Thy most gracious favor, and further us with Thy continual help that in all our works begun, continued, and ended in Thee we may glorify Thy holy name and follow on in the example of Thyself, the Great Physician.

We thank Thee for the blessings that Thou hast given us, and the wisdom of our minds and skill of our hands for the healing of our fellow men, which supplement all these wondrous things given us with Thy Holy Spirit as we seek to serve all who suffer in Thy name. Amen.

Section 4

National Anthem

SPEAKER LANE: If you will remain standing, we will now have the National Anthem.

. . . National Anthem . . .

Section 5 (See 1)

Further Report of Reference Committee on Credentials

SPEAKER LANE: The chairman of the Credentials Committee now wishes to report on the number of delegates registered.

DR. MCCARTY, *Kings:* There are 179 present, Dr. Lane.

Section 6

Approval of Minutes of 1958 Meeting

SPEAKER LANE: A quorum is present, a quorum being constituted by 100 delegates. The next order of business is the approval of the minutes of the 1958 meeting, as published in Part II of September 1, 1958, issue of the NEW YORK STATE JOURNAL OF MEDICINE.

Are there any corrections, additions, or deletions, Mr. Secretary?

SECRETARY ANDERTON: Mr. Speaker, I move an amendment of the minutes by changing the word "not" to the word "very" in the last sentence of the second paragraph in the right column on page 36 of this JOURNAL, so that the sentence will read, "Protection, therefore, is expensive but very necessary."

SPEAKER LANE: You have heard the amendment. Is there a second?

DR. JOHN F. KELLEY, *Oneida:* I second it.

. . . There being no discussion, the amendment was put to a vote and was unanimously carried . . .

SPEAKER LANE: I declare the minutes approved as published and amended.

Section 7

Reference Committees

SPEAKER LANE: The appointments to reference committees were published in the April 1 issue of the JOURNAL. There have been one or two changes: Council, Part III, Dr. Lewis Lloyd Burrell, Jr., of Erie, is replacing Dr. Mary Wyttenbach, of Chemung; Council, Part VII, Dr. C. Joseph Delaney, of New York, is asked to replace Dr. John H. Keating, New York, who could not come.

. . . The reference committees as thus published and corrected are as follows:

CREDENTIALS

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William Hall Lewis, Jr., New York
Bernard J. Hartnett, Cayuga
Garra L. Lester, Chautauqua
E. Gordon MacKenzie, Dutchess

PRESIDENT'S REPORT

John L. Sengstack, Suffolk, *Chairman*
Walter S. Bennett, Washington
John C. Brady, Erie
Lawrence A. Kohn, Monroe
Frank J. McGowan, New York

REPORTS OF SECRETARY, JUDICIAL COUNCIL, DISTRICT BRANCHES

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Melville A. Hare, Livingston
John A. Kalb, Broome
George F. Nevin, Cortland
Adelaide Romaine, New York

REPORTS OF TREASURER, TRUSTEES, BUDGET, WAR MEMORIAL

John E. Lowry, Queens, *Chairman*
Thomas M. Flanagan, Chenango
Lynn Rumbold, Monroe
Edward F. Shea, Ulster
C. Stewart Wallace, Tompkins

PLANNING COMMITTEE FOR MEDICAL POLICIES

Herbert Berger, Richmond, Section Delegate, *Chairman*
Wilfrid M. Anna, Niagara, District Delegate
John N. Dill, Westchester
Robert F. Warren, Kings, *Acting Chairman*
Irving Weiner, Orange

MALPRACTICE INSURANCE AND DEFENSE BOARD, LEGAL COUNSEL

John D. Naples, Erie, *Chairman*
Thomas S. Cotton, Steuben
Robert E. Doran, Ontario
John L. Finnegan, Queens
Solomon Schussheim, Kings

COUNCIL—PART I

CONSTITUTION AND BYLAWS COMMITTEE, PUBLIC HEALTH AND EDUCATION, CIVIL DEFENSE AND CATASTROPHE, COMMITTEE TO STUDY ESTABLISHMENT OF A SCIENTIFIC AND EDUCATIONAL TRUST, QUESTIONS OF ETHICS

Joseph P. Alvich, Bronx, *Chairman*
James H. Arseneau, Wayne
John J. Flynn, Kings
Arthur H. Walker, Monroe
Carl G. Whitbeck, Columbia

COUNCIL—PART II

PUBLIC HEALTH ACTIVITIES A—MATERNAL AND CHILD WELFARE, SCHOOL HEALTH, ACCIDENT PREVENTION, CHILD ACCIDENTS

Maynard W. Gurnsey, Steuben, *Chairman*
Fred W. Bush, Monroe, Section Delegate
James E. Glavin, Essex
William L. Wheeler, Jr., New York
Joseph G. Zimring, Nassau

COUNCIL—PART III

PUBLIC HEALTH ACTIVITIES B—RURAL MEDICAL SERVICE, GENERAL PRACTICE

William E. Pelow, Onondaga, *Chairman*
James H. Ewing, New York
Alfred A. Hartmann, Franklin
Samuel Wagreich, Bronx
Lewis Lloyd Burrell, Jr., Erie, Section Delegate

COUNCIL—PART IV

PUBLIC HEALTH ACTIVITIES C—CANCER, BLOOD BANKS, MENTAL HYGIENE, FILM REVIEW, HEART DISEASE

Alfred A. Angrist, Queens, *Chairman*
Max Cheplove, Erie
Moses H. Krakow, Bronx
Jason K. Moyer, Broome
Edwin G. Mulbury, Greene, District Delegate

COUNCIL—PART V

PUBLIC HEALTH ACTIVITIES D—PHYSICAL MEDICINE AND REHABILITATION, AGING, DIABETES, HARD OF HEARING AND THE DEAF, ALCOHOL AND NARCOTICS ADDICTION, DISABILITY DETERMINATIONS, POLIOMYELITIS

Samuel Sanes, Erie, *Chairman*
Irving L. Ershler, Onondaga
Irwin Felsen, Allegany

Henry Fleck, Bronx, Section Delegate
Herbert S. Ogden, New York

COUNCIL—PART VI

HOSPITAL AND PROFESSIONAL RELATIONS, DENTAL HEALTH, JOINT COMMITTEE TO COMBAT STAPHYLOCOCCAL INFECTIONS

William T. Boland, Chemung, *Chairman*
Louis Berger, Kings
Samuel Frant, New York
Frank LaGattuta, Bronx
James A. Moore, Albany

COUNCIL—PART VII

ECONOMICS, MEDICARE, MEDICAL EXPENSE INSURANCE, PUBLIC MEDICAL CARE, LIAISON WITH VETERANS ADMINISTRATION, SPECIAL COMMITTEE ON RESOLUTION 58-49 (MEDICAL CARE, JOB OF THE MEDICAL PROFESSION), COLUMBIA UNIVERSITY STUDY OF NONPROFIT MEDICAL INSURANCE PLANS IN NEW YORK STATE

John F. Kelley, Oneida, *Chairman*
Gilbert A. Clark, Rensselaer
C. Joseph Delaney, New York
Harry A. Mackler, Kings
Charles R. Mathews, Monroe

COUNCIL—PART VIII

AMERICAN MEDICAL EDUCATION FOUNDATION, WOMAN'S AUXILIARY, JOINT COMMITTEE WITH PHARMACEUTICAL ASSOCIATION OF NEW YORK STATE

John W. Latcher, Otsego, *Chairman*
Sol Axelrad, Queens
George G. Knight, Rockland
Paul H. Sullivan, Nassau
Frank Tellefsen, Richmond

COUNCIL—PART IX

LEGISLATION, CULTS, FEDERAL LEGISLATION, AUTOPSIES

Peter M. Murray, New York, *Chairman*
Raymond J. Byron, Schenectady
Michael J. Crino, Monroe
Albert H. Douglas, Queens
James I. Farrell, Oneida, Section Delegate

COUNCIL—PART X

WORKMEN'S COMPENSATION, INDUSTRIAL HEALTH, OPERATING ROOM DEATHS

Carl R. Ackerman, Bronx, *Chairman*
George A. Burgin, Herkimer
William A. Cooper, New York
Frank A. Gagan, Dutchess
John C. Kinzly, Niagara

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PUBLICATION, PUBLIC RELATIONS, MEDIA OF INFORMATION

Philip D. Allen, New York, *Chairman*
Thomas F. McCarthy, Bronx
Felix Ottaviano, Madison
W. Walter Street, Onondaga
Henry Vinicor, St. Lawrence

COUNCIL—PART XII

CONVENTION, NURSING EDUCATION, OFFICE ADMINISTRATION AND POLICIES, SPECIAL COMMITTEE ON 1958 SURVEY REPORT, BELATED BILLS

Waring Willis, Westchester, *Chairman*
Thomas M. d'Angelo, Queens
Kent W. Jarvis, Oswego
Aaron Kottler, Kings
Joseph A. Wintermantel, Cattaraugus

MISCELLANEOUS BUSINESS

Norton S. Brown, New York, *Chairman*
Leo T. Flood, Nassau
Stanley B. Folts, Seneca
Charles A. Prudhon, Jefferson
Francis A. Stephens, Albany

SPEAKER LANE: When we get around to resolutions, if you have additional resolutions to submit, and particularly when we get around to the writing of reports for the reference committees—about which we will talk more later—you will find Miss Lewis available to edit resolutions and reports, and she will act as the clearinghouse for the return of reports of committees and signing of reports by committee members.

I will now ask the secretary to make a motion.

Section 8

Reference of Reports and Supplementary Reports

SECRETARY ANDERTON: Mr. Speaker, I move that the reports and supplementary reports of Officers, Council, Trustees, Legal Counsel, and District Branches that have been published and distributed to the members of this House be referred to the appropriate reference committees without reading.

SPEAKER LANE: You heard that motion. Is there a second?

DR. JOHN C. MCCLINTOCK, *Councillor:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

SPEAKER LANE: It is so ordered, and these reports are, therefore, assigned to their respective reference committees.

SUPPLEMENTARY REPORTS

Section 9 (See 135) Report 59-A

Supplementary Report of the Malpractice Insurance and Defense Board

To the House of Delegates, Gentlemen:

In their annual survey of the Group Plan, the Society's actuaries state that no change in basic rates is indicated for the next year. They do, however, recommend that the Society accept the offer of our insurance carrier to discontinue the contingent loss factor that has been included in the premium charge since 1949. The effect of this discontinuance would be an over-all premium reduction of about 4 per cent.

The contingent loss factor was originally introduced because of the rapidity with which loss ratios were increasing and because of the uncertainty as to the accuracy of our rate-making procedure. The value of the contingency fund was demonstrated when the premium rates for policy years 1949 to 1952 proved to be grossly inadequate. Those for 1953 would also have been inadequate, except for the contingent loss factor.

Since 1953 the loss experience, including reserves for outstanding and unreported cases, indicates that the premiums collected for policy years 1954–1957 are sufficient to pay losses and may even result in an underwriting profit. However, since the agreement with respect to the contingent reserve provides for the collection of surcharges sufficient to restore any deficit sustained by the company, the contingent loss factor charge would have to be continued for several years in order for the accumulated deficit to be entirely wiped out. The company feels that the loss experience has now become fairly well stabilized and that our rate-making procedure is sufficiently accurate to produce the proper premium rate. The company has therefore agreed to discontinue this charge effective September 1, 1959. The Board recommends that the Society accept this proposal and authorize an amendment to the existing agreement between the Society and the company, to become effective September 1, 1959, which will eliminate all reference therein to surcharges to produce a contingent reserve fund.

Our experience to date indicates that further adjustments in the assignment of the various specialties to premium classes will be required. We believe that these changes should be postponed until next year when more statistical data will be available. In the meantime, the Board would appreciate recommendations from various groups, especially general practice, regarding the criteria that should be applied in determining which of two or more premium classes is appropriate for an individual member.

Respectfully submitted,
JOHN F. KELLEY, M.D., *Chairman*

Section 10 (See 182) Report 59–B

Supplementary Report of the Council, Part X, Workmen's Compensation

To the House of Delegates, Gentlemen:

The Workmen's Compensation Committee of the Council, at a meeting held in Amsterdam, New York, on October 30, 1958, moved that the Bureau of Industrial Health and Workmen's Compensation obtain data from any available source to determine the number of cases percentage-wise that are being placed for arbitration to the Medical Practice Committee of the Workmen's Compensation Board and compare these data with figures and the number of arbitrations presented to the county medical societies in the upstate areas. The bureau was instructed to report to the House of Delegates when this material was available.

In accordance with information obtained from the Workmen's Compensation Board, the following figures were submitted for the year 1958:

	Medical Practice Committee		County Medical Societies	
Cases	Number	Per Cent	Number	Per Cent
Received during year	11,475	. . .	1,849	. . .
Disposed of during year	10,426	100	1,891*	100
Closed before hearing	7,789	75	1,725	91
Closed on arbitration calendar	2,637	25	166	9
Value of bills decided	$152,377.44	. . .	$8,974.23	. . .
Amount awarded	96,393.26	64	4,097.94	45

* Residual from previous year included in total cases disposed.

The Bureau of Industrial Health and Workmen's Compensation of the Medical Society of the State of New York was able to settle bills for 50 physicians who asked the assistance of this bureau. The total amount in dispute in these 50 cases amounted to $4,798.27. The amount was settled for the sum of $3,462.59. This represents 72 per cent of the total amount in dispute.

It is to be noted that the Medical Practice Committee has awarded about 64 per cent of the value of bills. The county medical societies through the arbitration committees have allowed 45 per cent of the total amounts in dispute. In accordance with the records available to the Bureau of Industrial Health and Workmen's Compensation, 92 out of 166 cases were actually heard by arbitration committees. The remainder were settled or postponed for action on some other date within ten days prior to the date of the scheduled arbitration.

Respectfully submitted,
GERALD D. DORMAN, M.D., *Chairman*

Section 11 (*See 144*) Report 59–C

Supplementary Report of the Council, Part II, Accident Prevention

To the House of Delegates, Gentlemen:

On March 26 the Subcommittee on Epilepsy of the Subcommittee on Accident Prevention considered a letter from Dr. William Haddon, director of the Driver Research Center of the State Health Department, who wished advice on the case of a clergyman who had had a single seizure recently at the age of forty-three. Hospital records were submitted as well as a report from the director of the department of neuropsychiatry of the hospital. After detailed consideration of the case, the subcommittee unanimously recommended that there be some relaxation in the present regulations which it originally suggested to the Bureau of Motor Vehicles regarding qualifications for drivers' licenses of those persons with epilepsy or a history of "seizures, spells, and blackouts."

The subcommittee made a recommendation, which was approved by the Council at its April 9 meeting, "that if a person with a history of a single, isolated, convulsive seizure has normal neurologic findings, a normal electroencephalogram, and no demonstrable relevant pathology in skull x-rays, he may, after one year, be issued a three-year license subject to review each six months for a duration of two years, after which, if there is no further evidence of convulsive seizure on the part of the licensee, no further review of the license will be required until the next regular renewal date." This recommendation was transmitted by letter to Dr. Haddon.

In subsequent telephone conversations Dr. Haddon procured additional opinions of the subcommittee. One concerned the person whose only seizure occurs within minutes or hours of a severe head injury. The subcommittee felt that such symptoms were indicative of brain laceration and the individual should go through the same waiting period as persons who have a single, isolated convulsion. With regard to the individual who has been on an anticonvulsant after a single, isolated seizure, the subcommittee felt that the original rule III, 2a and 2b, should apply.

Respectfully submitted,
S. Bernard Wortis, M.D., *Chairman*

Section 12 See 143) Report 59–D

Supplementary Report of the Council, Part II, School Health

To the House of Delegates, Gentlemen:

The chairman of the Subcommittee on School Health wishes to report that he attended a meeting of the Advisory Committee on School Health to the Board of Regents in Albany on April 2. He did this as a member of the Advisory Committee and not as a representative of the Medical Society, but it might be of interest to record that at this meeting the committee voted to continue the annual examinations in the schools under the jurisdiction of the State Department of Education. This was done in spite of the fact that your chairman presented considerable evidence that these examinations were outmoded and the law should be changed so as to provide for periodic rather than annual examinations.

Respectfully submitted,
William E. Ayling, M.D., *Chairman*

Section 13 (*See 147*) Report 59–E

Supplementary Report of the Council, Part V, Aging

To the House of Delegates, Gentlemen:

In spite of inclement weather, the State-wide Conference on Aging in Utica on March 7, referred to in our annual report, was considered a success and a real contribution to the preparation for the White House Conference on Aging in January, 1961. A joint letter signed by Dr. Leo Gibson as president of the State Society and Dr. Herman E. Hilleboe, Commissioner of Health, was sent to all county medical societies, health officers, and certain officials of both the State Society and the Department of Health at the end of January, calling their attention to the conference and urging that they attend it. The registrants also included representation from rehabilitation centers, visiting nurses associations, community chests, welfare departments, the National Committee on the Aging, the State Charities Aid Association, and the Cleveland Academy of Medicine.

The conference featured a review of the American Medical Association's 6-point positive health program for older citizens:

1. Stimulation of realistic attitudes toward aging by all people and wider use of rehabilitation services. Dr. Michael Dacso, director of the Department of Physical Medicine and Rehabilitation of the Goldwater Memorial Hospital in New York City, spoke on this topic.
2. Extension of effective methods of financing health care for the aged. Dr. Carlton E. Wertz, chairman of the A.M.A. Committee on Insurance and Prepayment Plans, was the speaker.
3. Extension of skilled personnel training programs and improvement of medical and related facilities for older people. This subject was presented by Dr. Franklyn B. Amos, director of the Office of Professional Training of the New York State Department of Health.
4. Promotion of health maintenance programs was discussed by Dr. George G. Reader, professor of

medicine at Cornell University Medical College and director of the Comprehensive Care and Teaching Program at that institution.

5. Amplification of medical and socioeconomic research in problems of the aging was presented by Dr. David B. Allman, immediate past president of the American Medical Association and a member of its Committee on Aging.

6. Leadership and cooperation in community programs for senior citizens was the subject discussed by Dr. Frank W. Reynolds, director of the Bureau of Chronic Diseases and Geriatrics of the New York State Department of Health.

The 80 registrants divided into six regional groups to discuss the papers, and the findings of each group were subsequently reported to the reassembled conference.

The proceedings of the conference will be published in the June 15 issue of the NEW YORK STATE JOURNAL OF MEDICINE.

Respectfully submitted,
JOSEPH J. WITT, M.D., *Chairman*

Section 14 (See 94) Report 59–F

Supplementary Report of the Council, Part IV, Heart Disease

To the House of Delegates, Gentlemen:

The Subcommittee on Heart Disease met on March 13. It was pointed out that although the subcommittee had requested a page in the NEW YORK STATE JOURNAL OF MEDICINE for at least six months to describe the rheumatic fever prevention program in order to educate the physicians of the State in this regard, no articles had yet been prepared for this page. The committee agreed they would like to have the page include other material: (1) a brief summary of projects throughout the State, (2) notice of meetings and courses, and (3) notice of papers in the field by members of the State Society. This proposal was approved by the Council at its April meeting and will be referred to the editor for his decision.

The subcommittee considered a communication from the American Heart Association to all local heart associations relative to the campaign called "Fight Food Faddism" in which the A.M.A., the Food and Drug Administration, and the National Better Business Bureau are participating. It was recommended "that the 'Fight Food Faddism' campaign be approved and that individuals be advised to consult their physician before embarking on any food fad."

On a recommendation of the subcommittee at its last previous meeting, an Ad Hoc Committee consisting of Drs. Norman Plummer, Anthony A. Mira, and Gerald D. Dorman had been appointed to consider the plight of the cardiac in industry. It was pointed out that there is a great discrepancy between medical thinking and medical-legal action, to the detriment of many persons who are able to work but cannot obtain jobs because they are considered cardiac risks by employers. Dr. Plummer presented to the subcommittee a resolution which had been formulated for its consideration. After discussion it was unanimously voted to approve the resolution, as amended, with regard to the employment of the cardiac in industry, and to submit it to the Council with the recommendation that it be conveyed to the House of Delegates of the State Society and of the American Medical Association. The Council approved.

Respectfully submitted,
J. G. FRED HISS, M.D., *Chairman*

Section 15 (See 156) Report 59–G

Supplementary Report of the Council, Part XI, Cooperation with Media of Information

To the House of Delegates, Gentlemen:

The subcommittee met with the New York State Bar Association committee to re-evaluate and reaffirm the "Standards of Practice for Doctors and Lawyers," at headquarters on Thursday, March 12, 1959.

While no specific changes were recommended in the Standards by either group, there was a great deal of discussion about problems involved in doctor-lawyer relations. These included doctors' reports in personal injury actions, court appearances of physicians, joint meetings, and doctors' practices after death.

In regard to doctors' reports in personal injury actions, H. Stuart Klopper, Esq., representing the Bar Association committee, pointed out that a physician was entitled to a reasonable fee for any report, provided that he willingly cooperated with the patient's attorney. After discussion it was agreed that the question of fees should be discussed by local medical societies and the bar associations and that a mutual understanding regarding such fees should be arrived at on the basis of the principles set forth in the Standards.

It was also agreed that the State Society and the State Bar Association should suggest in their publications, such as newsletters and bulletins, that county groups of each organization consider setting up minimum fees under the heading of "compensation" as outlined in the Standards. It was felt that through this means the idea of minimum fees would be brought to the attention of local groups, while at the same time additional publicity would be given to doctors and lawyers concerning the existence of the Standards.

Concerning court appearances, Mr. Klopper maintained that it was not right to have a doctor stand by for an unreasonable time waiting to appear at a court proceeding. He said that such a physician who was asked to stand by was entitled to a reasonable fee. He reported that the Queens County Bar Association, with which he is affiliated, had agreed upon a standard fee to cover standby appearances of physicians. It was the consensus of those present that the doctor should be notified promptly when a case has been settled that he will not be called to appear in court.

On the other hand, it was brought out that a physician, in return for such consideration on the part of an attorney, should readily and willingly agree to appear in court. It was also agreed that the matter of court appearances also should be publicized by both State organizations.

The subcommittee and the representative of the Bar Association agreed that joint meetings of county medical societies and local bar associations should be encouraged to foster a spirit of better understanding and mutual cooperation and that the idea of such meetings should be publicized in the publications of both State groups.

As a means of publicizing the above-mentioned matters, the May, 1959, *Newsletter* carried a first-page feature article entitled "Doctors and Lawyers Discuss Reports, Court Appearance" which mentioned the idea of joint meetings.

The final matter discussed was the disposition of doctors' practices after their deaths and the confidential nature of records. It was recommended that a discussion of the disposition of the practices of deceased physicians should be part of the next annual conference of county medical society public relations chairmen, slated to take place in the fall of 1959.

The chairman and the members of his subcommittee wish to express their thanks to the committee of the State Bar Association for the cooperation extended during the past year. An excellent spirit of mutual understanding and cordial relations has been developed which has done a great deal towards improving and advancing interprofessional relations.

Respectfully submitted,
JOHN C. MCCLINTOCK, M.D., *Chairman*

Section 16 (See 142) Report 59–H

Supplementary Report of the Council, Part II, Maternal and Child Welfare

To the House of Delegates, Gentlemen:

The Subcommittee on Maternal and Child Welfare met on March 12 and attempted to define some of the functions of the committee. It was thought that the purpose should be to have a definite program concerning the analysis of the maternal deaths in the State each year. These of course would bear no name or hospital number but would be analyzed by the members of the subcommittee. It was also thought by those present that a review of this analysis should be given at the yearly meeting to the Section on Obstetrics and Gynecology of the State Society. Some discussion was held concerning the possibility of printing a pamphlet each year. The pediatricians present also felt that some attempt should be made to analyze deaths under twenty-eight days of life or those which occurred in the perinatal period.

Therefore, in the future the subcommittee will try to set up the State in areas and delegate some of these tasks to individuals in these districts.

Respectfully submitted,
EDWARD C. HUGHES, M.D., *Chairman*

Section 17 (See 96) Report 59–I

Supplementary Report of the Council, Part IV, Medical Film Review

To the House of Delegates, Gentlemen:

A Medical Film Institute was held on April 17 at the New York State Health Department building in Albany. It was sponsored by the State Medical Society and the Health Department and was supported in part by a grant from the New York State Division of the American Cancer Society. Its purpose was to acquaint medical school faculties and other teachers of medical students, interns, and residents with the availability of teaching films and to attempt to demonstrate the manner in which they can be used most effectively.

David S. Ruhe, M.D., director of the Department of Audio-Visual Education at the University of Kansas, and J. Edwin Foster, Ph.D., director of Education, Audio-Visual Materials, American Heart Association, were the principal speakers. Dr. Ruhe's subject was "The Place of Motion Pictures in Medical Teaching," and Dr. Foster spoke on "Basic Services Essential for the Wide and Effective Use of Medical Motion Pictures."

Prior to the institute a questionnaire was circulated among prospective conferees inquiring whether they used teaching films, how they used them, and what their opinion was as to medical films in general. A second questionnaire will be sent out to the 25 persons who attended the institute, based upon some of the points which were brought out at that time.

Respectfully submitted,
KENNETH B. OLSON, M.D., *Chairman*

Section 18 (See 133) Report 59–J

Supplementary Report of the Council, Part III, Rural Medical Service

To the House of Delegates, Gentlemen:

The Committee on Rural Medical Service has been working on an educational program to coordinate services in the rural areas of the State of New York with the facilities which can be offered in the larger cities and the medical centers. This educational effort will be coordinated with the lay and farm agencies which have representation in the counties of the State. These agencies have numerous facilities which can be used for this purpose.

The committee is hoping to have this program coordinated between the Agricultural Extension Service, Home Demonstration Units, 4-H Clubs, State Charities Aid Association, and other associations which deal with lay groups in their respective areas. The committee has met with the leaders of these associations, together with some of the deans of the medical colleges, and has laid this program before them. It has been the consensus of the committee, and also the recommendation of these lay groups, that the Medical Society, through its component county medical societies, take the leadership in this effort. The committee has decided to use Onondaga, Cortland, and Oswego Counties for a pilot study. They have met with the presidents of these county medical societies as well as some of the representatives of these lay organizations and have discussed the program with them. It is planned that the program will be presented to the members of the county medical societies in these three areas for their consideration and approval.

The committee hopes to accomplish these relationships so that rural medicine will have the advantages of modern medical care and facilities through complete cooperation of these agencies and closer connections with the hospitals and medical centers in urban areas.

Respectfully submitted,
Edward C. Hughes, M.D., *Chairman*

Section 19 (See 115) Report 59–K

Supplementary Report of the Council, Part IX, Legislation

To the House of Delegates, Gentlemen:

The following is a listing of the legislation which was introduced at the 1959 session of the Legislature in which the Medical Society was interested, and the action taken in connection with these various bills.

This list and the comments were prepared by the legislation counsel and are self-explanatory.

1. *Chiropractor licensing:* S. Int. 614, Pr. 4161, Peterson (Finance); A. Int. 2436, Pr. 2473, Butler (Ways and Means); *Killed.*

Despite last-minute activity and the apparent blessing on the part of some State agencies, notably the Education Department, the revised Chiropractor Bill was not reported out in the Senate. The Assembly bill had not been amended and, of course, was not reported.

2. *Optometrist—school eye tests:* A. Int. 127, Pr. 127, La Fauci (Education)—*Killed.*

3. *Physician Advertising:* A. Int. 476, Pr. 476, Brook (Education)—*Killed.*

4. *Chiropractor—jury exemption:* A. Int. 704, Pr. 704, Lerner (Judiciary)—*Killed.*

5. *Optometrists—use of "doctor":* S. Int. 518, Pr. 518, Brydges (Education); A. Int. 1159, Pr. 1160, Brady (Education)—*Passed, signed by Governor.*

Although this bill was listed on sheets prepared by Dr. Smith, we understood that the Society had no objection or particular interest in this measure. We therefore did not oppose it in the Legislature and have taken no position one way or the other with the Governor.

6. *Union health center—laundry workers, etc.:* S. Int. 1195, Pr. 1215, Cornell (Corporations); A. Int. 2461, Pr. 2498, Trainor (Judiciary)—*Killed.*

7. *Medical Society bill re IX-C medical plans:* S. Int. 1253, Pr. 1275, Metcalf (Insurance); A. Int. 1627, Pr. 1633, Main (Insurance)—*Killed.*

This was one of our affirmative program bills which would have changed mandatory coverage of podiatry and dental care to permissive. As we suspected, a terrific stream of opposition on the part of the dentists and podiatrists resulted in no action being taken on this bill.

8. *Bioanalyst bill re IX-C medical plans:* A. Int. 1630, Pr. 1636, Mintz (Insurance)—*Killed.*

9. *Bioanalyst licensing exam:* A. Int. 1631, Pr. 1637, Mintz (Ways and Means)—*Killed.*

10. *Attorney General's bill re mentally ill physicians, etc.:* S. Int. 1263, Pr. 1286, Brydges (Education); A. Int. 1796, Pr. 1806, Schoeneck (Judiciary)—*Killed.*

You will recall that early in the session this measure was a matter of great concern. At the public hearing, the Attorney General and the committees agreed to withhold further action on this measure this year.

11. *Medical Society group life bill:* S. Int. 1313, Pr. 1339, Condon (Insurance); A. Int. 1946, Pr. 5037, Russo (Insurance)—*Reported in both Houses, did not pass.*

This was the Society's group life insurance bill. It was opposed throughout the session by the underwriters. As we feared at our first legislation meeting, the Eighth District of the Society formally opposed the bill, and one of the committee chairmen stated that the Onondaga County Medical Society also opposed the bill. With the formidable opposition maintained by the underwriters, as well as dissension in our own ranks, it did not appear that we could muster enough votes to pass the bill in either House, even though we were successful in having it reported. As a matter of fact, in the Assembly all of the Republican members of the Insurance Committee formally requested the chairman to recommit the bill.

12. *Workmen's Compensation—rehabilitation and expert panels:* S. Int. 1325, Pr. 1351, Hatfield (Finance); A. Int. 2038, Pr. 2056, Ostrander (Ways and Means)—*Killed.*

13. *Medical Society bill re Medical Practice Committee:* S. Int. 1436, Pr. 1478, Albert (Labor); A. Int. 2207, Pr. 2230, Ostrander (Labor)—*Passed, vetoed by Governor.*

14. *Optometrists—inclusion in IX-C medical plans:* S. Int. 1444, Pr. 4290, Condon (Insurance); A. Int. 2050, Pr. 2068, Volker (Insurance)—*Passed, vetoed by Governor.*

The third amended version making permissive inclusion in IX-C medical plans was passed.

15. *Physician—laboratory contracts:* S. Int. 1571, Pr. 1613, Condon (Education); A. Int. 2677, Pr. 2714, Podell (Education)—*Killed.*

16. *Hospital service corporation—outside services:* S. Int. 1438, Pr. 1480, Brydges (Insurance); A. Int. 1881, Pr. 1895, Brook (Insurance)—*Passed, signed by Governor.*

17. *Ophthalmic dispenser—change in character of board:* S. Int. 1211, Pr. 1231, Brydges (Finance); A. Int. 1961, Pr. 1978, Curto (Ways and Means)—*Killed.*

18. *Optometrists—practice by other than optometrist:* S. Int. 517, Pr. 517, Brydges (Education); A. Int. 1962, Pr. 1979, Curto (Education)—*Killed.*

19. *United Wire, Metal and Machine Health and Welfare Fund:* S. Int. 1724, Pr. 1771, Gittleson (Corporations); A. Int. 2116, Pr. 2134, Berman (Judiciary)—*Killed.*

20. *Optometrists—contact lenses:* S. Int. 519, Pr. 519, Brydges (Education); A. Int. 2122, Pr. 2140, Dickinson (Education)—*Killed.*

Despite much activity on both sides, both the Senate and Assembly bills remain bottled up in the Senate Education Committee.

21. *Medical Society—injunction bill:* S. Int. 1805, Pr. 1852, Hatfield (Education); A. Int. 2520, Pr. 2557, Conway (Judiciary)—*Killed.*

This was the Society's injunction bill, but as expected, it failed to move. As is well known, it is thought of in the Legislature as an antichiropractor bill.

22. *Medical Society—autopsy bill:* S. Int. 2376, Pr. 2447, Metcalf (Health); A. Int. 3231, Pr. 3289, Strong (Judiciary)—*Killed.*

Although this was an affirmative Society bill, shortly after its introduction we were advised the Society had changed its mind and did not wish to push the measure this year.

23. *Reduction of IX-C special contingent fund:* S. Int. 2589, Pr. 2696, Rath (Insurance); A. Int. 3226, Pr. 3284, Russo (Insurance)—*Killed.*

24. *Union Health Center in Rochester:* S. Int. 2571, Pr. 2678, Hatch (Corporations); A. Int. 3265, Pr. 3345, Goddard (Judiciary)—*Killed.*

25. *Arbitration of hospital bills:* S. Int. 2862, Pr. 3003, Albert (Labor); A. Int. 2036, Pr. 2054, Ostrander (Labor)—*Killed.*

26. *Waiver of privilege in injury actions:* S. Int. 2629, Pr. 2736, J. Cooke (Codes)—*Killed.*

27. *Local licensing:* S. Int. 2714, Pr. 2835, Hults (Internal Affairs); A. Int. 3392, Pr. 3486, Strong (Internal Affairs); S. Int. 2715, Pr. 2836, Hults (Internal Affairs)—*Killed.*

28. *Licensing x-ray operators:* A. Int. 2719, Pr. 4890, Lentol (Codes)—*Passed both houses, vetoed by Governor.*

29. *Physiotherapy Grievance Committee:* S. Int. 2771, Pr. 3699, Brydges (Education)—*Passed both Houses, signed by Governor.*

It is desirable to comment briefly on the following:

The bill sponsored by the Medical Society limiting the activities of the Medical Practice Committee to jurisdiction of the New York counties was passed by both houses of the Legislature, but was vetoed by the Governor. The following is a transcript of the Governor's memorandum supporting his veto:

STATE OF NEW YORK
EXECUTIVE CHAMBER
ALBANY

April 23, 1959

Memorandum filed with Senate Bill, Introductory Number 1436, Print Number 1478, entitled: "AN ACT to amend the workmen's compensation law, in relation to the territorial jurisdiction of the medical practice committee"

NOT APPROVED

This bill would limit the territorial jurisdiction of the Medical Practice Committee, appointed under the Workmen's Compensation Law, to counties having a population of one million or more "wholly included in a city." This would operate to exclude Nassau County, which in 1958 passed the one million mark in population.

During 1958 the Medical Practice Committee for the first time extended to Nassau County its guidance role in connection with medical care under the Workmen's Compensation Law. There has been little opportunity to date to measure the merit or lack of merit in this extension of the Committee's activities.

I find that there is a very sharp divergence of views as to the desirability of the Medical Practice Committee continuing its role in Nassau County. The Department of Labor recommends disapproval of this bill on the ground that no sufficient reason has been advanced to warrant the termination of the Committee's present work in the County. I have concluded that I should follow the recommendation of the Department in this respect.

The bill is disapproved.

NELSON A. ROCKEFELLER

The bill which called for the licensing of x-ray operators was passed by both Houses of the Legislature during the waning hours of the session after it had been opposed, and we were of the opinion that it was not looked upon with favor. Following its passage, however, we again registered objection with the Governor. Objection was also registered by the State Department of Health and the New York State Radiological Society. This bill was a very dangerous one from the point of view of the operation of x-ray equipment inasmuch as it would have allowed the operation of such by inexperienced persons and people under inadequate supervision. This legislation was vetoed by the Governor.

It is necessary to re-emphasize how important it is for each county society and each member of the various county societies interested in medical legislation to maintain close contact with their respective legislators. We have made considerable gains during this year with the members of the Legislature of the State of New York, and these gentlemen are anxious to maintain and have contact with physicians throughout the State. They are interested in having our opinion about various types of legislation, but it is necessary that this be done with regularity and in a constructive manner.

It is therefore desirable that we proceed immediately to consider phases of medical legislation in which we will be interested during the 1960 session of the State Legislature.

Respectfully submitted,
JAMES M. BLAKE, M.D., *Chairman*

Section 20 (*See 116*) Report 59–L

Supplementary Report of the Council, Part IX, Cults

To the House of Delegates, Gentlemen:

Legislation was introduced again this year calling for the licensure of chiropractors. This legislation, although somewhat amended, was similar for the most part to that which has been introduced in years previous.

It is to be pointed out, however, that the legislation was supported and approved by the Department of Education and the Board of Regents, as noted in the memorandum by Charles A. Brind, counsel for the State Department of Education. This memorandum reads as follows:

> MEMORANDUM, by Charles A. Brind, Counsel, State Education Department, in relation to licensing of chiropractors (S. Int. 614, A. Int. 2436):
>
> Over the years there has been considerable discussion of the desirability of the licensing of chiropractic. The Board of Regents has given considerable study to the matter. The Regents takes no position with the merits of the theory of chiropractic.
>
> The studies have indicated, however, that there are approximately four thousand practitioners in the State at present. These persons have varying degrees of training, some of them very little. Attempts to regulate the practice through the enforcement of the Medical Practice Act in the courts have been unsuccessful, and the Regents are now convinced that the only way in which the health of the people of the State can be adequately protected is through licensing and regulation. Forty-four states now license chiropractors.
>
> After careful consideration of the matter and receiving the views of the Interdepartmental Health Resources Board . . . the Regents have concluded that the present measure as amended adequately protects the public and recommend that it receive legislative approval.
>
> Respectfully submitted,
> Charles A. Brind

Mr. Brind mentions that the Interdepartmental Health Resources Board had views on the subject but fails to mention that these views opposed the chiropractors.

This legislation, although approved by the Department of Education, in our opinion did not provide safeguards for the health of the people of the State and therefore was vigorously opposed. We are happy to report that the Legislature apparently agreed with our views inasmuch as the legislation remained in committee.

It is important to point out that there is considerable support from various sources that the practice of chiropractic as it is now conducted in the State of New York without controls is detrimental to the health and welfare of the people of the State. It is again suggested, therefore, that it is necessary that the question of cultism and the practice of cults of various types in the State of New York be reviewed in detail and action taken, as necessary, to control such practices.

Respectfully submitted,
JAMES M. BLAKE, M.D., *Chairman*

Section 21 (*See 175*) Report 59–M

Supplementary Report of the Council, Part VII, Special Committee on Resolution 58–49

To the House of Delegates, Gentlemen:

The Special Committee on Resolution 58–49 has the following membership:

George J. Lawrence, Jr., M.D., *Chairman*	Queens
Frank A. Gagan, M.D.	Dutchess
Edward C. Hughes, M.D.	Onondaga
Carlton E. Wertz, M.D.	Erie

The resolution which the special committee was assigned to study reads as follows:

WHEREAS, government, business, labor, the insurance industry, Blue Cross, Blue Shield, and hospitals are campaigning vigorously to establish various methods of delivering medical care; and

Whereas, medical care can be delivered only through the personal services of members of the medical profession, and no plan of medical care can be made effective without the cooperation of the medical profession; and

Whereas, the Medical Society of the State of New York is the recognized representative of the medical profession of New York State and is thus best fitted to determine the quality of medical care offered by any plan; and

Whereas, the medical profession has a twenty-five-hundred-year tradition of caring for the sick with regard only to rendering the best medical care possible; and

Whereas, the medical profession should offer its own program for providing the people of New York with the best medical care obtainable; and

Whereas, such a program can be developed best under the auspices of the Medical Society of the State of New York; now therefore be it hereby

Resolved, by this House of Delegates, that the Medical Society of the State of New York again pledges its continued support to the cause of the best medical care for all the people of the State of New York and expresses its determination to take care of all sick people; and be it further

Resolved, that the Council of the Medical Society of the State of New York be and hereby is instructed to study the medical needs of all the people of New York and in so doing seek cooperation and advice from the constituent county medical societies; and be it further

Resolved, that the Council be directed to submit to the House of Delegates its recommendations, based on this study, as to how the best medical care can be offered to all the people of the State of New York with due regard to the factors of adequacy of coverage, economics, freedom of the patient, freedom of medicine, and the individual's responsibility for the welfare of himself and his family.

At a meeting of the committee on December 11, 1958, a questionnaire was considered which was to be sent to the constituent county medical societies for information requested in the resolution. The questionnaire and the resolution were mailed to the secretary of each society on January 19, 1959.

On April 8 the committee reviewed the responses from the county societies, which were distributed as follows according to Blue Shield areas: Thirty-five counties responded out of 61—13 out of 17 counties from the United Medical Service area, New York; six out of nine counties from the Central New York Medical Plan area, Syracuse; five out of 11 counties from Medical and Surgical Care, Utica; six out of seven from the Western New York Medical Plan area, Buffalo; three out of 11 from the Northeastern New York Medical Service area, Albany; two out of six from the Genesee Valley Medical Care area, Rochester; no reply from Chautauqua County, served by Chautauqua Region Medical Service, Jamestown.

In all instances the questionnaires returned indicated that free choice of physician was favored over closed panel practice; also that medical care benefits be offered on a service basis with an income ceiling. Many societies suggested that two contracts be offered providing service benefits with ceilings varying from $2,500 to $4,000 for an individual and from $4,000 to $7,500 for a family.

In regard to the composition of members of boards of directors under Article IX-C, nonprofit medical service corporations, it was the practically unanimous opinion that physicians should be in the majority on the board. It was also indicated that minimum benefits offered should be surgical-medical in-hospital, and extended benefit coverage was requested by practically every county society that responded. It was also the feeling that the four ancillary services, i.e., x-ray, anesthesiology, pathology, and physical therapy, should be provided through Blue Shield contracts instead of Blue Cross contracts and that these services should be provided in and out of the hospital when feasible.

The committee felt that the instructions in the resolution to the effect that "the medical needs of all of the people of New York" be studied would require a long-range and expensive program of research. Therefore, it was necessary to limit the scope of the committee's study to the question of health insurance coverage which would provide the best medical care "with due regard to the factors of adequacy of coverage, economics, freedom of the patient and freedom of medicine, and the individual's responsibility for the welfare of himself and family."

It was the feeling of the committee that the Medical Society of the State of New York should support the best medical care for all of the people of New York State; that the medical profession must anticipate the needs of labor and industry for medical service; and that the Society should cooperate with labor and management in bringing about this desired result. The committee suggested that perhaps a strong campaign should be waged to get proprietary hospitals elevated to an accredited level so that the public can expect the best possible medical care.

The committee studied the question of ancillary services which are now provided for under some Blue Cross plans and pointed out that if these services were removed at the present time from Blue Cross plans, it would deprive approximately 2,600,000 subscribers in New York State of these benefits, and that if these benefits are to be removed, the State Society might well consider the qualifications of the doctors who would render services for these benefits under Blue Shield contracts.

The committee considered the question of a relative value schedule being adopted by all plans throughout the State, fully recognizing, however, that by using this schedule the dollar amount might vary in different areas.

The committee considered resolution 58–11, referred to as "the Wisconsin Plan for Blue Shield," which would provide service benefits without a fixed schedule of allowances. The committee concurred with the report of the Subcommittee on Medical Expense Insurance that this plan be not approved since only three county societies indicated any interest in a program of this type.

It was recommended that this committee be continued, awaiting the report now being developed by Dr. Ray Trussell, chairman of the School of Public Health and Administrative Medicine at Columbia University, on nonprofit prepayment plans in New York State. It was further recommended that a study be made of the Trussell report.

Respectfully submitted,
George J. Lawrence, Jr., M.D., *Chairman*

Section 22 (See 128) Report 59–N

Report of the Judicial Council

To the House of Delegates, Gentlemen:

The membership of the Judicial Council for the 1958–1959 Society year is as follows:

Edward T. Wentworth, M.D., *Chairman*	Monroe
Charles H. Loughran, M.D.	Kings
James Greenough, M.D.	Otsego
John F. Kelley, M.D.	Oneida
Norton S. Brown, M.D.	New York

In accordance with the Bylaws, the secretary of the Medical Society of the State of New York sits with the Judicial Council as its secretary. William F. Martin, Esq., counsel, also attends the meetings of the Judicial Council.

During the past year the Judicial Council has met three times; once immediately following the meeting of the House of Delegates for organization in accordance with the Bylaws and twice for hearings on the appeal of Dr. Levon A. Akopiantz from action of the Medical Society of the County of New York. Dr. Norton S. Brown, president of the Medical Society of the County of New York, voluntarily disqualified himself from participation in the hearings and was not present.

On July 7, 1958, the Judicial Council received from Dr. Levon A. Akopiantz, 1316 South Roxbury Drive, Los Angeles 35, California, an appeal from a decision of the Medical Society of the County of New York terminating his membership in said society. On August 22, 1958, the Respondent filed its reply with the Judicial Council. On October 8, 1958, the Judicial Council received from the Appellant a rebuttal to the Respondent's reply. The Judicial Council held a hearing on the appeal on October 10, 1958, but was unable to reach a decision. It requested Memoranda of Law on the issue from the Appellant, from the Respondent, and from Messrs. Martin, Clearwater and Bell. On January 15, 1959, Memoranda of Law were received by the Judicial Council from the Respondent and from Messrs. Martin, Clearwater and Bell. On March 6, 1959, the Appellant filed an affidavit and on April 2, 1959, a Memorandum of Law. On April 23, 1959, the Judicial Council received another Memorandum of Law from Messrs. Martin, Clearwater and Bell. The Judicial Council held a final hearing on the appeal on April 23, 1959. After due consideration of all the facts and material presented to it, the Judicial Council rendered the following unanimous decision:

"The decision of the Medical Society of the County of New York is affirmed. Appeal dismissed."

Respectfully submitted,
Edward T. Wentworth, M.D., *Chairman*

Section 23 (See 178) Report 59–O

Supplementary Report of the Council, Part VI, Hospital and Professional Relations

To the House of Delegates, Gentlemen:

As stated in the Hospital and Professional Relations Committee report, it is necessary to submit this supplementary report due to the fact that the "Permanent Policy Committee" consisting of the Committee on Medical Relations of the Hospital Association and the Hospital and Professional Relations Committee of the Medical Society had not met at the time our annual report was submitted.

The Permanent Policy Committee held a meeting March 19, 1959, in the Medical Society offices. The purpose of this meeting, as stated in the agreement between the two organizations, was as follows: "This committee will meet at least annually to consider matters of policy and any other matters properly falling within its purview."

Those present representing the Committee on Medical Relations of the Hospital Association included:

Thomas Hale, M.D., *Chairman*, Albany Hospital, Albany
Lloyd Gaston, M.D., St. Luke's Hospital, New York City
J. A. Katzive, M.D., Maimonides Hospital, Brooklyn

William A. Kelly, M.D., Mount Vernon Hospital, Mount Vernon
Mr. Howard R. Taylor, Niagara Falls Memorial Hospital, Niagara Falls
Mr. Paul P. Sobering, Oswego Hospital, Oswego
Christopher Parnall, Jr., M.D., Rochester General Hospital, Rochester
Arnold A. Karan, M.D., Bronx Hospital, Bronx
Mr. Charles M. Royle, Executive Director, Hospital Association of New York State, Albany

Representing the Hospital and Professional Relations Committee of the Medical Society of the State of New York were the following:

Raymond S. McKeeby, M.D., *Chairman*	Broome
Vincent J. Collins, M.D.	New York
Bernard A. Watson, M.D.	Ontario
W. P. Anderton, M.D.	Secretary, Ex Officio

Also in attendance, representing the Medical Society, was Herbert T. Wagner, M.D., Executive Director.

The first item on the agenda was information in regard to the formation of the Joint State Committee as recommended under paragraph nine of the Mediation Procedure. This information was already reviewed in the Hospital and Professional Relations Committee report previously submitted.

The second item on the agenda was the advisability of a pre-Legislature session of the Permanent Policy Committee in the future to discuss forthcoming legislation of interest to both organizations. It was thought advisable to have such a session early in the fall so that proper consideration could be given to pending legislation. It was suggested that this could be developed by the legislation committees of both groups.

The next item was the consideration of Dr. Henry T. Randall's letter in which he suggested establishing "a tripartite liaison group in the State of New York, this to consist of the State Medical Society, of the medical schools in the persons of clinical members of the faculty who are in senior positions, at least part of whom are full time, and the State Hospital Society, and that this tripartite group in effect be substituted for the combined committee of the State Society and the State Hospital Society." After discussion it was agreed to table the information contained in the letter until next year's meeting with the suggestion that Dr. Randall be contacted for more specific information. It was felt that certain other problems discussed in the letter were strictly local problems and should be settled within the county.

The fourth item was a discussion of the Forand Bill. Since there has been some difference of opinion in regard to this bill at the various levels of medical and hospital organizations, the Permanent Policy Committee was requested to take some definite stand in regard to it. The following motion was presented:

> *Resolved,* that this committee recommend to its parent bodies that they express themselves definitely as being opposed to the Forand Bill. The solution to this problem must be sought in the voluntary field where we are convinced that it will be found.

Six were in favor of the motion, one against the motion, and two abstained from voting.

All of the above items discussed at this Permanent Policy Committee meeting were reported to the Council of the Medical Society at its April meeting, and the actions of the committee were approved.

The next item was a discussion of paragraph 4 of the Hospital-Physician Relationship Agreement. Both groups have officially approved the agreement except for paragraph 4. The committee is aware of much of the controversy that has gone on in previous years in attempting to formulate a satisfactory statement regarding the financial arrangement between physicians and hospitals. After discussing the issues at some length, the following motion was passed:

> *Resolved,* that as a substitute for Paragraph 4, this Joint Committee recommends to their parent organizations that at the next annual meeting it should be suggested that the following should be included as an integral part of the Agreement, "Guiding Principles," paragraph 4, taken from page 14 of the "Relations of Physicians and Hospitals," under Part II, Report of the Joint Committee on Hospital-Physician Relationships of the boards of trustees of the American Medical Association and the American Hospital Association, June, 1953:
>
> "Paragraph 4. The right of an individual to develop the terms of his service on the basis of local conditions and needs is recognized, but such contractual arrangements should in all cases insure (*a*) the policy of professional incentive for the physician, and (*b*) progressive development of the hospital departments involved in order that increasingly improved services to patients be rendered."

The above action of the Permanent Policy Committee was reported to the Council and referred to the House of Delegates for action. The committee feels that a more concrete expression of the financial arrangements should be sought. It is hoped that this can be brought about by future meetings of the Permanent Policy Committee.

Several other problems of mutual interest were discussed. There was a fine spirit of cooperation at this meeting with each participant fully realizing the interdependence of the two organizations, which expressed an atmosphere of continuing successful negotiations in the future.

Respectfully submitted,
Raymond S. McKeeby, M.D., *Chairman*

Section 24

Remarks by the Speaker

Speaker Lane: At the end of this meeting and at the beginning of the action of the reference committees this afternoon, the tables will be available in the large room across the corridor to the right, opposite here.

I would like to remind you that each report is to have five copies. Those interested are to seek reference committees on special matters.

The officers, Council, and committee members will hold themselves ready to confer with reference committees on any matter that they may be interested in.

I have very few remarks to make at the beginning of this meeting. We are going to try very hard not to have a meeting tomorrow night, and we will be helped in this by the cooperation of everyone in this room, particularly those who are on reference committees and the chairmen of reference committees in order to condense as far as possible your reports and your recommendations to the House and particularly to have your reports typed up and in on time so that they will be available as soon as the House opens tomorrow morning.

Section 25

Introduction of New Members

Speaker Lane: I would now like to introduce the new delegates. Each man is asked to stand when his name is read and remain standing until all are named, and then we will have a round of applause for all at one time. They are as follows:

Section Delegates

Francis E. Ehret, Erie—Allergy
Joseph J. Hallett, Monroe—Dermatology and Syphilology
Sydney D. Weston, Kings—Gastroenterology and Proctology
Harry A. Hanson, Monroe—Industrial Medicine and Surgery
Milton Helpern, New York—Legal Medicine
Meyer Rosenberg, Kings—Neurology and Psychiatry
Arthur R. Wilsey, Fulton—Obstetrics and Gynecology
Samuel F. Kelley, New York—Otolaryngology
Fred W. Bush, Monroe—Pediatrics
Henry Fleck, Bronx—Physical Medicine
Paul A. Kennedy, Erie—Surgery
Lewis Lloyd Burrell, Jr., Erie—General Practice

District Delegates

Edward H. Robitzek, Richmond—First District Branch
Wilfrid M. Anna, Niagara—Eighth District Branch

County Delegates

Joseph J. Russo, Albany
Leonard L. Heimoff, Bronx
James L. Palmer, Broome
Max Cheplove, Erie
Martyn Ratzan, Kings
Maxwell H. Scholnik, Kings
Arthur H. Walker, Monroe
Norbert Fethke, Montgomery
May E. Chinn, New York
Bernard J. Pisani, New York
George N. Wise, New York
Frank W. Farrell, Queens
Charles C. Mangi, Queens
John L. Clowe, Schenectady
Anthony Kohn, Suffolk
Donald R. Reed, Westchester
John A. Hatch, Yates

Section 26 (See 101)

Supplementary Report of the President

Speaker Lane: It is now my pleasure to recognize President Leo Gibson, and I would request Dr. Pelow and Dr. Street to escort Dr. Gibson to the rostrum.

. . . Drs. William E. Pelow and W. Walter Street escorted President Gibson to the rostrum amid applause . . .

President Gibson: Mr. Speaker, members of the House of Delegates, ladies and gentlemen, this convocation of the House of Delegates of the Medical Society of the State of New York marks the one hundred and fifty-third year of its endeavor to enlighten and direct public opinion in regard to the problems of medicine and health for the best interests of the people of the State of New York. The past year has been reasonably successful in adding to the many contributions for the benefit of the people of this State accumulated over more than a century and a half of progress. The success of the year now ending has not been due to any one person. The worth-while accomplishments have been due entirely to the hard, exacting work of all the officers, Council, Board of Trustees, and our committees and their chairmen. I am most grateful to the members of the House for allowing me to enjoy a small part in these activities. I would like to express my gratitude to your president-elect, Dr. Henry I. Fineberg, and to Dr. Walter Mott, chairman of the Board of Trustees, for their unfailing help in solving some of the difficult problems incumbent upon the presidency. The splendid work of Dr. Fineberg as chairman of the Legislation Committee last year and as president-elect this year indicates that the Society will be in excellent hands when he assumes the presidency at this meeting.

History has been made in the annals of our Society since your last meeting in May of 1958. A few months after that meeting, your administrative staff moved into its new headquarters—a move which has resulted in a tremendous improvement in the efficiency of our organization and in the morale of the staff. The new location is at 750 Third Avenue between 46th and 47th Streets. This new headquarters is the result of years of careful investigation and planning. I think it is only fitting and proper that we give a vote of appreciation to all who worked not only on the committee that recently established the new headquarters but to all, especially Dr. Andrew Eggston, who labored so faithfully in the past for some type of change in our offices. I feel that it was due to Dr. Walter W. Mott's determined efforts that the job was finally completed in 1958. Our thanks go to him.

I extend to you, and through you to all the members of the Medical Society of the State of New York, an invitation to visit the new offices, which are in keeping with the dignity of our Society.

Pursuant to a resolution approved by the 1958 House of Delegates, the Council was authorized to consider and implement those portions of the recommendations and suggestions of the 1958 Survey Report which did not require amendment to the Constitution and Bylaws. Employment of an executive director met these requirements.

A committee of five past presidents with Dr. Renato Azzari as chairman was selected to study this resolution. This committee spent many long days including Sundays considering several capable men as candidates for executive director. The names of these candidates finally were submitted to the Council, which selected Herbert T. Wagner, M.D., who became executive director December 1, 1958. He has made many innovations and improvements in office procedures. Dr. Wagner has already visited several county societies and at present is conferring with the executive committees of the district branches. This effort to form a closer union with the State Society is to be commended.

The report of the Survey Committee on all the recommended changes is published in the April 1, 1959, edition of the Journal, pages 1389 to 1393 inclusive. The House should give these items careful and adequate consideration and act accordingly. Any action you take will have a vital effect on the future of this Society for years to come.

Legislation.—Although a complete report on legislation will be given to the House, I should like to make a few brief comments about the activity of one of the most important committees in our organization.

The composition of the committee remained unchanged, consisting of 18 members representing the various sections of the State. All resolutions referred to it by the House were carefully reviewed.

The committee believes, and I think correctly so, that our Society should not consistently introduce measures in the Legislature which we know have little chance of becoming law. Concentrate on specific phases of legislation which have some chance of becoming laws.

The Legislature apparently agreed with our view in regard to licensure of chiropractors inasmuch as the legislation for licensure remained in committee. I believe, however, that everyone, including the doctors and the legislators and the Board of Regents, is tired of the annual fight in regard to the licensure of chiropractors.

It is important to point out that there is considerable support from various sources that the practice of chiropractic as it is now conducted in the State of New York without controls is detrimental to the health and welfare of the people of the State. It is again suggested, therefore, that it is necessary that the questions of cultism and the practice of cults of various types in the State of New York be reviewed in detail and action taken as necessary to control such practices.

The Committee on Legislation is receptive to any constructive suggestions in regard to this legislation offered by this House of Delegates.

Public Health and Education.—As a liaison group between our Society and the New York State Department of Health, as well as the New York City Department of Health, this committee under Dr. Norman S. Moore continues to be another indispensable and important one in our organization. This year it increased its scope to cover areas of medical practice in hospitals involving public health principles, cooperated with Dr. Greenough's committee in the study of staphylococcal infections in hospitals, and conferred with medical educators of the State in regard to medical education and general practice, as requested in a resolution by the House last year.

Workmen's Compensation.—In November, 1955, the Council Committee on Workmen's Compensation began diligent efforts to obtain satisfactory increase in the workmen's compensation fee schedule. Due to the untiring efforts of Dr. Gerald Dorman a new fee schedule was promulgated in 1959. This schedule does not meet all the demands that the State Society made upon the Workmen's Compensation Board but in general is satisfactory. I want to assure you that no more complete and masterful presentation of argument on your behalf could have been made than the presentation of the facts by Dr. Dorman, chairman of the Council Committee on Workmen's Compensation. Colonel Solomon E. Senior is the new Chairman of the Workmen's Compensation Board. Colonel Senior has indicated his intention to discuss our mutual problems with Dr. Dorman.

Dr. Peter J. Di Natale, chairman of the Industrial Health Committee, as well as Dr. Anthony A. Mira, director of the Bureau of Industrial Health and Workmen's Compensation, deserve praise from all of us for their assistance in this work.

Union Health Clinics.—One of the most pressing problems facing our profession in this country today is the rapidly growing tendency for labor unions to establish their own health clinics. Last year Dr. Givan appointed a special ad hoc committee with Dr. Joseph Lane as chairman to establish policy in regard to this matter.

Meetings have been held with representatives of both labor and management. While no specific plans have been drawn up, the atmosphere has been cleared, and a better feeling prevails among the groups involved.

Mr. Hanover, president of the State AFL-CIO, has gone so far as to state that he would like to have four of his group meet with four of the representatives of the committee of the Medical Society some time this summer. The committee was quite stimulated by this suggestion, and I am sure such a meeting will be arranged.

Public Health and Education.—The report of the Committee on Public Health and Education contains much information on questions formerly raised by this House. I recommend that you study it carefully. The attitude of the medical educators of the State toward the influence of teaching on specialization versus general practice is well explained therein.

The committee found that the methods of undergraduate education were changing so rapidly that changes in the formula of postgraduate instruction were necessary. With these facts in mind, the committee sponsored an exploratory committee for the establishment of a scientific and educational trust.

With the authorization of the Council, I appointed a special committee to study such a trust. In a preliminary report the committee pointed out that the trust would be an independent organization under our sponsorship. The activities of such a group would result in the upgrading of postgraduate medical education, improvement in the practice of rural medicine, the furtherance of research, and the fulfillment of other hopes and dreams of a similar nature. The medical profession in this State would be able, through the trust, to present positive programs for better public health and medicine.

In a final report to the Council, the committee recommended that an educational and scientific trust be approved in principle. It also recommended that the entire matter be referred to the Council Committee on Public Health and Education so that it might work out the details and technicalities of starting and maintaining such a program. The blueprint prepared by this committee would be submitted to our counsel for evaluation and legal approval. The Council approved these recommendations.

For doing his usual efficient and thorough job, we thank Dr. Henry I. Fineberg, chairman, and the members of his committee.

There is already opportunity for such an organization. In the next decade medical educators and the medical profession are confronted with a task of increasing the number of practitioners prepared to serve the people of this country. The population of the United States in 1958 was estimated at 175 million persons. At the present rate of growth of our population, we can anticipate an increase of approximately 25 per cent in the next ten years, bringing our population to 220 million people. At the present time we have 132 physicians per 100,000 population. This figure has remained constant within one or two points during the past thirty years. It is estimated that it will be necessary to increase the number of graduates from 6,800 in 1956 to 8,700 per year in 1970 if the present ratio of physicians to 100,000 population is to be maintained.

Will there be enough competent students to fill the additional places in our medical schools? There are indications that the medical profession faces new and increased competition for the best students from other professions such as engineering and law. Many new opportunities have opened up for graduates with the degree of doctor of philosophy in such traditional disciplines as physics and chemistry. There are indications that the percentage of outstanding students entering the field of medicine is diminishing because of this competition with other learned disciplines.

There are indications that many competent and potentially interested students for the field of medicine are discouraged from entering medicine because of the long period of education that is required and the high costs of medical education, together with the lost earning potential during the long educational effort. A scientific and educational trust could be of great aid in correcting this difficulty.

Economics.—The Council Committee on Economics with its Subcommittee on Medical Care Insurance solves many controversial problems each month. A new fee schedule for Medicare was negotiated last July, and the committee welcomes criticisms from the various counties if they have a real complaint. The Subcommittee on Medical Care Insurance will continue to be more and more active as the problems of the care of the aging progress.

The relations of this committee with the Blue Shield Plans become very vital.

May I call your attention to a resolution introduced by Dr. McClintock at the last Council meeting, as follows:

> *Resolved*, that the House of Delegates of the Medical Society of the State of New York hereby approves of the plans being made and encourages the Blue Shield Plans in New York who have not already done so, to prepare a contract for people over sixty-five years of age.

I believe the situation is very clear. The number of citizens over sixty-five is increasing. Problems in this respect facing us today are due in part to medicine's great achievements in prolonging human life. We must find a way to apply the voluntary health insurance principle to the elderly and retired people. Government in the interest of the people will not avoid that responsibility.

Rural Medical Service.—The Committee on Rural Medical Service with Dr. Edward Hughes as chairman has instilled new life into this project. They have found that while New York State has been a leader in many medical and public health programs, it has not established a modern medical health program for rural areas.

As a definite means of implementing its basic ideas for improving rural medical care, the committee submitted a seven-point program to the Council in October, 1958, which was approved.

Dr. Hughes will visit the presidents and leaders of various civic organizations in several counties to expedite this program and keep it within the scope of county society activity.

Finally, I wish to pay a special tribute to Dr. Walter P. Anderton who also is terminating his official connection with the Medical Society at this session. He is a good friend of mine, a good friend of yours, and a good friend of the medical profession. He has been secretary for fifteen years, and to many he has been "Mr. Medical Society." His conscientious attention to all details, his willingness to cooperate, and the wise counsel which he has so often provided has, I am sure, endeared him to us all.

I hope you will have successful cooperation in all your deliberations and, as in the past, your actions will be beneficial not only to our profession but to the people of the State of New York. (*Applause*)

Speaker Lane: I would like to state that I have enjoyed the Council meetings under Dr. Gibson during the past year and feel he has done an outstanding job.

I wish to refer his report to the Reference Committee on Report of President, with the exception of the recommendation concerning Blue Shield coverage for the aged, and that should be referred to Reference Committee on Report of Council, Part VII, for their consideration.

Section 27 (See 101)

Address of President-Elect

Speaker Lane: It is now my very great pleasure to recognize and ask to come to the platform your president-elect, Dr. Henry I. Fineberg. I would ask Dr. George Lawrence and Dr. Thurman Givan to escort him up here, please.

. . . Drs. George J. Lawrence, Jr., and Thurman B. Givan escorted President-Elect Fineberg to the platform amid applause . . .

President-Elect Fineberg: As I stand here this morning—in a position that in past years has been occupied by many distinguished members of our profession—I must echo some of the sentiments that probably have been expressed by all of them. To be elected the president of this Society is one of the greatest honors that can be accorded a doctor of medicine by his colleagues. I enter upon this important office with a feeling of deep humility. It is only natural that I should be grateful for, and proud of, this expression of your confidence, and I can assure you that I will try in every way to justify the trust you have placed in me.

As chairman of the Council Committee on Legislation for several years and as president-elect, I have had the privilege of making contacts all over New York, and this has been a most gratifying and wonderful experience, one that will stay with me always. I look forward to renewing these fine friendships during the coming year, as I again visit various sections of the State.

Our Bylaws require that I deliver this talk, and it gives me the opportunity of presenting some of the ideas uppermost in my mind, most of which will not be new or earth-shaking, but it is a good rule that anything worth saying is worth repeating.

The problems confronting us are many, and the perplexities that our profession faces stir sympathy and understanding. The time allotted here does not permit a long discourse for there is much to be done during the next two and a half days, a period altogether too short to resolve the many enigmas which annually are presented to the House. Therefore, I will attempt, as far as possible, to contain my remarks within reasonable limits.

The relationship between medicine and labor is a topic which is receiving top billing all over the country. Despite the adverse publicity to which some unions and their leaders have been exposed, there are a considerable number of benevolent organizations which are devoted to the welfare of their people. They are affecting our way of life, and the economy of our country more and more as time goes on.

We must be realistic and sit down at the conference table to explore the influence that this third party in medical service is exerting and will exert. I agree wholeheartedly with the American Medical Association—that physicians and union leaders should get together, comment on their respective positions, exchange ideas, and explore areas of mutual interest with the hope that from such meetings will come answers to the problem of financing the best medical care for everyone. We must try to create ground rules for cooperative effort.

Our State Society has already embarked on a program of this type. We have been conferring with and listening not only to the agents of unions but also representatives of management. We are certain that good will come of these discussions.

Furthermore, some unions desperately need our help. About four months ago, a joint labor-management foundation reported that many New York union members were using health insurance paid for by their employers to buy low-grade medical care. The *New York Times* revealed a survey indicated that one fourth of the union families questioned went to nonaccredited hospitals for surgery, obstetrics, and other medical services. One third of the physicians consulted by the unionists did not have staff appointments at recognized hospitals. One quarter of those described as specialists lacked professional certification, and many were unlisted in standard medical directories.

That union members and their families had a lot to learn if they were to make the most effective use of their health and welfare benefits was the conclusion emerging from this study. Of course, there are die-hards in all groups who wish to maintain a status quo and refuse to budge. This type of inertia can lead to dire consequences. These are not days for stereotyped thinking but for imagination. The history of medicine is one of progress and achievement. We must realize that we are in a changing world, one that calls for us to sit down and evaluate and face all our problems. It is our duty to see to it that the costs of medical care are kept fair and reasonable; we must dedicate ourselves to improving health standards and to the tasks of providing increasingly good modern medical care within the reach of every citizen of the community.

I would like to talk briefly about the free choice of physician and voluntary health insurance. These issues have been discussed previously in great detail —and do not require much additional comment. Free choice of physician is still the best way of providing the highest grade of medical care to the public. This is the consensus of the doctors of our State, as shown by a recent survey, and we must continue to fight for this principle.

As far as health insurance is concerned, may I reemphasize some of the thinking of Dr. Louis H. Bauer expressed at a recent meeting attended by people representing various disciplines: "The profession is beginning to realize that the prepayment of medical care is here to stay . . . We must insist that we want a system that is going to give us the best type of medical care and one that will be as satisfactory as possible to everybody . . . In adopting any plan we should have one that considers the community as a whole . . . The medical profession approves plans that provide care for poor risks as well as good risks . . . Choosing one's doctor is important, regardless of whether or not the average person is qualified to do so. Any doctor will tell you, and many doctors who have been patients will realize, that half the battle is having confidence in the doctor who is taking care of you . . . under government-controlled health plans, economy rules the things the doctor can do rather than efficiency . . . It is very doubtful that very many people want government-controlled insurance . . . As soon as the government comes in, politics come in . . . and the doctor does not have the freedom to treat his patient as he thinks best . . . Management, labor, and the community as a whole must decide what they want, but these agencies must discuss the problems that arise with the doctor of medicine because we have to deliver the care that is necessary . . . Labor may have one viewpoint, management may have another, and medicine a third, but these three viewpoints can, in at least some areas, be amalgamated. Some of the difficulty is due to ignorance on the part of some of us for not understanding the view of the other fellow . . . It is high time for the medical profession itself to unite and become concerned with the development of a realistic over-all plan, not one just involving a portion of the problem."

For as long as I can remember, we have been discussing public relations, often referred to as human relations. I have repeated time after time that it has become fashionable to lambaste the medical profession. In too many places we are being maligned and taken to task, sometimes unmercifully, most often without true cause but unfortunately on occasion with justification.

We have a Public and Professional Relations Bureau which has been trying to effect a wholesome relationship between doctors and the public. It is my contention, however, that this bureau at best can only develop and blueprint the architecture for a public relations program. It is the devoted service of the individual physician that is the key feature in any effort of this type. Well-devised PR pamphlets cannot take its place.

We hear people say that they love their family doctor, but it is the medical profession that they dislike. I fail to understand the logic of this type of thinking. What is it that puts the entire profession into such disfavor?

To our great distress, a small minority of physicians have lost the great spirit of service that is and has been so characteristic of the doctor. The result is that too frequently the sins of the few are visited upon the many. Complaints have come to me that physicians cannot be reached for varying lengths of time, especially over week-ends. We have emergency medical services in many of our county medical societies, but are they working efficiently? Are they accomplishing their purpose? I might add that this situation is not peculiar to our State alone.

Many of you will remember what a past president of the American Medical Association—a general practitioner—Dr. Dwight H. Murray, pointed out so vividly at the end of his term of office. The "voice-of-the-people" letters that he had received were concerned mainly with the inability to get a doctor when wanted or needed, unwillingness on the doctor's part to answer night, week-end, and holiday calls from sick patients, and overcharging. He urged us to take these matters to heart and declared that "satisfied patients have been, and always will be, our first line of defense against government domination of our profession . . . It is a difficult task, I know, to please every patient. But I ask you, 'would it be easier to practice medicine as servants of the government?'"

I believe that it is important for the doctor to discuss fees frankly and directly, including those of the consultants who are called on for assistance.

The doctor should inform the patient clearly and concisely about what has to be done and why. The old cliche still holds—that the physician must practice the art as well as the science of medicine. In the long run, good public relations are born, and often die, at the bedside and in the doctor's office. The medical schools and their teachers must also inculcate into their students that the practice of medicine represents a public service of the highest degree.

Dr. David B. Allman has stated that the "most difficult decisions have not been on the scientific side of medicine. The most agonizing experiences lie in the field of human relations."

We must eliminate mysticism. Today, people are not completely uninformed, but we must learn to talk to them in effective, understandable language. A recent study has shown that more than 75 per cent of adult Americans regularly read some of the medical news that is printed in the daily newspapers. About 36 per cent of literate America frequently reads all the medical news that is printed and expresses a desire for more. This surge of interest in the medical world is not confined to newspapers but extends to radio, television, and periodicals. There is a tremendous thirst for medical and scientific knowledge on the part of the laity. This is the atomic age. Mr. Arthur H. Motley, president of Parade Publications, has informed me that more and more scientific and medical writers are currently being employed by his organization and others than ever before in our history.

We should heed the words of Virgil M. Hancher, president of the State University of Iowa, who some years ago, in discussing the social responsibility of medicine, had this to say about doctors: "Medicine has a wonderful story to tell. At the risk of being garrulous, doctors should tell the story, and should tell it again and again.

"There is a rising tide of criticism against the medical profession. Far too high a proportion of that criticism is ill founded and is based on ignorance and misunderstanding. Some of it has been based on the unwise attitudes and practices of certain general practitioners and certain specialists in the profession.

"The tremendous advances which medicine has made in the last century and the magnificent story which medicine has to tell of its expanded services to the American people are so great that we should not risk damage to the medical profession by unwise legislation in these latter days.

"The most important thing which doctors can do for American society, and a responsibility above all others which I believe they must bear, is to continue the rapid development which the profession has experienced in the past century, to bring its services understandably to the attention of the American people, and to see that doctor and patient, and patient and doctor, work together in sympathy and understanding for the solution of our common problems."

The doctor must also assume the role of citizen. He should participate in the various organizations throughout his county: the chamber of commerce, the welfare council, the health council, and others. He should take an interest in the candidates for public office, vote at elections, be concerned with city planning—in other words, perform all the duties required of the other citizens of a democratic society. Of course, participation in civic affairs will mean sacrifices on the part of the physician on a much greater scale than required of many others in the community. The doctor must adhere to an exacting schedule, time representing his earning capacity, and he cannot endanger the welfare or life of any of his patients. Despite all this, there is no doubt that the doctor can contribute more to community affairs than he is now doing in our State.

The American Medical Association has shown that much of this has already been done on a national basis. Thousands of physicians, in hundreds of towns and cities, are learning the high rewards that come in working with other groups for civic accomplishments. We have been accused of living in "ivory towers." There is no doubt that changes are taking place. More and more of the scientists and doctors of medicine are coming out of "these ivory towers" and are actively taking part in the social, economic, and political aspects of community life.

I am firmly convinced that all of us should become members of the American Medical Association. The advantages of membership are many, and I can see no disadvantages. There are some who do not agree with the decisions of the officers and delegates, but any member can always voice his objections by the democratic method—the right to vote for his representatives and to testify before the reference committees of the House of Delegates. It is the duty of our doctors to be active participants in the affairs of the American Medical Association, the State Society, and the county society. I have no sympathy whatsoever for the individual who is ever willing to criticize but refuses to play a part in the determination of his destiny.

We must be interested in informing the lay public and in the continued postgraduate training of the practitioner of medicine. We should establish active speakers bureaus in our county organizations. We should encourage certain members to become proficient in the art of speaking. They should be willing to serve as medical missionaries throughout their communities. The talks may be purely scientific in nature or may be discussions of medical economics or on any other subjects which will attract and inform the laity.

Our physicians must keep up with the rapid march of medical science. We must supply the means by which this training can be disseminated to the greatest number of doctors. A continual program of education is a sine qua non in the practice of medicine. This can very well be centered in the hospital in many areas. Every hospital should be a teaching institution. Staff physicians can always receive what might be called "on-the-job" training. Unfortunately, all physicians do not hold hospital appointments, but these individuals can keep up with modern trends by attending the scientific sessions of the county society or by being invited to the ward rounds, clinics, seminars, and lectures in recognized hospitals.

In our postgraduate educational efforts in New York State, we have been very fortunate in having a fine Committee on Public Health and Education, chaired by Dr. Norman S. Moore, which, in conjunction with the State Department of Health, has been conducting an effective education program. Dr. Moore has pointed out in his reports to the Council, and in the annual reports of his committee, the need of changing formulas in postgraduate educational methods to match the new methods of undergraduate teaching. His committee has under consideration these changing formulas.

The trend toward superspecialization has created problems. The general practitioner is still the backbone of American medicine. We must assure him that he is in a position of responsibility and prestige. He should be induced to attend county society meetings, hospital staff sessions, clinicopathologic conferences, and special courses. He should be represented on hospital medical boards. The Academy of General Practice is doing much in this direction and should be commended.

I need only mention the shortages of house staff officers that are plaguing many of our medical institutions. We should pay special attention to the interns and residents who are being trained in our hospitals. Their services should not be considered only as benefits to hospitals and to visiting staffs. We should go out of our way to take them into our confidence, to invite them to our meetings, and to initiate special seminars in the practice of medicine and medical economics to insure they have the right inkling of the road that lies ahead.

I would like to tell you more about the contemplated scientific and educational foundation, which was proposed to the Committee on Public Health and Education as the means of going ahead with an adequate educational program for both physicians and the public. Dr. Gibson has discussed this, and I will not repeat what he said. I hope that you have read the report of the committee which was appointed to study this possibility. The original idea was a creation of the Medical Society of Pennsylvania as a legal way for that society to solicit and disperse funds for educational and scientific programs. The objectives of such an organization are admirable, and in my opinion it could be the best public relations instrument thus far put forward by our Society. We are aware that before making any definite plans, we must carefully and concretely delineate the ways of accomplishing the important features of such a project, without encumbering any reserves or assets of the Society. When documented, it should have wide latitude of function.

However, the important provision is that this foundation be composed of a group separate from the Council but under the sponsorship of the Medical Society. It would be operated wholly by the medical profession, solely in educational and scientific pursuits with no direct monetary benefits to the Society. The latter is very important from the tax point of view. This venture could result in the upgrading of postgraduate education, improvement in the practice of rural medicine, the furtherance of research, and the fulfillment of other hopes and dreams of a similar nature—even to the point of securing financial aid for medical students who are in need.

It is my sincere hope that this idea will be fully explored and implemented.

Legislation is an important aspect of the work of our Society. I have found that little can be accomplished without the wholehearted support of the members and officers of the county medical societies in all parts of the State. We must try to confine our energies to those proposals that we believe have a chance of being successful, because there is no question about the fact that if we introduce too many bills, our efforts can become so diluted that the important ones will fall by the wayside.

The experts tell us that it is essential that we get to know our legislators, that we talk to them, and that we present to them our viewpoints about matters concerned with health so that they can properly evaluate the various situations and be in better position to solve the problems that arise. We have kept ourselves too far removed for too long from these important people.

Most of our legislation problems will be long-range ones. Despite the feelings of some of our members, we cannot have enacted into law all of our proposals. A bill introduced at one session may fail to pass, but if we continue to fight for what we believe to be right, we may succeed eventually. Legislation activity requires continual planning and vigilance. We have competent counsels to whom we can turn for advice, but here again they can only develop the necessary patterns in Albany. It is our responsibility to inform people throughout the State.

For many years we have been concerned with full government control of medicine. This subject is still important and must not be neglected. Recent activities should convince us that the proponents of this socialistic philosophy are still with us and determined to foist their program upon the people of this country. For example, I mention the Forand bill and its implications, of which you are undoubtedly aware. Also it has been brought to my attention that strenuous efforts will be made to bring to the foreground a new form of the old Wagner-Murray-Dingell proposal. We must continue to fight against any unrealistic legislation which threatens the freedom of the doctor and, what is most important, can result in inferior medical care.

All of us will admit that the government has a role to play in the care of the indigent and in the advancement of community public health and research, where huge sums of money are needed. But it has no business promulgating rules and regulations which will completely govern physicians, dentists, nurses, pharmacists, or hospitals.

I believe that we have kept ourselves a bit aloof from our brothers in the other professions that have expressed a willingness to help us—the dentists, the pharmacists, the veterinarians, the nurses, and others.

The dentist's problem is the same as ours. He is also endangered by the encroachment of government interference. We should be willing to join hands with him. Our joint aim is the welfare of the patient, and cooperation between our two groups should be the keynote.

The preservation of free enterprise is as important to the veterinarian and the pharmacist as it is to the practitioner of medicine. They want to help, and we should accept their offers of assistance.

Is it necessary for me to point out the lack of nurses and what it means? Many of you, I am sure, have had the experience of demanding a special nurse for your patient, but to no avail. There were none to be had.

We must assist the nursing associations in their recruitment programs, and we should play an active part in the advancement of nursing schools. There is no doubt that we have learned to scorn the idea that nurses are simply "genteel servants" with limited thinking facilities. After all, a patient, except in the case of simple ailments, is treated not by one individual but by a team consisting of physician nurse, hospital attendant, laboratory worker, and others. The nursing problem today is also our problem, and we must help solve it.

Now, I turn to the physician not in private practice. Many of our colleagues have looked upon those who are not actually engaged in the private practice of medicine as a small group. The thinking in some circles is that these doctors are not particularly involved in the policies which affect the private practitioner such as "socialized medicine," "free choice," "confidential physician-patient relationship," and the "third party in medicine."

According to recent statistics about 45 per cent of the doctors in this country are either part- or full-time salaried individuals. Many of them take care of patients. Some are in government service, the Armed Forces, the Veterans Administration, and the public health service; others hold full-time civil service positions in various Federal agencies. A large number are serving as civilian interns and residents. The nonpracticing group includes those administratively employed by medical societies, industry, schools, health departments, hospitals, and those who claim that they are retired. It is interesting to note that fewer than 5 per cent of all the medical men in the United States consider themselves retired.

I do not know how many of these doctors are members of their local medical societies, but I believe that their participation in organizations of this type is quite important. The American Medical Association has declared that medical policies concerning patient care, as well as the "politics" of health, begin at the county society levels, and if all the physicians, be they private practitioners or part- or full-time paid doctors, could participate in such activities, there would be a great deal less misunderstanding and more cooperation, which would redound to the benefit of all. Is it not true that the majority of over 30,000 interns, residents, and reserve medical officers will probably some day enter the private practice of medicine as soon as they have fulfilled their present obligations? Are we to fail to recognize the important role that the full-time teachers in our medical schools play in the realm of organized medicine? Do not these people have a tremendous influence in orienting the doctors of tomorrow toward medical policies of the future? And is it not a fact that much of the research that will directly affect patient care is supervised through medical centers connected with medical schools?

What I am trying to stress is that both local and state medical associations should invite the participation of the nonpracticing physician. There must be unity in all branches of medicine. On the other hand, the nonpracticing physician, if he wishes to have a voice in organized medicine, should be willing to become an active and not an absentee member of his local medical society. The entire medical profession must work together.

Medicine in this country has taken a step forward in a tremendous effort to solve the rapidly growing problem of caring for the aging, a subject which has been discussed on many occasions.

I am happy that our Society has seen fit to endorse heartily the stand of the American Medical Association which is urging doctors all over the United States to adjust their fees for medical services to fit the economic circumstances of persons over the age of sixty-five who have reduced incomes and very modest reserves. We have declared that this type of program should be expedited.

What is most important is that these projects, when properly organized, will meet the medical needs of the older folks while maintaining the American heritage of freedom. We should be most enthusiastic about any plan whereby the elderly person will be able to see a doctor of his choice and will be in a better position to do this with dignity and self-reliance.

It is gratifying to learn that there has been an immediate response from Blue Shield Plans throughout the nation and that New York is playing its part in the fulfillment of this modern, up-to-date philosophy.

There is another part of the aging program which merits some attention. Despite the ideas of some of our youngsters that oldtimers should surrender and become dormant, there appears to be a growing belief throughout the country that retirement should not be based on chronologic age alone. I am sure that most of you read the articles in a recent issue of the *A.M.A. News* which pointed out that a good many oldsters are living active, useful lives. A number of prominent people have recently pleaded with us to give the older persons a chance and to restudy and re-evaluate their capacities.

Evidently we are beginning to see a sane approach to the problem of the aging. It is our contention that you do not get rid of a man just because he has reached a certain age in life. We must determine what and how much he can do. We have seen men in the older age group who are still capable of doing a competent and very satisfactory job, and, on the other hand, we have met younger men who have lost the ability to carry on and have been compelled to drop out.

And so, ladies and gentlemen, here we are again at the beginning of a new year with the hope that what we will accomplish during the next twelve months will be productive. I must warn you, however, that alone the president of any organization can do little. It is only by working together that we succeed. The head of a group can only be as strong and his administration as successful as the membership wishes and permits.

I look forward to the deliberations of this body during the next few days and to the work of the committees and subcommittees of the Council which will function for you in the interim between the meetings of the House of Delegates. I stand ready to help in every way possible, and I trust that you will keep me informed of your reactions or those of your representatives. It is essential that I reap the benefits of your thinking.

I would like to say a few words about my predecessor, Dr. Leo Gibson. He has worked diligently. He has served with distinction, and I know that he will continue to play an important role in the affairs of our Society. I am grateful to him for taking me into his confidence and for keeping me posted on all the important matters that came before him so I would be prepared to step into his shoes which, I can assure you, are big ones to fill.

Finally, I desire to pay tribute to Dr. Anderton, who for so many years has had a guiding hand in the Society. During the period that I have held certain assignments, I have turned to him quite often for advice and guidance—and never has he failed to be kind and gracious, ever ready and willing to help. I hope that he will continue an active interest in our work and that we will be able to call upon him for consultation whenever the need arises.

I thank you. (*Applause*)

SPEAKER LANE: Dr. Fineberg's report will be referred to the Reference Committee on President's Report.

Section 28

Presentation of Citation

SPEAKER LANE: Ladies and gentlemen of the House of Delegates, we have a real pleasure now to make the annual award to the Outstanding General

Practitioner of New York State. As you know, he is an eighty-five-year-old country doctor, who has devoted more than fifty-five years to healing the sick and has given four sons to the medical profession. Dr. John Dean George, Sr., of Verona, New York, was elected as the Outstanding General Practitioner of New York State for 1958 by the Council. Dr. George is here this morning to receive this certificate indicative of the honor bestowed upon him.

Before presenting it, however, I would like to let you know a little bit about his background. Dr. George was born on October 13, 1873, on a farm at Redwood, New York. Following two years as a teacher in his home district, he attended Potsdam Normal School and entered McGill University Medical College, from which he graduated in 1901. In 1904 he married Maude Luana Eggston, of Antwerp, New York. They had six children, five of whom are now living. Four boys received medical degrees from the University of Rochester School of Medicine and Dentistry and are now licensed practitioners of medicine. One of them is John, Jr., who is now in general practice and surgery in Verona; a girl, Shirley, is a graduate of St. Lawrence University.

Always an active man, Dr. George was president of the local school board and largely responsible for a new building erected in 1927. He was on the board for thirty years. He has been Health Officer for over forty years and is now conducting 12 clinics in the schools of the township each year. He is the school physician.

Dr. George was a captain in the Medical Corps, United States Army, World War I, and is a member of the Medical Society of the County of Oneida, the Medical Society of the State of New York, and the American Medical Association.

Dr. George, it is indeed a great honor for me in behalf of the Medical Society of the State of New York to present this certificate to you.

. . . The members rose and applauded . . .

Speaker Lane: I would like to read the certificate:

> The Medical Society of the State of New York presents this certificate to John Dean George, Sr., M.D., in recognition of his selection by the Council as the Outstanding General Practitioner of New York State for 1958.
>
> Leo E. Gibson, *President*
>
> May 9, 1959 W. P. Anderton, *Secretary*

The official seal of the Medical Society of the State of New York is also affixed to the certificate.

Dr. George, again it is my pleasure. It is also my pleasure to state to you that Mrs. George is here as well as one of Dr. George's sons, Dr. Warren George, one of my friends from Rochester.

Dr. John Dean George, Sr.: I thank you for this introduction. I am glad to say that after a few missed turns we were glad to get into Buffalo.

I want to thank the Medical Society of the County of Oneida and my adjoining County of Madison for nominating me for this high position.

Lastly, I want to thank the Medical Society of the State of New York for the honor that they have paid me.

I thank you.

Speaker Lane: Now in regard to the annual award for the Outstanding General Practitioner, I would like to make the following remarks, and this has been asked of me primarily by the Public and Professional Relations Bureau because of the fact that we have not had any candidate for the General Practitioner of the Year on a national level and partly because of the fact that our recommendations have been received too late. In order to permit more county medical societies to submit nominations for the 1959 annual Outstanding General Practitioner award, it has been decided to extend the deadline from May 15 to June 15, 1959. The Committee on Public Relations feels that the additional time will enable some county societies which have not yet made their selection to decide upon a candidate and submit his name for consideration for the State and national awards. The committee strongly urges all county societies which have a prospective candidate to designate him as their choice and to submit his name together with the photograph and detailed curriculum vitae to the Public and Professional Relations Bureau at the State Society's headquarters, 750 Third Avenue, New York 17, New York. Please keep that in mind so that we can have candidates for this award.

Section 29

Introduction of Executive Director

Speaker Lane: It is now my pleasure to introduce to you the executive director of the Medical Society of the State of New York, Herbert T. Wagner, M.D., who has been with us as you know since December 1 of last year.

Dr. Wagner, who is the son of a physician, was graduated and got his M.D. in 1936 from Indiana University and also received a master's degree in business administration in 1939 from the University of Chicago. He has had extensive experience in administrative work, both in hospitals and in different foundations and organizations. He has also spent four years with the Public Health Service, where he was assigned to the Division of Hospital Facilities and directed the experimental field study for the Hill-Burton Hospital Survey and Construction Act. He is a charter member of the Medical Administrators Conference, the Hospital Administrators Correspondence Club, was certified by the American Board of Preventive Medicine in 1953, and is now a member of the Westchester County Medical Society, the Medical Society of the State of New York, the American Medical Association, the American Hospital Association, and five other state associations. It is my pleasure to present to you Dr. Wagner.

Executive Director Wagner: Dr. Lane, Dr. Wurzbach, ladies and gentlemen, I thought for a long time about what remarks I might make. I think it was mostly in respect to this House that I deferred it until about three or four o'clock (your time) this morning, when I was flying at some 30,000 feet trying to get back here from an A.M.A. meeting in the West. I was at that time more alone, I suppose, and able I hope to put down just a very brief point.

I am indebted to you for this courtesy, and I welcome the privilege of a brief statement. I want to assure this House, as I have previously said to the officers, the Council, and the Board of Trustees, my dedication to the principles, the ethics, and purposes of this Society and, through these, to the welfare of human society. As I have reverently sought guidance before acceptance of this appointment, I do now and shall seek such counsel for wisdom in judgment, for integrity in all actions, for stimulation of creative thinking, and for patience and perseverance in performance.

It would be indiscreet to labor you at this moment with diagnosis or platitudes in regard to our problems, our needs, or our future, even if I knew the answers.

We are here because we recognize and will meet the challenges of good health care in our changing environment. In due time there will be established and mutually understood our respective responsibilities, procedures, and authorities for effective administration. We will have agreements and we will have disagreements. The improbability of eternal unanimity is comparable to the development of an unabridged dictionary by an explosion in a printer's shop.

There is much to do. The vacuums of the future beckon to us. If we are to grow beyond the horizons in knowledge and in service to mankind, we must combine the fertile enthusiasm of the initiate, the intelligent restraint of the experienced, the vigor of the able, and the courage of faith. With these, tomorrow is our today.

Thank you very kindly. (*Applause*)

Speaker Lane: Thank you, Dr. Wagner.

Section 30

Representatives of Other State Societies

Speaker Lane: We now have several distinguished visitors to present to you. First is Dr. Ellwood C. Weise, Sr., president-elect of the Connecticut Medical Society. I will ask Dr. Walter Mott, please, to bring him to the rostrum.

Dr. Walter W. Mott, *Trustee:* If I may say just a word, Dr. Anderton and I have for so many years enjoyed the hospitality of Connecticut that it is a great pleasure to welcome here their president-elect.

Speaker Lane: Thank you, Dr. Mott.

Dr. Ellwood C. Weise, Sr.: Mr. Speaker, officers, delegates, and guests, I am most happy to represent the Connecticut State Medical Society. From that tiny little geographic area to your southeast, from the Connecticut State Medical Society, I bring you the warmest greetings and the sincerest felicitations.

Your problems as you go along with your meeting are our problems. Since your ambassador of good will, Dr. Henry I. Fineberg, represented you at our annual meeting about ten days ago and took us by storm, I believe you need not be worried if New York City decides to secede from New York State, because Dr. Fineberg impressed us so much and so favorably that I am convinced that little Connecticut would step right in.

Gentlemen, it is a privilege and pleasure to be here, and the Connecticut State Medical Society wishes you a most successful and rewarding 153rd Annual Meeting.

Thank you!

Speaker Lane: Our next guest is also from a neighbor state, Dr. William F. Costello, from New Jersey, and I would like Dr. Stanley Kenney, please, to bring him up.

Dr. J. Stanley Kenney, *Trustee:* Mr. Speaker and members of the House, Bill Costello is from the New Jersey delegation. He is chairman of the delegates from that state to the A.M.A. He has served in almost every capacity with the State of New Jersey. It has been my privilege to know him for many years, and I take great pleasure in presenting him to you.

Dr. William F. Costello: I don't know whether that chairmanship of the A.M.A. delegation is good or bad. It is not always so good.

Mr. Speaker and ladies and gentlemen of the House, it is always a great pleasure to come over here and visit New York and to bring greetings from your sister state of New Jersey. We have always had a most harmonious feeling and relationship with New York, and it has been cemented and augmented by your delegates whom you have sent to visit us. Among them is that genial gentleman who I understand is soon to retire, your secretary, Dr. Anderton. He has been most affable and generous to us, both when he came to New Jersey and when we have visited you. New Jersey hopes that despite the fact that he may not stay too long as your secretary, he won't forget to come and see us in New Jersey.

I am especially happy to come here today because I happen to be a graduate of the University of Buffalo—I won't tell you what year, but I am a graduate, and I am afraid that Gordon Heyd and Carlton Wertz may give me away. One of the mysteries though that has stood out in my mind ever since my graduation—and perhaps if there are some of the gentlemen here who remember Dr. Herbert Hill, who was professor of chemistry at the University of Buffalo, they may know what I mean—the big mystery is why he ever passed me in organic chemistry, and he died without telling me.

We had our annual meeting about two weeks ago. As I look through the resolutions that are about to be introduced here, your problems and our problems are almost identical. As I looked through these resolutions I almost thought that I had brought my portfolio of resolutions up from New Jersey.

It occurred to me that Atlantic City is a wonderful city for conventions and meetings, and our problems are so identical that maybe we ought to amalgamate, and you folks come over and have your annual meeting with us in New Jersey. It would save you a lot of time.

I want to thank you folks for the opportunity of being here to wish you a pleasant and successful meeting, and I hope that it will be productive of actions which will reflect credit on your Society and the American Medical Association and be rewarding and for the welfare of our constituents and the public whom we wish to serve.

May I say one other thing? I want to compliment you on your selection of president-elect. I heard his virile talk this morning. I am sure that you are going to be in for a pretty active session during the year. I want to compliment you and compliment him on his presentation.

Thank you very much!

Speaker Lane: The next gentleman is Dr. Orlo G. McCoy, vice-president of the Medical Society of the State of Pennsylvania. I will ask Dr. Bauckus to bring him to the dais.

Dr. Herbert H. Bauckus, *Trustee:* I present Dr. McCoy.

Dr. Orlo G. McCoy: Mr. Speaker, officers and members of this House, I deem it a great honor and privilege to have been designated by Dr. Farrell, our president in Pennsylvania, to attend this 153rd session. The opportunity is going to be mine to observe another House of Delegates in action.

I have sat in our Pennsylvania house for ten years and served on the reference committees, and I find many things strange about your way of doing business, but basically it is the same, and as has been said by my colleagues, our problems are mutual.

I am not a stranger in New York State, having taken medical work at the University of Rochester and also got quite a workout on Part III of the National Board Examination at Strong Memorial a few years ago. My father was born down in Ellicottville, and in 1941 I was licensed to practice in New York State in the storm belt in Chautauqua County. It has been my pleasure to meet Dr. Anderton at our Pennsylvania Society proceedings and also Dr. Greenough.

I thank you again for the privilege of being here.

Speaker Lane: Now from Vermont we have Dr. Benjamin Singerman, and I would like Dr. Moore to bring him forward.

Dr. Norman S. Moore, *Councillor:* It gives me great pleasure to introduce Dr. Benjamin Singerman, of Burlington, Vermont, the representative of the Medical Society of the State of Vermont. Dr. Singerman is past president of the Chittenden County Medical Society.

Dr. Benjamin Singerman: Thank you, Dr. Moore.

Mr. Speaker and members of the House of Delegates of the Medical Society of the State of New York, this is the first year that I have been chosen by the Vermont State Medical Society to represent them here at your deliberations. It is indeed a great pleasure for me to be here today, especially so since I am a native New Yorker and received my entire education from grade school through college in the City of New York, but somehow it seemed that the State of Vermont was a bit more anxious to have me in its medical school than any school in the State of New York, and perhaps out of gratitude and I think more out of intense love for the state I decided to remain in the State of Vermont. But I am not very far from New York, because as I leave my house each morning it takes me just two minutes to look across Lake Champlain and see New York in the region of Plattsburgh, Fort Ticonderoga, and that area.

I am very happy that I drove 400 miles yesterday if for nothing else than to have heard Dr. Fineberg's talk. The dynamism and the social outlook that Dr. Fineberg expressed in his talk I think are very typical of the type of social legislation we all look forward to when we think of New York State, both in its Legislature in Albany and its deliberations of the Medical Society. If his talk is a sample of what is to follow, I am indeed happy to be here today, and I hope my society deems fit to send me back in future years.

Section 31

Report of Physicians' Home

Speaker Lane: The next order of business is an address by Dr. Charles Gordon Heyd, president of the Physicians' Home. Dr. Heyd!

Dr. Chas. Gordon Heyd, *Past President:* Mr. Chairman and members of the House of Delegates, I am here to take just a few minutes to bring you close to the ideas of Physicians' Home.

If I were to say to you that we can guarantee a doctor, who is an American citizen and has been a member of the State Society for ten consecutive years, that we can look after him when he becomes old and feeble or destitute, that is an insurance policy that you could not buy anywhere in this country.

One of the most frequent questions is, where is this home? There is no such thing as a physical home for the Physicians' Home, Inc. Our 61 guests are maintained in a home of their own selection in a locality in which they were brought up. The treatment of aged is today not an institutional business. It is to preserve the individual in some relationship to his environment. The greatest hazard of growing old is the loneliness that must prevail in those last remaining years.

How does the Physicians' Home get its money? The State Society has permitted us to add a voluntary assessment of $2.00. That brings us in about $37,000 or $38,000.

In addition, we make an annual appeal on or about Thanksgiving Day for a minimum of $10, and that $10 entitles the individual to be a member of the corporation and to have a vote at the annual meeting. That brings in about $35,000 or $36,000.

The income from our investments brings in $40,000. That is considerable money. Now a few statistics that will be interesting I am sure: Of the money that we receive a certain percentage goes into reserves to help build our capital to a larger amount, always against the day that the number of indigents will rise.

There are few years in which we do not have a complete history. When this Physicians' Home was founded, they undoubtedly had in their minds—Coleman, Bob Morse, Frankenthaler—the idea of a physical home, and two attempts were made to run a physical home. There was no doubt in the minds of the founders of Physicians' Home in 1919 that they would like a physical home, and owing to the generosity of the late Dr. Mountain they organized one at Oneida, which went broke in about eighteen months, but the death rate among our guests was so high as to indicate that this was not the way to take care of the elderly members of our Society.

With the lapse of a few years when the Oneida proposition was failing, the statistics are rather meager. We have taken care of 129 doctors and/or their wives. The total number of years that we have kept our guests is three hundred and seventy-six. The amount of money that we have expended to date is $398,802.50.

Now a breakdown of some of the aspects of this: Five individuals were supported for an average of 9.9 years. The average duration of care is two and a half years. The longest beneficiary—incidentally we have two women to every man; the death rate among the doctors is very much higher than it is with their wives—the beneficiary with the longest period of assistance is Mrs. C. M., of New York County, who has been maintained for seventeen years and one month. The next longest is Dr. H.F., who lived for fifteen years and five months in the home that was maintained at Stamford. The beneficiary receiving the greatest amount of aid was Dr. John J. D., of Kings County, who received $20,595 over a period of fourteen years, and his wife is now receiving $175 a month.

We have had beneficiaries from 28 counties. New York has the largest number with 45 individuals, spending a total under our care of one hundred and thirty-eight years, and aid amounting to $122,615. Kings County is second with 15 beneficiaries who have spent seventy-one years and seven months, with the cost or the donation amounting to $74,285.

We like to feel that we are doing a good job. Outside of a secretary and Dr. Reid, not anyone receives a penny for his services. The finances are run by a board of trustees elected for five years. The administration of the home is by 27 directors elected in classes of three years.

It may be repeated now that the measure of the usefulness of any organization is the response that comes from them. For example, a few days ago we received this letter:

> "Dear Dr. Heyd:
>
> "Thank you very much for what you did for Mrs. L. Dr. Reid and Miss Hoyt both acted magnificently and provided immediate assistance. It is good to learn at first hand what a terrific job the Physicians' Home is doing, but no fund automatically provides the personal kindness and interest shown by yourself and Dr. Reid. Mrs. L. is truly a very deserving person, being upon hard times through no fault of her own."

And another:

> "Dear Dr. Reid,
>
> "Our father, Charles F., passed away on May 2. We, his children, wish to thank you most sincerely for your kindness and sympathetic understanding as revealed to us."

The final one:

> "Dear Miss Hoyt,
>
> "I wish to express my gratitude for the very kind, courteous treatment which I received from you and Dr. Reid last week. In these days when everything is rush, rush, rush, as in so many cases on a strictly impersonal basis, it is refreshing to have contact with people such as you who sincerely give of their time and counsel. Again I thank you for everything you have done."

We pay a visit to all of our guests from one end of the State to the other. Miss Hoyt is coming up here, motoring up, and will see five of our guests in this area of New York State. We will have a stand in the exhibition where this little pamphlet with the seal and the scroll will be given out. I think we are the only State in the United States that has really taken over a job that is the job of the doctors. Every cent that we spend has been given by you, the doctors—nobody else. Every item of this is run by your friends, the doctors.

I have been very happy to be associated with this for so many years, and when you receive these nice little letters from us, let your pen slip and don't stop at just that $2.00 but try to make it $3.00, $4.00, or $5.00 beyond that. Of course, everything is welcome.

Thank you for this opportunity to give a breakdown of the work of your own Physicians' Home.

Speaker Lane: Thank you, Dr. Heyd.

Members of the House, we having coming up before us next perhaps the most important business that this House of Delegates will have to consider, and that is the report to be given by Dr. George Lawrence concerning the Management Survey Report. His committee has been studying this for a long period of time. You have all been asked to read this report carefully before coming to this meeting today because it is long. We are trying to save time, and by so doing we hope to expedite this report.

Now we have been sitting for quite a while. I will declare a ten-minute recess. I hope you will remember that it is ten minutes. At the end of that time Dr. Wurzbach will reconvene the meeting, and we will take up Dr. Lawrence's report.

. . . Recess . . .

Speaker Lane: Will you kindly take your seats, please? Will the House please come to order?

Dr. Heyd would like the floor for a minute to make a very pleasing announcement.

Dr. Heyd: Gentlemen, I picked up $1,000 so quickly. As I took my seat, I was informed by Dr. Pallin and Dr. Kottler that the Kings County Physicians Guild is giving $1,000 to the Physicians' Home.

SPECIAL COMMITTEE ON CONSTITUTION AND BYLAWS

Section 32 (See 161)

Report of Special Committee on Constitution and Bylaws

Speaker Lane: May I have your attention, please? It has been brought to the attention of the Chair that the wording of Chapter X, regarding reference committees, states thus: "All recommendations, resolutions, measures and propositions presented to the House of Delegates and which have been duly seconded shall be referred by the speaker to the appropriate reference committee."

If we follow this wording, it would mean that we would now have to refer Dr. Lawrence's report to a reference committee, which is going to complicate matters and delay action a great deal.

In the past there have been several instances in which a committee of the House has been permitted to report directly to the House for action upon the report, and Dr. Bauer is going to make a motion for your consideration. Dr. Bauer, please.

Dr. Louis H. Bauer, *Past President:* Mr. Speaker, it has been customary in the past that special committees of the House which have been appointed to consider a particular topic and directed to report back to the House have done so. I think it is true that the Bylaws do need clarification on this point, but in this particular instance I believe the House itself can act as the reference committee. It will save duplication of effort and a tremendous amount of time.

I would therefore move, Mr. Speaker, that Dr. Lawrence's committee be entitled to report direct to this House, the House itself acting as the reference committee. That will save much time.

Dr. J. Stanley Kenney, *Trustee:* I second it.

Speaker Lane: You have heard the motion, which has been seconded, and this requires a two-thirds vote of the delegates present. Those in favor of the motion, please say "aye," those opposed "no." The motion is carried.

Dr. Lawrence will please be ready to submit his report, and Dr. Wurzbach will take over.

Dr. Bauer: I suggest, Mr. Speaker, that a resolution be introduced to clarify this section of the Bylaws so that there will be no further confusion about it. All that it is necessary to do is to add a few words at the end of the paragraph, "except in the case of committees of the House which shall report direct."

Speaker Lane: Thank you, Dr. Bauer.

Vice-Speaker Wurzbach: Dr. Lawrence!

Dr. George J. Lawrence, Jr., *Councillor:* Mr. Speaker and members of the House, I would like you to get out your copy of the annual reports and turn to page 1651. This is a rather lengthy report, and if you will read along with me, you will be able to understand, I hope. It might be a good idea to have your copies of the Constitution and Bylaws handy. You might want to refer to those. Are you ready?

Chorus: Yes.

Dr. Lawrence: Your committee had several resolutions referred to it. The first concerned resolution 58–25 covering transfer of Cayuga County Medical Society from Seventh to Fifth District Branch. I don't think it is necessary to read the resolution.

Your committee recommends approval of this resolution, and I move approval of this part of my report.

. . . The motion was seconded . . .

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all those in favor of adopting the committee report will say "aye," opposed "no." It is carried.

Dr. Lawrence: The next resolution, 58–56, would provide life membership to paid-up active members who have paid dues for thirty-five years. I will read the resolved:

> *Resolved,* that the Bylaws of the Medical Society of the State of New York be amended by the addition of the following sentence to Chapter 1, Section 6:
>
> "Any physician who has been an active member of the Society for more than thirty-five years, regardless of his age or state of health, shall become, automatically, an active, paid-up life member of the Society, with all the privileges and benefits of an active member."

The effect of this resolution would be to make relatively young men eligible for life membership and able to hold office without paying dues. It would also make two categories of life membership, which your committee feels would lead to confusion.

Your committee, therefore, recommends disapproval of this resolution, and I move, Mr. Speaker, approval of this part of the report.

Dr. Walter W. Mott, *Trustee:* I second it.

Vice-Speaker Wurzbach: The motion has been made and seconded calling for the disapproval of this resolution. Is there any discussion? Hearing no discussion, all those in favor of the action of the committee say "aye," those opposed "no." It is carried.

Dr. Lawrence: The next portion of my report concerns the delegates to the American Medical Association. Two resolutions, 58–55 and 58–61, were referred to us last year on this subject.

I think I will have to read these resolutions; they are not too long. Resolution 58–55 reads:

> *Resolved,* that the Bylaws of the Medical Society of the State of New York be amended as follows:
>
> Chapter III, Section 6, add: "If a delegate is dropped from office due to a change in the number of delegates, he shall become the first alternate delegate in his class in the proper sequence."

Resolution 58–61 reads as follows:

> *Resolved,* that Chapter III, Section 6 of the Bylaws of the Medical Society of the State of New York shall be amended by the addition of the following: "A duly elected delegate to the American Medical Association who does not serve as such because of reduction in number of delegates to which the Society is entitled shall fill any vacancy which may occur in the delegation before alternate delegates are designated for that purpose."

Each of the above resolutions concerns the delegates to the American Medical Association, and the two resolutions are being considered together. The first refers to delegate "class" which is nowhere defined in the Constitution and Bylaws.

Your committee feels that an elected delegate remains a delegate whether or not he serves in that capacity.

Resolution 58–61 conforms with this reasoning and specifies that elected delegates should be used to fill vacancies before alternates are utilized.

Your committee, therefore, recommends disapproval of resolution 58–55 and approval of resolution 58–61.

I move approval of this portion of my report.

Dr. Ezra A. Wolff, *Assistant Secretary:* I second it.

Vice-Speaker Wurzbach: Is there any discussion?

Dr. Monroe M. Broad, *Queens:* I fail to understand how we can duly elect a delegate if no vacancy exists. Therefore, under 58–61 we would in effect be electing one delegate more than we are entitled to and actually preparing him to act as an alternate delegate first entitled to succeed to a vacancy, whereas under 58–55 regardless of the number of delegates we are entitled to, the first alternate will then fill the vacancy, which actually is saying the same thing twice. I think that we cannot speak about duly elected delegates if no vacancy exists. I would like a clarification of this from the speaker, please.

Dr. Lawrence: I think I can explain the reason for confusion. Here at this meeting on Monday we shall elect a list or a number of delegates to the American Medical Association. We elect the number that we are permitted to have by the constitution and bylaws of the American Medical Association according to our membership as of last December. However, these men who are elected at this meeting will not serve until 1960 and 1961. By the end of 1959 we may be entitled to fewer delegates than we are entitled to at the present time. In that event the last delegate naturally will not be a qualified delegate to the American Medical Association. However, if we are entitled next year to more delegates than we elect this year, the alternate, the first alternate, will step up. If a man who has been elected as a delegate is dropped down to the first alternate delegate because our loss of membership, a decrease in membership, causes us to lose one delegate, the purpose of resolution 58–61 is to see that this man who has been elected as a delegate serves as a delegate before any alternate is placed in a vacancy that might arise. I hope that clears it up.

Vice-Speaker Wurzbach: Does that answer your question, Dr. Broad?

Dr. Broad: Yes, thank you.

Dr. Gerald D. Dorman, *Councillor:* Perhaps this only adds further confusion to a confused situation, but if there are delegates nominated and elected, the election is on the basis of the number of votes received, so that the difference between the last elected delegate and the first elected alternate is not that this House has specifically said this man we are thinking of only as an alternate and not as a delegate. It just means that instead of receiving 109 votes he only received 108, and I feel that to make a differentiation on the basis of whether a man was elected a delegate or elected an alternate, first alternate, is a false position for this House to assume. I feel that is where the classes have been used in the past; in other words, the people elected at this time, if a vacancy occurs, the man who instead of getting 109 votes got 108 should take that place. That was the feeling of this House at the time it was making this election.

In other situations—and we have had it happen very often before—a man may be a delegate one year and an alternate the other, and if he was elected an alternate one year and a delegate the other, you always have to put the delegate in. I feel this is an awkward situation, and I would speak against this particular recommendation.

Vice-Speaker Wurzbach: Do you speak against both?

Dr. Dorman: I would speak against the report on resolution 58–61.

Vice-Speaker Wurzbach: Is there any further discussion?

Dr. Thomas M. d'Angelo, *Queens:* I wish to speak in favor of the committee's report. This thing has come up a number of times. It has been very embarrassing all around. It seems to me that whenever the election is held for delegates, a certain number of delegates are declared elected, and a certain number are declared elected as alternates. That goes down in our minutes. They are elected as delegates, and it is my belief that all elected delegates should be used before any alternates are called upon to take their place.

Vice-Speaker Wurzbach: Is there any further discussion?

Voices: Question!

Vice-Speaker Wurzbach: Gentlemen, you are voting on the report of the committee recommending disapproval of resolution 58–55 and approval of resolution 58–61. All those in favor say "aye," opposed "no." It is carried.

Dr. Lawrence: The next matter referred to us concerns increase in committee membership, Council committee membership, and is resolution 58–26, which would increase the membership of the Council Committee on Public Health and Education. Do you want me to read that resolution, gentlemen?

Chorus: No.

Vice-Speaker Wurzbach: Read your recommendation.

Dr. Lawrence: Your committee recommends that no action be taken on this resolution at this time since we feel that our recommendation on resolution 58–65 (concerning the Management Survey Report) will cover it. We recommend no action at this time. I move approval of this part of my report.

Dr. Kenney: I second it.

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all those in favor of approving the recommendation of the committee say "aye," opposed "no." It is carried.

Dr. Lawrence: I now come to a long and complicated part of my report. It concerns amendments which were introduced last year and thought necessary to implement the Management Survey Report:

Resolution 58–65 was introduced by Dr. Azzari and contains many proposed amendments in this one resolution to the Constitution and Bylaws, which amendments are intended to implement the Management Survey Report.

Your Special Committee on Constitution and Bylaws met twice with Dr. Azzari's committee to discuss and study these proposals. They are all contained in resolution 58–65, which follows and covers about three and one-half to four pages. The length of this resolution, which we must go over, was the reason the Speaker suggested that all the members of the House study this resolution before coming to the meeting.

Our recommendations on 58–65 are as follows:

Under Section A, of the resolution, which concerns amendments to the Constitution: (1) Amend Article I, second sentence to add following the words "New York" the phrase, "and to serve and strengthen the work of the component county societies" and following the words "public health" on line 8 of the second sentence, add the phrase, "and to consider ways in which better medical care can be provided to all segments of the population of the State with least financial burden on the individual."

Your committee feels that the present language in Article I is sufficiently broad to encompass the purposes of these suggested changes. We also feel that the suggested changes embody policies which are already being carried out by your Society and are not necessary to include here. We therefore recommend disapproval, and I move the approval of this portion of my report.

Dr. Mott: I second it.

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all in favor of the committee's report say "aye," opposed "no." It is so ordered.

Dr. Lawrence: (2) Amend Article III to substitute words "Board of Trustees" for word "Council."

Since the Council has recommended that no change be made in the present status of the Council and the Board of Trustees, and since your committee concurs with this view, we recommend that all portions of this resolution which would affect this part of the Management Survey Report be disapproved. These are all the parts in which the word "Council" has been changed to "Board of Trustees" or where this change has been implemented in one way or another. The parts that we, therefore, recommend be disapproved are as follows:

Constitution—(2), (3), (5), (6), (8).

Bylaws—(1), (2), (3), (4), (5), (6), (8), (9), (11), (12), (13-1, 2, 3, 4, 7, 8, 9, 10, 11), (14), (15–1), (16), (17), (18), (19), (20), (21) (22–2).

That is on page 1656. Mr. Speaker, I move approval of this part of my report.

. . . The motion was seconded . . .

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all those in favor of the action of the committee say "aye," opposed "no." It is so ordered.

Dr. Lawrence: Under the Constitution (4): Since, as mentioned above, the Council has recommended that no change be made in the present status of the Council and Board of Trustees, we recommend that this portion of the resolution be disapproved. However, since the Council has recommended that the executive director attend all Council meetings with voice but without vote, we recommend that this section of the resolution be amended so as to provide that the second paragraph of Article IV of the Constitution shall read: "The executive director and the editor of the New York State Journal of Medicine shall attend all meetings of the Council with voice but without vote."

I move approval of this portion of the report.

. . . The motion was seconded . . .

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all those in favor of the action of the committee say "aye," opposed "no." It is so ordered.

Dr. Bauer: I am a little concerned about how the record is going to look on these actions. You have already now taken four actions, which actually amend the Bylaws in approving the report of Dr. Lawrence, and I think it should appear in the record that in approving the report the Bylaws have been amended by at least a two-thirds vote. Otherwise the question might arise from somebody reading the minutes of this meeting that the Bylaws were not properly amended, so I think in each instance it should appear that these actions have amended the Bylaws, and that they were adopted by at least a two-thirds vote. I think all of them except one were adopted unanimously. There were a few scattered "nays" on one. I think they had at least a two-thirds vote, and the record ought to show that.

Vice-Speaker Wurzbach: The Chair rules that all the previous actions taken were changes in the Constitution and Bylaws of the Society and were adopted by a minimum two-thirds vote.

Dr. Lawrence: (7) Amend Article IX (Funds) second paragraph to add following the word "Society" the phrase, "except that the said board may delegate, to such person or persons as it sees fit, the authority to expend funds of the Society in amounts and under conditions to be determined by said board."

Since it is desirable to allow certain fiscal powers to be delegated to the executive director, we recommend approval of this amendment.

I move approval of this portion of my report.

Vice-Speaker Wurzbach: With the necessary change in this portion of the Constitution.

Dr. William T. Boland, *Chemung:* I second it.

Vice-Speaker Wurzbach: Is there any discussion?

Dr. Mott: Mr. Speaker, does this not refer to the said board as if we had reconstituted the Council and Trustees?

Dr. Lawrence: May I answer that, Mr. Speaker?

Vice-Speaker Wurzbach: Yes.

Dr. Lawrence: Article IX under Funds has not changed. It refers to the Board of Trustees: "The approval of the Council and of the Board of Trustees shall be necessary for the expenditure of any funds of the Society."

In this we are adding, "except that the said board may delegate, to such person or persons as it sees fit, the authority to expend funds of the Society in amounts and under conditions to be determined by said board."

Dr. Mott: The "said board" is what I had reference to. What is the "said board"?

Dr. Lawrence: The "said board" is the Board of Trustees.

Dr. Kenney: You just read that the approval of funds comes from the Council and the board. Should that not be plural?

Dr. Wolff: Mr. Chairman, this refers very definitely to the presently constituted Board of Trustees, which is named in the article previously. The Council is not a board. It is by definition a council in the Constitution and Bylaws, and therefore this should not be board. I think the committee's report is correct as stated. I think it is quite clear that this refers to the present board, not the projected board that would have come about by the adoption of the Edlund Report.

Vice-Speaker Wurzbach: Is there any further discussion?

Dr. Alfred P. Ingegno, *Councillor:* I don't like to belabor the point, but the Constitution speaks now of the approval of the Council and of the Board of Trustees, so it seems to me that if you just use the word "board" you are confusing the matter. I think it would be better to use the word "bodies," referring to the two that are mentioned in this article.

Dr. Lawrence: May I discuss that, Mr. Chairman?

Vice-Speaker Wurzbach: Yes, sir, certainly.

Dr. Lawrence: The purpose of the amendment is to allow the Board of Trustees to delegate these functions. It is not the Council that will delegate these functions. The Council approval is also necessary for the expenditure of funds, but the Board of Trustees is empowered in this resolution to delegate to such person or persons as it sees fit the authority, and I think the purpose of the amendment is to give the Board of Trustees the power to so delegate.

Dr. Kenney: Why not spell it out?

Dr. Norman S. Moore, *Councillor:* Mr. Speaker, I believe it would be more clear if following the word "board," there was added "on recommendation of the Council," which would clarify the whole paragraph, and I move that amendment.

. . . The amendment was seconded . . .

Vice-Speaker Wurzbach: The amendment is that following the word "board," there be added the words, "on recommendation of the Council." Is there any discussion on the amendment? Hearing none, all those in favor of the amendment say "aye," opposed "no." The amendment is carried.

Is there any further discussion on the original motion as amended? Hearing none, all those in favor say "aye," opposed "no." It is unanimously carried and becomes a change in the Constitution, as amended.

Dr. Lawrence: (9) Amend Article XIII (Amendments), first paragraph, by substituting the words "to the Board of Trustees" for the words "at a previous annual meeting," and amend the last sentence of the last paragraph to substitute the words "Board of Trustees" for the word "Council."

This proposed amendment would make it easier to amend the Constitution. Your committee feels strongly that the Constitution should be a stable document, not subject to hasty amendment. We therefore disapprove this amendment, and I move approval of this portion of the report.

Dr. Mott: I second it.

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all those in favor of the report of the committee say "aye," opposed "no." It is unanimously carried and becomes no change.

Dr. Lawrence: Under B, Amendments to Bylaws: (7) Amend Section 2 of Chapter III so as to eliminate words "with the exception of the secretary" in the third paragraph.

Since the secretary will no longer be salaried, the wording in the present Bylaws is unnecessary.

We recommend approval of this amendment, and I move approval of this portion of my report.

. . . The motion was seconded . . .

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all those in favor of this recommendation say "aye," opposed "no." It is carried.

Dr. Lawrence: (10) Bylaws, the subject matter of this portion of the suggested amendments deals with the proposed consolidated Board of Trustees.

We therefore recommend disapproval of section 10 of the resolution with the following amendments:

The proposed Section 2 (a), Chapter IV, reads in part: "but nothing herein contained shall limit the authority of said board to delegate said power and authority to such person or persons as it sees fit in the exercise of its discretion." This would enable the proposed consolidated Board of Trustees to delegate control of personnel to the executive director. In order to accomplish this with respect to the present Council and Trustees, we recommend that the following be added to the end of Chapter IV, Section 1 (a) of the present Bylaws: "It may with the approval of the Board of Trustees engage an executive director and define his duties." So that Chapter IV, section 1 (a) will then read as follows:

> *Section 1 (a).*—The Council shall be the executive and administrative body of the Society while the House of Delegates is not in session and shall control all arrangements for the annual meeting. Its resolutions and actions shall be decisive and final except that all resolutions and actions of the Council are subject to review, reconsideration, and action by the House of Delegates. Its actions shall be governed by the Constitution and Bylaws of the Society and the rules and regulations of the House of Delegates. The Council shall have power and authority to employ, discharge, and arrange duties and fix compensation for any employe whom it may find necessary for conducting the affairs of the Society, and may delegate the foregoing to such person or persons as it sees fit in the exercise of its discretion. It may with the approval of the Board of Trustees engage an executive director and define his duties.

The last sentence is the added material.

Vice-Speaker Wurzbach: What is your motion?

Dr. Lawrence: We have recommended disapproval of Section 10 of the resolution but approval of this amendment. I therefore move approval of this portion of my report.

Dr. Wolff: I second it.

Vice-Speaker Wurzbach: Is there any discussion?

Dr. Ingegno: Just a question, Mr. Chairman. "It shall prepare an annual budget for submission to the Board of Trustees," was omitted when Dr. Lawrence read it. Was that intended to be omitted?

Vice-Speaker Wurzbach: What page are you on?

Dr. Ingegno: Page 16 of the Constitution and Bylaws, present section.

Dr. Lawrence: I think that is an error that slipped in over my proofreading. We did not intend to omit that from the present Constitution or Bylaws.

Vice-Speaker Wurzbach: Will you move that?

Dr. Lawrence: I move that be included in Section 1 (a) or left in Section 1 (a).

Vice-Speaker Wurzbach: Thank you, Dr. Ingegno.

Dr. Mott: I will second that.

Vice-Speaker Wurzbach: Is there any further discussion?

Dr. Bauer: Isn't that a duplication? If I understood the chairman of the committee correctly, it is being left in the Constitution that the Council shall have the power and authority to employ, discharge, and arrange the duties, with the approval of the Board of Trustees, and fix compensation of and for any employe whom they would find necessary to conduct the affairs of the Society. It seems to me that would cover the executive director. Why do you need an additional sentence for him specifically? The executive director will be a full-time employe of the Society. I think it is already covered here. You could employ a half dozen directors if you wanted to under this language. I think that an additional sentence is superfluous.

Dr. Lawrence: Mr. Speaker, it was the feeling of the members of this committee and also of Dr. Azzari's committee that the position of executive director should be specifically mentioned in our Bylaws, and it was thought that this would be the proper place to include it. If it is not here, other references to the executive director will have no reference point. This defines the fact that we do have the position of an executive director.

Vice-Speaker Wurzbach: Does that answer your question?

Dr. Bauer: Yes, but I think you can simplify it. I get Dr. Lawrence's point. It would seem to me to be simpler if you said, "The Council shall have power and authority to employ, discharge, and arrange duties and fix compensation for the executive director and for any other employe whom you may find necessary." That shortens it considerably and avoids a duplication of language, yet brings your executive director into the picture. I would move that as an amendment to the committee's motion.

Vice-Speaker Wurzbach: After the word "employe" including—

Dr. Bauer: I said "to employ, discharge, and arrange duties and fix compensation for an executive director and any other employe," etc.

Dr. Lawrence: Mr. Speaker, I would like to discuss that a little further if I may. Your committee also felt that there was a need here to illustrate that it was up to the Board of Trustees to define the powers of the executive director. That is another reason we felt this added sentence was indicated. Mr. Speaker, I have the temerity to say that I think the way we have it here is clearer than the way Dr. Bauer has suggested.

Vice-Speaker Wurzbach: Dr. Bauer, did you make a motion to that effect?

Dr. Bauer: I made a motion, but it was not seconded. I am perfectly willing to withdraw it. I had no objection to the language. I just thought it was unnecessarily wordy. I withdraw the motion.

Vice-Speaker Wurzbach: The motion made by Dr. Bauer is withdrawn.

Voices: Question!

Dr. Carlton E. Wertz, *Past President:* Did I understand the speaker to say that the Board would define the duties of the executive director rather than the Council?

Dr. Lawrence: The Council, with the Board of Trustees.

Dr. Wertz: You did not clarify that.

Dr. Lawrence: It is clarified.

Dr. Samuel Leo, *Bronx:* Mr. Chairman, will it not be proper to vote first on disapproval and then place the amendment as a recommendation in two separate votes?

Voices: Question!

Vice-Speaker Wurzbach: The question is called for. All those in favor of the committee's recommendation say "aye," those opposed "no." It is carried and becomes a part of the Bylaws.

Dr. Lawrence: (10) Bylaws, Section 9 of the proposed amendment to Chapter IV reads: Amend Section 9 so as to omit present section completely and substitute the following language: "Commissions and committees of the Board of Trustees shall be appointed by the president subject to the approval of the board, in order to implement the intent of Section 8 of this chapter."

The Council has recommended that committee chairmen need not be members of the Council and that a Commission on Medical Services be established. In order to implement these recommendations, your committee recommends that Chapter IV, Section 10 of the Bylaws, which reads as follows:

> Committees of the Council may include other members of the Society and shall be appointed by

> the president subject to the approval of the Council. Each committee shall include at least one member of the Council who shall be chairman, except that he need not be chairman for the committee or committees in charge of activities (a), (b), and (f), Chapter IV, Section 9 of the Bylaws. The membership of committees shall not exceed three, including the chairman, except the committees in charge of activities (a), (b), (d), (f), (i), (k), and (l), Chapter IV, Section 9, of the Bylaws. The Public Relations Committee shall consist of a chairman and nine other members.

be amended so as to read:

> *Section 10.*—Commissions and committees of the Council may include other members of the Society and shall be appointed by the president subject to the approval of the Council. The chairman of each commission shall be a member of the Council.

Mr. Speaker, I move approval of this portion of our report.

. . . The motion was seconded . . .

Vice-Speaker Wurzbach: Is there any discussion?

Dr. Broad: Does that mean that the president now appoints commissions and selects their chairmen, and that now makes them members of the Council without having been so elected by this House of Delegates?

Voices: No.

Dr. Kenney: At the beginning of his report in connection with the proposed amendment to Chapter IV, Section 9 of the Bylaws, he says to omit the present section completely and to substitute therefor the following change: "Commissions and committees of the Board of Trustees." Are you referring to the present Board of Trustees there or the Council? I would like clarification.

Dr. Lawrence: "Commissions and committees of the Council."

Dr. Kenney: Instead of Board of Trustees you mean Council, do you not?

Vice-Speaker Wurzbach: That is the proposed amendment.

Dr. Kenney: But it says "substitute the following language."

Dr. Wolff: That is the recommendation of Dr. Azzari's committee.

Vice-Speaker Wurzbach: That is the recommendation of Dr. Azzari's committee, and further on is the clarification. Is there further discussion?

Dr. Lawrence: I might point out that if you pass this and go along with our recommendation here, you will be giving the Council the power to create commissions, and each commission must be chaired by a member of the Council. However, committees appointed by the Council, according to this amendment, need not be chaired by members of the Council. There is no definition or requirement as to the size of the commissions or committees the way it will read if you approve this part of our report.

Vice-Speaker Wurzbach: All those in favor of the report as given say "aye," opposed "no." This part is carried and becomes part of the Bylaws.

Dr. Thurman B. Givan, *Past President:* Don't you think to carry out the proper provisions that you should state that it is carried by at least a two-thirds majority each time?

Vice-Speaker Wurzbach: I thought that was understood when I said it was carried. All motions previously made and carried have a unanimous vote since the previous statement of the Speaker and therefore become part of the Constitution and Bylaws.

Dr. Lawrence: (10) Bylaws, Section 10, in order to further implement the Council's recommendations concerning commissions, your committee recommends that section B, (10), subsection 10, of the resolution, referring to Chapter IV, Section 11 of the Bylaws, be amended so as to retain the word "Council" instead of the words "Board of Trustees" in the first sentence.

This part of the resolution also recommends the insertion of the words "commissions and" in Chapter IV, Section 11, subdivision 7 of the Bylaws. This will then read "7. Reports of commissions and committees."

We recommend approval of this portion of the resolution, and I move approval of this portion of my report.

Dr. Kenney: I second that.

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all those in favor of the adoption of the committee's report say "aye," opposed "no." It is so carried and by unanimous vote becomes part of the Bylaws.

Dr. Lawrence: (13) (5) Chapter VII (Duties of Officers), amend Section 7 to replace the present anguage with the following:

> The secretary shall be the custodian of the Seal of the Society, and of all books of records and papers belonging to the Society, except such as properly belong to the treasurer, and shall keep an account of and promptly turn over to the treasurer all funds of the Society which come into his hands. He shall provide for the registration of the members at all sessions of the Society. With the aid and cooperation of the secretaries of the county societies, he shall keep a proper register of all the registered physicians of the State by counties. He shall aid the officers of the district branches in the organization and improvement of the county societies and the extension of the power and influence of the Society. He shall conduct the official

> correspondence, notifying members of meetings; officers, trustees, and board members of their election, and commissions and committees of their appointments and duties. He shall affix the Seal of the Society to all credentials issued to members of the Society elected by the House of Delegates and to such other papers and documents as may require the same. He shall make an annual report to the House of Delegates. Acting in cooperation with the Board of Trustees, he shall prepare and issue all programs. He shall be a member of the Board of Trustees. He shall be ex officio a member of all boards, commissions, and committees with voice but without vote. He shall record the name and date of admission of each member of the Society. He shall be in complete charge of the administration of the headquarters of the State Society. He will at the direction of the Board of Trustees delegate, to such person or persons as the Board of Trustees may designate, such of his powers and obligations as are consonant with the best interests and efficient conduct of the business of the Society.

This proposed amendment would have the effect of eliminating the secretary as a countersigner of Society checks and would make the executive director responsible to him. Since it is the opinion of this committee and of Dr. Azzari's committee that neither of these is desirable, we recommend disapproval.

I therefore move approval of this part of my report, which carries disapproval of the suggested amendment.

Dr. Boland: I second it.

Vice-Speaker Wurzbach: Is there discussion? Hearing none, all those in favor of the adoption of this part of the report say "aye," opposed "no." It is unanimously carried.

Dr. Lawrence: Since we have already recommended that the executive director be responsible to the Council, and that the Council may transfer control of the administration of the headquarters of the Society to him, we recommend that Section 7 of Chapter VII which deals with the duties of the secretary be amended so as to delete the sentence which reads: "He shall be in complete charge of the administration of the headquarters of the State Society."

I move approval of this part of my report.

Dr. Wolff: I second it.

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all those in favor of this recommendation say "aye," opposed "no." It is unanimously carried and becomes a change in the Bylaws.

Dr. Lawrence: (13) (6) Chapter VII (Duties of Officers), amend Section 8 to omit words: "may countersign checks drawn by the treasurer on funds of the Society, he . . ."

In conformity with the above-noted changes, we recommend disapproval of this proposed amendment.

I move approval of this part of my report.

Dr. d'Angelo: I second it.

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all those in favor of this recommendation say "aye," opposed "no." It is unanimously carried and becomes a change in the Bylaws.

Dr. Lawrence: (15) (2) Chapter IX (Expenses), in order to implement the recommendation of the Council concerning commissions and to correct an obvious oversight in the present Bylaws, which do not provide for the payment of expenses incurred by employes of the Society in the performance of their duties, we recommend approval of this portion of the resolution amending it in the following way:

Amend Section 1 to add the words "commissions and" before the word "committees" in the fourth and fifth lines of Chapter IX, Section 1; add the words "employes of the Society" following the word "committees" in the fifth line of said section; add the words "commissions and" in the fourteenth line of the said section before the word "committees"; delete the word "and" in line 15 and add a comma following the word "Council" and add the words "and employes" in the fifteenth line of said section following the word "committees." Chapter IX, Section 1 shall then read as follows:

> Allowances for expenses incurred in the actual performance of official duties by officers, members of the Council, the Board of Trustees, of the Judicial Council and commissions and committees and employes of the Society, and delegates to the American Medical Association shall be made in conformity with the following conditions. The president shall be allowed a per diem and expenses when engaged upon official business. All other officers shall be allowed traveling expenses when engaged upon official business. Members of the Council, of the Board of Trustees, and of the Judicial Council shall be allowed traveling expenses. Members of commissions and committees of the Council, all special committees, and employes of the Society shall be allowed traveling expenses. Delegates of the district branches sitting in the House of Delegates shall be allowed necessary expenses by the Medical Society of the State of New York. There shall be no allowance made for the expenses, traveling or otherwise, for any committee appointed pursuant to Chapter X of these Bylaws. Proper vouchers must be filed with the secretary before any of above allowances are made. The delegates to the American Medical Association who have attended each session of the house of delegates of that Association, as certified by the secretary of the American Medical Association to

the secretary of the Medical Society of the State of New York, shall be allowed traveling expenses. Each district branch shall be entitled to receive a sum not to exceed $400, exclusive of the work done by the secretary regarding notices, programs, etc., to defray the expenses of such district branch, provided a proper statement of such expense shall have been presented to the secretary. All bills, claims, or vouchers herein provided for shall be filed within thirty days after the date of the incurring of such expense. This time may be extended for any cause by the Board of Trustees and such extension shall not exceed ninety days. Payment of all these expenses shall be made under directions of the Board of Trustees.

Vice-Speaker Wurzbach: You move approval?

Dr. Lawrence: I move approval of this portion of our report.

. . . The motion was seconded . . .

. . . A lengthy discussion followed relating to (*a*) the definition of "traveling expense," (*b*) certification of attendance at meetings of the A.M.A. House of Delegates, (*c*) per diem allowance for the president-elect, (*d*) expenses of representatives of scientific sections at the House of Delegates meeting, (*e*) expenses of anyone (including alternates) who acts as a delegate at the A.M.A. meeting.

. . . In the course of the discussion a motion was carried to amend Chapter IX by inserting the words "and the president-elect" after the words "The president" in line 7. (The subsequent action of the House, recommitting this portion of the report to the reference committee, nullified the adoption of this amendment; see below.) A motion to insert "and section delegates" after "delegates of the district branches" in line 17 was withdrawn in order that it might be reintroduced as a resolution to be acted upon in 1960. A motion to table this portion of the report, "(15) (2) Chapter IX (Expenses)," was voted on and defeated . . .

Dr. Thomas F. McCarthy, *Bronx:* It is obvious we are getting more confused. There are obviously a great many changes in the section discussed, so if it is in order, I would like to move to refer this back to Dr. Lawrence's committee to permit all these men to discuss it with them, and have them resubmit it to us in its completed form after discussion, so that we may act, say, sensibly on all these changes.

. . . The motion was seconded . . .

Vice-Speaker Wurzbach: It has been moved and seconded that this section be referred back to committee for subsequent report at this session of the House. All those in favor of this motion say "aye," opposed "no." It is carried.

Dr. Lawrence: The next part of our report concerns (22) (1) Chapter XVII (Amendments), of the Bylaws. Amend Section 1 to change words "at a previous annual meeting" to the following: "to the Board of Trustees" for word "Council."

This proposed amendment would make it possible for the Bylaws to be amended without action by the House of Delegates.

We therefore recommend its disapproval, and I recommend approval of this portion of my report.

. . . The motion was seconded . . .

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all those in favor say "aye," opposed "no." It is so ordered.

Dr. Lawrence: (23) of the resolution concerns the *Principles of Professional Conduct.* It would amend Chapter 3, Article VI, Section 3 to eliminate the last three lines of said section in order to implement Suggestion XIV of the survey. These lines read as follows: "Contract practice which allows diversion of fees for professional medical services to a hospital, organization, or political subdivision is unethical."

This proposed amendment to the *Principles of Professional Conduct* would negate an action which was overwhelmingly adopted by this House several years ago. Furthermore, Suggestion XIV of the Management Survey Report is compatible with this portion of the *Principles of Professional Conduct.*

We therefore recommend disapproval of this amendment, and I move approval of this portion of my report.

Dr. Wolff: I second it.

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all those in favor say "aye," those opposed "no." It is carried, and it stays in the *Principles of Professional Conduct.*

Dr. Lawrence: Mr. Speaker, this concludes my report. I move approval of the report as a whole as amended.

Dr. Kenney: I second it.

Vice-Speaker Wurzbach: All those in favor of this motion say "aye," opposed "no." It is approved; it is carried.

Delegate: You can't yet move the report as a whole.

Dr. Lawrence: As amended.

Dr. Bauer: I would suggest that Dr. Lawrence withdraw his motion. That should more properly be made when he brings back his supplementary report tomorrow or whenever he brings it back at this session. However, I would like, Mr. Speaker, to say this: that I think this House owes a debt of gratitude to Dr. Lawrence for presenting so clearly a very long, complicated report.

Dr. Lawrence: Thank you, Dr. Bauer.

Before closing this part of my report, I know we all realize that I had an awful lot of help with this, and I first of all would like to thank Dr. Ezra Wolff, Dr. Hartmann, and the other members of my committee for their invaluable assistance in drawing up this report. I also had a great deal of help from the office, and I would very much like to thank Mr. Burns of Mr. Martin's office, for his help, Miss Lewis, Miss Dougherty, Miss Wheeler, and Miss Fineberg, from the office, for their invaluable help.

Vice-Speaker Wurzbach: Will you withdraw your motion for approval of the report as a whole, please?

Dr. Lawrence: Yes, I will withdraw it at this time. I agree with Dr. Bauer.

Vice-Speaker Wurzbach: We thank you very much. I wish to thank the House for their great help to me on my initial appearance.

Speaker Lane: I would like to commend the House also for their patience in listening to this long report and in being so helpful.

We have just a little bit more business to do. We will make it as short as possible, but we want to complete this session of the House, with the reference of resolutions to the proper reference committees and then adjourn so that you can get at the business of the day.

You have before you the resolutions which have been assigned up through number 17. With your indulgence and strict attention we will assign the rest of the resolutions as quickly as possible. Please have your sheets before you and mark down the proper committees that they go to.

RESOLUTIONS

Section 33 (See 168) Resolution 59–1

Insurance Report

Introduced by Nassau County Medical Society

Whereas, at the 1958 meeting of the House of Delegates of the Medical Society of the State of New York, it was recognized by resolution 58–16 that the paper work required of physicians for the completion of insurance report forms has become burdensome; and

Whereas, in this same resolution the House of Delegates approved the policy of physicians requiring fees from insurance companies for the preparation of these reports; now therefore be it hereby

Resolved, that this House of Delegates request an appropriate committee of the Medical Society of the State of New York to negotiate with representatives of typical insurance carriers to the end that a simplified report form may be prepared and an appropriate fee may be agreed on, so that it may become standard practice for a physician to be reimbursed by the insurance carrier for these services, without further burdening the patient.

Referred to Reference Committee on Report of the Council, Part VII.

Section 34 (See 58, 169) Resolution 59–2

Medical Care Insurance for Persons Over Sixty-five

Introduced by Nassau County Medical Society

Whereas, the American Medical Association is on record as approving the development of an effective voluntary health insurance program for persons over sixty-five years of age with modest resources or low family income; and

Whereas, the members of the Nassau County Medical Society recognize this need and have voted to approve the recommendation of the American Medical Association; now therefore be it hereby

Resolved, that the Medical Society of the State of New York through its appropriate committees urge the Blue Shield Plans of the State to develop a program of medical care insurance coverage, consistent with the proposal of the American Medical Association, for persons over sixty-five who, *after adequate income investigation,* are found to be with modest resources or low family income.

Referred to Reference Committee on Report of the Council, Part VII.

Section 35 (See 103) Resolution 59–3

Proposed Legislation to Suspend Licenses of Mentally Ill Professional Persons

Introduced by Nassau County Medical Society

Whereas, legislation has been introduced into the Legislature of the State of New York which would result in the suspension of license to practice by members of certain professional groups if they became mentally ill and received treatment for such illness in a mental hospital; and

Whereas, this proposed legislation would put the burden of proof on the professional person involved when he sought the restoration of such license; and

Whereas, there is no provision in the bill guaranteeing to such professional person a rapid review and decision on such application; and

Whereas, the present provisions of the State Education Law and the State Mental Hygiene Law include ample machinery for caring for such situations; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York hereby records itself as being opposed to this type of legislation; and be it further

Resolved, that the Medical Society of the State of New York urge similar opposition by other professional groups involved.

Referred to Reference Committee on Report of the Council, Part IX.

Section 36 Resolution 59–4

Amendment to Bylaws to Provide Remission of Dues During Residency Training

Introduced by Medical Society of the County of Saratoga

Whereas, Article I of the Constitution of the Medical Society of the State of New York states that one of the purposes of the Medical Society of the State of New York is "to extend medical knowledge and advance the science and art of medicine"; and

Whereas, there are no provisions in the Constitution and Bylaws of the Medical Society of the State of New York for the remission of dues for members embarking on residency training; and

Whereas, Chapter XIV, Section 2, paragraph 3 of the Bylaws states: "The dues of any active or junior member of the Medical Society of the State of New York may be remitted for the current year on account of illness, financial hardship, or temporary service in the armed forces or in the United States Public Health Service, when the request is made by the member's component county medical society"; now therefore be it hereby

Resolved, that Chapter XIV, Section 2, paragraph 3 of the Bylaws be amended by the addition of the following: "or when the member is engaged in a residency training program approved by the Council on Medical Education of the American Medical Association," so that Chapter XIV, Section 2, paragraph 3 of the Bylaws will then read:

> "The dues of any active or junior member of the Medical Society of the State of New York may be remitted for the current year on account of illness, financial hardship, temporary service in the armed forces or in the United States Public Health Service, or when the member is engaged in a residency training program approved by the Council on Medical Education of the American Medical Association, when the request is made by the member's component county medical society."

Referred to Special Committee on Constitution and Bylaws.

Section 37 (See 185) Resolution 59–5

Revision of Workmen's Compensation Fee Schedule

Introduced by Medical Society of the County of Queens

Whereas, physicians' fees under the Workmen's Compensation Act are a recurring problem for the doctor; and

Whereas, it has been the experience of the medical profession of the State of New York that revision of the Workmen's Compensation Minimum Fee Schedule is an arduous task for the Workmen's Compensation Board and for organized medicine; now therefore be it hereby

Resolved, that the Workmen's Compensation Minimum Fee Schedule be revised annually to reflect changes in the Cost of Living Index by adding or subtracting an amount to such fees in accordance with variations in the Cost of Living Index as published by the U.S. Department of Labor; and be it further

Resolved, that the Chairman of the Workmen's Compensation Board be requested to implement this resolution.

Referred to Reference Committee on Report of the Council, Part X.

Section 38 (See 186) Resolution 59–6

Workmen's Compensation Fees for Osteopaths

Introduced by Medical Society of the County of Queens

Whereas, the president of the Medical Society of the State of New York, on August 15, 1958, in a letter to the Chairman of the Workmen's Compensation Board, urged "that osteopaths in no instance be granted fees higher than those granted to doctors of medicine"; and

Whereas, a supplemental medical fee schedule of the Workmen's Compensation Board, dated February 24, 1959, reveals that osteopaths will be granted higher fees than doctors of medicine in general practice; now therefore be it hereby

Resolved, that this House of Delegates of the Medical Society of the State of New York recommend that a communication be sent to the Chairman of the Workmen's Compensation Board protesting the fact that the schedule of fees for doctors of medicine in general practice is lower than the schedule of fees for osteopaths; and be it further

Resolved, that the Chairman of the Workmen's Compensation Board be requested to raise the fees paid to doctors of medicine in general practice so that they shall at least equal those paid to osteopaths.

Referred to Reference Committee on Report of the Council, Part X.

Section 39 (See 104) Resolution 59–7

To Rescind Action Permitting Podiatrists to Use "Foot Specialist" Designation

Introduced by Medical Society of the County of Queens

Whereas, a regulation of the Board of Regents of the University of the State of New York permits podiatrists to affix the words "foot specialist" to professional signs; and

WHEREAS, the practice of podiatry has distinct limitations, and podiatrists are not "specialists" on all conditions involving the feet; and

WHEREAS, other groups may request similar designations as "specialists" in their own restricted fields; now therefore be it hereby

Resolved, that the Board of Regents of the University of the State of New York be requested to rescind the action whereby podiatrists are permitted to use the designation of "foot specialist."

Referred to Reference Committee on Report of the Council, Part IX.

Section 40 (See 105) Resolution 59–8

Study and Recodification of the Laws Dealing with the Dead Human Body

Introduced by MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, ambiguities in the statutes dealing with autopsies promote misconceptions in the mind of the lay public; and

WHEREAS, such misconceptions create obstacles for medical examiners, coroners, and pathologists in the performance of their tasks; and

WHEREAS, these ambiguities and misconceptions have created prejudice against autopsies and hinder the advancement of medical knowledge, in conflict with the general welfare; now therefore be it hereby

Resolved, that the president of the Medical Society of the State of New York explore the possibility of obtaining the support of a foundation or foundations to make possible a study by local and state bar associations, in cooperation with academies of medicine and other interested agencies and/or the American Law Institute, of the entire body of law dealing with the dead human body, including administrative and legal procedures dealing with the autopsy, the cadaver, disposal, definition of death, definition of cause of death, authority of coroners and medical examiners, legalizing of tissue banks and transplantation, cemetery laws, etc., with the view of codifying law dealing with the dead human body and the development of a model group of statutes to deal with this problem as it confronts the needs of a modern society; and be it further

Resolved, that a copy of this resolution be forwarded to all interested organizations and agencies, including appropriate bar associations, state medical societies, academies of medicine, hospital associations, state and national societies of pathologists, public health associations, specialty boards, and the American Academy of General Practice, to enlist their endorsement, cooperation, and support of such an endeavor; and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association be instructed to introduce a similar resolution at the June, 1959, meeting of the American Medical Association.

Referred to Reference Committee on Report of the Council, Part IX.

Section 41 (See 48, 170) Resolution 59–9

Social Security for Self-Employed Physicians

Introduced by MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, self-employed physicians are not covered by the provisions of the Social Security Law (O.A.S.I.); and

WHEREAS, it is desirable that self-employed doctors of medicine be included in the social security system (O.A.S.I.) on a compulsory basis; now therefore be it hereby

Resolved, that this House of Delegates of the Medical Society of the State of New York reaffirm its endorsement of social security for self-employed physicians on a compulsory basis; and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the American Medical Association be instructed to introduce a resolution at the June, 1959, meeting of the House of Delegates of the American Medical Association, endorsing compulsory social security (O.A.S.I.) for self-employed physicians; and be it further

Resolved, that these delegates be instructed to work militantly for favorable consideration of this resolution by the House of Delegates of the American Medical Association.

Referred to Reference Committee on Report of the Council, Part VII.

Section 42 (See 173) Resolution 59–10

Reaffirmation of the Concept of Free Choice of Physician

Introduced by MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, the Reference Committee on Insurance and Medical Service of the American Medical Association will report on its study of the work done by the Commission on Medical Care Plans of the American Medical Association at the meeting of the House of Delegates of the American Medical Association in June, 1959; and

WHEREAS, this Reference Committee has

requested the constituent associations to express their attitude regarding the report; and

Whereas, one of the questions posed concerns our attitude toward free choice of physician; and

Whereas, another question posed concerns our attitude toward closed-panel systems; and

Whereas, there is no clamor from the public for lessening of free choice; and

Whereas, the arbitrary assignment of a patient to a doctor as practiced in closed-panel systems represents a regression in relationships between human beings; and

Whereas, there are indications that subscribers to closed-panel systems find the restriction of free choice a disadvantage; and

Whereas, free choice of physician has been shown to be the best way to provide the best medical care for the public; and

Whereas, free choice should be expanded in all medical areas; now therefore be it hereby

Resolved, that free choice of physician is a fundamental principle, incontrovertible, unalterable, and essential to good medical care; and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association be instructed to reaffirm the concept of free choice of physician; and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association be instructed militantly to oppose any change in policy which affects the free choice of physician.

Referred to Reference Committee on Report of the Council, Part VII.

Section 43 (See 105) Resolution 59–11

Modernization of the Law Dealing with the Dead Human Body

Introduced by Medical Society of the County of Queens

Whereas, litigation has arisen against the coroner in Los Angeles, California, as a result of the performance of his duties; and

Whereas, this litigation is the result of ambiguous, contradictory, and outmoded and inapplicable laws dealing with the dead human body; and

Whereas, this litigation has a distinct bearing on the practice of pathology and the work of medical examiners and coroners throughout the nation; and

Whereas, the House of Delegates of the Medical Society of the State of New York recognizes the need for autopsies as essential to proper medical practice, to the study of disease, and to the welfare of the public; now therefore be it hereby

Resolved, that the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association at its meeting in June, 1959, be instructed to introduce a resolution that the American Medical Association

1. Inform the public in general of the necessity and advantages of properly performed autopsies and further inform the public that autopsies are essential to the acquisition of medical knowledge; and
2. Initiate and implement efforts to modernize the body of law dealing with the dead human body and advocate changes in the law so that pathologists, coroners, and medical examiners will not be in conflict with the law in the several states when conscientiously performing their duties in the interest of knowledge, public health, and general welfare.

Referred to Reference Committee on Report of the Council, Part IX.

Section 44 (See 171) Resolution 59–12

Group Life Insurance

Introduced by Medical Society of the County of Erie

Whereas, the 1957 House of Delegates of the Medical Society of the State of New York mandated the State Medical Society through its Committee on Legislation to support or initiate legislation legalizing group life insurance for self-employed professional men; and

Whereas, a careful study of group life coverage will show that it is impractical and unsound for individuals not having a common employer but who are bound together only in a professional association; and

Whereas, the policy of the State Medical Society with respect to group life insurance coverage for physicians is not supported by many county medical societies because they are convinced such insurance is basically unsound; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York reconsider its action of 1957 approving group life insurance coverage for self-employed professional men; and be it further

Resolved, that the House of Delegates instruct the Committee on Legislation of the Medical Society of the State of New York to cease and desist from sponsoring group life insurance legislation for professional men and to oppose actively any such legislation initiated by others.

Referred to Reference Committee on Report of the Council, Part VII.

Section 45 (See 106) Resolution 59–13

Fitting of Contact Lenses

Introduced by Medical Society of the County of Erie

Whereas, the fitting of contact lenses necessitates the introduction of a foreign object under the eyelids and on the eyeball by manual and digital means; and

Whereas, the use of local anesthetics and chemical dyes is often required in the proper fitting of contact lenses; and

Whereas, the medical knowledge and understanding of the various pathologic conditions pertaining to ophthalmology are absolutely essential in deciding whether or not to use contact lenses, as well as in deciding the type thereof to be used in each individual case; and

Whereas, in recent times considerable advertising and publicity, much of a misleading nature, has been indulged in on a commercial basis by some optometrists for the purpose of increasing the sale of such lenses; and

Whereas, numerous cases of eye injuries have been occasioned by the promiscuous sale and improper use of contact lenses, to the detriment of an inadequately informed public; and

Whereas, a complete study of this problem can lead only to the conclusion that the prescribing and fitting of contact lenses is a medical procedure; now therefore be it hereby

Resolved, that the Medical Society of the State of New York request the introduction of legislation in the 1960 New York State Legislature whereby Section 7101 of Article 143 of the Education Law would be amended to provide that a licensed optometrist may fit contact lenses only under the personal supervision of a physician.

Referred to Reference Committee on Report of the Council, Part IX.

Section 46 (See 150, 151) Resolution 59–14

Treatment of Narcotic Addicts

Introduced by Medical Society of the County of Richmond

Whereas, the Joint Legislative Committee on Narcotics Study of the State of New York in its report to the Governor states that the medical profession has been remiss in not accurately defining the area of activity wherein physicians may treat narcotic addicts; and

Whereas, this criticism has also been directed at our profession by the Chief Magistrate of the City of New York; and

Whereas, present New York State law states that a physician may treat an addict only if "good faith" be established; and

Whereas, "good faith" has never been properly defined by the medical profession or by the courts of New York State; and

Whereas, physicians are reluctant to treat these sick people because the Federal and State Bureaus of Narcotics demand that each case must be decided on its own merits and may demand court hearings where censure and/or loss of license might be imposed should the courts decide that "good faith" has not been exercised by the attending physician; now therefore be it hereby

Resolved, that licensed physicians should be permitted to treat narcotic addicts as they do all other patients (the alcoholic addict, for example), attempting withdrawal of drugs in or out of a hospital, and prescribing such materials, narcotic or otherwise, that the physician believes the patient needs according to the best interests of the patient and the community; and be it further

Resolved, that where a physician feels that the patient cannot be maintained without drugs, a certificate testifying to this fact be signed by the physician and be countersigned by another practicing physician after appropriate examination, such certificate to be deposited with the Department of Health of the State of New York; and be it further

Resolved, that general hospitals be persuaded to admit such patients on the written order of a licensed physician; and be it further

Resolved, that a similar resolution be introduced by the delegates from the Medical Society of the State of New York in the House of Delegates of the American Medical Association in June and that the New York State delegates work actively for its passage.

Referred to Reference Committee on Report of the Council, Part V.

Section 47 (See 200) Resolution 59–15

Enforcement of Regulation 19, Chapter 16 of the New York Sanitary Code, re Ionizing Radiation

Introduced by Medical Society of the County of New York

Whereas, Regulation 19, Chapter 16 of the Sanitary Code of the State of New York prohibits the use of ionizing radiation on humans by unlicensed practitioners of the healing arts; and

Whereas, said regulation is a means of safeguarding the public health; and

Whereas, the Medical Society of the County of New York and other county medical societies in

New York State have recorded their approval of Regulation 19, Chapter 16 of the New York State Sanitary Code and have urged its strict enforcement; now therefore be it hereby

Resolved, that this House of Delegates of the Medical Society of the State of New York heartily approve Regulation 19, Chapter 16 of the New York State Sanitary Code and urge its rigid application and strict enforcement by the New York State Department of Health; and be it further

Resolved, that a copy of this resolution be sent to the Commissioner of Health of the State of New York and to the Commissioner of Health of the City of New York.

Referred to Reference Committee on Report of the Council, Part I.

Section 48 (See 41, 170) Resolution 59–16

Social Security for Doctors of Medicine

Introduced by MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

WHEREAS, the Medical Society of the County of New York for five consecutive years, including March 23, 1959, has stated its position favoring inclusion of doctors of medicine in the social security system of the United States of America; and

WHEREAS, the Medical Society of the State of New York has similarly approved such legislation; and

WHEREAS, it is increasingly evident, in every poll of doctors of medicine throughout the nation, that former disapproval is waning; now therefore be it hereby

Resolved, that the Medical Society of the State of New York reaffirm its desire that doctors of medicine be included under the laws of Old Age and Survivors Insurance (social security); and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the American Medical Association introduce a similar resolution at the June, 1959, meeting of the House of Delegates of the American Medical Association.

Referred to Reference Committee on Report of the Council, Part VII.

Section 49 (See 130) Resolution 59–17

Essay Contest of the Association of American Physicians and Surgeons

Introduced by MEDICAL SOCIETY OF THE COUNTY OF MONTGOMERY

WHEREAS, other state medical societies and associations have endorsed the essay contest for high school students sponsored by the Association of American Physicians and Surgeons (topics: "The Advantages of Private Medical Care" or "The Advantages of the American Free Enterprise System"); and

WHEREAS, the contest has received the approval and sponsorship of the five metropolitan New York county medical societies and their respective auxiliaries, where these exist; and

WHEREAS, approval by the House of Delegates of the Medical Society of the State of New York is essential to the sponsorship of this contest by the State and local medical societies and auxiliaries; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York go on record as approving this contest for 1959–1960 and recommend it to the county medical societies and the woman's auxiliaries for sponsorship.

Referred to Reference Committee on Miscellaneous Business.

Section 50 (See 107) Resolution 59–18

Cooperation Regarding Legislation

Introduced by NASSAU COUNTY MEDICAL SOCIETY

WHEREAS, the influence of the Medical Society of the State of New York in legislative matters depends upon the united strength of the organization; and

WHEREAS, when the State Society, through its House of Delegates or through its official committees, has decided upon a course of action, has taken a stand in favor of, or in opposition to pending legislation, or has established a policy, its influence depends entirely upon its ability to present a united front; now therefore be it hereby

Resolved, that every component county medical society be urged not to make public a stand or an opinion contrary to that of the State Society unless such action has been discussed with the appropriate officer or committee of the Medical Society of the State of New York.

Referred to Reference Committee on Report of the Council, Part IX.

Section 51 (See 119) Resolution 59–19

Location of Annual Convention

Introduced by MEDICAL SOCIETY OF THE COUNTY OF ONONDAGA

WHEREAS, the Medical Society of the State of New York has had a varying policy over the years in regard to the location of the annual convention of the Society; and

WHEREAS, experience has demonstrated that the best attendance at this convention is always obtained when it is held in New York City; and

WHEREAS, the number of industrial exhibitors is greater when the convention is held in New York City; and

WHEREAS, the holding of the annual convention in cities other than New York incurs heavy financial expense for the State Medical Society due to the fact that employes must be transported to such cities as Buffalo and Rochester; and

WHEREAS, it is in the best interest of the Medical Society of the State of New York, financially and otherwise, to hold the annual convention in New York City; now therefore be it hereby

Resolved, that all annual conventions of the Medical Society of the State of New York be held in New York City.

Referred to Reference Committee on Report of the Council, Part XII.

Section 52 (See 108) Resolution 59–20

Amendment to General Municipal Law, Section 50-d

Introduced by MEDICAL SOCIETY OF THE COUNTY OF ONEIDA

WHEREAS, physicians perform many gratis professional services for the public through municipal, county, charitable, educational, and eleemosynary organizations; and

WHEREAS, some recipients of the physician's gratis services under these auspices suffer injuries as a result of these services which cause them to seek redress in the form of payments for alleged malpractice; and

WHEREAS, the General Municipal Law in Section 50-d absolves certain physicians from liability resulting from suits for damages due to alleged malpractice in public institutions operated by municipal corporations, wherein the physician is either an intern, resident, or other physician who serves without compensation; now therefore be it hereby

Resolved, that this House of Delegates mandate the Legislation Committee to request the introduction of an amendment to General Municipal Law, Section 50-d, to add after "Public Institutions operated by Municipal Corporations" the words, "and County and State Boards of Control," and, if it be found unsuitable to include county and State under the Municipal Law, then to request the introduction of the same legislation under the pertinent laws to cover county and State institutions; and be it further

Resolved, that this House of Delegates mandate the Legislation Committee to request the introduction of legislation of similar import under the proper laws affecting charitable, educational, and eleemosynary institutions to the effect that physicians who work for the benefit of the public under their auspices and without compensation shall not be liable for damages for personal injuries due to alleged malpractice, but shall be considered as the employes of such charitable, etc., institutions which shall primarily assume such liability.

Referred to Reference Committee on Report of the Council, Part IX.

Section 53 (See 109) Resolution 59–21

Amendment to Lien Law

Introduced by MEDICAL SOCIETY OF THE COUNTY OF ONEIDA

WHEREAS, physicians frequently provide services to patients for disease or injuries for which the patient seeks remuneration from a defendant through legal action, thereby deferring the payment of the physician's fees until the legal action is completed and a verdict or settlement is obtained; and

WHEREAS, these cases are frequently adjudicated without the attending physician's knowledge, and the attorney for the plaintiff, after deducting legal fees and expenses, gives the balance of the award to the patient but neglects to pay the physician his just fees for services rendered to the patient; and

WHEREAS, the physician is often deprived of his just compensation, or is forced to accept a lesser amount to settle his claim, or must resort to legal action to collect his fees from the patients; and

WHEREAS, Section 475 of the Judiciary Law of the State of New York provides for a general lien and a charging lien in favor of attorneys against the records, property, and money of his client obtained by judgment, award, or settlement, thus protecting the attorney's interest against the possible knavery of his client and ensuring the payment of his fees; and

WHEREAS, Section 3, Article II, of the Lien Law provides that a contractor . . . laborer . . . or material man who performs labor or furnishes materials for the improvement of real property . . . shall have a lien for the principal and interest of the value or agreed price of the labor or materials upon the real property improved,—the so-called mechanics lien; and

WHEREAS, General Business Law, Article IX, Section 90-143, known as the Uniform Warehouse Receipts Act, provides that a warehouseman shall have a lien on goods deposited, or on the proceeds thereof in his hands, for all lawful charges for storage, etc.; and

WHEREAS, many other segments of our economy are protected by liens to prevent nonpayment for work, labor, or services; now therefore be it hereby

Resolved, that the House of Delegates of the

Medical Society of the State of New York instruct the appropriate committee to seek legislation that would provide a lien in favor of physicians similar to the attorney's lien, making it mandatory for an attorney to disburse from any award, verdict, or settlement in favor of his client the just fees of the physicians who treated the plaintiff prior to his final settlement with his client; and be it further

Resolved, that the committee of the Medical Society of the State of New York, acting in liaison with the New York State Bar Association, contact their lawyer counterparts and make every effort to obtain the Bar Association's endorsement of this proposed legislation.

Referred to Reference Committee on Report of the Council, Part IX.

Section 54 (See 110) Resolution 59–22

Physician's Lien Under Workmen's Compensation Law

Introduced by Medical Society of the County of Oneida

Whereas, physicians frequently provide services to patients for occupational disabilities for which the claimant seeks remuneration from a defendant through a "third party" legal action, thereby denying the physician the payment of his usual fee and limiting him to the schedule of fees promulgated by the Chairman of the Workmen's Compensation Board; and

Whereas, such cases are frequently settled or adjudicated without the attending physician's knowledge, and the attorney for the plaintiff, after deducting legal fees and expenses, gives the balance of the award to the patient, neglecting to pay the physician any additional consideration to which he is entitled; and

Whereas, the Workmen's Compensation Law of the State of New York specifically defines that the claimant has a right to receive continued medical care at the employer's expense while he is seeking his "third party" remedy, and the courts have held that the employer's obligation to furnish medical care survives the award against the negligent third party, and the attending physician is therefore compelled to charge no more than scheduled fees for his services; and

Whereas, the Workmen's Compensation Law further limits the expenses in a "third party" action to those that are "reasonable and necessary" in effecting "third party" recovery (Section 29, Subdivision 1, Workmen's Compensation Law); and

Whereas, Section 189, Subdivision 1, of the Lien Law provides a lien for hospitals against the award, judgment, or settlement obtained by a patient against a third party; and

Whereas, Section 216 of the Surrogates Court Act gives a mortician or undertaker a preference amounting to a lien against the estate of the deceased, for his work, labor, and services; and

Whereas, Section 475 of the Judiciary Law of the State of New York provides for a general lien in favor of attorneys against the records, property, and money of his client obtained by judgment, award, or settlement, thus protecting the attorney's interest against the possible knavery of his client and ensuring the payment of his fees; and

Whereas, Section 3, Article II, of the Lien Law provides that a contractor . . . laborer . . . or material man who performs labor or furnishes materials for the improvement of real property . . . shall have a lien for the principal and interest of the value or agreed price of the labor or materials upon the real property improved—the so-called mechanics lien; now therefore be it hereby

Resolved, that this House of Delegates instruct the Council to seek a legal remedy that would provide for a lien in favor of physicians similar to the attorney's lien, making mandatory the disbursement from any award, verdict, or settlement in favor of his client through a "third party" action, of such amounts as will permit the physician the usual fees for the services rendered the patient if said patient were not a claimant under the Workmen's Compensation Law; and be it further

Resolved, that the Medical Society of the State of New York make every effort to obtain the New York State Bar Association's endorsement of this proposed legal remedy.

Speaker Lane: Although this concerns the Workmen's Compensation Law, we have assigned it to Part IX because it also involves legislation, so we think it would more properly come under Part IX.

Section 55 (See 176) Resolution 59–23

Health Insurance Coverage for Mentally Ill

Introduced by Medical Society of the County of Albany

Whereas, the Commissioner of Insurance of New York State has many applications before him to allow rate increases in voluntary health insurance programs, especially the Blue Cross plans of various areas of this State; and

Whereas, the Commissioner at present has no authority to specify that mental illness be a required coverage for any Blue Cross plan; now therefore be it hereby

Resolved, that this House of Delegates instruct the Committee on Legislation to sponsor whatever legislation is necessary to bring about the following:

1. That voluntary health insurance plans desiring approval from the Commissioner of Insur-

ance of New York State for rate increases shall be directed to include coverage for care of the mentally ill in non-Federal hospitals, with a maximum of thirty days a year for each subscriber;

2. That where coverage for this type of illness has not previously been in force, coverage for mental illness may be added either to the basic contract of all subscribers or in the form of a special rider contract, available to all subscribers on payment of the additional premium approved by the Commissioner of Insurance;

3. That where a special rider covering care of the mentally ill in non-Federal hospitals is the only coverage afforded the subscriber for this type of illness, subsequent requests for rate increases by voluntary health insurance plans shall be directed by the Commissioner of Insurance to include mental illness coverage for a maximum of thirty days a year for each subscriber in the basic contract for which approval is being sought;

4. That as soon as practicable, but not later than ten years from the date of this enactment, coverage for mental illness shall be the same as for other illnesses covered by the policy holder's contract.

Referred to Reference Committee on Report of the Council, Part IX.

Section 56 (*See 95*) Resolution 59–24

Definition of Psychotherapy

Introduced by NASSAU COUNTY MEDICAL SOCIETY

WHEREAS, the need for a restatement of the proper relationship between the professions of medicine and psychology is recognized by the Nassau County Medical Society and others; and

WHEREAS, the medical profession has sought to develop and expand the assistance which can be had from psychologic services, such as testing, vocational rehabilitation, and research, in the care of the mentally and emotionally ill in hospitals, clinics, and community mental health services; and

WHEREAS, the diagnosis and treatment of such patients entails legal responsibility; and

WHEREAS, physicians, and only physicians, are trained adequately to discharge this function; and

WHEREAS, mental illnesses are well-defined disease entities, clearly described and delineated in the "Standard Nomenclature of Diseases and Operations"; and

WHEREAS, a basic tenet of modern medicine is that the psychologic and physical components of an illness cannot be separated in diagnosis and treatment; and

WHEREAS, psychotherapy is a form of medical treatment and does not form the basis for a separate profession; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York recommend that the New York State Education Law, Article 131, Section 6501, "Definitions," paragraph 4, be amended to include the following subparagraph: "Psychotherapy: The art and the science of medicine as applied to the treatment of mental and emotional disorders."

Referred to Reference Committee on Report of the Council, Part IV.

Section 57 (*See 94, 206, 218, 224*) Resolution 59–25

Relationship of Atherosclerotic Heart Disease to Occupations

Introduced by NORMAN S. MOORE, M.D., Councillor

WHEREAS, atherosclerotic (coronary) heart disease is a chronic, progressive disease related chiefly to metabolic and genetic factors; and

WHEREAS, the course of atherosclerotic heart disease has been shown to have little or no relationship to types of occupation or to reasonable stress or strain; and

WHEREAS, it is important for sociologic and economic reasons that cardiacs be encouraged to perform gainful work; and

WHEREAS, the State of New York is making every effort to have handicapped persons employed; and

WHEREAS, employers are always reluctant and often do not employ or retain cardiacs because of financial and moral risk that they feel they are taking in employing a person who may become a compensation case; now therefore be it hereby

Resolved, that in order that employers may be encouraged to employ or re-employ cardiacs as frequently as possible, the Medical Society of the State of New York place itself on record in support of the theory that atherosclerotic heart disease has no relationship to the individual's usual occupation.

Referred to Reference Committee on Report of the Council, Part IV.

Section 58 (*See 34, 169*) Resolution 59–26

Insurance for Persons Over Sixty-five Years of Age

Introduced by JOHN C. MCCLINTOCK, M.D., Councillor

WHEREAS, there is an urgent need to provide, at the earliest possible date, prepayment medical care insurance for the over-sixty-five-years-of-age citizen; and

WHEREAS, the American Medical Association and the Economics Committee and its subcommittees of the Medical Society of the State of New York all have recommended to the Council of the

Medical Society of the State of New York that Blue Shield plans in New York State be urged to create this type of insurance program, with recognition that these people are in a low-income group; and

WHEREAS, the Council of the Medical Society of the State of New York has endorsed these recommendations by writing the Blue Shield plans in New York State; now therefore be it hereby

Resolved, that this House of Delegates of the Medical Society of the State of New York hereby approves and commends those plans which have such programs now in operation or formation in the State of New York and encourages the other plans to prepare a contract for the over-sixty-five-years-of-age group; and be it further

Resolved, that a copy of this resolution be sent to the directors and each member of the board of directors of the Blue Shield plans in the State of New York; and be it further

Resolved, that the Blue Cross plans in New York State receive a copy of this resolution with the request that they join Blue Shield in providing prepaid insurance for the over-sixty-five-years-of-age group of our citizens.

Referred to Reference Committee on Report of the Council, Part VII.

Section 59 (See 172) Resolution 59–27

Indemnity Plan for Medicare

Introduced by MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, the Medical Society of the County of Queens favors an indemnity plan rather than service benefits for the Medicare Program; and

WHEREAS, a summary of the Medicare Conference held in Philadelphia on December 6, 1957, and published on page 492 of the February 1, 1958, *Journal of the American Medical Association* stated, under the heading "Indemnity Plan for States Desiring It," that "it was decided that any specific plan proposed by a state medical association would be given careful study and would be placed before the Berry Advisory Committee before approval"; and

WHEREAS, the Council of the Medical Society of the State of New York stated that greater economies could be achieved for Medicare if physicians charged their usual fee rather than obtain the fee provided in the fixed schedule of allowances; now therefore be it hereby

Resolved, that the Medical Society of the State of New York when next negotiating with the Federal government for a Medicare contract should *not* agree to a fixed schedule of allowances for services but should allow physicians to charge the fees they would normally charge for the services rendered to persons of comparable standards of living in their locale.

Referred to Reference Committee on Report of the Council, Part VII.

Section 60 (See 201) Resolution 59–28

Civil Defense Stockpiles

Introduced by MEDICAL SOCIETY OF THE COUNTY OF HERKIMER

WHEREAS, it is common knowledge that stockpiles of medical supplies are stored by the civil defense organization of the United States in numerous areas throughout this State; and

WHEREAS, in the event of a civilian disaster these supplies will be needed by the members of the medical profession and their aides and hence the location of these supplies must be known to the medical profession; and

WHEREAS, for example, this county medical society, after application to the county director of civil defense, has been unable to determine the location of these supplies because he, the director, does not know their location; and

WHEREAS, the civil defense plan for obtaining this knowledge goes into effect after the disaster and is nebulous and highly impractical because of the certain disruption of and heavy use of communication systems; now therefore be it hereby

Resolved, that an appropriate committee of the Council be instructed to insure that the appropriate committee of each county medical society be apprized without delay of the location and inventory of the medical stockpiles in their vicinity so that we will be properly prepared to fill our role in civil defense.

Referred to Reference Committee on Report of the Council, Part I.

Section 61 (See 157) Resolution 59–29

Inclusion of Proprietary Hospitals in Medical Directory of New York State

Introduced by BRONX COUNTY MEDICAL SOCIETY

WHEREAS, the policy of the Medical Society of the State of New York has been not to list proprietary hospitals and their active staffs in the *Medical Directory of New York State;* and

WHEREAS, in past years there has been a notable improvement in the quality of medicine practiced in many proprietary hospitals; and

WHEREAS, the Joint Commission on the Accreditation of Hospitals has seen fit to duly accredit many proprietary hospitals; and

WHEREAS, this accreditation carries with it the knowledge that these hospitals and their staffs are fully cognizant of and do continue to advance the practice of medicine; and

Whereas, certain proprietary hospitals within the State of New York have been duly accredited by the Joint Commission on the Accreditation of Hospitals; now therefore be it hereby

Resolved, that the Medical Society of the State of New York rescind its ban against the inclusion in the *Medical Directory of New York State* of these hospitals and the lists of their active staffs; and be it further

Resolved, that duly accredited proprietary hospitals be included with a listing of their active staffs in future editions of the *Medical Directory of New York State* published by the Medical Society of the State of New York.

Referred to Reference Committee on Report of the Council, Part XI.

Section 62 (See 158) Resolution 59–30

Public Statements by Officers of National Medical Organizations

Introduced by Bronx County Medical Society

Whereas, in the past the president and other officers of certain national medical societies have made statements which have been quoted by the press and widely publicized as official statements of the policies of said societies; and

Whereas, following such publicity these same officers have stated that they were expressing only their own opinions; and

Whereas, unfortunately the press did not publish any retractions or publicize the fact that these statements were only personal opinions; and

Whereas, statements on medical matters made by these men while in office are construed by the press as official statements of policy; now therefore be it hereby

Resolved, that the officers of national medical societies should be instructed not to speak on any medical policies, whether to the press or in speeches to groups, unless their remarks and speeches are the policy of the national medical society which they represent; and be it further

Resolved, that this resolution be introduced by the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association at its meeting in June, 1959.

Referred to Reference Committee on Report of the Council, Part XI.

Section 63 Resolution 59–31

Remission of Dues and Election to Life Membership

Introduced by Medical Society of the County of New York

Speaker Lane: This is for direct action by the House at this time, and we will read it:

Whereas, Dr. Alexander B. Timm was dropped from membership on December 31, 1958, for nonpayment of dues; and

Whereas, Dr. Timm has been ill since 1958, and is now seventy-one years of age; now therefore be it hereby

Resolved, that the action of his being dropped from membership in 1958 be rescinded; and be it further

Resolved, that Dr. Alexander B. Timm's dues for 1958 and 1959 be remitted because of ill health, and that he be elected to life membership in the Medical Society of the State of New York.

Dr. McClintock: I move it.

Dr. Kenney: I second it.

Speaker Lane: Is there any discussion? Hearing none, all in favor say "aye," any opposed "no." It is so carried.

Section 64 (See 167) Resolution 59–32

Maximum Reimbursable Fee Schedule of New York State Department of Social Welfare

Introduced by Medical Society of the County of Oneida

Whereas, Section 61 of the Social Welfare Laws (Chapter 619, Laws of 1940 as amended) provides that each county of the State of New York is constituted as a county public welfare district responsible for the assistance and care of any person found in its territory for whose support the State is responsible, subject to reimbursement by the State; and

Whereas, Section 153 of the Social Welfare Law provides that the reimbursement of public welfare districts, cities, and towns for public assistance shall consist of the amount of Federal funds . . . received on account of such expenditures and 50 per cent of the amount expended for public assistance and care for a local charge; and

Whereas, the amounts paid to physicians by public welfare districts for medical care is dependent on a reimbursable fee schedule maintained by the State Department of Social Welfare, which schedule dictates the amounts paid by public welfare districts to physicians for all medical care and procedures; and

Whereas, the approval of the State Department of Social Welfare must be obtained to increase fees for physicians; and

Whereas, a revision of the maximum reimbursable fee schedule of the State Department of Social Welfare has not been made for many years; now therefore be it hereby

Resolved, that this House of Delegates of the Medical Society of the State of New York mandate the chairman of the Subcommittee on Public Medical Care of the Medical Society of the State of New York to contact the office of the Commissioner of Social Welfare of the State of New York for the purpose of arranging a study of the maximum reimbursable fee schedule, and, where indicated, request an increase in the fees for those procedures where such increase is found to be warranted.

Referred to Reference Committee on Report of the Council, Part VII.

Section 65 (See 187) Resolution 59–33

Correction of an Inadequacy Under Workmen's Compensation Law

Introduced by Bronx County Medical Society

Whereas, a physician licensed to practice under the Workmen's Compensation Law must accept a patient's statement at face value as to the circumstances of his injury; and

Whereas, a physician may under these conditions render extensive and prolonged treatment, uncompensated, until liability is determined; and

Whereas, hearings may be held to ascertain these facts without the physician's knowledge or presence; and

Whereas, the patient may waive his rights through failing to attend hearings deliberately or through neglect; and

Whereas, such acts may well prevent the physician from receiving his fees for services rendered; now therefore be it hereby

Resolved, that the Medical Society of the State of New York through its appropriate bureau and committee investigate the possibility that changes in the Workmen's Compensation Law or Regulations of the Workmen's Compensation Board may be instituted to correct this situation and safeguard the interests of the participating physician.

Referred to Reference Committee on Report of the Council, Part X.

Section 66 (See 188) Resolution 59–34

Workmen's Compensation Board Minimum Fee Schedule

Introduced by Thomas F. McCarthy, M.D., Bronx County Medical Society

Whereas, the latest revision of the medical fee schedule of the Workmen's Compensation Board became effective on March 1, 1959; and

Whereas, according to the press and publicity announcements issued by the Chairman of the Workmen's Compensation Board, this fee schedule purported to increase fees an average of 30 per cent; and

Whereas, careful examination of the new minimum fee schedule discloses that this is not the case; now therefore be it hereby

Resolved, that the Medical Society of the State of New York, through its appropriate committee, take the necessary steps immediately to correct this obvious deficiency.

Referred to Reference Committee on Report of the Council, Part X.

Section 67 (See 111) Resolution 59–35

Keogh-Simpson Bill

Introduced by Thomas F. McCarthy, M.D., Bronx County Medical Society, as an individual

Whereas, an organized attempt to discredit the Keogh-Simpson Bill, at present before the Senate of the United States, is now apparent; and

Whereas, this legislation corrects an inequity, and provides no advantage for the self-employed that is not already enjoyed by corporation executives, government employes, union members, and sundry other millions of American citizens; now therefore be it hereby

Resolved, that the Medical Society of the State of New York urge the favorable consideration by the Senate of this just bill; and be it further

Resolved, that such action on the part of this Society be communicated to the appropriate Senate committee, to Senators Javits and Keating, and to the President of the United States.

Referred to Reference Committee on Report of the Council, Part IX.

Section 68 (See 174) Resolution 59–36

Payment to Interns and Residents by Blue Shield Plans

Introduced by Medical Society of the County of Queens

Whereas, the Medical Society of the County of Queens has gone on record as opposing the payment of fees or benefits to members of hospital house staffs by United Medical Service; and

Whereas, more hospitals are endeavoring to have house and staff physicians transfer monies collected from United Medical Service and other third parties to a special fund of the hospital; and

Whereas, a county society in the State of New York has passed a resolution requesting United Medical Service to pay interns and residents in certain hospitals; and

Whereas, the Medical Society of the County of Queens reiterates its unalterable opposition to the payment of fees or benefits to residents or interns by United Medical Service; now therefore be it hereby

Resolved, that the Medical Society of the State of New York oppose payment of fees or benefits to residents or interns by any Blue Shield plan in the State of New York.

Referred to Reference Committee on Report of the Council, Part VII.

Section 69 Resolution 59–37

Congratulations to New York Medical College

Introduced by Jerome L. Leon, M.D., Medical Society of the County of Queens, as an individual

Resolved, that the Medical Society of the State of New York, its officers and members, extend their earnest congratulations to New York Medical College on the occasion of its one hundredth anniversary; and be it further

Resolved, that all men of medicine salute the theme: "Progress in the Medical Sciences for the Survival of Free Men," on which New York Medical College has chosen to base its year-long centennial observance; and be it further

Resolved, that New York Medical College be honored for its desire to use its centennial to lead the medical profession in a rededication to greater service to mankind; and be it further

Resolved, that a copy of this resolution be presented to the dean of New York Medical College.

Speaker Lane: This also can be acted upon at once.

. . . The motion to adopt the resolution was seconded from all parts of the room . . .

Speaker Lane: Is there discussion? If not, those in favor say "aye," any opposed "no." It is so carried.

Secretary Anderton: I move that that be reported as carried unanimously.

. . . The motion was seconded by many . . .

Speaker Lane: You have heard Dr. Anderton's motion, which was seconded. Those in favor say "aye," any opposed "no." It is so amended.

Section 70 (*See 131*) Resolution 59–38

Appointment of Physician to Saratoga Spa Commission

Introduced by Webster M. Moriarta, M.D., Saratoga County Medical Society, as an individual

Whereas, the State of New York has a five-million-dollar investment in the Saratoga Spa; and

Whereas, now for the first time there is a physician in full charge of the Spa and its development; and

Whereas, until recently there have always been at least two physicians as members of the Saratoga Spa Commission; and

Whereas, at present there is only one physician member of the Commission; and

Whereas, the Saratoga County Medical Society has already adopted a resolution requesting the appointment of an additional physician to the Commission; now therefore be it hereby

Resolved, that this House of Delegates of the Medical Society of the State of New York go on record as approving the appointment of at least two physicians to the Saratoga Spa Commission; and be it further

Resolved, that this House of Delegates adopt the following petition to be sent to the Governor of New York State:

Honorable Nelson A. Rockefeller
Governor of the State of New York
Albany, New York

The Medical Society of the State of New York respectfully submits the following petition:

Chapter 866 of the Laws of 1930 directed the development of the Saratoga Spa as an element of the State's public health program and assured its availability to the public for balneologic, therapeutic and other health purposes. Since the establishment of the present Saratoga Spa, the Medical Society of the State of New York has maintained a continued interest in the development of this great natural resource.

The eminent citizens who serve as members of the Saratoga Spa Commission have, in the past, numbered among them at least two doctors of medicine from the State of New York. The Saratoga Spa Commission was thereby effectively equipped with professional medical guidance in current operations and progressive development.

Since the prime purpose for which the Saratoga Spa was founded was to make available to all people the therapeutic benefits of its natural springs, the State Society feels it a matter of importance that the Saratoga Spa Commission once more embrace at least two members of the medical profession. In consequence, the Medical Society of the State of New York respectfully submits this petition to the Governor and requests that, in making future appointments, utmost consideration be given to maintaining at least two doctors of medicine on the Saratoga Springs Commission.

Referred to Reference Committee on Miscellaneous Business.

Section 71 (*See 167*) Resolution 59–39

Public Medical Care Fee Schedule

Introduced by Henry Vinicor, M.D., St. Lawrence County Medical Society, as an individual

Whereas, according to the annual report of the Subcommittee on Public Medical Care, as published in the April 15 issue of the Journal, "Since 1946 a basis of reimbursement by the State of New York to welfare districts was agreed to be two thirds of the Workmen's Compensation Minimum Fee Schedule"; and

Whereas, also according to this report, "The Medical Society of State of New York held the view that each (county) medical society would, through a designated committee and county commissioner of welfare, negotiate a fee schedule approximating the prevailing fee for that particular county"; and

WHEREAS, the manual of State Department of Social Welfare, known as Book V, in section 540-113 states: "The fees and rates appearing in the schedule are the maximums to which the State rate of reimbursement will be applied. Local welfare districts may negotiate fees that reflect the requirements of their own individual communities. However, the State does not reimburse on amounts paid in excess of the State schedule. In the event that a community adopts fees that are less than the State schedule, State reimbursement will be based on the fees actually paid"; and

WHEREAS, on March 1, 1959, there was finally an upward revision of the Workmen's Compensation Minimum Fee Schedule; and

WHEREAS, x-ray departments in St. Lawrence County have started sending bills for welfare patients reflecting the changes in the Workmen's Compensation schedule; and

WHEREAS, these bills, being more than the maximum to which the State rate of reimbursement is allowed, have caused ill will, embarrassment, and hardship for the county; now therefore be it hereby

Resolved, that the Council Subcommittee on Public Medical Care be directed to meet as soon as possible with the State Department of Social Welfare for the purpose of apprizing them of the new Workmen's Compensation Minimum Fee Schedule, thus attempting to raise the maximum fees and rates to which the State rate of reimbursement to counties will be applied.

Referred to Reference Committee on Report of the Council, Part VII.

Section 72 (See 119) Resolution 59–40

Date of Meeting of House of Delegates

Introduced by MEDICAL SOCIETY OF THE COUNTY OF QUEENS

Resolved, that subsequent meetings of the House of Delegates of the Medical Society of the State of New York begin on Monday as in the past and continue until the business of the House and the annual meeting has been completed; and be it further

Resolved, that the meetings of the House of Delegates should not begin on Saturday or Sunday.

Referred to Reference Committee on Report of the Council, Part XII.

Section 73 Resolution 59–41

Prorating of Blue Shield and GHI Surgical Fees in Service Benefit Cases

Introduced by JOHN L. SENGSTACK, M.D., SUFFOLK COUNTY MEDICAL SOCIETY

SPEAKER LANE: Number 41 has been withdrawn.

Section 74 (See 189) Resolution 59–42

Surgical Fees for General Practitioners in the 1959 Revision of the Workmen's Compensation Minimum Fee Schedule

Introduced by MEDICAL SOCIETY OF THE COUNTY OF WASHINGTON

WHEREAS, the March 1, 1959, revision of the Workmen's Compensation Minimum Fee Schedule allows qualified general practitioners only three quarters of the fee paid qualified surgeons for the same procedures; and

WHEREAS, this ruling actually reduces the fees paid these general practitioners for the same procedures in previous schedules; and

WHEREAS, this ruling is unjust and discriminatory; now therefore be it hereby

Resolved, that the Medical Society of the State of New York petition the Chairman of the Workmen's Compensation Board to correct this inequity without delay.

Referred to Reference Committee on Report of the Council, Part X.

Section 75 (See 112) Resolution 59–43

Lien Law

Introduced by MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

WHEREAS, there is currently no lien law which is applicable to physicians' charges for medical services in New York State; and

WHEREAS, in many instances physicians are forced to sue for payment for services rendered in connection with liability or personal injury cases; and

WHEREAS, there is apparently some reluctance on the part of legislators to enact a lien law for physicians in the absence of a standard or fixed fee schedule; and

WHEREAS, the principle of a fixed fee schedule has not been accepted by the medical profession in the State of New York and indeed would be very difficult to formulate or apply; now therefore be it hereby

Resolved, that the Committee on Legislation of the Medical Society of the State of New York cause to be introduced before the New York State Legislature a lien law for doctors of medicine similar to that currently in effect for hospitals; and be it further

Resolved, that in lieu of the "fixed" or "standard" fee schedule, the proposed law be based on the principle that in order for the lien to become valid, the fee be "reasonable and proper for the services rendered"; and be it further

Resolved, that the Committee on Legislation of the Medical Society of the State of New York bend every effort to secure the enactment of such a bill at the next legislative session.

Referred to Reference Committee on Report of the Council, Part IX.

Section 76 (See 202) Resolution 59-44

Medical Seminars in Foreign Countries

Introduced by HARRY A. MACKLER, M.D., MEDICAL SOCIETY OF THE COUNTY OF KINGS, as an individual

WHEREAS, the Medical Society of the County of Kings is having a medical seminar in Austria; and,

WHEREAS, this has been accomplished at a great financial saving to the members of the Medical Society of the County of Kings; and

WHEREAS, this practice has many advantages for all county societies and other medical organizations; now therefore be it hereby

Resolved, that the Medical Society of the State of New York refer this matter to its appropriate committee for study and investigation as to the feasibility of conducting such medical seminars under the auspices of the State Medical Society and submit its report to the Council of the Medical Society of the State of New York.

Referred to Reference Committee on Report of the Council, Part I.

Section 77 (See 137) Resolution 59-45

Establishment of Malpractice Insurance Advisory Committee

Introduced by HARRY A. MACKLER, M.D., MEDICAL SOCIETY OF THE COUNTY OF KINGS, as an individual

WHEREAS, malpractice suits are on the increase and a number of these malpractice suits have questionable validity and foundation; and

WHEREAS, the Medical Society of the State of New York has a Malpractice Insurance and Defense Board to evaluate these cases and make recommendations to the carrier; and

WHEREAS, this board is limited to act for members who are insured with the designated State Society carrier; and

WHEREAS, all other members in good standing are deprived of this privilege; now therefore be it hereby

Resolved, that the Medical Society of the State of New York appoint a malpractice insurance advisory committee, in addition to the existing Malpractice Insurance and Defense Board, to act for all carriers.

Referred to Reference Committee on Report of the Malpractice Insurance and Defense Board and Legal Counsel.

Section 78 (See 181) Resolution 59-46

Strikes against Voluntary Hospitals

Introduced by MEDICAL SOCIETY OF THE COUNTY OF KINGS

WHEREAS, there is now going on a series of strikes against many voluntary hospitals in New York City; and

WHEREAS, the health and welfare of any community could be jeopardized by such action which could cause hardship to the sick, serious consequences, and even untimely deaths; and

WHEREAS, it is important that reason and conscience prevail, so that the sick may not suffer unnecessarily; now therefore be it hereby

Resolved, that the Medical Society of the State of New York hereby goes on record as deploring the strikes now in effect against many voluntary hospitals in New York City.

Referred to Reference Committee on Report of the Council, Part VI.

Section 79 (See 98) Resolution 59-47

Cancer Diagnosis Program

Introduced by MEDICAL SOCIETY OF THE COUNTY OF KINGS

WHEREAS, cancer is currently the second leading cause of death in the State of New York; and

WHEREAS, the prognosis in a given case of cancer has been shown to be related to the stage of disease at the time of diagnosis and the institution of therapy; and

WHEREAS, the use of the Papanicolaou smear has been demonstrated to be an effective means of establishing early diagnosis, particularly of uterine malignancy; now therefore be it hereby

Resolved, that the Medical Society of the State of New York approve the development by the Subcommittee on Cancer of the Committee on Public Health and Education of a State-wide program to promote the wider routine use of the Papanicolaou smear and other methods of early cancer diagnosis by the physicians in the State of New York; and be it further

Resolved, that the Subcommittee on Cancer solicit the support of the State and New York City Health Departments, as well as the local and State cancer societies and hospital organizations in the implementation of their program.

Referred to Reference Committee on Report of the Council, Part IV.

Section 80 (*See 113*) Resolution 59–48

Improvement in Legislation Program

Introduced by NASSAU COUNTY MEDICAL SOCIETY

WHEREAS, large numbers of members of the component county medical societies and of their auxiliaries are sincerely interested in the legislation program of the Medical Society of the State of New York and devote considerable time to this work; and

WHEREAS, it is of vital importance that these volunteer committees have accurate knowledge of the status of bills in which they are interested, not merely in the closing days of the Legislature but also during the rest of the year, particularly in the period when bills are on the Governor's desk for his signature or veto; and

WHEREAS, this information has not been readily obtainable during the session of the State Legislature recently ended nor during the thirty days thereafter; now therefore be it hereby

Resolved, that this House of Delegates requests that there be devised and established a better means of communication between our representatives in Albany, the headquarters staff of the State Society in New York City, and the legislation committees of the several county societies.

Referred to Reference Committee on Report of the Council, Part IX.

Section 81 (*See 132*) Resolution 59–49

Increase in Voluntary Assessment for Physicians' Home

Introduced by CHAS. GORDON HEYD, M.D., PAST PRESIDENT

WHEREAS, the number of guests of the Physicians' Home is increasing rapidly from year to year; and

WHEREAS, the number of widows of physicians, surviving their husbands, is increasing; now therefore be it hereby

Resolved, that the Physicians' Home, Inc., be granted permission to change the phrase "Voluntary Assessment" from $2.00 to $4.00.

Referred to Reference Committee on Miscellaneous Business.

SPEAKER LANE: That completes the assignment of the resolutions that have been distributed thus far.

DR. MAURICE J. DATTELBAUM, *Treasurer:* May I ask the chairmen of the reference committees to whom there has been assigned any question of expenses to notify me where they will be so I can come there and discuss the problem.

SPEAKER LANE: Gentlemen, we would like the chairmen of the reference committees to meet with Dr. Wurzbach and me before you leave the hall.

As far as supplementary reports, I think it is clear to which committees they will go, but if you wish me to go through them with you I will.

CHORUS: No.

SPEAKER LANE: I again thank you for your indulgence; the meeting is adjourned until tomorrow morning at ten o'clock.

. . . Whereupon at 1:50 P.M., the meeting recessed . . .

Morning Session

Sunday, May 10, 1959

The session convened at 10:15 A.M.

Section 82

SPEAKER LANE: Ladies and gentlemen, the meeting will please come to order.

We have two announcements to make that are on the sad side. One is the death of Dr. Richard P. Doody, of Troy, New York, a delegate for fifteen years, who was sixty-four years old and who died Friday afternoon. We will ask you to rise for a moment of silence in honor of Dr. Doody.

. . . The delegates stood for one moment of silence in honor of their departed confrere . . .

SPEAKER LANE: Dr. Anderton will read a telegram to be sent to Mrs. Doody.

SECRETARY ANDERTON: Mr. Speaker, this is dated May 10, 1959:

Mrs. Richard P. Doody
1 Eaton Road
Troy, New York

House of Delegates of Medical Society of the State of New York sends you and yours deep sympathy. We miss our friend and fellow member of many years, a leader in our profession ever mindful of public welfare.

JOSEPH A. LANE, *Speaker*
W. P. ANDERTON, *Secretary*

I move approval of this telegram.

. . . The motion was seconded by several . . .

SPEAKER LANE: You heard the motion, which has been seconded. Those in favor will say "aye," any opposed "no." It is carried.

We also regret to announce the sudden death last evening of Mrs. Moses Krakow, wife of Dr. Moses Krakow, one of our delegates for a long period of time. We will send a telegram of sympathy to Dr. Krakow on the death of his wife.

There are now being distributed to you some additional resolutions. I will wait just a few minutes until they are passed out, and we will refer these resolutions to the proper reference committees.

ADDITIONAL RESOLUTIONS

Section 83 (See 114, 205) Resolution 59-50

Relations of Medicine and Psychology

Introduced by MEDICAL SOCIETY OF THE COUNTY OF KINGS

Resolved, that the Medical Society of the State of New York approve in its entirety the following resolution on "Relations of Medicine and Psychology" which was approved by the board of trustees of the American Medical Association, the council of the American Psychiatric Association, and the executive council of the American Psychoanalytic Association:

"For centuries the Western world has placed on the medical profession responsibility for the diagnosis and treatment of illness. Medical practice acts have been designed to protect the public from unqualified practitioners and to define the special responsibilities assumed by those who practice the healing art, for much harm may be done by unqualified persons, however good their intentions may be. To do justice to the patient requires the capacity to make a diagnosis and to prescribe appropriate treatment. Diagnosis often requires the ability to compare and contrast various diseases and disorders that have similar symptoms but different causes. Diagnosis is a continuing process, for the character of the illness changes with its treatment or with the passage of time, and that treatment which is appropriate may change accordingly.

"Recognized medical training today involves, as a minimum, graduation from an approved medical school and internship in a hospital. Most physicians today receive additional medical training, and specialization requires still further training.

"Psychiatry is the medical specialty concerned with illness that has chiefly mental symptoms. The psychiatrist is also concerned with mental causes of physical illness, for we have come to recognize that physical symptoms may have mental causes just as mental symptoms may have physical causes. The psychiatrist, with or without consultation with other physicians, must select from the many different methods of treatment at his disposal those methods that he considers appropriate to the particular patient. His treatment may be medicinal or surgical, physical (as electroshock), or psychologic. The systematic application of the methods of psychologic medicine to the treatment of illness, particularly as these methods involve gaining an understanding of the emotional state of the patient and aiding him to understand himself, is called psychotherapy. This special form of medical treatment may be highly developed, but it remains simply one of the possible methods of treatment to be selected for use according to medical criteria for use when it is indicated. Psychotherapy is a form of medical treatment and does not form the basis for a separate profession.

"Other professional groups such as psychologists, teachers, ministers, lawyers, social workers, and vocational counselors, of course, use psychologic understanding in carrying out their professional functions. Members of these professional groups are not thereby practicing medicine. The application of psychologic methods to the treatment of illness is a medical function. Any physician may utilize the skills of others in his professional work, but he remains responsible, legally and morally, for the diagnosis and for the treatment of his patient.

"The medical profession fully endorses the appropriate utilization of the skills of psychologists, social workers, and other professional personnel in contributing roles in settings directly supervised by physicians. It further recognizes that these professions are entirely independent and autonomous when medical questions are not involved, but when members of these professions contribute to the diagnosis and treatment of illness, their professional contributions must be coordinated under medical responsibility"; and be it further

Resolved, that the Medical Society of the State of New York instruct its legal counsel to oppose any rule, regulation, opinion, or attempt to amend the present Medical Practice Act that might exclude psychotherapy from the present Medical Practice Act; and be it further

Resolved, that the Medical Society record its belief that it is a matter of ethical procedure for each of its members to be bound by the above resolution.

Referred to Reference Committee on Reports of Malpractice Insurance and Defense Board and Legal Counsel.

Section 84 (*See 177*) Resolution 59–51

Legal Status of Demand by Associated Hospital Service for Information and Correspondence from Attending Doctors on Patients Hospitalized Under Associated Hospital Insurance Coverage

Introduced by WILLIAM HALL LEWIS, JR., MEDICAL SOCIETY OF THE COUNTY OF NEW YORK, as an individual

WHEREAS, certain Blue Cross plans in New York State have a contract with the subscriber, a third party to the contract being a member hospital; and

WHEREAS, this contract allows officers and employes of the Blue Cross plans the privilege of reviewing the hospital records of the subscriber patients, including the reasons for such hospitalization; and

WHEREAS, the said officers and employes can submit a request for additional information by questionnaire to the record room of the hospital and thus involve the attending doctor; and

WHEREAS, this questionnaire contains questions that are beyond the legal province of the doctor to answer without the knowledge and consent of the patient; and

WHEREAS, the procedures of sending such questionnaires involve the attending doctor in expending considerable time and attention; and

WHEREAS, the officers or employes of a Blue Cross plan may use such correspondence as a cause for delay or withholding benefits, implying that the doctor is at fault; and

WHEREAS, such correspondence may place the attending doctor in a position of policing hospitalization and judging insurance stipulations in a contract of which he has no part; now therefore be it hereby

Resolved, that this House of Delegates requests review by its appropriate committee and with its legal counsel of such contracts and procedures, and to take measures to clarify for the patient, the profession, and the attending doctor the responsibilities of the doctor in these matters; and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the American Medical Association House of Delegates be instructed to introduce a similar resolution at its meeting in June, 1959.

Referred to Reference Committee on Report of the Council, Part VII.

Section 85 (*See 159*) Resolution 59–52

Public Relations and Information

Introduced by WILLIAM HALL LEWIS, JR., MEDICAL SOCIETY OF THE COUNTY OF NEW YORK, as an individual

WHEREAS, certain governmental agencies and other media that are in contact with the public have the opportunity to release certain publicity remarks in the form of public information; and

WHEREAS, individuals or groups in such agencies or bureaus may make particular mention of the medical profession in special and possibly unfavorable manner; now therefore be it hereby

Resolved, that this House of Delegates instruct its appropriate committee to exert proper protest against such public announcements; and be it further

Resolved, that this House of Delegates instruct its delegates to the House of Delegates at the American Medical Association meeting in June, 1959, to introduce such a resolution for action by the appropriate committees and officers of the American Medical Association.

Referred to Reference Committee on Report of the Council, Part XI.

Section 86 (*See 194*) Resolution 59–53

Employes Pension Fund Assessment from Newly Elected, Re-elected, or Reinstated Members

Introduced by WALTER W. MOTT, M.D., CHAIRMAN, BOARD OF TRUSTEES

WHEREAS, the Medical Society of the State of New York has established a retirement plan for its employes; and

WHEREAS, the House of Delegates at its 1956 meeting voted to assess all members of the Society $10 each in order to establish said retirement plan; and

WHEREAS, it is essential that the plan have adequate reserves in order to operate on a sound financial basis; now therefore be it hereby

Resolved, that all members of the Medical Society of the State of New York who are hereafter newly elected, re-elected, or reinstated following the adjournment of the House of Delegates on May 11, 1959, are hereby assessed $10 each for the Pension Fund, due and payable upon such election, re-election, or reinstatement.

Referred to Reference Committee on Reports of Treasurer, Trustees, Budget, and War Memorial.

Section 87 (*See 118, 203*) Resolution 59–54

Change in Specialist Roster of the New York State Department of Health

Introduced by MEDICAL SOCIETY OF THE COUNTY OF MONTGOMERY

WHEREAS, in each county society the various doctors do a great deal of rehabilitative surgery; and

WHEREAS, all of these men have workmen's compensation qualifications to do surgery in the various specialties; now therefore be it hereby

Resolved, that the Medical Society of the State of New York petition the New York State Department of Health to change its roster of specialists for the Rehabilitation Program to include all those doctors who are qualified by the New York State Workmen's Compensation Board to do surgery.

Referred to Reference Committee on Report of the Council, Part X.

Section 88 (*See 181*) Resolution 59–55

Disapproval of Strikes Against Hospitals

Introduced by MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

WHEREAS, the Medical Society of the State of New York considers the welfare of the patient the primary concern of the medical profession; and

WHEREAS, the Medical Society of the State of New York considers any action of an individual or organization which interferes with the proper care of patients in hospitals as inimical to the welfare of the sick; now therefore be it hereby

Resolved, that the Medical Society of the State of New York is and hereby records its unequivocal opposition to any strike or any other activity prejudicial to the welfare of hospitalized patients; and be it further

Resolved, that the membership of the Medical Society of the State of New York will continue to make every effort to be certain that the sick receive proper care; and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the American Medical Association be instructed to introduce a similar resolution at the A.M.A. House of Delegates in June, 1959; and be it further

Resolved, that copies of this resolution be sent to the responsible State and municipal executive officers and to the State Hospital Association.

Referred to Reference Committee on Report of the Council, Part VI.

Section 89 Resolution 59–56

Reimbursement of Section Delegates

Introduced by ARTHUR Q. PENTA, M.D., SECTION ON CHEST DISEASES, and E. CRAIG COATS, M.D., SECTION ON UROLOGY

WHEREAS, section delegates are official members of the House of Delegates as defined in the Bylaws of the Medical Society of the State of New York, Chapter II, Section 1, page 10, under subheading (d); and

WHEREAS, section delegates represent Statewide problems of their respective sections; and

WHEREAS, their expenses as delegates have to date been on a personal basis; now therefore be it hereby

Resolved, that the Bylaws of the Medical Society of the State of New York, Chapter IX, Section 1, page 32, line 17, be amended by inserting "and sections" so that the full sentence will then read: "Delegates of the district branches and sections sitting in the House of Delegates shall be allowed necessary expenses by the Medical Society of the State of New York."

Referred to Special Committee on Constitution and Bylaws.

Section 90 (See 117) Resolution 59–57

Administration of Physiotherapy by Written Prescription

Introduced by Henry Fleck, M.D., Section on Physical Medicine

Whereas, physical therapy is a part of medical practice and can only be administered under the supervision of a licensed physician; and

Whereas, the present State education law permits the practice of physical therapy on oral prescription of a duly licensed and registered physician; and

Whereas, such oral prescription is not in the best interest of the patient; now therefore be it hereby

Resolved, that the Medical Society of the State of New York, through its appropriate committee, take whatever steps necessary so that the present law covering the practice of physical therapy (Paragraph 6512, Article 4a, Number 2) be amended to read as follows:

"(2) The administration of physiotherapy by a duly licensed and registered physiotherapist upon the written prescription of a duly licensed and registered physician."

Referred to Reference Committee on Report of the Council, Part IX.

Section 91 Resolution 59–58

Remission of Dues and Election to Life Membership

Introduced by Medical Society of the County of Tompkins

Whereas, Dr. Edward W. Warren has been a member in good standing of the Medical Society of the County of Tompkins and the Medical Society of the State of New York for many years; and

Whereas, Dr. Warren has suffered a long and protracted illness to the extent that it now appears he will never be able to resume practice; and

Whereas, the Medical Society of the County of Tompkins has voted to remit his dues for 1959; now therefore be it hereby

Resolved, that Dr. Warren's dues for 1959 be remitted because of ill health, and that he be elected to life membership in the Medical Society of the State of New York.

Speaker Lane: Resolution 59–58 we will act on now.

Dr. J. Stanley Kenney, *Trustee:* I move adoption of the resolution.

Dr. Arthur J. Bedell, *Past President:* I second it.

Speaker Lane: It has been moved and seconded. Is there any discussion?

Dr. Thomas M. d'Angelo, *Queens:* I am fully in accord with the resolution, but I wonder whether or not it follows all of the steps prescribed by the Constitution. How old is the doctor?

Speaker Lane: Apparently age is not an important factor if the doctor is disabled and appears totally infirm.

Dr. d'Angelo: Is it in accord with the Constitution that we can do that?

Speaker Lane: Dr. Anderton tells me yes.

Is there any further discussion? Hearing none, all in favor say "aye," those opposed "no," if any. It is carried.

Section 92 (See 204) Resolution 59–59

Fee-Splitting by Hospitals

Introduced by Samuel Leo, M.D., Bronx County Medical Society, as an individual

Whereas, the lay boards of directors in certain hospitals have notified the visiting staff of their respective hospitals that fees collected for service cases from Blue Shield be accepted and deposited by these staff members; and

Whereas, physicians collecting and depositing such fees must then return these fees to their respective hospitals for use as seen fit by the board of directors; now therefore be it hereby

Resolved, that such practices should be considered a form of fee-splitting, and those physicians who participate in such practice should be considered as practicing unethically; and be it further

Resolved, that hospitals making it mandatory for doctors to return such fees under the threat of losing their connections with the hospital should be reported to the Joint Committee on Hospital Accreditation for censure.

Referred to Reference Committee on Report of the Council, Part I.

Speaker Lane: That completes the resolutions that have been received to date. If any of you have any reason to believe that you want to introduce a resolution, please do it today. No resolution is to be introduced tomorrow. Everything must be in today.

Dr. Angrist, chairman of the Reference Committee on Report of Council, Part IV, I understand is ready to give his report at this time.

REFERENCE COMMITTEE, PART IV

Section 93

Report of Reference Committee on Report of Council, Part IV: Public Health Activities C—Cancer

Dr. Alfred A. Angrist, *Queens:* Dr. Lane and members of the House, this represents the report of your Reference Committee on Council, Part IV, including public health activities referred to this reference committee. To make the report concise we will refer to the printed material distributed and the resolutions.

The report of the Subcommittee on Cancer, as published in the April 1, 1959, issue of the New York State Journal of Medicine on pages 1330 and 1331, was approved, thereby endorsing the campaign to conduct a vaginal smear diagnostic survey of adult women patients in hospitals and the support of the cooperative study of leukemia under the sponsorship of the American Cancer Institute.

It is to be noted that the consent of each patient in the proposed survey is required to avoid a technical charge of assault against physicians and hospitals.

I move the adoption of this portion of my report.

Speaker Lane: Is there a second?

Dr. Walter W. Mott, *Trustee:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be adopted. Is there discussion? If not, those in favor, say "aye," any opposed "no." It is so ordered.

Section 94 (See 14, 57, 206, 218, 224)

Report of Reference Committee on Report of Council, Part IV: Public Health Activities C—Heart Disease

Dr. Angrist: The report of the Subcommittee on Heart Disease, as published in the same issue of the New York State Journal of Medicine on page 1331, is approved.

The supplementary report of the subcommittee as distributed under designation 59–F is approved, as hereinafter amended, including the reference to the editor of the New York State Journal of Medicine for a page to be devoted to (1) education of the physicians of the State describing the rheumatic fever prevention program, (2) notice of meetings and courses in heart disease, and (3) notice of papers in the field of heart disease by members of the State Society and other educational material as deemed advisable by the editor.

The "Fight Food Faddism" campaign was endorsed.

The resolution referred to in this supplementary report of the Subcommittee on Heart Disease, as submitted by Dr. Norman S. Moore, of the Council, and distributed as resolution 59–25, received considerable discussion by your reference committee and is amended as follows:

The first two "whereas" portions of the resolution are combined to read:

> Whereas, the course of atherosclerotic heart disease (coronary) has been shown to be related chiefly to metabolic and genetic factors and to have little or no relationship to the type of occupation or to reasonable stress or strain; and

plus the insertion of a final "whereas" as follows:

> Whereas, the Work Evaluation Program of the American Heart Association has shown that the employment of candidates certified for particular work occasions no extra hazard to the employer or his insurance carrier; now therefore be it hereby
>
> *Resolved,* that the Medical Society of the State of New York place itself on record in support of the theory that atherosclerotic heart disease has no known acceptable relationship to the individual's usual occupation, and that employers may be encouraged to employ or re-employ cardiacs as frequently as possible; and be it further
>
> *Resolved,* that this recommendation be conveyed to the American Medical Association.

By way of clarification the following statement is offered by your committee: It was felt that in this instance we are reaping the whirlwind of having the compensation law interpreted to allow compensation for coronary episodes occurring while at work. If the resolution recommended is to be more than a pious hope in encouraging such employment of cardiacs, then the application of the compensation law will necessarily have to take into consideration this expressed lack of association of coronary attacks with employment; otherwise insurance carriers will prompt employers to continue to shy away from the employment of individuals with such a cardiac history.

Mr. Chairman, I move the acceptance of this portion of the report.

Dr. Max Cheplove, *Erie:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion, gentlemen?

. . . After discussion by Dr. Aaron Kottler of Kings, Dr. Lawrence A. Kohn of Monroe, Dr. d'Angelo of Queens, Dr. Louis H. Bauer, past president, and Dr. Arthur E. Lamb of Kings in regard to the wording of the resolution, it was moved by Dr. Bauer and seconded that the matter be referred back to the reference committee for rewording. This motion was discussed briefly. . .

Speaker Lane: Is there any further discussion? If not, those in favor of Dr. Bauer's motion, which is to refer back to the reference committee this portion of the report, will say "aye," any opposed "no." It is so ordered.

Section 95 (See 56)

Report of Reference Committee on Report of Council, Part IV: Public Health Activities C—Mental Hygiene

Dr. Angrist: The report of the Subcommittee on Mental Hygiene is approved, as published on page 1331 of the above issue of the New York State Journal of Medicine, including (1) extension of medical insurance to include psychiatric coverage, with the suggestion, however, that suitable limitations be established to assure some safeguards for the actuarial extension of such services; (2) exploration of the problem of mental retardation and study of prevention and therapy, and (3) the limitation of activities of psychologists, in keeping with resolution 59–24 as hereinafter amended.

This resolution is amended to alter the "whereas" and "resolved" as follows:

> Whereas, mental illnesses are well-defined disease entities; and

The "resolved" portion of the resolution is altered as follows:

> *Resolved,* that the House of Delegates of the Medical Society of the State of New York goes on record as defining psychotherapy as the art and the science of medicine as applied to the treatment of mental and emotional disorders.

By way of explanation, may I state the following: The original resolution really brought up the question which has plagued this House so often of opening up the Medical Practice Act to amendment, and the present variation in the original resolution seems to accomplish the intent of the original resolution without giving us that particular hazard. Incidentally, the alteration as suggested by your committee was satisfactory to the proponents of the resolution who were in on the consultation and discussion at that juncture.

Your reference committee notes with satisfaction the withdrawal of the discriminating proposal of automatic suspension of licensure of a physician who is admitted to a psychiatric hospital for emotional or mental illness.

Mr. Chairman, I move the adoption of this portion of the report.

Speaker Lane: Is there a second?

Dr. Jason K. Moyer, *Broome:* I second it.

Speaker Lane: Is there discussion? If not, those in favor of the approval of this portion of the report say "aye," opposed, if any, "no." It is so ordered.

Section 96 (See 17)

Report of Reference Committee on Report of Council, Part IV: Public Health Activities C—Medical Film Review

Dr. Angrist: Your reference committee approves the report of the Subcommittee on Medical Film Review, as published on page 1332 of the same issue of the New York State Journal of Medicine, and the supplementary report, 59–I, describing the Medical Film Institute, referred to in the last paragraph of the published report, held in Albany on April 17, 1959.

Your reference committee expresses the hope that any future institute to stimulate the use of teaching films will have a broader base by the participation of more counties in the State.

Your reference committee notes with regret the failure to use the available educational facilities and opportunities by medical schools and physicians and endorses the wider distribution of catalogs of such material and the findings and recommendations of the Medical Film Institute to promote the fuller use of this rich teaching material throughout the State.

Mr. Chairman, I move the adoption of this portion of the report.

Secretary Anderton: I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion? If not, those in favor will say "aye," any opposed "no." It is so ordered.

Section 97

Report of Reference Committee on Report of Council, Part IV: Public Health Activities C—Blood Banks Commission

Dr. Angrist: The report of the Blood Banks Commission, as published on pages 1387 and 1388 in the same April 1 issue of the New York State Journal of Medicine, is approved.

It is safe to state that the House of Delegates of the Medical Society of the State of New York was always in sympathy with the aims and objectives of this effort; it would be an understatement to refer to the activities of the Blood Banks Commission and the North East District Clearing House and the Blood Banks Association of New York State with its large financial deficit as a cause of concern and stimulus of discussion in this House.

It should give the House of Delegates considerable satisfaction to learn that the $16,000 allocated last year will not be used in full. In addition, both the Blood Banks Association and the Clearing House last year had only a deficit of about $5,500, in addition to the use of about $4,500 in reserve. The picture is indeed more promising for this year, for as of April 30, 1959, the Blood Banks Association expenditure has been $1,309 and the Clearing House has cost $1,773, for a total of $3,082 for the four-month period. There is also the expectation of additional income from other state societies participating in the program of the Clearing House.

The clarification of the organization, its objectives, and the withdrawal from the costly competitive procurement program have done much to yield this favorable position. We all owe a debt of gratitude to those who labored for this achievement, including Drs. Kenney, Berger, Fineberg, and Worcester, and Misses Clarke and Ritzler.

Mr. Chairman, I would like to move the adoption of this portion of the report.

Dr. Thurman B. Givan, *Past President:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion? If not, those in favor say "aye," any opposed "no." It is so ordered.

Section 98 (See 79)

Report of Reference Committee on Report of Council, Part IV: Public Health Activities C—Cancer Diagnosis Program

Dr. Angrist: There is one other resolution that was referred to your reference committee. This is resolution 59-47. This is amended as follows:

The subject is changed from "Cancer Diagnosis Program" to "Cancer Detection Program."

The third "whereas" should read as follows:

> Whereas, the use of cytology has been demonstrated to be an effective means of early detection, and particularly of uterine malignancy;

and the first "resolved" has been altered to substitute in the fourth line the phrase "cytology" in place of the phrase "Papanicolaou smear."

Mr. Chairman, I move the adoption of this portion of the report.

Dr. Norman S. Moore, *Councillor:* I second it.

Speaker Lane: Is there any discussion? Those in favor of approving this portion of the report will say "aye," those opposed, if any, "no." It is so ordered.

Dr. Angrist: May I take this opportunity to extend my grateful appreciation to the members of the Society who came before our reference committee to assist us, and particularly to the members of the reference committee, Drs. Max Cheplove, Moses H. Krakow, Jason K. Moyer, and Edwin G. Mulbury, whose contributions to the deliberations of the committee made my own task such a simple one and a singularly pleasant one.

Mr. Chairman, I move the adoption of the report with the exception of the matter referred back.

. . . The motion was seconded . . .

Speaker Lane: Is there any discussion? If there is none, all in favor please say "aye," any opposed "no." It is so ordered.

Section 99 (See 121) Report 59-Q

Supplementary Report of Council, Part XII: Belated Bills

Speaker Lane: I have before me supplementary report 59-Q of the Council, Part XII, Belated Bills, and this is referred to Part XII:

To the House of Delegates, Gentlemen:

A statement covering expenses of Dr. James T. Carroll of Rochester, New York, was received May 9, 1959, with a request that it be presented to the House of Delegates for approval. The expenses were incurred in connection with the attendance of Dr. Carroll as a member at a meeting of the Council Committee on Public Relations which took place October 24, 1958:

Transportation	$70.00
Hotel	12.50
Meals	5.00
Total	$87.50

Section 100

Change in Referral of Resolution

Speaker Lane: I also have a note here that resolution 59-52, which we assigned this morning, had already been assigned to Council, Part XI, and has been considered and approved by that reference committee. Therefore, no further action is necessary except in the report on resolution 59-52.

Will the members of the Reference Committee, Part VI, meet with the chairman at once to consider the new resolutions.

They will meet in the Washington Room on the Mezzanine Floor. Reference Committee, Part VI, consisting of William T. Boland, chairman, Louis Berger, Samuel Frant, Frank LaGattuta, and James A. Moore, will meet immediately.

The following reports are ready for signature, Part XII, Dr. Waring Willis' committee, and Part II, Dr. Gurnsey's committee. Will the members of those committees please sign their reports which can then be presented to the House?

REFERENCE COMMITTEE PRESIDENT AND PRESIDENT-ELECT

Section 101 (See 26, 27)

Report of Reference Committee on Reports of President and President-Elect

Dr. John L. Sengstack, *Suffolk:* Mr. Speaker, members of the House, and guests, reporting on the president's report, your reference committee has read with great interest the report of your president, Dr. Leo E. Gibson, which is a comprehensive report of his activities over the past year. He has given us a fine summary of the activities of the many standing committees and pointed out the significant features of their work. He has expressed his gratitude for the privilege of serving our Society, and he has thanked especially the members of his staff, the president-elect, Dr. Henry I. Fineberg, the secretary, Dr. W. P. Anderton, and the executive director, Dr. Herbert T. Wagner.

Two significant events are especially noted: the removal of the Society headquarters to new offices and the appointment of the new executive director, Dr. Wagner.

In his comments on the work of the committees, Dr. Gibson points out that the Committee on Legislation recommends that we should not consistently introduce measures into the Legislature which we know have little or no chance of becoming law. We should concentrate on specific phases of legislation which have some chance of becoming laws of the State. We should spend considerably more time in improving our general relations with the legislators. He commends the work of this committee, of which Dr. James M. Blake is chairman, and this reference committee strongly endorses Dr. Gibson's remarks.

The president also endorses the work of the Malpractice Insurance and Defense Board headed by Dr. John F. Kelley, and he urges more support for the Group Plan of Malpractice Insurance.

The work of the Public Health and Education Committee has acted as a catalyst to bring together all agencies affected by the increasing problem of staphylococcal infection outbreaks in hospitals. He commends the work of this committee, of which Dr. Norman S. Moore is chairman.

The president expressed his appreciation to Dr. Peter J. Di Natale, chairman of the Industrial Health Committee, and the director, Dr. Anthony A. Mira, for its study of union health centers and establishment of management first-aid stations in industry, and feels that greater coordination between union health centers and local county societies should be encouraged.

He also commends the sound public relations program of the Public Relations Committee, whose chairman is Dr. John F. Rogers.

The 1958 Management Survey Committee under the chairmanship of Dr. Renato J. Azzari has our deepest appreciation for the changes that have been accomplished to date, and the president hopes the committee will continue its excellent work.

The Committee on Workmen's Compensation, after many months of negotiations, was able to revise satisfactorily the minimum fee schedule which has gone into effect as of March 1, and for this work Dr. Gibson wishes particularly to thank Dr. Anthony A. Mira and the chairman of the Council Committee on Workmen's Compensation, Dr. Gerald D. Dorman.

The Committee on American Medical Education Foundation under Dr. William Pelow is praised for its efforts in encouraging our members to make larger contributions.

The Blood Banks Commission reports that the North East District Clearing House is a going concern, and it appears quite certain that it will become self-supporting in the not too distant future.

Dr. Gibson notes the changes in the staff and publication of the NEW YORK STATE JOURNAL OF MEDICINE, and he commends the work of Dr. Alfred P. Ingegno and Dr. Laurance D. Redway in their efforts to continue to publish an outstanding journal. This committee hopes the scientific material accepted for publication will steadily improve.

The Nursing Education Committee is continuing its work in exploring methods of helping to reduce the nurse shortage, and Dr. Gibson praises the work of Dr. John M. Galbraith and his committee for trying to solve this difficult problem.

The Committee on Rural Medical Service, Dr. Edward C. Hughes, chairman, is commended for instituting in the counties of Onondaga, Oswego, and Cortland a pilot study for improving rural medical care.

The War Memorial Committee is also praised for its continuing work in the administration of this fund under the able chairmanship of Dr. Renato J. Azzari.

We are in hearty accord with the president in thanking Mrs. Maurice G. Sheldon and her official family in the Woman's Auxiliary for the fine work they are doing.

A special committee on the format of a scientific and educational trust was appointed, and we note that this committee recommended that this trust be approved in principle, and for the thorough job of investigating, the president wishes to thank Dr. Henry I. Fineberg, chairman, and his committee for their very excellent work.

In conclusion, your reference committee realizes the immense scope that the work of the president covers, and we can do no more than congratulate him on the success of his efforts, in which he was ably abetted by the loyal work of these various committees. Therefore, this reference committee is pleased to join with the House of Delegates in thanking Dr. Gibson for his outstanding work on behalf of the Society and congratulate him on his leadership.

At the first session of the House of Delegates, we heard with interest the supplementary report of the president in which he repeated and emphasized the excellent work of his various committees, and this reference committee heartily endorses all of the recommendations.

Now reporting on the report of the president-elect: We also listened with great interest to the speech presented by our president-elect, Dr. Henry I. Fineberg, and found in it much food for thought. His remarks concerning the relationship between medicine and labor and the need for medicine to protect union members from unqualified medical care require study and action. He also emphasized the need for free choice of physician and a voluntary health insurance plan embodying this principle. The importance of this need was emphasized by his quotation of the thoughts recently expressed by Dr. Louis H. Bauer.

Your reference committee also emphasizes the importance that Dr. Fineberg places on the need for the continuing education of doctors not affiliated with hospitals, colleges, and medical societies.

Dr. Fineberg emphasized the great interest that the public takes in medical news, and your reference committee endorses his ideas of transmitting this information to the public but only after verification or supervision by competent medical authority.

The reference committee also agrees with the president-elect that the doctor must step down from his ivory tower and enter into the general social, economic, and political activities of his community. One way of doing this is for all doctors to know their legislators personally.

We also endorse the idea of more cooperation between dentists, pharmacists, veterinarians, nurses, and hospitals. We strongly urge means of recruitment of nurses.

In closing, we endorse Dr. Fineberg's laudation of Dr. Gibson, Dr. Anderton, and the administrative staff.

This report has been signed by the members of my reference committee, to whom I wish to express my thanks and appreciation at this time: Dr. Walter S. Bennett, Dr. John C. Brady, Dr. Frank J. McGowan, and Dr. Lawrence A. Kohn.

I move that the report be adopted as presented.

Dr. Lawrence A. Kohn, *Monroe:* I second it.

Speaker Lane: It has been moved and seconded that the report as a whole be adopted. Is there discussion?

Dr. Moore, *Councillor:* I suggest one correction in the report: Dr. James Greenough is the chairman of the Ad Hoc Committee to Combat Staphylococcal Infections in Hospitals and not me.

Speaker Lane: You will accept that correction?

Dr. Sengstack: Yes.

Speaker Lane: Is there any discussion? If not, those in favor of approval of those reports please say "aye," opposed "no." It is so ordered.

Thank you very much, Dr. Sengstack.

REFERENCE COMMITTEE, PART IX

Section 102

Report of Reference Committee on Report of Council, Part IX: Legislation, Cults, Federal Legislation, Autopsies

Dr. Peter M. Murray, *New York:* Mr. Speaker, ladies and gentlemen of the House of Delegates, your Reference Committee on the Report of Council, Part IX: Legislation, Cults, Federal Legislation, Autopsies, submits the following report:

Attention is called to the reports as printed in the April 1 issue of the New York State Journal of Medicine, pages 1343 through 1353 and page 1396. Your committee strongly urges that every member of the Society take time to sit down and read this report which contains in great detail the splendid job performed by the Council Committee on Legislation. Dr. James M. Blake of Schenectady, chairman, and his splendid committee have been very energetic in performing the tasks assigned to them, and it is a liberal education in the unselfish devotion to the welfare of the people of the State of New York to read of their activities.

As chairman of your reference committee on legislation, I had prepared a rather lengthy summary of this work, but upon calling my committee's attention to what I had done, they, in their greater wisdom to which I defer, suggested that if the members of this Society did not read the original report, they would hardly read the voluminous abstract which I had prepared. I consequently again refer you and urgently request you read this report.

Your committee wishes to call attention to two matters which may be singled out in this report:

1. The Committee on Legislation is of the opinion that if a program of legislation is to be effective and satisfactory, the activity and interest in legislation must extend beyond the committee itself to the various county societies, actually to the individual members of each society throughout the entire State. It was further agreed that more effort should be made toward improving our general relationship with the members of the Legislature. Therefore, it has been recommended to each county society that through its legislation chairman and its public relations chairman, as well as other individual members of the society, contact be made with various legislators in their area. Getting to know the legislators personally and having the opportunity of discussing in detail with them the various phases of medical legislation and the reasons for our interest in such can perhaps do more than anything else in enhancing good medical legislation.

It was pointed out by Assemblyman Metcalf and Assemblyman Ryan that the great weakness of the Medical Society, in their opinion, as refers to legislation, was our failure, as individual physicians, to contact and become acquainted with our respective legislators and to take advantage of the opportunity of discussing with them our ideas pertaining to medical legislation.

It is therefore strongly emphasized in this report that each county medical society make specific arrangement, if it has not already done so, to meet whether as a group or as individuals with the legislators from the area, become acquainted with them, and discuss with them the phases of medical legislation in which they are interested. Your committee cannot emphasize this too strongly. Our attention was drawn to this point yesterday by both our present president, Dr. Leo E. Gibson, and president-elect, Dr. Henry I. Fineberg.

2. It was further the thought of the members of the committee that we, as a Society, should not consistently introduce multiple measures into the Legislature which would have little or no chance of being enacted into law. It seems much more desirable that we concentrate on specific phases of legislation from year to year and, of course, legislation which has some chance of becoming reality. A county medical society should carefully scrutinize resolutions pertaining to legislation which are being approved and submitted to the State Society for formal action.

Your committee considered also resolutions referred to it by the Speaker of the House as follows:

Resolutions	Sections
59–3	*See* 35, 103
59–7	*See* 39, 104
59–8	*See* 40, 105
59–11	*See* 43, 105
59–13	*See* 45, 106
59–18	*See* 50, 107
59–20	*See* 52, 108
59–21	*See* 53, 109
59–22	*See* 54, 110
59–35	*See* 67, 111
59–43	*See* 75, 112
59–48	*See* 80, 113
59–50	*See* 83, 114, 205
59–57	*See* 90, 117

Section 103 (See 35)

Report of Reference Committee on Report of Council, Part IX: Proposed Legislation to Suspend Licenses of Mentally Ill Professional Persons

Dr. Murray: Resolution 59–3, subject "Proposed Legislation to Suspend Licenses of Mentally Ill Professional Persons," introduced by Nassau County Medical Society:

> *Resolved,* that the House of Delegates of the Medical Society of the State of New York hereby records itself as being opposed to this type of legislation; and be it further
>
> *Resolved,* that the Medical Society of the State of New York urge similar opposition by other professional groups involved.

It is our information that this legislation did not pass, it was withdrawn, but we were put on notice that the matter is not closed. It is going to be restudied, and we will have to be on the lookout for its reintroduction.

We recommend no action be taken on this resolution, and, Mr. Speaker, I move the adoption of this portion of our report.

Dr. Albert H. Douglas, *Queens:* I second the motion.

Speaker Lane: It has been moved and seconded. Is there any discussion? If not, those in favor of the committee's recommendation of no action on this resolution will say "aye," any opposed "no." It is so ordered.

Section 104 (See 39)

Report of Reference Committee on Report of Council, Part IX: To Rescind Action Permitting Podiatrists to Use "Foot Specialist" Designation

Dr. Murray: Resolution 59–7, subject "To Rescind Action Permitting Podiatrists to Use 'Foot Specialist' Designation," introduced by Medical Society of the County of Queens:

> *Resolved,* that the Board of Regents of the University of the State of New York be requested to rescind the action whereby podiatrists are permitted to use the designation of "foot specialist."

It was the consensus of the committee that the use of the term "foot specialist" should be prohibited. Your committee approves this resolution in principle and refers it to the Council for action.

Mr. Speaker, I move the adoption of this portion of our report.

Dr. Aaron Kottler, *Kings:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion? If not, those in favor will say "aye," any opposed "no." It is so ordered.

Section 105 (See 40, 43)

Report of Reference Committee on Report of Council, Part IX: Study and Recodification of the Laws Dealing with the Dead Human Body; Modernization of the Law Dealing with the Dead Human Body

Dr. Murray: Resolution 59–8, subject "Study and Recodification of the Laws Dealing with the Dead Human Body," introduced by the Medical Society of the County of Queens:

> *Resolved,* that the president of the Medical Society of the State of New York explore the possibility of obtaining the support of a foundation or foundations to make possible a study by local and state bar associations, in cooperation with academies of medicine and other interested agencies and/or the American Law Institute, of the entire body of law dealing with the dead human body, including administrative and legal procedures dealing with the autopsy, the cadaver, disposal, definition of death, definition of cause of death, authority of coroners and medical examiners, legalizing of tissue banks and transplantation, cemetery laws, etc., with the view of codifying laws dealing with the dead human body and the development of a model group of statutes to deal with this problem as it confronts the needs of a modern society; and be it further
>
> *Resolved,* that a copy of this resolution be forwarded to all interested organizations and agencies, including appropriate bar associations, state medical societies, academies of medicine, hospital associations, state and national societies of pathologists, public health associations, specialty boards, and the American Academy of General Practice, to enlist their endorsement, cooperation, and support in such an endeavor; and be it further
>
> *Resolved,* that the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association be instructed to introduce a similar resolution at the June, 1959, meeting of the American Medical Association.

Also resolution 59–11, which bears on the same problem, "Modernization of the Law Dealing with the Dead Human Body," introduced by the Medical Society of the County of Queens:

> *Resolved,* that the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association at its meeting in June, 1959, be instructed to introduce a resolution that the American Medical Association:
>
> 1. Inform the public in general of the necessity and advantages of properly performed autopsies and further inform the public that autopsies are essential to the acquisition of medical knowledge; and
>
> 2. Initiate and implement efforts to modernize the body of law dealing with the dead human body and advocate changes in the law so that pathologists, coroners, and medical examiners will not be in conflict with the law in the several states when conscientiously performing their duties in the interest of knowledge, public health, and general welfare.

The following statement was submitted by Dr. Angrist, chairman of the Special Committee on Autopsies:

"Since submitting the report of the Special Committee on Autopsies, your chairman has been advised of an institute to be held in Chicago on May 26 and 27 entitled, 'The Legal Environment of Medicine,' under the auspices of the Society of Medical Research. Part of its deliberations will deal with the present legal status of the autopsy and the law of the dead human body.

"It is suggested that the House of Delegates of the Medical Society of the State of New York endorse such a broad study as a promising one to clarify the difficult problems presently confronting the members of the profession in this field."

These resolutions are recommended by the Special Committee on Autopsies under the chairmanship of Dr. Angrist. Your committee recommends the approval of these resolutions. I move the adoption of this portion of our report.

Dr. Herbert H. Bauckus, *Trustee:* I second it.

Speaker Lane: It has been regularly moved and seconded to adopt this portion of the reference committee's report. Is there any discussion? If not, all those in favor say "aye," opposed "no," if any. It is so ordered.

Section 106 (See 45)

Report of Reference Committee on Report of Council, Part IX: Fitting of Contact Lenses

Dr. Murray: Resolution 59–13, "Fitting of Contact Lenses," introduced by the Medical Society of the County of Erie:

> *Resolved,* that the Medical Society of the State of New York request the introduction of legislation in the 1960 New York State Legislature whereby Section 7101 of Article 143 of the Education Law would be amended to provide that a licensed optometrist may fit contact lenses only under the personal supervision of a physician.

Your committee approves this resolution in principle and refers it to the Council for action.

Mr. Speaker, I move adoption of this portion of the report.

Speaker Lane: Is there a second?

Dr. William T. Boland, *Chemung:* I second it.

Speaker Lane: Is there discussion? If not, those in favor say "aye," any opposed "no." It is so ordered.

Section 107 (See 50)

Report of Reference Committee on Report of Council, Part IX: Cooperation Regarding Legislation

Dr. Murray: Resolution 59–18, "Cooperation

Regarding Legislation," introduced by Nassau County Medical Society:

> *Resolved,* that every component county medical society be urged not to make public a stand or an opinion contrary to that of the State Society unless such action has been discussed with the appropriate officer or committee of the Medical Society of the State of New York.

Your committee agrees in principle with this resolution and expresses the hope that such sentiments should be expressed in appropriate literature for distribution.

Mr. Chairman, I move the adoption of this portion of our report.

Dr. James I. Farrell, *Section Delegate:* I second that.

Speaker Lane: Is there any discussion? If not, all those in favor say "aye," contrary "no," if any. It is so ordered.

Section 108 (See 52)

Report of Reference Committee on Report of Council, Part IX: Amendment to General Municipal Law, Section 50-d

Dr. Murray: Resolution 59–20, "Amendment to General Municipal Law, Section 50-d," introduced by Medical Society of the County of Oneida:

> *Resolved,* that this House of Delegates mandate the Legislation Committee to request the introduction of an amendment to General Municipal Law, Section 50-d, to add after "Public Institutions operated by Municipal Corporations" the words, "and County and State Boards of Control," and, if it be found unsuitable to include county and State under the Municipal Law, then to request the introduction of the same legislation under the pertinent laws to cover county and State institutions; and be it further
>
> *Resolved,* that this House of Delegates mandate the Legislation Committee to request the introduction of legislation of similar import under the proper laws affecting charitable, educational, and eleemosynary institutions to the effect that physicians who work for the benefit of the public under their auspices and without compensation shall not be liable for damages for personal injuries due to alleged malpractice, but shall be considered as the employes of such charitable, etc., institutions which shall primarily assume such liability.

Your committee recommends that this be referred to the Council for confirmation and advice of counsel.

I move adoption of this portion of the report.

Speaker Lane: Is there a second?

Dr. Kottler: I second it.

Speaker Lane: Is there discussion? If not, those in favor say "aye," opposed "no." It is so ordered.

Section 109 (See 53)

Report of Reference Committee on Report of Council, Part IX: Amendment to Lien Law

Dr. Murray: Resolution 59–21, "Amendment to Lien Law," introduced by Medical Society of the County of Oneida:

> *Resolved,* that the House of Delegates of the Medical Society of the State of New York instruct the appropriate committee to seek legislation that would provide a lien in favor of physicians similar to the attorney's lien, making it mandatory for an attorney to disburse from any award, verdict, or settlement in favor of his client the just fees of the physicians who treated the plaintiff prior to his final settlement with his client; and be it further
>
> *Resolved,* that the committee of the Medical Society of the State of New York, acting in liaison with the New York State Bar Association, contact their lawyer counterparts and make every effort to obtain the Bar Association's endorsement of this proposed legislation.

Your committee approves this resolution and refers it to the Council for action.

I move adoption of this portion of the report.

Speaker Lane: Is there a second?

Dr. Michael J. Crino, *Monroe:* I second it.

Speaker Lane: You have heard the motion, and it has been seconded. Is there any discussion? If not, those in favor will say "aye," any opposed "no." It is so ordered.

Section 110 (See 54)

Report of Reference Committee on Report of Council, Part IX: Physician's Lien Under Workmen's Compensation Law

Dr. Murray: Resolution 59–22, "Physician's Lien Under Workmen's Compensation Law," introduced by the Medical Society of the County of Oneida:

> *Resolved,* that this House of Delegates instruct the Council to seek a legal remedy that would provide for a lien in favor of physicians similar to the attorney's lien, making mandatory the disbursement from any award, verdict, or settlement in favor of his client through a "third party" action, of such amounts as will permit the physician the usual fees for the services rendered the patient if said patient were not a claimant under the Workmen's Compensation Law; and be it further
>
> *Resolved,* that the Medical Society of the State

> of New York make every effort to obtain the New York State Bar Association's endorsement of this proposed legal remedy.

Your committee recommends approval of this resolution and refers it to the Council for action.

Mr. Speaker, I move adoption of this portion of the report.

Dr. Kottler: I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be adopted. Is there any discussion? If not, those in favor say "aye," any opposed "no." It is so ordered.

Section 111 (See 67)

Report of Reference Committee on Report of Council, Part IX: Keogh-Simpson Bill

Dr. Murray: Resolution 59–35, "Keogh-Simpson Bill," introduced by Dr. Thomas F. McCarthy, of the Bronx County Medical Society, as an individual:

> *Resolved,* that the Medical Society of the State of New York urge the favorable consideration by the Senate of this just bill; and be it further
>
> *Resolved,* that such action on the part of this Society be communicated to the appropriate Senate Committee, to Senators Javits and Keating, and to the President of the United States.

Your committee recommends approval of this resolution.

I move adoption of this portion of our report.

Dr. Jason K. Moyer, *Broome:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion? If not, those in favor will say "aye," those opposed "no." It is so ordered.

Section 112 (See 75)

Report of Reference Committee on Report of Council, Part IX: Lien Law

Dr. Murray: Resolution 59–43, "Lien Law," introduced by the Medical Society of the County of New York:

> *Resolved,* that the Committee on Legislation of the Medical Society of the State of New York cause to be introduced before the New York State Legislature a lien law for doctors of medicine similar to that currently in effect for hospitals; and be it further
>
> *Resolved,* that in lieu of the "fixed" or "standard" fee schedule, the proposed law be based on the principle that in order for the lien to become valid, the fee be "reasonable and proper for the services rendered"; and be it further
>
> *Resolved,* that the Committee on Legislation of the Medical Society of the State of New York bend every effort to secure the enactment of such a bill at the next legislative session.

This committee recommends approval of this resolution.

Mr. Speaker, I move adoption of this portion of our report.

Dr. Crino: I second it.

Speaker Lane: It has been regularly moved and seconded that this portion of the report be approved. Is there discussion? If not, all those in favor will say "aye," any opposed "no." It is so ordered.

Section 113 (See 80)

Report of the Reference Committee on Report of Council, Part IX: Improvement in Legislation Program

Dr. Murray: Resolution 59–48, "Improvement in Legislation Program," introduced by Nassau County Medical Society:

> *Resolved,* that this House of Delegates requests that there be devised and established a better means of communication between our representatives in Albany, the headquarters staff of the State Society in New York City, and the legislation committees of the several county societies.

Your committee approves this resolution in principle and refers it to the Council for implementation.

I move adoption of this portion of our report.

Speaker Lane: Is there a second?

Dr. Kottler: I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion? If not, those in favor say "aye," any opposed "no." It is so ordered.

Section 114 (See 83, 205)

Report of Reference Committee on Report of Council, Part IX: Relations of Medicine and Psychology

Dr. Murray: Mr. Speaker, may I ask for information on resolution 59–50. This was referred to our committee, and we took action on it, but information has come to me that it has been referred to another committee. Is that correct?

Speaker Lane: Number 59–50?

Dr. Murray: Yes, "Relations of Medicine and Psychology."

Speaker Lane: That apparently has been referred to the Reference Committee on Malpractice Insurance and Legal Counsel.

Dr. Murray: Then I will omit our report on that, with your permission.

Speaker Lane: That is all right. That will be deleted from your report then?

Dr. Murray: Yes.

Section 115 (*See 19*)

Report of Reference Committee on Report of Council, Part IX: Supplementary Report of the Committee on Legislation

Dr. Murray: Report 59–K, Supplementary Report of the Committee on Legislation: A copy of the supplementary report, Committee on Legislation, was distributed to the delegates as Report 59–K.

Your committee commends Dr. Blake, chairman, and his committee for this thoroughgoing report of the legislative picture. It is an indication of the methodical and thorough work of this committee under the splendid leadership of Dr. James M. Blake.

Mr. Speaker, I move the adoption of this portion of our report.

Speaker Lane: You heard the motion. Is there a second?

Dr. Douglas: I second it.

Speaker Lane: Is there discussion?

Dr. Arthur J. Bedell, *Past President:* Mr. Speaker and members of the House, on the first page of 59–K you will find under number 5 it says, "Optometrists—use of 'doctor.' " Now I say—and I speak for the ophthalmologists of this State—that we regret very much that that was allowed to be presented without any notification to any of our ophthalmologic societies. The optometrists of this country are waging a campaign not only in this State but throughout the country that they are not only equal but better than we who are trained M.D.'s in the art and science of medicine as directed to ophthalmologic subjects. I therefore wish to state for the ophthalmologists of the State that I object to the method of having that passed. This is simply a method of right of observation, which is too late, because the Governor signed the bill.

Speaker Lane: We regret that this has happened.

Section 116 (*See 20*)

Report of Reference Committee on Report of Council, Part IX: Supplementary Report of the Committee to Combat Cults

Dr. Murray: Report 59–L, Supplementary Report of the Committee to Combat Cults: A copy of the supplementary report, Committee to Combat Cults, was distributed to the delegates as report 59–L. Your committee notes with satisfaction also this advice on the subject of combating cults. I understand that the bill was not reported out, but there is no reason for us to relax our vigilance. I commend that report to your interest for reading, and, Mr. Speaker, I move the adoption of this portion of our report.

Speaker Lane: It has been moved and seconded that this portion of the report be approved.

I believe I forgot to ask for a vote on 59–K, which was moved and seconded that that portion of the report be approved. I did not ask for a vote on that. Is there discussion other than Dr. Bedell's remarks? If not, those in favor will say "aye," any opposed "no." It is so ordered.

Now your action on 59–L—

Dr. Thomas M. d'Angelo, *Queens:* In connection with 59–L, I think that we should not pass over very lightly that portion of the memorandum of the State Education Department, Board of Regents, in regard to the Regents taking no position on the merits of chiropractic, yet asking that chiropractors be licensed. I think this body of the Medical Society of the State of New York should send a memorandum to the Board of Regents explaining our position in this matter. It is up to them also to make some inquiry as to the merits and theory of chiropractic before offering a bill to license these individuals.

Speaker Lane: Do you wish to make a motion to that effect?

Dr. d'Angelo: I make a motion to that effect.

Speaker Lane: Amending the report of the reference committee.

Dr. d'Angelo: That this Medical Society of the State of New York send a memorandum to the Board of Regents concerning this matter.

Speaker Lane: Is there a second to Dr. d'Angelo's motion?

Dr. Bedell: Yes, I second it.

Speaker Lane: It has been moved and seconded as amended by Dr. d'Angelo. You heard the motion. Is there discussion on the amendment? If not, those in favor of the amendment of Dr. d'Angelo will say "aye," opposed "no." It is so ordered.

We now need action on Dr. Murray's motion as amended to approve 59–L. Is there further discussion? If not those in favor will say "aye," opposed "no." It is so ordered.

Section 117 (*See 90*)

Report of Reference Committee on Report of Council, Part IX: Administration of Physiotherapy by Written Prescription

Dr. Murray: Resolution 59–57, subject "Administration of Physiotherapy by Written Prescription," introduced by Dr. Henry Fleck, Section on Physical Medicine. With your permission, Mr. Speaker, I will read it:

> Whereas, physical therapy is a part of medical practice and can only be administered under the supervision of a licensed physician; and
>
> Whereas, the present State education law permits the practice of physical therapy on oral prescription of a duly licensed and registered physician; and

WHEREAS, such oral prescription is not in the best interest of the patient; now therefore be it hereby

Resolved, that the Medical Society of the State of New York, through its appropriate committee. take whatever steps necessary so that the present law covering the practice of physical therapy (Paragraph 6512, Article 4a, Number 2) be amended to read as follows:

"(2) The administration of physiotherapy by a duly licensed and registered physiotherapist upon the written prescription of a duly licensed and registered physician."

Mr. Speaker, your committee has considered this resolution. It recommends approval in principle and refers it to the Council for action. I move the adoption of this portion of our report.

SPEAKER LANE: Is there a second?

DR. FREDERIC W. HOLCOMB, *Trustee:* I second it.

SPEAKER LANE: Is there discussion? All in favor say "aye," any opposed "no." It is so ordered. The motion is carried.

DR. MURRAY: I move the adoption of this report as a whole as amended.

DR. J. STANLEY KENNEY, *Trustee:* I second it.

SPEAKER LANE: Is there discussion? If not, those in favor say "aye," any opposed "no." It is carried.

May I commend Dr. Murray's committee before he commends his own committee for their handling of this large number of resolutions we have under consideration. We hope for another year that there will be some means by which we can lighten the load on some of these committees and distribute the work a little bit more equitably.

DR. MURRAY: Mr. Speaker, your committee chairman wishes to thank the committee, consisting of Dr. James I. Farrell, Oneida, Section Delegate; Dr. Raymond J. Byron, Schenectady; Dr. Michael J. Crino, Monroe; and Dr. Albert H. Douglas, Queens, for their faithful contributions to the work of this committee and their participation in all of its deliberations.

SPEAKER LANE: Thank you, Dr. Murray.

Section 118 (See 87)

Change of Referral of Resolution

SPEAKER LANE: We have here resolution 59–54, about which we have had a little trouble. It is a little bit complicated in its context. We originally referred it to Part X, but this reference committee feels that this should be referred to Council, Part I. We will ask Council, Part I, to consider resolution 59–54.

We now have ready for report Council, Part XII, Dr. Waring Willis. I will ask Dr. Wurzbach to preside.

REFERENCE COMMITTEE, PART XII

Section 119 (See 51, 72)

Report of Reference Committee on Report of Council, Part XII: Convention

DR. WARING WILLIS, *Westchester:* Reporting on the convention, your reference committee has perused the report of the Convention Committee under the chairmanship of Dr. Samuel Z. Freedman, and notes with satisfaction the increase of 900 persons over the previous record total attendance of 1957. The quality of the exhibits last year was particularly worthy of praise. In the same vein, we recognize the fact that the exhibit figures for 1959 will exceed those of any other convention held in Buffalo. The report of Dr. Colgate Phillips on the increasing quality and number of scientific motion pictures made by our own members on original themes is noteworthy, and encouragement for the continuation of this trend is expressed.

The report of the scientific committee under the chairmanship of Dr. Alfred P. Ingegno is to be singled out for special mention because of the unusually large attendance at both the section and the general session meetings. This bespeaks the high quality of the presentations and the interest of the members.

Mr. Speaker, I move adoption of this part of the report.

VICE-SPEAKER WURZBACH: Is there a second?

DR. AARON KOTTLER, *Kings:* I second it.

VICE-SPEAKER WURZBACH: Is there any discussion? If not, all those in favor of the adoption of this portion of the report will say "aye," opposed "no." It is so ordered.

DR. WILLIS: We have two resolutions relative to the convention.

Resolution 59–19, introduced by the Medical Society of the County of Onondaga, subject "Location of the Annual Convention":

> *Resolved,* that all annual conventions of the Medical Society of the State of New York be held in New York City.

Your reference committee realizes that when the convention is held in New York City, the attendance is highest, the number of exhibitors is increased, and the facilities are much more satisfactory. In addition and of lesser importance is the fact that the convention financial deficit is less when the meeting is held in New York City. However, we feel that holding the convention occasionally in the upstate area increases good will and stimulates interest in the Medical Society. Several cities upstate are developing more adequate facilities for holding conventions. There are located upstate three important medical schools whose student bodies could very nicely profit by visiting a State Medical Society convention held in the area.

For the above reasons, your reference committee feels that occasionally the convention should be held in the upstate area and that the decision, the interval, and the timing should be left to the discretion of the Council.

For these reasons your reference committee offers a substitute resolution:

> *Resolved,* that most annual conventions of the Medical Society of the State of New York be held in New York City, and that occasionally the annual convention be held in the upstate area; and be it further
>
> *Resolved,* that the decision, the interval, and the timing and the place of the annual conventions be left to the decision of the Council.

I move the adoption of this substitute resolution and disapproval of the original resolution.

Vice-Speaker Wurzbach: Is there a second?

Dr. Joseph A. Wintermantel, *Cattaraugus:* I second it.

Vice-Speaker Wurzbach: Is there discussion?

Dr. Alfred P. Ingegno, *Councillor:* Mr. Speaker, I am in hearty accord with the resolution as presented. I would like, as I have in previous years, in accordance with the opinion expressed by the Scientific Program Subcommittee, to offer an amendment that the annual meetings of the House of Delegates be held separately in the various districts around the State, in the various areas of the State, at such times and places as may seem most practicable to the Council. I believe that there should be an opportunity for various regions of the State to see the House of Delegates in action and for the delegates to learn more about the various areas of the State. There are facilities that will accommodate the House in various areas of the State with great ease. I do think that a session of the House of Delegates apart from the scientific program would do no harm to the convention. There is no real connection between the two.

We have studied the matter carefully and find that almost invariably when the House of Delegates has finished its work, the delegates promptly leave. They do not stay for the most part except those that may be participating in a section meeting or a session. They do not stay for the scientific program. I think keeping the scientific program separate would permit the members to attend the scientific program without being burdened by the duties of the House of Delegates at the same time.

My amendment would be that the annual meetings of the House of Delegates be held separately in the various areas of the State at such times and places as may seem most practicable to the Council.

Vice-Speaker Wurzbach: Is there a second?

. . . The motion was seconded . . .

Delegate: May I speak on the original motion?

Vice-Speaker Wurzbach: No, there is an amendment. Is there any discussion on the amendment?

Dr. Arthur J. Bedell, *Past President:* Mr. Speaker and members of the House, for many years I was the chairman of the scientific committee of this State Society. One of the surprising things was how few delegates ever took an interest in knowing anything about the scientific side of medicine. The attendance of the delegates at the meetings was very limited. Now if you were to adopt this resolution, even those few—and we trust more and more of you will become interested in scientific medicine—would never show up. Further than that, the few scientific men who came down to see this august body in action might never have the realization of how hard you work and how little you do. (*Laughter*)

I therefore move, sir, that this resolution be not adopted or rather that the amendment be not adopted.

Dr. Walter T. Heldmann, *Richmond:* As I understand this, it is just a resolution of the reference committee, and this is an amendment to their resolution. I rise to a point of order. Article VIII of the Constitution says: "There shall be an annual meeting of the Society and of the House of Delegates to be held at a time and place designated by the House of Delegates" and not by the Council, so I submit that this must be introduced as an amendment to the Constitution and not as a committee report.

Dr. Donald C. Walker, *Schenectady:* Furthermore, it seems to me that the amendment has no relation to the original intent of the motion as brought in by the reference committee and is out of order anyhow.

Vice-Speaker Wurzbach: The Speaker rules that this is a matter of Constitution and Bylaws and is out of order at the present time. We are now back to the original motion as presented by Dr. Willis, a substitute resolution.

Dr. Henry Vinicor, *St. Lawrence:* I think my county is about the farthest from New York City. We are approximately 400 miles from New York, and we would genuinely feel that we would like to have all meetings in New York City. It seems strange that the groups of people that I have talked to from upper New York State, even a few from Erie County and certainly those from around Syracuse, want to have all meetings held in New York City, and apparently possibly some of the people from New York City would like to get away from there. We have great fishing facilities in my county, but we think for a convention New York City is better.

Dr. Samuel Z. Freedman, *Assistant Treasurer:* This convention up in Buffalo is the first one in four years. In other words, the last convention upstate was in 1955 because the sesquicentennial celebration was held in 1957. For that reason we had a four-year interval in having a convention upstate. I would only suggest that rather than leave the interval of time between conventions to the Council, an expression of opinion be given here with a definite time interval if so desired by this House. In other words, I would rather see that the House express its opinion whether, in the first place, it does want all conventions to be held downstate, and second, if it decides in favor of the substitute resolution brought in by the reference committee, that that be amended to specify a time interval. In short, I would rather have an expression on this, an expression of opinion, from the House rather than throw it into the lap of the Council.

Vice-Speaker Wurzbach: Do you wish to make an amendment on that point?

Dr. Heldmann: This entire discussion is out of order. This House can only set the time and place of the next convention, not for future conventions, unless you amend your Bylaws.

Vice-Speaker Wurzbach: Article VIII states: "*Meetings*—There shall be an annual meeting of the Society and of the House of Delegates to be held at a time and place designated by the House of Delegates."

Dr. William B. Rawls, *New York:* Mr. Speaker, may I offer an amendment to Dr. Willis' report. When he says, "left to the discretion of the Council," we cannot do that unless we change the Constitution and Bylaws. I therefore offer this amendment, that we keep it that all future meetings of this Society be held in the City of New York unless otherwise specified by the House of Delegates, and in such instances at least a two-year notice be given of such change of place of meeting. That would give the State Society personnel time to arrange for this without having to push on another one.

Vice-Speaker Wurzbach: You bring that in as an amendment to the first resolved. Is there a second?

. . . The amendment was seconded . . .

Vice-Speaker Wurzbach: The amendment is open for discussion. The amendment is that the first resolved shall read:

> *Resolved,* that most annual conventions of the Medical Society of the State of New York shall be held in New York City unless otherwise specified by the House of Delegates and two-year previous notice be given thereof.

Dr. Robert F. McMahon, *Onondaga:* Dr. Rawls said "all" not "most." He said all meetings, not most meetings.

Vice-Speaker Wurzbach: That is right:

> *Resolved,* that the annual convention of the Medical Society of the State of New York shall be held in New York City unless otherwise specified.

Dr. McMahon: You said "most."

Vice-Speaker Wurzbach: That was taken out. Are you ready for the question? All those in favor of the amendment say "aye," opposed "no." The amendment is carried.

Now the motion as amended is before the House. Are you ready for the question? All those in favor of the adoption of the motion as amended will say "aye," opposed "no."

I will ask that you stand. Those in favor will please stand. All right, will you gentlemen be seated, please. Now those opposed will please stand. The noes were vociferous, but the motion is carried.

Now continue, Dr. Willis.

Dr. Willis: Resolution 59-40, "Date of Meeting of the House of Delegates":

> *Resolved,* that subsequent meetings of the House of Delegates of the Medical Society of the State of New York begin on Monday as in the past and continue until the business of the House and the annual meeting have been completed; and be it further
>
> *Resolved,* that meetings of the House of Delegates should not begin on Saturday or Sunday.

Your reference committee sees much merit in holding the House of Delegates meeting on Saturday and Sunday both to conserve working days for the delegates and to free the delegates for attendance at the scientific sessions. We also feel that, if possible, the scientific sessions should begin Monday and end Wednesday, if possible. We definitely consider that to change the dates of meeting at this time before we have completed even one session is inadvisable. For this reason your reference committee recommends disapproval of this resolution.

I move acceptance of this part of the report.

Dr. Kent W. Jarvis, *Oswego:* I second it.

Vice-Speaker Wurzbach: It is open for discussion.

. . . There were calls for the question . . .

Vice-Speaker Wurzbach: No discussion; all those in favor of the motion for disapproval of the resolution say "aye," opposed "no." The motion is carried accepting the committee's recommendation of disapproval.

Dr. Freedman: This now having passed, see if I understand it. The chairman of the reference committee has said that the scientific meeting shall start on Monday and finish on Wednesday.

Dr. Willis: That was just a recommendation.

Dr. Freedman: Just a recommendation?

Dr. Willis: Yes. The reason for that was that several members who came to the reference committee stated that they had to stay until Thursday afternoon to go to a particular section meeting. We thought that if it could be condensed a bit it might help. That is just a recommendation. It might not be feasible.

Section 120

Report of Reference Committee on Report of Council, Part XII: Office Administration and Policies

Dr. Willis: Your reference committee has received the report of the Committee on Office Administration and Policies with much satisfaction. Your committee draws attention to the fact that you now have a headquarters office of which you can be proud and which is well worth a visit when you are next in New York City. We also join in welcoming Dr. Herbert T. Wagner and commend him to this House for its cooperation and support. He has taken hold of Society affairs in an unusually efficient manner in the short time he has been with us.

We also join with the committee in regretting that our revered secretary, Dr. W. P. Anderton, whose courtesy and patience are well known by every member of this House, will retire at the expiration of his term of office. His unstinting efforts for the welfare of the Medical Society of the State of New York will always be remembered. On behalf of this House of Delegates, your reference committee wishes Dr. Anderton the comfort and satisfaction that come with a task well done.

Your reference committee strongly urges the House of Delegates to follow the suggestions of the Committee on Office Administration and Policies and appoint a committee of similar composition for the coming year.

I move adoption of this portion of the report.

Vice-Speaker Wurzbach: Is there a second?

Dr. Kottler: I second it.

Dr. Bedell: I move you, sir, that this House rise in visible expression of our gratitude for the service rendered this organization by Dr. Anderton.

. . . The members arose and applauded . . .

Secretary Anderton: Thank you all very much, from the bottom of my heart.

Vice-Speaker Wurzbach: Is there any further discussion? If not, all those in favor of the adoption of this portion of the report say "aye," opposed, if any, "no." This portion of the report is adopted.

Continue, Dr. Willis.

Section 121 (See 99)

Report of Reference Committee on Report of Council, Part XII: Belated Bills

Dr. Willis: With reference to the voucher received from Dr. G. Rehmi Denton, Albany, in the amount of $36.60, covering expenses of attending a meeting of the Ad Hoc Committee on Labor Unions and Industrial Health Centers, in New York City, May 12, 1958; a voucher in the amount of $65.51 received from Dr. Lyman C. Boynton, Monroe, covering expenses of attending a meeting of the Subcommittee on Public Medical Care in New York City, October 24, 1958; a voucher in the amount of $87.50 received from Dr. James T. Carroll, Rochester, covering expenses incurred in attending a meeting of the Committee on Public Relations, held on October 24, 1958; a statement covering expenses of the 1957–1958 annual meeting of the Seventh District Branch to the amount of $369.14—your reference committee recommends that each voucher be paid.

Mr. Speaker, I move adoption of this portion of the report.

Dr. Thomas M. d'Angelo, *Queens:* I second it.

Vice-Speaker Wurzbach: Is there discussion? If none, all in favor of the motion will say "aye," opposed "no," if any. It is adopted.

Section 122

Report of Reference Committee on Report of Council, Part XII: Nursing Education

Dr. Willis: Your reference committee approves the report of the Nursing Education Committee and wishes further to emphasize to this House the suggestion of the committee that physicians take every opportunity to discuss nursing careers with all young people of high school age with whom they come in contact and serve as speakers and discussion leaders at Career Day programs. The work of the Auxiliary in providing nursing scholarships and loans, promoting Future Nurses Clubs, and participating and organizing Career Day activities should be especially singled out for commendation.

I move adoption of this portion of the report.

Dr. Herbert H. Bauckus, *Trustee:* I second the motion.

Vice-Speaker Wurzbach: Is there discussion? If not, all in favor of the adoption of this portion of the report will say "aye," contrary "no." It is adopted.

Section 123

Report of the Reference Committee on Report of Council, Part XII: 1958 Management Survey Report

Dr. Willis: Your reference committee has carefully considered the report of the Ad Hoc Committee to Study the 1958 Management Survey Report.

We compliment Dr. Azzari and his committee for their masterful handling of the lengthy, important, and complicated document.

We agree that most, if not all, of the suggestions and recommendations made in the report may well be adopted by the Medical Society of the State of New York, but we also agree with the Survey Committee that to implement them all within the space of one year could very well be disastrous to the orderly processes of the Society.

The reference committee considers it expedient to enact those recommendations and suggestions which we believe can be accepted by the majority of the delegates without reservation, preferring to leave for further study and consideration those more controversial matters. We earnestly request each delegate leaving this convention to carry those items not enacted for immediate implementation by this House to his own county society for further consideration and opinion, possibly to return as resolutions before the next House of Delegates.

Assuming that each delegate is familiar with the Survey Report, and in order to highlight those portions of the report considered unacceptable by the Survey Committee for enactment at this session, your reference committee will discuss in detail only those recommendations and suggestions not acceptable to the Survey Committee.

Recommendations I to VII inclusive are very much as stated in the Survey Report and have been recommended by the Survey Committee. Your reference committee is in complete agreement and recommends their adoption. Mr. Speaker, I so move.

VICE-SPEAKER WURZBACH: Is there a second?

DR. WALTER W. MOTT, *Trustee:* I second the motion.

VICE-SPEAKER WURZBACH: Is there any discussion? If not, all in favor of the adoption of this portion of the report say "aye," opposed "no." This portion is adopted.

DR. WILLIS: Recommendation VIII: Let the executive director appoint a personnel director. Your reference committee agrees with the executive director and the report of the Survey Committee that an officer with personnel matters as full-time duty seems unnecessary. It is recommended that the duties be delegated as part of the activities of some member of the office staff. We are convinced that realistic personnel policies re-enacted from time to time to meet changing concepts are essential to provide an efficient headquarters staff loyal to and enthusiastic about the Medical Society of the State of New York. We recommend acceptance of this part of the report, and I so move.

VICE-SPEAKER WURZBACH: Is there a second?

DR. MOTT: I second it.

VICE-SPEAKER WURZBACH: Is there discussion? If not, all in favor of the adoption of this portion of the report say "aye," opposed "no." This portion is adopted.

DR. WILLIS: Recommendations X, XI, XII, XIII, and XIV—the Survey Committee approved this portion of the Survey Report and in several instances either added further emphasis or pointed out existing inconsistencies which must be reconciled in order to carry out the letter and spirit of the recommendations.

Your reference committee adds its voice to that of the Survey Committee and recommends acceptance and implementation. I move the approval of this part of the report.

VICE-SPEAKER WURZBACH: Is there a second?

DR. J. STANLEY KENNEY: *Trustee:* I second it.

VICE-SPEAKER WURZBACH: Is there discussion on this portion of the report? If not, all those in favor say "aye," opposed "no." This portion of the report is adopted.

DR. WILLIS: Recommendation XVII, employ a publications consultant for a thorough study of the JOURNAL, *Directory*, and *Newsletter*. The Survey Committee opposes this action at the present time and suggests referring the matter to the executive director, the editor, and the Publication Committee for study and advice.

Your reference committee considers that the NEW YORK STATE JOURNAL OF MEDICINE has improved greatly in recent years but still is far from attaining the place among American medical journals that should be expected of a publication representing the medical profession of the State of New York. The shortcoming seems mostly in the medical content, rather than in its format, advertising, and finances. Much time and effort are being expended by the editorial staff to convince those in research and teaching that the NEW YORK STATE JOURNAL OF MEDICINE is a suitable outlet for their publications. In view of the load that will descend on the officers and staff of the Society this year, your reference committee feels inclined to accept the recommendation of the Survey Committee, and I so move, Mr. Speaker.

DR. PETER J. DI NATALE, *Councillor:* I second it.

VICE-SPEAKER WURZBACH: Is there discussion on this portion? Hearing none, all those in favor say "aye," opposed "no." It is so ordered.

DR. WILLIS: Recommendations XVIII and XIX, recommended by the Survey Committee without change; in fact, the executive director is already studying methods of implementation. Your reference committee endorses this action, and I so move.

VICE-SPEAKER WURZBACH: Is there a second?

DR. MOTT: I second it.

VICE-SPEAKER WURZBACH: Is there discussion? Hearing none, all those in favor of adopting this portion of the report will say "aye," those opposed, if any, "no." This portion of the report is adopted.

DR. WILLIS: Recommendation XX, fiscal setup under the executive director: The Survey Committee recommends the implementation of these changes with minor exceptions:

Item 2, the Survey Committee believes no change should be made in the present Bylaws, Chapter VII, Sections 7, 8, 9, which require two signatures for checks on the Society's treasury account, either the treasurer or assistant treasurer and either the secretary or assistant secretary.

Item 3, "Set up a separate bank account in the secretary's name, preferably in a separate bank, to be the executive director's revolving fund. Checks on this fund are to be signed by the executive director without cosignature." The Survey Committee recommends amending this section and implementing it as follows: Set up separate bank accounts in the secretary's name to be the executive director's revolving fund. Checks on these funds to be signed by the executive director or, in his absence, by an alternate who shall be selected by the Council and Trustees.

Item 4, change word "checks" for the words "single check" and substitute the word "funds" for the word "fund."

Item 5, word "fund" to be changed to word "funds."

Your reference committee sees very little difference between the Survey Committee recommendations and the intent of the Survey Report. For that reason we agree with the modification and present it to you for adoption. Mr. Speaker, I so move you.

VICE-SPEAKER WURZBACH: Is there a second?

DR. FREDERIC W. HOLCOMB, *Trustee:* I second it.

DR. RENATO J. AZZARI, *Trustee:* I believe that the chairman of the reference committee is in error when he states that funds should be set up in the name of the secretary. It should be in the name of the Society.

DR. WILLIS: Thank you! I will make that change.

VICE-SPEAKER WURZBACH: Is there any further discussion? If not, all those in favor of adopting this portion of the report say "aye," those opposed "no." This portion is adopted.

DR. WILLIS: Recommendations XXI and XXII approved by the Survey Committee and partially implemented. Your reference committee recommends approval of these recommendations, and I so move.

VICE-SPEAKER WURZBACH: Is there a second?

DR. KENT W. JARVIS, *Oswego:* I second it.

VICE-SPEAKER WURZBACH: Is there any discussion? If not, all those in favor say "aye," opposed "no." It is carried, and this portion of the report is adopted.

DR. WILLIS: Mr. Speaker, I move the acceptance of the recommendations with that one amendment.

VICE-SPEAKER WURZBACH: Is there a second?

DR. BEDELL: I will second it.

VICE-SPEAKER WURZBACH: Is there discussion? No discussion, all those in favor say "aye," opposed "no." The report as a whole to this point is adopted.

DR. WILLIS: Reporting on the suggestions:

I. While the committee report gives no reason for not implementing this suggestion to redefine the objectives of the Society, we feel that they must be in accord with the spirit and purpose of the suggestion. However, the objectives are not at present hindering the Society from fulfilling its functions to the people of the State and, therefore, could be left in abeyance at present. Your reference committee cannot strongly disagree and recommends the Survey Committee's report of "no action." I so move.

VICE-SPEAKER WURZBACH: Is there a second?

SECRETARY ANDERTON: I second it.

VICE-SPEAKER WURZBACH: Is there discussion? If none, all those in favor say "aye," opposed "no." This portion of the report is adopted.

DR. WILLIS: Suggestions II, III, IV, V, and VI: Streamline the government of the State Society by electing one governing body instead of two. Divided opinion in various areas of the State has been recognized by the Survey Committee as reason for returning this suggestion for further study. Many feel that the present dual board is cumbersome, duplicating, inefficient, and expensive and should eventually be abolished. This is a drastic step and should not be done until a blueprint of functions and organization of a single board has been drawn up. Suggestions are made elsewhere which have bearing on this matter and should be resolved first. While we strongly urge further consideration of this suggestion at another convention, your reference committee feels that the recommendations of the Survey Committee to return this suggestion for further study should be adopted, and I so move.

VICE-SPEAKER WURZBACH: Is there a second?

DR. KOTTLER: I second it.

VICE-SPEAKER WURZBACH: Is there any discussion? If not, all those in favor of adoption of this part of the report say "aye," opposed "no." This part is adopted.

DR. WILLIS: Suggestions VII, VIII, and IX. Approval recommended by the Survey Committee except for change in the wording "let Trustees and Executive Committee" be changed to read, "let Council, Trustees, and Executive Committee." This was concurred in by your reference committee and is recommended to you for adoption. I so move.

DR. KENNEY: I second it.

VICE-SPEAKER WURZBACH: Is there discussion? If not, all those in favor of the adoption of this portion of the report say "aye," opposed "no." This portion is adopted.

DR. WILLIS: Suggestion X: Approved by Survey Committee with the wording "Prepare special materials to show doctors on salary what the A.M.A. means to them and why they, equally with the practitioner, should be members," amended to read, "To prepare special materials or secure them from the A.M.A., urging all doctors of medicine not now members of the A.M.A. to become members of the A.M.A." This action is recommended by your reference committee for approval, and I so move.

Vice-Speaker Wurzbach: Is there a second?

Dr. Mott: I second it.

Vice-Speaker Wurzbach: Is there any discussion? All those in favor of the adoption of this part of the report say "aye," opposed "no." This portion is adopted.

Dr. Willis: Suggestions XI, XII, XIII, and XIV: These suggestions were approved by the Survey Committee, and concurred in by your reference committee. I move their adoption.

Dr. Kottler: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If none, all those in favor of the adoption of this portion of the report will say "aye," those opposed, if any, "no." This portion is adopted.

Dr. Willis: Suggestion XV: To abolish "bullet voting." This suggestion was rejected by the Survey Committee on the constitutional grounds that the right to vote was also the right not to vote. Certainly in the political structure of the State this is an axiom, but likewise in such large and diversified numbers "bullet voting" could never be organized on a practical basis. However, in smaller groups, among which we include the House of Delegates of the Medical Society of the State of New York, a minority could, by organizing delegations to bullet vote, conceivably elect candidates to some offices. Your reference committee feels that each delegate to this august body comes with an implied pledge to vote his best judgment for every office. Accordingly, we recommend rejection of the Survey Committee's report of disapproval. Mr. Speaker, I so move.

. . . The motion was seconded . . .

Dr. Bedell: Does that mean we abolish it?

Vice-Speaker Wurzbach: Is there any discussion on this?

Dr. Heldmann: By "bullet voting," Mr. Speaker, I suppose you mean only voting for one or two men when there are positions open for five or six in the same office. What I would like to know when we are voting for delegates to the A.M.A. convention, for instance, if a man inadvertently only votes for eight men instead of nine as he should, would that be considered bullet voting, and would his ballot be thrown out? I think some provision should be made for that type of mistake. It can be made. Would you consider that bullet voting? I don't know who would make such a ruling.

Dr. Willis: I would like to hear what counsel says on that. My understanding would be that would be a voided ballot on the basis of bullet voting.

Mr. William F. Martin, *Counsel:* I would say if they can't count up to nine, the ballot should be voided. Either you are going to have a full ticket voted for or not. You will have to have a simple rule that a ballot for nine is valid and for less than nine is invalid. The practice has been in the past to put any number from one to eight, sometimes one or two, and I take it that is what you are trying to correct. You could not say if it is three or four, it is valid. It has to be either a full vote or none.

Dr. Louis H. Bauer, *Past President:* If I understand this correctly, the reference committee is recommending that we adopt this resolution which is in favor of barring bullet voting. Is that correct?

Dr. Willis: That is correct.

Dr. Bauer: I don't believe that that is American. I think every person has a right to vote as he sees fit. I agree that every delegate ought to be fair about this, and he should vote for every office and for the number of people who must be elected, but I can conceive, particularly in this selection of delegates to the American Medical Association, that some of the men may not know who would be the best candidates other than perhaps half a dozen of them, and it would be very difficult for them to make a choice beyond that half dozen. I think to throw out that ballot just because he did not vote for a full nine would result in a lot of injustice, and I certainly hope that this resolution will not pass.

Dr. Ezra A. Wolff, *Assistant Secretary:* I want to rise to support Dr. Bauer's point of view. I objected in the committee to this proposition. First of all, the connotation "bullet ballot" is a bad one. This is a shibboleth that has a bad reputation. Actually it has been said that the minority can impose its will on the majority by organization. That is the fault of the majority. A lethargic majority deserves the type of electorate it gets and deserves the officers it gets. If the majority is not willing to go out and vote its own will, even a minority can take over in a democracy. It is incumbent on them to take over and exercise the right to vote. I agree the right to vote is the right not to vote. If I am only interested in one candidate, why I vote for one. Therefore, I am opposed to this proposition and approve the report of the Survey Committee.

Vice-Speaker Wurzbach: Is there further discussion? You are voting on this presentation. If you vote in favor of the report of the reference committee, you void all but completed ballots. Is that understood? All those in favor of the report of the reference committee say "aye," opposed "no." This motion is lost.

Dr. Willis: Suggestions XVI and XVII: Approved by the Survey Committee and adoption concurred in by your reference committee. Mr. Speaker, I so move.

Dr. John M. Galbraith, *Councillor:* I second that.

Vice-Speaker Wurzbach: Is there discussion? All those in favor of adopting this portion of the report say "aye," those opposed "no." It is carried, and this portion of the report is adopted.

Dr. Willis: Suggestion XVIII: Concerning retirement age limits. The Survey Committee recommended deferring action until after further study. Your reference committee agrees and advises adoption of this action. Mr. Speaker, I so move.

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of adoption of this portion of the report say "aye," opposed "no." This portion is adopted.

Dr. Willis: Suggestions XIX, XX, XXI, XXII, and XXVII: These suggestions concern commission and committee setup. The House of Delegates approved yesterday an amendment to Chapter IV, Section 10, of the Bylaws to eliminate the requirement that the chairman of a Council committee shall be a member of the Council. A further recommendation was made that, as a start, a Commission on Medical Services should be organized, and that this commission should comprise the Committee on Economics, the Committee on Questions of Ethics, the Committee on Hospital and Professional Relations, the Committee on Industrial Health, the Committee on Workmen's Compensation, the Committee on Rural Medical Service, and the Committee on Medical Care Insurance. It was felt that if this could be carried out, we would all get an opportunity to evaluate its effectiveness and possible superiority over our present system of committees. After this test the Survey Committee feels that we would be in a much better position to judge the advisability of organizing other commissions as outlined in the Survey Report.

Dr. Wolff: Mr. Speaker and members of the House, the original intent of the Survey Report was that commissions would be meant to streamline the activities of the Society, to make them more efficient. In a sense the more you condense the controlling group, the more efficient the organization becomes. So as a House of Delegates we function with, as Dr. Bedell suggested, a relative amount of inefficiency. Our Council is a smaller group and has been accused of being not so efficient as it might be, and it has therefore been suggested that we combine the Council with the Trustees and form a still smaller group. If we are to carry that reasoning to its ultimate, we will have a single man who will be a dictator, who will be a most efficient man because when he says something, it will be carried out. Incidentally, I submit while it is efficient, it is not democracy.

I suggest too that the commission will tend rather than to increase efficiency to decrease it since it will interpose an additional agency into the enactment of any principle or judgment that this Society may care to take. Thus if an idea is introduced to the Society at the House here, it goes to the Council, it will then go to the commission, which will then refer it to the specific committee. The committee will now be in a sense a subcommittee that will study it, report back to the commission, which will report back to the Council, the Council then report back to the House. By that time the subject matter may or may not have any utility.

I suggest that we have now a very representative Council with its own committees that report directly. It would be in my estimation very unwise to submerge such important committees as the Economics Committee, the Workmen's Compensation Committee, and the Committee on Medical Care Insurance to the status of subcommittees. I submit that a single chairman cannot fully report all of the feelings of those committees if they are relegated to the position of subcommittees. I think that that will not only decrease the efficiency but will make the members of the Society less aware of what is going on within the Society unless they are a lot more intelligent than they have been in the past. Therefore, fellow delegates, I am not in favor of the committee's report and suggest that it be voted down.

Dr. Willis: Mr. Speaker, in reply to Dr. Wolff, we are not recommending in this anything about combining the Trustees and the Council, and so forth.

Dr. Wolff: I understand that.

Dr. Willis: The second part of it is that this is entirely an experiment for a year. The Medical Society of the State of California and the Medical Society of the State of Pennsylvania have in the last few years undergone reorganization, and they have put in a commission form of doing business. They were contacted by the management consultants. They are enthusiastic about the commission form of management. They cannot speak too highly for it. You have complete reports on that in your Survey Report. While they are all very enthusiastic about it, and it looks like a very good setup, we feel that before it is applied to the Medical Society of the State of New York, it should have some trial. It should have a trial before we throw it out. It should have a trial before we adopt it. This suggestion is to put in one commission for this next year. In due time reports will be made to this House of Delegates on how it is functioning. On the merits you can then adopt it or defeat it. This is merely the appointment of a commission for a limited time.

Dr. Thurman B. Givan, *Past President:* Mr. Chairman and members of the House, as a member of this Survey Committee we took all those things into consideration over a long period of time. When you come down to the facts, while it is not called a commission, we have what practically amounts to one that has been very efficiently run for many years in our own Society, namely, the Public Health and Education Committee, which has subcommittees, very important ones, that are functioning wonderfully, under the chairmanship of Dr. Norman Moore, so it has already had a trial with success in this State. I hope that this trial commission is supported by this House.

Vice-Speaker Wurzbach: Is there any further discussion?

Dr. Willis: There is one other point I think should be brought to the attention of this House, and that is by having commissions it does not prevent the chairmen of committees from coming before the Council and giving their report in person. That is specifically stated in the Survey Report that the committee chairman can come, when he is requested by the Council and when he has a report to make that he thinks is important enough to the Council, to give his report in person, so he is not precluded from contact with the Council and therefore from this House of Delegates.

Vice-Speaker Wurzbach: Is there further discussion?

Dr. Wolff: In rebuttal, sir, if I may just have a word, Dr. Givan already suggests we have a commission in the form of the Public Health and Education Committee. I disagree with him to the extent that I do not feel that the subcommittees of the Public Health and Education Committee are the equivalents of the committees that would be incorporated into this presently suggested commission. The Subcommittee on the Hard of Hearing and the Deaf hardly would carry equal weight with the Economics Committee, the Ethics Committee, or the Workmen's Compensation Committee.

I suggest too that while it is possible, as Dr. Willis says, that chairmen of committees may on occasion be asked to attend, they will not be available for consultation at all times as at present, and it will, I am sure, interfere with the work of the Council rather than add to its efficiency.

Vice-Speaker Wurzbach: Is there further discussion? If not, gentlemen, the question before you is if you vote in the affirmative, there shall be formed a commission composed of the Committee on Economics, Committee on Questions of Ethics, Committee on Hospital and Professional Relations, Committee on Industrial Health, Committee on Workmen's Compensation, Rural Medical Service Committee, and the Committee on Medical Care Insurance. Are you ready for the question? All in favor of the adoption of the recommendation of the reference committee will say "aye," those opposed "no." The motion is carried.

Dr. Willis: Suggestions XXIII, XXIV, XXV, XXVI, XXVIII, and XXIX: These were recommended by the Survey Committee for approval, and your reference committee gives them to you for adoption. I so move.

Vice-Speaker Wurzbach: Is there a second?

Dr. Wolff: I second it.

Vice-Speaker Wurzbach: Is there any discussion? All those in favor say "aye," those opposed "no." This portion is adopted.

Dr. Willis: Suggestion XXX: This suggestion was rejected in favor of requesting the Planning Committee to review its voluminous material on the subject with the object of making recommendations. Your reference committee is in accord with this action. I so move.

Dr. James Greenough, *Trustee:* I second that.

Vice-Speaker Wurzbach: Is there any discussion? All those in favor of this action say "aye," opposed "no." It is carried.

Dr. Willis: Suggestions XXXI, XXXII, and XXXIII: The Survey Committee approved these suggestions, but noted they can only be fully implemented when the field directors have been appointed. Your reference committee recommends approval, and I so move.

Vice-Speaker Wurzbach: Is there a second?

Dr. William T. Boland, *Chemung:* I second it.

Vice-Speaker Wurzbach: Is there any discussion? If none, all those in favor of the motion say "aye," opposed "no." This portion of the report is adopted.

Dr. Willis: Suggestion XXXIV: Employ an outside public relations agency. The Survey Committee is skeptical about this suggestion because of previous poor results. Your reference committee was of the same opinion and wishes to emphasize too the contention that medical public relations are based at the doctor's office and rise and fall on the patient-doctor relationship.

Your reference committee recommends adoption of the report of the Survey Committee on this item. I so move.

Vice-Speaker Wurzbach: Is there a second?

Dr. Thomas M. d'Angelo, *Queens:* I second it.

Vice-Speaker Wurzbach: Is there discussion? All in favor of this portion of the report say "aye," opposed "no." This portion of the report is adopted.

Dr. Willis: Suggestion XXXV: Join the *Newsletter* to the Journal. This suggestion was disapproved by the Survey Committee, but they felt that the *Newsletter* might be published more frequently. Your reference committee supports the Survey Committee and recommends disapproval of the suggestion. I so move.

Dr. Holcomb: I second it.

Vice-Speaker Wurzbach: Is there discussion?

Dr. Freedman: In doing that, I assume that the reference committee goes along with the idea that the *Newsletter* might be published more frequently. Is that correct?

Dr. Willis: Yes.

Dr. Freedman: I think it should be brought to the attention of the House that some of these things cost money. Last Friday night the Budget Committee of this Society spent at least five and one-half hours going over the budget for 1959, and if nothing else came out of it, we came away with the idea that the House very often makes suggestions or recommendations which cost a lot of money, and then when we have to come up with a request for an increase in dues, which I think we will have to next year, that is also unpopular.

I assume that if we passed a recommendation by the reference committee, this does not commit the Council to specific action. Is that correct?

Vice-Speaker Wurzbach: That is correct. It says "might."

Dr. Freedman: The word "might" would cover it. I only asked the question in order to emphasize that when it comes up in the Council, it shall not be considered as a mandate. It costs money if you are mandating.

Vice-Speaker Wurzbach: Is there any further discussion? Hearing none, all those in favor of the adoption of this portion of the report say "aye," opposed "no." This portion is adopted.

Dr. Willis: Suggestion XXXVI: The Survey Committee approved this suggestion with the exception of the suggestion for supplying a small Society periodical to patients for use in waiting rooms. Your reference committee agrees that such a periodical, unless carefully planned, could do much more harm than good and recommends the action of the Survey Committee. I so move.

Vice-Speaker Wurzbach: Is there a second?

. . . The motion was seconded . . .

Vice-Speaker Wurzbach: Is there any discussion? If not, all in favor of the adoption of the report say "aye," opposed "no." This portion of the report is carried.

Dr. Willis: Suggestion XXXVII: Point out to the public the cost of medical education. Your reference committee agrees with the Survey Committee that this approach is liable to produce antagonism and recommends the action of disapproval, and I so move.

Dr. Joseph A. Lane, *Speaker:* I second that.

Vice-Speaker Wurzbach: Is there any discussion? All in favor of this portion of the report say "aye," those opposed "no." This part of the report is adopted.

Dr. Willis: Suggestion XXXVIII: Produce syndicated articles on medicine throughout the State. The Survey Committee felt that these articles were difficult to produce and liable to have a deleterious effect, with which your reference committee concurs and recommends disapproval of the suggestion.

Mr. Speaker, I so move.

Dr. Mott: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of the adoption of this portion of the report say "aye," those opposed "no." It is so ordered.

Dr. Willis: Suggestion XXXIX: Try to prevent doctor's endorsements of various products. Disapproved by the Survey Committee as conflicting with action already being taken by the American Medical Association. This action has been supported by your reference committee for the same reasons, and I so move. The American Medical Association has a program to this effect. It was felt for the State to take it on would be just duplicating the program.

Vice-Speaker Wurzbach: Is there a second?

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of the adoption of this portion of the report say "aye," opposed "no." It is adopted.

Dr. Willis: Suggestion XL: Arrange one program a year in each county medical society and possibly in each district branch to be devoted to public relations problems. The Survey Committee recommended no action pending a study of the Planning Committee's minutes on this subject. Your reference committee concurs in this recommendation, and I so move.

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all those in favor of adopting this portion of the report will say "aye," opposed "no." This portion of the report is adopted.

Dr. Willis: Suggestions XLI and XLII: Investigate closed television or radio programs between Society and county societies. The Survey Committee recommends further study by the Public Relations Committee, and your reference committee so recommends.

Mr. Speaker, I move adoption of this recommendation.

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of adopting this portion of the report say "aye," opposed "no." This portion of the report stands adopted.

Dr. Willis: Suggestion XLIII: Develop closer relationships between the Public and Professional Relations Bureau and the legislation activities of the Society, including the Albany office. Suggest Public Relations and Legislation belong together under a Commission on Public Policy. The Survey Committee approves the first sentence but disapproves the second pending further study of committees and commissions. Your reference committee recommends this action to you, and I so move.

Vice-Speaker Wurzbach: Is there a second?

Dr. Kenney: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, those in favor of adoption of this part of the report will say "aye," those opposed "no." It is carried, and this portion of the report is adopted.

Dr. Willis: Suggestion XLIV: With outside help, establish a publishing department of the Society, with a publisher responsible to the executive director functioning under policies set up by the Council and Trustees. Action on this suggestion was recommended postponed at this time by the Survey Committee. Your reference committee, for reasons previously stated, also feels that such action should be postponed at this time, and I so move.

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all those in favor of the adoption of this portion of the report say "aye," those opposed "no." This portion is adopted.

Dr. Willis: XLV: Make publishing department budget autonomous. Your reference committee agrees with the Survey Committee and recommends disapproval at this time. This action was disapproved by the Survey Committee because of the effect on the income of the Journal, and this action is also recommended by your reference committee as inopportune. I so move.

Dr. Mott: I second it.

Vice-Speaker Wurzbach: Is there any discussion? All those in favor will say "aye," those opposed "no." This part of the report is adopted.

Dr. Willis: Suggestion XLVI: Reduce the subscription rate of the Journal from $7.50 to $5.00. This was disapproved by the Survey Committee, and your reference committee recommends similar action. I so move.

Dr. Kenney: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, those in favor of the adoption of this portion of the report say "aye," those opposed "no." This part is adopted.

Dr. Willis: Suggestion XLVII: Let the Journal join the Magazine Publishers Association. The Survey Committee recommends referral to the Publication Committee. Your reference committee concurs and recommends such action. I so move.

Dr. Mott: I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all those in favor of this action say "aye," those opposed "no." This is approved.

Dr. Willis: Suggestion XLVIII: This suggestion was approved by the Survey Committee and supported by your reference committee. I move its adoption.

Vice-Speaker Wurzbach: Is there a second?

Dr. Di Natale: I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all those in favor of this portion of the report say "aye," opposed "no." This portion of the report is adopted.

Dr. Willis: XLIX: To encourage long-range planning, including budgeting three years ahead, with revisions every six months. This was considered impractical and cumbersome by the Survey Committee and therefore disapproved. This action is recommended by your reference committee, and I so move.

Vice-Speaker Wurzbach: Is it seconded?

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of the adoption of this part of the report say "aye," those opposed "no." This part is adopted.

Dr. Willis: Suggestion L: This suggestion is related to relationships of the Society and its officers with the Blood Banks Commission and Association and their officers. The Survey Committee recommended that this be referred to the executive director for study, and your reference committee so recommends.

Vice-Speaker Wurzbach: Do you so move?

Dr. Willis: Yes sir, I so move.

Vice-Speaker Wurzbach: Is that seconded?

Dr. Di Natale: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all in favor of the adoption of this portion of the report of the reference committee say "aye," opposed "no." This portion is adopted.

Dr. Willis: Suggestion LI: Approved by the Survey Committee and concurred in by your reference committee. I so move.

Vice-Speaker Wurzbach: Is there a second?

Dr. Wolff: I second it.

Vice-Speaker Wurzbach: Is there discussion? All those in favor of the adoption of this portion of the report say "aye," those opposed "no." This part is adopted.

Dr. Willis: LII: Change method of amending Bylaws and Constitution to reduce delay. The Survey Committee disapproved this suggestion, feeling that all alterations in Bylaws and Constitution should have thorough study before being voted upon. You have already disapproved this suggestion by your refusal to change the Bylaws accordingly. Your reference committee is in full agreement with your action.

Vice-Speaker Wurzbach: No action need be taken by the House on this.

Dr. Willis: Mr. Speaker, I recommend the adoption of the action on the suggestions as amended, and I so move.

Vice-Speaker Wurzbach: Is there a second?

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all those in favor of the adoption of the report as amended say "aye," those opposed "no." The report as amended is adopted.

DR. WILLIS: Mr. Speaker, I recommend the adoption of the entire report as amended.

DR. BEDELL: I second the motion.

VICE-SPEAKER WURZBACH: Is there any discussion? It has been moved and seconded that the report as amended be adopted.

DR. VINICOR: You mean the entire report?

VICE-SPEAKER WURZBACH: Yes. All those in favor of the adoption of the entire report as amended will say "aye," those opposed "no." The entire report as amended is adopted.

DR. WILLIS: Before closing, I would like to thank the members of my committee, Dr. Thomas M. d'Angelo, Dr. Kent W. Jarvis, Dr. Aaron Kottler, and Dr. Joseph A. Wintermantel.

ADDITIONAL RESOLUTIONS

Section 124 (See 181) Resolution 59–60

Disapprobation of Strikes Against Hospitals

SPEAKER LANE: Number 59–60, subject "Disapprobation of Strikes Against Hospitals." It was introduced by the Bronx County Medical Society, and it reads:

> WHEREAS, the proper care of the sick has always been considered a matter of prime concern to the medical profession everywhere; and
>
> WHEREAS, a strike against several hospitals in this State is now in progress, endangering the health and welfare of the patients and interfering with their proper treatment and care; now therefore, be it hereby
>
> *Resolved*, that the Medical Society of the State of New York record its severe disapprobation of such strikes or any other activities prejudicial to the welfare of the hospitalized sick; and be it further
>
> *Resolved*, that the delegates to the American Medical Association from the Medical Society of the State of New York be instructed to introduce a similar resolution at the June, 1959, meeting; and be it further
>
> *Resolved*, that copies of this resolution be forwarded to the responsible State and municipal executive officers and the State Hospital Association.

What is your pleasure concerning this resolution?

DR. FREDERIC W. HOLCOMB, *Trustee:* I move its adoption.

VICE-SPEAKER WURZBACH: Is that being referred to a reference committee?

SPEAKER LANE: Not at the present time. I interpret this as being a possible one that we could take up as a House for House action. Technically, it should be referred, but in order to conserve time I wonder what the pleasure of the House would be.

DR. LOUIS H. BAUER, *Past President:* There is another resolution, almost the same, which has been referred to a reference committee. I think they should be referred together.

DR. WILLIAM T. BOLAND, *Chemung:* We have two other resolutions on the same subject. This had not been referred to me, but I supposed that it would be, and on that supposition we acted on it, and it will be in my report.

SPEAKER LANE: Wonderful! It is therefore referred to Part VI.

Section 125 Resolution 59–62

New York State's Year of History

SPEAKER LANE: Resolution 59–62, subject "New York State's Year of History," introduced by John F. Rogers, M.D. Is it your considered opinion we may act on it in the House at this time?

DR. JOHN F. ROGERS, *Councillor:* Yes.

SPEAKER LANE: It reads:

> WHEREAS, the year 1959 has been acclaimed as New York State's Year of History by celebrating, among other activities, the Hudson-Champlain Festival; and
>
> WHEREAS, a State Commission appointed by the Legislature has made a herculean effort to stimulate local historical interest throughout the State; now therefore be it hereby
>
> *Resolved*, that the Medical Society of the State of New York heartily endorses this program; and be it further
>
> *Resolved*, that a copy of this resolution be forwarded to the State Commission on Historic Observances, Senator Ernest I. Hatfield, chairman, Albany, New York.

DR. ROGERS: I move its adoption.

DR. ARTHUR J. BEDELL, *Past President:* I second it.

SPEAKER LANE: It has been moved and seconded that this be approved. Is there discussion? If not, those in favor say "aye," any opposed "no." It is adopted.

Section 126 (See 219) Resolution 59–61

Scheduling of House of Delegates So As Not to Conflict with Mother's Day

Introduced by HERBERT G. COHEN, M.D., BRONX COUNTY MEDICAL SOCIETY, as an individual

> WHEREAS, to be in attendance at the House of Delegates on Mother's Day is not in keeping with the true sentiment of that day, which should be observed at home as a family holiday; now therefore be it hereby

Resolved, that the sessions of the House of Delegates should be scheduled so as not to coincide with Mother's Day.

Referred to Reference Committee on Report of the Council, Part XII.

Speaker Lane: We will now have the report of Dr. Masterson's Reference Committee on Reports of Secretary, Judicial Council, and District Branches.

REFERENCE COMMITTEE, SECRETARY, JUDICIAL COUNCIL, DISTRICT BRANCHES

Section 127

Report of Reference Committee on Report of the Secretary

Dr. John G. Masterson, *Kings:* Your reference committee reviewed the report of our secretary, Dr. W. P. Anderton. As in the past, the report reflected the untiring effort of our secretary in behalf of the Society. Since this represents the last report of our retiring secretary, your reference committee wishes to commend Dr. Anderton for his outstanding performance of duty over the past fifteen years as secretary of our Society. His interest and devotion in the activities of the Society merit the appreciation and gratitude of the entire membership.

Mr. Speaker, I move adoption of this portion of the report.

Dr. J. Stanley Kenney, *Trustee:* I second it.

Speaker Lane: Is there any discussion? If not, those in favor will say "aye," opposed "no." It is so carried.

Section 128 (See 22)

Reference Committee Report on Report of Judicial Council

Dr. Masterson: The Judicial Council met during the past year, in accordance with the Constitution and Bylaws. After careful review, your reference committee approves the report of the Judicial Council as submitted to the House of Delegates.

Mr. Speaker, I move the adoption of this portion of the report.

Secretary Anderton: I second it.

Speaker Lane: It has been moved and seconded that this portion of the report of the reference committee be adopted. Is there any discussion? If not, those in favor say "aye," any opposed "no." It is so ordered.

Section 129

Report of Reference Committee on Reports of District Branches

Dr. Masterson: Your reference committee has reviewed the reports of all the district branches. The district branches held meetings during the past year in accordance with the Constitution and Bylaws. The reports of the district branches reflect a general concern as to their continued function under the present Constitution and Bylaws. During the past year the average attendance at the district branch meetings represented 3.6 per cent of the membership.

Therefore, your reference committee would approve the reports of the district branches and recommend that the Council conduct a study during the coming year to determine whether there is a need for revising the present district branch structure in our Society. Your committee suggests that the Council consider the feasibility of evaluating the wishes of the membership in this regard by a referendum on the subject.

Mr. Speaker, I move adoption of this portion of the report.

Speaker Lane: Is there a second?

Dr. Arthur J. Bedell, *Past President:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be adopted. Is there discussion? If not, those in favor say "aye," any opposed "no." It is so ordered.

Dr. Masterson: I move the adoption of the report as a whole.

Dr. Bedell: I second it.

Speaker Lane: It has been moved and seconded that the report as a whole be adopted. Is there discussion? If not, those in favor say "aye," those opposed "no." It is so ordered.

Dr. Masterson: The chairman would like to express his appreciation to this committee, Dr. John A. Kalb, Dr. George F. Nevin, and Dr. Adelaide Romaine.

Speaker Lane: Thank you, Dr. Masterson.

REFERENCE COMMITTEE, MISCELLANEOUS BUSINESS

Section 130 (See 49)

Report of Reference Committee on Miscellaneous Business: Essay Contest of the Association of American Physicians and Surgeons

Dr. Norton S. Brown, *New York:* Three resolutions were referred to the Reference Committee on Miscellaneous Business.

The first of these, 59–17, introduced by Montgomery County, resolves that this House of Delegates go on record as approving the essay contest of the Association of American Physicians and Surgeons.

Your reference committee suggests that the title be changed to read, "Advantages of Private Medical Care," or "The American Free Enterprise System," and approves this resolution with that change. I so move.

Dr. Arthur J. Bedell, *Past President:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion? If not, those in favor will say "aye," opposed "no." It is so ordered.

Section 131 (See 70)

Report of Reference Committee on Miscellaneous Business: Appointment of Physician to Saratoga Spa Commission

Dr. Brown: Resolution 59–38, introduced by Saratoga County, is concerned with the appointment of physician members to the Saratoga Spa Commission and requires that this House of Delegates send a petition expressing this request to Governor Rockefeller.

Your reference committee recommends approval of this resolution, and I so move.

Speaker Lane: Is it seconded?

Dr. Leo T. Flood, *Nassau:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion? If not, those in favor say "aye," contrary "no." It is so ordered.

Section 132 (See 81)

Report of Reference Committee on Miscellaneous Business: Increase in Voluntary Assessment for Physicians' Home

Dr. Brown: The third resolution referred to the committee is 59–49, introduced by Dr. Heyd, which grants permission to the Physicians' Home to increase its voluntary assessment from $2.00 to $4.00. Your reference committee approves this resolution, and I so move.

Dr. Charles A. Prudhon, *Jefferson:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion? If not, those in favor, say "aye," opposed "no." It is so ordered.

Dr. Brown: I move the approval of the report as a whole.

Dr. Prudhon: I second it.

Speaker Lane: It has been moved and seconded that the report as a whole be approved. Is there discussion? If not, those in favor say "aye," any opposed "no." It is so ordered.

Dr. Brown: I would like to thank the members of the committee, Dr. Leo T. Flood, Dr. Stanley B. Folts, Dr. Charles A. Prudhon, and Dr. Francis A. Stephens, for their exhausting labors.

Speaker Lane: Thank you, Dr. Brown.

REFERENCE COMMITTEE, PART III

Section 133 (See 18)

Report of Reference Committee on Report of Council, Part III: Public Health Activities B—Rural Medical Service and General Practice

Dr. William E. Pelow, *Onondaga:* Your committee has reviewed the report as published in the Annual Reports of 1959. The committee thinks that much effort is being expended to improve the status of the general practitioner, generalist, family doctor, or the nonspecialist. The committee has carefully studied subheadings 1 through 9 and the following subheadings 1 through 8. Your reference committee is of the opinion that the work of the Council subcommittee has gone far in the field to regain recognition for the general practitioner.

This reference committee wishes to call attention to the fact that no action is reported by the Rural Medical Service Committee relative to Dr. Richard Bellaire's letter of 1956 requesting a study of the basic causes and reasons for the insufficient increase of physicians entering or engaging in general practice, etc.

The Council committee's report on rural medical service seems to be following along the same lines and has entered into tangential fields relative to the medical practitioner in rural areas.

This committee recommends further aggressive action on the part of the Medical Society of the State of New York to interest hospitals in sponsoring "in-hospital" training of general practitioners in the various fields of medicine in which they are interested. We think that this committee of the Council is one of the more important ones, because it deals with the cornerstone or basic foundation of medical practice. These committees should be commended for their efforts.

Mr. Speaker, I move adoption of this report.

Dr. Arthur J. Bedell, *Past President:* I second it.

Speaker Lane: It has been moved and seconded that this report of the reference committee be adopted. Is there discussion? If not, those in favor say "aye," any opposed "no." It is so ordered.

Dr. Pelow: I wish to thank the members of my committee, namely, Dr. James H. Ewing, Dr. Alfred A. Hartmann, Dr. L. Lloyd Burrell, and Dr. Samuel Wagreich.

Speaker Lane: Thank you, Dr. Pelow.

Gentlemen, we will stand recessed until 2:15 p.m.

. . . A recess was taken at 12:45 p.m. . . .

Afternoon Session

Sunday, May 10, 1959

The session reconvened at 2:30 P.M.

SPEAKER LANE: The House will please come to order. Dr. Wurzbach counted that we apparently have a quorum, so we will start the business of the afternoon.

Section 134 Resolution 59-63

Amendments to Bylaws Affecting District Branches

Introduced by ROMAN R. VIOLYN, M.D., FOURTH DISTRICT BRANCH

> WHEREAS, a county society, because of its small membership, cannot properly discipline one of its own members; and
>
> WHEREAS, the district branches of which such a county society is a part are composed of many county societies with a large membership; and
>
> WHEREAS, the situation of a county society being unable to properly discipline one of its members because of its small membership can be corrected by referring disciplinary matters to the appropriate district branch; and
>
> WHEREAS, proper implementation of the foregoing would require certain changes in the Bylaws of this Society; now therefore be it hereby
>
> *Resolved,* that the following amendments are hereby introduced in the 1959 House of Delegates pursuant to Chapter XVII of the Bylaws of this Society:
>
> A. Amend Section 2 of Chapter VI of the Bylaws to add the words *"or district branches"* following the words "component county medical societies" in the fourth line of said section; following the words "societies" in the fifth line of said section; following the words "county medical societies" in the twelfth line of said section; following the words "county medical society" in the fourteenth line; following the word "society" in the fifteenth line; following the words "component medical society" in the seventeenth line; following the words "component medical society" in the nineteenth line and following the words "component medical society" in the last line of said section.
>
> B. Amend Section 4 of Chapter VI of the Bylaws to add the words "or district branch" in the fourth line of said section.
>
> C. Amend Section 5 of Chapter VI of the Bylaws to add the words "or district branch" to the third line of said section; and be it further
>
> *Resolved,* that the district branches and component county medical societies be directed to amend their respective constitutions and bylaws to provide the necessary procedural machinery to implement the foregoing.

SPEAKER LANE: That will be referred to the Special Committee on Constitution and Bylaws and will lay over until next year.

We will now have the reports of reference committees, the first of which will be Dr. John D. Naples, reporting for the Reference Committee on Malpractice Insurance and Defense Board and Legal Counsel.

REFERENCE COMMITTEE, MALPRACTICE BOARD AND LEGAL COUNSEL

Section 135 (See 9)

Report of Reference Committee on Reports of Malpractice Insurance and Defense Board

DR. JOHN D. NAPLES, *Erie:* Mr. Speaker and members of the House, your committee has reviewed the annual report of the Malpractice Insurance and Defense Board published in the April 1, 1959, issue of the JOURNAL, pages 1378 to 1380, and also Supplementary Report 59-A; also the report of the Legal Counsel, pages 1641 to 1645. We have also considered and wish to report on resolution 59-45.

In what is essentially an informative report, the Malpractice Insurance and Defense Board reviews the current status of the Group Plan. It is encouraging to note that since the report was written, participation in the plan has continued to increase. It would seem that our State plan has successfully withstood the strains that are becoming apparent in the experiences of more recently organized programs.

Among the large number of current applicants for new insurance are many members who have been refused insurance by their present carriers. It would obviously be unfair to those members who have stood by the Group Plan for many years to have their loss experience adversely affected by the addition of extra hazardous risks. The board has therefore recommended that the indemnity representative be instructed to postpone the acceptance of any application which in his judgment he feels should be further examined by the board. In such cases insurance under the Group Plan should not be issued until the board has had an opportunity to investigate and, when it believes necessary, actually interview the applicant in person.

Your reference committee concurs in this recommendation and wishes to point out that it is in no way a punitive measure but only a sensible precaution in the interest of the Group Plan as a whole.

Your committee recommends adoption of this section of the report, and I so move.

Dr. Robert E. Doran, *Ontario:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be adopted. Is there discussion? If not, those in favor will say "aye," opposed "no." It is so ordered.

Dr. Naples: In an attempt to clarify the rights of members who are insured for malpractice by companies other than the Group Plan carrier, the board has suggested an amendment to the existing regulations on this subject. After discussion, your reference committee feels that the amendment proposed by the board should be referred to the Committee on Constitution and Bylaws so that any possible differences may be reconciled. The committee wishes to point out, however, that the impression some members have that no matter where they carry their insurance they will be defended by the Society's legal counsel is simply not so. The conditions under which such defense can be provided are rather limited and cannot usually be determined in advance.

Your committee recommends, therefore, that no action be taken upon this proposal of the board, and I so move.

Speaker Lane: Is there a second to this motion?

Dr. James Greenough, *Trustee:* I second it.

Speaker Lane: Is there any discussion? If not, those in favor of the motion say "aye," any opposed "no." It is so ordered.

Dr. Naples: With regard to the Supplementary Report of the Malpractice Insurance and Defense Board, 59–A, we accept with thanks and profound gratitude the work entailed in that report, to say nothing of the fact that we are most pleased about the over-all premium reduction reported. The committee recommends approval of the proposals contained in the board's supplementary report relating to the amendment in the agreement between the Society and our insurance carrier whereby the contingent reserve (or C.L.F.) will be eliminated effective September 1, 1959. This will have the effect of giving all insured members a small reduction in the premium they will pay during the coming year.

That is the end of that, and I ask for adoption of that.

Speaker Lane: Is it seconded?

Dr. Samuel Sanes, *Erie:* I second it.

Speaker Lane: Is there any discussion? If not, all in favor indicate by saying "aye," those opposed "no." That portion of the report is carried.

Section 136

Report of Reference Committee on Report of Counsel

Dr. Naples: As far as the report of the legal counsel, pages 1641 to 1645, of April 15, 1959, your committee accepts this report with our deepest thanks and appreciation. We would like to compliment our counsel, Mr. William F. Martin, for a magnificent report which mirrors and reflects fact, fiction, and law.

I ask for approval of that portion, and I so move.

Dr. Walter W. Mott, *Trustee:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there any discussion? If not, all in favor indicate by saying "aye," opposed "no." This portion of the report is adopted.

Section 137 (See 77)

Report of Reference Committee on Reports of Malpractice Insurance and Defense Board and Legal Counsel: Establishment of Malpractice Insurance Advisory Committee

Dr. Naples: Mr. Speaker, concerning resolution 59–45, regarding establishment of malpractice insurance advisory committees, your reference committee recommends disapproval of this. The committee feels that the evaluation of cases is being handled satisfactorily by the county societies. We feel that this matter should be kept at the component county society level. If the individual county societies so desire, they can form such committees.

Your committee therefore recommends disapproval of this resolution, and I so move.

Dr. Thomas S. Cotton, *Steuben:* I second it.

Speaker Lane: It has been moved and seconded that the recommendation of the committee which calls for disapproval of the resolution be adopted. Is there discussion? If not, all in favor of the committee's report say "aye," opposed "no." It is adopted.

Dr. Naples: In conclusion, I wish to thank the members of my committee, Dr. Thomas S. Cotton, Dr. Robert E. Doran, Dr. John L. Finnegan, and Dr. Solomon Schussheim, for their devotion and energy expended in arriving at these conclusions in preparing this report.

I move the adoption of this report in its entirety.

Speaker Lane: Is there a second?

. . . The motion was seconded . . .

Dr. Herbert Berger, *Section Delegate:* Mr. Chairman, I would like to object to the adoption of the report as a whole because of an omission in the 1958 House of Delegates meeting. I turn to page 1297, "Arbitration of Malpractice Claims." This House passed a resolution that a limited number of malpractice claims be submitted to arbitration. The advantages of arbitration were pointed out last year before the reference committee that heard this resolution, and they were that arbitration in malpractice actions is quick, inexpensive, and private, so that the physician's reputation might not be endangered by a court hearing. I read that some 1,316 cases were disposed of by our counsel and by the malpractice board of our State Society, yet I do not hear that any of these were subjected to arbitration. Therefore, I should like to move that the reference committee meet with the counsel of the State Medical Society and Malpractice Insurance and Defense Board chairman so that this action of the House of Delegates in 1958 can be implemented at the earliest possible moment and that mechanisms for the arbitration of alleged malpractice cases can be elaborated.

SPEAKER LANE: Do you move that as an amendment or as a substitute motion?

DR. BERGER: Amendment, Mr. Speaker.

SPEAKER LANE: Is there a second to that amendment?

. . . The amendment was seconded . . .

SPEAKER LANE: It has been moved and seconded that the chairman of the Malpractice Board and legal counsel meet with the reference committee to discuss this matter and to provide for implementation of the resolution of 1958. Is that correct?

DR. BERGER: That is correct.

DR. JOHN F. KELLEY, *Oneida:* Mr. Chairman, I am speaking for Mr. Martin now. Of those 1,300 cases that you speak, it was felt by Mr. Martin's office and by the board, none of them could be put over to this arbitration plan. I have no objection to going ahead and meeting again and going over it and reporting back to the House of Delegates.

SPEAKER LANE: Is there any other comment or discussion?

DR. THOMAS M. D'ANGELO, *Queens:* This matter of arbitration was studied by the board at various meetings, and it was decided on the advice of Mr. Martin that none of these cases was suitable for arbitration.

When you mention 1,300 cases you must remember, gentlemen, that these 1,300 did not go to court. The vast majority of them were settled out of court. A tremendous number of them never came to anything except a claim, so the statistics are not entirely correct. We had so many cases, and just those cases that we thought might go to court would be suitable for arbitration. In the opinion of Mr. Martin there were no such cases. Therefore, I move you, since the board has taken this matter of the House of Delegates under cognizance, that the amendment be tabled.

. . . The motion was seconded . . .

SPEAKER LANE: It has been moved and seconded that the amendment be tabled. This is not debatable.

DR. ABRAHAM D. SEGAL, *Kings:* Point of order, do you table an amendment today? You could not yesterday.

SPEAKER LANE: I figure it would apply to the entire motion.

MR. WILLIAM F. MARTIN, *Counsel:* What? Arbitration of cases?

SPEAKER LANE: Would you like to speak to that?

MR. MARTIN: We have suggested to about a half dozen of our opponents that the cases be arbitrated rather than sued out, because I know that this idea has been under discussion. We have gotten a very cold reception to the idea. Of course, it is altogether possible that the next two or three of our opponents to whom we suggest this procedure may agree to arbitration.

As you all know, arbitration is a proceeding where there is no jury. The average negligence attorney has had no experience with arbitration and is a little uncertain how his claim will be handled in arbitration. Usually the only negligence matters which are arbitrated are those involving automobile insurance policies which contain an uninsured motorist endorsement.

I think that some day we may get to the point where we might have a dozen or fifteen of these matters arbitrated because of a change in the thinking of people, but although we have, pursuant to the direction of the House, attempted to get a number of our opponents to agree to arbitration, we have had no success in getting any of them to agree to it. That is the situation to date.

SPEAKER LANE: Is there any further discussion?

DR. MONROE M. BROAD, *Queens:* Are we discussing the motion to table?

SPEAKER LANE: That is not debatable.

DR. SOLOMON SCHUSSHEIM, *Kings:* May I give some words of information to the House?

SPEAKER LANE: If it is discussion on the motion to table, I think you would be out of order.

DR. SCHUSSHEIM: It would be.

DR. SEGAL: As Dr. McCarthy said yesterday, when we had a motion to table an amendment, that it carried with it also the original motion, today we are using a different set of rules. I think we ought to recognize Dr. McCarthy's point made yesterday, and either table the whole matter or nothing.

DR. THOMAS F. MCCARTHY, *Bronx:* I think we should specify what your motion is. What are you tabling?

SPEAKER LANE: My understanding of the motion to table was that it affected Dr. Berger's amendment. Is that correct, Dr. d'Angelo?

DR. D'ANGELO: Yes.

Dr. Louis H. Bauer, *Past President:* Point of order, you cannot table an amendment unless you table the motion to which it pertains.

Speaker Lane: I agree.

Dr. Bauer: A motion to table applies to the whole business, not to a part.

Dr. d'Angelo: I withdraw my motion to table.

Speaker Lane: I think that helps the situation. Dr. Berger, does any of the discussion or the explanation that has been made here change your attitude about this action at all?

Dr. Berger: Mr. Speaker, it does not. I feel that with this large volume of cases, had this type of adjustment been pursued, some opportunity might have been made for us to try it. It would seem on the surface—and we had before the reference committee last year representatives of the American Arbitration Association—it would seem that this method of management of malpractice actions had considerable merit, and we were anxious to conduct this pilot study so as to determine whether or not it had some value for us. I would like to see it pursued, and I would like the amendment to be voted upon by this House.

Speaker Lane: Is there further discussion? Speaking to the amendment, Dr. Schussheim.

Dr. Schussheim: What is the amendment?

Speaker Lane: The amendment is that the arbitration method would be implemented. That is the basis of it.

Dr. Schussheim: Probably what I say would take in both phases of (1) Dr. Berger's amendment and (2) the action of the reference committee. We were very cognizant of the fact of this resolution of the House of 1958, and it was discussed after most of our report had been thoroughly analyzed, and we were told off the record that there were no cases suitable for that type of action. Although we did not have an official report, we had assumed that somebody would come up with this question.

We feel, I think, the committee, and most of us who were on the committee last year felt that it would be within the province of our legal counsel to determine what type of cases could possibly be presented to this arbitration committee for action, and he was not ready as yet, did not have the right type of cases, and therefore we did not report on that.

Mr. Martin: Could I speak to this a minute?

Speaker Lane: Mr. Martin again.

Mr. Martin: As an alternative to trying a case without a jury, of course there is the nonjury trial before a judge alone. With very, very few exceptions I think I would prefer to try, as we do, a number of our cases nonjury before a judge alone rather than before three arbitrators. With no criticism of the American Arbitration Association, they do a really fine job in trying to get the right type of arbitrators, but it is a rather catch-as-catch-can proposition to decide what you are going to wind up with in the way of the three people who are going to hear a case of this sort, and you are inclined to take what you know about as an alternative in preference to that about which you know very little.

The only groups of our opponents who would ever consent to arbitrate a case are the same ones who will consent to try a case without a jury.

The average judge trying one of these cases without a jury does a pretty good job, so that if you wind up with even a small percentage of your cases that are to be tried without a jury and your opponent will consent to arbitration, you are then faced with the choice of leaving it in the courts or taking it to arbitration and putting it before three unknown arbitrators.

Considering that we do pretty well with nonjury cases, I would not want the judges to hear that we are generally trying to avoid trying our cases before them to take them to arbitration before three arbitrators whom we know nothing about. A nonjury case is tried very quickly. It can be tried within several months of its being put on the calendar, and we try a very considerable number of our cases before a judge without a jury.

We have suggested arbitration to a number of our opponents. As yet we have found nobody sympathetic to the idea. They will say, "The most we will do is waive a jury."

We are not seeking to avoid trying these before any tribunal that can swiftly dispose of them, but if you were represented by me in a case, you would just have to trust to my experience in deciding which tribunal was the best one for you to go before, and incidentally what is best for you is best for me.

Speaker Lane: There is an amendment to the motion before the House. Is there any further discussion on it?

. . . There were calls for the question . . .

Speaker Lane: Those in favor of Dr. Berger's motion, the amendment, will say "aye," opposed "no." The amendment is defeated.

Dr. Naples: Now I move adoption of this report in its entirety.

Speaker Lane: It has already been seconded.

Dr. Sanes: If not, I second it.

Speaker Lane: Is there further discussion? Hearing none, those in favor say "aye," any opposed "no." It is so ordered.

Section 138 Resolution 59-64

Amendment to Bylaws Affecting Membership of Nominating Committee

Introduced by Edward H. Robitzek, M.D., First District Branch

Whereas, more than one half of the members of the Medical Society of the State of New York are members of the five counties of greater New York, plus the counties of Westchester, Nassau, and Suffolk; and

Whereas, representation of these county societies on the nominating committee, even considering the fact that the president has appointed the two members-at-large from among members of the aforementioned county societies in the past, is not at all proportionate to their numerical strength; and

Whereas, in order to correct the foregoing situation, an amendment to the Constitution and Bylaws of the Medical Society of the State of New York will be required; now therefore be it hereby

Resolved, that the following amendment is hereby introduced in the 1959 House of Delegates:

Amend Section 4 of Chapter XI of the Bylaws as follows:

"*Section 4.* The Nominating Committee shall comprise twelve members, one member to be chosen from each district branch and three additional members-at-large to be appointed to this committee by the president, in conformity with Chapter VII, Section 1, of these Bylaws and chosen from among the counties of New York, Bronx, Suffolk, Kings, Richmond, Westchester, Queens, and Nassau. It will be the duty of this committee to propose and nominate members of the Society for all vacancies to be filled at the annual meeting of the House of Delegates succeeding their appointment. In the event of a tie vote in the Nominating Committee, the president shall cast the deciding vote. The recommendations of the committee shall be made to the House of Delegates in the same manner as prescribed in Chapter X, Section 2 of the Bylaws."

Speaker Lane: Referred to the Committee on Constitution and Bylaws, and it will hold over until next year.

REFERENCE COMMITTEE, PART VIII

Section 139

Report of the Reference Committee on Report of Council, Part VIII: Woman's Auxiliary

Dr. John W. Latcher, *Otsego:* There were no resolutions referred to this committee for action, and therefore consideration was first given to the report of the Advisory Committee to the Woman's Auxiliary.

This invaluable organization continues to support an extensive program which encompasses an ever-increasing number of projects, all of which are at least peripherally concerned with forwarding the aims and enhancing the prestige of the medical profession. Not the least of their activities during the past year was their success in getting medicine's message across to the State Federation of Women's Clubs in connection with the chiropractic bill. Their devoted service to our Society merits our deepest gratitude.

Mr. Speaker, I move the adoption of this report.

Dr. George G. Knight, *Rockland:* I second it.

Speaker Lane: Is there discussion? If not, all in favor of the adoption of this portion of the report say "aye," opposed "no." It is carried.

Section 140

Report of the Reference Committee on Report of Council, Part VIII: Joint Committee with Pharmaceutical Association of New York State

Dr. Latcher: The report of the Joint Committee of the Medical Society of the State of New York and the Pharmaceutical Association of New York State stated that no meetings were held since "no matters of immediate concern were before it." Your reference committee felt that there were many considerations which might legitimately interest this group: for example, the obvious but tacit cooperation of various drug companies in fixing the price of such medications as steroids and certain antibiotics at levels which assure a satisfactory profit to the manufacturer, but often penalize the patient.

Another subject for consideration by this committee might be the growing tendency of some drug houses to market "shot-gun" medications which many physicians feel are ill advised.

It was also felt that if the medical profession is to provide a reduced fee schedule for lower income elderly patients, this committee might explore the possibility of securing drugs at reduced cost for this group.

It seemed, in short, that if a meeting of this committee were held, many points of common interest would soon become apparent. As our president-elect, Dr. Fineberg, stated in his masterful address yesterday morning, the medical profession is surrounded by an atmosphere of increasing hostility and misunderstanding. In this situation it is to our advantage to maintain the friendliest possible relations with such paramedical organizations as the pharmacists. Regular meetings of this committee would help to accomplish such an objective.

Mr. Speaker, I move the adoption of this portion of the report.

Speaker Lane: Is there a second?

Dr. Henry J. Barrow, *Bronx:* I second it.

Speaker Lane: Is there any discussion? If not, all those in favor of the adoption of this portion of the report say "aye," opposed "no." It is so ordered.

Section 141

Report of Reference Committee on Report of Council, Part VIII: American Medical Education Foundation

Dr. Latcher: The report of the Special Committee on the American Medical Education Foundation was discussed, and it was noted that although donations in the State were increasing gradually, our record was poor when compared with such states as Illinois and California. Various methods of increasing response were suggested. It was noted that some counties of the State were emulating the practice of the Physicians' Home and including in their bills for dues a line such as "American Medical Education Fund—Contribution (voluntary) $10." It could not be ascertained whether this practice was true of all the component counties, but it was felt that if it were generally adopted, some contributions might be secured which would otherwise not be forthcoming.

It was also the feeling of your reference committee that the foundation's campaign would benefit by a meeting of the special committee even though its size might make 100 per cent attendance impossible. A date in the late fall should serve to avoid the rigors of the upstate winter weather and might set the stage for a more active drive for contributions during the ensuing months.

Mr. Speaker, I move adoption of this portion of the report.

Dr. John J. Flynn, *Kings:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be adopted. Is there discussion? If not, all those in favor say "aye," any opposed "no." It is so ordered.

Dr. Latcher: I move the adoption of the report as a whole.

Speaker Lane: Do I hear a second?

Dr. John C. McClintock, *Councillor:* I second it.

Speaker Lane: It has been moved and seconded that the report as a whole be adopted. Is there discussion? If not, those in favor, please say "aye," any opposed "no." It is so ordered.

Dr. Latcher: I would like to take this opportunity to thank the members of my committee, Dr. Sol Axelrad, Dr. George G. Knight, Dr. Paul H. Sullivan, and Dr. Frank Tellefsen, for their assistance in the preparation of this report.

Speaker Lane: Thank you, Dr. Latcher.

REFERENCE COMMITTEE, PART II

Section 142 (See 16)

Report of Reference Committee on Report of Council, Part II: Public Health Activities A—Maternal and Child Welfare

Dr. Maynard W. Gurnsey, *Steuben:* The Subcommittee on Maternal and Child Welfare met on March 12, at which time an attempt was made to define some of the functions of this subcommittee, including an analysis by the subcommittee of maternal deaths. A review of this analysis would then be presented at the yearly meeting of the Section on Obstetrics and Gynecology. The possibility of putting this in pamphlet form for distribution was discussed.

The pediatricians attending this meeting felt some attempt should be made to analyze infant deaths under twenty-eight days of life or those which occurred in the perinatal period.

It is hoped that the State may be divided into areas, so that these tasks may be delegated to individuals in these areas.

Your reference committee was in complete agreement with these aims.

I move the adoption of this portion of the report.

Speaker Lane: Is there a second?

Dr. Fred W. Bush, *Section Delegate:* I second it.

Speaker Lane: Is there discussion? If not, all in favor of adopting this portion of the report say "aye," contrary "no." It is so ordered.

Section 143 (See 12)

Report of Reference Committee on Report of Council, Part II: Public Health Activities A—School Health

Dr. Gurnsey: The chairman of the Subcommittee on School Health attended a meeting of the Advisory Committee on School Health to the Board of Regents in Albany on April 2. He attended in the role of a member of the advisory committee and not as a representative of the State Society. In spite of considerable evidence by the chairman that the present annual school examinations are outmoded and the law should be changed, it was voted to continue the annual examinations in the schools under the jurisdiction of the State Health and Education Departments.

Your reference committee after considerable discussion agreed that the annual school examinations should be done.

I move the adoption of this portion of my report.

Speaker Lane: Is there a second?

Dr. Joseph G. Zimring, *Nassau:* I second it.

Speaker Lane: Is there discussion? If not, those in favor of adopting this portion of the report please say "aye," any opposed "no." It is so ordered.

Section 144 (See 11)

Report of Reference Committee on Report of Council, Part II: Public Health Activities A—Accident Prevention

Dr. Gurnsey: On March 26 the Subcommittee on Epilepsy of the Subcommittee on Accident

Prevention considered an individual case. They unanimously recommended that there should be some relaxation in present regulations, originally suggested to the Bureau of Motor Vehicles, regarding qualifications for drivers' licenses for those persons with epilepsy or a history of "seizures, spells, and blackouts."

The subcommittee recommended at its April 9 meeting that in certain cases and under certain conditions the individual may be issued a three-year license after one year without symptoms, which would be reviewed each six months for a period of two years, after which if no more seizures occurred, no further review would be necessary until the next regular renewal date.

It was the opinion of your reference committee that more definite information should be sought regarding the physician's liability in recommending or rejecting a patient's fitness for operation of a motor vehicle; also what, if any, responsibility a physician has in reporting a patient's condition which might make him incapable of operating a motor vehicle with safety.

I move the adoption of this portion of the report.

Dr. Bush: I second it.

Speaker Lane: Is there discussion? If not, those in favor of adopting this portion of the report say "aye," those opposed, if any, "no." This portion of the report is adopted.

Section 145

Report of Reference Committee on Report of Council, Part II: Child Accidents

Dr. Gurnsey: Regarding child accidents, this subcommittee deserves our sincere thanks for the excellent work it has done and is continuing to do.

We are to be envied by every other state in the Union in the field of child accident prevention.

In the near future each county society will receive information on child accident prevention and how we may aid in this very worth-while endeavor.

This has been brought about by the combined efforts of the State Health Department, the State Medical Society, the State Chapter of the American Academy of General Practice, and the American Academy of Pediatrics.

I move the adoption of this portion of the report.

Dr. Bush: I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be adopted. Is there discussion? If not, those in favor will say "aye," any opposed "no." It is so ordered.

Dr. Gurnsey: I move adoption of my report as a whole.

Dr. Henry J. Barrow, *Bronx:* I second it.

Speaker Lane: It has been moved and seconded that the report as a whole be adopted. Is there discussion? If not, those in favor say "aye," those opposed "no." It is so ordered.

Dr. Gurnsey: I would like to thank my committee, Dr. Fred W. Bush, Dr. James E. Glavin, Dr. William L. Wheeler, Jr., and Dr. Joseph G. Zimring, for their help in preparing this report.

Speaker Lane: Thank you, Dr. Gurnsey.

REFERENCE COMMITTEE, PART V

Section 146

Report of Reference Committee on Report of Council, Part V: Public Health Activities D—Physical Medicine and Rehabilitation

Dr. Samuel Sanes, *Erie:* The first part of the report from your reference committee takes up the Subcommittee on Physical Medicine and Rehabilitation. There were no meetings of this subcommittee. By mail vote the subcommittee chose Dr. Willis D. Weeden as the State Society's candidate for the Physician's Award of the President's Committee on Employment of the Physically Handicapped. Dr. Weeden received the citation for Meritorious Service from the Governor's Committee on Employment of the Physically Handicapped.

I move adoption of this portion of the report.

Speaker Lane: Is there a second?

Dr. Irving L. Ershler, *Onondaga:* I second it.

Speaker Lane: Is there discussion? If not, those in favor of the adoption of this portion of the report will say "aye," any opposed "no." It is carried.

Section 147 (See 13)

Report of Reference Committee on Report of Council, Part V: Public Health Activities D—Aging

Dr. Sanes: The second part of the report takes up the Subcommittee on Aging, including the annual report and supplementary report of the subcommittee. The subcommittee is to be commended for its action in carrying out the joint educational project with the State Department of Health on health maintenance and disease prevention in old age. This action consisted of (1) informing each county society of the joint project and recommending a scientific program on the theme of the project, (2) sending to all county societies two booklets prepared by the Bureau of Chronic Diseases and Geriatrics of the State Department of Health, (3) preparing a symposium on periodic health inventories and health counseling for the New York State Journal of Medicine, and (4) providing speakers for county medical societies on the subject, "Health Maintenance and Disease Prevention in the Aged."

Although requests for speakers from county medical societies in regard to the last point have fallen short of expectation, we feel that the subcommittee should be encouraged to continue the speakers bureau on health maintenance and disease prevention in the aged.

We can be proud of the State-wide Conference on Aging (described in the supplementary report), arranged and run off by the subcommittee in Utica on March 7, 1959. There were 80 registrants representing the Medical Society of the State of New York, New York State Department of Health, rehabilitation centers, visiting nurses' associations, community chests, welfare departments, National Committee on Aging, State Charities Aid Association, and Cleveland Academy of Medicine. The conference featured a review of the A.M.A.'s six-point positive health program for older citizens. The proceedings will be published in the June 15 issue of the NEW YORK STATE JOURNAL OF MEDICINE.

Mr. Speaker, I move adoption of this portion of the report.

DR. IRWIN FELSEN, *Allegany:* I second it.

SPEAKER LANE: It has been moved and seconded that this portion of the report be adopted. Is there discussion? All those in favor indicate by saying "aye," those opposed, if any, "no." It is so ordered.

Section 148

Report of Reference Committee on Report of Council, Part V: Public Health Activities D—Diabetes

DR. SANES: The third part of the report takes up the Subcommittee on Diabetes. We look with favor on the efforts of the subcommittee to bring about concerted action by local county medical societies, local health departments, and the diabetes affiliates of the American Diabetes Association in the detection of diabetes and in the continuing education of the profession and laity to secure optimal treatment and control.

The subcommittee has taken action to draw up (1) proper procedures for diabetes testing and diagnosis and (2) standards for interpretation, with the feeling that when report of such procedures and standards is adopted, it be published in the NEW YORK STATE JOURNAL OF MEDICINE and distributed as reprints to the profession throughout the State.

The subcommittee has emphasized the need for urine and blood sugar testing after a meal rather than after fasting.

Mr. Speaker, I move adoption of this part of the report.

DR. HENRY FLECK, *Section Delegate:* I second it.

SPEAKER LANE: Is there any discussion? If none, all in favor of the adoption of this portion of the report say "aye," opposed "no." It is so ordered, and this portion of the report is adopted.

Section 149

Report of Reference Committee on Report of Council, Part V: Public Health Activities D—Hard of Hearing and the Deaf

DR. SANES: The fourth part of the report takes up the Subcommittee on Hard of Hearing and the Deaf. The subcommittee held two meetings during the year, at which various subjects were discussed: (1) variation in amounts reimbursed to the Hearing and Speech Center in Utica by the State Health Department for patients from Oneida County as compared to those from other counties; (2) extravagant claims made in advertising of hearing aids; (3) need of hearing and speech centers to make known their facilities and to carry out their programs intensively; (4) the desirability of otologists keeping up to date on all tests; (5) certain changes in the law regarding industrial hearing loss; (6) suggestions for filling out the vocational rehabilitation form by examining otologists for the Department of Education; (7) lack of reporting of preschool children to the State administration; (8) activities of various agencies such as the State Psychiatric Institute, the Lexington School for the Deaf, Council of Agencies for the Hearing Impaired (New York City), Bellevue Hospital-Hunter College Center; and (9) discrepancies in results of tests for hearing.

We call attention to the recommendation of the subcommittee (on the basis of newspaper articles stating a teacher applying for a license in the metropolitan area is not permitted to teach if he is deaf) "that if a person can function satisfactorily with a hearing aid, he should be permitted to teach in any school."

Mr. Speaker, I move adoption of this report.

DR. J. STANLEY KENNEY, *Trustee:* I second it.

SPEAKER LANE: It has been moved and seconded that this portion of the report be approved. Is there discussion? If not, those in favor say "aye," any opposed "no." It is so ordered.

Section 150 (See 46, 151)

Report of Reference Committee on Report of Council, Part V: Public Health Activities D—Addiction to Alcohol and Narcotics

DR. SANES: The fifth part of the report takes up the Subcommittee on Addiction to Alcohol and Narcotics. We want to bring it to your attention that the subcommittee held no meetings during the past year.

Your committee spent a good share of its time, particularly because of resolution 59–14 referred to it, discussing the problem of narcotic addiction and the relationship of physicians to this problem under existing laws and regulations. The committee recognizes how broad, serious, important, complex, multifaceted, and ramifying is the problem of narcotic addiction. Different attitudes and approaches have been put forth by physicians for the treatment and control of narcotic addicts. Recently facts, figures, and ideas have become available on the narcotic problem through national, State, and local reports. Your reference committee recommends that in the coming year the Subcommittee on Addiction to Alcohol and Narcotics study intensively the problem of narcotic addiction in the light of the recent reports and in regard to the medical approach, and that the subcommittee in its 1960 annual report give the House of Delegates the results of its study and the benefits of its deliberations.

Mr. Speaker, I move adoption of this portion of the report.

Speaker Lane: Is there a second?

Dr. Peter J. Di Natale, *Councillor:* I second it.

Speaker Lane: Is there any discussion? If not, all those in favor of the adoption of this portion of the report please say "aye," those opposed, if any, "no." It is so ordered.

Section 151 (*See 46, 150*)

Report of Reference Committee on Report of Council, Part V: Public Health Activities D—Treatment of Narcotic Addicts

Dr. Sanes: Your reference committee had one resolution, 59–14, referred to it. I will read the "resolved" portions:

> *Resolved,* that licensed physicians should be permitted to treat narcotic addicts as they do all other patients (the alcoholic addict, for example), attempting withdrawal of drugs in or out of a hospital and prescribing such materials, narcotic or otherwise, that the physician believes the patient needs according to the best interests of the patient and the community; and be it further
>
> *Resolved,* that where a physician feels that the patient cannot be maintained without drugs, a certificate testifying to this fact be signed by the physician and be countersigned by another practicing physician after appropriate examination, such certificate to be deposited with the Department of Health of the State of New York; and be it further
>
> *Resolved,* that general hospitals be persuaded to admit such patients on the written order of a licensed physician; and be it further
>
> *Resolved,* that a similar resolution be introduced by the delegates from the Medical Society of the State of New York in the House of Delegates of the American Medical Association in June and that the New York State delegates work actively for its passage.

In view of the recommendation just made by the committee and approved by the House, I move no action on this resolution.

Dr. Ershler: I second it.

Speaker Lane: Is there discussion? If not, those in favor of the adoption of this portion of the report will say "aye," any opposed "no." It is so ordered.

Section 152

Report of Reference Committee on Report of Council, Part V: Public Health Activities D—Poliomyelitis

Dr. Sanes: The Special Advisory Committee Regarding Poliomyelitis, which is the sixth part of the report, held no meetings during the past year.

Mr. Speaker, I move adoption of this portion of the report.

Speaker Lane: Is there a second?

Dr. Felsen: I second it.

Speaker Lane: Is there discussion? If not, all in favor of the adoption of this portion of the report will say "aye," those opposed, if any, "no." This portion of the report is adopted.

Section 153

Report of Reference Committee on Report of Council, Part V: Public Health Activities D—Disability Determinations

Dr. Sanes: The seventh part of the report takes up disability determinations.

The Medical Advisory Committee to the Bureau of Disability Determinations of the New York State Department of Social Welfare had an active year. It held five meetings with representatives of the bureau. The committee made suggestions to the bureau on methods of payments for consultative examinations. It discussed with the bureau ways and means of informing physicians of New York State about disability determination programs to secure their cooperation in the interest of their patients.

The subcommittee went over two items of literature from the BOASI. The first of these was a pamphlet entitled "Disability and Social Security. Evaluation of Disability," and it was approved for distribution. A series of four or five short articles is to be prepared by the BOASI, edited by the committee, and considered for publication in the State Journal.

Mr. Speaker, I move the adoption of this portion of the report.

Dr. Herbert S. Ogden, *New York:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be adopted. Is there discussion? If not, all in favor of the adoption of this portion of the report will say "aye," opposed, if any, "no." It is adopted.

Dr. Sanes: I move adoption of the report as a whole.

Dr. J. Stanley Kenney, *Trustee:* I second it.

Speaker Lane: It has been moved and seconded that the report as a whole be adopted. Is there discussion? If not, those in favor say "aye," any opposed "no." It is adopted.

Dr. Sanes: I wish to thank the members of my committee: Dr. Irving L. Ershler, Dr. Irwin Felsen, Dr. Henry Fleck, and Dr. Herbert S. Ogden. Thank you very much.

Speaker Lane: Thank you very much, Dr. Sanes.

REFERENCE COMMITTEE, PART XI

Section 154

Report of Reference Committee on Report of Council, Part XI: Publication

Dr. Philip D. Allen, *New York:* The Publication Committee has had another successful year under the chairmanship of Dr. Alfred P. Ingegno. Dr. Ingegno has proved himself to be an able successor to Dr. John J. Masterson, who guided the destinies of this committee for many years. The committee calls attention to the fact that while advertising income held up well, rising costs of material and personnel have had to be contended with. This sounds like reports we read of many corporations and apparently is a situation which will be with us for some time.

Your reference committee believes the many new features started this year by the New York State Journal of Medicine and enumerated in the committee report are worth while and have added reader interest to the publication.

The statistical report on the Journal is replete with facts that all members of our Society should read.

This reference committee believes the House of Delegates owes a great debt of gratitude to Dr. Laurance D. Redway, the editor, Miss Alvina Rich Lewis, the assistant to the editor, Mr. T. E. Alexander, the business manager, and also to a newcomer to the Journal personnel this year, Dr. William Hammond, who, as assistant editor, has contributed so much, especially by relieving Dr. Redway of many publishing details. Our beloved secretary, Dr. W. P. Anderton, likewise deserves our thanks for his work with this committee, especially his counsel in the task of preparing the 1959 edition of the *Directory.*

Your reference committee feels that gratis circulation of the Journal to senior medical students should be continued. It is also our feeling that the New York State Journal of Medicine is a progressive, live publication which is doing an excellent task in keeping abreast with the medical times.

Our reference committee commends the management for maintaining high standards and at the same time continuing to be financially solvent. As regards the Medical Library, we suggest that the Journal publicize our library so that more physicians throughout the State may be familiarized with its workings and even its location.

Mr. Speaker, I move the acceptance of this part of the report.

Dr. W. Walter Street, *Onondaga:* I second it.

Speaker Lane: Is there any discussion? If not, all those in favor of the adoption of this part of the report will say "aye," any opposed "no." It is adopted.

Section 155

Report of Reference Committee on Report of Council, Part XI: Public Relations

Dr. Allen: Dr. John F. Rogers and his committee have made a long and detailed report on this past year's activities of the Public Relations Committee. The numerous facets of this work have been enumerated and discussed in minute detail.

Much of this work is a continuing process from previous years. Your reference committee is pleased to note that due attention has been directed to maintaining and re-examining projects which have been in operation. We refer to such activities as emergency services, mediation committees, speakers services, press liaison, etc. We approve their exploration in the field of telephone listing in various communities with the telephone companies. We commend the fact that "Standards of Practice for Doctors and Lawyers" will appear in the 1959 *Medical Directory of New York State.*

The continued use of displays whenever feasible is praiseworthy. Extending this to the public schools seems worth while. The special issue of *Newsletter* in color, publicizing the annual convention, we believe was effective.

The committee urges that the Public Relations Committee attempt to clarify to the public the distinction between doctors of medicine and other nonmedical men who use the title of doctor. We believe this publicity would be of advantage to the doctors of our State and to the public as well.

We believe the Council was well advised in allowing the bureau to call a press conference prior to the convention whereby reporters are briefed on resolutions to be presented and on all phases of the scientific program.

This reference committee approves the continuing of medical assistant courses and of their increased scope as outlined. We believe the organization on county and State level of this group of people who are so closely allied with us would be valuable.

Our committee wishes to congratulate Dr. John D. George of Oneida County on his selection as the Outstanding General Practitioner of the year.

Your reference committee would indeed be remiss if we failed to express our appreciation to the Woman's Auxiliary. Under the presidency of Mrs. Maurice G. Sheldon, this group has again proved that they are a great asset to our Society.

The proposed program for 1959 is outlined under twelve headings. It is quite inclusive and broad in scope.

I will move this part of the report, Mr. Chairman.

Speaker Lane: Is there a second?

Dr. J. Stanley Kenney, *Trustee:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion?

Dr. Thomas F. McCarthy, *Bronx:* There is one item in it I wish to elaborate on a little bit, and that was this question that Dr. Bedell brought up this morning, which he called to your attention, the bill recently signed by the Governor, which would now give the optometrist the right to put "doctor" before his name too. For several years a resolution was brought into this House of Delegates requesting the Board of Regents to require that the degree conferred upon a man would be placed after his name; in other words, if you are a D.O., you put that after your name, and the designation of "doctor" would have no significance. That was, I believe, referred to the Council a number of times, and nothing was done about it, in a way because of the fact that the Board of Regents would not listen to that idea because they felt that there was no special quality in a doctor, an M.D., that was not held by some other men.

I feel that we have to take some positive action to do something about impressing upon the public the fact that simply the word "doctor" before a man's name does not qualify him to treat sick people. We may disagree possibly with the Board of Regents, say, as regards chiropodists, or psychoanalysts, or psychologists, or osteopaths even, that they are the equivalent of an M.D. I feel that we should impress upon our Public Relations Bureau that this is the policy of this Society, and that all of our members should be impressed with the fact that their name should be John Doakes, M.D., and not Dr. John Doakes. Thank you!

Speaker Lane: It has been moved and seconded. Is there further discussion? If not, those in favor of the approval of this portion of the report will say "aye," any opposed "no." It is so ordered.

Section 156 (See 15)

Report of Reference Committee on Report of Council, Part XI: Media of Information

Dr. Allen: The Subcommittee on Cooperation with Media of Information, chaired by Dr. John D. McClintock, has turned in a very suitable performance this year, especially with their continued activity in connection with the "Guide for Cooperation for Doctors, Hospitals, and Reporters." This is an activity that must be continually revitalized. The broadcasting companies are to be congratulated on their code demanding that every doctor of medicine, dentist, or nurse who appears on television must be an accredited member of their respective professions. Continued support and assistance at policing this code will be a continuing major problem.

We believe the supplementary report regarding the meeting of the committee with the New York State Bar Association to re-evaluate and reaffirm the "Standards of Practice for Doctors and Lawyers" shows intelligent progress in this important field affecting the two professions.

This reference committee has reviewed and commented on most of the bureau's activities this year. The report is long and sometimes redundant. We realize that of necessity there must be much repetition of the preceding year's activities. Much of the work of the bureau must necessarily be that of reevaluating, revitalizing, and perhaps expanding. The work of this bureau represents a big and expensive part of the activities of our State Medical Society. We heartily approve of the Council's recent action in authorizing the executive director to recommend reorganization of the Bureau of Public and Professional Relations.

Mr. Speaker, I move this part of my report.

Dr. Felix Ottaviano, *Madison:* I second it.

Speaker Lane: Is there any discussion? All in favor of the adoption of this portion of the report will say "aye," contrary, if any, "no." It is adopted.

Section 157 (See 61)

Report of Reference Committee on Report of Council, Part XI: Inclusion of Proprietary Hospitals in Medical Directory of New York State

Dr. Allen: We had three resolutions referred to us. The first was 59–29, subject "Inclusion of Proprietary Hospitals in *Medical Directory of New York State,*" introduced by Bronx County Medical Society. I will read the "resolveds":

> *Resolved,* that the Medical Society of the State of New York rescind its ban against the inclusion in the *Medical Directory of New York State* of these hospitals and the lists of their active staffs; and be it further
>
> *Resolved,* that duly accredited proprietary hospitals be included with a listing of their active staffs in future editions of the *Medical Directory of New York State* published by the Medical Society of the State of New York.

Your reference committee disapproves of this resolution. It has been the policy of the Council and Publication Committee to list only voluntary and public-supported hospitals. We believe this policy should be continued.

Mr. Speaker, I move the adoption of this portion of the report.

Dr. John C. McClintock, *Councillor:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be adopted. Is there any discussion?

Dr. Charles Sandler, *Bronx:* Mr. Speaker, I agree this resolution was introduced by Bronx County, but for a specific reason. All of us have been aware for many years of the increasing encroachment of Federal, State, and municipal administrations in hospital construction and management. We have made many pious resolutions in this House of Delegates regarding that encroachment. In our particular county, Bronx County, a considerable portion of beds available for use are public beds with a very small proportion relatively of beds available for the use of the private physician.

In recent years several excellent, recently constructed hospitals, proprietary hospitals, have been erected, and at a considerable expense, and after a great deal of effort these proprietary hospitals have managed to lift themselves up to the point where they have been accredited by the Hospital Association. In no respect are these hospitals inferior to the voluntary, the city, or the Federal hospitals. Indeed, in many respects, because they are more recent, they are far superior physically and even in the manner in which their medical affairs are conducted. We feel it is only a just reward to these hospitals, proprietary hospitals, who by their close supervision of the activities of their doctors and by the great efforts they have made to come up to the standards, the very high standards, and the inspections of the American Hospital Association, and have finally achieved this recognition, that that recognition be recognized by this House of Delegates and by the Medical Society. We feel it would help other hospitals and encourage other proprietary hospitals, knowing that their achievement in their raising of standards is recognized by the medical profession, to go and do likewise.

We honestly suggest then that this portion of the report of your reference committee in, shall we say, disapproving our resolution be not approved, and we urge you to give these hospitals the recognition that they really deserve and to encourage others to help them likewise.

Dr. Alfred P. Ingegno, *Councillor:* It is not often that I disagree with Dr. Sandler, but in this instance as chairman of the Publication Committee, before which this question has come on a number of occasions, I must disagree. The fact nevertheless remains that there is a very fundamental difference between proprietary hospitals and government-supported institutions and voluntary hospitals, in that these are a source of private profit. Without in any way wishing to deprecate the efforts that are being made in some of these proprietary hospitals to improve their standards, nevertheless the fact remains that they do not, and should not, have the same standing that these other hospitals have. We feel that by listing them in the *Directory,* we would be giving them a standing that they do not deserve and that we would in effect be advertising institutions which are created mainly for private profit.

Speaker Lane: Is there other discussion? If not, those in favor of the motion for approval of this portion of the report say "aye," opposed "no."

I will ask for a repeat on that vote. Those in favor will say "aye," those opposed "no." The motion is carried.

Section 158 (See 62)

Report of Reference Committee on Report of Council, Part XI: Public Statements by Officers of National Medical Organizations

Dr. Allen: The next concerns resolution 59-30, subject "Public Statements by Officers of National Medical Organizations." This also was introduced by Bronx County Medical Society. I will read the "resolveds":

> *Resolved,* that the officers of national medical societies should be instructed not to speak on any medical policies, whether to the press or in speeches to groups, unless their remarks and speeches are the policy of the national medical society which they represent; and be it further
>
> *Resolved,* that this resolution be introduced by the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association at its meeting in June, 1959.

We approve this resolution in principle but question how it could be implemented. We therefore recommend disapproval of this resolution as presented. I move the adoption of this portion of the report.

Speaker Lane: Is there a second to this motion?

Dr. Street: I second it.

Speaker Lane: It is moved and seconded that this portion of the report be approved. Is there discussion? If not, those in favor say "aye," those opposed "no." The motion is carried.

Section 159 (See 85)

Report of Reference Committee on Report of Council, Part XI: Public Relations and Information

Dr. Allen: The next resolution was 59-52, subject "Public Relations and Information," and it was introduced by Dr. William Hall Lewis, Jr., Medical Society of the County of New York, as an individual. I will read the "whereases"—it is short—otherwise it won't make sense:

> Whereas, certain governmental agencies and other media that are in contact with the public have the opportunity to release certain publicity remarks in the form of public information; and
>
> Whereas, individuals or groups in such agencies or bureaus may make particular mention of the medical profession in special and possibly unfavorable manner; now therefore be it hereby
>
> *Resolved*, that this House of Delegates instruct its appropriate committee to exert proper protest against such public announcements; and be it further
>
> *Resolved*, that this House of Delegates instruct its delegates to the House of Delegates at the American Medical Association meeting in June, 1959, to introduce such a resolution for action by the appropriate committees and officers of the American Medical Association.

Mr. Speaker, your committee discussed this, and we decided the principle was good. I don't know how you are going to implement all this, but we recommend approval of this resolution.

Speaker Lane: Is there a second?

Dr. McCarthy: I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion? It not, those in favor say "aye," any opposed "no." It is so ordered.

Dr. Allen: I would like to move the approval of my report as a whole.

Speaker Lane: Is there a second?

Dr. Kenney: I second it.

Speaker Lane: It has been moved and seconded that this report as a whole be approved. Is there discussion? If not, those in favor will say "aye," any opposed "no." It is carried.

Dr. Allen: Mr. Speaker, at this time I would like to thank the other members of my committee who attended in a body and were very helpful, Dr. Thomas F. McCarthy, from the Bronx; Dr. Felix Ottaviano, from Madison; Dr. W. Walter Street, from Onondaga; and Dr. Henry Vinicor, from St. Lawrence.

Speaker Lane: Thank you, Dr. Allen.

Dr. Allen: Before I leave, I would also like to express the committee's thanks to Mr. Miebach, Mr. Tracey, and Mr. Walsh, all of whom were helpful in our deliberations and in digesting this report.

Section 160

Telegram of Sympathy

Speaker Lane: At this time I will read to you a telegram sent to:

> Dr. Moses Krakow
> 1749 Grand Concourse
> Bronx, New York
>
> House of Delegates of Medical Society of State of New York sends deep sympathy. We miss you and much deplore the cause of your absence.
>
> Joseph A. Lane, *Speaker*
> W. P. Anderton, *Secretary*

SPECIAL COMMITTEE, CONSTITUTION AND BYLAWS

Section 161 (*See 32*)

Report of Special Committee on Constitution and Bylaws

Speaker Lane: At this time I would like to call Dr. Lawrence to the rostrum to discuss the problems resubmitted to his committee yesterday.

Dr. George J. Lawrence, Jr., *Councillor:* Mr. Speaker and members of the House, would you please turn to page 1658 in your Annual Reports.

The House yesterday recommitted the portion of this committee's report concerning Chapter IX (Expenses) of the Bylaws. Your committee had approved this portion of resolution 58-65 but felt it was necessary to amend it in order to correct an oversight in the present Bylaws which do not provide for the payment of expenses incurred by employes of the Society in the performance of their duties. As was pointed out yesterday, this section requires further clarification concerning allowances for expenses incurred by various members of the Society, and your committee therefore recommends that Chapter IX, Section 1, of the Bylaws be amended so as to add the words, "commissions and," before the word "committees" in the fourth and fifth lines of Chapter IX, Section 1. Add the words, "employes of the Society," following the word "committees" in the fifth line of said section; add the words "commissions and" in the fourteenth line of the said section before the word "committees"; delete the word "and" in line 15; add a comma following the word "Council" and add the words "and employes" in the fifteenth line of said section following the word "committees."

We also recommend that the words, "and president-elect," be added after the word "president" in line 8. This would permit the president-elect to receive a per diem and expenses.

We further recommend that the words "and section delegates," be added following the words, "delegates of the district branches" in line 17. This would permit section delegates to receive traveling expenses the same as all other delegates do.

We also recommend that the sentence, "The delegates to the American Medical Association who have attended each session of the House of Delegates of that association, as certified by the secretary of the American Medical Association to the secretary of the Medical Society of the State of New York, shall be allowed traveling expenses," be deleted, and the following sentence substituted for it: "A member of this Society who acts as a delegate to the House of Delegates of the American Medical Association or an alternate delegate who, at the direction of the Council, attends a meeting of the House of Delegates of the American Medical Association shall be allowed traveling expenses."

Section 1, of Chapter IX, of the Bylaws should then read as follows:

> Allowances for expenses incurred in the actual performance of official duties by officers, members of the Council, the Board of Trustees, of the Judicial Council and commissions and committees and employes of the Society, and delegates to the American Medical Association shall be made in conformity with the following conditions: The president and president-elect shall be allowed a per diem and expenses when engaged upon official business. All other officers shall be allowed traveling expenses when engaged upon official business. Members of the Council, of the Board of Trustees, and of the Judicial Council shall be allowed traveling expenses. Members of commissions and committees of the Council, all special committees, and employes of the Society shall be allowed traveling expenses. Delegates of the district branches and section delegates sitting in the House of Delegates shall be allowed necessary expenses by the Medical Society of the State of New York. There shall be no allowance made for the expenses, traveling or otherwise, for any committee appointed pursuant to Chapter X of these Bylaws. Proper vouchers must be filed with the secretary before any of above allowances are made. A member of this Society who acts as a delgate to the House of Delegates of the American Medical Association, or an alternate delegate who, at the direction of the Council, attends a meeting of the House of Delegates of the American Medical Association shall be allowed traveling expenses. Each district branch shall be entitled to receive a sum not to exceed $400, exclusive of the work done by the secretary regarding notices, programs, etc., to defray the expenses of such district branch, provided à proper statement of such expense shall have been presented to the secretary. All bills, claims, or vouchers herein provided for shall be filed within thirty days after the date of the incurring of such expense. This time may be extended for any cause by the Board of Trustees and such extension shall not exceed ninety days. Payment of all these expenses shall be made under directions of the Board of Trustees.

Mr. Speaker, I move approval of this portion of my report.

Dr. Ezra A. Wolff, *Assistant Secretary:* I second the motion.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion?

. . . The resolution was discussed by Dr. Thomas F. McCarthy, Bronx; Dr. Carlton E. Wertz, past president; Dr. Norman S. Moore, councillor; Dr. James Greenough, trustee; Dr. Thomas M. d'Angelo, Queens; Dr. Vincent J. Collins, section delegate; Dr. Ezra A. Wolff, assistant secretary; Mr. William F. Martin, counsel; and Dr. William B. Rawls, New York. Dr. Walter T. Heldmann, Richmond, questioned the propriety of voting on these proposals without prior notice and publication. His position was supported by Dr. Louis H. Bauer, past president, and Mr. William F. Martin, counsel. Quoting Article XIII of the Constitution, the Speaker ruled that the proposals expanded the provisions of the amendment submitted in 1958 and consequently could not be presented for action by the House until 1960 . . .

Dr. Lawrence: Mr. Speaker, this controversial material that we have put into our committee report has all been put in since yesterday. As our committee originally brought in its report, it did not have any of this controversial material. I therefore suggest to the House that you disapprove my motion to approve the report I have just brought in and after that approve this part of the report as I read it yesterday. It will contain certain material referrable to committees and commissions which we need in here, but it will not have this material that you are all objecting to about expenses. That would then be reintroduced as a resolution, which would, of course, have to lay over until next year.

Dr. Bauer: I think we can simplify this. I will make a substitute motion for Dr. Lawrence that we accept his report of yesterday instead of the one he has just submitted today.

Speaker Lane: Is there a second?

Dr. J. Stanley Kenney, *Trustee:* I second that.

Speaker Lane: Is there discussion?

Dr. Wolff: I want to complete this all in one motion if I can. I was going to suggest that the controversial material be resubmitted so that it can be put in the form of a proposed constitutional amendment, and would ask that it be allowed to be introduced tomorrow, not all of it, part of it—part of it be introduced as a resolution, not all of it—and I would ask that we be allowed to introduce it tomorrow with unanimous consent of the House so that it can lay over and be studied through the year and be presented again next year. I would move, Mr.

Chairmen, to amend Dr. Bauer's motion that the portion that was added concerning expenses be resubmitted.

Dr. Bauer: I will accept the amendment.

Speaker Lane: Is there a second to the amendment?

Dr. Henry J. Barrow, *Bronx:* I second the amendment.

Speaker Lane: Is there further discussion?

. . . There were calls for the question . . .

Speaker Lane: You are now voting on the amendment, Dr. Wolff's amendment. Those in favor of Dr. Wolff's amendment will say "aye," any opposed, "no." It is adopted.

Is there further discussion on the motion, Dr. Bauer's substitute motion as amended? If not, those in favor will say "aye," any opposed "no." It is so ordered.

Dr. Lawrence: Mr. Speaker, I would now like to move approval of my report as a whole and as amended.

Speaker Lane: Is there a second to that motion?

Dr. John C. McClintock, *Councillor:* I second it.

Dr. Henry Vinicor, *St. Lawrence:* Mr. Speaker, I am not discussing what took place today; I am discussing Dr. Lawrence's report as of yesterday.

Speaker Lane: I believe a motion has been passed concerning that.

Dr. Vinicor: We are voting on this report as a whole, and as such I felt that I had a right to discuss it.

Speaker Lane: Go ahead.

Dr. Vinicor: I rise to make several statements and ask several questions, knowing as I do this the utter futility of it all. It may not do the Society any good, but please allow me the psychologic benefit of getting it off my chest and thereby trying to understand the workings of this delegation.

Two years ago this Society felt that a management survey was needed. The result was the Edlund Report. This recommended many changes in order to streamline the workings of our group. In May, 1958, resolution 58–65 was introduced to the House of Delegates by Dr. Azzari. This resolution is on page 1652 of the Annual Reports and for the information of the House of Delegates of 1959. This resolution contained many changes in the Constitution and Bylaws as suggested by this Survey Report.

Then a Survey Committee, consisting of Drs. Azzari, Fineberg, Givan, Greenough, Masterson, Mott, Gibson, and Anderton met on July 24, September 4, October 5, and November 9 and recommended changes on the changes of Dr. Azzari's original resolution. This you will find on page 1389 of the same report.

Then a Special Committee on Constitution and Bylaws, consisting of Drs. Lawrence, Hartmann, and Wolff, studied the changes prepared by Dr. Azzari's original resolution 58–65.

Then a reference committee met on May 9 and presumably also May 10, 1959, and recommended changes on the changes on the changes.

Gentlemen, we are to vote on something important. I am very much confused. I don't think I am stupid. I am sure there must be one or two others also confused. Many thousands of dollars were spent by this State Society to produce this Survey Report. The implementation of this report was prepared by a distinguished former president of this Society. Could this man who had studied the problem so long and extensively have been so wrong that the Special Committee on Constitution and Bylaws and special House committee found it necessary to make 41 changes in 58–65, some consisting of entire paragraphs?

The question is, is it customary for the House of Delegates to appoint a House committee consisting of councillors and officers of the State Society? Is this not like appointing the same judge and prosecutor?

Question, how is it possible for all these changes in 58–65 to have been recommended by both the survey and the special committee, special House committee, and yet at no time within my hearing—and I don't believe I have left this room—has Dr. Azzari risen at this session to protest these changes or at least to explain the reasons for his original recommendations.

Question, was it not the desire of the Medical Society to increase the efficiency of our organization and to eliminate duplication that a management firm was hired in the first place, and was not one of the very basic changes recommended that there be an elimination of the Council, and that there would only be a 12-man Board of Trustees directly responsible to the House of Delegates? Are we truly or really interested in efficiency, or are we possibly perpetuating certain positions? I submit that decreasing the size and duplication is not dictatorship, as one of our officers mentioned this morning, but efficiency.

Ladies and gentlemen of this House of Delegates, no man, or member I should say, of this august body defers more and respects more the opinions of our elder statesmen, namely, the members of the Council and the Board of Trustees, but it is sometimes difficult for a group which has always worked diligently, honorably, and with only one thought in mind, that of serving the State Society and the people of New York, to realize that there is some overlapping and some inefficiency in their methods, though certainly not in their thoughts, and certainly a new organization would make their organization more efficient and easier and thus in the end reflect greater credit and honor on themselves and this Society.

May I then beg the indulgence of the House of Delegates to defer action on this report of Dr. Lawrence's committee until a new resolution discussing this problem is presented to you.

Thank you, ladies and gentlemen. No matter what occurs—and I know what will—I already feel better.

SPEAKER LANE: Thank you Dr. Vinicor. Dr. Lawrence

DR. LAWRENCE: There is a motion before the House.

DR. RENATO J. AZZARI, *Trustee:* I would like to discuss the remarks of Dr. Vinicor.

First of all, gentlemen, as you all know, last year I introduced a resolution in behalf of the Council and suggested certain changes in the Constitution and Bylaws that covered the entire Survey Report. Then the Survey Committee met and made recommendations to the Council, which you voted yesterday. I see no conflict between the recommendations of the Survey Committee and the committee which Dr. Lawrence heads. We have simply expressed an opinion and left it to the House to vote on it. That is all we have done. It is entirely within your province either to vote for it or vote against it. You have already voted for the greater part of this report, with the exception of one section that is under discussion at this time, and that is all I have to say to you.

SPEAKER LANE: Thank you, Dr. Azzari.

Is there any further discussion?

. . . The question was called for . . .

SPEAKER LANE: The question is on Dr. Lawrence's motion. Those in favor will say "aye," any opposed "no." It is so ordered.

DR. LAWRENCE: Mr. Speaker, I would again like to thank the members of my committee, Dr. Alfred A. Hartmann and Dr. Ezra A. Wolff, for helping me so much with this report.

I also would like to thank the members of the House for their indulgence.

SPEAKER LANE: Dr. Lawrence, the Chair would like to commend your committee for very diligent work.

There are three resolutions which have been presented, all of which are affecting the Constitution and Bylaws, 59–65, 59–66, and 59–67, all of which will be referred to the Committee on Constitution and Bylaws, and will lay over until next year.

ADDITIONAL RESOLUTIONS

Section 162 Resolution 59–65

Reports of Sections to House of Delegates

Introduced by VINCENT J. COLLINS, M.D., SECTION ON ANESTHESIOLOGY

WHEREAS, the scientific sections of the Medical Society of the State of New York are an integral part of the organization of the State Society; and

WHEREAS, the specialties represented in these sections have problems which affect the social, economic, cultural, educational, and other general aspects of broad medical practice; and

WHEREAS, these problems and information concerning the status of practice in the various specialties should be available to the Medical Society as a whole to guide its intelligent deliberation; now therefore be it hereby

Resolved, that the scientific sections report to the House of Delegates concerning their status; and be it further

Resolved, that Chapter XII of the Bylaws, "Sections," be amended by the addition of Section 6 which would read as follows:

"*Section 6.* The delegate of each section may present an annual report to the House of Delegates concerning the status of his specialty."

Referred to Special Committee on Constitution and Bylaws.

Section 163 Resolution 59–66

Amendment to Bylaws Concerning Reports to House of Delegates

Introduced by GEORGE J. LAWRENCE, JR., M.D., COUNCILLOR

Resolved, that Chapter X, Section 2, of the Bylaws be amended so as to add the following to the final sentence: "except that reports of committees of the House of Delegates may, in the discretion of the House, be presented directly to the House without referral to the reference committees."

Referred to Special Committee on Constitution and Bylaws.

Section 164 Resolution 59–67

Changes in Constitution and Bylaws

Introduced by ARTHUR F. GAFFNEY, M.D., FIFTH DISTRICT BRANCH

WHEREAS, the House of Delegates in 1958 authorized implementation of as much of the "Survey Report" as practical; and

WHEREAS, several delegates of this convention feel that in the future more of the report should be implemented; and

WHEREAS, a majority of the committee assigned to implement the report were members of the present Council; and

WHEREAS, if the notice of change of the Bylaws is not reintroduced, the Survey Report will have been a waste of time, effort, and money; and

WHEREAS, many of the delegates had insufficient time to discuss the report of Dr. Lawrence's Special Committee on Constitution and Bylaws, especially in a reference committee; now therefore be it hereby

Resolved, that the following notice of change of Constitution and Bylaws be introduced in accordance with the provisions of Article XIII of the Constitution and Chapter XVII of the Bylaws of this Society, *to wit:* as printed in the Annual Report for the House of Delegates 1959, Pages 1652 to 1659, Constitution (2), (3), (4), (5), (6), (8), (9); Bylaws (1), (2), (3), (4), (5), (6), (8), (9), (10), (11), (12), (13–1, 2, 3, 4, 5, 7, 8, 9, 10, 11), (14), (15–1), (16), (17), (18), (19), (20), (21), (22–1, 2).

Referred to Special Committee on Constitution and Bylaws.

REFERENCE COMMITTEE, PLANNING COMMITTEE

Section 165

Report of Reference Committee on Report of Planning Committee for Medical Policies

Dr. Robert F. Warren, *Kings:* There was no meeting during the year as no new business was referred by the Council.

Resolution 56–6 was given to the Planning Committee in 1957. A previous subcommittee had not submitted a report. The resolution recommended study of membership of the House of Delegates with the view of establishing proportional representation based on the relation of membership of individual county medical societies to the total membership of the State Society and reviewing the necessity for representation from the various scientific sections.

A subcommittee headed by Dr. Joseph A. Lane recommended maintaining the present status, and the Planning Committee accepted this recommendation unanimously.

The reference committee recommends acceptance of this report. Mr. Chairman, I move acceptance of this portion of the report.

Dr. Peter J. Di Natale, *Councillor:* I second it.

Speaker Lane: Is there any discussion? If not, those in favor of the motion calling for the approval of this portion of the report will say "aye," any opposed "no."

Dr. Warren: The Planning Committee originally initiated policies; however, for the last several years it has acted as a reference committee considering only material referred to it by the Council.

The recommendation of the Management Survey Committee is as follows:

> XXIII. Let the Planning Committee be restored to being an actual planning committee to work with the executive director on long-range policy.
>
> XXIV. Let the Planning Committee appoint annually a subcommittee under the chairmanship of the president-elect on objectives for the year ahead, meaning the year in which the president-elect will be president. Let the president-elect report on these objectives to the House of Delegates when he is about to become president. At the end of his term as president, let him report to the House of Delegates on the extent to which the year's objectives were accomplished.

The reference committee recommends this suggestion which would restore the Planning Committee on Medical Policies to the position for which it was originally established.

Mr. Chairman, I move acceptance of this portion of the report.

Speaker Lane: Is it seconded?

Dr. Irving Weiner, *Orange:* I second it.

Speaker Lane: The motion has been made and seconded that this portion of the report be approved. Is there discussion? If not, those in favor of the approval of this portion of the report will say "aye," any opposed "no." It is so ordered.

Dr. Warren: Mr. Speaker, this is the total report. I recommend acceptance of the report as a whole.

Speaker Lane: It has been recommended that the report as a whole be accepted.

Dr. Di Natale: I second it.

Speaker Lane: Is there any discussion? If not, those in favor say "aye," any opposed "no." It is so ordered.

Dr. Warren: I wish to thank Dr. Wilfrid Anna, Dr. John N. Dill, and Dr. Irving Weiner for their help, and Dr. Gibson and Dr. Wurzbach who sat in at the reference committee.

Speaker Lane: Thank you, Dr. Warren.

Vice-Speaker Wurzbach: We will now have the report of Part VII, Dr. John Kelley.

REFERENCE COMMITTEE, PART VII

Section 166

Report of Reference Committee on Report of Council, Part VII—Economics, Medicare, Medical Expense Insurance, Public Medical Care, Liaison with Veterans Administration, Special Committee on Resolution 58–49 (Medical Care, Job of the Medical Profession), Columbia University Study of Nonprofit Medical Insurance Plans in New York State

Dr. John F. Kelley, *Oneida:* Mr. Speaker and members of the House of Delegates, your reference committee has reviewed and discussed reports of the Council Committee on Economics, Subcommittee on Public Medical Care, Subcommittee on Liaison with the Veterans Administration, Subcommittee on Resolution 58–49, and Columbia University Study of Nonprofit Medical Insurance Plans.

Economics Committee: Your committee wishes to commend Dr. McClintock, chairman of the Council Committee on Economics, as well as the chairmen of all subcommittees under Dr. McClintock. They have held many meetings, taken up many subjects, all of very vital importance to our Society. This reference committee agrees entirely with the report of the Council Committee on Economics.

Medical Expense Insurance Subcommittee: The Medical Expense Insurance Subcommittee under the chairmanship of Dr. Ackerman is to be highly commended for the arduous task which had to be accomplished. They had many resolutions to review, and this reference committee is in complete agreement in all their findings. We also feel that the meeting which was held under Dr. Ackerman's chairmanship January 31 to February 1, 1959, in New York City with representatives of Blue Shield Plans was very productive and developed what this reference committee feels is a marked forward step in the Blue Shield movement in the State of New York. An organization was set up for Blue Shield Plans in collaboration with the State Medical Society to outline and develop a uniform organization of these plans and the State Society for uniformity in the future.

Bureau of Medical Care Insurance: The reference committee is in complete accord with the report of the Bureau of Medical Care Insurance and wishes to commend Mr. Farrell for his untiring efforts in developing liaison between the different Blue Shield Plans and the State Society. It was noted in their report that Blue Shield Plans are increasing every year, and quarterly progress reports would be of great value for analysis and comparison.

Medicare: The reference committee noted the report on Medicare. At a meeting called in August, 1958, by General Paul Robinson in Washington, D.C., it was brought out that the program was exceeding the government appropriation by approximately twelve million dollars per year and, therefore, immediate action would be necessary to curtail costs so expenditures would remain within the appropriation. In October, 1958, curtailment was outlined in certain categories, including injuries not requiring hospitalization, termination visits, pre- and postsurgical tests before and after hospitalization, neonatal visits, and elective and plannable surgery, all of which were no longer covered.

U.S. Veterans Administration, Subcommittee on Liaison with: The reference committee is in complete accord with the report of the Liaison with U.S. Veterans Administration Subcommittee, and we wish to commend Dr. George Burgin, chairman, as well as Dr. Bauckus and Dr. Golembe.

Advisory Committee to Columbia University Study: Your reference committee reviewed the Advisory Committee to the Columbia University Study of Nonprofit Medical Insurance Plans in New York State under the chairmanship of Dr. John C. McClintock, and we agree with his report that the study is not sufficiently advanced to make other than a progress report.

Public Medical Care Subcommittee: A report from the Subcommittee on Public Medical Care headed by Dr. Earl C. Waterbury, chairman, was approved in its entirety by your reference committee. It is the hope of the reference committee that this study will continue under appropriate committees, either now existing or to be appointed.

I move adoption of this portion of the report.

VICE-SPEAKER WURZBACH: Is there a second?

DR. CHARLES R. MATHEWS, *Monroe:* I second it.

VICE-SPEAKER WURZBACH: Is there any discussion? If not, all in favor of the adoption of this portion of the report say "aye," opposed "no." This portion is adopted.

Section 167 (See 64, 71)

Report of Reference Committee on Report of Council, Part VII: Maximum Reimbursable Fee Schedule of New York State Department of Social Welfare; Public Medical Care Fee Schedule

DR. KELLEY: We will pass on to the resolutions which were given to this committee.

Numbers 59–32 and 59–39 were combined. The first concerned "Maximum Reimbursable Fee Schedule of New York State Department of Social Welfare," and it was introduced by the Medical Society of the County of Oneida:

> *Resolved,* that this House of Delegates of the Medical Society of the State of New York mandate the chairman of the Subcommittee on Public Medical Care of the Medical Society of the State of New York to contact the office of the Commissioner of Social Welfare of the State of New York for the purpose of arranging a study of the maximum reimbursable fee schedule and, where indicated, request an increase in the fees for those procedures where such increase is found to be warranted.

The second was number 59–39, introduced by Henry Vinicor, St. Lawrence County Medical Society, as an individual:

> *Resolved,* that the Council Subcommittee on Public Medical Care be directed to meet as soon as possible with State Department of Social Welfare for the purpose of apprizing them of the new Workmen's Compensation Minimum Fee Schedule, thus attempting to raise the maximum fees

and rates to which the State rate of reimbursement (to counties) will be applied.

The reference committee felt it was not necessary to consider them because of letter dated April 24, 1959, from the Deputy Commissioner of Social Welfare. He states that a new fee schedule will be released the early part of July, 1959, which will be revised basically to conform to long established practice and mutual agreement at two thirds of the new compensation fee schedule.

I move adoption of this portion of the report.

Vice-Speaker Wurzbach: Is there a second?

Dr. John C. McClintock, *Councillor:* I will second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all in favor of adopting this portion of the report say "aye," opposed "no." This portion is adopted.

Section 168 (See 33)

Report of Reference Committee on Report of Council, Part VII: Simplified Insurance Report Forms

Dr. Kelley: Resolution 59–1, "Simplified Insurance Report Forms," introduced by Nassau County Medical Society:

> *Resolved,* that this House of Delegates request an appropriate committee of the Medical Society of the State of New York to negotiate with representatives of typical insurance carriers to the end that a simplified report form may be prepared and an appropriate fee may be agreed on, so that it may become standard practice for a physician to be reimbursed by the insurance carrier for these services, without further burdening the patient.

No action was taken on this resolution as this work has already been done. Simplified claim forms for insurance have been sent to all doctors in the State of New York. It is the feeling of the committee that commercial forms are for service to insurance companies and that the individual doctor should set their fee with the commercial company. The nonprofit insurance forms are a service to the patient, and no fee should be charged.

I move this portion of the report be adopted.

Dr. Harry A. Mackler, *Kings:* I second it.

Vice-Speaker Wurzbach: Is there any discussion? All those in favor of the adoption of this portion of the report say "aye," those opposed "no." This portion is adopted.

Section 169 (See 34, 58)

Report of Reference Committee on Report of Council, Part VII: Medical Care Insurance for Persons Over Sixty-Five; Insurance for Persons Over Sixty-Five Years

Dr. Kelley: Resolutions 59–2 and 59–26 were combined. Both pertain to the same subject. The first is 59–2, "Medical Care Insurance for Persons Over Sixty-Five," introduced by Nassau County Medical Society:

> *Resolved,* that the Medical Society of the State of New York through its appropriate committees urge the Blue Shield Plans of the State to develop a program of medical care insurance coverage, consistent with the proposal of the American Medical Association, for persons over sixty-five who, *after adequate income investigation,* are found to be with modest resources or low family income.

The second is 59–26, "Insurance for Persons Over Sixty-Five Years of Age," introduced by Dr. John C. McClintock, Councillor:

> *Resolved,* that this House of Delegates of the Medical Society of the State of New York hereby approves and commends those plans which have such programs now in operation or formation in the State of New York and encourages the other plans to prepare a contract for the over-sixty-five-years-of-age group; and be it further
>
> *Resolved,* that a copy of this resolution be sent to the directors and each member of the board of directors of the Blue Shield Plans in the State of New York; and be it further
>
> *Resolved,* that the Blue Cross Plans in New York State receive a copy of this resolution with the request that they join Blue Shield in providing prepaid insurance for the over-sixty-five-years-of-age group of our citizens.

These resolutions were considered together. They are both approved and heartily endorsed by the committee.

I move the approval of this part of the report.

Vice-Speaker Wurzbach: Is there a second?

Dr. William T. Boland, *Chemung:* I second it.

Vice-Speaker Wurzbach: It has been moved and seconded that this portion of the report be approved. Is there discussion? Hearing none, all in favor say "aye," opposed "no." This portion is adopted.

Section 170 (See 41, 48)

Report of Reference Committee on Report of Council, Part VII: Social Security for Self-Employed Physicians; Social Security for Doctors of Medicine

Dr. Kelley: Numbers 59–9 and 59–16 were combined. Resolution 59–9, "Social Security for Self-Employed Physicians," introduced by the Medical Society of the County of Queens:

> *Resolved,* that this House of Delegates of the Medical Society of the State of New York reaffirm its endorsement of social security for self-employed physicians on a compulsory basis; and be it further

> *Resolved,* that the delegates from the Medical Society of the State of New York to the American Medical Association be instructed to introduce a resolution at the June, 1959, meeting of the House of Delegates to the American Medical Association, endorsing compulsory social security (O.A.S.I.) for self-employed physicians; and be it further
>
> *Resolved,* that these delegates be instructed to work militantly for favorable consideration of this resolution by the House of Delegates of the American Medical Association.

Resolution 59–16, "Social Security for Doctors of Medicine," introduced by the Medical Society of the State of New York:

> *Resolved,* that the Medical Society of the State of New York reaffirm its desire that doctors of medicine be included under the laws of Old Age and Survivors Insurance (social security); and be it further
>
> *Resolved,* that the delegates from the Medical Society of the State of New York to the American Medical Association introduce a similar resolution at the June, 1959, meeting of the House of Delegates of the American Medical Association.

These resolutions were approved by the committee. I move their adoption.

VICE-SPEAKER WURZBACH: Is there a second?

DR. MACKLER: I second it.

VICE-SPEAKER WURZBACH: Is there any discussion? If not, all those in favor of the adoption of this portion of the report say "aye," opposed, if any, "no." This portion is adopted.

Section 171 (See 44)

Report of Reference Committee on Report of Council, Part VII: Group Life Insurance

DR. KELLEY: Resolution 59–12, "Group Life Insurance," introduced by the Medical Society of the County of Erie:

> *Resolved,* that the House of Delegates of the Medical Society of the State of New York reconsider its action of 1957 approving group life insurance coverage for self-employed professional men; and be it further
>
> *Resolved,* that the House of Delegates instruct the Committee on Legislation of the Medical Society of the State of New York to cease and desist from sponsoring group life insurance legislation for professional men and to oppose actively any such legislation initiated by others.

The reference committee disapproved of this resolution. It was felt by the committee that group insurance problems should be handled at the county level and that there are many things in favor of this type of insurance and there are many things not in favor.

I move adoption of this portion of the report.

VICE-SPEAKER WURZBACH: Is there a second?

DR. C. JOSEPH DELANEY, *New York:* I second it.

VICE-SPEAKER WURZBACH: Is there any discussion? All those in favor of the adoption of this portion of the report will say "aye," opposed "no." This portion is adopted.

Section 172 (See 59)

Report of Reference Committee on Report of Council, Part VII: Indemnity Plan for Medicare

DR. KELLEY: Number 59–27, "Indemnity Plan for Medicare," introduced by the Medical Society of the County of Queens:

> *Resolved,* that the Medical Society of the State of New York when next negotiating with the Federal government for a Medicare contract should *not* agree to a fixed schedule of allowances for services but should allow physicians to charge the fees they would normally charge for the services rendered to persons of comparable standards of living in their locale.

This resolution was disapproved by the committee because negotiations are under way with the Federal government at this time. This would embarrass the committee who are conducting such negotiations.

I move the adoption of this portion of the report.

VICE-SPEAKER WURZBACH: Is there a second?

SECRETARY ANDERTON: I second it.

VICE-SPEAKER WURZBACH: Is there any discussion? Hearing none, all in favor of the adoption of this portion of the report say "aye," opposed "no." This portion of the report is adopted.

Section 173 (See 42)

Report of Reference Committee on Report of Council, Part VII: Reaffirmation of the Concept of Free Choice of Physician

DR. KELLEY: Number 59–10, "Reaffirmation of the Concept of Free Choice of Physician," introduced by the Medical Society of the County of Queens. Your reference committee after reading over this resolution felt that there are many things in it that could better be left out, and we reworded it, so if you will refer to it—you have it before you I imagine—I will read the reworded resolution, and you can follow along with the original resolution that you have before you:

> WHEREAS, the Reference Committee on Insurance and Medical Service of the American Medical Association will report on its study of the work done by the Commission on Medical Care Plans of the American Medical Association at the meeting of the House of Delegates of the American Medical Association in June, 1959; and

> WHEREAS, this reference committee has requested the constituent associations to express their attitude regarding the report; and
>
> WHEREAS, freedom of choice of physician has been shown to be the best way to provide the best medical care for the public; and
>
> WHEREAS, that free choice of physician is a fundamental principle and essential to good medical care; now therefore be it hereby
>
> *Resolved*, that the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association be instructed to reaffirm the concept of freedom of choice of physician.

This resolution the committee felt should be reworded, and I move adoption of the reworded resolution.

VICE-SPEAKER WURZBACH: Is it seconded?

SECRETARY ANDERTON: I will second it.

VICE-SPEAKER WURZBACH: Is there discussion?

. . . In the course of the discussion which followed, Dr. George J. Lawrence, Jr., councillor, proposed an amendment which would restore the four "whereases" relating to closed panel systems as contained in the original resolution and would add:

> . . . and be it further
>
> *Resolved*, that the Medical Society of the State of New York reiterates its opposition to the concept of closed panels of physicians.

. . . This amendment was seconded.

. . . Dr. John C. McClintock, councillor, stated that the question raised by the American Medical Association did not relate to the Society's attitude toward closed panels but rather to its attitude toward physicians who participate in them. He stated that the proposed amendment would hamper the Committee on Economics in its dealings with labor unions.

. . . Dr. Lawrence replied that discussions with labor and management were pointless unless they were made to understand the Society's objections to their proposed medical care plans.

. . . Dr. Thomas M. d'Angelo of Queens spoke in support of Dr. Lawrence's amendment. He reminded the delegates that of the 35 counties which had responded to a survey on this subject, all had expressed opposition to a closed-panel system.

. . . Dr. Vincent J. Collins, section delegate, made a substitute motion that the resolution originally presented be approved. The motion was seconded.

. . . Dr. Ezra A. Wolff, assistant secretary, made a second substitute motion that the last two "resolveds" of the original resolution be adopted and the rest omitted. This was seconded.

. . . Dr. d'Angelo and Dr. Arthur H. Walker of Monroe argued against the second substitute motion on the ground that the "resolveds" did not express the condemnation of closed-panel systems contained in the "whereases."

. . . There were calls for the question . . .

VICE-SPEAKER WURZBACH: All those in favor of the second substitute motion—we are now voting on the second substitute motion, which is that the last two "resolveds" are the entire motion—all those in favor of this substitute motion say "aye," those opposed "no." It is definitely lost.

Now, gentlemen, we are back to the first substitute motion, which is that the entire resolution 59-10 as originally presented be adopted. Is there any discussion? Hearing none, all those in favor of this substitute motion say "aye," those opposed "no." It is carried. The original resolution is carried in this substitute motion.

Section 174 (See 68)

Report of Reference Committee on Report of Council, Part VII: Payment to Interns and Residents by Blue Shield Plans

DR. KELLEY: Number 59-36, subject "Payment to Interns and Residents by Blue Shield Plans," introduced by the Medical Society of the County of Queens:

> *Resolved*, that the Medical Society of the State of New York oppose payment of fees or benefits to residents or interns by any Blue Shield Plan in the State of New York.

The committee did not approve or disapprove this resolution. This will be referred to the Council for further study. We wish to emphasize the principle that hospitals should not practice medicine.

I may clarify that a little bit. It came before the reference committee that there are certain teaching hospitals at the present time who are unable to get material for their fifth-year residents, sufficient material to meet the requirements, so they have been licensing them, and then they go into the private rooms for study and provide medical care. The committee felt that the hospitals, these teaching institutions, should still not collect the money from Blue Shield and take it for the work these residents were doing. However, there was quite a lot of talk about it by some of the members from the teaching staffs, and we felt it should be taken up by the Council and studied further before we made a definite decision on it.

I move adoption of this portion of the report.

VICE-SPEAKER WURZBACH: Is there a second?

DR. GILBERT A. CLARK, *Rensselaer:* I second it.

VICE-SPEAKER WURZBACH: Is there any discussion?

DR. THOMAS F. MCCARTHY, *Bronx:* I feel if you fail to act on this you are more or less endorsing this policy. The point that I have always made in discussing this with the deans of medical schools and the teaching institutions is, "Will you honestly tell these people, when they come to your hospital, that they are going to be operated on by a resident?" These people have the conception that when they took out their insurance they were going to be treated by a so-called practicing physician and not be operated on by a resident or intern in a hospital. Every time they tell me, "No, we don't tell these people that because then they might not come to the hospital." I think that is the crux of the matter. If you are honest enough to tell these people you are being operated on by the man who is doing the operating and not that you are being operated on by a doctor of surgery of the department, which is the conception that these people have when they go to these large teaching institutions, then I might favor this, but I know they will never do it. Therefore, I oppose your passing this over, and I move the adoption of this resolution.

Vice-Speaker Wurzbach: You are making a substitute resolution?

Dr. McCarthy: A substitute motion.

Dr. Henry J. Barrow, *Bronx:* I second it.

Dr. George J. Lawrence, Jr., *Councillor:* I would just like to ask what you meant by free choice a few minutes ago. You almost brought down the House voting that people should have the right to choose their own physicians. Now if you don't pass this resolution, you are going to disagree with yourselves. You are going to negate, partially negate, an action which you took so strenuously a few minutes ago. If you believe in supporting free choice, you believe in supporting this next resolution.

Dr. Henry T. Randall, *New York:* What is the substitute motion?

Vice-Speaker Wurzbach: The substitute motion is to adopt the original resolution 59–36.

Dr. Randall: May I make a comment on the substitute motion? I would like to bring to the attention of the House of Delegates that this problem is broader than what is apparently expressed in the original resolution.

I would also parenthetically disagree rather with Dr. McCarthy's statement about his conversations with deans and ask him what deans he talked to, because our experience, at least in New York County, has been that the patients are well informed that they are being operated on by residents.

With respect to the problem as a whole, I would like to call the House's attention to the fact that we, as members of the State Society, have certain obligations involving the carrying of some of the responsibilities of medical education and that medical education in the graduate field is in very severe jeopardy today as the result of a combination of economic trends diminishing the number of patients and certain of the provisions of this State Society and of the Blue Shield type of requirements which prohibit sufficient patients being available for training purposes.

I hope that the Society, whatever action it may take with regard to this resolution, will recognize its responsibilities for future generations in training and that by study it will be possible to work out ways and means whereby the younger generation will have the opportunity to achieve that training perfectly within the understanding of the patients who are involved.

This is not merely a problem of economics, whether or not the Blue Shield program is to pay an intern or a resident. It is much more profoundly a problem of the whole future of graduate training and responsibility for graduate training of this Society for the future.

I hope that methods can be brought about through the Council, perhaps through the Planning Committee, whereby this matter may be studied, whether studied by referral of this particular resolution as your reference committee suggests or whether referred to the Council on the merits of the problem as such I don't care, but I want it brought before everyone that the problem exists.

Vice-Speaker Wurzbach: Is there further discussion?

Dr. Cyril M. Levin, *Richmond:* Opposing the payment of interns and residents by Blue Shield Plans, I am strongly in favor of this resolution as it is. If there are any other ways of helping on what the doctor proposed before, that should be considered, but it is not a part of this resolution and does not pertain to this resolution because it specifically states Blue Shield Plans.

Dr. Thomas M. d'Angelo, *Queens:* I certainly appreciate the words and what was said by the people on the other side of the House concerning graduate education. I think it is very necessary. I myself can very well see how some of these questions arise at present. I don't think that the doctor's way is the way to solve it actually. Of course, whatever this House does or says, the Blue Shield Plans will have to pay registered physicians, there is no question about it. Whether or not they are residents will make no difference, they will have to pay them, so we say by all means if we have to pay them, let us pay them. But I don't see why these physicians should then turn the money over to the hospitals.

Dr. Arthur J. Bedell, *Past President:* That is the crux of it.

Dr. d'Angelo: Let them have free choice. Let them notify Dr. So-and-So who is in residency. I see nothing in this resolution to jeopardize the training program at all.

Dr. Arthur H. Walker, *Monroe:* Mr. Speaker, I would like once again to ask that the resolution originally presented be passed. I think there are several problems that come up besides the problem of education, which I think is very important. We are all agreed on that, but there are certain other problems that come up. For instance, are these men licensed to practice in New York State, and if so, are they covered by malpractice insurance, and if they are not, who is going to carry the ball for them if there is a malpractice suit? Furthermore, if these people have this insurance, why are they not being cared for by a private physician as they should be?

I speak once again in favor of the passage of this resolution as originally presented.

Dr. Lawrence: A question before voting on this. I believe we need some clarification on the third "whereas," which says a county society in the State of New York has passed a resolution requesting U.M.S. to pay interns and residents in certain hospitals. I don't believe that is correct. I think the county society's comitia minora took such an action, but this was subsequently tabled by the stated meeting. If I am correct in this, that "whereas" should be deleted, but I am in favor of passing the resolution originally introduced except for that item.

Vice-Speaker Wurzbach: You therefore make an amendment to this substitute that the third "whereas" be deleted?

Dr. Lawrence: If I am correct, I so move. If someone wants to correct me, I won't so move.

. . . The amendment was seconded . . .

Dr. Norton S. Brown, *New York:* I would like to answer Dr. Lawrence's question for the benefit of the information of the House.

Our comitia minora has been studying the problem of Blue Shield payments to advanced residents in our teaching hospitals. The study has been going on for some time. It is not purely, as Dr. Randall suggested, based on the economic considerations. It becomes a problem, if a large percentage of ward patients are covered with insurance, how our boys in training are going to be trained. In internal medicine that is not important, but in surgery and gynecology and obstetrics, where you have to do things to patients, it becomes a very critical matter in the question of graduate teaching.

The resolution is in error when it says that this was passed. It was passed by our comitia. We had a very stirring and long debate at a stated meeting of the medical society. For the first time in history, I believe, we had a large turnout of university people as well as the routine members of our own society. The decision was to return the resolution to an ad hoc committee for further study.

New York County feels very strongly that unless organized medicine will undertake some responsibilities in this time of change and crisis, our teaching hospitals are going to have to depend more and more upon Federal aid, and I think that we must accept some responsibility unless we wish to accelerate the development of the Federally subsidized system of medical education. If that is what some of the delegations would like to have, that is their privilege. It is not my concept of the best way medicine should be practiced.

Dr. Herbert S. Ogden, *New York:* I want to take a slight exception to my president's (Dr. Brown's) statement. We cannot have this thing both ways. One person has just gotten up here and said the crying need is to have patients, that patients cannot be obtained for residents to operate on because everybody has Blue Shield, and they are entitled to have their own doctor instead of a resident operate on them. On the other hand, Dr. Brown just suggested or raised the bogeyman that the Federal government can supply us with the necessary patients. Unless we are going to be subsidized in the United States Army or something of that sort, I cannot see it.

I think, that the true picture of what went on in New York County has not been presented. The resolution that was brought into New York County was the reverse of the one here. This one reaffirms free choice principle and says that residents shall not be paid. The resolution that came into New York County said residents shall be paid under circumstances that are set up by the medical schools ad hoc committee consisting of the deans of the medical schools and other members of the profession.

The effect was entirely the reverse of this thing. This was going to turn the United Medical Service fees over to the medical schools in effect because it was going only to be put in effect in the teaching hospitals, and the definition as to what were teaching hospitals was that teaching hospitals were those that had had their staff appointed by the medical schools completely. This is quite a different matter from what we are presented with here today.

I am very much in favor of the resolution as it has come from Queens County, and I urge you all to vote for it. When the reverse of this resolution came up in New York County, I voted against that resolution. After much debate it was tabled and recommitted to the committee with the statement that the committee should enlarge itself, not talk just to the deans of the medical schools, but get a cross-section of the population. There is no reason why in New York City, for example, the residents in Presbyterian Hospital are paid and the residents in Mt. Sinai Hospital not paid. Most people will agree both are very fine institutions, so it was obvious you needed to talk to more people before you could arrive at any such solution or at a sensible solution.

My belief is that in the situation that we find ourselves in now, the position most consistent with what we have stood for in the past and what we hope to stand for in the future is embodied in the resolution Queens County brought in, and I urge you to support it.

Dr. George Himler, *New York:* I was on that committee that studied that matter for about five years. I think what we are doing here is probably confusing two issues. This is very important, what you have before you, and it is the question of the possible payment of residents and interns by Blue Shield, which was presented as a possible method of solving the problem. The basic problem is the one that Dr. Randall reported to you, the problem of our teaching institutions that have neither the money nor the patients to carry on their teaching program.

It is quite possible, as in our county the opinion was, that this was not a good method, and very possibly this House will agree it is not a good method, but instead of merely passing this resolution which eliminates one possible method of solving the problem, I would suggest to you that we add something to it, and that is that we recognize the problem and that we instruct the Council to study that problem, even though you may not care for this method of handling it.

I would like to offer an amendment to the present amendment.

Vice-Speaker Wurzbach: You can offer an amendment to an amendment or a substitute motion, either one.

Dr. Himler: As a substitute motion then. I would accept this entire motion as it stands now and add a final "resolved." That "resolved" would be that other methods of support for graduate medical education be sought by the Medical Society.

Vice-Speaker Wurzbach: That is out of order.

. . . The question was called . . .

Vice-Speaker Wurzbach: A two-thirds vote—we are now voting on—

Dr. Brown: We are now voting on the amendment which is that the third "whereas" be deleted.

Vice-Speaker Wurzbach: Correct. All those in favor of this amendment say "aye," opposed "no." It is so ordered.

We are now back to the substitute motion which is to adopt the original 59–36 as it was originally presented in the House with the amendment which you have just passed, which is the deletion of the third "whereas."

Dr. Bedell: Question.

Vice-Speaker Wurzbach: All those in favor of this substitute motion as amended say "aye," opposed "no." The substitute motion as amended is carried.

Section 175 (See 21)

Report of Reference Committee on Report of Council, Part VII: Annual Report of Special Committee on Resolution 58–49

Dr. Kelley: The reference committee feels this is an interim report. The importance of the original resolution is such that further studies should be made, and the Medical Society of the State of New York should go on record that it is the responsibility of all physicians to see that good medical care is rendered to all the people of the State of New York, and we should accept that responsibility and develop a method by which this can be carried out.

I move the adoption of this portion of the report.

Dr. Mathews: I second it.

Vice-Speaker Wurzbach: Is there a second? It was seconded. Is there any discussion? All those in favor of the adoption of this portion of the report will say "aye," those opposed "no." It is so ordered.

Section 176 (See 55)

Report of Reference Committee on Report of Council, Part VII: Health Insurance Coverage for Mentally Ill

Dr. Kelley: Number 59–23, "Health Insurance Coverage for Mentally Ill," introduced by the Medical Society of the County of Albany:

> *Resolved,* that this House of Delegates instruct the Committee on Legislation to sponsor whatever legislation is necessary to bring about the following:
>
> 1. That voluntary health insurance plans desiring approval from the Commissioner of Insurance of New York State for rate increases shall be directed to include coverage for care of the mentally ill in non-Federal hospitals, with a maximum of thirty days a year for each subscriber;
>
> 2. That where coverage for this type of illness has not previously been in force, coverage for mental illness may be added either to the basic contract of all subscribers or in the form of a special rider contract, available to all subscribers on payment of the additional premium approved by the Commissioner of Insurance;
>
> 3. That where a special rider covering care of the mentally ill in non-Federal hospitals is the only coverage afforded the subscriber for this type of illness, subsequent requests for rate increases by voluntary health insurance plans shall be directed by the Commissioner of Insurance to include mental illness coverage for a maximum of thirty days a year for each subscriber in the basic contract for which approval is being sought;
>
> 4. That as soon as practicable, but not later than ten years from the date of this enactment, coverage for mental illness shall be the same as for other illnesses covered by the policyholder's contract.

This resolution was disapproved by the committee. I so move.

Vice-Speaker Wurzbach: Is there a second?

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there discussion? All those in favor of the report of the committee—

Dr. Louis H. Bauer, *Past President:* Mr. Speaker, did I understand that the committee recommends approval of this?

Vice-Speaker Wurzbach: Disapproval. All those in favor of the recommendation of the committee, which is disapproval of the resolution, say "aye," those opposed "no." It is carried.

Section 177 (See 84)

Report of Reference Committee on Report of Council, Part VII: Legal Status of Demand by Associated Hospital Service for Information and Correspondence from Attending Doctors on Patients Hospitalized Under Associated Hospital Insurance Coverage

Dr. Kelley: Resolution 59–51, subject "Legal Status of Demand by Associated Hospital Service for Information and Correspondence from Attending Doctors on Patients Hospitalized Under Associated Hospital Insurance Coverage," introduced by Dr. William Hall Lewis, Jr., of the Medical Society of the County of New York, as an individual:

> *Resolved,* that this House of Delegates requests review by its appropriate committee and with its legal counsel of such contracts and procedures and to take measures to clarify for the patient, the profession, and the attending doctor the responsibilities of the doctor in these matters; and be it further
>
> *Resolved,* that the delegates from the Medical Society of the State of New York to the American Medical Association House of Delegates be instructed to introduce a similar resolution at its meeting in June, 1959.

The committee approves this resolution with the exception of the last "resolved." I move adoption of this portion of the report.

Dr. Delaney: I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all those in favor of the recommendation of the reference committee say "aye," opposed "no." It is so ordered.

Dr. Kelley: The reference committee moves the approval of the report as a whole as amended.

Vice-Speaker Wurzbach: Is there a second?

Dr. Mackler: I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, those in favor of the adoption of the report as a whole as amended say "aye," those opposed "no." It is carried.

Dr. Kelley: I would like to thank the members of my committee, Dr. Gilbert A. Clark, Rensselaer; Dr. C. Joseph Delaney, New York; Dr. Harry A. Mackler, Kings; and Dr. Charles R. Mathews, Monroe, for a long afternoon and a great deal of controversy.

Vice-Speaker Wurzbach: Thank you, Dr. Kelley.

REFERENCE COMMITTEE, PART VI

Section 178 (See 23)

Report of Reference Committee on Report of Council, Part VI: Hospital and Professional Relations

Dr. William T. Boland, *Chemung:* This is the report on Council, Part VI, Hospital and Professional Relations, Dental Health, Joint Committee to Combat Staphylococcal Infections.

The Hospital and Professional Relations Committee consists of Raymond S. McKeeby, M.D., chairman, Bernard A. Watson, M.D., and Vincent J. Collins, M.D.

The meetings were held January 7, February 12, and March 19, 1959.

1. At the January 7, 1959, meeting resolution 58–51 having to do with the disapproval "of the practice of hospitals charging a patient a fee for taking an electrocardiogram, and the hospital charging another fee, not covered by Blue Cross insurance, for the interpretation of the same electrocardiogram," was discussed. The committee felt the specific hospitals doing this practice should be ascertained and that the action of the House of Delegates should be brought directly to their attention. The committee will further discuss the resolution at a meeting with the Hospital Association.

2. Dr. Henry T. Randall suggested in a letter to the committee that tripartite representation of the medical schools, Medical Society, and Hospital Association would be helpful. The committee approved in principle the ideas and also referred the letter to the meeting to be held with the Hospital Association.

3. The request of the Subcommittee on Mental Health that the Public Health and Education Committee should press for psychiatric units in general hospitals. Members of the committee felt since many problems arise in the care of the mental patients, even when admitted for diagnosis alone, it could only be recommended in hospitals which have a psychiatric team. They also maintain there would be additional expense to Blue Cross subscribers because of the increase in premium to support this expanded program; also that the Blue Cross subscribers are taxed to support now existing mental institutions. Since there are other committees studying the whole problem, among these the Metcalf Committee of the Legislature, the committee felt that no action be taken until all reports are studied.

4. The committee states that probably the most important thing accomplished is the formation of the Joint State Committee as outlined in the

"Proposed Guiding Principles." This Joint State Committee is comprised of two members of the State Society appointed by the president, Dr. Norton S. Brown, New York, and Dr. Raymond S. McKeeby, Broome. The two members from the Hospital Association are Dr. Bernard Watson and Dr. Morris Hinenburg. This committee selected a fifth member, the Honorable David Peck of New York City, who will serve as chairman. The functions of this committee are outlined under paragraph 9 of the "Guiding Principles of Hospital-Physician Relationship." A meeting composed of the Committee on Medical Relations of the Hospital Association of New York State and the Hospital and Professional Relations Committee of the Medical Society was scheduled for March 19, and the conclusion of the Joint Committee will be presented in the supplementary report.

Your reference committee recommends the acceptance of the report of the Committee on Hospital and Professional Relations as outlined above. I move this part of the report be adopted.

Vice-Speaker Wurzbach: Is there a second?

Dr. Louis Berger, *Kings:* I second it.

Vice-Speaker Wurzbach: Is there discussion of this part of the report? All in favor of the adoption of this portion of the report say "aye," opposed "no." It is so ordered.

Dr. Boland: Supplementary Report 59–O was necessary because the Permanent Policy Committee had not met at the time the annual report was submitted. The Permanent Policy Committee consists of Thomas Hale, M.D., chairman; Lloyd Gaston, M.D.; J. A. Katzive, M.D.; William A. Kelly, M.D.; Mr. Howard R. Taylor; Mr. Paul P. Sobering; Christopher Parnall, Jr., M.D.; Arnold A. Karan, M.D.; and Mr. Charles M. Royle, representing the Committee on Medical Relations of the Hospital Association.

Raymond S. McKeeby, M.D.; Vincent J. Collins, M.D.; Bernard A. Watson, M.D.; W. P. Anderton, M.D., ex-officio; and Herbert T. Wagner, M.D., executive director, representing the Hospital and Professional Relations Committee of the State Medical Society.

1. The first item discussed was the formation of the joint State committee as recommended under paragraph nine of the mediation procedure.

2. Also discussed was the advisability of a session of the Permanent Policy Committee in the fall as a pre-Legislature session so that proper consideration could be given to pending legislation.

3. The next item was the consideration of Dr. Henry T. Randall's letter in which he suggested establishing "a tripartite liaison group in the State of New York." It was agreed to table the information contained in the letter until next year's meeting with suggestion that Dr. Randall be contacted for more specific information.

4. There was a discussion of the Forand Bill. Since there has been some difference of opinion in regards to this bill, the Permanent Policy Committee was requested to take some definite stand in regards to the bill. The following motion was passed:

> *Resolved,* that this committee recommends to its parent bodies that they express themselves definitely as being opposed to the Forand Bill. The solution to this problem must be sought in the voluntary field where we are convinced that it will be found.

Six were in favor of the motion, one against, and two abstained from voting.

The above items were approved by the Council at the April meeting.

I move this part of the report be adopted.

Vice-Speaker Wurzbach: Is there a second?

Dr. Samuel Frant, *New York:* I second it.

Vice-Speaker Wurzbach: Is there discussion? All in favor of this portion of the report say "aye," contrary "no." This portion is adopted.

Dr. Boland: Paragraph 4 of the Hospital-Physician Relationship Agreement was discussed. This paragraph has caused a great deal of discussion for several years and has not been satisfactorily resolved for all concerned on financial arrangement between physician and hospitals. The Permanent Policy Committee passed the following motion:

> *Resolved,* that as a substitute for Paragraph 4, this Joint Committee recommends to their organizations that at the next annual meeting, it should be suggested that the following should be included as an integral part of the agreement, "Guiding Principles," Paragraph 4, taken from page 14 of the "Relations of Physicians and Hospitals," under Part II, Report of the Joint Committee on Hospital-Physician Relationships of the boards of trustees of the American Medical Association and the American Hospital Association, June, 1953:
>
> *Paragraph 4.* The right of an individual to develop the terms of his service on the basis of local conditions and needs is recognized, but such contractual arrangements should in all cases insure (*a*) the policy of professional incentive for the physician, and (*b*) progressive development of the hospital departments involved in order that increasingly improved services to patients be rendered."

The above action of the Permanent Policy Committee was reported to the Council and referred to the House of Delegates for action.

Your reference committee accepts this motion but with the stipulation that nothing in this motion be regarded by members of the Medical Society of the State of New York as being in conflict with or as being less comprehensive than the statements contained in the *Principles of Professional Conduct* of this Society or the "Guides to Relationship between Physicians and Hospitals," as adopted by the A.M.A. House of Delegates in June, 1953, and reaffirmed in December, 1953, and amended in 1958.

It is also recommended that the Committee on Hospital and Professional Relations continue to seek an agreement on an amendment of Paragraph 4, in order that principles contained in these documents be included more explicitly in the aforesaid Paragraph 4, to wit: "A physician should not dispose of his professional attainments or services to any hospital, corporation, or lay body by whatever name called or however organized under terms or conditions which permit the sale of the services of that physician by such agency for a fee," as stated on page 8 of the "Relationship of Physicians and Hospitals."

I move that part of the report be adopted.

Dr. Arthur J. Bedell, *Past President:* I second it.

Vice-Speaker Wurzbach: Is there discussion?

Dr. Irving M. Pallin, *Kings:* We have fought this principle against the corporate practice of medicine for many years, and we have probably won. I see no necessity for bringing in these two paragraphs which allow this interpretation. Even though we do say that the corporate practice of medicine will not be permitted, these paragraphs allow interpretation; for instance, paragraph 4: "The right of an individual to develop the terms of his service on the basis of local conditions and needs is recognized, but such contractual arrangements should in all cases insure (*a*) the policy of professional incentive for the physician." That certainly is open to interpretation. We don't know at this point what the incentive would be. The implications may be there. I see no necessity for bringing this paragraph in at all, and I think we should reaffirm our stand in this position.

Vice-Speaker Wurzbach: Do you make any motion, sir?

Dr. Pallin: I would like to amend the motion that this paragraph 4 of the committee's report be deleted.

. . . The amendment was seconded . . .

Vice-Speaker Wurzbach: We are now on the amendment that paragraph 4 be deleted. Is there discussion? Hearing none, all in favor of the amendment, which is the deletion of paragraph 4, say "aye," those opposed "no." The amendment is carried. Dr. Boland, that takes care of that.

Dr. Boland: I move that this part of the report be adopted as amended.

Vice-Speaker Wurzbach: All those in favor of the adoption of this portion of the report as amended say "aye," opposed "no." It is adopted as amended.

Section 179

Report of Reference Committee on Report of Council, Part VI: Dental Health

Dr. Boland: Since there was no meeting of the Joint Dental Health Committee, there is no report.

I move this part of the report be adopted.

Dr. James A. Moore, *Albany:* I second it.

Vice-Speaker Wurzbach: All those in favor of this report say "aye," opposed, if any, "no." It is adopted.

Section 180

Report of Reference Committee on Report of Council, Part VI: Joint Committee to Combat Staphylococcal Infections

Dr. Boland: This part of the report concerns the Joint Committee to Combat Staphylococcal Infections. This committee consisted of Dr. James Greenough, chairman, Dr. Granville W. Larimore, Dr. Victor N. Tompkins, Dr. Christopher Parnall, Dr. Martin R. Steinberg, Dr. Alonzo Yerby, and Dr. Norman S. Moore. This committee was appointed as a result of a suggestion of the Public Health Council. At a meeting of the committee on May 15, 1958, the following motions were approved:

1. To draw up a guide for the control of staphylococcal infections for hospitals, physicians, and other medical personnel.
2. To secure an advisory committee to assist this project.
3. To acquaint the American Medical Association, the American Hospital Association, and the United States Public Health Service with the proposed action.
4. To divide the expenses of this project equally between the Medical Society of the State of New York, the Hospital Association of New York State, the New York State Department of Health, and the New York State Department of Social Welfare.

An advisory committee consisting of 22 members was obtained. The committee consisted of physicians, nurses, and laymen who were especially interested in the subject. Meetings of the advisory committee were held on June 4 and July 16, 1958. At the first meeting the group discussed material for the manual in four subgroups: professional technics and practices, epidemiology, laboratory procedures, and administrative technics and practice. At the second meeting the reports of the four groups were reviewed and consolidated. Then the material was rewritten in a form suitable for publication. After final approval by the Joint Committee, 1,500 copies of the manual were published and distributed on December 1, 1959. A few corrections were made, and a second edition of 5,000 copies was published on January 12, 1959.

The committee, with the consent of the Health Department, plans to combine the staphylococcal manual with the present Health Department publication, "Guide for Prevention and Control of Infections in Hospitals."

The Joint Committee to Combat Staphylococcal Infections is to be congratulated for accomplishing so much in a relatively short time.

Your reference committee recommends that all physicians in the State of New York acquaint themselves with the manual. Appreciation is extended to the advisory committee for their assistance in preparing the manual "Control of Staphylococcal Infections in Hospitals."

I move this part of the report be adopted.

Dr. Frank LaGattuta, *Bronx:* I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all in favor of the adoption of this report say "aye," opposed, "no." This portion of the report is adopted.

Section 181 (*See 78, 88, 124*)

Report of Reference Committee on Report of Council, Part VI: Disapproval of Strikes Against Hospitals

Dr. Boland: Three resolutions were referred to our reference committee, 59–46, 59–55, and 59–60. All three resolutions dealt with the disapproval of strikes against hospitals. Since all three resolutions contained about the same material, they were all discussed in detail, and the committee voted that we incorporate the three into one and report them as resolution 59–55.

There is a great deal of interest shown in these three resolutions, and several members who were interested in the subject appeared before the committee, and a great deal of material was furnished to the committee as to what is going on in New York City at the present time in the strikes against the nonprofit hospitals.

Because of the importance of this composite resolution, I think I should read the whole resolution:

> Whereas, the Medical Society of the State of New York considers the welfare of the patient the primary concern of the medical profession; and
>
> Whereas, the Medical Society of the State of New York considers any action of an individual or organization which interferes with the proper care of patients in hospitals as inimical to the welfare of the sick; now therefore be it hereby
>
> *Resolved,* that the Medical Society of the State of New York is and hereby records its unequivocal opposition to any strike or any other activity prejudicial to the welfare of hospitalized patients; and be it further
>
> *Resolved,* that the membership of the Medical Society of the State of New York will continue to make every effort to be certain that the sick receive proper care; and be it further
>
> *Resolved,* that the delegates from the Medical Society of the State of New York to the American Medical Association be instructed to introduce a similar resolution at the A.M.A. House of Delegates in June, 1959; and be it further
>
> *Resolved,* that copies of this resolution be sent to the responsible State and municipal executive officers and to the State Hospital Association.

The reference committee recommends that this resolution be adopted as read.

Vice-Speaker Wurzbach: That is the composite resolution?

Dr. Boland: Yes.

Dr. Frant: I second it.

Vice-Speaker Wurzbach: It is open for discussion.

Dr. Bedell: Mr. Speaker and gentlemen, I rise just to add that this should immediately be given to the press. This is an urgent situation. We should go on record immediately as appreciating all the implications of that which is going on in New York. I move that, sir, as an amendment.

Dr. Henry J. Barrow, *Bronx:* I second that.

Vice-Speaker Wurzbach: It has been amended that it be immediately released to the press. Now on the amendment that this be immediately released to the press, is there any discussion?

All of those in favor of this amendment say "aye," those opposed "no." The amendment is carried. We are now on the original, on the substitute resolution of the reference committee, with the added amendment of immediate release to the press. Is there any discussion?

. . .Dr. George J. Lawrence, Jr., councillor, and Dr. Herbert Berger, section delegate, spoke against the resolution. Dr. Lawrence cited the extremely low wages paid to some hospital employes and expressed the opinion that the hospitals in New York City had been unwise in not "going along" with a fact-finding board which had been suggested. Dr. Berger quoted a newspaper statement made in behalf of the hospitals to the effect that normal service was being maintained and that none of the 2,700 patients had suffered any inconvenience and the further statement that amounts paid by the city for ward patients and by Blue Cross for insurance beneficiaries were inadequate. He agreed with Dr. Lawrence about the low pay of nonprofessional hospital workers and reminded the delegates that these were "the very people who surround us and who look to us for help."

...Dr. Alfred P. Ingegno, councillor, made a substitute motion that resolution 58-40 be adopted instead of the composite resolution presented by the reference committee.

...Dr. Abraham D. Segal, Kings, supported the resolution, spoke of some of the difficulties of dealing with unions and union members, and mentioned the fact that some hospital employes hold two jobs.

...Dr. Ezra A. Wolff, assistant secretary, preferred the composite resolution to the Kings County resolution (59–40) because the former included the phrase "or any other activity." For the same reason, Dr. Samuel Z. Freedman, assistant treasurer, opposed the substitute motion and urged adoption of resolution 59–55...

Dr. Louis H. Bauer, *Past President:* I think the Medical Society of the State of New York would be remiss in its duty if it did not have something to say on this situation which has caused so much public attention. I think it can be handled without referring to the right to organize or not to organize or even the use of the work "strike," and I would move this as a substitute motion. It is really an amendment to Dr. Ingegno's motion, but I will do it as a substitute:

> Whereas, there now exists an unfortunate situation in many voluntary hospitals in New York City; and
>
> Whereas, the health and welfare of any community could be jeopardized by such a situation; and
>
> Whereas, it is important that reason and conscience prevail so that the sick may not suffer unnecessarily; now therefore be it hereby
>
> *Resolved,* that the Medical Society of the State of New York hereby goes on record as deploring any action which may cause hardship to the sick or unnecessary suffering.

Vice-Speaker Wurzbach: Do I hear a second?

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there any discussion of Dr. Bauer's substitute motion? All those in favor of the acceptance of this substitute motion say "aye," opposed "no." I will ask for a standing vote. Those in favor of Dr. Bauer's motion stand; now those opposed. The motion is carried.

Dr. Boland: I move this part of the report be adopted as amended.

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: All in favor of the report to be adopted as amended say "aye," those opposed "no." It is adopted as amended.

Dr. Boland: I move that the report as a whole be adopted as amended.

Dr. Frant: I second it.

Vice-Speaker Wurzbach: All those in favor of the adoption of the report as a whole as amended say "aye," those opposed "no." It is adopted.

Dr. Herbert S. Ogden, *New York:* Point of order.

Vice-Speaker Wurzbach: A point of order has been called.

Dr. Ogden: Members of the staff have just asked me to find out now if what we passed included the phrase "to release immediately to the press," which was in the previous resolution passed before we considered Dr. Bauer's motion on his resolution.

Vice-Speaker Wurzbach: Dr. Anderton is recognized.

Secretary Anderton: I move that the resolution just adopted be immediately released to the press.

Dr. Boland: I second it.

Vice-Speaker Wurzbach: All those in favor of Dr. Anderton's motion say "aye," those opposed "no." It is carried.

Dr. Boland: At this time I would like to thank the members of my committee: Dr. Frank LaGattuta, Bronx; Dr. James A. Moore, Albany; Dr. Louis Berger, Kings; and Dr. Samuel Frant, New York.

REFERENCE COMMITTEE, PART X

Section 182 (See 10)

Report of Reference Committee on Report of Council, Part X: Workmen's Compensation

Dr. Carl R. Ackerman, *Bronx:* Your reference committee reviewed the report of the Committee on Workmen's Compensation.

It approves and commends the committee's actions in opposing the attempts of podiatrists to exceed the scope of their legally permitted practice.

The committee reported the successful passage of a bill that provides for payment to physicians who testify at hearings involving nonoccupational disability. The rates are similar to those allowed for physician's testimony at workmen's compensation hearings.

The committee referred to another bill which was sponsored by the Commerce and Industry Association and endorsed by the Medical Society of the State of New York. This bill related to rehabilitation and the appointment of impartial specialists.

The reference committee was in agreement with most objectives of this legislation. However, one provision required that the Chairman of the Workmen's Compensation Board shall be empowered to license special clinics dealing primarily with rehabilitation.

Because there is inherent in such a concept the possibility that compensation practice could thereby be diverted from individual physicians to corporate or institutional practice, your reference committee recommends that this bill be restudied with regard to this point and with a view to reconsidering the endorsement given it by the Medical Society of the State of New York.

This bill was not passed, but the intent to reintroduce such legislation is mentioned in this report.

Mr. Speaker, I ask for approval of this portion of the report.

Dr. Peter J. Di Natale, *Councillor:* I second it.

Vice-Speaker Wurzbach: Is there any discussion? Hearing none, all in favor of the adoption of this portion of the report say "aye," contrary "no." It is adopted.

Dr. Ackerman: The Workmen's Compensation Committee reviewed the sequence relative to revision of the minimum medical fee schedule. These negotiations, which started in March, 1955, and continued through December, 1958, when the Chairman of the Workmen's Compensation Board issued the new schedule, have continued. In reviewing the chronology, your reference committee noted that these negotiations were in the hands of the Workmen's Compensation Committee for the first two years. This appeared right and proper as this committee, presumably, was acting for our president who under State Law is to be consulted by the Chairman of the Workmen's Compensation Board when establishing physicians' fee schedules.

Then some two years later representatives of each of the county medical societies were asked to meet with the Chairman of the Workmen's Compensation Board. It is most unlikely that this group of 147 doctors who were thus assembled could constitute an efficient and effective negotiating force.

Your committee strongly urges that future negotiations be conducted by a single experienced group.

The reference committee endorses all the recommendations made by the Medical Society of the State of New York to the Chairman of the Workmen's Compensation Board subsequent to the issuance of the new fee schedule. Our committee advises that these requests be presented to the new Chairman of the Workmen's Compensation Board except that portion of the proposed rehabilitation legislation previously mentioned.

We especially endorse the principle "that a review of the schedule be made by all interested parties at least every two years," which by the way is one of the recommendations.

I move approval of this portion of the report.

Dr. George A. Burgin, *Herkimer:* I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all those in favor of adopting this portion of the report will say "aye," those opposed "no." This portion is adopted.

Dr. Ackerman: Concerning the Supplementary Report of the Council Committee on Workmen's Compensation, this report is informational and is a comparative study of the arbitration of compensation cases under the Medical Practice Committee as compared with arbitration through the county medical societies.

The reference committee urges the Medical Society of the State of New York to continue its policy which favors the abolition of the Medical Practice Committee.

I ask for approval of this portion of the report.

Dr. Di Natale: I second it.

Vice-Speaker Wurzbach: Is there discussion? All in favor of the adoption of this portion of the report say "aye," those opposed "no." This portion is adopted.

Dr. Ackerman: As to the Supplementary Report of the Bureau of Workmen's Compensation, under the Workmen's Compensation Law the medical society in counties of less than one million population is privileged to serve in arbitration of disputed medical bills for service rendered claimants under the Workmen's Compensation Law. The local county medical society usually plays host to the arbitration committee by providing suitable meeting quarters and two representatives appointed by the president of the county medical society. It frequently occurs that in the smaller counties the number of cases to be arbitrated are very few. In order to avoid undue expense on behalf of all parties concerned, a medical society in an adjoining county will often serve as host for those cases that arise in these counties. All through the years it has been customary that the host medical society has provided the meeting place although it might mean the rental of quarters in a hotel or other such public meeting place.

It has recently been brought to the attention of the Bureau of Workmen's Compensation that at least one county objects to the provision of a meeting place if this meeting place requires a rental fee. It is felt by this county that the Medical Society of the State of New York should pay for any expense involved in the arbitration of these disputed medical bills.

The committee considers this primarily a local problem. It recommends that any costs involved be prorated among the participating counties.

I ask for approval of this portion of the report.

Vice-Speaker Wurzbach: Is there a second?

Dr. Arthur J. Bedell, *Past President:* I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor, say "aye," those opposed "no." This portion of the report is adopted.

Section 183

Report of Reference Committee on Report of Council, Part X: Industrial Health

Dr. Ackerman: The reference committee reviewed the report of the Committee on Industrial Health.

It approved the recommendations of the Industrial Health Committee relative to the standards for union health centers. We concur with the recommendation that the Medical Society of the State of New York adopt the principles developed and promulgated by the American Medical Association as "Guides for the Evaluation of Management and Union Health Centers," with the exception and elimination of item VIIIA4 on page 12 of the American Medical Association booklet.

This exception relates to publicity and advertising. In the opinion of both the Industrial Health Committee and this reference committee, it is considered too stringent.

I ask for approval of this portion of the report.

Vice-Speaker Wurzbach: Is there a second?

Dr. Di Natale: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor say "aye," opposed "no." This portion is adopted.

Dr. Ackerman: This committee commends the Industrial Health Committee for its study of union and management health centers in New York City.

We further compliment the Industrial Health Committee for its excellent and devoted work during the year.

As to the report of the Ad Hoc Committee on Labor Unions and Industrial Health, this committee has concerned itself with the establishment of better relations with organized labor and management and has participated in the study of union health centers.

The committee is to be commended for its efforts in striving for better understanding between representatives of labor and medicine. The joint meeting held in February, 1959, in New York City attests to this effort.

Your reference committee notes that overlapping and reduplication of areas of activity occur between this Ad Hoc Committee and the Committee on Industrial Health. We recommend that the activities of these committees be combined.

I move approval of this portion of the report.

Vice-Speaker Wurzbach; Is there a second?

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there discussion? All those in favor say "aye," opposed "no." This portion of the report is carried.

Section 184

Report of Reference Committee on Report of Council, Part X: Operating Room Mortality

Dr. Ackerman: As to the report of the Special Committee on Operating Room Mortality, this committee report outlines the groundwork being laid for the future course of action of this committee. Your reference committee agrees with its plans to establish liaison with anesthesia study committees and the New York State Health Department for the purpose of uniform reporting and classification.

We also agree with its recommendation that it be made a permanent subcommittee since prolonged study would be required to accumulate data.

I move the approval of this portion of the report.

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all those in favor of the adoption of this portion of the report say "aye," those opposed "no." This portion of the report is adopted.

Section 185 (See 37)

Report of Reference Committee on Report of Council, Part X: Revision of Workmen's Compensation Fee Schedule

Dr. Ackerman: Mr. Speaker, the committee had presented to it five resolutions, 59-5, 59-6, 59-33, 59-34, and 59-42.

Resolution 59-5, "Revision of Workmen's Compensation Fee Schedule"—the committee disapproved this resolution for the following reasons:

It considered the use of a "cost-of-living index" as impractical.

It would make more difficult the underwriting of insurance companies.

An annual revision of the fee schedule constituted too short a period.

Instead the committee has accepted the recommendation of the Workmen's Compensation Committee, previously passed by the House of Delegates in my report, that revision be asked for at intervals of not longer than two years.

I ask for the approval of the action of the committee.

Dr. Henry J. Barrow, *Bronx:* I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of the action of the committee in disapproving this resolution say "aye," those opposed "no." This part of the report is carried.

Section 186 (See 38)

Report of Reference Committee on Report of Council, Part X: Workmen's Compensation Fees for Osteopaths

Dr. Ackerman: Resolution 59-6, "Workmen's Compensation Fees for Osteopaths," the committee approved this resolution with a change in the wording of the second "resolved." As rewritten the "resolved" now states:

> *Resolved,* that the Chairman of the Workmen's Compensation Board be requested to adjust the fees paid to physicians and osteopaths to remove this basic inequity.

I ask for the approval of this action.

Vice-Speaker Wurzbach: Is that seconded?

Dr. Di Natale: I second it.

Vice-Speaker Wurzbach: Is there any discussion? All those in favor say "aye," those opposed "no." This action is approved.

Section 187 (See 65)

Report of Reference Committee on Report of Council, Part X: Correction of an Inadequacy Under Workmen's Compensation Law

Dr. Ackerman: Resolution 59-33, "Correction of an Inadequacy Under Workmen's Compensation Law," the committee approved this resolution. I ask for the approval of this action.

Dr. William A. Cooper, *New York:* I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor say "aye," opposed "no." This action is approved.

Section 188 (See 66)

Report of Reference Committee on Report of Council, Part X: Minimum Fee Schedule

Dr. Ackerman: Resolution 59-34, "Minimum Fee Schedule," the committee was sympathetic to the intent of this resolution. The committee however fully realized that the present rate schedule is not completely satisfactory, but it recommends that the proposal set forth in the report of the Workmen's Compensation Committee be followed. Accordingly, attempts at renegotiations for an increase would be made within two years.

The committee recommends no action on resolution 59-34. I ask for approval of this portion of the report.

Vice-Speaker Wurzbach: Is there discussion? First, is it seconded?

Dr. Di Natale: I second it.

Vice-Speaker Wurzbach: Any discussion? If not, all those in favor of the adoption of this portion of the report say "aye," contrary "no." It is carried.

Section 189 (See 74)

Report of Reference Committee on Report of Council, Part X: Surgical Fees for General Practitioners in the 1959 Revision of the Workmen's Compensation Minimum Fee Schedule

Dr. Ackerman: Resolution 59-42, which deals with "Surgical Fees for General Practitioners." I think it would be best if I read the resolution, and then we give you our action:

> Whereas, the March 1, 1959, revision of the Workmen's Compensation minimum fee schedule allows qualified general practitioners only three quarters of the fee paid qualified surgeons for the same procedures; and
>
> Whereas, this ruling actually reduces the fees paid these general practitioners for the same procedures in previous schedules; and
>
> Whereas, this ruling is unjust and discriminatory; now therefore be it hereby
>
> *Resolved,* that the Medical Society of the State of New York petition the Chairman of the Workmen's Compensation Board to correct this inequity without delay.

The reference committee studied this resolution, and we found out that the concept stated in the first "whereas" of this resolution applies to office, home visits, consultations, anesthesia, and radiology. All other fees in the schedule of procedures are equal for the general practitioner and the specialist.

The committee was presented with no evidence to sustain the second "whereas." The committee therefore disapproves this resolution, and I ask for approval of this portion of the report.

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there discussion? If none, all in favor of the adoption of this portion of the report say "aye," those opposed "no." It is adopted.

Dr. Ackerman: I now ask for the acceptance of the entire report as a whole.

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If none, all in favor of the adoption of the report as a whole say "aye," those opposed "no." The report as a whole is adopted.

Dr. Ackerman: May I take this occasion to thank the members of my committee who spent a long, arduous afternoon and early evening, Dr. George A. Burgin, Dr. William A. Cooper, Dr. Frank A. Gagan, and Dr. John C. Kinzly, for their cooperation and fine work.

I also would like to thank Dr. Anthony A. Mira for his aid to the committee.

Vice-Speaker Wurzbach: Thank you, Dr. Ackerman.

REFERENCE COMMITTEE, TREASURER, ETC.

Section 190

Report of Reference Committee on Report of Treasurer

Dr. John E. Lowry, *Queens:* Mr. Speaker and members of the House of Delegates, this is the report of your Reference Committee on Reports of the Treasurer, Trustees, Budget, and War Memorial.

First reporting on the report of the treasurer, your reference committee spent some time in carefully going over the report of our treasurer, Dr. Maurice Dattelbaum, and again as in many years in the past we commend him for his constant vigilance and careful custodianship of the funds of this Society. Only when one attempts to learn how much time our treasurer gives to his job can one appreciate how fortunate the Medical Society of the State of New York is in having as its treasurer a man of Dr. Dattelbaum's capabilities.

To summarize his report briefly, we find that the year 1958 resulted in a net excess of income over expenditures of $9,578.83. This does not, of course, compare with the surplus of 1957 of $66,213.80, but when one carefully analyzes some of our newly acquired expenses of 1958, the difference is very readily understood. Though total dues increased by approximately $2,000 over the previous year, there were several items which more than offset this increase in dues. There was an approximately $8,200 decrease in income from the Journal, an increase in administrative expenses of $29,839, an additional $3,329 spent by the Public and Professional Relations Bureau, as well as increases in many other phases of the State Society's business. In order not to bore you with figures unnecessarily, I mention only a few more instances in which increases in expenditures occurred:

Bureau of Medical Care Insurance (Medicare)	$6,840
Special traveling expenses (of which $4,000 represented increase in delegates' expenses to the American Medical Association)	$18,260
Net increase in cost of annual convention	$7,200
Moving and equipping the State Society's new office (parenthetically, however, this cost was met by applying income from other funds to be received in future years)	$63,312

Your reference committee feels that continued efforts should be made at the county society level to increase membership in the county and the State societies, not alone for the income received as a result of increased membership but also to have our State Society representative of the largest number of physicians in active practice.

As you know, your treasurer submits a financial report each month to the Board of Trustees. This statement includes details of all funds of the Society and gives the trustees a keen awareness of all our financial operations.

Again, let us say "thank you" to our treasurer for another year of devoted labor to our Society. Mr. Speaker, I move the adoption of this portion of this report.

Dr. Walter W. Mott, *Trustee:* I second that.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of the adoption of this part of the report, say "aye," opposed "no." This part of the report is adopted.

Section 191

Report of Reference Committee on Report of Board of Trustees

Dr. Lowry: The next portion of this report deals with the Board of Trustees.

Again your reference committee spent some time in reviewing the report of the trustees ending January 31, 1959. Dr. Walter W. Mott, as senior trustee, has served most efficiently during the past year as chairman of the board. He announced the appointments of Dr. J. Stanley Kenney, as chairman of the Investment Committee, and Dr. Renato J. Azzari, as chairman of the War Memorial Committee.

As noted by the Board of Trustees in their report, because of the rapidly changing market in securities, it has required unusual vigilance by the board through its Investment Committee, the treasurer, and our financial advisers, the Chase Manhattan Bank, to keep the assets of our Society in prudent balance. Your reference committee commends the Board of Trustees for having done just that.

We note too, with full approval, that a policy of quarterly conferences of our Investment Committee with our financial advisers in the Chase Manhattan Bank has been adopted, and great care has been exercised to avoid idle funds by the purchase of United States Treasury short-term issues. The Board of Trustees mentions that our legal counsel, Mr. William F. Martin, has attended all meetings of the board and thus has been immediately available for advice on legal matters that may have arisen. This too your reference committee looks upon with favor, and, Mr. Speaker, I move the adoption of this portion of the report.

Dr. Edward F. Shea, *Ulster:* I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of the adoption of this portion of the report say "aye," opposed "no." This part of the report is adopted.

Dr. Lowry: It is noted that at the suggestion of the Council, the Board of Trustees decided to write off the amount of $103,000 already advanced to the Blood Banks Association, which had been carried as a loan, and to regard this as a humanitarian gift of the Society toward the betterment of public health. The North East District Clearing House has been supported by the budgeted amount of $16,000, and we have been assured that this project will soon be self-supporting.

It is noted also in the board's report that as expected at the last meeting of the House of Delegates, a Medicare agreement was negotiated in July, 1958, was signed by the chairman, and the Board of Trustees wishes to acknowledge the work of Mr. George P. Farrell in administering this important activity.

Mr. Speaker, I move the adoption of this portion of the report.

DR. LYNN RUMBOLD, *Monroe:* I second it.

VICE-SPEAKER WURZBACH: Is there any discussion? If not, all in favor of the adoption of this portion of the report say "aye," opposed, if any, "no." This portion of the report is adopted.

DR. LOWRY: Your committee noted that two major problems confronted the Council and the trustees during the past year. The first was the management survey conducted by Rogers, Slade and Hill, and the second was the moving of the headquarters of the State Society.

The management survey was presented to the House of Delegates too late for well-considered action to be taken at the 1958 meeting. Since adoption of all recommendations made in the survey will require extensive changes in the Constitution and Bylaws, these proposals were all introduced at the 1958 meeting of the House of Delegates, in order to conform with the rule that all proposed alterations in Constitution and Bylaws must lay over for one year.

These changes in the Constitution and Bylaws have been presented to this House by another committee and thus will not be discussed further here.

One recommendation of the survey, which did not require changing the Bylaws, was the selection and appointment of an executive director for the headquarters of the State Society. A committee appointed by the president, which was headed by Dr. Azzari and of which the chairman of the Board of Trustees was a member, interviewed prospective applicants and made its choice. On the recommendations of this committee, the Council, acting for the House of Delegates in the interim between sessions, selected Herbert T. Wagner, M.D., of Bronxville, New York, and authorized the Board of Trustees to employ him as executive director. Dr. Wagner took office on December 1, 1958.

The second major project of the past year was the moving of the headquarters of the State Society from a cramped and inadequate location to the spacious and air-conditioned eighteenth floor of 750 Third Avenue, New York City. The trustees report that the Moving and Furnishing Committee, headed by Dr. Dorman, did a superb job, and moving was done with a minimum of disturbance to office routine with fine cooperation from Dr. Anderton and Mr. Alexander.

Most committee meetings are now held at headquarters. The Physicians' Home has leased space there for its executive director, and additional space, at a reduced rate, has been rented in the basement for storage of inactive records.

Your reference committee feels that the Board of Trustees, with Dr. Walter W. Mott as chairman, is deserving of special commendation for their work in the past year.

Mr. Speaker, I move the adoption of this portion of the report.

DR. SHEA: I second the motion.

VICE-SPEAKER WURZBACH: Is there discussion? If not, all in favor say "aye," opposed "no." This part of the report is adopted.

Section 192

Report of Reference Committee on Report of Budget

DR. LOWRY: Now reporting on a review of the budget for the year ending December 31, 1959, we note that a deficit is predicted for this year of $79,426 as against $58,701 of last year. Your reference committee however thinks the estimate of income for the year ending December 31, 1959, of $508,206 is quite conservative since in 1958 our total income from all sources was $620,294.29. Your committee also feels that even though we concede increasing expenses in 1959 in all categories, we are also aware of the possible increase in income from dues and from the JOURNAL together with decreases and in some instances actual deletions of some of our major operating expenses in the past year.

The House must note that your Budget Committee has asked for no increase in dues and no assessment in the coming year.

It is further felt by the reference committee that your Budget Committee is deserving of a word of praise for their realistic and conservative approach to the budget for 1959.

Mr. Speaker, I move the adoption of this portion of the report.

VICE-SPEAKER WURZBACH: Is there a second?

SECRETARY ANDERTON: I second it.

VICE-SPEAKER WURZBACH: Is there discussion? If not, all those in favor of the adoption of this portion of the report say "aye," those opposed, if any, "no." This portion of the report is adopted.

Section 193

Report of Reference Committee on Report of War Memorial Committee

Dr. Lowry: And now your reference committee wishes to report on the War Memorial Committee composed of members of the Board of Trustees, with Dr. Azzari as chairman.

The War Memorial Fund is one of our really worth-while and commendable projects, and our State Society can be justly proud of the results being obtained by it.

The fund is now in its eleventh year, having started in 1948, and as you may know, this fund gives stipends for education to the sons and daughters of the members of this Society who lost their lives during World War II or during the Korean War as a result of enemy action or service-connected illness. This committee administers the fund, passes on the eligibility of the applicants, and these students, when properly enrolled in an accredited college, receive $900 a year toward their education. As of this report, some 71 students have received benefits to the sum of $96,300 and actual disbursements have covered a total of one hundred and fifty-seven years of college studies.

The interests of our students vary from medicine through nursing, engineering, journalism, and many other lines of endeavor. The colleges attended are several in New York State, some in the Midwest, and others even as far west as California. Most of the students maintain excellent scholastic standards, and both the students and their mothers keep in touch with the committee to report progress in college. They are ever thankful for the financial help they receive and repeatedly express this thought in writing. It is projected from the estimated assets and payments of the fund that the probable date of termination will be 1978, and at that time there might be a balance of over $40,000 when obligations to all beneficiaries have been paid.

Your reference committee congratulates the War Memorial Committee and Miss Mollie Pesikoff especially for her continued devoted interest and assistance in carrying out the administration of this fund.

Mr. Speaker, I move the adoption of this portion of the report.

Dr. C. Stewart Wallace, *Tompkins:* I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of the adoption of this portion of the report say "aye," opposed, if any, "no." This portion of the report stands adopted.

Section 194 (See 86)

Report of Reference Committee on Reports of Treasurer, Trustees, Budget, and War Memorial: Employes Pension Fund Assessment from Newly Elected, Re-elected, or Reinstated Members

Dr. Lowry: Your reference committee had one resolution referred to it, resolution 59-53, introduced by Dr. Walter W. Mott, chairman of the Board of Trustees, subject "Employes Pension Fund Assessment from Newly Elected, Re-elected, or Reinstated Members." This resolution is short, and I think I would like to read it, Mr. Speaker:

> Whereas, the Medical Society of the State of New York has established a retirement plan for its employes; and
>
> Whereas, the House of Delegates at its 1956 meeting voted to assess all members of the Society $10 each in order to establish said retirement plan; and
>
> Whereas, it is essential that the plan have adequate reserve in order to operate on a sound financial basis; now therefore be it hereby
>
> *Resolved*, that all members of the Medical Society of the State of New York who are hereafter newly elected, re-elected, or reinstated following the adjournment of the House of Delegates on May 11, 1959, are hereby assessed $10 each for the pension fund, due and payable upon such election, re-election, or reinstatement.

Your committee heard much discussion on this resolution from various members of the Board of Trustees and from our treasurer. We are aware of the acute need for supplementing our present pension fund. First, the fund will soon be dissipated if this is not done, and second, the Medical Society of the State of New York must have an adequate and sound pension fund as one of the many means of attracting the type of help we need in our State Society office.

For these and many other reasons, your committee recommends that the House of Delegates adopt this resolution.

Mr. Speaker, I move adoption of this portion of this report.

Dr. J. Stanley Kenney, *Trustee:* I second it.

Vice-Speaker Wurzbach: Is there any discussion?

Dr. Thomas F. McCarthy, *Bronx:* There are several things in this final "resolved" which I don't know whether the committee considered. You say that this man if he was reinstated or re-elected will have to pay this $10 when he is reinstated. If he paid it before, say he paid $10 two years ago when this was voted, does he have to pay another $10 when he is reinstated?

Vice-Speaker Wurzbach: That is what the motion says.

Dr. McCarthy: That is what the motion says, and it is very unfair if he paid the previous $10 when the assessment was made, and then he is reinstated and is assessed another $10.

Vice-Speaker Wurzbach: Do you amend the motion?

Dr. McCarthy: I think that should have been considered when this resolution was in the reference committee. I can't make a substitute motion very well because it involves considerable questions. In other words, I can't say that no man has to pay it when he is reinstated. I would say unless previously this man had paid the assessment, and that is the only substitute or amendment I make.

Vice-Speaker Wurzbach: You want to amend the "resolved?"

Dr. McCarthy: Unless the man reinstated has already paid the $10 assessment.

Vice-Speaker Wurzbach: This is not applicable if previously paid, is that what you mean?

Dr. McCarthy: Yes.

Vice-Speaker Wurzbach: Is there a second to that amendment?

. . . The amendment was seconded . . .

Vice-Speaker Wurzbach: Is there any discussion on the amendment? If not, those in favor say "aye," those opposed "no."

We will have a standing vote. Those in favor of this amendment will rise; those opposed will now rise. The amendment is carried 56 to 46.

Dr. McCarthy: I move the adoption of the original resolution as amended.

Dr. Shea: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of the adoption of the original motion as amended say "aye," those opposed "no." The motion as amended is declared adopted.

Dr. Lowry: I move adoption of the report as a whole as amended. I would like to thank Drs. C. Stewart Wallace, Edward F. Shea, Thomas M. Flanagan, and Lynn Rumbold for their diligent work in helping to prepare it.

Vice-Speaker Wurzbach: Now, is there any discussion of the approval of the report as a whole as amended?

Dr. McCarthy: Last year there was a resolution introduced with regard to the emergency care of indigent doctors, which was referred to the Budget Committee, and then in the report this year it says, "see the Budget Committee report." I thought there should be some specific reference to what the Budget Committee thought of how to handle this.

Dr. Lowry: Might I answer this in part? Your reference committee took this matter into consideration, and referring back to the report of the Budget Committee about one third up from the bottom of page 1640, the Budget Committee reports, "At times it has been found necessary to reduce requested appropriations either because such expenditures do not fit in with our policy or because such expenditures are beyond our means." We bore Dr. McCarthy's statement in mind, and the reference committee felt that the deletion of any report on the matter mentioned by Dr. McCarthy was nicely covered by the portion of the Budget Committee report that I have just read to you.

. . . The matter was further discussed by Dr. Datelbaum and Dr. McCarthy . . .

Dr. Lowry: That concludes my report.

Vice-Speaker Wurzbach: All those in favor of the adoption of the report as a whole as amended will say "aye," opposed "no." The report as a whole as amended is adopted.

REFERENCE COMMITTEE, PART I

Section 195

Report of Reference Committee on Report of Council, Part I: Constitution and Bylaws

Dr. Joseph P. Alvich, *Bronx:* Your reference committee on Council, Part I, after reviewing the 1958–1959 report, wishes to submit the following comments on the Council Committee on Constitution and Bylaws:

The work of this committee was for the past year reviewed and found to merit full support and gratitude of the State Society. I move the approval of this portion of the report.

Dr. John J. Flynn, *Kings:* I second it.

Vice-Speaker Wurzbach: Is there any discussion? If none, all those in favor say "aye," opposed "no." This portion of the report is adopted.

Section 196

Report of Reference Committee on Report of Council, Part I: Ethics

Dr. Alvich: Report of Reference Committee on Report of Council, Part I, Questions of Ethics: According to the report of this committee, no major problems were brought up during the year. Advice was given concerning the application of the code of ethics to specific situations, and the opinion of the committee was made known to interested parties. I move approval of this portion of the report.

Dr. Arthur H. Walker, *Monroe:* I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of the approval of this portion of the report say "aye," opposed "no." It is so approved.

Section 197

Report of Reference Committee on Report of Council, Part I: Public Health and Education

Dr. Alvich: Report of Reference Committee on Report of Council, Part I, Public Health and Education: Your reference committee approves the recommendations of the committee for constant changes necessary to keep abreast of the times and the need for changes in the Bylaws, permitting larger committees for the proper implementation of such changes. I move the approval of this portion of the report.

Dr. Walker: I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all in favor say "aye," those opposed "no." This portion of the report is adopted.

Dr. Alvich: Regarding the liaison with the New York State and New York City Health Department officials concerning joint cooperative ventures, as in the toll from childhood accidents, your reference committee commends the Subcommittee on Childhood Accidents for its accomplishments in this field.

I move the approval of this portion of the report.

Dr. James H. Arseneau, *Wayne:* I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all those in favor of the adoption of this portion of the report will say "aye," opposed "no." This portion of the report is adopted.

Dr. Alvich: Regarding the Diabetes Subcommittee, your reference committee wishes to commend it for its successful formulation of working relationships between the Diabetes Association, the county medical societies, and the New York State Health Department, all for the common good of the unknown diabetic.

I move the adoption of this portion of the report.

Dr. Flynn: I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all those in favor say "aye," those opposed "no." This portion is adopted.

Dr. Alvich: With regard to formal recommendations concerning consideration for driver licensure, your reference committee advises a continuance of a study of this problem, and it further recommends to the committee the establishment of principles and criteria to guide the examining physicians in determining who may and who may not operate a motor vehicle and also to establish standards on which the examining physician may base his opinion, especially in borderline cases. Your reference committee further suggests the early cooperation with the Motor Vehicle Bureau and the Medical Society of the State of New York for proper implementation of this procedure.

I move the approval of this portion of the report.

Dr. Walker: I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all those in favor say "aye," opposed "no." This portion is adopted.

Dr. Alvich: With regard to the work of the Subcommittee on Geriatrics, your reference committee wishes to congratulate the members for the foresight of this group on its organizational planning and the improving of the lot of the aging in the State of New York.

I move the approval of this portion of the report.

Dr. Flynn: I second it.

Vice-Speaker Wurzbach: Is there discussion? All those in favor of adopting this portion of the report say "aye," opposed "no." This portion of the report is adopted.

Dr. Alvich: Regarding the report of the Subcommittee on Cancer concerning the use of routine vaginal smears on hospital admissions, as practiced in the routine use of blood counts, urinalyses, and chest films, your reference committee feels that this procedure is not so simple as it is made to appear, that it has many other facets, and that it should be subjected to further study and evaluation.

I move the adoption of this portion of the report.

Dr. Arthur E. Lamb, *Kings:* I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all in favor of the adoption of this portion of the report say "aye," contrary "no." It is adopted.

Dr. Alvich: With regard to the problem of the sudden appearance of staphylococcus infections in epidemic proportions in certain locations, the Public Health and Education Committee, recognizing its responsibility, is to be commended on its prompt action by the united effort of hospital personnel, Health Department officials, and the medical profession, thereby averting an amendment to the Sanitary Code by means of this voluntary participation.

With regard to this serious problem of staphylococcus infections in hospitals, your reference committee wishes to alert the Council that certain counties in our State have already set up special committees to study this problem and that the State Medical Society should therefore encourage all counties to follow such a pattern and be guided by the results reported by these special committees.

I move the adoption of this portion of the report.

Dr. Flynn: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all in favor say "aye," opposed "no." This portion of the report is adopted.

Dr. Alvich: With regard to the lot of the general practitioner, there seems to be a detectable urge on the part of the general practitioner to ensure that their way of practice will be perpetuated. Your reference committee agrees with the report of the Committee on Public Health and Education that the curricula of the medical schools of this State are weighted neither in favor of nor against influencing medical students with regard to general practice.

With reference to the development of general practitioners, your reference committee does not wholeheartedly agree with the findings that the medical schools are not unwittingly influencing the students into the specialties. It feels that the schools should make a more determined effort to encourage and develop the general practitioners of medicine.

I move the adoption of this portion of the report.

Dr. Flynn: I second it.

Vice-Speaker Wurzbach: Is there discussion? If not, all those in favor say "aye," opposed "no." This portion of the report is adopted.

Dr. Alvich: With regard to the postgraduate education program, the complete report was reviewed, and it was the unanimous feeling of the reference committee that a great deal of progress has been made in the past year and that the program should be continued with the view to further expansion. Of particular interest in this program, your reference committee noted:

1. Increase in the number of participating organizations in the past year throughout the State.
2. The liaison between the State Society and the State Department of Health and various teaching centers.
3. Marked improvement in the information released in the brochure, "What Goes On." The Lederle Laboratories and Mrs. Charlotte Troutwine are to be commended for their invaluable assistance to and cooperation with the committee.

I move the approval of this portion of the report.

Vice-Speaker Wurzbach: Is there a second?

Dr. Walker: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of the adoption of this portion of the report say "aye," contrary "no." This portion is adopted.

Section 198

Report of Reference Committee on Report of Council, Part I: Civil Defense and Catastrophe

Dr. Alvich: Report of the Reference Committee on Report of Special Committee on Civil Defense and Catastrophe: Your reference committee approves the contents of the report and agrees with the special committee that further work is needed to correct certain deficiencies still present in the plan.

I move the approval of this portion of the report.

Dr. Flynn: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, those in favor of the adoption of this portion of the report will say "aye," opposed "no." This portion of the report is adopted.

Section 199 (See 204, 229)

Report of Reference Committee on Report of Council, Part I: Scientific and Educational Trust

Dr. Alvich: Report of Reference Committee on Committee to Study Possible Establishment of a Scientific and Educational Trust: Your reference committee has carefully studied the report this special committee has made on investigating the possibility of establishing such a foundation. This foundation, if established, would with the help of philanthropic funds promote research in the fields of health and health education. Such a foundation would be an independent program under the sponsorship of the Medical Society of the State of New York. Such visionary planning, with its unlimited possibilities, merits full exploration and commendation.

Your reference committee recommends that after the blueprint prepared by the Committee on Public Health and Education is evaluated and approved by our State Society counsel, that it then be returned to the House of Delegates for final approval before the implementation.

I move the approval of this portion of the report.

. . . The motion was seconded . . .

Vice-Speaker Wurzbach: Is there discussion? All in favor of the adoption of this portion of the report say "aye," opposed "no." This portion of the report is adopted.

Section 200 (See 47)

Report of Reference Committee on Report of Council, Part I: Enforcement of Regulation 19, Chapter 16, of the New York State Sanitary Code Regarding Ionizing Radiation

Dr. Alvich: Report on resolutions referred to our reference committee, Part I, which were five in number, 59-15, 59-28, 59-44, 59-54, and 59-59.

The first resolution, 59-15, subject "Enforcement of Regulation 19, Chapter 16, of the New York State Sanitary Code Regarding Ionizing Radiation," and introduced by the Medical Society of the County of New York, is a means of safeguarding the public health, and your reference committee recommends the adoption of this resolution. I so move.

Dr. Carl G. Whitbeck, *Columbia:* I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, those in favor of the adoption of this portion of the report will say "aye," opposed "no." This portion of the report is adopted.

Section 201 (See 60)

Report of Reference Committee on Report of Council, Part I: Civil Defense Stockpiles

Dr. Alvich: The second resolution referred to this committee, 59-28, subject "Civil Defense

Stockpiles," was introduced by the Medical Society of the County of Herkimer. This resolution was discussed with Dr. Golden, a member of Herkimer County. Since these stockpiles must be made available without any delay when occasions arise, it is important that this resolution be approved and implemented as soon as possible.

Your reference committee recommends the adoption of this resolution, and I so move.

DR. WALKER: I second it.

VICE-SPEAKER WURZBACH: Is there any discussion? All those in favor of the adoption of this resolution will say "aye," opposed, if any, "no." It is adopted; this portion of the report is adopted.

Section 202 (See 76)

Report of Reference Committee on Report of Council, Part I: Medical Seminars in Foreign Countries

DR. ALVICH: The third resolution referred to this committee, 59–44, subject "Medical Seminars in Foreign Countries," was introduced by Dr. Harry A. Mackler, Medical Society of the County of Kings, as an individual. This resolution was discussed thoroughly with Dr. Mackler, and your reference committee at this time recommends no action be taken on it. I so move.

VICE-SPEAKER WURZBACH: Is there a second?

DR. FLYNN: I second it.

VICE-SPEAKER WURZBACH: Is there any discussion? If not, those in favor of this action say "aye," opposed "no." This action is supported.

Section 203 (See 87)

Report of Reference Committee on Report of Council, Part I: Change in Specialists Roster of the New York State Department of Health

DR. ALVICH: The fourth resolution referred to this committee, 59–54, subject "Change in Specialists Roster of the New York State Department of Health," introduced by the Medical Society of the County of Montgomery: This resolution was thoroughly discussed with Dr. Violyn, of Montgomery, and it was agreed by your reference committee to change the "resolved" as follows:

> *Resolved*, that the Medical Society of the State of New York petition the New York State Department of Health to include in its roster of specialists for the rehabilitation program all those doctors in the county who are qualified by the New York State Workmen's Compensation Board to do such rehabilitative surgery.

Your reference committee recommends the adoption of the resolution with the changes as read, and I so move.

VICE-SPEAKER WURZBACH: Is it seconded?

. . . The motion was seconded . . .

VICE-SPEAKER WURZBACH: Is there discussion? If not, all those in favor will please say "aye," opposed "no." This portion of the report is adopted.

Section 204 (See 92, 199, 229)

Report of Reference Committee on Report of Council, Part I: Fee-Splitting by Hospitals

DR. ALVICH: The fifth resolution referred to this committee, 59–59, subject "Fee-Splitting by Hospitals," introduced by Dr. Samuel Leo, Bronx County Medical Society, as an individual: This resolution was discussed thoroughly with Dr. Leo and also with Dr. Randall of New York County.

Your reference committee recommended the adoption of this resolution with the following changes; I would suggest that you have the resolution before you as I go through it with the changes:

> WHEREAS, the lay boards of directors in certain hospitals have notified the visiting staff of their respective hospitals that fees collected for service cases be accepted and deposited by these staff members; and
>
> WHEREAS, physicians collecting and depositing such fees to their own account must then return such fees to their respective hospitals for use as seen fit by the board of directors; now therefore be it hereby
>
> *Resolved*, that such practices should be considered a form of fee-splitting, and those physicians who participate in such practice shall be considered as practicing unethically; and be it further
>
> *Resolved*, that hospitals making it mandatory for doctors to return such fees shall be reported to the Joint Committee on Hospital Accreditation for censure.

I move the adoption of this resolution with the corrections.

VICE-SPEAKER WURZBACH: Is there a second?

. . . The motion was seconded . . .

VICE-SPEAKER WURZBACH: Is there any discussion?

. . . Dr. Thomas M. d'Angelo of Queens moved that the resolution be amended by deleting the second part of the first "resolved," which would then end with the words, "a form of fee-splitting." Dr. Henry T. Randall of New York County seconded the amendment.

. . . Dr. Alfred P. Ingegno, councillor, suggested, and Dr. d'Angelo accepted the suggestion, that the statement be made more emphatic by adding the words "and hence unethical" so that the amended resolved would read:

> *Resolved*, that such practices shall be considered a form of fee-splitting and hence unethical; . . .

VICE-SPEAKER WURZBACH: All right, gentlemen, the amendment is before you. Any discussion on the amendment? If not, all those in favor of the adoption of the amendment say "aye," those opposed "no." The amendment is carried.

Now you are back on the original motion as amended. Those in favor of the resolution as amended say "aye," those opposed "no." The resolution as amended is carried.

Dr. Alvich: I move the adoption of the entire report, with the corrections and additions.

Dr. Flynn: I second it.

Vice-Speaker Wurzbach: Gentlemen, the entire report is presented for action as amended, and it has been seconded. Is there discussion?

Dr. John C. McClintock, *Councillor:* I move reconsideration of the portion having to do with scientific and educational trust, the plans having to be returned to the House of Delegates. That would mean a delay of a year.

Vice-Speaker Wurzbach: Page 3.

Dr. McClintock: In other words, you say, "that after the blueprint prepared by the Committee on Public Health and Education is evaluated and approved by our State Society counsel, that it then be returned to the House of Delegates for final approval before implementation." You mean it cannot be acted on for a year?

Dr. Alvich: The committee went over this, and they felt that this should be a slow process. We discussed this with those who are interested in it, and they made us feel that this is not going to be something that is going to take place in a year. There will be a gradual metamorphosis over a period of four or five years and that when the counsel gives clearance on the legality, and so forth, then this thing should be implemented.

Vice-Speaker Wurzbach: It cannot be implemented by this statement.

Dr. McClintock: I move to reconsider that part of the report.

Vice-Speaker Wurzbach: You make a motion to reconsider. Is that seconded?

Dr. Henry I. Fineberg, *President-Elect:* I second it.

Vice-Speaker Wurzbach: The motion before you is that we reconsider the report on the scientific and educational trust. All those in favor of reconsideration say "aye," opposed "no." The motion is lost.

Now then we are on the motion to approve the entire report as amended. All those in favor say "aye," opposed "no." It is carried.

Dr. Alvich: Mr. Speaker and members of the House, at this time I wish to thank a visitor to our committee, Dr. George N. Wise, and also the members of my committee, Dr. James H. Arseneau, Dr. John J. Flynn, Dr. Arthur H. Walker, and Dr. Carl G. Whitbeck, for their prompt attendance at the reference committee sessions and for their cooperation and discussions, and their help in the compilation of this report.

Vice-Speaker Wurzbach: Thank you, Dr. Alvich.

Section 205 (See 83, 114)

Disposition of Resolution 59–50: Relations of Medicine and Psychology

Speaker Lane: I have occasion to ask your cooperation in handling resolution 59–50, introduced by the Medical Society of the County of Kings. This was originally wrongfully referred. It was then misplaced. We have now discussed it with Dr. Kottler, who is bringing this in for Kings County, and with our legal counsel. We find that there are considerable legal complications involved in this. Dr. Kottler is willing that this be further considered by the legal counsel and then referred to the Council of the State Society, and I ask your permission to handle this particular resolution in this manner.

Dr. Thurman B. Givan, *Past President:* I so move.

Dr. James Greenough, *Trustee:* I second it.

Vice-Speaker Wurzbach: Those in favor say "aye," those opposed "no." It is carried. Thank you very much.

REFERENCE COMMITTEE, PART IV

Section 206 (See 57, 94, 218, 224)

Report of Reference Committee on Report of Council, Part IV: Public Health Activities C—Relationship of Atherosclerotic Heart Disease to Occupations

Dr. Alfred A. Angrist, *Queens:* Pardon me, but this is on the matter that was referred back to my reference committee previously.

Vice-Speaker Wurzbach: What is it?

Dr. Angrist: This is really limited to resolution 59–25. It was sent back to the committee. In the present state of toxic stimulation of the House, I think the exhaustion will prompt little discussion and speedy action.

The title of this resolution is "Relationship of Atherosclerotic Heart Disease to Occupations." In lieu of reading the "whereases," all of which I think lack any element of controversy, I prefer to read the last "whereas" and the "resolved" for your consideration. The last "whereas" reads as follows:

> Whereas, the Work Evaluation Program of the American Heart Association has shown that employment of candidates certified for particular work occasions no extra hazard to the employer or his insurance carrier; now therefore be it hereby

> *Resolved,* that in order that employers may be encouraged to employ or re-employ cardiacs as frequently as possible, the Medical Society of the State of New York refers the employer to this expert opinion of the American Heart Association of the relationship of atherosclerotic heart disease to occupation, and that cardiacs may be employed for particular duty for which they have been medically certified.

Mr. Speaker, I move the adoption of the resolution as amended.

. . . The motion was seconded . . .

VICE-SPEAKER WURZBACH: It has been moved and seconded that the resolution be amended and approved as thus amended.

. . . In the course of discussion, Dr. Angrist stated that the first two "whereases" of resolution 59–25 had been combined to read:

> WHEREAS, the course of atherosclerotic heart disease (coronary) has been shown to be related chiefly to metabolic and genetic factors and to have little or no relationship to the type of occupation or to reasonable stress and strain; . . .

Dr. Alfred P. Ingegno, councillor, moved that this "whereas" be deleted, and Dr. Arthur E. Lamb of Kings seconded the motion.

. . . Dr. Albert H. Douglas, Queens, offered, as an amendment, that the following "resolved" be added:

> *Resolved,* that the Medical Society of the State of New York, through its Council and appropriate State committees, explore the possibility of initiating a comprehensive study of the various medical, legal, and economic aspects of this problem.

. . . The amendment was seconded . . .

. . . Dr. Ezra A. Wolff, assistant secretary, suggested that the reference committee and the discussants bring in a report the following morning agreeable to all of them. He moved that the House recess until morning. . . .

. . . The motion to recess was seconded from all parts of the room . . .

VICE-SPEAKER WURZBACH: There is a motion to recess until tomorrow morning, and it has been seconded. Those in favor of this motion will say "aye," those opposed "no." I would like to have a division of the assembly; there is a doubt in my mind. Those in favor of recessing will say "aye," those opposed to recessing will say "no." We will have to count them. Those in favor of recessing please stand and be counted; those not in favor of recessing, please stand now and be counted.

The motion to recess is carried, and the House is recessed until nine o'clock tomorrow morning.

. . . A recess was taken at 7:20 P.M. . . .

Morning Session

Monday, May 11, 1959

The session convened at 9:10 A.M.

SPEAKER LANE: The meeting will please come to order.

Section 207

Announcements

SPEAKER LANE: I have a few meetings to announce: First, the delegates and alternate delegates to the American Medical Association will meet in the Washington Room immediately after the close of this session.

The Council will meet as soon as that meeting is over, and that will also be in the Washington Room.

The Board of Trustees meets immediately after the Council finishes its business.

The Judicial Council meets immediately after the adjournment of the House in the Los Angeles Room on the Mezzanine.

The Planning Committee will meet after this meeting is over, and we will let you know the location of that meeting before we adjourn.

Section 208

Appointment of Tellers

SPEAKER LANE: The first order of business is the elections.

Mr. Secretary, is there a quorum present?

SECRETARY ANDERTON: Mr. Speaker, there is; 154 members have registered in the House.

SPEAKER LANE: Thank you, Doctor.

I will announce the list of tellers. Dr. McCarthy and the tellers will meet in the Washington Room on the Mezzanine when ready to count the ballots.

The following are tellers:

Charles F. McCarty, Kings, *Chairman*
Edward H. Robitzek, First District (*withdrawn*)
Norman C. Lyster, Sixth District
Vincent J. Collins, Anesthesiology
Milton Helpern, Legal Medicine
James A. Moore, Albany
Irwin Felsen, Allegany
Joseph P. Alvich, Bronx
Henry J. Barrow, Bronx
Charles Sandler, Bronx
Joseph A. Wintermantel, Cattaraugus
Swen L. Larson, Chemung
George F. Nevin, Cortland
Philip J. Hust, Delaware
Frank A. Gagan, Dutchess
John C. Brady, Erie
James E. Glavin, Essex
George A. Burgin, Herkimer
Leo S. Drexler, Kings
David Kershner, Kings
Warren A. Lapp, Kings
Charles R. Mathews, Monroe
Norbert Fethke, Montgomery
Paul H. Sullivan, Nassau
Joseph G. Zimring, Nassau
Michael C. Armao, New York
James H. Ewing, New York
George Himler, New York
William Hall Lewis, Jr., New York
Herbert S. Ogden, New York
John C. Kinzly, Niagara
Irwin Alper, Oneida
Robert F. McMahon, Onondaga
W. Walter Street, Onondaga
Robert E. Doran, Ontario
Sol Axelrad, Queens
John Edward Lowry, Queens
Walter T. Heldmann, Richmond (*withdrawn*)
Henry Vinicor, St. Lawrence
Donald C. Walker, Schenectady
John H. Wadsworth, Schoharie
Stanley B. Folts, Seneca
Earl W. Douglas, Suffolk
Eugene F. Galvin, Ulster
Walter S. Bennett, Washington
Donald R. Reed, Westchester

Section 209

Report of Nominating Committee

SPEAKER LANE: I will now call on the chairman of the Nominating Committee, Dr. Philip Allen, for the report of that committee. Dr. Allen! These are to be written on the board.

DR. PHILIP D. ALLEN, *New York:* Mr. Speaker and members of the House of Delegates, your Nominating Committee met on December 12, 1958. All members of the committee were present with the exception of Dr. John M. Galbraith, who was detained by an emergency.

The nominations of the committee were as follows:

President-Elect	Norman S. Moore, Tompkins
Vice-President	John L. Sengstack, Suffolk
Secretary	William L. Wheeler, Jr., New York
Assistant Secretary	Ezra A. Wolff, Queens
Treasurer	Maurice J. Dattelbaum, Kings
Assistant Treasurer	John F. Rogers, Dutchess
Speaker	Joseph A. Lane, Monroe
Vice-Speaker	Frederick A. Wurzbach, Jr., Bronx
Councillors (*three years*)	James M. Blake, Schenectady Peter J. Di Natale, Genesee George J. Lawrence, Jr., Queens Waring Willis, Westchester
Trustees (*five years*)	Leo E. Gibson, Onondaga James Greenough, Otsego

That completes our report, Mr. Chairman.

Section 210 (See 222)

Nominations and Balloting

The president-elect, vice-president, secretary, assistant secretary, treasurer, speaker, vice-speaker, four councillors for three years, and two trustees for five years were unopposed and were elected by a single ballot cast by the secretary.

For the office of assistant treasurer, Dr. Samuel Z. Freedman was nominated from the floor and Dr. John F. Rogers by the Nominating Committee.

The nominees of the Nominating Committee for election of eight delegates and eight alternate delegates to the American Medical Association (after the withdrawal of Robert F. Warren, Kings; Frederick A. Wurzbach, Bronx; and William L. Wheeler, Jr., New York) were as follows:

Renato J. Azzari, Bronx
James M. Blake, Schenectady
Peter M. Murray, New York
William B. Rawls, New York
Harold F. Brown, Erie
George A. Burgin, Herkimer
Peter J. Di Natale, Genesee
Leo E. Gibson, Onondaga
James Greenough, Otsego
Walter T. Heldmann, Richmond
Norman S. Moore, Tompkins
John F. Rogers, Dutchess
Solomon Schussheim, Kings
Waring Willis, Westchester
Ezra A. Wolff, Queens

Dr. Edward H. Robitzek of Richmond County was nominated from the floor.

The following members of the House of Delegates were called upon to cast their ballots:

OFFICERS, COUNCILLORS, TRUSTEES

Leo E. Gibson
Henry I. Fineberg
Harry Golembe
W. P. Anderton
Ezra A. Wolff
Maurice J. Dattelbaum
Samuel Z. Freedman
Joseph A. Lane
Frederick A. Wurzbach, Jr.
Walter W. Mott
James M. Blake
Peter J. Di Natale
George J. Lawrence, Jr.
John F. Rogers
Gerald D. Dorman
Edward C. Hughes
Raymond S. McKeeby
Alfred P. Ingegno
Harold F. Brown
John C. McClintock
John M. Galbraith
Norman S. Moore
James Greenough
Herbert H. Bauckus
Renato J. Azzari
John J. Masterson
Frederic W. Holcomb
J. Stanley Kenney

EX-PRESIDENTS

Orrin Sage Wightman
Chas. Gordon Heyd
Arthur J. Bedell
Louis H. Bauer
Carlton E. Wertz
Edward T. Wentworth
Andrew A. Eggston
Thurman B. Givan

COMMISSIONER, NEW YORK STATE DEPARTMENT OF HEALTH

Herman E. Hilleboe

DISTRICT DELEGATES

Edward H. Robitzek
Charles W. Shlimbaum
Edwin G. Mulbury
Roman R. Violyn
Arthur F. Gaffney
Norman C. Lyster
William L. Dorr
Wilfrid M. Anna
Earl C. Waterbury

SECTION DELEGATES

Francis E. Ehret
Vincent J. Collins
Arthur Q. Penta
Joseph J. Hallett
Sydney D. Weston
Lewis Lloyd Burrell, Jr.
Harry A. Hanson
Milton Helpern
Herbert Berger
Meyer Rosenberg
Arthur R. Wilsey
James I. Farrell
James P. Cole
Samuel F. Kelley
Harry P. Smith
Fred W. Bush
Henry Fleck
Joseph H. Kinnaman
Frank J. Borrelli
Paul A. Kennedy
E. Craig Coats

DELEGATES FROM COMPONENT COUNTY SOCIETIES

Albany (4)
William P. Nelson, III
James A. Moore
Joseph J. Russo
Francis A. Stephens

Allegany (1)
Irwin Felsen

Bronx (12)
Carl R. Ackerman
Joseph P. Alvich
Henry J. Barrow
Herbert G. Cohen
Jerome B. Flynn
Leonard L. Heimoff
Thomas J. O'Kane
Frank LaGattuta
Samuel Leo
Thomas F. McCarthy
Charles Sandler
Samuel Wagreich

Broome (3)
John A. Kalb
Jason K. Moyer
James L. Palmer

Cattaraugus (1)
Joseph A. Wintermantel

Cayuga (1)
Bernard J. Hartnett

Chautauqua (2)
Herbert A. Laughlin
Garra L. Lester

Chemung (2)
William T. Boland
Swen L. Larson

Chenango (1)
Thomas M. Flanagan

Clinton (1)
Edward Siegel

Columbia (1)
Carl G. Whitbeck

Cortland (1)
George F. Nevin

Delaware (1)
Philip J. Hust

Dutchess (3)
Frank A. Gagan
Lawrence Sweeney
Albert A. Rosenberg

Erie (8)
John C. Brady
Matthew L. Carden
Max Cheplove
Martin L. Gerstner
John D. Naples
Samuel Sanes
Clarence A. Straubinger
Walter Scott Walls

Essex (1)
James E. Glavin

Franklin (1)
Alfred A. Hartmann

Fulton (1)
Joseph L. Thompson

Genesee (1)
Alfred L. George

Greene (1)
Sol Yarvin

Herkimer (1)
George A. Burgin

Jefferson (1)
Charles A. Prudhon

Kings (22)
Frederic E. Elliott
Louis Berger
Ben A. Borkow
Leo S. Drexler
John J. Flynn
David Kershner
Aaron Kottler
Arthur E. Lamb
Warren A. Lapp

Isaac Levine
Charles H. Loughran
Harry A. Mackler
John G. Masterson
Charles F. McCarty
David B. Monheit
Irving M. Pallin
Martyn Ratzan
Maxwell H. Scholnik
Solomon Schussheim
Abraham D. Segal
Milton B. Spiegel
Robert F. Warren

Lewis (*1*)
Edgar O. Boggs

Livingston (*1*)
Melville A. Hare

Madison (*1*)
Felix Ottaviano

Monroe (*6*)
Michael J. Crino
Lawrence A. Kohn
Charles R. Mathews
Lynn Rumbold
James M. Stewart
Arthur H. Walker

Montgomery (*1*)
Norbert Fethke

Nassau (*8*)
Maurice B. Berger
C. Dean Bohrer
Gerard V. Farinola
Leo T. Flood
Abraham W. Freireich
Edward K. Horton
Paul H. Sullivan
Joseph G. Zimring

New York (*25*)
Philip D. Allen
Michael C. Armao
Norton S. Brown
Samuel B. Burk
May E. Chinn
William A. Cooper
C. Joseph Delaney
James H. Ewing
Leonard J. Raider
Samuel Frant
Carl Goldmark, Jr.
George Himler
Frederick Lee Liebolt
Ely Elliott Lazarus
William Hall Lewis, Jr.
Julia V. Lichtenstein
Frank J. McGowan
Peter M. Murray
Herbert S. Ogden
Bernard J. Pisani
Henry T. Randall
William B. Rawls
Adelaide Romaine
William L. Wheeler, Jr.
George N. Wise

Niagara (*2*)
Joseph A. D'Errico
John C. Kinzly

Oneida (*3*)
Irwin Alper
Anthony G. Jarosewicz
John F. Kelley

Onondaga (*5*)
Irving L. Ershler
Robert F. McMahon
William J. Michaels, Jr.
William E. Pelow
W. Walter Street

Ontario (*2*)
Robert E. Doran
Philip M. Standish

Orange (*3*)
Robert J. Hewson
Theodore R. Proper
Irving Weiner

Orleans (*1*)
Angelo F. Leone

Oswego (*1*)
Kent W. Jarvis

Otsego (*1*)
John W. Latcher

Putnam (*1*)
Robert S. Cleaver

Queens (*13*)
Alfred A. Angrist
Sol Axelrad
William Benenson
Monroe M. Broad
Thomas M. d'Angelo
Albert H. Douglas
Harry H. Epstein
Frank W. Farrell
John L. Finnegan
Jerome L. Leon
John Edward Lowry
Charles C. Mangi
Louis J. Morse

Rensselaer (*2*)
Gilbert A. Clark
Richard P. Doody*

Richmond (*3*)
Walter T. Heldmann
Cyril M. Levin
Frank Tellefsen

Rockland (*2*)
Harold W. Grosselfinger
George Gordon Knight

St. Lawrence (*1*)
Henry Vinicor

Saratoga (*1*)
Webster M. Moriarta

Schenectady (*3*)
Raymond J. Byron
John J. Clowe
Donald C. Walker

Schoharie (*1*)
John H. Wadsworth

Schuyler (*1*)
Fritz Landsberg

Seneca (*1*)
Stanley B. Folts

Steuben (*2*)
Thomas S. Cotton
Maynard W. Gurnsey

Suffolk (*5*)
Philip J. Rafle
Anthony Kohn
John L. Sengstack
Sol Shlimbaum
Robert W. Unangst

Sullivan (*1*)
S. Elisabeth Vuornos

Tioga (*1*)
John H. Jakes

Tompkins (*1*)
C. Stewart Wallace

Ulster (*2*)
Eugene F. Galvin
Edward F. Shea

Warren (*1*)
Morris Maslon

Washington (*1*)
Walter S. Bennett

Wayne (*1*)
James H. Arseneau

Westchester (*7*)
Arthur H. Diedrick
John N. Dill
Harold J. Dunlap
Reid R. Heffner
Donald R. Reed
William P. Reed
Waring Willis

Wyoming (*1*)
Willard J. Chapin

Yates (*1*)
John A. Hatch

SPEAKER LANE: We will now call the meeting to order for further business. I would like now to call on Dr. Herman Hilleboe, Commissioner of Health of the State of New York. Dr. Hilleboe!

Section 211

Greetings from Governor Rockefeller

DR. HERMAN E. HILLEBOE, *Commissioner, New York State Department of Health:* Mr. Speaker and members of the House of Delegates, it is my pleasure this morning to read to you a letter from my chief, who is the only person I recognize as boss except my wife. This letter I think is of interest to all of us who are practicing medicine in New York State. It is directed to our president, Dr. Gibson, and it is from Nelson A. Rockefeller:

> Dear Dr. Gibson:
>
> I have asked Dr. Hilleboe to bring to you and the members of the House of Delegates of the Medical Society of the State of New York my personal greetings on this, the occasion of your 153rd annual meeting.
>
> As some of you, I am sure, are aware, I am very much interested in the whole field of health and I am eager to do everything I can as Governor to bring to all of our people the benefits of the great advances that medical science has achieved. I am equally anxious to see that this is achieved without resort to governmental control of medicine.
>
> We must recognize, however, that there are difficult problems confronting us in the economics of medical care.
>
> Adequate medical care and hospitalization are not uniformly available throughout our State. The explosive growth of our suburban areas has intensified this problem. There are serious and difficult problems to be solved with respect to the cost of medical services. Our voluntary hospitals are faced with mounting deficits, and the cost of medical serv-

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* Deceased; no substitute.

ices of all kinds is steadily rising. The high cost of treating catastrophic diseases and the struggle against cancer or other major illness can imperil the economic future of an entire family, and leave a legacy of suffering long after the illness has passed.

In an effort to seek solutions to some of these problems, I have directed my staff to begin a number of studies in this area. Among these studies is one to determine the feasibility of extending the Disability Benefits Law to include catastrophic illness coverage for our wage earners. I am also interested in continuing and expanding New York's research in heart disease and cancer, which are the two great killers today. We are moving to develop our rehabilitation services to the end that maximum efforts are directed toward saving human talent and rebuilding lives through this important third stage of medicine. We will continue to encourage the extension of full-time local health services to those areas of the State where people do not now have the advantages of modern public practices.

In all of these endeavors I welcome, in fact I earnestly solicit, the advice, counsel, and cooperation of the Medical Society of the State of New York and of each of its 25,000 members. Working together I am sure we can further enhance New York's longtime leadership in medicine and public health.

Sincerely,
Nelson A. Rockefeller

Thank you!

Speaker Lane: Gentlemen, I think this is rather a singular occasion on which the Governor, at least in my memory, has sent a personal delegate to address this group. I think that we should respond by indicating our appreciation to the Governor, and I will recognize Dr. Bedell, to comment, please.

Dr. Arthur J. Bedell, *Past President:* Mr. Speaker and gentlemen, I move you, sir, that the secretary be instructed to write to the Governor thanking him for the personal attention that he has given this matter, especially in assuring us of his desire to work with us and through us to improve the health of the people of the State of New York. I so move.

Dr. J. Stanley Kenney, *Trustee:* I second it.

Speaker Lane: It has been moved and seconded as you have heard. I am sure there is no discussion. Those in favor will say "aye," those opposed "no." It is unanimously carried.

Thank you again, Dr. Hilleboe.

Section 212

Tribute to Dr. Walter W. Mott

Dr. J. Stanley Kenney, *Trustee:* Mr. Speaker, ladies and gentlemen of the House, the adjournment of this House of Delegates today will mark the completion of long years of devoted, wise, and constructive service to this Society of one of its revered members, Dr. Walter W. Mott of White Plains, New York, who will be surrendering his trusteeship and has indicated that he will not be a candidate this year to succeed himself.

This august body cannot let this occasion pass without suitably recording its great debt of gratitude to Dr. Mott for his long years of service and for his valuable contributions to the welfare of his fellow physicians and the public which they serve.

Walter Mott began his distinguished career, as most do, as a member of his county society, Westchester. He rapidly rose through all its echelons, serving in various positions of influence, including the presidency of this prominent county society. He did not neglect his professional responsibilities and became one of the leading surgeons in his community. With this he found the time to be a leader in many important civic activities and conscientiously carried out the true concepts of the doctor-citizen. But most of all he endeared himself to his patients who literally worshipped him. Truly it may be said he is "the beloved physician."

I need not dwell on his surpassing record as councillor, trustee, and A.M.A. delegate at various times during his long career as a member and officer of this Society. He is retiring this year as chairman of the Board of Trustees, which will sorely miss his patience, wisdom, and counsel.

The present magnificent and dignified home of your State Society, to him more than any other man, will be a lasting monument to his patient perseverance in accomplishing this important mission.

As a person he has endeared himself to everyone who has had the privilege of knowing him intimately. We of the Board of Trustees—and I include the Council too—have a great love and admiration for this unselfish man. Quiet, reserved, polite, affable, and most gracious at all times, he epitomizes the perfect gentleman.

Dr. Mott has been the true physician and the loyal friend. As he retires now to a more restful and, we hope, a less harassed way of life, we wish him well. We pray he will be blessed for years to come with health and happiness and the cherished companionship and love of his devoted wife. This is not farewell, Walter—we hope we will see you as often as you feel your health and strength will permit.

I move that this House of Delegates, on behalf of all members throughout the State, accept this humble appreciation of Dr. Mott and our heartfelt thanks for all he has accomplished; and that these sentiments be suitably inscribed and presented to Dr. Mott, as an official action of this House.

Speaker Lane: You heard the motion—

Dr. Arthur J. Bedell, *Past President:* I second it.

. . . The motion was carried by acclamation, with the delegates rising and applauding . . .

Speaker Lane: Thank you, Dr. Kenney. May I personally salute Dr. Mott.

Section 213

Tribute to Dr. W. P. Anderton

Dr. John J. Masterson, *Trustee:* The Office Management Committee, in its annual report, briefly expressed our appreciation, respect, and esteem in which we hold Dr. Anderton. I would like, however, with your permission, Mr. Chairman, to introduce the following resolution.

Speaker Lane: You certainly have it.

Dr. Masterson: It reads:

> Whereas, W. P. Anderton, M.D., became secretary of the Medical Society of the State of New York in December, 1944; and
>
> Whereas, he has been re-elected each year since that date, and re-election year after year is a tribute in itself; and
>
> Whereas, he has faithfully, diligently, and most capably fulfilled the duties of his office for a period of almost fifteen years and has devoted himself to the ideal of serving the Society in every possible way above and beyond the duties of his office; and
>
> Whereas, his gracious and affable nature has earned for him the distinctive designation of "the genial secretary"; and
>
> Whereas, not only this House and the members of the Society but individuals and groups outside the Society have been the beneficiaries of his dedicated work; and
>
> Whereas, in addition to secretary, he served the Society as general manager from March 8, 1951, to December 1, 1958, and he put into this position the same capability, zeal, and dedication that he displayed as secretary; and
>
> Whereas, he has helped to guide the destinies of this House efficiently and well down through the years and has served this Society in many ways, being an elected delegate to the American Medical Association for many years; and
>
> Whereas, in every way he has proved a true physician and a loyal member of the medical profession, and he has always had uppermost in all his thoughts and actions the welfare of the physicians and the public of the State and has demonstrated time and again his unwavering loyalty to the Society; and
>
> Whereas, his retirement as secretary takes place with this meeting of this House; now therefore be it hereby
>
> *Resolved,* that this House, on behalf of its own members and the more than 25,000 members of the Medical Society of the State of New York, formally express our deepest appreciation and heartfelt thanks to W. P. Anderton, M.D., for his long years of loyal and exceptional service and express our best wishes for continued health and happiness; and be it further
>
> *Resolved,* that these sentiments be inscribed in suitable form and presented to Dr. Anderton as an official action of this House.

I move, sir, this resolution.

Dr. J. Stanley Kenney, *Trustee:* I second it.

Speaker Lane: I am sure that this motion will be approved by a rising vote of thanks.

. . . The motion was carried by acclamation, with the delegates rising and applauding . . .

Speaker Lane: We follow in their footsteps, and I hope that those who take over their positions can use them as models for the future.

Section 214

Report of Special Committee on Prize Essays

Speaker Lane: The next order of business is two reports: one from the Special Committee on Prize Essays, and Dr. Anderton will report on that for Dr. Eggston, who has been sick.

Secretary Anderton: Mr. Speaker, this reads:

> To the House of Delegates, Gentlemen:
>
> The committee consists of Dr. David K. Miller, Dr. Allen H. Minor, and Dr. Andrew A. Eggston, chairman.
>
> After consideration of the two papers submitted for the Merit H. Cash prize, the committee agreed in recommending that the prize be awarded for the paper entitled "Obstruction of the Superior Vena Caval System."
>
> No essays were submitted for the Lucien Howe prize.
>
> Respectfully submitted,
> Andrew A. Eggston, M.D., *Chairman*

Mr. Speaker, in this envelope there is sealed the name of the author, and on the outside his code, "Operation Insomnia," and inside the name is Dr. Joseph J. Ricca, 100 Eighth Avenue, Brooklyn 15, New York. (*Applause*)

I move, sir, the approval of this report.

Dr. Peter J. Di Natale, *Councillor:* I second it.

Speaker Lane: It has been moved and seconded that this report be approved. Those in favor say "aye," opposed "no." It is so ordered.

Thank you, Dr. Anderton.

The Scientific Awards Committee is still in action, trying to present their report. They hope to have it ready before the House adjourns.

Section 215

Election of Life Members

Speaker Lane: The next order of business is the election of life members. That has been published in the blue booklet. There are several additional names to be added, and Dr. Anderton will read those.

Secretary Anderton: Mr. Speaker, I move that the gentlemen who are listed in the program booklet as candidates for life membership, with the exception of Dr. Irma K. Cronheim, of New York City, who died April 24, 1959, be so elected, and in addition the following doctors:

Alfred Charles Beck, Brooklyn
M. Renfrew Bradner, Sr., Warwick
Lucile C. Flood, Highland Falls
Peter Maybarduk, New York City
Harold F. Morrison, Warwick
Walter I. Neller, Middletown
Daniel Francis O'Keeffe, Albany
Guy M. Parkhurst, Bath
Scott B. Schleiermacher, Newburgh
Max Jones Schroeder, New York City

I so move, sir.

Dr. Arthur J. Bedell, *Past President:* I second it.

Speaker Lane: It has been moved and seconded that these members be elected to life membership. Those in favor of the motion will say "aye," any opposed "no." It is so ordered.

. . . The complete list is as follows:

Adelbert C. Abbott, Syracuse
Harry Ackerman, Bronx
Edward B. Allen, White Plains
Isidor Apfelberg, New York City
Horace E. Auringer, Addison
Wardner D. Ayer, Syracuse
William Howard Barber, Sr., Calverton
George W. Batt, Angelica
Alfred Charles Beck, Brooklyn
David Beck, New York City
Harold K. Bell, Brooklyn
Alice R. Bernheim, New York City
Edgar Bieber, Dunkirk
Edgar Birdsall, Glens Falls
David Treadwell Bishop, Brooklyn
Samuel W. Boorstein, Bronx
Laverne A. Bouton, Amsterdam
M. Renfrew Bradner, Sr., Warwick
Patrick F. Britt, Syracuse
Harold R. Brown, Flushing
Leslie Brown, New York City
Louis Casamajor, New York City
Henry Wisdom Cave, New York City
L. Beverly Chaney, Jackson Heights
Louis Chargin, New York City
Stephen A. Chilian, New York City
Onofrio Cirillo, New York City
James Albert Corscaden, New York City
Rufus B. Crain, Rochester
Peter Thomas Daly, Bronx
Thomas Kirby Davis, New York City
Frank N. Dealy, Port Washington
Leslie A. Dickinson, Rochester
Abraham S. Elterman, East Rockaway
Herman Elwyn, New York City
William Engel, New York City
Sigmund Epstein, New York City
Gustav Erlanger, New York City
Otto Alois Faust, Albany
Alfred A. Feuerring, Bronx
Henry Craig Fleming, New York City
Lucile C. Flood, Highland Falls
Lewis J. Friedman, New York City
Isidore Harry Goldberger, Bronx
Alfred Goodman, New York City
Samuel Gottesman, New York City
Israel Gottlieb, Bronx
James M. Happell, Salamanca
Kristian Gosta Hansson, New York City
M. Esther Harding, New York City
Samuel Hecht, New York City (retroactive to May 14, 1958)
George F. Herben, Big Moose
Mark Hornstein, New York City
Thurlow. T. Huntington, Rochester
Frank W. Ingram, Rochester
Charles G. Irish, Lancaster
Arthur Husted Jackson, Watkins Glen
Isidore Jacobowitz, New York City
Michael Jaffer, New York City
Max Jessner, New York City
Harold B. Johnson, Buffalo
Morris Kaplan, New York City
Raphael M. Kelly, Brooklyn
Charles R. Kingsley, Jr., Staten Island
Max Kirschner, Alton, Illinois
George August Koenig, New York City
Herman Kolton, New York City
Jacob S. Kominz, Rochester
Isidor Kross, New York City
Monroe B. Kunstler, New York City
Edward A. Lane, Hartsdale
Thomas Eugene Lavell, New York City
Roy F. Leighton, Scarsdale
Charles G. Lenhart, Spencerport
Robert Lewy, Floral Park
Markus Lindenfeld, Forest Hills
Joseph Livingston, New York City
Clara L. Loewy, Yonkers
Siegmund Loewy, Elmhurst
Leon S. Loizeaux, New York City
Mark Lourie, Bronx
Jacob Luftig, Brooklyn
Henry Ross Magee, Newton, Pennsylvania
Robert J. Maichle, Dansville
Samuel Mandelbaum, New York City
Peter Maybarduk, New York City
Henry E. McGarvey, Bronxville
Harriet C. McIntosh, New York City
Arthur S. McQuillan, Jackson Heights
Benjamin Michailovsky, New York City
George E. Milani, Bronx
Milton A. Miller, New York, City
Rudolph Duryea Moffett, New York City
Myron L. Morris, New York City
Harold F. Morrison, Warwick
Dudley J. Morton, New York City
Walter W. Mott, White Plains
Horace O. Muscato, Buffalo
Walter I. Neller, Middletown
Thomas F. Nevins, Brooklyn
Harry I. Norton, Rochester
Homer H. Oaksford, Gloversville
Elmer William O'Brien, Webster
Daniel Francis O'Keeffe, Albany
Guy M. Parkhurst, Bath
Vincenzo Pascale, New York City
Stephen J. Petrovits, Westbury
Charles Phillips, New York City
Otto Carl Pickhardt, New York City
Lee Sinclair Preston, Oneida
James Z. Railey, New York City
Joseph L. Ramirez, New York City
Abraham Ravich, New York City
Harry Thomas Remmer, Utica
Bertrand E. Roberts, St. Petersburg, Florida

Albert Rooker, Niagara Falls
Nathan Roos, New York City
Ben-Henry Rose, Miami Beach, Florida
Lazar Rosenthal, Brooklyn
Samuel M. Rothberg, New York City
Alphons Rothschild, Syracuse
Louis M. Ruderman, East Meadow
Arthur L. Runals, Allegany
William Cloud Rutledge, New York City
Andrea Saccone, New York City
Julio Samper, New York City
William A. Sawyer, Rochester
Samuel J. Scadron, New York City
Scott B. Schleiermacher, Newburgh
Max Jonas Schroeder, New York City
Joseph Schroff, New York City
Carl G. Schwan, Hornell
Otto Francis Schwartzer, New York City
Elmer G. Seel, Rochester
Fedor L. Senger, Brooklyn
Frances Shostac, New York City
Robert C. Simpson, Amsterdam
Sol Slomka, New York City
George E. Slotkin, Buffalo
William A. Somerville, Hewitt, New Jersey
Max Spiegel, New York City
Miguel Steinberg, New York City
Walter Steinberg, Bellerose
Philip Moen Stimson, New York City
Raphael G. Stoliarsky, New York City
Arthur Purdy Stout, New York City
Milton. I. Strahl, Brooklyn
Edmund B. Sullivan, Mount Vernon
Francis X. Timoney, New York City
Charles E. H. Upham, New Rochelle
Benjamin Morgan Vance, New York City
George J. Veith, Suffern
Benjamin P. Watson, New York City
George W. Wheeler, New York City
Everett N. Whitcomb, Port Washington
Myrtle M. Wilcox, Binghamton
A. Harold Willard, New York City
Ross Miller Wilson, New York City
Glenn A. Wood, Syracuse
McIver Woody, New York City
Anibal Zelaya, New York City

Section 216

Memorial to Charles A. Gordon, M.D.

Dr. John G. Masterson, *Kings:* Mr. Speaker, during the past year, the Medical Society of the State of New York lost an illustrious member in the death of Dr. Charles A. Gordon. Inasmuch as Dr. Gordon was the chairman of the Subcommittee on Maternal Welfare, I would request that the death of Dr. Gordon be recorded with regret in the minutes of this House of Delegates.

Speaker Lane: Do you so move?

Dr. Masterson: I so move.

Dr. Samuel Sanes, *Erie:* I second it.

Speaker Lane: All in favor please say "aye," opposed "no," if any. It is carried and so recorded.

Section 217

Address of Incoming President-Elect

Speaker Lane: It is now my pleasure to introduce to you—and I am sure he does not need any introduction—our new president-elect, Dr. Norman S. Moore. I would like Dr. James Greenough and Dr. Wallace, of Tompkins County, to escort him to the platform. Dr. Moore!

. . . Drs. James Greenough and C. Stewart Wallace escorted incoming President-Elect Moore to the platform amid applause . . .

Incoming President-Elect Moore: Mr. Speaker and members of the House, I stand here both humble and grateful—humble because I know the magnitude of the responsibilities that lie ahead; grateful because of your evaluation of my ability to meet that responsibility.

I came into this House many years ago, and Dr. Stanley Kenney just told me it was during the speakership of Dr. Kopetzky, so I have had a chance for many years to watch the officers, the members of the Council and Board of Trustees, and the committees of the House and the Council toil with the problems of the Medical Society of the State of New York. I have observed for a long time that it is their toil which makes an administration successful.

I pledge my efforts for Dr. Fineberg's administration. I ask for the cooperation in the future from all the committees that have helped so gloriously in the past, because I know that it is not the leaders, but the committees, the work of everybody in the Society that makes the administration successful. I hope and pray for the leadership to mobilize the resources of that group.

Thank you!

Speaker Lane: Gentlemen, we have some unfinished business, which I hope won't take too long to complete. First, we would like to call Dr. Angrist back to the rostrum to see if we can complete the business we were at when we adjourned last evening by five votes.

Section 218 (See 57, 94, 206, 224)

Report of Reference Committee on Report of Council, Part IV: Public Health Activities C—Relationship of Atherosclerotic Heart Disease to Occupations

Dr. Alfred A. Angrist, *Queens:* Mr. Speaker, I think it might simplify the problem and expedite the solution if I could have the privilege of moving that the modified resolution which I am about to read in full be accepted as a substitute motion for all that went before.

We tried to include much of the criticism and contentions that were embodied in some of these recommendations and suggestions made in the form of amendments and the like. May I read the modified resolution? If you will refer to your copy of 59-25, the modification takes into consideration some of the suggestions made and deletes the first two "whereases," as was suggested on the floor of this House last evening. The resolution then begins with the third "whereas," and reads as follows:

> WHEREAS, it is important for sociologic and economic reasons that cardiacs be encouraged to perform gainful work; and
>
> WHEREAS, the State of New York is making every effort to have handicapped persons so employed; and
>
> WHEREAS, employers are always reluctant and often do not employ or retain cardiacs because of financial and moral risk that they feel they are taking in employing a person who may become a compensation case; and

and then this is a newly inserted "whereas," which I read to you before, but I will read it at this juncture:

> WHEREAS, the Work Evaluation Program of the American Heart Association has shown that employment of the candidates certified for particular work occasions no extra hazard to the employer or his insurance carrier; now therefore be it hereby

and the "resolved" has been modified as follows:

> *Resolved*, that in order that employers may be encouraged to employ or re-employ cardiacs as frequently as possible, the Medical Society of the State of New York refers the employer to this expert opinion of the American Heart Association to the effect that cardiacs may be employed for particular duties for which they have been medically certified.

Mr. Speaker, I move this resolution as a substitute motion at this juncture.

VICE-SPEAKER WURZBACH: Is it seconded?

DR. LOUIS H. BAUER, *Past President:* I second it.

VICE-SPEAKER WURZBACH: This substitute resolution is now open for discussion.

DR. ABRAHAM M. FREIREICH, *Nassau:* It is clear from the discussion and from many of the controversial points raised yesterday with regard to this resolution that while the intent of course is good, this body being composed of doctors in all specialties is really not in a position to come to a final conclusion with respect to this particular problem of heart disease. I therefore wish to offer a substitute resolution for consideration here:

> WHEREAS, it is important for sociologic and economic reasons that cardiacs be encouraged to perform gainful work; and

which is the third "whereas" in the original resolution

> WHEREAS, the American Heart Association through its component branches has been studying the employability of cardiacs in industry through their work evaluation units; and
>
> WHEREAS, the State of New York is making every effort to have handicapped persons employed; now therefore be it hereby
>
> *Resolved*, that the House of Delegates of the Medical Society of the State of New York places itself on record as being in support of the program of the American Heart Association.

I move this as a substitute resolution.

VICE-SPEAKER WURZBACH: Do I hear a second?

DR. ARTHUR J. BEDELL, *Past President:* I second it.

VICE-SPEAKER WURZBACH: We are now speaking on the second substitute resolution. Is there discussion?

. . . There were calls for the question . . .

VICE-SPEAKER WURZBACH: If there is no further discussion, we are now voting on the second substitute resolution, which you have just heard presented. All those in favor of this resolution say "aye," opposed "no." I am going to call for a standing vote. All those in favor of this second substitute resolution will stand—

DR. BEDELL: Mr. Speaker, I call attention to the fact that many of the members of this House are now off the floor, and I do feel that they have a right to be here.

DR. THOMAS F. MCCARTHY, *Bronx:* We have a quorum.

DR. BEDELL: It is a question of rights. Those who are off the floor are performing a duty assigned to them by the Speaker of the House. We have in the past always given the tellers a chance to express their opinion.

VICE-SPEAKER WURZBACH: I think the statement of Dr. Bedell is well taken, and this will be held over until the tellers return, at which time I will ask Dr. Angrist to give his substitute, and you should give your substitute, Dr. Freireich.

Section 219 (See 126)

Report of Reference Committee on Report of Council, Part XII: Scheduling of House of Delegates So As Not to Conflict with Mother's Day

VICE-SPEAKER WURZBACH: Dr. Waring Willis has a report to present, and it won't cause too much controversy.

DR. WARING WILLIS, *Westchester:* The Reference Committee on Report of the Council, Part XII, had one additional resolution referred to it, 59–61, subject, "Scheduling of House of Delegates So As Not to Conflict with Mother's Day," introduced by Herbert G. Cohen, Bronx County, as an individual:

> *Resolved*, that the sessions of the House of Delegates should be scheduled so as not to conflict with Mother's Day.

This is the first time that such a resolution has been brought before this House. Any action that this committee may take will probably be misinterpreted. If we do not add a new resolution concerning Father's Day, we will be accused of being prejudiced. Every member of this committee is in favor of Mother's Day. We are also in favor of Father's Day, and so we are faced with a real dilemma. In order to be completely neutral and not offend either the mothers or fathers, and since every day is mother's day, we recommend no action.

VICE-SPEAKER WURZBACH: Is this motion seconded?

DR. ARTHUR J. BEDELL, *Past President:* I second it.

VICE-SPEAKER WURZBACH: Is there any discussion? If not, all those in favor of the report of the reference committee say "aye," those opposed "no." The committee action is approved.

DR. WILLIS: Now I make a motion to approve the entire report of this reference committee as amended.

DR. J. STANLEY KENNEY, *Trustee:* I second it.

VICE-SPEAKER WURZBACH: Is there any discussion? If not, all those in favor say "aye," opposed "no." It is so ordered.

DR. LOUIS H. BAUER, *Past President:* Mr. Speaker, I would like to move that Dr. Willis be nominated as the diplomat of the year. (*Laughter*)

VICE-SPEAKER WURZBACH: By acclamation.

Section 220 Resolution 59–68

Amendment to Chapter IX, Section 1 of Bylaws

DR. GEORGE J. LAWRENCE, JR., *Councillor:* I was given permission by the House yesterday to introduce a resolution concerning an amendment to the Bylaws, which has been introduced. It has been given to the secretarial staff for typing, and Dr. Lane told me he has the number.

SPEAKER LANE: It has not come up yet.

VICE-SPEAKER WURZBACH: Can you introduce it by title? Just introduce it by title.

DR. LAWRENCE: It is a resolution to amend the Bylaws, Chapter IX, Section 1. This is the one on which there was a great deal of controversy before the House, as you know, concerning expenses.

VICE-SPEAKER WURZBACH: In other words, this is being introduced an an amendment to the Bylaws, which is hereby accepted by the House and will hold over to the next annual meeting and be reported at that time by the committee.

. . . The resolution referred to, which was subsequently distributed, is as follows:

> *Resolved*, that Chaper IX, Section 1, of the Bylaws be amended so as to add the words "commissions and" before the word "committees" in the fourth and fifth lines of Chapter IX, Section 1; add the words "employes of the Society" following the word "committees" in the fifth line of said section; and add the words "commissions and" in the fourteenth line of the said section before the word "committees"; and delete the word "and" in line 15 and add a comma following the word "Council" and add the words "and employes" in the fifteenth line of said section following the word "committees"; and be it further
>
> *Resolved*, that the words "and president-elect" be added after the word "president" in line 8; and be it further
>
> *Resolved*, that the words "and section delegates" be added following the words "delegates of the district branches" in line 17; and be it further
>
> *Resolved*, that the sentence, "The delegates to the American Medical Association who have attended each session of the House of Delegates of that association, as certified by the secretary of the American Medical Association to the secretary of the Medical Society of the State of New York shall be allowed traveling expenses," be deleted and the following sentence substituted for it: "A member of this Society who acts as a delegate to the House of Delegates of the American Medical Association, or an alternate delegate who, at the direction of the Council, attends a meeting of the House of Delegates of the American Medical Association shall be allowed traveling expenses"; and be it further
>
> *Resolved*, that the following sentence be inserted to follow the word "expenses" in line 17: "Members of the Society appointed by the president or Council to carry out special assignments for the Society also shall be allowed traveling expenses" so that Section 1 will then read as follows: "Allowances for expenses incurred in the actual performance of official duties by officers, members of the Council, the Board of Trustees, of the Judicial Council and commissions and committees and employes of the Society, and delegates to the American Medical Association shall be made in conformity with the following conditions. The president and president-elect shall be allowed a per diem and expenses when engaged upon official business. All other officers shall be allowed traveling expenses when engaged upon official business. Members of the Council, of the Board of Trustees, and of the Judicial Council shall be allowed traveling expenses. Members of commissions and committees of the Council, all special committees, and employes of the Society shall be allowed traveling expenses. Members of the Society appointed by the president or Council to carry out special assignments for the Society also shall be allowed traveling expenses. Delegates of the district branches and section delegates sitting in the House of Delegates shall be allowed neces-

sary expenses by the Medical Society of the State of New York. There shall be no allowance made for the expenses, traveling or otherwise, for any committee appointed pursuant to Chapter X of these Bylaws. Proper vouchers must be filed with the secretary before any of above allowances are made. A member of this Society who acts as a delegate to the House of Delegates of the American Medical Association, or an alternate delegate who, at the direction of the Council, attends a meeting of the House of Delegates of the American Medical Association shall be allowed traveling expenses. Each district branch shall be entitled to receive a sum not to exceed $400, exclusive of the work done by the secretary regarding notices, programs, etc., to defray the expenses of such district branch, provided a proper statement of such expense shall have been presented to the secretary. All bills, claims, or vouchers herein provided for shall be filed within thirty days after the date of the incurring of such expense. This time may be extended for any cause by the Board of Trustees and such extension shall not exceed ninety days. Payment of all these expenses shall be made under directions of the Board of Trustees."

Speaker Lane: There are two or three minor actions that we can take here. I need the permission of the House to have introduced resolutions on this final day, and I ask that indulgence from the House. Will you so approve? Those in favor say "aye," those opposed "no." It is carried.

Dr. Anderton, will you kindly make the motions.

Section 221

Resolution of Thanks

Secretary Anderton: Mr. Speaker, I offer the following resolution:

> Whereas, the 153rd Annual Convention of the Medical Society of the State of New York has proved itself to be successful in every facet; now therefore be it hereby
>
> *Resolved*, that the House of Delegates, speaking for our entire membership, records much thanks to those who have made this possible; and be it further
>
> *Resolved*, that we express our appreciation to the Hotel Statler-Hilton in Buffalo, its officers, and employes; and be it further
>
> *Resolved*, that we thank Mr. Charles L. Baldwin, Miss Camille M. Marra, Miss Mollie Pesikoff, and others, for their helpful preparations for our convention and their accomplishments during our sessions; and be it further
>
> *Resolved*, we thank the members of our staff who have been of so much assistance to our House of Delegates, Miss Doris K. Dougherty, Miss Alvina Rich Lewis, Miss Susan V. Baker, Miss Alice Wheeler, Miss Roslyn Feinberg, Miss Mary McMahon, and Mrs. Beatrice Moosa, and be it further
>
> *Resolved*, that we are especially grateful to Mr. Thomas E. Alexander for his meticulous efforts and supervision of preparations for our dinner dance, House of Delegates, and many other parts of our convention; and be it particularly
>
> *Resolved*, that we appreciate and admire the successful presiding of Dr. Joseph A. Lane, our speaker, and for the able assistance of the vice-speaker, Dr. Frederick A. Wurzbach, Jr., as well as our assistant secretary, Dr. Ezra A. Wolff.

I so move, sir. I move the adoption of this resolution.

Dr. Arthur J. Bedell, *Past President:* I second it.

Speaker Lane: It has been moved and seconded. I notice one name omitted there, the able work of Dr. Walter P. Anderton, and I would like to add that to the list.

It has been moved and seconded. Those in favor say "aye," any opposed "no." It is so ordered.

Are there any reference committees which have not reported?

. . . There was no response . . .

Speaker Lane: According to our records here everyone has reported.

There are two minor reports at this point.

Now I would like personally, on the part of myself and Dr. Wurzbach, to thank the chairmen of the reference committees and all of the delegates who acted on the reference committees for their work on these committees. Everything has been done very expeditiously, and we certainly thank you for your cooperation.

At this time, in view of the fact that the tellers are not back yet, and there is some business to conduct after they come back, I will declare a twenty-minute recess.

. . . Recess . . .

Speaker Lane: Gentlemen, the meeting will please come to order. If you will kindly take your seats, we will try to get on with the business of the House and complete it as soon as possible.

Section 222 (See 210)

Report of the Tellers

Speaker Lane: Dr. McCarty, are you ready to report?

Dr. Charles F. McCarty, *Kings:* Yes.

Speaker Lane: You may proceed.

Dr. McCarty: Report of the tellers—for assistant treasurer: Freedman 179, Rogers 40.

For Delegates to the A.M.A.: Azzari 211, Di Natale 191, Rawls 187, Moore 180, Greenough 163, Gibson 143, Blake 127, Murray 117.

That is eight.

Speaker Lane: I now declare these candidates as elected delegates to the A.M.A. beginning January, 1960.

Continue, Dr. McCarty.

Dr. McCarty: Continuing: Wolff 113, Schussheim 105, Willis 71, Brown 49, Burgin 30, Rogers 20, Heldmann 17, Robitzek 12.

Speaker Lane: I declare these gentlemen elected as alternate delegates to the American Medical Association.

Section 223

Introduction of President of National Woman's Auxiliary

Speaker Lane: It is my pleasure to introduce to you Mrs. Arthur E. Underwood, president of the national Woman's Auxiliary.

Mrs. Arthur E. Underwood: Thank you, gentlemen. It is indeed a pleasure to represent 80,000 wives of physicians. Dr. Gibson, Dr. Lane, Dr. Fineberg, and Dr. Bedell organized us in this State twenty-three years ago.

On the national level we have had four projects: Safeguard today's health for tomorrow, because we believe the individual's well-being determines the community's well-being; we have *Today's Health* magazine, A.M.A. educational activities, paramedical care, and safety in the home and on the highway.

We have contributed to many of our organizations, and we have helped in community health work with other organizations. We wish to stand beside you. We wish for your guidance, and we wish to thank you for the privilege.

Thank you!

Speaker Lane: Thank you very much, Mrs. Underwood.

I wish to state that I made a serious error in not including in our commendations for the work done for this meeting Dr. Herbert T. Wagner, our executive director.

We will now go back to the business at hand, and ask Dr. Angrist to come to the rostrum again and see if we can get that business completed.

Section 224 (See 57, 94, 206, 218)

Report of Reference Committee on Report of Council, Part IV: Public Health Activities C-Relationship of Atherosclerotic Heart Disease to Occupations

Vice-Speaker Wurzbach: Dr. Bedell rose to the point of order that it was not proper to consider this business while so many were absent. The House then held it over until the present time. There was at that time presented by Dr. Angrist, chairman of the committee, a substitute resolution and another substitute resolution was presented subsequently. I will ask that both now be read, Dr. Angrist first, the substitute for the original resolution, number 59–25.

Dr. Alfred A. Angrist, *Queens:* Mr. Speaker, may I suggest that I save the House the necessary expenditure of time and withdraw my own substitute resolution. I think Dr. Freireich will do likewise, and we will give you a combined resolution.

Vice-Speaker Wurzbach: Dr. Freireich, do you withdraw your substitute?

Dr. Abraham W. Freireich, *Nassau:* I do.

Vice-Speaker Wurzbach: Then, Dr. Angrist, you present your substitute resolution to the original resolution 59–25.

Dr. Angrist: In short, if I may do so, I will read it in its entirety:

> Whereas, it is important for sociologic and economic reasons that cardiacs be encouraged to perform gainful work; and
>
> Whereas, the American Heart Association, through its component branches, has been studying the employability of cardiacs in industry through their Work Evaluation Program; and
>
> Whereas, the State of New York is making every effort to have handicapped persons employed; now therefore be it hereby
>
> *Resolved,* that the House of Delegates of the Medical Society of the State of New York places itself on record as being in support of the program of the American Heart Association in its effort to promote employment of cardiacs for the particular duties for which they have been medically certified.

This is endorsed by the members of the reference committee.

Vice-Speaker Wurzbach: Do you move its acceptance?

Dr. Angrist: Yes.

Vice-Speaker Wurzbach: Is it seconded?

Dr. Freireich: I second it.

Vice-Speaker Wurzbach: Is there discussion?

Dr. Albert H. Douglas, *Queens:* I would like to offer this amendment to the substitute motion: "Be it further resolved that the Medical Society of the State of New York through its Council and appropriate committees explore the possibility of initiating a comprehensive study of the medical, economic, and legal aspects of this problem."

I believe that this amendment is self-explanatory, and I will conserve time by not discussing it further.

. . . The amendment was seconded . . .

Vice-Speaker Wurzbach: Is there any further discussion?

Dr. Milton Helpern, *Section Delegate:* Apropos of Dr. Douglas remarks, I might say that such a study is in progress at the present time. It is a long-range study and is being carried out very intensively under the auspices of the Heart Association, so that if the Society wants to go on record to more or less approve of the study that is being done all right, but the study is already in progress, and that is one of the reasons why I wanted to speak yesterday about the original resolution.

Dr. Angrist: We included that reference to the program being conducted by the American Heart Association and are just in a sense endorsing that effort.

Vice-Speaker Wurzbach: Is there any further discussion?

. . . There were calls for the question . . .

Vice-Speaker Wurzbach: All those in favor of the substitute resolution as here presented by Dr. Angrist say "aye"—

Dr. Arthur J. Bedell, *Past President:* First the amendment.

Vice-Speaker Wurzbach: All those in favor of the amendment as presented say "aye," those opposed "no." The amendment is lost.

We are now back to the original substitute resolution. Is there any discussion of that? All those in favor of the substitute resolution as presented by Dr. Angrist say "aye," opposed "no." It is so ordered.

Dr. Angrist: May I at this juncture move that the report as a whole as amended of your Reference Committee, Part IV, be approved.

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: Is there any discussion? If not, all those in favor of the motion that the Part IV report be accepted as a whole as amended will say "aye," those opposed "no." It is accepted.

Section 225

Sending Felicitations to Meeting of the Dental Society of the State of New York

Vice-Speaker Wurzbach: Dr. Wolff, do you have something to present?

Dr. Ezra A. Wolff, *Assistant Secretary:* I should like to ask the introduction of a resolution which is innocuous.

Dr. Arthur J. Bedell, *Past President:* I so move that the privilege be granted.

Vice-Speaker Wurzbach: Dr. Bedell moves that the privilege be granted.

Dr. Albert H. Douglas, *Queens:* I second it.

Vice-Speaker Wurzbach: All in favor of granting the privilege say "aye," contrary "no." The privilege is granted.

Dr. Wolff: The Dental Society of the State of New York is meeting in Syracuse and celebrating the centennial of the American Dental Association. I should like to move that the felicitations of this House go to the Dental Society of the State of New York on this occasion.

Dr. Bedell: I second it.

Vice-Speaker Wurzbach: It has been moved and seconded. Is there any discussion? Hearing none, all those in favor of this resolution say "aye," opposed "no." The resolution is passed.

Section 226

Functioning Committees

Dr. Herbert Berger, *Section Delegate:* Mr. Speaker, as the reports of the various reference committees unfolded yesterday, it became apparent that many of the committees of this House have not met during the past year. It would seem that there were only two possible interpretations: Either that we have a superfluity of committees, or perhaps some of our members are so busily occupied with multiple tasks that they have not been able to give any time to the operation of these committees. Therefore, I should like to suggest that this body memorialize the incoming officers and ask them to seek the help of district branches and county societies in placing men on appropriate committees who can actually function in these areas.

Vice-Speaker Wurzbach: As a motion this cannot be accepted. However, I will accept it as a reiteration of statements made by chairmen of reference committees concerning the activities of committees.

Is there any further business? Does anyone have anything to bring before the House at the present time?

Section 227

Thanks to Speaker and Vice-Speaker

Dr. Arthur J. Bedell, *Past President:* Mr. Speaker and Mr. Vice-Speaker, I address you both, and the House through you. Gentlemen of the House, I move a rising vote of thanks in appreciation of the services rendered this House by the speaker and the vice-speaker.

. . . The motion was carried by acclamation amid applause . . .

Speaker Lane: Thank you very much, ladies and gentlemen.

Vice-Speaker Wurzbach: Will the members of the Planning Committee meet at the close of the House please, here at the speakers' rostrum.

Section 228

Report of the Scientific Awards Committee

Speaker Lane: It is now my pleasure to introduce Dr. Charles D. Post, from the Scientific Awards Committee, who will make the annual awards.

Dr. Charles D. Post: Mr. Speaker and members of the House, it is only through the alertness and promptness of my committee that I could have gotten in this report. It has had to be assembled, the exhibits reviewed, since nine o'clock.

We have the pleasure of presenting the following awards to you:

Scientific Research

First Award

"Arteriography in Bone and Soft Tissue Tumors"
Ru-Kan Lin, M.D., Elliott C. Lasser, M.D., Herschel C. Moss, M.D., and Paul Zuckerman, B.S., Roswell Park Memorial Institute, Buffalo

Second Award

"Management of Atypical Lesions of the Cervix"
Michael J. Jordan, M.D., Emerson Day, M.D., and Genevieve M. Bader, M.D., Memorial Center for Cancer and Allied Diseases, New York City

Honorable Mention

"Palliative Management of Cancer"
Eugene L. Bronstein, M.D., and James J. Nickson, M.D., Memorial Center for Cancer and Allied Diseases, New York City

Clinical Research

First Award

"Neural Mechanism of Emesis and Antiemesis"
William Amols, M.D., H. Houston Merritt, M.D., and S. C. Wang, M.D., College of Physicians and Surgeons of Columbia University, New York City

Second Award

"Vascular Surgery of the Brain"
Wallace B. Hamby, M.D., and Lorenzo Belmusto, M.D., Buffalo General Hospital, Buffalo

Honorable Mention

"The Red-Eye: Differential Diagnosis and Treatment"
Arnold S. Breakey, M.D., and Conrad Berens, M.D., New York University Post-Graduate Medical School, New York City

I have the pleasure of reporting this, and I would like to thank my associates, Dr. Harold F. Brown and Dr. John G. Masterson, for their assistance.

Secretary Anderton: I move the adoption of this report, with thanks to the committee.

Dr. Arthur J. Bedell, *Past President:* I second it.

Speaker Lane: It has been moved and seconded that this report be adopted, with thanks. Is there any discussion? Those in favor say "aye," opposed "no." It is carried.

Is there any other business to come before the House?

Please give us your attention. Dr. Alvich is here. If we pay close attention, I am sure we can expedite matters.

Section 229 (See 199, 204)

Report of Reference Committee on Report of Council, Part I: Scientific and Educational Trust

Dr. Joseph P. Alvich, *Bronx:* Mr. Speaker and members of the House, I am coming before you this morning in reference to the recommendation made by our reference committee on the creation of a scientific and educational foundation.

If you recall, the committee wholeheartedly approved of the formation of such a foundation, and they thought it was a very good thing, and there were quite some possibilities where if the State Society adopted this, it could do something for the public health and also for medicine in general.

The final reference there was that it recommended that after the blueprint prepared by the Committee on Public Health and Education was evaluated and approved by our State Society legal counsel, it would then be returned to the House of Delegates for final approval before implementation. That would mean when Mr. Martin could go through the legal formality of getting things going in three or four months. If that foundation wanted to function, they would have to wait until next year for any funds to be available to them, or any pilot studies could not be tried until this House of Delegates reconvenes next year, which would seem unnecessary as long as our Council during the interim of our sessions passes anyway on most of the problems arising during the year.

A meeting of our committee was held this morning. At this meeting we invited our executive director, Dr. Wagner, President-Elect Fineberg, and Dr. Moore, and we discussed this matter. It was the consensus of the committee unanimously that rather than tie the hands of these people once this thing gets going that it should be referred to the Council for final approval and implementation. Therefore, the committee would like to make this final statement.

Your reference committee recommends that after the blueprint prepared by the Committee on Public Health and Education is evaluated and approved by our State Society legal counsel, it then be returned to the Council for final approval before implementation.

I move the approval of this new recommendation.

. . . The motion was seconded . . .

Dr. Thomas M. d'Angelo, *Queens:* But we passed it, so that we would have to wait a year now. We are just giving it now to the Council. I heartily approve it, but it seems to me that these two motions that we passed are a little contradictory. I think it would be wise to rescind yesterday's action before adopting this one.

Dr. Alvich: Perhaps it might be well that I, as chairman of the reference committee, move that the decision made yesterday be reconsidered.

Speaker Lane: Is there a second?

Dr. John A. Kalb, *Broome:* I second it.

Speaker Lane: It has been moved and seconded to reconsider yesterday's action. All those in favor of the motion to reconsider will say "aye," any opposed "no." The motion is carried.

Dr. Alvich: Now, Mr. Speaker, I move that that read as follows: Your reference committee recommends that after the blueprint prepared by the Committee on Public Health and Education is evaluated and approved by our State Society legal counsel, it then be returned to our Council for final approval before implementation.

Speaker Lane: Is there a second to that motion?

Dr. William T. Boland, *Chemung:* I second it.

Speaker Lane: Is there any discussion?

Dr. Alvich: A correction—for final approval and implementation.

Dr. d'Angelo: I don't like to continue the business of this House, but all you did was reconsider it. You did not rescind.

Dr. Alvich: Mr. Speaker, I move to rescind. Is that what you want, Dr. d'Angelo?

Mr. Martin: On reconsideration, Dr. Alvich is suggesting that the words "House of Delegates" be changed to "Council."

Dr. Alvich: That is right.

Speaker Lane: Is there further discussion?

. . . There were calls for the question . . .

Speaker Lane: You asked for the question. Those in favor of Dr. Alvich's motion will say "aye," opposition "no." The motion is carried.

Dr. Alvich, move for your report as a whole.

Dr. Alvich: I move the adoption of this report as a whole as amended.

Dr. J. Stanley Kenney, *Trustee:* I second it.

Speaker Lane: It has been moved and seconded as you have heard. Is there discussion? Hearing none, those in favor will say "aye," any opposed "no." It is so ordered.

Dr. Alvich: Thank you all.

Speaker Lane: Thank you, Dr. Alvich.

Is there any further business to come before this House?

. . . There was no response . . .

Speaker Lane: On behalf of Dr. Wurzbach and myself, I wish to thank you for your cooperation through the meeting and the expeditious manner in which all matters were handled by you.

I now declare this House of Delegates adjourned sine die.

. . . The House of Delegates adjourned at 11:25 A.M., sine die . . .

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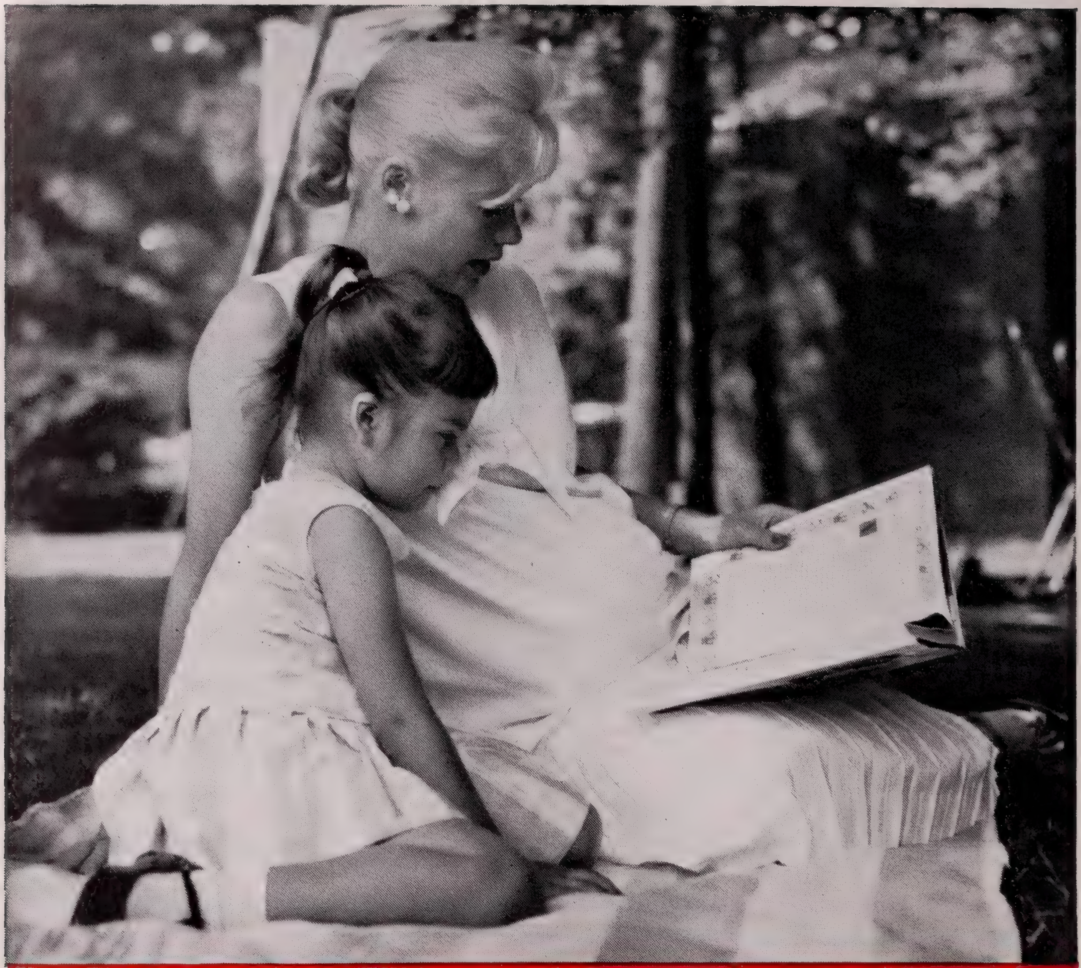

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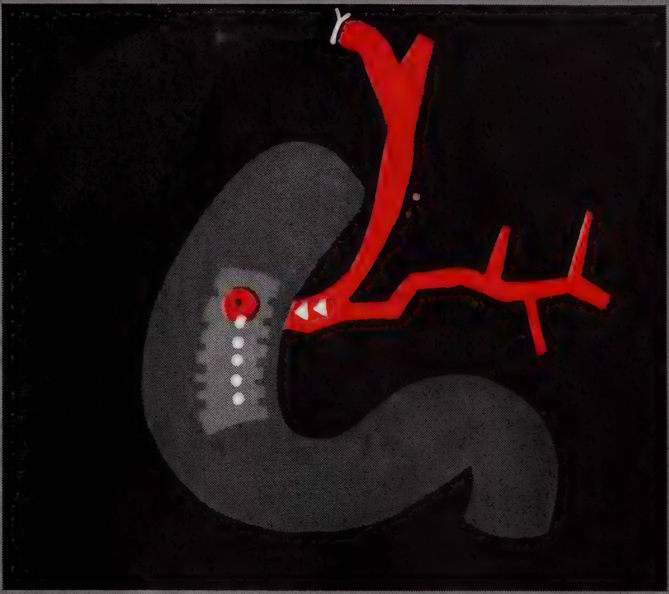

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190 (sick & well infants)	Henrickson[3]	Satisfactory results. Average hospital stay: 5.5 days; average daily weight gain: 3 ounces.

*Maltose-dextrins formula modifier, Mead Johnson

1. Hatfield, M. A.; Simpson, R. A., and Jackson, R. L.: J. Pediat. 44: 32-45 (Jan.) 1954. 2. Frost, L. H., and Jackson, R. L J. Pediat 39: 585-592 (Nov.) 1951. 3. Henrickson, W. E.: GP 8: 51-56 (Oct.) 1953. 4. Litchfield, H. R.: Arch. Pediat. 61: 617 (Dec.) 1944.

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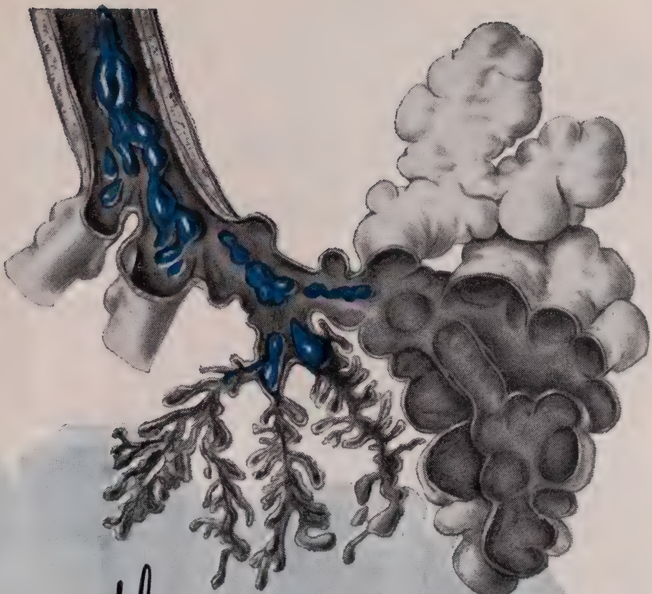

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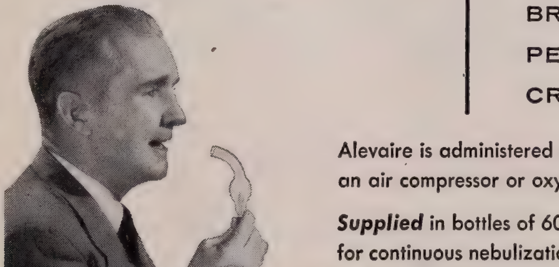

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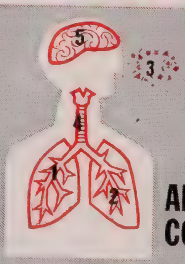

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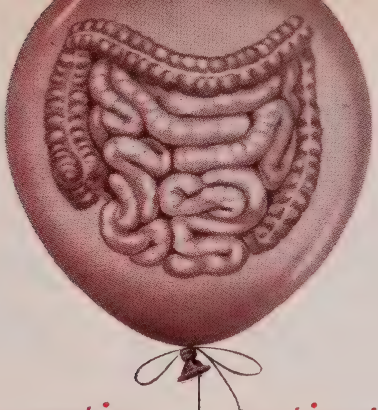

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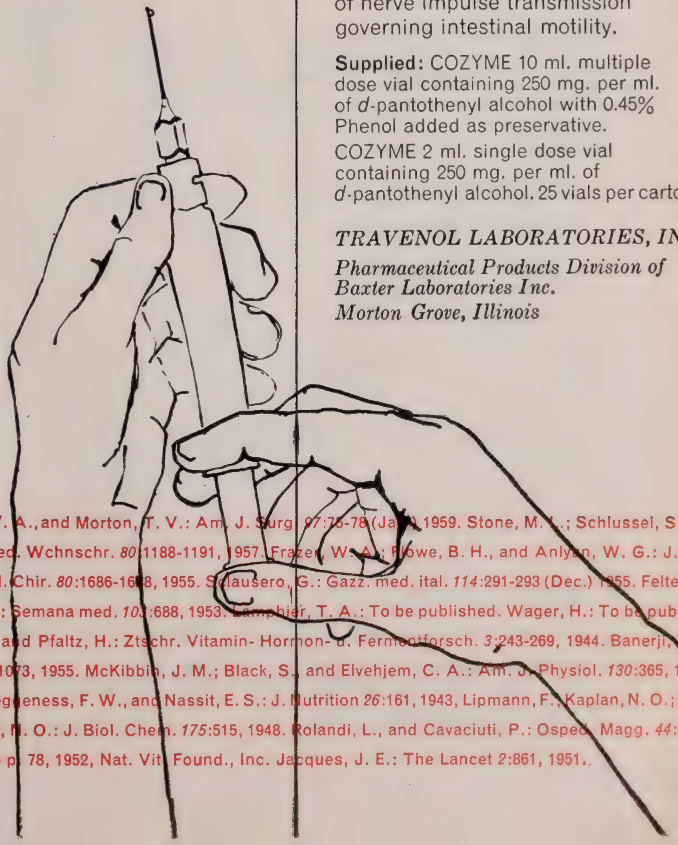

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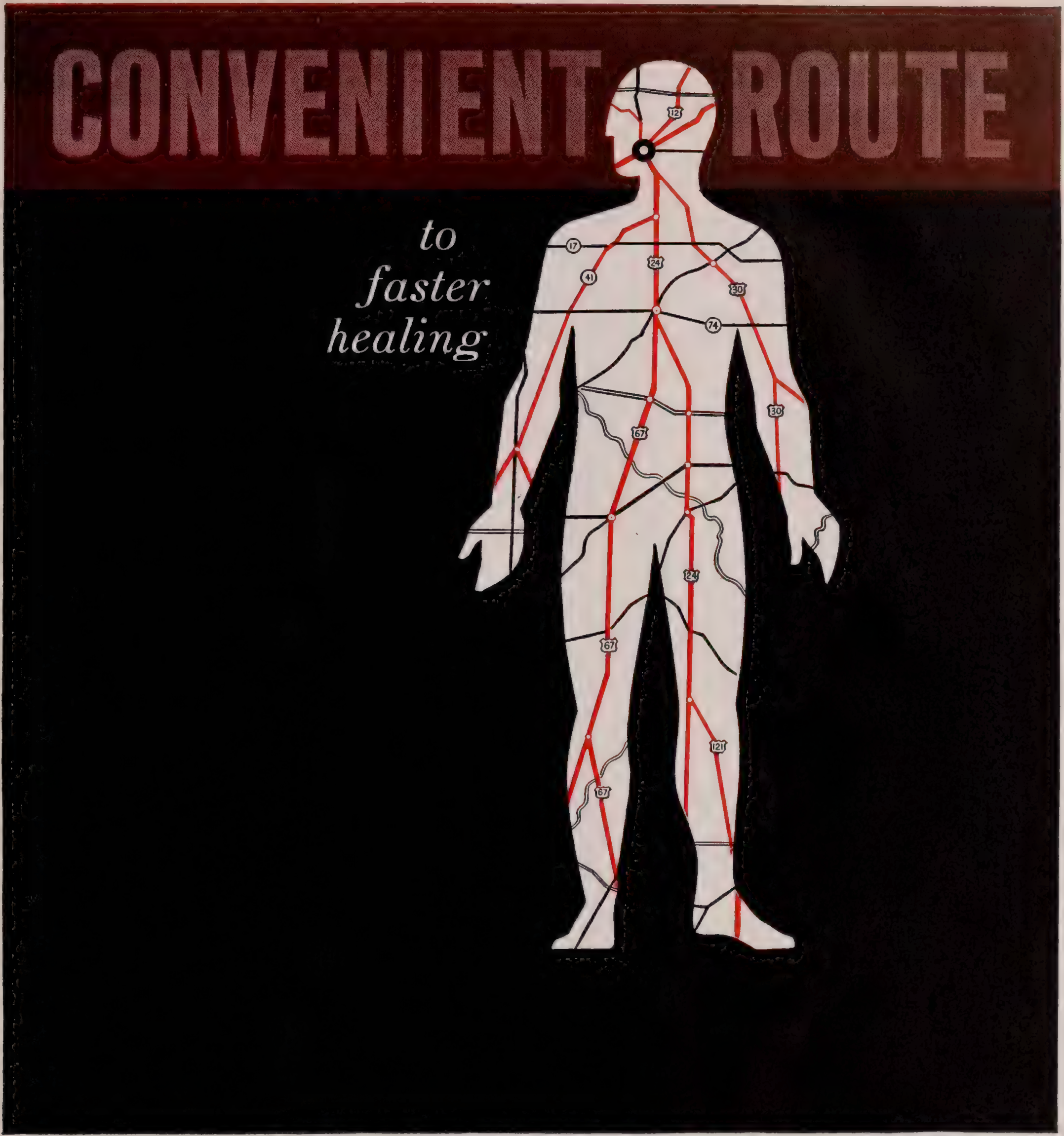

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With the introduction of Novahistine, a better and safer way to relieve symptoms of a cold became available to physicians. The synergistic action of the Novahistine formula...combining an orally-effective vasoconstrictor with an antihistamine...promptly clears the air passages and checks irritant nasal secretions. NOVAHISTINE can eliminate the problem of rebound congestion and damage to nasal mucosa in patients who misuse topical applications. • For long-lasting "Novahistine Effect" prescribe Novahistine LP Tablets...which begin releasing medication as promptly as conventional tablets but continue bringing relief for 8 to 12 hours. Two Novahistine LP Tablets in the morning and two in the evening will effectively control the average patient's discomfort from a cold. Each tablet contains phenylephrine HCl, 20 mg., and chlorprophenpyridamine maleate, 4 mg.

*Based on National Prescription Audits of new Novahistine prescriptions since 1952.

PITMAN-MOORE COMPANY Division of Allied Laboratories, Inc. • Indianapolis 6, Indiana

Novahistine LP†
LONG-ACTING

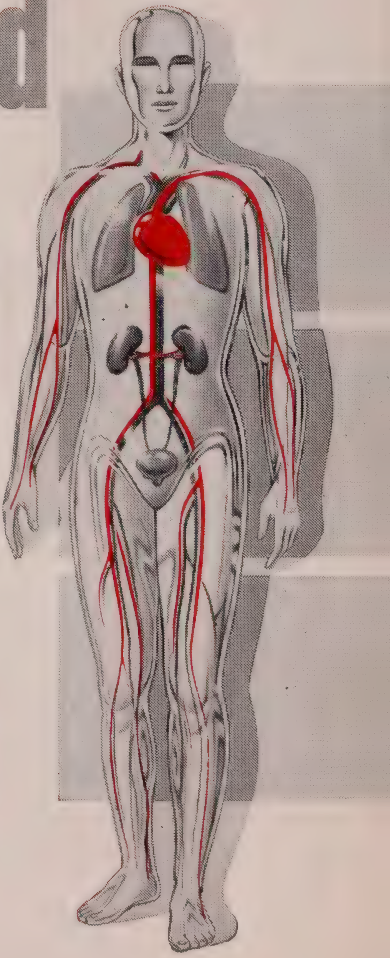
†Trademark

NEW

HYDRODIURIL T. M.

(HYDROCHLOROTHIAZIDE)

simplifies* and improves any regimen for hypertension



**it's as easy as 1, 2, 3 to use*

HYDRODIURIL T.M.

(HYDROCHLOROTHIAZIDE)

1 **Initiate therapy with HYDRODIURIL:** one 25 mg. tablet or one 50 mg. tablet once or twice a day. HYDRODIURIL by itself often causes an adequate drop in blood pressure over a period of two to three weeks. This may be all the therapy some patients require.

2 **Add or adjust other agents as required:** HYDRODIURIL enhances the activity of all commonly-used antihypertensive agents; thus, the dosage of other medication (rauwolfia, reserpine, hydralazine, veratrum) should be initiated or adjusted as indicated by patient condition. If a ganglion-blocking agent is contemplated or being used, usual dosage must be reduced by 50 per cent.

3 **Adjust dosage of all medication:** the patient must be frequently observed and careful adjustment of all agents should be made to establish optimal maintenance dosage.

Supplied: 25 mg. and 50 mg. scored tablets HYDRODIURIL (Hydrochlorothiazide) bottles of 100 and 1,000.
Additional literature for the physician is available on request.
HYDRODIURIL is a trademark of Merck & Co., INC. Trademarks outside the U S.. DICHLOTRIDE, DICLOTRIDE, HYDROSALURIC.

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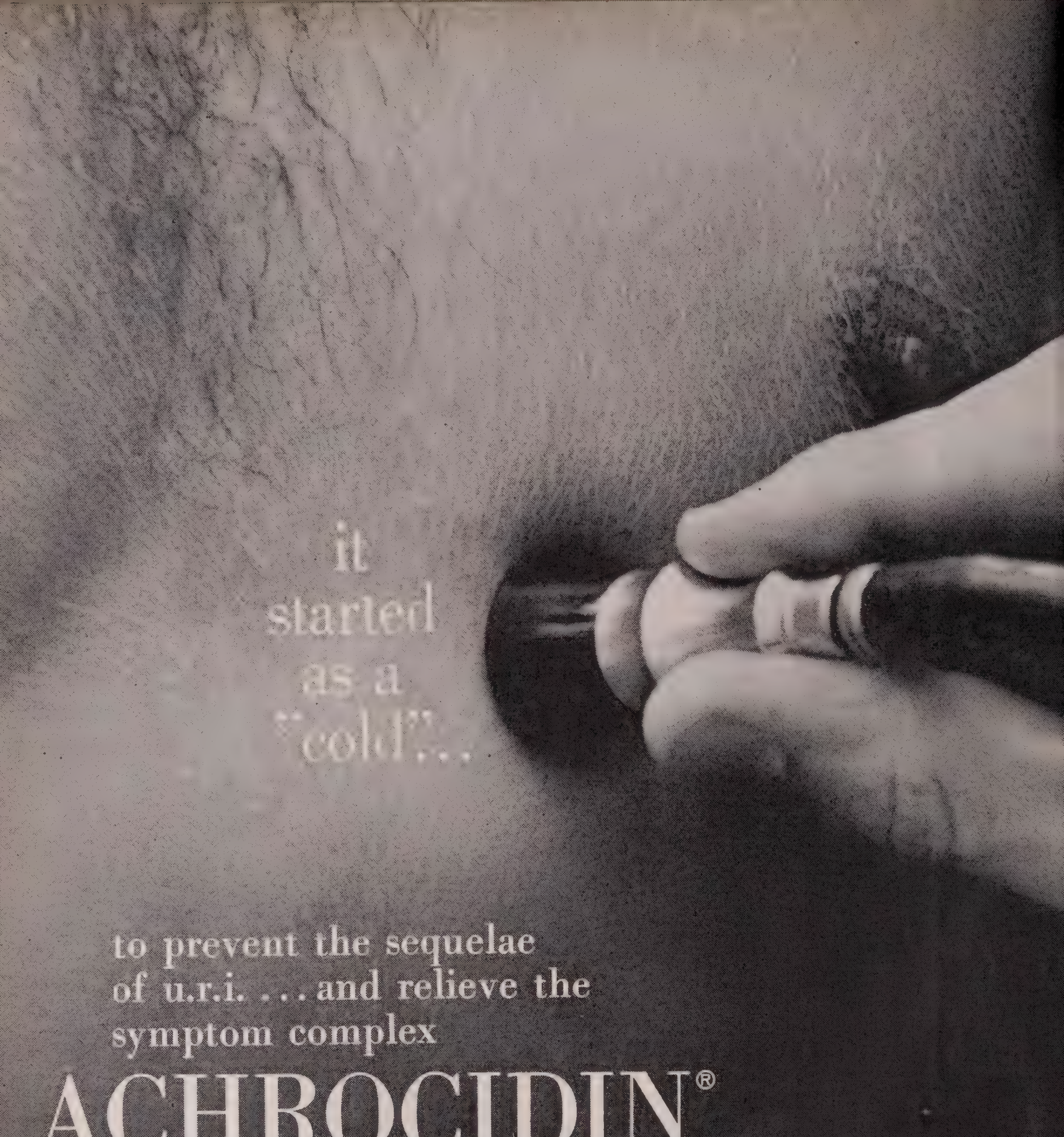

to prevent the sequelae of u.r.i. ... and relieve the symptom complex

ACHROCIDIN®

Tetracycline-Antihistamine-Analgesic Compound Lederle

Pneumonitis, otitis, tonsillitis, adenitis, sinusitis or bronchitis develops as a serious bacterial complication in about one in eight cases of acute upper respiratory infection.[1] To protect and relieve the "cold" patient... ACHROCIDIN.

Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline (125 mg.); phenacetin (120 mg.); caffeine (30 mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP (lemon-lime flavored), caffeine-free.

1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

Doctors' Dilemma, 1959

the challenge of chronicity in genitourinary tract infections

"Aside from the disturbing increase in emergence of antibiotic resistant bacterial strains, perhaps the most challenging dilemma confronting thoughtful physicians today is the problem of chronic infection of the genitourinary tract."[1]

to control the chronic case

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brand of nitrofurantoin

"may be used for protracted periods for the suppression of infection in the urinary tract, even in the presence of probable obstruction."[2]

- ■ Rapidly bactericidal against a wide range of gram-positive and gram-negative bacteria including organisms such as staphylococci, Proteus and certain strains of Pseudomonas, resistant to other agents
- ■ Development of bacterial resistance has not been a problem in over 7 years of extensive clinical use
- ■ No cross-resistance or cross-sensitization with other drugs since FURADANTIN, a synthetic nitrofuran, is unrelated chemically to any other class of antimicrobial drugs
- ■ Excellent tolerance—no toxic effects on kidneys, liver or blood-forming organs have ever been reported
- ■ "The drug was given continuously and safely for as long as three years."[3]

Available as Tablets, 50 and 100 mg.; Oral Suspension, 25 mg. per 5 cc. tsp.

References: 1. Lipscomb, H., et al.: South. M. J. 52:16, 1959. 2. Jawetz, E., et al.: A.M.A. Arch. Int. M. 100:549, 1957. 3. Lippman, R. W., et al.: J. Urol., Balt. 80:77, 1958.

NITROFURANS—a *unique* class of antimicrobials—neither antibiotics nor sulfonamides

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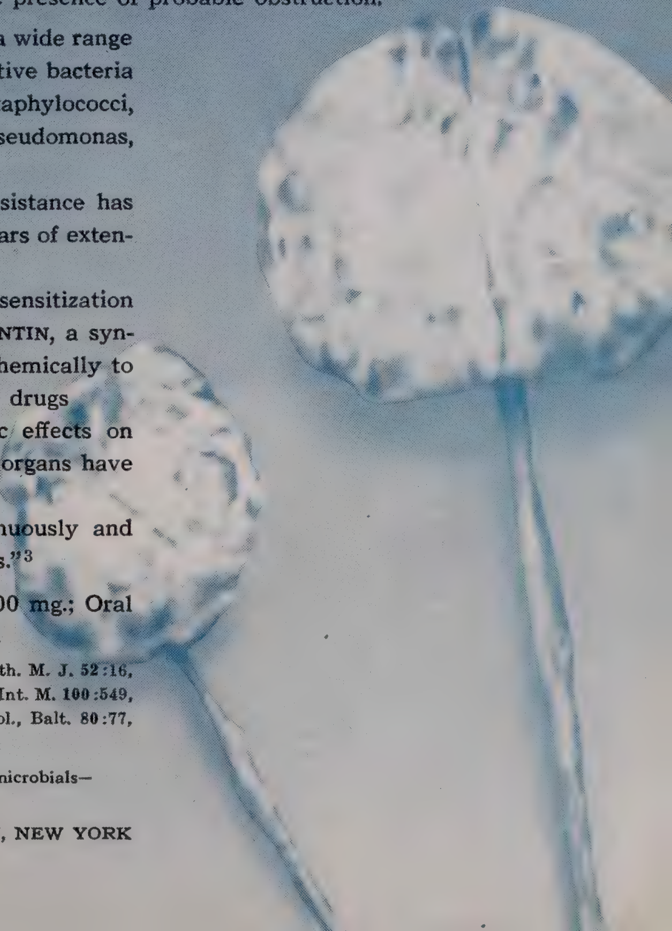
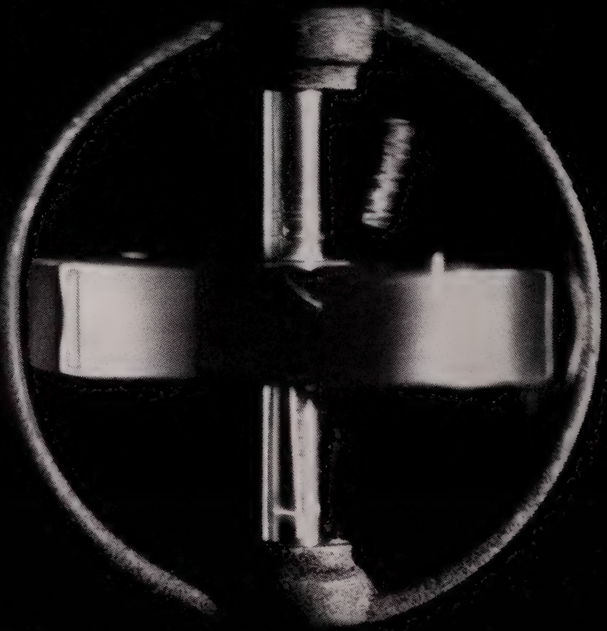


minimal disturbance
of the patient's chemical and psychic balance . . .



still unsurpassed
for *total*
corticosteroid
benefits

Aris

Substantiated by published reports of leading clinicians:

- **effective control** of allergic and inflammatory symptoms[1-20]
- **minimal disturbance** of the patient's chemical and psychic balance[1,4,5,8-19]

tocort®

Triamcinolone LEDERL

t anti-inflammatory and antiallergic levels RISTOCORT means:

- **freedom from salt and water retention**
- **virtual freedom from potassium depletion**
- **negligible calcium depletion**
- **euphoria and depression rare**
- **no voracious appetite — no excessive weight gain**
- **low incidence of peptic ulcer**
- **low incidence of osteoporosis with compression fracture**

Indications: rheumatoid arthritis; arthritis; respiratory allergies; allergic and inflammatory dermatoses; disseminated lupus erythematosus; nephrotic syndrome; lymphomas and leukemias.

Precautions: With ARISTOCORT all traditional precautions to corticosteroid therapy should be observed. Dosage should always be carefully adjusted to the smallest amount which will suppress symptoms. After patients have been on steroids for prolonged periods, discontinuance must be carried out gradually.

Supplied: Scored tablets of 1 mg. (yellow); 2 mg. (pink); 4 mg. (white); 16 mg. (white).

Diacetate Parenteral (for intra-articular and intrasynovial injection). Vials of 5 cc. (25 mg./cc.).

List of References 1-20 supplied on request.

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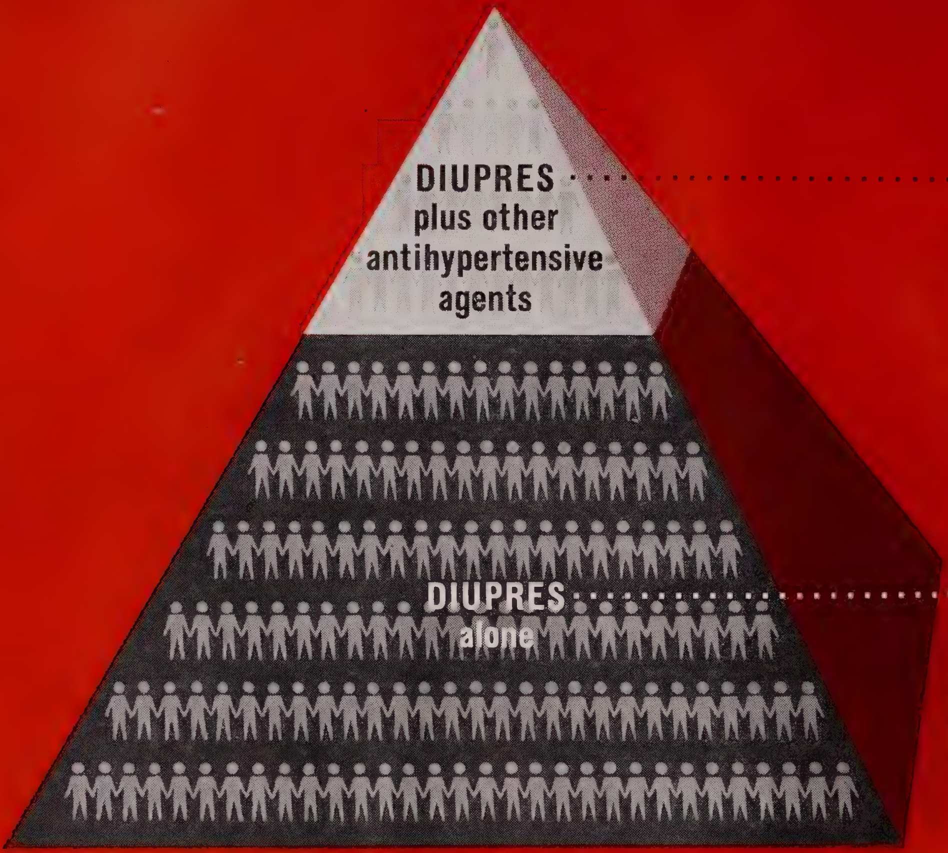
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plus other
antihypertensive
agents
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alone

with DIUPRES,
fewer patients
require addition
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hypertensive
agents

DIUPRES
is adequate
by itself
for many
hypertensives

DIUPRES PROVIDES "BROAD-BASE" ANTIHYPERTENSIVE THERAPY

... is effective by itself in a majority of patients with mild or moderate hypertension, and even in many with severe hypertension

greatly improved
and simplified management
of
hypertension

DIUPRES*

DIURIL® WITH RESERPINE

the first "wide-range" antihypertensive—effective in mild, moderate, and severe hypertension

- more hypertensives can be better controlled with DIUPRES alone than with any other agent . . . with greater simplicity and convenience, and with decreased side effects
- can be used as total therapy or primary therapy, adding other drugs if necessary
- in patients now treated with other drugs, can be used as replacement or adjunctive therapy
- should other drugs need to be added, they can be given in much lower than usual dosage so that their side effects are often strikingly reduced
- organic changes of hypertension may be arrested and reversed . . . even anginal pain may be eliminated
- patient takes one tablet rather than two . . . dosage schedule is easy to follow
- economical

DIUPRES-500 500 mg. DIURIL (chlorothiazide),
0.125 mg. reserpine.
One tablet one to three times a day.

DIUPRES-250 250 mg. DIURIL (chlorothiazide),
0.125 mg. reserpine.
One tablet one to four times a day.

MSD MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

*DIUPRES AND DIURIL (CHLOROTHIAZIDE) ARE TRADEMARKS OF MERCK & CO., INC.

Old age
Convalescence
Adolescence
Infant diarrhea
Debilitating gastrointestinal conditions
Postoperatively

Whenever the diet is faulty, the appetite poor, or the loss of food is excessive

through vomiting or diarrhea—

Valentine's
MEAT EXTRACT

stimulates the appetite,
increases the flow of digestive juices,
provides: supplementary amounts of vitamins, minerals and soluble proteins,
extra-dietary vitamin B_{12},
protective quantities of potassium, in a palatable and readily assimilated form.

Supplied in bottles of 2 or 6 fluidounces.

DOSAGE *is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy.*

VALENTINE Company, Inc.
RICHMOND 21, VIRGINIA

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STOP *running noses*
and open stuffed noses orally

Triaminic®

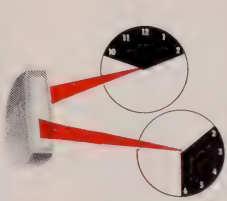
the leading oral nasal decongestant

- in nasal and paranasal congestion
- in sinusitis
- in postnasal drip
- in allergic reactions of the upper respiratory tract

safer and more effective than topical medication[1,2,3]

- systemic transport to all respiratory membranes
- provides longer-lasting relief
- presents no problem of rebound congestion
- avoids "nose drop addiction"

Relief with Triaminic is prompt and prolonged because of this special timed-release action . . . beneficial effect starts in minutes, lasts for hours



first—the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then—the core disintegrates to give 3 to 4 *more* hours of relief

Each TRIAMINIC Tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

One-half of this formula is in the outer layer, the other half is in the core.

Dosage: One tablet in the morning, mid-afternoon and at bedtime.

References: 1. Lhotka, F. M.: Illinois M. J. **112**: 259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. **5**:1183 (Sept.) 1958.

TRIAMINIC JUVELETS: Each timed-release Juvelet is equivalent in formula and dosage to one-half of a TRIAMINIC tablet, for the adult or child who requires only half strength dosage.

TRIAMINIC SYRUP is recommended for adults and children who prefer liquid medication. Each 5 ml. tsp. is equivalent to ¼ of a Triaminic Tablet. *Adults:* 2 tsp. 3-4 times a day; *children 6-12:* 1 tsp. 3-4 times a day; *children under 6:* in proportion.

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

how often have you thought...

"...but how will it work in my practice?"

This most frequently asked question cannot be answered by the manufacturer, the detail man, an advertisement, a piece of mail. Only through actual experience with a product in day-to-day private practice can this question be answered.

UNITENSEN PROVED IN DAY-TO-DAY PRACTICE In office trials, Unitensen products have been proved effective therapy in the management of the hypertensive patient. These are the facts, obtained from 3,841 physicians, who used Unitensen products in their day-to-day office practice, in treating a total of 35,727 patients. In 11,093 cases (31.0%) results were "excellent"; in 51.2% (18,294) cases, "good"; "fair" results were obtained in 4,591 patients (12.9%) and in only 1,749 cases (4.9%) were results "unsatisfactory." Minor side effects were reported in 1,081 cases (3.0%).

The results mentioned above were obtained while the patients engaged in their normal daily occupations and activities. None of the patients involved in the study were hospitalized or institutionalized. And, despite such variables as dietary indiscretions, an occasional overdose, or a dose inadvertently "missed," the Proof In Practice Study shows Unitensen products to be safe, dependable, potent antihypertensive therapy . . . permitting practical office management of virtually all hypertensive cases.

UNITENSEN: BASIC HYPERTENSIVE THERAPY Although many of the patients in the Study also received diuretics and/or tranquilizers during the course of treatment, it was noted that the vasodilating effect of Unitensen was required to obtain optimum blood pressure control. Unitensen, a true hypotensive agent, is potentiated by diuretics. A combination of the two is frequently recommended for lower dosage of each drug, minimizing the side effects of either.

UNITENSEN DOES MORE THAN LOWER BLOOD PRESSURE Dr. Burton M. Cohen* makes the following observations regarding Unitensen:

"Hypotensive effect obtained through specific stimulation of afferent side of reflex pathways of blood pressure control without adrenolytic action or ganglionic blocking . . . Nausea and vomiting rare . . . No alteration of vasomotor reflexes, thus no postural collapse . . . Bradycardia, never tachycardia, may occur . . . Cardiac output not lessened . . . Renal circulation participates in reflex vasodilation . . . Cerebrovascular resistance is decreased, with improvement or maintenance of blood flow and O_2 utilization . . . No dangerous side actions have been reported."*

UNITENSEN-R® Each tablet contains cryptenamine (tannates) 1.0 mg., reserpine, 0.1 mg.

UNITENSEN-PHEN® Each tablet contains cryptenamine (tannates) 1.0 mg., phenobarbital, 15 mg.

UNITENSEN® Each tablet contains cryptenamine (tannates) 2.0 mg.

Clinical supplies available on request.

Neisler IRWIN, NEISLER & CO. • Decatur, Illinois

*Cohen, B. M.: The Ambulatory Patient with Hypertension: An Approach to Office Management, presented at the American Medical Association Convention, San Francisco, California, June 22-27, 1958.

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the newest concept in acne treatment

Brāsivol™

Three-pronged attack on acne:

- Detergent base—removes oil
- Abrasive particles—open pores [Fused synthetic Al. oxide]
- Hexachlorophene—controls bacteria

Outstanding success in clinical trials in more than one thousand cases over 10-year period.

SEND FOR SAMPLES.

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prompt control

OF

- hypersecretion
- hypermotility
- pain
- spasm

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®Miltown + *anticholinergic*

relieves anxiety and tension
for enhanced antispasmodic effect

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with cod liver oil

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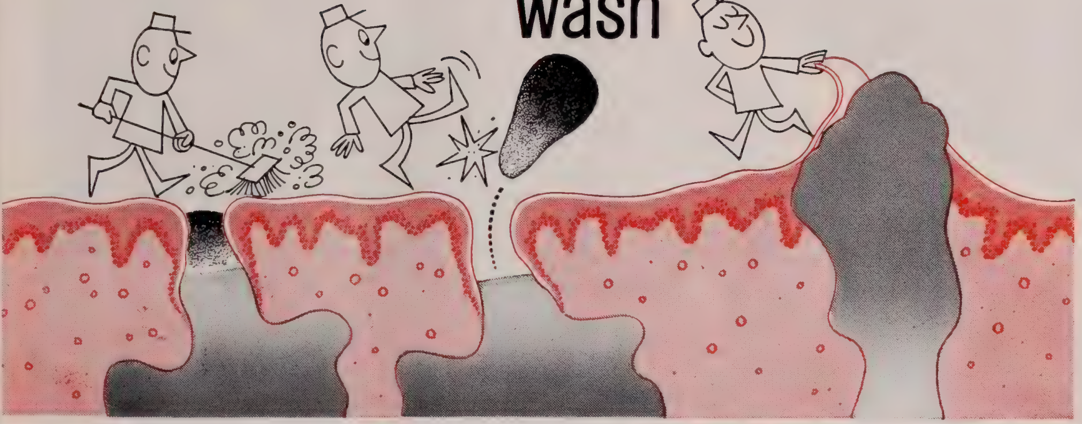
Fostex®
treats their acne while they wash



degreases the skin helps remove blackheads dries and peels the skin

...and this is how it works

Fostex provides essential actions necessary in treating acne. It washes off excess oil. It unblocks pores by penetrating and softening blackheads. It dries and peels the skin, removing papule coverings, thus permitting drainage of sebaceous glands.

Fostex contains Sebulytic®,* a combination of surface-active wetting agents with remarkable antiseborrheic, keratolytic and antibacterial actions ... enhanced by sulfur 2%, salicylic acid 2%, hexachlorophene 1%.

*sodium lauryl sulfoacetate, sodium alkyl aryl polyether sulfonate and sodium dioctyl sulfosuccinate.

Your patients will like Fostex because it is so simple to use. They simply wash acne skin 2 to 4 times a day with Fostex, instead of using soap.

FOSTEX CREAM

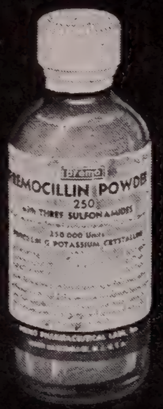
. . . in 4.5 oz. jars. For therapeutic washing in the initial phase of oily acne treatment.

Write for samples.

FOSTEX CAKE

. . . in bar form. For therapeutic washing to keep the skin dry and free of blackheads during maintenance therapy. Also used in relatively less oily acne.

WESTWOOD PHARMACEUTICALS Buffalo 13, New York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PREMOCILLIN POWDER
250
with THREE SULFONAMIDES

designed for the young in severe infections . . .

SUPPLIED
in 60 ml. bottles.

PREMOCILLIN "250"

WITH

THREE SULFONAMIDES

DYNAMIC ANTI-INFECTIVE THERAPY for mixed infections . . . PREMOCILLIN penicillin — triple sulfonamide combination in exceptionally palatable fluid form . . . provides a wider antibacterial spectrum; is convenient to administer and is usually well tolerated. PREMOCILLIN combines 250,000 U. potassium penicillin G and 0.5 Gm. sulfonamide (0.167 Gm. each sulfadiazine, sulfamerazine, sulfacetamide) per teaspoonful. •

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"finger-itis"
yes, any rheumatic "itis" calls for
Sigmagen®
corticoid-salicylate compound
TABLETS
Schering
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in Mexico,
it's called the 'turista' or 'Montezuma's revenge'

diarrhea by any name

GASTROENTERITIS
BACILLARY DYSENTERY
PARADYSENTERY
SALMONELLOSIS
DIARRHEA OF THE NEWBORN
NONSPECIFIC DIARRHEA
"SUMMER COMPLAINT"

usually responds rapidly to

Cremomycin®

NEOMYCIN-SULFASUXIDINE®-KAOLIN-PECTIN SUSPENSION

for *rapid* relief of all diarrheas—regardless of etiology

fruit-flavored, readily accepted by patients of all ages*

Neomycin—rapidly bactericidal against most intestinal pathogens, but is relatively ineffective against such diarrhea-causing organisms as Shigella.

SULFASUXIDINE—an ideal adjunct to neomycin because it is highly effective against Shigella and certain other neomycin-resistant organisms.

Kaolin and Pectin—coat and soothe the inflamed mucosa, adsorb toxins, help reduce intestinal hypermotility, help provide rapid symptomatic relief.

*For infants, CREMOMYCIN may be administered in the regular bottle feeding, since its fine particles easily pass through a standard nursing nipple.

MSD MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILA. 1, PA.

CREMOMYCIN AND SULFASUXIDINE ARE TRADEMARKS OF MERCK & CO., INC.

wherever there is inflammation, swelling, pain

VARIDASE®

Streptokinase-Streptodornase Lederle

BUCCAL Tablets

conditions for a fast & comfortable comeback

Host reaction to injury or local infection has a catabolic and an anabolic phase. The body responds with inflammation, swelling and pain. In time, the process is reversed. VARIDASE speeds up this normal process of recovery. By activating fibrinolytic factors VARIDASE shortens the *undesirable phase,* limits necrotic changes due to inflammatory infiltration, and initiates the constructive phase to speed total remission. Medication and body defenses can readily penetrate to the affected site; local tissue is prepared for faster regrowth of cells. In infection, the fibrin wall is breached while the infection-limiting effect is retained. In acute cases, response is often dramatic. In chronic cases, VARIDASE Buccal Tablets can stimulate a successful response to primary therapy previously considered inadequate or failing.

for routine use in injury and infection ...new simple buccal route

VARIDASE Buccal Tablets should be retained in the buccal pouch until dissolved. For maximum absorption, patient should delay swallowing saliva. Dosage: One tablet four times daily usually for five days. When infection is present, VARIDASE Buccal Tablets should be given in conjunction with ACHROMYCIN® V Tetracycline with Citric Acid. Each VARIDASE Buccal Tablet contains: 10,000 Units Streptokinase and 2,500 Units Streptodornase. Supplied: boxes of 24 and 100 tablets.

1. Innerfield, I.: Clinical report cited with permission
2. Clinical report cited with permission

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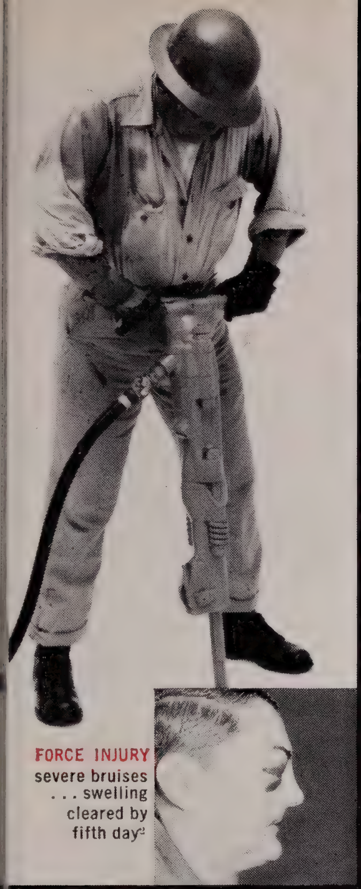
Pearl River, New York



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VARIDASE[1]

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rapidly spreading
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within a week[1]

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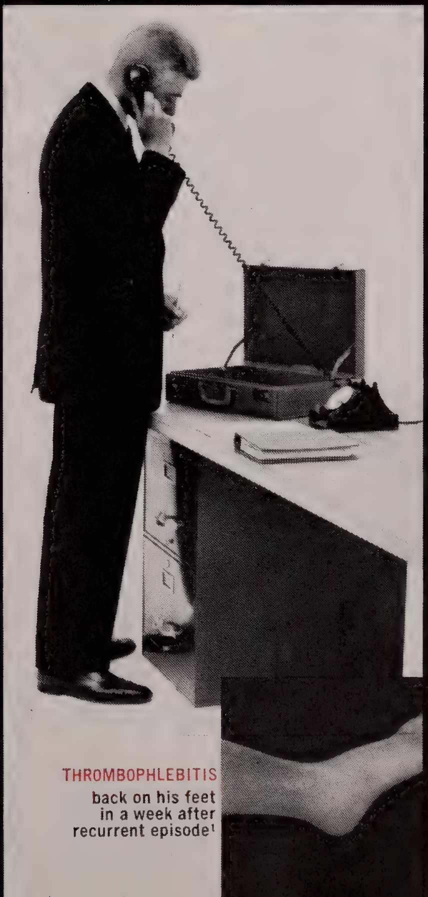
in 3 days . . .
returned
to school . . .
closure advanced[1]



THROMBOPHLEBITIS
back on his feet
in a week after
recurrent episode[1]

REFRACTORY CELLULITIS
normal routine
resumed after 4 days
of VARIDASE[1]

"ankle-itis"
yes, any rheumatic "itis" calls for
Sigmagen®
corticoid-salicylate compound
TABLETS
SG-J-358
Schering

NASSAU ACADEMY OF MEDICINE AND NASSAU COUNTY MEDICAL SOCIETY

announce

A SEMINAR ON HYPNOSIS

December 11, 12, 13, 1959

Nassau Academy of Medicine, Garden City, Long Island, New York

Attendance Limited to Physicians and Dentists

Subsequent Seminars

Jan. 29–31	University of Kentucky, Lexington, Ky.
Feb. 26–28	Pennsylvania Academy of General Practice, Phila., Pa.
Apr. 8–10	Marquette University, Milwaukee, Wisc.
Apr. 22–24	Louisiana Academy of General Practice, New Orleans, La.

FACULTY

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SEMINARS ON HYPNOSIS
One N. Crawford Ave.
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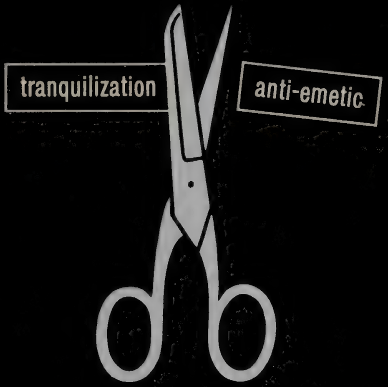
now potent tranquilizer therapy is safer than ever



Virtual freedom of Mellaril from major toxic effects is due to greater specificity of tranquilizing action—divorced from such "diffuse" effects as anti-emetic action.

MELLARIL is virtually free of such toxic effects as

- jaundice
- Parkinsonism
- blood dyscrasia

"Thioridazine [MELLARIL] is as effective as the best available phenothiazine, but with appreciably less toxic effects than those demonstrated with other phenothiazines. . . This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."[1]

SANDOZ

Mellaril®
THIORIDAZINE HCl
specific, effective tranquilizer • safer at all dosage levels

remarkable lack of side effects

In more than 3,000 carefully-followed patients, Mellaril has been almost completely free of such major side effects as jaundice, extrapyramidal symptoms, Parkinsonism, blood dyscrasia, dermatitis— even when given in quantities far in excess of the usual dosage.

"POVERTY" OF SIDE EFFECTS

"The most striking aspect of thioridazine [Mellaril] therapy is the poverty of side effects.... In its lack of side effects and low toxicity, it is superior to all other tranquilizing drugs tested. For this reason also it is well tolerated by patients, particularly those who are not hospitalized and who frequently discontinue their medication because of dizziness, sleepiness, increased tension or parkinsonism with other drugs."[2]

NEGLIGIBLE SIDE EFFECTS

"Side effects were negligible at all dosage levels: no incidence of parkinsonism or other extrapyramidal symptoms. Minimal sedation, on the whole lower than with other tranquilizing agents. No alteration in liver function, urine or blood. No photosensitivity. Patient acceptability was exceptional: lack of drowsiness, lethargy or 'washed out' feeling, permitted patients to carry on normal everyday activities. Orthostatic hypotension was absent. The initial 'keyed up' tense feeling common to other drugs of this type was absent.... Patients forced to interrupt treatment with other phenothiazine derivatives because of parkinsonism or other extrapyramidal symptoms were able to continue therapy with thioridazine without appearance of parkinsonism."[3]

SINGULARLY FREE OF SIDE EFFECTS

"The extrapyramidal syndrome was not encountered in any of its forms. Dizziness and sleepiness responded to a reduction in dosage. Other side effects did not occur.... It is singularly free from the side effects ordinarily seen with these [phenothiazine] compounds."[4]

ABSENCE OF SIGNIFICANT SIDE EFFECTS

"None of the following toxic effects, so common after administration of the phenothiazines, was present during the period of Thioridazine administration: Parkinsonism or Parkinson-like symptoms, photosensitivity, orthostatic hypotension, bone-marrow depression."[1]

MINIMAL SIDE EFFECTS

"Side effects such as extrapyramidal activity, jaundice and photosensitivity have not been observed in patients treated with Thioridazine [Mellaril]. Extrapyramidal side effects produced by other phenothiazines have disappeared promptly with no deterioration in the behavioral response when these patients have been shifted to Thioridazine."[5]

NO JAUNDICE

"No allergic reactions were observed such as skin eruptions, jaundice or agranulocytosis. Central nervous system toxicity, as manifested by extrapyramidal effects, seizures, and excitement did not occur despite the use of high doses (up to 2000 mg.) of the drug."[6]

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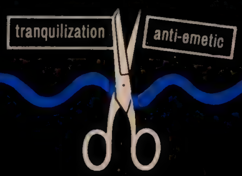
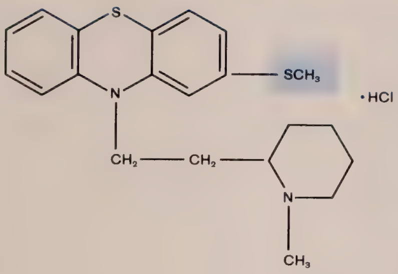
THIORIDAZINE HCI

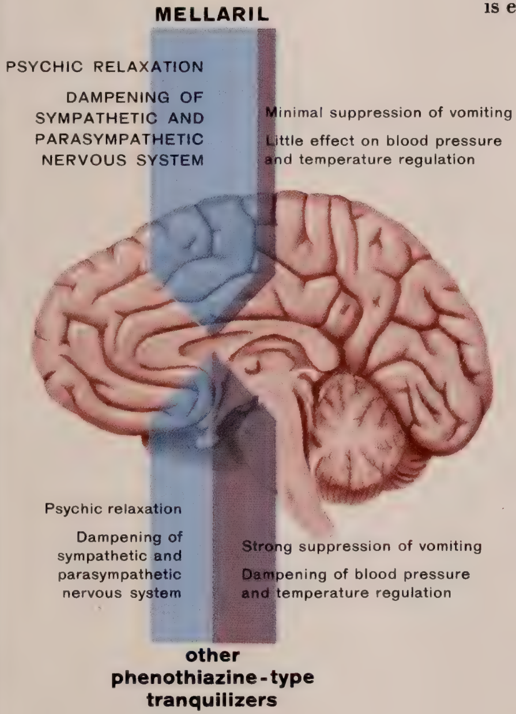
specific, effective tranquilizer • safer at all dosage levels



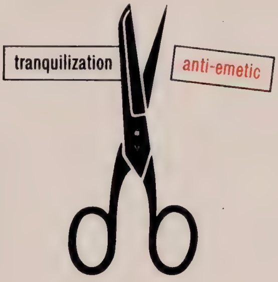
a new advance in tranquilization:
greater specificity of tranquilizing action plus fewer side effects



Of 109 phenothiazines synthesized by Sandoz, Mellaril was selected as the most promising on the basis of extensive evaluation. The presence of a thiomethyl radical ($S\text{-}CH_3$) in the position conventionally occupied by a halogen in other phenothiazines is unique and could be responsible for the relative absence of side effects and greater specificity of psychotherapeutic action. This is shown clinically by:


MELLARIL
PSYCHIC RELAXATION
DAMPENING OF SYMPATHETIC AND PARASYMPATHETIC NERVOUS SYSTEM
Minimal suppression of vomiting
Little effect on blood pressure and temperature regulation
Psychic relaxation
Dampening of sympathetic and parasympathetic nervous system
Strong suppression of vomiting
Dampening of blood pressure and temperature regulation
other phenothiazine-type tranquilizers

1 A specificity of action on certain brain sites in contrast to the more generalized or "diffuse" action of other phenothiazines. This is evidenced by a lack of appreciable anti-emetic effect.


tranquilization
anti-emetic

2 Less "spill-over" action to other brain areas – hence, absence of undue sedation, drowsiness or autonomic nervous system disturbances.

3 A notable absence of extrapyramidal stimulation.

4 Lack of impairment of patient's normal drive and energy, while achieving psychomotor control in mental and emotional disorders.

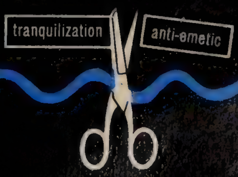
5 Virtual freedom from toxic effects – jaundice, photosensitivity, skin eruptions, disturbed body temperature regulation, blood forming disorders have been absent in reports currently available.

These properties add up to a greater margin of safety in general office practice, in ambulatory psychiatric out-patient clinics, and in hospitalized patients.

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels


tranquilization
anti-emetic

excellent clinical response

In office practice and in hospitalized patients, Mellaril has proved highly useful for a wide variety of major and minor emotional disorders (such as anxiety, tension, apprehension, alcoholism, agitated psychoneurosis, agitated psychotic states, etc.).

EXTREMELY SATISFACTORY "... produced extremely satisfactory results in the broad therapeutic range represented in this series."[3]

POTENT AGENT "... appears to be a potent agent in the symptomatic management of a variety of psychiatric states."[4]

MAJOR ADDITION TO THERAPEUTICS "This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."[1]

AN ACTIVE AGENT "Thioridazine is an active therapeutic agent. . . . It is effective in a variety of psychiatric disorders, including schizophrenic reactions. . . . The drug is particularly advantageous for a group of schizophrenic patients who are sometimes made worse by other phenothiazine derivatives or Rauwolfia alkaloids. It should also be suitable for treating patients with psychoneuroses and chronic brain syndrome."[6]

EVEN IN VERY SEVERE CASES "Of the 152 patients treated 25 have been released and they have not suffered a relapse. This proportion is significant if we stop to consider that we are dealing only with acute cases which had been considered hopeless and obviously destined to finish their days in an asylum."[7]

EXCELLENT THERAPEUTIC RESPONSE "Patients with emotional tensions resulting from the stress and strain of life . . . were treated with Mellaril at the dosage level of 10 mg. three times daily. In 94 such patients, 83 obtained an excellent therapeutic response."[8]

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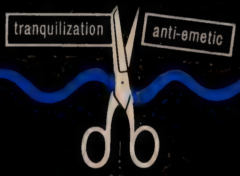
specific, effective tranquilizer • safer at all dosage levels



"... extremely satisfactory results ..." in a clinical spectrum ranging from minor nervous disorders to severe psychotic disturbances[3]

RESULTS WITH MELLARIL IN 194 PATIENTS[3]

ACUTE PSYCHOTICS	CHRONIC PSYCHOTICS	NEUROTICS
83% satisfactory effect	68% satisfactory effect	57% satisfactory effect
Some cases had complete remission of symptoms. Most were able to return home to useful occupations.	Relief of symptoms in cases permitted easier management and a return to a more or less useful life.	Some cases, complete relief of symptoms. Other cases, partial relief of symptoms.

RESULTS WITH MELLARIL IN PATIENTS PREVIOUSLY TREATED WITH OTHER TRANQUILIZERS[3]

DIAGNOSTIC CATEGORY	IMPROVED %	VERY SATISFACTORY %	SATISFACTORY %	UNSATISFACTORY %
SCHIZOPHRENIA				
Acute	89	61	28	11
Chronic paranoid	84.2	31.6	52.6	15.8
Chronic, other	73.9	21.7	52.2	26.1
Residual	57.1	9.5	47.6	42.9
CHRONIC BRAIN SYNDROME	66.6	33.3	33.3	33.3
CHRONIC PSYCHONEUROSIS	62.5	12.5	50	37.5
CHRONIC PSYCHOSOMATIC DISORDERS	75	25	50	25

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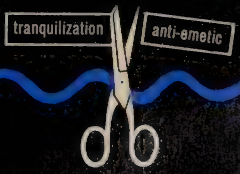

a guide to administration and dosage

Dosage ranges from 10 mg. three or four times a day in milder situations to 25 mg. three or four times a day for more disturbed patients. In ambulatory psychiatric out-patients, dosages of 50 to 100 mg. three or four times a day have been found adequate. For severely disturbed hospitalized psychotics, dosages of 200 to 300 mg. three times a day may be administered.

Dosage must be individualized according to the condition and degree of response. In all cases, the smallest effective dosage should be determined for each patient.

INDICATION	USUAL STARTING DOSE	TOTAL DAILY DOSAGE RANGE
ADULTS		
Mental and Emotional Disturbances:		
MILD — where anxiety, apprehension and tension are present	10 mg. t.i.d.	20-60 mg.
MODERATE — where agitation exists in psychoneurosis, alcoholism, intractable pain, senility, etc.	25 mg. t.i.d.	50-200 mg.
SEVERE — in agitated psychotic states as schizophrenia, manic depressive, toxic psychoses, etc.:		
Ambulatory	100 mg. t.i.d.	200-400 mg.
Hospitalized	100 mg. t.i.d.	200-800 mg.
CHILDREN		
BEHAVIOR PROBLEMS IN CHILDREN	10 mg. t.i.d.	20-40 mg.

PRECAUTIONS: Although possessing a unique structure and a selectivity of action which broadens its therapeutic ratio, the physician should be alert to the possibility of untoward reactions in certain susceptible individuals. In particular, he should watch for potential hemopoietic depression, jaundice or orthostatic hypotension. As with other phenothiazines, Mellaril is contraindicated in severely depressed or comatose states from any cause.

SUPPLIED: MELLARIL Tablets, 10 mg., 25 mg., 100 mg. Bottles of 100.

1. Ostfeld, A. M.: Scientific Exhibit, American Academy of General Practice, San Francisco, April 6-9, 1959. **2.** Kinross-Wright, V. J.: Lecture, Clinical Meeting, American Medical Association, Minneapolis, Dec. 4, 1958. **3.** Kinross-Wright, V. J.: Scientific Exhibit, Clinical Meeting, American Medical Association, Minneapolis, Dec. 2-5, 1958. **4.** Cohen, S.: TP-21, a new phenothiazine, Am. J. Psychiat. *115*:358, Oct. 1958. **5.** Glueck, B.: Scientific Exhibit, American Psychiatric Association, Philadelphia, April 27-May 1, 1959. **6.** Hollister, L. E., and Macdonald, B. F.: Presented at California Medical Association; Section on Psychiatry, San Francisco, Feb. 25, 1959. **7.** Remy, M.: Schweiz. med. Wchnschr. *88*:1221, Nov. 29, 1958. **8.** Freed, S. C., in discussion on Thioridazine (Mellaril) n Psychiatric Patients, Hollister, L. E., and Macdonald, B. F., presented at California Medical Association; Section on Psychiatry, San Francisco, Feb. 25, 1959.

- controls neurotic and psychotic patients with anxiety, apprehension, nervous tension
- virtual absence of jaundice, parkinsonism, photosensitivity, dermatitis
- minimal sedation and drowsiness
- does not mask organic conditions such as brain tumors, intestinal obstruction, etc., because of lack of anti-emetic action
- increased specificity of action results in greater safety at all dosage levels

SANDOZ

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THIORIDAZINE HCl
specific, effective tranquilizer • safer at all dosage levels
tranquilization
anti-emetic

120 CAPSULES
GERALIN
DIETARY SUPPLEMENT
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GERALIN-the one-capsule-daily comprehensive dietary supplement: for older patients at a savings they'll appreciate! vitamins . . . minerals . . . lipotropics . . . amino acids . . . bioflavonoids
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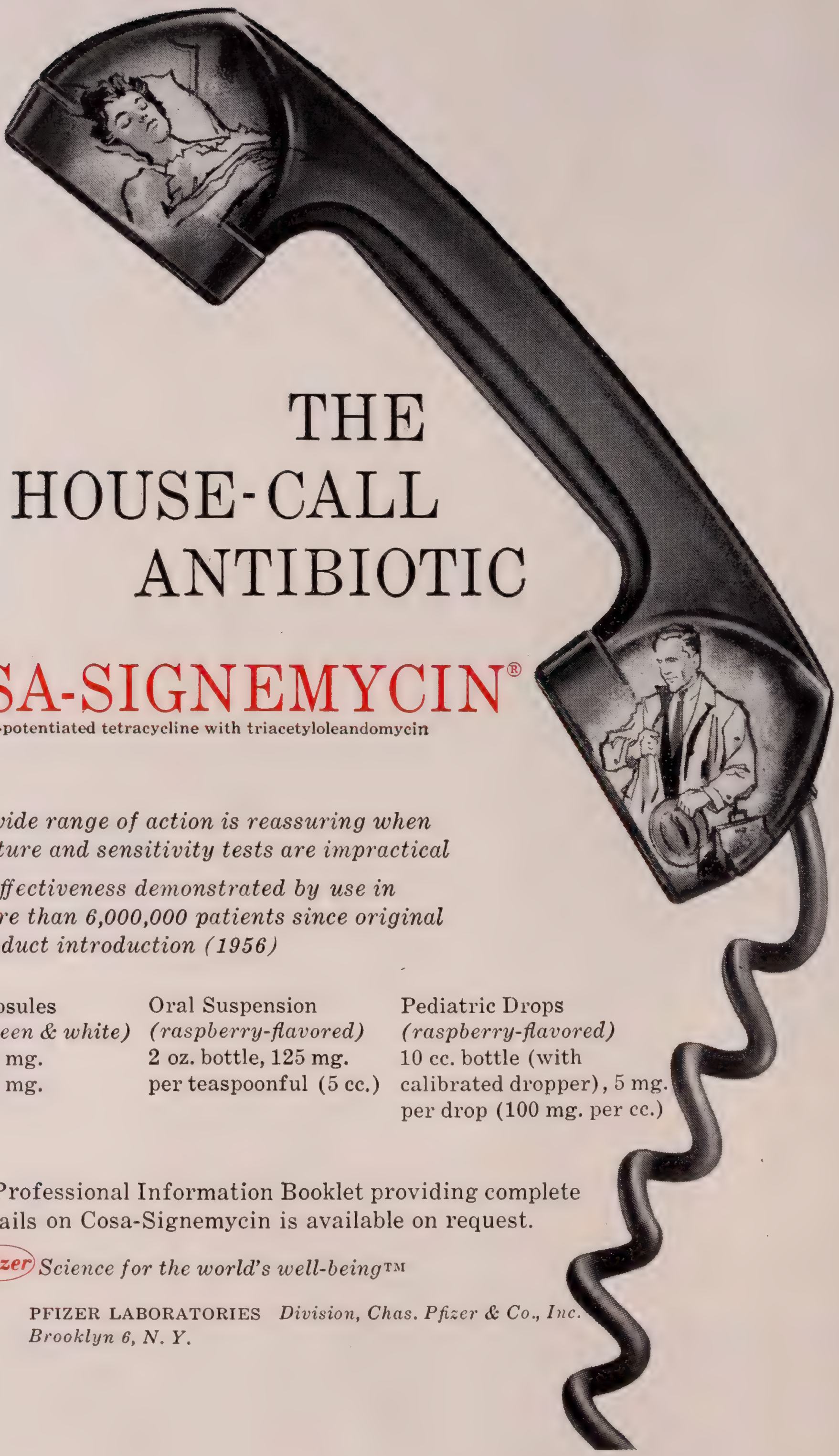

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glucosamine-potentiated tetracycline with triacetyloleandomycin

- *wide range of action is reassuring when culture and sensitivity tests are impractical*
- *effectiveness demonstrated by use in more than 6,000,000 patients since original product introduction (1956)*

Capsules	Oral Suspension	Pediatric Drops
(green & white)	*(raspberry-flavored)*	*(raspberry-flavored)*
125 mg. 250 mg.	2 oz. bottle, 125 mg. per teaspoonful (5 cc.)	10 cc. bottle (with calibrated dropper), 5 mg. per drop (100 mg. per cc.)

A Professional Information Booklet providing complete details on Cosa-Signemycin is available on request.

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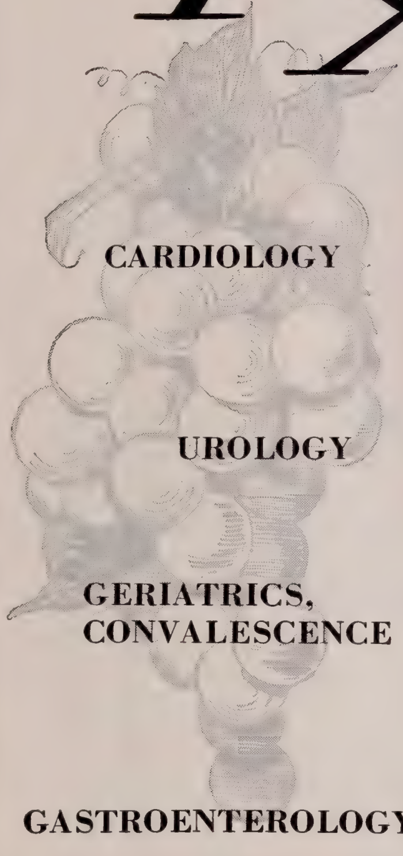

℞ Recent research* confirms the widening FIELD for WINE

CARDIOLOGY

WINE has been used with excellent effect for the relief of pain, discomfort, apprehension and anxiety in angina pectoris, thromboangiitis obliterans, Raynaud's disease and hypertension.

UROLOGY

The judicious use of WINE can brighten the otherwise monotonous, unappealing diet in renal disease. It increases glomerular blood flow, stimulates diuresis, is nonirritating to the kidneys.

GERIATRICS, CONVALESCENCE

By stimulating appetite, supplying quick energy source, relaxing tensions and increasing morale, the prudent use of WINE has been described as a balm for the convalescent and "milk" for the aged.

GASTROENTEROLOGY

In moderate amounts WINE increases gastric secretion, relaxes gastric tension and, therefore, is a valuable aid in the treatment of anorexia, hypochlorhydria, dyspepsia, spastic constipation and diarrhea.

DIABETES

In the normal diet of the diabetic, WINE can serve as an excellent energy source which does not require the participation of insulin.

These and other therapeutic uses for wine are discussed in *"Uses of Wine in Medical Practice." For your free copy write—Wine Advisory Board, 717 Market Street, San Francisco 3, California.

expectations
fulfilled!

In eczematous dermatitis with secondary infection CREME AND LOTION pH 5.0

COR-TAR-QUIN™

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HYDROCORTISONE • STAINLESS TAR • DIIODOHYDROXYQUINOLINE
IN ALUMINUM ACETATE VEHICLE

COR-TAR-QUIN is especially effective in those dermatoses where an inflammatory reaction is accompanied by increased scaling, lichenification, and secondary infection.

Combined hydrocortisone-coal tar therapy produces an enhanced antipruritic, anti-inflammatory response and diiodohydroxyquinoline is fungicidal as well as bactericidal. The Acid Mantle creme base of COR-TAR-QUIN helps restore and maintain normal pH of the skin. Relief is prompt and lasting.

Sig: Apply b.i.d. ½ oz., 2 oz., and 4 oz. tubes with either 0.5% or 1.0% hydrocortisone

also available without the stainless tar, as CORT-QUIN™ CREME pH 4.5

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KILLS THEM ALL

In Topical Infections, regardless of etiology, BETADINE OINTMENT destroys all pathogens present. BETADINE OINTMENT, a single topical agent, is a full-range pathogenicide—kills bacteria, fungi, protozoa, yeasts, and viruses on contact. Yet it is nonsensitizing, nonirritating, and nontoxic to normal skin tissue.

BETADINE OINTMENT • topical pathogenicide • fully effective against resistant strains • destroys gram-positive and gram-negative organisms • kills fungi, protozoa, yeasts, viruses • no development of resistant strains on prolonged use • provides protective barrier against invading pathogens • nonsensitizing . . . relieves pain • color indicates germicidal protection • applies easily . . . may be bandaged.

indications: primary and secondary skin infections including pyoderma, mycotic and bacterial infections, eczema, furunculosis, minor burns, as well as staph. aureus and pseudomonas infections.

administration: apply liberally over affected area as often as needed, bandage if desired.

supplied: one ounce tube.

BETADINE™ OINTMENT

(CONTAINS POVIDONE-IODINE)

TOPICAL PATHOGENICIDE ... KILLS PATHOGENS ON CONTACT

established in 1905 TAILBY-NASON COMPANY, INC., DOVER, DELAWARE

NOW

. . . a new way to relieve pain and stiffness in muscles and joints

INDICATED IN:

- **MUSCLE STIFFNESS**
- **LUMBOSACRAL STRAIN**
- **SACROILIAC STRAIN**
- **WHIPLASH INJURY**
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- **LOW BACK PAIN**
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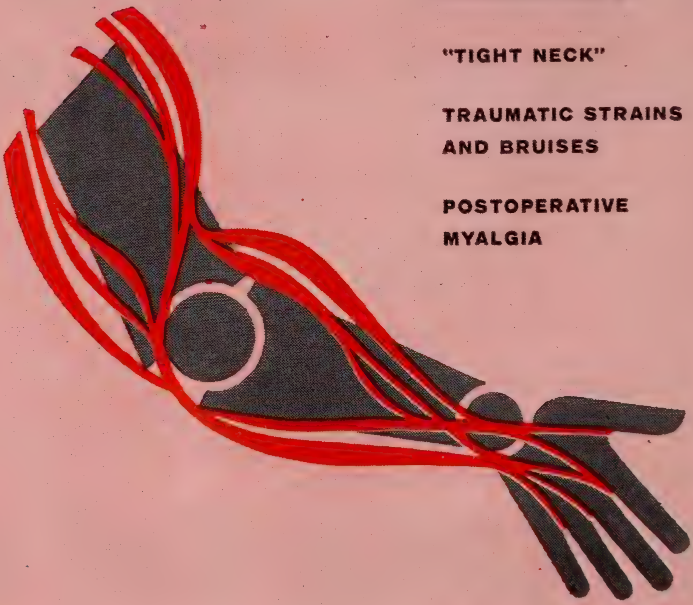
- **TRAUMATIC STRAINS AND BRUISES**
- **POSTOPERATIVE MYALGIA**



■ Exhibits unusual analgesic properties, different from those of any other drug ■ Specific and superior in relief of SOMAtic pain ■ Modifies central perception of pain without abolishing natural defense reflexes ■ Relaxes abnormal tension of skeletal muscle

SOMA T.M.

N-isopropyl-2-methyl-2-propyl-1, 3-propanediol dicarbamate

■ More specific than salicylates ■ Less drastic than steroids ■ More effective than muscle relaxants

SOMA has an unique analgesic action. It apparently modifies central pain perception without abolishing peripheral pain reflexes. SOMA is particularly effective in relieving joint pain. Patients say that they feel better and sleep better with SOMA than with any previously used analgesic, sedative or relaxant drug.
SOMA also relaxes muscle hypertonia, with its stresses on related joints, ligaments and skeletal structures.

ACTS FAST. Pain-relieving and relaxant effects start in 30 minutes and last 6 hours.

NOTABLY SAFE. Toxicity of SOMA is extremely low. No effects on liver, endocrine system, blood pressure, blood picture or urine have been reported. Some patients may become sleepy on high dosage.

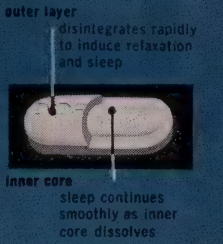
EASY TO USE. Usual adult dose is one 350 mg. tablet 3 times daily and at bedtime.

SUPPLIED: Bottles of 50 white sugar-coated 350 mg. tablets.
Literature and samples on request.

WALLACE LABORATORIES, NEW BRUNSWICK, N. J.

For those patients who complain

carries your patients through the middle of the night


outer layer
disintegrates rapidly to induce relaxation and sleep
inner core
sleep continues smoothly as inner core dissolves

Each Nebralin timed-release tablet contains:

Dorsital* .... 90 mg.
Warning: May be habit forming

Mephanesin ....425 mg.
*Dorsey brand of pentobarbital

CAUTION: Federal law prohibits dispensing without prescription

Dosage: One or two tablets ½ hour before retiring.

about waking up at 2 A.M.

nebralin®

timed-release tablet

timed-release action for a full night's sleep

NEBRALIN is designed to duplicate the normal sleep pattern. It encourages muscular relaxation and induces sustained, relaxed sleep by the release of Dorsital and mephenesin in a timed-release tablet. Rapid-acting mephenesin quickly relaxes skeletal muscles to overcome "fatigue-tension" and conditions the body for sleep. Dorsital provides CNS sedation to induce sound, relaxed sleep. The initial and sustaining dosages are designed to keep the amount of barbiturate to be inactivated at any one time at a low level tapering toward morning. Evidence indicates that mephenesin is capable of producing sleep,[1] and when combined with a barbiturate enhances barbiturate action.[2,3] Moreover, the integrated action of the two components permits smaller dosages of each,[4] assuring your patients refreshed awakenings without "morning hangover."

1 Schlesinger, E. B.: Tr. New York Acad. Sc. 2:6, (Nov.) 1948.
2 Richards, R. K., and Taylor, J. D.: Anesthesiology 17:414, 1956.
3 Shideman, F. E.: Postgrad. Med. 24:207, 1958.
4 Berger, F.: Pharmacol. Rev. 1:243, 1949.

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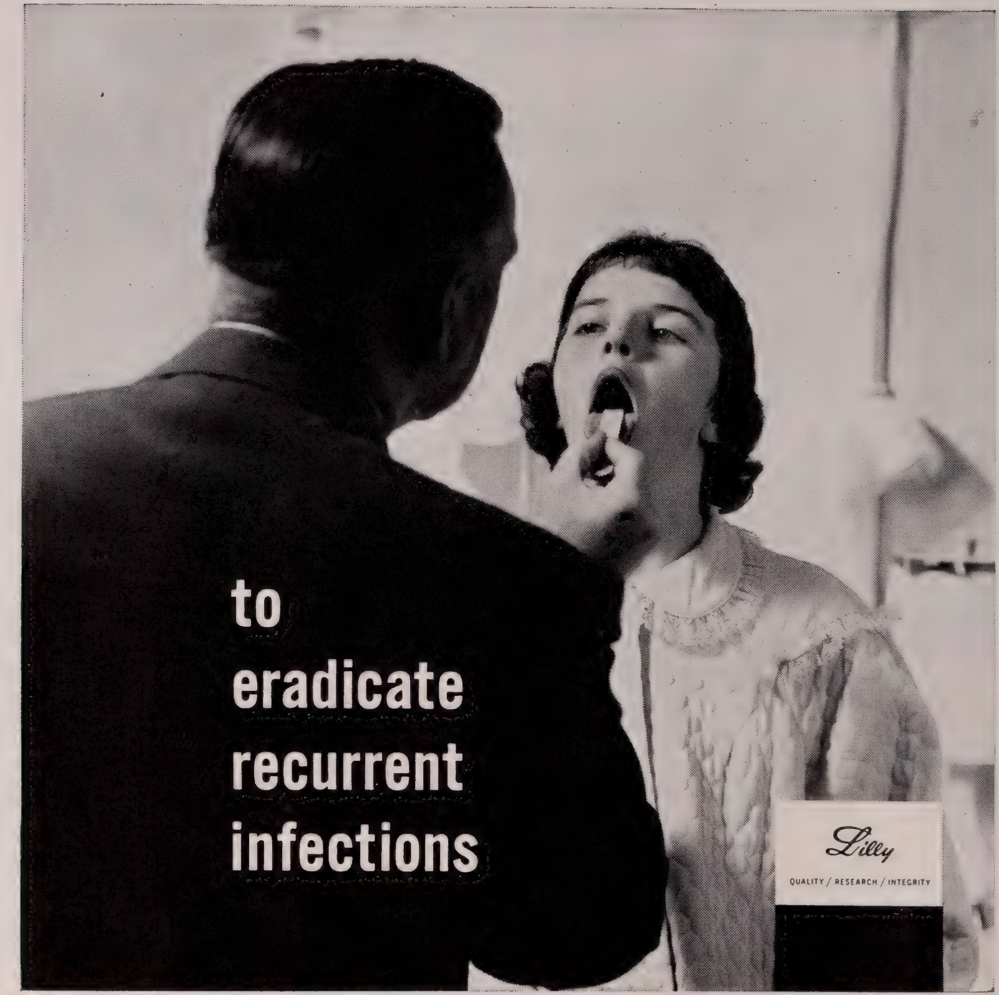

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When the infection keeps coming back, it may well be that a more decisive antibiotic attack is indicated. In such cases, Ilosone consistently provides a prompt, high level of antibacterial activity in the patient's serum. Ilosone is bactericidal against both streptococci and pneumococci and has been reported particularly effective against staphylococcus infections in clinical investigation.[1]

Usual dosage: For adults and children over fifty pounds, 250 mg. every six hours. For optimal effect, administer on an empty stomach. Ilosone is supplied in Pulvules® of 125 mg. and 250 mg., in bottles of 24 and 100.

1. J.A.M.A., *170:*184 (May 9), 1959.

Ilosone® (propionyl erythromycin ester, Lilly)

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GENERAL INFORMATION

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EDITORIALS

A Great Heritage

At this season, when numbers of our colleagues hold solemn religious observance, we bring greetings.

Throughout history the physician has ever held an eminent position in society, not only as healer but also as scholar and teacher. Many have provided great moral leadership. There is no more outstanding example than the great philosopher, Talmudist, hygienist, and physician—Moses ben Maimon, better known as Maimonides (1135–1204).

Maimonides was born under the Arab rulers of Cordova. In addition to the basic Hebrew scholarship he early absorbed the Arabian flowering in science, literature, medicine, and philosophy. He became a skilled physician and in the latter part of his life was court physician to the Sultan at Cairo. For him the patient was always a human being, not merely a case. In spite of his exacting duties at the court he made time to serve the general population as well. In addition there was always a regular portion of time set aside for the affairs of his own people. A letter written to a friend about this time reveals something of his life.

> The following is my daily occupation: I dwell in Fostat and the Sultan resides in Kahiro; these two places are two Sabbath days' journey [one and one-half miles] distant from each other. My duties to the Sultan are very heavy. I am obliged to visit him every day, early in the morning, and when he, or any of his children, or any of the inmates of his harem are indisposed, I dare not quit Kahiro, but must stay through the greater part of the day in the palace. It also frequently happens that one or two of the officers fall sick and I must attend to their healing. Hence, as a rule, I repair to Kahiro very early in the day, and even if nothing unusual happens I do not return to Fostat until the afternoon. Then I am almost dying with hunger. I find the antechambers filled with people, both Jews and Gentiles, nobles and common people, judges and bailiffs, friends and foes, a mixed multitude who await the time of my return. I dismount from my animal, wash my hands, go forth to my patients, and entreat them to bear with me while I partake of some light refreshment, the only meal I take in twenty-four hours. Then I go forth to attend to my patients, write prescriptions and directions for their several ailments. Patients go in and out until nightfall, and sometimes even, I solemnly assure you, until two hours and more in the night. I converse with them, and prescribe for them, while lying down from sheer fatigue; and when night falls, I am so exhausted that I can scarcely speak. In consequence of this, no Israelite can have any private interview with me, except on the Sabbath day. On that day the congregation, or at least, the majority, comes unto me after the morning service, when I instruct them as to their proceedings during the whole week; we stay together a little until noon, when they depart. Some of them return and read with me, after the afternoon service, until evening prayers. In this manner I spend the day. I have here related to you only a part of what you would see if you were to visit me.

One of the loftiest expressions of the true place of the physician is to be found in the Oath and Prayer which first appeared many years after his life span but have been attributed to Maimonides.

OATH

Thy Eternal Providence has appointed me to watch over the life and health of thy creatures. May the love for my art actuate me at all times. May neither avarice, nor miserliness, or the thirst for glory, nor for a great reputation engage my mind; for the enemies of truth could easily deceive me and make me forgetful of my high aim of doing good to thy children. May I never see in the patient anything but a fellow creature in pain. Grant me strength, time, and opportunity always to correct what I have acquired, always to extend its domain: For knowledge is immense and the spirit of man can extend infinitely to enrich itself daily with new requirements. Today he can discover his errors of yesterday and tomorrow he may obtain a new light on what he thinks himself sure of today. O God thou hast appointed me to watch over the life and death of thy creatures; Here I am ready for my vocation.

PRAYER

O Stand by me, my God in this truly important Task: For without thy loving counsel and support, man can but naught.

Inspire me with true love for this my art and for thy creatures.

O grant that neither greed for gain, nor thirst for fame, nor vain ambition may interfere with my activity.

For these I know are enemies of truth and love of men

And might beguile one in the profession from furthering the welfare of thy creatures.

Editorial Comment

New Editor for the J.A.M.A. John H. Talbott, M.D., professor of medicine at the University of Buffalo School of Medicine since 1946, has been appointed editor of the *Journal of the American Medical Association*, and director of the A.M.A.'s Division of Scientific Publications.

Dr. John Harold Talbott is a member of the Medical Society of the State of New York, received his medical degree at Harvard in 1929, and has been editor of *Medicine* since 1948. Dr. Talbott is the second distinguished member of the medical profession of the Empire State to be selected to head the largest national medical publication of our time. The first editor of the *Journal of the American Medical Association* was Nathan Smith Davis, M.D., appointed in 1883. Dr. Davis was born "in a log cabin on the farm near Greene, Chenango County, New York" in 1817 and was the person "to whom more than to any other one individual the American Medical Association owed its founding and development."* He became the first editor-in-chief of the *J.A.M.A.* in 1883.

We extend to Dr. Talbott all good wishes for success in his new appointment.

Foreign Students in the United States. The number of foreign students studying in the United States has increased 38 per cent in the last five years, the Institute of International Education reported in a survey released June 12, 1959.†

The 47,245 students from 131 countries registered in U.S. colleges and universities this year represent a 9 per cent increase over the number last year and an 86 per cent increase over that of the academic year 1948–1949. According to all available statistics the current figure represents the largest foreign student population in any country of the world.

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* Fishbein, M.: History of the American Medical Association, 1847–1947, Philadelphia, W. B. Saunders Company, 1947, pp. 3, 108.

† Institute of International Education, 1 East 67th St., New York City.

The postwar period has also produced a great spurt in the exchange of university teachers and scholars, the Institute revealed in its fifth edition of *Open Doors*, an annual statistical report on educational exchange. In five years the number of foreign professors teaching in our schools has tripled. American colleges and universities reported 1,937 foreign faculty members this year in comparison with 635 in 1954–1955. With 1,842 American faculty abroad, this was the first year on record that we "imported" more professors than we "exported."

The sharp increase in both "export" and "import" faculty figures reflected the United States' growing concern with education in the physical sciences. Nine hundred seven or 47 per cent of the foreign professors brought to American schools this year were in this field. This was double the number of foreign science professors here last year. The number of American science professors who went abroad to teach and do research was 389, 43 per cent more than last year.

"The increasing percentage of foreign students attracted by our science courses seems to show that the United States is achieving new status in science education," said I.I.E. President Kenneth Holland in commenting on the survey. This was the first time that the physical and natural sciences placed third in fields of interest among foreign students. In previous years, it had scored fourth, fifth, and even sixth, always trailing behind the social sciences, and sometimes behind medicine and business administration.

Figures in *Open Doors* are obtained by surveys conducted by the Institute of International Education throughout the academic year. The Institute, which celebrates its fortieth anniversary this year, is the world's oldest and largest private multinational exchange organization.

The rapidly developing Middle East sent a record number of students here this year, according to *Open Doors 1959*. This was the first year that more Middle Easterners came to study in the United States than Europeans. The largest number of foreign students (15,823) continued to come from the Far East and the second largest number (10,249) from Latin America. The Middle East was third with 6,619 and Europe fourth with 6,601.

Statistics on sources of financial support showed that again this year the single largest group of students, 42 per cent, were studying on their own funds. The next largest group, 28 per cent, were aided by scholarships from private organizations. There was a slight increase this year in the number of students supported by foreign governments (4.9 per cent), with a particularly large number of African students receiving help from their own nations. The United States government gave scholarship aid to 4.8 per cent of all students, and joined with private organizations in supporting another 2 per cent. These statistics again point up the vital role of private foundations and fraternal and civic organizations in bringing foreign students to our shores, and they also seem to indicate that the prestige of our schools is as much a factor in attracting students as the availability of scholarships.

Every state in the Union, as well as Hawaii, the District of Columbia, and Puerto Rico, played host to foreign students, according to the same source. New York had the largest number of all (13.7 per cent), with New York and California together accounting for a quarter of all foreign students in this country.

The *Open Doors* survey on foreign physicians showed a new high of 8,392 doctors from 91 countries in training here this year, an increase of 10 per cent over last year and 65 per cent over five years ago. The Far East again sent the largest number, with the Middle East showing the greatest increase, 25 per cent more doctors than last year.

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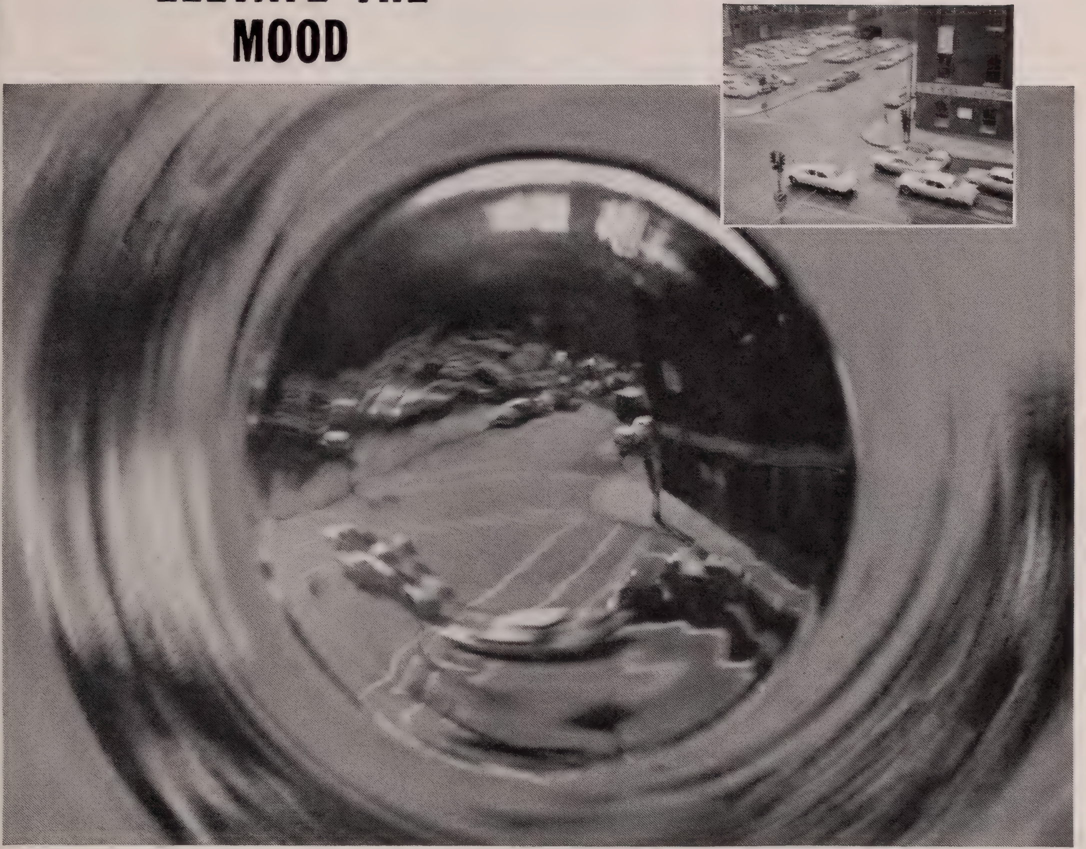

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*Pratt, R. T. C., and McKenzie, W.: Anxiety States Following Vestibular Disorders, Lancet *2*:347 (Aug. 16) 1958.

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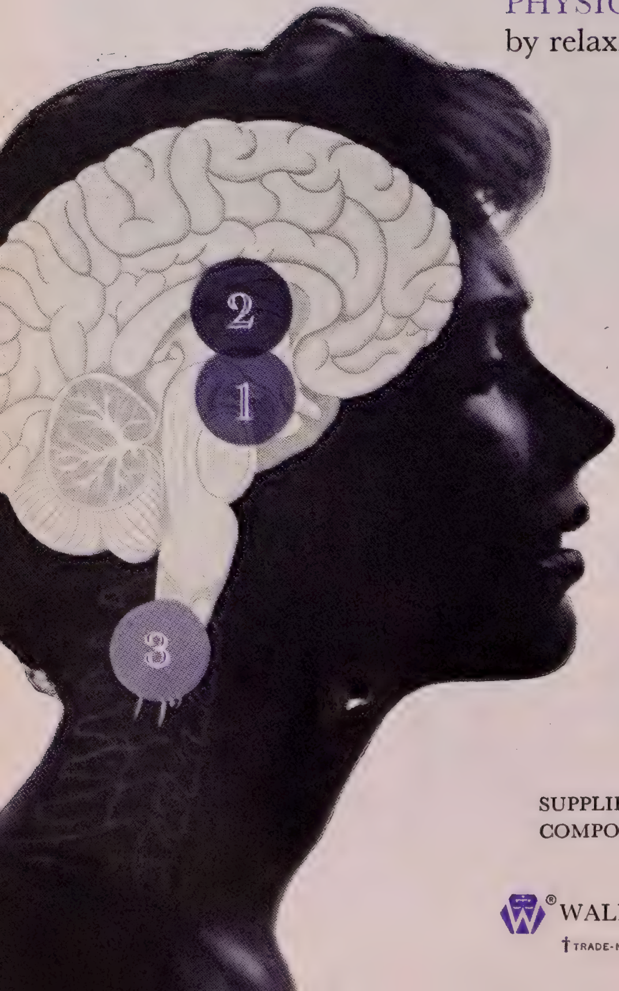

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SCIENTIFIC ARTICLES

Motor Vehicle Accidents in New York State*

JOHN H. POWERS, M.D., COOPERSTOWN, NEW YORK

(From the Department of Surgery, the Mary Imogene Bassett Hospital)

THE first fatal motor vehicle accident in this State occurred in New York City in September, 1899, when Mr. H. H. Bliss stepped off a trolley car, was struck by a passing automobile, and was knocked to the ground. He was given first aid and transferred to the Roosevelt Hospital where he died the following day. During the subsequent fifty years motor vehicles have claimed the lives of 1,000,000 Americans, and if the present rate continues, the second million will have been killed by 1974; 2,000,000 deaths from motor vehicles in the United States in seventy-five years. Truly this is an appalling decimation of life in an allegedly civilized country.

During the twelve months of 1957, 38,500 persons were killed and 1,400,000 were injured nonfatally,[1] some only seriously enough to lose one day from work, others so extensively that they are totally disabled for the remainder of their lives; and estimates by the National Safety Council suggest that "the worst is yet to come . . . that the year 1966 may be expected to produce in excess of 53,000 fatalities" by motor vehicles.[2]

In New York State alone in less than two decades the number of motor vehicle accidents involving personal injury has risen 133 per cent, from 72,433 in 1940 to 168,764 in 1958; the number of persons injured has increased from 94,829 to 272,757 during the same period of time, a rise of 187 per cent (Fig. 1). Actually in New York State in 1958 such accidents and injuries reached an all-time high.[3]

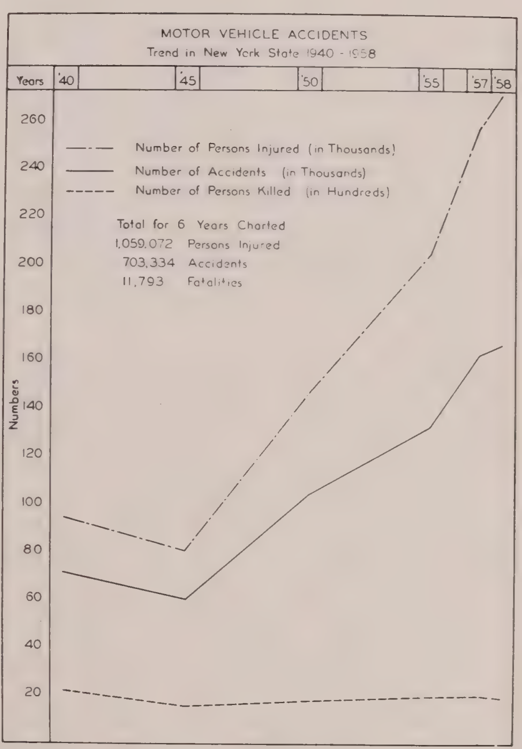


FIG. 1. Trends in motor vehicle accidents in New York State, 1940 to 1958.

Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, General Sessions, May 14, 1959.

* This study was supported in part by a grant from the Division of Special Health Services, Accident Prevention Program, United States Department of Health, Education, and Welfare, Washington, D.C.

TABLE I.—TABULATION OF DATA RELATIVE TO METROPOLITAN, URBAN, AND RURAL MOTOR VEHICLE ACCIDENTS, DISTRIBUTION ACCORDING TO DENSITY OF POPULATION, IN NEW YORK STATE, 1958

Location	Population (Per Cent)	Accidents (Per Cent)	Injuries (Per Cent)	Deaths (Per Cent)
New York City	53.2	52.1	52.4	30.2
Other towns and cities	22.0	20.3	18.6	11.8
Villages and rural areas	22.7	25.7	27.1	56.0

It therefore seems appropriate to bring this subject to the attention of the State Medical Society in the hope that its members may return to their homes with some of these facts in mind and the serious intention of disseminating such knowledge to their patients and to the other members of their communities. The doctors in this country must interest themselves in this problem if the current destruction of human life and limb on the highways of the nation is to be curtailed.

During the year 1958 New York City, with 53 per cent of the population of the State, was responsible for 52 per cent of the accidents due to motor vehicles, 52 per cent of the injuries thereby sustained, but only 30 per cent of the fatalities. Other urban areas with 22 per cent of the population contributed 20 per cent of the accidents, 19 per cent of the injuries, and 12 per cent of the deaths, exactly the same proportion. Rural towns and villages, however, with only 23 per cent of the population of the State, were responsible for 26 per cent of the accidents, 27 per cent of the injuries, and 56 per cent of the fatalities. In other words, the mortality of motor vehicle accidents in the rural areas throughout the State is twice that of accidents occurring in urban and metropolitan communities (Table I).

As a member of the staff of the Mary Imogene Bassett Hospital in Cooperstown I first became interested in the incidence and severity of such rural accidents many years ago.[4] The village is situated in the eastern central part of the State, 10 miles south of U. S. Route 20, which, until the opening of the Thruway, was the main transcontinental highway from Boston and New York to Albany, Buffalo, Cleveland, Chicago, and points west. For many years the hospital served an area 50 miles in length along this highway and most of the persons seriously injured on Route 20 were referred there for treatment.

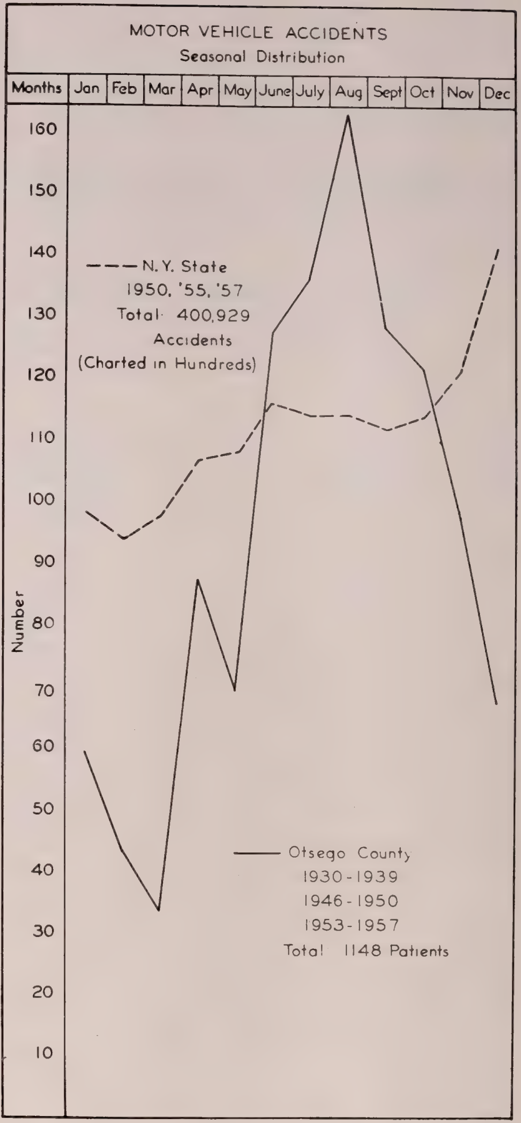


FIG. 2. Graphic representation of seasonal distribution of motor vehicle accidents in Otsego County and in New York State.

Analysis of Accidents

This review is based on (1) a study of three groups of patients injured in motor vehicle accidents in rural Otsego County and admitted to the Mary Imogene Bassett Hospital in Cooperstown during the years 1930 to 1939, 1946 to 1950, and 1953 to 1957 inclusive; (2) an analysis of statistics published annually for New York State by the Bureau of Motor Vehicles during the years 1940, 1945, 1950, 1955, 1957, and 1958;[3] and (3) data collected by the National Safety Council on motor vehicle accidents in the United States in 1957.[1]

It is thereby possible to compare statistics relative to automobile accidents as they have occurred in a rural county in central New York, in New York State as a whole, and throughout the nation.

SEASONAL, WEEKLY, AND DAILY DISTRIBUTION.—The incidence of all rural accidents rises sharply during the summer months then falls abruptly with the departure of tripping tourists from the highways, the completion of the harvest, and the return of children to school.[5] Accidents due to motor vehicles alone follow the same rural seasonal pattern, increase in number rapidly with the long summer days of June to a peak in August and then fall equally promptly with the cold days of November and the onset of winter (Fig. 2). The same seasonal variation, however, does not obtain throughout the State, nor generally throughout the nation, where more accidents transpire, more injuries are sustained, and more people are killed in the winter months of November, December, and January than during other seasons of the year.[1,3]

Everywhere in the country week ends and holidays are extremely hazardous, especially when combined. During 1957, 535 persons were killed on the highways of this nation over the week end of July Fourth, 595 over Labor Day, 345 on Christmas Day alone, and 245 on the first day of the New Year.

Two series of accidents in Otsego County indicate that Sunday is the most dangerous day of the week on rural highways (Fig. 3). Throughout the State, however, accidents are more common on Friday and Saturday,

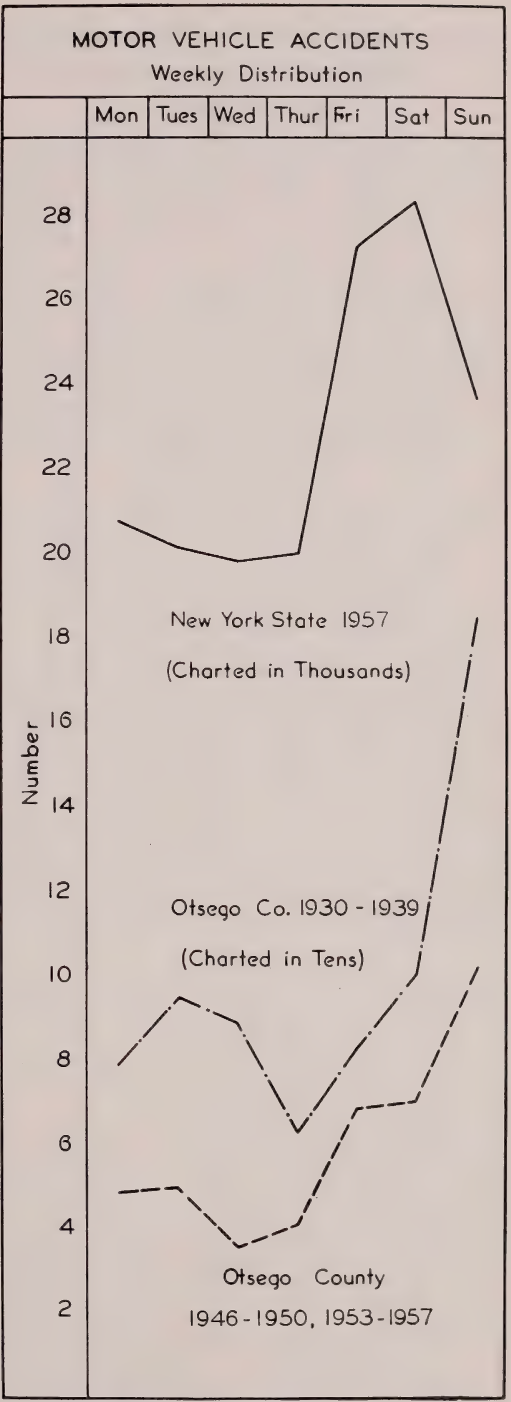
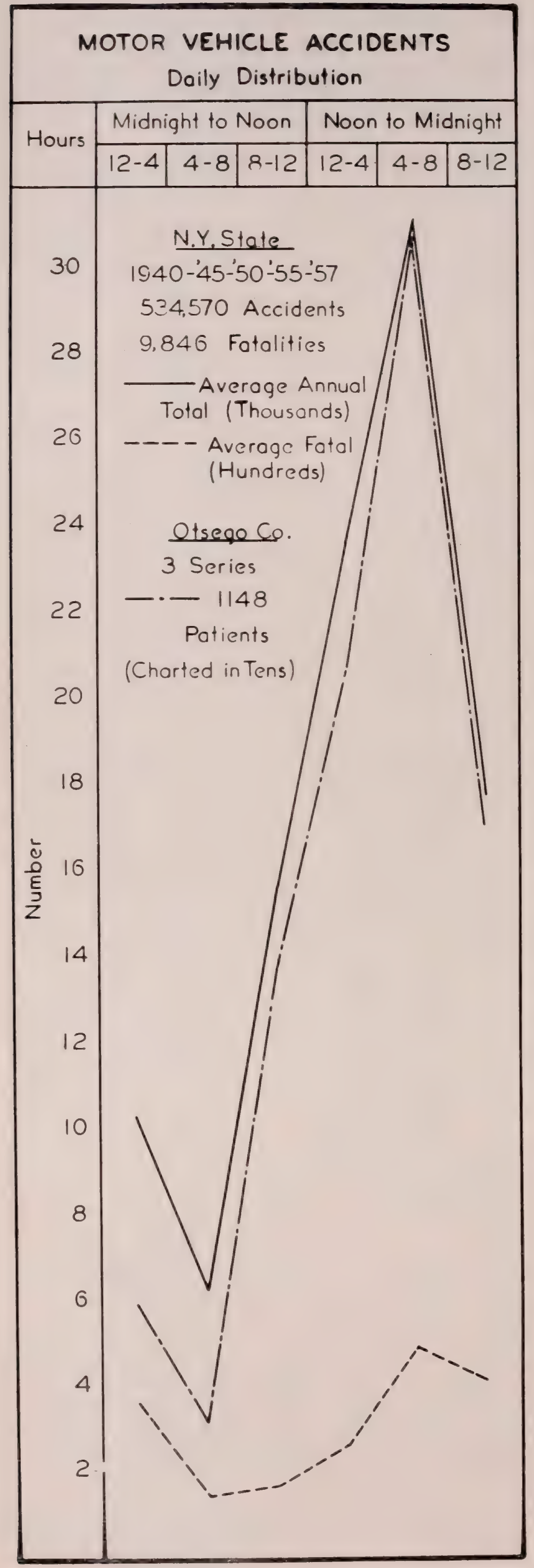


FIG. 3. Weekly distribution of automobile accidents in New York State in 1957 compared with the three series studied at the Mary Imogene Bassett Hospital in 1930 to 1939, 1946 to 1950, and 1953 to 1957 (combined).



possibly because so many people leave urban jobs and homes for week ends in the country at about the same time. One has only to come up the Thruway from New York late Friday afternoon or Saturday morning to realize the tremendous congestion of traffic at these hours, especially during the summer.

Of even more importance is the distribution of motor vehicle accidents around the clock. The hours of late afternoon and early evening are by far the most dangerous on the rural highways and country roads of central New York and on the congested turnpikes and broad avenues of urban areas throughout the State and nation (Fig. 4). Traffic is heaviest at the end of the day, drivers and pedestrians both are weary and both anxious to reach their destinations; excessive speed by the former and undue callousness by the latter are common, and death truly stalks the highways between these hours. The worst single hour for both fatal and nonfatal accidents in New York State in 1957 was that between 7:00 and 8:00 in the evening. In both the State and the nation the hours from 8:00 P.M. to 4:00 A.M. show a continued high incidence of fatal accidents (Fig. 5) even though traffic is lighter at night.

Two thirds of all the accidents involving personal injury occur during the hours of daylight; the majority of fatal accidents take place at night or during the deceptive half-light of dusk or dawn (Table II). Darkness and ingestion of alcohol play very important roles in the increased morbidity and mortality of motor vehicle accidents during these hours.

CONDITIONS OF TRAVEL.—Seventy-five per cent of all accidents in Otsego County and 78 per cent of both nonfatal and fatal accidents in New York State occurred during clear weather; the proportion is even higher throughout the United States

FIG. 4. Daily distribution of personal injury accidents in New York State during the years 1940, 1945, 1950, 1955, and 1957 as compared with three series of accidents in Otsego County occurring over a span of twenty-seven years.

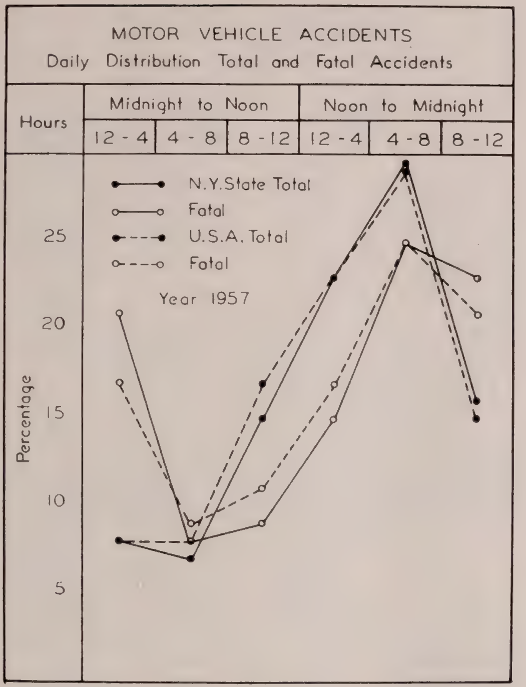


FIG. 5. Proportionate daily distribution of fatal and nonfatal accidents in New York State and in the United States during the year 1957.

TABLE II.—DISTRIBUTION OF NONFATAL AND FATAL MOTOR VEHICLE ACCIDENTS IN RELATION TO LIGHT AND DARKNESS

Light Conditions	All Accidents: Otsego County* (Per Cent)	All Accidents: New York State† (Per Cent)	Fatal Accidents: New York State** (Per Cent)
Daylight	60.5	62.6	38.3
Darkness	33.0	32.6	56.1
Dusk or dawn	6.5	4.8	5.6

* Otsego County, 492 accidents.
† New York State, 162,523 accidents.
** New York State, 2,032 fatal accidents.

TABLE III. TABULATION OF MOTOR VEHICLE ACCIDENTS IN RELATION TO WEATHER CONDITIONS

Weather	All Accidents: Otsego County* (Per Cent)	All Accidents: New York State† (Per Cent)	All Accidents: United States** (Per Cent)	Fatal Accidents: New York State†† (Per Cent)	Fatal Accidents: United States** (Per Cent)
Clear or cloudy	75.6	78.5	82.0	77.9	84.0
Rainy	12.1	15.6	13.0	17.3	11.0
Foggy	5.7	0.6	3.0	2.0	2.0
Snowy	6.5	4.8	1.0	2.0	2.0

* Otsego County, 1930 to 1939, 1953 to 1957, 645 accidents.
† New York State 1957, 162,523 accidents.
** United States, 1957, reports from 27 states.
†† New York State, 1957, 2,032 fatal accidents.

TABLE IV.—INCIDENCE OF NONFATAL AND FATAL ACCIDENTS IN RELATION TO CONDITION OF THE ROAD

Surface	All Accidents: Otsego County* (Per Cent)	All Accidents: New York State† (Per Cent)	All Accidents: United States** (Per Cent)	Fatal Accidents: New York State† (Per Cent)	Fatal Accidents: United States** (Per Cent)
Dry	62.0	71.0	72.0	68.6	77.1
Wet	20.0	21.4	18.6	25.4	17.4
Snowy or icy	15.8	7.5	9.1	5.9	5.2
Muddy	2.2	0.1	0.3	0.1	0.3

* Otsego County, two series, 645 accidents.
† New York State, 1957, 162,523 accidents.
** United States, 1957, reports from 29 states.

TABLE V.—TABULATION OF NONFATAL AND FATAL MOTOR VEHICLE ACCIDENTS IN RELATION TO TOPOGRAPHY OF ROAD

Character of Road	All Accidents: New York State* (Per Cent)	All Accidents: United States† (Per Cent)	Fatal Accidents: New York State* (Per Cent)	Fatal Accidents: United States† (Per Cent)
Straight, level	86.7	78.3	70.7	61.5
Straight, grade	5.5	9.0	7.5	13.2
Straight, hillcrest	0.9	1.3	1.3	1.6
Curves, level	4.3	6.5	14.9	14.1
Curves, grade	2.2	4.3	5.0	8.6
Curves, hillcrest	0.3	0.6	0.6	1.0

* New York State, 1957, 162,523 accidents.
† United States, 1957, reports from 18 States.

(Table III). Furthermore, two thirds of the rural accidents and three fourths of all accidents in New York State and in the nation are on dry roads (Table IV). Since most driving is done in clear weather when the surface of the road is dry, the high proportion of both accidents and fatalities which transpire under such favorable conditions indicates the importance which human factors and speed play in such tragedies. Snowy, icy, muddy roads, and fog are somewhat more significant in rural accidents than elsewhere.

Seventy-eight to 87 per cent of all accidents and 61 to 71 per cent of all fatalities

TABLE VI.—CLASSIFICATION OF ACCIDENTS IN OTSEGO COUNTY, 1930 TO 1939*

Classification	Accidents Number	Accidents Per Cent	Patients Number	Patients Per Cent
Collision between motor vehicles	104	22.2	206	30.0
Collision with fixed object	89	19.0	152	22.2
Collision with pedestrian	76	16.2	81	11.8
Collision with bicycle	8	1.8	9	1.3
Collision with railroad train	4	0.9	4	0.6
Collision with animal	3	0.6	4	0.6
No collision, car in motion	118	25.2	162	23.6
No collision, car stationary	66	14.1	68	9.9
Unknown	24		26	
TOTAL	492		712	

* Reprinted from J.A.M.A. **115**: 1521 (Nov. 2) 1940; by permission of publisher.

in both the State and nation in 1957 occurred while the driving was straight ahead on level roads (Table V). The proportion of fatal to nonfatal accidents is somewhat higher on straight and curved grades and hillcrests, highest of all on level curves which are responsible for only 5 per cent of all accidents but 15 per cent of all fatalities.

CLASSIFICATION OF ACCIDENTS.—Accidents in which the car was in motion but no collision occurred were most frequent in Otsego County (Table VI). These were usually due to failure to make a turn by an operator who was driving too fast on an open road with which he was unfamiliar. After the car left the highway, a collision with a telephone pole, fence post, or other fixed object was common. Collisions with other motor vehicles are somewhat more frequent in the congested traffic of metropolitan and urban areas; many of these, as one might suspect, are rear-end collisions. In New York State in 1957, 16 per cent of all motor vehicle accidents involved pedestrians,[6] and so also was this true in Otsego County during the decade 1930 to 1939.

TABLE VII.—TYPES OF VEHICLES INVOLVED IN MOTOR ACCIDENTS, 1957

Vehicles	All Accidents: Otsego County* (Per Cent)	New York State† (Per Cent)	United States** (Per Cent)
Passenger cars	84.7	87.1	86.0
Trucks	10.4	6.5	11.0
Motorcycles	2.9	0.3	0.3
Bicycles	1.4	1.5	1.2
Buses	0.1	1.4	1.0
Taxis	0.1	3.2	1.0

* Otsego County, two series, 710 vehicles.
† New York State, 285,867 vehicles.
** United States, 18,000,000 vehicles.

TABLE VIII.—DIRECTION OF VEHICULAR TRAFFIC WHEN NONFATAL AND FATAL ACCIDENTS OCCURRED

Direction	All Accidents: Otsego County* (Per Cent)	All Accidents: New York State† (Per Cent)	Fatal Accidents New York State† (Per Cent)
Going straight	75.7	77.2	82.6
Turning left	3.5	4.9	3.6
Turning right	2.2	2.0	1.4
Backing	2.2	2.0	1.4
Making U turn	0.0	0.5	0.3
Car stationary	16.4	6.5	3.6
Other	0.0	6.9	7.1

* Otsego County, 607 vehicles.
† New York State, 285,867 vehicles.

VEHICLES INVOLVED AND DIRECTION OF TRAVEL.—Approximately 85 per cent of all the vehicles involved in motor accidents, regardless of where they occur, are passenger cars, your car and mine, which comprised 89 per cent of all self-propelled vehicles registered in New York State in 1957. The very close correlation in the percentage of passenger cars among the small, large, and enormous number of vehicles involved in the three groups of accidents in Otsego County, in New York State, and in the United States is interesting and impressive (Table VII). Furthermore, 75 per cent of the vehicles involved in all personal injury accidents and 83 per cent of those in fatal accidents in New York State were going straight ahead when the tragedy occurred (Table VIII).

CONDITION OF VEHICLES AND DRIVERS.—One out of five passenger cars checked for safety in the United States in 1957 was found deficient in one or more of the require-

TABLE IX.—CONDITION OF 607 VEHICLES INVOLVED in 492 RURAL ACCIDENTS*

Condition	Accidents	
	Number	Per Cent
Apparent good conditions	438	82.2
Defective tires	18	3.4
Defective brakes	15	2.8
Defective headlights	13	2.4
Defective steering mechanism	10	1.9
Defective taillights	5	.9
Other mechanical defects	34	6.4
Unknown	74	
TOTAL	607	

* Reprinted from J.A.M.A. **115**: 1521 (Nov. 2) 1940; by permission of publisher.

TABLE X.—CONDITION OF MOTORISTS INVOLVED IN SAME ACCIDENTS*

Condition	Accidents	
	Number	Per Cent
Apparently normal	346	83.0
Intoxicated	39	9.3
Asleep	17	4.1
Other conditions	15	3.6
Unknown or irrelevant	75	
TOTAL	492	

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ments for safe driving; 1,360,000 vehicles were examined. Twenty per cent of the 607 vehicles involved in the accidents first reported from the Mary Imogene Bassett Hospital[4] were alleged to have defective tires, brakes, headlights, taillights, steering mechanism, or other mechanical deficiencies (Table IX). The proportion of defective vehicles involved in accidents throughout the State is believed to be much lower. It therefore seems probable that at least four out of five of all passenger cars involved in motor vehicle accidents annually in this country are in good condition, a fact which again emphasizes the importance of human behavior in the causation of such tragedies.

Accurate information concerning the physical condition of drivers involved in motor accidents is difficult to obtain. So far as could be determined 83 per cent of the motorists in the initial Bassett Hospital series were normal; 9.3 per cent were obviously intoxicated, and 4.1 per cent were asleep (Table X). Fifteen per cent of the drivers involved in fatal accidents in New York State and in the United States were intoxicated, asleep, blinded by oncoming headlights, or found to have other physical defects; the remaining 85 per cent were normal.

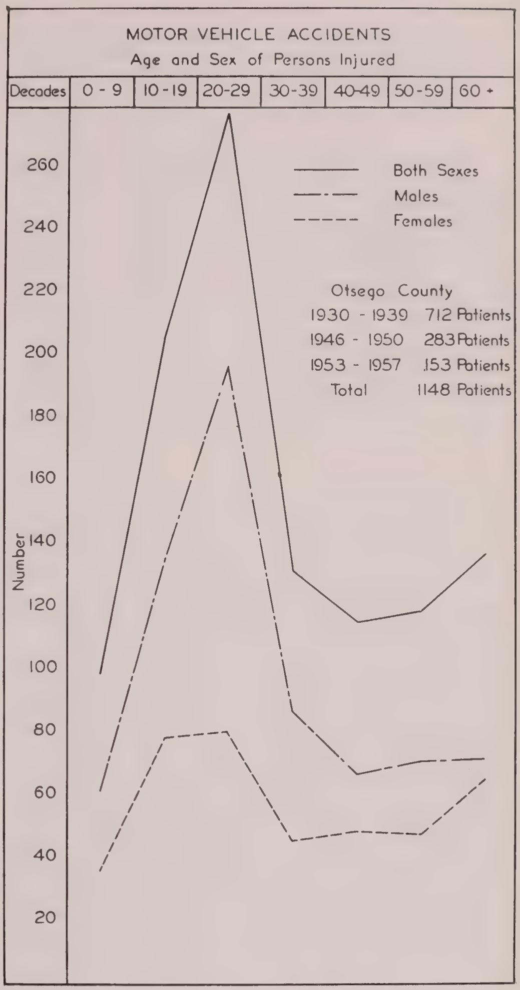

FIG. 6. Distribution by age and sex of 1,148 patients injured in motor vehicle accidents in Otsego County.

Analysis of Injuries

DISTRIBUTION BY AGE AND SEX.—In the three groups of motor vehicle accidents studied at the Bassett Hospital which are representative of such tragedies as they obtain in a rural area of central New York, both sexes were injured much more often

TABLE XI.—Topographic Location of 4,082 Injuries Sustained by 995 Patients Treated at Mary Imogene Bassett Hospital (Two Series)

Distribution	1930 to 1939 (Per Cent)	1946 to 1950 (Per Cent)
Head and neck	37.1	38.8
Shoulder and upper extremity	16.5	10.0
Thorax and abdomen	14.5	18.0
Hip and lower extremity	17.9	19.4
Genitalia and perineum	0.5	0.1
Multiple injuries and shock	13.5	13.7
	——Numbers——	
Total classified injuries	2,891	1,191
Number of patients	712	283
Average injuries per patient	4	4

TABLE XII.—Tabulation of Accident- and Patient-Mortality Rates, Otsego County and Mary Imogene Bassett Hospital

	——Number——			——Per Cent——	
Series	Accidents	Patients	Deaths	Accident Mortality	Patient Mortality
1930 to 1939	492	712	35	7.1	4.9
1946 to 1950	203	283	6	3.0	2.1
1953 to 1957	111	153	2	1.8	1.3
Total	806	1,148	43	5.3	3.7

between the ages of twenty and twenty-nine years inclusive than during any other decade of life (Fig. 6). Throughout all ages males were involved with twice the frequency of females.

Tabulations by the Bureau of Motor Vehicles indicate that throughout the State individuals are injured more often during the fourth decade of life.

According to statistics reported by the Metropolitan Life Insurance Company[7] the death rate from motor vehicle accidents throughout the nation is highest among males at age twenty-one and among females at age eighteen.

Classification of Injuries.—The 995 patients admitted to the Bassett Hospital during the years 1930 to 1939 and 1946 to 1950 because of 695 accidents sustained 4,082 total injuries tabulated according to the Standard Classified Nomenclature of Disease, an average of four injuries per patient. Fractures comprised by far the largest group and many of these were compound. Lacerations, contusions, and abrasions were next in order of frequency.[4] About 15 per cent of the patients in both series were in shock when they arrived at the Hospital (Table XI), and at least 25 per cent sustained some degree of cerebral concussion.

Topographic Distribution of Injuries.—Actually of equal, if not more, interest in a study of injuries received by the victims of motor vehicle accidents is their topographic location. The head and neck are most susceptible to such trauma and in these two groups of patients were injured with twice the frequency of any other part of the body (Table XI). Traumatic lesions of the shoulder and upper extremity, the thorax and abdomen, and the hip and lower extremity occur with comparable frequency but are less than half as common as are injuries of the head and neck. Multiple injuries of bones and soft parts in combinations with shock are common.

Period of Hospitalization.—The average period of hospitalization during 1930 to 1939 was 20.3 days. The average number of subsequent visits to the outpatient department was four. The average period of hospitalization during 1953 to 1957 was 13.3 days and the average number of outpatient visits was three. This represents a total saving of three years of hospitalization for the 153 patients in the late group and, at the current rate, something over $26,000 in costs.

Mortality.—Thirty-five accidents in the first group were fatal; 12 persons were killed immediately; 7 were moribund on admission and survived for an average period of only thirty-five minutes after arrival; with 1 exception the average duration of life among the remaining 16 fatal cases was six days. The accident-mortality rate was 7.1 per cent, the patient-mortality 4.9 per cent (Table XII). The chief traumatic causes of death among the patients who reached the hospital alive

TABLE XIII.—SUMMARY OF DATA RELATIVE TO MOTOR VEHICLE ACCIDENTS IN NEW YORK STATE, 1940 AND 1958*

Tabulation	Numbers		Per Cent Change
	1940	1958	
Registrations	2,848,515	5,054,678	+77
Licensed drivers	3,901,815	6,632,000	+70
Annual mileage (in millions)	24,622	45,624	+85
Accidents	72,433	168,764	+133
Persons injured	94,829	272,257	+187
Deaths	2,452	2,169	−11

* Annual Reports, Bureau of Motor Vehicles.[3]

were simple and compound fractures of the skull with cerebral injury, fracture dislocations of the cervical or dorsal spine, and crushing injuries of the chest with rupture of multiple intrathoracic and intra-abdominal viscera. Complicating pulmonary embolism and bronchopneumonia were responsible for five fatalities.

During 1946 to 1950, 283 persons were involved in 203 accidents; 3 were killed immediately, and 3 died subsequently in the hospital, an accident-mortality rate of 3 and patient-mortality rate of 2.1 per cent.

Only two deaths are known to have occurred among the 153 patients injured in 111 accidents during 1953 to 1957; the accident-mortality rate in this most recent series was 1.8 and the patient-mortality was 1.3 per cent.

Responsible for this improvement in mortality rate are the many modern contributions to our knowledge of the physiologic requirements of the human organism following trauma, the ready availability of blood and substitutes therefor, the extensive use of chemotherapeutic agents and antibiotics, improved methods for internal fixation of fractures, the utilization of anticoagulants for the prevention and treatment of thrombosis, early mobilization and ambulation after injury, and advances in the science of anesthesiology.

In New York State within the past two decades, despite the alarming increase in the numbers of accidents and persons injured, the actual number of fatalities has remained essentially unchanged. During these same years, the registrations have increased from 2,848,515 vehicles in 1940 to 5,054,687 in 1958, the licensed drivers from 3,901,815 to 6,632,000, and the annual mileage in millions from 24,622 to 45,624 (Table XIII). Hence, the death rate per 10,000 registrations has fallen from 8.60 in 1940 to 4.53. Within these same two decades, however, the number of persons injured per 10,000 registrations has risen from 333 in 1940 to 522 in 1958.

Summary

The number of accidents due to motor vehicles in New York State and the number of persons injured thereby have increased steadily during the past two decades. Such accidents are commonest on dry, straight, level roads in clear weather during the hours of daylight between 4:00 in the afternoon and 8:00 in the evening. Drivers and passengers are most frequently involved during the third and fourth decades of life. Excessive speed, reckless driving, and alcohol are largely responsible for such unnecessary and tragic accidents on the highways of New York State.

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The Management of Acute Bleeding from Esophageal Varices

SEYMOUR I. SCHWARTZ, M.D., ROCHESTER, NEW YORK

(*From the Department of Surgery, University of Rochester School of Medicine and Dentistry*)

THE optimum treatment of acute bleeding from esophageal varices is one that effects prompt control of bleeding without further disturbing the already impaired liver function. Therapy can be catagorized into two general groups. The first group would comprise direct approaches to stop bleeding without influencing the portal pressure including the nonsurgical approach of balloon tamponade, injection with sclerosing solution by esophagoscope, transesophageal ligation, and partial esophageal gastrectomy. The second group would be composed of measures to decrease portal hypertension and consequently eliminate a major factor in the cause of hemorrhage and would include splenectomy, ligature of the hepatic artery, and direct venovenous anastomosis between the portal and the systemic systems. Conspicuous by its absence from this armamentarium is a nonsurgical attempt to effect a reduction in portal pressure. Surgical posterior pituitary extract (Pituitrin S) and vasopressin (Pitressin) administered intravenously have resulted in a prompt fall in portal venous pressure and have been used as effective adjuncts in the treatment of acute bleeding episodes of esophageal varices.

Disadvantages of Methods Currently Used to Control Esophageal Bleeding

A regimen depending on balloon tamponade has been the nonoperative method usually proposed for the control of esophageal hemorrhage, and the Sengstaken-Blakemore tube has been the most popular device.[1,2] It has proved a great aid in the control of hemorrhage but reports have indicated failure rates varying from 25 to 55 per cent,[3–6] and in our experience approximately 40 per cent of the bleeding episodes could not be controlled despite strict adherence to the technics of management advised.[2] Aspiration, asphyxiation, and ulceration at the site of tamponade have all been reported and experienced in a significant number of instances in our clinic. Esophageal ulceration in the region of balloon tamponade has been noted in approximately 85 per cent of patients who have come to autopsy. Several articles[3–7] have appeared recently calling for reappraisal of the use of balloon tamponade therapy. Conn,[7] in a study of 50 patients in whom a Sengstaken-Blakemore tube was used, indicated that only 20 per cent were entirely free of potentially fatal difficulties, and 9 patients died as a direct consequence of its use.

The failure rate, coupled with complications attending the use of the esophageal balloon, have prompted the recommendation[8–10] of immediate surgical attack either by transesophageal ligation or by direct portacaval anastomosis.[11] Our limited experience with immediate transesophageal ligation and portacaval anastomosis reveals an almost prohibitive mortality rate. In the patient with significant liver dysfunction, especially with jaundice, prolonged anesthesia and surgery frequently precipitate hepatic failure and coma. It is not an infrequent occurrence for the operation to effect cessation of bleeding by either of the surgical approaches only to have the

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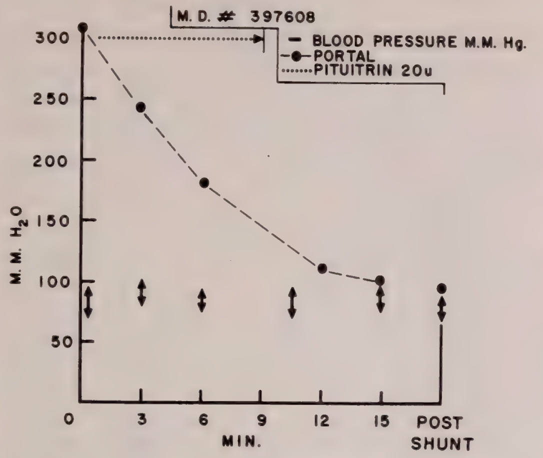

FIG. 1. Direct measurements at operation demonstrating effect of intravenous surgical posterior pituitary extract on portal venous pressure and arterial pressure. Comparison between effect of posterior pituitary extract and portacaval anastomosis on portal pressure.

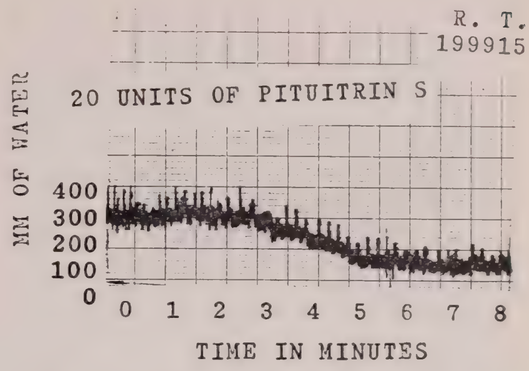

FIG. 2. Recording of portal pressure during administration of surgical posterior pituitary extract at operation.

patient succumb because of liver failure.

The venovenous anastomosis, either portacaval or splenorenal, is the more physiologic surgical approach to reducing portal hypertension and decreasing the bleeding potential of esophageal varices, and the mortality and morbidity rate for this operative procedure is appreciably less when surgery is carried out electively. It is for this reason that we have proposed a regimen directed at bringing about a temporary reduction in portal hypertension, during which period the patient can be prepared for elective surgery.

Pharmacology of Surgical Posterior Pituitary Extract and Vasopressin

The pharmacologic effects of intravenous posterior pituitary extract on the portal circulation in experimental animals have been investigated quite thoroughly by several approaches.[12-15] A prompt fall in portal venous pressure and portal flow was consistently demonstrated. The extent of portal pressure reduction ranged from 20 per cent in normal animals to 49 per cent in dogs with inferior vena caval obstruction causing portal hypertension.[14] Most investigators[12-15] have attributed this reduction to a marked constriction in the arterioles of the splanchnic bed, although some[16] have related it to the closing of arteriovenous shunts within the liver. The changes in portal circulation were inconsistently accompanied by a slight rise in systemic arterial pressure and a minimal alteration in systemic venous pressure. The duration of action varied from thirty minutes to one hour. Davis *et al.*[17] demonstrated a decrease of portal pressure and flow in man as manifested indirectly by a lowering of intrasplenic pulp pressures and hepatic vein wedge pressures. No changes in hepatic oxygen consumption were noted.

We have investigated the direct effect of intravenous surgical posterior pituitary extract on portal venous pressure in 9 patients during operation for portacaval or splenorenal anastomosis.[18] In 8 of the 9 patients studied, a marked and rapid decrease was noted subsequent to the injection of posterior pituitary extract. Figure 1 is a representative graph demonstrating the effect of surgical posterior pituitary extract on portal pressure, arterial pressure, and systemic venous pressure. Figure 2 is a recording demonstrating a significant decrease in portal pressure from 320 to 150 mm. of water. It was of extreme interest that in all instances the portal vein pressure was reduced by administration of posterior pituitary extract to approximately the same level as resulted from a subsequent shunt when one was performed. In only one instance was a significant arterial hypertension produced and in this case the blood pressure elevation was transitory. The vena caval pressures showed no significant alterations.

Studies on 3 unanesthetized cirrhotic patients in whom hepatic wedge pressures were carried out revealed that vasopressin effected a significant depression in portal pressure in each of these patients. The amount of pressure reduction noted was 33 per cent, 52 per cent, and 48 per cent. The duration of action measured in 2 of the patients varied between forty-five and seventy minutes. There was no marked elevation in systemic arterial pressure in any of these patients.

Clinical Experiences with Surgical Posterior Pituitary Extract and Vasopressin

Wiggers[19] initially suggested that the extract of the pituitary gland be applied to the therapy of massive hemoptysis subsequent to his demonstration that the preparation would cause diffuse vasoconstriction of the arterioles. Rist[20] reported 12 cases in which intravenous administration of posterior pituitary extract stopped pulmonary hemorrhage that could not be controlled by other methods. Trimble and Wood[21] reported its use on 46 occasions in 32 patients with prompt control of pulmonary bleeding. Kehne, Hughes, and Gompertz[14] used posterior pituitary extract in 2 cases of bleeding esophageal varices and caused prompt cessation of bleeding on five occasions in 1 of the patients and on two occasions in the other patient. Davis *et al.*[17] administered posterior pituitary extract to 1 patient during esophagoscopy and noted dramatic blanching of the mucosa and decrease in the varices shortly after the injection of the drug.

Intravenous surgical posterior pituitary extract, or more recently vasopressin, have been applied therapeutically to 22 patients with acutely bleeding esophageal varices at our hospital (Table I). The estimated blood loss prior to the institution of therapy varied between 250 and 1,500 cc. Twenty of these were alcoholic cirrhotic patients. In 1 patient the varices were secondary to thrombosis and cavernomatous transformation of the portal vein, and in 1 patient, the primary pathology was that of biliary cirrhosis. In all instances the presence of varices was confirmed by esophagogram or esophagoscopy. A nasogastric tube or an *uninflated* Sengstaken-Blakemore tube was inserted in 18 patients to maintain a constant gastric suction and thus decrease regurgitation in the esophagus of gastric fluid. In two instances a gastrostomy was used instead of the nasogastric tube. Twenty clinical units of surgical posterior pituitary extract or vasopressin were given over a period of between five to twenty minutes, and the nasogastric or gastrostomy tube was irrigated at half-hour intervals. The quality of gastric irrigation return, serial vital signs, and microhematocrit determinations were used as a guide to the status of bleeding and the effective therapy. In a group of 20 patients, 41 distinct episodes of massive acute bleeding were so treated with prompt control 38 times. The gastric aspirate cleared five to twenty minutes after the completion of intravenous posterior pituitary extract vasopressin. Vital signs and hematocrit determinations showed stabilization and subsequent improvement with transfusion.

TABLE I.—POSTERIOR PITUITARY EXTRACT OR VASOPRESSIN THERAPY OF BLEEDING ESOPHAGEAL VARICES

Regimen	Patients	Bleeding Episodes	Effective Control
Therapy and Levin tube	14	28	26
Therapy and gastrostomy	2	4	4
Therapy and Sengstaken tube	4	7	6
Therapy after Sengstaken tube failure	2	2	2
TOTAL	22	41	38

In 2 patients who were initially treated with the inflated Sengstaken-Blakemore tube which failed to control the bleeding, the addition of intravenously administered posterior pituitary extract brought about a prompt cessation of bleeding. In several instances bleeding recurred after an interval of quiescence ranging from six hours to several days, and the drug was used to control the second and subsequent attacks. On two occasions, posterior pituitary extract greatly facilitated transesophageal ligation of bleeding varices by causing a marked reduction in the brisk arterial-type bleeding which obscured the surgical field and made identification of the individual varices difficult. Subsequent to injection of the drug, individual varices became much more apparent for suture.

A slight increase in brachial-arterial pressure was occasionally noted during administration, but pressure returned to normal after a maximum of ten minutes. Patients infrequently complained of diffuse crampy abdominal pains and the urge to defecate, but this subsided one-half hour subsequent to the completion of therapy in all instances. There were no significant alterations in nonprotein nitrogen, sodium, potassium, carbon dioxide, or chloride demonstrated. The surgical posterior pituitary extract and vasopressin have been used effectively as sole agents in the control of bleeding varices, as adjuncts to tamponade therapy, and as aids to the surgeon during transesophageal ligation of the varices.

Management of "Acute Bleeding Episode"

The management of the patient bleeding acutely from esophageal varices requires a multifaceted regimen. In addition to prompt control of bleeding, attention must be directed to preventing or reversing shock and avoiding ammonia intoxication and hepatic failure. The majority of patients who have presented with acutely bleeding esophageal varices have not been in shock at the time of admission to the hospital. However, if the signs and symptoms of shock are noted, initial efforts are directed toward the elevation of blood pressure by means of transfusion. As soon as the diagnosis of bleeding esophageal varices has been established, a soft rubber nasogastric tube of the Levin type is passed and nasogastric suction is established. More recently it has been elected to perform a gastrostomy under local anesthesia since it is felt that more effective gastric suction can be established with less trauma to the esophageal mucosa. The importance of gastric suction is twofold. First, it affords a direct visual evaluation of the extent of bleeding, and second, it decreases the extent of regurgitation of gastric acid into the esophagus. The latter fact is thought to be of importance since acid regurgitation has been strongly implicated in the initiation and maintenance of bleeding from esophageal varices.[22] After suction has been established an intravenous drip of dextrose and water is begun, and 20 clinical units of vasopressin or surgical posterior pituitary extract are administered over a ten- to twenty-minute period. Rapid injection is necessitated by the tachyphylactic property of the drug, that is, decreasing responses follow consecutive injections made at short intervals. It is to be noted that a long-acting intramuscular preparation such as vasopressin tannate is of little benefit. Although the effect of the intravenous drug therapy is temporary, the reduction in portal pressure exists for a sufficient length of time to allow turgid veins to collapse, the edges of the bleeding site to coapt, and a hemostatic thrombus to form. The drug can be repeated at four-hour intervals if there is evidence of recurrent bleeding. Intravenous posterior pituitary extract and vasopressin are contraindicated in patients with angina and coronary arterial disease in view of generalized vasoconstrictive properties of the drugs.

Early in the course of treatment cathartics are administered either orally or by the gastrostomy tube, if one is used, to cause evacuation of the blood within the intestinal tract, and neomycin is administered to decrease the bacterial flora. Both of these measures are directed at the prevention of hepatic coma. As soon as the bleeding has ceased, the patient is started on a high caloric, antiulcer diet to decrease the gastric acidity. If the patient stabilizes early and shows only minimum derangement of liver function, a portal-systemic shunt may be carried out after a period of several days. If, on the other hand, there is marked abnormality of liver function and the patient is markedly jaundiced, all attempts are directed toward avoiding surgery until the liver functions have returned to more respectable levels and the jaundice has disappeared.

Summary

Intravenous surgical posterior pituitary extract (Pituitrin S) and vasopressin (Pitressin) effectively reduce portal pressure and thereby control the acute bleeding from esophageal varices. The use of these drugs has obviated the need for balloon tamponade and decreased the incidence of emergency surgery in a significant number of cases. The pharmacology is discussed and a regimen for the nonoperative management for the acute bleeding episode of esophageal varices is proposed.

260 Crittenden Boulevard, Rochester 20

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No one means all he says, and yet very few say all they mean, for words are slippery and thought is viscous.—Henry Brooks Adams

Considerations in the Changing Management of Pediatric Anesthesia

RICHARD AMENT, M.D., AND CARL B. MISCHKA, M.D., BUFFALO, NEW YORK

(*From the Buffalo Children's Hospital and the University of Buffalo School of Medicine*)

WHILE technics in adult anesthesia have undergone great changes since the early 1940's, changes in the technics of pediatric anesthesia from the traditional open-drop ether have progressed much more slowly. It has become increasingly apparent that, properly handled, most of the agents used in adult anesthesia can be used to advantage in anesthetizing children. With this new-found versatility of agent and technic the pediatric anesthesiologist can now assure a pleasanter and smoother operative course. Certain facets of the changing practice of pediatric anesthesia which we have observed during the past ten years seem worthy of emphasis.

The preoperative preparation of the pediatric patient does not consist merely of administering a sedative drug. A calm preoperative attitude is more often observed among those children who feel secure in their home environment and who have not been overprotected by their parents. An apprehensive parent makes for an apprehensive child. The preoperative preparation of the child should begin in the surgeon's office as soon as a decision to operate is reached. As indicated by Francis and Cutler[1] and Coleman,[2] an adequate explanation of the forthcoming procedure may do much to correct erroneous impressions and to allay apprehension. The use of cartoon books and play technics can be used to orient the child to the contemplated procedure. This kind of frank approach is emphatically preferred to the deceptions practiced by some parents in enticing their children to the hospital. At the Buffalo Children's Hospital a cartoon book which can be colored by the youngster has been developed. In it the cartoon personality "Henry" explains the usual hospital course of a child undergoing a tonsillectomy. The American Society of Anesthesiologists booklet can be of great help to parents by helping them to understand better the operative procedure.

The success of the immediate preoperative preparation of the pediatric patient for surgery is dependent on the hospital environment the child faces. As pointed out in the Albany study by Jackson,[3] children treated with consideration for emotional factors give little evidence of psychic trauma. A cheerful looking building and a staff geared to the handling of children can be of great help in eliminating emotional disturbances. In most cases the use of heavy sedation is not only superfluous in this atmosphere but also may be deleterious to the patient's respiratory and circulatory status and complicate the administration of inhalation anesthetics.

After many attempts at premedication of children with oral or rectal barbiturates and tranquilizers, such as phenergan hydrochloride in addition to a belladonna derivative, it is our impression that most children are managed best with scopolamine hydrobromide alone or in the older children with meperidine hydrochloride-scopolamine hydrobromide premedication. The action of these drugs is most predictable when they are administered intramuscularly thirty to forty-five minutes prior to the induction of anesthesia. Our dosage scale closely approximates that recommended by Slater and

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Stephen.[4] Suggestion and play technics are utilized to accomplish a smooth induction in a large percentage of our children. While we have not employed hypnosis to any extent in our pediatric practice, the use of positive suggestion with active participation of the child in a play situation, such as flying a jet plane, has contributed to speedy atraumatic inductions. No approach is ideal, however, and we occasionally are faced with an unmanageable child in whom no amount of sedation could compensate for the psychic imbalance with which we need regretfully to cope.

Over the past decade considerable changes have taken place in the management of adenotonsillectomy patients from both the anesthetic and the surgical points of view. For instance, the shift of emphasis from the rapid, routine surgical procedure at ages four to six to one which involves mostly children with repeated infections, respiratory and otic, has made the surgical procedure more formidable. Also the otolaryngologist's preoccupation with a more meticulous adenoidectomy has lengthened the operation and has increased the hazard of postoperative bleeding.

Our anesthetic technics for tonsillectomy have changed over the years from one of insufflation with ether-air mixtures to a nonrebreathing technic with a variety of anesthetic agents in which an endotracheal tube is utilized to insure the airway. At the Buffalo Children's Hospital during the past ten years 23,186 anesthetics for adenotonsillectomy have been administered, of which 12,000 during the past five-year period were accomplished with endotracheal technics. We are in accord with the views held by Pender and Hallberg[5] and Collins and Granatelli,[6,7] who feel that the disadvantages of endotracheal anesthesia in children undergoing adenotonsillectomies have been overemphasized. We feel that the endotracheal tube in no way obstructs the working space of the surgeon but, in fact, that visualization is improved and a quieter operative field is more readily obtained in the presence of an unobstructed airway. Single-dose succinylcholine chloride has been administered to facilitate rapid and atraumatic intubations in over 6,000 of these cases. Vinethene or cyclopropane induction and intubation with nitrous oxide and ether maintenance for which a nonrebreathing valve is utilized has been our most common technic in the management of adenotonsillectomy patients. Fluothane administered by nonrebreathing technic has proved to be a valuable addition to our armamentarium.

In handling the tonsil patient who experiences postoperative hemorrhage and/or shock the anesthesiologist plays a very critical role. The prevention of aspiration and a militant approach to the treatment of shock both fall within his province. All tonsil and adenoid patients returned to surgery for control of bleeding, even of a minor nature, are crossmatched in anticipation of possible further difficulties. An adequate suction apparatus is immediately made available and operational during the induction phase. Inhalation anesthesia, preferably with cyclopropane, has been our induction choice in this precarious situation. The endotracheal tube is always held in place at the termination of the procedure to maintain oxygenation until the inevitable massive regurgitation of old blood is completed and pharyngeal reflexes are again active.

In our 23,186 adenotonsillectomies there have been no anesthetic deaths. One patient, an eight-year-old child, died from hemorrhagic shock during a third attempt to control adenoid bleeding twenty hours after the initial operative procedure. Two patients in this ten-year period underwent cardiac massage following cardiac asystole with complete recovery. One of these patients was a seventeen-month-old boy who was anesthetized by means of a vinethene-ether sequence. Following an uneventful induction, 20 mg. of succinylcholine were given intravenously to facilitate intubation. After ventilation with 100 per cent oxygen a number 22 endotracheal tube was inserted with ease and an ether-oxygen mixture was administered from a Gwathmey machine through a reservoir bag and nonrebreathing valve. Controlled respirations rapidly produced surgical anesthesia and an overwhelming alveolar concentration of ether vapor. Minimal bleeding was noted at the incision and cardiac arrest was immediately diagnosed; the chest was entered and cardiac massage instituted within sixty seconds. The heart beat was immediately restored. This patient had an uneventful postoperative course and completely recovered.

The other patient was a fifteen-year-old boy admitted for a secondary adenoidectomy. Following a calm, uneventful induction with 20-mg. thiopental and 40-mg. succinylcholine, the patient was ventilated with 100 per cent oxygen and intubated with a number 28 endotracheal tube. Nitrous oxide-ether anesthesia was administered with the use of a circle filter machine, and quiet rhythmic respirations returned within five minutes, the pulse rate at this time being 80 per minute. Sudden blanching and reflex cardiac arrest occurred when the adenotome was inserted into the nasopharynx. The chest was entered and cardiac massage instituted by the anesthesiologist within one minute while one of his colleagues maintained ventilation with 100 per cent oxygen. Immediate restoration of the cardiac beat occurred with massage. This patient had an uneventful recovery except for a chest wall infection.

During the same ten-year period 2,800 plastic procedures involving the head and neck were done. Of these, 810 were for harelips, 590 were for cleft palates, and 412 were for otoplasties. The remainder of the indications included hemangiomas, burns, scar excisions, nevi, and other congenital defects. Probably in no other surgical situation is insurance of a patent airway throughout the operative procedure so vital. Prior to the development of nonrebreathing technics in which endotracheal tubes are utilized, the repair of cleft palates and lips was accomplished at this hospital with several combinations of anesthesia, none of which was adequate or completely safe. Local anesthetics supplemented with thiopental or with nitrous oxide or other inhalation agents, usually administered by insufflation methods, were given. In many of these cases electrocautery was used, thereby increasing the risk. Often only regional methods were employed, and surgery was accomplished in spite of a protesting, moving patient.

Usually harelips are repaired in the newborn as soon as the child has reached 10 pounds in weight and cleft palates are repaired as soon as the child reaches the age of one year. Until the age of two these patients are premedicated with scopolamine alone; the older children receive small doses of merperidine in addition to the scopolamine. Of the 2,800 patients in this group, 2,700 were anesthetized with combinations of inhalation anesthetics by means of endotracheal technics, the oral route being used for the lips and the nasal route for the majority of the palates. Anesthesia in these 2,700 infants and children was induced with vinethene or cyclopropane and they were then intubated. Anesthesia was maintained with a nitrous oxide-ether mixture for which a reservoir breathing bag and a nonrebreathing valve with a continuous flow of gases of from 4 to 8 L. were employed. Contrary to the opinion expressed in a recent article by Greenfield,[8] who prefers an open endotracheal system with utilization of an Ayre tube, we prefer the nonrebreathing valve for these cases and have encountered no difficulties with increased resistance or encroachment on the operative field.

After intubation the mouth and pharynx are packed with gauze sponges. This is effective in preventing excessive amounts of blood from entering the pharynx and esophagus and aids in anchoring the endotracheal tube. We have observed a severe bout of hypoxia in a patient obstructed by a packing sponge that had not been removed prior to extubation. It is particularly important that an accurate count be made of the packing sponges inserted in the pharynx since it is relatively easy to overlook one at the time of extubation.

The anesthesiologist must pay particular attention to the airway during positioning and draping of the head to guard against kinking or dislodging of the endotracheal tube. In these procedures it is also vital to strap a stethoscope over the infant's precordium since one often finds himself at considerable distance from the working area and able to monitor the patient only with extreme difficulty. By auscultation directly after intubation one can determine if both lungs are properly expanding. In these small babies it is very easy to introduce the endotracheal tube too far into the major bronchi and obstruct the opposite lung.

Because of the minimal blood volume margins in a small child it has been agreed at the Buffalo Children's Hospital that a hemoglobin of 9 Gm. is the minimal acceptable level for elective procedures. It is the rare patient undergoing harelip or cleft palate repair who is not transfused during the surgical procedure. Blood is started immediately and from 50 to 100 cc. are given, depending on the size of the defect and the extent of the procedure.

While it was originally deemed imperative that a cutdown be done preoperatively in every case, because of delays and technical failures, cutdowns have been almost completely abandoned. We have had to delay surgery while a cutdown was done in the operating room in only 2 patients out of nearly 1,000 cases. In all other cases we have been able successfully to cannulate a vein with a number 22 or number 20 needle shortly after the child has been anesthetized. However, although the time required to start an intravenous infusion properly may not be lengthy, because of the critical nature of the anesthetic procedure it has been deemed advisable to have an associate available to start the infusion.

It is preferable to have these infants extubated in the operating room, where the anesthesiologist can personally supervise the infant and have all of his equipment available. No child should be removed to the recovery room unless his pharyngeal reflexes are present, since the very repair of congenital lesions may often temporarily narrow the airway. Although throughout the operative procedure much of the oozing from raw surfaces is controlled by 0.25 per cent Neo-synephrine packs, there may be postoperative bleeding into the pharynx which the infant cannot handle if his reflexes are obtunded. A tongue suture is routinely placed in these cases to help maintain the airway during the recovery period. It is removed in the recovery room when the patient has reacted completely.

Since endotracheal technics have been used to manage the airway in head and neck surgery there has been one mortality. This occurred in a four-month-old baby with a large hemangioma of the left side of the neck. This child was intubated following a cyclopropane induction, and anesthesia was maintained with nitrous oxide and ether administered by the nonrebreathing technic. Massive bleeding occurred throughout the procedure and the child was transfused with 300 cc. of whole blood. Labored respirations and cyanosis developed after one and one-half hours of surgery, leading to bradycardia and cardiac arrest. Although the heart responded to massage temporarily, spontaneous respirations never resumed. Autopsy revealed complete, diffuse atelectasis with areas of obstructive emphysema.

We have done one prophylactic tracheotomy postoperatively in a cleft palate case with subglottic edema, probably due to a tight endotracheal tube during surgery. This patient subsequently made an uneventful recovery. One newborn in this group had a persistant bradycardia lasting four hours, the pulse dropping from 140 to 80 and then spontaneously reverting to a normal rate.

Considerable controversy has been engendered over the use of endotracheal tubes in pediatric anesthesia. We wish to add our experience to the ever-increasing statistical proof of the value of endotracheal anesthesia. Despite the conclusive review in favor of endotracheal anesthesia in children by Pender in 1953,[9] articles such as that by Gregg[10] still appear in the literature in opposition to its use. While we cannot vouch for its uncomplicated use in the hands of the occasional anesthetist, in the confines of a pediatric medical center it provides a respiratory lifeline with a minimal of complications and facilitates smooth and rapid administration of inhalation agents. Sound knowledge of the anatomy of the pediatric glottis, which has been so aptly described by Eckenhoff,[11] is necessary to prevent complications. To avoid subglottic edema, one should avoid introducing endotracheal tubes which fit snugly in the child's glottis.

All of our endotracheal tubes are soaked in a pHisoHex solution and thoroughly scrubbed with pHisoHex after each time they are used. They are then stored in a clean drawer. They are not sterilized by immersion in chemical antiseptic solutions, since these solutions may become impregnated in the wall of the endotracheal tube and cause chemical irritation of the tracheal mucosa.

Over the past ten years 20,000 procedures have been accomplished here with endotracheal technics with one major complication, the aforementioned tracheotomy. We have had 3 other children who developed subglottic edema of serious proportions. Two of these children, three and one-half years and five years of age, were intubated for adenotonsillectomy without trauma. However, croupy cough and respiratory stridor developed in each instance six hours after the operative procedure. The symptoms cleared by the following morning with the use of steam, Alevaire, and rectal Nembutal. On two occasions in this decade excessive positive pressures applied to a child's lung through an endotracheal tube produced rupture of alveoli, mediastinal emphysema, and a bilateral pneumothorax. One of these patients experienced a pneumoperitoneum as well. These absorbed with no residual sequelae.

One must be aware of the ease with which endotracheal tubes become occluded with secretions, particularly in small children. We have observed instances in which this occurred, requiring the substitution of a patent tube for the occluded one. One should also be aware of the hazards of respiratory obstruction associated with loose endotracheal tube adaptors in the presence of copious pharyngeal secretions. On one occasion in the past ten years an endotracheal tube from which the adaptor had loosened was coughed up into the pharynx and swallowed by the patient after a spinal fusion. Esophagoscopy was then required to remove the tube.

The utilization of succinylcholine chloride in a single dose to facilitate intubation has many advantages. It permits an atraumatic insertion of the endotracheal tube in a lighter plane of anesthesia. Intubation can be accomplished much earlier in the induction period, thereby eliminating most laryngospasms and associated respiratory obstruction. In the infant particularly, the relaxation provided permits insertion of a slightly larger endotracheal tube than can be introduced without succinylcholine.

We have used succinylcholine in a single dose to facilitate intubation in 7,500 cases in the past three years in doses ranging from 1 to 40 mg. Each patient is ventilated with 100 per cent oxygen for one to two minutes at the time the succinylcholine is injected intravenously so that hypoxia does not occur during the apnea which is present during the interval of intubation. Caution is advised in adding potent anesthetic agents to the gas mixture, particularly in small children, when controlled respirations are being maintained since high alveolar concentrations of anesthetic gases can be easily attained in this circumstance.

Following the administration of succinylcholine we have observed transitory bradycardia without demonstrable deleterious effect, particularly with cyclopropane inductions. This has been also observed by Telford and Keats[12] and by Leigh *et al.*[13] Although intubation can be easily accomplished without hypoxia by the experienced pediatric anesthesiologist in the apneic, flaccid patient, this technic may be very dangerous in the hands of the occasional anesthetist. Normal respiratory activity usually resumes in three to ten minutes, although apnea may persist for longer periods. Children are quite resistant to the effects of succinylcholine.[12] In these 7,500 cases we had 4 prolonged cases of apnea which persisted beyond the duration of the operative procedure following the use of intravenous succinylcholine. In none of these instances was an excessive dose administered.

Adequate spontaneous respirations were re-established from two to three and one-half hours after the succinylcholine had been given. There were no untoward effects noted from this experience.

Summary

In reviewing the changing management of pediatric anesthesia we have been impressed with several salient features: (1) In general, the successful preoperative preparation of the child is best accomplished by a positive approach in a cheerful atmosphere free from parental anxiety and not by drug depression. (2) A balance of combined anesthetics, including succinylcholine for intubation, is of equal value in pediatric procedures as in adult procedures. (3) Endotracheal technics markedly facilitate pediatric surgical procedures with minimal complications.

In presenting experiences culled from the administration of pediatric anesthesia at the Buffalo Children's Hospital during the past ten years, including 23,186 adenotonsillectomies and 2,800 plastic procedures, we wish to emphasize the necessity for ever-increasing safeguards to protect the good-risk as well as the poor-risk patient against complications occurring during operative procedures.

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Discussion

Thomas Morgan, M.D., *Rochester, New York.*—I would like to express my thanks to Dr. Ament and to my classmate of the class of '46, Buffalo, Dr. Mischka, for this opportunity to comment on their experiences.

As indicated in this paper, our job in the area of preoperative preparation is to implement the good work started by surgeon and parent or to try to eradicate the unpleasant image built up in the mind of the child entering the hospital for a surgical procedure.

I was impressed to hear that narcotics and hypnotics were found to be not only unnecessary but possibly harmful as part of the premedication in the younger age group. Along this line, I am curious to find out whether the use of tranquilizers as part of the premedication seems to have any effect on postoperative nausea and vomiting. Our investigation of several of these drugs in adults did not lead to the discovery of a satisfactory antiemetic so there seemed to be no point in continuing the study in children.

Over 23,000 adenotonsillectomies with no mortality is a very fine record. Dr. Ament's description of the cardiac massage in one of these patients is interesting in that the cardiac massage was instituted by the anesthesiologist. The reference to endotracheal intubation, its importance and safety for head and neck surgery in children, is very sound. Our experience at the Genesee Hospital in Rochester, where we do a fair number of cleft lips and palates, is similar to that at Buffalo Children's Hospital. We apparently followed the same pattern in changing management: from oro- or nasopharyngeal insufflation of ether-oxygen (or nitrous oxide-ether-oxygen) to endotracheal nonrebreathing technics with the same agents.

Our requirement for some time for elective surgery has been a hemoglobin of 10 Gm., slightly higher than mentioned here. This applies to the cleft lip and palate cases as well as to adenotonsillectomies. The almost routine use of blood transfusion in the cleft lip and palate operations at the Buffalo Children's Hospital is new to me. I cannot recall having transfused one of these patients.

As for the patient who bleeds after a adenotonsillectomy and who has to be brought back to the operating room, we believe that: (1) blood should be drawn for typing and cross-matching, and (2) fluids (normal saline, glucose in water, or whole blood) should be running intravenously before the start of anesthesia for control of the bleeding tonsillar fossa or adenoid area.

The surgeon's request for just a "whiff" while he "takes a look" should be flatly refused unless these requirements are met.

Again I would like to thank Dr. Mischka and Dr. Ament for the opportunity of hearing their fine paper. They have distilled the practical experience from a large volume of pediatric cases into a very worth-while presentation.

Low I.Q.—Rx for Gout?

The decisive factor in gout may not be only how much you eat, but how well you think. Nutritional investigators have long suspected that intelligence, instead of or in addition to gluttony, might be the key to the extremely painful, inflammatory condition. Indeed, gout has often been considered a foremost occupational hazard of diplomats, scientists, and writers.

New research done on 817 draft inductees at Fort Dix, New Jersey, has tended to confirm this suspicion. Blood samples from the youthful soldiers indicated that those with higher intelligence ratings had similarly high concentration of uric acid within their systems. The acid is associated with swelling of the joints by gout sufferers. A more beneficial effect of the acid, the investigators hypothesize, is that it may also stimulate intellectual activity just as its chemical cousin, caffeine, does.

The researchers acknowledge, however, that a great deal more work must be done before any positive conclusions can be reached. Proof is needed, for instance, to cope with the argument that people of intelligence often have the economic resources to maintain rich diets from which the body manufactures uric acid.

Those who argue that cerebral capacity, and not that of the gullet, is the tip-off on gout susceptibility can also point to history, however. The list of famous gout sufferers includes Benjamin Franklin, Sir Isaac Newton, Charles Darwin, Martin Luther, John Calvin, Johann Wolfgang von Goethe, and Alfred Lord Tennyson.—*Nutrition Foundation*

A Preliminary Study of the Use of 2-Methyl-1, 2-Bis (3-Pyridyl)-1-Propanone (SU 4885) as a Test of Pituitary Function in Man[*]

GROSVENOR W. BISSELL, M.D., ALVIN L. SCOTT, M.D., WELLS E. FARNSWORTH, M.D.,
AND ISABELLE WINKLER, M.T., BUFFALO, NEW YORK
(From the Medical Service and Research Laboratories, Buffalo Veterans Administration Hospital and the University of Buffalo Medical School)

CONSIDERABLE interest has been exhibited recently in the synthesis of compounds capable of modifying the production of steroids by the adrenal cortex. In 1950 Hertz *et al.*[1] described the interference with adrenal cortical steroidgenesis following administration of amphenone B, but this agent proved too toxic for widespread clinical application. Recently another compound, 2-methyl-1, 2-bis (3-pyridyl)-1-propanone (Fig. 1), has been shown to exert certain more selective inhibitive effects on adrenal cortical biosynthesis and to be relatively nontoxic.[2]

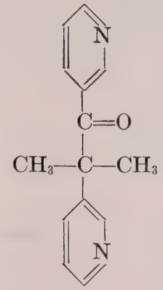
N
C=O
CH_3—C—CH_3
N

FIG. 1. 2-methyl-1, 2-bis (3-pyridyl)-1-propanone (SU 4885).

Normally the anterior lobe of the hypophysis elaborates corticotrophin, which stimu-

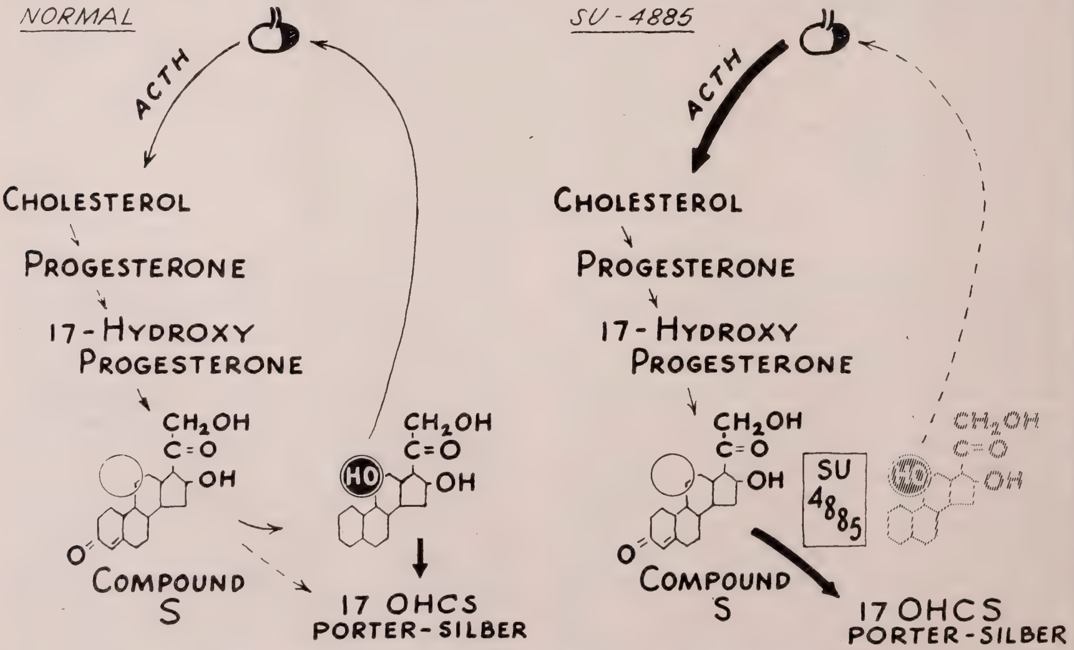
NORMAL
ACTH
CHOLESTEROL
PROGESTERONE
17-HYDROXY PROGESTERONE
CH_2OH
C=O
OH
O
COMPOUND S
CH_2OH
C=O
HO
OH
17 OHCS
PORTER-SILBER
SU-4885
ACTH
CHOLESTEROL
PROGESTERONE
17-HYDROXY PROGESTERONE
CH_2OH
C=O
OH
O
COMPOUND S
SU 4885
CH_2OH
C=O
HO
OH
17 OHCS
PORTER-SILBER

FIG. 2. Series of steps in the production of hydrocortisone.

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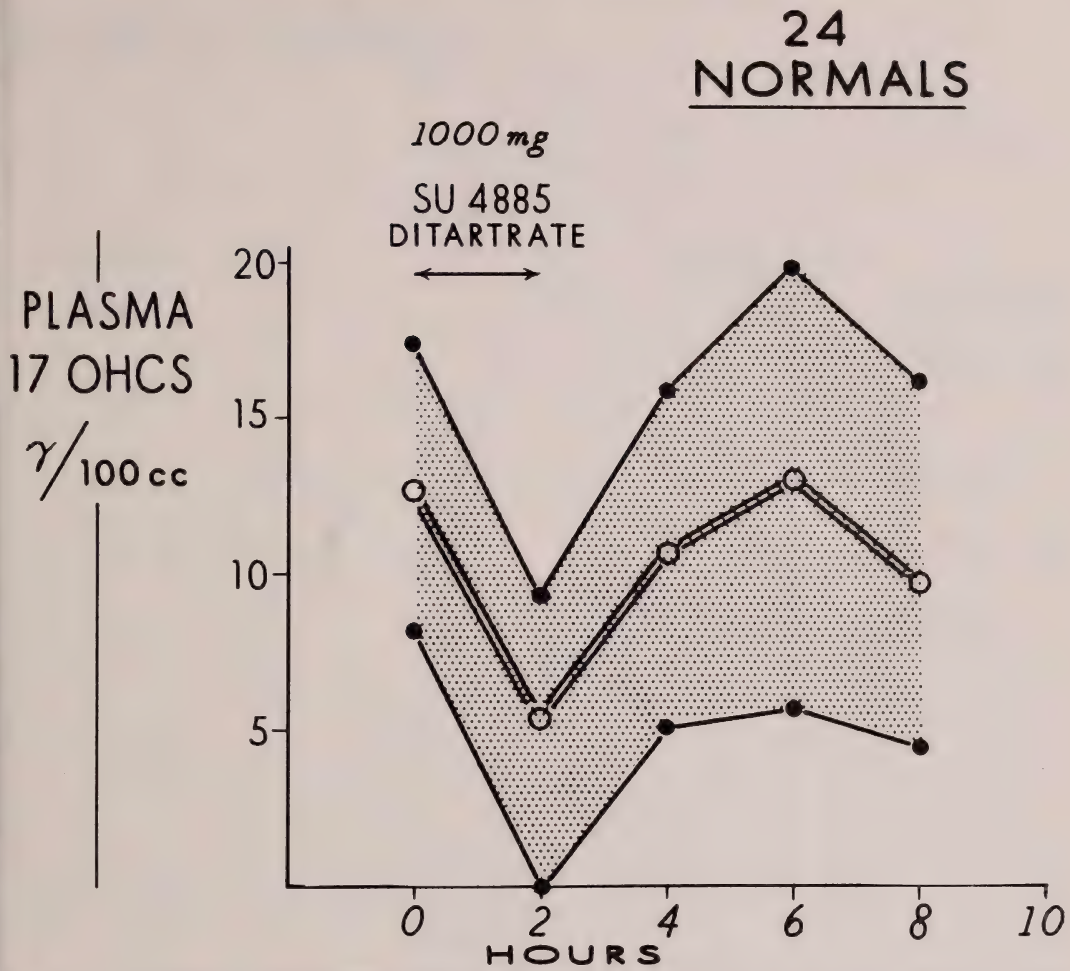

FIG. 3. Average levels of Porter-Silber chromogens in the plasma of 24 males averaging thirty-five years of age without evidence of endocrine disease after infusion of SU 4885.

lates the adrenal cortex to produce a number of adrenal steroids, one of the most important of which is hydrocortisone. This hormone is produced through a series of steps, originating with the parent steroid cholesterol and proceeding through hydroxyprogesterone to compound S which is then converted through beta-hydroxylation to hydrocortisone, or cortisol (Fig. 2). Hydrocortisone is the principal adrenal steroid present in the circulating blood, and its level in the circulating body fluid determines the extent of its control on anterior pituitary corticotrophic function. Jenkins *et al.*[3,4] and Liddle *et al.*[5] have demonstrated in animal and human experiments that SU 4885 interferes with the beta-hydroxylation of desoxyhydrocortisone, or compound S, to hydrocortisone. As a result, the hydrocortisone "brake" on the pituitary is removed, corticotrophin secretion is increased, and the production of compound S rises. Since compound S and hydrocortisone are 17,21-dihydroxy-20 ketosteroids, it is possible to determine either or both as Porter-Silber chromogens (OHCS). Thus, it appears possible that SU 4885 can be used not only as an adrenal suppressant but also, even if by indirection, as an index of anterior pituitary function.

Several groups are currently exploring this latter possibility by measurement of urinary Porter-Silber chromogens, or formaldehydrogenic 11-oxysteroids, following

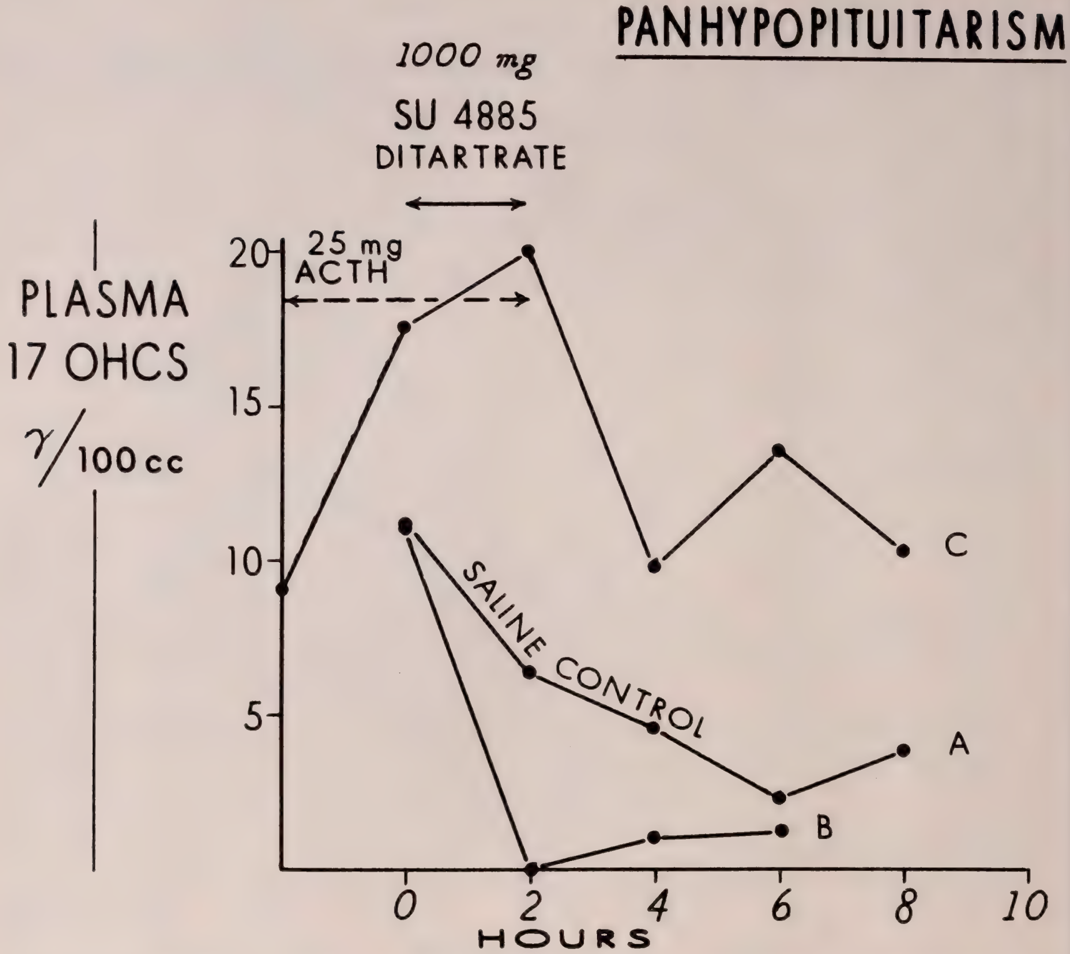

FIG. 4. Experiment demonstrating lack of pituitary response in patient with panhypopituitarism.

the intravenous or oral administration of SU 4885. Because of obvious difficulties related to urine collections we have confined our efforts to an attempt at developing a test utilizing a plasma assay.

Any test of pituitary-adrenal function employing serial determinations of plasma hydroxycorticosteroids must take into account the well-recognized diurnal variation of hydroxysteroids. The normal diurnal pattern is characterized by a rise in hydroxycorticoids from midnight to early morning, falling progressively during the following sixteen hours. This is repeated during each twenty-four-hour cycle and is relatively constant for healthy persons with normal sleeping habits.[6]

Material and Methods

We have found that dosage, timing of the infusion, and spacing of samples are crucial if consistent results are to be obtained. Large doses have been shown to completely inhibit adrenal biosynthesis in dogs[2,4] and man. We have found that the test is invalidated if conducted in the afternoon, when pituitary-adrenal sensitivity is known to be lessened, as recently shown by Gold *et al.*[7] We have also observed that running the infusion for ten minutes, four hours, and eight hours yields inconsistent results.

All tests were run by obtaining a control sample not later than 9:00 A.M., following which the subject was infused with 1,000

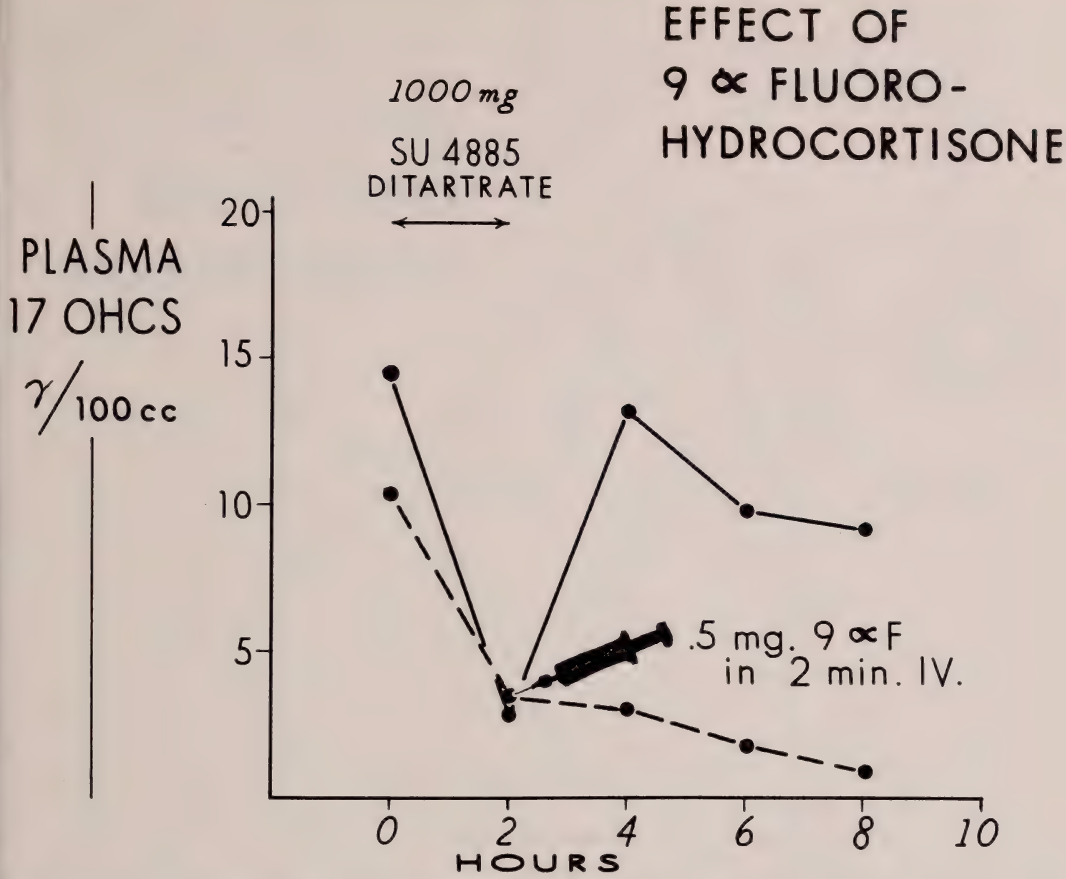

FIG. 5. Inhibition of normal pituitary response by fast infusion of 9-alpha-fluorohydrocortisone (solid line showing normal control response).

mg. of SU 4885* as the ditartrate in 250-cc. physiologic saline for a period of two hours. Plasma samples were obtained at two, four, six, and usually eight hours following the start of the infusion. Repeat tests in the same individual give reasonable reduplication of results. Determinations of plasma 17-hydroxycorticoids were performed using the method of Peterson, Karrer, and Guerra.[8]

Results in Normal Individuals

Figure 3 shows the average response of 24 normal male subjects (without clinical evidence of endocrine disease) averaging thirty-five years of age. Normally there is a fall in OHCS (17-hydroxycorticosteroids) at the end of the infusion, which may be interpreted as the period of interference with beta-hydroxylation, followed by a rise during the next four hours, representing the period of production of Porter-Silber chromogens under uninhibited pituitary secretion. The control level is approached six hours after the end of infusion.

Evidence That Rise in Porter-Silber Chromogens is Due to Pituitary Stimulation

NO RISE IN PANHYPOPITUITARISM.—A male patient with panhypopituitarism due to a huge chromophobe tumor was infused in three different experiments (Fig. 4). The saline control (curve A) denotes the gradual falling off of the effect of exogenous depo-

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* Generously supplied by Dr. C. H. Sullivan of the Ciba Laboratories, Summit, New Jersey.

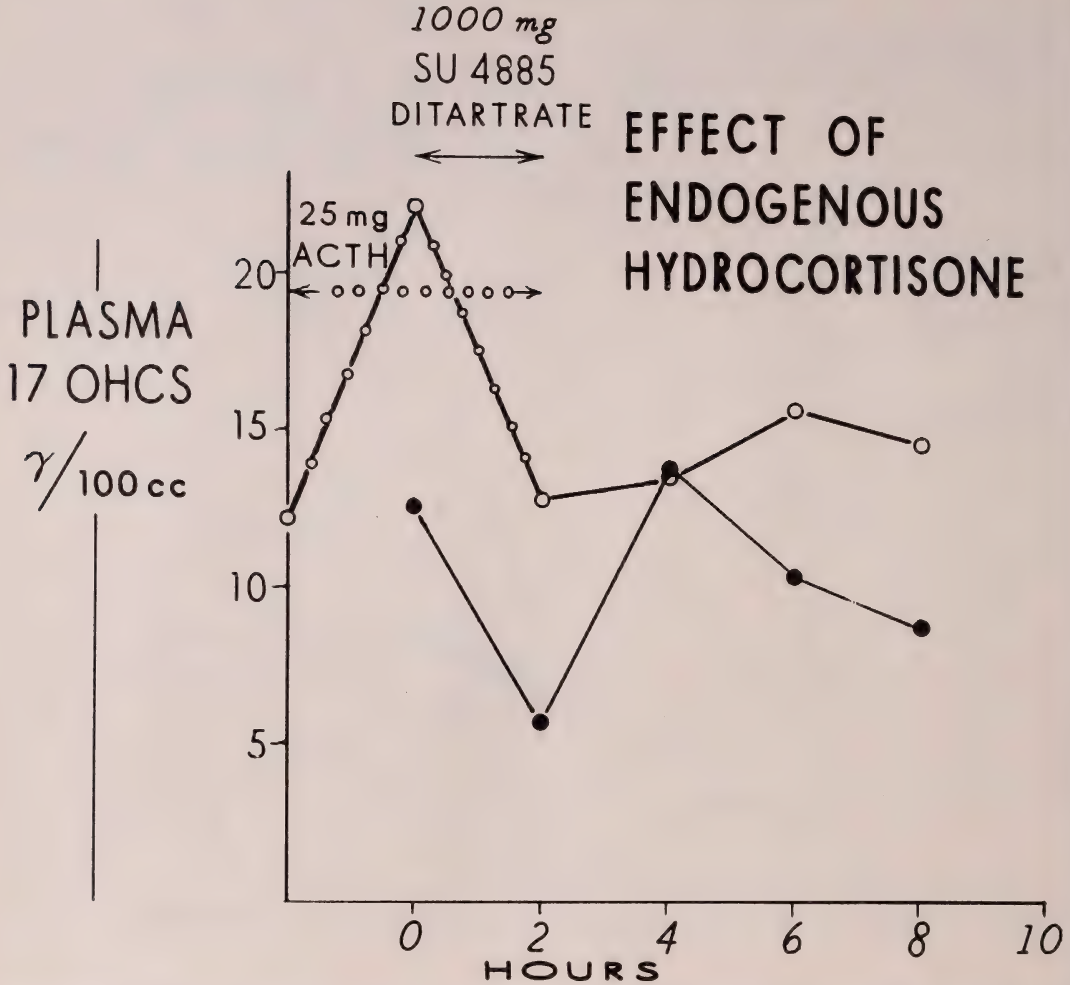

FIG. 6. Effect of endogenous hydrocortisone on pituitary response (lower curve showing normal control response).

corticotropin, on which the patient was being maintained. In curve B there is a complete lack of the expected rise in Porter-Silber chromogens after the end of the SU 4885 infusion at the four- and six-hour intervals. Some criticism of this latter experiment could stem from the possibility that even though this subject was being maintained by ACTH in gel, to avoid adrenal suppression caused by steroid maintenance, his adrenals might have been completely inhibited by the dose of SU 4885 and thus incapable of pituitary response even if it were capable of being elicited. Therefore, as a check he was given corticotrophin gel until random corticoid levels and the development of edema and mild hypertension indicated that his adrenal stimulation was, if anything, excessive. He was then infused with ACTH for four hours, during the latter two of which SU 4885 was also added to the infusion. It will be noted in curve C that there is a continued rise in Porter-Silber chromogens during the combined infusion, the latter two hours of which we assume to be due largely to compound S, with an abrupt fall following the withdrawal of exogenous ACTH, further indicating the dependence of the rise of Porter-Silber chromogens on endogenous

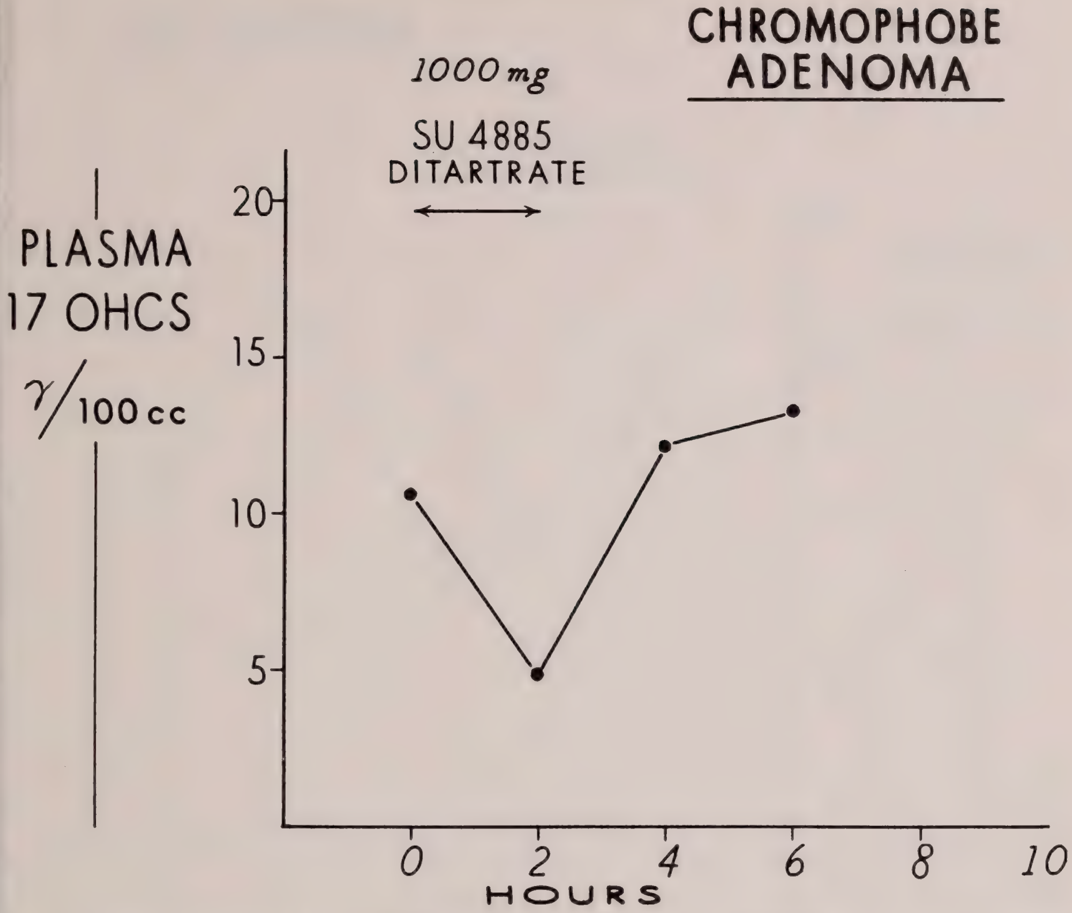

FIG. 7. Normal response of a forty-year-old male with chromophobe adenoma to the SU 4885 infusion plasma test of pituitary-adrenal function.

ACTH production in normal individuals at four and six hours.

SUPPRESSION OF PITUITARY RESPONSE FOLLOWING RAPID INJECTION OF 9-ALPHA-FLUOROHYDROCORTISONE.—A patient whose control response was normal was given 0.5 mg. of 9-alpha-fluorohydrocortisone over a two-minute period at the end of the infusion of SU 4885 (Fig. 5). 9-alpha-fluorohydrocortisone is not detectable as Porter-Silber chromogen. The complete opposite of the expected response indicates the dependence of the normal rise of Porter-Silber chromogens on pituitary stimulation.

EFFECT OF SUPPRESSION OF PITUITARY BY ENDOGENOUS HYDROCORTISONE.—A patient whose control response was normal was given a four-hour infusion of ACTH, during the last two hours of which he received SU 4885 (Fig. 6). The sharp rise of the Porter-Silber chromogen level during the first part of the ACTH infusion indicates increased endogenous production of hydrocortisone, whose suppressive effect on the pituitary we believe accounts for the lack of response after the cessation of the infusion of SU 4885.

Results in Various Endocrine Conditions

ASYMPTOMATIC CHROMOPHOBE ADENOMA.—A forty-year-old male gave a history of sudden onset of severe headache one year ago, at which time an enlarged sella was discovered. The initial investigation gave no clinical or laboratory evidence of pituitary hypofunction. More recently he

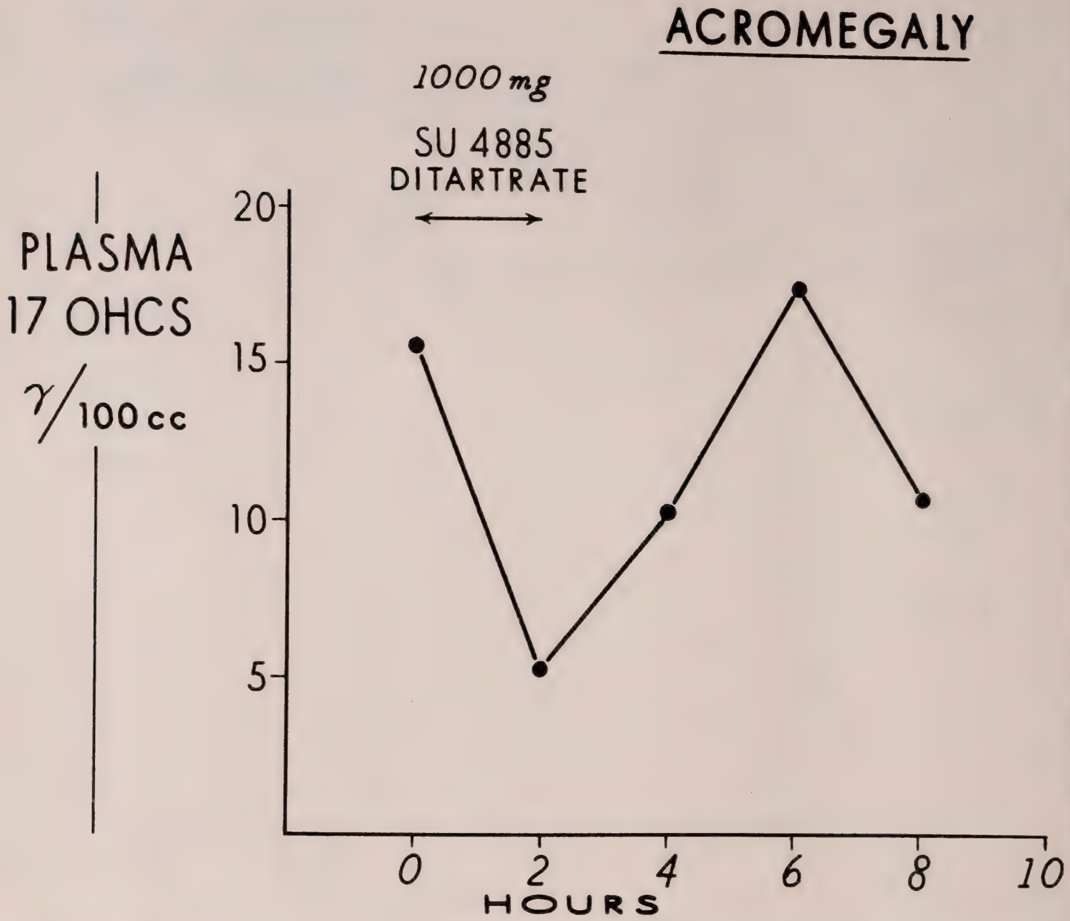

FIG. 8. Normal response of a forty-one-year-old male with acromegaly to the SU 4885 infusion plasma test of pituitary-adrenal function.

has shown clinical and laboratory evidence of decreasing gonadotropin production. A normal response with SU 4885 (Fig. 7) was obtained, suggesting that his corticotrophin production is unimpaired.

ACROMEGALY.—A newly diagnosed, asymptomatic forty-one-year-old male acromegalic patient, who had been admitted to the hospital for a herniorrhaphy, was tested. His response was normal (Fig. 8).

CUSHING'S SYNDROME.—A thirty-seven-year-old male patient with recurrent Cushing's syndrome was tested. This patient had been treated several years previously with unilateral adrenalectomy and pituitary irradiation which was followed by complete remission of his disease. He refused total adrenalectomy, and an adequate although apparently ineffective course of pituitary irradiation was administered several months previously. The continued rise of the Porter-Silber chromogens after the cessation of the infusion suggests excessive corticotrophin secretion (Fig. 9). It was planned to repeat the test for a longer period but unfortunately the patient died of a cerebral hemorrhage before this could be accomplished. The left adrenal was surgically absent. There was marked hyperplasia of the remaining adrenal. Information relative to the precise pathology of his pituitary is not available at present.

HYPOGONADISM.—Four young males suffering from primary hypogonadism, but

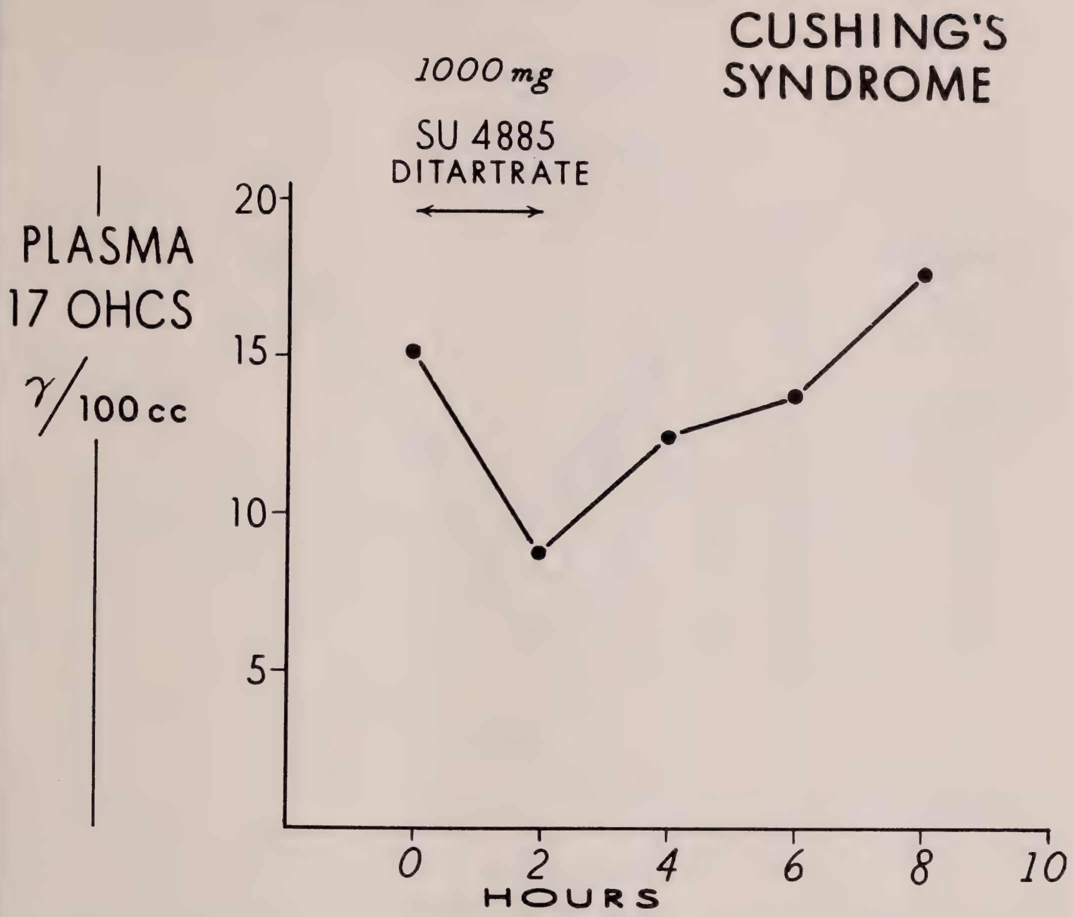

FIG. 9. Continued rise of plasma Porter-Silber chromogens after cessation of SU 4885 infusion in a thirty-seven-year-old male with Cushing's syndrome, suggesting excessive corticotropin secretion.

otherwise normal, were infused (Fig. 10). Two patients, J.H. and D.C., had perfectly normal responses; the response of R.B. is probably also within normal range. R.M., however, shows a somewhat abnormal response although he gave no detectable clinical evidence of pituitary-adrenal dysfunction.

HYPERTHYROIDISM.—Some degree of adrenal hypofunction has been variously reported in Graves disease.

Tests performed on 2 male patients with untreated severe Graves disease would suggest that this is probably not due to impaired corticotrophin production as has been postulated.[9]

Effect of Steroid Therapy

Suppression of the adrenal cortex by steroid therapy is a well-known occurrence. This is due primarily to suppression of pituitary corticotrophin, as shown by the prevention of cortical atrophy in animals receiving concomitant exogenous corticotrophin.[10]

Two patients who had received steroids chronically for the treatment of rheumatoid arthritis were tested with SU 4885 (Fig. 12). Patient C.N., a sixty-five-year-old male, had received cortisone or a derivative in varying doses since February, 1951. Steroid therapy was gradually tapered and was stopped on

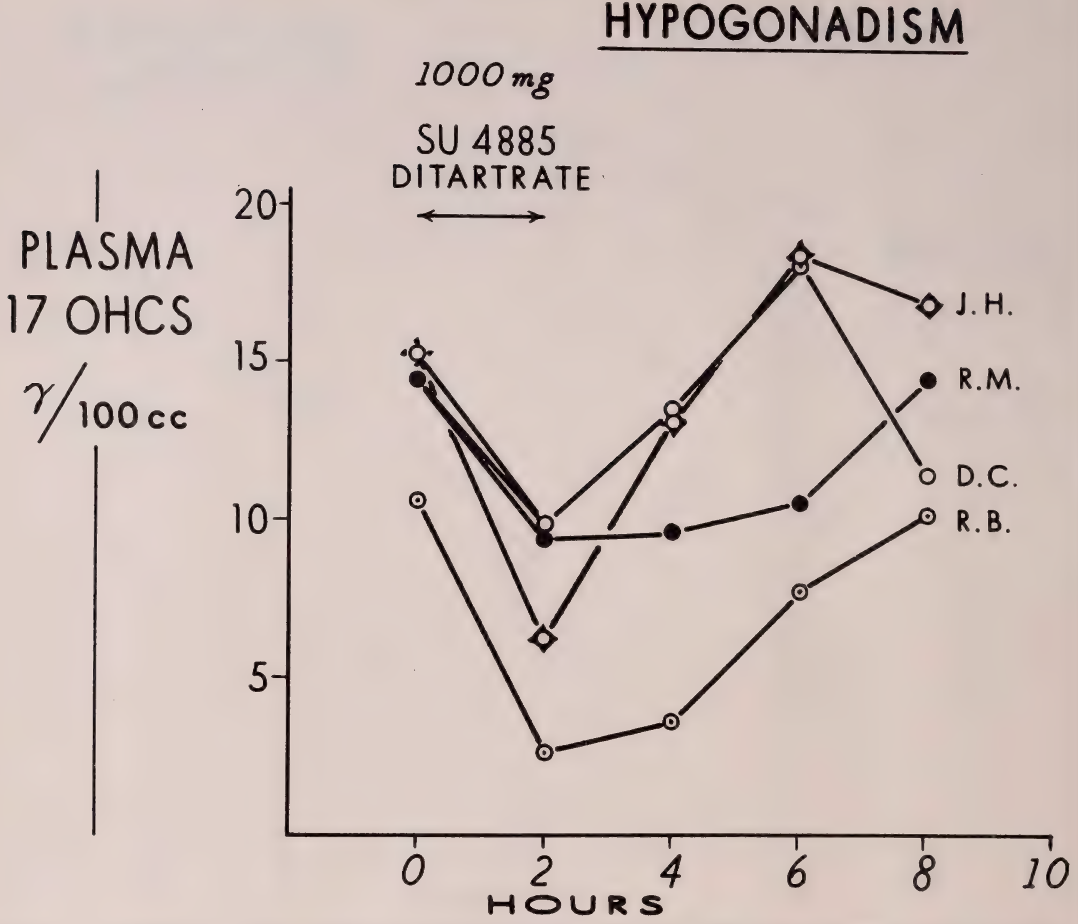

Fig. 10. Response of 4 males with primary hypogonadism to the SU 4885 infusion plasma test of pituitary-adrenal function.

March 9, 1959, followed by a brief course of ACTH in gel for four days. Twenty-four hours after the last dose of corticotrophin he was tested and showed a subnormal response. E.B. also was a sixty-five-year-old man who had received steroid therapy since 1952. The steroids were stopped on March 14, 1959. Twenty-four hours later he was given an intravenous infusion of 25 units of corticotrophin during the performance of a four-hour ACTH response test, which showed an initial value of 8.5 micrograms per cent 11-hydroxycorticoids with an elevation at four hours to 18.3 micrograms per cent. This was interpreted as indicating some diminution of adrenal response. His test with SU 4885 likewise gave an abnormal result.

E.Q. and R.R. were afebrile, ambulant tuberculous patients, forty-three and forty-six years respectively, who had received intensive combined antibiotic and steroid therapy for sixty days followed by a short stimulative course of ACTH for one week. The tests with SU 4885 were run fifty-six days after the last dose of corticotrophin. Both gave abnormal results. One week after testing with SU 4885 the adrenal response of these patients was tested with corticotropin. R.R. showed a 0-hour value of 7.3 micrograms per cent hydroxycorticoids with a rise to 23.8 micrograms per cent in four hours, which may indicate a moderate reduction of adrenal responsiveness. E.Q. showed a 0-hour of 11.6 micrograms per cent with a four-hour rise to 37 micrograms per

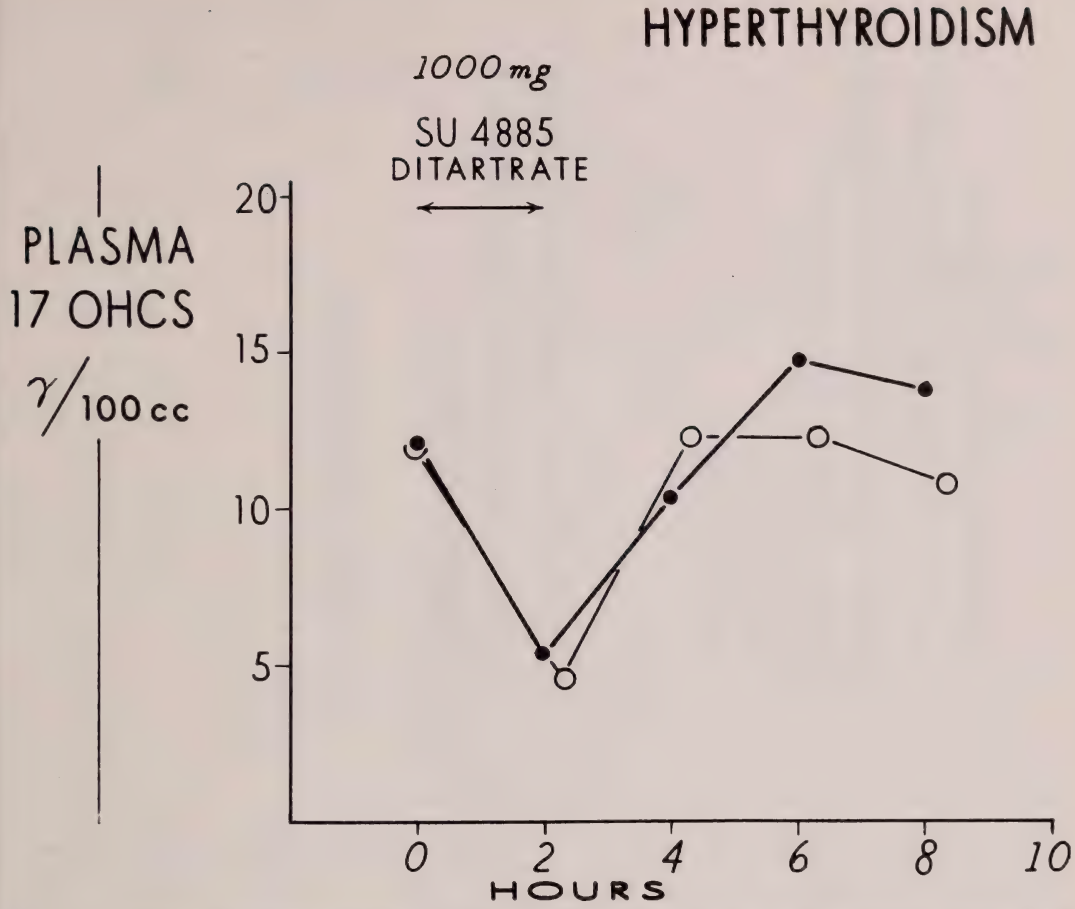

FIG. 11. Normal response of 2 males with severe Graves disease to the SU 4885 infusion plasma test of pituitary-adrenal function.

cent. This is within the normal range.

All of these tests would seem to imply subnormal or abnormal response of the pituitary-adrenal mechanism. The tests on E.Q. and R.R. would also suggest that pituitary suppression by steroid therapy may persist for a considerable period after therapy has been discontinued.

Conclusion

Preliminary studies seem to indicate that under carefully controlled conditions of dosage, time of performance of the test, and timing of samples, SU 4885 may be used as an indirect test of pituitary corticotrophic function in man.

The authors would like to express their appreciation to Miss Margaret Davidson for the typing of the manuscript.

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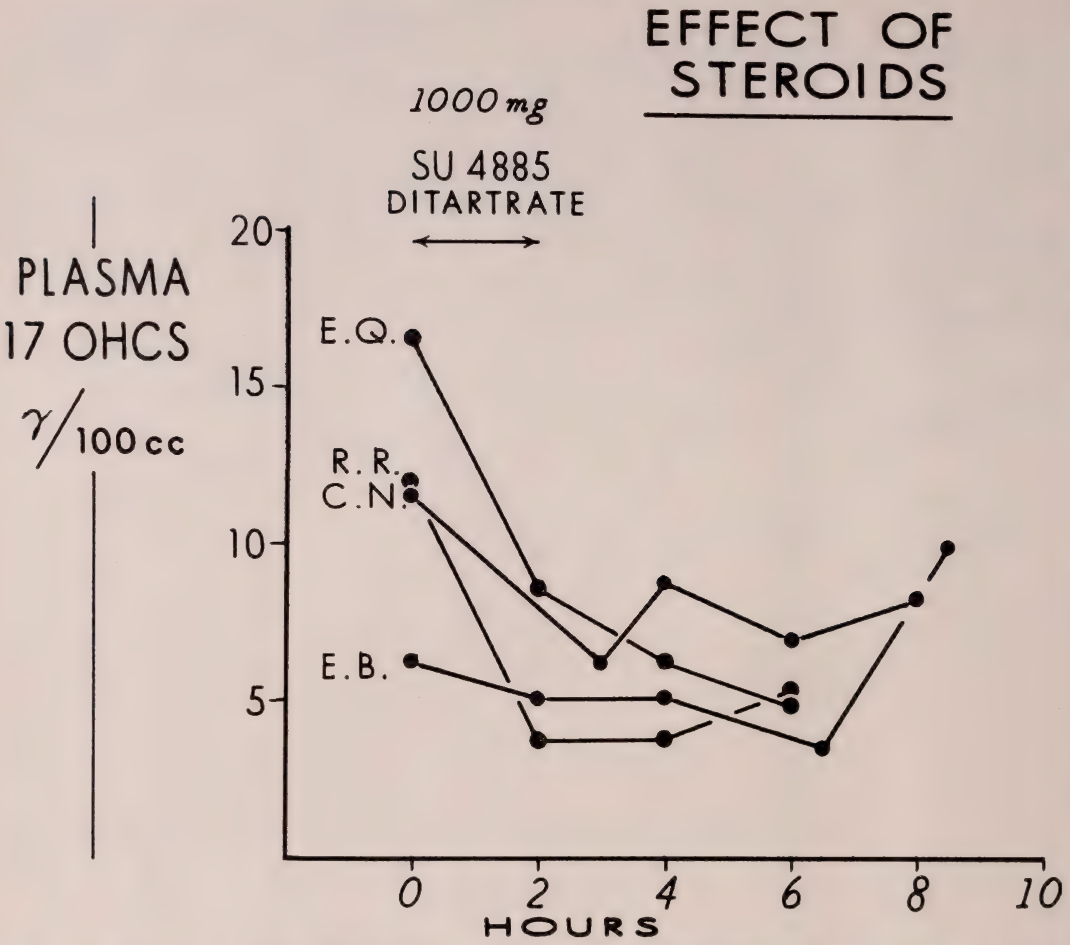

FIG. 12. Response of 4 males receiving steroid therapy, 2 for rheumatoid arthritis (C.N. and E.B.) and 2 for tuberculosis (E.Q. and R.R.), to the SU 4885 infusion plasma test of pituitary-adrenal function.

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Discussion

Thomas F. Frawley, M.D., *Albany, New York.*—It is indeed a great pleasure to be given the opportunity of discussing this most interesting, comprehensive, and thought-provoking paper by Dr. Bissell and his associates. They have, by virtue of exhaustive studies, shown that we may now have a technic for evaluating adrenocorticotropic function of the anterior pituitary.

At the present time we have fairly reliable methods for detecting the level of most of the anterior pituitary tropic hormones. Radioiodine studies provide some index of pituitary thyrotropic hormone (TSH). Some of the gonadotropic hormones can be satisfactorily measured. The problem of assaying ACTH has been made difficult by virtue of problems in separating this material in plasma samples and by not having a suitable assay procedure. The work of Nelson and Hume[a] has shown that by measuring directly the adrenal cortical effluent by means of a cannula in the adrenal vein, the level of ACTH in samples injected into these dog preparations can be assayed with reasonable accuracy. However, this type of animal prep-

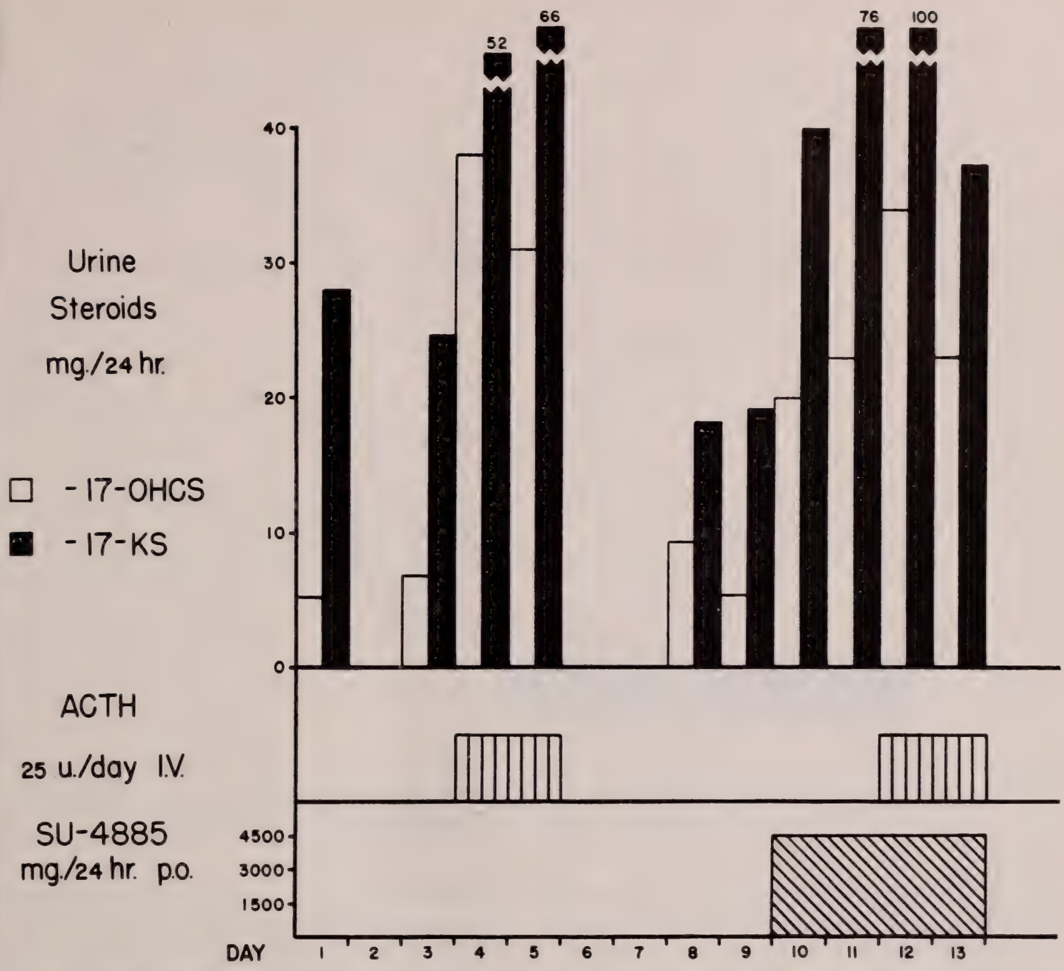

FIG. A. Effect of orally administered SU 4885 on 17 KS and 17 OHCS excretion in a thirty-three-year-old female with adrenal hyperplasia.

aration is not readily available, and the technic for measuring the various adrenal steroids from plasma samples is rather detailed and difficult. There has been an increasing need for a simplified method for measuring ACTH. Unquestionably there are certain clinical instances of relative ACTH deficiencies which often go unrecognized. It is also likely that there are pituitary disorders that are manifested solely by unitropic deficiencies, such as ACTH or TSH, rather than classic pluritropic deficiency states. The studies of Dr. Bissell and his associates suggest that one can detect such abnormal states of ACTH production whether it be a single deficiency or part of a plural deficiency of pituitary hormones.

Like Dr. Bissell, we have been conducting for the past two years a number of studies employing the compound designated as SU 4885. We have found that this material can be used orally as well as intravenously. Dr. Hansjorg Kistler, working in my laboratory, has shown that although the oral form will give the same type of information, the intravenous method is more precise and much more reproducible. The oral dose is 750 mg. every four hours. The intravenous test consists of an infusion of SU 4885 in an amount of 1,000 mg. given over a two-hour period.

The study described on this slide shows the effect of orally administered SU 4885 on the response of urinary 17-ketosteroids in a patient with adrenal hyperplasia (Fig. A). With ACTH alone there was a marked increase in 17-ketosteroids to 66 mg. per twenty-four hours. With SU 4885 there was a progressive increase in 17-hydroxycorticoids and 17-ketosteroids. On SU 4885

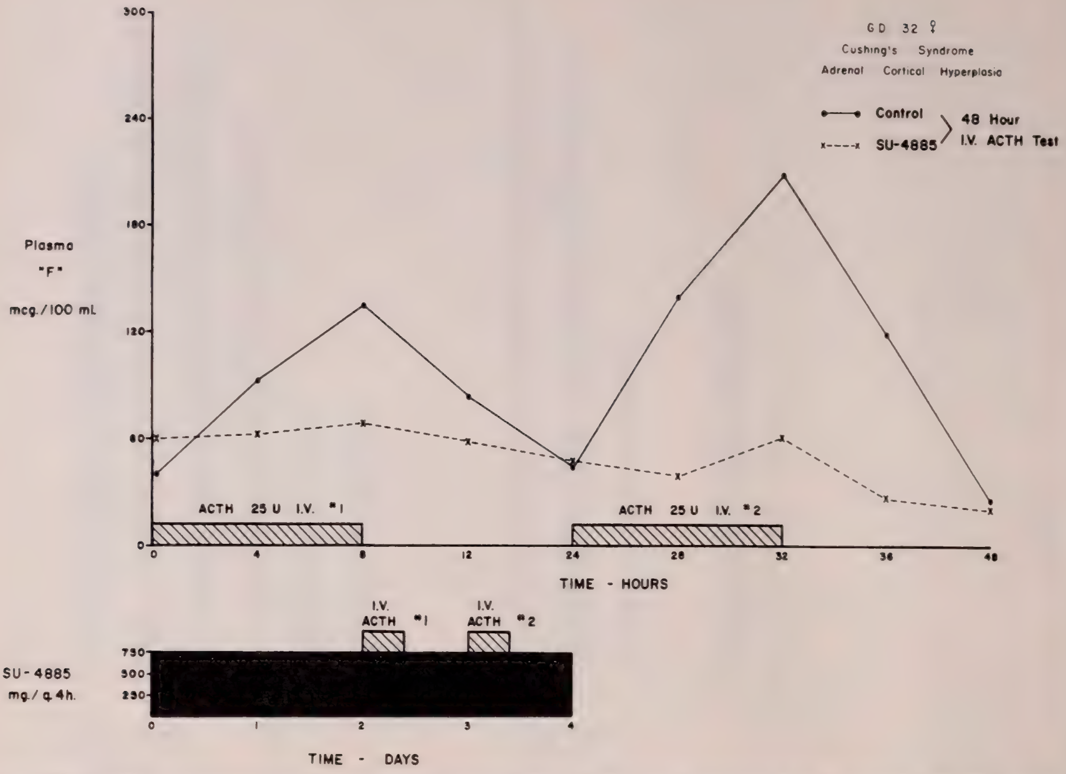

FIG. B. Experiment in thirty-two-year-old female with Cushing's syndrome and adrenal cortical hyperplasia, demonstrating the direct inhibitory effect of SU 4885 on the adrenals.

the 17-hydroxycorticoids increased from a control value of approximately 7 mg. per twenty-four hours to more than 20 mg. per twenty-four hours. The 17-ketosteroids increased from a control of 18 mg. per twenty-four hours to about 40 mg. per twenty-four hours on the first day and to 76 mg. per twenty-four hours on the second day. With ACTH there was a further increase in both 17-hydroxycorticoids and 17-ketosteroids.

In the second study performed in a normal subject the same type of response was observed. We interpreted these results as meaning that without normal suppression of pituitary ACTH, due to a block in cortisol synthesis, there is increased ACTH production and with this an increase in urinary steroids of the noncortisol type.

That this effect of SU 4885 is directly upon the adrenal is shown in this next study, where plasma cortisol was measured following ACTH administration (Fig. B). Without SU 4885 the plasma F rises sharply with each injection of ACTH. With SU 4885, however, a markedly reduced rise is noted. Since the final step in cortisol synthesis by the adrenal is due to 11-beta-hydroxylation and since all other steroids that precede this hydroxylation step have been identified in the urine, it is concluded that this compound works, as pointed out by Jenkins *et al.*[3,4] and Liddle *et al.*[5] as well as by the study of Dr. Bissell, by inhibiting this hydroxylation step.

Dr. Kistler has been able to detect mild forms of ACTH deficiency, such as might occur following irradiation of the pituitary for pituitary tumors. As a result of his studies we envision that this material may find a place in a variety of situations, such as: (1) detection of early pituitary ACTH deficiency, (2) determination of the completeness of hypophysectomy, (3) treatment of selected cases of Cushing's syndrome, particularly adrenal cortical carcinoma where adrenalectomy and / or pituitary ablation have not completely erradicated the process, and (4) detection of the effect of certain pharmacologic agents on the release and production of pituitary ACTH.

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RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Present Status of Surgery of the Stomach and Duodenum

BJORN THORBJARNARSON, M.D., AND FRANK GLENN, M.D., NEW YORK CITY

(*From the Department of Surgery, New York Hospital, Cornell Medical Center*)

SURGERY OF THE STOMACH

Congenital Anomalies

Hypertrophic Pyloric Stenosis.—Pyloromyotomy is now recognized as the treatment of choice in pyloric stenosis of the newborn. This is a disease more common in first-born males than in other infants. Symptoms, one of which is projectile vomiting, are usually manifest in the third to sixth week of life. The diagnosis is established almost solely by palpating the hard tumor under the edge of the liver and observing gastric peristalsis in the epigastrium. Some experience in palpating pyloric tumors is needed to develop assurance, and often repeated examinations are necessary. It is often helpful to feed the child while he is being examined since this prevents crying and straining. The operation is best carried out through a right subcostal gridiron incision. Technical details in performing pyloromyotomy are few. The tumor usually invaginates the duodenum distally creating a fornix, a situation in which there is danger of entering the lumen when the remaining fibers of the muscle are divided. It is of utmost importance, however, to do a complete myotomy. If an opening is made into the duodenum, it should be closed with sutures for the mucosa only. A tag of omentum may be sutured over this and nasogastric suction applied for twenty-four hours.

Benson and Warden[1] reported on 707 cases recently. The postoperative mortality was 0.6 per cent. A palpable tumor was present in 68 per cent of their patients. Radiologic examination was carried out in 25.6 per cent of cases, but the authors do not think it necessary to resort to radiologic examination this often. The average preoperative stay in the hospital in the last eight years was 1.8 days, which indicates how early the syndrome is now recognized with prompt treatment before debilitating dehydration and alkalosis set in.

Hypertrophic Pyloric Stenosis in Adults.—This disease, which is fairly common in the newborn, is rarely found in adults, but when so found it is also more common among males. Clinically there are three categories: symptoms since childhood, atypical ulcer symptoms beginning in adult life, and sudden development of obstructive symptoms in adulthood. Eleven patients have been encountered in this hospital with adult pyloric stenosis.[2] Symptoms had lasted from one to thirty-seven years, and in only 2 of these patients was the diagnosis made before operation. The treatment recommended is gastric resection, since 3 of the patients had concomitant gastric ulcers and 2 had duodenal ulcers. It is often difficult to recognize the lesion at operation, since it may easily mimic a neoplasm.

Duplications.—Duplications are congenital embryonal anomalies. Because the stomach in early embryonal life and after the duplications form is a thoracic organ, these structures may be found up in the mediastinum and mimic more common mediastinal tumors, causing respiratory and circulatory difficulties.[3] Other locations are along the curvatures of the stomach and close to the pylorus, where it may cause obstruction and be mistaken for hypertrophic pyloric stenosis. When these tumors are removed they may have all the layers of the stomach wall. Often the mucosa is gastric but does not have to correspond to the mother organ. Occasionally acid gastric secretions may be found in these duplications, causing peptic ulceration, bleeding, and perforation. As a rule these symptoms are evident in early childhood. Occasionally these anomalies may persist and remain unrecognized until they cause symptoms later on in life.

Cancer

Surgery of the stomach has seen many improvements and advances since Billroth performed the first successful resection of the pylorus in 1881 and the first successful total resection of the stomach was performed in 1897. Ever since that time it has been the only effective treatment for cancer of the stomach. This tumor used to be the most common malignant tumor of the digestive system but lately the intestine has surpassed the stomach as the source of most deaths from cancer. Still, the death rate for gastric cancer is 13 per 100,000 population per year. Males are twice as frequently afflicted as females. There seems to be an increased disposition among persons of group A blood to develop carcinoma of the stomach.[4] Heredity may play a role. Carcinoma is seen three times more often among patients with pernicious anemia than in the average population. Other etiologic factors are gastritis, polyps (which are malignant in 30 per cent of cases when removed), and race (for example, this tumor is twice as common among Japanese males in Hawaii than among other races there.[5] The signs and symptoms are insidious, 30 per cent of the patients having had symptoms for over a year when operated on and only 20 per cent having had symptoms for less than three months. The complaint of anorexia, slight weakness, mild epigastric pain, and/or low-grade fever is often dismissed or overlooked when patients are first seen. As a result, the most common symptom at the time of diagnosis is weight loss, which occurs in 90 per cent of cases. Unfortunately it too often is a late manifestation of the disease. The next most common symptom is epigastric pain, which is reported in 55 per cent of cases; all too frequently pain of this type is not immediately associated with malignant lesions of the stomach.[6]

Diagnosis.—Roentgenologic examination is still the most reliable method of diagnosis for gastric neoplasms. In doubtful cases gastroscopy and especially exfoliative cytologic studies, as advocated by Papanicolaou and Cooper from this institution, may be helpful. However, the value of the cytologic method is dependent on its being expertly carried out and interpreted. Cytologic diagnosis by chymotrypsin lavage technic was reported as 89.5 per cent accurate in 38 cases by Umiker *et al.*[7] with only 2 false positives found. Ross *et al.*[8] reported 41 cases in which 29 were diagnosed by cytologic methods. Radiologic and cytologic methods seem to be outstanding in the evaluation of gastric lesions, particularly since one often supplements the other in doubtful cases. Certain areas of the stomach are less accessible for diagnosis by radiographic methods than others, such as the cardia.[9]

Carcinoma vs. Gastric Ulcer.—How often a gastric ulcer previously benign becomes malignant is still an unanswered question. Similarly, it is debatable whether all carcinomatous gastric ulcers are malignant from their inception. Carcinomas of the stomach, however, often appear as ulcerating lesions; although most of the time there is no doubt about the correct diagnosis, how often carcinoma masquerades as a benign-looking ulcer and how best to approach the problem of differential diagnosis are questions which are often raised. In spite of expert evaluation in the most advanced institutions there appears to be an irreducible minimum of carcinomas faithfully simulating benign ulcers.[10–13] The estimates of this occurring vary from 10 to 20 per cent in instances in which there is still some doubt after thorough investigation. Some estimates are even higher.

On the basis of the higher estimates many feel that all gastric ulcers should be treated promptly and surgically. In support of surgery is the fact that the cure rate is three to four times higher in cases of cancer found in this group than in those of clinically diagnosed carcinomas. Another argument for surgery is that 80 per cent of gastric ulcers are refractory to or recur after medical therapy.[14] Surgeons argue that the mortality from operations for gastric ulcers is now 2 per cent or less[13] and that good results are obtained in 90 per cent of patients undergoing surgery.[10] The arguments against surgery as the treatment of choice for gastric ulcers are: (1) the incidence of overlooked or misdiagnosed carcinomas is not as high as it is proposed to be,[12] (2) only a few highly advanced institutions have a mortality of 2 per cent or less from gastric resection, (3) the side-effects of gastric resection, although it may cure the ulcer symptoms, are such that many patients may be left worse off than they were before. We believe that more patients with gastric ulcers should be treated surgically than is being done at present. There will be individual cases in which medical treatment solely may be used to advantage, as in the young person with a long history of ulcer symptoms and free acid in the stomach. On the other hand, the person in the older age group with no free acid in the stomach and perhaps a history of short duration of symptoms should have prompt operation, even if conclusive proof of malignancy is lacking and even though it is known that the operative mortality will be higher in the older age group.

Operation.—Most investigators agree that in spite of the modern advances in pre- and postoperative care and anesthesia the results from gastric cancer operations have not followed suite; results of the resection of these lesions is about the same as twenty years ago, and the number of five-year survivors has not increased too much even though more radical procedures are more widely advocated and practiced than before. Some authors on this subject maintain that there is an inverse relationship between the delay in the diagnosis and both resectability and survival in gastric cancer. They explain this on individual biologic variability among these tumors in different patients. Although surgery is the sole hope for cure, we have not yet found the proper standards by which to apply the different surgical methods.[15] The mortality after subtotal gastrectomy for cancer as most favorably reported is now about 5 to 6 per cent and for total gastrectomy as low as 7 per cent.[5] In most institutions, however, it is considerably higher, and in a recent article the mortality is reported as 11.1 per cent for subtotal resection and 23.3 per cent for total resection.[16] This illustrates the range of results from different hospitals. The hope that the number of long-term survivors will be increased by extending the scope of surgery has not generally been realized. McNeer and coworkers,[16] however, maintain that there has been almost threefold improvement in resectability of gastric cancer in the last fifteen years and that operability has improved one-third. An encouraging sign that has emerged is that the outlook for patients with localized lesions, that is without metastasis, is much better than for the others.

Marshall[6] found that 34.8 per cent of 327 patients with no metastases survived five to ten years with only 7.2 per cent of 529 patients with lymph node metastases surviving the same period of time. The same author found the absolute five-year survival for cancer of the stomach to be 10.8 per cent and the ten-year one 7.4 per cent. Another author accumulated 9,177 cases and found an absolute five-year survival of 5.7 per cent.[17]

The immediate mortality or postoperative mortality in cancer of the stomach has greatly decreased in the last twenty years, and late morbidity also has been overcome to some extent. It is apparent, however, that most, if not all, patients who survive long enough after total gastrectomy will develop a macrocytic anemia, which responds to vitamin B_{12}.[18] Hypochromic anemia, which may be improved by iron and vitamin administration, is often found.

The problem of creating a gastric reservoir to improve the patient's ability to eat and retain food and to improve resorption from the intestinal tract has been overcome in various ways. We have used with good results an interposed loop of jejunum, as suggested by Free and coworkers.[19] The operation performed consists of a total gastrectomy, including removal of the greater omentum and spleen. Often the tail of the pancreas is removed at the same time. Attention is paid to node dissection along the celiac artery and its branches and between the head of the pancreas and the duodenum. Adjacent organs have been removed en block when they have been involved. There were 3 postoperative deaths in this group, or a mortality of 12 per cent. Ten patients survived long enough to allow estimates of nutritional results. Six of these gained weight following discharge from the hospital. All of these patients were given multiple small feedings after the operation. They were instructed in the application of a low-carbohydrate, high-protein diet without restriction of fat.

Only 1 of these patients had symptomatic dumping after the operation, and the 10 patients who survived for six months returned to their occupations.

SARCOMA.—Sarcomas of the stomach are relatively rare lesions. In various reports their incidence is from 1 to 5 per cent of malignant tumors of the stomach. In the New York Hospital the incidence is over 7 per cent.[20] Differential diagnosis before operation is difficult and usually carcinoma is suspected. During operation leiomyosarcomata are easier to recognize than lymphomata because of their small area of origin and bulky cystic nature. The outlook for patients with these lesions is considerably better than for those with carcinoma. In our series of 50 patients over half were alive five years after operation, including both operable and inoperable cases. Large and bulky tumors of the stomach should not deter surgeons from operation even though invasion of neighboring organs may have occurred unless the diagnosis of cancer has been established. Leiomyosarcomata are often slow-growing tumors, and therefore wide removal is not necessary for long survival. It is doubtful that radical procedures for lymphoma in this location are necessary since we have had a few patients survive for many years even though it was felt that some tumor had been left behind. Most of these patients were treated by radiation therapy in addition to surgery.

Radiation therapy alone, however, does not seem to be effective in controlling lymphoma of the stomach.

Benign Conditions

Gastric Ulcers.—Peptic ulcers are considered to be caused by increase in corrosive action of the gastric contents and diminished defensive measures in the areas affected. Gastric ulcers have been divided into categories according to symptoms, location, and pathophysiologic findings. The pyloric canal and prepyloric ulcers have symptomatology somewhat similar to duodenal ulcers and often are similarly accompanied by hypersecretion and hyperacidity, which can be demonstrated clinically. Another type is the gastric ulcer associated with duodenal ulcers. Multiple gastric ulcers have been found to be twice as common among patients with duodenal ulcers as not. These gastric ulcers have been demonstrated to arise later than the duodenal ulcers with the secretory pattern somewhat similar. The third type is the gastric ulcer located higher on the lesser curvature and associated with a long hypotonic stomach and hypo- or achlorhydria. Johnson[22] suggests that local hyperacidity is present in the long atonic stomach because of failure of mixing. This local hyperacidity first stimulates the secretion of mucus which prevents ulcer formation, but later this defense mechanism becomes exhausted and ulceration results. He also makes the observation that the stomach of duodenal ulcer patients often is of the steer-horn or transverse type, allowing good mixing of the antral and fundus secretions and thus minimizing the occurrence of gastric ulcers until some degree of pyloric obstruction occurs; stasis in the antrum stimulates further and uncontrolled acid formation with the exhaustion of the protective mucus production. The role of the antrum in producing gastric ulcer has also been postulated by Dragstedt,[23] who found that this occurred following vagotomy for duodenal ulcers.

The incidence of gastric ulcers is highest around the age of forty, or ten years later than for duodenal ulcers. The complications of gastric ulcers are the same as of duodenal ulcers with the possible addition of malignant degeneration. Thus bleeding, obstruction, perforation, and intractable pain all occur in the natural course of the disease. The complication of bleeding is much more serious in gastric ulcers than in the duodenal variety and usually requires prompt surgical intervention. Thus Lipp[24] reports 7 deaths among 15 patients with bleeding gastric ulcers. Dworken[14] reports on 129 patients with gastric ulcers treated medically and followed for forty-six months. Only 20 per cent continued free from symptoms after the treatment. Fifteen per cent were operated on, 22 per cent had symptoms for five to twelve months each year, 18 per cent had symptoms one to four months each year, and 25 per cent had symptoms for less than one month each year. Thus, there were apparent good results in 45 per cent of the cases. Comfort *et al.*[13] report on 779 benign gastric ulcers treated surgically, with a postoperative mortality of 1.5 per cent. Serious late complications of dumping and recurrent ulceration were found in 4 per cent of the patients. Hastings *et al.*[25] reports on 100 patients who had operations for gastric ulcers with only 3 dissatisfied patients. The authors judged the results excellent or good among only 78 of the same 100 patients, and only 1 patient had a recurrent ulceration. Therefore, the subjective and objective evaluation of results vary. Most of the poor results observed were from failure to maintain weight. The great majority of the patients had more than 60 per cent of their stomach removed. The necessity for distinguishing between benign gastric ulcers and carcinoma of the stomach has been discussed previously, and the fact is universally recognized that in spite of intensive diagnostic studies it is sometimes impossible to distinguish between the two. We believe firmly that prompt surgery should be performed whenever there is the slightest element of doubt. In certain instances medical therapy is instituted. When this is done, close observation has to be carried out to confirm the success of the therapy and benign character of the lesion.

The size of the ulcer probably is no indication of its nature, but large lesions have a worse prognosis without surgery.[26] Ulcers on the greater curvature should always be regarded with suspicion. On the other hand, posterior penetrating ulcers most often are benign. A gastric ulcer may be assumed to be benign if it heals completely on medical therapy within three to six weeks. The crater has to disappear and normal motility and peristalsis must be demonstrated in the ulcer-bearing area. Subjective symptoms should disappear quite early. A priori it may be assumed that ulcers over 2 cm. in diameter, recurrent ulcers, ulcers that have previously perforated, and those in which back pain or hyperacidity is present have a poor prognosis for healing on medical therapy, and early surgery is recommended even though no suspicion of malignancy exists.

Operation.—The gastric ulcers associated with duodenal ulcers or located in the pyloric and prepyloric area are usually associated with hyperacidity and some hypersecretion. When this is the case the resection has to be fashioned to decrease the acid-producing area and to remove the antrum. As a rule two thirds of the stomach should be removed. In the case of the gastric ulcer associated with hypochlorhydria the lesion is probably caused by poor mixing and neutralization in the proximal reaches of the stomach, and a large resection or vagotomy is not necessary. When the ulcer is so close to the esophagus that removal would destroy the mechanism guarding against reflux, serious thought should be given to leaving the ulcer in situ if biopsy and frozen section reveal it to be benign. A distal gastric resection and gastroenterostomy will in most cases be followed by healing of these ulcers.

Billroth I vs. Billroth II Resection.—The Billroth I operation is usually easily performed in persons with gastric ulcers because the duodenum is not scarred or fixed to the pancreas. The beneficial effects from the Billroth I operation are: (1) less time is consumed during operation, (2) the danger of duodenal stump perforation is eliminated, and (3) normal continuity is re-established, allowing more mixing of the food with the bile and pancreatic secretion with somewhat better fat resorption resulting. It is becoming apparent, however, that several drawbacks exist with this procedure, in particular the higher recurrence rate of proved ulcer and ulcer symptoms than after Billroth II. We believe that increasing evidence will appear that the recurrence rate of ulcers after the Billroth I operation is much higher than for Billroth II, in particular in operations for duodenal and gastrojejunal ulcers. The incidence of marginal ulcers is small in patients with gastric ulcers, but even here some increase is seen after gastroduodenostomy. We believe the Billroth I operation should be reserved mainly for gastric ulcers and that only in these cases will it find permanent recognition as a useful procedure.

GIANT HYPERTROPHIC GASTRITIS.—The differential diagnosis of benign giant hypertrophic gastritis from carcinoma or lymphoma is often difficult. The filling defects observed on barium examination and the gastroscopic appearance may in many cases offer insurmountable difficulties. It is, however, of importance not to subject these patients to an unnecessary major operation, which often has to be a total gastrectomy if the lesion is thought to be malignant.

Steigmann and coworkers[27] advise that a patient presenting large rugae be given a trial of medical management if: (1) the symptoms have been of many years duration, (2) the patient previously responded to medical management, (3) the abdominal pain and tenderness are mild and localized, (4) the acidity is high, and (5) if gastroscopy reveals large rugae with comparatively smooth mucosa. These authors feel that short duration of symptoms, severe generalized abdominal pain and tenderness, severe nutritional disturbances, marked weight loss in a short period of time, and enlarged spleen or lymph nodes are suggestive of a malignant lesion. Mucosal changes of bleeding and nodularity seen on gastroscopy are additional findings for a possible malignancy. Strode[28] feels that differentiation is difficult even at surgery. He finds that the stomach is usually larger than usual, that there are enlarged lymph nodes locally, and that not infrequently the organ is involved in surrounding adhesions. The disease is more common in males and may affect the whole stomach or only a small area. When these patients are subjected to surgery it is best only to establish diagnosis unless the patients' symptoms are severe. It seems that subtotal gastrectomy with even incomplete removal of the rugae may afford relief.

Prolapse of Gastric Mucosa.—The diagnosis of prolapse of the gastric mucosa is made by the radiologist and depends on demonstrating a mushroom-shaped defect in the duodenal bulb with rugae continuous through the pylorus. The symptoms of prolapse of the gastric mucosa are not specific, and this finding does not imply that it is causing symptoms. In a series of 133 patients from this institution it was estimated that the condition was asymptomatic in 43.[29] Bleeding and pain may occur from this affliction, and peptic ulceration may be associated with it. Medical therapy is effective in about half of the symptomatic patients. The symptomatic patients not relieved by medical therapy are often relieved by subtotal gastric resection, in particular when hemorrhage is the indication for surgery.

Eosinophilic Granuloma.—Although it is not of common occurrence, isolated cases are reported of a granulomatous disease of the stomach and duodenum in which eosinophilic leukocytes predominate.[30] The symptoms may be those of ulcer-type pain, often periodic, with anorexia and weight loss. There apparently are two forms of this disease. In one the symptoms are of long duration with eosinophilia in the peripheral blood and radiologic evidence of deformity of the duodenal bulb; in the other type the symptoms are of short duration with no systemic eosinophilia and a polyp-like appearance of the lesion radiographically.[31] Sometimes there is diffuse infiltration and rigidity of the antrum of the stomach. On the basis of these findings the diagnosis may sometimes be made before operation, and we have been able to do this. The differential diagnosis is mainly between a malignant tumor or peptic ulcer and the true lesion.

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SURGERY OF THE DUODENUM

Congenital Anomalies

The site of congenital obstruction of the duodenum due to atresia or stenosis is usually at the ampulla of Vater.[1] The bile may drain into the proximal or distal part. Symptoms are evident soon after birth and require prompt intervention. The obstruction may be visualized by fluoroscopy after contrast material has been given by mouth. Sometimes confusion arises both radiographically and at surgery from the huge dilation and thickened wall of the first portion of the duodenum, easily mistaken for a part of the stomach proper. The best operation for its relief is side-to-side anastomosis of the first portion of the duodenum to the jejunum by making a rent in the transverse mesocolon.

Two premature children with duodenal obstruction were observed by us during the last year. Both were females; one had atresia, the other stenosis. Side-to-side anastomoses were successfully completed in both children. One of these children survived, the other died suddenly from aspiration through a small tracheoesophageal fistula which had not been recognized preoperatively. The combination of two or more congenital anomalies should always be suspected and looked for in these infants before surgery is attempted since they commonly occur.

Enterogenous cysts or duplications occasionally are found in the duodenum and produce atypical symptoms by causing obstruction of varying degrees. Kirtley and Matuska[2] found 21 cases in the literature up to 1953 and described a case they treated in which the cyst was excised and the duodenum closed transversely. Recently we also encountered a case like this in an adult female. The problem of removal is apparent when it is recalled that the cyst and the duodenum have one wall in common. Satisfactory results may be obtained by unroofing the duplication on its intestinal side, or if this is not feasible a gastric resection may be preferable.

Tumors

Although rare compared to their incidence in the stomach and large intestine, tumors are not infrequently found in the duodenum. Primary carcinoma and lymphoma arise in the mucosa and submucosa of this part of the bowel.[3] Recently 17 cases were reported by Ochsner and Kleckner.[4] Carcinoma of the ampulla of Vater is a fairly common tumor, to be discussed with tumors of the biliary tract in a later issue of the JOURNAL. Carcinoma is only occasionally found in the duodenum, and benign tumors are rare although lipomas and polyps have been described.[5] Aberrant islands of pancreatic tissue and adenomas of Brunner's glands are also occasionally encountered. The signs and symptoms of these tumors vary considerably. Tumors in the region of the ampulla of Vater cause jaundice early, and in the first portion of the duodenum the tumor may simulate duodenal ulcer. The symptoms of the polyps and space-occupying lesions are usually intermittent pyloric obstruction and bleeding, which may be severe since the lesions are exposed to the almost undiluted acid (pepsin) secretion of the stomach. Malignant tumors of the duodenum should be treated by radical surgical excision. The results of pancreatiticoduodenal resection is considerably better for duodenal lesions than for pancreatic ones.

Diverticula

There are two kinds of diverticula of the duodenum. The primary ones, which are pulsion diverticula, are most frequently seen in the second portion around the ampulla of Vater and always on the mesenteric side. These have a thin wall, mostly of mucosa, and occur through weak spots, possibly where mesenteric vessels enter the bowel. There is often intimate association with the pancreas and lower end of the common duct. The secondary diverticula are more common and have the full thickness of the bowel wall. These are traction diverticula in the first portion, secondary to peptic ulceration and scarring associated with the process of healing.

There is considerable doubt about the symptomatology of primary duodenal diverticula and indications for removal.[6,7] Surgical intervention should be carried out only after a careful and detailed study of the patient. Even when this is done, disappointments may occur. The symptoms may be upper abdominal pain, weight loss, flatulence, and/or anemia. Occasionally the diverticulum may press on the duodenum and cause obstruction or jaundice. It is usually of long duration. Bleeding may occur, but rarely is malignancy suspected.

Surgical excision is difficult and to be successful requires utmost care. Occasionally the common duct will open into the diverticulum, and postoperative complications from duodenal fistulas and pancreatitis are relatively common.

Duodenal Ulcers

The association of duodenal ulcer with hyperacidity and hypersecretion has been well documented. The occurrence of atypical peptic ulceration, hypersecretion, and hyperacidity has been described in a syndrome which is associated with noninsulin-producing islet-cell adenomas of the pancreas and tumors or hyperplasia of numerous other endocrine glands. This syndrome was described by Zollinger and Ellison[8] and seems to explain some of the cases of intractable ulcer diathesis which have defied any kind of treatment in the past. Ellison[9] discusses 24 patients and notes that 5 of these had tumors of other endocrine glands (pituitary, parathyroid, and adrenal). Fourteen had a single tumor in the pancreas; 10 had multiple ones. Nineteen of the tumors were malignant, but the rate of growth was slow and peptic ulceration was the main manifestation. Kirsner[10] discusses the influence and association of parathyroid tumors with peptic ulcer and notes that whereas peptic ulcer occurs in 5 to 10 per cent of the total population, its incidence in individuals with hyperparathyroidism is considerably higher (estimated from 9 to 24 per cent by different authors). He notes that ulcer symptoms sometimes precede those of hyperparathyroidism and reports 5 patients with ulcers refractory to treatment that healed promptly after removal of a parathyroid tumor and remained healed for periods of from one to twenty years. Cope[11] found several patients with chief-cell hyperplasia of the parathyroid glands who also have had other endocrine tumors and peptic ulceration. Chief-cell hyperplasia usually involves all the parathyroid glands and may be mistaken for adenoma formation if all four glands are not explored. Relief cannot be expected unless three of the glands are completely removed and the fourth subtotally. Cope believes that chief-cell hyperplasia rather than adenoma of the parathyroid is the common finding when there are other associated endocrine tumors. Beal[12] found 3 patients in whom endocrine disturbances seemed to influence the progress of peptic marginal ulceration. One of these had a marginal ulcer which healed after removal of a parathyroid adenoma; another after bilateral adrenalectomy for Cushing's disease. In the third an islet-cell tumor was found on postmortem examination. The apparent association of hyperplasia or a tumor of endocrine glands and intractable peptic ulceration has not yet been fully explained, but there are already enough cases on record to link these two closely in selected instances in which prompt healing of an otherwise intractable ulcer has occurred after removal of the endocrine influence.

Massive Bleeding.—Peptic ulcerations are responsible for the great majority of massive upper gastrointestinal hemorrhages. The treatment of such a catastrophe has been the cause of much discussion, and various methods have been advocated. Meulengracht[13] introduced the conservative approach, with frequent feedings and no planned operative intervention. Stewart and others[14] advocate prompt surgery without trial of medical therapy. One of the difficulties in assessing the merits of the various plans advocated is the fact that very few of the reports give a true picture of the problem involved. The variations in age, sex, and social standing of the patients are such that comparison between the results of two institutions may be impossible. The definition of massive hemorrhage also varies greatly, and often the source of the bleeding is not too well defined. We have already noted that massive bleeding from a gastric ulcer is best treated by prompt emergency surgery since conservative therapy gives poor results. One of the problems, therefore, is to determine the source of bleeding. The history and symptomatology of gastric and duodenal ulcers may overlap and thus cannot contribute to the differential diagnosis in a number of cases. Weber *et al.*[15] found that radiologic examination by emergency gastrointestinal series was 90 per cent accurate in locating the source of bleeding. The same authors define massive bleeding as a lowering of the total red cell mass below 60 per cent. An equivalent loss is believed to have occurred if there is a sudden drop of hemoglobin values below 8 Gm. with a visible loss of 1,000 cc. by emesis or melena or a need for more than 2,500 cc. of blood during the first twenty-four hours after hemorrhage.

The results from treatment of bleeding ulcers largely depend on the availability of whole blood for administration and how liberally it is administered. Several factors influence the course of the bleeding. The ulcers which have eroded directly into the main trunks of the pancreaticoduodenal or left gastric arteries bleed more massively than others. The old chronic callous ulcers cause bleeding which only stops with difficulty because of the fibrous base. Arteriosclerosis has the same effect. Massive bleeding as a rule is better tolerated by young people than old; on the other hand, the factors enumerated as favorable to continued bleeding are more often found in the old than in the young. The age of the patient with a bleeding duodenal ulcer is not a factor in determining the possibility of a second hemorrhage, but the mortality from the first or subsequent bleeding increases with age. Stewart and coworkers[14] are among the foremost advocates of prompt surgery in selected cases. They advocate prompt gastric resection for patients who have had gross bleeding into the upper gastrointestinal tract within a week, a total red-cell mass less than 60 per cent of normal, and reasonable clinical evidence for the diagnosis. In a series of 193 patients the postoperative mortality was 3 per cent under the age of fifty and almost 18 per cent over the age of fifty. The authors argue that the danger is increased by age and with associated systemic diseases of a serious nature, which lower the patient's physiologic reserve. The average age of the patients in this series was 57.2 years; 18 per cent were over seventy years. The mortality among patients under fifty varies in different reports from 4.3 to 8 per cent and among those over fifty from 15.4 to 29 per cent. The outlook seems to be worse when the bleeding is manifested by hematemesis than by melena alone.[16]

Occasionally patients are encountered in whom the source of the hemorrhage cannot be determined prior to operation nor determined with accuracy at the operating table. Kirtley and Riddell[17] report on 26 patients with severe hematemesis and melena who were explored for control of bleeding of obscure origin. Their indications for operation were:

1. Continued bleeding for forty-eight hours despite strict medical management.
2. Failure to maintain hematocrit levels with 500 cc. of blood transfused every eight hours.
3. An exsanguinating hemorrhage for which excessive amounts of blood were needed to maintain blood pressure.
4. Massive bleeding in a patient over fifty.
5. Bleeding which stopped but recurred while the patient was under strict medical management.
6. Multiple recurrent hemorrhages.

There were 17 males and 9 women. The average age was forty-six. Eleven of the patients had previous epigastric symptoms. In 12 only an exploratory laparotomy was performed. Sixty-seven per cent of this group either died or had recurrent bleeding. Twenty-one patients had a primary or secondary empirical gastric resection when the source of the bleeding could not be determined at laparotomy. Thirty-eight per cent of this group bled again or died. These authors argue that an empirical 75 per cent gastric resection should be carried out for massive upper gastrointestinal hemorrhage for which no explanation is found at operation.

Cooper *et al.*[16] report that a blind (empirical) gastric resection was 88 per cent successful in stopping the bleeding when no lesion could be found. They feel that laparotomy is indicated for massive bleeding if the source can be located in either the stomach or duodenum. They also feel that routine barium meal examination of the stomach is not necessary; they prefer to use it to rule out esophageal varices. In this respect they also feel that the bromsulphalein test is helpful in ruling out cirrhosis of the liver if the results show less than 7 per cent retention of the dye. Their indications for operation are:

1. Exsanguinating hemorrhage.
2. Continued bleeding requiring replacement of more than 500 cc. of blood every eight hours for forty-eight hours.
3. Repeated bleeding while the patient is in the hospital on a strict medical ulcer regimen.

Gastrointestinal hemorrhages which occur after operations unrelated to the stomach are often particularly severe. Gilchrist and De Peyster[18] report on 8 patients in whom this occurred. All of the patients with massive bleeding who required 2,500 cc. or more of blood died when they were treated medically. Three patients who were operated on and had gastric resection all survived. The cause for these hemorrhages was found to be multiple gastroduodenal ulcers in all instances.

We believe that when the source of bleeding is known the problem is somewhat easier to solve. As we have mentioned, gastric ulcers often bleed severely and the bleeding is not as apt to stop as in duodenal lesions.[16,19] Early emergency surgery should be carried out after replacement of initial blood loss. In duodenal ulcers the majority of young patients with bleeding ulcers may be handled conservatively, although deaths from exsanguination are known to occur. There are certain situations, however, when emergency surgery should be carried out. This is when massive bleeding recurs while the patient is under treatment in the hospital and when transfusions are still needed forty-eight hours after the initial blood replacement. Elderly people with bleeding duodenal ulcers form a special category. Massive bleeding is less likely to stop when the vessels are arteriosclerotic and do not collapse. Diseases of the coronary vessels increase the danger of fall in blood pressure and blood volume.[20] Prolonged bed rest with heavy sedation is poorly tolerated by old people and hypostatic pneumonia is liable to occur. The old arteriosclerotic person, therefore, should be considered a possible candidate for emergency surgery with the first attack of bleeding if it does not promptly subside. When massive upper gastric intestinal hemorrhage occurs and the source is unknown, efforts have to be aimed at establishing diagnosis. Blood dyscrasias have to be ruled out. Radiologic examination of the upper gastric intestinal tract may be carried out while the patient is bleeding although we believe it is of greatest value in ruling out esophageal varices. If the source cannot be established, a conservative approach should be adopted for at least forty-eight hours. If exsanguinating hemorrhage occurs or bleeding continues, surgery should be carried out even without knowing the source of the bleeding. If no cause is found for the bleeding at operation, an empirical gastric resection should be done since this appears to give the best results.

We feel that in the situations mentioned, emergency surgery for control of bleeding is the method of choice, since results are better than with conservative therapy. The poor results sometimes reported from surgery may result from operations performed when the proper indications are not present, from failure to perform a gastric resection when an anatomic lesion cannot be found, even though the bleeding is identified in the stomach or duodenum, and from operating late on people exsanguinated for too long a time and therefore in no condition to withstand the operative intervention.

Perforated Peptic Ulcer.—One of the serious complications of peptic ulcer is perforation into the free peritoneal cavity. Often the patients have a long history of peptic ulceration, but a certain number, or up to 30 per cent, have no such previous history.[21] The mortality and morbidity have always been high and late sequelae are frequent. Because of this, new methods of treatment are freely explored. One of the methods now in vogue is the conservative approach, relying on gastric suction, intravenous feedings, and antibiotics to tide the patient over the acute episode. The advocates of this approach have cited the frequency with which the perforation is found to be sealed over at laparotomy. A second method is laparotomy and simple closure of the perforation with suture. Frequently large callous ulcers are found which already have produced a certain degree of pyloric obstruction. This finding plus the fact that 50 per cent of the patients suffering a perforation will later require definitive surgery has prompted some surgeons to advocate primary gastric resection as the method of choice.[21–23] We believe that no set rules apply to all cases. Certainly the conservative approach has nothing to recommend it if acceptable surgical facilities are available, and neither should primary gastric resection be advocated for all perforated peptic ulcers. Simple closure of the perforation is a procedure most likely to be easily tolerated by patients who are seriously ill. The high incidence of recurrence of ulcer symptoms leads us to believe that patients with chronic ulcers should be advised to have an elective gastrectomy two to three months after closure of the perforation. There will be certain instances, such as perforated gastric ulcers with a particularly poor prognosis [22] or large callous duodenal ulcers with pyloric obstruction encountered during closure of a perforation,[23] in which primary resection should be considered. In cases of perforated duodenal ulcers in seriously ill patients a simple gastroenterostomy with or without vagotomy may be preferable to subtotal resection.

Operations.—Peptic ulceration of the first part of the duodenum is one of the more common chronic disorders of modern man. A large majority of patients suffer with this disease without ever undergoing surgical treatment because it is universally recognized that uncomplicated duodenal ulcer is not an indication for surgery. In our clinic about 15 per cent of duodenal ulcer patients ultimately undergo surgical treatment, and almost without exception only when the complications of bleeding, perforation, intractable pain, or obstruction have supervened. Others estimate that up to 30 per cent of the duodenal ulcer population would benefit from surgery.[24] Indications for surgery in patients with duodenal ulcers in whom there is intractability vary widely. The results of surgery for duodenal ulcer are good in up to 85 per cent of selected patients. As a rule the older the patient when he is operated on and the longer he has lived with his disease, the better the results. Johnson, Beal, and Sleisenger,[25] from this clinic, found that recurrence of ulceration was greatly increased among patients operated on for duodenal ulcers under the age of thirty-five.

Operations for duodenal ulcers are now being tailored to attack the sources of hyperacidity and hypersecretion, which are judged the direct causes of the local lesion. This involves resection of the antrum to eliminate the gastrin factor, a high resection to eliminate as much as possible of the parietal cell-bearing area of the stomach, and vagus nerve resection to eliminate the cephalic phase of secretion. Various modifications of the technics for removing the acid-secreting area of the stomach and for establishing continuity of the gastric intestinal tract are available. We believe that it is of advantage, if possible, to remove the ulcer proper since the handling of the duodenal stump is thus made easier, but this is not essential and should not be indulged in indiscriminately. Mortality and morbidity from gastric secretion resulting directly from the operation are mainly the result of duodenal stump perforations and injury to the common duct and pancreas during operation.[26] Various methods are available to handle this situation. Some persons prefer to use the gastroenterostomy and vagotomy if much difficulty is foreseen in closing the duodenum. Others advocate pyloric exclusion, and still others recommend leaving the duodenum open and draining it with catheters inside the lumen. The disadvantage of having to resort to gastroenterostomy and vagotomy is that recurrent ulceration is more common after this procedure.[27] The same is true for antral exclusion, in particular if all the pyloric mucosa is not removed. The placing of a catheter inside a difficult duodenal stump and draining it may be the best way out of a difficult situation, preferable to risking injury to the pancreas and common duct.

The Billroth I gastric resection has been tried for duodenal ulcers in recent years. It has been shown that there is less weight loss and more weight gain among patients with gastroduodenostomy and better utilization of the food ingested. As we have mentioned earlier, however, it now seems that this operation is suited mainly for gastric ulcers. Walters[28] finds the incidence of recurrent ulceration to be twice as high for duodenal ulcers and two and one-half times higher for marginal ulcers with Billroth I than after the Billroth II operation.

Duodenal Injuries

The duodenum is partly a retroperitoneal organ and fixed over the vertebral column. In this position it is particularly exposed to blunt trauma which may pinch it against the vertebrae and thus cause mechanical injury. Penetrating wounds are responsible, however, for the great majority of the cases, 45 out of 50 as reported by Webb *et al.*[29] The mortality in these cases is high, 28 per cent in the series. Intraperitoneal injuries were much more common than retroperitoneal ones, but the prognosis was particularly unfavorable in the latter instances. The authors advise very careful exploration of the duodenum and the pancreas to rule out retroperitoneal injuries. This involves mobilization to inspect the retroperitoneal space. Associated injuries to adjacent structures are common. Thorough drainage should be carried out and a gastroenterostomy considered if there is massive damage.

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(*Number sixty-seven in a series on Recent Advances in Medicine and Surgery*)

Marriage: a community consisting of a master, a mistress, and two slaves, making in all, two.
—AMBROSE BIERCE

CLINICOPATHOLOGIC CONFERENCE

ROSWELL PARK MEMORIAL INSTITUTE

BUFFALO, NEW YORK

Conducted by E. R. STUDENSKI, M.D.

MARCH 8, 1956

Discussed by IRVING HYMAN, M.D.

Case History

L. Dozoretz, M.D.: A forty-three-year-old white female apparently lived an uneventful life until eight years prior to admission to Roswell Park Memorial Institute. She was married and had two children, ten and thirteen years of age. Her menstrual history was not remarkable. She was considered an individual who got along well with people, seemed clean and tidy, and was fairly alert and energetic. Her school record shows that she failed to be promoted one year and that she graduated from the eighth grade at age fifteen years.

About eight years prior to admission, two years after the birth of her last child, she became frigid. One year later, an employer discharged her because of a bad work record, noting that she was childish, could not get along well with other employes, and apparently showed an element of mental deficiency with paranoid features. Within another year, she became amenorrheic, apathetic, untidy, and deficient in her ability to take care of her home. She became disheveled, inappropriate, and silly. Her husband abandoned her because she did not manage her home or perform as a wife.

She began to gain weight and was admitted to a mental hospital during the fifth year of her illness. At that time, physical examination revealed an edematous appearance and moderate macroglossia. The blood pressure was 132/88 and blood cholesterol was 324 mg. per cent. Her basal metabolism rate was minus 21. The patient was untidy, emotionally unstable, and below average in intelligence; the full scale I.Q. was 96, verbal 87, and performance 106. There was poor attention span. She was given thyroid for one and one-half months without results. She resided in this hospital for three years and then developed increasing urinary incontinence, defective vision, severe headaches, dizziness, and instability of movements. At this time a spinal puncture was performed revealing clear, colorless fluid with a pressure of 478 mm. of water. A history of rare convulsions was listed. Skull plate showed thinning of the occiput, enlarged sella, loss of the posterior clinoids, diminution in the size of the anterior clinoids, and a zone of increased density in the pituitary. Neurologic examination revealed bilateral optic pallor, hyperactive deep tendon reflexes on the right, unsustained right patellar clonus, and sustained right ankle clonus. She was transferred to Roswell Park Memorial Institute during the eighth year of her illness.

Examination on admission to Roswell Park Memorial Institute eighteen days before death revealed bilateral optic atrophy with almost total loss of vision on the left, negative Babinski signs, and unsustained clonus in both ankles. She was unstable and on standing tended to fall to the right. The blood pressure was 100/70. The sense of smell was absent bilaterally. Roentgenograms of the skull showed marked deepening of the sella with loss of the dorsum sella as well as posterior displacement of the pineal.

Laboratory studies revealed unremarkable hemogram findings, the blood sugar was 92 mg. per 100 ml., nonprotein nitrogen was 29 mg. per 100 ml., albumin was 4.33 Gm. per 100 ml., globulin was 1.69 Gm. per 100 ml., the free cholesterol was 55 mg. per 100 ml. with a total of 260 mg. per 100 ml., calcium was 10.3 mg. per 100 ml., phosphorus was 4.7 mg per 100 ml., and alkaline phosphatase was 6.7 units; 17 ketosteroid excretion on three successive samples was 5.3, 2.4, and 5.6 mg. per day. The urine findings were unremarkable.

Discussion

Irving Hyman, M.D.: A little over twenty years ago, attention was focused on a problem similar to this one when George Gershwin died after having been under analytic treatment for a year or so. He, too, had signs of change in personality and signs of a progressive lesion, but, in addition, he had one other symptom that clarified the situation, namely, smelling burning rubber.

Mental Symptoms Associated with Brain Tumors.—Our patient had a progressive lesion. The symptoms, as elaborated by Dr. Dozoretz, were interesting from this point of view. If one goes over a series of brain tumors, two thirds of the patients will have some mental symptoms. Actually, if one inspects the mental symptoms somewhat more closely, they are not those of the standard psychotic diseases or psychoses. Ten per cent may have symptoms reminiscent of schizophrenia or manic depressive psychosis. The other 90 per cent will have other manifestations that ought to give us some indication of something happening other than the so-called functional psychosis. Tumors causing rise of intracranial pressure may produce psychic disturbance of a general character: for example, slow reaction to stimuli, inattention, indifference, desire to be left alone, lack of initiative and spontaneity, impairment of vigor and capacity, poor memory, inability to retain impressions, faulty insight, and so forth. Such symptoms are the results of the clouding of the finer intellectual qualities. In addition to these symptoms, such removal of higher psychic functions may result in such emotional side-reactions as irritability, euphonia, gay insouciance, and motiveless anger.

Psychiatric manifestations of a specific kind are less important and sometimes these occur in a prediagnosed individual and are coincidental. However, hallucinations of a specific mode, if recurring and associated with signs of increased pressure, may have localizing significance.

Mental Deficiency.—This woman was said to be mentally deficient, yet a little closer attention indicates that she failed one grade and graduated from the eighth grade at age fifteen, which is not too bad. A performance I.Q. of 106 with a scale of 96 is fair. There are many individuals doing a good day's job who have an I.Q. of this level. I do not think that she should have been labeled "mentally defective."

Location of Lesion.—There was a change in her personality. She was formerly a tidy housekeeper and then she became slovenly, first in her dress and then in her house. Before that, she showed an inability to cope with the situation in her external environment. Gradually, she became worse so that she could not cope with the ordinary housekeeping duties. At that point, a few other things occurred. Her relationship to her husband was impaired. She became frigid. She had an increase in weight. She had amenorrhea. Certainly, if one tries to localize a disease at this point, one should consider an involvement of the frontal lobes and the pituitary system. As time progressed, there was an increase in all of her symptoms. She deteriorated. She had further lack of attention and developed headaches. Finally, of course, she had bilateral optic atrophy, almost 500 mm. of water pressure of her spinal fluid, and a marked elevation in her spinal fluid proteins, which certainly indicates that something was close to the subarachnoid space. These findings plus the lack of smell certainly are indicative that the lesion was located on the undersurface of the frontal lobe. In addition, there were some changes in her endocrine system. Therefore, I feel at this point we can localize the lesion to the undersurface of the frontal lobe and the pituitary gland. May we see the x-ray films.

Elliot Lasser, M.D: The roentgenograms of the skull show an enlargement of the sella tursica (Fig. 1). There is disappearance and partial destruction of the floor of the sella. The posterior clinoids are either destroyed or decalcified. The anterior clinoids are intact, although slightly thickened and displaced slightly toward the midline. There is some questionable interruption of the continuity of the sphenoid bone.

Dr. Hyman: We have established two things. The patient has a tumor and its location is deep to the frontal lobes. Three types of tissue may be involved. First, the pituitary may give rise to a tumor that has broken out beyond the fossa to produce a tremendous enlargement and secondarily destroyed the brain tissue by compression; second, a tumor of the meninges may be located on the undersurface of the frontal lobe; third, there may be a tumor of the third ventricle or the floor of the third ventricle that has involved the sella and destroyed the pituitary.

Inasmuch as headache seems to have been a late symptom and the endocrine disturbance occurred early in her disease, I would feel that this was primarily a tumor within the pituitary that extended outside the fossa and produced frontal lobe signs by compression. Further studies should be performed to clarify the situtation.

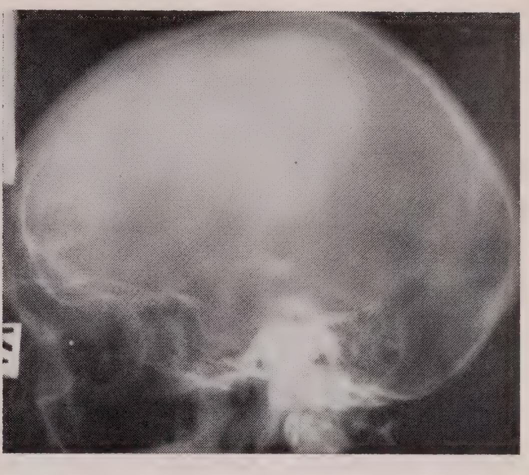

Fig. 1. Lateral view of skull shows lack of visualization of the posterior clinoids and partial destruction of the floor of the sella.

Dr. Lasser: Further x-ray film examinations were carried out. An angiogram gives a better clue to the diagnosis. From the lateral view, tremendous posterior displacement of the anterior cerebral artery has resulted from a large lesion located low in the frontal lobe (Fig. 2). The middle cerebral artery is elevated slightly by the tumor. On the anterior view, even though there is tremendous displacement of the anterior cerebral artery, there is practically no midline displacement (Fig. 3). Ventriculogram was done and only the left ventricle was filled. However, it shows again that there is relatively little displacement across the midline. On the anterior view, the anterior horn of the left lateral ventricle is deviated posteriorly and superiorly. (Fig. 4).

Dr. Hyman: These roentgenographic findings are very helpful. In addition to the x-ray film findings, the lack of sense of smell suggests a tumor involving the olfactory region. A meningioma in this region will cause these symptoms and is consistent with the duration of the disease.

John W. Pickren, M.D: Dr. Perese, tell us what you found at surgery.

Dogan Perese, M.D.: Clinically, we felt that we were dealing with an olfactory meningioma. Therefore, we elected to re-

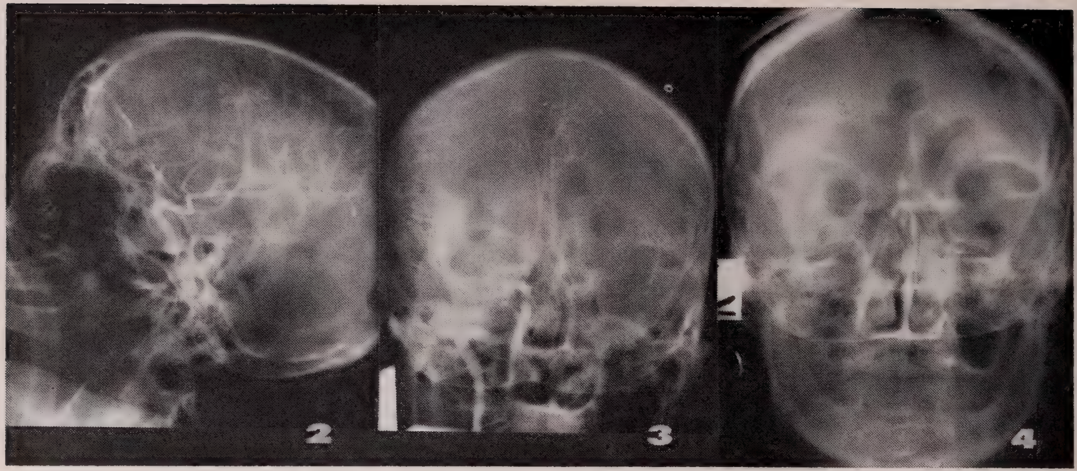

FIG. 2. Lateral view of the carotid angiogram reveals tremendous posterior displacement of the anterior cerebral artery and elevation of the middle cerebral artery.

FIG. 3. Anterior view of the carotid angiogram reveals lack of midline displacement of the anterior cerebral artery.

FIG. 4. Ventriculogram shows posterior and superior deviation of the anterior horn of the left lateral ventricle.

move the tumor through a coronal flap which exposed both frontal lobes. We found that almost no cortex remained in the frontal lobes, but that they were replaced by a tumor which almost filled the anterior fossa of the cranium and extended beyond the sphenoid ridges. The tumor extended about one inch beyond the anterior clinoids and surrounded the entire pituitary. The tumor was removed in pieces. Unfortunately, near the end of the procedure, the patient developed cardiac arrest. Artificial massage was instituted. Her heart began to beat at a slow rate. She lived twelve hours after the procedure when again cardiac arrest occurred.

Diagnoses

Clinical.—*Meningioma, olfactory region.*

Dr. Hyman.—*Meningioma, olfactory region.*

Anatomic.—*Meningioma, olfactory region.*

Pathologic Report

EUGENE R. STUDENSKI, M.D.: The pathologic findings relevant to this patient can be divided into two portions; the first concerning the tumor as removed at autopsy and the second the findings at autopsy relating to the effects of the tumor on the surrounding structures and distant effects on other organs. The final cause of death in this patient is undoubtedly the cardiac arrest. The systemic findings do not provide any clue to the mechanism of this failure.

The specimen removed at surgery consisted of approximately 240 Gm. of morselized tumor tissue and approximately 30 Gm. of adjacent brain tissue. Microscopically, the tumor shows relatively sharp encapsulation without any evidence of actual invasion of the surrounding brain tissue. The tumor structure is largely that of sheets of cells with regular, mildly hyperchromatic nuclei and considerable amounts of eosinophilic cytoplasm. These cells form occasional whorls and rarely show loosely packed spindle patterns (Fig. 5). The tumor is classified as a meningiomatous meningioma.

The mass of tumor is extremely large and compares with the largest reported intracranial neoplasms of this type. The effects of this mass on surrounding tissues of the brain could not be demonstrated at autopsy

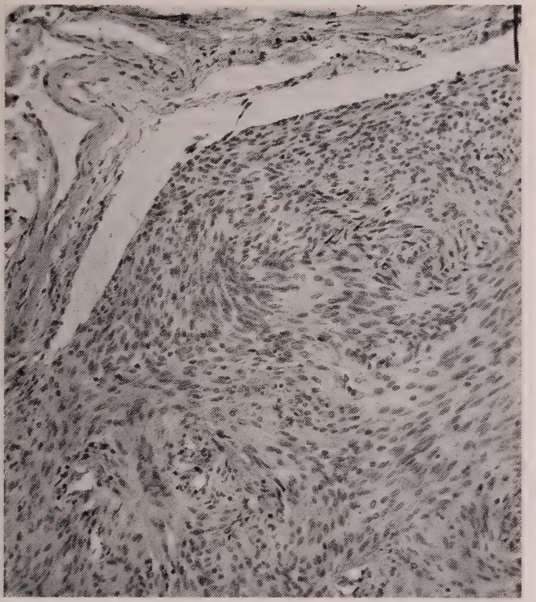

FIG. 5. Microscopic picture typical of meningiomatous meningioma.

because of the surgical distortion. However, it may be said that the frontal lobes were pushed superiorly, that a large portion of the left frontal lobe was absent surgically, and that there was some erosion of the base of the right frontal lobe. The base of the skull in the region of the sphenoid, the roof of the orbit, and the olfactory plate showed extreme thinning with numerous lace-like openings into the underlying soft tissue. The dura over these areas contained adherent tumor material which, however, did not penetrate through the fibrous dura mater or invade the bone itself. Microscopically, the bone showed diffuse resorption with thin residual trabeculae without invasion by tumor. The pituitary fossa and the pituitary were flattened and the organ was distorted. However, no microscopic cellular changes were seen. The adrenals and ovaries appeared normally active. Many developing follicles were present. The thyroid. however, showed extensive fibrosis and atrophy.

Summary

The lesion was a slow-growing meningioma that remained localized without invasion of surrounding tissues and produced its effects almost entirely through pressure on the adjacent structures. Despite the history of amenorrhea, we note unremarkable gynecologic organs and what is apparently normal activity of the ovary. There is, however, considerable evidence of atrophy of the thyroid, consistent with hypothyroidism.

Did You Know?

—Guatemalan Indians live chiefly on beans and corn and yet if they get enough good quality protein to survive as growing children can tramp three or four consecutive days with loads of more than 100 pounds on their backs? Their death rate among first-weaning infants, however, is still terrifically high!

—Americans today eat about one out of four meals away from home? The ratio one hundred years ago was one in 200.

—Vienna's first coffee house was opened in 1683 when the Austrians beat back the attacking Turkish army?

An Austrian soldier is said to have found a sack of the bean, leaving a permanent impact on the food habits of the world.—*Nutrition Foundation*

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ALFRED F. GRANATELLI, M.D.
VALENTINO D. B. MAZZIA, M.D.
GEORGE WALLACE, M.D.

Cardiovascular Collapse in Cardiac Tamponade

ACCUMULATION of fluid in the pericardium may become so excessive as to interfere with cardiac diastole. This condition can be aggravated by certain anesthetic maneuvers so as to result in cardiac tamponade, as was observed in the following case.

Case Report

A fifty-year-old nurse's aide was admitted to the hospital because of increasing shortness of breath and chest pain of three weeks duration. She had always been in good health except for an episode of left lower pneumonia twenty-one years ago and gallbladder disease requiring cholecystectomy one year ago. At the time of this last operation roentgenograms of the chest were unremarkable except for slight widening in the hilar areas interpreted as dilated aorta. Following an upper respiratory infection one month prior to admission, the patient manifested increasing shortness of breath, malaise, and then gripping pains over the anterior portion of the left side of the chest substernally. She was found to have a temperature of 39.2 C. She was treated with penicillin but her symptoms did not improve. A roentgenogram of the chest at this time was interpreted as showing a left pleural effusion, and the patient was admitted for evaluation.

Physical examination revealed a well-developed woman appearing slightly cyanotic. Her temperature was 38.4 C. Her pulse was regular at a rate of 130 per minute. Her arterial blood pressure was 110/90. The neck veins were flat on admission but subsequently became distended, filling from below. Examination of the chest showed it to be of normal diameter. During respiration decreased excursion was noted on the left side. Percussion revealed dullness to flatness over the lower half of the chest anteriorly and posteriorly. On auscultation there were increased breath sounds with egophony and fine

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Discussed at a conference held at Bellevue Hospital, New York City, May 4, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

rales over this area posteriorly. The right lung seemed clear. Examination of the heart demonstrated dullness to percussion 2 cm. to the right of the right sternal border. On auscultation the heart sounds were distant. The abdomen was soft and slightly distended. The liver edge was felt three fingerbreadths below the right costal margin.

Urinalysis findings were normal. The hematocrit determination was 39. The white blood count and differential were normal. The blood urea nitrogen and the fasting blood sugar were normal. The Mazzini test result was 4 plus. The latest roentgenograms of the chest showed the trachea to be in the midline. There was evidence of left pleural effusion to the seventh rib posteriorly. The heart shadow was enlarged massively in all diameters with widening of the superior mediastinum. Fluoroscopy revealed a paralyzed left diaphragm.

It was felt that the patient had pericardial and pleural effusion of undetermined etiology. Because of increasing signs of respiratory distress, pericardiocentesis was done with removal of 50 cc. of bloody fluid, which had a hematocrit of 8. Following thoracentesis a small quantity of straw-colored fluid was obtained. There was relief of distressing symptoms after the pericardial tap. However, four days later the patient became acutely dyspneic and cyanotic, and it was noted that she developed atrial fibrillation. Pericardial tap was repeated and 90 cc. of fluid were removed but the patient had no relief of symptoms. Because of developing rales in the right side of the chest, the possibility of pulmonary edema was considered. She was digitalized, and this was followed by conversion of her atrial fibrillation to a normal sinus rhythm and clearing of her symptoms. Six days later the patient developed pleuritic chest pains over the right lower lobe with signs of consolidation accompanied by fever and an elevated white blood count. Five days later she developed a massive venous thrombosis involving the right femoral and right iliac veins. Because of the patient's hemorrhagic pericardial effusion it was felt that anticoagulation therapy could not be undertaken safely and that pericardiostomy and pleuropericardial window were indicated as a safety measure before anticoagulation therapy could be done. The preoperative diagnosis was hemopericardium of undetermined origin, left pleural effusion, paralysis of the left side of the diaphragm, right lower lobe pneumonia or possibly pulmonary embolus, and right iliac vein thrombosis. Her physical status was classified as 3, and as an operative risk she was classified as poor.

For preoperative medication the patient was given 50 mg. of sodium amytal, 50 mg. of Demerol, and 0.4 mg. of atropine sulfate by intramuscular injection. When she arrived in the operating room an hour and a half later she was still in an anxious state. Her pulse rate was then 104 per minute and regular. Her respiratory rate was 28 per minute. Her blood pressure was 125/70. An electrocardioscope was connected to the patient for cardiac monitoring.

Anesthesia was induced with cyclopropane and oxygen after administration of pure oxygen for five minutes with gradual increase of the cyclopropane concentration to a mixture of equal parts of 700 cc. each. A total of 60 mg. of 0.2 per cent succinylcholine solution was administered intravenously while the patient's trachea was intubated under direct laryngoscopy with a number 36 cuffed anode tube following spraying of the larynx with 5 per cent Cyclaine. Artificial respiration by means of intermittent manual bag pressure was instituted immediately after intubation. The lungs were examined and found to be expanding normally during chest inflation while breath sounds could be heard in both lungs.

During this period, from start of anesthesia through intubation, the electrocardioscope was watched constantly. The heart rate did not change but a marked lowering in the voltage of the QRS complexes and the T waves was noted. Immediately after intubation no blood pressure could be detected by auscultation of the brachial artery, but the pulse was palpable and a regular sinus rhythm persisted at a rate increased by 10 beats per minute. It was felt that the arterial hypotension might have been due to excessive increased pressure on the breathing bag during the period of controlled respiration. Although the blood pressure remained unobtainable, it was decided to proceed with the proposed pericardiostomy. The patient was turned onto her right side while the breathing bag was flushed with oxygen until spontaneous respirations returned two minutes later. Spontaneous respiration was allowed with vigorous assistance exerted on the breathing bag, but the blood pressure did not return. However, when the pressure on the breathing bag was removed the blood pressure and the pulse both rose slowly within ten minutes to 90/40 and 110 per minute respectively. At this time it was noted on the electrocardioscope that the QRS complexes were markedly lowered and the T waves flattened. Anesthesia was being maintained with cyclopropane-oxygen by means of a closed to-and-fro system with carbon dioxide absorber. Respirations were being assisted. On opening the chest it was noted that the heart was in acute tamponade. A small puncture was made in the pericardium which resulted in a gushing escape of fluid in a jet 18 inches high. Immediately the electrocardioscope showed improvement, and within ten minutes the QRS complexes tripled in voltage and the T waves became upright again. The rest of the anesthetic course was uneventful.

Surgical exploration revealed a tumor mass from the left lingula which enveloped the anterior lobe, pulmonary artery, and aortic arch. It also extended to and invaded the pericardium. Only a biopsy of this tumor was done at this time. The patient recovered quickly from anesthesia. Her blood pressure at the end of the operation was 96/42. Her pulse was regular at a rate of 104 per minute, and her respiratory rate was 30 per minute. She had received 450 cc. of 5 per cent dextrose in water during operation. Blood loss was estimated at being less than 50 cc. The patient's postoperative condition was classified as fair, with both lungs essentially the same as before.

Comment

The critical period of cardiac tamponade with disappearance of blood pressure occurred immediately after endotracheal intubation. Apnea developed following intravenous administration of succinylcholine and artificial control of respirations by intermittent manual compression of the breathing bag. Inquiry into the manner by which this controlled respiration was performed revealed that vigorous manual pressure, probably a pressure of 30 cm. of water, was being applied intermittently. Such vigorous bag pressure causes excessive pulmonary inflation. When this occurs in a patient with pericardial effusion while his chest is closed, the excess pulmonary inflation results in increased pressure on the pericardium, which may so constrict the heart as to interfere with cardiac filling. The result is what was observed in this case: arterial blood pressure disappears and the electrocardiogram displays a significant change, characterized by marked lowering both of the QRS complexes and the height of the T waves. Untreated this would quickly result in death.

The decision to carry on with the proposed pericardiostomy despite the critical condition of the patient was good. However, two preventive measures could have been done which would have possibly avoided cardiac tamponade. First, it would have been well to have done a pericardial tap just before surgical intervention; this would have minimized development of acute cardiac tamponade from complications arising out of anesthetic management and anesthetic course. Laryngeal spasm, bronchospasm, or bucking on the endotracheal tube are conditions which could so increase intrapulmonary pressure as to result in increased compression of the pericardium. Second, when artificial respiration becomes necessary prior to incision of the distended pericardium, as it occurred in this case during apnea following endotracheal intubation, it is important to remember not to overinflate the lungs. Adequate ventilation can be afforded by means of 10 cm. or even 5 cm. of water pressure exerted on the breathing bag. Vigorous controlled respiration usually entails the application of at least 30 cm. of water pressure, and this should be avoided under such conditions.

(*Number seventy-three in a series of Clinical Anesthesia Conferences*)

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Directory, Poison Control Center*

Improper Disposal of Drugs and Household Products

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Boric Acid	1 year	Female

The patient obtained the injurious agent in the following manner: One rounded teaspoonful of boric acid powder was dissolved in 4 ounces of water and stored in the refrigerator to be used for washing the eyes. The grandmother inadvertently took this solution, added 2 more ounces of water, and placed part of this in the baby's bottle, to which she added a small amount of Karo syrup. This was offered to the baby, and the grandmother estimates that the baby took less than 1 ounce of this mixture. The mother discovered the empty jar approximately three hours later and started forcing the child to ingest copious amounts of water and milk on the advice of the family physician. The child was hungry and took these readily. She did not vomit. The child was playful and showed no ill effects. The same amount in a younger infant may well have terminated fatally.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Dry Ice	6 years	Male

A group of children were playing out-of-doors and discovered dry ice on the street. Several of them ingested it. This patient was taken to the hospital because he had a burning sensation in the throat. On admission the diagnosis of a possible gastrointestinal disturbance was considered. X-ray of the abdomen was reported as follows: "Moderate amount of gas and feces are scattered along almost the entire course of colon. There is no evidence of any intestinal obstruction. No free air under either diaphragm. Esophagram: The barium appears to hold the middle third of the esophagus, although it passes beyond the point, but fails to distend the esophagus on the available films. The significance of this finding is not certain and could be better evaluated during fluoroscopy. Repeat examination for further evaluation is suggested in approximately a week if symptoms warrant it." The patient remained in the hospital for one week, where he was treated with aspirin and codeine, and finally made a complete recovery. The discharge diagnosis was possible esophagitis.

Because of the increasing use and availability of this product, such as in ice cream packages and frozen foods, its hazardous potentialities must be recognized. Because of its appearance, children are attracted to it. This product should be included among the ever-increasing group of substances encountered in the home requiring knowledge by the family of its hazardous potentialities. Particular attention must be paid to the method of disposal so that it should never be made available to the children.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Eye Drops	4 years	Female

The mother left the child in the kitchen to go to the bathroom. On her return the patient told the mother that she had swallowed the "cough medicine" and pointed to the small bottle containing the eye drops. The medication, which had been prescribed for the mother, was in a bottle placed on the washing machine, from which the child obtained it. Since there was only a small amount left in the bottle when the child obtained it, the mother thought the ingestion was not of any consequence.

The patient, however, soon became dizzy, stumbled, and went into a sound sleep from which she could not be awakened. She was then rushed to the hospital. On admission the following symptoms were present: vomiting, nausea, abdominal pains, and stupor. The stomach was lavaged about fifteen minutes after ingestion with 1,000 cc. of water, bicarbonate, and universal antidote. On the ward the patient developed intermittent cyanosis, dyspnea, and hyperexcitability. Bilateral dilatation of the pupils was also noted. She was treated with scopolamine, Seconal, intravenous fluids, cool water baths, caffeine sodium benzoate, oxygen, and suction. In spite of all therapy, the patient developed convulsions and coma and death ensued. She died four hours after admission.

Treatment in this case was not facilitated by the sparse identifying information on the clinic-dispensed container. In view of the potent character of many eye preparations, physicians, especially ophthalmologists, should inform patients when prescribing these products of the special safeguards needed in their handling and storage. In addition, clinics should review their labeling procedures to make certain that identification of their medications are easily obtained and made available in emergencies.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Drano	18 months	Male

The mother placed the "empty" Drano can in the bathroom waste paper basket. The child obtained the can from the basket and ate some of the granules which were clinging to the side of the can. An older sibling called the mother's attention to this fact. On examining the child she noticed redness and blisters on his mouth and lips. He was taken to the hospital, where his stomach was lavaged with milk, vinegar, and water one and one-half hours after ingestion. After four days in the hospital and symptomatic treatment and supportive therapy, the patient made a complete recovery.

This incident again illustrates the lack of caution in handling and dispensing of potentially hazardous household products.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Unknown Pills	4 years	Female

This child was playing out-of-doors with another child. They found many medicine bottles with different colored pills in them in the public garbage bin on the grounds of the housing project in which they lived. Thinking the pills were candies, the child swallowed several of the different pills from the various bottles. This patient developed vomiting, diarrhea, and stupor. He was taken to St. Vincent's Hospital, where he was observed and treated. The laboratory finding on admission was 15 per cent eosinophils. The patient slept for fourteen consecutive hours following admission in stupor.

The reason for the high eosinophil count is being investigated; the symptoms point towards the ingestion of an unknown barbiturate.

Although poisoning was classified as severe, the patient made a complete recovery after five days of hospitalization and supportive therapy.

This accident certainly could have been prevented if more caution were exercised in discarding unused drugs.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
AFTA (Trichlor-Ethylene Petroleum Solvent)	2 years	Male

The day prior to the accident the rug-cleaning man was in the home and left some of the rug-cleaning preparation in an empty coke bottle under the kitchen sink, where the family ordinarily keeps empty soda and beer bottles. The rug-cleaning man failed to tell the family about this. The following day, while the mother of the child was on the telephone, the patient obtained the coke bottle and swallowed a few drops. He told his mother "I drank it, I drank it," and the mother wisely immediately took the child to her family physician. The child's stomach was lavaged with normal saline about ten minutes after ingestion, and he was referred back to the family physician for further medical care.

This episode was attended with the concern and alarm when the presence of carbon tetrachloride in the mixture is suspected, until the Poison Control Center was able to allay the anxieties of both the family and physician by means of a number of telephone calls and follow-ups relating to the exact ingredients of the substance.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Antimenometrorrhagic Tablets (Purified Toluiodine-Blue Compound)	21 months	Male

The product was discarded in a trash basket; the mother could not tell how and when the infant obtained the pills. The mother found chunks of pills in the vomitus. The child was taken to the hospital, where his stomach was lavaged about one and a quarter hours after ingestion. The only presenting symptoms on admittance to the hospital were nausea and vomiting. Also, the child's urine was blue in color for two days following ingestion. The child was hospitalized for one day and then discharged as improved. At the time the nurse made the home visit the patient was again in the hospital, this time with a high fever because of otitis media.

Incidents involving ingestion of highly colored substances frequently cause concern and alarm far beyond the inherent toxicity of these products.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Lestoil	31 years 2 years 4 years	Female

The 2 children were under the care of the grandmother, who was preparing potted veal for dinner. Lestoil was stored in a container on a shelf above the one that contained cooking oil. The grandmother had cataracts and apparently no sense of smell. She used the Lestoil instead of the oil. When the family began to eat the veal the grandmother immediately realized her error, and the mother and the 2 children went to the hospital emergency room. Since the family was asymptomatic on admission, except for a bitter "taste" in the mouth, the hospital emergency room discharged them after a period of observation.

This is but one of many accidental ingestions involving this "oil" product.

Incident 9

Toxic Agent	*Age*	*Sex*
Turpentine	16 months	Female

A glass containing turpentine, which had been used for cleaning paint brushes, was left on the kitchen floor preparatory to being discarded. The older sibling put the glass on the kitchen table, and the sixteen-month-old sibling obtained it and swallowed its contents. The child experienced burning in the mouth and throat and became cyanotic. She was taken to the hospital emergency room, where her stomach was lavaged one-half hour following ingestion with saline and she was given milk of magnesia. Her eyes were puffy, and she fainted in the hospital. The child remained in the hospital, where she was treated with supportive therapy.

Although the symptoms were alarming, no kidney complications, which are so frequently associated with turpentine poisoning, were noted. It is of interest that in the large number of poisonings reported to this Center, kidney complications are not being reported. The general availability and promptness of treatment in emergency rooms may be a responsible factor.

(*Number thirty-nine in a series of Briefs on Accidental Chemical Poisonings*)

Purpura Fulminans Treated Successfully with Anticoagulation

Purpura fulminans (purpura hemorrhagica, purpura gangrenosa, purpura necrotica) is the abrupt occurrence of massive gangrenous areas, usually in the extremities, during convalescence from a benign illness. Perhaps all of these terms are unfortunate, because they improperly categorize this entity with the purpuras. The areas first appear as painful bluish spots, progress rapidly, and are accompanied by signs of severe toxicity.

Most reported cases have been fatal within two or three days. Amputation was usually necessary in survivors, and was considered in the case reported here. This patient recovered, however, on intravenous heparin therapy, surgical excision, and skin grafts. The rationale of the anticoagulant therapy is based on the hypothesis that purpura fulminans (as an alternative term the author suggests "postinfectious intravascular thrombosis with gangrene") is fundamentally a thrombotic disease—a hypothesis supported both by clinical observations and study of autopsy material.

In this adolescent girl, the illness followed an episode of pharyngitis, presumably of streptococcic origin. Clinical and laboratory data suggested extensive intravascular thrombosis and a hypercoagulable state. The pathologic similarities between the lesions of purpura fulminans and those of the localized Schwartzman phenomenon support the hypothesis that this is basically a thrombotic disease.—*J. Russell Little, M.D., St. Louis, Missouri, Journal of the American Medical Association, January 3, 1959*

NUTRITION EXCERPTS

Prepared with the cooperation of the Faculty of the Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.B., B.S., *Editor*

The Controversy Regarding the Calcium Requirement

FRANCES A. JOHNSTON, PH.D., ITHACA, NEW YORK

IF THE theory of calcium adaptation to be discussed in this article is proved correct, the argument that adults must drink milk in order to get sufficient calcium may lose its validity. There is danger, however, that the public will interpret this finding as a reason for not drinking milk. This would be unfortunate since milk is important for its contribution of nutrients other than calcium, particularly riboflavin and high-quality protein. Numerous dietary studies have shown that nonmilk drinkers seldom consume a diet which meets the recommendations of the Food and Nutrition Board of the National Research Council in riboflavin, protein, and thiamine, as well as calcium. The Board now recommends 800 mg. of calcium a day for the adult.[1]

Nutritionists, like other scientists, are critical of their work and are alert to note whether their laboratory findings agree with conditions existing in population groups. Snapper[2] has noted that in northern China, where the diets of the common people seldom contain more than 350 mg. of calcium and sometimes as little as 200 mg. per day, there is little sign of poor calcification among adults except among those who are sheltered from the sun and therefore obtain little vitamin D. This evidence makes nutritionists pause to think but should not be accepted as proof of a low need without further investigation. Some unsuspected source of calcium may have been missed in the evaluation of the diets. Furthermore, the people are short of stature and their need for calcium is consequently less. However, a deficiency of calcium may have been one of the factors contributing to the short stature. Possibly their bones are not as well calcified as is desirable even though osteomalacia is seldom noted except among those who have had little exposure to the sun.

Even if one assumes that these people obtain enough calcium from diets low in the element, the question arises why laboratory studies indicate a higher need for calcium. In these studies attempts have been made to find the point of calcium balance, that is, the amount of calcium in the food which covers or "balances" the amount lost in the feces and urine. They have been conducted for short periods of time, usually twenty days or less on any given intake, and college students accustomed to generous intakes of milk have served as subjects. Possibly the students had not been given enough time to adapt to the lower levels.

Individuals may adapt in three ways: by absorbing a higher percentage of the calcium in the food, by excreting less in the urine, and by secreting less in digestive juices. To obtain valid information regarding adaptation, studies need to be made on persons who either have been living on low-calcium diets for a long period of time before the balance study is begun, so that they will have adapted, or on persons who are kept on a balance study with a low intake for a long enough period of time for adaptation to take place.

The first approach was used by Hegsted *et al.*,[3] who studied inmates of a prison in Peru. The men had been living on a low-calcium prison diet for from two to twenty years. When submitted to a balance study in which the intake was 338 mg. per day, they retained 29 mg. This was adequate provided 29 mg. is enough to cover small losses, such as those in skin, hair, and perspiration, which are not calculated as losses in balance studies. These results were probably due to previous adaptation on the part of the prisoners, but since no controls unaccustomed to a low intake were included, one cannot be sure that this was the case.

The second approach was used by Nicolaysen *et al.*,[4] who studied inmates of a prison in Norway. They kept the men on an intake of 900 mg. of calcium per day until stabilization was achieved at that level and then dropped the intake to from 400 to 500 mg. Most of the prisoners required two to eight months to adapt from the higher level to the lower one. The data from this study have not yet been published so that they cannot be examined critically. Attention should be called to the fact that although 500 mg. is low compared to the 800-mg. intake recommended by the Food and Nutrition Board it is not especially low.

A group of students at Cornell University were studied by both methods.[5] Of 11 men, 5 had been living on low intakes and 6 on high ones. All 11 were placed on about 200 mg. of calcium per day, an intake considerably lower than the customary intake of any of them. Of the 5 accustomed to a low intake, 2 retained calcium so well that 1 actually had a slight positive balance while the other was exactly in balance. The other 3 men were in definite negative balance. The reason for the difference in performance is not known. As far as could be deduced from the histories of the subjects, the 2 men who were able to attain a balance had been on continual low intakes for a longer period of time than the other 3; they were a few years younger than the others and were allergic to milk. Seven of the men were kept on the 200-mg. intake for three months. They showed some indication of adaptation, but the change was so small and the number of subjects so few that it was not statistically significant. It can be concluded that adaptation, if it occurs, is a slow process which apparently is a matter of years rather than months. At present there is evidence that some individuals can adapt to low-calcium diets but we do not know what conditions determine the ability to adapt, how long it takes to adapt, and to how low a level a person can adapt.

There certainly is a need for some calcium in the diet because there is always some in the feces in addition to that which is unabsorbed food calcium and some in the urine. There are also small amounts lost in skin, hair, nails, perspiration, and so forth. If these losses were not replaced individuals undoubtedly would in time become decalcified. The minimum amount of calcium for replacing these losses in the adapted individual is as yet unknown. Probably most people can adapt to 500 mg. per day. Years ago, when people drank less milk than they now do and many were accustomed to intakes of about 500 mg., a fair proportion of those studied on intakes of about that level were able to maintain a balance. In 1937 Leitch[6] reviewed the calcium balance experiments in the literature and noted that on an intake of 520 mg. half the women studied were in negative balances and half positive. In recent years, when most college students who have served as subjects have been accustomed to higher calcium intakes, most subjects have lost calcium on that intake. The work of Nicolaysen *et al.*[4] also shows that men can adapt to from 400 to 500 mg.

In studying a number of diets of college men who do not drink milk and who consume a large quantity of food, 3,000 calories per day or more, we noted that most of these men obtain at least 500 mg. of calcium a day. This is due to milk in cooked foods, cheese, and ice cream and also to malted milk and milk shakes, consumption of which they do not regard as "drinking milk." In the case of college women whose caloric intakes are below 2,200, the calcium intake is apt to be below 500 mg. if they do not drink milk.

If people can adapt, they may be able to get along on even less than 500 mg., as indicated by the work of Hegsted[3] showing that a little over 300 mg. in a specific situation was sufficient. There are reports in the literature on single individuals who were in balance on less than 500 mg. Although there is evidence that adaptation to low levels of calcium occurs, until we know more about the factors involved and to how low a level persons can adapt we must be cautious. If people adapt to low levels, they maintain a lower store of calcium in the body. Studies are needed over lifetime periods to find out whether people are in as good health at the lower plane of calcium nutrition as when the diet contains moderate amounts.

Another reason for caution in reducing the calcium intake is that calcium has an effect on phosphorus retention. In the Cornell study 7 men whose intakes of phosphorus were adequate under normal circumstances went into negative phosphorus balance when the calcium was reduced to about 200 mg.[7] Other laboratories also have noted an effect of the calcium intake on phosphorus retention. Consequently a low level of calcium intake cannot be accepted as adequate unless phosphorus as well as calcium balance can be achieved at the low level.

Still another reason for caution lies in observations that people who have lived for many years on low-calcium intakes develop decalcified bones in old age. Vinther-Paulsen[8] in Denmark studied 33 people sixty-eight to ninety-six years of age. X-ray studies of the vertebral column showed that among those with an habitual intake of 500 mg. or less per day the incidence of osteoporosis was 74 per cent while among those on an habitual intake of 800 mg. or more there were no evidences of bony changes. In studies of this type the protein and vitamin D intakes should also be investigated since if inadequate they may contribute to the development of the decalcification. Furthermore, older people frequently get little exercise and immobility is known to cause a loss of calcium from the body.

If the time should ever come when the amount of radioactive strontium present in foods is dangerous, the influence of this on calcium metabolism will need to be taken into consideration. Strontium in the body behaves much like calcium. Wasserman *et al.*[9] noted that rats incorporate less strontium into bone when the calcium in the diet is increased. However, Palmer *et al.*,[10] working on rats under somewhat different conditions, did not find this effect. Whether human beings would behave like the rats studied by Wasserman and his group is unknown, but if they did, a high-calcium intake would be protective.

The question of harm owing to drinking

large quantities of milk deserves consideration. A few physicians have reported that persons with very high calcium intakes, on the order of 2 quarts per day, have developed kidney stones. These persons may have developed some abnormal physiologic condition which made them "stone formers," and therefore the high-calcium diet was harmful. Possibly the high-calcium diet was a factor causing the physiologic condition but evidence of this is lacking at present. The possibility of harm from 2 quarts or more of milk a day is no argument against a pint a day.

The 800 mg. of calcium a day for adults recommended by the Food and Nutrition Board may supply much more calcium than is needed, but until more is known about the ability of individuals to adapt to low intakes, the recommendation should not be lowered for people in the United States, where most people have no difficulty in obtaining that amount. The recommendation of 2 cups of milk a day for adults should be continued even if much less than 800 mg. of calcium is eventually recommended because milk supplies other important nutrients.

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(*Number eight in a new series of Nutrition Excerpts*)

Chloroprocaine Hydrochloride: A Clinical Evaluation in Office Surgery

After observing 101 patients who required local anesthesia for office procedures the author, Egmont J. Orbach, M.D., concludes that chloroprocaine hydrochloride has certain advantages over procaine. These advantages include (1) a more profound anesthetic effect; (2) 20 to 30 per cent less of chloroprocaine hydrochloride than procaine needed to anesthetize a given area; (3) lower incidence of untoward reactions, allergic or otherwise; and (4) a shorter duration of action, suiting it to office practice.—*American Practitioner and Digest of Treatment, February, 1959*

CARDIOVASCULAR SPOTLIGHT

Prepared by the Subcommittee on Heart Disease
Council Committee on Public Health and Education
Medical Society of the State of New York

J. G. FRED HISS, M.D., *Editor*

This is the first of a series of "Cardiovascular Spotlights" sponsored by the Subcommittee on Heart Disease of the Council Committee on Public Health and Medical Education of the Medical Society of the State of New York. An attempt will be made to present organizational or program material dealing with cardiovascular problems of special or timely interest to the county medical societies and their members. This page will appear every other month.

A Cardiac Workshop

J. G. FRED HISS, M.D., SYRACUSE, NEW YORK

THERE is now so much medical knowledge that physicians spend many hours, days, or weeks each year reviewing the old and acquiring the new. This is done by reading medical books and medical journals; by attending formal lectures, medical meetings, teaching days, and staff meetings; by working in hospitals and clinics; and by taking postgraduate courses. Each of these methods has some advantages and some disadvantages. For example, reading can be done at odd times on any day, in contrast to the great amount of definitely fixed time necessary to attend meetings at a distance or to take postgraduate courses. The latter have the advantage of personal contact with the lecturers, teachers, or investigators as well as with other physicians who are also trying to "brush up."

The author has had the privilege of being associated with a "workshop" type of self-education in cardiovascular diseases in two of the northern counties of New York State. The plans of organization and operation are described here briefly in the hope that they might be useful elsewhere in the State, especially in areas away from the large medical centers.

The plan has been in operation in Lowville since 1952 and in Gouverneur since 1956. Although called "heart clinics" they are not clinics in the usual sense of the term. Each "clinic" meets once a month in the local hospital. In Lowville the Lewis County Medical Society designates two of its members in rotation to operate one session, and in Gouverneur the medical staff of the Edward John Noble Hospital selects two physicians in rotation for each session. In each place every physician in the group can participate if he wishes. This wide participation is a most important part of the plan.

In each town there is close cooperation among the physicians, the nursing groups, the hospitals, and the local heart associations. The two physicians assigned on any one day take a history; examine the patient; and read the laboratory reports, the electrocardiograms, and the x-ray plates or fluoroscopy reports when available.

When these examinations are completed a cardiology consultant from an upstate medical center and all of the available interested physicians of the local group assemble and listen to the presentation of the cases by the "examiners of the day." Following this there is a free, informal, and stimulating discussion during which the examiner defends his diagnosis and recommendations. The consultant sums up the case and aids in writing the final report which is then sent to the referring physician. The report includes a copy of the history, the examination, and the diagnosis and suggestions for treatment as well as a suggested return date if the referring physician desires one.

This type of exercise has been very stimulating and has made collateral reading much more interesting and meaningful. It has also lead to attendance at more "heart meetings" and to participation in more postgraduate or refresher courses in the large medical centers. One of the most surprising results is the discovery of many presumably rare cardiac conditions in each of the rather small population groups concerned. Organic valvular lesions, innocent murmurs, individual chamber enlargements, various arrhythmias, persistent ductus, coarctation, septal defects, tetralogy of Fallot, congenital pulmonary stenosis, and many other terms have gradually acquired very precise meanings in the minds of the participants.

In order to make such a program a real success the following additional points must be rigidly observed:

1. All medical policies must be made by the physicians.
2. All patient references to the program must be made by the patient's private physician. No references should be accepted from school physicians, nurses, welfare officers, or from patients themselves or from their families.
3. All reports must go to the referring physician so that he can relay the findings to the patient, except in those cases where the referring physician definitely states that the condition should be discussed by the group with the patient.
4. No direct treatment should be given.
5. The consultant should accept patients from the geographic area involved only on reference from the patient's private physician so that he shall not be in direct competition with the physicians he is trying to help.

Summary

A workshop type of graduate medical education in cardiovascular diseases successfully in use in two northern New York State areas is described. The same method or some modification thereof may be usable in other areas of the State.

Additional detailed information may be obtained from the president of the Lewis County Medical Society in Lowville, from the president of the medical staff of the Edward John Noble Hospital in Gouverneur, or from the Subcommittee on Heart Disease of the Council Committee on Public Health and Medical Education of the Medical Society of the State of New York.

(*Number one in a new series of Cardiovascular Spotlights*)

CASE REPORTS

Residual Choledochal Calculi Thirty-One Months After Cholecystectomy: Spontaneous Passage Four Days After Demonstration by Intravenous Cholegraphy

EDWIN J. EUPHRAT, M.D., SYRACUSE, NEW YORK

(From the Department of Radiology, Onondaga General Hospital)

Unlike stones in the urinary tract, choledochal calculi are rarely observed to pass spontaneously. Sherlock[1] is of the opinion that calculi greater than 0.5 cm. in diameter require surgical removal. Writers on the subject of active management of choledochal calculi pay little attention to the possibility of spontaneous passage, although the sudden subsidence of jaundice and other symptoms of common duct obstruction, presumed to indicate the passage of a stone into the duodenum, has occurred in the experience of many surgeons.[2] The pleasant recollection of such rare but happy occasions is apparently not convincing enough to justify, in the face of the all too familiar lethal potentialities of progressive cholemia, anything less than an aggressive surgical approach.

However, reoperation after cholecystectomy is not undertaken lightly, and the search for a less aggressive approach to the problem continues to be pursued eagerly. Ether, introduced via the T tube in patients with choledochostomies, although not entirely abandoned, is being employed with diminishing enthusiasm.[3] Until a solvent harmless to the mucous membrane of the biliary tract becomes available, surgeons will be reluctant to temporize, particularly when the diagnosis has been established unequivocally by radiographic methods, whether or not a T tube is in situ.[4]

A search of the *Quarterly Cumulative Index Medicus* yields no reference to the spontaneous passage of choledochal calculi by the normal route into the duodenum. A case in which such stones were eliminated following injection of iodized oil was described by Neuwirt in 1930.[5] It is probable that passage in this instance was attributed to the pressure of injection and lubrication by the oily contrast material rather than to spontaneous extrusion. Among 20 patients with residual calculi demonstrated by postoperative cholangiography, all of whom persistently refused reoperation because they were symptom-free, Hicken, McAllister, and Call[3] make no reference to a single instance in which a biliary calculus was recovered from the stool of a patient. It would be difficult to conclude that all of these stones remained silent in each of these 20 patients for many years. A more credible explanation would be that in at least some of them the stones had passed into the duodenum and been discharged in the stool, unnoticed by the patient.

Because, among other reasons, the diligent examination of the feces is a loathsome pastime to most laymen, an accurate estimate of the frequency with which choledochal calculi pass spontaneously will remain undetermined. Even well-documented instances are extremely rare, so that it is of interest to record a case in which two residual calculi in the common duct, demonstrated cholegraphically, were recovered from the stool of the patient four days after the radiographic procedure, thirty-one months following cholecystectomy for acute cholecystitis and cholelithiasis.

Case Report

A forty-nine-year-old white married housewife was referred for intravenous cholegraphy on February 23, 1959, because of increasingly severe bouts of epigastric pain radiating to the right shoulder blade, nausea, and occasional vomiting of about five weeks duration. In November,

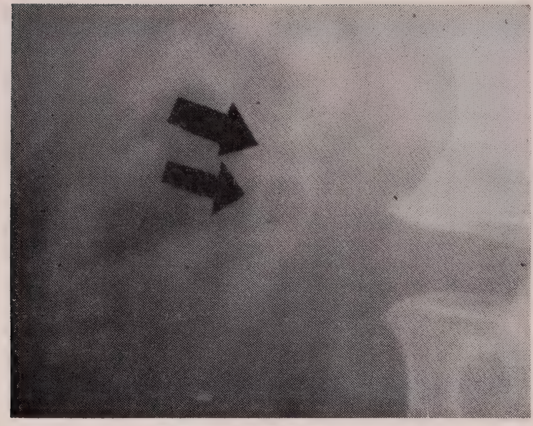

FIG. 1. Cholegraph thirty minutes after injection. Two nonopaque filling defects appear in the common duct.

1956, an emergency cholecystectomy had been performed for acute cholecystitis and cholelithiasis. Many calculi were present in the gallbladder but none were palpable in the common duct. Recovery had been uneventful. Since the operation the patient recalled occasional episodes of indigestion, sometimes with moderate pain radiating to the right shoulder, but she had never been aware of jaundice, light-colored stool, or dark urine. Until the recent increase in the severity of her symptoms, she had required no medication for relief.

Within ten minutes after intravenous injection of 20 ml. of 52 per cent iodipamide (Cholografin methylglucamine), a contrast agent became demonstrable in the biliary tract. At thirty minutes an exceptionally clear shadow was obtained visualizing the common duct, its major tributaries, and the stump of the cystic duct, none of which appeared to be significantly dilated or deformed (Fig. 1). About 3 cm. above the distal end of the common duct there was a round, fairly well-defined, nonopaque filling defect, about 0.9 cm. in diameter. About 2 cm. proximal to this was a second defect, about 0.7 cm. in diameter. At forty minutes the contrast agent had begun to pass into the duodenum in a significant amount. With the patient turned to a prone position the smaller, more proximal calculus was observed to have migrated into the vicinity of the confluence of the hepatic ducts (Fig. 2).

On March 4, 1959, arrangements were made to admit the patient to the hospital for elective exploration of the common duct on the following day. However, on the evening of February 27 she experienced another attack of severe upper abdominal pain, nausea, and vomiting for which 100 mg. of Demerol were prescribed. No nitrite or other antispasmodic was administered. It was feared that an emergency operation might be indicated, but after about an hour's sleep the patient awoke completely relieved. She then voided some coffee-colored urine. This was interpreted as an indication that the distal calculus had entered the region of the sphincter of Oddi. The following morning she observed some yellow discoloration of her skin and sclerae. Later in the day she recovered an 0.8 cm. faceted gallstone from her stool (Fig. 3). That evening the pain and nausea recurred, and the same sequence of events was repeated, culminating in the recovery of the second calculus. The jaundice promptly subsided, and the patient has remained symptom-free.

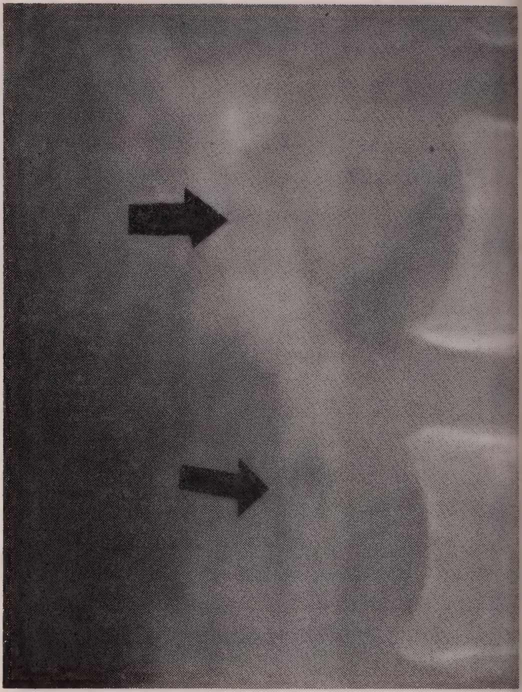

FIG. 2. Cholegraph forty minutes after injection. The smaller, more proximal defect is now observed to have migrated into the vicinity of the confluence of the hepatic ducts (*upper arrow*). Patient is prone.

Comment

This case appears to be unique in several respects: the delay of thirty-one month's prior to the passage of the stones, the relatively prompt

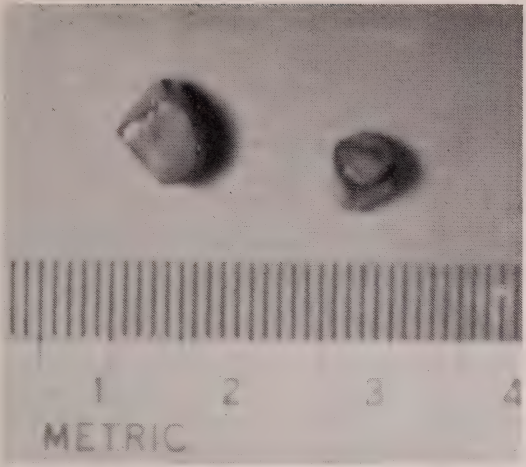

FIG. 3. Calculi recovered from stool.

passage after a demonstration by cholegraphy, and the immediate recovery from the stool of multifaceted, and therefore residual, biliary calculi, all without the benefit of antispasmodics or other measures calculated to induce passage. It confirms the opinion that calculi may be present in the common duct for long periods without seriously affecting the normal contour of the duct or its tributaries and without producing jaundice unless or until obstruction, usually at the sphincter of Oddi, supervenes.

Summary

A case of spontaneous passage of choledochal calculi, residual fifty-one months after cholecystectomy for acute cholecystitis and cholelithiasis, has been reported. The calculi were clearly demonstrated in intravenous cholegrams and recovered from the stool four days later.

ACKNOWLEDGMENT: I am indebted to Dr. Thurston Keese and Dr. William Michaels for clinical data and permission to publish this case.

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Test to Discover Metabolism Deficiency

A new method has been found to detect during infancy a metabolism deficiency which is known to be a contributing factor in certain mental illnesses, a Boston physician has revealed.

According to Gerhard Nellhaus, M.D., the new procedure involves the use of a tiny paper strip to test urine samples of infants during the first months of life. Such tests will indicate the presence of a metabolism deficiency known as phenylketonuria.

The defect is a hereditary deficiency of an essential amino acid, the chemical which builds protein and is vital to life. If not discovered and corrected through diet, the deficiency could lead to mental illness, the physician warned.

In his report, which appears in the June 27 *Journal of the American Medical Association*, Dr. Nellhaus said that with the institution of proper diet the convulsive, behavioral, and intellectual disturbances of the disorder will be improved.

The new test is done with material consisting of a stiff strip of cellulose impregnated with various chemicals. The doctor said that the strip is dipped into the urine sample or saturated by pressing against a wet sheet or diaper. Color reaction occurs within a few seconds and a final reading can be made in thirty seconds.

In the past testing was done by using a ferric chloride solution. The new method is more convenient as well as practical since the color reaction is more positive and will not fade as rapidly as will the solution. The strip method is also beneficial in testing infants who are receiving drugs used in the treatment of rheumatic fever or rheumatoid arthritis.

Dr. Nellhaus is chief resident, children's medical service, Massachusetts General Hospital.

Disseminated Coccidioidomycosis Treated with Amphotericin B

SALVATORE A. LA BARBERA, M.D., STATEN ISLAND, NEW YORK

(*From the U. S. Public Health Service Hospital, Seattle, Washington*)

DISSEMINATED coccidioidomycosis had been lacking specific chemotherapeutic treatment until approximately three years ago when a polyene. antifungal antibiotic, amphotericin B, was tried. Since then there have been a number of reports on the beneficial clinical effect of the drug in patients with coccidioidomycosis.[1–18] The reader is referred to Littman, Horowitz, and Swadey's article[7] for a review of the salient features of coccidioidomycosis as well as of the characteristics of amphotericin B. The purpose of this paper is to present another case of disseminated coccidioidomycosis treated with amphotericin B and followed for fourteen months.

Case Report

A thirty-three-year-old Negro male was referred to the U. S. Public Health Service Hospital, Seattle, Washington, on January 16, 1957, with an admitting diagnosis of bronchopneumonia. The patient stated he had been well until two days prior to admission when he had had a sudden onset of right chest pain which was pleuritic in nature and associated with mild dry cough and a fever of 101 F. He denied previous history of respiratory disease.

The only positive findings on examination were crackling inspiratory rales at the right lower lung field and an oral temperature of 99 F.

A chest film showed an infiltration in the right lower lung field felt to be pneumonitis. The white blood cell count was 7,500 per cu. mm., the hemoglobin was 17.2 Gm. per cent, and sputum studies for pathogens showed normal flora.

Within the next three weeks a gamut of antibiotics from penicillin to chloramphenicol were unable to alter the patient's course. He ran a remittent fever with periodic spikes to 103 F. The white blood cell count rose to 18,000 per cu. mm. with a normal differential, and the pulmonary infiltration increased. The first strength purified protein derivative was positive. Coccidioidin and histoplasmin skin tests were negative. Bronchoscopy showed no endobronchial disease.

Approximately one month after admission fungi which were consistent with coccidioides imitis were found in the sputum. This was subsequently confirmed by further sputum smears and cultures. Serologic tests for coccidioidal infection revealed a complement fixation test that was positive 1 to 16 and a precipitin test that was positive 1 to 10.

Seven weeks after admission, moderate cervical lymphadenopathy and a nodule of the left arm were noted. By then, he had lost approximately 40 pounds and was slightly lethargic. He became discouraged by his course and requested discharge against medical advice on March 12, 1957.

Ten days later he returned and was readmitted. Examination revealed the previous pulmonary findings with additional dullness and decreased breath sounds at the area of the right middle lobe. The liver was palpable three fingers below the right costal margin; there was no splenomegaly; and several fleshy nodules were noted on the legs, thighs, and arms. Two of these were fluctuant and tender and revealed numerous spherules of coccidioides imitis on aspiration. The patient was obviously worse.

Chest x-ray films showed further increase in the infiltration with involvement of the right lower and middle lobes, and sputa were loaded with spherules of coccidioides imitis. Blood cultures were positive for coccidioides imitis. The hemoglobin was 11.5 Gm. per cent, the hematocrit was 33.5, the red blood cell count was 3.88 million per cu. mm., and the white blood cell count was 12,750 per cu. mm. with a normal differential. Liver function tests revealed: cephalin flocculation 3 plus, thymol turbidity 22 cc. of barium sulfate, bromsulphalein with 8 per cent retention after 45 minutes, total protein 7.05 Gm. per cent, albumin 3.1 Gm. per cent, globulin 3.95 Gm. per cent, and alkaline phosphatase 28 Bodansky units. The complement fixation test had become positive at 1 to 128, and the precipitin test was negative. By June 5 the complement fixation test was positive in a dilution of 1 to 256.

Eight weeks after the onset of his illness, the patient was started on amphotericin B. This drug was given intravenously according to the following schedule: the starting dosage was 0.25 mg. per Kg. of body weight per day with increases in increments of 0.15 mg. daily until the total dosage of 1 mg. per Kg. was reached. The calculated total dosage was injected with pressure into 500 cc. of 5 per cent glucose so that the drug was evenly suspended. This suspension was given slowly in four- to six-hour periods.

Approximately two hours after administration of the drug the patient had chills, followed by fever ranging from 103 F. to 104 F., nausea, and emesis. These symptoms were partially relieved by the administration of chlorpromazine, 25 mg., and aspirin, 10 gr. The patient was maintained on this regimen for a period of three weeks. During this period administration of the drug for approximately two to three days was omitted because of the patient's general malaise. The patient's appetite was poor, he continued to lose weight, and his anemia was slowly becoming more pronounced. Because of this the drug was discontinued and oral medication was substituted. This was given with an initial dosage of 200 mg. every eight hours and was increased daily until he was receiving 600 mg. every eight hours for a total dosage of 1.8 Gm. per day. Approximately two weeks later the intravenous drug was substituted with a daily dosage of 1 mg. per Kg. of body weight. Following the first three-week course of intravenous amphotericin B a bone marrow aspiration was reported as showing erythroid hyperplasia. A sickling trait was noted but further studies did not confirm hemolysis, and the anemia was treated supportively.

After three weeks of amphotericin B, the patient began to gain weight and had a sense of well-being. There was slow clearing shown on an x-ray film of the chest, marked regression of the subcutaneous nodules, the blood cultures became negative, there were decreased spherules in the sputum and the hemoglobin, and the red cell count and hematocrit rose to almost normal levels. The patient's fever, which was remittent and ranging between 100 F. and 103 F. prior to treatment, was now normal following the intravenous amphotericin B. The second course of intravenous amphotericin B was not given as continuously as the first but on an average of three to four times per week. Other than the side-effects of chills, fever, nausea, and a small degree of emesis, the patient had no other toxic manifestations. On July 1, after total dosage of the drug (1.8 Gm. per day) had been administered daily for forty-three days, amphotericin B was discontinued because the supply was exhausted.

During the course of the patient's illness an abscess on the thigh was aspirated and instilled with amphotericin B. Following this the abscess healed almost completely. An abscess of the arm similarly treated resolved somewhat slowly, became organized, and remained as a hard nodule. The coccidioidin skin test became positive. Serial liver function tests revealed progressive improvement. On June 17 the alkaline phosphatase was 10.2 Bodansky units, the cephalin flocculation was 2 plus, and the thymol turbidity was 1.7 cc. barium sulfate. The electrocardiogram findings remained normal. Serial chest x-ray film studies showed progressive clearing until May 27 when they stabilized with moderate residuum. The patient became entirely asymptomatic except for a slight productive cough showing a few spherules and he was discharged on July 2.

The patient was followed in the Outpatient Department from July 9, 1957, to July 2, 1958. During this time he gained weight, felt well, and a number of sputum smears and cultures varied from none to a few spherules. The complement fixation titer dropped rapidly and by February 10, 1958 was positive in dilutions of 1 to 16. The pulmonary residual remained stable and the hemogram showed completely normal findings. Liver function studies showed little to no change. The patient did not follow medical advice and began doing construction work. On July 2, 1958, it was noted that he had a painless soft swelling over the right lateral malleolus. Repeat laboratory studies again showed no change except for the complement fixation titer which had climbed to 1 to 32.

On July 24, 1958, he was admitted for reevaluation. Examination revealed a well-nourished Negro male in no apparent distress. The lungs were within normal limits, the liver was palpable two to three fingers below the xiphoid in the midline, and a draining abscess was present on the lateral aspect of the right ankle.

The admission urinalysis, hemogram, and blood urea nitrogen showed normal findings. The total protein was 7.97 Gm. per cent with 3.80 Gm. per cent albumin and 4.17 Gm. per cent globulin. Liver function studies revealed that the cephalin flocculation was negative, the thymol turbidity was 1.5 cc. barium sulfate, the alkaline phosphatase was 5.5 Bodansky units, the prothrombin time was 55 per cent of normal, and there was a bromsulphalein retention of 35 per cent at forty-five minutes. The coccidioidin skin test was positive with 1 cm. induration. Sputum examination revealed no evidence of spherules or endospores of coccidioidis and chest x-ray film examinations revealed no change from previous films. A series of blood cultures for coccidioidis all showed negative findings. Cultures from the abscess of the ankle revealed many streptococci and Staphylococcus pyogenes which were sensitive to penicillin and tetracycline.

Although further studies were planned, after fourteen days of hospitalization the patient failed to return from hospital pass, was discharged, and was lost to follow-up. The question of further treatment with amphotericin B and resection of his probable pulmonary focus had not been settled. Nonetheless the patient appeared clinically well.

Summary

A case of disseminated coccidioidomycosis treated with amphotericin B is presented. The course was rapidly downhill with a grim prognosis as manifested by positive blood cultures, rising complement fixation titers, and failure of the skin to react to intradermal coccidioidin. Amphotericin B was started eight weeks following the onset of his illness. Following this there was remarkable improvement both objectively and subjectively. A fourteen-month follow-up following discontinuance of the drug revealed stabilization of all laboratory studies except for a re-elevation of the complement fixation titer from 1 to 16 to 1 to 32. The patient was completely asymptomatic except for the production of sputum containing a few spherules.

The clinical effect of this drug in this patient has been most encouraging and is in agreement with results obtained by others. The lasting effect of the drug seems suggested by the patient's complete well-being after fourteen months of cessation of treatment. It is reasonable to assume that this drug will play a major part in the specific treatment of this disease.

253 Burgher Avenue, Staten Island 5

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Sacral Epidurography

ALBERT W. COOK, M.D., JOSEPH P. ARCOMANO, M.D., AND LEWIS L. IMMERMAN, M.D., BROOKLYN, NEW YORK

(*From the Division of Neurosurgery, State University of New York Downstate Medical Center, the Department of Neurosurgery of the Long Island College Hospital, and the Department of Radiology of the Long Island College Hospital*)

THE radiographic visualization of the sacral epidural space following the regional installation of pantopaque has been found to be of diagnostic value in specific situations. The safety, feasibility, and clinical importance of this procedure will be emphasized by a description of the technic, an account of 2 illustrative cases, and a discussion of the types of clinical problems which should justify the use of such a diagnostic procedure.

Technic of Sacral Epidurography

With the patient in a prone position, and after suitable preparation of the skin area about the sacral hiatus, a number 18 gauge spinal needle is inserted through a 1 per cent novocain wheal into the sacral canal. With the aid of fluoroscopy, the point of the needle is placed at a point adjacent to the first sacral bony segment. A syringe containing 15 cc. of pantopaque is attached to the needle. As the needle is withdrawn slowly, pantopaque is injected slowly throughout the entire length of the sacral canal. Roentgenograms are taken of the sacrum in multiple projections. During the injection considerable care should be given to the large venous channels which at times exist within the sacral area; for this reason procedures such as this are not without danger if done in the presence of angioblastic malformations in the bone of the sacral canal. There have been no enduring symptoms in the 9 patients in whom this procedure has been used, even though subsequent roentgenograms of the sacral area have demonstrated slow but progressive reabsorption of the opaque substance (Fig. 1). The following radiographic features may be considered significant in the sacral epidurogram: (1) failure to fill the epidural space and perineural zones symmetrically and (2) displacement of the demonstrated perineural zones.

Case Reports

CASE 1.—*Intermittent and finally intractable low back and left lower extremity pain with focal neurologic findings (S-1 root). Demonstration by routine and special roentgen technics (epidurography) of upper sacral lesion.*

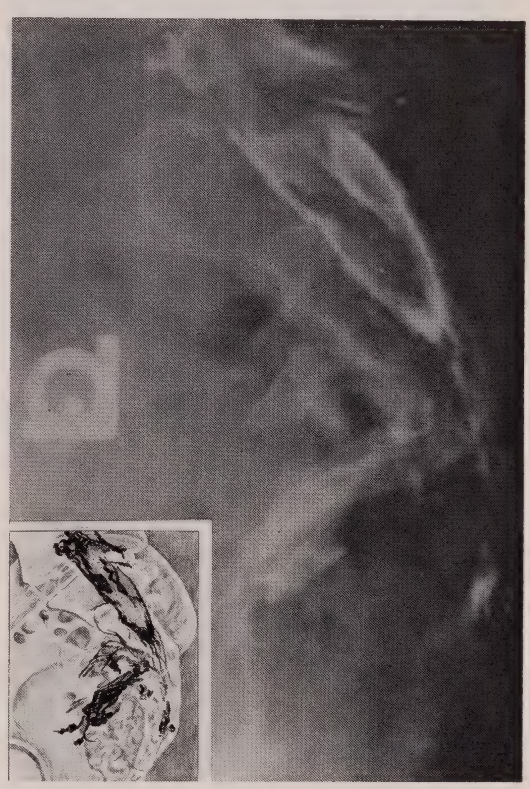

FIG. 1. Normal sacral epidurogram in lateral projection exhibiting clear outline of sacral canal.

A forty-nine-year-old white female was admitted to the Long Island College Hospital on September 10, 1954, because of persistent low back pain and pain in the left lower extremity. Although low back pain had been present intermittently for a number of years, in June, 1954, pain in the left hip became severe for a short time following sneezing. One week later pain appeared in the left lower extremity, particularly in the region of the posterior aspect of the leg, and numbness was experienced in the left heel. Sev-

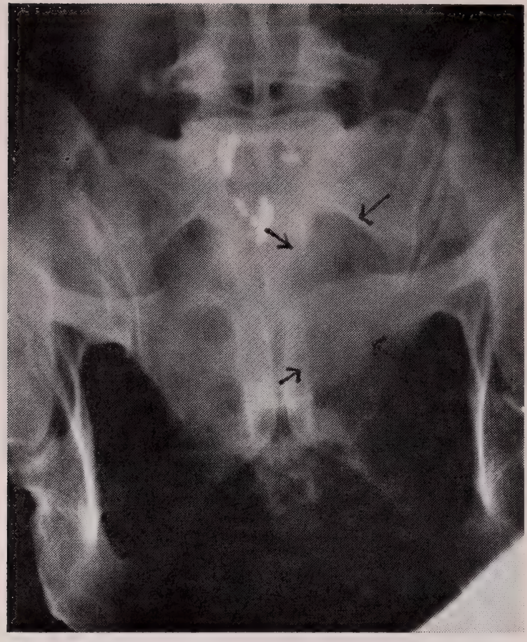

FIG. 2. Posterior-anterior roentgenogram of sacrum indicating destructive lesion in sacrum.

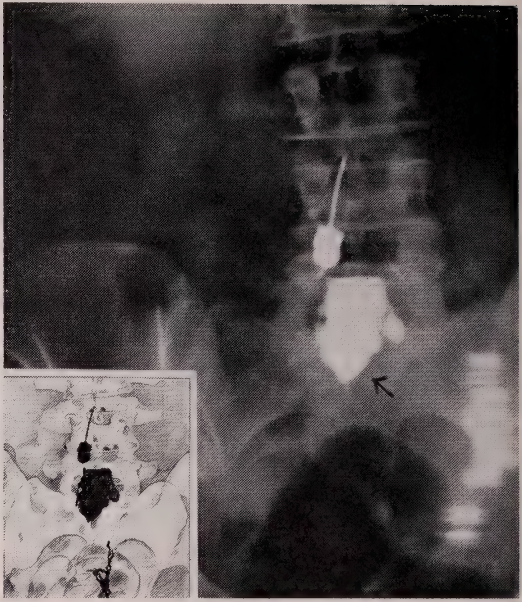

FIG. 3. Myelogram indicating presence of mass lesion in upper sacral area by virtue of displacement of cul-de-sac.

eral days later pain increased in the left thigh and low back and persisted in spite of bed rest, leg traction, and the use of a back support. At times the supine position could not be tolerated and the patient said "I had to walk to relieve the pain." Osteopathic treatment and analgesics also provided little relief. There was no pain in the right lower extremity and no sphincteric difficulty.

Physical examination disclosed the following pertinent features: absent left ankle jerk, alleged hypalgesia (25 per cent) in the region of the left heel, absence of muscle atrophy and motor dysfunction, mild reversal of normal lumbar lordosis, restricted bending in the lumbar area, and tenderness over the left sacroiliac region.

Roentgenographic examination of the lumbosacral region disclosed a destructive lesion in the left sacrum at the level of the first and second sacral foramina. There was erosion of the medial and superior margins of the left iliac crest (Fig. 2). Lumbar myelography showed only deviation of the cul-de-sac to the right (Fig. 3).

Subsequently a mass was palpated in the left upper sacral area and biopsy of this lesion showed it to be a giant cell sarcoma of the bone. Following a course of deep x-ray therapy (tumor dose 3,284 roentgens) the pain disappeared. However there were no discernible roentgenographic changes in the area of the tumor. Pain again returned in March, 1955, and further roentgen

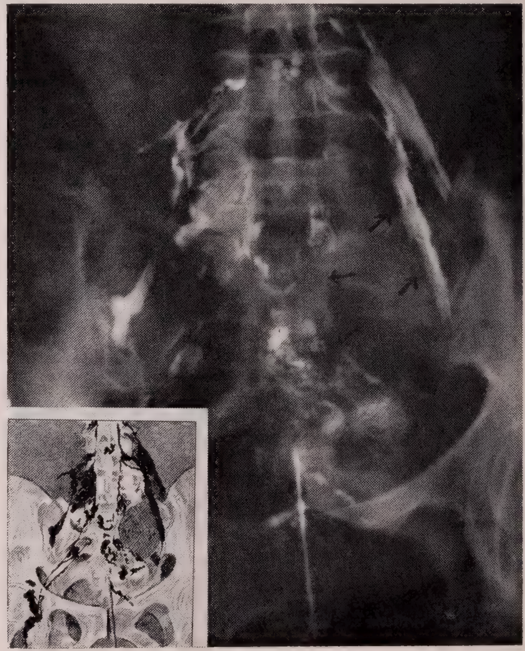

FIG. 4. Sacral epidurogram outlining extent of tumor in upper sacrum.

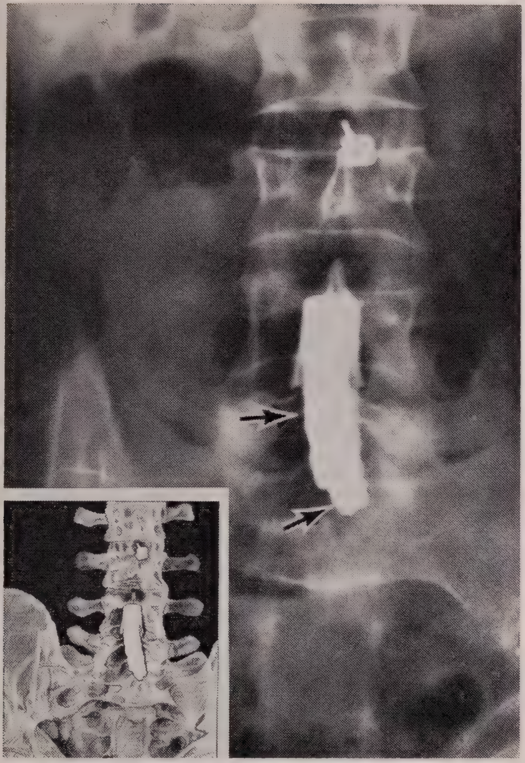

FIG. 5. Myelogram displaying deviation of cul-de-sac by sacral mass.

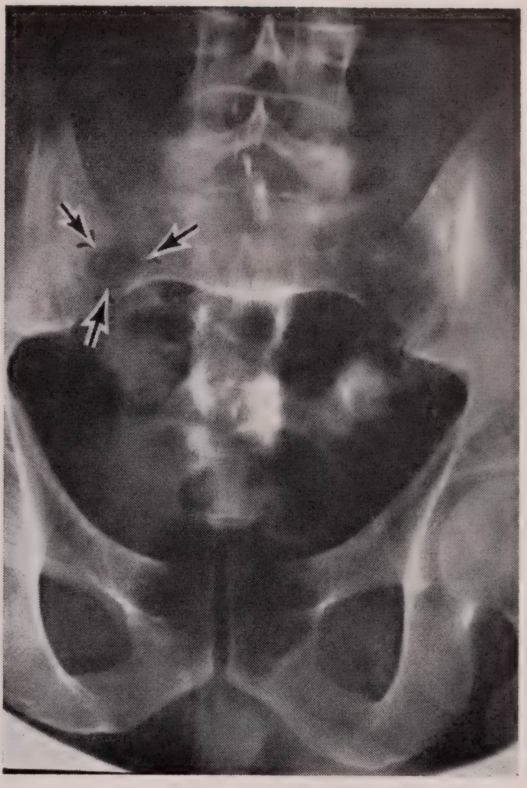

FIG. 6. Posterior-anterior roentgenogram of sacrum indicating destructive lesion in sacrum.

therapy (tumor dose 4,100 roentgens) induced another remission. In June, 1955, admission to the hospital was again necessary because of further neurologic signs and pain. A sacral epidurogram was then performed (Fig. 4) and the extent of the lesion demonstrated. Anterolateral chordotomy was subsequently performed but gradually general physical deterioration ensued until the patient died in August, 1955.

COMMENT.—Experience with this patient emphasized the significance of sacral lesions in producing the syndrome of sciatica as well as the feasibility of outlining a sacral lesion by sacral epidurography.

CASE 2.—*Intermittent and finally intractable root pain (S-1). Demonstration by routine and special roentgen technic (epidurography) of upper sacral lesion.*

A white male aged thirty-three was admitted to the Long Island College Hospital on May 20, 1955, because of pain in the right buttock, right lower extremity, and numbness of the right heel. Pain first appeared one and one-half years prior to this time but was of a transitory character and was located primarily in the right gluteal area. Subsequently two additional episodes of transitory right gluteal pain appeared in the ensuing months. One month before the patient entered the hospital, however, pain in the right gluteal area had again appeared which endured and was associated with a sensation of numbness in the right heel and radiation of pain down the posterior aspect of the right lower extremity. There had been no pain in the left lower extremity and no sphincteric difficulty.

Physical examination did not disclose any specific abnormalities except those related to the low back and lower extremities. Tenderness was present over the right lumbosacral area in all planes. The right Achilles tendon reflex was absent but there were no other motor or muscle reflex changes. Hypalgesia and hypesthesia (50 per cent) were demonstrable over the lateral aspect of the right leg and heel. Lumbar myelography (Fig. 5) disclosed only a deviation of the cul-de-sac to the left, but a destructive lesion of

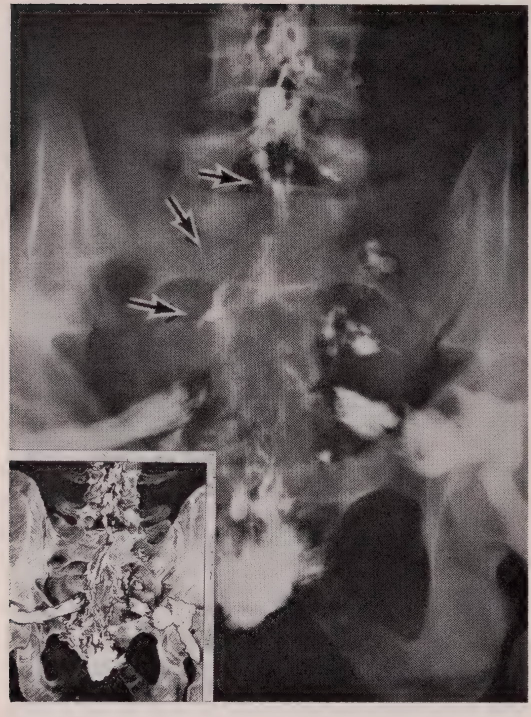

FIG. 7. Sacral epidurogram showing displacement of epidural opaque material by mass in sacrum.

the right upper sacrum was visualized in plane roentgenograms of this area (Fig. 6). A sacral epidurogram (Fig. 7) verified the presence of a mass lesion in the right upper sacral area. After appropriate surgical exposure, a portion of the tumor was removed for biopsy. No definite pathologic diagnosis could be made regarding the tumor; however, pain was completely relieved by a course of deep radiation therapy. Following the patient's return to the British Isles it was reported that he subsequently succumbed to the malignant disease.

COMMENT.—In this instance the typical syndrome of compression of the first sacral root on the right was evident clinically. Previous experience prompted consideration of the upper sacrum as the site of the lesion, and this was verified by appropriate roentgen technics including sacral epidurography.

General Comment

Spinal epidurography (air) was first suggested by Sanford and Doub in 1941[1] when more satisfactory and safe procedures for the demonstration of lesions of the spinal canal were not available. With the advent of clinical utilization of pantopaque as a contrast material in the spinal subarachnoid space, enthusiasm for the epidural procedures waned. Subsequent clinical experience has established, however, that diagnostic procedures such as pantopaque myelography may have distinct limitations when the varied pathologic entities implicating the upper sacral area are considered.

The syndrome of so-called sciatica may result from any abnormal situation comprising one of the neural components that form the nerve bundle or the sciatic nerve. The intradural area traversed by these nerve trunks can be visualized by subarachnoid injection of an opaque substance. Yet the epidural areas S-1 and S-2 through which the more caudad roots traverse is not outlined by this procedure. Often and perhaps more frequently than is known lesions comprising these roots may be the causative agents producing subjective manifestations of sciatica and may be completely overlooked because of so-called negative myelography.

It is apparent that sacral epidurography may find great usefulness in patients in whom there are objective and subjective manifestations of lesions of the upper sacral roots but in whom other more routine measures fail to disclose the origin of the radicular syndrome.

Summary

The technic of spinal epidurography is presented; and an account of 2 cases is given to illustrate its clinical importance and usefulness. Specific situations in which an upper sacral lesion might be suspected and this procedure found to be of great diagnostic use have been discussed briefly.

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Nothing prevents our being natural so much as the desire to appear so.—DUC DE LA ROCHEFOUCAULD

MONTH IN WASHINGTON

The House Ways and Means Committee has put aside until next year the so-called Forand bill which is opposed vigorously by the medical profession. But supporters of the legislation have made clear that they will press for action by Congress next year when politics will be paramount because of the presidential and Congressional elections in November.

The Ways and Means Committee took no action on the legislation after five days of hearings highlighted by the Eisenhower Administration lining up with the medical profession in opposition to it.

Arthur S. Flemming, Secretary of Health, Education, and Welfare, told the committee that "it would be very unwise" to enact such a bill. He warned of "far-reaching and irrevocable consequences." It would freeze health coverage of the aged "in a vast and uniform government system" and would mark the beginning of the end of voluntary health insurance for old persons, he said.

Secretary Flemming later promised to report to Congress early next year on possible alternatives, including Federal subsidies to private carriers of health insurance for the aged, but he took no position on any of the alternatives for the time being.

Summing up the hearings, Dr. F. J. L. Blasingame, executive vice-president of the A.M.A., said: "It was shown that it would be most unfortunate for the Federal government to move in for political reasons and attempt in a compulsory fashion to solve by legislation problems which are being thoughtfully considered at the state and local level by the medical profession and other dedicated members of the health team."

Main support for the bill, which was sponsored by Rep. Aime J. Forand (D., R.I.), comes from organized labor. The legislation would increase Federal Social Security taxes to finance hospital, surgical, and nursing home care for Social Security beneficiaries.

Although this bill has been shelved for the time being by the House Committee, the problems of the aged are being studied by a Senate Subcommittee headed by Sen. Pat McNamara (D., Mich.). The Subcommittee on Problems of the Aged and Aging of the Senate Committee on Labor and Public Welfare has held public hearings intermittently in Washington. It also planned to hold hearings in various other cities.

In his second appearance before the Senate Subcommittee, Dr. Frederick C. Swartz, Chairman of the A.M.A.'s Committee on Aging, reported that state and local medical associations "have moved promptly" to make the A.M.A.'s six-point "positive health program" for the aged "an effective and workable instrument."

Dr. Swartz said that the problem of financing health services for the aged is "a temporary, not a permanent one" because "each year, more and more of the Americans who are reaching sixty-five are covered" by voluntary insurance.

Democrats in Congress cut back their housing program further after President Eisenhower vetoed a $1.4 billion bill. Starting with a $2.1 billion program, Democrats came down to the $1.4 billion figure in an effort to avoid a veto although it was a more expensive program than Mr. Eisenhower wanted.

After the President vetoed this bill anyway, Democrats came up with a $1 billion bill which retained three provisions of interest to the medical profession. They would: (1) provide construction loan guarantees by the Federal Housing Administration of up to 75 per cent of the cost of proprietary nursing homes; (2) authorize $25 million in direct loans for construction of housing for interns and nurses, and (3) authorize a $50 million revolving fund for direct loans to help private nonprofit corporations build rental housing for the elderly.

Congress voted a compromise $400 million appropriation for medical research. The amount was about $80 million less than approved by the Senate, but was more than $100 million above the Eisenhower Administration's request for the National Institutes of Health.

The allotments for research in specific fields included: cancer, $91 million; mental health, $68 million; heart, $62 million; arthritis, $47 million; neurology, $41 million; and allergy, $34 million.

Prepared by the Washington Office of the American Medical Association, Washington, D.C.

God can't be always everywhere: and, so, invented mothers.—Sir Edwin Arnold

NECROLOGY

Ernest G. Abraham, M.D., of New York City and Newark, New Jersey, died on August 17 at his home at the age of fifty-eight. Dr. Abraham received his medical degree in 1925 from the University of Konigsberg. He was senior clinical assistant in gynecology and endocrinology at Mount Sinai Hospital. Dr. Abraham was a Fellow of the American College of Obstetrics and Gynecology and of the International College of Surgeons, a Diplomate of the International College of Surgeons, and a member of the Aero Medical Association, the Association of Military Surgeons of the United States, the American Public Health Association, the American Board of Legal Medicine, the Rudolf Virchow Medical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Albert Adams, M.D., of Whitestone, died on August 3 at his home at the age of seventy-nine. Dr. Adams graduated in 1904 from Columbia University College of Physicians and Surgeons. He was a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Anthony Bassler, M.D., of New York City, died at his home on August 20 at the age of eighty-five. Dr. Bassler graduated in 1898 from Bellevue Hospital Medical College. He was a consultant in gastroenterology at St. Vincent's, Misericordia, St. John's Riverside (Yonkers), St. Agnes (White Plains), United Hospital (Port Chester), and Polyclinic Hospitals. He was the organizer and former president of the New York Gastroenterological Association as well as founder and first chairman of the Section on Gastroenterology of the American Medical Association, a former president of the National Gastroenterological Association and the National Society for the Advancement of Gastroenterology, and in 1937 served as the American president of the International Congress on Hepatic Insufficiency. He was also American president of the International Society of Gastroenterology. Dr. Bassler was an honorary vice-president of the American Society of Stomatologists, a former assistant professor of pathology at Bellevue Hospital Medical College and New York University, a professor of gastroenterology at the Polyclinic Medical School and Fordham and New York Universities. For his work on dysentery in World War I he was cited by the Navy and also the Army for his aid to the Selective Service, and held membership in the Legion of Honor of France and an honorary LL.D. degree from Hahnemann Medical College.

Dr. Bassler was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Gastroenterology and of the American College of Physicians, a member of the American Roentgen Ray Society, the American Therapeutic Society, the New York Academy of Medicine, the New York Gastroenterological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Aaron Bell, M.D., of New York City, died on August 26 at his home at the age of fifty-seven. Dr. Bell graduated in 1926 from Cornell University Medical College and interned at New York and Bellevue Hospitals. He was director of neuropsychiatry at Lenox Hill Hospital and Lenox Hill Hospital Outpatient Department and a consultant in neurology at Huntington and Hasbrouck Heights (New Jersey) Hospitals. Dr. Bell was a Diplomate of the American Board of Psychiatry and Neurology and a member of the Association for Research in Nervous and Mental Disease, the American Academy of Neurology, the New York Academy of Medicine, the New York Neurological Society, the New York Society for Clinical Psychiatry, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Eugene John Braun, M.D., of New York City, died on May 7 at the age of fifty-one. Dr. Braun received his medical degree in 1932 from the University of Prague. He was an assistant attending psychiatrist at St. Luke's Hospital. Dr. Braun was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry), a Member of the American Psychiatric Association, and a member of the Association for the Advancement of Psychotherapy, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James W. Byrne, M.D., of Utica, died on February 24 at the age of seventy-three. Dr. Byrne graduated in 1910 from Albany Medical College. He was an attending in surgery at St. Luke's Memorial Hospital.

Flanders Dunbar, M.D., of New York City and Kent, Connecticut, died on August 22 at the age of fifty-six. Dr. Dunbar graduated in 1930 from Yale University School of Medicine. She was a Diplomate of the American Board of Psychiatry and Neurology, a Fellow of the American Psychiatric Association, and a member of the American Psychoanalytic Association, the American Psychopathological Association, the Association for Research in Nervous and Mental Disease, the New York Academy of Medicine, the New York Society for Clinical Psychiatry, the New York Psychoanalytic Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Fama, M.D., of the Bronx, died on August 29 at his home at the age of seventy. Dr. Fama graduated from New York Homeopathic Medical College and Flower Hospital in 1914 and had also received a degree from the University of Palermo in 1923. He was an associate physician (inactive) at Union Hospital of the Bronx. In 1921 he was appointed by the Department of the Interior to be a member of the United States Board of Pension Surgeons; in 1924 he was named an honorary surgeon of the Police Department; in 1934 he was appointed to the medical board of the New York City Employees Retirement System and later became chairman of the board. Dr. Fama was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Anthony J. Flood, Sr., M.D., of Watertown, died on June 30 in the House of the Good Samaritan at the age of seventy-three. Dr. Flood graduated in 1912 from Queens University Faculty of Medicine, Ontario. He was an honorary surgeon at Mercy Hospital. Retired, Dr. Flood was at one time medical director of the Watertown public school system.

Henry Frenkiel, M.D., of the Bronx, died on June 14 at the age of sixty-four. Dr. Frenkiel received his medical degree from the University of Warsaw in 1925. He was an assistant in ophthalmology at Fordham Hospital and an assistant in otorhinolaryngology at Kings County Hospital. Dr. Frenkiel was a member of the Bronx County Medical Society and the Medical Society of the State of New York.

Arnold M. Goodhart, M.D., of the Bronx, died on June 14 at the age of sixty-nine. Dr. Goodhart graduated in 1916 from Fordham University School of Medicine.

Julius Hass, M.D., of New York City, died on August 18 at the Hospital for Special Surgery at the age of seventy-one. Dr. Hass received his medical degree from the University of Vienna in 1910. He was a consultant in orthopedic surgery at the Hospital for Special Surgery and Montefiore Hospital. He was a Diplomate and Fellow of the International College of Surgeons and a member of the American Academy of Orthopaedic Surgeons, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Philip P. Hayman, M.D., of New York City, died on July 6 at the age of seventy. Dr. Hayman graduated in 1911 from the College of Physicians and Surgeons of Baltimore. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Franklin Ives, M.D., of Houston, Texas, formerly of Brooklyn, died on June 30 at the age of eighty-nine. Dr. Ives graduated from Columbia University College of Physicians and Surgeons in 1895. He was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the New York Academy of Medicine, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Kenneth Kerr, M.D., of Staten Island, died on July 2 at the age of fifty-six. Dr. Kerr graduated in 1928 from Columbia University College of Physicians and Surgeons and interned at Roosevelt Hospital.

Russell C. Kimball, M.D., of West Brentwood, died on July 7 at the age of fifty-nine. Dr. Kimball graduated from the University of Michigan Medical School in 1928.

Thomas J. Kirwin, M.D., of New York City, died on August 18 at New York Hospital at the age of sixty-seven. Dr. Kimball graduated from Cornell University Medical College in 1917. He was an attending in urology at Flower and Fifth Avenue Hospitals, a consultant in urology at Coney Island, South Nassau Communities, Elmhurst General, and

General (Passaic, New Jersey) Hospitals. Dr. Kirwin was a Diplomate of the American Board of Urology and of the International College of Surgeons, a Fellow of the American College of Surgeons and of the International College of Surgeons, and a member of the American Urological Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry Krauskopf, M.D., of New York City and Jamaica, died on June 18 in Atlantic City at the age of seventy-eight. Dr. Krauskopf graduated from Columbia University College of Physicians and Surgeons in 1902. He was a consultant in gynecology at Jewish Memorial Hospital where he had also served as president of the medical staff. Dr. Krauskopf, who retired in 1958, was a Fellow of the American College of Surgeons and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry R. Marlatt, M.D., of Fairport, died on July 13 at his home at the age of seventy-four. Dr. Marlatt graduated in 1911 from the University of Buffalo School of Medicine. He was a former public health officer in Homer, Louisiana, and helped organize the city health department in Peoria, Illinois, in 1946. Dr. Marlatt was a member of the American Public Health Association, the American School Health Association, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ralph Munzner, M.D., of Alton, died at his home on April 25 at the age of sixty-two. Dr. Munzner received his medical degree in 1923 from the University of Giessen. For the last six years he had been Wayne County coroner. Dr. Munzner was a member of the Wayne County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Bendet Nelson, M.D., of New York City, died on June 18 at the age of ninety-one. Dr. Nelson received his medical degree in 1897 from the University of Kiev.

Dermot F. O'Connor, M.D., of Syosset, died on July 21 at the age of forty-one. Dr. O'Connor graduated in 1941 from University College, Dublin. He was a junior attending in obstetrics and gynecology at Meadowbrook Hospital. Dr. O'Connor was a member of the Nassau Obstetrical Society, the Nassau County Medical Society, and the Medical Society of the State of New York.

George D. Pace, M.D., of Saugerties, died on May 20 at his home at the age of seventy-nine. Dr. Pace graduated from Long Island College Hospital Medical School in 1908. He was a member of the Ulster County Medical Society and the Medical Society of the State of New York.

Nathaniel Pearl, M.D., of Long Beach, died on August 6 at the age of fifty-two. Dr. Pearl graduated from the Royal College of Physicians and Surgeons, Edinburgh, in 1939. He was an associate physician in internal medicine at Long Beach Memorial Hospital. Dr. Pearl was an Associate Fellow of the American College of Chest Physicians, a Member of the American College of Cardiology, and a member of the American Academy of General Practice, the New York Cardiological Society, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Erich B. Plocki, M.D., of New York City, died on June 30 at the age of fifty-eight. Dr. Plocki received his medical degree in 1925 from the University of Wurzburg. He was a senior clinical assistant in surgery of peripheral vascular diseases at Mount Sinai Hospital. Dr. Plocki was a member of the American Geriatrics Society, the New York Gastroenterological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Rosenbaum, M.D., of the Bronx, died on May 16 at the age of fifty-seven. Dr. Rosenbaum graduated from George Washington University School of Medicine in 1927 and interned at Lincoln and Montefiore Hospitals. He was an attending physician at Harlem Hospital and at the Department of Health Tuberculosis Clinic. Dr. Rosenbaum was a Fellow of the American College of Chest Physicians and a member of the American Public Health Association, the New York Academy of Medicine, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Rosenberg, M.D., of Brooklyn, died on May 26 at the age of fifty-seven. Dr. Rosenberg received his medical degree from the University of Rome in 1932. He was a member of the Kings County Medical Society and the Medical Society of the State of New York.

Roscoe D. Severance, M.D., of Syracuse, died on July 30 at the age of sixty-two. Dr. Severance graduated in 1920 from Syracuse University College of Medicine. He was senior consultant in orthopedics at University Hospital and clinical professor emeritus of orthopedic surgery at the State University Upstate Medical Center. Retired in 1958, Dr. Severance was a Diplomate of the American Board of Orthopedic Surgery and a member of the American Academy of Orthopaedic Surgeons, the Syracuse Academy of Medicine, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Tartikoff, M.D., of Brooklyn, died on July 22 in Maimonides Hospital at the age of forty-five. Dr. Tartikoff graduated in 1939 from the University of Maryland Medical School and interned at Israel-Zion Hospital. A clinical instructor in obstetrics and gynecology at the State University of New York Downstate Center, he was an associate in obstetrics and gynecology at Maimonides and Coney Island Hospitals and an associate in gynecology at the Jewish Chronic Disease Hospital. Dr. Tartikoff was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Obstetrics and Gynecology and of the American College of Surgeons, an Associate of the International College of Surgeons, and a member of the Brooklyn Gynecological Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Garfield Wagner, Jr., M.D., of Gowanda, died on April 16 at the age of fifty-four. Dr. Wagner graduated in 1929 from the University of Buffalo School of Medicine. He was a Fellow of the American College of Chest Physicians and a member of the American Trudeau Society, the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Nelson Williams, M.D., of Poundridge, died on June 6 at the age of eighty-three. Dr. Williams graduated from Columbia University College of Physicians and Surgeons in 1903.

James Cathcart Wilson, M.D., of Scarsdale, died on August 24 in Daytona, Florida, at the age of sixty-one. Dr. Wilson graduated in 1922 from Columbia University College of Physicians and Surgeons and interned at Bellevue Hospital. He was an honorary physician at Lawrence Hospital, Bronxville. Dr. Wilson was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Benno Maurice Wronker, M.D., of New York City, died on May 26 at the age of seventy-three. Dr. Wronker graduated in 1909 from Columbia University College of Physicians and Surgeons.

Match Test Used to Measure Respiratory Function

The simple act of blowing out a book match has now become a medical test. It is used to measure the seriousness of airway obstruction in such pulmonary diseases as asthma or emphysema. The test is described by four Michigan doctors in the August 1 *Journal of the American Medical Association.*

Wheezing and prolonged expiration—the usual bedside signs of airway obstruction—do not give the necessary information to evaluate respiratory function, the doctors said. It is usually evaluated by two rather complicated tests requiring the use of mechanical devices, which cannot always be brought to a bedside.

The match test was devised as a simple bedside means for checking airway obstruction. The doctors gave the match test to 126 patients with various pulmonary diseases. Next they gave the two standard respiratory function tests and then correlated the results of the three tests.

The match test, they believe, is useful as a screening procedure. If a patient is unable to blow out a match held six inches from his mouth, it is a sign he should undergo the more specific complicated tests.

The authors are Drs. Thomas H. Snider, John P. Stevens, Freeman M. Wilner, and Benjamin M. Lewis of the Veterans Administration Hospital, Dearborn, Michigan, and Wayne State University College of Medicine, Detroit.

NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Promoted—Dr. John E. Kiley, from assistant professor to associate professor of medicine; Dr. David F. Brown and Dr. William H. Conklin, from assistant to instructor; Dr. Thomas L. Hawkins, Jr., from research fellow in hematology to instructor in medicine; and Drs. Clifford Casey and Michael Melas from assistant instructors to assistants. Drs. Lewis W. Barton and Edward C. Brandow. Jr., both of Albany, from instructor to assistant clinical professor of otolaryngology and assistant to instructor in otolaryngology, respectively. Drs. James J. Cassidy and Robert C. Hays, from assistant instructor to instructor in obstetrics and gynecology; and Dr. David F. Kennedy from assistant instructor to instructor in psychiatry.

Appointed—Drs. Edward Attarian, Albany; William V. Kinnard, Albany; Edward W. Knight, Canaan; Dean Seibert, Berlin, Connecticut; Thomas Spath, Albany; and Robert Milora, Albany, have been named assistant instructors in medicine. Other new appointees are: Drs. John H. Carter and Harold F. Welch, both of Albany, as instructors in surgery; to the sub-departments of surgery are: Ernest S. Mathews, Lockport, neurosurgery; Munir Jabbur, Nebk, Syria, and Arthur J. Wendth, Jr., Albany, orthopedic surgery; Edward Stasio, Ridgewood, otolaryngology; Richard P. Andrews, Albany, plastic surgery; Howard L. Gadboys, Waltham, Massachusetts, thoracic surgery; Jules Charron, Montreal, Canada, Gerald Kotzin, Albany, and W. J. Spakowski, Windsor, Canada, urology. Named as assistant instructors in surgery have been: Vincent P. Donnelly, Schenectady; Ivan A. Hernandez, Santa Clara, Cuba; John S. Knox, Selkirk; Neil Mempert, Long Island City; Keith G. McCullough, Manitoba, Canada; Donald J. Mangus, Albany; James E. Mincy, Jackson, Mississippi; Shinji Miyagi, Shiroishi-City, Japan; David W. O'Keeffe, Albany, Edward C. Quinlan, Eugene A. Schrang, and Marcus Shoobe, Albany; and Carmine W. Terraciano, the Bronx. Anesthesiology, Thomas V. Flanagan, Albany; Mahmoud Sebghatic, Tehran, Iran; Hirokuni Sakai, Yokahama, Japan, as assistant instructors; neurology, Rajindar F. Joenja, Delhi, India, and Nicholas N. Velarde, San Isitro, the Philippines, assistant instructors; obstetrics and gynecology, Bruce S. Mix, Scotia; Jason Reder, Pittsfield, Massachusetts; William A. Flood, North Bennington, Vermont; Michael Billingson, Albany, as assistant instructors; Jacqueline Mauro, Albany, instructor in obstetrics and gynecology and pathology. Pediatrics, Edwin A. Bronsky, Binghamton; Joseph C. Loffredo, Schenectady; Bernice G. Shoobe, Albany, as assistant instructors; and in psychiatry, Jesse J. Kaye, New Scotland, and Dewey Robbiano, Jr., Albany, as instructors; Perihan Aral, Ankara, Turkey; Henry Camperlengo, Brooklyn; William V. Donohue, Albany; George H. Sweeney, Albany; Jack Underwood, Albany, as assistant instructors.

Research Appointments—Dr. Harmut W. Doerwaldt, Rennselaer, and Dr. Samuel Spitzer, Skaneateles, research fellows in hematology; Dr. Miriam Friendenthal, Albany, and Dr. Jesus T. Suero, Laguna, the Philippines, research fellows in pulmonary diseases; Dr. George E. Reardon, West Hartford, Connecticut, and Dr. Henry Tulgan, Albany, research fellows in medicine.

Columbia University College of Physicians and Surgeons

Grant—The Dysautonomia Association awarded a $5,000 grant to Robert A. Fishman, M.D., for further research in the blood-brain barrier. Dr. Fishman will investigate the exchange of magnesium between blood and cerebral-spinal fluid in an effort to understand the relationship of magnesium metabolism to diverse neurologic symptoms. This study may throw light on the unexplained fact that magnesium is the only cation in greater concentration in the cerebrospinal fluid than in plasma. The distribution of ions and water in the normal cerebral hemisphere will also be investigated as well as the effects of chronic obstructive hydrocephalus on water and ion distribution of the atrophic hemisphere.

New York University Post-Graduate School of Medicine

Appointed—Merril Eisenbud and Dr. Roy E. Albert have been appointed professor and associate professor of industrial medicine. Mr. Eisenbud will assume direction of a laboratory concerned with the study of long-range effects of radioactivity on man to be established at the Medical Center which will be a unit of the Institute of Industrial Medicine.

Dr. Albert, who has been associated with Professor Eisenbud at the Atomic Energy Commission and was assistant director of the Radioisotope Laboratory of George Washington University Hospital, Washington, D.C., will assist Mr. Eisenbud.

State University of New York Downstate Medical Center in Brooklyn

Appointed—Dr. Stanley L. Lee, full-time director of hematology, Maimonides Hospital of Brooklyn, has been appointed associate professor of medicine.

Retired—Dr. John J. Hamilton Crawford, clinical professor of medicine, retired August 31 and was appointed clinical professor emeritus of medicine which was effective September 1. Dr. E. Jefferson Browder, chairman, Department of Neurosurgery, retired from active service on the faculty August 31 and was named professor emeritus of neurosurgery which was effective September 1. Also, effective September 1, the retirement of Dr. Arthur W. Grace, professor emeritus of dermatology and syphilology, as well as head, Department of Dermatology and Syphilology.

Resigned—Drs. John J. Kelly, Jr., and J. Leonard Brandt resigned August 31 as associate professors of medicine to accept teaching and research positions. Dr. Kelly became director of medical education, Mercy Hospital, San Diego, California, and Dr. Brandt was named physician-in-chief, Jewish General Hospital, and director of medical research and lecturer in medicine, Magill University, both in Montreal.

State University of New York College of Medicine Upstate Medical Center

New Faculty Members—Dr. Harold D. Kletschka has been named assistant professor of surgery; Dr. Eugene W. Anthony, Fulton, clinical assistant professor of ophthalmology; Dr. John E. Doyle, clinical instructor of medicine; Dr. Harold Smylyan, instructor of medicine, and Dr. Akira E. Takemori, instructor of pharmacology.

Presented Paper—Dr. Walter S. Vincent, assistant professor of anatomy, spoke at an informal meeting of the Faraday Society in Cambridge, England, which was held August 30 through September 1. Dr. Vincent received a travel grant from the National Science Foundation to cover the costs of attending the meeting. He also visited the Laboratory of Animal Morphology, Brussels, before returning to this country.

Speaker—Dr. Otto H. Muller, professor of physiology, and a pioneer in the use of the polarograph in this country since 1935, was a major speaker at the Second International Congress of Polarography, Cambridge, England, in August. Dr. Muller discussed "Rate-Controlled Reactions as Illustrated by the Reduction of Pyruvic Acid." His trip abroad was financed by a Wellcome Research Travel grant awarded by the Wellcome Trust of England.

University of Buffalo School of Medicine

Awarded—A. Thomas Pulvino received a fellowship of $600 for special research in the biologic and physical sciences related to medicine from the March of Dimes. The purpose of the fellowship is to interest medical students in careers in research, a field in which the nation is critically shorthanded. The fellowships are awarded to a limited number of candidates who have completed one year of medical school and can devote at least two months to full-time research study.

Students are nominated for the award by the dean of their school.

MEDICAL NEWS

Brooklyn Ophthalmological Society—At the May, 1959, meeting of the Brooklyn Ophthalmological Society the following members were elected to office: Ira W. Mensher, M.D., president; Edward Saskin, M.D., vice-president; Nicholas P. Tantillo, M.D., secretary-treasurer; and A. Benedict Rizzuti, M.D., associate secretary.

Sloan-Kettering Institute Appoints Acting Director—The executive committee of the Sloan-Kettering Institute has announced the appointment of Dr. A. R. T. Denues as acting director of the Institute Dr. Denues succeeds the late C. P. Rhoads, M.D.

Increased Incidence of Animal Rabies—An increased incidence of animal rabies, with more than half the cases occurring in Western New York, was reported during the first seven months of 1959, according to Herman E. Hilleboe, M.D., State Health Commissioner.

One hundred twenty-eight cases were reported as of July 31, compared to 102 cases for the same period last year. Sixty-six of the cases have occurred recently in eight western counties now certified as areas where rabies exist. The counties involved are Wyoming, 27 cases; Allegany and Livingston, 14; Steuben, 3; and Genesee, Erie, Monroe, Cattaraugus, 2 each. With the exception of Steuben County, rabies has not been reported from these counties in recent years.

Sixty-three of the cases reported this year have been found in foxes. Other cases include: bovine, 32; canine, 15, and other species of animals, 18.

Canine rabies poses the most dangerous threat to man; however, this type of rabies can be controlled. A single injection of modified live virus vaccine will protect a dog for at least four years and possibly for life.

Under the New York State Public Health Law, certification of a county for the existence of rabies places a quarantine on all dogs—whether or not they are vaccinated against rabies. No dogs can legally be at large in certified counties.

Certification of the eight western counties will continue until the threat has passed. The quarantine can be removed for vaccinated dogs if 70 per cent of the dogs in a given county are vaccinated.

Allegany, Livingston, Steuben, and Wyoming counties recently completed successful canine vaccination programs. Other affected counties are formulating such programs.

Postgraduate Course in Orthopedic Surgery—Columbia University College of Physicians and Surgeons will present its fourth annual postgraduate course in orthopedic surgery, November 9 through 13, under the direction of Frank E. Stinchfield, M.D.

The course, designed particularly for specialists in orthopedic surgery, will survey musculoskeletal diseases and injuries in the light of modern advances in basic knowledge and clinical practice. Presentations will be by lectures, symposia, and motion pictures. Open discussions will be encouraged. Admission is restricted to physicians licensed in the United States.

For information concerning this course write to: Postgraduate Course in Orthopedic Surgery, Office of the Dean, College of Physicians and Surgeons, 630 West 168th Street, New York 32, New York.

United Cerebral Palsy Research and Training Program—The United Cerebral Palsy Research and Education Foundation is offering research and training grants, clinical ellowships in cerebral palsy, postdoctoral fellowships in brain research, and medical student fellowships in cerebral palsy. Deadline for submission of applications is March 15, 1960. Funds will be available for recipients on July 1, 1960.

Additional information may be procured from: Director of Research, United Cerebral Palsy, Research and Educational Foundation, 321 West 44th Street, New York 36, New York.

Onondaga Sanatorium Transferred to County—Herman E. Hilleboe, M.D., State Health Commissioner, has announced the transfer of the Onondaga Sanatorium to Onondaga County. The county is planning to use the sanatorium for expansion of its county welfare infirmary facilities. Tuberculosis hospital care for residents of Onondaga and Cayuga Counties will be provided at Mount Morris Tuberculosis Hospital while residents of Cortland County will be accommodated by the Homer Folks Tuberculosis Hospital, Oneonta.

The closing of the sanatorium will achieve an annual savings in fixed costs of more than one-half million dollars of State tax funds.

Postgraduate Courses at Columbia University—Columbia University College of Physicians and Surgeons will offer the following postgraduate courses to be given at the Hospital for Joint Diseases, 1919 Madison Avenue, New York City: "Roentgenographic Interpretation of Diseases of Bones and Joints," twelve sessions on consecutive Wednesdays from 8:00 P.M. to 10:00 P.M., September 30 through December 16; "Disabilities of the Foot," a weekend course, 9:00 A.M. to 5:00 P.M., October 1 through 3; and "Orthopedic Surgery," October 12 through 17.

For further information concerning these courses write to: Miss Amelia Mater, secretary for medical education, Hospital for Joint Diseases, 1919 Madison Avenue, New York 35, New York.

Hospital to Offer Prehospital Care for Long-Term Diseases—A unique prehospitalization care and treatment program is being inaugurated by the Jewish Chronic Disease Hospital, Brooklyn, for victims of long-term diseases. The program, supported by a grant of $330,000 from the National Institutes of Health, will open a five-year study to determine the feasibility of offering care and treatment in the home to victims of strokes. The new service will be offered prior to hospitalization as a possible means of avoiding the need for hospital care. Services will be offered which would ordinarily be given in a hospital.

The program will consist of a complement of medical, nursing, social caseworker, physical and occupational therapies, and housekeeping services to be made available to the patient to the degree determined by professional standards of rehabilitation. Where necessary, such other specialists or consultants on the hospital staff will be provided. Should the patient develop an acute condition of the primary illness, or should other acute conditions develop, such medical and nursing services as may be required will be provided. This will include hospitalization for any acute ailment that may occur. Mobile units of physical therapy and occupational therapy will be brought in and adapted for home use.

Postgraduate Courses in Surgery at NYU-Bellevue—New York University-Bellevue Medical Center's Post-Graduate Medical School will offer the following full-time courses in surgery during October and November: "Review of Surgery of the Stomach, Duodenum, and Small Intestine," October 26 through 30; "Review of Surgery of the Biliary Tract and Pancreas," November 2 through 6; "Review of Surgery of the Colon and Rectum," November 9 through 13; "Review of Surgery of the Head and Neck, Including the Thyroid," November 16 through 20; and "Review of Abdominal Surgical Diseases in Children," November 23 through 25.

For additional information write to: Office of the Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

Heart Slide Kit for Use by Physicians—As an aid to physician speakers a resource slide kit consisting of 188 Kodachrome and black and white slides on the subject of heart and circulatory diseases has been compiled by the American Heart Association. A table of contents and descriptive material accompany the slides which are grouped for medical and for combined medical and lay audiences. Included in the set for medical audiences are electrocardiograms, heart drawings and heart models, and cardiac silhouettes.

For information concerning cost and availability write to the American Heart Association, 44 East 23rd Street, New York 10, New York.

American Heart Association Grants—Applications for American Heart Association grants-in-aid for the fiscal year beginning July 1, 1960, must be submitted not later than November 1, 1959.

Grants are made to nonprofit institutions in direct support of a particular investigator for a specific program of research under his direction. Awards are in support of research in the cardiovascular field or basic sciences for periods up to five years.

All applications for grants-in-aid must be made on forms obtainable from the assistant medical director for research, American Heart Association, 44 East 23rd Street, New York 10, New York.

Establishment of Federal Radiation Council—An executive order establishing the Federal Radiation Council was recently issued by President Eisenhower. This marks an important step in the progress toward a consistent and coordinated governmental approach to the over-all program associated with radiation. The general standards and guidance provided by the executive order will constitute the framework for the operating rules and regulations of the various Federal agencies concerned with radiologic health protection.

U.S. Medical Exhibit at Berlin Industries Fair—The latest in American surgical, medical, and dental equipment, including many new lifesaving technics, were on display at the fourteen-day Berlin Industries Fair which opened September 12. The exhibit, entitled, "Medicine, USA," was assembled by the United States Information Agency in cooperation with the Commerce Department's Office of International Trade Fairs. It was the only United States government exhibit at the fair.

New Film on Rehabilitation of Asthmatic Children—"The Hidden Tear," a new 16-mm. motion picture with sound about a successful rehabilitation program for asthmatic children, is now available for showing to medical and lay groups. The film runs for fifteen minutes. It is presented in a manner readily understood by laymen but is sufficiently detailed to be of interest to a professional audience, particularly general practitioners and allergists concerned with asthma and its relief.

The film was made possible by a grant from Warner-Chilcott Laboratories division of Warner-Lambert Pharmaceutical Company. Requests for a print of "The Hidden Tear" should be addressed to: Mr. George Rohrmann, Film Department, Warner-Chilcott Laboratories, Morris Plains, New Jersey.

New Heart Units Completed at Presbyterian Hospital—The completion of two new units of an extensive program to advance the facilities for the diagnosis and surgical treatment of heart diseases at The Presbyterian Hospital, Columbia-Presbyterian Medical Center, 622 West 168th Street, New York City, has been announced.

The first of the units, called the cardiac special care unit is, in effect, a recovery room for patients who have undergone the relatively new surgical procedure of operating within the heart while a machine takes over the functions of the heart and lungs. The unit consists of five beds, each of which has its own equipment for constant monitoring of the patient's state of recovery. In addition, each of the units is connected to a central monitor which is used for another observation post and also keeps permanent records that can be used for research and teaching. A staff of special nurses with experience in the postoperative care of this type of patient provide the intensive care necessary for these patients over a period of several days.

The second new unit, the angiocardiography room, will double the hospital's facilities for caring for cardiac patients who require elaborate equipment to determine the nature of their illness.

The new heart program at the hospital has been facilitated by a research grant from the John A. Hartford Foundation, Inc.

Tenth Annual Course in Ophthalmology

The Department of Ophthalmology of the State University of New York Upstate Medical Center at Syracuse will present its tenth annual postgraduate course in ophthalmology at the Hotel Syracuse, Friday and Saturday, December 4 and 5. The following New York City physicians will participate as lecturers: A. B. Reese, M.D.; A. Gerard DeVoe, M.D.; and J. Gordon Cole, M.D.

The course will be limited to 60 members. These will be accepted in the order in which applications, accompanied by tuition fees, are received. Inquiries regarding the course may be addressed to: James L. McGraw, M.D., professor and chairman, Department of Ophthalmology, State University of New York, Upstate Medical Center, 766 Irving Avenue, Syracuse 10, New York.

Personalities

Speaker

Leona Baumgartner, M.D., New York City Health Commissioner, at the annual meeting of the Pennsylvania Public Health Association, August 18.

Awarded

Thomas L. Hawkins, Jr., M.D., Selkirk, a special fellowship by the Nathan Hofheimer Foundation to undergo advanced training in hematology.

Honored

Stanley P. Jones, M.D., Mattituck, with a parade and reception given by the community in honor of his thirty years of medical service.

Appointed

Leona Baumgartner, M.D., New York City Commissioner of Health, to the newly-formed Blue Cross public advisory committee . . . Eugene Wells Bogardus, M.D., Pleasantville, as Cortland County Health Commissioner . . . Bernard T. Brown, M.D., Syracuse, as director of the State Out-Patient Chest Clinic in Onondaga County . . . L. Laramour Bryan, M.D., Clinton, as an assistant commissioner of the State Department of Mental Hygiene . . . Hans J. Detels, M.D., Pine Bush, as senior physician at Wallkill State Prison . . . William E. Sorrel, M.D., Scarsdale, as head of a research project in schizophrenic mental disorder.

Resigned

Ira Wickner, M.D., Wallkill, as senior physician at Wallkill State Prison.

Retired

Morton L. Levin, M.D., Albany, as assistant commissioner for medical services for the State Health Department . . . Robert E. Plunkett, M.D., Troy, as assistant commissioner for tuberculosis control for the State Health Department.

New Office

Harold Francis Dallas, M.D., for the practice of anesthesia in Cortland . . . Paul Dooley, M.D., for the practice of general medicine on Liberty Street, Arcade.

MEDICAL MEETINGS

Association of Medical Illustrators

The fourteenth annual meeting of the Association of Medical Illustrators will be held in Seattle, Washington, October 5 through 7. Headquarters will be at the Olympic Hotel. Several sessions will also be held at the University of Washington. The theme of the meeting is, "Changes and Trends in Illustration."

Interested members of the medical profession are invited to attend. For information contact: A. Hooker Goodwin, publicity chairman, Illustration Studios, University of Illinois, Colleges of Medicine, Dentistry and Pharmacy, 1853 West Polk Street, Chicago, Illinois.

Academy of Psychosomatic Medicine

The sixth annual meeting of The Academy of Psychosomatic Medicine will be held October 15 through 17 at the Sheraton-Cleveland Hotel in Cleveland. The meeting will be oriented to fit the needs of nonpsychiatric physicians.

Among the speakers will be the following New York physicians: David J. Impastato, M.D., associate clinical professor of psychiatry, New York University College of Medicine; Milton Plotz, M.D., associate professor of clinical medicine, State University Medical Center of New York; Arnold P. Friedman, M.D., associate professor of clinical neurology, Columbia University College of Physicians and Surgeons; Bernard J. Wattiker, M.D., assistant professor of surgery, New York Medical College; Burton Zohman, M.D., clinical professor of medicine, State University of New York College of Medicine; M. Murray Peshkin, M.D., clinical professor of medicine and pediatrics, Albert Einstein College of Medicine, New York; Jacob L. Moreno, M.D., founder and director of the Moreno Institute of Psychodrama and Group Psychotherapy, Beacon, New York; and Felix Wroblewski, M.D., associate professor of medicine, Cornell University Medical College and chief, Section of Medical Enzymology, Sloan-Kettering Institute, New York.

American Society of Facial Plastic Surgery

The fall meeting of the American Society of Facial Plastic Surgery will be held in Chicago October 15 through 17. The medical profession is invited to take part in the first day of the meeting which will consist of a dinner to be held at the Palmer House at 6:00 P.M., followed by a colloquy on "Refinements in Facial Plastic Surgery." The two final days of the meeting, which will take place at the University of Illinois Eye and Ear Infirmary, are for members only.

For details contact: Samuel M. Bloom, M.D., secretary, 123 East 83rd Street New York 23, New York.

For further information concerning the meeting write to: Zale A. Yanof, M.D., program chairman, Academy of Psychosomatic Medicine, 2282 Ashland Avenue, Toledo 10, Ohio.

Women's Medical Society of New York State

The Women's Medical Society of New York State will meet on October 18. The meeting will begin with a tour of the United Nations buildings at 10:00 A.M. At 1:00 P.M. a luncheon will be held at the New York Infirmary, Stuyvesant Square East and 15th Street, New York City. Following the luncheon, at 2:30 P.M., Michael H. K. Irwin, M.D., medical officer with United Nations, will speak on the topic, "World Health Organization and Unicef."

American Heart Association

One hundred nine original scientific papers, selected from 400 submitted, will be presented at the American Heart Association's thirty-second annual scientific sessions to be held Friday, October 23 through Sunday, October 25, at Convention Hall, Philadelphia.

Speakers will include Secretary Arthur S. Flemming of the United States Department of Health, Education, and Welfare whose subject will be "The Role of Voluntary Health Associations in Meeting Future Health Needs," and Ludwig W. Eichna, M.D., professor of medicine, New York University College of Medicine who will present the George E. Brown Memorial Lecture, "Circulatory Congestion and Heart Failure."

Included in the American Heart Association's program will be a joint session with the American College of Cardiology which is conducting its interim meeting to coincide with the Heart Association's scientific sessions.

Following the scientific sessions the thirty-fifth annual meeting of the assembly, delegate body of the American Heart Association, will be held on October 26 and 27 at the Bellevue Stratford Hotel, Philadelphia.

Registration and hotel accommodation forms are available from the American Heart Association, 44 East 23rd Street, New York 10, New York.

American Cancer Society

The American Cancer Society will present a symposium on "Evaluation of Early Diagnosis of Cancer" at its annual scientific session to be held October 26 and 27 at the Biltmore Hotel, New York City.

The program is approved and recommended by the American Academy of General Practice for twelve hours of category II credit for its members.

Tenth Annual County Medical Societies Civil Defense Conference

The tenth annual county medical societies civil defense conference will be held in Chicago, November 7 and 8 at the Morrison Hotel.

The purpose of the conference is to inform and assist medical and health personnel for their roles in the event of a disaster. It is sponsored by the American Medical Association's Council on National Defense.

Featured speaker will be Congressman Melvin Price, ranking member of the Joint Congressional Committee on Atomic Energy. He will report on recent findings on the environmental and biologic effects of nuclear warfare.

Information regarding the conference can be obtained by writing to: Frank W. Barton, secretary, Council on National Defense, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

American Academy of Dental Medicine

Problems involved in restoring the occlusion will be discussed at the midwinter meeting of the American Academy of Dental Medicine, to be held at the Sheraton-McAlpin Hotel, New York City, Sunday, December 6. Interested physicians are invited to attend. For reservations and program write to: Dr. Andrew J. Cannistraci, 2152 Muliner Avenue, New York 62, New York.

Schoenberg Memorial Lecture

The annual Schoenberg Memorial Lecture, sponsored jointly by the New York Society for Clinical Ophthalmology and the National Society for the Prevention of Blindness, will be given at 8:15 P.M. on Monday, December 7, at the New York Academy of Medicine, 2 East 103rd Street.

Algernon B. Reese, M.D., clinical professor of ophthalmology at Columbia University College of Physicians and Surgeons, will give the Schoenberg lecture. His subject will be, "The Role of the Pigment Epithelium in Ocular Pathology."

American College of Allergists

The American College of Allergists will hold its annual congress and graduate instructional course February 28 through March 4, 1960, at the Americana Hotel, Bal Harbor, Miami Beach, Florida.

For information concerning the congress write to: John D. Gillaspie, M.D., treasurer, 2049 Broadway, Boulder, Colorado.

Deborah Hospital to Present Symposium

Deborah Hospital will hold its second international symposium on "Changing Concepts in Medicine (Congenital Heart Disease)" at the Bellevue-Stratford Hotel, Philadelphia, April 28 through 30, 1960.

The symposium will feature panel discussions encompassing all aspects of congenital heart conditions and the selection of patients for surgical corrections.

For further information write to: Charles P. Bailey, M.D., Deborah Hospital, Browns Mills, New Jersey.

Did you know that America's annual per capita consumption of fish stands at only 12 pounds, as opposed to 159 pounds of red meat? Nutrition experts, however, urge increased fish consumption because its fatty acids seem to help "cut" the animal fats contained in the human diet which are so often associated as one of the possible factors in arterial and heart disease problems. The study of applied nutrition is becoming so important in modern America that more than 300 colleges and universities now offer courses in "volume-feeding."
—*Nutrition Foundation*

BOOKS RECEIVED

(The following books were received during the month of July, 1959)

The Mouth, Its Clinical Appraisal. By A. B. Riffle, D.D.S. Duodecimo of 118 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1959. Cloth, $3.50.

The Medical Clinics of North America. Los Angeles Number. July, 1959. Medical Considerations in Surgical Disease. Max P. Lipman, M.D., and David State, M.D., consulting editors. Octavo. Philadelphia, W. B. Saunders Company, 1959. Published bimonthly (six numbers a year). Cloth, $18 net; Paper, $15 net.

Diabetic Manual. By Elliott P. Joslin, M.D. Tenth edition. Duodecimo of 304 pages, illustrated. Philadelphia, Lea & Febiger, 1959. Cloth, $3.75.

Principles of Disability Evaluation. By Wilmer Cauthorn Smith, M.D. Octavo of 210 pages. Philadelphia, J. B. Lippincott Company, 1959. Cloth, $7.00.

Molecules and Mental Health. Edited by Frederic A. Gibbs, M.D. Octavo of 189 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1959. Cloth, $4.75. (Published for the Brain Research Foundation)

The Power of Sexual Surrender. By Marie N. Robinson, M.D. Octavo of 261 pages. Garden City, Doubleday & Company, Inc., 1959. Cloth, $4.50.

Physiology of Prematurity, Transactions of the Third Conference, March 25, 26 and 27, 1958, Princeton, N. J. Edited by Jonathan T. Lanman, M.D. Octavo of 157 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1959. Cloth, $3.00.

Ciba Foundation Symposium on Carcinogenesis Mechanisms of Action. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., and Maeve O'Connor, B.A. Octavo of 336 pages, illustrated. Boston, Little, Brown & Company, 1959. Cloth, $9.50.

Ciba Foundation Symposium on the Regulation of Cell Metabolism. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., and Cecilia M. O'Connor, B.Sc. Octavo of 387 pages, illustrated. Boston, Little, Brown and Company, 1959. Cloth, $9.50.

Cancer in Families. A Study of the Relatives of 200 Breast Cancer Probands. By Douglas P. Murphy, M.D., and Helen Abbey, Sc.D. Octavo of 76 pages, illustrated. Cambridge, Massachusetts, published for The Commonwealth Fund by Harvard University Press, 1959. Cloth, $2.50.

Neuropharmacology, Transactions of the Fourth Conference, September 25, 26, and 27, 1957, Princeton, N. J. Edited by Harold A. Abramson, M.D. Octavo of 285 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1959. Cloth, $5.00.

Respiratory Physiology and Its Clinical Application. By John H. Knowles, M.D. Cambridge, Massachusetts, Harvard University Press, 1959. Cloth, $5.25.

Notes of a Soviet Docotor. By G. S. Pondoev. Octavo of 238 pages. New York, Consultants Bureau, Inc., 1959. Cloth, $4.95.

Practitioners' Conferences Held at The New York Hospital-Cornell Medical Center. Volume 7. Edited by William J. Grace, M.D. Octavo of 275 pages. New York, Appleton-Century-Crofts, Inc., 1959. Cloth, $6.75.

Moloy's Evaluation of the Pelvis in Obstetrics. By Charles M. Steer, M.D. Second Edition. Octavo of 131 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $4.00.

Radiation Therapy. By Walter T. Murphy, M.D. Quarto of 1041 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $25.

Atlas of Roentgenographic Measurement. By Lee B. Lusted, M.D., and Theodore E. Keats, M.D. Quarto of 176 pages, illustrated. Chicago, The Year Book Publishers, Inc., 1959. Cloth, $9.00.

J.-M. Charcot 1825-1893, His Life—His Work. By Georges Guillain, M.D. Octavo of 202 pages. New York, Paul B. Hoeber, Inc., 1959. Cloth, $7.00.

Steroids. By Louis F. Fieser and Mary Fieser. Octavo of 945 pages, illustrated. New York, Reinhold Publishing Corporation, 1959. Cloth, $18.

Current Problems in Allergy and Immunology. Papers dedicated to Bela Schick on the occasion of his 80th birthday. Edited by William Kaufman

Quarto of 992 pages, illustrated. New York, S. Karger, 1959. Cloth, $14.40.

A Mount Sinai Hospital Monograph on Systemic Lupus Erythematosus. Edited by George Baehr, M.D., and Paul Klemperer, M.D. Quarto of 84 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $3.75.

BOOKS REVIEWED

Therapeutic Radiology. By William T. Moss, M.D. Octavo of 403 pages, illustrated. St. Louis, The C. V. Mosby Co., 1959. Cloth, $12.50.

This is a superior text written by Moss who is associated with the Department of Radiology at the Northwestern University School of Medicine. It is practical and deals with all of the common clinical problems likely to be encountered by a radiologist. The radiation treatment of benign conditions is discussed, but the book will be especially useful to those who deal with cancer patients. While the text will be of primary value to radiologists, anyone handling cancer patients will find the book useful.

It is unique in its detailed discussion of the effects of radiation on normal tissue. More important, however, is the obviously experienced appraisal of the current modalities available for radiologic care.

The illustrations are clear and interesting. The bibliographies at the end of each chapter indicate a careful summation of the available information.

The text will be extremely valuable to trainees who are advised to study it. It is a practical guide to the problems of patient care. It will be useful to the practicing radiation therapist, who will find in it excellent summaries of standard, currently used technics.

It is a good, practical working text which covers all of the usual radiologic problems and it is recommended.—Mortimer R. Camiel

Science & Psychoanalysis. Vol. 2. Individual and Familial Dynamics. Edited by Jules H. Masserman, M.D. Octavo of 218 pages. New York, Grune & Stratton, Inc., 1959. Cloth, $6.75.

This is the second of the series, Science and Psychoanalysis, published by The Academy of Psychoanalysis. It follows the same format as volume I, and contains a condensed and integrated part of the papers presented at the scientific sessions of the Academy in December, 1957, and in May, 1958.

The first part is devoted to a discussion of masochism, a universal phenomenon which still requires study and elucidation. Such authorities on the subject as Clara Thompson, May Romm, Leon Salzman, and others have presented their material in a stimulating and provocative manner. There then follows a panel discussion on the subject which enhances the value of the book.

The same format is followed in the second part of the book in which the recent trend in familial and social dynamics is investigated objectively by those who urge this method of treatment of neurotic patients. Excellent evaluations are presented by Ackerman, The Psychoanalytic Approach to the Family; Don Jackson, The Family Interaction, and others who have been approaching therapy by a method not acceptable to the orthodox Freudian therapist.

The book will make a valuable addition to those who do not attend the meetings of The Academy, but want to keep abreast of newer approaches to the treatment of the neurotic patient.—Joseph L. Abramson

The Chemical Prevention of Cardiac Necroses. By Hans Selye, M.D. Octavo of 235 pages, illustrated. New York, The Ronald Press Co., 1958. Cloth, $7.50.

In this book, the author whose work is now so well known, reviews the experimental material relating to cardiac necroses in animals. His own interesting and important work is covered in detail. This volume will be of most intense interest to cardiologists and those in research medicine.—Milton Plotz

[Continued on page 3666]

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[Continued from page 3664]

Streptomycin and Dihydrostreptomycin. By Louis Weinstein, M.D., and N. Joel Ehrenkranz, M.D. Octavo of 116 pages, illustrated. New York, Medical Encyclopedia, Inc., 1958. Cloth, $4.00.

This test constitutes a good brief review of the history of these preparations. It therefore has value as a reference and source book and due to rapidly changing technics and recent discoveries in the field of therapy with these medications the matter of dosage, methods of administration, and the susceptible diseases it rapidly becomes outdated. As in all antibiotic therapy there is no method of fixing the data because rapidly changing technic and rapidly changing patterns of response in the population make it necessary for recent and immediate information to be rapidly communicated to the physician. This purpose is not served by textual material.—Theodore M. Feinblatt

The Care of the Geriatric Patient. Edited by E. V. Cowdry. Duodecimo of 438 pages. St. Louis, The C. V. Mosby Co., 1958. Cloth, $8.00.

This volume covers the care of the geriatric patient in all its phases. Obviously this volume is just the beginning of a series of comprehensive studies in a field which, out of necessity, is expanding rapidly.

Because of the wide variety of the subjects covered, the pure medical aspects are discussed to a limited extent, and justifiably so. As important to the physician as the administration of medicine is the knowledge of home nursing care, rehabilitation, nursing home care, and such allied subjects.

The material covered is authoritative and well written. Some of the subjects are well summarized and are convenient references.

This book is recommended to all physicians.—Morris Zuckerbrod

Cyclopropane Anesthesia. 2nd edition. By Benjamin Howard Robbins, M.D. Octavo of 293 pages, illustrated. Baltimore, Williams & Wilkins Co. 1958. Cloth, $9.00.

Cyclopropane Anesthesia is a second edition of pioneer work on cyclopropane. Robbins, professor of anesthesiology and associate professor of pharmacology at Vanderbilt University School of Medicine and anesthesiologist-in-chief at Vanderbilt University Hospital, has had a primary interest in pharmacology. This is reflected in the first edition (1940) where the most information available on this drug at that time was compiled. Most of the pharmacology was based on animal research, the majority his own.

This edition is expanded to include all of the latest information gleaned from the literature, information obtained from animal and human laboratory and clinical research.

Robbins very carefully and minutely reviews the effect of cyclopropane on each and every body system in chapter divisions. His attention to detail and his choice of material show considerable thought and an extensive knowledge of the literature.

The effect of cyclopropane on respiration, cardiac function, and the vascular system predominates. He offers convincing, and some conclusive, evidence that the undesirable effects of this drug on circulation and respiration are due to the premedicant narcotics and not to its intrinsic action.

The attention to detail, self-criticism, fair evaluation of the work of others, and the substantial experimental controls all inspire readers' confidence in the author. However, one feels that some of the material is slanted in the direction of the author's attitude.

The extensive bibliography with annotated references provides a ready origin and source for review or research of the literature. The chapter division, headings and subheadings, clear explanation of illustrations, clear and concise literary style, make this book easy to read and understand. Thus it meets the requirements of the tyro as well as the specialist. This book should be on the shelf of, and read at least once by, every physician who administers cyclopropane for anesthesia, whether clinically or in the laboratory.

One cannot help questioning the necessity or propriety of including the chapter on the relaxing agents. It seems to be an afterthought presenting no more information than is usually found in pharmacologic textbooks.—Irving M. Pallin

Poliomyelitis. Papers and discussions presented at the Fourth International Poliomyelitis Conference. By International Poliomyelitis Congress. Octavo of 684 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1958. Cloth, $7.50.

This volume reports the proceedings of the Fourth International Poliomyelitis Conference held at Geneva, Switzerland, in July, 1957, and highlights the advances and concepts since the previous meeting of 1954.

Vaccination against poliomyelitis was the first topic discussed and Salk reviewed some newer problems in regard to immunization with killed virus. The evidence submitted by him indicates that by suitably manipulating dosage and schedule of administration, an effective degree of immunity can be expected to persist for a number of years at least.

The case for orally administered attenuated

[Continued on page 3674]

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- Membership in Medical Societies, international, national, state and local.
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- Medical staff and research appointments in voluntary, municipal, state and federal hospitals in New York State (official titles).

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Many physicians save time by regularly consulting their Directory for telephone listings, a colleague's address or office hours, as well as information about their State Society. You, too, will find your Directory a valuable source of information when you use it often.

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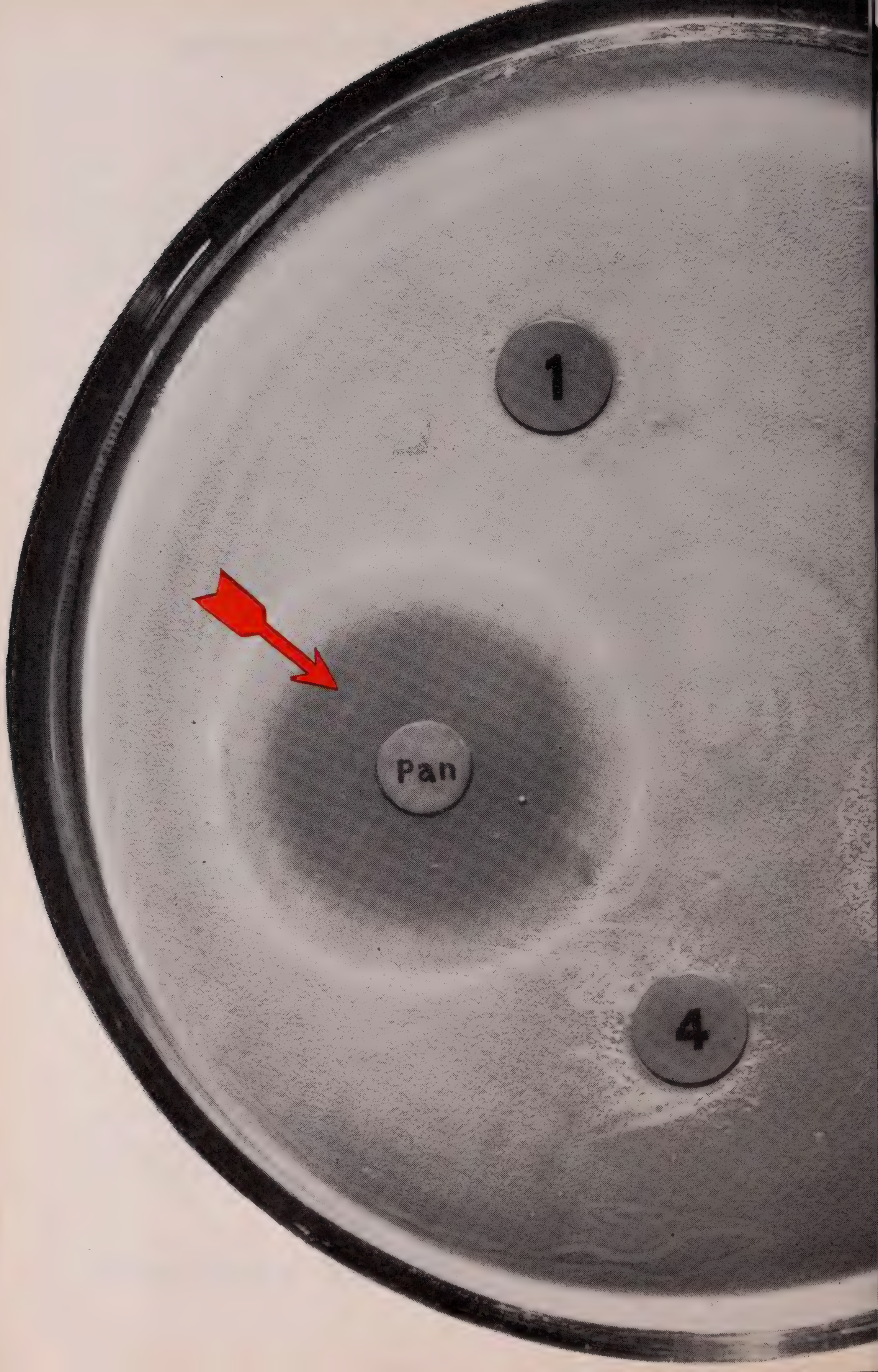
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[1] Clark, G.M.: Personal Communication, 1958.

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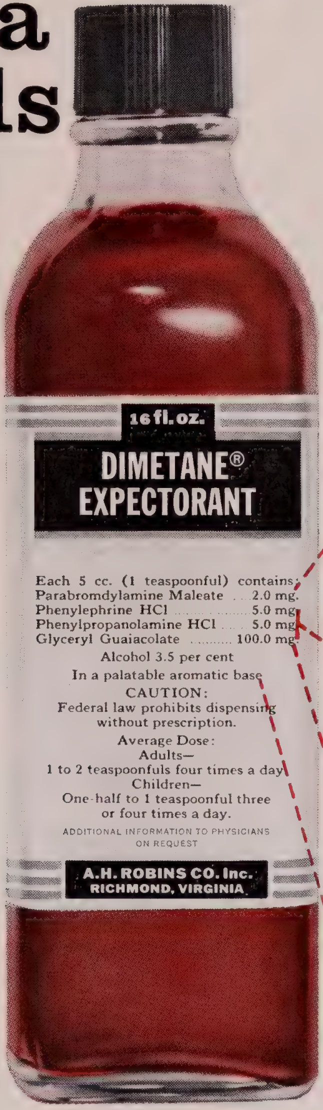
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[Continued from page 3666]

virus was reported by Sabin, and it was his opinion that there was justification for initiating trials of the currently available tested lots of highly attenuated poliomyelitis virus vaccine and that such trials are in progress in countries where mass application of killed virus vaccine was not feasible.

The role of enteric viruses producing diseases stimulating poliomyelitis covered the Echo viruses as causative agents of aseptic benign meningitis, especially Type 6, and the Coxsackie B-5 viruses. The etiology of encephalomyocarditis by Coxsackie B viruses was discussed in detail.

The studies on cultured mammalian cells and of viruses was reviewed thoroughly and mention was made that ribonucleic acid was present not only in polio virus but possibly in the other allied groups. The problems of the viral diagnostic laboratory were enumerated and simplified tests for the identification of the ECHO and Coxsackie groups are still needed.

The session closed with the reports on respiratory distress problems and the care of patients so stricken. Respirator patients and emancipation of such victims from the machine, paralytic polio and the problems of scoliosis, and finally the severely paralyzed upper extremities with functional surgery repair ended the discussion.

This volume of reports is an intriguing and enjoyable mass of knowledge, advances, and review of the entire polio problem, and will make many an enjoyable fireside reading hour.—Mark J. Wallfield

Protection in Diagnostic Radiology. Edited by B. P. Sonnenblick. Octavo of 346 pages, illustrated. New Brunswick, N. J., Rutgers University Press, 1959. Cloth, $7.50.

The need for this volume and others like it is self-evident. Radiation hazards are with us in a very real way. The science and the art of radiology have reached a fair measure of maturity and with its universal growth and its affluence must go a deepening sense of social responsibility. The time must soon come when the use of x-ray equipment and other sources of radiation energy will be permitted only to those with a broad training in applied radiation physics and radiation protection or those whose activities are monitored by the new specialists in radiation health engineering. Until such time the radiologist, and still more the nonradiologist physician would do well to carefully peruse the well-edited pages of this volume.

The book itself is an excellently selected collection of papers on the problems of radiation protection in diagnostic x-ray examinations; fluoroscopy of course is prominently included. The work presented is authorative, clear, and readily readable by the serious student. The list of authors of the original papers included is a who's who in the specialty.

Perhaps under emphasized in this volume is the obvious fact that all fluoroscopic and/or x-ray examinations not clearly indicated are to be condemned. Not clearly indicated are "routine" fluoroscopies of children or of adults under forty years of age should not be tolerated and when such examinations are required they should be carried out under conditions of maximum accommodation and safety of operation. There should be no compromise with ignorance or carelessness. Medical ethics can accept no less.—Asa B. Friedmann

Chloromycetin (Chloramphenicol). By Theodore E. Woodward, M.D., and Charles L. Wisseman, Jr., M.D. Octavo of 159 pages, illustrated. New York, Medical Encyclopedia, 1958. Cloth, $4.00.

This is a good review of the modern use of Chloromycetin. There is a brief history of the development of the drug. Since it contains an excellent bibliography it is recommended as a reference book.—Theodore M. Feinblatt

Diseases of the Nervous System. Ninth edition. By Sir Francis Walshe, M.D. Octavo of 373 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $8.00.

This latest revised and up-to-date edition of the well-known text by one of the deans of British neurology is not just another textbook. Most of the information contained therein could no doubt be obtained elsewhere. It is, however, the author's skillful touch as an experienced clinician and teacher that lends to this work special color and distinction. A multitude of phenomena and the terminology associated with them is reduced to few common denominators making thus the clinical neurology clear and understandable within the limits of present-day knowledge.

This book was written for the practitioner and the student. To a specialist it may point out that economy of words is indeed possible in the field of neurology and in addition it will reemphasize the relative importance of the clinical point of view as opposed to that of laboratory investigations. To a teacher of neurology this textbook may demonstrate how original complex material can be organized and presented in such a way as to make it intelligible even to undergraduate students of medicine. —Ladislav P. Hinterbuchner

The Symptom as Communication in Schizophrenia. Edited by Kenneth L. Artiss, M.D. Octavo of 233 pages, illustrated. New York, Grune & Stratton, Inc., 1959. Cloth, $5.75.

The author is a Lieutenant Colonel, MC, U.S. Army psychiatrist doing research at Walter Reed Hospital in Washington, D.C. and has edited this report of a study of army inductees.

The patients studied and treated broke down during basic training. Their symptomatic behavior is considered from the standpoint of its meaning in terms of the army and home situations.

This delightful book is one of several recent monographs on schizophrenia—it seems that Bleuler's trail blazing has been followed by some pioneers. This study of the interpersonal, dynamic aspects of schizophrenia extends and validates previous concepts of the condition as having understandable facets amenable to treatment. Chapter VI is particularly interesting.

Considering communication, this book could have been improved as an English composition. For psychiatrists interested in the study and treatment of schizophrenia it contains stimulating material worth thinking about.—EWARD L. PINNEY, JR.

Handbook of Cardiology for Nurses. 3rd edition. By Walter Modell, M.D., and Doris R. Schwartz, B.S., R.N. Duodecimo of 328 pages. New York, Springer Publishing Co., 1958. Cloth, $4.50.

This *Handbook of Cardiology for Nurses* is now deservedly in its third edition. It continues to be a work of authority and importance which may be safely commended not only to nurses but to those persons having a college education who wish to know more about heart disease. The section on diet is particularly good.—MILTON PLOTZ

Bone Tumors. Second edition. By Louis Lichtenstein, M.D. Octavo of 402 pages, illustrated. St. Louis, The C. V. Mosby Co., 1959 Cloth, $12.

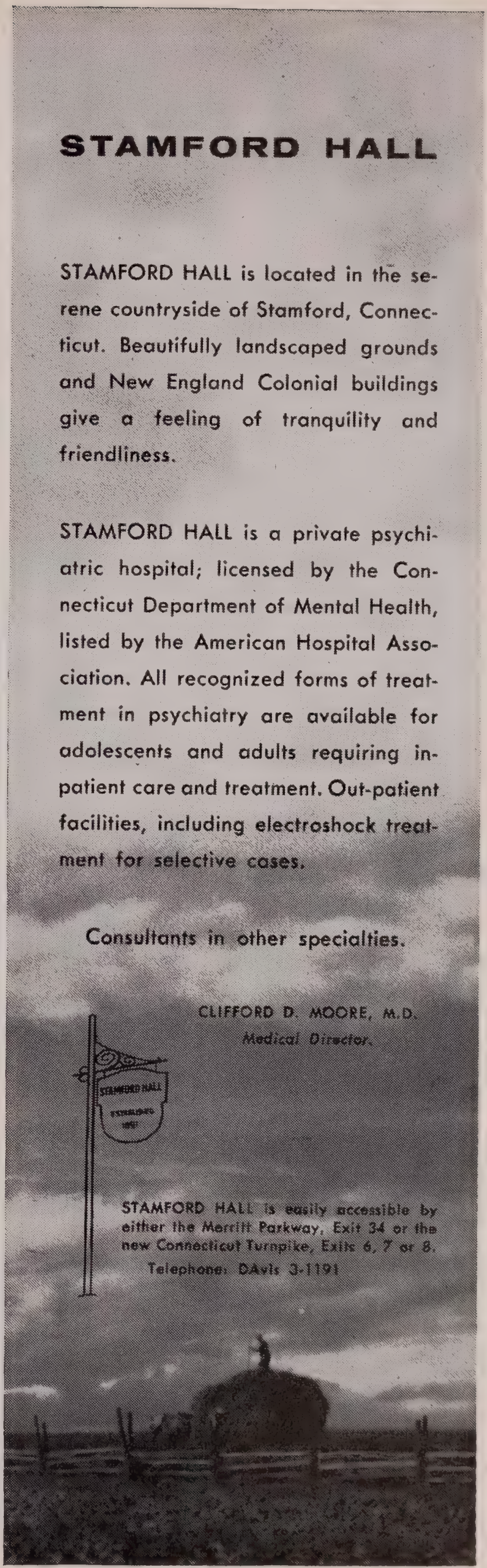
The second edition of this excellent book has been enlarged to contain not only additional x-rays and photomicrographs but also new chapters on guide to management of bone tumors, tumors of periosteal origin, discussion on tumors of synovial joints and bursae, as well as discussion on nonneoplastic diseases of bone simulating tumors.

The author's comments on Ewing's tumor of reticulum cell sarcoma are stimulating and thought provoking.

This reviewer was impressed with the meticulous care and choice of words the author uses on the microscopic descriptions of the various bone lesions.

This authoritative book is written in an easy and

[Continued on page 3678]



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1. Alvarez, W. C.: Geriatrics 13:647, 1958.
2. Gale, E. T., and Thewlis, M. W.: Geriatrics 8:80, 1953.

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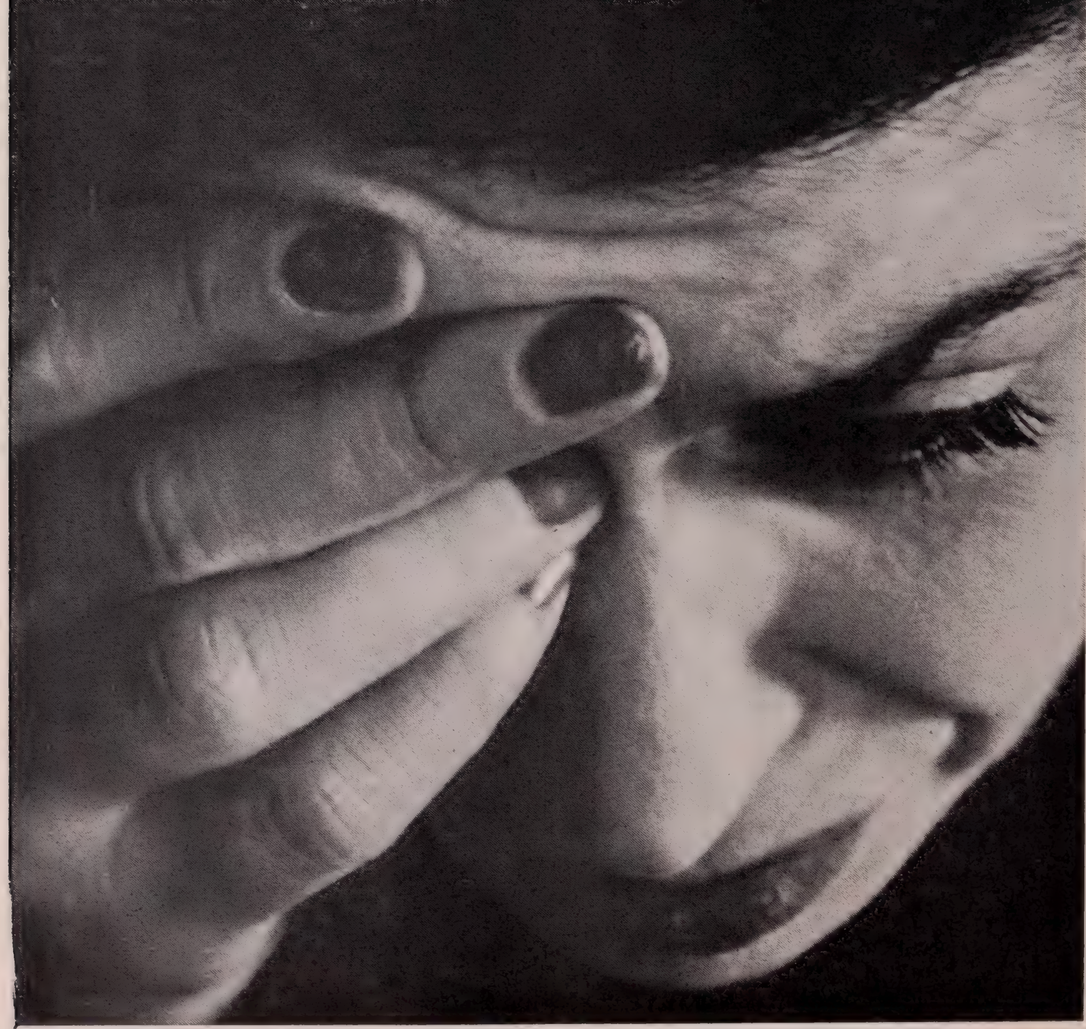

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[Continued from page 3675]

enjoyable style and is highly recommended to anyone interested in bone tumors.—CARMELO C. VITALE

A Bibliography of Internal Medicine. Communicable Diseases. By Arthur L. Bloomfield, M.D. Octavo of 560 pages. Chicago, The University of Chicago Press, 1958. Cloth, $10.

This is a "bibliography for clinicians, [students], and for those with a general interest in the subject rather than specialists." It is a collection of references and critical abstracts of the more important fundamental and original contributions to the advancement of the subjects covered. It includes those phases of the subject which have helped advance our knowledge of the disease.

This book contains an excellent author's index but no subject index. The author and publisher have wisely omitted the latter as unnecessary since the table of contents is quite adequate.

This work is highly recommended as a source book to all those having an interest in the roots of internal medicine. Those interested in the development of our knowledge of communicable diseases will find in it a mine of information.

The author is to be congratulated for having devoted the time necessary for the compilation of this book and for the excellent job done.—L. A. HOCHBERG

Heredity Counseling. Edited by Helen G. Hammons. Duodecimo of 112 pages. New York, Paul B. Hoeber, Inc., 1959. Cloth, $4.00.

This book consists of a symposium sponsored by the American Eugenics Society in which 17 authors representing a variety of disciplines, present up-to-date knowledge on the problems of genetics in medicine and on the developing role of heredity counseling in marriage and childbearing.

Part I consists of "Genetics in Medical Practice." There are discussions on the value of parental counseling in the fields of pediatrics, public health nursing, and cardiovascular diseases. The chapter on the relationship of genetics to dentistry is especially good.

Part II is concerned with "Heredity Counseling." The structure of a heredity-counseling service is described. Other chapters are devoted to the meaning of empiric risk figures for disease or defects, procedures for referral to heredity counselors, types of problems presented to heredity counselors, and the type of advice given by heredity counselors. There is an index and some bibliography.

The book gives the reader a general view of what genetic counseling consists of and an idea of the severe limitations which exist at present —STANLEY S. LAMM

Medical Society of the State of New York
District Branch Meetings—1959–1960

District Branch	*Date*	*Place*
I	Spring, 1960	. . .
II	November 4, 1959	Smithtown
III & IV	October 14 & 15, 1959	Grossinger
V	April 7, 1960	. . .
VI	September 23, 1959	Binghamton
VII	September 17, 1959	Rochester
VIII	October 1, 1959	Wellsville
IX	Spring, 1960	. . .

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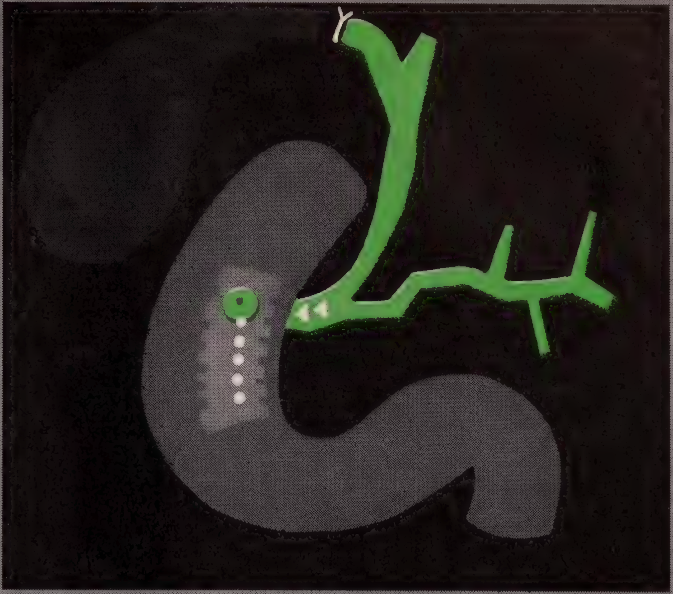

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Source: Vazquez, S. G.: J. Internat. Coll. Surgeons *28*:394, 1957.

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References: 1. Lhotka, F. M.: Illinois M. J. **112**:259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly **37**:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. **5**:1183 (Sept.) 1958. 4. Bonica, J. J.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 272. 5. Dascomb, H. E.: in Current Therapy, Saunders, Phila., 1958, p.78. 6. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p.547.

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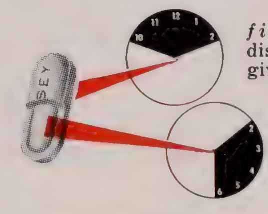

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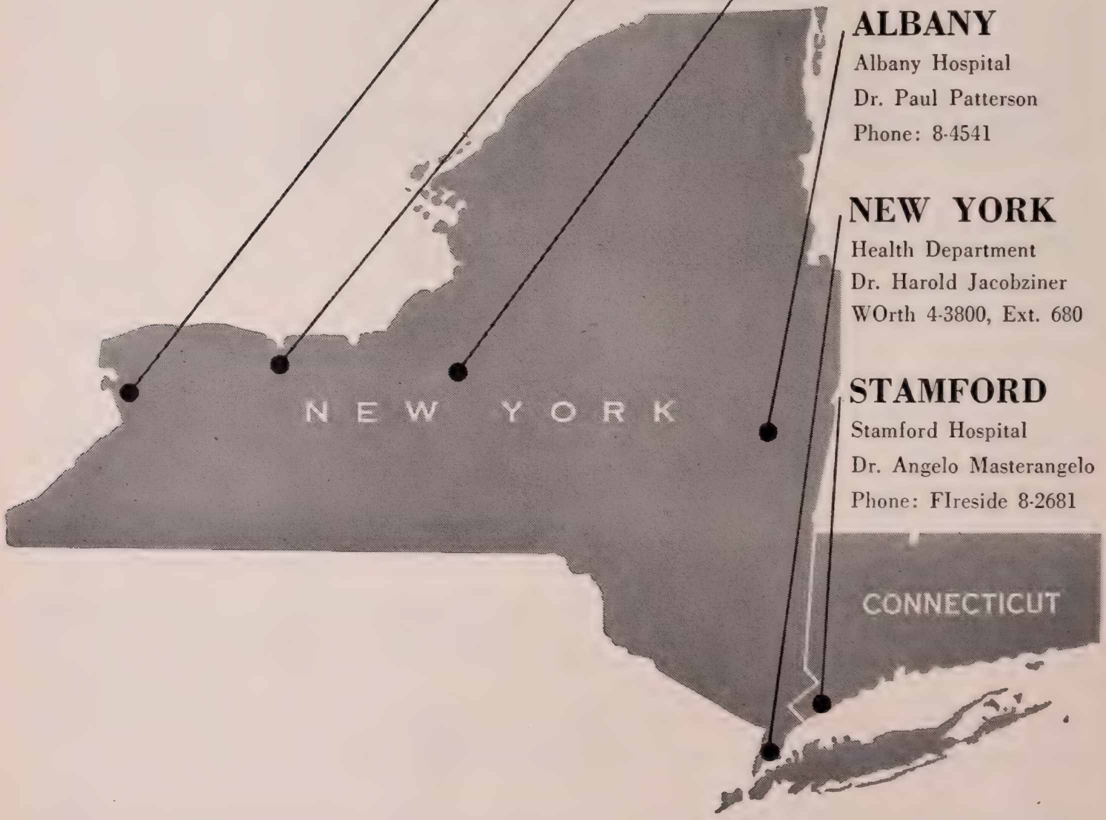

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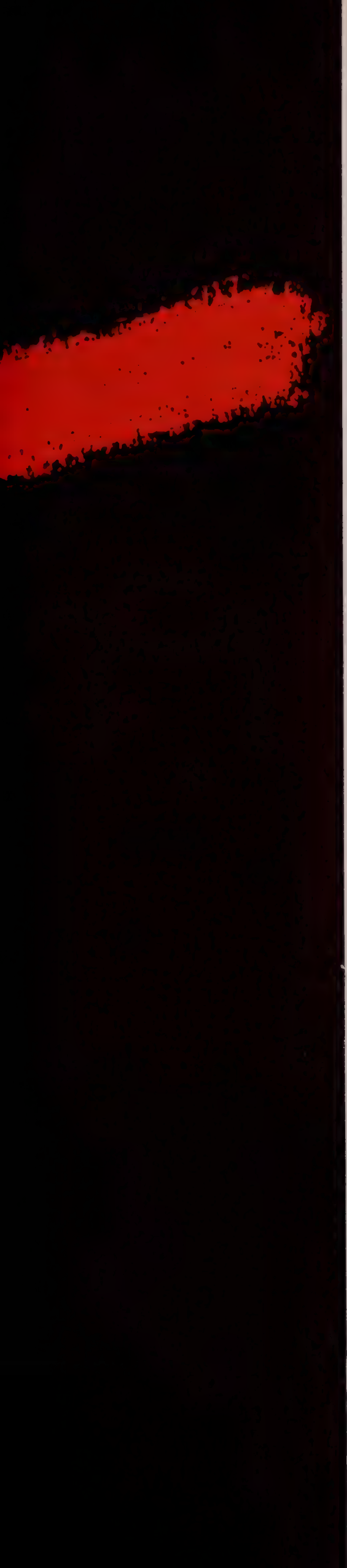

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1. Editorial, New England J. Med. 258:48, 1958.
2. Vinnicombe, J.: Antibiotic Med & Clin. Ther. 5:474, 1958.
3. Sheth, U. K., et al.: Ibid., p. 604, 1958

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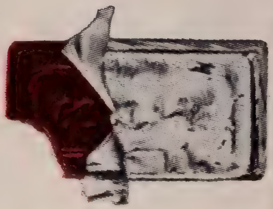

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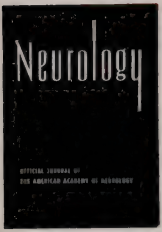

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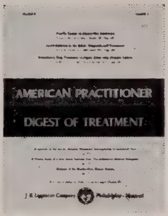

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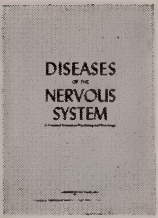
"In the treatment of tension headaches... [Fiorinal's non-narcotic action] offers a better opportunity for relief than some usually prescribed non-narcotic analgesics." *(Weisman, S. J.: Am. Pract. & Digest. Treat. 6:1019, July 1955.)*



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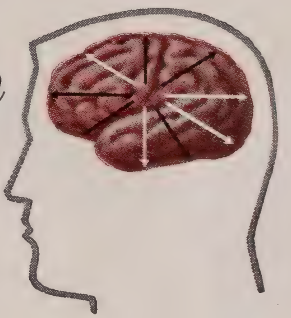
"Fiorinal appears to be one of the most useful preparations to date for the relief of tension headaches. Easing of the head discomfort was accomplished by one or two tablets without any unpleasant side effects such as drowsiness or gastric upsets. In many cases Fiorinal appeared to temporarily relieve the discomfort from sinus trouble or acute respiratory infections." *(Kibbe, M. H.: Dis. Nerv. System 16:77, March 1955.)*

specific therapy for tension headache



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relieves pain, muscle spasm, nervous tension

rapid action • non-narcotic • economical

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Each tablet contains:
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Dosage: 1 or 2 tablets every 4 hours, according to need, up to 6 per day.

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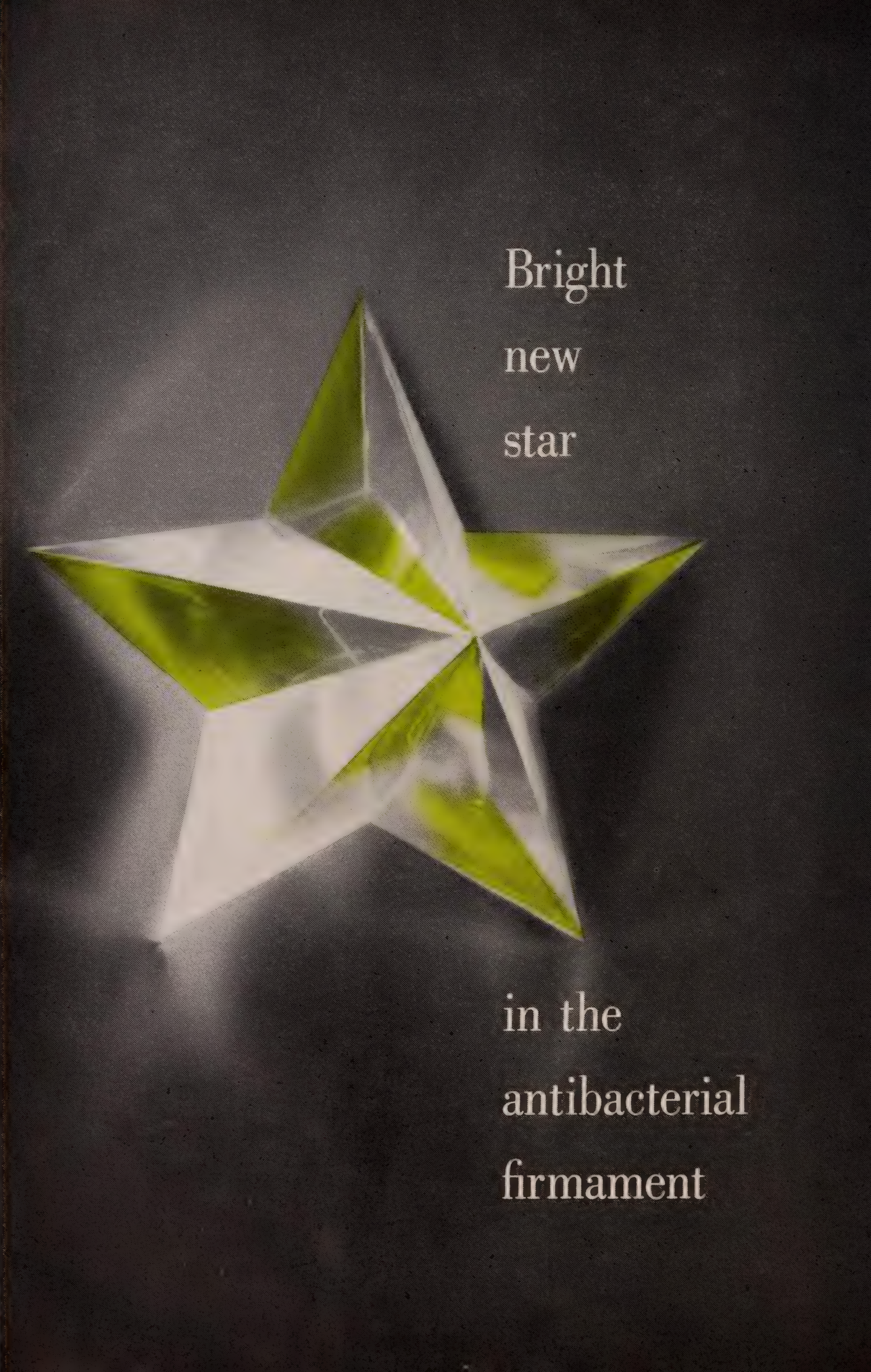
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D. pneumoniae	14	0	*100.0*
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Proteus	5	5	*50.0*
A. aerogenes	8	0	*100.0*
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*Includes many strains resistant to antibiotics.

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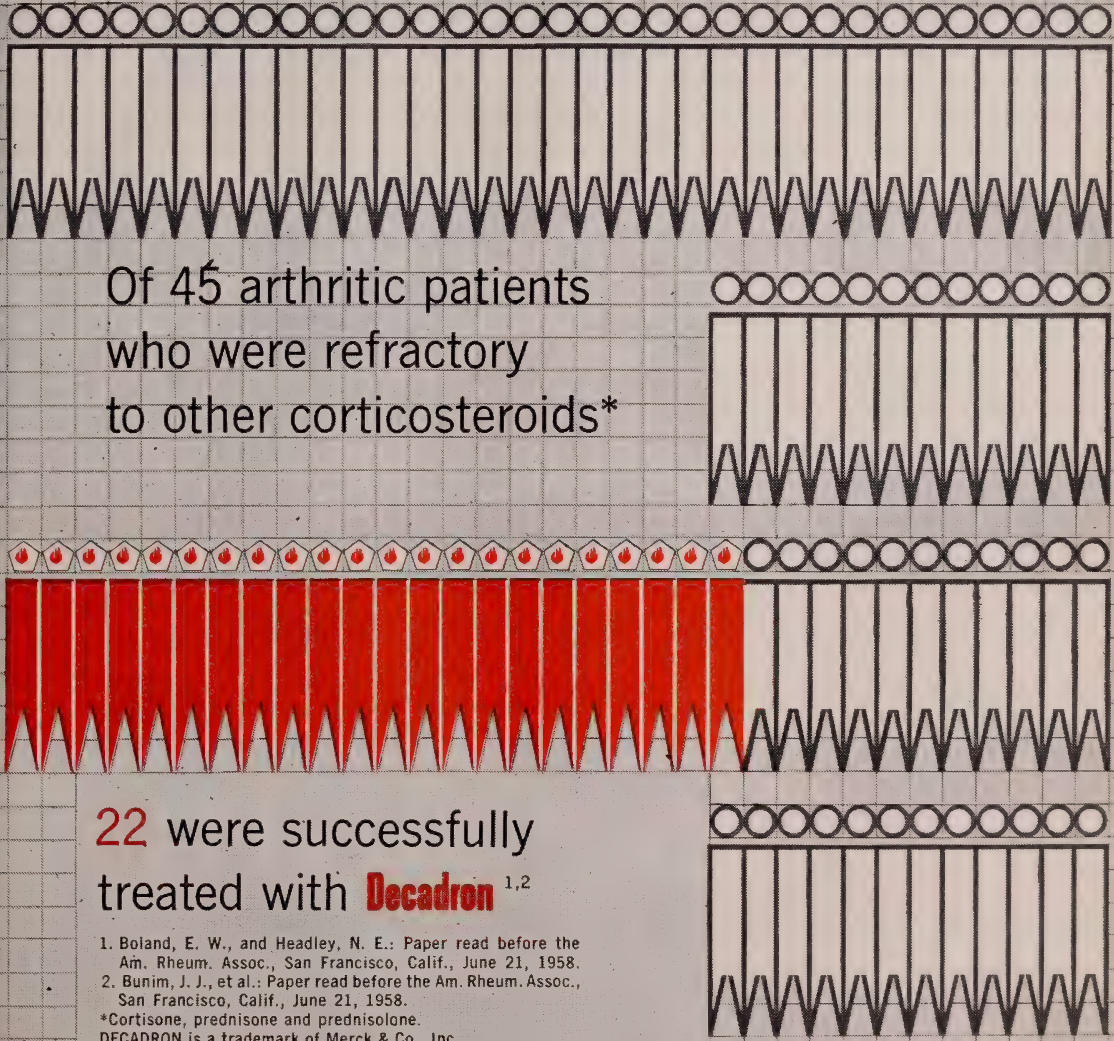

Of 45 arthritic patients
who were refractory
to other corticosteroids*

22 were successfully
treated with **Decadron** [1,2]

1. Boland, E. W., and Headley, N. E.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.
2. Bunim, J. J., et al.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

*Cortisone, prednisone and prednisolone.

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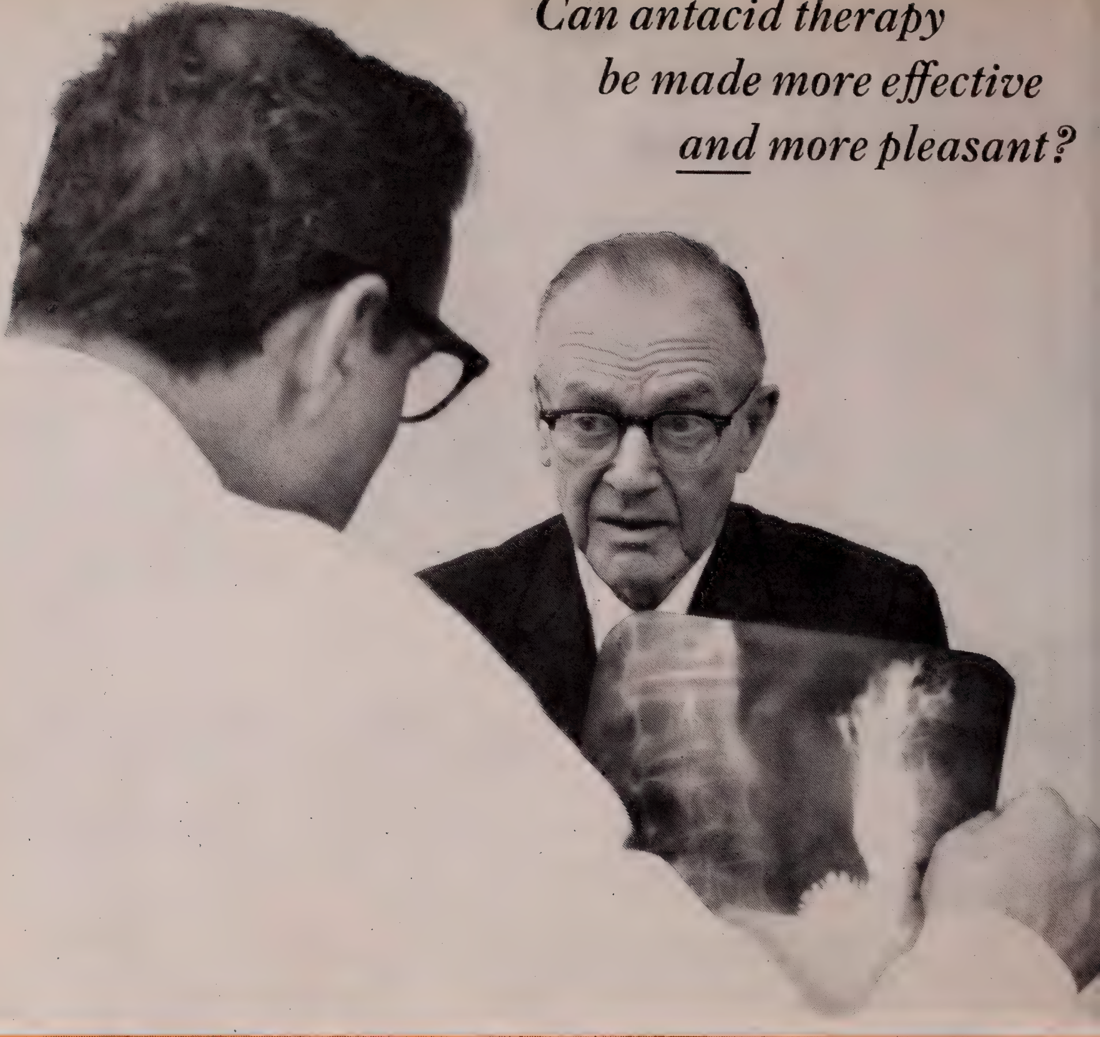

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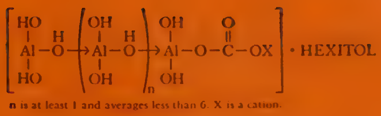
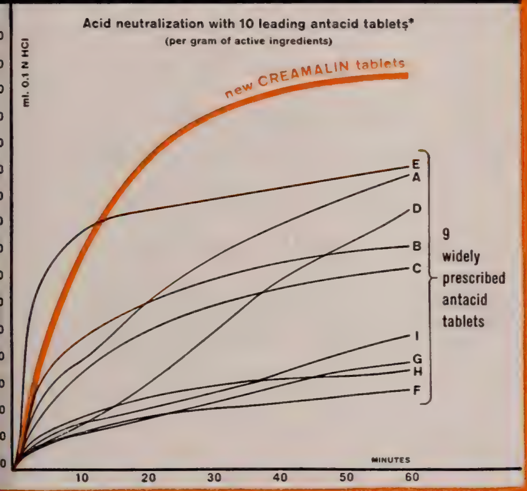


$$\left[\underset{HO}{\overset{HO}{Al}}-\overset{H}{O}\rightarrow\left(\underset{OH}{\overset{OH}{Al}}-\overset{H}{O}\right)_n\rightarrow\underset{OH}{\overset{OH}{Al}}-O-\overset{O}{\overset{\|}{C}}-OX\right]\cdot\text{HEXITOL}$$

n is at least 1 and averages less than 6. X is a cation.

CREAMALIN NEUTRALIZES *MORE* ACID *FASTER*

Quicker Relief • Greater Relief



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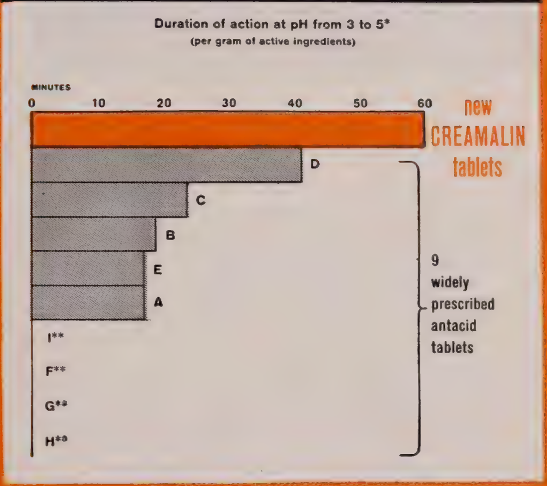

*Hinkel, E. T., Jr., Fisher, and Tainter, M. L.: A new highly reactive aluminum hydroxide complex for gastric hyperacidity. To be published.
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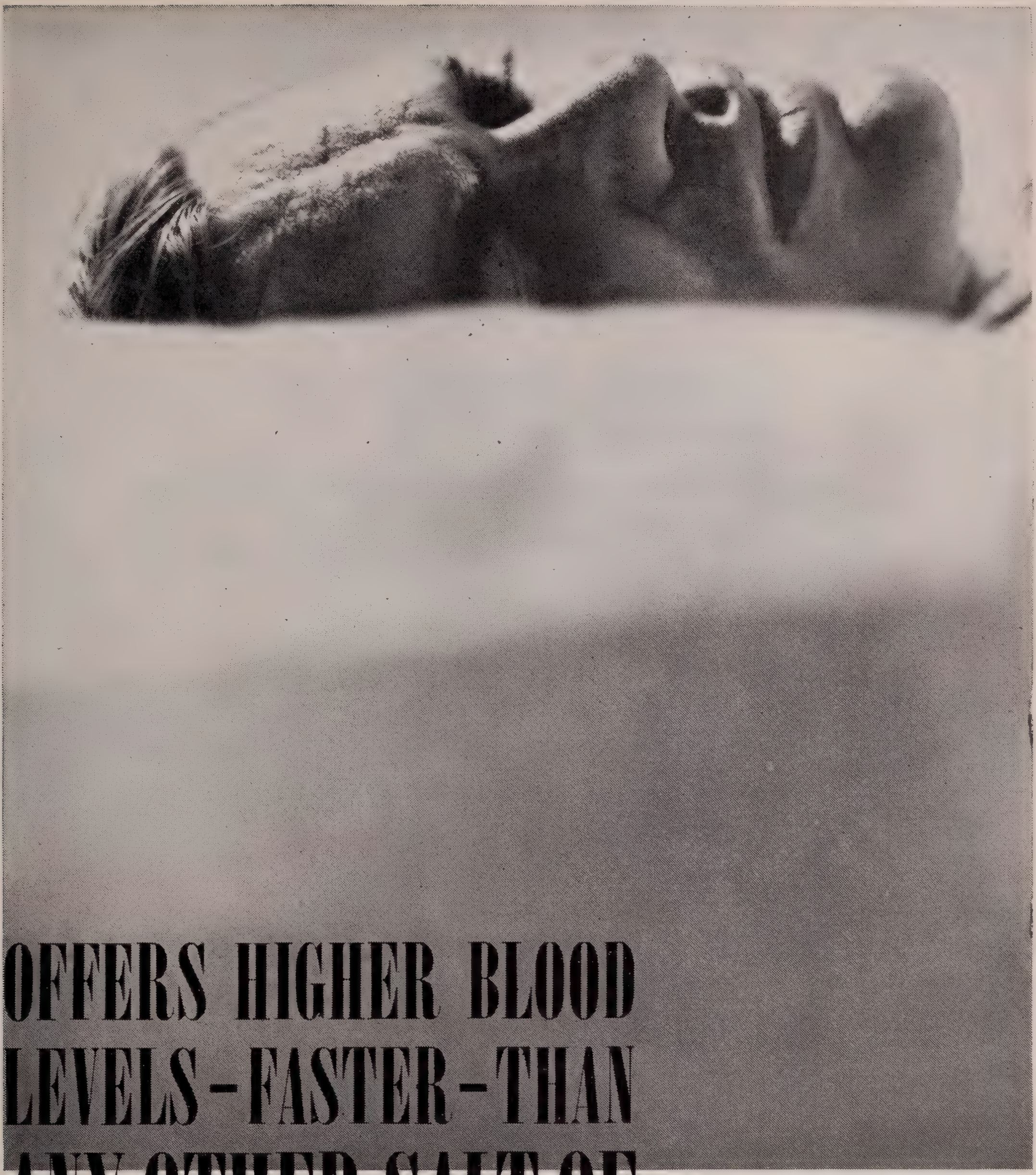

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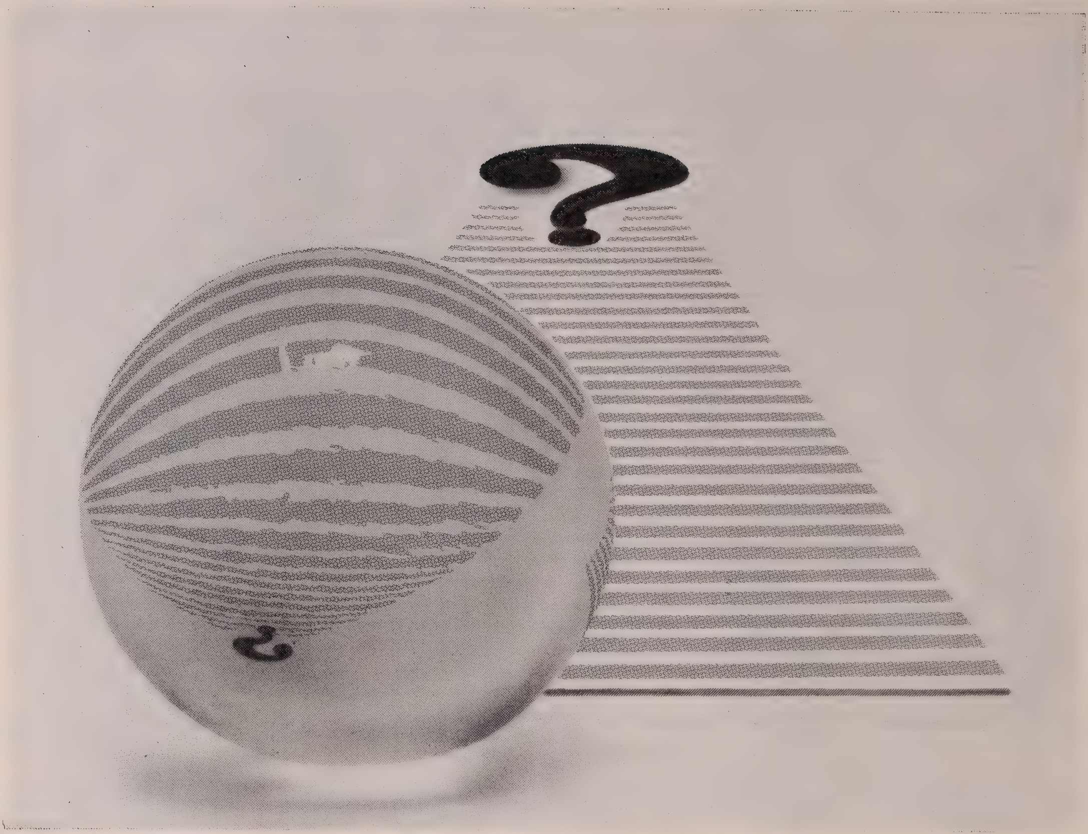

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References: 1. Dowling, H. F.: Postgrad. Med. *23*:594 (June) 1958. 2. Gimble, A. I.; Shea, J. G., and Katz, S.: Antibiotics Annual 1955-1956, New York, Medical Encyclopedia Inc., 1956, p. 676. 3. Long, P. H., in Kneeland, Y., Jr., and Wortis, S. B.: Bull. New York Acad. Med. *33*:552 (Aug.) 1957. 4. Rein, C. R.; Lewis, L. A., and Dick, L. A.: Antibiotic Med. & Clin. Ther. *4*:771 (Dec.) 1957. 5. Stone, M. L., and Mersheimer, W. L.: Antibiotics Annual 1955-1956, New York, Medical Encyclopedia Inc., 1956, p. 862. 6. Campbell, E. A.; Prigot, A., and Dorsey, G. M.: Antibiotic Med. & Clin. Ther. *4*:817 (Dec.) 1957. 7. Chamberlain, C.; Burros, H. M., and Borromeo, V.: Antibiotic Med. & Clin. Ther. *5*:521 (Aug.) 1958. 8. From, P., and Alli, J. H.: Antibiotic Med. & Clin. Ther. *5*:639 (Nov.) 1958.

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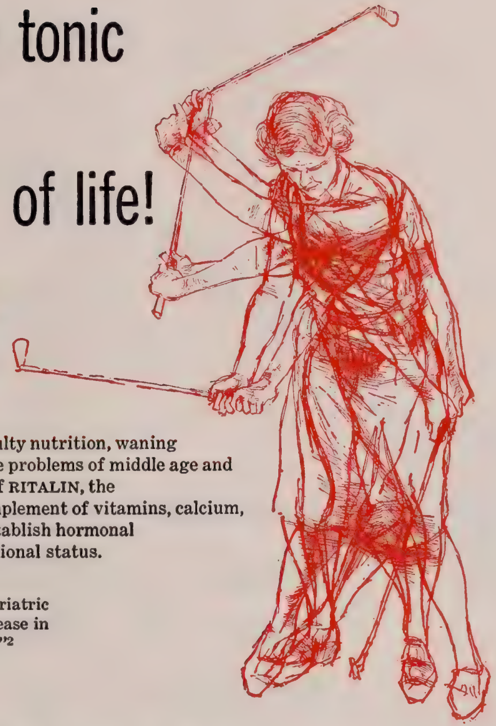

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References: 1. Natenshon, A. L.: J. Am. Geriatrics Soc. *6*: 534 (July) 1958.
2. Bachrach, S.: To be published.
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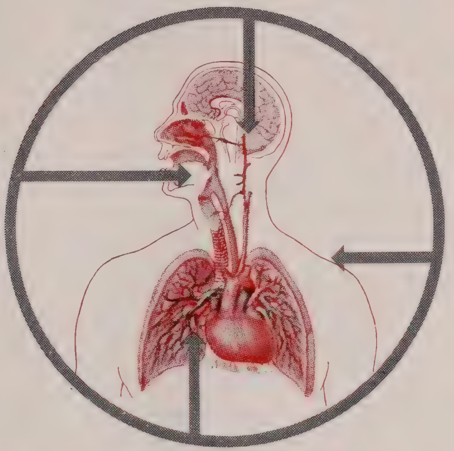

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References: 1. Lhotka, F. M.: Illinois M. J. **112**:259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly **37**:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. **5**:1183 (Sept.) 1958. 4. Bonica, J. J.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 272. 5. Dascomb, H. E.: in Current Therapy, Saunders, Phila., 1958, p.78. 6. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p.547.

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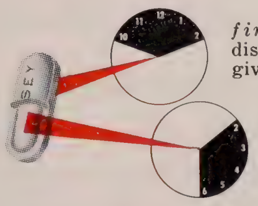

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VOLUME 59 OCTOBER 15, 1959 NUMBER 20

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References: **1.** Graham, W.: Canad. M. A. J. **79**:634 (Oct. 15) 1958. **2.** Robins, H. M.; Lockie, L. M.; Norcross, B.; Latona, S., and Riordan, D. J.: Am. Pract. Digest Treat. **8**:1758, 1957. **3.** Kuzell, W. C.; Schafarzick, R. W.; Naugler, W. E., and Champlin, B. M.: New England J. Med. **256**:388, 1957.

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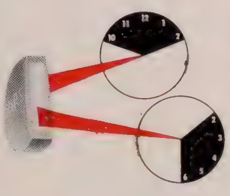

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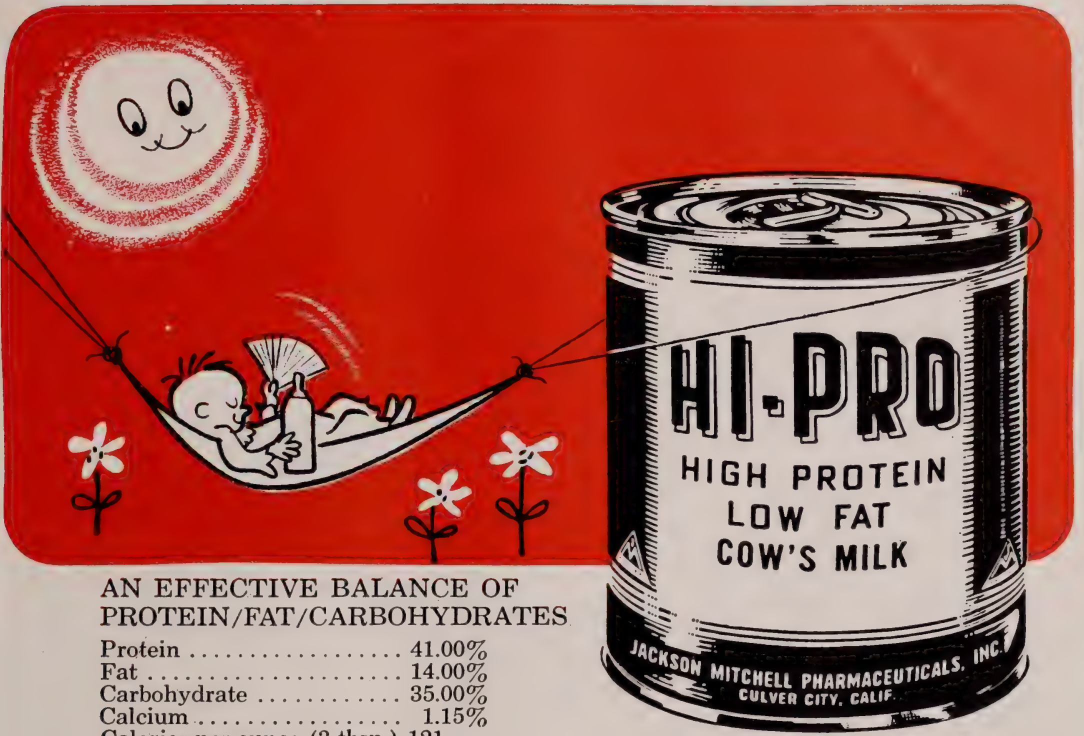

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KAPSEALS CELONTIN is effective in the treatment of petit mal and psychomotor epilepsy. It provides effective control with a minimum of side effects, frequently checks seizures in patients refractory to other anticonvulsant medications, and does not tend to precipitate grand mal attacks in those patients with combined petit mal and grand mal seizures. For this reason, CELONTIN is useful in treating patients with more than one type of seizure and can be given in combination with Dilantin.[7-10]

CELONTIN Kapseals (methsuximide, Parke-Davis) 0.3 Gm., bottles of 100.

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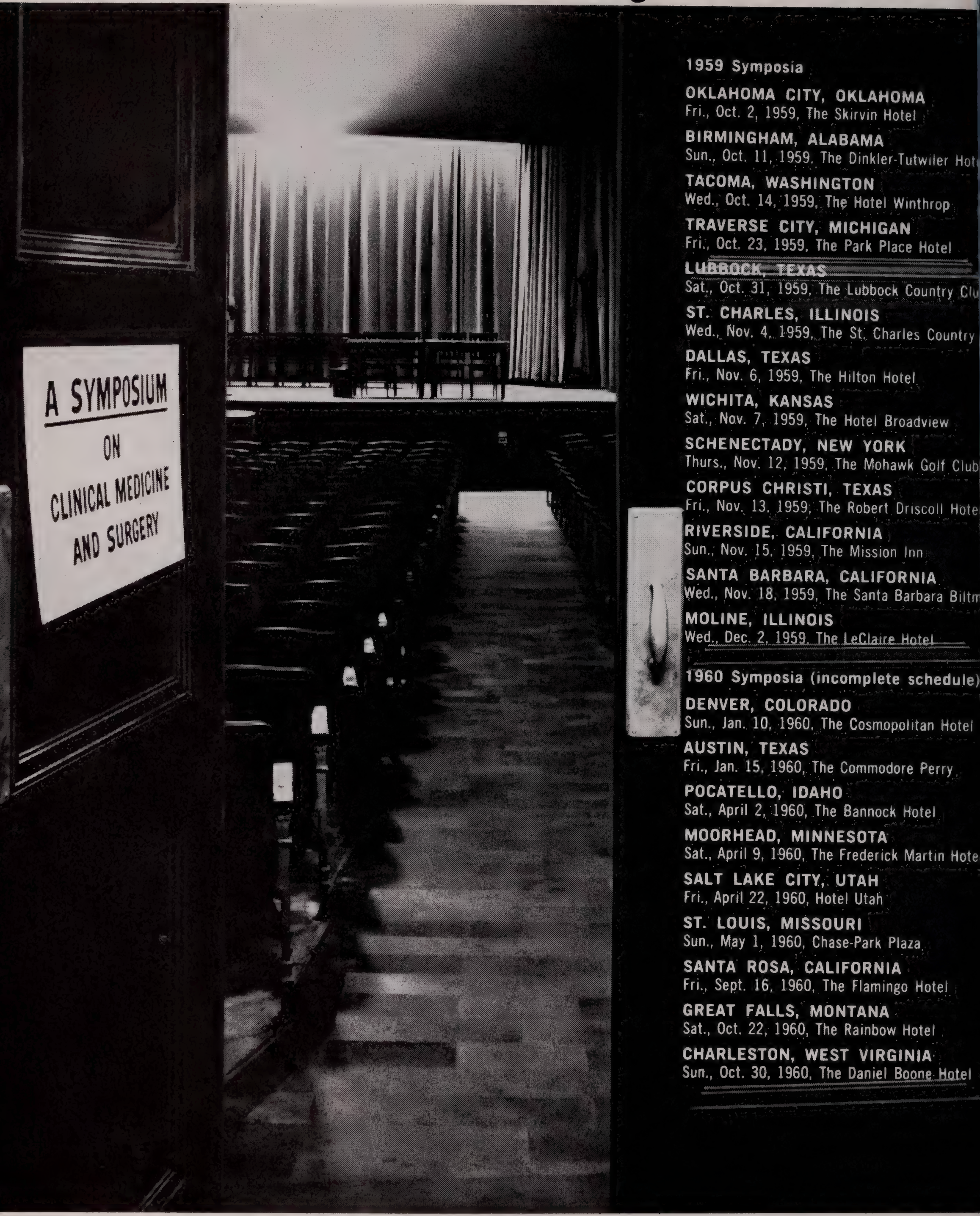

1959 Symposia

OKLAHOMA CITY, OKLAHOMA
Fri., Oct. 2, 1959, The Skirvin Hotel

BIRMINGHAM, ALABAMA
Sun., Oct. 11, 1959, The Dinkler-Tutwiler Hot

TACOMA, WASHINGTON
Wed., Oct. 14, 1959, The Hotel Winthrop

TRAVERSE CITY, MICHIGAN
Fri., Oct. 23, 1959, The Park Place Hotel

LUBBOCK, TEXAS
Sat., Oct. 31, 1959, The Lubbock Country Clu

ST. CHARLES, ILLINOIS
Wed., Nov. 4, 1959, The St. Charles Country

DALLAS, TEXAS
Fri., Nov. 6, 1959, The Hilton Hotel

WICHITA, KANSAS
Sat., Nov. 7, 1959, The Hotel Broadview

SCHENECTADY, NEW YORK
Thurs., Nov. 12, 1959, The Mohawk Golf Club

CORPUS CHRISTI, TEXAS
Fri., Nov. 13, 1959, The Robert Driscoll Hote

RIVERSIDE, CALIFORNIA
Sun., Nov. 15, 1959, The Mission Inn

SANTA BARBARA, CALIFORNIA
Wed., Nov. 18, 1959, The Santa Barbara Biltm

MOLINE, ILLINOIS
Wed., Dec. 2, 1959, The LeClaire Hotel

1960 Symposia (incomplete schedule)

DENVER, COLORADO
Sun., Jan. 10, 1960, The Cosmopolitan Hotel

AUSTIN, TEXAS
Fri., Jan. 15, 1960, The Commodore Perry

POCATELLO, IDAHO
Sat., April 2, 1960, The Bannock Hotel

MOORHEAD, MINNESOTA
Sat., April 9, 1960, The Frederick Martin Hote

SALT LAKE CITY, UTAH
Fri., April 22, 1960, Hotel Utah

ST. LOUIS, MISSOURI
Sun., May 1, 1960, Chase-Park Plaza

SANTA ROSA, CALIFORNIA
Fri., Sept. 16, 1960, The Flamingo Hotel

GREAT FALLS, MONTANA
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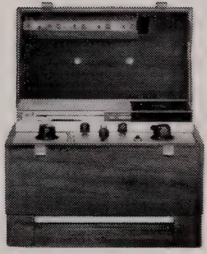

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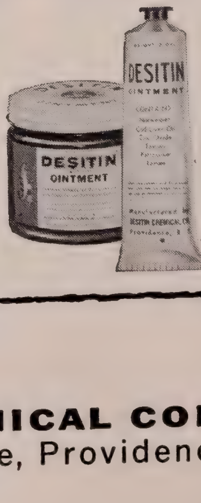

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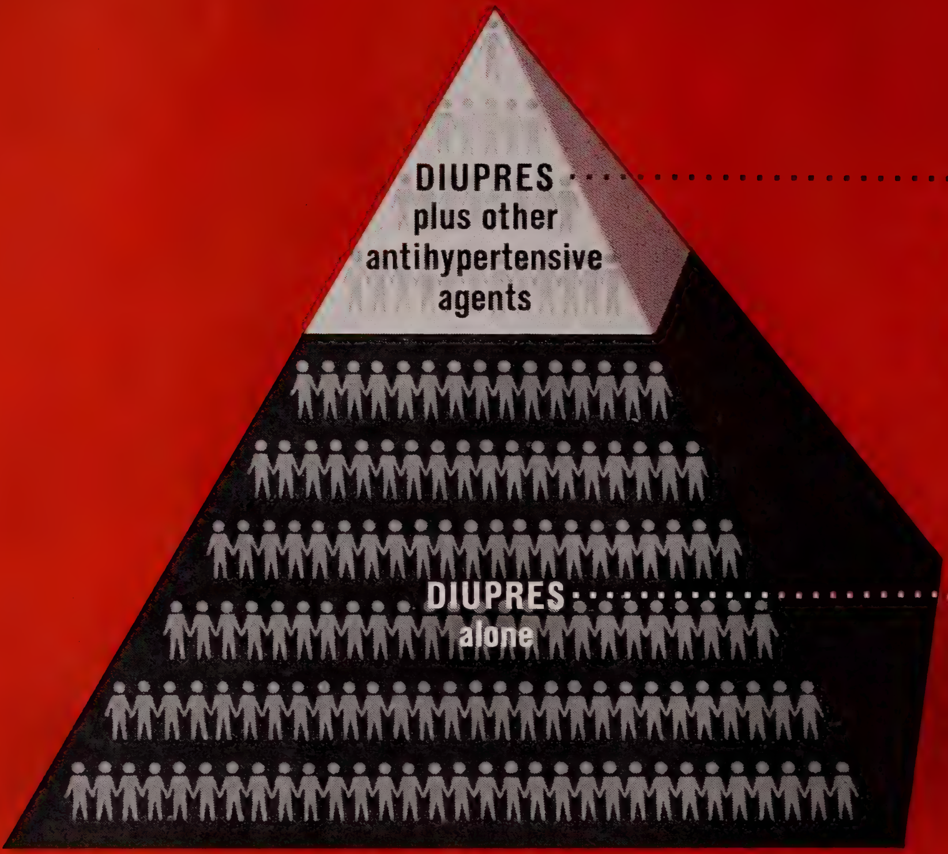
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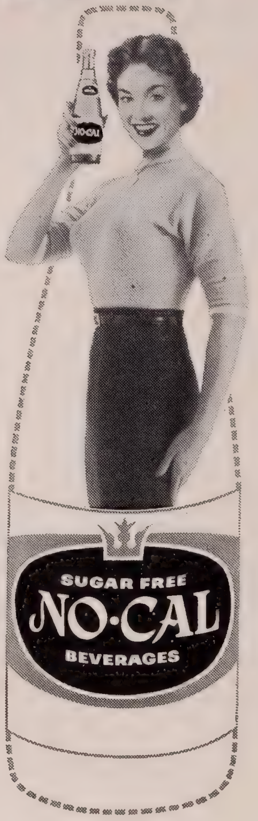

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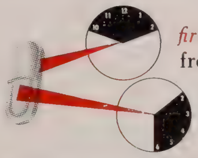

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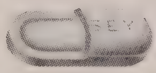
timed-release  *tablets*

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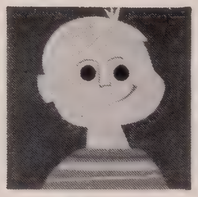
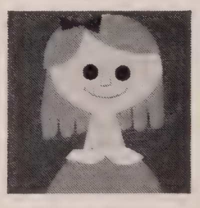


can be chewed like candy

can be crushed and sprinkled on cereal or other food

can be dissolved in water, juice or milk



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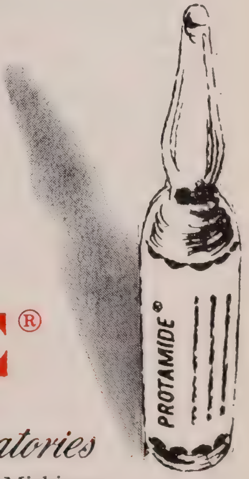

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2. Smith, Richard T.: New York Med. 8:16, 1952.

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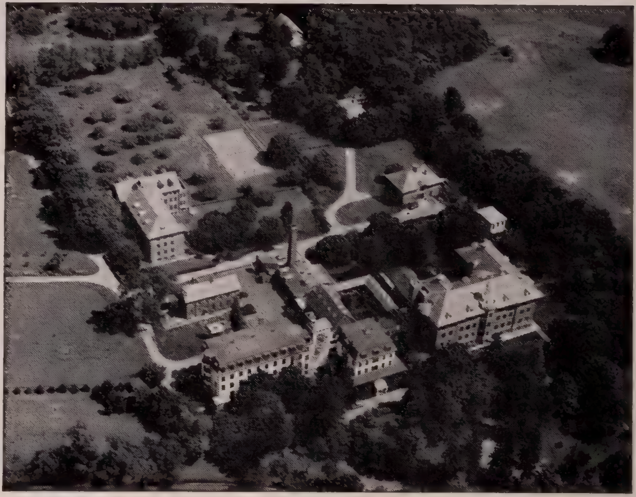

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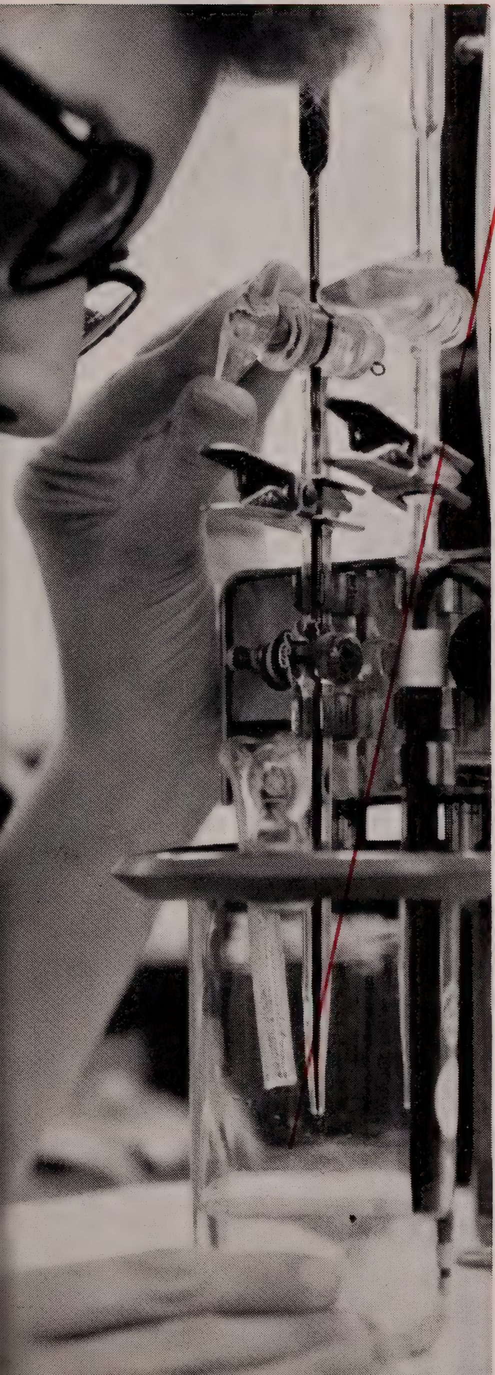
there's a way to ensure that assistance to our needy elderly colleagues will be continuously provided, not only in good times but also in bad. For bequests through wills and special gifts, as distinct from membership dues and annual contributions, are added to an endowment fund which is being built up through the years. This will provide a certain security of income during periods of recession when our main source of support, dues from the members of the Medical Society of the State of New York, might possibly be decreased. So give some thought now to the making of a will—to provide for the final disposition of your property in the way you want it to be distributed. A bequest form for making a gift is printed below. And we hope you will remember Physicians' Home among your benefactions.

BEQUEST FORM

"I hereby give, bequeath and devise to Physicians' Home, a New York Membership Corporation, having principal offices in New York City, the following property: ....
...."

PHYSICIANS' HOME

750 Third Avenue New York 17, N. Y.



you share this care / by specifying

Vi-Sol drops

An important step in assuring the vitamin potency of Vi-Sol drops is this aquameter check for excessive moisture. This precision instrument makes it possible to determine moisture content to an exact degree, an extra measure of care that is routine with each lot of Vi-Sol drops.

to safeguard potency...

one of 143 product quality controls* assuring superiorit

This test for moisture level is just one of the many conducted, using the most advanced equipment, that make certain of stated *potency* at the time of manufacture. Other tests are designed to assure vitamin *stability* throughout shelf-life and use.

This meticulous care at every step makes *the big difference* in Vi-Sol drops. The mother knows that the product is pure and safe . . . the formulation sound and the potency stable when she sees the Mead Johnson name on the label.

**plus 231 additional quality checks that guard Vi-Sol drops from raw material to package.*

Deca-Vi-Sol® drops
10 significant vitamins, Mead Johnson

Poly-Vi-Sol® drops
6 essential vitamins, Mead Johnson

Tri-Vi-Sol® drops
3 basic vitamins, Mead Johnson

Mead Johnson
Symbol of service in medicine

announcing:

the newest concept in acne treatment

Brāsivol™

Three-pronged attack on acne:

- Detergent base—removes oil
- Abrasive particles—open pores [Fused synthetic Al. oxide]
- Hexachlorophene—controls bacteria

Outstanding success in clinical trials in more than one thousand cases over 10-year period.

SEND FOR SAMPLES.

STIEFEL LABORATORIES, INC.
Oak Hill, New York

ONE FOR ALL
Lederle

MUMPS VACCINE

Specific immunizing antigen (chick embryo origin) active against various isolated virus strains. Effectively prevents or modifies mumps in children and adults.

Lederle LEDERLE LABORATORIES, A Division of
AMERICAN CYANAMID CO., Pearl River, New York

new modern site-of-pain relief in musculoskeletal distress

GER-O-FOAM

(aerosol foam)

GER-O-FOAM
ANAESTHETIC & ANALGESIC FOAM

eases pain, spasm; improves function

Deeply absorbed to permeate affected sensory endings, the proven local analgesic-anesthetic agents in GER-O-FOAM give relief in minutes, lasting for hours in . . . rheumatoid arthritis, osteoarthritis, muscle sprain, fibromyositis, low back pain, etc.

IN A NEW CLINICAL STUDY[1] GER-O-FOAM gave "satisfactory" results in 85% of chronic musculoskeletal patients. Response was "striking" in certain intractable acute conditions . . . "permitting functional exercises otherwise impossible."

GER-O-FOAM combines: Methyl salicylate 30%, benzocaine 1%, traces of volatile oils in a specially processed, neutralized emulsion base, for aerosol use.

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GERIATRIC

1. Gordon, E. E. and Haas, A.: Industrial Medicine & Surgery 28:217, 1959.

2 NEW FORMS OF CORICIDIN

relieve sinusitis colds • allergic rhinitis

decongestant • antihistaminic
analgesic • antipyretic | ORAL

CORICIDIN "D"
econgestant Tablets

combine dependable **CORICIDIN** benefits with specific action of phenylephrine to provide rapid prolonged relief of congested respiratory passages

TOPICAL | decongestant •
antihistaminic • antibiotic

CORICIDIN
Nasal Mist

offers prompt topical symptomatic relief of congested nasal mucosa and controls excessive nasal drainage **without** rebound effects

Each Coricidin "D" tablet contains 2 mg. Chlor-Trimeton® Maleate, 0.23 Gm. aspirin, 0.16 Gm. phenacetin, 30 mg. caffeine and 10 mg. phenylephrine — boxes of 12 tablets

Each cc. of Coricidin® Nasal Mist contains 3 mg. Chlor-Trimeton Gluconate, 5 mg. phenylephrine hydrochloride and 0.05 mg. gramicidin — squeeze-bottles of 20 cc.

Schering

SCHERING CORPORATION • BLOOMFIELD, NEW JERSEY

proven successful[1] in
almost every
case of

skin itch

and dryness

Used in the bath SARDO releases millions of microfine water-dispersible globules* to provide a soothing, softening suspension which enhances your other therapy. SARDO baths . . .

1 **rehydrate the dry, itchy, scaly skin**

2 **add comfort to the therapeutic care**

3 **act to measurably increase natural emollient skin oil**

4 **minimize loss of natural oil and excessive moisture with a fine non-occlusive film**

Patients will appreciate pleasant, convenient, easy to use, pine-scented SARDO. Non-sensitizing. Most economical. Bottles of 4, 8 and 16 oz.

1. Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958

Sardo®

in the bath

for atopic dermatitis
eczematoid dermatitis
senile pruritus
contact dermatitis
soap dermatitis

Sardo
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Samples and literature
yours for the asking.

Sardeau, Inc. 75 East 55th Street
New York 22, N. Y.

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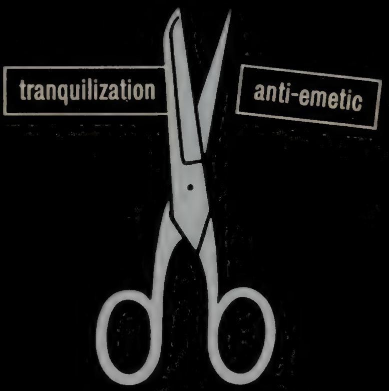
now potent tranquilizer therapy is safer than ever

MELLARIL is virtually free of such toxic effects as

- jaundice
- Parkinsonism
- blood dyscrasia



Virtual freedom of Mellaril from major toxic effects is due to greater specificity of tranquilizing action — divorced from such "diffuse" effects as anti-emetic action.

"Thioridazine [MELLARIL] is as effective as the best available phenothiazine, but with appreciably less toxic effects than those demonstrated with other phenothiazines. . . This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."[1]

S
SANDOZ

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels

remarkable lack of side effects

In more than 3,000 carefully-followed patients, Mellaril has been almost completely free of such major side effects as jaundice, extrapyramidal symptoms, Parkinsonism, blood dyscrasia, dermatitis— even when given in quantities far in excess of the usual dosage.

"POVERTY" OF SIDE EFFECTS

"The most striking aspect of thioridazine [Mellaril] therapy is the poverty of side effects.... In its lack of side effects and low toxicity, it is superior to all other tranquilizing drugs tested. For this reason also it is well tolerated by patients, particularly those who are not hospitalized and who frequently discontinue their medication because of dizziness, sleepiness, increased tension or parkinsonism with other drugs."[2]

NEGLIGIBLE SIDE EFFECTS

"Side effects were negligible at all dosage levels: no incidence of parkinsonism or other extrapyramidal symptoms. Minimal sedation, on the whole lower than with other tranquilizing agents. No alteration in liver function, urine or blood. No photosensitivity. Patient acceptability was exceptional: lack of drowsiness, lethargy or 'washed out' feeling, permitted patients to carry on normal everyday activities. Orthostatic hypotension was absent. The initial 'keyed up' tense feeling common to other drugs of this type was absent.... Patients forced to interrupt treatment with other phenothiazine derivatives because of parkinsonism or other extrapyramidal symptoms were able to continue therapy with thioridazine without appearance of parkinsonism."[3]

SINGULARLY FREE OF SIDE EFFECTS

"The extrapyramidal syndrome was not encountered in any of its forms. Dizziness and sleepiness responded to a reduction in dosage. Other side effects did not occur.... It is singularly free from the side effects ordinarily seen with these [phenothiazine] compounds."[4]

ABSENCE OF SIGNIFICANT SIDE EFFECTS

"None of the following toxic effects, so common after administration of the phenothiazines, was present during the period of Thioridazine administration: Parkinsonism or Parkinson-like symptoms, photosensitivity, orthostatic hypotension, bone-marrow depression."[1]

MINIMAL SIDE EFFECTS

"Side effects such as extrapyramidal activity, jaundice and photosensitivity have not been observed in patients treated with Thioridazine [Mellaril]. Extrapyramidal side effects produced by other phenothiazines have disappeared promptly with no deterioration in the behavioral response when these patients have been shifted to Thioridazine."[5]

NO JAUNDICE

"No allergic reactions were observed such as skin eruptions, jaundice or agranulocytosis. Central nervous system toxicity, as manifested by extrapyramidal effects, seizures, and excitement did not occur despite the use of high doses (up to 2000 mg.) of the drug."[6]

Mellaril®

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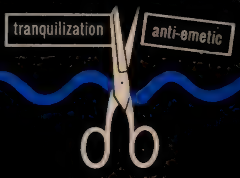
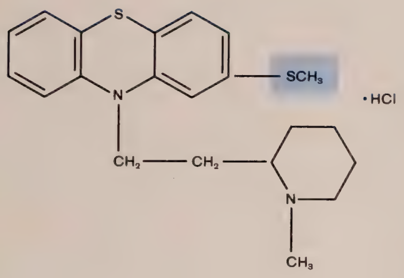
specific, effective tranquilizer • safer at all dosage levels

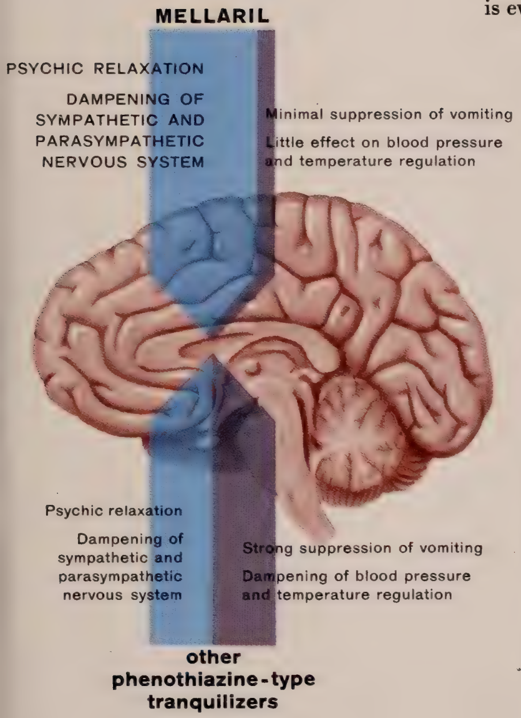


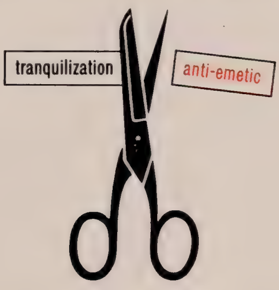
a new advance in tranquilization:
greater specificity of tranquilizing action plus fewer side effects


S
N
SCH₃
•HCl
CH₂
CH₂
N
CH₃

Of 109 phenothiazines synthesized by Sandoz, Mellaril was selected as the most promising on the basis of extensive evaluation. The presence of a thiomethyl radical ($S\text{-}CH_3$) in the position conventionally occupied by a halogen in other phenothiazines is unique and could be responsible for the relative absence of side effects and greater specificity of psychotherapeutic action. This is shown clinically by:

1 A specificity of action on certain brain sites in contrast to the more generalized or "diffuse" action of other phenothiazines. This is evidenced by a lack of appreciable anti-emetic effect.


MELLARIL
PSYCHIC RELAXATION
DAMPENING OF SYMPATHETIC AND PARASYMPATHETIC NERVOUS SYSTEM
Minimal suppression of vomiting
Little effect on blood pressure and temperature regulation
Psychic relaxation
Dampening of sympathetic and parasympathetic nervous system
Strong suppression of vomiting
Dampening of blood pressure and temperature regulation
other phenothiazine-type tranquilizers


tranquilization
anti-emetic

2 Less "spill-over" action to other brain areas — hence, absence of undue sedation, drowsiness or autonomic nervous system disturbances.

3 A notable absence of extrapyramidal stimulation.

4 Lack of impairment of patient's normal drive and energy, while achieving psychomotor control in mental and emotional disorders.

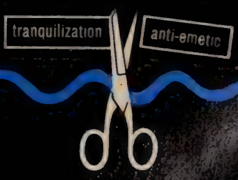
5 Virtual freedom from toxic effects — jaundice, photosensitivity, skin eruptions, disturbed body temperature regulation, blood forming disorders have been absent in reports currently available.

These properties add up to a greater margin of safety in general office practice, in ambulatory psychiatric out-patient clinics, and in hospitalized patients.

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels


tranquilization
anti-emetic

excellent clinical response

In office practice and in hospitalized patients, Mellaril has proved highly useful for a wide variety of major and minor emotional disorders (such as anxiety, tension, apprehension, alcoholism, agitated psychoneurosis, agitated psychotic states, etc.).

EXTREMELY SATISFACTORY "... produced extremely satisfactory results in the broad therapeutic range represented in this series."[3]

POTENT AGENT "... appears to be a potent agent in the symptomatic management of a variety of psychiatric states."[4]

MAJOR ADDITION TO THERAPEUTICS "This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."[1]

AN ACTIVE AGENT "Thioridazine is an active therapeutic agent. . . . It is effective in a variety of psychiatric disorders, including schizophrenic reactions. . . . The drug is particularly advantageous for a group of schizophrenic patients who are sometimes made worse by other phenothiazine derivatives or Rauwolfia alkaloids. It should also be suitable for treating patients with psychoneuroses and chronic brain syndrome."[6]

EVEN IN VERY SEVERE CASES "Of the 152 patients treated 25 have been released and they have not suffered a relapse. This proportion is significant if we stop to consider that we are dealing only with acute cases which had been considered hopeless and obviously destined to finish their days in an asylum."[7]

EXCELLENT THERAPEUTIC RESPONSE "Patients with emotional tensions resulting from the stress and strain of life . . . were treated with Mellaril at the dosage level of 10 mg. three times daily. In 94 such patients, 83 obtained an excellent therapeutic response."[8]

Mellaril®

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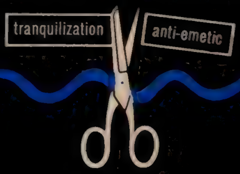
specific, effective tranquilizer • safer at all dosage levels



"...extremely satisfactory results..." in a clinical spectrum ranging from minor nervous disorders to severe psychotic disturbances[3]

RESULTS WITH MELLARIL IN 194 PATIENTS[3]

ACUTE PSYCHOTICS	CHRONIC PSYCHOTICS	NEUROTICS
83% satisfactory effect	68% satisfactory effect	57% satisfactory effect
Some cases had complete remission of symptoms. Most were able to return home to useful occupations.	Relief of symptoms in cases permitted easier management and a return to a more or less useful life.	Some cases, complete relief of symptoms. Other cases, partial relief of symptoms.

RESULTS WITH MELLARIL IN PATIENTS PREVIOUSLY TREATED WITH OTHER TRANQUILIZERS[3]

DIAGNOSTIC CATEGORY	IMPROVED %	VERY SATISFACTORY %	SATISFACTORY %	UNSATISFACTORY %
SCHIZOPHRENIA				
Acute	89	61	28	11
Chronic paranoid	84.2	31.6	52.6	15.8
Chronic, other	73.9	21.7	52.2	26.1
Residual	57.1	9.5	47.6	42.9
CHRONIC BRAIN SYNDROME	66.6	33.3	33.3	33.3
CHRONIC PSYCHONEUROSIS	62.5	12.5	50	37.5
CHRONIC PSYCHOSOMATIC DISORDERS	75	25	50	25

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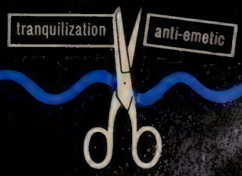

a guide to administration and dosage

Dosage ranges from 10 mg. three or four times a day in milder situations to 25 mg. three or four times a day for more disturbed patients. In ambulatory psychiatric out-patients, dosages of 50 to 100 mg. three or four times a day have been found adequate. For severely disturbed hospitalized psychotics, dosages of 200 to 300 mg. three times a day may be administered.

Dosage must be individualized according to the condition and degree of response. In all cases, the smallest effective dosage should be determined for each patient.

INDICATION	USUAL STARTING DOSE	TOTAL DAILY DOSAGE RANGE
ADULTS		
Mental and Emotional Disturbances:		
MILD—where anxiety, apprehension and tension are present	10 mg. t.i.d.	20-60 mg.
MODERATE—where agitation exists in psychoneurosis, alcoholism, intractable pain, senility, etc.	25 mg. t.i.d.	50-200 mg.
SEVERE—in agitated psychotic states as schizophrenia, manic depressive, toxic psychoses, etc.:		
Ambulatory	100 mg. t.i.d.	200-400 mg.
Hospitalized	100 mg. t.i.d.	200-800 mg.
CHILDREN		
BEHAVIOR PROBLEMS IN CHILDREN	10 mg. t.i.d.	20-40 mg.

PRECAUTIONS: Although possessing a unique structure and a selectivity of action which broadens its therapeutic ratio, the physician should be alert to the possibility of untoward reactions in certain susceptible individuals. In particular, he should watch for potential hemopoieti depression, jaundice or orthostatic hypotension. As wit other phenothiazines, Mellaril is contraindicated i severely depressed or comatose states from any cause.

SUPPLIED: MELLARIL Tablets, 10 mg., 25 mg., 100 mg. Bottles of 100.

1. Ostfeld, A. M.: Scientific Exhibit, American Academy of General Practice, San Francisco, April 6-9, 1959. 2. Kinross-Wright, V. J.: Lecture, Clinic Meeting, American Medical Association, Minneapolis, Dec. 4, 1958. 3. Kinross-Wright, V. J.: Scientific Exhibit, Clinical Meeting, American Medical Assoc ation, Minneapolis, Dec. 2-5, 1958. 4. Cohen, S.: TP-21, a new phenothiazine, Am. J. Psychiat. *115*:358, Oct. 1958. 5. Glueck, B.: Scientific Exhibit, Americ Psychiatric Association, Philadelphia, April 27-May 1, 1959. 6. Hollister, L. E., and Macdonald, B. F.: Presented at California Medical Association; Section Psychiatry, San Francisco, Feb. 25, 1959. 7. Remy, M.: Schweiz. med. Wchnschr. *88*:1221, Nov. 29, 1958. 8. Freed, S. C., in discussion on Thioridazine (Mellari in Psychiatric Patients, Hollister, L. E., and Macdonald, B. F., presented at California Medical Association; Section on Psychiatry, San Francisco, Feb. 25, 195

- controls neurotic and psychotic patients with anxiety, apprehension, nervous tension
- virtual absence of jaundice, parkinsonism, photosensitivity, dermatitis
- minimal sedation and drowsiness
- does not mask organic conditions such as brain tumors, intestinal obstruction, etc., because of lack of anti-emetic action
- increased specificity of action results in greater safety at all dosage levels

SANDO

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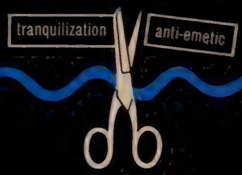
THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels



In Kraurosis and Leukoplakia Vulvae, Postmenopausal and Senile Vaginitis, Pruritis Vulvae et Ani . . .

HIST-A-CORT-E®

CREME pH 4.7

ACID MANTLE®·HYDROCORTISONE·ESTRONE·PYRILAMINE MALEATE·SYNTHETIC VITAMIN A

INCORPORATED IN EXCLUSIVE ACID MANTLE® VEHICLE

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Stops itching instantly and completely.
Corrects thickening of skin—eliminates scaling.
Restores skin to normal softness and pliability.
Tends to negate necessity for surgery
in Kraurosis and Leukoplakia Vulvae.

THE MOST TRUSTED NAME IN DERMATOLOGICALS

Supply: With ½% hydrocortisone in ½ oz. and 1 oz. tubes
With 1% hydrocortisone in ½ oz. tubes
Sig: Apply twice daily

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Stop Muscle Spasm

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Brand of Orphenadrine HCl

in Parkinsonism

An energizing agent against weakness and fatigue... effective as a euphoriant...counteracts sialorrhea and oculogyria...lessens rigidity and tremor...well tolerated...even in presence of glaucoma.

in Low-Back Pain

Effective relief from spasm and pain in painful skeletal muscle disorders due to sprains, strains, herniated intervertebral disc, whiplash injuries, chronic osteoarthritis...No known contraindications.

Dosage: Usually 1 tablet (50 mg.) t.i.d.

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Northridge, California

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U.S. Patent No. 2,567,351. Other patents pending.

time-tested therapy

in

bronchial asthma

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Cheyne-Stokes respiration

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reliable diuresis

potent myocardial stimulant

bronchial relaxant

tablets, ampuls, powder, suppositories

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The Seventeenth Annual

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Open to all physicians. Registration fee: $10. For further information write: **Dr. Joseph Frothingham,** *Chairman,* **New England Postgraduate Assembly, 22 The Fenway, Boston 15, Mass.**

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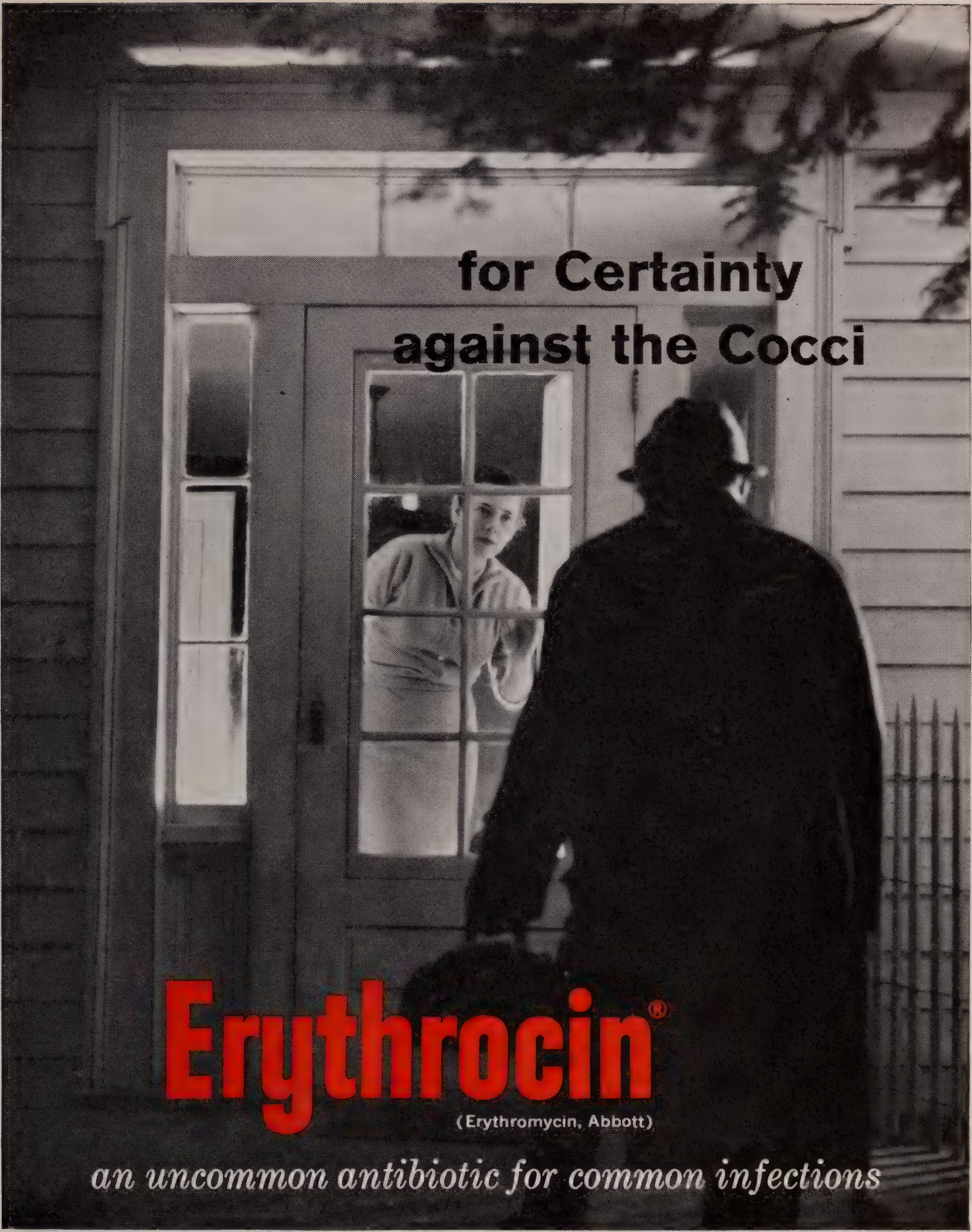
for Certainty
against the Cocci
Erythrocin®
(Erythromycin, Abbott)
an uncommon antibiotic for common infections

Provides fast, high blood and tissue concentrations—plus an unparalleled safety record. Erythrocin is available in easy-to-swallow Filmtabs® (100 and 250 mg.); in tasty, citrus-flavored Oral Suspension (200 mg. per 5-cc. teaspoonful); and for intravenous and intramuscular use.

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In every arthritic state . .

WITHOUT STEROIDS

FIRST NATIONAL BANK

WITHOUT STEROIDS

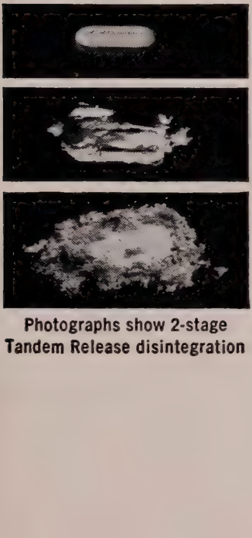
MAINTENANCE THERAPY WITHOUT STEROIDS IS FUNDAMENTAL

Sound, conservative therapy with salicylates has been consistently reaffirmed as basic, long-term maintenance therapy in the arthritides.

Buffered Pabirin provides superior maintenance therapy. It epitomizes fundamental long-term basic therapy since it can be given month after month without serious complications and with minimal problems to patient and doctor alike.

Buffered Pabirin is formulated to provide high and sustained salicylate blood levels. Each tablet consists of an outer layer containing a buffer (aluminum hydroxide), para-aminobenzoic acid, and ascorbic acid; a core of acetylsalicylic acid.

In the stomach, the outer layer quickly releases the buffer, which protects against nausea, dyspepsia and other gastrointestinal symptoms so frequently encountered with salicylates alone. The core of Buffered Pabirin then disintegrates rapidly, permitting rapid absorption of the acetylsalicylic acid for faster pain relief.



Photographs show 2-stage Tandem Release disintegration

Each tablet contains:

Acetylsalicylic acid (5 gr.)	300 mg.
Para-aminobenzoic acid (5 gr.)	300 mg.
Ascorbic acid	50 mg.
Dried aluminum hydroxide gel	100 mg.

All Buffered Pabirin is sodium- and potassium-free.

Dosage: Two or three tablets 3 or 4 times daily.

References: 1. Hart, D.; Bagnall, A. W.; Bunim, J. J., and Polley, F. H.: Ninth International Congress on Rheumatic Diseases, Toronto, Ont. (June 25) 1957. 2. Report of Joint Committee, Medical Research Council & Nuffield Foundation, Treatment of Rheumatoid Arthritis, British Medical Journal (April 13) 1957. 3. Friend, D. G.: New England J. Med. *257*:278 (Aug.) 1957.

Buffered **Pabirin®** *Tablets*

SMITH-DORSEY · a division of The Wander Company · Lincoln, Nebraska · Peterborough, Canada

NOW

. . . a new way to relieve pain and stiffness in muscles and joints

INDICATED IN:

- MUSCLE STIFFNESS
- LUMBOSACRAL STRAIN
- SACROILIAC STRAIN
- WHIPLASH INJURY
- BURSITIS
- SPRAINS
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- LOW BACK PAIN
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- Exhibits unusual analgesic properties, different from those of any other drug
- Specific and superior in relief of SOMAtic pain
- Modifies central perception of pain without abolishing natural defense reflexes
- Relaxes abnormal tension of skeletal muscle

SOMA T.M.

N-isopropyl-2-methyl-2-propyl-1, 3-propanediol dicarbamate

- More specific than salicylates
- Less drastic than steroids
- More effective than muscle relaxants

SOMA has an unique analgesic action. It apparently modifies central pain perception without abolishing peripheral pain reflexes. SOMA is particularly effective in relieving joint pain. Patients say that they feel better and sleep better with SOMA than with any previously used analgesic, sedative or relaxant drug.
SOMA also relaxes muscle hypertonia, with its stresses on related joints, ligaments and skeletal structures.

ACTS FAST. Pain-relieving and relaxant effects start in 30 minutes and last 6 hours.

NOTABLY SAFE. Toxicity of SOMA is extremely low. No effects on liver, endocrine system, blood pressure, blood picture or urine have been reported. Some patients may become sleepy on high dosage.

EASY TO USE. Usual adult dose is one 350 mg. tablet 3 times daily and at bedtime.

SUPPLIED: Bottles of 50 white sugar-coated 350 mg. tablets.
Literature and samples on request.

WALLACE LABORATORIES, NEW BRUNSWICK, N. J.

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eradicate
recurrent
infections
Lilly
QUALITY / RESEARCH / INTEGRITY

ILOSONE® WORKS to assure a more decisive response

When the infection keeps coming back, it may well be that a more decisive antibiotic attack is indicated. In such cases, Ilosone consistently provides a prompt, high level of antibacterial activity in the patient's serum. Ilosone is bactericidal against both streptococci and pneumococci and has been reported particularly effective against staphylococcus infections in clinical investigation.[1]

Usual dosage: For adults and children over fifty pounds, 250 mg. every six hours. For optimal effect, administer on an empty stomach. Ilosone is supplied in Pulvules® of 125 mg. and 250 mg., in bottles of 24 and 100.

[1] J. A. M. A., *170*:184 (May 9), 1959.

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EDITORIALS

New York State Programs in Alcoholism

From time to time, items appear in medical or lay publications pointing out that certain states have passed special legislation for alcoholism control or treatment programs and have appropriated special funds for these purposes. The legislation may establish a commission on alcoholism, call for a survey of the problem and existing resources, or provide for the establishment of a specified number of diagnostic or treatment facilities.

Alcoholism is now recognized as a disease which is of serious concern to practicing physicians and to public and voluntary health agencies. Physicians and other professional persons interested in this problem frequently question the lack of a special alcoholism commission or board in New York State and the small amount of funds specifically earmarked for alcoholism in the State budget, in comparison with funds so designated in other states.

Such questions are answered in a recent report entitled "New York State Programs in Alcoholism," issued by the New York State Interdepartmental Health Resources Board. This report is an inventory of all State programs dealing with the problem of alcoholism and presents in one document the various activities of each of the various State departments and agencies that have responsibilities in this field. Of considerable interest are the following items:

1. Responsibilities for persons afflicted with alcoholism are the concern of several different State departments and agencies, the efforts of which are coordinated through the State Interdepartmental Health Resources Board.

2. Through the Community Mental Health Service Program of the State Department of Mental Hygiene, a mechanism exists for providing State aid to localities for the establishment or support of outpatient and hospital services for alcoholic patients on a community basis. Thus, through an operating State program, New York State has the potentiality of developing a widely-spread medical service program to meet the needs of the alcoholic in the locality. Obviously, these potentialities are dependent upon the further development of community mental health boards, the priority assigned to alcoholism, and the procurement of sufficient local public or voluntary funds which may be matched by State funds.

As of April, 1959, there were 27 community mental health service programs in operation, representing about 90 per cent of the population. Specialized alcoholism clinics were supported by four of these; namely, those in Nassau, Broome, Monroe, and Erie Counties. In many other areas, general mental health clinics supported by the program provide care for alcoholic patients. In New York City and in Erie and Monroe Counties, the program also provides financial support for hospital services for alcoholic patients.

3. Through the public home and infirmary programs of the local public welfare agencies, supervised by and provided State aid through the State Department of Social Welfare, a mechanism exists for the establishment of a widespread system of sheltered facilities and halfway houses for the rehabilitation of alcoholic patients. A special ward for the rehabilitation of alcoholic patients has recently been established at the county home in Onondaga County, and halfway house services are now being planned. Camp La Guardia, a residential work facility operated by the New York City Department of Welfare with State reimbursement, has a high proportion of

alcoholic men and has an Alcoholics Anonymous program associated with it. Here again, we have the potentialities for meeting local needs through existing programs. There are at present a total of 38 approved public home infirmaries in New York State, including five in New York City.

4. In the field of research, the State, through the Interdepartmental Health Resources Board, supports a major research program in alcoholism at the State University College of Medicine in Brooklyn. Important contributions have been made in the endocrinologic, psychologic, sociologic, and clinical aspects of alcoholism.

5. In the training of professional personnel, the Interdepartmental Health Resources Board has been developing a scholarship program utilizing graduate courses offered by leading universities. In 1958, 12 persons were sent to the Yale Summer School of Alcohol Studies, seven were given grants covering a two-week course offered at Teachers College of Columbia University, and 11 persons received scholarships for a full semester course at Fordham University School of Social Service.

6. Public information on alcoholism is considered part of public health education and as such is a responsibility of the Office of Public Health Education of the State Department of Health. In 1958, the Office's Film Library met requests for 717 showings of its four special films on alcoholism, reaching more than 24,500 persons.

7. In regard to the causation of motor vehicle accidents, the improper use of alcohol is considered as one of the most important human variables under study by the "Driver Research Center," administered by the State Department of Health under joint sponsorship with the Bureau of Motor Vehicles of the State Department of Taxation and Finance.

8. Alcoholics with mental and emotional disorders are admissible to the State hospitals operated by the Department of Mental Hygiene. In 1957, a total of 1,084 patients with alcoholic psychoses were received as first admissions, constituting nearly 7 per cent of the total first admissions and 6.7 per 100,000 of the general population.

9. Regarding the public schools, education about alcohol is required by the State Education Law. In general, such instruction is included in the health education programs.

10. The Interdepartmental Health Resources Board has had the availability of an excellent advisory committee composed of outstanding authorities in several disciplines which are concerned with alcoholism.

From the above, it is seen that the New York State approach to alcoholism is based on the development of adequate services and facilities through the regularly operating programs of the official State departments and their local counterparts. Special funds for alcoholism are limited to research and training programs, and these are administered by the Interdepartmental Health Resources Board. This earmarked budget is $121,825 this year. On the other hand, over one million dollars a year in State aid is now being extended through the Division of Community Mental Health Services of the State Department of Mental Hygiene to community mental health boards for clinic and hospital services for alcoholic patients. Significant amounts of State aid through the State Department of Social Welfare to local public welfare agencies is extended for sheltered care for homeless men, of whom a high proportion are alcoholics.

Thus current New York State expenditures for alcoholism services are of higher proportions than ordinarily considered, and the potentialities for growth through the State-aid mechanisms are considerable. Responsibility is now up to the communities to recognize the local problems and the need for adequate clinical and related resources, and then to convince the local appropriating bodies of the need to make the local matching funds available.

The report should be of considerable

interest to physicians concerned with the development of adequate resources for the alcoholic patient in his community. Indeed, the medical profession, through individual physicians or through a committee on alcoholism of the county medical society, should show appropriate leadership in stimulating a community program, in line with the recommendations of the Committee on Alcoholism of the American Medical Association and the Medical Society of the State of New York.—I.J.B.

Editorial Comment

Recent Trends in Infant Mortality. The *Statistical Bulletin* of the Metropolitan Life Insurance Company, states in part:*

> The perennial problem of infant mortality has come into sharper focus in recent years as the number of babies born in the United States reached record high levels and as the long-term downward trend in the mortality among babies came to an abrupt, if temporary, halt. In each of the past five years births exceeded the 4 million mark, the total for 1958 being about $4^1/_4$ million. Provisional figures from the National Office of Vital Statistics show that there were approximately 113,000 deaths among babies under one year of age during 1958, equivalent to a rate of 26.9 per 1,000 live births; this compared with the rate of 26.4 per 1,000 in 1957 and with the all-time low of 26.1 in 1956.
>
> Every state, without exception, succeeded in reducing its infant mortality rate in the decade between 1945–1946 and 1955–1956. In 31 states and the District of Columbia the decrease amounted to 25 per cent or more. In New Mexico the infant mortality rate fell no less than 56 per cent—from 89.5 to 39.5 per 1,000 live births. Maine and West Virginia each recorded a reduction of somewhat over 40 per cent. Whereas one third of the states had infant mortality rates of at least 40 per 1,000 in 1945–1946, not a single state was in that category a decade later.
>
> Although the geographic variation in the death rate under age one has been reduced, there is still a considerable difference between the states with the most favorable record and those at the bottom of the list. In Utah the infant mortality rate in 1955–1956 was down to 21.1 per 1,000 live births; it was only slightly higher in Iowa, Idaho, Minnesota, and Connecticut. At the other extreme, New Mexico, despite its remarkable gains, recorded a rate not far from twice that in the best states. Not much better was the position of Mississippi, Arizona, and South Carolina.
>
> Although a marked degree of control has been gained over mortality in infancy, the experience of the past few years clearly indicates that there is no room for complacency. The increase in infant mortality reported in 1957 and 1958 undoubtedly reflected the widespread prevalence of influenza in those years, but the fact that the death rate during most of 1958 was greater than in the like part of 1957 suggests that other factors may be involved. It should be possible to reduce the infant mortality rate for the country as a whole to that already attained by some of the states.

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* May, 1959, p. 6.

By proclamation of

Governor Nelson A. Rockefeller

October 18—Physicians' and Surgeons' Day

October 18 to 24—Family Doctors' Week

PRESIDENT'S PAGE

HENRY I. FINEBERG, M.D.

On August 1 we learned, through the *New York Times* and the *New York Herald Tribune*, that the Rockefeller administration has started a study of the medical resources of the State of New York.

The Governor's office announced that the survey would cover the adequacy of hospital and nursing home facilities and would explore "ways of keeping medical care within financial reach of the average individual."

It was reported that Governor Rockefeller is concerned over the administrative and fiscal problems in hospitals, including the costs of medical care. Quoting the Consumer's Price Index, Mr. Rockefeller's office reported certain figures which we do not understand and are not ready to accept: that, in the ten-year period between 1948 and 1958, the cost of medical care rose 43 per cent, while housing costs were rising 26 per cent, food 16 per cent, clothing 3 per cent. The statement continued to explain that the cost of medical care had increased by more than twice the over-all 20 per cent rise in the cost of living.

Serving on the committee will be a group of very fine gentlemen. The director is John J. Bourke, M.D., executive director of the Joint Hospital Survey and Planning Commission. Other members are: Herman E. Hilleboe, M.D., State Health Commissioner; Raymond W. Houston, Social Welfare Commissioner; Paul Hoch, M.D., Mental Hygiene Commissioner; Martin P. Catherwood, Industrial Commissioner; Thomas Thacher, Superintendent of Insurance; T. Norman Hurd, Director of the Budget, and William R. Ronan, secretary to the Governor. This Interdepartmental Committee is expected to complete its study late in the fall and should have its recommendations ready for the 1960 session of the Legislature which opens next January.

According to the Governor's release, among the problems to be considered are the following:

Insuring that high-cost medical facilities are put to the best use and do not lie idle because persons who need them cannot afford them.

How to provide better insurance coverage of the cost of medical and nursing care outside the hospital.

How to improve insurance coverage of diagnostic medical services outside hospitals, as a means of preventing illness or securing early treatment.

How to develop more rehabilitation services for general hospitals—to restore as many patients to self-sufficiency as possible.

To encourage the establishment of new moderate-cost nursing homes for persons who require long-range care.

How to expand ambulatory and home-care services.

This is a very extensive program and will require much research and a great deal of thought. We feel that the Medical Society of the State of New York should play an important role in this effort. Any conclusions that are reached will affect all of us.

With this in mind, we took the liberty of writing to Governor Rockefeller. We pointed out that an investigation such as he has outlined can result in much good, and we had this to say to him:

> We are sure that, with the high caliber of persons that have been assigned to the task of surveying the problems of hospital facilities and medical programs, the resultant report will be factual and without prejudice. Undoubtedly the cost of illness in general will be broken down into its component parts—hospitals and nursing homes, medical care per se, private nursing, drugs and medications, and other areas involved—so that all of us will have a true picture of the situation.
>
> In our June 23rd letter—speaking for the 25,000 members of the Medical Society of the State of New York—we pledged to you our cooperation in all matters pertaining to the health and welfare of the people of our great state. We are now at the beck and call of your special committee.
>
> Dr. Gerald D. Dorman, of 51 Madison Avenue, New York 10, New York, is chairman of our Council Commission on Medical Services. This commission consists of the chairmen of seven of our very important committees: Medical Economics, Questions of Ethics, Medical Care Insurance, Hospital and Professional Relations, Industrial Health, Rural Medical Service, and Workmen's Compensation.
>
> I know that Dr. Bourke may call upon Dr. Dorman and his commission for help at any time.
>
> Perhaps one or two representatives of the Medical Society can be added to your special committee.

We are convinced that we have friends in court. Dr. Bourke has served on committees of our Society. He knows our problems and he understands what we have been trying to achieve throughout the years. We have spoken to him about the survey, and his attitude is one of cooperation and enlightenment.

Committees such as this have been in existence before. We hope that the Governor will see fit to call on us. At any rate, the findings and recommendations of this group should be interesting and will bear watching.

As this is being dictated (August 24) there has, as yet, been no word from the Governor concerning our offer to help.

Henry I. Fineberg

HENRY I. FINEBERG, M.D. *President*

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District Branch Meetings—1959–1960

District Branch	*Date*	*Place*
I	Spring, 1960	. . .
II	November 4, 1959	Smithtown
III & IV	October 14 & 15, 1959	Grossinger
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A. WALTER SUITER LECTURE

General Sessions, 1959 Annual Meeting

BUFFALO, NEW YORK MAY 13, 1959

ALFRED P. INGEGNO, M.D., *Chairman*

Recent Progress in the Understanding of Bilirubin Metabolism and Jaundice

IRWIN M. ARIAS, M.D.,* BRONX, NEW YORK

(*From the Departments of Medicine, Albert Einstein College of Medicine of Yeshiva University and Bronx Municipal Hospital Center*)

May I say at the outset that the honor and privilege of the A. Walter Suiter Lectureship of this Society conveys mingled feelings of gratitude and humility. These are greatly enhanced by my contemplation of the list of distinguished men who have preceded me on the eighteen previous occasions that this lecture in memory of Dr. Suiter has been given. I sincerely acknowledge my appreciation of this considerable privilege.

The subject of my talk, advances in our knowledge of bilirubin metabolism and jaundice, is somewhat broad, and, I must confess, the title is a bit misleading. It would be more appropriate to state that I will discuss a contribution of this aspect of basic science to clinical medicine from three points of view: First, a review of the important advances that have been made in the field of bilirubin metabolism and jaundice in the past six years. Second, the relationship of these contributions to clinical medicine, insofar as it can be assessed at this time. Third, the effect of these advances on future research, which may have profound clinical as well as therapeutic significance.

Historical Background

Prior to 1953 there were two periods of considerable advance in the understanding of the physiology of jaundice, from the time, in 400 B.C., when Hippocrates first noticed and described jaundice. The first period was from 1847 to 1875 and represents the work of the great German and Russian physiologists and pathologists. Virchow[1] first associated the pigment called "gallenfarbstoff" with hemoglobin by showing that crystals of what we now call bilirubin were formed in blood extravasate. Tarchanoff[2] convincingly demonstrated that when hemoglobin is given intravenously to dogs there is an increase in the excretion of bile pigment into the cannulated bile duct, and Stadeler[3] subsequently isolated the red-brown pigment from bile and gave it its name, bilirubin, which replaced the more general term "gallenfarbstoff."

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* Associate in Medicine, Albert Einstein College of Medicine, and Senior Research Fellow, New York Heart Association.

The second period was from 1910 to 1924 and featured one vital physiologic and two important chemical groups of observations. The physiologic study was performed by Mann and coworkers,[4] who demonstrated that when the liver is removed from an animal there is a progressive increase in the concentration of bilirubin in the blood. In one experiment, which was beautiful in its simplicity, there was evidence that bilirubin is not formed in the liver and that the liver is required for the removal of bilirubin from the intact organism.

The two important groups of chemical observations were made by Hans Fischer and his colleague,[5] who isolated bilirubin from bile, characterized it chemically, and introduced the entire field of porphyrin chemistry, and by van den Bergh and Snapper,[6] two young Dutch physicians who adapted Erlich's specific test for bilirubin in the urine in a quantitative manner so as to enable accurate determinations of the concentrations of bilirubin in the serum.

Indirect and Direct van den Bergh Reactions

The standard van den Bergh procedure involves the addition of diazotized sulfanilic acid to serum, urine, or bile and the subsequent development of a red color. This color is quantitated as a measurement of bilirubin.

Van den Bergh and Snapper observed that when diazotized sulfanilic acid is added in the presence of alcohol to the serum of patients with what we now would call hemolytic jaundice, a red color develops. It was purely by chance that one day, instead of adding alcohol to the solution, they added water; the red color did not develop. However, they observed the same red color develop in the presence of water in the urine solution of a patient with obstructive jaundice. Subsequently van den Bergh and Snapper showed that when freshly obtained bile is similarly added to diazotized sulfanilic acid in water, the red color develops.

On the basis of these observations—namely that the pigment in the serum of individuals with hemolytic jaundice reacts only in the presence of alcohol whereas the pigment present in freshly obtained bile or in the urine of patients with bilirubinuria reacts in water—van den Bergh very cautiously suggested that perhaps the liver does something to convert this first reaction, which he termed "indirect," to the second reaction, which he termed "direct."

For the next thirty-three years an extremely lively debate ensued whether these reactions—the one occurring in water, the other in alcohol—are dependent on two different types of bilirubin or whether they reflect a purely physical process and whether there is any biologic significance to these reactions.

By 1918 it was well known that bilirubin is derived from hemoglobin, which is produced by the breakdown of red blood cells. The concept was advanced by German physiologists of the early 1920's that bilirubin at the site of red-cell breakdown in the reticuloendothelial system becomes bound to the globin of hemoglobin and that it circulates in the plasma in the form of bilirubin globin, which was presumed to be responsible for the indirect reaction with diazotized sulfanilic acid. It was generally believed that the role of the liver is to remove the globin from this complex and subsequently to excrete the bilirubin as a sodium salt. Sodium bilirubinate was believed to be responsible for the direct reaction with diazotized sulfanilic acid.

This theoretic concept was never supported by laboratory observation although it subsequently became accepted, more or less, as fact. Then, in 1953, Cole and Lathe,[7] in England, made a preparation of bilirubin which was completely free of protein and which, when passed through ion exchange columns, separated into three bilirubin pigments. These pigments were completely free of protein. One of them gave the indirect reaction with diazotized sulfanilic acid, and the other two gave the direct reaction. This observation terminated the concept that protein binding is an important factor in the production of direct and indirect reactions with diazotized sulfanilic acid.

Bilirubin Conjugation

Shortly after Cole and Lathe's[7] important observation three groups of investigators, Billing and Lathe[8] in England, Talafant[9] in Czechoslovakia, and Schmid[10] at the National Institutes of Health, demonstrated that the pigments which give the direct reaction with diazotized sulfanilic acid are bilirubin conjugated with 1 or 2 mols of glucuronic acid.

Structurally bilirubin is a tetrapyrrole. The conjugation with glucuronic acid occurs on the carboxyl groups of the propionic acid substitutents. Unconjugated or free bilirubin is responsible for giving the indirect reaction with diazotized sulfanilic acid; when bilirubin is conjugated with either 1 or 2 mols of glucuronic acid, the pigment becomes more water soluble. It is this pigment, bilirubin mono- or diglucuronide, which is excreted in the bile in normal individuals and in the urine of individuals with obstructive or parenchymal liver disease and which is responsible for giving what is clinically designated as the direct van den Bergh reaction.

Conjugation with glucuronic acid is an important biologic process that serves two major functions: (1) It gives rise to one of the detoxification reactions by which ingested phenols and other substances are rendered nontoxic, and (2) it allows these substances, by their conversion into soluble forms, to be readily excreted by the body.

A great variety of hormonal substances are conjugated in this fashion, such as thyroxin and the 17-hydroxycorticoids. When they are conjugated, they lose their biologic activity. When bilirubin is conjugated, it loses its capacity to be a cytotoxic agent, particularly to the nervous system, and can be excreted in the bile and urine. Conjugation is required for the excretion of bilirubin into the bile and urine of man.

Conjugation with glucuronic acid is not the only means of detoxification. Most compounds which form glucuronides can also form sulfates. Isselbacher and McCarthy[11] recently have shown that only 80 per cent of the bilirubin in normal human bile which gives the direct reaction is conjugated as a mono- or diglucuronide. About 15 per cent of this material in bile is conjugated with ethereal sulfate. The sulfate linkage occurs on the hydroxyl group. The remaining 5 per cent has not been identified to date.

With the importance of bilirubin conjugation in mind, it is well to review the progress in knowledge concerning the biochemistry of glucuronide formation.

Biochemistry of Glucuronide Formation

The biosynthetic process by which various compounds are conjugated with glucuronic acid has become clear through the work of many laboratories in the past seven to eight years. There are three important points I would like to make regarding this process.

First, the glucuronic acid used in conjugation is, for all practical purposes, not derived from exogenous glucuronic acid, that is, from glucuronic acid in the diet or that administered parenterally. It is derived ultimately from glucose.

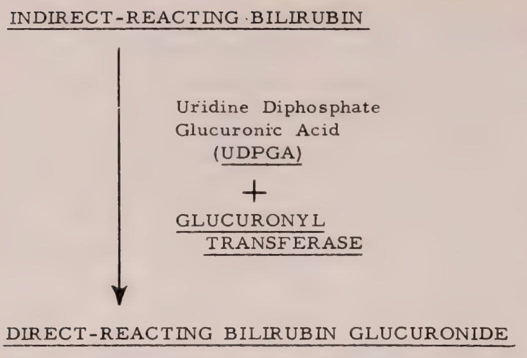
INDIRECT-REACTING BILIRUBIN
Uridine Diphosphate Glucuronic Acid (UDPGA)
+
GLUCURONYL TRANSFERASE
DIRECT-REACTING BILIRUBIN GLUCURONIDE

FIG. 1. Biosynthetic process of bilirubin conjugation with glucuronic acid.

Second, this acid must be in a particular high-energy form in which it can react with various receptors to produce glucuronides. This complex high-energy form is indicated by the symbols UDPGA, which represents uridine-diphosphoglucuronic acid. UDPGA is, in effect, the storage form of glucuronic acid in the body.

Third, in order for glucuronic acid to be utilized it must be transferred from its storage form to the particular material that is going to be conjugated, for example bilirubin. This transfer is accomplished by enzymatic activity in the liver of man and other species and is designated as glucuronyl transferase (Fig. 1).

With these points in mind let us go back to the beginning and follow the sequence of events involved in normal bilirubin metabolism.

Normal Bilirubin Metabolism

The normal human erythrocyte has a survival of approximately one hundred to one hundred twenty days. This means that about 1 per cent of the red cells in man are destroyed each day. The major pigment in the red cell is hemoglobin. Ninety-five per cent of hemoglobin by weight is the protein globin. Only 4 per cent is the porphyrin heme. When the red cells are destroyed in the reticuloendothelium system throughout the body, the globin that is broken away from the hemoglobin is reutilized for protein synthesis in other parts of the body. The iron in the heme is transformed to ferritin and is also utilized in other reactions. The porphyrin heme remains. When the ring is opened, bilirubin is derived, becomes bound to the serum albumin, and in this manner circulates to the liver. This bilirubin is responsible for the indirect reaction with diazotized sulfanilic acid.

In the liver this bilirubin is conjugated, 80 per cent with glucuronic acid and 15 per cent with sulfate, and is subsequently excreted into the bile. In the intestinal tract the various microorganisms reduce this bilirubin to two kinds of components: one, urobilinogen, is colorless, and the other, urobilin, is colored and is responsible for the normal color of stool.

The urobilinogen is reabsorbed into the systemic circulation and all but a very small amount is subsequently re-excreted by the liver. About 4 mg. per day is excreted by the kidneys. This constitutes the normal urinary urobilinogen excretion. All clinical laboratory tests for the differential diagnosis of jaundice are based on the normal gross metabolic behavior of bilirubin.

Defective Bilirubin Metabolism

HEMOLYTIC JAUNDICE.—Let us consider what the situation would be in a patient with hemolytic jaundice, in other words, if the patient's red cells, instead of surviving for one hundred days, survived for only fifty days. This would lead to an increased production of unconjugated bilirubin and thus to an increased amount of this substance transported to the liver, where conjugation occurs, and to an increased excretion of bilirubin into the intestinal tract. This raises an important question, which will become even more important when we consider jaundice in the newborn infant: What is the capacity of the liver to conjugate bilirubin?

In an adult man with hemolytic jaundice it is extremely rare to find serum bilirubin levels that are greater than 10 to 15 mg. per cent. This is a reflection of the fact that

TABLE I.—Types of Nonhemolytic Acholuric Jaundice

Disease	Indirect-Reacting (Unconjugated) Bilirubin (mg. per cent)
Crigler-Najjar syndrome	19–48
Constitutional hepatic dysfunction	1.5–11
Physiologic jaundice of the newborn	1.5–22
Jaundice of prematurity	1.5–70
Jaundice of rats (Gunn)	4–14

the liver's capacity to conjugate and excrete bilirubin is approximately thirty times greater than the amount of bilirubin normally formed per day. To put it another way, in an adult 300 mg. of bilirubin is formed from red-cell destruction per day. If the liver were functioning maximally, this amount of bile pigment could be excreted in about twenty minutes. The fact may be expressed in a third way: In order for hemolytic jaundice to develop in the absence of liver disease, the degree of hemolysis must be immense. In the case of the newborn infant, as will be shown, there is associated liver disease.

Obstructive Jaundice.—In patients with obstruction at the extrahepatic biliary tree the production of bilirubin from red cells is normal since there is no increased hemolysis, and conjugation is normal within the liver. The conjugated products are regurgitated through and around the liver cells and lymphatics into the blood stream and are responsible for the elevated conjugated, or direct-reacting, bilirubin in the serum. Conjugated bilirubin has the capacity to be excreted into the urine, whereas unconjugated bilirubin, you will recall, cannot be excreted either into the urine or bile. Therefore, in obstructive jaundice there is bilirubinuria, and if the obstruction is complete there is no urobilinogen formation in the intestinal tract because no bilirubin enters the tract. What is of the greatest importance in the differential diagnosis of jaundice is that there is no urine urobilinogen excretion because of these factors. The assessment of urinary urobilinogen excretion in the differential diagnosis of biliary obstruction and hepatitis probably is the most valuable single clinical laboratory means at our disposal.

Nonhemolytic Acholuric Jaundice.—Let us suppose that we were dealing with a group of patients in whom the conjugating system itself were defective. What might one expect to see? The normal production of bilirubin would continue. However, the liver would be incapable of converting this pigment to a conjugated form and therefore incapable of excreting it. The pigment would remain within the blood stream, and we would clinically visualize this as a situation in which the patient had jaundice and the serum bilirubin was entirely indirect-reacting, or unconjugated. This pigment cannot be excreted into the urine, and therefore this disease entity or group of entities is designated as nonhemolytic acholuric jaundice. Such situations occur in man and in a particular strain of mutant rats.

Types of Nonhemolytic Acholuric Jaundice

There are several types of nonhemolytic acholuric jaundice (Table I). The Crigler-Najjar syndrome is probably well known to pediatricians even though it is a rare disease. There are only about 14 cases recorded in the world's literature, but it is important for several reasons which will become apparent. It was originally described by Crigler and Najjar[12] at Johns Hopkins who discovered it in 8 infants who were born of parents in three related family groups. All of these infants became jaundiced shortly after birth without evidence of hemolysis and with indirect, or unconjugated, bilirubinemia, from 11 to 48 mg. per cent. There was no bile in the urine. Their livers were normal on histologic examination. All but one died of brain damage due to the deposition of bilirubin, a situation designated as kernicterus. Kernicterus in this disease is completely independent of ABO and Rh blood incompatibility.

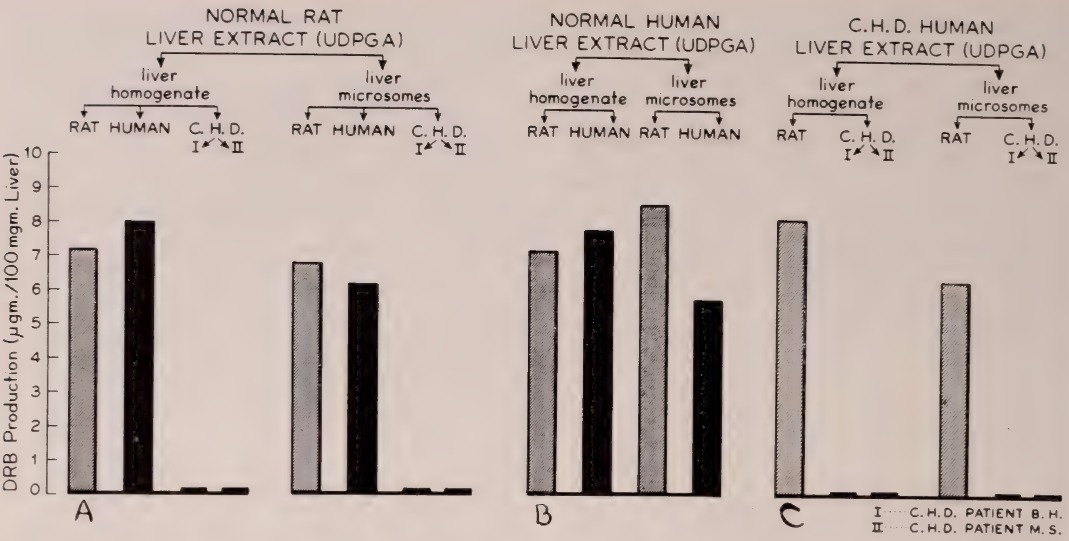

FIG. 2. Results of assay procedure to determine presence of conjugated, or direct-reacting, bilirubin in which normal rat and human livers and the livers of 2 patients with nonhemolytic acholuric jaundice were employed.

The second type of nonhemolytic acholuric icterus is known clinically as Gilbert's disease, constitutional hepatic dysfunction, physiologic hyperbilirubinemia, and a host of other syndromes. Its characterisic feature is unconjugated bilirubinemia, usually in the range of 2 to 5 mg. per cent but sometimes concentrations as high as 18 mg. per cent are seen. The most fruitful source of such patients for study is in our veteran population because these men often are discharged from the Armed Services with a diagnosis of chronic hepatitis. All the bilirubin in their serums is unconjugated and there is no bilirubinuria.

The third and fourth types are more familiar because the physiologic jaundice of the newborn occurs clinically in 75 per cent of normal newborn infants, and if one were to measure serum bilirubin levels in the newborn it occurs in 100 per cent. The serum bilirubin concentration in the newborn infant within the first five days of life usually become 1.5 to approximately 4.5 mg. per cent but on occasion may go as high as 15 or 20 mg. per cent. In the premature infant the degree of bilirubinemia, unrelated to Rh and ABO incompatibility, is much more marked and levels as high as 50 to 70 mg. per cent may be observed.

When the unconjugated bilirubin in the serum exceeds approximately 18 to 20 mg. per cent, it is deposited within the many cells of the central nervous system and, since it is a cytotoxic agent, leads to the clinical situation known as kernicterus. Even though the jaundice will subsequently disappear if the infant survives the newborn period, the residual damage to the brain persists. Kernicterus contributes significantly to the mortality rate of premature infants.

The last type of nonhemolytic acholuric jaundice occurs in a mutant strain of rats first described by Gunn,[13] a Canadian geneticist, in 1938. The homozygous members of this strain are jaundiced from birth. The disease manifestations in these animals seem to be identical biochemical and pathologic prototypes of the human forms of severe nonhemolytic acholuric jaundice; their livers are histologically normal by light microscopy, they develop kernicterus, and their survival time is limited. If one were to mate a jaundiced animal with a normal animal, 50 per cent of the offspring would not be jaundiced but would be biochemically heterozygous in the sense that they would have a biochemical defect not evident clinically.

Assay Procedure for Glucuronyl Transferase

The chemical reactions involved in bilirubin conjugation can be used to determine the presence of the enzymatic activity of glucuronyl transferase. When bilirubin, UDPGA, and liver from rats or humans are incubated under appropriate conditions, it is possible to identify chemically the conjugated form of bilirubin.

Figure 2 (A and B) shows the results of such an assay in which normal human and rat livers were used. The results demonstrate that if UDPGA, the enzyme, and bilirubin are present, normal conjugation can occur.

This assay method has been adopted for the study of the human forms of nonhemolytic acholuric jaundice. The opportunity to study 2 patients with severe nonhemolytic acholuric jaundice led to our first application of such an assay.[14]

Case Reports

Case 1.—The first patient, a twenty-one-year-old girl, came to our attention through a colleague in Yonkers. She was jaundiced from approximately the first year of life. A seventeen-year-old sister had a bilirubin of 7 mg. per cent and her mother, who died three years previously, was jaundiced to a slightly lesser degree.

This young girl has a normal mental status. Her neurologic examination gave normal findings. On examination of her serum bilirubin, by special chemical technics as well as by a standard van den Bergh procedure, all of the bilirubin was present in the unconjugated form (8.8 mg. per cent). There was no bilirubin in the urine. Her liver on biopsy examination was normal histologically.

Case 2.—The second patient was brought to our attention by Dr. George Jervis of Letchworth Village, in Thiels, New York. This woman had been a patient at Letchworth Village and other mental hospitals for almost all of her entire forty-three years. She was jaundiced from shortly after birth. Her family history is not known. Mentally she was an idiot. Neurologically she had signs of extrapyramidal tract disease. She died about eight months after this study was performed and at autopsy had evidence of kernicterus. Her serum bilirubin was almost 19 mg. per cent and was entirely unconjugated. Her liver was normal on morphologic examination. The excretion of urobilinogen into the stools was markedly decreased, indicating that the over-all excretion of bilirubin by the patient's liver was defective.

Laboratory Tests.—Both individuals were subjected to numerous studies which ruled out any possibility of red blood cell hemolysis. The routine liver function tests, including bromsulphalein (BSP) excretion, all gave normal results.

Assay Studies for Glucuronyl Transferase.—Liver tissue was obtained from both of these individuals and studied in the assay system previously described in order to determine if glucuronyl transferase activity was present in their livers. The results of these studies are shown in Figure 2C. A normal rat liver served as the source of UPDGA, and when this was incubated with the patients' liver homogenate or microsomes (enzyme preparations) there was no production of conjugated bilirubin. In other words, these patients had a marked deficiency, if not absence, of the enzyme that is responsible for transferring glucuronic acid from UDPGA to bilirubin and thereby converting it to conjugated bilirubin, in which form it would be excreted.

Comment.—It would seem that the inability of these patients to conjugate bilirubin accounts for their inability to excrete it through the liver. This, in effect, is a biochemical lesion which is not associated with histologic changes on light microscopy. Because the bilirubin cannot be excreted into either the urine or bile, it accumulates in the blood. If it accumulates to a great enough extent and early enough in life, it enters the central nervous system and produces the same type of pathologic condition seen in erythroblastosis fetalis with kernicterus.

One important question arises from these studies. These individuals did not become increasingly jaundiced with time. Where does the bilirubin go? This important

Genetic Type	No. of Rats	0-Aminophenol Gluc. Formed (*)	No. of Rats	Bilirubin Glucuronide Formed (*)
HOMOZYGOUS	4	0.000 - 0.012	3	0.000
HETEROZYGOUS	6	0.025 - 0.029	5	0.011 - 0.039
HOMOZYGOUS NORMAL	8	0.067 - 0.074	6	0.056 - 0.089

(* µmoles glucuronide formed per Gm. wet weight of liver)

Fig. 3. Glucuronide synthesis by male Gunn rat liver microsomes.

question is not answered as yet, but it is a very fruitful area for investigation.

Figure 3 shows similar findings in the mutant strain of rats described by Gunn.[13] The homozygous jaundiced animal is severely deficient in glucuronyl transferase activity. As a result of this deficiency, unconjugated bilirubin cannot be converted to the conjugated form. Of interest is the phenomenon of an intermediate defect in the nonjaundiced heterozygous animals which, however, is not severe enough to result in clinical jaundice.

Gilbert's Disease

Gilbert's disease is not an uncommon disease. In general, the jaundice begins early in life and may be quite intermittent. It is characterized by an elevated unconjugated serum bilirubin concentration, which in some individuals may be as high as 10 to 15 mg. per cent.

The symptoms are extraordinarily nonspecific—fatigue, weakness—and, in general, it is impossible to differentiate them from those of anxiety. All of the liver function tests that are commonly used in clinical medicine give normal results, and the histologic liver findings, as determined by standard histologic technics, also are normal. Cholegraffin and BSP excretion are normal, and there is no bilirubinemia. The prognosis is excellent—no one ever dies of this disease. But the anxiety that can be generated in a given family, particularly when a diagnosis of chronic hepatitis is made, is considerable.

For the past three years we have been interested in studying patients with this disease, and 18 such individuals have been made available to us (Fig. 4). There is a considerable range in the concentration of serum bilirubin, beginning at 18.8 mg. per cent and going as low as 1.4 mg. per cent. There are not sufficient data to draw any conclusions regarding the genetic pattern, but it is interesting that in about half of the patients there is a family history of a similar type of icterus, in either a sibling or another related member. In some of the individuals with a greater degree of bilirubinemia the fecal urobilinogen excretion was significantly decreased.

In this group the assay of the enzymatic activity responsible for the formation of bilirubin glucuronide was carried out by means of a special technic that is applicable to normal liver biopsy specimens. The results of such assay procedures are given in Figure 5.

There is a general relationship between the degree of deficiency of the enzymatic activity and the serum bilirubin concentration; this is not a linear relationship and within the limits of the assay a specific relationship cannot be established. It is of interest,

Patient (& Age)	Serum Unconjugated Bilirubin Concen.	Family History of Jaundice	Fecal Urobilinogen Excretion
M.S.(42)	18.8	------	------
P.H.(14)	13.5	YES	------
G.J.(12)	12.2	NO	DECREASED
H.J.(33)	10.5	YES	DECREASED
R.deL.(9)	9.6	YES	------
B.H.(21)	8.8	YES	DECREASED
G.S.(16)	6.8	------	------
N.H.(17)	6.2	YES	------
V.H.(20)	5.9	YES	------
J.A.(7)	5.5	NO	NORMAL
R.R.(29)	4.2	------	NORMAL
7 Patients(5-19)	1.4 - 3.9	YES (3 Patients)	NORMAL (2)

FIG. 4. Findings in 18 patients with nonhemolytic acholuric jaundice.

Patient	Serum Unconjugated Bilirubin Concentration	Liver GLUCURONYL TRANSFERASE Activity
P.H.	13.5	28 UNITS (*)
G.J.	12.2	54
H.J.	10.5	30
B.H.	8.8	62
N.H.	6.2	94
V.H.	5.9	46
J.A.	5.5	99
S.B.	3.9	115
M.M.	2.8	97
H.K.	1.4	156
NORMALS (15)	------	158 - 267

(* UNIT milli μM 4-M-UMB. GLUC. Formed/mgmN/30min)

FIG. 5. Results of assay study to determine glucuronyl transferase activity in 10 patients with nonhemolytic acholuric jaundice.

however, that patients with bilirubinemia of this type, over 3 to 4 mg. per cent, had a significant decrease in the presence of glucuronyl transferase activity in the liver. In those with lesser degrees of bilirubinemia, the results are within the normal range.

It would seem that these individuals as well as the homozygous Gunn rat and the Crigler-Najjar children are similarly deficient in the enzyme which is responsible for the conversion of unconjugated bilirubin to bilirubin glucuronide. Because of this defect, they cannot conjugate bilirubin normally and clinical jaundice develops.

The Newborn

If one calculates the amount of bilirubin that normally is formed in the newborn infant, one comes to the interesting conclusion that if the liver were completely unable to excrete this bilirubin it would accumulate in the serum at the rate of approximately 10 mg. per cent per day. This correlates rather well with the rise in bilirubin that is often observed in premature infants. I would stress again that this has nothing to do with ABO or Rh incompatibility; this is the physiologic jaundice of the newborn and in its most severe and significant form, jaundice of the premature infant.

It is inescapable that the liver is defective in the jaundice of the newborn and premature infant. Therefore, it is not surprising that when assay studies have been performed in newborn humans as well as animals striking deficiencies in the glucuronide conjugating systems are revealed. Brown and Zuelzer,[15] Lathe and Walker,[16] and others have shown that in the guinea pig fetus the enzymes responsible for the conjugation reaction are virtually absent and that the levels that are found in the adult guinea pig are not reached until approximately the fifteenth day of life. Assays of the human fetus have given similar results. In other words, the normal newborn cannot conjugate bilirubin because of a relative deficiency in not only glucuronyl transferase activity but also in UDPGA synthesis. Because of this deficiency in the glucuronide conjugating system much of the bilirubin that is formed during the first five days of life accumulates in the serum.

In the normal full-term newborn the ability to conjugate bilirubin is reached by about the third to fourth day of life. Hence, the bilirubin does not usually exceed 5 to 7 mg. per cent. In the premature infant this delayed development of the conjugating system exists in a more severe form for a longer period of time, thus allowing a greater period of time for the accumulation of unconjugated bilirubin, which has no other way of being excreted from the body. As a result, kernicterus and brain damage occur when the bilirubin level exceeds approximately 18 to 20 mg. per cent.

In infants with erythroblastosis there is an additional factor. The main pathologic condition is the biochemical lesion in the liver because the degree of hemolysis in erythroblastosis, even in its most severe form, would result in a comparatively small retention of bilirubin in terms of the amount the normal liver can handle. If hemolysis is superimposed, even though mildly, on a defect in glucuronide conjugation in the liver, the levels of bilirubin become increasingly greater.

The current use of exchange transfusions is directed primarily toward the removal of unconjugated bilirubin from the plasma and only secondarily to the removal of sensitized red cells. This is so because, as mentioned, if the liver were functioning normally, it could easily handle the amount of bilirubin that would be derived from such limited amounts of hemolysis since the excretory capacity can be increased about thirtyfold.

The increased knowledge of bilirubin metabolism in the newborn infant has opened an important area for further biochemical research, and I think it would not be too unreasonable to suggest that with better understanding of the biochemistry of the conjugating system the day may not be too far away when it will be possible to activate the glucuronyl transferase system in the newborn infant and thereby protect him from kernicterus and probably entirely do away with exchange transfusions. This, of course, is pure speculation.

Role of the Liver in Bilirubin Metabolism

Several areas of current investigation involve the relationship of the liver to bilirubin metabolism. One area is concerned with the relationship between the ability of the liver to receive bilirubin from the plasma, to conjugate it, and subsequently to excrete the conjugated product. What is the process by which conjugated bilirubin is excreted by the liver? Do drugs like chlorpromazine and the many others that are capable of causing so-called intrahepatic cholestasis exert their effect on biologic systems of transport that are responsible for the excretion of conjugated material? To put it in clinical terms, what does intrahepatic obstructive jaundice mean?

Conjugation is required for the excretion of bilirubin into the bile. As an illustration, Gunn rats deficient in glucuronyl transferase activity excrete little bilirubin into the cannulated bile duct after unconjugated bilirubin is given intravenously; however, if conjugated bilirubin is injected in the form of bilirubin glucuronide, it is excreted promptly into the common bile duct.

In other words, the ability to conjugate and the ability to excrete are not the same. It is reasonable to suggest that drugs like chlorpromazine and Nilevar and diseases like cholangiolytic hepatitis may exert their major effect not on the conjugating system but on the ability of the liver to excrete the conjugated product.

Another area developed from the criticism of van den Bergh's work. When van den Bergh suggested that the liver does something to convert what he called the indirect to the direct pigment there was widespread agreement, for it was obvious that if the liver is removed from man the bilirubin level increases. However, what happens if the liver is destroyed in situ, for example with carbon tetrachloride? It is well known that in severe hepatitis or severe carbon tetrachloride poisoning the rise in the serum bilirubin is primarily of the direct-reacting, or conjugated, type.

In 3 patients who had severe fatal hepatitis almost all of the serum bilirubin was the direct-reacting type, as determined by van den Bergh tests and paper chromatography of the azopigments. Glucuronyl transferase activity was found to be present in their serums; in normal serum there is no such activity.

This is not proposed as another enzymatic test of liver function, but it has several interesting aspects. Most of the enzymes whose activities are currently assayed in the evaluation of liver disease are associated with the soluble fraction of the liver cell. It is this fraction which readily can diffuse into the blood stream and other tissues, even without sizable degrees of liver damage. Therefore, it is not surprising that elevated levels of serum glutamic oxalacetic transaminase, for example, may be found when there is very minimal structural liver damage.

Glucuronyl transferase, on the other hand, is associated with a particulate fraction, the microsomes, and only enters the peripheral blood under extreme degrees of hepatic necrosis. When one sees a patient with an extreme degree of necrosis, one may be seriously misled by the fact that almost all of the bilirubin in the serum is conjugated, or direct-reacting. On occasion this has led to surgical intervention. Needless to say, surgical intervention in a patient with subacute hepatitis or acute yellow atrophy may be fatal. It therefore follows that only under certain selected circumstances detection of circulating glucuronyl transferase activity has great significance.

Major Areas of Investigation

These advances in the understanding of bilirubin metabolism have, as always happens in research, opened new problems and questions. The four major areas of current investigation are concerned with the following:

1. Are there other pathways of bilirubin metabolism? When cortisone is given to patients with intense jaundice due to hepatitis or biliary obstruction, there may be a prompt decrease in the concentration of bilirubin in the serum without increased excretion into the bile or urine or even the tissues. What are other ways in which the body excretes this bile pigment?

2. Why are newborn infants not jaundiced at the moment of birth? Presumably this pigment is transported to the mother for conjugation and excretion.

3. What is the excretory process? How is conjugated bilirubin excreted? How do various drugs affect it?

4. Perhaps from the standpoint of thera-

peutic medicine the most important question: Can conjugation be stimulated in vivo? Can the conjugating mechanism be stimulated safely so as to eliminate exchange transfusions and prevent kernicterus?

Closing

I would like to close this presentation with a paraphrase of some favorite words by Dr. Fuller Albright that were spoken in reference to another problem: I have told you much more about bilirubin metabolism than I know; I hope I have raised more questions than I have answers for. As usual, a lot more work is necessary.

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Question and Answer Period

QUESTION: I am wondering what is known about the part, if any, the thyroid hormone plays in the conjugation of bilirubin. I have heard of several cases of unexplained jaundice in infants with hypothyroidism.

DR. ARIAS: I know of no in vitro work on the influence of the thyroid hormone on bilirubin metabolism. Thyroxin is excreted from the body in part as a glucuronide and is conjugated by a similar mechanism. We too have heard of a patient with hypothyroidism with high unconjugated bilirubinemia. At present the mechanism involved is not well understood.

QUESTION: Are individuals with Gilbert's disease, who apparently do not have glucuronyl transferase, also unable to conjugate other substances?

DR. ARIAS: I should have mentioned that in those with bilirubinemia of over 4 mg. per cent it is possible to demonstrate in vivo decreased urinary excretion of conjugated phenols and some of the steroids. Patients with bilirubinemia of less than 5 mg. per cent, using the methods currently available for in vivo study of conjugation, have not shown a decrease in the urinary excretion of menthol, as menthol glucuronide or acetyl paramino phenol.

QUESTION: There is some evidence in the German literature that the red cell of the newborn period has a shorter survival time. Do you know of any evidence that an increased destruction of fetal hemoglobin may contribute to the physiologic jaundice of the newborn?

DR. ARIAS: This, of course, is a very important question, and it is a very difficult one to answer because of the difficulties in studying erythrocyte survival in the fetus. Perhaps I overstated my case a little in my presentation. The point that I wished to make was this: Even if increased hemolysis did occur in utero, a liver with even a respectable proportion of its normal capacity to conjugate would be entirely capable of handling any increased bilirubin from fetal hemoglobin hemolysis or even from nonhemoglobin sources. I wanted to draw attention to the fact that the biochemical lesion that is responsible for this clinical situation is in the liver and not in the red cell, but your point is quite correct. I am aware of the evidence. Many workers have postulated that the change in the infant's circulation may result in a slight increase in the destruction of red cells, which have more hemoglobin than adult red cells. I know of no definitive evidence regarding this question.

QUESTION: Isn't it true that the fetal liver, in general, has a defect? For instance, the cholesterol content of fetuses is much lower than in the adult. There is a deficiency in the sterification. The liver, in general, lacks the capacity to perform in the first few days or even first few weeks. I think it has been found that about the second week and up all the esterification takes place again and that the total content of cholesterol begins to become more normal. Therefore, isn't it probable that everything in the normal liver, not only the glucuronides, is either lacking or not particularly working well in the fetal liver.

DR. ARIAS: This, of course is true, and I didn't mean to suggest that the only difference between fetal and normal liver is in this one area of function.

DR. ALFRED P. INGEGNO: Are there any explanations for the differences in toxicity or in nerve-damaging effects of the two types, conjugated and nonconjugated, of bilirubin?

DR. ARIAS: This also is a difficult question to answer. One can answer it teleologically, which I suppose is the safest way under these circumstances. Unconjugated bilirubin is soluble only in lipid. The central nervous system has a very high lipid content, and the blood brain barrier is not effectively developed until about the fifth to seventh day of life. Lipid-soluble bilirubin may thus readily gain access into the high concentrations of lipid in the central nervous system, particularly in the extrapyramidal nuclei. On the other hand, conjugated bilirubin is polar and water soluble. In the test tube or incubation medium one can uncouple oxidative phosphorylase by the addition of unconjugated bilirubin but not by the addition of conjugated bilirubin.

QUESTION: Is there any known relation of this to hepatic coma?

DR. ARIAS: Probably not.

ANNUAL CONVENTION

Medical Society of the State of New York
Hotel Statler Hilton, New York City

SCIENTIFIC PROGRAM

May 9 to 13, 1960

Any State Society member interested in presenting a paper before a scientific section or a general session is requested to contact the section chairman (see page 3714) or to write to Alfred P. Ingegno, M.D., Chairman, Scientific Program Subcommittee, at 27 Eighth Avenue, Brooklyn 17, New York, before November 1, 1959.

IN SITU CARCINOMA OF THE CERVIX

DIAGNOSIS, MANAGEMENT, AND IN PREGNANCY

Moderator

EMERSON DAY, M.D., NEW YORK CITY, *Director, Strang Prevention Clinic; Chief, Division of Preventive Medicine, Sloan-Kettering Institute, Memorial Center for Cancer and Allied Diseases*

Diagnosis of Carcinoma In Situ of the Uterine Cervix

ROBERT E. L. NESBITT, JR., M.D., ALBANY, NEW YORK

(*From the Department of Obstetrics and Gynecology, Albany Medical College of Union University*)

SURFACE carcinoma of the cervix has stimulated the interest of gynecologists for a half century, and has been referred to as "incipient carcinoma," "intraepithelial carcinoma," and "preinvasive carcinoma." Schiller[1] in 1927 described these early lesions as "beginning carcinoma"; noninvasive, but definitely carcinoma. Broders[2] first introduced the term "carcinoma in situ" in 1932. Today, the concensus holds that these early lesions of the cervix are actual cancer, and treatment properly carried out during this preinvasive stage of the disease assures the patient a permanent cure.[3–14] Much of the improved results in the treatment of cervical carcinoma during the past several decades is attributable to the fact that new methods of early cancer detection were developed during this period and not merely that our technics of surgical and irradiation therapy have been greatly improved. The recognition that invasive cervical cancer may be preceded by noninvasive cancer has been the impetus for the development of these diagnostic procedures, and the discovery of early clincal lesions as well as cases of carcinoma in situ have been the inevitable dividends of these efforts.

Among the new developments which were added to the known diagnostic procedures of careful history-taking, bimanual examinations, speculum inspection, and biopsy, was the introduction, by Hinselmann[15] in 1925, of colposcopy. The instrument, now enjoying considerable popularity as a helpful adjunct in cancer detection, aids the eye by magnification to secure more accurate visualization and assessment of suggestive epithelial changes. Schiller[16] gave impetus to investigations of the cervix with the introduction of the Schiller test in 1928. Injury or disease of the vagina or cervical epithelium reduces its glycogen content, hence its iodine-fixing capacity, and the area remains unstained by Lugol's solution. Thus, this aqueous iodine test helps to pinpoint a suspicious area or target lesion for biopsy. Finally, and perhaps more importantly, the broadening horizon of cytology, introduced into medicine by Papanicolaou,[17–19] has made an outstanding contribution to knowledge of the

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early life history of the malignant processes in the cervix.

Unlike invasive cervical cancer, carcinoma in situ is not a clinical diagnosis characterized by pathognomonic alterations in the appearance of the mucous membrane. A distinction should be made between carcinoma in situ and the International Classification, Stage 0. The latter classification is a clinical term used to classify cervical carcinomas unassociated with gross lesions; thus, this classification includes certain cases of early invasive cancer in which there is no gross lesion which can reasonably be expected to be cancer. Contrariwise, carcinoma in situ is a histologic diagnosis definable as a lesion in which the entire thickness of the squamous epithelial layer is replaced by cells microscopically indistinguishable from those of frank invasive cancer, with the complete loss of stratification, but with no invasive penetration of the basement membrane. Involvement of endocervical glands is common, and as long as the lesion is confined within the gland structure, the diagnosis remains carcinoma in situ. Here lies the great burden of responsibility which rests on the clinician who must concern himself with the intricacies of histologic diagnosis in deciding on a proper course of clinic management for his patients. The complexities of diagnosis of these cervical lesions have been largely responsible for the remarkable increase in the daily contact between gynecologists and pathologists over the past decade.

Cytology has assumed an important role in the detection of cancer, and it has particular application to the genital tract. This technic should be regarded as an important screening test rather than as a definitive examination for cervical cancer. Histologic confirmation of doubtful or positive cytologic findings is required before definitive diagnosis or treatment of the lesion is justified. The greatest value of the smear lies in the detection of early lesions in the grossly unremarkable cervix, principally carcinoma in situ and a small number of Stage I cancers, since the majority of advanced cases detected by the smear are readily diagnosed by other procedures. Cytologic smears, especially those obtained by cervical scraping and endocervical aspiration, are significant in that they sample cells from the entire uterine cervix. When an easily recognizable gross lesion is present in the cervix, it is only common sense to subject it to histologic study.

The coexistence of carcinoma in situ and invasive carcinoma is entirely too frequent to be ignored. It is essential to know first that carcinoma in situ is present and second that an invasive carcinoma is not present. The validity of diagnosis depends largely on the type and amount of tissue examined. Frequently the transition from normal tissue to carcinoma in situ, or even to invasive cancer, is gradual, taking place over a width of several millimeters or even several centimeters. Although multiple independent foci of carcinoma in situ in the cervix are occasionally noted, the serial-block technic will demonstrate that the great majority of apparently separate foci are in reality extensions of serpiginous borders of a single lesion. These lesions may extend to involve a large area without becoming invasive. Because of the problems inherent in the attempt at a three-dimensional interpretation from a two-dimensional specimen, it may be difficult or impossible to evaluate apparent invasion without the benefit of an adequate "cone" of cervical tissue.

In our clinic the technics of multiple punch or surface biopsy and of shallow ring biopsy proved to be inadequate for confirmation of positive cytology in the case of carcinoma in situ and in ruling out the possibility of early invasion. Fractional curettage, in conjunction with cervical biopsy, has gained considerable importance because of the knowledge that endocervical cancer can exist without visible pathologic changes in the vaginal portion of the cervix. The diagnosis of carcinoma in situ does not demand emergency treatment and, in order to be certain that no invasive areas are missed, we have subjected the great majority

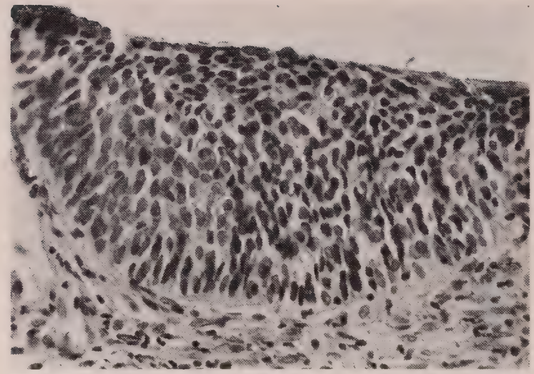

FIG. 1. Carcinoma in situ of uterine cervix (×650). (Reproduced through the courtesy of the editors of *Surgery, Gynecology, and Obstetrics*.[23])

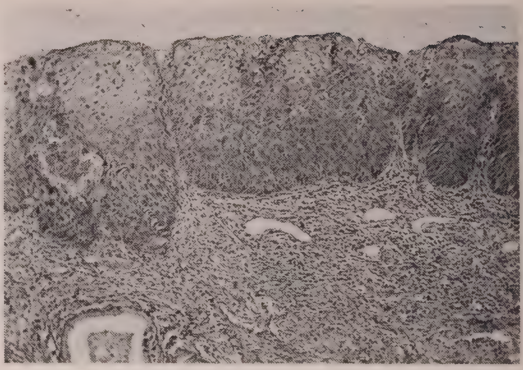

FIG. 2. Basal cell hyperactivity, Grade II, involving almost one-half the thickness of cervical epithelium (×130).

of our cases to cervical conization before definitive diagnosis or treatment. We prefer the cold-knife technic, since then the complete rim of the squamocolumnar junction, the site of origin of cervical squamous-cell malignancy, is available without charring for as many histologic sections as are needed. This technic serves not only to prove the presence of carcinoma in situ, but also shows whether or not, and to what extent, the cervical glands are involved. Both multiple sections and serial sections of questionable areas should be cut and studied as necessary by a competent pathologist as well as by the clinician.

The histologic diagnosis of carcinoma in situ depends on the absence of cell maturation, altered epithelial pattern, hypercellularity, and cellular atypia, and these features may be manifested in either stratified epithelium of the ectocervix or in endocervical epithelium (Fig. 1). Atypia is manifested by individual cells throughout the entire thickness of the epithelial layer which exhibit macronucleosis, macronucleoli, anisonucleosis, and nuclear and cytoplasmic pleomorphism. Features of cytoplasmic pleomorphism include foci of dyskeratosis and oligocytoplasmosis. Irregular and massed chromatin clumps may be prominent and lend a basophilic tinctorial effect to the epithelium. Mitotic figures are nearly always increased in number, frequently in the superficial layers. Alterations in polarity of cellular orientation occur when the cells fail to take their normal position and appearance; normal flat squames are not evident in the surface zone.

In a series of 25 cases of carcinoma in situ which were misdiagnosed and treated by hysterectomy, Galvin, Jones, and Te Linde[20] concluded that the most common mistake leading to premature and unnecessary surgery was misinterpretation of varying degrees of basal cell hyperactivity. The importance of differentiating epidermization and basal cell hyperactivity from carcinoma in situ has been stressed repeatedly. In cervices showing basal cell hyperactivity there remains some stratification of squamous cells overlying the hyperactive basal cells (Fig. 2). In general, there is uniformity in the appearance of nuclei, polarity is maintained, and the individual cells do not take on the nuclear characteristics previously noted for malignant lesions. Occasionally, however, hyperactive basal cells make up the entire thickness of the epithelial layer and yet maintain great uniformity and polarity (Figs. 3 and 4). These cases are especially worrisome and probably constitute the group in which the greatest number of errors are made. Also, basal cells appearing in the region of the squamocolumnar junction are apt to be prominent and vary somewhat in size, shape, and staining qualities. We have observed this cellular atypia more frequently in the cervices of pregnant than in non-

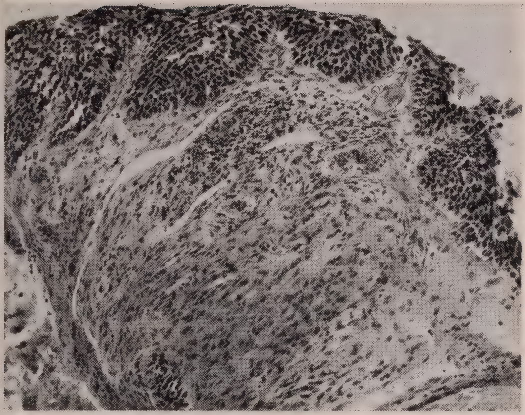

Fig. 3. Basal cell hyperactivity, Grade III, involving almost the entire thickness of epithelial epithelium (×150).

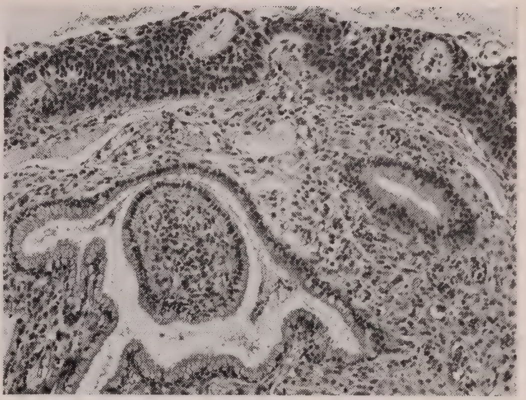

Fig. 4. Basal cell hyperactivity noted in surface epithelium of endocervical canal (×150).

pregnant women. The epithelial deviations in the cervix which occur during pregnancy are mostly in the direction of hyperactivity. If the histologic criteria for carcinoma in situ are present, however, the diagnosis should be made regardless of pregnancy.

Pregnancy puts certain limitations on the time and frequency of diagnostic procedures and the amount of cervical tissue that can be safely removed for study. One is less certain in these cases that only carcinoma in situ is present and that no invasion has occurred. A few clinicians have had the misfortune to discover, at the time of more extensive diagnostic procedures at delivery or in the postpartum period, that a patient with what was supposed to be carcinoma in situ throughout most of her pregnancy and without therapy actually had an invasive lesion of the cervix with perhaps parametrial extension. The biopsy may be taken from the periphery of an advanced cervical cancer as was originally described by Schottlander and Kermauner.[21] This fact demonstrates that among other things that should be done when one is searching for carcinoma in situ is an adequate pelvic examination. In addition, we now believe that the cervices of pregnant women demonstrating the histologic criteria of carcinoma in situ on punch biopsy should be subjected to a wide ring biopsy or shallow cone biopsy for the purpose of excising the squamocolumnar junction and the adjacent gland-bearing area. These procedures are feasible without compromising the integrity of the internal os and major portion of the internal cervical canal because, in most instances, there is a simple eversion of excess tissue through the external os. The squamocolumnar junction is frequently a centimeter or more lateral to the endocervical canal on the external lip of the cervix. Blood loss is readily controllable with suture or electrocoagulation at specific bleeding points. If no invasion is found, the pregnancy is allowed to continue to term and delivery provided meticulous follow-up of the patient is instituted with re-examination of the pelvis at intervals, cytologic smears as indicated, and colposcopy if available. It has been our custom to subject all these patients to definitive diagnostic procedures at six weeks postpartum, usually by a wide deep cervical conization. A recent study by the Pelvic Cancer Committee of Philadelphia,[22] show-. ing that delay in diagnosis of carcinoma of the cervix was nearly twice as common in pregnant as in nonpregnant women, would seem to justify this rigorous attitude.

Nesbitt and Stein[23] found the periodic acid-Schiff stain (PAS) test to be a useful technic for demonstrating the basement membrane beneath the cervical epithelium and in determining progress of epithelial maturation and metaplasia. The deepest layers of the ectocervical epithelium, the

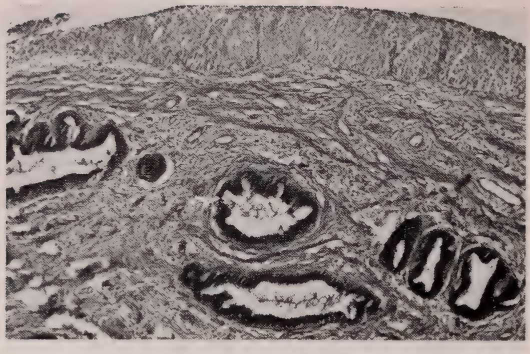

FIG. 5. Carcinoma in situ. The entire thickness of surface epithelium is made up of glycogen-free basal cells sharply contrasted with heavy periodic acid-Schiff staining of columnar endocervical cells (×130). (Reproduced through the courtesy of the editors of *Surgery, Gynecology, and Obstetrics.*[23])

inner two- or three-cell layer of the stratum germinativum, normally do not take this glycogen stain.[23,24] Proceeding toward the surface, the cells contain a progressively increasing amount of substance which is PAS stainable. Also, the reserve cells of the endocervix contained no PAS-stainable material. In fact, there is usually a rather sharp line of demarcation between the basal or reserve cells and the more superficial layers. This rather consistent difference in staining qualities can be utilized in determining the extent of basal cell hyperactivity in the epithelium. In the cases of marked basal cell hyperactivity only the most superficial cells are positively stained and in carcinoma in situ the entire thickness of the surface epithelium is made up of basal cells that are essentially glycogen and mucopolysaccharide-free (Fig. 5). Hyperplastic or anaplastic reserve cells appearing in the endocervix do not take the stain, and thus are usually distinguishable from the ordinary columnar epithelium or squamous metaplasia of the mature type which contain considerable glycogen. Basal cell hyperactivity, atypical hyperplasias, and bizarre forms of squamous metaplasia can be readily differentiated from carcinoma in situ by determining the PAS stainability of the abnormal epithelium and by noting the degree and extent of cellular atypia. The combination of failure in differentiation and total failure in maturation, characteristic of carcinoma in situ, is not observed in the benign lesions. The biologic characteristics of these cervical lesions are diagrammatically summarized in Table I.[23]

TABLE I.—BIOLOGIC CHARACTERISTICS OF CERVICAL LESIONS[16]

Histologic Diagnosis	Endocervix (Reserve Cell)	Ectocervix (Basal Cell)
Normal	Normal Differentiation to columnar cell Complete maturation	Complete maturation
Squamous metaplasia	Abnormal differentiation (to squamous cell) Complete maturation	. . .
Basal cell hyperactivity	Abnormal differentiation (to squamous (Delayed cell) or irregular maturation	Delayed or irregular maturation
Carcinoma in situ (basal cell type)	Failure in differentiation Failure in maturation (entire epithelial layer)	Failure in maturation (entire epithelia layer)
Prickle cell hyperplasia (Bowenoid) (variant)	Irregular differentiation Delayed or irregular maturation (at the prickle cell level)	Delayed or irregular maturation (at the prickle cell level)

The periodic acid-Schiff stain test thus provides a helpful diagnostic adjunct in differentiating between benign and early cancerous cervical lesions. The distinction between early invasion and simple extension of anaplastic cells into the neck or body of an endocervical gland can also be made objectively (Fig. 6). From the nuclear characteristics of the cells and the demonstration of the absence of cytoplasmic periodic acid-Schiff-positive material throughout the entire epithelial layer, it is possible to make a diagnosis of carcinoma in situ with conviction. It is imperative that pathologists and clinicians have a mutual understanding of the lesion, its histologic criteria and biologic potential, if treatment is to be uniform, not unduly radical in some cases and unjustifiably conservative in others. In simplest terms, carcinoma in situ appears to result

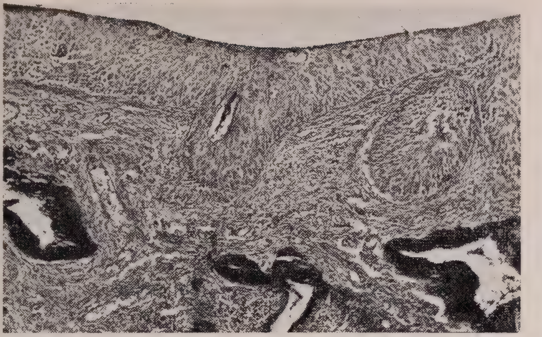

FIG. 6. Carcinoma in situ. The extension into and filling of endocervical glands by glycogen-free malignant cells are readily apparent. A sharp intact basement membrane is outlined, periodic acid-Schiff stain (×130). (Reproduced through the courtesy of the editors of *Surgery, Gynecology, and Obstetrics.*[23])

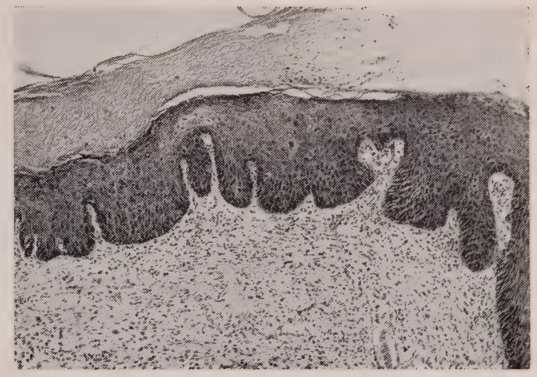

FIG. 7. Bowenoid variant. Prickle cell hyperplasia with cellular atypia. Overlying superficial cells are normal, hematoxylin, and eosin staining (×130). (Reproduced through the courtesy of the editors of *Surgery, Gynecology, and Obstetrics.*[23])

from atypical hyperplasia with complete failure of maturation in the basal cells of the ectocervix or in the reserve cells of the endocervix. In the basal cell lesion, cellular atypia due to complete failure of maturation throughout all layers up to the surface of the epithelium is the chief feature. When the lesion appears in the endocervical canal, there is atypical hyperplasia of the reserve cells with absolute failure in differentiation as well as in maturation. The surface epithelium is frequently thinner and less regular than in the ectocervix. Many of the endocervical glands may be completely filled with immature and undifferentiated reserve cells while others may show cells with varying degrees of maturation. This histologic pattern is commonly seen in carcinoma in situ and our experience agrees with other investigators who think of carcinoma in situ as a disease primarily of the endocervix.

Although the foregoing histologic and histochemical changes are manifested at some point in the cervical epithelium of all cases, the resultant pattern is not entirely consistent throughout. One may see contiguous areas of normal epithelium, basal cell hyperactivity, and carcinoma in situ appearing in the same section of cervical tissue. Another histologic variant occasionally noted in cases of carcinoma in situ is cellular atypia of the intermediary epithelial zone. This lesion, often contiguous or coexisting with typical lesions of the basal cell type involving the surface epithelium or glands, is characterized by atypical hyperplasia with delayed or irregular maturation at the prickle cell layer and recalls the lesions found in the skin and sometimes in the paralaryngeal mucosa commonly referred to as Bowen's disease.[3] In these Bowenoid cervical lesions the epithelium may be altered by the development of large, deep, club-shaped epithelial pegs throughout the basal zone where there may be either marked cellular atypia of a malignant pattern or a fairly normal-appearing basal zone (Fig. 7). We have been reluctant to classify definitively or treat such cases as carcinoma in situ unless the typical basal or reserve cell lesion previously described is also demonstrable in the tissue.

Finally, it seems advisable to make a plea for better and more thorough examinations and better education of the public. It has been emphasized that in order to diagnose cancer of the cervix the physician should have "a bright light and a suspicious mind." The cervical smear, in detecting the early, symptomless, and by the same token, curable cancer, has minimized but not replaced the need for a bright light, and the "suspicious mind" remains an essential. Scheffey and Lang[25] have reported their surprise at finding that of 117 cases of carcinoma in situ gathered from a total of 24 different Philadelphia hospitals, approximately 70 per cent had had some form of irregular bleeding, sufficient to indicate pelvic examination and possible biopsy. Symptoms of apparently trivial nature may be present for a period of from six to twelve months before they assume suggestive proportions, and occasionally unrelated symptoms of minor character may attract attention to the local lesion or be the incentive for institution of diagnostic procedures. Cancer diagnostic procedures usually require special training and skill to carry out, are designed to fit the particular problem, and usually make possible the removal of tissue for biopsy. One must agree with Decker and Decker,[26] however, who state that it should be possible for most general practitioners to meet the requirements for cancer detection. He should be able to recognize the predisposing factors of malignant conditions, the physical signs and symptoms that suggest carcinoma, have available at least minimal laboratory equipment as well as facilities for the procurement of cervical smears, and possess a knowledge of the methods of positive diagnosis. The general practitioner is the key figure in the widespread cancer detection programs designed to discover evidence of disease in presumably well and asymptomatic persons; and he must be fully acquainted with his responsibilities to the public as well as to cancer specialists.

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Problem Lesions of the Cervix

NORBERT B. REICHER, M.D., AND ELEANOR BECHTOLD, SYRACUSE, NEW YORK

(*From the Department of Gynecology, State University of New York Upstate Medical Center*)

For the purpose of this presentation, "problem lesions" are confined to those conditions of the uterine cervix which offer varying degrees of difficulty in the differential diagnosis of carcinoma in situ. These lesions may ultimately prove to be benign and often reversible; most likely they are reactions to tissue injury and altered physiologic processes.

It is very important that they be understood by the clinician and recognized by the pathologist, for herein lies a source of false-positive error. To the unwary, the atypia is so alarming that uteri may be unnecessarily sacrificed with the mistaken belief that carcinoma in situ is present. Short of removal of a useful organ the patient may have been subjected needlessly to prolonged emotional and physical trauma.

To better comprehend the magnitude of the problem lesions, figures from mass studies such as the Memphis Cytology Project, under the auspices of the National Cancer Institute[1] may be examined. This praiseworthy experiment, involving 100,000 women, brought to light 1,552 women who were biopsied because of smears graded Class III or higher. The final figure derived from published data reveals that 46 per cent of these 1,552 women did not have cancer of the cervix either in situ or invasive. It would be grossly unfair to lift this figure of 46 per cent out of context and call the group problem lesions. On the other hand it is utterly fair to speculate that some of these cases, all with troublesome smears, represented difficult problems for decision; and that many of them would tax severely physicians with a lesser degree of training.

In our own material, one problem lesion is usually encountered for every four carcinomas that are diagnosed. It can be understood readily that advancing degrees of atypia create problem lesions which must be differentiated from carcinoma. For the present, training and experience are the most important safeguards against too many false-positive diagnoses of carcinoma in situ.

Problem lesions of the cervix are many and varied; their nomenclature alone leaves the clinician insecure. Different laboratories assign different names to similar lesions. Some of the terms more commonly used that convey the impression of a problem are: atypia, dysplasia, basal cell hyperplasia, atypical squamous metaplasia, warty hyperplasia, koilocytotic atypia, trichomonas atypia, anaplasia of repair, parakeratosis, and dyskaryosis.

It would be helpful in understanding this multiplicity of terms if some common denominator could be postulated for what seems to be occurring in the cervix. The denominator most logically appears to be tissue injury in its broadest sense, taking place at a highly specialized and active epithelial junction, the squamocolumnar junction.

Certain established facts and clinical observations tend to support this thesis:

1. The extreme variability and activity of the morphologic squamocolumnar junction appears to be protective. Columnar epithelium rapidly covers areas of squamous injury at this zone, preventing ulceration and eventually replacing itself by a process of metaplasia.

2. Metaplastic epithelial development is related to the multipotential reserve cell of the endocervix.

3. The nature of the injury, whether it proves to be bacterial, protozoan, mycotic, viral, mechanical, hormonal, or chemical, must be repetitive and inflammatory. This is seen to be true in experimentally produced

cervical dysplasia and carcinoma in mice.[2] Acute injury elsewhere in the body may produce bizarre epithelial changes.[3]

4. Cytologic atypias appear to be more marked where inflammatory responses are more intense. This is particularly true in trichomonas atypia.[4]

5. Many histocytologic departures from normal are readily reversible and will wax and wane depending on appropriate therapy or its discontinuance.[2–5]

6. There are several studies involving large numbers of women followed for many years with minimized injury potential where no cases of carcinoma of the cervix have developed. The largest study included 13,000 nuns.[6] Others are composed of women whose cervices received scrupulous attention.

7. In 1948, cytopathologic changes resulting from trichomonas infestation and injury were first suspected by the authors and later reported in 1952.[5] Many of these cases showed severe atypias, which to the present time have not become carcinoma; however, the degree of atypia does vary with the extent of the inflammatory process.

The management of a real problem lesion is not easy either on the patient or on her physician. After repeated smears, biopsies, endocervical curettements, and even cold knife conization, the diagnosis remains "severe atypia, problem lesion." These patients are often young and prophylactic hysterectomy is certainly not in order.

Some help may be gained by careful, nondestructive therapy directed against the vaginal, cervical, and endocervical infection, where present. Lessening of the atypia on smear or endocervical sample is reassuring. Repeat endocervical curettage at three- to six-month intervals along with smears is practical. The endocervical curettings yield a very high degree of accuracy in these cases and can be obtained as an office procedure.[7] To be of value, endocervical curettings must be representative of the entire canal. They should be obtained without dilatation, using a fine curet, and without loss of even a tiny fragment. The technician must process, embed, and deeply section each specimen carefully. The pathologist must acquaint himself with the peculiarities of this type of sample. All these conditions having been met, the clinical-pathologic team will have a simple, efficient method of working out problem lesions. This is particularly evident where facilities exist for correlation of all cytologic and pathologic samples from these problem cases.

Case Reports

Case 1.—The patient was a thirty-seven-year-old woman, para 1, gravida 3, who was first seen by her gynecologist on February 16, 1953. At that time, she had clinical evidence of a trichomonas infestation, with an eroded, hypertrophied cervix. Vaginal and endocervical smears were taken and were reported as showing extensive, severe atypia, most probably in metaplastic cells: Class II to III. Repeat smears again showed severe atypia.

Cervical biopsies and endocervical curettings taken in May, 1953, showed severe atypia requiring extremely close observation.

Smears continued to show marked atypia, not sufficient to be diagnostic of carcinoma, for three months and then gradually improved, although the status of the infection varied, until December, 1954. At this time, severe atypia recurred in both smears and tissues, and the pathologists' opinions were divided as to whether or not this represented squamous carcinoma.

As the infection was treated and cleared, however, the severity of the atypia decreased in both smears and tissues. The patient was uncooperative about follow-up, but had a fractional curettage in July, 1955, which showed only slight atypia. She was then lost to follow-up for eighteen months, but in November, 1957, and January, 1958, had cytologic studies which showed only slight atypia, although the trichomonas infestation persisted (Fig. 1).

Case 2.—The patient was a twenty-four-year-old woman, para 2, gravida 3, who was first seen in the obstetric clinic on January 21, 1949, in her third month of pregnancy. She had a marked cervicitis. A vaginal smear was taken and examination showed extreme atypia, suspicious of carcinoma. Cervical biopsies showed atypia and

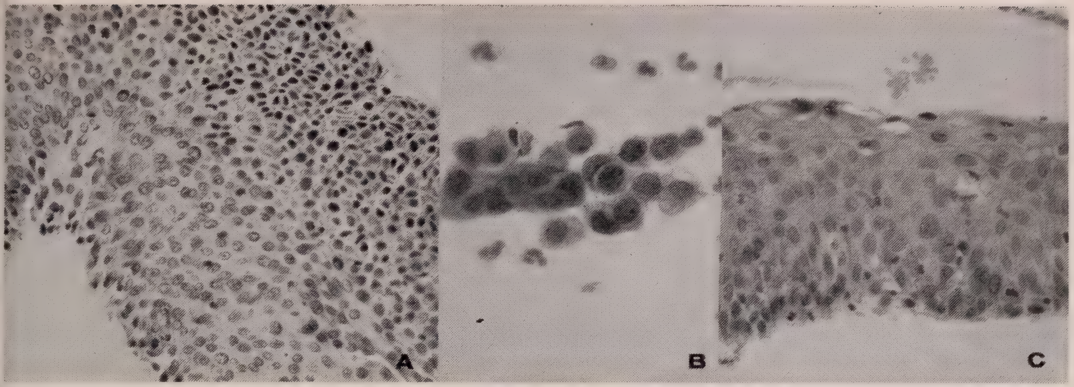

FIG. 1. *Case 1.*—(*A*) First endocervical curettings, May, 1953, two months after Class II to III smears. Marked atypia with loss of normal architecture (×400). (*B*) Endocervical smear, December, 1954, twenty-one months later. Class III: enlarged, irregular nuclei, but with minimal chromatin changes, probably benign (×600). (*C*) Endocervical curettings, February, 1955, two months later. Atypia much less severe (×400).

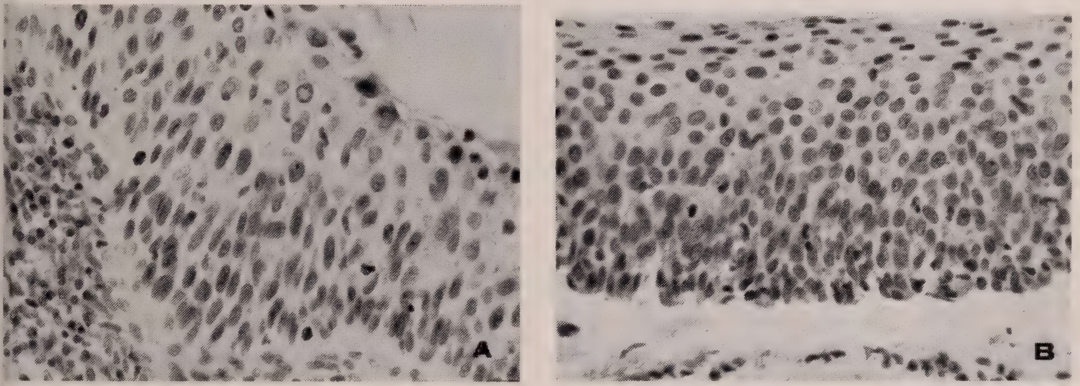

FIG. 2. *Case 2.*—(*A*) Cervical biopsy, October, 1949, two months postpartum. Severe atypia, thought at the time to suggest carcinoma in situ. Note severe inflammation (×400). (*B*) Endocervical curettings, June, 1952. Atypia lessened. Fewer bizarre cells (×400).

the patient was then lost to follow-up until after her delivery in August, 1949.

In September, 1949, smears were reported as Class V, squamous carcinoma. In October, 1949, tissues showed a very disturbing atypia suggestive of carcinoma in situ. Treatment of her severe trichomonas infestation was recommended, to be followed by repeat tissue and cytologic studies.

From this time until November, 1953, this patient had a total of 14 tissue samplings of the cervix and endocervix. She also had 18 sets of vaginal and endocervical smears taken. Most of these samplings were spaced three to six months apart. Once an entire year intervened between biopsies, with worsening and improvement of smears in the interim. Thorough attempts were also made to clear the cervical infection by nondestructive means (that is, no cautery).

In both smears and tissues, the character and severity of the atypia varied greatly and it was observed that lessening of the atypia was always associated with clinical improvement in the status of the inflammatory process. By May, 1950, the atypia was still present but much less worrisome, and remained so until January, 1952, when atypia worsened suddenly in both smears and biopsies. Severe atypia then continued until December, 1952. Improvement was again noted which lasted until September, 1953. At this time smears finally showed changes considered consistent with squamous carcinoma, and tissues were interpreted as showing "probable neoplastic changes."

A cervical stenosis developed at this point, and further follow-up of this patient became difficult. She was again treated for her infection, and six

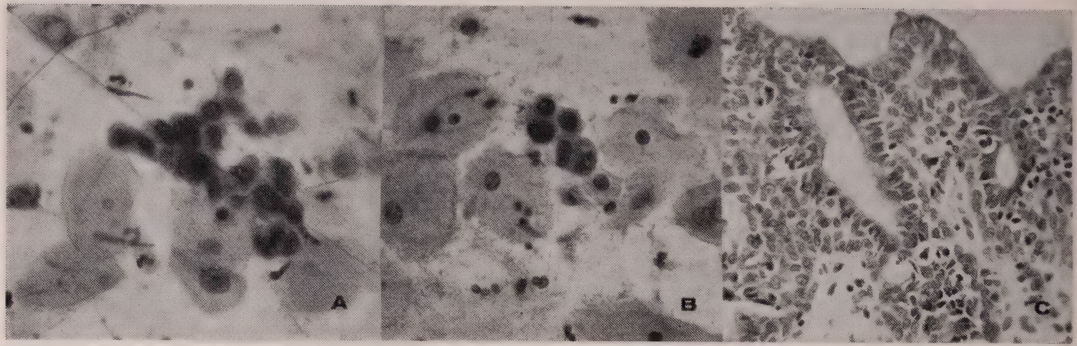

FIG. 3. *Case 2.*—(*A*) Endocervical smear, November, 1952. Class III. Alarming change toward anaplasia. Irregular, hyperchromatic nuclear pattern (×600). (*B*) Endocervical smear, February, 1953. Class II to III. Atypia less severe (×600). (*C*) Section of cervix, November, 1953. Hysterectomy specimen. Minimal inflammation. Squamous metaplasia. No carcinoma found. Smears same date were Class II (×400).

weeks later the uterus was removed. The cervix and endocervical canal were carefully, serially sectioned.

On the day of hysterectomy, the smears showed no infection and only slight atypia. The serial sections of the cervix revealed minimal chronic cervicitis and slightly atypical squamous metaplasia but no carcinoma. (Figs. 2 and 3).

Comment

There are here presented 2 cases with problem lesions, each followed for approximately five years. The cases are similar in that each showed at one time or another some degree of atypia in both smears and tissues, sufficient to be interpreted as probable carcinoma in situ. They have in common marked cervical infection which, when somewhat cleared, resulted in prompt lessening of the atypia.

These cases were selected from a large group of problem lesions not as part of a planned study with ideal follow-up and management, but to demonstrate what may occur to confound the physician. The smear and tissue data were collected and re-examined in retrospect, searching for an explanation of the reversion of the severe atypia so often observed in the long-term studies. The only apparent, relatively consistent factor is tissue injury of some sort resulting in an inflammatory response.

The squamocolumnar junction is highly reactive to repeated insults, frequently showing variable degrees of atypia as a result. It is then not unthinkable that in such an epithelial junction there resides a mutative capacity awaiting only repeated injury to become accelerated. Further, it is plausible that the genetic impact of injury is variable in different individuals and that the "point of no return" (true neoplasia) is also variable.

The comment is rational that such lesions if left unattended for a sufficient number of years may become unequivocal carcinoma of the cervix.

The criticism that the nature and frequency of the tissue studies may have altered the outcome of these cases is not entirely valid because the atypia in multiple smears has been seen to worsen and improve during prolonged periods when no tissue samples were taken.

Conclusions

It is not intended that this presentation will solve the problem lesion, for much basic research in this area is required. Its purpose is to show that even high degrees of atypia may result from infection in the uterine cervix and that, by careful long-term study, improvement and reversal may be noted. One may thereby avoid doing an unnecessary hysterectomy because of a false-positive diagnosis of carcinoma in situ.

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Pregnancy Relationships to Carcinoma In Situ

PAUL K. BIRTCH, M.D., AND CLYDE L. RANDALL, M.D., BUFFALO, NEW YORK

(*From the Department of Obstetrics and Gynecology, Buffalo General Hospital, and the Children's Hospital*)

THE in situ stage of carcinoma of the human cervix is generally regarded as the earliest recognizable evidence of a highly malignant neoplasm. There is much evidence that within the limits of biologic variation carcinoma in situ represents an irreversible process and will progress to clinically recognizable carcinoma of the cervix and a fatal outcome unless the neoplasm is destroyed or completely removed before metastases occur.

The importance of recognizing the pathology at an early date has long been evident, and it is particularly important to detect cancer early. Present trends in all phases of research and practice indicate a growing conviction that it is better to attempt to prevent disease than to have to attempt to cure it.

Carcinoma in situ is recognized as Stage 0 in the League of Nations classification of cervical carcinoma. This is a lesion that is not only preclinical but also apparently can be expected to persist as such, for varying lengths of time, quite unrecognized by the examiner's eyes and fingers. If we accept the concept that carcinoma in situ represents an irreversible process, and as such is the precursor of clinically invading carcinoma, it behooves the clinician to utilize every means possible to pick up this potentially fatal disease in its earliest and therefore most curable stage.

There are many data to suggest that in situ lesions are recognizable about a decade before clinical cancer is usually discovered. Nature has seemed to put us on our mettle, for there seems reason to believe that we have perhaps ten years or more in which to recognize the woman who is developing carcinoma of the cervix. This concept of the time usually required for the in situ stage to progress to clinically recognizable cancer suggests practical considerations as regards the detection of early cancer that we believe might well determine the management of our younger pregnant patients.

A practice in keeping with a really adequate and ideal effort to detect cervical cancer might well start with routine vaginal and cytologic examinations on all females beginning with their first visits to their pediatricians. From a more practical standpoint, however, the known incidence of cervical malignancy at an early age suggests that efforts to detect cervical malignancy among infants and young girls are quite unnecessary. We believe we should also admit that the young expectant mother is in most instances almost as unlikely to have cervical malignancy during pregnancy as any apparently normal female infant. The young mother, however, finds herself in the well-meaning, but possibly sometimes over-zealous hands of a specialist trained to look for cervical cancer. Small wonder that the doctor so trained is likely to look for cervical cancer during the opportunities provided by 12 to 14 examinations in somewhat less than a year of prenatal and postpartum care. A review of the literature concerning this problem at this time is not likely to help us make up our minds as to the best management for our younger patients as regards the advisability of attempting to detect cervical cancer during pregnancy. The incidence of carcinoma of the cervix first detected during pregnancy seems to approximate 0.05 per cent.[1,2] These figures refer to clinically appreciable cancer however, and the cytologist is not necessary to suspect or detect the lesion in most instances.

The incidence of preclinical carcinoma in situ first detected in association with pregnancy is not as yet established. It is well known that the cervix undergoes cytologic, histologic, and grossly evident changes during the course of a perfectly normal pregnancy. Epperson *et al.*[3] have reported four histologic changes in the glandular epithelium of the cervix directly related to pregnancy: (1) glandular hyperplasia, (2) glandular epithelial hyperplasia, (3) adenomatous hyperplasia, and (4) epidermatization.

Any or all of these changes yield cytologic spreads and histologic sections which may be difficult to interpret and are therefore not unlikely to result in questionably conceived surgical procedures that are at best likely to disturb the pregnant patient.

Epperson *et al.*[3] have reported 5 cases of intra-epithelial carcinoma detected among 4,849 patients observed during pregnancy. This suggests an incidence of 0.1 per cent, approximately double the usually quoted incidence of clinically recognizable carcinoma of the cervix during pregnancy. More important, however, is the fact that all of their patients were allowed to continue uninterrupted throughout the balance of their pregnancy, and all of this group showed normal biopsy findings during their postpartum period. Nesbitt and Hellman[4] have since observed 2 more cases of cervical carcinoma detected during pregnancy that were no longer evident in biopsies at the time of postpartum examination.

In a report published in 1953, Greene *et al.*[5] stated their belief that pregnancy is not responsible for specific changes in cervical epithelium and emphasized that such changes as do occur are not peculiar to pregnancy. These authors have also suggested that the controversy concerning the significance of preinvasive carcinoma in pregnant patients can be settled only by following patients with such lesions deliberately during their pregnancy and determining whether or not their local lesions are likely to persist and develop after the termination of pregnancy. The same authors have reported that in 12 of 14 patients diagnosed as having carcinoma in situ during pregnancy the lesion was found to persist after the termination of pregnancy. They fail, however, to state the total number of pregnant patients among whom these 14 with early malignant conditions were found.

Greene and Peckham[6,7] have concluded

a recent paper with the statement "these lesions (carcinoma in situ) . . . are not pregnancy changes" and have reported 18 additional cases first recognized during pregnancy. Again we can only guess as to the total number of pregnant patients among whom these 18 cases were found. In 78.4 per cent of the cases diagnosed as carcinoma in situ during pregnancy, however, the lesions were again found in postpartum biopsies. Again these observers conclude that pregnancy has no tendency to produce changes which mimic preinvasive carcinoma, that the diagnosis of this lesion is valid during pregnancy, and that its significance is therefore the same in the pregnant as in the nonpregnant woman.

Marcus, Brandt, and Cibley[8] have emphasized the difficulties of establishing the diagnosis of carcinoma in situ of the cervix during pregnancy. We do not question Carter *et al.'s*[9] or Greene's *et al.'s*[5] conclusions regarding the diagnosis of this lesion, but we wonder how often carcinoma in situ really does develop during pregnancy and whether or not it is necessary or even desirable to try to establish this diagnosis during pregnancy. Marcus, Brandt, and Cibley[8] have also emphasized that pregnancy need not be interrupted and that definitive therapy for carcinoma in situ should not be undertaken until adequate postpartum follow-up has demonstrated persistence of the lesion. We wonder therefore: Why do cytologic studies on young patients during pregnancy if the diagnosis when established is to be regarded and managed as recommended by Marcus, Greene, Carter, and others?

Carter *et al.*[9] suggest that the diagnosis of cervical carcinoma in situ must be made only in accordance with strict microscopic criteria and warn that failure to require such criteria will result in many unnecessary hysterectomies. When the patient is pregnant at the time of diagnosis, Carter's group also suggests that the patient may usually complete her pregnancy. If this be true, again we ask: Why do cytologic studies on the patient during her pregnancy? A lesion that is clinically suspicious should of course be biopsied but we do not believe that we should attempt to establish the diagnosis of preclinical cervical carcinoma in situ during pregnancy.

Te Linde, and Galvin and Jones[10] have emphasized the danger that the lesion may represent only the periphery of an invasive lesion if a diagnosis of carcinoma in situ is apparent. Along with Black *et al.*[11] and many others they believe, therefore, that conization or a ring biopsy is indicated before a reliable and final diagnosis can be established. We believe it is generally agreed that any patient in any stage of pregnancy who has a wide conization faces an increased risk of losing her pregnancy. Nevertheless, Carter *et al.*[9] state that the pregnant woman is entitled to have her cervix surveyed by inspection, by cytologic technics, and by biopsy when necessary. Such routine procedures would seem to minimize the value of experience and clinical judgment on the part of the obstetrician, particularly as regards his younger pregnant patients. We believe that more consideration might well be given certain practical aspects of this problem. Knowledge of the actual incidence of the clinically significant stages of cervical cancer among younger women makes efforts to detect their preclinical precursors during pregnancy seem likely to cause more trouble than the findings can eventually justify.

Among the patients subjected to smears and then biopsies will be some already predisposed to abortion or premature labor. It will be difficult for such patients to believe that the diagnostic procedures employed did not account for the loss of their pregnancy. Perhaps most important of all we believe that more consideration should be given the mental and emotional trauma likely to be experienced by a heretofore apparently healthy and happily pregnant patient during the time her cervix is being surveyed.

Carter and his coworkers[9] have based

their conclusions that each pregnant woman should have her cervix surveyed on the evident frequency of early cervical cancer among 8,000 obstetric patients on whom they attempted to detect such lesions. They found 44 Stage 0 carcinomas and 23 invasive carcinomas of the cervix, a total of 67 carcinomas of the cervix first recognized during pregnancy. Other reports in the literature seem to express a consensus that all pregnant patients should be studied cytologically and, when indicated, by biopsy during pregnancy. It is with this general consensus that we cannot agree.

Figures from the Bureau of Cancer Control in New York State indicate that between the ages of twenty and thirty-five (which is the age bracket for the highest incidence of pregnancy) we should expect to find in any one year only 4 cases of clinically evident carcinoma of the cervix in every 100,000 women examined. These figures include all women within this age bracket, however, not just pregnant women. Neither Carter's nor Greene's studies suggest that cervical carcinoma is more frequent among the pregnant than the nonpregnant women within the same age groups. Carter's figures do suggest, however, that among each 1,000 women examined during pregnancy, 5.6 will be found to have developed the in situ stage of cervical carcinoma. This incidence would indicate an ultimate occurrence rate of not less than 5.6 cases of cervical carcinoma per 1,000, or 560 per 100,000 women! This latter figure is approximately ten times the annual detection rate of clinically evident carcinoma of the cervix as the diagnosis has been established in the State of New York in recent years. It is evident that either Carter's figures are too high, or that carcinoma of the cervix must indeed persist in a detectable in situ stage for approximately ten years. Thus there appears reason to believe that during any one year of a ten-year period one can apparently pick up at a favorably early in situ stage nearly all of the cases of cervical carcinoma that can ultimately be expected to develop within any sizable group of women during a ten-year period.

If mass screening of all women is to be done as a cancer detection measure, on the basis of known incidence figures and from an economic and practical viewpoint, we have never believed that one can justify the acceptance of women under thirty-five years of age into such a study. The inference here again seems obvious. If few younger women are affected and the diagnosis can be made in the in situ stage at any time within a period of several years, why do smears in pregnancy?

We have now observed the cervix and performed ectocervical cytologic studies to estimate the hormonal effect on more than 8,000 private obstetric patients seen in the office since 1949. This experience has involved some 16,000 smears taken during pregnancy which again suggests that we have observed these pregnant cervices this number of times. During the first three years of this study, smears were taken every two to four weeks until fetal life was evident and later whenever bleeding was reported. Bleeding was actually reported in 26 per cent of our patients, and to see where the bleeding was coming from we have always inspected the cervix in bleeding cases. This would seem to be a practical point, since if the bleeding is coming from the canal and not the portio, why should one take a smear and a biopsy of the ectocervix?

The appearance of many patient's cervices on many occasions have been truly astonishing, even frightening, yet these patients had no symptoms and had usually reported no bleeding. If these ugly, extensively eroded-looking cervices were malignant, one would expect them to bleed at least on contact or to show a positive result of probe test. On the other hand, when such a cervix begins bleeding spontaneously, further investigation would certainly be indicated.

We have noted clinically evident carcinoma of the cervix on only one occasion. Simple biopsy confirmed the suspicion of invasive carcinoma. On a few additional occasions the appearance was such that we took smears and biopsied the cervix though the patient had no symptoms, but all such investigations showed no malignant conditions.

All of the 8,000 private patients we have examined during pregnancy have since returned for postpartum care. With but few exceptions, all have been examined and smears taken for cytologic study between three and twelve months after delivery. To date we have detected not a single instance of carcinoma in situ or early invading cervical carcinoma in this group. This is, of course, lower than the expected incidence but according to Carter's data it would seem that we must have failed to detect some 66 cases of in situ or early invading carcinoma of the cervix. It is difficult for us to believe that we have overlooked such cases. During the same period of time we have been detecting cases of corpus and cervical carcinoma among the nonpregnant gynecologic patients examined by the same individuals in the same office.

We suggest then, that we have observed a group of 8,000 obstetric patients who might well be regarded as part of the control series that Greene and Peckham have been looking for. Certainly we have merely followed all patients throughout pregnancy and have done routine cytologic studies only during the postpartum period. To date we have observed no reason to regret this course nor to change our management.

It has been repeatedly stated in the literature that it is quite ethical, once the pregnant patient has been diagnosed as having carcinoma in situ, to have the problem explained to her and to have her understand the significance of Stage 0 carcinoma and then permit her to deliver and attempt more pregnancies if she agrees to be closely followed. This attitude is difficult to understand. We as obstetricians and gynecologists are still in disagreement regarding the diagnosis and treatment of carcinoma in situ of the pregnant cervix. How can we then tell the young patient that she has cancer, and do nothing about it except to emphasize that we must insist on "watching it?"

To the patient, cancer is usually a dreaded and depressing diagnosis. The psychologic trauma to the patient may in many instances be immeasurable. This is especially true among the patients we are considering because motherhood should be happily expectant and calmly maturing period in a young woman's life. We believe that the routine employment of vaginal cytology and cervical biopsy during pregnancy, which may then yield us only suspicious or inconclusive results, too often tends eventually to force us to more extensive procedures on the cervix. These procedures are likely to result in a frightening hemorrhage or may terminate in the always possible occurrence of abortion or premature labor. Such an experience may do much to destroy a young couples' faith in themselves and in their doctor as well.

How do we explain the difference between the occurrence rate or at least detection rate, of early cervical carcinoma among patients seen by Carter's group,[9] by Greene *et al.*,[5] and among the women examined in our office?

We do not believe this represents a failure on our part to recognize early cancer in our patients, nor do we believe that we would disagree with published criteria for the diagnosis of carcinoma in situ.

Perhaps these variations represent only the inaccuracies that can be expected when relatively small samplings are considered.

We would emphasize, however, that

1. Cervical carcinoma may be expected to persist in the in situ stage for several years, possibly for as long as ten years or more.
2. Once the diagnosis of carcinoma in situ has been established during pregnancy by smears plus adequate biopsy ruling out invasion, it is perfectly safe to defer definitive treatment of the lesion until postpartum re-examina-

tion demonstrates persistence of the malignant change.

Since employment of the probe test and a punch biopsy of clinically suspected lesions still provides widely available and reliable means of detecting cervical cancer at an early stage, we can only suggest then that during pregnancy is a poor time to do routine cytologic screening in an effort to detect cancer of the cervix in its nonclinically suspected in situ stage. Among patients under thirty-five years of age particularly, to postpone routine efforts to detect cervical cancer but a few months, until the postpartum period, would not seem to subject such younger women to an appreciable risk as far as their chance of developing a metastasizing stage of cervical carcinoma is concerned.

Conclusion

The fact that we can recognize carcinoma in situ of the cervix through routine examinations during pregnancy does not of itself warrant what is involved psychologically, economically, and practically. We do not, therefore, recommend routine efforts to detect carcinoma in situ during pregnancy as a part of routine prenatal care.

The paper entitled "Some Problems in Cytodetection and Pathologic Diagnosis," by Leopold G. Koss, M.D., was not available for publication. The paper by Michael J. Jordan, M.D., Genevieve M. Vader, M.D., and Emerson Day, M.D., "Carcinoma In Situ: Diagnostic Observation or Immediate Definitive Treatment" has appeared in the *Proc. Third National Cancer Conference*, Philadelphia, J. B. Lippincott Company, 1957, p. 674.

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Atrophy of Disuse as a Confusing Element in the Diagnosis of Peripheral Nerve

Because the atrophy of disuse does not produce any change in electrical activity while denervation atrophy betrays itself by characteristic changes, electromyography is valuable in detecting the place where neurogenic atrophy ends and the atrophy of disuse begins.

The atrophy of disuse is due to restricted or complete lack of use of voluntary muscles, and is a common accompaniment of neurogenic atrophy in any form of mono- or polyneuropathy, whether the cause be traumatic, vascular, infectious, neoplastic, or congenital in origin. Because differentiation is extremely difficult on a purely clinical basis, the clinician may be led to believe that the lesion is elsewhere and subject the patient to other complex diagnostic procedures and treatments.—*A. A. Marinacci, M.D., Bulletin of the Los Angeles Neurological Society, December, 1956*

Tuberculosis of the Mammary Gland

THOMAS C. CASE, M.D., NEW YORK CITY

(From the Department of Surgery, Goldwater Memorial Hospital, New York University Division)

THE mammary gland is an infrequent site of tuberculous infection. The earliest report of such an infection was by Sir Astley Cooper in 1829,[1] who recorded "scrofulous swellings in the bosom" of young women with enlargement of the cervical glands. Half a century later Dubar[2] described it in more detail and established the condition as a clinical entity. In more recent years Shipley and Spencer[3] in 1926 reported 205 cases, while in 1931 Morgan,[4] in a most comprehensive review of the literature, was able to collect 439 cases. To date over 600 cases have been recorded.

The condition is comparatively rare; however, it is extremely likely that other cases have escaped correct diagnosis and that still more have been recognized but not recorded.

Interest in diseases of the mammary gland has increased greatly and has presented the profession with many varied and interesting problems such as the coexistence of tuberculosis and carcinomatous conditions and the possibility of the transmission of carcinoma to the offspring by way of Bittner's milk factor.[5]

The present case is considered worthy of record because of the several interesting features it presents:

1. The apparent complete localization of the disease to one area following trauma.
2. The long interval of apparent freedom from disease.
3. The location of the disease in the breast with no other demonstrable lesions elicited elsewhere in the body.

Pathogenesis

Although many lesions have been described as a primary breast condition in the past, the greater majority have been undoubtedly secondary to a focus elsewhere in the body. Primary tuberculosis may be due in some cases to a local infection, but it is probably more often caused by a blood-borne invasion of the tubercle bacillus. It is more prevalent in the female in glands which have been or are physiologically active, and in the majority of cases it is unilateral. The predilection of the bacillus for certain parts of the body is difficult to explain. Moore[6] offered the theory that most people carry tubercle bacilli which are ever ready to settle when the natural immunity of the individual is sufficiently lowered and a suitable nidus is provided.

No other tuberculous lesion could be demonstrated in the case here reported, which appears to make it a case of primary infection in the breast which had been the seat of trauma. The trauma had produced a localized area of hemorrhage which formed a suitable nidus for the bacillus with subsequent abscess formation.

In the secondary type of lesion the patient usually gives a history of tuberculosis or may present herself with an active tuberculous lesion in the tissues adjacent to the breast. This is most probably the usual mode of involvement of the mammary gland.

The following routes of spread have been described:

LYMPHATIC SPREAD.—The breast is infected by a retrograde extension of the disease from the tuberculous nodes in the axilla. This is the most usual route; however, occasionally the cervical or mediastinal nodes may be the focus from which the spread to the breast occurs. Involvement of the axillary nodes was noted in 50 to 75 per cent of the cases reported in the literature.[7,8]

Other lymphatic routes have been described from the tracheobronchial nodes to the mediastinal trunk, then on to the internal mammary chain and from there to the breast (subareolarplexus of Sappey).

Still another mode of spread has been described from an intra-abdominal focus up to the rectus sheath and into the mammary gland. The latter two methods of spread are in the reverse direction of the spread of carcinoma of the breast.

SPREAD FROM CONTIGUOUS STRUCTURES.—The active focus may be in the sternum, the ribs, or the costochondral junction. Direct spread from the underlying chest wall has been described.[9] The breast may also be infected secondary to operations on the lungs for tuberculosis if the incision is extended into the breast tissue and the wound becomes infected.

DUCTAL INFECTION.—Infection from the lactiferous ducts may initiate a tuberculous focus in the alveoli of the breast, but this route is considered extremely rare.

HEMATOGENOUS SPREAD.—Hematogenous spread has seldom been reported. Nagashima[10] was unable to demonstrate tuberculosis in the breast of 34 autopsies on patients who had tuberculosis of the internal organs or widespread miliary tuberculosis.

Incidence

The incidence of tuberculous mastitis is certainly not high. The figures of the Mayo Clinic[11] show that 6 cases were reported between 1904 and 1915, representing an incidence of 0.51 per cent of all the mammary conditions admitted for treatment. At St. Bartholomew's Hospital in London of 1,500 cases admitted for lesions of the breast 1.5 per cent proved to be tuberculous mastitis.[11] At Goldwater Memorial Hospital this was the first case to be recorded.

Type of Lesions

The variety of lesions that are encountered are as follows:

1. Acute miliary type of tuberculous mastitis. The acute miliary type is a rather rare form of the disease and when found is another manifestation of generalized miliary tuberculosis.
2. Nodular tuberculous mastitis. The most common form reported is nodular and it affects the supporting tissue of the breast primarily. The lesion spreads slowly, caseates, and becomes fixed to the overlying skin. It ultimately breaks down and forms a chronically discharging sinus.
3. Disseminated tuberculous mastitis. In disseminated cases numerous foci of infection are present throughout the breast and multiple chronic discharging sinuses are present.
4. Sclerosing tuberculous mastitis. The sclerosing type of lesion is more common in the aged. The progress of the lesion is usually slow, and there is little if any tendency to sinus formation. The breast tissue shrinks, the skin becomes retracted, and the condition simulates carcinoma. In many instances the true diagnosis can be made only from the microscopic study of a tissue biopsy.
5. Tuberculous mastitis obliterans. In tuberculous mastitis obliterans the pathologic condition is produced from infection initiating in and then spreading along the ducts. As the infection progresses, fibrosis takes place and eventually there is an obliteration of the duct lumen.

Signs, Symptoms, and Diagnosis

The majority of these patients are women with fair skin and blue eyes. There may be a considerable loss of weight and a pronounced anemia; however, many appear to be in excellent health.

In the early stages a localized swelling of variable size may make its appearance. There may be a slight retraction of the nipple, accompanied or unaccompanied by a discharge. In some a dusky red hue may be noticed in the skin overlying the lesion, which may become thickened and shining, simulating the condition presented by an advanced carcinoma. As the condition progresses, the lesion may spontaneously rupture through the skin and create a chronic discharging sinus with watery pus. The associated lymph glands may or may not become involved. Pain is not usually a prominent symptom.

The tumefaction is usually fixed in relation to the substance of the gland which itself remains freely mobile. The swelling is indefinite in outline and is surrounded by marked induration of the adjacent tissues.

In cases where the lesion is secondary, the history is most significant and should arouse suspicion. The primary lesions are more difficult to diagnose. In the sclerosing type the chronic course of the disease makes it most difficult to differentiate from carcinoma.

Differential Diagnosis

The conditions to be considered for differential diagnosis are as follows:

CARCINOMA.—With tuberculous mastitis, pain and nipple discharge are more prevalent than they are with carcinoma of the breast. Carcinoma usually affects the older age group and the lymph nodes are more frequently involved in carcinoma. However, in most cases only the biopsy will confirm the diagnosis.

ACUTE MASTITIS.—Tuberculous mastitis is usually more insidious in its onset and less painful than acute mastitis. The acute course of the usual type of infection is significant.

CHRONIC MASTITIS.—In simple chronic mastitis one usually does not find the fixation of the lesion to the skin and deeper structures which is characteristic of tuberculous mastitis.

ACTINOMYCOSIS.—The presence of sulfur granules and identification of the fungus are pathognomonic of actinomycosis. None of these symptoms are found in tuberculous mastitis.

In all cases a careful history and routine x-ray examinations of the chest and tissue biopsy will be most helpful in making a differential diagnosis. It has, however, been noted that mammary tuberculosis is an external hematogenous form of tuberculosis which does not coexist with pulmonary tuberculosis.[12] The minimal pulmonary lesions are the same as those observed in other forms of external tuberculosis; therefore, the appearance of a mammary tumor in a patient with pulmonary tuberculosis should rouse the suspicion of cancer rather than of mammary tuberculosis.

Treatment

The treatment of tuberculous mastitis has been considerably modified with the advent of chemotherapeutic agents. In the past, whenever surgery was indicated after a tissue biopsy had been made, the surgery was usually of a radical nature. Many of the patients had at least a simple mastectomy. Today in primary cases local wedge excision and medication should suffice. In secondary cases, if response to medication is satisfactory, local excision is again sufficient.

In patients with multiple sinuses and in whom the lesion is markedly advanced with considerable destruction of breast tissue, the administration of medication is indicated as a primary form of therapy. Surgery may be indicated later in the nature of a simple mastectomy.

The prognosis is so much better in patients today, since the administration of drugs has been found to be so effective, that the surgery indicated in the majority of patients is mostly limited. Radical surgery is rarely necessary.

Case Report

A twenty-nine-year-old white female was admitted to the Goldwater Memorial Hospital on November 11, 1958, with the chief complaint of pain and some swelling of the left breast of four days duration. She was married and had two healthy children. There was nothing of significance noted in her past medical history. General physical examination showed essentially negative findings except for a local condition.

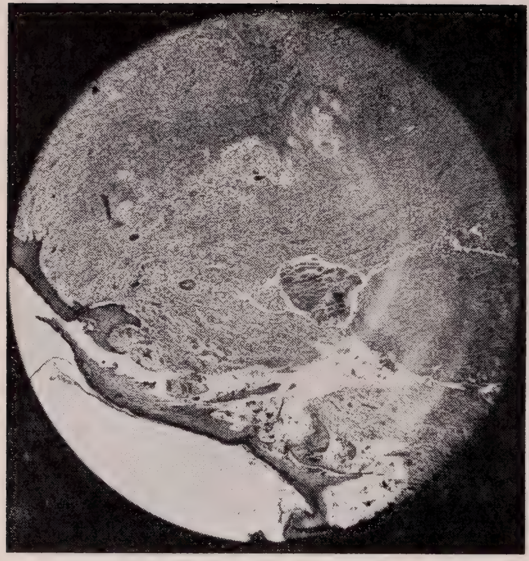

Fig. 1. Low-power photomicrograph showing tubercles.

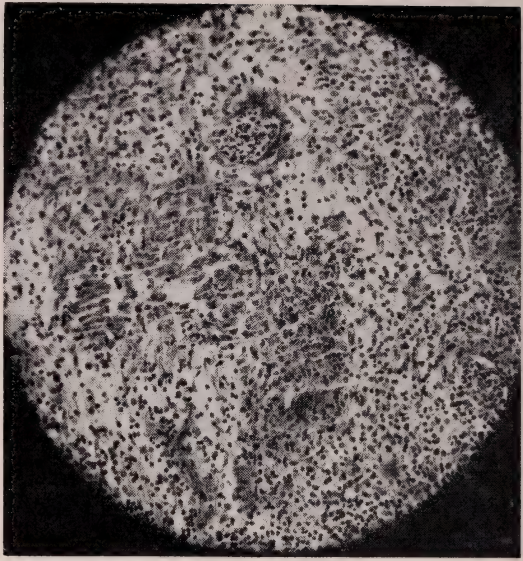

Fig. 2. High-power magnification of lesion in Figure 1.

Local Condition.—There was a mass with a draining sinus present in the upper outer quadrant of the left breast. It measured 5 by 3 cm. The sinus opening was close to the areola and the nipple was inverted. The mass was hard and firmly fixed to the underlying breast tissue. The preoperative diagnosis was that of possible carcinoma of the left breast.

Present Illness.—The present condition dated back to 1952 at which time, following an injury to her left breast, she had developed a mass which was removed at another hospital. Following this procedure, a mass persisted at the site of excision. Unfortunately the tissue biopsy of the mass was not obtainable. In March, 1958, she developed a pain in the mass in her left breast and after several days the skin overlying the mass broke down spontaneously. She was then admitted to another hospital and the mass was incised and drained and again no tissue biopsy was obtained. A sinus condition persisted until November, 1958, when she was admitted to our hospital for excisional biopsy. The mass and sinus tract were excised in toto and the wound drained. She was discharged on the fourth postoperative day with the wound healing satisfactorily.

An x-ray film of her chest showed negative findings. The results of the Wassermann, the blood count, and the urinalysis findings were also negative.

A culture of the pus from the wound was reported as Staphylococcus aureus, sensitive to penicillin.

The pathologic report by Dr. J. Rosenthal and Dr. L. Odessky was as follows:

Gross Description.—The specimen consists of a mass of yellowish-gray fibrofatty tissue measuring 6.0 by 3.5 by 2.0 cm. In its central portion there is a sinus tract 5 mm. in length.

Microscopic Description.—Numerous tubercles are found, composed of epithelioid cells with occasional Langhans' giant cells and surrounded by numerous lymphocytes and occasional polymorphonuclear leukocytes. There is no necrosis (Figs. 1 and 2).

Diagnosis.—Chronic granuloma (tuberculosis).

After the tissue diagnosis had been reported, the patient was given adequate antituberculous therapy and has been symptom-free with a well-healed wound.

Comment

The frequency or rarity of a particular infection in a tissue depends, to a considerable extent, on the ability of that tissue to provide the essentials necessary for the growth or destruction of a particular organism. Thus it is that tuberculous infection in the lungs and in the lymph nodes are of frequent occurrence, while in such tissue as voluntary muscle, in the myocardium and mammary gland, this type of infection is an unusual occurrence. However, when the local resistance of the part is deteriorated by trauma, as in the patient here reported, a nidus is established for the initiation of an infection. Although this is a rather rare occurrence, the tubercle bacillus became the predominating organism in this instance and was the cause for the chronic and recurrent infection.

Summary

We have reported a case of tuberculosis of the breast which was suspected of being a carcinoma in spite of the age of the patient. A local excision of the mass and sinus and the use of chemotherapeutic antituberculous agents appear to have provided sufficient therapy to date.

530 Park Avenue, New York 21

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Novobiocin and Novobiocin-Neomycin for Intestinal Antisepsis

Administration of a combination of 250 mg. novobiocin and 1 Gm. neomycin every hour for four hours and then every six hours for seventy-two hours resulted in rapid and satisfactory control of five groups of organisms in preparing patients for colonic surgery. The organisms were streptococci, staphylococci, coliform organisms, clostridia, and bacteroides. Gram-positive rods and Proteus were each found in a single patient and were the only other organisms identified.

The control of bacterial flora and the sensitivity studies carried out indicate that this is one of the more desirable combinations for preoperative preparation of the colon. Novobiocin alone, however, was not considered satisfactory for this purpose since the response of the coliform organisms and bacteroides was inadequate; control of streptococci was only partial; and, when found, clostridia were not controlled. When used together, however, sensitivity studies indicated that the two drugs complement each other for preoperative preparation of the colon. The authors observe that since much emphasis is placed on the possibility of a micrococcal enteritis following broad spectrum antibiotic therapy and since novobiocin is reported to be particularly effective against micrococci, this would appear to be another factor in favor of this combination for preoperative preparation of the bowel.—*Isidore Cohn, Jr., M.D., and Alfred B. Longacre, M.D., Annals of Surgery, August, 1957*

Pressurized Therapy: A New Treatment for Vascular Diseases and Coincidental Low Back Pain

MILTON E. EISEN, M.D., NEW YORK CITY

THE author has devised a new type of pressurized therapeutic garment for specific types of vascular disease and coincidental low back pain. This is a recent medical application of the space suit used by military aviation in jet flight.

Physiologically dilation of both arterioles and veins is prevented by means of air pressure. Peripheral resistance is maintained by the support given to the arterioles, and air pressure on both thighs and abdomen helps to maintain an improved venous return and cardiac output.[1]

Venous return is determined chiefly by the following activities:

1. In normal individuals the contractions of the skeletal muscles squeeze the veins contained within them and drive the blood toward the heart.[2]

2. With each inspiration there is increased negative pressure in the pleural cavity which aspirates blood towards the heart. The diaphragm descends and raises the intra-abdominal pressure and in this way squeezes blood out of the abdominal veins.

3. Any factor which constricts the veins, thus decreasing their capacity, helps to increase the venous return of blood to the heart.

Other things being equal, an increase in venous return increases the cardiac output in normal individuals. However, in cardiac failure, arteriosclerotic heart disease, and auricular fibrillation a decrease in venous return may improve the performance of the heart.

The effects of venesection are comparable to those of pressurized cuffs on the thighs: blood volume is reduced, venous pressure and right auricular pressure fall, venous return is diminished, and cardiac output is reduced.[3] If cardiac muscle fibers are overstretched because of excessive filling, a more feeble contraction is obtained, the output per beat is diminished, and the heart does not empty itself effectively. This may occur in certain stages of clinical cardiac failure and in these instances is associated with engorgement of the venous side of the heart. In such cases venesection or abdominal pressurization, by lowering the venous pressure and reducing the abnormal degree of stretch of cardiac muscle fibers, may greatly improve the efficiency of the individual beats and consequently of the state of the circulation.

The pressurized therapeutic garment* assumes the shape and form of shorts. It is made of nylon and is fully lined with a thin inflatable rubber bladder. The garment extends from the waist to the lower third of the thigh. The upper third of the posterior aspect consists of a firm, boned inflatable section. The seat is made of fine elastic mesh which assists the patient in standing and sitting. Directly below this mesh is a detachable crotch which may be removed whenever necessary without deflation or removal of the garment. The suit is inflated through a small Kant-leak valve, situated in the upper right section of the suit, with a pound or more of pressure, which can be applied easily with

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Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, General Sessions, May 14, 1959.

* Manufactured by David Clark & Company, Inc., Worcester .Massachusetts.

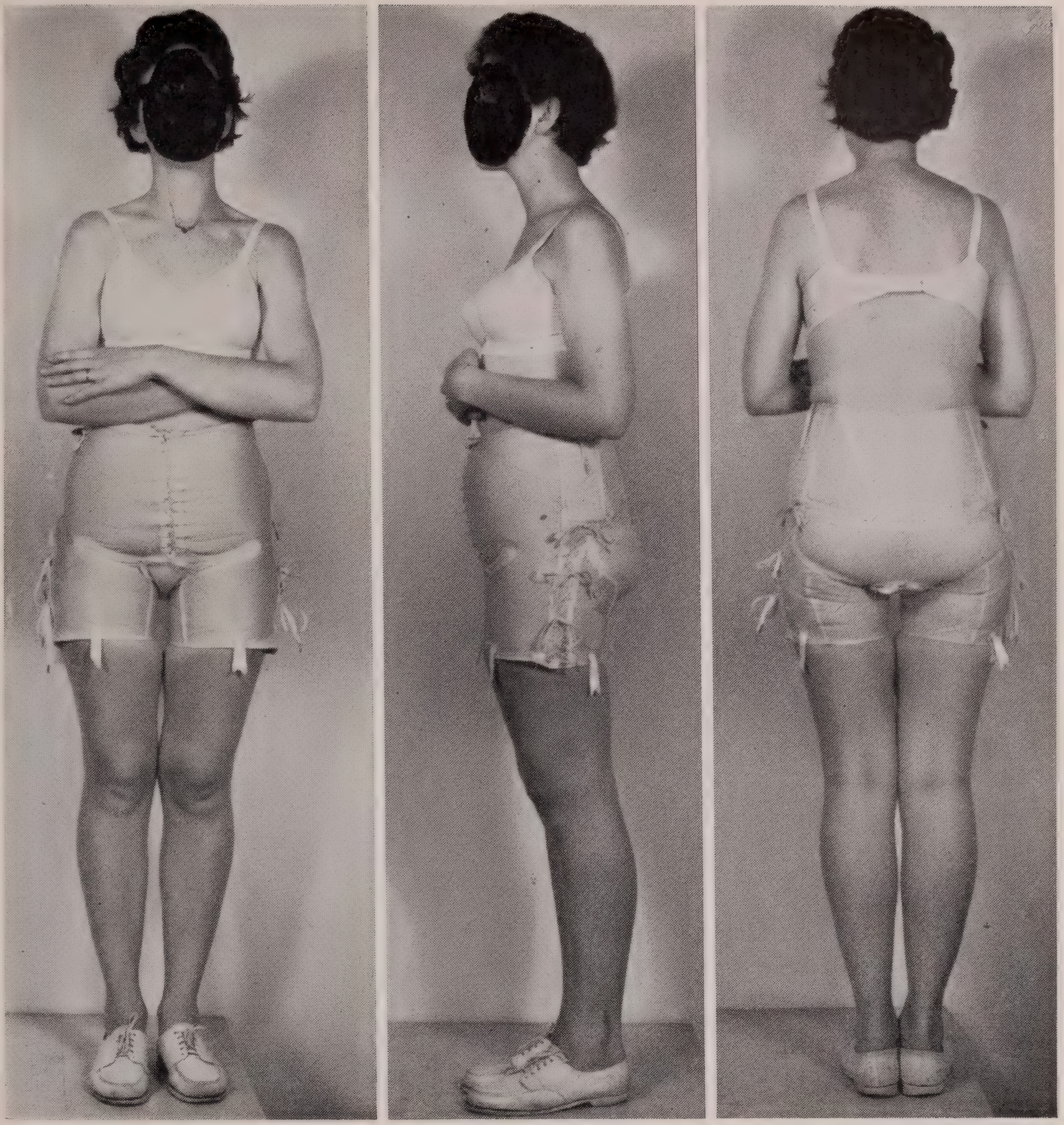

FIG. 1. Three views of fully inflated garment.

a hand inflator. Figure 1 shows the garment fully inflated; Figure 2 shows the garment fully inflated under a tight-fitting dress.

This garment is worn with the patient lying down for one hour daily for a period of three weeks in the office or hospital treatment of vascular diseases and coincidental intractable low back pain. It is then similarly used three times weekly for the next three weeks.

Material and Methods

For the past two and a half years 77 patients with vascular diseases and coincidental low back pain were treated with this new technic. Objective tests consisted of:

1. X-rays of the lumbar spine.
2. X-rays of the pelvis and lower extremities to determine presence of calcification of the arteries.

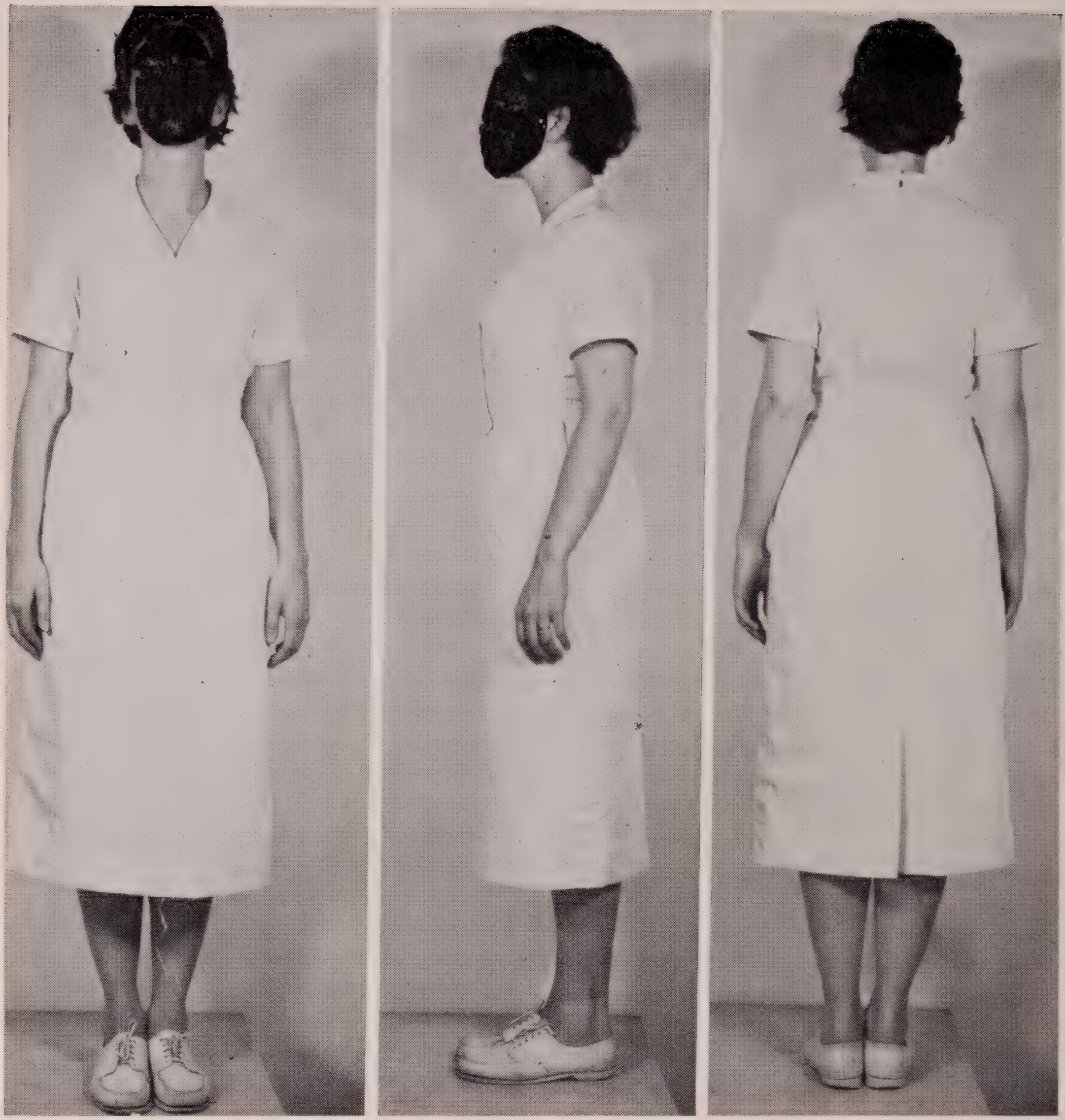

FIG. 2. Fully inflated garment under tight-fitting dress.

3. Myelograms and arteriograms in selected cases.

4. Electrocardiograms before and after exercise without patient wearing the pressurized therapeutic garment.

5. Electrocardiograms before and after exercise with patient wearing the pressurized therapeutic garment.

6. Venous pressure before and one hour after pressurized therapy.

7. Circulation time studies before and one hour after therapy.

8. Sedimentation rates before and after therapy.

9. Comparison of heart rates before and after exercise without and with pressurized therapy.

Findings are shown in Table I.

Case Reports

CASE 1.—A forty-year-old married woman was seen for the first time on August 2, 1957, with the complaint of constant excruciating pain in the lumbar region radiating down the left leg. The pain was greatly aggravated by any attempt of

TABLE I.—FINDINGS IN 77 PATIENTS WITH LOW BACK PAIN AND COINCIDENTAL VASCULAR DISEASES

Finding	Number of Patients
Intervertebral herniated disk	10
Osteoarthritis of lumbar spine	19
Sciatica	8
Sacroiliac strain	5
Arteriosclerotic heart disease	12
Raynaud's disease	1
Extensive superficial thrombophlebitis of upper part of thigh	4
Congestive heart failure	5
Auricular fibrillation with severe uncontrollable palpitations	5
Hypotension	3
Chronic occlusive arterial disease of lower part of abdominal aorta and iliac arteries	5

the patient to move from side to side or arise to a sitting position. The pain first began five years previously, when the patient lifted a heavy suitcase. She did not receive adequate relief of pain with her ordinary corset, and on the advice of her doctor she was fitted with a sacroiliac support and later with a lumbosacral one. However, both were ineffectual in the relief of pain. She had been confined to a hospital bed for a period of six weeks, during which time she received the usual therapy of bed rest and sedation. She stated that she had not detected any appreciable lessening of pain on exertion in bed or on attempting to arise. In the present attack the patient was unable to walk and was compelled to remain in bed.

There was no previous illness of importance and no history of trauma to her back. Examination revealed no evidence of peripheral vascular disease or occlusion of the iliac arteries which could be responsible for these symptoms. The spine was held rigidly, and tenderness was noted over the lumbar spines. Motor power in the lower extremities was but little impaired. The deep reflexes were lively, the right more active than the left. Plantar stimulation gave poor response on both sides. The hematologic and blood chemistry findings were within normal limits. X-rays of the spine did not give any significant findings. A myelogram revealed a defect at the fourth lumbar interspace. The diagnosis was protruded intervertebral disk.

The pressurized garment was worn by the patient for one hour while she was lying in bed. This procedure was repeated several times daily, with the result that the patient became considerably free of pain and was able to walk about the corridor without undue distress at the end of the week. Within three weeks from the initiation of treatment, the patient was discharged as considerably improved. She was advised to continue maintenance therapy to prevent reactivated pain.

CASE 2.—A fifty-seven-year-old married woman was first seen in August, 1958, with the complaint of low back pain of three years duration and prolonged periods of severe cardiac palpitation on effort and at rest. In addition, she experienced shortness of breath on lying flat and on exertion. Duration of cardiac and respiratory symptoms was four years. She had been taking analgesics and wearing a back brace for the low back pain and quinidine and digoxin for her heart condition. In spite of this therapy she did not obtain relief. X-ray examination revealed osteoarthritis of the lumbar spine, and an electrocardiogram showed rapid auricular fibrillation with flutter waves Venous pressure and circulation rate were markedly elevated.

The patient was hospitalized for ten days. The pressurized therapeutic suit was put on her for one hour three times daily before meals while she was supine, and she then was allowed to walk around still wearing the suit. The subjective symptoms of back pain, severe palpitation, and shortness of breath were relieved. An electrocardiogram revealed marked slowing of the heart rate; the venous pressure and circulation time became normal, thus reflexly slowing the heart rate. Within two weeks from initiation of treatment the patient was discharged as considerably improved.

CASE 3.—A fifty-six-year-old woman was first seen in October, 1958, with the complaint of low back pain and substernal distress associated with shortness of breath on walking and at rest. The symptoms had begun three years previously. The electrocardiogram at that time revealed evidence of coronary insufficiency. Her blood pressure was 230/130. X-ray of the lumbar spine gave a negative result. Her local physician prescribed Peritrate, aminophylline, nitroglycerin (12 to 15 tablets daily), and theobromine for the cardiac condition, with little relief resulting. Also, sedatives and analgesics were given for the low back pain. In the past two months walking had become difficult, and pains in the arms and chest and across the lumbar spine and buttocks became severe after every exertion, such as bowel movement and light housework, and after every meal.

Physical examination revealed no femoral pulsation in the left lower extremity. A systolic bruit was heard over the femoral and iliac arteries and over the lowermost section of the abdominal aorta and iliac artery. The venous pressure and circulation rate were elevated.

The patient was hospitalized and the pressurized therapeutic garment was put on for one hour three times daily before meals for ten days with the patient in bed. No medication was given. During this time it was noticed that the patient had no cardiac pain on eating, no pains in the arms when raising them above the head, and no shortness of breath. Back pain was conspicuous by its absence. Venous pressure and circulation time were reduced. The patient was allowed to walk around wearing the garment, and no pain was felt in the chest or lower back. This procedure was continued for one week, and her condition was found to be greatly improved. The electrocardiogram showed improvement. The patient was maintained on this therapy without oral medication and was found to be greatly improved subjectively and objectively. At the present time the patient states that she can walk 1 mile without chest pains and without nitroglycerin.

Case 4.—A ninety-two-year-old married woman was first seen in May, 1957, with the complaint of pain in the lumbar region aggravated by exertion and movement, such as getting out of bed, arising from a chair, and walking. The pain would radiate down either leg. Duration of symptoms was nine years. In addition, the patient complained of dizziness and weakness. She had worn various types of corsets and braces with very little relief of back pain.

Present physical examination revealed the blood pressure to be 95/40, heart sounds regular in rate and rhythm, and no evidence of congestive failure. X-rays of the lumbar spine revealed evidence of extensive osteoarthritis and osteoporosis. There was no evidence of peripheral vascular disease. Treatment with the pressurized therapeutic garment for one hour daily with the patient lying in bed was initiated. At the end of two weeks she was allowed to walk around the room wearing the garment. It was noted that she was able to sit down and get up from a chair with much more ease than previously. At the end of seven weeks of treatment the patient was free of pain. Her blood pressure had risen to 150/70 and was stabilized at this level. After two months she was able to walk six to eight blocks without any distress. The patient has been without low back pain for the past two years.

Comment

A new type of pressurized therapeutic garment has been of significant help in the rehabilitation of patients with circulatory impairment and coincidental low back pain. The present therapy appears to be more effective and usable than the universal mechanical and medicinal methods of treatment. Of the 77 patients receiving pressurized therapy, 68 responded with considerable relief of low back pain and cardiac embarrassment in an accelerated period of time. Eight patients experienced limited relief, which was more than had been achieved by previous methods.

Physiologically the application of air pressure on both thighs and abdomen helps to maintain an improved venous return and cardiac output. In cardiovascular disease a decrease in venous return, produced by the pressurized garment on thighs and abdomen, trapping excess blood in the lower extremities, may improve the performance of the heart. All of the conditions of low back pain have one common denominator: muscle ischemia and fibrositis, which were the principal factors responsible for the low back pain. Muscle relaxation brought about by improved circulation was produced by pressurized therapy for prolonged periods of time. The low back pain may have been relieved coincidentally by improved performance in circulation. Maintenance therapy is advocated for periods of from three to six months.

This, of course, was a limited study and therefore requires further evaluation. The author intends to continue this work and hopes that it will be adopted by others so that much larger experience can be gained and the true place of this therapy in our therapeutic armamentarium may be determined. We will thus be able to learn whether this garment is universally successful or beneficial only in specific circulatory diseases and states of low back pain.

Summary

1. Seventy-seven patients with specific conditions of low back pain coincidental with circulatory diseases received considerable relief of pain on a new accelerated therapy given intensively for three to six weeks, depending on the severity of the condition. Sixty-eight patients were able to return to their usual occupations.
2. Nine patients received inadequate relief.
3. The majority did not obtain relief of pain with the ordinary type of corset, lumbosacral support, sacroiliac support, and various other types of supports.
4. Barbiturates, analgesics, and nitroglycerin, for sleeping and relief of pain, were reduced.
5. Most patients were able to walk and exert themselves with very little pain or cardiac embarrassment when wearing the suit after having been bedridden.
6. Objective tests, including electrocardiograms, venous pressure, and circulation time, corroborated improved subjective symptoms.
7. Maintenance therapy is advocated for from three to six months.

111 EAST 80TH STREET, NEW YORK

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The Communication of Suicidal Intent

More than two thirds of a group of persons who had committed suicide had communicated suicidal ideas to relatives, friends, or acquaintances, and 41 per cent had definitely stated that they intended to end their lives. This information emerged from interviews shortly after suicide in 134 cases. Another striking finding was that 98 per cent were in all likelihood clinically ill before suicide.

In most instances, the suicidal communications started within a few months before the actual act occurred, were repeatedly verbalized, and expressed to many persons. The authors report that the frequency of expression of suicidal ideas was not significantly related to age, sex, marital state, religion, whether living alone or not, occupation, income, or education. Chronic alcoholics had a somewhat greater tendency than the others to make a specific declaration of intent.

These writers also point out that there is a lack of realistic information on just what course the relatives or friends should pursue when confronted with this kind of situation.—*Eli Robins, M.D., and associates, Washington University, St. Louis, Missouri, American Journal of Psychiatry, February, 1958*

Symposium

CURRENT CONCEPTS OF ULCERATIVE DISEASE OF THE GASTROINTESTINAL TRACT

Moderator

SYDNEY D. WESTON, M.D., BROOKLYN, *Attending Proctologist, Maimonides Hospital and Jewish Chronic Disease Hospital*

Panelists

MELITTA SPERLING, M.D., NEW YORK CITY, *Associate Psychiatrist, Kings County Hospital Center; Clinical Professor of Psychiatry, State University of New York Downstate Medical Center*
CLARENCE DENNIS, M.D., BROOKLYN, Chief, *Department of Surgery, Kings County Hospital Center; Professor and Chairman, Department of Surgery, Stcte University of New York Downstate Medical Center*
A. H. AARON, M.D., BUFFALO, *Professor of Clinical Medicine (Emeritus), University of Buffalo School of Medicine*
MAXWELL H. POPPEL, M.D., NEW YORK CITY, *Director, Department of Radiology, Bellevue Hospital Center; Professor and Chairman, Department of Radiology, New York University College of Medicine*

Introduction

SYDNEY D. WESTON, M.D.: The problems we wish to pose concern the current concepts of ulcerative disease of the gastrointestinal tract. While this is a specialty section, it seems to me that its members, be they gastroenterologists or proctologists, have an obligation to the general practitioner. It isn't enough for us to care for the patients referred. To be sure, we must perfect ourselves so that we will be able to diagnose properly and treat a patient. We must go further. We must teach our colleagues in general practice how to evaluate a history, a sign, and a symptom. We must enlighten them in the fine art of differential diagnosis. The generalist must be given the opportunity of taking care of the patient as a whole. When he reaches his limitation, then the specialist is asked to step in.

Our section is indeed proud and fortunate in assembling for you this panel of distinguished specialists. Melitta Sperling, M.D., will discuss the psychiatric aspects; Clarence Dennis, M.D., will comment on the surgical aspects; A. H. Aaron, M.D., will

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Presented at the 152nd Annual Meeting of the Medical Society of the State of New York, New York City, Section on Gastroenterology and Proctology, May 15, 1958.

carry on the discussion from the medical standpoint; and Maxwell H. Poppel, M.D., will air the radiologic features of this problem.

We hope the introductory remarks of the panel members will raise a number of controversial points in your minds, and we shall endeavor later on to answer the questions you submit.

Psychiatric Aspects of Ulcerative Colitis

Melitta Sperling, M.D.: Psychiatric interest in ulcerative colitis is of fairly recent origin. Twenty-eight years ago, Murray,[1,2] by describing the role of psychogenic factors in the etiology of ulcerative colitis, pioneered the investigation of this disease. Other psychiatrists and internists began to investigate ulcerative colitis from a psychiatric point of view. The studies of Sullivan[3] and Daniels[4] and others in this country, and of Cullinan[5] and Wittkower[6] in England, left no doubt about the significance of emotional factors in the origin and course of this illness. These authors demonstrated the existence of a definite relationship between emotional disturbance and the onset of bloody diarrhea, and also certain features characteristic of the personality of the ulcerative colitis patient.

Wittkower from a personality study of 40 patients concluded that ulcerative colitis is a disease of the mentally ill. In his opinion, similar precipitating events would not lead to this symptom in other individuals. He also noted that these patients experienced a decrease in mental symptoms during the period of increased bodily illness. Daniels[4] reported treating a young woman with ulcerative colitis who developed depression with suicidal tendencies when her ulcerative colitis subsided. All workers in the field were impressed particularly with two features which they had observed in these patients; their emotional immaturity and their dependence on parents or parental figures. Yet these features described as characteristic personality traits of the patients with ulcerative colitis can be observed in patients suffering from various other psychosomatic illnesses or mental disorders and did not appear to me to be of specific significance in ulcerative colitis.

In 1942 I began to study and treat psychoanalytically children suffering from ulcerative colitis. For the first ten years the studies were done within a hospital setting and then this research was continued privately to the present time. My expectation was that this method of investigation, which included also the mothers of these children, should permit a better understanding of the psychologic factors in ulcerative colitis and perhaps throw some light on the unknown etiology of this illness.

In 1946 I published my first account of this work, a detailed report of the treatment of 2 children of the initial group which consisted of 6 subjects.[7] Since then (1942), I have treated 16 patients intensively and 9 for shorter periods, have seen 18 in consultations and have supervised the treatment of 6 more cases, a total of 49 patients ranging in age from three to forty-six years. As a psychoanalyst, it is not my intention to impress with numbers, but rather with the method and intensity with which I have studied my material. On the basis of my experience, I felt justified in formulating some dynamic conclusions concerning the nature and origin of ulcerative colitis.[7]

I found that ulcerative colitis is not a disease of adulthood as is commonly assumed, but that it originates in childhood, although it may remain latent and the clinical manifestations may appear only later in life. This finding is in full accord with our knowledge of the causes of mental and, more recently, of so-called psychosomatic illness, derived from psychoanalytic theory and practice. It is of interest that Portis,[8] although studying his material from a different viewpoint, arrived at a similar conclusion. Early experiences and unresolved conflicts predispose and condition certain behavior later in life. The nature of these experiences and the age at which they occur are important factors in determining the severity and form of the reaction which may be precipitated by a specific emotional situation later in life. It was found that the disposition to react with bodily symptoms to emotional trauma is acquired very early in life.[9–13] In fact, in very young children (infants) bodily pathways are the only outlets for emotional distress.

I should like to present briefly some of the most salient findings of my work.

Are there experiences which could be considered as specific ones in the genesis of ulcerative colitis and, if so, what are some of these experiences? My approach to this challenging question was to treat and to observe psychoanalytically ulcerative colitis in young children. This afforded the opportunity of studying the pattern of ulcerative colitis from its beginning. Ulcerative colitis in its full clinical manifestations with the characteristic proctoscopic and radiographic findings occurs in young children.[14] Among my patients were four children aged from three to five years who had developed the first clinical manifestations of ulcerative colitis at the ages of from eighteen to twenty-six months. (I want to emphasize that I am speaking here of idiopathic ulcerative colitis and I am aware of the fact that there are different forms of ulcerative colitis caused by different agents.) My first question was: Why do the first clinical manifestations usually occur just around this age?

The period between ages one and one-half and three years we know to be a very significant developmental phase in the child's life. It is the period of toilet training when the child has to give up soiling and pleasure in his excretion and to acquire bowel control. It is also the age during which the child undergoes an important psychologic transformation, turning from a passive and completely dependent infant into the outwardly aggressive and even destructive toddler who begins to evidence strivings for self-assertion and independence from his mother. An unusual preoccupation with bowel functions and the restriction of the child's aggressive drives during this phase interfere with his satisfactory development and provide the basis not only for a bowel disturbance as a reaction to certain experiences but also for a disturbance that will affect the child's ability to handle and to express aggression adequately later in life.[12]

In all of the children whom I have treated and also in those adult patients in whom it was possible to reconstruct this phase of their lives, it was found that the mothers of these patients had an inordinate need to control the child's bowel functions, to suppress any overt aggressive behavior, and to discourage any show of independence. This fact was even more clearly and impressively brought out in the psychoanalytic treatment of the mothers of some of my child patients. In the psychoanalytic treatment of such mothers I found that this attitude was a reaction formation against unconscious wishes to handle fecal matter and to indulge in forbidden anal activities. Such repressed needs of the mother were gratified legitimately through the illness of the child, which made these activities not only permissible but mandatory.[15,16] What I am emphasizing here is the fixation to the so-called anal phase as an important predisposing factor in ulcerative colitis.

Case Reports.—*Case 1.*—The mother of a four-year-old boy who developed ulcerative colitis at the age of eighteen months and whose treatment I have described in detail elsewhere[15,17] reported with pride that at the age of one her son had already shown an unusual concern about cleanliness. Her reaction to his developing ulcerative colitis can be best described in her remark, "I am such a clean woman and my child has such a messy disease." In my playroom, he was afraid even to touch clay and had to wash his hands immediately when he touched it. His illness made it necessary for both of them to handle the forbidden and consciously abhorred fecal matter continually.

In some of my cases, the mother and child spend many hours daily and nightly in this toilet symbiosis. In spite of the obvious signs of disgust by the mother or even the child accompanying cleaning procedures, it was found that this was a very gratifying and enjoyable experience for both. These children and even some adult patients wear diapers all the time, and it is often more difficult to get the mother to give up diapering and manipulating the patient than it is to get the patient to give up the diarrhea and soiling.

Case 2.—The mother of a nine-year-old boy, after a year of urging by the pediatrician of the hospital where the boy had been hospitalized three times with severe attacks of ulcerative colitis, accepted referral to me only as an alternate to major surgery which had been suggested then. This mother insisted that the boy wear diapers at all times. When he no longer soiled, in fact, had no diarrhea or any symptoms of ulcerative colitis, she still insisted that he wear diapers as a safety measure so that she could inspect them and examine parts of his body closely and frequently.

Case 3.—A woman aged forty with chronic ulcerative colitis had her mother come and stay with her when she had an attack of ulcerative colitis. The mother slept in the double bed with the patient while the patient's husband moved out of the room. The patient had from 16 to 40 bowel movements per day, and her mother would clean her up after each one and then oil her as one would an infant to the great satisfaction of the patient. This patient had to be very sick to feel entitled to and to permit herself such indulgence.

The most significant contribution which came from my work with ulcerative colitis children was the discovery of the specific relationship between mother and child, which I consider to be an important etiologic and dynamic factor in ulcerative colitis.[7,13,15–18] This is a relationship of a mutually exclusive need for one another, originating and apparent already very early in life, preceding the anal phase. The dependency of the patient with ulcerative colitis on the mother, parents, or parental figures has been recognized and accepted by all investigators, but the dependency of the mother on the patient (child) is a fact that has escaped the attention of most investigators. Only in simultaneous psychoanalytic study of such a mother and her sick child can one clearly see in operation the fundamental workings and effects of this relationship and appreciate the force it exerts on the patient in maintaining his sickness. I have discussed this subject extensively elsewhere,[7,13,15,16] but what I want to emphasize here is the importance of taking into consideration this attitude of the mother when one treats a child with ulcerative colitis or treatment will not be successful or even possible.

Even those clinicians who discount the importance of psychologic factors in ulcerative colitis have recognized the powerful influence of the mother on the patient and considered the mother, in certain cases, a greater problem than the patient.[19] I should like to illustrate this point with two examples.

Case 4.—A boy was seven and one-half years old at the time treatment began. I saw him first in the ward of the hospital where he had been a patient for one year with recurrent attacks of ulcerative colitis. He was in an acute attack with 12 to 16 bloody stools daily, had abdominal cramps, severe anorexia, and high fever. Medications and diets did not help him and he was getting frequent blood transfusions. After I had treated him for a month in the hospital, he was discharged for treatment at the clinic when he was still running a fever and had needed a tranfusion before leaving the hospital. He was treated by me in the clinic without medication (except for vitamins) or dietary restrictions under the supervision of the pediatric staff of the hospital to whom I presented this patient in regular conferences. The difficult phase in the treatment, when his aggression and destructive impulses were brought to the fore and expressed in overt behavior, could be managed successfully with the understanding and full cooperation of his mother. Although the ulcerative colitis had fully subsided during the first half year, his treatment lasted for one and a half years in order to bring about a modification of the personality disorder underlying his ulcerative colitis.[7]

This boy is now twenty-two years old and I had an opportunity to see him recently when he consulted me because of some problems with his girl friend. He had had no recurrence of ulcerative colitis since the age of eight. When I had started treating him he was an emaciated child weighing 39 pounds, when I discharged him at nine years of age, he had doubled his weight. At present he has to watch his diet in order not to gain weight (he is 5 feet 7 inches tall and weighs 164 pounds), and he has a tendency to constipation. The work with the mother and her relationship with me I consider a decisive factor in the successful treatment of this boy.[7]

In the case of the four-year-old boy (Case 1), the mother had accepted referral under the pressure of the hospital where he had been hospitalized at one and a half and three and a half years of age respectively. Already in the hospital it had been apparent that his parents presented a psychiatric problem themselves but were unwilling to accept help. The boy was a very passive and anxious child who had never been permitted to play with other children or show any overt aggressive behavior. After several months of treatment, when he began to assert himself somewhat, was attending kindergarten and enjoying it, and evidenced some overt aggressive behavior with consequent improvement of his ulcerative colitis, his mother suddenly withdrew him from treatment. His mother could not permit him to become a healthy and aggressive boy and to leave her to attend kindergarten in a healthy way. When he was sick he was good, submissive, and completely dependent on her. I saw him again a year later with an acute attack of ulcerative colitis in the hospital ward. Again, psychoanalytic treatment was strongly recommended. The little boy was anxious to resume treatment, yet the mother would not accept it.[15]

The handling of the aggression and destructiveness of these patients during the transitory period of treatment when the symptoms subside is a technical problem which I have discussed elsewhere.[7,16,20] It is of interest in this connection that parents of children with ulcerative colitis sometimes seek psychiatric help for the severe behavior problems which these children present especially in their free intervals. Two cases of ulcerative colitis in children have come to my attention in this way. The behavior of the child was not connected by the parents nor the pediatrician with the ulcerative colitis but was considered an unrelated problem. Psychotic episodes in patients with ulcerative colitis have been reported and projective tests (Rorschach and others) of patients with ulcerative colitis very often indicate a latent psychosis.[16,21]

Returning to the discussion of the specific relationship between mother and child in ulcerative colitis, I want to add that this relationship, developed originally with the mother, may be transferred later to another person (mother-substitute). Such a mother-substitute may be a brother or sister, sweetheart, wife or husband of the patient, or even the patient's own child. It is always one person with whom the patient has this exclusive relationship. The attitude developed in the relationship to the mother will be carried over to the mother-substitute on whom the patient now becomes completely dependent. The degree of security or insecurity of this relationship is indicated by the decrease or increase of the patient's symptoms. It can be read like a barometer that registers the changes in the patient's emotional climate. The onset and recurrences of ulcerative colitis occur whenever there exists a threat of separation from this person, mother or mother-substitute, or the danger of loss of this relationship, which the patient cannot accept.

Such a typical life situation for the young child, as demonstrated before, is the period of toilet training and self-assertion. Another such life situation is the start of school. It is not coincidental that the onset of ulcerative colitis in many cases of children coincides with the start of school. A girl of six and one-half years, who had developed ulcerative colitis at the start of school, had a severe relapse at the end of the Christmas vacation. Psychoanalytic exploration revealed that she had felt unable to return to school and leave her mother.

Puberty and early adolescence is another crucial period testing the individual's ability to renounce the original object of attachment and to form new relationships with persons of the same and opposite sex. Onset of ulcerative colitis in adolescence is a rather frequent occurrence. In my adolescent patients sexual problems were found to be most prominent, which the patients themselves were not aware of. Instead they were completely preoccupied with their illness. In 2 girls, the onset of ulcerative colitis coincided with menarche, and these girls stopped menstruating altogether after the ulcerative colitis set in. In their analyses it was found that unconscious infantile sexual fantasies and fears of pregnancy and birth were factors in their ulcerative colitis symptoms. In the adolescent boys, fear of normal sexual activity was very marked. In 2 cases that I analyzed, deep-seated unconscious homosexual and bisexual conflicts were found. The resolution of these conflicts led to the cure of the ulcerative colitis. I have described in detail[21] the treatment of 1 case, that of an eighteen-year-old boy who developed ulcerative colitis at the age of fourteen. In 2 cases fourteen- and sixteen-year-old boys, hypochondriacal fears preceded and accompanied the ulcerative colitis.

In early adulthood, the individual's ability to accept the responsibilities of this age, such as work, marriage, and children, is tested. In the group of the young adult patients, the onset of the ulcerative colitis in many cases coincided with the decision to get married or followed shortly after the marriage. A young man aged twenty-five had developed ulcerative colitis when confronted with making a decision to marry a girl he liked. He could not make the decision and the girl became engaged to someone else. Although she was still willing to forego her already announced wedding and to marry him, he could still not decide because, as was found later in his analysis, he was unable to break away from his mother. Shortly after the girl was married, he got sick.[15] Another young man, after he discovered the infidelity of his wife and could not decide whether to leave her, developed ulcerative colitis. In these cases closer investigation revealed the presence of serious sexual problems and maladjustment. It is not incidental that the precipitating situations under which an individual may develop ulcerative colitis later in life (for instance, loss of the mother-substitute through death, divorce, infidelity, and so forth) are the same situations to which another individual may react with a manifest depression.

Case 5.—A woman of forty-six years developed ulcerative colitis when her mother became deathly ill. While she was hospitalized for ulcerative colitis, her mother died. She did not improve in the hospital and came to see me because I had treated some members of her family. This was her first attack of ulcerative colitis still in the acute phase. Knowing her circumstances and the preceding situation, I interpreted the ulcerative colitis to her as an equivalent of a depression in reaction to her mother's illness and death. Her symptoms cleared up and since then almost ten years have passed and she has remained well.

I should also like to illustrate with some examples the transfer of the original relationship with the mother to a substitute mother. A twelve-year-old girl developed ulcerative colitis when her brother left for the army and she found out that he was sick and she feared that he would die. In treatment it was found that she had an unusually strong attachment to her ten-years-older brother and that she had transferred to him the relationship she had had with her mother. Unfortunately, it is not possible to give the analytic details here, which are most interesting and without which these phenomena remain ununderstandable. An eighteen-year-old girl developed ulcerative colitis following the marriage of her two-years-older sister to whom she had been attached in a peculiarly close way. Most interesting was the case of a forty-four year-old woman who developed ulcerative colitis when her daughter became engaged. It was found that she had had an episode of ulcerative colitis twenty years ago, shortly after she got married. She had had a remission of twenty years duration which had not been interrupted by her husband's sudden death four years prior to her daughter's engagement. It was found that she had transferred her relationship from her mother, not to her husband, but to her child. Neither the patients themselves, nor their environment nor the treating physician had linked the onset of the illness to the preceding events. This, as well as the unconscious significance of this relationship to the patient, was brought out in psychoanalytic treatment.

I have described some of my findings from my work with ulcerative colitis, based on the psychoanalytic method of investigation. It is not the object of such a study to deal specifically with the physiologic mechanisms and the medical aspects of ulcerative colitis. It is a well-established fact that among the various agents which influence and interfere with the normal physiology of the colon, emotions play a prominent role. The emotional stimuli are transmitted to the colon through the nervous pathways, inducing the pathophysiologic changes which manifest themselves in inflammation, bleeding, and diarrhea. Ulceration is the outcome of these changes, induced by emotional stimuli.[8,22]

In considering therapy, one must recognize that the use of medications and surgery are symptomatic measures and do not affect the cause of the illness. It must be borne in mind that in ulcerative colitis the sick personality which produces these symptoms is to be treated, not the colitis symptoms nor the diseased colon.

I am not advocating psychoanalysis as a treatment for the individual patient primarily because it represents an enormous investment of effort, skill, and time available only to a few. In view of the fact that there are no known other therapies which promise and effect a cure of ulcerative colitis, psychoanalysis might still be considered as the treatment of choice for certain cases. Unfortunately, psychoanalysts are not eager to treat such patients and to assume the responsibilities which by far transcend those entailed in the treatment of neurotic or even psychotic patients. The treatment of these patients will remain largely the responsibility of the medical profession, who could be helped greatly in this task by utilizing the understanding gained from psychoanalytic research.

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Ulcerating Diseases of the Gastrointestinal Tract

CLARENCE DENNIS, M.D.: In conjunction with Karl E. Karlson, M.D., Irving F. Enquist, M.D., and Sidney Fierst, M.D., and with the collaboration of the Department of Medicine, Division II, Kings County Hospital, and of many members of the Department of Surgery, I have participated in a study aimed at reaching a statistically valid conclusion with regard to which of three methods of management of massive gastroduodenal hemorrhage is most effective.[1]

In order that we might have a standardized type of patient with which to deal in terms particularly of degree of blood loss, the criteria of Stewart[2] were utilized. His criteria consist in the loss of at least an estimated 0.5 liter of blood in the preceding seven days and in loss of at least 40 per cent of the calculated total circulating red cell mass. We used radioactive iodinated albumin for determination of blood volume and calculated red cell mass on the basis of the hematocrit.

Following selection of emergency admission patients who satisfied these criteria, statistically valid random methods of sampling were utilized in order to select the type of therapy for each individual patient. The three types of therapy employed were as follows:

1. The therapy recommended by Andresen,[3] who served as consultant to the study. This consists in the administration of a liquid formula in two-hourly intervals and the utilization of blood transfusion only for symptoms of anoxia or drops in blood pressure to below 70 mm. of mercury. Transfusion is then given only in small amounts, usually less than 100 ml. at a time. As time passes, the patient is given increasing amounts of material by mouth, provided there is no residual evidence of bleeding.

2. The method of Stewart of vigorous early transfusion and a three-fourths gastrectomy within twelve hours.

3. The method of Hoerr, Dunphy, and Gray.[4] This consists of an endeavor to evaluate the rapidity of bleeding on the basis of the rapidity of transfusion necessary to keep the patient out of shock. On admission to the hospital, the patient is transfused with enough blood to bring him out of shock. If this requires as much as 1,500 ml. of blood, the hemorrhage is regarded as exsanguinating, and the patient is given additional blood and subjected to gastrectomy at once. If the amount of blood required is no more than 1,500 ml. and if, in any given eight-hour period thereafter, 500 ml. are sufficient to keep the patient out of shock, it is then assumed that the bleeding is not sufficient to necessitate operation. If at any time subsequent to immediate transfusion out of shock the patient requires a larger eight-hourly allotment of blood than 500 ml., then operation is performed.

TABLE I.—ALL PATIENTS WITH ACUTE HEMORRHAGE, RED BLOOD COUNT MASS BELOW 60 PER CENT, NO LIVER DISEASE, AND NO PREVIOUS GASTRIC OPERATION*

Subgroup	Number of Patients	Deaths	Mortality (Per Cent)	
Non-operative	62	11	18	(14)†
Immediate operation	47	6	13	(14)†
Selective operation	44	7	16	(14)†
TOTAL	153	24	16	

* This table includes the patients in the therapy group plus the patients who were excluded for deviations from protocol.

† Therapy group.

In the particular study which has been carried out over the past five years, we have included in the operative group under the method of Hoerr, Dunphy, and Gray, those patients over fifty years of age in the belief that they might be worse bleeders than the younger age group. The results indicate the mortality rate has been 14 per cent in each of the groups of patients who have been properly handled according to the various therapy regimens (Table I). Further study of the figures indicates, however, that if we

TABLE II.—IDIOPATHIC ULCERATIVE COLITIS IN 159 PATIENTS UNDERGOING SURGERY

Condition of Patient	Number of Patients
Living	107 (97 well or arrested)
Dead	26 (11 surgical, 15 due to carcinoma with ulcerative colitis)
Lost	26 (16 well or arrested when last seen)

TABLE III.—IDIOPATHIC ULCERATIVE COLITIS IN 102 PATIENTS NOT UNDERGOING SURGERY

Condition of Patients	Number of Patients
Living	15 (4 arrested)
Dead	37 (10 unrelated to ulcerative colitis)
Lost	50 (5 cases arrested when last seen)

were to remove the age limitation in the third group it is possible that the mortality here might be lower. The study is being altered to accomplish this purpose at the present time.

Now I shall pass from the problems of gastroduodenal hemorrhage to the problems surrounding idiopathic ulcerative colitis. A review made of our experience at the University of Minnesota by Dr. Karlson and me included the experience of the entire University Hospital from 1934 to 1951.[5] The over-all figures are indicated in Tables II and III. Although many of these patients are lost to follow-up, it is true that the number is not large enough to invalidate the conclusion that these patients were much more safe if operative intervention was utilized at an appropriate time than if it was denied to these patients. Many of the deaths which occurred were due to the familiar acute complications of idiopathic ulcerative colitis, such as perforation and peritonitis, sepsis, and acute liver failure. On the other hand, many of the deaths were due to secondary carcinoma of the colon. At the time that the study was published in 1952, there were 16 patients in this group of 267 who had developed carcinoma of the colon, and only 1 of these cancer patients was alive. Since that time, 3 additional known carcinomas have developed in this group of patients. It is apparent from reviewing the figures that those patients who had had idiopathic ulcerative colitis for ten years had a 10 per cent carcinoma incidence thereafter. This is a peculiarly malignant form of cancer. The figures are consistent with the thesis that the likelihood of the development of carcinoma increases as more years pass, unless the colon is removed.

The danger of cancer as a complication of colitis is worsened by the peculiar nature of the disease, idiopathic ulcerative colitis. Our profession stresses to the general public the symptoms of bouts of diarrhea, abdominal cramps, pus or blood in the stool, and distension or weight loss as early signs of cancer of the colon. The unfortunate patient with colitis has, however, already become accustomed to these symptoms, and both he and his physician are likely to be lulled into catastrophe thereby. When this is coupled with the great likelihood that a large degree of fibrosis in an advanced idiopathic ulcerative colitis will mask the x-ray signs of cancer development in the colon in question, the danger of leaving such a colon in place becomes more apparent.

Wangensteen and Toon[6] first suggested the utilization of a single primary operation for removal of the colon in idiopathic ulcerative colitis rather than the preliminary performance of an ileostomy. The experience at the University of Minnesota indicates that the mortality of operative intervention has been reduced at least 80 per cent by this pattern of attack. This identical conclusion was reached independently by Miller, Ripstein, and Tabah[7] shortly after it had been suggested by Wangensteen and Toon. In the experience at the University of Minnesota and subsequently at Kings County Hospital in Brooklyn, the mortality rate from primary removal of the colon or of the colon and rectum has been below 5 per cent.

It is reasonable, therefore, to conclude that the patient with advanced fibrotic changes from idiopathic ulcerative colitis runs a higher risk of a cancer developing in the colon and of death therefrom than from the risk involved in removal of that colon surgically. When this observation is combined with the other late complications of ulcerative colitis all too frequently seen, such as exacerbation and sepsis, cirrhosis of the liver, advancing polyarthritis, and so forth, there is no justification for withholding colectomy or proctocolectomy from these patients, the choice depending on the state of the rectum.

The prognosis in the patient who has had the colon or the colon and rectum removed has been pursued as well. Of 80-odd patients from the group at the University of Minnesota dismissed from the hospital after such procedures, there have been no deaths due to late complications of the operative procedure. There have been deaths due to metastases from carcinomas of the colon removed on the indications noted in whom the pathologist first demonstrated the presence of cancer, and there have been deaths from unrelated causes such as leukemia and traffic accidents. Between 85 and 90 per cent of these people went back to their former pursuits and at least 6 young ladies in the group have subsequently had babies. There is 1 with a history of multiple pregnancies. In none of these young women have there been complications of pregnancies. One, however, who retained but 6 feet of small intestine, lost a pregnancy at two and one-half months.

In view of the experience which we have had, my associates and I feel it appropriate to recommend removal of the colon and removal of the rectum, if diseased, for (1) fulminating colitis, (2) acute colitis which does not come rapidly under control, (3) colitis complicated by cirrhosis of the liver, (4) perforation of the colon, (5) carcinoma of the colon, and for (6) colitis of more than three years duration in which there is persistent evidence of fibrosis of the colon.

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Medical Management of Chronic Nonspecific Ulcerative Colitis

A. H. AARON, M.D.: From the gastroenterologist's point of view several important recent findings concerning ulcerating lesions of the gastrointestinal tract merit discussion.

Esophagitis.—Superficial ulcerating lesions involving the lower third of the esophagus are much more common than has been suspected. The condition is associated with cardiospasm, hiatal hernia, duodenal ulcer, and gastric ulcer near the cardia. We are also increasingly aware of the trauma caused in this area by the ingestion of various foods and drugs.

Peptic Ulcer, Hematemesis.—Innumerable new agents used in the treatment of various diseases of the gastrointestinal tract may induce superficial ulceration of the esophagus, stomach, and duodenum in the presence of hydrochloric acid and pepsin in the stomach. Certain drugs with a systemic effect on the gastric secretion through innervation and hormonal mechanisms may produce the same lesion. The physician should realize the importance of this in prescribing any potent substance used in treating a wide variety of other lesions.

Alteration of Gastric Motility.—In partially obstructive lesions of the pyloric outlet the administration of certain agents may bring about retention and increased changes in the gastroduodenal mucosa.

Ulcerative Colitis.—Under medical management the ability to improve and prolong the life of an individual with chronic nonspecific ulcerative colitis is well recognized. This brings up a most interesting point, we must realize that prolonged chronic and that is ulcerative colitis is a true precancerous problem especially in the younger age group.

Duodenal Ulcer: A Concept

M.H. Poppel, M.D.: Because of the vastness of today's subject, I have decided to limit my remarks to two aspects. The first concerns the duodenal ulcerative concept, and the second describes the indenture sign as the earliest roentgen-ray indication of the acute exudative phase of colonic infection.

Concept.—Only too often we are confronted with the simple question, has this patient a duodenal ulcer? Superficially, it would seem that a competent examiner could affirm or deny the question after an adequate roentgen-ray examination. On further reflection it becomes apparent that the absence or presence of an ulcer niche at any one time is in itself only part of a larger local problem within a general problem. Our present purpose is to concentrate on the local problem.

In order to appreciate fully all the manifestations of duodenal ulcer found by roentgen-ray examination, one must consider the entire mucosa of the duodenal bulb as a potential ulcer-bearing area. Accordingly, when the conditions necessary for ulcer formation are present, there develop one or more ulcers which either remain somewhat unchanged for variable periods of time or more usually go on to healing or to complication. Often we demonstrate a niche and report a duodenal ulcer. Perhaps a year later we may re-examine the patient and again demonstrate a niche. The probability, however, is that the second niche is a new one developing in an area prone to ulceration under proper conditions. In other words, we are observing an ulcer-bearing area and not one specific ulcer.

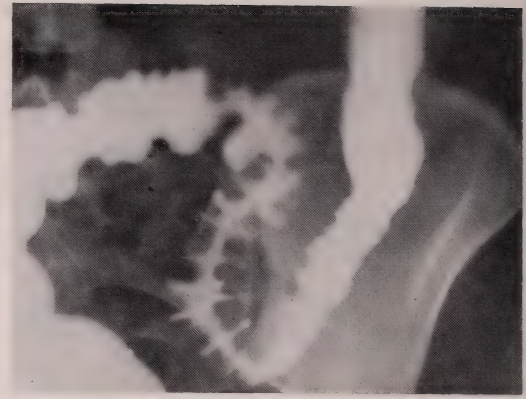

Fig. 1. The indenture sign as described in the text.

This concept may be better appreciated if one compares the duodenal bulb mucosa with the skin on the face of an acne patient. Examinations a year apart reveal acne, but the individual lesions are not the exact same ones. In short, we are dealing with an acne-bearing area and the appearance at any one time is a summation of the active lesions and their residue and/or complications of the previous lesions.

In a similar manner, in the duodenal bulb we are dealing with a dynamic ulcer-bearing area. Accordingly, at any one time we may or may not be viewing one or more active ulcers plus their residue and/or complications of some of the previous ulcers.

Indenture Sign. The indenture sign is the earliest sign of the acute exudative phase of colonic infection found by roentgen-ray study. Although it is a nonspecific sign, it is specific for acute exudative inflammation from any source.

This sign was clearly enunciated for the colon by Rendich and Poppel in 1939, when they described the indenture pattern of acute exudative inflammation with reference to lymphogranuloma venereum of the transverse colon. The first clue of the significance of the indenture pattern was presented previously by Rendich and Ehrenpreis in 1933 in their demonstration of the indenture pattern in a postoperative barium-filled appendix specimen with acute exudative inflammation.

The indenture pattern is a defect characterized by numerous usually equal scallopings or indentations caused by swollen mucosal folds extending into the lumen and reducing its size (Fig. 1). The defect has no sharp demarcations and the involved area gradually merges with the normal portions. The peaks or serrations are not ulcerations but represent barium extending in between the rather uniform swollen mucosal folds characteristic of acute exudative inflammation. These spikes are usually equal in size and change simultaneously in shape and size, depending on the size of the mucosal folds.

The defect may be quite long, and there may be skipped areas. Irritability and intolerance of the colon to the barium are rather pronounced. There may be tenderness on palpation. Thorough cleansing of the bowel prior to the examination is an important prerequisite. The postevacuation study is especially important. The normal regular folds are replaced by thickened folds forming the indenture pattern. An air-contrast study affords no additional diagnostic criteria and, indeed, is counterindicated in the highly inflamed bowel.

The indenture pattern is not specific for any disease entity and merely represents the acute exudative phase of colonic infection.

Eye Examination May Prevent Stroke

By checking the blood pressure of the eyes, one cause of stroke can be diagnosed even before the stroke occurs, according to a group of Boston physicians.

A common cause of paralytic stroke is the clogging of the internal carotid artery, which leads through the neck to the brain. If an obstruction, such as a blood clot, is found in the artery early enough, it can be removed by surgery or the use of clot-dissolving drugs, thus preventing a stroke.

Internal carotid artery insufficiency can be diagnosed by checking the blood pressure of the eyes. It is measured by a technic, called ophthalmodynamometry which is described in the July 18 *Journal of the American Medical Association.*

The authors are J. Lawton Smith, M.D., and David G. Cogan, M.D., Harvard University Medical School and Massachusetts Eye and Ear Infirmary, and Irving H. Zieper, M.D., Massachusetts General Hospital.

In the procedure, the eyes are first dilated and anesthetized. Pressure is applied to the eyeballs and the blood pulsations are observed through the ophthalmoscope, the instrument commonly used in eye examinations. The technic is rapid and safe, and is becoming increasingly important with the recent advent of more effective treatment of carotid artery insufficiency, the doctors noted. In addition to its use as a diagnostic procedure, the technic can be used to check the effectiveness of treatment for carotid artery obstructions.

It should be used as a diagnostic procedure whenever patients exhibit such early signs of carotid artery obstruction as transient partial blindness; dizziness or nausea on changing posture, or weakness of the limbs on one side of the body.

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Invalidity of the Diagnosis "Anxiety Neurosis"

Notes on Curiosity and Boredom as Motivating Forces

MARK D. ALTSCHULE, M.D., WAVERLEY, MASSACHUSETTS

(*From the Laboratory of Clinical Physiology, McLean Hospital*)

MEDICAL and quasimedical writers of every era have either mentioned or discussed at some length the feeling, ranging from uneasiness to a sense of impending disaster, that is called anxiety. This ancient definition will be adhered to in the present discussion, and no consideration will be given to purely intellectual convictions of the inevitability of disaster (such as constitute the basis of a law formulated by the enigmatic Murphy: "If anything can go wrong, it will").

Interest in anxiety as a symptom reached its first peak in the eighteenth century in Great Britain.[1] Although Locke had, in the seventeenth century, defined anxiety, or the need to avoid it, as the main motive force in all human activity, most physicians chose to ignore this unsubstantiated philosophic concept. There were a few exceptions, however: Battie,[2] for example, wrote in 1758, "Uneasiness is so interwoven in the very frame of mortals, that even the greatest satisfaction implies the removing or stifling the greatest uneasiness which before disquieted." (The significance of this pronouncement is perhaps diminished somewhat by the comment of Battie's great contemporary, John Monro, Sr., who declared him to be "crazier than his patients.") Smith,[3] ten years later, related anxiety to stress, saying that in the absence of stress "the soul receives no disagreeable sensations, believes its tabernacle in safety, and therefore is at ease." Crichton[4] also emphasized ego involvement when he said (in 1798) that fear was "a modification of self-love," paraphrasing the more explicit earlier comment of St. John of the Cross "All inquietude [or anxiety] is vanity."

The nineteenth century saw a great increase of interest in anxiety; this interest was particularly pronounced in philosophic and purely literary writings, such as those of Heidigger and Kafka. So widespread seems the preoccupation with the pangs of *angst* that one present-day critic has characterized such nineteenth-century German writings as deriving from "angst in the pangst."[5] These writings influenced medical thinking, and this influence showed itself in various ways. The French set to work exploring the physiology of anxiety. One experiment, for example, published by Binet

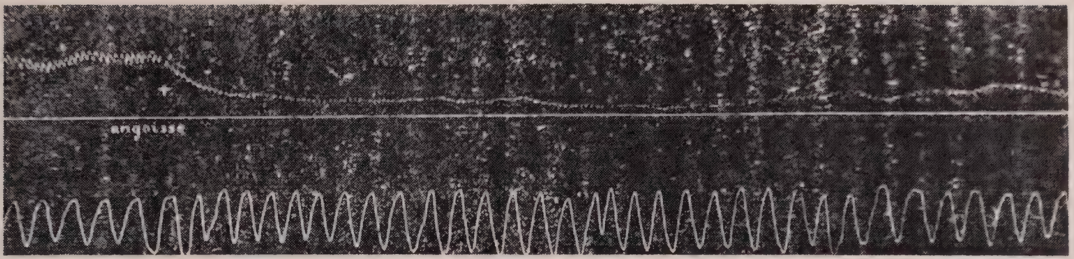

FIG. 1. Changes caused by anxiety (angoisse). The upper tracing shows pulse rate and volume, the lower shows respiratory rate and tidal volume (from Binet and Courtier[6]).

and Courtier in 1897,[6] described the plethysmographic and respiratory changes caused by anxiety in a professor called on to discipline a student:

"M.X. . ., qui était chargé de ce rappel à la discipline, était soumis aux expériences pléthysmographiques, le jour ou l'élève devait venir dans le laboratoire. Pendant qu'on prenait le tracé, un coup de sonnette se fait entendre a la porte. Nul doute, c'est l'élève! Le professeur ne marque aucune émotion exterieure, il reste silencieux; mais il a l'idée de reproches a addresser, il se sent vivement ému, il éprouve une forte constriction a l'épigastre. Les trois symptômes . . . sont ici réuni au grand complet: vaso-constriction profonde, sans ondulations (le pouls en réapparaissant, a perdu son dichrotisine); augmentation énorme de fréquence du coeur, qui passe de 70 pulsations à 95; accélération de la respiration avec forte augmentation d' amplitude, en un mot type de respiration emotive." The tracing is clearly marked with the word "angoisse" (Fig. 1).

In addition, of course, clinical studies on anxiety or conditions in which anxiety occurs were published in various countries. One notable example is that of Hecker[7] who clearly advanced the concept that many symptoms were equivalents or incomplete manifestations of anxiety attacks; however, Hecker did not consider anxiety states separable from the rest of neurosis. Two years later Freud[8] published a paper in which he listed many symptoms that were regarded by his contemporaries as common in neurosis and that, like Hecker, he believed to be "united under the head of pertaining to the expression of anxiety." Freud named this syndrome "anxiety-neurosis" not only because he (like Hecker) thought that all the symptoms could be grouped around the central symptom of "morbid anxiety" but also because he believed that the syndrome had a specific etiology; "the deflection of somatic sexual excitation from the psychical field, and an abnormal use of it, due to this deflection," in the words of Freud. (In contrast, neurasthenia was held to result when "less adequate relief takes the place of an adequate one.") Freud's ideas about the etiology of anxiety neurosis met with opposition, perhaps partly because they were unintelligible.* Nevertheless, the idea of a separate syndrome called "anxiety neurosis" has persisted; indeed, for a time some authors called agitated depression "anxiety psychosis," believing that anxiety was central to the process. This term is, however, no longer used.

The concept of a distinct clinical entity called anxiety neurosis accorded with the nineteenth century German tendency to emphasize anxiety. This trend was apparently an extension of the emphasis on Wertherian self-pitying woe that played a large role in German thinking after 1800 just as Sartre's has today. This trend spread to America many decades later. Here Locke's seventeenth century idea that the prime motivating force in all human activity is anxiety (or the need to avoid it) became a cornerstone of theories in psychology, sociology, and cultural anthropology.

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* The matter of unintelligibility in writing is discussed by Federn (Federn, P.: The neurotic style, Psychiatric Quart. **31**: 681 [1957].) He says "if there is an unconscious resistance in one's self against what one is writing, it becomes difficult to make one's self understood."

More than sixty years have passed since the term anxiety neurosis was invented to describe the diagnostic entity. Freud's early ideas about the origin of this hypothetic disease have largely been forgotten, but the term is still widely applied as a diagnosis. Most American psychologic writings ascribe anxiety neurosis to unresolved mental conflicts (sexual or other, but usually unconscious), these presumed conflicts constituting a supposed threat to a hypothetic entity called the ego. There are many variations of this theme; according to some writers the anxiety itself may be unconscious, and in some manifestations it may wander about the body, becoming fixed in one organ or another. None of these hypotheses is based on substantial evidence and some are incomprehensible; hence this kind of material cannot be used in a study of the validity of the idea that anxiety neurosis is a diagnostic entity. On the other hand, evidence of other kinds has accumulated and should be considered.

Establishing a clinical entity entails isolating and defining its specific anatomic or physiologic features. No anatomic lesion has been described in anxiety neurosis (histochemical technics might reveal such abnormalities in the future), but there is a considerable amount of physiologic data on patients so diagnosed. This falls into six categories:

Abnormal Circulatory and Respiratory Changes, Impaired Oxidative Metabolism, and Abnormal Formation and Utilization of Lactic Acid During Exercise.—The material on abnormal circulatory and respiratory changes, impaired oxidative metabolism, and abnormal formation and utilization of lactic acid during exercise has been reviewed by Cohen and White,[9] who showed that these changes do not distinguish patients said by psychiatrists to have anxiety neurosis from patients with some other types of neurosis, or from those diagnosed by internists as having neurocirculatory asthenia. Moreover, the biochemical disorder is found in a variety of other diseases.[10] Clearly this group of physiologic abnormalities cannot alone serve to define a separate diagnostic entity.

Increased Secretion of Adrenal Cortical Hormones.—The secretion of hydrocortisone is increased in anxious persons;[11–13] similar findings have been reported for many diseases. Aldosterone excretion is also greatly increased but this too is not specific.[14,15]

Excessive Excretion of Epinephrine and Related Substances in the Urine.—The secretion of epinephrine and norepinephrine is increased in anxiety.[16,17] This finding too is highly nonspecific and accordingly cannot be used to define an entity.

Supernormal Synthesis of Hippuric Acid[18,19] and of Para-aminohippuric Acid.[20,21]—Findings with tests for supernormal synthesis of hippuric acid and of para-aminohippuric acid in patients with neurosis who exhibit marked anxiety show much overlapping with the normal, and the difference is only statistical. Moreover, the reported finding has not been widely corroborated. It is improbable that this test will serve to define the entity.

Hypersensibility or Normal Sensory Acuity but Lowered Threshold of Discomfort.[22]—Hypersensibility does not distinguish anxiety neurosis from other neuroses. Moreover, pain tolerance in neurosis does not vary with the level of anxiety.[23,24]

High Sedation Threshold.[25–27]—A high sedation threshold does not distinguish between anxiety neurosis and other neuroses.

Available Psychologic Data

Perhaps it is unreasonable to expect that a condition in which psychologic manifestations are so prominent should show any primary organic abnormality; in view of that possibility only the available psychologic data should be considered.

These data are of three sorts: those produced by introspection, those based on clinical observation, and those derived from experimentation. As regards the first, although introspection may produce hypotheses that stimulate observation and experiment, the introspections of one man or even of a thousand men cannot be used to formulate a valid theory.

Clinical observation has actually been used to test the validity of the idea that a distinct clinical entity called anxiety neurosis can be identified on the basis of clinical criteria. All the evidence shows that this entity cannot so be identified with anything approaching regularity. Data bearing on this matter are numerous since the study of anxiety as a psychologic variable is currently fashionable. In 1953 Taylor[28] developed the Manifest Anxiety Scale on the basis of selection, made by clinicians from a pool of standard personality-questionnaire items, of those items which would most likely be reported, or at least acknowledged, by persons suffering from high manifest anxiety. This scale purportedly constituted, therefore, a clinical psychologic description of anxiety neurosis. However, Taylor and Spence[29] were unable to distinguish anxiety-neurotic from other neurotic patients by means of the test. Sampson and Bindra[30] found that although the Taylor test differentiated between neurotic persons and college students (!) it did not distinguish anxiety-neurotic from other neurotic patients. The latter findings were also reported by Matarazzo, Guze, and Matarazzo[31] and by Buss.[32] Kendall[33] and Hoyt and Magoon[34] likewise found a poor correlation between ratings on this scale and behavioral signs of anxiety. Only Siegman[35] found a somewhat higher score for anxiety-neurotic than for other neurotic patients on the Manifest Anxiety Scale. It is evident that when clinicians evaluated patients whose Manifest Anxiety Scale ratings had been measured, the correspondence between these ratings and their judgments of the severity of anxiety was poor. Moreover, what the Taylor scale measures clearly differs in some respects from anxiety: The state of so-called anxiety revealed by the Taylor test is accompanied by much less impairment of performance than threat-induced anxiety.[36] Since the Taylor scale was formulated in the first place on the basis of clinicians' ideas about the characteristics of behavior and thinking in anxiety, it is evident either that such ideas vary locally, that clinicians diagnose anxiety on the basis of criteria of which they themselves are unaware, or that the separation of anxiety neurosis from other neuroses is not valid.

The question of what the Manifest Anxiety Scale can accurately be said to measure naturally arises. Several studies provide an answer: Excellent correlations between ratings on this scale and scores on scales that measure neuroticism (per se) have been found by Deese, Lazarus, and Keenan,[37] Brackbill and Little,[38] Eriksen and Davids,[39] and Franks.[40] In short, a scale chosen by clinicians to isolate anxiety merely measures neuroticism: Clinical psychologic criteria do not distinguish anxiety neurosis from other types of neurosis. Fragmentary attempts have been made also to relate signs of anxiety in other tests with the clinical diagnosis of anxiety. A poor correlation was found between alleged signs of anxiety in the Thematic Apperception Test and clinical evaluations of anxiety.[41] Similarly, the correlation between anxiety and Rorschach findings is poor.[42,43]* It should be noted in passing that the Manifest Anxiety Scale correlates well with the number of food aversions;[44] with the degree of responsiveness to threats;[45–47] with wordiness;[48] with ease in forming chains of associations;[49] and with job dissatisfaction in the form of adverse attitudes toward superiors, working conditions, and company policies relating to work, wages, and promotion.[50] All these traits are commonly encountered in neurosis. On the other hand, some words that are freely employed in discussion of neurosis, such as rigidity, anal personality, and so forth, have been shown to be so used despite little or no validation.[51,52]

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* The continued use of the Rorschach test is disconcerting in view of the fact that it has been, in the words of one expert, "worthless as a research instrument. Though claiming for decades to be the method *par excellence* for studying personality, the Rorschach method has nothing to show for its applications in the personality field. After more than thirty years of research, the vast bulk of Rorschach studies are still attempts to demonstrate some kind of validity of this test." Jensen, A. R.: Personality, Ann. Rev. Psychol. **9**:295 (1958).

Other analyses of the psychologic nature of anxiety neurosis are also of interest. Kamin *et al.*[24] studied behavioral aspects of anxiety and isolated two factors: an avoidance tendency and a tendency toward general upset or arousal. The second is of particular interest in that it seems to coincide with the hypersensibility found in neurotic patients by Chapman *et al.*[22] Indeed, clinical observation suggests that hypersensibility is the most constant manifestation of neurosis. O'Connor, Lorr, and Stafford[53] studied the Taylor Manifest Anxiety Scale with the aid of factor analysis and isolated five separate factors that are measured by the scale; this finding supports the idea that the scale does not measure anxiety alone. These five factors perhaps constitute a psychologic description of neuroticism. Unfortunately, the factors are difficult to characterize in terms of today's clinical psychology. It is evident that available evidence, both clinical and psychologic, lends no support to the idea that anxiety neurosis can be distinguished from other types of neurosis.

Despite this, some physicians might still consider it possible that there is a special form of neurosis in which all the manifestations are due to anxiety. However, nearly all current American general descriptions of neurosis state explicitly or by implication that anxiety or the need to avoid it is at the root of all manifestations of all types of neurosis. The validity of this idea has never been established. Although unexplained anxiety is a common symptom in neurosis, it also occurs frequently in hyperthyroidism; Cushing's syndrome; hypoglycemia; pheochromocytoma; acute cardiopulmonary syndromes such as pulmonary edema, pulmonary infarct, angina pectoris, and myocardial infarct; anoxic states; hypercapnia; temporal lobe epilepsy; and schizophrenic, manic-depressive, and involutional psychoses. It likewise is noted after the administration of epinephrine, ephedrine, and some other sympathomimetic amines. Certainly the fact that anxiety frequently occurs in neurosis does not automatically justify the conclusion that anxiety is the central manifestation of the disorder; it might be only one among several symptoms, albeit one of the most prominent. Extensive reading in the psychologic, psychodynamic, and psychiatric literature has thus far revealed no evidence that anxiety is any more than just one symptom of neurosis, just as it is one symptom of many of the organic conditions listed here.

It is clear that the sum total of available physiologic and clinical evidence lends no support to the idea that anxiety neurosis exists as a distinguishable entity, and the same is true of the experimental evidence. Four groups of methods are commonly used for the experimental production of anxiety: stressful discussion,[54] threats of painful physical stimuli,[55–58] stimulation of the temporal lobe,[59] and injection of epinephrine[54,55,60–62] or isopropyl norepinephrine[63] or administration of ephedrine or similar substances by mouth.[64] Anxiety neurosis, however, has never been produced experimentally in man. (The experimental induction of chronic neurotic behavior in animals is well known, but this phenomenon is not relevant to the present discussion of anxiety neurosis.) Moreover, even when men are made anxious for long periods of time, the abnormality in hippuric acid synthesis that is seen in neurosis does not develop.[65]

It is interesting that increased production of catecholamines and their derivatives has been demonstrated in all clinical conditions in which anxiety is common except temporal lobe epilepsy, Cushing's syndrome, and the acute cardiopulmonary disorders; no data are available on these syndromes. It also is of interest that stressful interviews[66] and anxiety-producing situations[67] likewise increase the output of these amines. Since the anxiety induced by epinephrine resembles that produced by psychologic stress,[53] a logical theory could be formulated to the effect that a wide variety of stresses resulted in overproduction of epinephrine and that this (or the overproduction of some metabolite) caused the anxiety. It has been shown that the adrenal cortex (or the anterior pituitary gland) can be conditioned to discharge in psychologically stressful circumstances;[68] perhaps the adrenal medulla likewise can be conditioned to respond to psychologic distress. This concept would not require the intervention of a hypothetic ego to explain anxiety or any of its effects. Validation of this theory would require (a) that epinephrine be found in the blood or urine whenever anxiety occurred, and (b) that the epinephrine increase just before the anxiety was felt. The latter requirement is difficult to meet since methods for measuring blood epinephrine are grossly inaccurate and changes in urinary epinephrine content would occur too slowly to provide the necessary data.

However, this difficulty could be obviated by using as subjects persons with a sympathectomized limb; the blood vessels in such a limb become sensitized and constrict quickly when exposed to very low concentrations of epinephrine. Such constriction has actually been shown to occur in sympathectomized limbs of persons caused to become emotionally upset.[69-71] It would remain to be demonstrated that the vasomotor epinephrine effect occurred before the anxiety in such subjects made anxious by psychologic means.

Irrespective of whether or not this theory ultimately provides the germ of an explanation for the occurrence of anxiety in emotional stress, the fact remains that current psychologic beliefs about the occurrence of anxiety and the role of that feeling in neurosis are not based on substantial data.

Motivating Forces

The early history of current psychiatric ideas about anxiety suggests that intuition played a large part in the genesis of these ideas. It is perhaps natural (but not defensible) for those who suffer frequently and severely from anxiety to conclude that anxiety is man's chief everyday problem, and that coping with or avoiding it does and should constitute his main preoccupation during his waking (and sleeping?) hours. Similarly, it is also natural, but still indefensible, for psychiatrists who, having withdrawn from medicine, deal only with neurotic persons all day long (many psychiatrists do not treat psychotic patients) to reach similar intuitive conclusions. On the other hand, those persons to whom anxiety, when it occurs, is no more troublesome than a mild toothache might use their introspections to formulate a quite different theory.

There is surely no need to review the vast amount of experimental data that shows how important hunger, thirst, and sexual drives are in behavior. It might be argued that these drives are for the most part so easily satisfied in modern urban civilization as to play a role far inferior to the need to avoid anxiety; the last, according to this reasoning, thereby becomes the primary motive force in civilized living. However, the present author is convinced, on the basis of his own introspections, supported by observations on man and other mammals, that boredom—or the need to avoid it—is the chief factor underlying activity under ordinary conditions of domestication, and that other drives take command in other circumstances. The idea that boredom is a potent motivating force has, of course, been emphasized in countless novels and plays. The idea has also been discussed by philosophers. For example, Kierkegaard,[72] with typical exaggeration, wrote: "Adam was bored alone, then Adam and Eve were bored together; then Adam and Eve and Cain and Abel were bored *en famille*; then the population of the world increased, and people were bored *en masse.* To divert themselves they conceived the idea of constructing a tower high enough to reach the heavens. The idea itself is as boring as the tower was high, and constitutes a terrible proof of how boredom had gained the upper hand"—with Kierkegaard, at least. The corrosive effect of boredom was emphasized by Sir Horace Vere who replied to a question concerning the cause of his brother's death, "He died of having nothing to do."

The idea that boredom or the need to avoid it is a very potent motivating force is supported by work on the "exploratory drive" in vertebrates[73–106] and even in the cockroach.[107] Rats, for example, will learn a maze more quickly if rewarded by the opportunity to explore a more complicated maze; monkeys will endlessly perform certain tasks with no evident reward except the experience of novelty. Monkeys and kittens apparently prefer to manipulate objects and will learn with no reward other than an opportunity to manipulate.[108–110] In addition to these studies on exploration, other work also shows the need for novelty in the environment. For example, monkeys will continue to press a bar so long as it produces changes in illumination.[111] There is no need to review here the complex interrelations between the exploratory and other drives.[112–122] It will suffice to point out that hunger and thirst may depress exploratory activity somewhat.[112–114] However, when rats deprived of food and water "are placed in a novel environment with the opportunity to eat, drink or explore, they explore for a relatively long period" before initiating eating or drinking.[114] Also rats seem to prefer solving a problem in order to reach food to taking a simple direct route. Fear also diminishes exploratory activity in animals, at least for a time.[87,89,123]

Berlyne who has worked extensively on the problem[75,104,124–127] believes the exploratory drive to be related to curiosity. Exception might be taken to any concept that describes rats as feeling curiosity (or any other feeling), but Berlyne's ideas do not go nearly as far as those of Myers and Miller[119] who believe that rats experience boredom and explore in order to avoid or abolish it: they are motivated by what those authors call the "boredom drive." There is no need to enter into any controversy concerning the nature of the motivating drive in rats which makes them explore; the work, however, is significant in view of the finding of a similar drive in man.[124,125,127,128] Indeed Berlyne[124,127] has proposed a theory of human behavior which is based on the occurrence of the human analog (or perhaps homolog) of the exploratory drive which occurs in animals. Berlyne has defined the two factors that influence human behavior as "perceptual curiosity," a drive related to novelty of sensory stimuli, and "epistemic curiosity," a drive satisfied by acquisition of knowledge.

Comment

These recent studies on curiosity, combined with earlier work on hunger, thirst, sex, and so forth, as drives,* inevitably lead to the conclusion that any theory of motivation that is based on the idea of a single motive force, or even a single force that is always more important than the others, is not in accord with any available data. The idea that anxiety (or the need to avoid it) is always the drive determining human behavior has nothing to support it except the statements of its proponents.

The material discussed here suggests that there is no good reason for regarding anxiety neurosis as a clinical entity; there is no evidence that establishes its cause, and no physiologic or psychologic features known to be specific for what is commonly called anxiety neurosis. Actually neurosis is a poor term since it implies some sort of degenerative process involving nerve tissue, a concept for which there is no evidence.

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* These drives are not the only ones known to motivate activity. There has been much interest, for example, in another one recently—frustration, that is, being deprived of some anticipated reward. For literature and discussion see Amsel, A., and Hancock, W.: Motivational properties of frustration: III. Relation of frustration effect to antedating goal factors, J. Exper. Psychol. **53**: 126 (1957).

The problems of what to call the syndrome now called neurosis and how to characterize and name its various clinical subdivisions are difficult to solve. As regards the latter problem it should be noted that factor analysis of the symptoms of neurotic patients reveals a number of groups, of symptoms, only a few of which correspond to currently accepted diagnostic categories;[129] the remainder of these symptom complexes cannot be made to accord with any syndromes of neurosis now recognized by clinicians as separable from each other.[129] However, defining syndromes on the basis solely of patients' complaints is certain to leave gaps: In the case of neurosis it fails to take into account such objective behavioral manifestations as obsessiveness, persistent rumination, desire for attention and the related urge to talk about oneself, dependency, and—among some of the more intelligent—almost interminable psychologizing.

The development of a satisfactory nomenclature for what is now called neurosis must wait on the formulation of a classification based on physiologic and psychologic data that indicate etiology. In the meantime, some feature of neurosis that approaches closest to the ideals of specificity and consistency should be chosen as a basis of a temporary terminology. This feature is hypersensibility, and it therefore seems reasonable to suggest that what is now called "neurosis" be called instead "agnogenic hypersensibility," perhaps with the addition of some qualifying phrase such as "with anxiety attacks," "with compulsions," "with asthenia," "with gastrointestinal dysfunction," "with cardiorespiratory dysfunction," and so forth.

Summary

Available data lend no support to the idea that "anxiety neurosis" is a diagnostic entity caused by a specific physiologic or psychologic disorder: There is no way of distinguishing it from other forms of neurosis.

The idea that anxiety, or the need to avoid it, is always the prime motivating force in human behavior is not based on substantial evidence.

McLean Hospital

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(Number sixty-eight in a series on Recent Advances in Medicine and Surgery)

Chronic Regional Enteritis

In a series of 126 cases of regional enteritis treated over a period of seventeen years (with follow-up ranging from two to twenty-six years), 104 patients came to surgery. Of these latter, resection was undertaken in 86, with good results in 60 per cent. Excisions of the terminal ilium and right colon had the best prognosis when the disease was confined entirely to this region. Short-circuiting operations with a complete transection of the bowel gave good results in 52 per cent in 48 operations. The mortality in 57 short-circuiting operations was 7 per cent, and 4.5 per cent in 86 resections.

Resection appears to be the best approach when the enteritis is localized and the patient is in condition for the operation; otherwise a short-circuiting operation with complete division of the bowel is indicated. The over-all recurrence rate was 55 per cent. The author, Benjamin Jackson, M.D., Massachusetts General Hospital and Harvard University, Boston, observes that patients may be free of enteritis for fifteen to twenty years and then have a recurrence, although a four-year arrest may indicate the possibility of a permanent cure. When the patient is over fifty, the disease generally has a more benign course than in the younger groups. —*Annals of Surgery, July, 1958*

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ALFRED F. GRANATELLI, M.D.
VALENTINO D. B. MAZZIA, M.D.
GEORGE WALLACE, M.D.

Cardiovascular Collapse During Tracheostomy

PHYSICIANS are becoming cognizant that effective resuscitation in cardiac arrest is possible if immediate therapy is instituted. The following case report illustrates such an instance.

Case Report

A sixty-year-old man came to the emergency room of a hospital because of difficulty in breathing. As soon as this man entered the room it was evident that his dyspnea was severe. Inspection of the oral pharynx revealed marked cyanosis (the patient was colored and therefore this cyanosis had not been evident before). Also, there was a large bleeding tumor arising from the left tonsil and so invading the pharynx and larynx as to result in respiratory obstruction.

Immediate tracheostomy was undertaken. The patient's condition appeared so grave that the physician in charge deemed it best not to lose time by the use of local anesthesia. The skin over the trachea was incised quickly. Just as the trachea itself was incised, it was noticed that the patient's respiratory efforts suddenly ceased. An assistant palpated the radial pulse but could not feel any pulsations. Auscultation over the precordial area revealed no heart sounds. Immediately the "cardiac arrest tray" was requested and an anesthesiologist called for. Thoracotomy was performed in the left fifth intercostal interspace. The tissues were deeply cyanotic but there was no bleeding. The heart was not beating. Intermittent manual cardiac contractions were started. By this time the anesthesiologist was doing artificial respirations with oxygen by means of an endotracheal tube which had been inserted through the tracheotomy wound. Cyanosis cleared and spontaneous contractions of the heart returned.

To close the thoracotomy wound, the patient was transported to the operating room although it was necessary to maintain artificial respiration

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Discussed at a conference held at Bellevue Hospital, New York City, May 4, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

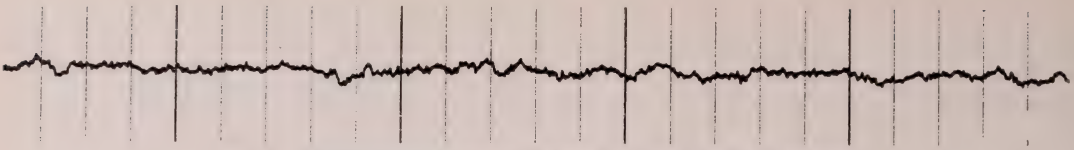

FIG. 1. Electroencephalogram taken just prior to hypothermia.

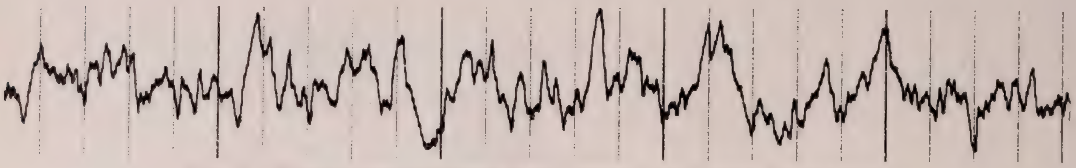

FIG. 2. Electroencephalogram taken sixteen hours after hypothermia.

during this transit. Spontaneous respiratory efforts returned soon, but since they were of low tidal volume they were assisted by manual-bag pressure. The arterial blood pressure was 100 mm. Hg systolic and 70 diastolic. The chest wound was closed carefully, the left lung was inflated prior to closure of the pleura, and the latter was connected by a tube to an underwater drain.

Although cardiac action and respiratory efforts remained good, the patient remained inert and required no anesthesia. His extremities were motionless but there were vigorous sucking movements of his mouth muscles. This was interpreted as due to decortication as a result of the cerebral lack of oxygen during the prolonged period of asphyxia, and the patient's prognosis appeared poor. It was recommended that hypothermia be induced and a ganglion-blocking drug, such as Thorazine, be administered in order to produce peripheral vasodilatation. At the end of the surgical intervention it was decided to replace the endotracheal tube with a metal tracheotomy tube. Unfortunately, after the endotracheal tube was removed the trachea retracted out of sight before the metal tube could be inserted. Cyanosis quickly developed again. Before the trachea could be isolated and the metal tube inserted into it, the patient had again suffered a serious bout of asphyxia.

When the patient arrived in the recovery room, he was still nonresponsive. His tissues now appeared well oxygenated, he was breathing spontaneously but with a Cheyne-Stokes type of rhythm, and his blood pressure remained 100/70. He was given 25 mg. of Thorazine intramuscularly, and oxygen therapy was maintained by means of a catheter inserted in the tracheotomy tube. The patient was placed in a Thermorite mattress. His temperature was decreased to 88 F. and was maintained at that temperature for ten hours, during which time he received 1,500 cc. of 5 per cent dextrose in water by intravenous drip infusion. An electroencephalogram performed just prior to induction of hypothermia showed no activity (Fig. 1). Repetition of the electroencephalogram early the next morning, however, showed a normal pattern (Fig. 2). Hypothermia was discontinued. The patient quickly regained consciousness and appeared well. He got out of bed in a short time and was walking and feeling well a few hours later. He was kept in the hospital for five additional days in satisfactory condition. His tonsillar tumor was examined and found to be so extensive that it was decided to treat it by means of x-ray therapy.

Comment

Although this patient required no anesthesia, the case is of interest to anesthesiologists for they may be called on to treat similar cases. The anesthesiologist in this case was a busy man and the results obtained attest to his proficiency. His first duty was to provide artificial respiration when he first arrived on the scene, at the time the thoracotomy was being performed. The trachea had already been incised so that it was an easy matter to introduce a tube into it. It was important to have the exact size tube and to have all the necessary connections between it and the source of oxygen. It was important to know how much pressure to apply to the breathing bag during the various phases of complete respiratory arrest, spontaneous breathing with deficient tidal volume, intrathoracic manipulations, and closure of the pleura and postoperatively. He also had to evaluate the patient's circulatory status during the time of manual cardiac contractions and when spontaneous cardiac contractions returned, as determined by electrocardioscopic observation and the patient's arterial blood pressure and pulse rate levels. It was the anesthesiologist who recommended induction of hypothermia since the patient had suffered so much cerebral hypoxia. There is good evidence accumulating that hypothermia reduces cerebral metabolism with resultant diminished cerebral oxygen requirements during this period.[1]

The administration of an autonomic ganglion-blocking drug which tends to increase peripheral blood flow, in this instance Thorazine, was also good therapy in trying to overcome cellular dysfunction produced by previous oxygen lack. The significant differences in the patient's electroencephalograms before and after these therapies (Figs. 1 and 2) were impressive.

One interesting observation from the course of events in this case is that cardiovascular collapse occurred at the moment the patient's trachea was being incised. In an attempt to save time, since the patient obviously was asphyxiating, no anesthesia had been employed. It is possible that the hypoxia enhanced the vagotracheal reflexes to such a point that a vagovagal reflex resulting in cardiac inhibition was produced. Since he had been experiencing respiratory obstruction for a long time, it was believed by some that it would have been preferable to take another two minutes for the local infiltration of a local anesthetic drug in order to prevent such an outcome.

Although this is an example of good resuscitation in a case of cardiac arrest, it is not cited in order to encourage such attempts in individuals who have died. Unfortunately, reports are mounting in which extensive efforts by means of artificial cardiac contraction combined with artificial respiration are extended for many hours in cases in which the patient has died because of a cerebral hemorrhage, terminal anuria, or some other terminal systemic disease. There is a need to learn and to teach which cases are and which cases are not worthy of such resuscitative attempts.

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(*Number seventy-four in a series of Clinical Anesthesia Conferences*)

Rabies

In 1953 it was learned that bats cause rabies in man. Other animals which serve as reservoirs of the disease include the cat, dog, wolf, fox, and skunk. Rabies presents its greatest danger to children. Those under fifteen accounted for more than 50 per cent of all human rabies deaths between 1944 and 1954. This is attributed both to higher inherent susceptibility and greater opportunities for severe exposure.—*Patterns of Disease, Parke, Davis & Company*

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Poisonings from Insecticides, Parents' Medications, and Other Substances

THE following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Aspirin	36 years	Female

Dr. Bertram Gesner of the New York University-Bellevue Medical Center reported on a thirty-five-year-old white female who was transferred trom Knickerbocker Hospital after admission for a suicide attempt by ingestion of 250 aspirin tablets at 7:00 P.M. on the previous night. She had been taken to Knickerbocker Hospital early in the morning. She had not been lavaged and later that day was transferred to the Bellevue Psychiatric Hospital.

The past history, obtained from the housekeeper and Department of Welfare, revealed that the patient was in Pilgrim State Hospital for six weeks, until February 3, 1959. She has had pelvic inflammatory disease since 1948. She was in Kings County Hospital until May 6, 1958, with a diagnosis of neurasthenia, fibrositis, and schizophrenic paranoia, Type C.

Physical examination revealed the patient to be a well-developed, well-nourished white female who had generalized convulsions and was in a comatose condition. She responded only to painful stimuli. There was also a depressed corneal reflex with pupils reacting only sluggishly. The rest of the physical examination findings were entirely negative.

Laboratory tests gave the following findings: The urine had a specific gravity of 1.019, pH 5.5, 3 plus acetone, a trace of reducing substance, no glucose, and a trace of albumin. The hematocrit was 55, and the white cell count was 33,000. The electrocardiogram revealed sinus tachycardia and no deviation of the electrical axis. The spinal fluid was normal. The serum potassium was 3.7 mEq. per liter, and the serum glucose was 160 mg. per 100 ml. The blood had a pH of 7.1, and the ferric chloride test result was positive. The stool was guaiac negative. The prothrombin time was normal, and the bleeding work-up results were normal. The gastric contents had no gross blood.

The patient was considered to be in severe acidosis and was treated with sodium lactate and sodium bicarbonate intravenously. After she was lavaged her blood pH rose to 7.45 but her urine pH remained between 5 and 5.5. She remained in deep coma with severe hyperpnea and was being prepared for dialysis. The patient expired in spite of therapy on the day following ingestion and on the same day of admission to Bellevue Hospital. The final cause of death was adjudged by the Medical Examiner as salicylate poisoning with the anatomic diagnosis of pulmonary edema and congestion of the viscera. The brain also contained salicylates.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Aminophylline	1 year	Female

The patient reportedly had a slight asthmatic attack, for which 100 mg. of aminophylline suppositories and $^1/_2$ teaspoonful of ephedrine-theophylline-phenobarbital mixture every four hours were prescribed. These medications were administered for two days. On the third day oxygen was also administered. The patient developed a temperature of 105.6 F., dyspnea, dehydration, convulsions, and coma. In spite of hydration, sedation, oxygen, and digitalization, the patient's course continued downhill, and she expired on the third day of admission.

In a recent article, Dr. Bret Ratner* calls attention to the fact that toxic symptoms as a result of accidental ingestion and excessive therapeutic doses of aminophylline are not infrequent in children. He also emphasizes that alarming reports of severe toxicity and death following administration of aminophylline have appeared in the pediatric literature since 1954. The symptoms of aminophylline intoxication are usually irritability, dehydration, severe vomiting, hematemesis, albuminuria, stupor, and convulsions, and death sometimes follows. Dr. Ratner states that in all reported cases of severe aminophylline toxicity in children, aminophylline medication by rectal suppository had been given repeatedly despite progressive development of alarming symptoms. He cites a case report by Nolke:

> A three-and-a-half-year-old boy with congenital stenosis of the trachea was admitted to the hospital for the tenth time for respiratory difficulty with infection of the upper respiratory tract. The child was placed in a steam room and was given penicillin and sulfadiazine.
>
> An aminophylline suppository ($3^3/_4$ grains) was administered every six hours. The following events ensued after this repetition of aminophylline:
>
> After the fourth suppository he refused all food except milk, which he was unable to retain. He urinated frequently in bed.
>
> After the fifth suppository he became extremely restless and required restraints.
>
> After the seventh suppository he vomited 'brownish mucus shreds' that shortly became 'reddish fluid.' He perspired profusely and constantly asked for water.
>
> After the ninth suppository he was listless. His temperature rose to 38.4 C. and he vomited a large amount of 'brownish fluid.'
>
> After the eleventh suppository his vomitus was described as 'coffee grounds with mucus' and he again became restless.
>
> After the twelfth suppository his vomiting became continuous, his temperature rose to 40.0 C., and he began to have convulsions. The temperature rose further to 41.1 C. The skin became cold and mottled, his peripheral veins collapsed, and death followed shortly thereafter.

In the case reported to this Center a similar situation apparently prevailed. Dr. Ratner rightly warns that under no circumstances should an order be left to repeat aminophylline administration every six to eight hours, for all deaths in young children resulted from this type of repeated medication. He states that aminophylline has proved highly toxic to children under three years of age.

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* Ratner, B.: The use and abuse of drugs in the treatment of asthma in children, Pediatrics, **23**: 781 (Apr.) 1959.

With the increasing frequency of aminophylline intoxication reported in children, one questions whether the continuance of this drug in the therapy of children is warranted. Our concern with this medication has been indicated previously.*

Incident 3

Toxic Agent	*Age*	*Sex*
Gin	7 years	Female

The child noted a bottle containing gin in the kitchen. Having just returned from active play and experiencing some thirst, she swallowed about 8 ounces of the alcoholic liquid, believing it to be water. Immediately following ingestion the patient vomited twice, and five minutes later she became comatose. She was admitted to the hospital in a comatose condition.

The laboratory report revealed a hemoglobin of 11.9 Gm. per cent and a hematocrit of 37. The white blood cell count was 10,850, with 73 per cent polymorphonuclears, 2 per cent eosinophils, and 25 per cent lymphocytes. The urine was negative except for a trace of albumin. The patient was treated with supportive therapy to which she responded well, and after two days of hospitalization she made a complete recovery.

The large amount of gin ingested by this seven-year-old is noteworthy, particularly since it was not associated with complicating sequella.

Incident 4

Toxic Agent	*Age*	*Sex*
Penicillin	15 years	Female

The public health nurse who visited the home reports that the child on returning from school stated that she had pain in the abdomen due to the ingestion of food, eaten in a school lunchroom. The mother immediately took her to the family physician, who administered an injection of penicillin. Immediately afterwards, the pain increased. The patient fainted and became cyanotic, comatose, and edematous. An ambulance was called but before the ambulance arrived the patient was dead.

Fatal reactions to penicillin are reported with sufficient frequency to raise the question whether penicillin injections should be administered without appropriate precautionary measures, such as a history of sensitivity and laboratory tests.

Severe drug reactions are in the Center's opinion drug poisonings and should be reported as such. As a matter of fact, such reactions should be thus reported according to the New York City Sanitary Code.

Incident 5

Toxic Agent	*Age*	*Sex*
Ferrous Sulfate Pills and Mouthwash	2 years	Male

While the mother was answering a telephone call, the patient's three-year-old sibling climbed on a bed with the aid of a chair and obtained the ferrous sulfate pills and mouthwash from a wardrobe closet. The three-year-old gave both to the patient, who drank one half of the bottle of mouthwash and ingested some of the pills. The child soon began to vomit, and the mother called an ambulance, which took the child to a hospital emergency room.

On admission the patient appeared dyspneic and comatose. There was a history of abdominal pain, nausea, and vomiting prior to the admission. The gastric lavage was done in the emergency room with saline, and the patient was admitted to the inpatient service, where a diagnosis of iron poisoning was made. The therapy consisted of bismuth subcarbonate, fluids administered intravenously, and methionine. After eight days in the hospital the patient improved, but he was followed in the outpatient department for two weeks thereafter.

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* Jacobziner, H.: Aminophylline toxicity, J. Pediat. **51**: 226 (Aug.) 1957.

Happily, in the iron ingestion cases reported to this Center (over 75) no fatalities occurred although some of the poisonings were fairly severe.

Incident 6

Toxic Agent	*Age*	*Sex*
Analgesic	26 months	Female

This case is cited because it involves a new analgesic drug (propoxyphene hydrochloride) with a scant record of ingestions. The medication was kept in the dresser drawer in the mother's bedroom, from which the patient obtained the medication and ingested 4 capsules. There were two contributory factors which made it easier for the child to secure the medication: the bottle was without a cap and the drawer was at a very low level. The patient became stuporous and was taken to Babies Hospital emergency room, where her stomach was immediately lavaged. Following lavage the patient improved dramatically, and after several hours of observation was sent home.

It is of interest that this child, formerly a resident of Baltimore, had a history of chewing paint and plaster and developed lead poisoning for which she was treated at Johns Hopkins Hospital. She was small for her age; she had been a premature who weighed only 1 pound, 2 ounces at birth.

Incident 7

Toxic Agent	*Age*	*Sex*
Hair Pin in Soda-Pop Bottle	2 adults	Female

Two nurses who were on duty at a local hospital were sharing a bottle of soda pop. When they had nearly depleted the contents they noted a rusty metal hair clasp in the bottom of the bottle. They immediately became nauseated and vomited and notified the physician on call. He responded immediately and lavaged their stomachs. The only other symptom was a headache which lasted for about twenty-four hours.

This incident is related for the following reasons:

1. The presence of unesthetic materials in foods or beverages often precipitates reactions and symptoms far beyond their presumably toxic potential.
2. In such situations the examining physician should exercise judgment to avoid unnecessary overtreatment.
3. Some patients use these incidents as a basis for lawsuits, utilizing the treatment and hospital record as a support for such suits. The nausea and vomiting associated with many of these cases is authentic but undoubtedly of psychic orgin.

Incident 8

Toxic Agent	*Age*	*Sex*
Sulfonamide (Wide-Spectrum)	$3^1/_2$ years	Male

The patient noted that his urine was red. He told his mother, who called an ambulance. The parent was informed by an older sibling that the patient had swallowed some pills which were in the parent's dresser drawer. The pills were originally obtained at a hospital clinic for the treatment of a kidney infection of the parent. The patient was admitted to the hospital, from which he was discharged four days later.

It has been observed repeatedly that incidents involving a color in the urine and other secretions and the staining of the mucosa by dye stuffs, such as inks, indelible pencils, and crepe paper, cause concern far beyond justification. Because small amounts of color have great tinctorial power with low toxicity, most of them justify little, if any, treatment.

One of the useful functions of the Poison Control Center in these instances is the allaying of anxiety in the family and the reporting physician.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Rat Poison	3 years	Male

The grandmother placed this rodenticide, presumably the anticoagulant type, on the floor in the bedroom. In the absence of the mother or grandmother, the child ingested a portion of this product in spite of repeated warnings by the grandmother that it is poisonous. The child developed burning of the mouth and throat, diarrhea, and stupor. He was taken to the hospital, where a diagnosis of warfarin ingestion was made. Supportive therapy was administered for three days, after which he was discharged.

In view of the fact that the reported symptoms from an anticoagulant type of rodenticide should not have occurred, it is believed that they were the result of the excitement and hysteria prevailing in the household and emergency room when the child was reported to have ingested rat poison.

No incidence of injury resulting from the ingestion of the anticoagulant type of rodenticide has been reported to this Center. The presence of a cereal bait is strongly indicative of the use of warfarin or another anticoagulant, and knowledge of this is helpful in diagnosing ingestions of otherwise unidentified rodenticides. Because of the almost universal use of cereal baits with the anticoagulant rodenticides, the mixing of more active poisons with anticoagulant rodenticides should be avoided by the householder as well as commercial exterminators.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Mice Seeds	10 months	Male

The mother was in the habit of keeping mouse seeds in a dish on the back of the movable artificial fireplace. While she was cleaning behind the fireplace, she left the dish on the floor, where the child was crawling. He obtained and ingested some of the product. The mother became alarmed and immediately took the child to the hospital emergency ward. His stomach was lavaged with water within one-half hour after ingestion. In spite of the fact that no symptoms were evident and the patient appeared well, he was observed at the hospital for three days and then discharged.

Mice seeds are the canary-type bird seeds coated with low percentages of strychnine or thallium. It is important to analyze the significance of the causative aspects of the ingestion of a few of these coated seeds. Results reported to this Center indicate that the ingestion of a few of these seeds is unlikely to be of significance. Overtreatment, however, is understandable in these situations.

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Black Flag Bug Killer	2 years	Male

The family had just moved into a new apartment and while in the process of moving, a bottle of insecticide was inadvertently placed on the floor. The two-year-old obtained the product and ingested some of its contents. The symptoms associated with the ingestion were nausea and vomiting. Further vomiting was induced at the hospital.

This episode occurred in a household in which precautionary measures are usually employed, as reported by the public health nurse. The normal supervision and custodial arrangements of even the best-managed homes are subject to disorganization at moving time. This is a danger-fraught period of which mothers and doctors should take cognizance.

(*Number forty in a series of Briefs on Accidental Chemical Poisonings*)

CASE REPORTS

Fecal Feedings as a Therapy in Staphylococcus Enterocolitis

LOUIS C. CUTOLO, M.D., NOEL H. KLEPPEL, M.D., H. ROBERT FREUND, M.D., AND JEANNE HOLKER, M.S., BROOKLYN, NEW YORK

(From the State University of New York Downstate Medical Center, Department of Surgery of The Long Island College Hospital)

IN the treatment of a patient with staphylococcus enterocolitis, a disease resulting from replacement of the usual bacterial flora of the intestinal tract by this organism, conventional therapy has been the administration of the antibiotic demonstrated by sensitivity tests to be the most effective in combating the microorganism. In a review of the literature[1-16] no example of staphylococcus enteritis resistant to all available antibiotics has been found. Recently a patient with a staphylococcus enterocolitis due to an organism resistant to all antimicrobial agents tested in vitro was encountered, and fecal feedings were used as a source of bacteria to provide competitive systems to the staphylococci.

Case Report

A sixty-five-year-old white male was admitted to the Long Island College Hospital because of gross blood in the stool. During a period of one week constipation alternating with diarrhea had been present, and on several occasions blood-streaked stools had been observed by the patient. There was no history of loss of weight, anorexia, jaundice, or other complaint. Physical examination disclosed no abnormalities except that blood was present on digital examination of the anus and rectum. Proctoscopy revealed multiple polyps extending from a level 8 cm. from the anal opening to 18 cm. cephalad. Radiographic examination following a barium enema demonstrated the presence of several larger polyps in the descending and distal sigmoid colon. A similar study performed elsewhere a year before had revealed colonic diverticulosis but no polyps. The routine laboratory examinations were within normal limits except for guaiac positive stools. Ten days after admission, through an endoscope, 12 polyps of the rectum and distal sigmoid were fulgurated. Four days later, after preparation with Sulfasuxidine and neomycin, an anterior resection of the sigmoid colon was performed, thus removing the polyps inaccessible to fulguration. The surgical procedure was performed without unusual difficulty. Pathologically the removed specimen of the colon disclosed polyposis and diverticulosis. Histologic examination revealed that one of the adenomatous polyps showed adenocarcinoma of the stalk and base without invasion of the intestinal wall; the remaining polyps were regarded as benign. The patient did well for the first postoperative days, but then developed pneumonia at the base of the right lung. This was treated successfully with penicillin, streptomycin, and Achromycin. On the sixth postoperative day there was complaint of pain in the left lower quadrant of the abdomen and the temperature rose to 103 F. At this time a wound dehiscence occurred which was repaired with through and through silk sutures. Intravenous therapy and nasogastric suction were instituted and continued for two days. After the appearance of intestinal peristalsis, fluids by mouth were given. On the eleventh postoperative day there was vomiting, and gastric dilatation was demonstrable. Eighteen hundred cc. of brown fluid gastric contents were removed by suction applied to a Levin tube. An irregular temperature between 101 and 102 F. prevailed. On the fourteenth postoperative day an increase in the distention of the abdomen was observed, and an x-ray examination suggested intestinal obstruction. This subsided spontaneously, but on the fifteenth postoperative day there were several watery, dark brownish-green stools. At this time the diagnosis of staphylococcus enterocolitis was entertained and a culture of the stool was made. This grew almost pure Staphylococcus aureus—coagulase positive—which was resistant, in vitro, to all available antibiotics. By the seventeenth postoperative day the patient presented symptoms and abnormal physical signs of a fully developed staphylococcus enterocolitis: elevations of pulse, temperature, and respiration, and 10 to 15 watery green stools per day. During the following twelve hours the patient's condition grew progressively worse. Since the reports from the laboratory indicated resistance of the organism to all available antibiotics, other therapeutic measures were entertained to reduce the staphylococcus content of the intestinal tract. The thought occurred to one of us that possibly the introduction of bacterial flora derived from the stools of "normal humans" into the intestine of the patient would eliminate the growth of Staphylococcus aureus. All previous antibiotics were discontinued and a Cantor tube was passed into the third portion of the duodenum. At two-hour intervals an emulsion of 50 cc. of fresh human feces and two ounces of yogurt were alternately administered through the tube. Enemas consisting of two ounces of feces and ten ounces of yogurt in a quart of normal saline were given three times a day. Two tablets of Lactinex (lactobacilli acidophilus) were also given orally three times a day. Twenty million units of penicillin were administered daily by a continuous intravenous drip. After forty-eight hours of this therapy the diarrhea ceased. The first formed stool was passed thirty-six hours later, and a culture of this and subsequent stools revealed gradually diminishing colonies of staphylococci and increasing predominance of normal intestinal bacteria. The culture taken seven days after the institution of this regime showed no Staphylococcus aureus, and only a very occasional gram-positive coccus could be identified on direct smear. Therapy with feces and antibiotics was discontinued on the eighth day at which time both the smear and culture showed only innumerable gram-negative rods. Subsequent operations became necessary, but at no time did the staphylococcus enteritis recur. On the ninety-sixth day following the first operation, a massive gastrointestinal hemorrhage due to an ulcer of the duodenum occurred. In spite of vigorous supportive measures, the patient died in thirty-six hours. At autopsy, in addition to a duodenal ulcer, an acute bronchopneumonia due to Staphylococcus aureus, coagulase positive, was found in the right lung. The mucosa of the entire intestinal tract was normal, and cultures taken at various levels revealed the presence only of normal coliform bacteria and complete absence of growth of the staphylococcus.

Comment

Staphylococcus enteritis develops when suppression of the normal bacterial flora of the gastrointestinal tract results from the administration of broad-spectrum antimicrobial agents. In addition, starvation periods and purging of a debilitated patient also may alter the existing bacterial balance sufficiently to allow an overgrowth of staphylococcus in the gastrointestinal tract. This microorganism is not a normal inhabitant of the human intestine but it is capable of rapid and overwhelming growth in the absence of coliform bacteria. Seemingly, when a sufficient amount of exotoxin is produced, symptoms and signs of enterocolitis develop. The toxin causes massive loss of fluid into the lumen of the intestine, associated with watery stool, thereby lowering the circulating blood volume. An exudate forms on the mucosal surface of the intestine as a pseudomembrane. Later this may slough, leaving patchy ulceration. Unless the growth of staphylococci of the intestinal tract can be brought under control, the resultant shock, electrolyte imbalance, and extreme toxicity may prove fatal.

In the case presented bacterial antagonisms were employed. By providing the intestinal tract with its normal bacterial flora, a growth was established to compete with the invading organism. Yogurt and Lactinex tablets were used in an attempt to provide the intestine with lactobacilli acidophilus; however, this amounted to a very small component of the variety of bacteria needed. Specimens of feces were selected from a group of hospitalized patients who were known to be free of infectious diseases, parasites, and malignant conditions. The feces utilized should be cultured so as to eliminate hospitalized carriers of staphylococci, although in this patient this was not done. A Cantor tube was passed transgastrically into the small intestine to bypass acid secretions which would destroy many organisms. With this therapy a response was obtained and both clinical and laboratory evidence revealed the elimination of the staphylococcus from the intestine.

Summary

A case of staphylococcus enterocolitis due to completely resistant staphylococci has been reported. The use of fecal feedings as a successful mode of therapy has been described and its rationale has been discussed.

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The Turkey—A New Health Hazard

Parrot fever (psittacosis) has been found to be caused, in part, by a new health hazard—the turkey. Parrots and parakeets are probably the most common source of this disease among humans, but infections have also been traced to pigeons, ducks, chickens, turkeys, canaries, sea gulls, egrets, and "road runners." In Texas in the year 1954 there were 201 cases of psittacosis with 190 cases attributed to the dressing of turkeys. In Wisconsin there were 22 cases at a single turkey-processing plant in 1956.—*Patterns of Disease, Parke, Davis & Company*

Serum Sickness-Like Reaction from Benzathine Penicillin G

CONSTANTINE A. GOTSIS, M.D., AND LEONARD HARRIS, M.D., BRONX, NEW YORK

(*From the Department of Pediatrics, the Bronx Hospital*)

This case report is presented because we can find no similar sensitivity reaction due to benzathine penicillin G (Bicillin) in the pediatric literature. Also, we wish to emphasize the differences in the course of sensitivity reactions to benzathine penicillin G as compared with short-acting penicillin preparations.

The problems posed have become increasingly important with the preferential position given benzathine penicillin G in the prophylactic therapy of rheumatic fever.

Case Report

An eleven-year-old girl, six weeks prior to her first admission to the Bronx Hospital, had been treated for pharyngitis with oral penicillin for one week. Two weeks later she developed a generalized rash, associated with migratory joint pains, starting in the knees and gradually spreading to the ankles, wrists, elbows, fingers, and toes. The joints were red, hot, and swollen. She had a low-grade fever. Treatment with 2.5 mg. of cortisone, three times a day for seven days, was unsuccessful and resulted in her first period of hospitalization.

At this admission the joints were painful to active and passive motion, an urticarial eruption was noted on the forearms, abdomen, chest, and face, and she had a mild cervical lymphadenopathy. A Grade I systolic murmur, best heard at the left sternal border, especially in the third and fourth intercostal spaces, was the only other positive finding.

Fluoroscopy revealed no heart enlargement and the electrocardiograms were normal. X-ray films of the long bones, chest, and skull were normal. The erythrocyte sedimentation rate ranged from 60 to 90 mm. per hour, C-reactive protein was 2 plus, antistreptolysin O titer was 500 units, and there was a slight leukocytosis. Nose and throat culture showed an atypical streptococcus and a hemolytic staphylococcus.

During this hospitalization the patient's temperature ranged between 100 F. to 102 F., becoming normal by the third week. A trial of salicylate therapy had little or no effect on the fever, skin eruption, or the joints. The skin eruption and joint pains slowly subsided and cleared by the third week.

Because of the persistence of the murmur, a diagnosis of possible rheumatic fever was made and the child was referred to the clinic for benzathine penicillin G prophylaxis. She received three benzathine penicillin G injections of 1,200,000 units at monthly intervals. Six days after the second injection the child developed an urticarial rash lasting four to five days, associated with mild arthralgia.

She received the third benzathine penicillin G injection two and a half months after discharge, and two days later she again developed a generalized rash and migratory joint pain starting in the fingers and spreading to the wrists, knees, shoulders, ankles, and neck, associated with fever up to 104 F. She remained in this condition for ten days prior to readmission, during which time she was given tetracycline without success.

Physical examination on readmission revealed an acutely and chronically ill-appearing female with a markedly erythematous, urticarial eruption over the entire body, particularly over the legs and abdomen. There was marked lymphadenopathy, especially in the cervical and axillary regions. The Grade I systolic murmur was again heard, this time best in the second and third intercostal spaces, just at the left sternal border. There was no transmission to the axilla. The heart was not enlarged, nor were a palpable liver or spleen present.

The patient ran a continuously spiking temperature up to 105 F. levels, and the rash was constantly present in varying intensity. The white blood count ranged between 14,600 to 18,300, stabs 2 to 7 per cent, segmented forms 77 to 86 per cent, lymphocytes 10 to 12 per cent, monocytes 2 to 3 per cent, and on one occasion 2 per cent eosinophils were noted. Her hemoglobin dropped slowly from 10.5 to 8.3 Gm. Sedimentation rate ranged from 68 to 117 mm. per hour. Nose and throat culture showed hemolytic alpha streptococcus and hemolytic staphylococcus albus. Antistreptolysin O titer was 166 units and sheep cell agglutination test was 4 plus. Lupus erythematosus preparations, heterophil agglutination, febrile agglutinins, three blood cultures, and the Wassermann test all showed negative results. Bone marrow examination; total protein; albumin globulin ratio; urinalysis; urine culture and smears; x-ray films of the chest, long bones, and skull; multiple electrocardiograms; and cardiac fluoroscopy all showed normal results. Biopsy of an axillary lymph gland and a portion of triceps muscle were reported as normal tissue.

On the third hospitalization day the patient was started on aspirin therapy. She received 40 gr. per day for one week with no effect on the fever, rash, or joint pains. Thirty-five days after the last benzathine penicillin G injection, the patient was still spiking a high temperature. A diagnosis of a serum sickness-like reaction to benzathine penicillin G was finally made and because of the seriousness of her general condition, treatment with prednisone (Meticorten) was begun. On only 15 mg. per day the child's temperature fell to normal within forty-eight hours and her rash disappeared. At weekly intervals the dosage was decreased 5 mg. per day. When the prednisone was finally discontinued, her temperature spiked again to 102 F. for two days and subsequently remained afebrile. At discharge the only symptom that remained was her murmur, which had changed in no way during her entire hospital stay.

Since discharge the child has been on no therapy and the parents were warned about ever giving her penicillin in any form. She has been doing well until recently, seven months after discharge, when she developed transient urticaria, fever, and arthralgia after an injection of procaine for a tooth extraction.

Comment

In a report of 1,303 patients[1] receiving penicillin by injection, the incidence of reaction to penicillin in oil and beeswax was 2.7 per cent, to procaine penicillin in oil it was 1.4 per cent, and to aqueous penicillin it was 1.2 per cent.

In a series of 2,755 individuals, a reaction rate to benzathine penicillin G with 1,200,000 units was found to be 5.21 per cent, and with 600,000 units 2.1 per cent was found. Oral penicillin revealed a rate of 1.07 per cent.[1]

The types of reaction to penicillin[2-8] vary from local induration, pain and swelling, allergic urticaria,[9] and erythema multiforme-type lesions to serum sickness-like reactions.[10-12] The last may consist of any or all of the following: urticaria, erythema multiforme,[4] fever, arthralgia, myocarditis,[10] encephalitis,[10] and anaphylactic reaction,[2,5-7,13] with profuse perspiration, nausea, weakness, dizziness, respiratory distress, peripheral collapse, and death.[4,14,15] Any and all of the above symptoms have been reported with all modalities of administration,[4,13] although with oral dosage,[1,5-7,9,16] as mentioned, the incidence is much lower.

Since the cardinal symptoms of both acute rheumatic fever and penicillin serum sickness-like reactions are fever; arthralgia; swollen, red, and painful joints; and skin eruptions, a differential diagnosis must always be made.

The rash of serum sickness is more frequently urticarial, while that of rheumatic fever is usually erythema multiforme, although both types of rashes can be found in either disease. The fingers and toes are frequently swollen in serum sickness and much less frequently swollen in rheumatic fever. Murmurs are common in rheumatic fever but are by no means rare in serum sickness. The sedimentation rate is increased in both entities, as is the C-reactive protein. A high antistreptolysin titer merely means a previous streptococcal infection, but a falling titer during the course of the disease is suggestive of serum sickness rather than rheumatic fever. Response to salicylate therapy is often difficult for interpretation, but a rapid response of diminution of fever and subjective symptoms is usually indicative of rheumatic fever. A positive sheep cell agglutination test is essentially nonspecific.

Our conclusion from the case presented, which demonstrates the difficulty in making the differential diagnosis between rheumatic fever and serum sickness-like reaction in atypical cases, is that where such a question exists, sulfa prophylaxis should be substituted for the usual penicillin prophylaxis. This caution is doubly necessary when benzathine penicillin G prophylaxis is contemplated.

Demonstrable levels of benzathine penicillin G have been shown six weeks after injection with the usual methods of assay.[17] A therapeutic level is claimed for four weeks. Therefore, any reactions to benzathine penicillin G can be expected to last for at least six weeks, the period during which the repository penicillin is slowly being utilized by the body. In some cases where there may be slower absorption, the reaction may be expected to last longer, since in the highly allergic individual any amount of penicillin, no matter how small, may produce severe symptoms.

Summary

We have presented the case of an eleven-year-old girl who was given benzathine penicillin G prophylaxis at monthly intervals on the basis of a diagnosis of "possible rheumatic fever." She had received oral penicillin for a pharyngitis two weeks prior to her course of disease. She had a mild reaction after the second injection of benzathine penicillin G and after the third injection she developed a serum sickness-like reaction with fever spiking as high as 105 F. for thirty-five days; marked lymphadenopathy; red, hot, and swollen joints; and an erythematous and urticarial eruption. These symptoms did not respond to salicylates but were dramatically relieved by prednisone.[18]

The wisdom of substituting sulfa prophylaxis in any case with any possibility of a serum sickness-like reaction to penicillin has been pointed out. The additional danger of benzathine penicillin G prophylaxis because of the long lasting storage effect has been stressed.

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Typhus Controlled by DDT

The impact of the DDT typhus control program has been "striking," it is reported in *Patterns of Disease*, published by Parke, Davis & Company for the medical profession. The disease, murine typhus, is transmitted from rats to man by the bite of the rat flea. In 1944, just before the program began, there were 5,401 reported cases; by 1957 there were 113 cases.

SPECIAL ARTICLE

Physicians' Home: Forty Years, 1919 to 1959

CHAS. GORDON HEYD, M.D., *President;* ADA CHREE REID, M.D., *Executive Director;*
J. MILLER WALKER, *Vice-President and General Counsel,* NEW YORK CITY

THE year 1959 completes forty years of continuous service by Physicians' Home to New York doctors and their families. It is doubtful whether physicians realize the extent of beneficial aid afforded by the institution or the salutary rate of expansion of its benevolences.

Beneficial aid is presently running at the rate of $72,000 per annum and during the current fiscal year $65,000* of aid will have been paid. There has been paid out in beneficial aid during the last fifteen years a total of $415,963 and during the preceding eight years, when activities were greatly restricted by financial resources, an additional $35,935, or an aggregate of $451,898 since 1937.

Fiscal Year	Aid Given
1945	$ 8,370
1946	7,454
1947	8,615
1948	11,100
1949	10,555
1950	14,600
1951	22,115
1952	25,256
1953	28,835
1954	32,219
1955	39,295
1956	40,137
1957	47,039
1958	55,373
1959	65,000*
Total for last fifteen years	$415,963
Total for preceding eight years	35,935
Total for past twenty-three years	$451,898

Operations during the earlier and formative years preceding 1937, which antedate the tenure of any of the present management, were necessarily very limited and records for some periods are incomplete. However, during that period the corporation was continuously engaged in its charitable undertakings and numerous beneficiaries were maintained. Based on all available records, it is estimated that since incorporation aggregate beneficial aid furnished by the corporation has exceeded a half million dollars, and the corporation has provided approximately 500 "beneficial-aid-years" of support for eligible beneficiaries.

From the concepts of its farsighted founders and modest beginnings, this institution, by doctors and for doctors, has progressively developed. Its accomplishments not only attest to the soundness of the founders' concepts, but also to the splendid support received from New York doctors and friends outside of medicine, in the form of annual contributions and bequests. Because goodwill and resources are now firmly established, the corporation's activities and benevolences over future years should expand in geometric rather than arithmetic proportions.

The Beginning

On Thanksgiving, 1918, in New York City the late Dr. Wolff Freudenthal learned of the economic disability of an elderly colleague residing in a poorhouse and brought his plight to the attention of the Medical Union. Shortly after alleviation of his circumstances by removal to a "home" on Long Island, a group of physicians gave study to the general problem, and on June 4, 1919, created a corporation† under the name Physicians' Home, for the general purposes of creating and maintaining a home for aged and indigent physicians and their wives and widows, and of assisting them and their needy minor children in any ways found feasible.

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* Estimated.

† Its proponents included Drs. Daniel Cook, Warren Coleman, Max Einhorn, Wolff Freudenthal, Silas F. Hallock, Graeme Hammond, Francis Huber, Robert T. Morris, Alexander Trautman, Henry Mann Silver, George Steel, Ralph Waldo, Albert G. Weed, and John E. Welch.

Basic Concept of Aid

It was a basic concept of the founders that beneficiaries should not be treated as subjects of public charity and that aid granted should be in the nature of an honorarium in recognition of past services to the public and the profession. Beneficiaries have traditionally been known as "guests"; all matters relating to them are treated in strict confidence; and their identities and circumstances are known only to the directors, administrative staff, and local investigating personnel.

The indigency of guests usually has resulted from illness, disabling accident, unwise investments, or (and in most cases) the erosion of savings caused by inflation or the excess of longevity over the doctors' planning. Sometimes the aid given by the corporation is temporary to tide the guest over a difficult period; usually it is permanent and continues during the remaining years of life. Some guests have been maintained for periods extending to fourteen, fifteen, and seventeen years.

Guests have included individuals prominent in the profession with high posts of responsibility on hospital staffs, in medical colleges, in national specialty societies, and in the affairs of the State Medical Society. All have served their communities and the profession well or with distinction. Guests as a group always represent a splendid cross section of the highest personal qualities of the profession; individuals indoctrinated with professional pride, earnest and deeply grateful, whose reliance on indefinite continuance of the aid is in most cases absolute.

Residence of Guests

It was the concept of the founders that Physicians' Home should have the dual purpose of maintaining guests in an established residence or of assisting them in comfortable living elsewhere in places of their own choosing. The founders realized that the desirability of either type of aid would depend upon existing economic and social conditions and the particular needs of guests.

During the early years a few guests were maintained in established residences on Long Island and near Caneadea, New York, and at Stamford, Connecticut. However, experience convinced the corporation that under present economic and social conditions, guests were more content living among their families, friends, and former patients in surroundings of their earlier life and that the greater good could be accomplished by giving them financial assistance without requiring residence in an established home.

However, in the future conditions may so change that it would be highly desirable for the corporation to have a physical home in which some or all guests might wish to reside, and its directors and trustees keep that possibility very much in mind.

Eligibility for Aid

Physicians' Home is legally required to limit its aid to cases of indigency among aged physicians and their wives, widows, and needy minor children, which is construed to mean the absence of financial resources sufficient to afford comfortable and refined living conditions.*

Traditionally the institution has always had a clear conception of its benevolence as intended for, and only for, physicians who have spent a considerable portion of their lives in the practice of medicine within the State. Its basic requirement for eligibility has accordingly been that the physician involved shall be a citizen of the United States, have practiced medicine in the State, and been a member of the State Medical Society for ten consecutive years.

Amount of Aid

Beneficial aid is in the form of monthly checks sent to guests and is keyed to the budget of the applicant. The amount granted is designed to cover (after allowing for any other income or support available to the guest) all proper financial requirements of the guest, including a reasonable cushion for incidental expenses.

The corporation provides on appropriate occasions for extraordinary or emergency expenses, including reasonable funeral expenses of guests to the extent families are unable to do so. However, resources have never permitted fully adequate and realistic contributions toward costs of hospital and custodial care of infirm guests.

Monthly checks to guests vary in amount depending upon financial requirements under the guest's approved budget and the extent of his or her outside income or other support. Presently checks range between $150 and $225 per month with smaller amounts paid where substantial outside income exists. During the current fiscal year beneficial aid will have been paid to approximately 65 individuals.

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* The corporation insists, of course, that sons and daughters legally and morally obligated to support the applicant fulfill that obligation to the extent feasible.

While prudent husbanding of the resources of the corporation naturally prevents the maintenance of guests in any degree of affluence, it earnestly endeavors to be generous with them, in consonance with the basic policy that they should be able to maintain themselves not only free of any stigma of poverty but in comfortable and dignified living.

Procedure on Applications

Applications for aid should be made to the principal office of the corporation, either by or on behalf of the applicant, and these are handled expeditiously. In the first instance they are studied and processed by the administrative staff which, either personally or through trained social service workers or the local county medical society, interviews the applicant and investigates all facts relevant to eligibility and the need for aid. Where advisable, financial and credit investigations are made of the applicant and next of kin.

Thereafter the application with recommendations from the administrative staff is presented to the executive committee which promptly acts thereon and informs the applicant. Action of the executive committee is reported to the board of directors at its next meeting for ratification or modification. Annual or more frequent reviews of the circumstances of all beneficiaries are made to ascertain continuance of eligibility and the extent of need, and beneficial aid is increased or decreased as circumstances require.

Sources of Income

During the early years the income necessary to cover grants of beneficial aid was provided by voluntary membership contributions solicited from a limited number of prominent physicians. Since 1940 the component county medical societies have collected for the corporation the voluntary assessment (originally of $1.00 and subsequently of $2.00) added to the annual dues statement of the county medical society. In addition, the institution has for many years enjoyed a splendid endorsement by the woman's auxiliaries of the State Society and of the component county societies. The work of the auxiliaries has been constant and their contributions substantial.

Since 1954 the corporation has solicited the entire membership of the State Society for annual membership contributions of $10 or more. The response has each year disclosed a strong and progressive upward trend, both respecting total amount of funds provided and respecting the number of contributing physicians. This annual solicitation has enabled considerable expansion of the activities and benevolence of the institution and the strengthening of its facilities for future service.

Accordingly, the ordinary income of the corporation is derived from contributions received annually direct from members (the most important source of income), the voluntary assessments collected by the component county societies, donations from the woman's auxiliaries, and income from the endowment fund of the corporation. In addition it frequently has other extraordinary income, consisting of bequests and special gifts, often designated to become a part of the endowment fund.

Use of Income

It is the general policy of the trustees to utilize each year, in extending beneficial aid to guests and in defraying administrative expenses, all the ordinary income of the corporation received from contributions and the major portion of the income from the endowment fund. The extraordinary income from bequests and special substantial gifts has usually been set aside to augment the endowment fund. In recent years, ordinary income from contributions has been at a higher level, and it has been the practice of the trustees to set aside in a general reserve a portion of investment income, as a cushion available for beneficial aid during less prosperous periods. The directors are determined that, to the limit of the resources of the corporation, it will never desert its accepted guests, and the general reserve is intended to assure that.

Endowment Fund

The corporation had no financial resources at the time of its organization and the accumulation of its endowment fund, from bequests and special gifts, has naturally been a slow process. Until recent years income from the endowment fund has been a relatively small amount. However, due to numerous and several magnificent bequests received under the wills of physicians and others, the fund has now reached the point where its income constitutes a substantial financial contribution to the corporate eleemosynary purposes.

The aim of the trustees is that the endowment shall continue to be built up until it reaches the point where:

(1) its income, together with the general reserve, will cover all anticipated requirements for beneficial aid during periods of depressed business conditions and enable more realistic contributions than presently feasible toward cost of hospital and custodial care of infirm guests;

(2) its principal is adequate to finance an established residence for guests should that become advisable under future conditions.

Most of the endowment fund is held by the corporation with full right to use principal and income for its purposes, with a minor portion of the fund having been received under condition that the corporation maintain the principal invested and use only the income. The endowment fund is maintained in high-grade bonds and stocks and in savings accounts. All assets of the corporation are in the custody of the Hanover Bank, of New York City, which is the financial counsellor to the trustees in all investment matters.

Corporate Framework

The voting members of the corporation consist of all individuals who make regular annual contributions of $10 or more, each of whom is entitled to vote at its annual meeting held in November.

The general management of the business and affairs of the corporation is conducted by a board of 27 directors, each of whom has a three-year term of office, one third of the board being elected at each annual meeting of members. Directors are chosen from among individuals approved for this purpose by the Council of the State Medical Society.

Because of the importance of constant attention to finances, the entire responsibility for the care, custody, and management of the property of the corporation is placed upon a board of five trustees, each of whom has a five-year term of office and one of whom is elected at each annual members meeting.

Directors, most of whom are physicians, give generously of their time to board meetings and many have for years served as officers and trustees. Directors and trustees receive no compensation for their services, as such, and compensation is paid only for services of the administrative staff and for legal, accounting, and investment counsel services.

The corporation is a charitable institution registered with the Department of Social Welfare Board under the laws of New York and exempt from income taxes under ruling of the Federal Department of Internal Revenue, and duly files its annual reports with those State and Federal agencies. Its books of account and financial affairs are audited annually by Price, Waterhouse & Co., independent auditors, and their report thereon is presented at each annual meeting of members and available at any time for inspection by any member.

Conclusion

There are doubtless many instances of genteel poverty and terminal indigency among meritorious physicians and their families, caused by illness, misfortune, or other circumstances beyond their control, which have not been brought to the attention of Physicians' Home. It welcomes at any time information concerning potentially eligible individuals, either directly from them or from other interested persons.

New York doctors may be justly proud of the past accomplishments and present status of this unique instrumentality for good. The extent to which it may broaden its benevolence, reduce anxiety, and brighten sunset years within the profession depends primarily upon their continued interest and support

(1) in responding to the annual appeal for membership contributions of $10 or more;

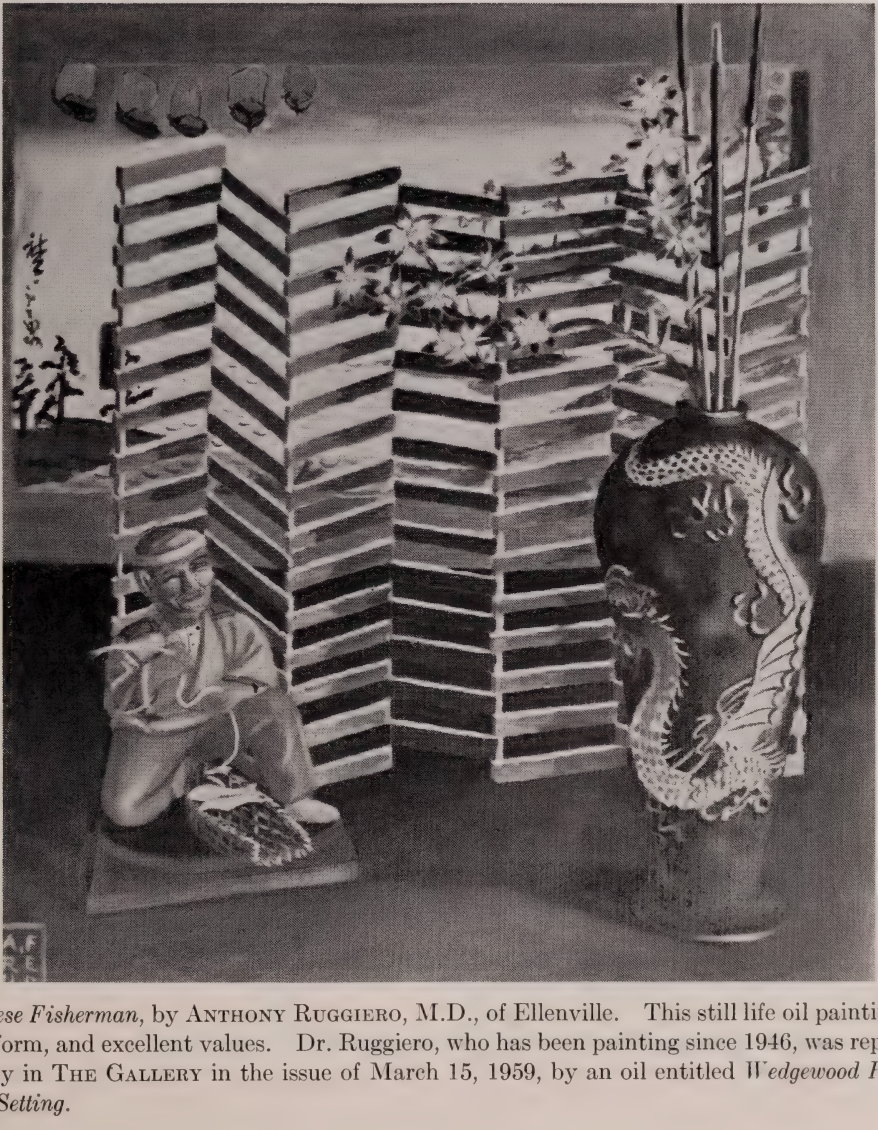
(2) in meeting the annual voluntary assessments collected through the component county medical societies;

(3) in conferring long-term benefits on the institution through substantial bequests and special gifts to augment its endowment fund.

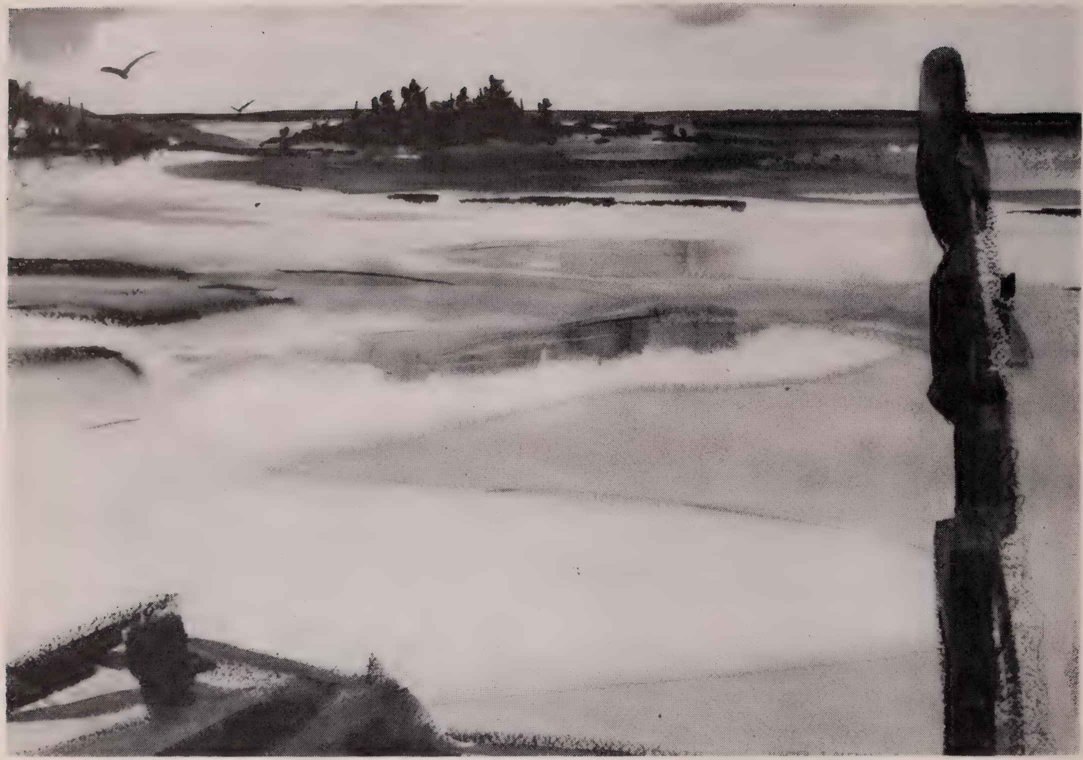
The heaven of each is but what each desires.—THOMAS MOORE

the Gallery

WALTER J. ALEXANDER, M.D., EDITOR



Japanese Fisherman, by ANTHONY RUGGIERO, M.D., of Ellenville. This still life oil painting shows texture, form, and excellent values. Dr. Ruggiero, who has been painting since 1946, was represented previously in THE GALLERY in the issue of March 15, 1959, by an oil entitled *Wedgewood Pitcher in Oriental Setting.*



Goose Rocks Beach, Maine, by WALTER J. ALEXANDER, M.D., of Binghamton. This watercolor was done "on the spot" in 1946 and won a prize from the American Physicians Art Association. On the right in the painting is an old log decorated as a totem pole.

INFORMATION ABOUT "THE GALLERY"

On these pages, the JOURNAL is presenting a series of reproductions of physician art work, and each member of the Medical Society of the State of New York is invited to contribute to this feature.

If you would like to participate, please furnish an 8 by 10 inch black and white glossy print of good quality suitable for reproduction. Prints of the art work are not returnable. This should be sent in a cardboard back manila envelope to the editor of "The Gallery":

Walter J. Alexander, M.D.
333 Main Street
Binghamton, New York

Please include the following information:

1. Your name and address
2. Title of picture
3. Where and when painted or sculpted
4. Where previously exhibited; any prizes received
5. Short interpretation of the work
6. How long you have painted; any instruction you have had.

MONTH IN WASHINGTON

Congress this year failed to take final action on any legislation of major interest to the medical profession except for the annual appropriation for medical research.

However, work was started on three measures of particular concern to physicians—the Forand, Keogh-Simpson, and international health research bills. Showdown votes on them are probable next year. If there are not votes next year, they will die and must be reintroduced in 1961 if they are to be considered further by Congress.

The House Ways and Means Committee held hearings on the Forand bill but deferred showdown voting on it until next year. The legislation—which is vigorously opposed by the medical profession, other groups on the health team, and the Eisenhower Administration—would provide hospital, surgical, and nursing home care for Federal Social Security beneficiaries. Social Security taxes would be raised to help finance the expensive program.

The Keogh-Simpson bill, after being approved by the House, was left hanging in the Senate Finance Committee. The Senate committee held two sets of hearings. It could vote early next year on the legislation which would grant income tax deferrals to physicians and other self-employed persons as an incentive to invest in private pension plans.

Chairman Oren Harris (D., Ark.) postponed until next session a vote by the House Commerce Committee on the Senate-approved international medical research bill because of a backlog of more urgent measures requiring committee action this year. He said that "a diligent effort" would be made during the recess to clarify a number of points at issue revealed in testimony before his committee.

The bill calls for an annual $50 million authorization to finance a new national institute of health to foster international medical research programs and cooperation. The Administration opposes some of its provisions.

President Eisenhower and Arthur S. Flemming, Secretary of Health, Education, and Welfare, made clear that they didn't feel bound to spend the additional $106 million which Congress voted for medical research. Congress raised the $294 million requested by the President to $400 million.

Mr. Eisenhower expressed concern that Congress is going too fast in providing medical research funds which are administered by the National Institutes of Health. He warned of a danger that the quality of research projects might be lowered and that manpower and other resources might be diverted from "equally vital teaching and medical practice." He directed that every project approved must be "of such great promise that its deferment would be likely to delay progress in medical discovery."

Secretary Flemming said that the President's criteria would be followed conscientiously. But the Secretary gave assurance that the restrictions would not be so rigid as to hamper research by denying funds for worthwhile projects.

One of the most important and surprising developments during this session of Congress was the political power shown by Mr. Eisenhower, a lame duck Republican president, in generally calling the shots on legislation although Democrats controlled the House and Senate with substantial majorities.

In his fight against "big spending" measures sponsored by Democrats, the President effectively used his veto power to mold the bills more to his liking. The Democrats were unable to muster the votes to override vetoes of two housing bills.

A third compromise housing bill retained three provisions of interest to the medical profession. One would provide Federal Housing Administration loan guarantees for building proprietary nursing homes. A second would provide FHA loan guarantees and direct loans for housing for elderly persons. The third would authorize loans for construction of housing for interns and nurses.

Notes

Live polio virus vaccine may be licensed for public use within a year or two. Dr. Leroy E. Burney, Surgeon General of the Public Health Service, said: "If energetic efforts are continued to find answers to the remaining technical questions concerning safety, effectiveness and manufacturing procedures, one or more of the three vaccines now being proposed may be under production within one to two years."

Primary responsibility for radiation health safety has been transferred from the Atomic Energy Commission to the Department of Health, Education, and Welfare. Such a shift in responsibility was called for in legislation pending in Congress but President Eisenhower ordered the transfer without

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Prepared by the Washington Office of the American Medical Association, Washington, D.C.

Congressional action.

The President directed HEW to "intensify its radiologic health efforts and have primary responsibility . . . for the collation, analysis and interpretation of data on environmental radiation levels such as natural background, radiography, medical and industrial uses of isotopes and x-rays and fallout."

HEW Secretary Flemming also was named chairman of a cabinet-level Federal Radiation Council.

Officers in charge of the Medicare program for military dependents were optimistic that certain medical benefits dropped for economy reasons in October, 1958, will be restored next January 1 but the professional director of the program, Col. Norman E. Peatfield, said that the Medicare permit system will be retained.

LETTER TO THE EDITOR

Documentation on X-Ray Reports

To the Editor:

One of my present endeavors is to collect documentation on x-ray reports, i.e., those somewhat ephemeral texts in which the roentgenologist lists and interprets the findings elicited during diagnostic (fluoroscopic and/or roentgenographic) examinations.

Since literature on this topic is relatively scarce, bibliographic indications (perhaps reprints) in any language would be of help. Quotable sentences on what should or on what should not be included in x-ray reports are also invited. Most of all, the undersigned would like to receive originals of x-ray reports, in any language, dated prior to 1910, or more recent ones, if signed by renowned radiologists. Incidentally, does anybody know who wrote the first x-ray report?

The original x-ray reports received, after being photographed for possible reproduction, will be returned to the sender, if so desired, or else retained for an exhibit. It is needless to emphasize that proper source credit would be forthcoming in the event of publication.

Please mail all communications to me at the following address: Box 293, Champaign, Illinois.

E. R. N. Grigg, M.D.

203 North Randolph Street
Champaign, Illinois

NECROLOGY

Samuel George Blum, M.D., of Brooklyn, died on August 23 at the age of seventy-three. In 1909 Dr. Blum graduated from Cornell University Medical College and interned at the Jewish Hospital of Brooklyn. He was a consultant in obstetrics and gynecology at the Jewish Hospital of Brooklyn. Dr. Blum was a member of the Brooklyn Gynecological Society, the Kings County Medical Society, and the Medical Society of the State of New York.

Charles Stites Cochrane, M.D., of Brooklyn, died on September 5 at Maimonides Hospital at the age of eighty. Dr. Cochrane graduated in 1900 from Long Island College Hospital Medical School and interned at Long Island College Hospital. He was a consultant in surgery at Kings County and Samaritan (Brooklyn) Hospitals, an honorary consultant in surgery at Carson C. Peck Memorial Hospital, and an attending in urology at Brooklyn State Hospital. Dr. Cochrane was a Diplomate of the American Board of Urology, a Fellow of the American College of Surgeons, and a member of the American Urological Association, the New York Academy of Medicine, the New York Society of the American Urological Association, the Brooklyn Urological Society, the Associated Physicians of Long Island, the Brooklyn Surgical Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Emanuel Fletcher, M.D., of Flushing, died on September 5 at Flushing Hospital at the age of fifty-three. Dr. Fletcher graduated in 1927 from Columbia University College of Physicians and Surgeons. He was an associate in pediatrics at Queens General Hospital, chief of the pediatric allergy clinic at Queens General Hospital Outpatient Department, and an associate in pediatrics at Flushing Hospital. Dr. Fletcher was a Licentiate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, a member and vice-president of the Queens Pediatric Society, a member and secretary of the Queens County Medical Society, and a member of the Medical Society of the State of New York and the American Medical Association.

Evangel Grivelis, M.D., of Brooklyn, died on August 19 at the age of sixty-seven. Dr. Grivelis graduated in 1931 from New York University and Bellevue Hospital Medical College. He was an associate in surgery at St. John's Episcopal Hospital. Dr. Grivelis was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George J. Hajworonsky, M.D., of Cherokee, Iowa, formerly of Orangeburg, died on May 19 in Iowa City, Iowa, at the age of forty. Dr. Hajworonsky received his medical degree from the University of Heidelberg in 1947. He was a Member of the American Psychiatric Association and a member of the Rockland County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Husted Jackson, M.D., of Watkins Glen, died on August 14 at Schuyler Hospital at the age of eighty-three. Dr. Jackson graduated in 1904 from Syracuse University Medical College. He helped organize the present Schuyler Hospital and was an honorary member of the staff, was coroner of Schuyler County for many years, and had served for more than twenty years on the board of managers at Willard State Hospital. Dr. Jackson was a member of the Schuyler County Medical Society and the Medical Society of the State of New York.

Curtis N. Jameson, M.D., of Hilton, retired, died on August 22 at the age of eighty-two. Dr. Jameson graduated in 1902 from Rush Medical College. He was the first anesthesiologist at Rochester General Hospital and at the time of his death was an honorary member of the staff. Dr. Jameson was a member of the American Society of Anesthesiologists, Inc., the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Simon Loeb Shick, M.D., of Jamaica, died on August 18 at the age of fifty-four. Dr. Shick graduated in 1930 from Long Island College Hospital Medical School and interned at Jamaica and Lying-In Hospitals. He was an associate in obstetrics and gynecology at Jamaica Hospital and an assistant in obstetrics and gynecology at Queens General Hospital. Dr. Schick II was a Diplomate of the American Board of Obstetrics and Gynecology and a member of the Queens Gynecological Society, the Queens County Medical Society, the Medical Society of the

State of New York, and the American Medical Association.

Alfred E. Shipley, M.D., of Brooklyn, died on September 4 in the Baptist Home at the age of eighty-three. Dr. Shipley graduated in 1899 from Columbia University College of Physicians and Surgeons. From 1934 to 1937 he was Deputy Commissioner of Hospitals and in 1917 was secretary of the Health Department. Dr. Shipley, who was a former professor of preventive medicine and community health at the Long Island College of Medicine, was a member of the American Public Health Association, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

ANNOUNCEMENT

Notice to All A.M.A. Dues-Paying Members

The American Medical Association has inaugurated a new procedure for its dues-paying members: each member will now receive the *Journal of the American Medical Association*, *The AMA News*, *Today's Health*, PLUS one of the ten A.M.A. specialty journals. When paying your A.M.A. dues, please inform your county society of your choice of one of the following:

A.M.A. Archives of Dermatology
A.M.A. Journal of Diseases of Children
A.M.A. Archives of Industrial Health
A.M.A. Archives of Internal Medicine
A.M.A. Archives of Neurology
A.M.A. Archives of Ophthalmology
A.M.A. Archives of Otolaryngology
A.M.A. Archives of Pathology
A.M.A. Archives of General Psychiatry
A.M.A. Archives of Surgery

MEDICAL NEWS

Pediatric Section Elects Officers—The pediatric section of the Medical Society of the County of Kings has elected the following officers for the year 1959–1960: Abraham Gilner, M.D., president; Saul Starr, M.D., vice-president; Ben M. Zweifler, M.D., secretary; and Ernest Heffer, M.D., treasurer.

The pediatric section meets each second Wednesday of October, November, and January at 8:30 P.M. in the Basic Science Building, State University of New York, Clarkson Avenue at New York Avenue, Brooklyn.

Dermatologists Form New Society—A new society, to be known as the International Society for Tropical Dermatology, is now in the formation stage. An organizing committee composed of professor Aldo Castellani, M.D., F.R.C.P. (Eng.), Instituto de Medicina Tropical, Lisbon, Anthony Cipollaro, M.D., and Frederick Reiss, M.D., New York City, has been formed. Dr. Reiss has been named organizing secretary.

Charter membership consists of almost 800 dermatologists, pathologists, and microbiologists from various parts of the world.

A tentative meeting has been scheduled for 1963 in conjunction with the Congress of the International Association for Leprosy to be held in Rio de Janiero, Brazil.

For further information concerning the new society write to: Frederick Reiss, M.D., 870 Fifth Avenue, New York 21, New York.

Medical Film Available for Loan—The medical motion picture "Dynamics of Phagocytosis" received two awards for excellence from the Biological Photographic Association at its twenty-ninth annual meeting recently. Sponsored by the Pfizer Laboratories division of Chas. Pfizer & Company, Inc., the film illustrates the defensive action of living human blood cells against invading bacteria.

It was produced by Leo L. Leveridge, M.D., in collaboration with Armine T. Wilson, M.D., of the Alfred I. du Pont Institute, Wilmington, Delaware.

The twenty-eight-minute film received first prize in the professional teaching motion picture category. In addition, it won the Biological Photographic Association's Medical Education Award, presented jointly by the association and *Postgraduate Medicine* for medical photography of superior educational value.

Designed for viewing by physicians, medical students and other professional groups, the film is available on a loan basis through the Pfizer Medical Film Library, 267 West 25th Street, New York 1, New York.

Essay Prize Offered to Students—Students of medicine are invited to compete for the Osler Medal of the American Association for the History of Medicine. This prize was established to stimulate an interest in medical history among students of the medical schools of the United States and Canada and is awarded annually to the author of the best essay submitted to the Association.

Essays should not exceed 10,000 words in length. They should be submitted not later than April 1, 1960 to: Samuel X. Radbill, M.D., 7043 Elmwood Avenue, Philadelphia 42, Pennsylvania.

Physician Visits Rome—Howard T. Behrman, M.D., New York City, visited Rome during July and August as the official representative of the United States Committee of the World Medical Association to the Italian medical societies.

Dr. Behrman met with Dr. Raffaele Chiarolanza, president of the National Federation of Italian Medical Society of Rome. While in Rome he lectured on and demonstrated the use of several new dermatologic technics, including dermabrasion, at the San Gallicano Hospital for Skin Diseases. He was assisted by Dr. Ugo Granelli, director of the hospital.

American College of Chest Physicians Offers Essay Prize—The American College of Chest Physicians is offering three cash awards to winners of its 1960 prize essay contest. First prize winner will receive $500, second prize winner, $300, and third prize winner, $200. Each winner will also receive a certificate.

The contest is open to undergraduate medical students throughout the world. Essays may be written on any phase of the diagnosis and treatment of chest diseases (cardiovascular or pulmonary).

The contest closes on April 1, 1960. For application and further information write to: American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

Institute for Advancement of Medical Communication Receives Grant—The Institute for Advancement of Medical Communication, New York City, has been awarded a grant by the National Science Foundation for a study of "The Metabolism of New Scientific Information." The chief aim of this project is to investigate the processes by which new information resulting from cardiovascular and endocrine research becomes generally available to the scientific community. Richard H. Orr, M.D., executive director of the institute, will serve as principal investigator.

Physician Returns from Israel—Rieva Rosh, M.D., associate professor of radiology, New York University College of Medicine, has recently returned from Israel where she presented a series of lectures on head and neck tumors to the dental students of Jerusalem University and to the Dental Society of Jerusalem. While abroad Dr. Rosh also lectured in Rome and Nice.

Omissions Noted—Owing to a typographical error in the *1958 Transactions of the Section on Ophthalmology of the American Medical Association,* the name of Arthur J. Bedell, M.D., Albany, was not included in the list of recipients of the gold medal known as "The Prize in Ophthalmology."

Dr. Bedell received this award in 1952 and proper credit is hereby given him.

Medical Assistants' Association Meets—The organization of the New York State Medical Assistants' Association marks the first state-wide association of physicians' assistants in New York. The organizational meeting took place at the headquarters of the Medical Society of the State of New York, New York City.

Elected president of the new Association was Mrs. Dorothy Ross, Long Beach. Other officers elected were Mrs. Loretta Davern, Syracuse, vice-president; Mrs. Ruth Victor, Kenmore, president-elect; Miss Betty Brooks, Albany, treasurer; Mrs. Ileen West, Binghamton, recording secretary; and Mrs. Carol Castleberry, Newburgh, corresponding secretary.

Elected as delegates to the American Association of Medical Assistants were Mrs. Dorothy Ross, Long Beach, Mrs. Lynn Strunk, Valatie, and Mrs. Bette Kindlon, Albany.

Elected to the Board of Directors as councilors to represent the following districts were: First, Mrs. Joseph Malcolm, Bronx: Second, Mrs. Rita Vollmert, West Hempstead; Third, Miss Margaret Minnock, Albany; Fifth, Miss Catherine Rumpf, Syracuse; Sixth, Miss Toy North, Johnson City; Eighth, Miss Rita Grimm, Buffalo; and Ninth, Mrs. Barbara Pavlik, Newburgh.

New Booklet on Epilepsy Available Free—A new booklet *Epilepsy—Its Causes, Effects and Treatment* has been published by the Federal Association for Epilepsy.

The booklet is available free of charge. It was written by Virginia A. Duggins, M.D., and is designed to give the epileptic, his family, and friends an understanding of the condition and advice about treatment.

To obtain a copy write to the Federal Association for Epilepsy, Inc., 1729 F Street, N.W., Washington 6, D.C., and ask for the booklet by name.

Health Insurance Council Receives Award—The Medical Society of the State of New York has given a citation to the Health Insurance Council for "rendering an important service to physicians and their patients" through its work in simplifying health insurance claim forms. The citation was presented by Henry I. Fineberg, M.D., president of the State Society.

St. Clare's Hospital Has Tenth Anniversary—A week-long celebration marked the tenth anniversary of St. Clare's Hospital in Schenectady, September 13.

The following physicians who were on the original staff and who are still active at the hospital, received ten-year service pins: Drs. Mario Bonaquist, Joseph Cirincione, Robert Coolidge, Joseph DeBlase, Rudolph Deutl, Joseph Driscoll, W. A. Dunham, George Emerson, Jacob Frumkin, Frank Furlong, William E. Gazeley, George Gilbert, F. A. Groff, Daniel Hecker, Seymour Horwitz, Ralph Isabella, Harrison Karp, August B. Korkosz, James L. McGrane, Donald MacElroy, Frank Marting, Stephen C. Meigher, Dominick Mele, Kurt Meyerhoff, Joseph Naumoff, William C. Ostrom, Phillip Parillo, Arthur Penta, John Phillips, George A. Reich, Carl Runge, Nelson Rust, and Walter Ryon.

Also, Drs. Virgil Sager, Morris Shapiro, Joseph Slovak, Michael Slovak, Peter Sykowski, Louis P. Tischler, Richard Woodruff, Herbert Wright, and George Zippin.

Section Officers Named for Pan American Medical Association Congress—Harry E. Tebrock, M.D., medical director of Sylvania Electric Products, Inc., New York City, and president of the section on industrial medicine and surgery of the Pan American Medical Association, has announced the appointment of officers who will assist him in organizing and conducting the program of the section for the thirty-fifth anniversary congress of the Pan American Medical Association which will be held in Mexico City, May 3 to 11, 1960.

The following physicians from the New York area have been named to the council of the section:

Albany: Herman E. Hilleboe, M.D., State Health Commissioner; *Brooklyn:* Edwin J. Grace, M.D.; *Flushing:* Kenneth Stratton, M.D.; *Great Neck:* Raymond J. Murray, M.D. *Jamaica:* Otis B. Schreuder, M.D.; *New York City:* Samuel Belgorod, M.D., Michael M. Dacso, M.D., Merrill Eisenbud, M.D., David H. Goldstein, M.D., Leonard Greenberg, M.D., Albert S. Hyman, M.D., Arthur Master, M.D., John J. Poutas, M.D., George Saunders, M.D., Irving Tabershaw, M.D., William L. Wheeler, M.D., Richard E. Winter, M.D., and George Wolcott, M.D.; *Queens Village:* Sylvester Catalanello, M.D.; *Rochester:* James Sterner, M.D.; *Yonkers:* John Silson, M.D.; and *Watertown:* Robert McCausland, M.D.

Personalities

Awarded

Anthony C. Cipollaro, M.D., New York City, the annual Gold Medal Award from the Italian-American Charitable Society, Inc., of Boston.

Elected

Albert Salisbury Hyman, M.D., New York City, as president of the American College of Sports Medicine.

Relocated

Melvin M. Newman, M.D., Fresh Meadows, associate professor of surgery, State University of New York Medical Center, has assumed the duties of chief of surgery at National Jewish Hospital, Denver, Colorado.

Promoted

Col. James H. Kidder, MC, U.S.A.R. to the rank of Brigadier General . . . Harold Rifkin, M.D., New York City, to the position of senior attending physician at Montefiore Hospital.

Honored

Leona Baumgartner, M.D., New York City Commissioner of Health, with an honorary membership in the American Society of Dentistry for Children . . . Samuel Rosen, M.D., associate clinical professor of otolaryngology, Columbia University, and Ralph E. Snyder, M.D., dean, New York Medical College, as honorary fellows of the International College of Surgeons.

Appointed

Arthur C. DeGraff, M.D., professor of therapeutics, New York University, as assistant medical editor of *GP* magazine . . . Selig H. Katz, M.D., Delmar, as assistant director, State Health Department Bureau of Maternal and Child Health . . . Bernard A. Watson, M.D., Clifton Springs, reappointed by Governor Rockefeller as a member of the Saratoga Spring Commission.

Speakers

Edwin F. Daily, M.D., New York City, at the tenth annual session of the American Association of Medical Clinics, September 26 . . . W. B. Dickson, M.D., Utica, at the tenth annual session of the American Association of Medical Clinics, September 25 . . . Jules Hirsch, M.D., New York City, at a symposium on the role of vitamins and other nutrients in lipid metabolism, at Tulane University School of Medicine, October 16 . . . C. Barber Mueller, M.D., Syracuse, before the Medical Society of Jefferson County, September 15 . . . Margaret H. D. Smith, M.D., before the Pediatric section of the Medical Society of the County of Kings, October 14 . . . H. E. Tebrock, M.D., Douglaston, before the Argentine Society of Occupational Medicine . . . Bernard S. Wortis, M.D., New York City, before the staff of the Veterans Administration Hospital, Northport, Long Island, on September 11 . . . H. M. Zimmerman, M.D., New York City, at the thirty-fourth Connecticut Clinical Congress of the Connecticut State Medical Society and the Yale University School of Medicine, September 30.

Learn as if you were to live forever
Live as if you were to die tomorrow.—ISIDORE, ARCHBISHOP OF SEVELLE

MEDICAL MEETINGS

Public Health Sessions at Atlantic City

The eighty-seventh annual meeting of the American Public Health Association and meetings of related organizations will be held in Convention Hall, Atlantic City, October 19 through 23. The theme of the meetings is "Public Health Is One World."

Among the organizations holding sessions during the week will be the American School Health Association, American College of Preventive Medicine, American Association of Public Health Physicians, American Industrial Hygiene Association, Industrial Medical Association, National Health Council, Joint Commission on Mental Health and Illness, and the Public Health Cancer Association of America.

New Jersey Diabetes Association

The New Jersey Diabetes Association in cooperation with the New Jersey State Department of Health will present its seventh annual symposium on "Lipids and Diabetes" on Wednesday, October 21. The symposium will be held in the main auditorium, Gibraltar Building of the Prudential Insurance Company of America, 763 Broad Street, Newark, New Jersey.

Among the speakers at the symposium will be Herbert J. Kayden, M.D., research service, New York University Medical Division, Goldwater Memorial Hospital, Welfare Island.

Members of the American Academy of General Practice will receive three hours credit under category II for attendance. For further information contact: Arthur Krosnick, M.D., coordinator, Diabetes Control Program, State of New Jersey Department of Health, Trenton 25, New Jersey.

Metropolitan New York Chapter, American Medical Writers Association

Morris Fishbein, M.D., Chicago, president of the American Medical Writers Association, professor emeritus, University of Chicago and University of Illinois, and former editor of the *Journal of the American Medical Association,* will be the guest speaker at the meeting of the Metropolitan New York Chapter on Thursday, October 29, at the Auditorium, Memorial Hospital, New York City. His topic will be: "The Doctor Communicates."

Preceding Dr. Fishbein's address will be the annual business meeting of the Chapter, with Richard H. Orr, M.D., president, in charge.

Anyone interested is invited to attend the second part of the meeting to hear Dr. Fishbein's talk, which will begin at 8:30 P.M.

Mid-West Forum on Allergy

The Mid-West Forum on Allergy will hold its third annual meeting on October 31 and November 1, at the Sheraton-Blackstone Hotel, Chicago. The meeting is sponsored by the Chicago Society of Allergy. For further information write to: Leon Unger, M.D., 185 North Wabash Avenue, Chicago 2, Illinois.

American Fracture Association

The American Fracture Association will hold its twentieth annual meeting, November 1 through 4, at the Roosevelt Hotel, New Orleans, Louisiana. Attendance at the meeting will be acceptable for category II credit in the American Academy of General practice.

A feature of the meeting will be a postgraduate course in fractures to be held at the Tulane University School of Medicine. Attendance at the course will be acceptable for category I credit in the American Academy of General Practice.

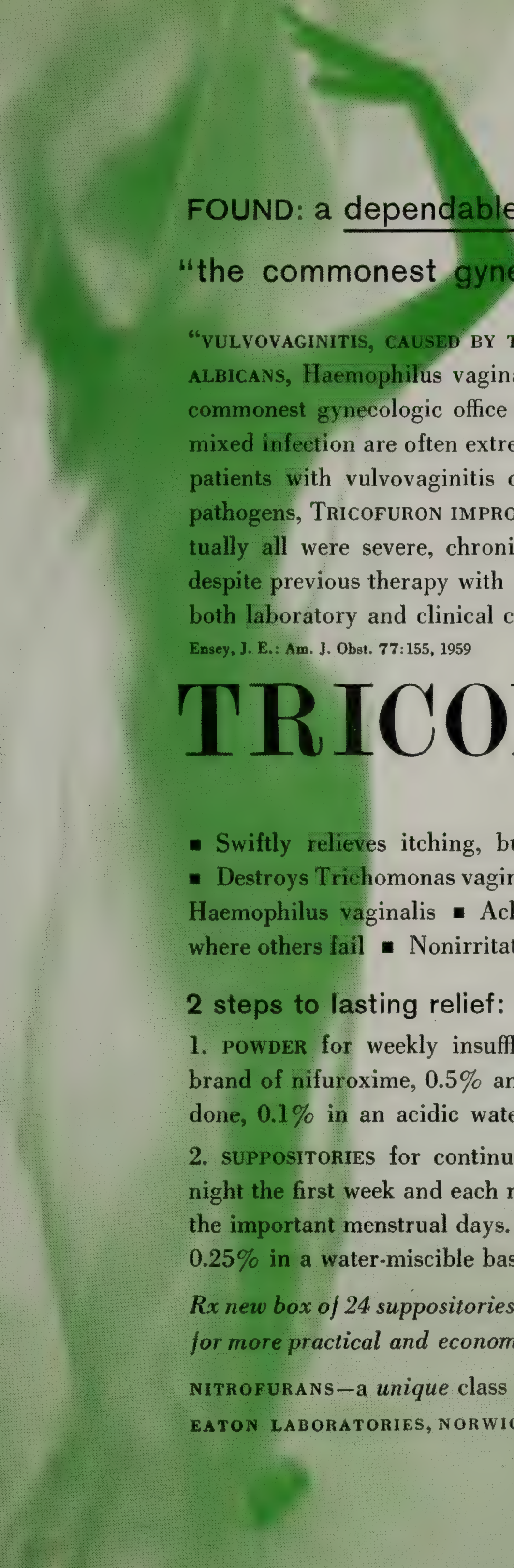
For information concerning the meeting write to: H. W. Wellmerling, M.D., secretary-general, The American Fracture Association, 610 Griesheim Building, Bloomington, Illinois.

Symposium on Cancer at M. D. Anderson Hospital and Tumor Institute

The University of Texas M. D. Anderson Hospital and Tumor Institute will hold its fourteenth annual symposium on fundamental cancer research, "Cell Physiology of Neoplasia," February 25 through 27, 1960.

Further information may be obtained by writing: Editorial Office, The University of Texas M. D. Anderson Hospital, Texas Medical Center, Houston 25, Texas.

The cruelest lies are often told in silence.—ROBERT LOUIS STEVENSON



FOUND: a dependable solution to

"the commonest gynecologic office problem"

"VULVOVAGINITIS, CAUSED BY TRICHOMONAS VAGINALIS, CANDIDA ALBICANS, Haemophilus vaginalis, or other bacteria, is still the commonest gynecologic office problem . . . cases of chronic or mixed infection are often extremely difficult to cure." Among 75 patients with vulvovaginitis caused by one or more of these pathogens, TRICOFURON IMPROVED cleared symptoms in 70; virtually all were severe, chronic infections which had persisted despite previous therapy with other agents. "Permanent cure by both laboratory and clinical criteria was achieved in 56. . . ."

Ensey, J. E.: Am. J. Obst. 77:155, 1959

TRICOFURON®

Improved

- Swiftly relieves itching, burning, malodor and leukorrhea
- Destroys Trichomonas vaginalis, Candida (Monilia) albicans, Haemophilus vaginalis
- Achieves clinical and cultural cures where others fail
- Nonirritating and esthetically pleasing

2 steps to lasting relief:

1. POWDER for weekly insufflation in your office. MICOFUR®, brand of nifuroxime, 0.5% and FUROXONE®, brand of furazolidone, 0.1% in an acidic water-dispersible base.

2. SUPPOSITORIES for continued home use each morning and night the first week and each night thereafter—especially during the important menstrual days. MICOFUR 0.375% and FUROXONE 0.25% in a water-miscible base.

Rx new box of 24 suppositories with applicator for more practical and economical therapy.

NITROFURANS—a *unique* class of antimicrobials

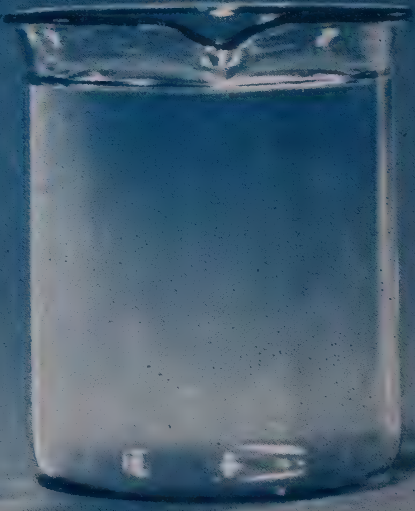
EATON LABORATORIES, NORWICH, NEW YORK

avoid the risk of insoluble, irritating aspirin particles

Chief among the drawbacks to aspirin usage is gastric intolerance. This ranges from mild upset and "heartburn" to severe hemorrhagic gastritis.[1-10] Studies performed in conjunction with gastrectomy[4,5] and gastroscopy[2] have shown insoluble aspirin particles firmly adherent to the gastric mucosa and imbedded between rugae. Reactions varying from mild hyperemia to erosive gastritis have been reported to occur in the areas immediately surrounding these adherent particles.[2,4,5] This is reported to be particularly true in patients with peptic ulcer.[4]

CALURIN is the freely soluble, stable calcium aspirin complex. Its high solubility forestalls gastric irritation or damage

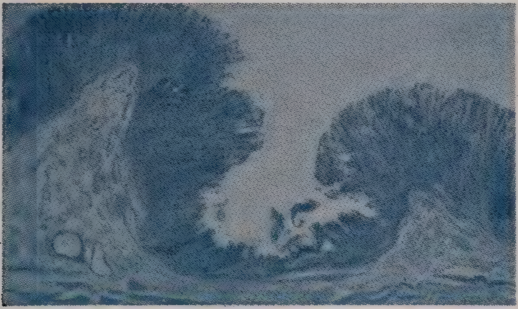
Regular aspirin crystals 24 hours after being mixed into water.



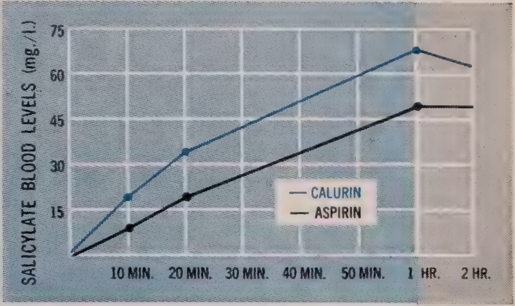
Calurin crystals in solution one minute after being mixed into water.

CALURIN*

STABLE SOLUBLE CALCIUM-ACETYLSALICYLATE-CARBAMIDE



Particle-induced ulceration — section through lesion found in gastrectomy specimen. An aspirin particle was found firmly imbedded in this undermined erosion. Such lesions may be associated with the relative insolubility of aspirin, which remains in particulate form after dispersion in gastric contents.



Calurin, being freely soluble, is promptly available for absorption into the systemic circulation. Salicylate blood levels in 12 subjects receiving both Calurin and plain aspirin were found to rise more than twice as high within ten minutes following Calurin. Also, these levels persisted higher for at least two hours.[11]

CALURIN is the aspirin of choice, especially when high-dosage, long-term therapy is indicated:

1 High solubility forestalls gastric irritation or damage. This advantage is of special importance in arthritis and other conditions requiring high-dosage, long-term therapy.

2 Produces high salicylate blood levels rapidly for prompt analgesic, anti-pyretic, anti-arthritic effect.

3 Sodium-free — for safer long-term therapy.

4 Flavored: can be chewed or dissolved in the mouth without water if desired — an advantage for patients requiring aspirin administration during the night and for pediatric patients.

Dosage: Each tablet of Calurin is equivalent to 300 mg. (5 gr.) of acetylsalicylic acid. For relief of pain and fever in adult patients, the usual dose of Calurin is 1 to 3 tablets every 4 hours, as needed; in arthritic states, 2 or 3 tablets 3 or 4 times daily; in rheumatic fever, 3 to 5 tablets 4 or 5 times daily. For children over 6 years, the usual dose is 1 tablet every 4 hours; for children 3 to 6 years, ½ tablet every 4 hours, as required. Not recommended for children under 3.

REFERENCES: 1. Waterson, A. P.: Aspirin and gastric haemorrhage, Brit. M. J. **2**:1531, 1955. 2. Douthwaite, A. H., and Lintott, G. A. M.: Gastroscopic observation of the effect of aspirin and certain other substances on the stomach, Lancet **2**:1222, 1938. 3. Editorial Comments: The effect of acetylsalicylic acid (aspirin) on the gastric mucosa, Canad. M. A. J. **80**:47, 1959. 4. Muir, A., and Cossar, I. A.: Aspirin and ulcer, Brit. M. J. **2**:7, 1955. 5. Muir, A., and Cossar, I. A.: Aspirin and gastric haemorrhage, Lancet **1**:539, 1959. 6. Schneider, E. M.: Aspirin as a gastric irritant, Gastroenterology **33**:616, 1957. 7. Bayles, T. B., and Tenckhoff, H.: Salicylate therapy in rheumatic diseases, Scientific Exhibit, Ann. Mtg. A. M. A., San Francisco, Calif., June, 1958. 8. Batterman, R. C.: Comparison of buffered and unbuffered acetylsalicylic acid, New Eng. J. M. **258**:213, 1958. 9. Cronk, G. A.: Laboratory and clinical studies with buffered and nonbuffered acetylsalicylic acid, New Eng. J. M. **258**:219, 1958. 10. Editorial: Aspirin plain and buffered, Brit. M. J. **1**:349, 1959. 11. Smith, P. K.: Plasma concentration of salicylate after the administration of acetylsalicylic acid or calcium acetylsalicylate to human subjects, Report submitted to Smith-Dorsey from Dept. of Pharmacology, Geo. Washington Univ. School of Medicine, Washington, D. C., Sept. 5, 1958.

*TRADEMARK

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Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

Physicians' Home

WE OF the Woman's Auxiliary to the Medical Society of the State of New York take great pride in the Physicians' Home, first, because our New York State physicians had the foresight to see the need of old-age assistance, such as is given by Physicians' Home, forty years before the Forand Bill was proposed, and second, because the founders of the Home and those who administer its funds have always been equally concerned with the welfare of physicians' wives and widows who have found themselves in indigent circumstances.

Since this year, 1959, is the fortieth anniversary of the founding of Physicians' Home, we of the Woman's Auxiliary salute the men who created the plan and put it into effect and also salute all those who have worked so hard during the years to make possible a "ruby anniversary" of celebration. And we wish to express our gratitude for the privilege of being included among those who help in maintaining the funds used by Physicians' Home in its work.

The history of Physicians' Home has been chronicled many times: how on Thanksgiving Day, 1918, the plight of an elderly physician came to the attention of the late Wolff Freudenthal, M.D.; how the certificate of incorporation was granted on June 4, 1919; how funds soon began to accumulate; how in 1923 an actual physical home was established at Caneadea, New York, through the generosity of the late Stephen B. Mountain, M.D.; how this became impractical and the decision to maintain the indigent physician in his own home, in his own community, among his own friends was made; how the Medical Society of the State of New York has cooperated in submitting names for the Home's board of directors and in permitting voluntary assessments to be listed on dues invoices.

This year, all over the Empire State, Auxiliary members are busy making plans to raise funds for the Physicians' Home. We are all working toward one goal—to help our aged physicians who are in need. The national Auxiliary president has listed "care for the aged" as a priority project, and our own State Auxiliary president has put "help raise funds for Physicians' Home" as one of our priority projects. Fund-raising activities being organized include square dances, dinner dances, raffles, card parties, fashion shows, garden tours, house tours, progressive luncheons, and brunches.

In Orange County the Auxiliary members are cooperating even further by ascertaining the names of physicians being helped by Physicians' Home and visiting them periodically, taking small gifts and articles to make their days happier.

Income of Physicians' Home is derived largely from voluntary contributions from members of the Medical Society of the State of New York and from individuals. Since 1947, our woman's auxiliaries have contributed a total of $20,181, the greatest amount being given by the Kings County Auxiliary, $2,900. Donations are also received from interested lay persons, frequently in the form of memorial gifts and bequests.

On this fortieth anniversary, we Auxiliary members are hoping to better our last year's donation of $2,370.75; we have asked each county auxiliary to appoint a Physicians' Home chairman and to devote one meeting to this cause. And further, we give our recognition, our devotion, and our loyalty to all who are guests of the Home and to all who work so hard in its program.

MRS. ERNEST E. SANTEMMA, *Chairman*
Physicians' Home

500 Front Street
Hempstead, New York

That man who lives for self alone, lives for the meanest mortal known.—JOAQUIN MILLER

BOOKS RECEIVED

(The following books were received during the month of September, 1959)

Clinical Coordination of Anatomy and Physiology. By Martha Pitel, Ph.D., and Mildred Schellig, M.D. Octavo of 320 pages, illustrated. New York, Springer Publishing Company, Inc., 1959. Paper, $5.50.

Synopsis of Ophthalmology. By William H. Havener, M.D. Duodecimo of 288 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $6.75.

An Introduction to Child Psychiatry. By Stella Chess, M.D. Octavo of 254 pages. New York, Grune & Stratton, 1959. Cloth, $5.25.

Synopsis of Ear, Nose, and Throat Diseases. By Robert E. Ryan, M.D., William C. Thornell, M.D., and Hans von Leden, M.D. Duodecimo of 383 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $6.75.

Anesthesia For Infants and Children. By Robert M. Smith, M.D. Quarto of 418 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $12.

The Care of Minor Hand Injuries. By Adrian E. Flatt, M.D. Quarto of 266 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $9.50.

Voyage from Lesbos. By Richard C. Robertiello, M.D. Octavo of 253 pages. New York, The Citadel Press, 1959. Cloth, $4.00

The Kinetics of Cellular Proliferation. Edited by Frederick Stohlman, Jr., M.D. Quarto of 456 pages, illustrated. New York, Grune and Stratton, 1959. Cloth, $5.75.

Recent Advances In Cardiology. By Terence East, F.R.C.P., and Curtis Bain, F.R.C.P. Fifth edition. Octavo of 421 pages, illustrated. Boston, Little, Brown and Company, 1959. Cloth, $10.

The Surgeon and the Child. By Willis J. Potts, M.D. Octavo of 255 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $7.50.

[Continued on page 3858]

THE MOUNT SINAI HOSPITAL
NEW YORK 29, NEW YORK

POSTGRADUATE COURSES IN CLINICAL MEDICINE

given in affiliation with

COLUMBIA UNIVERSITY
JANUARY through JUNE, 1960

COURSES FOR GENERAL PRACTITIONERS

Electrocardiography
Jan. 11 to 22; Mon. to Fri., 9 to 12 noon
Recent advances in cardiovascular disease
Jan. 25 to Feb. 5; Mon. to Fri., 9 to 12 noon
Clinical Cardiology
Feb. 2 to Apr. 5; Tue., 2 to 4 p.m.
Laboratory methods in hematology
Feb. 15 to Mar. 10; Mon. to Thur., 1 to 5 p.m.
Heart disease and circulatory dynamics
Feb. 16 to Apr. 19; Tue., 3 to 5 p.m.
Chemotherapy of infections and parasitic diseases
Mar. 1 to 17; Tue. & Thur.; 4:30 to 6 p.m.
Roentgen diagnosis of lesions of the gastrointestinal tract, gall bladder and pancreas
Mar. 14 to 22; Mon. to Fri.; 2:30 to 4 p.m.
Differential diagnosis in radiology of the chest
Mar. 14 to May 16; Mon.; 4:45 to 6:15 p.m.
Clinical neurology
Mar. 28 to Apr. 1; Mon. to Fri.; 10 to 1; 2 to 5 p.m.
Laboratory methods in blood banks
Mar. 29 to May 3; Tue.; 1 to 5 p.m.
Differential diagnosis in gastrointestinal radiology
Mar. 29 to May 31; Tue.; 5 to 6 p.m.
Gastroenterology
Apr. 4 to 8; Mon. to Fri.; 9 to 12; 2 to 5 p.m.
Office proctology
Apr. 14 & 15; Thur. & Fri.; 10 to 12; 1 to 4 p.m.

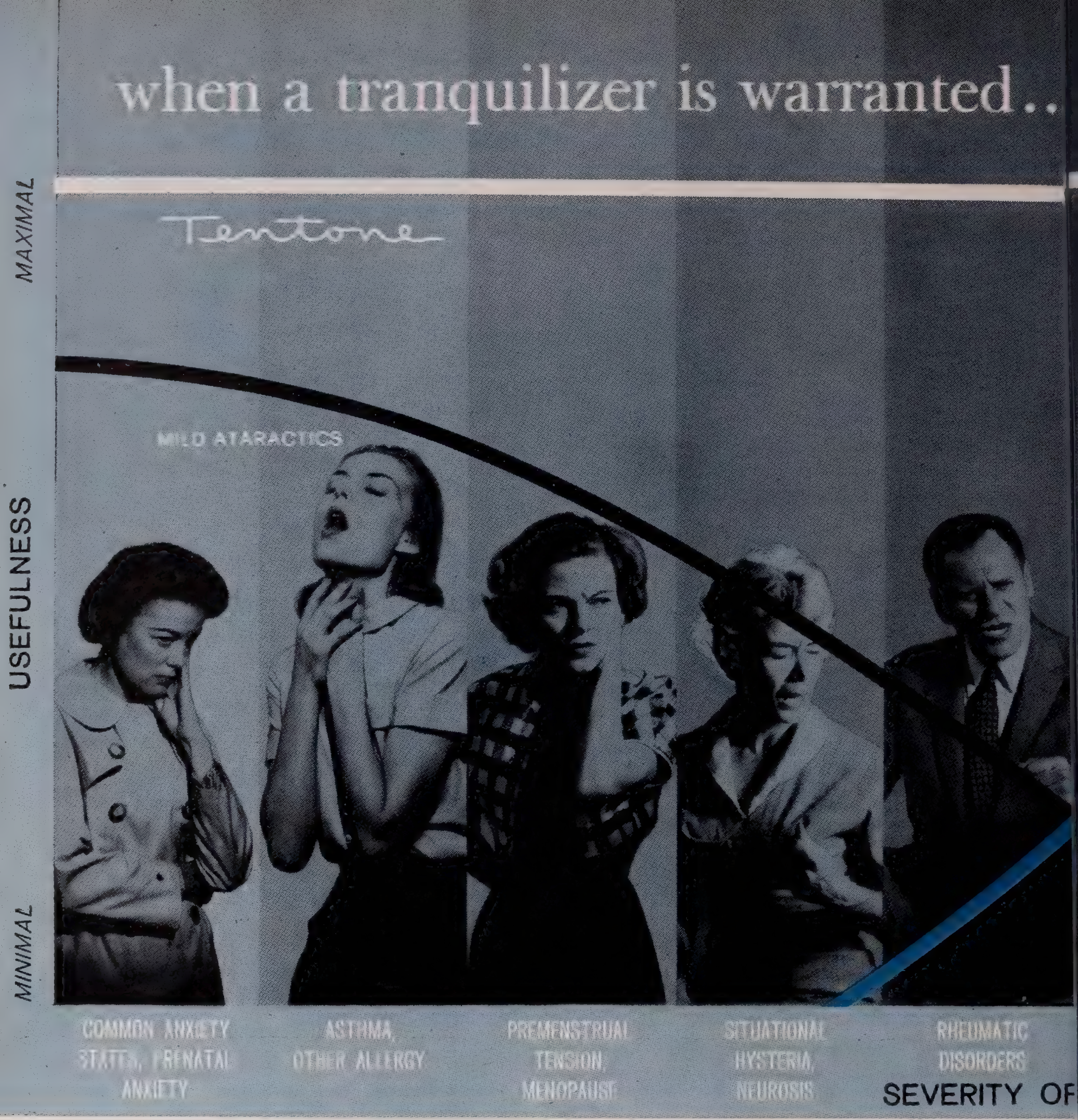
COURSES FOR SPECIALISTS

Combined course in indirect laryngoscopy & voice rehabilitation, and audiology
Note: These two courses may be taken together or as two separate courses.
Feb. 8 to 13; Mon. to Sat.; 9 to 5 p.m.
The use of the Schepens' ophthalmoscope
Mar. 8 to 24; Tue. & Thurs.; 2 to 4 p.m.
Trans-meatal (Endaural) surgery
Mar. 28 to Apr. 8; Mon. to Fri.; 9 to 6 p.m.
Histopathology of the eye
Apr. 6 to 29; Wed. & Fri.; 4 to 6 p.m.
Mobilization of stapes
Apr. 18 to May 6; Mon. to Fri.; 9 to 6 p.m.
Radium Therapy
May 17 to June 21; Tue.; 5 to 7 p.m.
Megavoltage Therapy
May 19 to June 23; Thur.; 5 to 7 p.m.
Clinical use of radioactive isotopes
June 6 to July 1; Mon. to Fri.; 9 to 12; 1 to 5 p.m.
Rhinoplasty and otoplasty
July 16 to 29; Mon. to Sun.; 9 to 6 p.m.

COURSES OF WHICH DATES ARE TO BE ARRANGED

Use of radioactive iodine
Mar. to May; Mon., Tue., Thu., Fri., 1 to 4 p.m.
Radiotherapy
a 6-month or 12-month course (full time).

For application forms and information, address the Registrar for Postgraduate Medical Instruction, The Mount Sinai Hospital, Fifth Avenue and One-Hundredth Street, New York 29, N. Y.



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TENTONE Methoxypromazine Maleate is a new, distinctive phenothiazine...highly active...for general use in mild and moderate emotional and psychosomatic disorders.

TENTONE elicits a striking, positive calming response[1,2]...with marked reduction of psychic disorientation, and low risk of blood, liver or other organic toxicity and intolerance.[1-4]

TENTONE parallels the weaker ataractics in low incidence of side effects. Freedom from induced depression is apparently even greater.[5]

TENTONE provides a broadly adaptable dosage range (30 to 500 mg. daily) to permit maximum control in cases of varying severity.

TENTONE is also indicated to relieve emotional stress in surgical, obstetric and other hospitalized patients.

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Dosage: Mild to moderate cases—average starting dose, one 10 mg. or one 25 mg. tablet three or four times daily. *Moderate to severe*—average starting dose, one 50 mg. tablet four times daily. *Supplied:* 10 mg., 25 mg., and 50 mg. tablets.

1. Bodi, T., and Levy, H.: Clinical report, cited with permission. 2. Wetzler, R. A., and Phillips, R. M.: Clinical report, cited with permission. 3. Prigot, A.: Clinical report, cited with permission. 4. Gosline, E., *et al.: Am. J. Psychiat.* 115:939 (April) 1959. 5. Turvey, S. E. C.: Clinical report, cited with permission.

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Lederle

[Continued from page 3855]

Combined Textbook of Obstetrics and Gynaecology. Edited by Dugald Baird, M.D. Sixth edition. Quarto of 936 pages, illustrated. Edinburgh, E. & S. Livingstone Ltd., (Baltimore, The Williams and Wilkins Company), 1957. Cloth, $15.

A Synopsis of Anaesthesia. By J. Alfred Lee, D.A. Fourth edition. Duodecimo of 616 pages, illustrated. Baltimore, The Williams and Wilkins Company, 1959. Cloth, $6.50.

Early Diagnosis. Edited by Henry Miller, M.D. Octavo of 400 pages. Baltimore, The Williams and Wilkins Company, 1959. Cloth, $6.50.

Color Atlas and Management of Vascular Disease. By William T. Foley, M.D., and Irving S. Wright, M.D. Quarto of 170 pages, illustrated. New York, Appleton-Century-Crofts, Inc., 1959. Cloth, $18.

BOOKS REVIEWED

Penicillin. By Harold L. Hirsh, M.D., and Lawrence E. Putnam, M.D. Octavo of 148 pages. New York, Medical Encyclopedia, 1958. Cloth, $4.00.

This contains a review of the diseases which respond to penicillin. There is mention of allergic responses but there is no reference to penicillinase. Therefore it is felt that this book although a good guide to the diseases which respond to penicillin and a guide to the dosage schedule used, may not be complete or up to date.

The rapidly changing picture of the pattern of responses to antibiotic therapy makes it difficult to fix the therapy in the form of a text.—Theodore M. Feinblatt

Physical Diagnosis. The History and Examination of the Patient. By John A. Prior, M.D., and Jack S. Silberstein, M.D. Octavo of 388 pages, illustrated. St. Louis, The C. V. Mosby Co., 1959. Cloth, $7.50.

This is a well-balanced volume with many admirable features. The type and paper are good and the illustrations are outstanding The section on "History Taking" is very complete and well written. Would that more space were given to a consideration of doctor-patient relationship.

The chapters on physical diagnosis are well written by specialists in the various fields and are uniformly complete, interestingly presented with sufficient clinical material to make interesting study for the student as well as experienced practitioner. There are several chapters that are outstandingly good.

One might take exception to or amplify several statements, for example, "If any abnormality is noted by digital examination, sigmoidoscopy is indicated." Certainly, in certain age groups, sigmoidoscopy is indicated as part of a routine physical examination whether or not the rectal examination is normal.

A section on examination of the geriatric patient might be a worth-while addition to this volume. With our aging population, it is just as important as a chapter on the examination of the pediatric patient.—Morris Zuckerbrod

Difficult Diagnosis. By H. J. Roberts, M.D. Octavo of 913 pages, illustrated. Philadelphia, W. B. Saunders Co., 1958. Cloth, $19.

The author, whose first book this is, is a practicing physician of considerable experience in practice who is obviously well read, medically and generally. His aim has been to aid the physician in the differential diagnosis of obscure illnesses.

There is a long section of general discussion; a section of useful diagnostic procedures; an atlas

[Continued on page 3860]

in Mexico,
it's called the 'turista' or 'Montezuma's revenge'

diarrhea by any name

GASTROENTERITIS
BACILLARY DYSENTERY
PARADYSENTERY
SALMONELLOSIS
DIARRHEA OF THE NEWBORN
NONSPECIFIC DIARRHEA
"SUMMER COMPLAINT"

usually responds rapidly to

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NEOMYCIN-SULFASUXIDINE®-KAOLIN-PECTIN SUSPENSION

for *rapid* relief of all diarrheas—regardless of etiology

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Neomycin—rapidly bactericidal against most intestinal pathogens, but is relatively ineffective against such diarrhea-causing organisms as Shigella.

SULFASUXIDINE—an ideal adjunct to neomycin because it is highly effective against Shigella and certain other neomycin-resistant organisms.

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[Continued from page 3858]

of systemic dermadromes, consisting of exceptionally well-selected and well-produced pictures from the literature.

This reviewer found the book accurate and interesting. It is, however, diffusely written and is in need of lightening and shortening. The reader will have to apply himself to find the material he needs but by following the author's instructions, he can do so. Condensing the book would improve its usefulness and reduce its present high price.—Milton Plotz

Group Processess. Transactions of the Fourth Conference, October 13, 14, 15 and 16, 1957, Princeton, N. J. Edited by Bertram Schaffner, M.D. Octavo of 266 pages. New York, Josiah Macy, Jr. Foundation, 1959. Cloth, $4.50.

The first subject discussed in this book is "The Impact of Game-Ingredients on Children's Play Behavior." A game called "beetle" is described and analyzed in terms of what children get out of it; the factors of aggression and hostility.

There is an assessment of frustration and gratification potentials. Other subjects include implications for our current models of personality; group size, interaction, and structural environment: and the role of aggression in group formation.

Inasmuch as the participants represent various scientific fields including psychiatry, physiology, ethnology, anthropology, and psychology among others, the reader is enabled to gain an insight into each subject from various viewpoints.—Stanley S. Lamm

Technic and Practice of Psychoanalysis. By Leon J. Saul, M.D. Octavo of 244 pages. Philadelphia, J. B. Lippincott Co., 1958. Cloth, $8.00.

This volume, dedicated to the author's patients and students, is a publication about psychoanalytic treatment. Dr. Saul, professor of clinical psychiatry, Medical School of the University of Pennsylvania, has been a thorough-going student and practitioner of psychoanalysis for many years. He speaks with authority expressed with enviable clarity in laying bare the technic of modern psychoanalysis.

The contents are divided into two parts: "Approach—What Should Be Accomplished," and "Practice—How to Accomplish Therapeutic Goals."

Herein one can find the modus operandi of the analyst in helping the individual patient find amelioration of various personality and neurotic problems. The general practitioner as well as the psychiatrist, sociologist, social worker, and others who have obtained or seek analysis may find herein a wealth of material which throws pertinent light on how disordered childish motivations have made for varying degrees of personality malfunction in later years. It ends with a note of prevention gleaned through psychoanalytic treatment. Emphasis is placed upon the practical aspects of this method of treatment.—Frederick L. Patry

The Principles and Practice of Medicine. A textbook for students and doctors. Fourth edition. By Sir Stanley Davidson, M.D. Octavo of 1,067 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $8.00.

This edition represents an attempt on the part of the author to delete from the third edition material which was considered redundant. It cannot be considered a reference book for anyone other than the busy general practitioner who needs a quick reference as a guide. The author has made many sacrifices in the attempt to obtain brevity. In many areas, therapeutic procedures are simply mentioned.

It is perhaps unfortunate that this text was written just prior to the release of many of the newer therapeutic measures which have come upon the medical scene within the past five years. As a compendium of the practice of medicine, it has a place on the shelf of the busy general practitioner. Though few in number, the colored plates are excellently illustrative.—Irving Greenfield

Surgery of the Prostate. By Henry M. Weyrauch, M.D. Octavo of 535 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $15.

Surgery of the Prostate is a complete text of all the methods used in surgical treatment of the prostate. This is of particular interest as no similar text in English has been published recently. It will be of increasing interest as disorders of the prostate must assume an increasingly greater part of clinical practice in the future. The author, Dr. Henry Weyrauch, is well qualified to present this material as he has been and is professor of urology at Stamford, a busy clinician, and an able experimentalist.

The text is well written and well illustrated. In the main it fulfills its aim of presenting all currently used methods of prostatic surgery without personal preference; however, enough guidance from personal experience is given which will benefit the reader. Other chapters describe the complications and the general hazards of surgery of the prostate. The only minor criticism that can be made is that references which are cited are not included in a bibliography.

The resident surgeon will find this text valuable assistance not only in obtaining advice as to performance of surgery but also in obtaining proper orientation as an excellent review of the history of each operation presented. This leads to an appreciation of present technic.

The text will also serve to orient physicians who are treating patients who are awaiting or contemplating prostatic surgery and those physicians viewing the same fate with apprehension. Those already qualified in urology will find the text interesting and useful mainly as an expression of Dr. Weyrauch's experience.

The book is willingly recommended.—Sidney R. Weinberg

Personality Change and Development. By Molly Harrower, Ph.D. Octavo of 383 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $10.

In this book, the author attempts to evaluate what changes take place in the test responses of some 4,000 individuals to a standard battery of projective technics. These individuals were retested over a period of fifteen years and the results were compared with the clinical assessment of the therapists involved. From the findings certain interesting deductions are made. It appears that changes in the test findings parallel clinical improvement. The book contains copies of many work sheets with detailed analyses of the findings in the individual cases studied. It is recommended primarily for clinical psychologists interested in the follow-up of patients who undergo therapy.—Alexander Levine

Psychological Stress. By Irving L. Janis. Octavo of 439 pages. New York, John Wiley & Sons, Inc., 1958. Cloth, $6.95.

The author is associate professor of psychology at Yale University. He received his psychoanalytic training at the New York Psychoanalytic Institute and his psychologic training at Columbia University. He is therefore well qualified to present the present material from both standpoints.

He has long interested himself in the psychoanalytic and behavioral aspects of surgical patients and this book is the outcome of intensive and thorough investigation on selected surgical patients on the wards of a large general hospital. He subjected them to a personal, careful investigation prior to and after their operation. The patients were studied from the standpoint of their responses to stressful situations, anticipation of bodily harm, threat to life, fear of pain, etc. This was followed-up by a similar study of their reactions following the operation.

In addition to this personal interview the author sent out questionnaires to several hundred young

[Continued on page 3862]

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[Continued from page 3861]

men who had recently undergone surgical procedures.

The study purported to show how people feel, think, and behave at times when they are facing the threat of pain, serious injury, or death. There has long been a need for such an evaluation. However, until very recently there has been no authoritative knowledge concerning these reactions. The author has done an excellent job in filling in the gaps in our knowledge in this field. Physicians and nurses who are in any way concerned with patients who are to undergo surgery will benefit a great deal from carefully studying the contents of this book.—Joseph L. Abramson

The Road to Emotional Maturity. By David Abrahamsen, M.D. Duodecimo of 388 pages. Englewood Cliffs, N J., Prentice-Hall, Inc., 1958. Cloth, $4.95.

The author, a psychoanalyst of note, brings to the lay reader a gold mine of self-help promoting better understanding and management of the motivational roll of emotions pertaining to problems of adjustment. The unconscious mind is given major prominence although conscious intellection is also capitalized in achieving a better understanding of how one got to be troubled with a wide variety of problems which could beset one's life journey.

The contents are divided into three parts: Part 1, "Looking Inward for Greater Awareness," reviews life experiences which beset one from birth to the years of maturity. The great importance of life conditionings during the formative years in setting the personality pattern and its probable stability related thereto is stressed.

Part 2, "Changing Your Inner Life for Emotional Comfort," throws light on how one might measure and apply knowledge especially toward the choosing of a mate and marriage.

Part 3, "Looking Forward for Emotional Comfort," focusses upon family formation, including a chapter on "The Art of Love in Marriage." "The Foundation for Your Child's Healthy Emotional Growth" and parent-child relationships will be found of particular interest.

The book is primarily concerned with "the normal man" and how normal problems of frustration, discontent, conflict, fear, hostility, and guilt might be better appreciated and managed in order that emotional maturity might be the prevailing achievement.

The busy practitioner can find in this volume a wealth of psychoanalytic facts and factors which could be helpful in furthering the understanding not only of himself but of others he obligates himself to serve.—Frederick L. Patry

Treatment of Cancer and Allied Diseases. Vol. III. Tumors of the Head and Neck. Edited by George T. Pack, M.D., and Irving M. Ariel, M.D. Octavo of 781 pages, illustrated. New York, Paul B. Hoeber, Inc., 1959. Cloth, $30.

This volume is a complete study of all tumors of the head and neck exclusive of brain tumors. As in the preceding volumes, the 70 contributing authors, from all parts of the world have written complete and concise discussions of each tumor.

Surgical and radiation therapy are discussed in adequate detail. There is an excellent chapter on reconstruction surgery. The discussion of end results with various technics is particularly satisfactory.

The illustrations are numerous; the bibliography is complete. All in all, the editors deserve the highest commendation for making available in one volume such an extensive résumé of the subject.

The book should be a part of every hospital library. It will be highly appreciated by physicians interested in tumor therapy.—Emanuel Mendelson

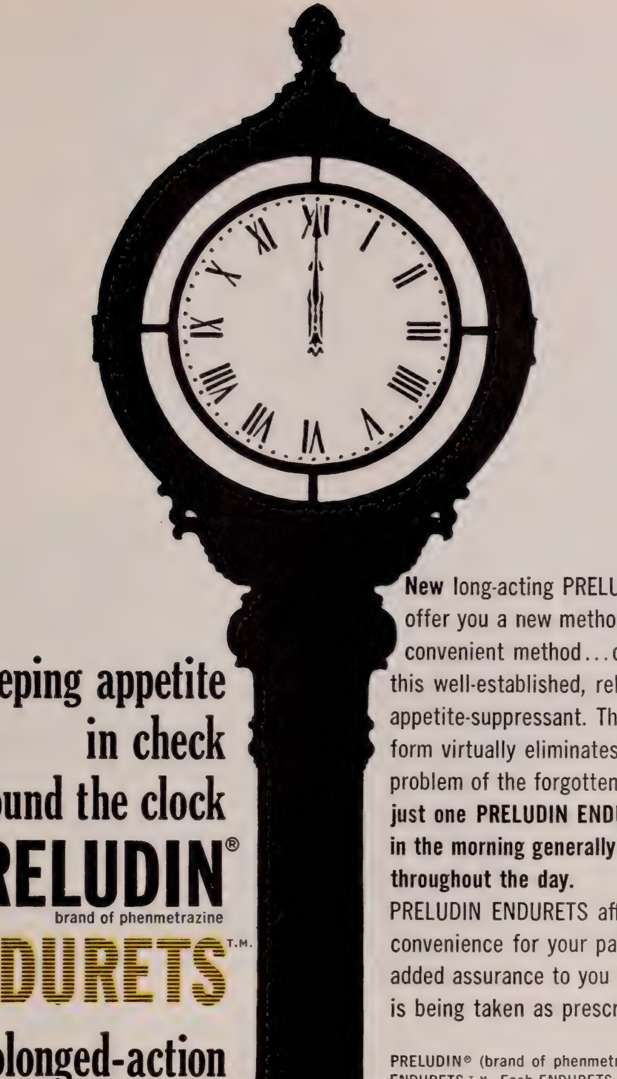
Diagnostic Anatomy. By Weston D. Gardner, M.D. Octavo of 376 pages, illustrated. St. Louis, The C. V. Mosby Co., 1958. Cloth, $10.

This book represents a compromise between a book on physical diagnosis and a very superficial book on human anatomy. It is designed primarily as a quick reference source for the intern, resident, or practicing physician who is not primarily directed toward surgery. How well it fulfills this function can perhaps be evaluated best by the group toward which the book is aimed but any reader is immediately struck by the fact that the entire book of about 350 pages contains only 20 illustrations all of which are the outline type. It would seem that much more illustrative material and more detailed drawings would have saved many words in the text and would make the book of much greater value to all readers including the practicing physician.

On the positive side the book is very readable and does a good job in emphasizing topographic anatomy. The relationships between the body surface and the deep structures are all too often presented in standard anatomy texts on the basis of the condition found in cadavers and often fail to point out clearly that these relationships may be quite different in the living body and also differ considerably from one individual to another.

The chapter on the general constitution and aging of the body is very interesting and informative and is perhaps an area where even more emphasis can be placed. The various types of body build

[Continued on page 3864]



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[Continued from page 3862]

and how they change in normal aging is a field of study in itself which is too often overlooked although its importance in helping the physician distinguish between normal aging processes and pathologic processes is self-evident.

Dr. Gardner should be commended for undertaking a very difficult job which will certainly in part fulfill a need for concise practical anatomy for nonsurgical practitioners but the reviewer does feel that additional illustrations in subsequent editions would be of considerable value.—GEORGE B. TALBERT

The Family Medical Encyclopedia. By Justus J. Schifferes, Ph.D. Duodecimo of 617 pages, illustrated. Boston, Little, Brown & Co., 1959.

The author of this volume is a layman with considerable experience and skill in medical writing. The entire manuscript was reviewed and obviously approved by Austin Smith, M.D., a physician with long experience in the same field.

The result is a concise, generally well-written collection of items, alphabetically arranged, concerned with medical questions which the average person is likely to ask. It also provides a useful glossary of medical terms for handy reference.

The section on fat seems to present a point of view with which the reviewer is at odds and needs at least a few balancing sentences. There is also no reference to saturated and unsaturated fats, terms which the intelligent reader is likely to encounter in reading the newspapers in 1959. With this exception, the material is accurate and up to date and the book can be recommended.—MILTON PLOTZ

Clinical Epidemiology. By John R. Paul, M.D. Duodecimo of 291 pages, illustrated. Chicago, The University of Chicago Press, 1958. Cloth, $5.00.

This wonderful little volume—timely as the 49th state, to which it pays indirect homage—ably fulfills its mission of alerting students and practitioners to the current, systematized reemphasis of an age-old perspective. As either a special discipline or a generic, interdisciplinary point of view, epidemiology is here formally and convincingly identified as a vital component of medicine—a sine qua non for the full understanding of the biology of health and disease. The fundamentals of this type of reasoning might possibly have been presented succinctly, but they could scarcely have been presented more effectively. Following a historical introduction which, in keeping with most textbook counterparts is characteristically either too long (where is its essence) or too short (where is Raymond Pearl), Paul defines, describes, and illustrates what is appropriately termed medical ecology. Early chapters present basic principles and later sections their application to specific noninfectious as well as infectious diseases. Without exception these are well worth reading and rereading.

The chapters on "Concepts of Etiology: The Seed, The Soil and The Climate," and "Poliomyelitis" are among the best to be found anywhere. A small appendix deals chiefly with serologic epidemiology. Rare questions can always be raised (for example, concerning the choice of "coronary occlusion" to illustrate prevalence, and of "fracture of skull" to illustrate cause of death), but these, like the unconsidered possibility of difficult to detect—or to dismiss—chronic, subclinical rheumatic fever, are as unimportant as they are debatable. Clinicians, who parenthetically, may attribute this appellation to an ambivalent admixture of admonition and admiration experienced by their equally able, equally ambitious nonpracticing colleagues, should be receptive to the author's proselyting efforts, appreciative of his understanding that they whose epidemiology has been largely intuitive since before Hippocrates, may have been unduly skeptical of statistical interpretations derived as they must inevitably be from their own very fallible observations.

As they respect the cardiologist, the roentgenologist, the anesthesiologist, and other specialist creations of paramedical technology, so they will respect the IBM emancipated epidemiologist. And they will more readily acknowledge the need for a clinician to be something of an epidemiologist—to an epidemiologist who is, happily, also something of a clinician.—ROBERT W. HILLMAN

Antibiotics Annual 1958–1959. Edited by Henry Welch, Ph.D., and Felix Marti-Ibanez, M.D. Octavo of 1,107 pages, illustrated. New York, Medical Encyclopedia, 1959. Cloth, $12.

This volume contains the proceedings of the sixth annual symposium on antibiotics with the Director, Division of Antibiotics, Food and Drugs Administration, U.S. Department of Health, Education, and Welfare, acting as chairman. It begins with five authoritative historical reviews and closes with two excellent panel discussions of control and management of staphylococcal infections. In between are more than 130 communications on every aspect of the newer antibiotics, methods of sensitivity testing, etc. Many of these substances are also being tested for antitumor effects so that this will become an Anti Biotic and Anti Oncotic Annual.

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[Continued on page 3866]

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[Continued from page 3864]

Diseases of the Colon and Anorectum. Volumes I and II. Edited by Robert Turell, M.D. Octavo. Volume I, pages 1 to 608. Volume II, pages 609 to 1238. Illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $35 per set.

This book is directed "primarily to the general surgeon who performs anorectal surgery and the proctologic surgeon with a general surgical background . . . ." Newer principles have been included through the liberal use of articles which have recently appeared in the current literature. Basic sciences and established principles and procedures as related to the functions and diseases of the colon and anorectum have been amply considered by qualified authorities. In many instances alternate viewpoints are presented so that the reader obtains a broad exposure to the topic under consideration. The chapter on abdominoperineal resection of the rectum is followed by a chapter on sphincter preserving operations for carcinoma recti. The seven different operative procedures described in these two chapters give the reader a broad view of the modern concept of surgery for this condition.

Certain other subjects are particularly well presented and are felt to be of such value to the colonic and rectal surgeon that they are worthy of mention. Goligher's dissertation on surgical anatomy of the colon, rectum, and anal canal and Ernest Lampe's description of the abdominal wall as related to abdominal incisions are both classical presentations.

The chapter on ulcerative colitis is well constructed and includes an all too short section on the subjective reaction of the ileostomy patient. This reviewer felt that some consideration should have been given to the work of Aylett in England and Turnbull in this country, both of whom have good evidence that ileoproctostomy may be of value in selected individuals.

The chapters on hemorrhoids and their treatment, fecal impaction, rectal prolapse, and developmental anomalies are well worth the attention of physicians concerned with the colon and rectum.

This book seems well suited for the resident surgeon interested in colon and anorectal surgery, for the general surgeon doing proctologic procedures, and for the proctologic surgeon who requires a broad and well-presented view of proctology.—A. W. Martin Marino, Jr.

NOMINATING COMMITTEE APPOINTED

In accordance with Chapter VII, Section 1 of the Bylaws of the Medical Society of the State of New York, which require that the president "within three months after assuming the office of president . . shall appoint a nominating committee, and it shall be published," Henry I. Fineberg, M.D., State Society president, has appointed the following Nominating Committee for 1959–1960:

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1. Spoor, H.: Proc. Scient. Sec. TGA No. 31, May 1959
2. Frank, L.: New York J. Med. 59:2892, 1959

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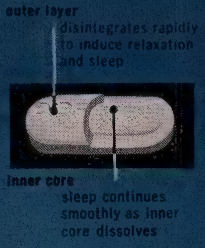
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[1] Schlesinger, E. B.: Tr. New York Acad. Sc. 2:6, (Nov.) 1948.
[2] Richards, R. K., and Taylor, J. D.: Anesthesiology 17:414, 1956.
[3] Shideman, F. E.: Postgrad. Med. 24:207, 1958.
[4] Berger, F.: Pharmacol. Rev. 1:243, 1949.

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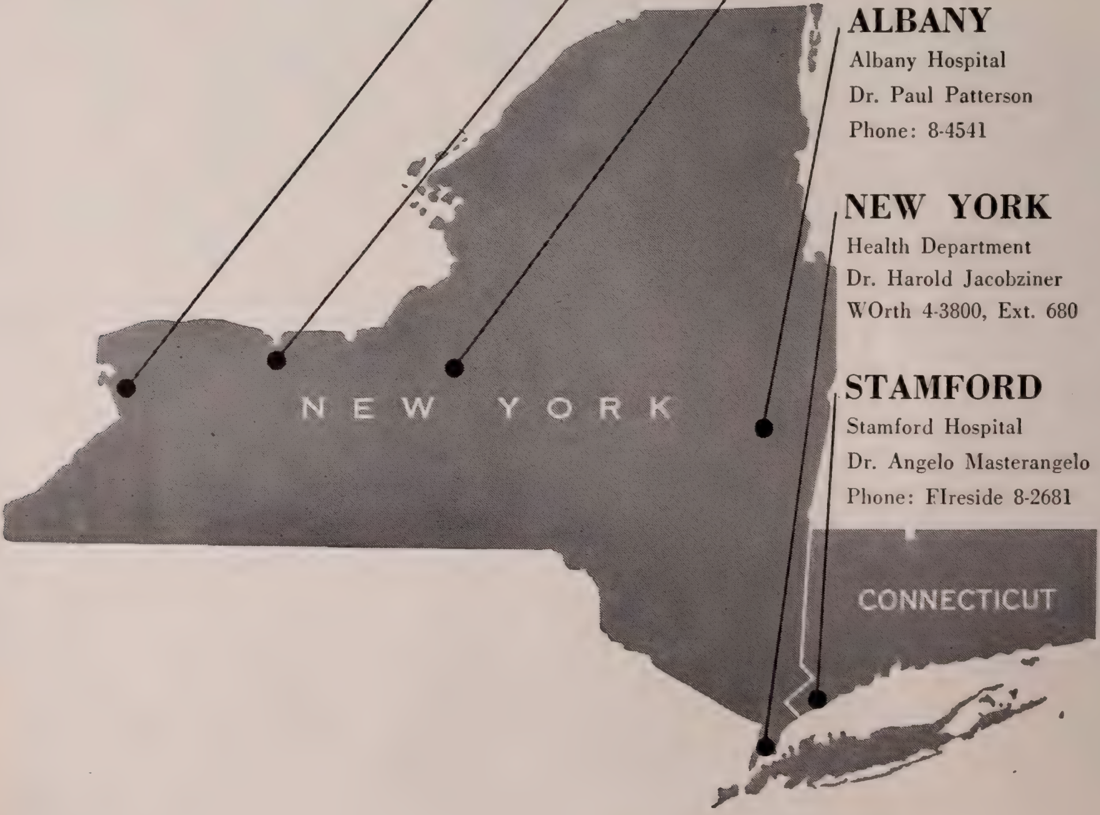

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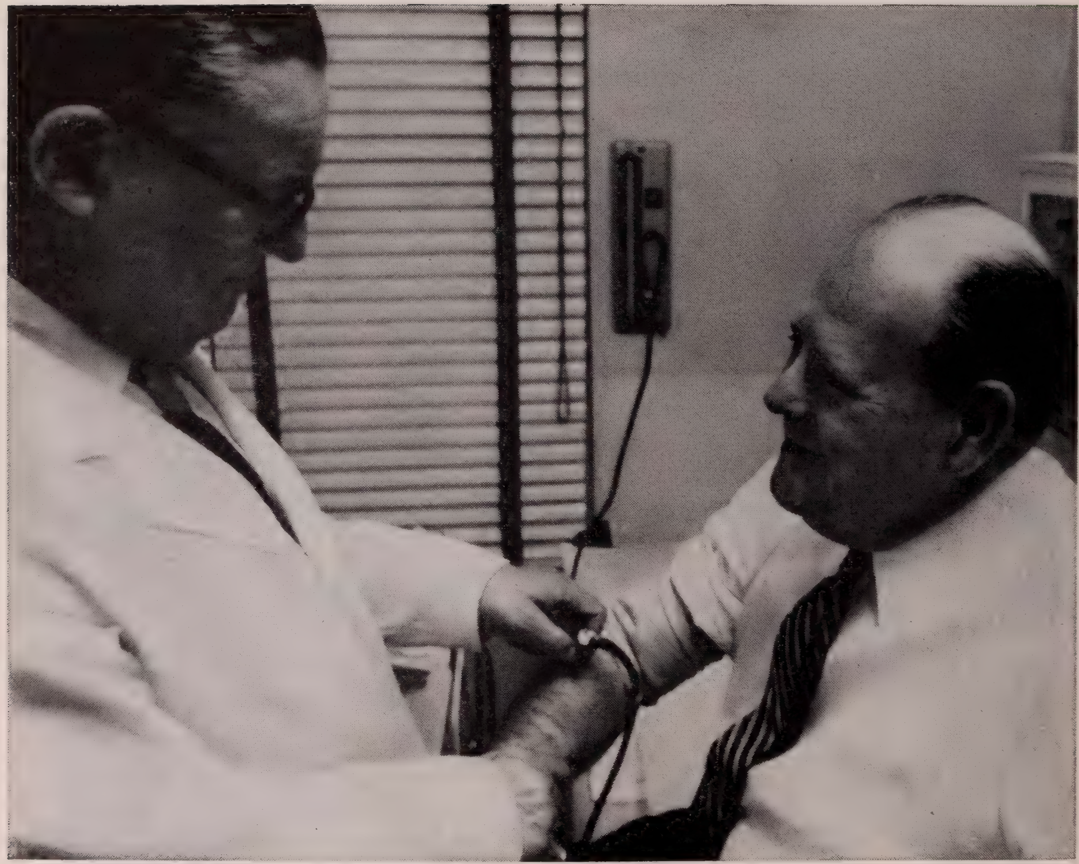

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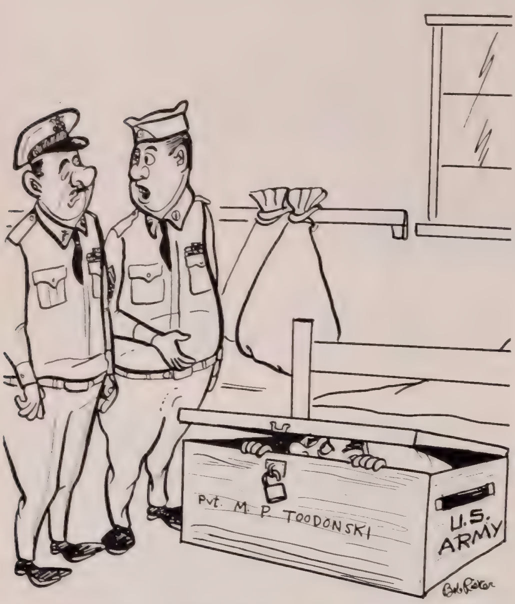
1. Herrmann, G. R., Vogelpohl, E. B., Hejtmancik, M. R., and Wright, J C.: J.A.M.A. *169*:1609 (April 4) 1959.
2. Bartels, C. C. Clinical report to CIBA.



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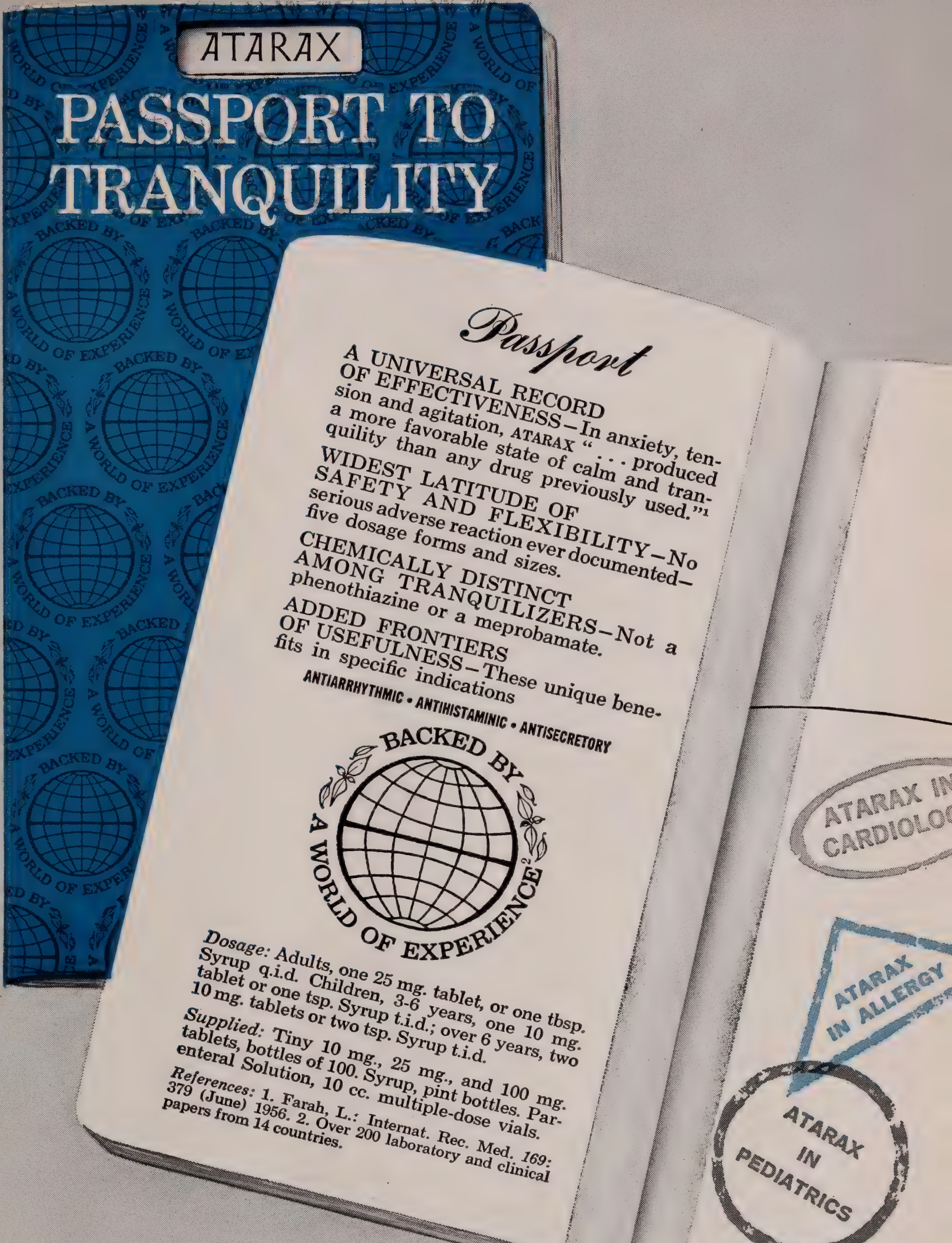
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References: 1. Farah, L.: Internat. Rec. Med. *169:* 379 (June) 1956. 2. Over 200 laboratory and clinical papers from 14 countries.

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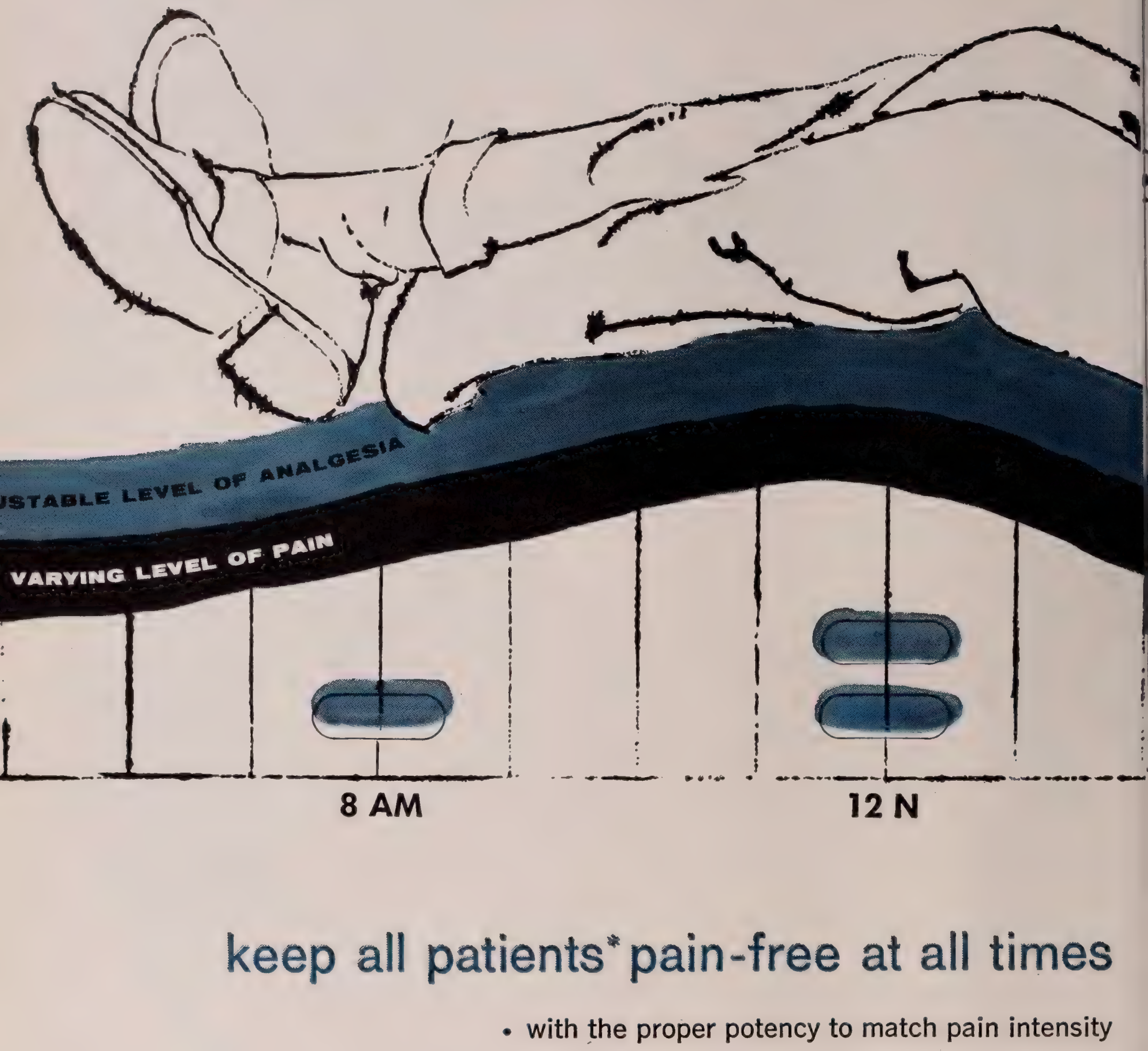
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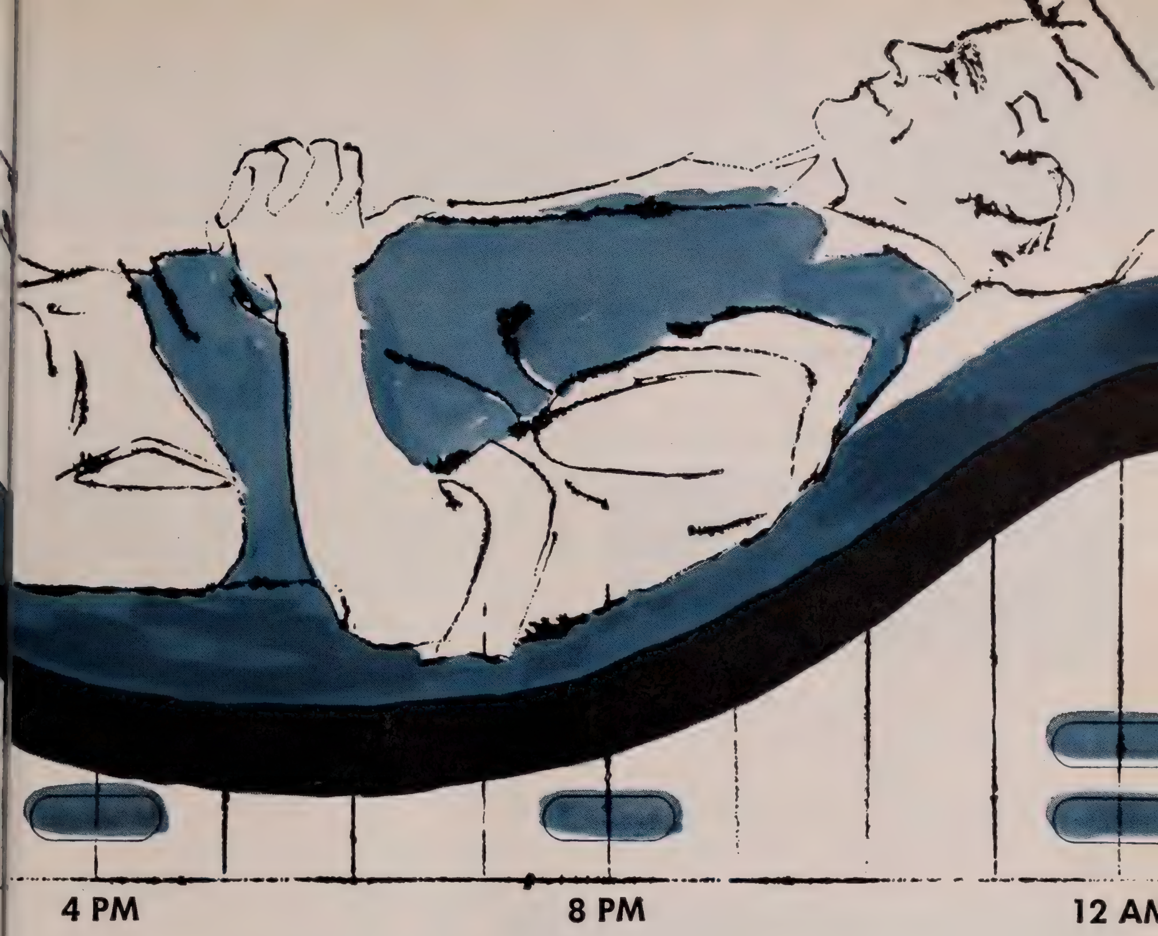

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TOTAL	366	60	238	54	14
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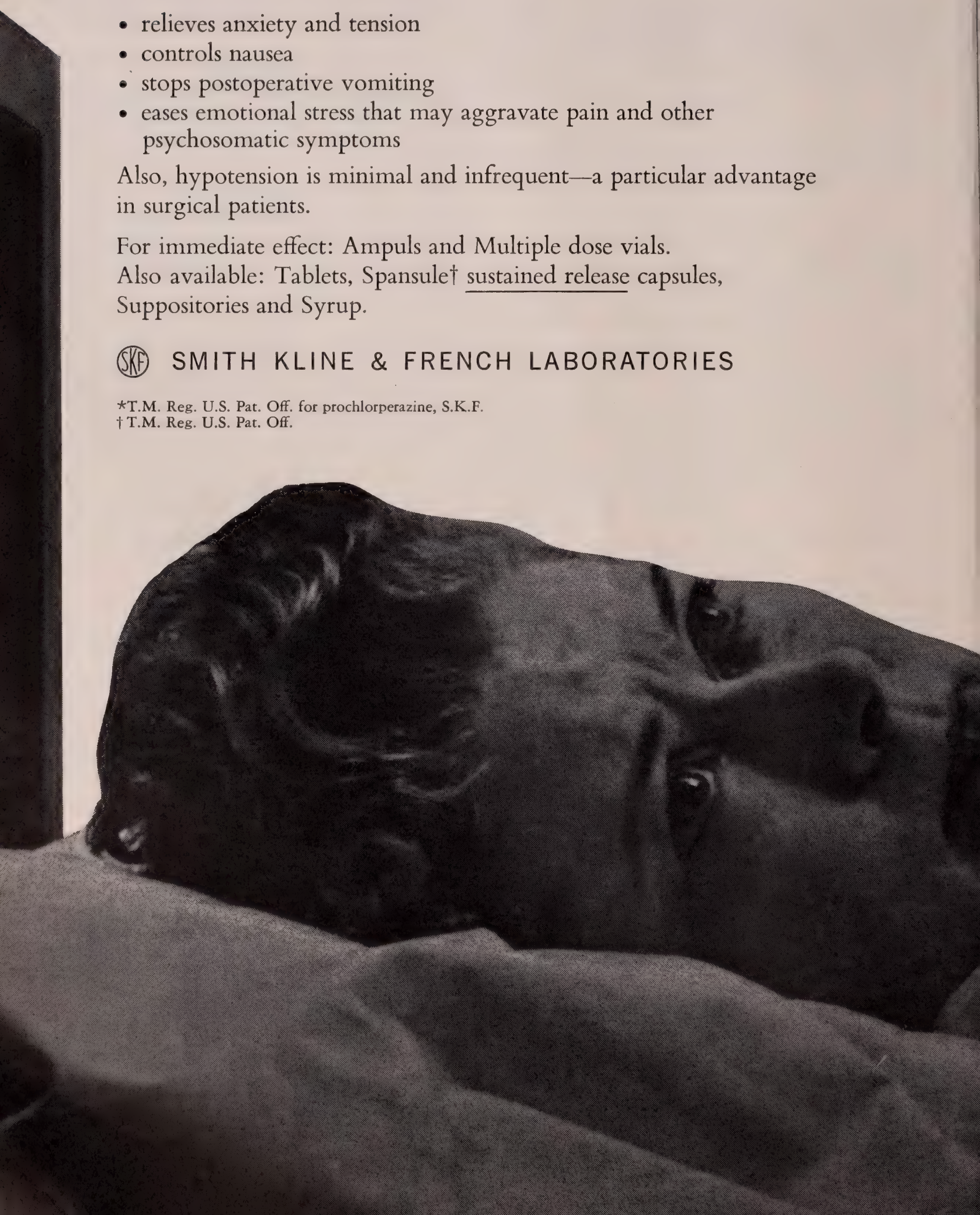

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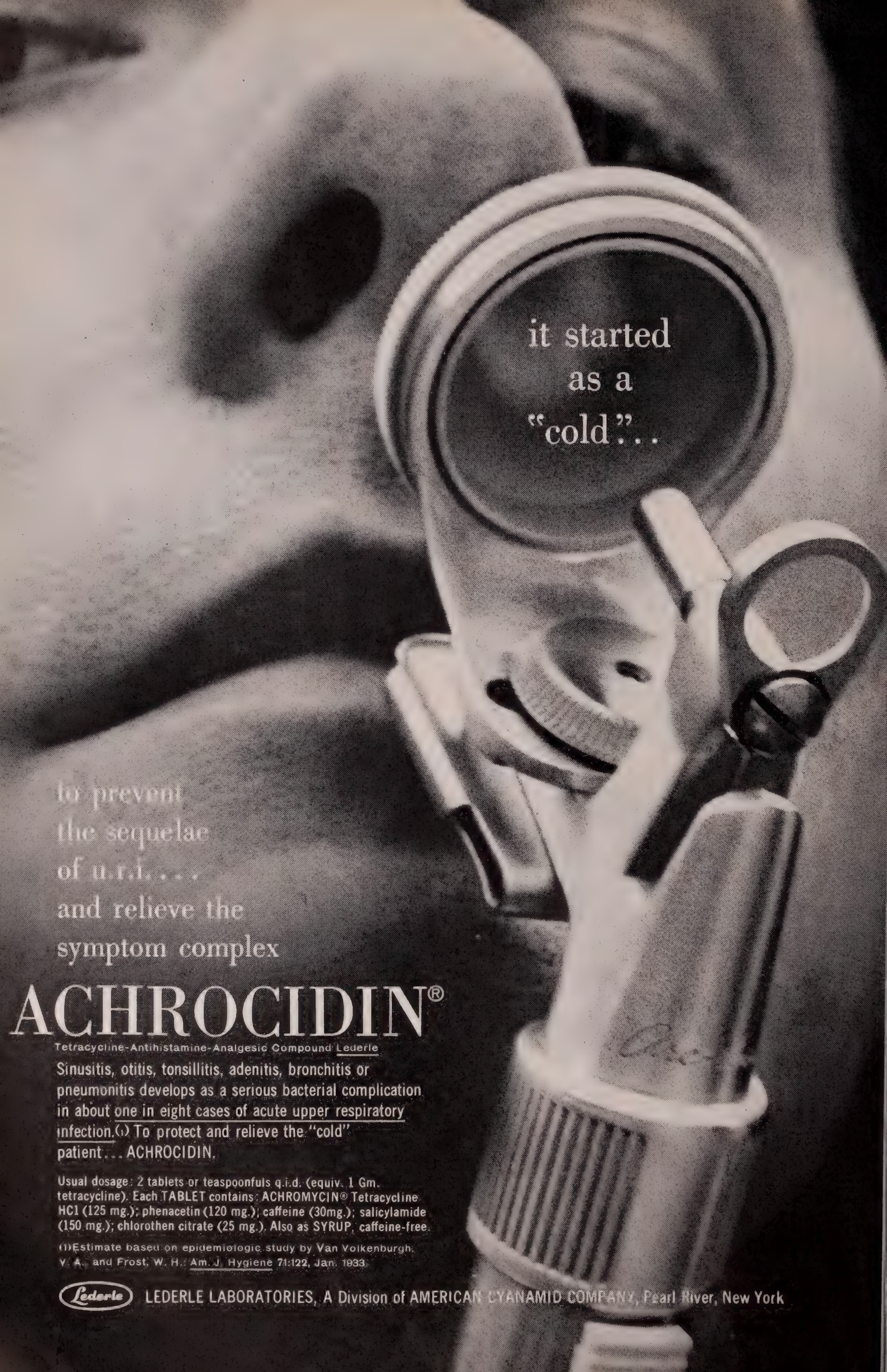

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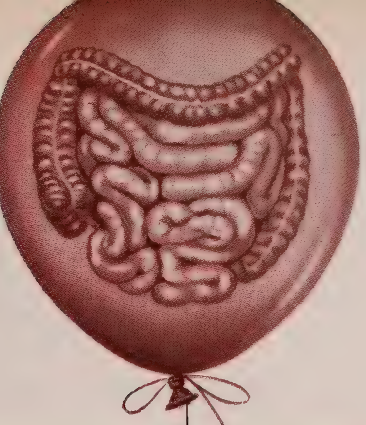

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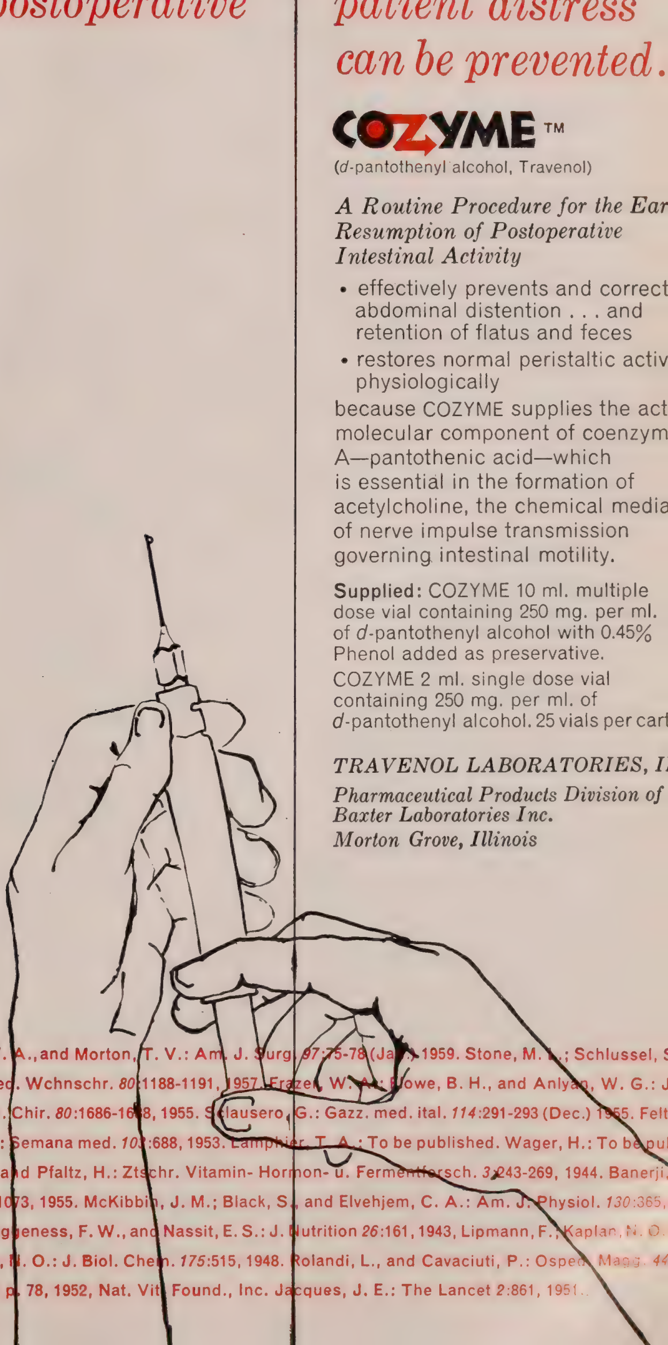

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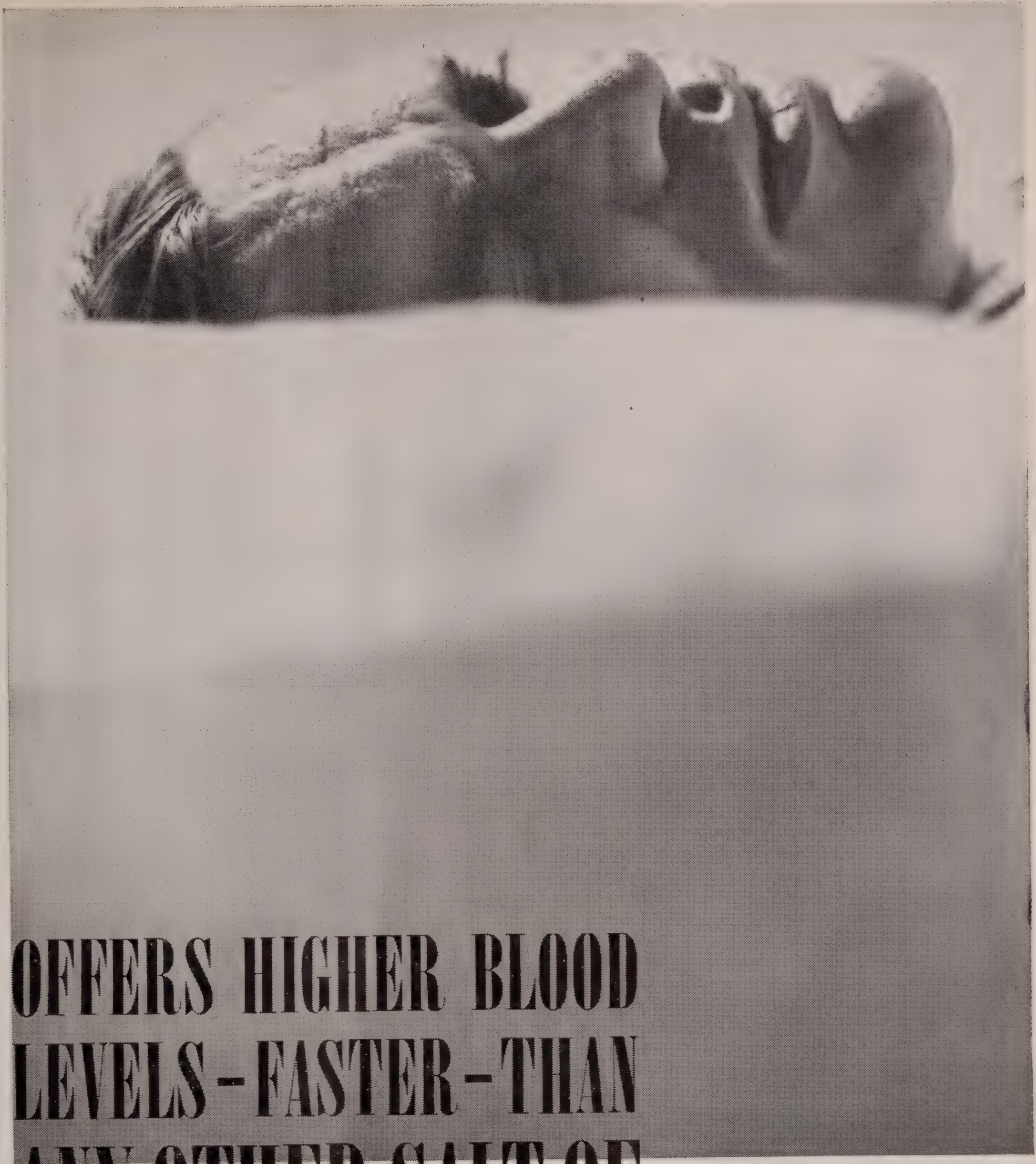

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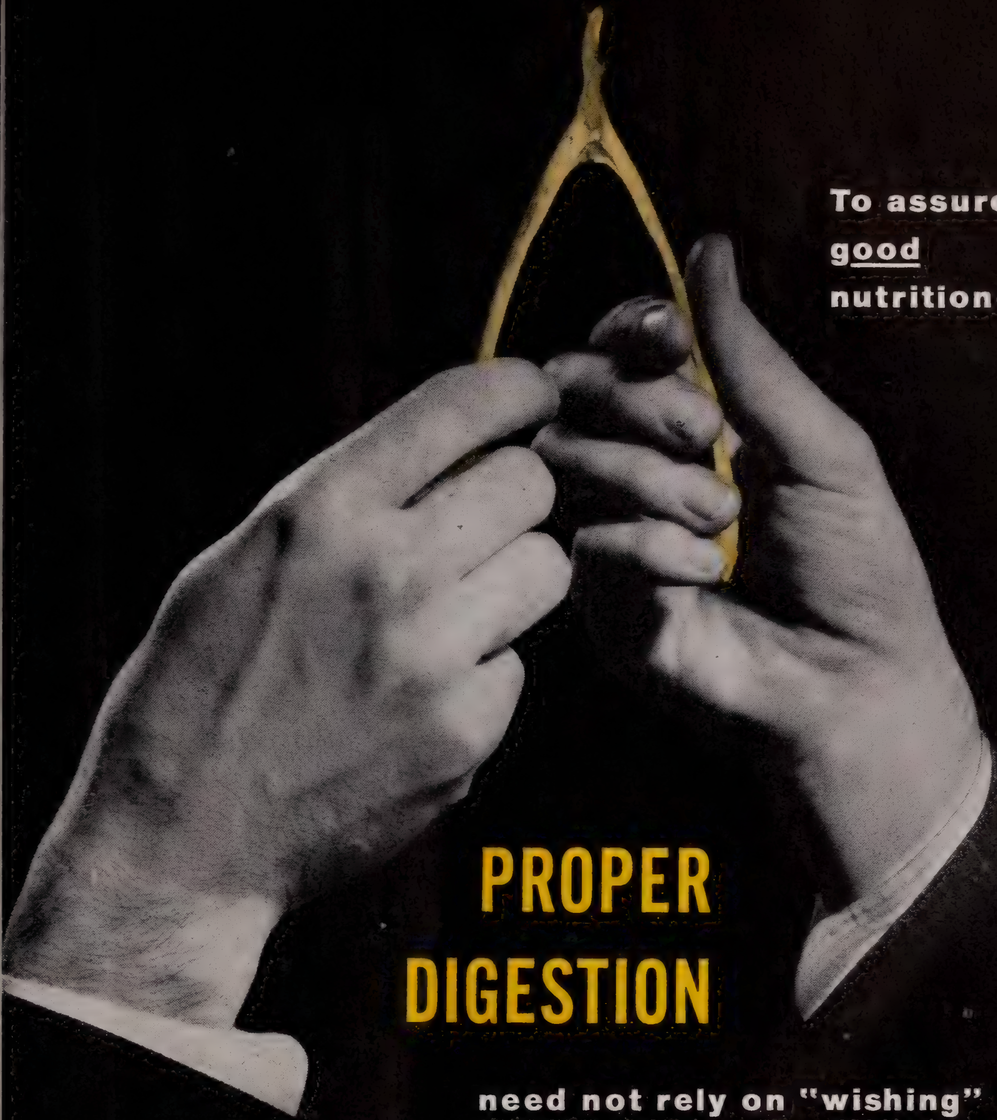

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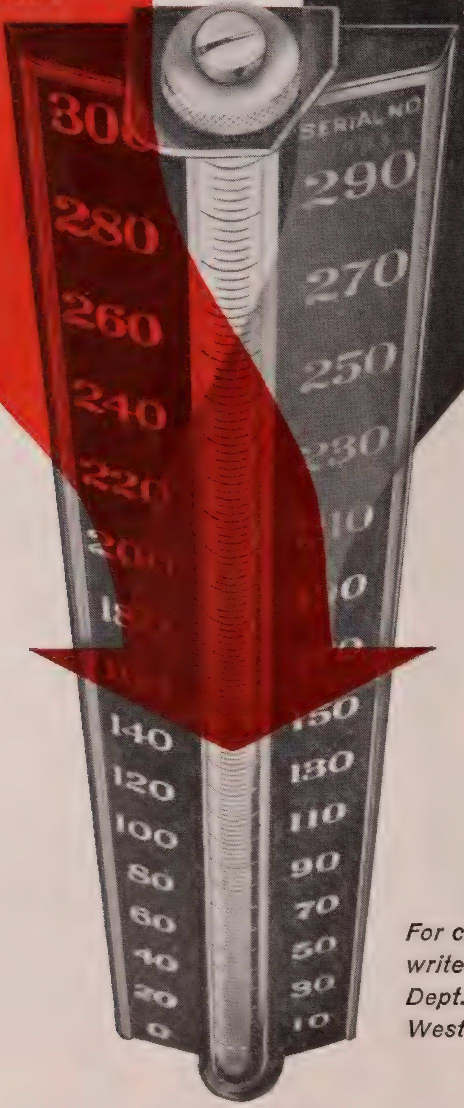
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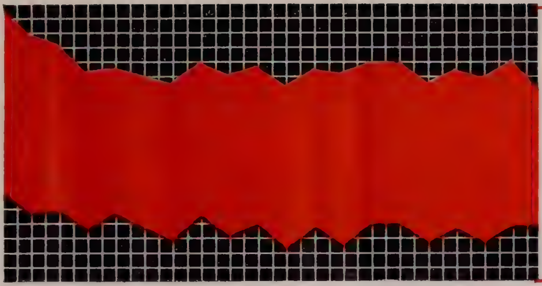

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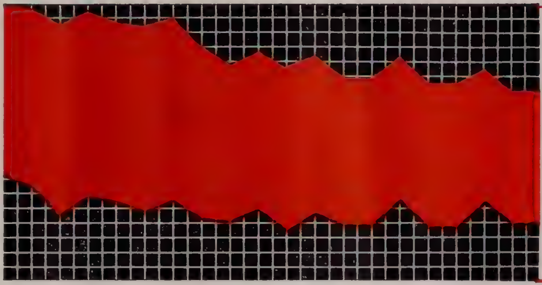

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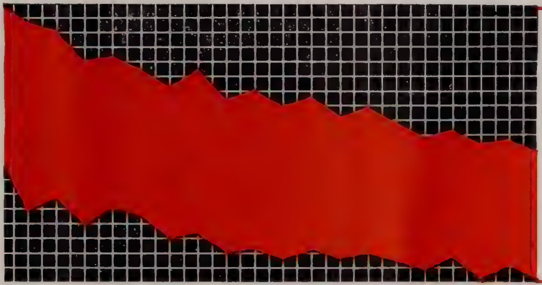

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One tablet one or two times a day.

If the patient is receiving ganglion blocking drugs or hydralazine,
their dosage must be cut in half when HYDROPRES is added.

MSD **MERCK SHARP & DOHME,** DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

*HYDRODIURIL AND HYDROPRES ARE TRADEMARKS OF MERCK & CO., INC.

avoid the risk of insoluble, irritating aspirin particles

Chief among the drawbacks to aspirin usage is gastric intolerance. This ranges from mild upset and "heartburn" to severe hemorrhagic gastritis.[1-10] Studies performed in conjunction with gastrectomy[4,5] and gastroscopy[2] have shown insoluble aspirin particles firmly adherent to the gastric mucosa and imbedded between rugae. Reactions varying from mild hyperemia to erosive gastritis have been reported to occur in the areas immediately surrounding these adherent particles.[2,4,5] This is reported to be particularly true in patients with peptic ulcer.[4]

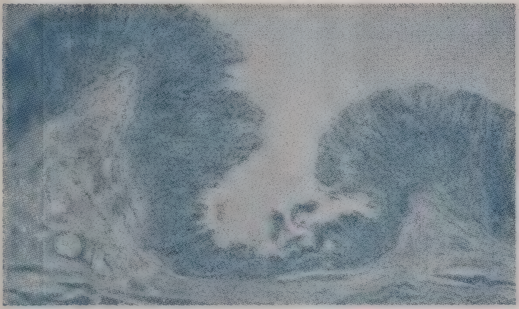
CALURIN is the freely soluble, stable calcium aspirin complex. Its high solubility forestalls gastric irritation or damage

Regular aspirin crystals 24 hours after being mixed into water.

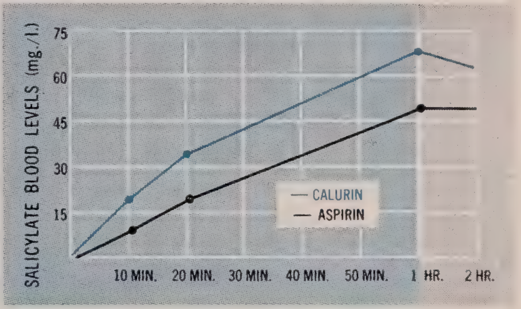
Calurin crystals in solution one minute after being mixed into water.

CALURIN*

STABLE SOLUBLE CALCIUM-ACETYLSALICYLATE-CARBAMIDE



Particle-induced ulceration — section through lesion found in gastrectomy specimen. An aspirin particle was found firmly imbedded in this undermined erosion. Such lesions may be associated with the relative insolubility of aspirin, which remains in particulate form after dispersion in gastric contents.



Calurin, being freely soluble, is promptly available for absorption into the systemic circulation. Salicylate blood levels in 12 subjects receiving both Calurin and plain aspirin were found to rise more than twice as high within ten minutes following Calurin. Also, these levels persisted higher for at least two hours.[11]

CALURIN is the aspirin of choice, especially when high-dosage, long-term therapy is indicated:

1 High solubility forestalls gastric irritation or damage. This advantage is of special importance in arthritis and other conditions requiring high-dosage, long-term therapy.

2 Produces high salicylate blood levels rapidly for prompt analgesic, anti-pyretic, anti-arthritic effect.

3 Sodium-free — for safer long-term therapy.

4 Flavored: can be chewed or dissolved in the mouth without water if desired — an advantage for patients requiring aspirin administration during the night and for pediatric patients.

Dosage: Each tablet of Calurin is equivalent to 300 mg. (5 gr.) of acetylsalicylic acid. For relief of pain and fever in adult patients, the usual dose of Calurin is 1 to 3 tablets every 4 hours, as needed; in arthritic states, 2 or 3 tablets 3 or 4 times daily; in rheumatic fever, 3 to 5 tablets 4 or 5 times daily. For children over 6 years, the usual dose is 1 tablet every 4 hours; for children 3 to 6 years, ½ tablet every 4 hours, as required. Not recommended for children under 3.

REFERENCES: 1. Waterson, A. P.: Aspirin and gastric haemorrhage, Brit. M. J. **2**:1531, 1955. 2. Douthwaite, A. H., and Lintott, G. A. M.: Gastroscopic observation of the effect of aspirin and certain other substances on the stomach, Lancet **2**:1222, 1938. 3. Editorial Comments: The effect of acetylsalicylic acid (aspirin) on the gastric mucosa, Canad. M. A. J. **80**:47, 1959. 4. Muir, A., and Cossar, I. A.: Aspirin and ulcer, Brit. M. J. **2**:7, 1955. 5. Muir, A., and Cossar, I. A.: Aspirin and gastric haemorrhage, Lancet **1**:539, 1959. 6. Schneider, E. M.: Aspirin as a gastric irritant, Gastroenterology **33**:616, 1957. 7. Bayles, T. B., and Tenckhoff, H.: Salicylate therapy in rheumatic diseases, Scientific Exhibit, Ann. Mtg. A. M. A., San Francisco, Calif., June, 1958. 8. Batterman, R. C.: Comparison of buffered and unbuffered acetylsalicylic acid, New Eng. J. M. **258**:213, 1958. 9. Cronk, G. A.: Laboratory and clinical studies with buffered and nonbuffered acetylsalicylic acid, New Eng. J. M. **258**:219, 1958. 10. Editorial: Aspirin plain and buffered, Brit. M. J. **1**:349, 1959. 11. Smith, P. K.: Plasma concentration of salicylate after the administration of acetylsalicylic acid or calcium acetylsalicylate to human subjects, Report submitted to Smith-Dorsey from Dept. of Pharmacology, Geo. Washington Univ. School of Medicine, Washington, D. C., Sept. 5, 1958.

*TRADEMARK

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

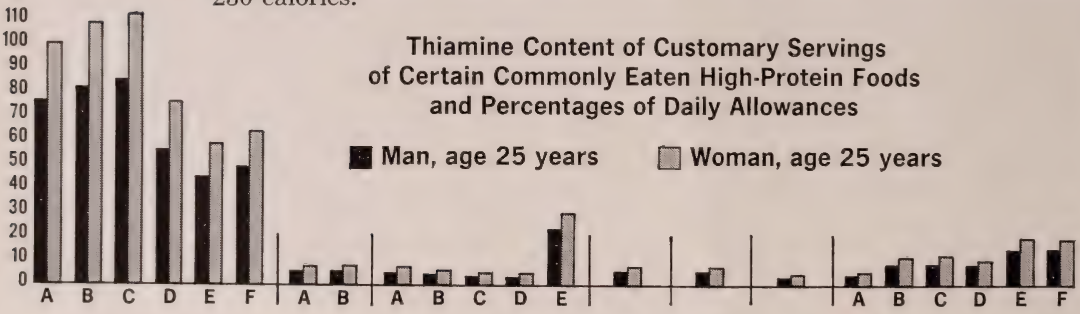
Pork...

Highest in Thiamine among High-Protein Foods

Pork meat in its many delicious forms—chops, steak, ham, Canadian-style bacon, link sausage—provides more thiamine than any other commonly eaten high-protein food.

In the planning of diets adequate in protein, variety may be obtained by choosing from all meats, fish, poultry, eggs, milk, and high-protein vegetables. But some high-protein foods are poor in thiamine content. Because pork meat outranks all other high-protein foods in its contribution of thiamine, its frequent inclusion in the daily menu ensures adequacy in this important nutrient.

The other nutritional values of pork are also substantial. For example, average servings of 3½ ounces (100 Gm.) of lean pork supply 34 grams of protein, 9 grams of fat, and, like all other meats, significant amounts of all the B vitamins and the minerals iron, phosphorus, magnesium, and potassium. The average serving of 100 Gm. lean pork provides a modest 230 calories.[1]



Thiamine Content of Customary Servings of Certain Commonly Eaten High-Protein Foods and Percentages of Daily Allowances

Cooked Lean Pork Meats (100 grams)

- A. Chop, loin center cut 3" x 2¼" x 1" 1.18 mg. B_1
- B. Roast, sirloin, 2 slices 2½" x 1" x ½" 1.27 mg. B_1
- C. Bacon, Canadian-style 4 slices, 1.32 mg. B_1
- D. Ham, roast, cured shank end 2½" x 2" x 1", 0.90 mg. B_1
- E. Ham, Steak, fresh, 2 slices 3" x 1½" x ½", 0.68 mg. B_1
- F. Sausage, link, 2⅔ links average, 0.76 mg. B_1

Poultry (100 grams)

- A. Chicken, roasted, 3 slices 3½" x 2½" x ¼", 0.080 mg. B_1
- B. Turkey, roasted, average, 3 slices 3½" x 2½" x ¼", 0.081 mg. B_1

Fish and Sea Food (100 to 240 grams)

- A. Cod Fish cakes, 1 large 125 grams, 0.071 mg. B_1
- B. Halibut steak, cooked 100 grams, 0.061 mg. B_1
- C. Salmon, canned, ⅔ cup 100 grams, 0.030 mg. B_1
- D. Tuna, canned, drained ⅝ cup solids, 100 grams, 0.050 mg. B_1
- E. Oysters, meat only, raw 1 cup, 240 grams, 0.350 mg. B_1

Eggs, 2 (108 grams)

0.080 mg. B_1

Milk (8 fl. oz., 245 grams)

0.090 mg. B_1

Cheese

cheddar, American, 60 grams, or cottage cheese, 100 grams. Both, 0.020 mg. B_1

High-Protein Vegetables (80 to 130 grams)

- A. Beans, canned or cooked ½ cup, approx. 130 grams, 0.060 mg. B_1
- B. Lentils, dried, cooked, ½ cup, 95 grams, 0.130 mg. B_1
- C. Asparagus, cooked, ⅔ cup cut pieces, 100 grams, 0.130 mg. B_1
- D. Beans, lima, green, cooked ½ cup, 80 grams, 0.110 mg. B_1
- E. Peas, black-eyed, immature seeds, cooked, ½ cup, 80 grams, 0.230 mg. B_1
- F. Peas, green, cooked, ½ cup, 80 grams, 0.200 mg. B_1

---

1. Leverton, R. M., and Odell, G. V.: The Nutritive Value of Cooked Meat, Oklahoma Agricultural Experiment Station, Oklahoma State University, Miscellaneous Publication MP-49, 1958.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

American Meat Institute
Main Office, Chicago...Members Throughout the United States

Incremin®

Lysine-Vitamins Lederle

with iron Syrup

for the undersized underweight child

build appetite

with
B complex
vitamins

prevent nutritional anemia

with ferric pyrophosphate,
a form of iron
exceptionally
well-tolerated

promote protein uptake

with the
potentiating effect
of l-Lysine on
low-grade
protein foods

in taste-tempting cherry flavor

Average dosage, 1 teaspoonful (5 cc.) contains:

l-Lysine HCl	300 mg.
Vitamin B_{12} Crystalline	25 mcgm.
Thiamine (HCl B_1)	10 mg.
Pyridoxine HCl (B_6)	5 mg.
Ferric Pyrophosphate (Soluble)	250 mg.
Iron (as Ferric Pyrophosphate)	30 mg.
Sorbitol	3.5 Gm.
Alcohol	0.75%

Bottles of 4 and 16 fl. oz.

Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

Blood pressure before Apresoline-Esidrix:

206/118

mm. Hg*

Blood pressure after Apresoline-Esidrix:

182/98 mm. Hg*

Added benefits: Lowered dosage requirements, fewer side effects • Improved renal blood flow • Relaxed cerebral vascular tone • Excellent diuresis in decompensated cases

SUPPLIED: Apresoline-Esidrix Tablets (orange), each containing 25 mg. of Apresoline hydrochloride and 15 mg. of Esidrix; bottles of 100.

*Response of 56-year-old female patient noted in clinical report to CIBA.

APRESOLINE® hydrochloride (hydralazine hydrochloride CIBA) / ESIDRIX® (hydrochlorothiazide CIBA)

Apresoline®-Esidrix®

Combination Tablets

POTENTIATED ANTIHYPERTENSIVE FOR ADVANCING HYPERTENSION

CIBA

SUMMIT, NEW JERSEY

2/2746 MK

Old age
Convalescence
Adolescence
Infant diarrhea
Debilitating gastrointestinal conditions
Postoperatively

Whenever the diet is faulty, the appetite poor, or the loss of food is excessive

through vomiting or diarrhea—

Valentine's
MEAT EXTRACT

stimulates the appetite,

increases the flow of digestive juices,

provides: supplementary amounts of vitamins, minerals and soluble proteins,

extra-dietary vitamin B_{12},

protective quantities of potassium, in a palatable and readily assimilated form.

Supplied in bottles of 2 or 6 fluidounces.

DOSAGE *is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy.*

VALENTINE Company, Inc.
RICHMOND 21, VIRGINIA

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KILLS THEM ALL

In Topical Infections, regardless of etiology, BETADINE OINTMENT destroys all pathogens present. BETADINE OINTMENT, a single topical agent, is a full-range pathogenicide—kills bacteria, fungi, protozoa, yeasts, and viruses on contact. Yet it is nonsensitizing, nonirritating, and nontoxic to normal skin tissue.

BETADINE OINTMENT • topical pathogenicide • fully effective against resistant strains • destroys gram-positive and gram-negative organisms • kills fungi, protozoa, yeasts, viruses • no development of resistant strains on prolonged use • provides protective barrier against invading pathogens • nonsensitizing . . . relieves pain • color indicates germicidal protection • applies easily . . . may be bandaged.

indications: primary and secondary skin infections including pyoderma, mycotic and bacterial infections, eczema, furunculosis, minor burns, as well as staph. aureus and pseudomonas infections.

administration: apply liberally over affected area as often as needed, bandage if desired.

supplied: one ounce tube.

BETADINE™ OINTMENT

(CONTAINS POVIDONE-IODINE)

TOPICAL PATHOGENICIDE ... KILLS PATHOGENS ON CONTACT

established in 1905 TAILBY-NASON COMPANY, INC., DOVER, DELAWARE

IN
gastritis
KEEPS THE
MIND OFF THE
STOMACH....
THE STOMACH
FREE OF PAIN

Milpath®

®Miltown + *anticholinergic*

relieves anxiety and tension
for enhanced antispasmodic effect

WALLACE LABORATORIES

HAVE YOUR PATIENTS EXPERIENCED THE ADVANTAGES OF ANTIPYRINE...

SAFETY

Side effects are generally absent with FELSOL . . . antipyrine causes no harmful effects to normal persons.

EFFICACY

FELSOL is effective as an antiasthmatic, analgesic, and antipyretic — elevating threshold in cases where prompt and enduring antipain or antifever action is required.

IN THE *Felsol* FORMULA

	Each Powder	Each Tablet
℞ Antipyrine	870 mg	435 mg
Iodopyrine	30 mg	15 mg
Citrated Caffeine	100 mg	50 mg

Try this safe and effective preparation for symptomatic treatment. Write for free professional samples and literature.

AMERICAN FELSOL CO., LORAIN, O.

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how often have you thought...

"...but how will it work in my practice?"

This most frequently asked question cannot be answered by the manufacturer, the detail man, an advertisement, a piece of mail. Only through actual experience with a product in day-to-day private practice can this question be answered.

UNITENSEN PROVED IN DAY-TO-DAY PRACTICE In office trials, Unitensen products have been proved effective therapy in the management of the hypertensive patient. These are the facts, obtained from 3,841 physicians, who used Unitensen products in their day-to-day office practice, in treating a total of 35,727 patients. In 11,093 cases (31.0%) results were "excellent"; in 51.2% (18,294) cases, "good"; "fair" results were obtained in 4,591 patients (12.9%) and in only 1,749 cases (4.9%) were results "unsatisfactory." Minor side effects were reported in 1,081 cases (3.0%).

The results mentioned above were obtained while the patients engaged in their normal daily occupations and activities. None of the patients involved in the study were hospitalized or institutionalized. And, despite such variables as dietary indiscretions, an occasional overdose, or a dose inadvertently "missed," the Proof In Practice Study shows Unitensen products to be safe, dependable, potent antihypertensive therapy . . . permitting practical office management of virtually all hypertensive cases.

UNITENSEN: BASIC HYPERTENSIVE THERAPY Although many of the patients in the Study also received diuretics and/or tranquilizers during the course of treatment, it was noted that the vasodilating effect of Unitensen was required to obtain optimum blood pressure control. Unitensen, a true hypotensive agent, is potentiated by diuretics. A combination of the two is frequently recommended for lower dosage of each drug, minimizing the side effects of either.

UNITENSEN DOES MORE THAN LOWER BLOOD PRESSURE Dr. Burton M. Cohen* makes the following observations regarding Unitensen:

"Hypotensive effect obtained through specific stimulation of afferent side of reflex pathways of blood pressure control without adrenolytic action or ganglionic blocking . . . Nausea and vomiting rare . . . No alteration of vasomotor reflexes, thus no postural collapse . . . Bradycardia, never tachycardia, may occur . . . Cardiac output not lessened . . . Renal circulation participates in reflex vasodilation . . . Cerebrovascular resistance is decreased, with improvement or maintenance of blood flow and O_2 utilization . . . No dangerous side actions have been reported."*

UNITENSEN-R® Each tablet contains cryptenamine (tannates) 1.0 mg., reserpine, 0.1 mg.

UNITENSEN-PHEN® Each tablet contains cryptenamine (tannates) 1.0 mg., phenobarbital, 15 mg.

UNITENSEN® Each tablet contains cryptenamine (tannates) 2.0 mg.

Clinical supplies available on request.

Neisler IRWIN, NEISLER & CO. • Decatur, Illinois

---

*Cohen, B. M.: The Ambulatory Patient with Hypertension: An Approach to Office Management, presented at the American Medical Association Convention, San Francisco, California, June 22-27, 1958.

"finger-itis"
yes, any rheumatic "itis" calls for
Sigmagen®
corticoid-salicylate compound
TABLETS
Schering
SG-J-258

Let Us Be Thankful

that we are able to take care of our own elderly colleagues who have suffered misfortune and now, in their sunset years, are no longer able to provide for themselves or their dependents. For they have served their communities well and are worthy of our support, made possible by your contributions.

Physicians' Home

750 Third Avenue **New York 17, N. Y.**

Synonyms for Pain Relief...

'TABLOID'

'EMPIRIN' COMPOUND®

Acetophenetidin ...... gr. 2½
Acetylsalicylic Acid .... gr. 3½
Caffeine .... gr. ½

'TABLOID'

'EMPIRIN' COMPOUND® WITH CODEINE PHOSPHATE*

No. 1
Acetophenetidin ...... gr. 2½
Acetylsalicylic Acid .... gr. 3½
Caffeine .... gr. ½
Codeine Phosphate .... gr. ⅛

No. 2
Acetophenetidin ...... gr. 2½
Acetylsalicylic Acid .... gr. 3½
Caffeine .... gr. ½
Codeine Phosphate .... gr. ¼

No. 3
Acetophenetidin ...... gr. 2½
Acetylsalicylic Acid .... gr. 3½
Caffeine .... gr. ½
Codeine Phosphate .... gr. ½

No. 4
Acetophenetidin ...... gr. 2½
Acetylsalicylic Acid .... gr. 3½
Caffeine .... gr. ½
Codeine Phosphate .... gr. 1

*Subject to Federal Narcotic Regulations

...providing the desired gradation of potencies for relief of varying intensities of pain

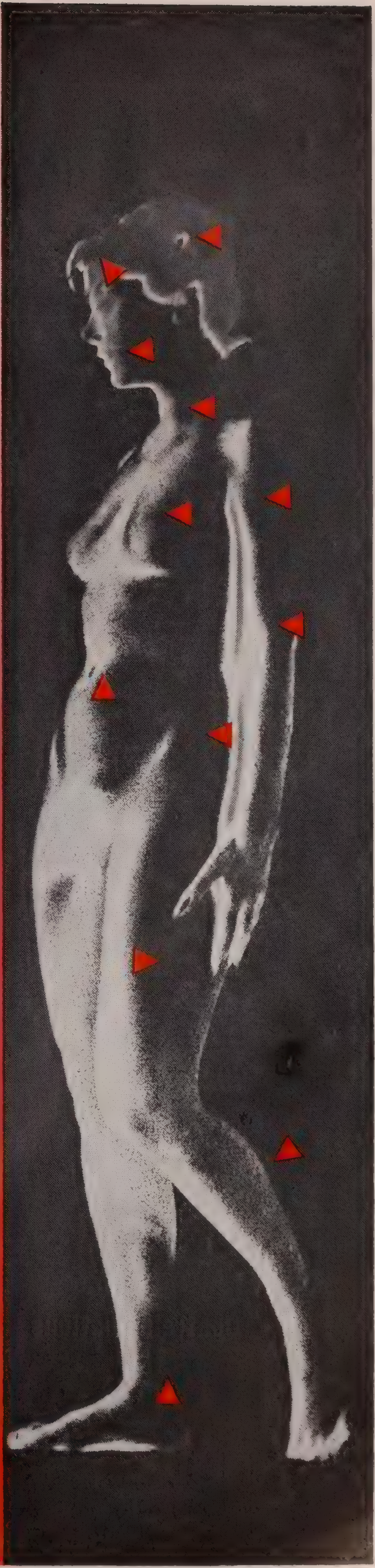
IN

- simple headache
- rheumatic conditions
- arthralgias
- myalgias
- common cold
- toothache
- earache
- dysmenorrhea
- neuralgia
- minor trauma
- tension headache
- premenstrual tension
- minor surgery
- post-partum pain
- trauma
- organic disease
- neoplasm
- muscle spasm
- colic
- migraine
- musculo-skeletal pains
- postdental surgery
- post-partum involution
- fractures
- synovitis/bursitis

relief of pain of all degrees of severity up to that which requires morphine

AND IN

- fevers
- dry, unproductive coughs



BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

PSYCHONORMALIZING Deaner®

deanol acetamidobenzoate

in the adjustment of School-Age Problem Children

when intelligence is masked
by behavior problems, in the
absence of organic cause

- Improves scholastic performance...
- Lengthens attention span...
- Improves social adaptability...
- Decreases irritability

Dosage

75 mg. (3 tablets) in the morning is the recommended starting dose. After two weeks, or whenever satisfactory improvement has occurred, a reduced dose may maintain this improvement in some cases; however, optimal response has been reported in most children on maintenance doses ranging from 75 mg. (3 tablets) to 150 mg. (6 tablets) per day.

Contraindications

'Deaner' therapy is contraindicated only in grand mal epilepsy and in mixed epilepsy with a grand mal component.

Deaner may be given with safety to patients with
previous or current liver disease,
kidney disease, or infectious diseases.

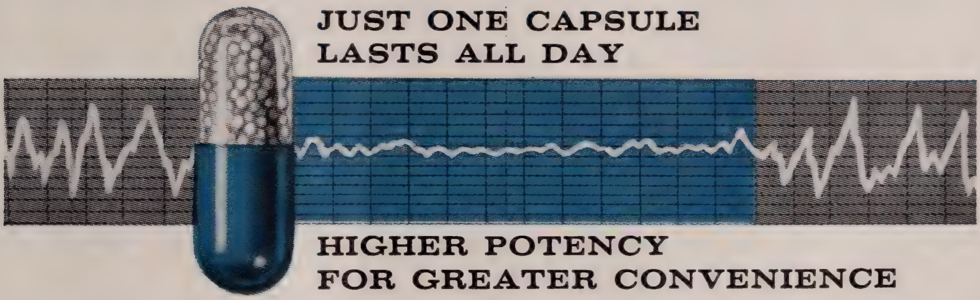
Riker Northridge,
California

NEW AND EXCLUSIVE

FOR SUSTAINED TRANQUILIZATION

MILTOWN® (*meprobamate*) now available
in 400 mg. continuous release capsules as

Meprospan®-400



JUST ONE CAPSULE LASTS ALL DAY

HIGHER POTENCY FOR GREATER CONVENIENCE

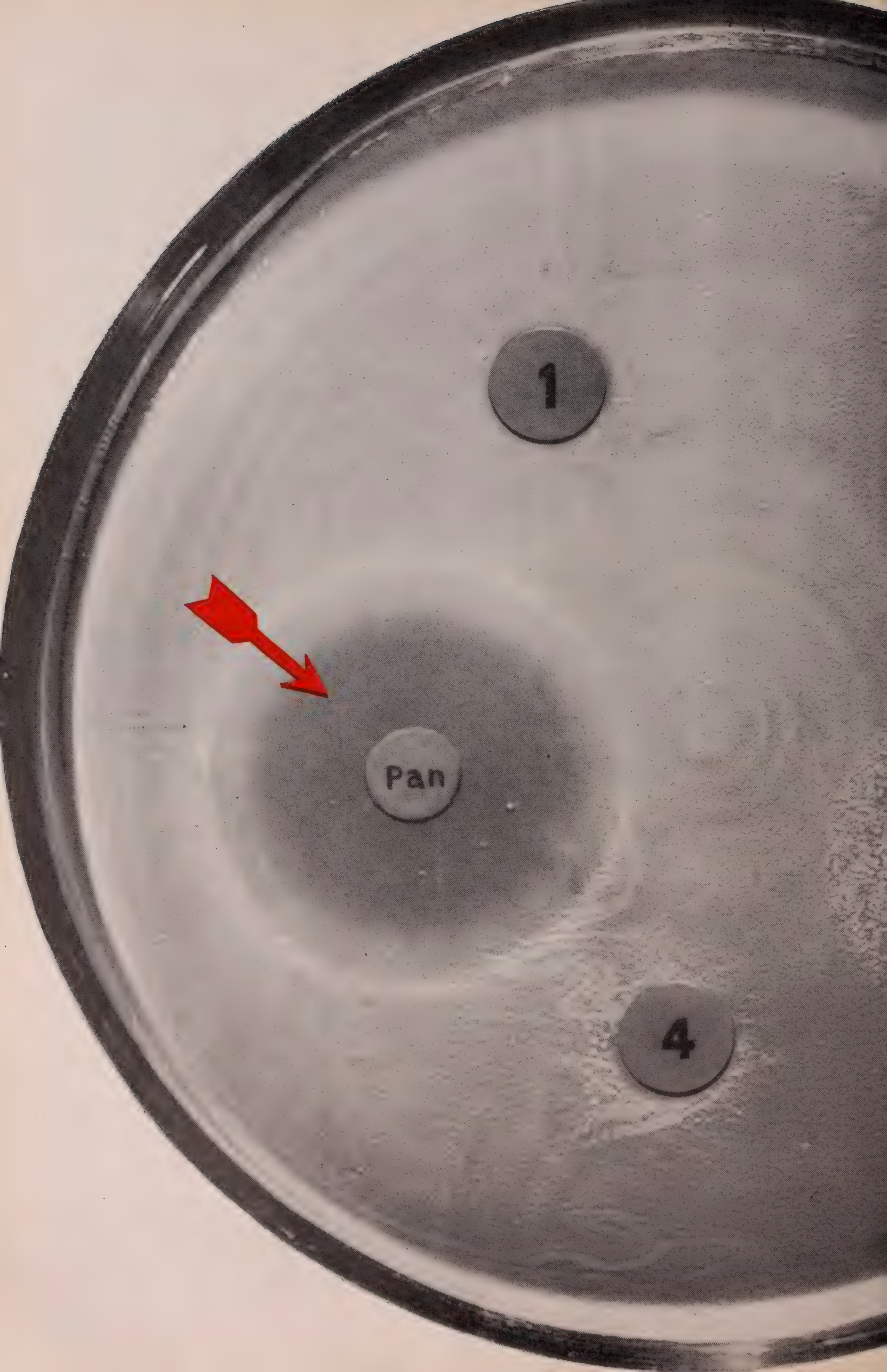
- relieves *both* mental and muscular tension without causing depression
- does not impair mental efficiency, motor control, or normal behavior

Usual dosage: One capsule at breakfast,
one capsule with evening meal

Available: *Meprospan-400,* each blue capsule contains
400 mg. Miltown (meprobamate)
Meprospan-200, each yellow capsule contains
200 mg. Miltown (meprobamate)
Both potencies in bottles of 30.

WALLACE LABORATORIES, *New Brunswick, N. J.*

CME-8427


1
Pan
4

This is Panalba performance... in pneumonia

. . . into a mixed culture of the three organisms commonly involved in pneumonia . . . *K. pneumoniae*, *Diplococcus pneumoniae*, and *Staphylococcus aureus* (in this case a resistant strain) . . . we introduce the five most frequently used antibiotics.

Twenty-four hours later (in this greatly enlarged photograph), note that only *one* of the five leading antibiotics has stopped *all* the organisms, including the resistant staph! This is Panalba.

In your next pneumonia patient . . . in *all* your patients with potentially-serious infections . . . provide this extra protection with your prescription:

Dosage—1 or 2 capsules 3 or 4 times a day.
Supplied—Capsules containing Panmycin phosphate equivalent to 250 mg. tetracycline hydrochloride, and 125 mg. Albamycin as novobiocin sodium, in bottles of 16 and 100.
Now available: new Panalba Half-Strength Capsules in bottles of 16 and 100.

Panalba*

(Panmycin* Phosphate plus Albamycin*)

The broad-spectrum antibiotic of *first* resort

Upjohn

The Upjohn Company
Kalamazoo, Michigan

*TRADEMARK, REG. U.S. PAT. OFF.

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the newest concept in acne treatment

Brāsivol™

Three-pronged attack on acne:

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- Hexachlorophene—controls bacteria

Outstanding success in clinical trials in more than one thousand cases over 10-year period.

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9:00 A.M. — 5:00 P.M.

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Indications — Results

EXTENDED TOTAL GASTRECTOMY
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yes, any rheumatic "itis" calls for
Sigmagen®
corticoid-salicylate compound
TABLETS
SG-J-358
Schering

now potent tranquilizer therapy is safer than ever

tranquilization
anti-emetic

Virtual freedom of Mellaril from major toxic effects is due to greater specificity of tranquilizing action — divorced from such "diffuse" effects as anti-emetic action.

MELLARIL is virtually free of such toxic effects as

- jaundice
- Parkinsonism
- blood dyscrasia

"Thioridazine [MELLARIL] is as effective as the best available phenothiazine, but with appreciably less toxic effects than those demonstrated with other phenothiazines. . . This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."[1]

SANDOZ

Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels

remarkable lack of side effects

In more than 3,000 carefully-followed patients, Mellaril has been almost completely free of such major side effects as jaundice, extrapyramidal symptoms, Parkinsonism, blood dyscrasia, dermatitis—even when given in quantities far in excess of the usual dosage.

"POVERTY" OF SIDE EFFECTS

"The most striking aspect of thioridazine [Mellaril] therapy is the poverty of side effects.... In its lack of side effects and low toxicity, it is superior to all other tranquilizing drugs tested. For this reason also it is well tolerated by patients, particularly those who are not hospitalized and who frequently discontinue their medication because of dizziness, sleepiness, increased tension or parkinsonism with other drugs."[2]

NEGLIGIBLE SIDE EFFECTS

"Side effects were negligible at all dosage levels: no incidence of parkinsonism or other extrapyramidal symptoms. Minimal sedation, on the whole lower than with other tranquilizing agents. No alteration in liver function, urine or blood. No photosensitivity. Patient acceptability was exceptional: lack of drowsiness, lethargy or 'washed out' feeling, permitted patients to carry on normal everyday activities. Orthostatic hypotension was absent. The initial 'keyed up' tense feeling common to other drugs of this type was absent.... Patients forced to interrupt treatment with other phenothiazine derivatives because of parkinsonism or other extrapyramidal symptoms were able to continue therapy with thioridazine without appearance of parkinsonism."[3]

SINGULARLY FREE OF SIDE EFFECTS

"The extrapyramidal syndrome was not encountered in any of its forms. Dizziness and sleepiness responded to a reduction in dosage. Other side effects did not occur.... It is singularly free from the side effects ordinarily seen with these [phenothiazine] compounds."[4]

ABSENCE OF SIGNIFICANT SIDE EFFECTS

"None of the following toxic effects, so common after administration of the phenothiazines, was present during the period of Thioridazine administration: Parkinsonism or Parkinson-like symptoms, photosensitivity, orthostatic hypotension, bone-marrow depression."[1]

MINIMAL SIDE EFFECTS

"Side effects such as extrapyramidal activity, jaundice and photosensitivity have not been observed in patients treated with Thioridazine [Mellaril]. Extrapyramidal side effects produced by other phenothiazines have disappeared promptly with no deterioration in the behavioral response when these patients have been shifted to Thioridazine."[5]

NO JAUNDICE

"No allergic reactions were observed such as skin eruptions, jaundice or agranulocytosis. Central nervous system toxicity, as manifested by extrapyramidal effects, seizures, and excitement did not occur despite the use of high doses (up to 2000 mg.) of the drug."[6]

Mellaril®

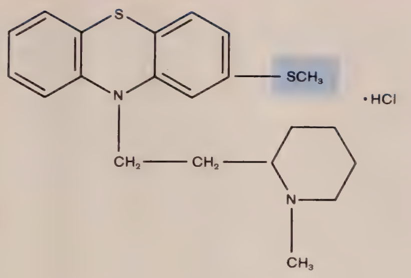
THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels

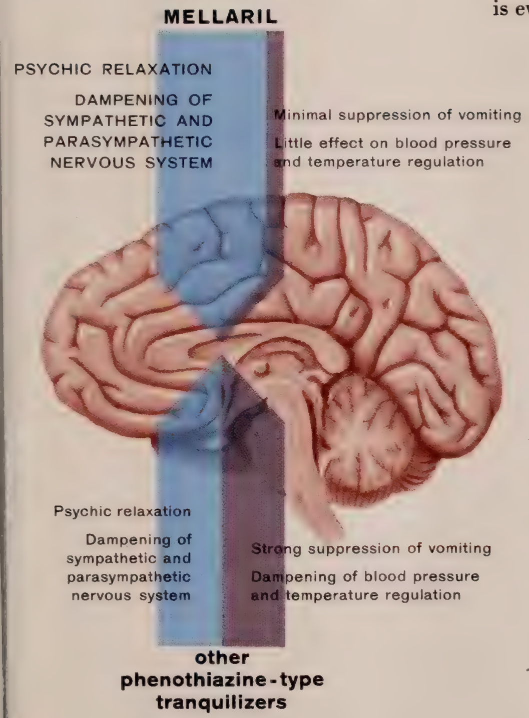
tranquilization

anti-emetic

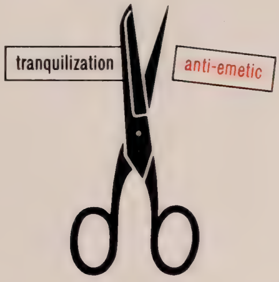
a new advance in tranquilization: greater specificity of tranquilizing action plus fewer side effects


S
N
SCH₃
·HCl
CH₂
CH₂
N
CH₃

Of 109 phenothiazines synthesized by Sandoz, Mellaril was selected as the most promising on the basis of extensive evaluation. The presence of a thiomethyl radical ($S\text{-}CH_3$) in the position conventionally occupied by a halogen in other phenothiazines is unique and could be responsible for the relative absence of side effects and greater specificity of psychotherapeutic action. This is shown clinically by:


MELLARIL
PSYCHIC RELAXATION
DAMPENING OF SYMPATHETIC AND PARASYMPATHETIC NERVOUS SYSTEM
Minimal suppression of vomiting
Little effect on blood pressure and temperature regulation
Psychic relaxation
Dampening of sympathetic and parasympathetic nervous system
Strong suppression of vomiting
Dampening of blood pressure and temperature regulation
other phenothiazine-type tranquilizers

1 A specificity of action on certain brain sites in contrast to the more generalized or "diffuse" action of other phenothiazines. This is evidenced by a lack of appreciable anti-emetic effect.


tranquilization
anti-emetic

2 Less "spill-over" action to other brain areas — hence, absence of undue sedation, drowsiness or autonomic nervous system disturbances.

3 A notable absence of extrapyramidal stimulation.

4 Lack of impairment of patient's normal drive and energy, while achieving psychomotor control in mental and emotional disorders.

5 Virtual freedom from toxic effects — jaundice, photosensitivity, skin eruptions, disturbed body temperature regulation, blood forming disorders — have been absent in reports currently available.

These properties add up to a greater margin of safety in general office practice, in ambulatory psychiatric out-patient clinics, and in hospitalized patients.

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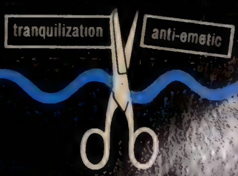
THIORIDAZINE HCl

specific, effective tranquilizer • safer at all dosage levels


tranquilization
anti-emetic

a guide to administration and dosage

Dosage ranges from 10 mg. three or four times a day in milder situations to 25 mg. three or four times a day for more disturbed patients. In ambulatory psychiatric out-patients, dosages of 50 to 100 mg. three or four times a day have been found adequate. For severely disturbed hospitalized psychotics, dosages of 200 to 300 mg. three times a day may be administered.

Dosage must be individualized according to the condition and degree of response. In all cases, the smallest effective dosage should be determined for each patient.

INDICATION	USUAL STARTING DOSE	TOTAL DAILY DOSAGE RANGE
	ADULTS	
Mental and Emotional Disturbances:		
MILD—where anxiety, apprehension and tension are present	10 mg. t.i.d.	20-60 mg.
MODERATE—where agitation exists in psychoneurosis, alcoholism, intractable pain, senility, etc.	25 mg. t.i.d.	50-200 mg.
SEVERE—in agitated psychotic states as schizophrenia, manic depressive, toxic psychoses, etc.:		
Ambulatory	100 mg. t.i.d.	200-400 mg.
Hospitalized	100 mg. t.i.d.	200-800 mg.
	CHILDREN	
BEHAVIOR PROBLEMS IN CHILDREN	10 mg. t.i.d.	20-40 mg.

PRECAUTIONS: Although possessing a unique structure and a selectivity of action which broadens its therapeutic ratio, the physician should be alert to the possibility of untoward reactions in certain susceptible individuals. In particular, he should watch for potential hemopoieti depression, jaundice or orthostatic hypotension. As wit other phenothiazines, Mellaril is contraindicated i severely depressed or comatose states from any cause.

SUPPLIED: MELLARIL Tablets, 10 mg., 25 mg., 100 mg. Bottles of 100.

1. Ostfeld, A. M.: Scientific Exhibit, American Academy of General Practice, San Francisco, April 6-9, 1959. 2. Kinross-Wright, V. J.: Lecture, Clinic Meeting, American Medical Association, Minneapolis, Dec. 4, 1958. 3. Kinross-Wright, V. J.: Scientific Exhibit, Clinical Meeting, American Medical Assoc ation, Minneapolis, Dec. 2-5, 1958. 4. Cohen, S.: TP-21, a new phenothiazine, Am. J. Psychiat. *115*:358, Oct. 1958. 5. Glueck, B.: Scientific Exhibit, America Psychiatric Association, Philadelphia, April 27-May 1, 1959. 6. Hollister, L. E., and Macdonald, B. F.: Presented at California Medical Association; Section o Psychiatry, San Francisco, Feb. 25, 1959. 7. Remy, M.: Schweiz. med. Wchnschr. *88*:1221, Nov. 29, 1958. 8. Freed, S. C., in discussion on Thioridazine (Mellari in Psychiatric Patients, Hollister, L. E., and Macdonald, B. F., presented at California Medical Association; Section on Psychiatry, San Francisco, Feb. 25, 195

- controls neurotic and psychotic patients with anxiety, apprehension, nervous tension
- virtual absence of jaundice, parkinsonism, photosensitivity, dermatitis
- minimal sedation and drowsiness
- does not mask organic conditions such as brain tumors, intestinal obstruction, etc., because of lack of anti-emetic action
- increased specificity of action results in greater safety at all dosage levels

SANDO

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THIORIDAZINE HCl
specific, effective tranquilizer • safer at all dosage levels
tranquilization
anti-emetic

3 IN ANY DERMATOSIS...

Suit the therapy to the condition

remember this topical trio for personalized treatment

- **each stops itch and inflammation quickly**
- **each instantly restores and maintains the normal protective acid pH of the external auditory canal**

1

the best therapeutic beginning[1] in acute skin inflammation

DOMEBORO® **TABLETS OR POWDER PACKETS pH 4.2**

The Original Modernized Burow's Solution

convenient wet dressings stay moist longer...maintain constant pH...speed healing...reduce inflammation.

Tablets in containers of 12, 100, 500, 1000. *Powder Packets* in boxes of 12 and 100.

2

maximum steroid benefits at lower dosage—lower cost

CORT-DOME®

CREME OR LOTION pH 4.6

Hydrocortisone Free Alcohol in ACID MANTLE®

Most universally employed anti-inflammatory steroid for topical use.

½% hydrocortisone in exclusive ACID MANTLE vehicle "is about as effective as 1% in most conditions treated."[2]

½%, 1% or 2% hydrocortisone free alcohol in water-miscible ACID MANTLE vehicle. In ½ ounce squeeze bottles, each with special soft plastic ear-applicator.

3

if infection complicates inflammation

NEO-CORT-DOME™

CREME OR LOTION pH 4.6

Hydrocortisone Free Alcohol plus Neomycin in ACID MANTLE®

½% or 1% hydrocortisone free alcohol and 5 mg. per Gm. neomycin sulfate in exclusive water-miscible ACID MANTLE vehicle. In ½ ounce squeeze bottles, each with special soft plastic ear-applicator.

1. Jones, E. H.: Eye, Ear, Nose & Throat Month. *38*:460, 1959. 2. Lockwood, J. H.: Bull. A. Mil. Dermatologists *4*:2, 1955.

DOME CHEMICALS INC. 125 West End Avenue/New York 23, N. Y. • Los Angeles/Montreal
World Leader in Dermatologicals

running noses

and open stuffed noses orally

Triaminic®

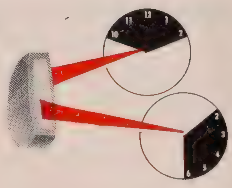
the leading oral nasal decongestant

- in nasal and paranasal congestion
- in sinusitis
- in postnasal drip
- in allergic reactions of the upper respiratory tract

safer and more effective than topical medication[1,2,3]

- systemic transport to all respiratory membranes
- provides longer-lasting relief
- presents no problem of rebound congestion
- avoids "nose drop addiction"

Relief with Triaminic is prompt and prolonged because of this special timed-release action . . . beneficial effect starts in minutes, lasts for hours



first—the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then—the core disintegrates to give 3 to 4 *more* hours of relief

Each TRIAMINIC Tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

One-half of this formula is in the outer layer, the other half is in the core.

Dosage: One tablet in the morning, mid-afternoon and at bedtime.

References: 1. Lhotka, F. M.: Illinois M. J. 112: 259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958.

TRIAMINIC JUVELETS: Each timed-release Juvelet is equivalent in formula and dosage to one-half of a TRIAMINIC tablet, for the adult or child who requires only half strength dosage.

TRIAMINIC SYRUP is recommended for adults and children who prefer liquid medication. Each 5 ml. tsp. is equivalent to ¼ of a Triaminic Tablet. *Adults:* 2 tsp. 3-4 times a day; *children 6-12:* 1 tsp. 3-4 times a day; *children under 6:* in proportion.

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

……..and still champion

DESITIN®

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in preventing and healing **diaper rash**

- **blocks** irritation due to urine and excrement
- **fights** ammonia and rash-producing bacteria
- **counters** and clears up chafing, rawness, excoriation

DESITIN OINTMENT the pioneer soothing, protective healing external cod liver oil therapy.

Samples? Please write . . **DESITIN CHEMICAL COMPANY** 812 Branch Ave., Providence 4, R. I.

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greater antibiotic activity

Milligram for Milligram, DECLOMYCIN exhibits 2 to 4 times the activity of tetracycline against susceptible organisms. (*Activity* level is the basis of comparison—not quantitative blood levels—since action upon pathogens is the ultimate value.*) Provides significantly higher serum activity level . . .

with far less antibiotic intake

DECLOMYCIN demonstrates the highest ratio of prolonged activity level to daily milligram intake of any known broad-spectru antibiotic. Reduction of antibiotic intake reduces likelihood of adverse effect on intestinal mucosa or interaction with contents

unrelenting peak antimicrobial attack

The DECLOMYCIN high activity level is uniquely constant throughout therapy. Eliminates peak-and-valley fluctuation, favoring continuous suppression. Achieved through remarkably greater stability in body fluids, resistance to degradation and a low rate of renal clearance.

*Hirsch, H. A., and Finland, M.: *New England J. Med.* 260:1099 (May 28) 1959.

DECLO

Demethylchlortetracycline Lederle

of antibiotic design

plus
"extra-
day"
activity

FOR PROTECTION
AGAINST
RELAPSE

DECLOMYCIN maintains activity for one to two days after discontinuance of dosage. Features unusual security against resurgence of primary infection or secondary bacterial invasion—two factors often resembling a "resistance problem"—enhancing the traditional advantages of tetracycline... for greater physician-patient benefit

in the distinctive, dry-filled, duotone capsule

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Capsules, 150 mg.,
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Adult dosage: 1 capsule
four times daily.

MYCIN®

Lederle

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a Division of
AMERICAN CYANAMID COMPANY
Pearl River, New York

in eight years Novahistine hasn't cured a single cold—but it has brought prompt relief of symptoms to almost 8,000,000 patients*

With the introduction of Novahistine, a better and safer way to relieve symptoms of a cold became available to physicians. The synergistic action of the Novahistine formula... combining an orally-effective vasoconstrictor with an antihistamine...promptly clears the air passages and checks irritant nasal secretions. NOVAHISTINE can eliminate the problem of rebound congestion and damage to nasal mucosa in patients who misuse topical applications.

For long-lasting "Novahistine Effect" prescribe Novahistine LP Tablets...which begin releasing medication as promptly as conventional tablets but continue bringing relief for 8 to 12 hours. Two Novahistine LP Tablets in the morning and two in the evening will effectively control the average patient's discomfort from a cold. Each tablet contains phenylephrine HCl, 20 mg., and chlorprophenpyridamine maleate, 4 mg.

*Based on National Prescription Audits of new Novahistine prescriptions since 1952.

PITMAN-MOORE COMPANY Division of Allied Laboratories, Inc. • Indianapolis 6, Indiana

Novahistine LP™
LONG-ACTING

in arthritis

Butazolidin

(phenylbutazone GEIGY)

tablets · alka capsules

potent · nonhormonal · anti-inflammatory agent

BUTAZOLIDIN tablets or the Alka capsules are **equally effective but individually adaptable in a wide range of arthritic disorders.**

Recent clinical reports continue to justify the selection of Butazolidin for rapid relief of pain, increased mobility, and early resolution of inflammation.

Gouty Arthritis: "...95 per cent of patients experienced a satisfactory response..."[1]

Rheumatoid Arthritis: In "A total of 215 cases...over half, 50.7 per cent showed at least major improvement, with 21.8 per cent showing minor improvement...."[2] **Osteoarthritis:** 301 cases showed "...a total of 44.5 per cent with complete remission or major improvement. Of the remainder, 28.2 per cent showed minor improvement...."[2] **Spondylitis:** All patients "...experienced initial major improvement that was maintained throughout the period of medication."[3] **Painful Shoulder Syndrome:** Response of 70 patients with various forms showed "...8.6 per cent complete remissions, 47.1 per cent major improvement, 20.0 per cent minor improvement...."[2]

References: **1.** Graham, W.: Canad. M. A. J. **79**:634 (Oct. 15) 1958. **2.** Robins, H. M.; Lockie, L. M.; Norcross, B.; Latona, S., and Riordan, D. J.: Am. Pract. Digest Treat. **8**:1758, 1957. **3.** Kuzell, W. C.; Schaffarzick, R. W.; Naugler, W. E., and Champlin, B. M.: New England J. Med. **256**:388, 1957.

Availability BUTAZOLIDIN® (phenylbutazone GEIGY): Red coated tablets of 100 mg. BUTAZOLIDIN® Alka: Capsules containing BUTAZOLIDIN® (phenylbutazone GEIGY), 100 mg.; dried aluminum hydroxide gel, 100 mg.; magnesium trisilicate 150 mg.; homatropine methylbromide, 1.25 mg.

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ARDSLEY, NEW YORK

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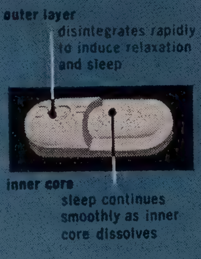
For those patients who complain

carries your patients through the middle of the night



outer layer
disintegrates rapidly to induce relaxation and sleep
inner core
sleep continues smoothly as inner core dissolves

Each Nebralin timed-release tablet contains:

Dorsital* .... 90 mg.
Warning: May be habit forming

Mephenesin ....425 mg.
*Dorsey brand of pentobarbital

CAUTION: Federal law prohibits dispensing without prescription

Dosage: One or two tablets ½ hour before retiring.

about waking up at 2 A.M.

nebralin®

timed-release tablet

timed-release action for a full night's sleep

NEBRALIN is designed to duplicate the normal sleep pattern. It encourages muscular relaxation and induces sustained, relaxed sleep by the release of Dorsital and mephenesin in a timed-release tablet. Rapid-acting mephenesin quickly relaxes skeletal muscles to overcome "fatigue-tension" and conditions the body for sleep. Dorsital provides CNS sedation to induce sound, relaxed sleep. The initial and sustaining dosages are designed to keep the amount of barbiturate to be inactivated at any one time at a low level tapering toward morning. Evidence indicates that mephenesin is capable of producing sleep,[1] and when combined with a barbiturate enhances barbiturate action.[2,3] Moreover, the integrated action of the two components permits smaller dosages of each,[4] assuring your patients refreshed awakenings without "morning hangover."

1 Schlesinger, E. B.: Tr. New York Acad. Sc. 2:6, (Nov.) 1948.
2 Richards, R. K., and Taylor, J. D.: Anesthesiology 17:414, 1956.
3 Shideman, F. E.: Postgrad. Med. 24:207, 1958.
4 Berger, F.: Pharmacol. Rev. 1:243, 1949.

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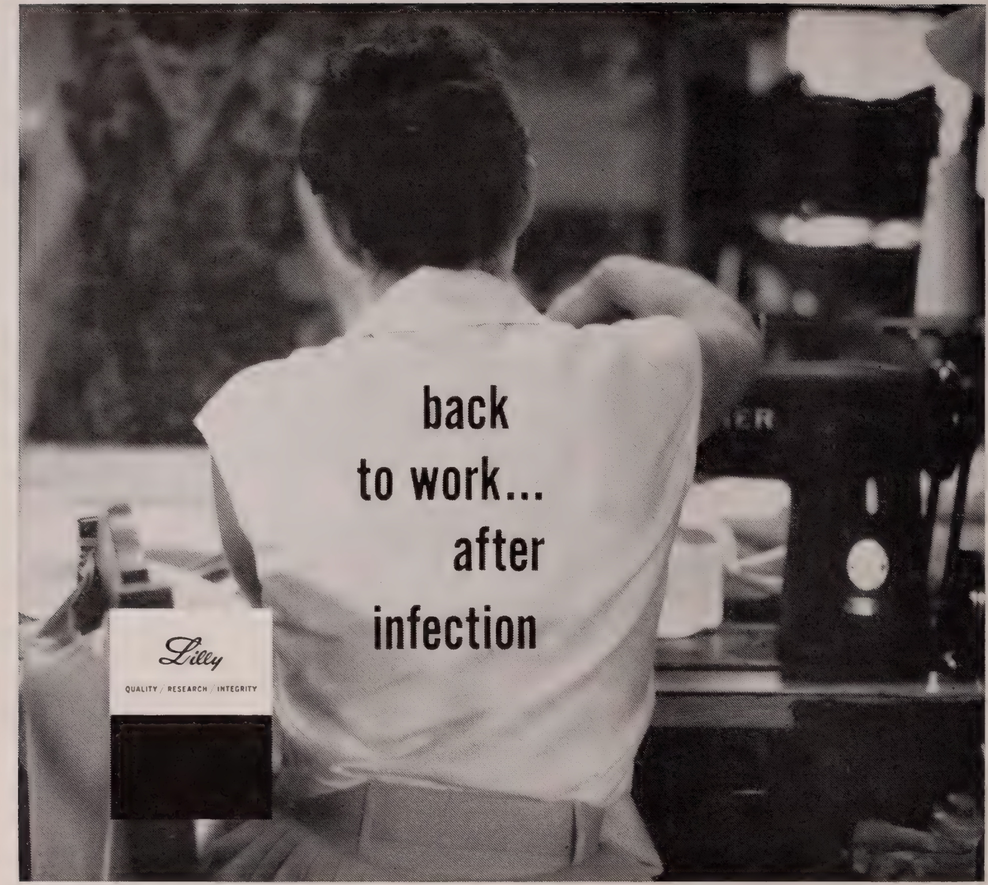

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Supplied: In scored tablets of 125 and 250 mg. (200,000 and 400,000 units).

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V-Cillin K, Pediatric: A taste treat for young patients. In bottles of 40 and 80 cc. Each 5-cc. teaspoonful provides 125 mg. of V-Cillin K.

V-Cillin K® Sulfa: Each tablet combines 125 mg. of V-Cillin K with 0.167 Gm. each of sulfadiazine, sulfamerazine, and sulfamethazine.

V-Cillin K® (penicillin V potassium, Lilly)

V-Cillin K® Sulfa (penicillin V potassium with triple sulfas, Lilly)

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EDITORIALS

Stockpiling of Medical Defense Supplies

The JOURNAL prints on page 4019 of this issue the locations and inventory at each location of medical defense supplies in New York State together with standing orders relative to the release of this material to a target area. The tables were compiled by James H. Lade, M.D., director of the Office of Medical Defense, Department of Health of the State of New York, and transmitted to the JOURNAL by E. A. Burkhardt, M.D., chairman of the Civil Defense and Catastrophe Committee of the Medical Society of the State of New York. The publication of this information in the JOURNAL fulfills the intent of House of Delegates Resolution 59-28.

It seems doubtful that many physicians have a clear conception of the vast amount of planning that has resulted in the purchase and location of the material described in this article by the civil defense authorities in this State. Yet since each individual doctor will be involved in the event of disaster, it is highly important that every one of them knows the location and extent of the stockpiles on which he must depend for such items as State aid station outfits, mobile hospital outfits, and blood collection outfits in the target-support areas.

The JOURNAL will publish yearly a corrected inventory.

The Medical Society of the State of New York is most appreciative of the efforts of the New York State Department of Health and the Office of Civil Defense under the direction of Dr. Lade for the stockpiled material for medical catastrophe use. The Special Committee on Civil Defense and Catastrophe of our Society has been active in allocating the types of materials that have been stock-piled. Total expenditure has been in excess of 18 million dollars.

The second civil defense article in this issue is entitled, "Disaster Medicine—the Local Problem." This article shows the difficulty of applying directives from the American Medical Association and the Office of Defense Mobilization at the local level.

The chairman of our Society Committee on Civil Defense and Catastrophe will present this problem at the A.M.A. County Civil Defense meeting on November 8, 1959. In general, the attitude at the A.M.A. level indicates that all civil defense activities should be tied to the State and county society members with the cooperation of the local hospitals. This of course deprives us of large amounts of Federal, State, and city funds which have been allocated for civil defense.

Training programs and exercises are being developed for catastrophe care of all citizens, and we believe that physicians should have a voice in the control of our civil defense program. If civil defense is to be "everybody's business," then there should be some liaison between the "know-how" of the medical and engineering professions and the politically controlled funds.

It is hoped that the membership will give the current articles careful study.

Project HOPE

A unique concept in the field of international health has been inaugurated recently by the People-to-People Health Foundation, the corporate entity of the Committee on Medicine and the Health Professions of the People-to-People Program.

The foundation is in the process of raising $3,500,000 to staff and outfit the mothballed Navy hospital ship "Consolation" as a floating medical center to be sent on a year's visit to Southeast Asia.

The project's efforts will be directed primarily toward bringing the latest technics and skills developed by the American medical profession to the medical and paramedical personnel in the Far East in their own environment, adapted specifically to their own needs and their way of life.

Intended as a concrete expression of the concern felt by the people of the United States for the people of other nations, the project will be neither a "do-good" nor a one-sided program. William B. Walsh, M.D., the project's head, expects the knowledge and experience gained by the American medical staff to be immensely valuable.

The ship will be staffed with both permanent and rotating medical personnel. Some 15 physicians, expert in various fields of medicine and surgery, 2 dentists, 20 graduate nurses, and 20 technicians will spend a full year with the ship. The remainder of the medical personnel will consist of volunteer units of generalists and specialists who will be flown to the ship for tours of four months. While some of the rotating personnel will remain with the ship, many will use the vessel as a logistic base to support their work inland with mobile units.

The project's success will depend solely on the support of individuals, corporations, foundations, and, perhaps most important, the American medical profession. The American Medical Association and the American Dental Association have endorsed the plan publicly and have pledged generous financial support.

Although a lack of time precludes an extensive appeal to the public at present, widespread individual support is necessary. Donations—which, of course, are tax deductible—may be sent to Project HOPE, P. O. Box 9808, Washington, D. C.

Editorial Comment

Report on Medicare. More than $185 million in benefits for civilian hospital and medical care have been paid on behalf of dependents of members of the nation's uniformed services since the inception of the Medicare program in 1956, according to the Health Insurance Institute.*

Medicare pays for civilian medical care for dependent spouses and children of active duty members of the Army, Navy, Air Force, Marines, Coast Guard, Commissioned Public Health Service, and the Coast and Geodetic Service.

From the day Medicare went into effect on December 7, 1956, until June 30, 1959, the program paid out $185,400,000—$91 million for hospital care and $94 million for physician bills.

167,000 BABIES.—During the fiscal year of 1958 there were 358,000 civilian hospital admissions under Medicare among the 3 million dependents covered by the program.

Maternity accounted for the largest share of admissions. Some 167,000 babies were born in civilian hospitals during the fiscal year of 1958.

The program provides that dependents admitted to civilian hospitals pay the first $25 of the hospital bill or $1.75 a day, whichever is greater. Then the government takes over, bearing the cost of the care plus the cost of administration.

Under Medicare, the payment of hospital claims is administered in 17 states by Mutual of Omaha and in the remaining states, Alaska, Hawaii, and Puerto Rico by Blue Cross. Physicians' claims are paid by other insurance companies and by many medical societies as well as by Blue Shield and Mutual of Omaha.

DEPENDENTS SATISIFIED.—In a recent survey some 72 per cent of the service men responding said Medicare would influence their decision to stay in the service. A total of 98.4 per cent of the dependents said they were satisified with the medical service.

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* AMA News **2**: 9 (Aug. 24) 1959.

Under the program, the government pays for eligible dependents the major cost of semiprivate hospital accommodations up to three hundred sixty-five days; physicians' bills during hospitalization for treatment of acute medical conditions, contagious diseases, surgical emergencies, acute surgical conditions, severe injuries during the acute state; for laboratory and x-ray tests and procedures during hospitalization; and for obstetric and maternity care for mother and child.

Medicare's annual report to Congress shows that the total average cost of having a baby in 1958 was $334, which included M.D. care, technicians fees, and hospital expenses. Complicated deliveries averaged $419, cesareans $588.

The 1958 figures represent a cross-section of surgical procedures and diseases requiring hospitalization.

The average cost per case in 1958 was $254. The highest cost cases included auto accident victims, open-heart surgery, complicated obstetric cases, and encephalitis.

The program paid for 28 radical hysterectomies for cancer for which the average hospital cost per patient was $390; physician's fee $429; and fees for consultants, anesthesiologists, and others, $108.

Of this the government paid an average total of $927. The patient paid an additional $34 per case and stayed in the hospital for eleven and one-half days.

. . .

The Medical Society of the State of New York has been the fiscal administrator of the Medicare program for the payment of physicians' claims since the Medicare law became effective.

From December 7, 1956, until June 30, 1959, 40,264 claims have been paid to 7,300 physicians in the amount of $3,030,000.

Some 13,300 babies were born during this period, and the total of payments was approximately $1,795,500 which represents 59 per cent of the medical cost under the program.

Local Blue Cross plans act as fiscal administrators for hospital services to qualified dependents in the area in which they operate. It is estimated that $2,969,000 have been paid in hospital benefits during the same period.

ANNUAL CONVENTION

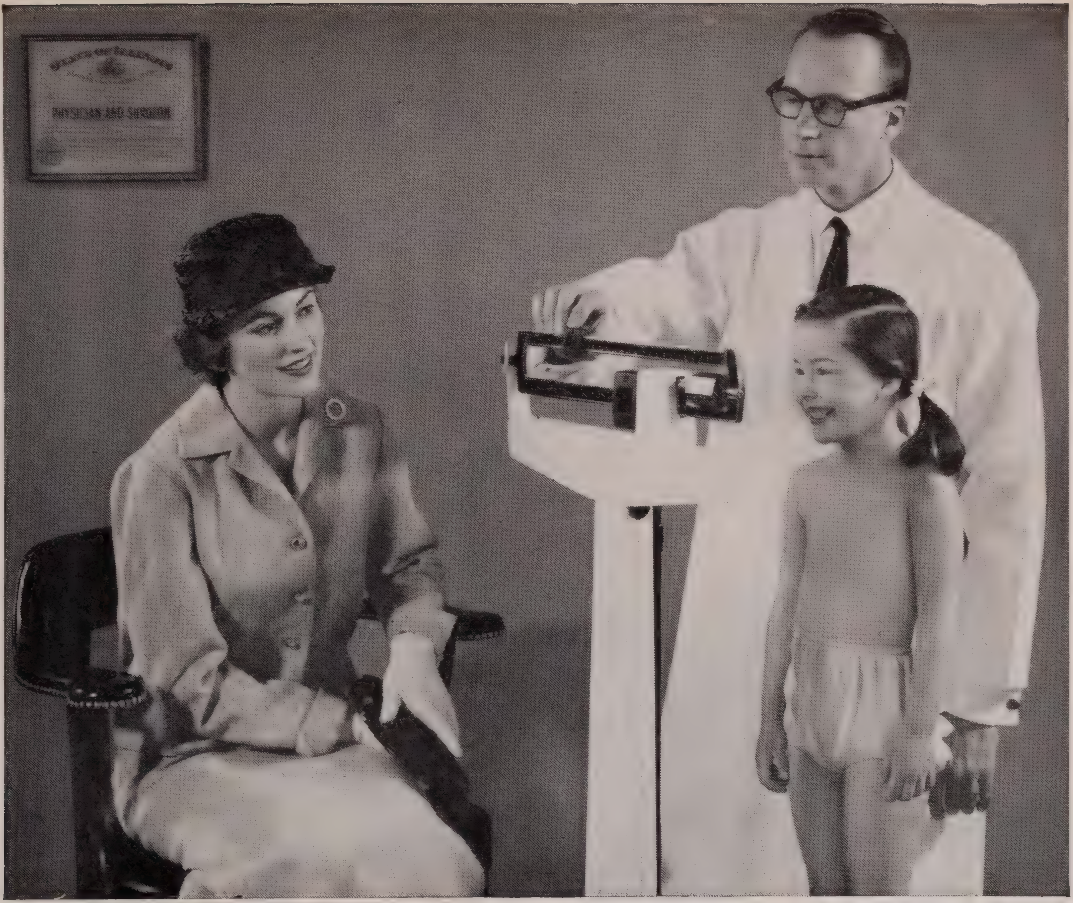
Medical Society of the State of New York

Statler Hilton Hotel, New York City

SCIENTIFIC PROGRAM

May 9 to 13, 1960

Any State Society member interested in presenting a paper before a scientific section or a general session is requested to contact the section chairman (see page 3898) or to write to Alfred P. Ingegno, M.D., Chairman, Scientific Program Subcommittee, at 27 Eighth Avenue, Brooklyn 17, New York, before November 1, 1959.



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Anorexia and "Weight Lag" Study—Brown, Libo and Nussbaum have reported* consistent and definite increases in rate of weight gain in eighty-six patients, ranging in age from 7 weeks to 15½ years. This beneficial action of Nilevar was observed in the patients with organic and traumatic disorders as well as those whose only complaints were poor appetite and/or persistent failure to gain weight.

In this study, the weight gained was not lost after discontinuance of Nilevar therapy although many patients did not continue the sharp gains effected by the drug.

The authors are of the opinion that Nilevar is a highly useful anabolic agent for influencing weight gain in underweight children.

When Nilevar is administered to children a dose of 0.25 mg. per pound of body weight is recommended and continuous dosage for more than three months is not recommended.

Nilevar is supplied as tablets of 10 mg., drops of 0.25 mg. per drop and ampuls of 25 mg. in 1 cc. of sesame oil. Further dosage information in Searle Reference Manual No. 4.

G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.

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*Brown, S. S.; Libo, H. W., and Nussbaum, A. H.: Norethandrolone in the Successful Management of Anorexia and "Weight Lag" in Children, Scientific Exhibit presented at the Annual Meeting of the American Academy of Pediatrics, Chicago, Oct. 20-23, 1958.

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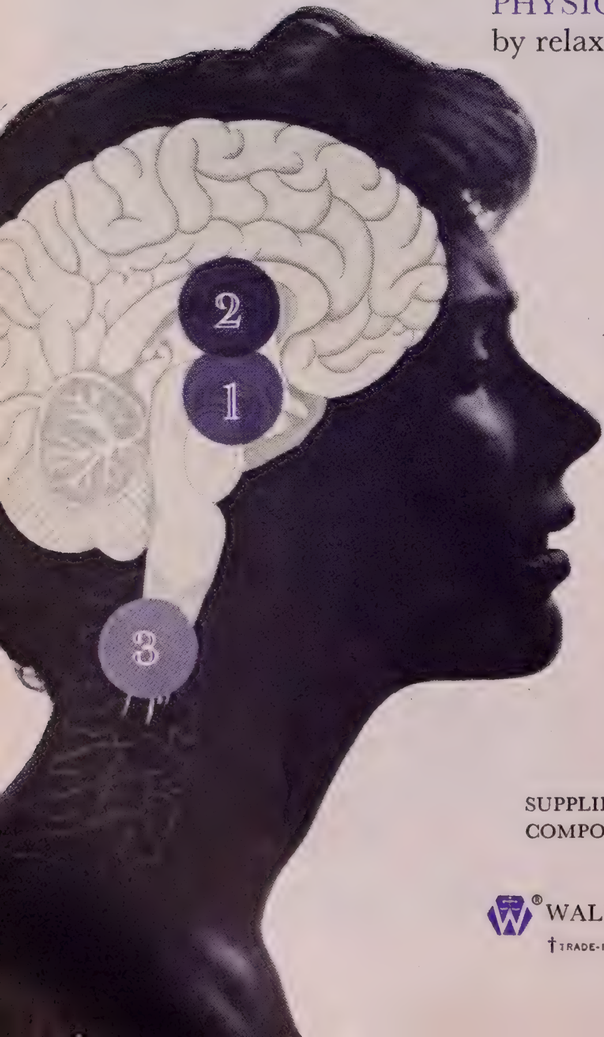

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SCIENTIFIC ARTICLES

Disability Associated with ECHO Virus Infections

PAUL F. WEHRLE, M.D., MILDRED E. JUDGE, R.P.T.,* MARGARET C. PARIZEAU, R.P.T.,† ORY CARBONARO, M.S., MYRON MILLER M.D., AND STANLEY ZINBERG, M.D., SYRACUSE, NEW YORK

(From the Department of Pediatrics, State University of New York Upstate Medical Center)

Until about ten years ago a diagnosis of poliomyelitis, based on clinical findings and confirmed by laboratory data acquired by the use of facilities available in the usual hospital laboratory, was made without misgivings by the clinician. If weakness was demonstrable, the classification of paralytic was added; if weakness was absent, or undetected on clinical evaluation, a diagnosis of nonparalytic poliomyelitis was made. The illness was sometimes termed abortive poliomyelitis if neither weakness nor spinal fluid abnormality was present. The physician was even more comfortable in his diagnosis if the nonparalytic illness had occurred during the summer or fall, if no contact with mumps was known, and if no antibody rise against mumps virus was detected in the complement-fixation test.

During the past few years this situation has changed dramatically. The discovery of the Coxsackie viruses[1] and their subsequent association with nonparalytic[2] and occasionally paralytic illness[3] was followed closely by the disclosure of several ECHO (enteric cytopathogenic human orphan) viruses,[4] again associated with both nonparalytic and mild paralytic disease.[5–9] The development of tissue culture technics which facilitated the discovery of these ECHO viruses also made rapid isolation and identification of viruses not only possible but prevalent in many centers, through the use of health department facilities and as a "by-product" of research projects.[10,11] These factors, together with the attempt to reach a precise etiologic diagnosis during the continuing evaluation of the efficacy of poliomyelitis vaccine, have compounded the physician's diagnostic possibilities in the poliomyelitis and aseptic meningitis syndromes.

In an attempt to further delineate the status of the ECHO viruses as causes of clinical disease in the Syracuse area, clinical and laboratory data and follow-up muscle function evaluations of patients with ECHO-6 and ECHO-9 infections have been reviewed. These data form the basis of this report.

Material and Method

The patients to be reported were admitted to the Syracuse City Hospital during the period from 1954 through 1958 with tentative diagnoses of acute poliomyelitis and aseptic, or viral, meningitis.** An ECHO virus was isolated from feces or spinal fluid or both from all patients at least once soon after admission. Virus isolation and typing

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Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, Section on Preventive Medicine and Public Health, May 13, 1959.

* City of Syracuse Department of Health.

† New York State Department of Health.

** The authors are grateful to the many private physicians who graciously permitted us to study these patients.

TABLE I.—NUMBER OF CASES OF VIRAL MENINGITIS WITH ECHO-6 AND ECHO-9 VIRUS ISOLATIONS, 1954–1958*

	Number of Patients					
Age (years)	1954	1955	1956	1957	1958	TOTAL
0 to 4	2	0	1	0	3	6
5 to 9	15	3	0	1	4	23
10 to 19	2	8	2	0	9	21
20 +	0	2	0	0	5	7
TOTAL	19	13	3	1	21	57

* All ECHO isolations prior to 1958 were ECHO-6; during 1958 ECHO-9 was the only ECHO agent associated with viral meningitis.

TABLE II.—CLINICAL MANIFESTATIONS ASSOCIATED WITH 35 ECHO-6 AND ECHO-9 CLINICAL INFECTIONS CLINICALLY DIAGNOSED AS ASEPTIC MENINGITIS*

	Patients with ECHO Virus					
	ECHO-6		ECHO-9		TOTAL	
Symptom	Number	Per Cent	Number	Per Cent	Number	Per Cent
Fever (history)	34	97	16	76	50	90
Headache	32	92	18	86	50	90
Vomiting	30	86	13	62	43	77
Stiff neck	26	74	19	91	45	80
Stiff back	16	46	3	14	19	34
Malaise (severe)	9	26	10	48	19	34
Aching	6	17	2	10	8	14
Rash	0	0	5	24	0	0
Fever in hospital						
2 days or less	22	63	17	81	39	70
4 days or more	3	9	2	10	5	9
TOTAL	35		21		56	

* One record not complete.

were performed in trypsinized cultures of either Macacca mulatta or cynomolgus monkey kidney cells.*[12] Identification of the virus was considered definite only if complete neutralization of cytopathogenic activity by specific antiserums was obtained with suitable controls on at least two successive tests after the primary isolation was accomplished. Many, although not all, serums were tested and found to be negative for mumps and poliovirus antibody rises. Data regarding ECHO antibody changes are not yet available due to technical difficulties.

Each patient had a complete evaluation of muscle function (performed by two of the authors, M.J. and M.P.) during early convalescence from the acute illness. At least one additional examination and often several evaluations were performed subsequently. Subjective statements of residual weakness were recorded.

Results

The number of patients studied by age and year of illness is recorded in Table I. It should be emphasized that these patients represent only those with illness severe enough to warrant hospitalization, and of those hospitalized, only those with definite virus isolation were considered. Although this sample of ECHO illness is consequently biased, the predominance of younger persons was characteristic of the disease pattern in the community. Another interesting pattern, revealed in this table, is the virtual disappearance of ECHO-6 from hospitalized patients by 1957, although it was the predominant ECHO agent isolated during the two-year period, 1954 to 1956, and its complete replacement by ECHO-9 during 1958.

The various clinical manifestations of these infections are listed in Table II. As

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* The serums used in this study were kindly supplied by Dr. Herbert Wenner, University of Kansas Medical School, Kansas City, Kansas.

TABLE III.—Muscle Function Status During Early Convalescence Following Symptomatic Infection with ECHO-6 and ECHO-9 Viruses

Muscle Function Grade	Number of Patients ECHO-6	ECHO-9	Total
Normal*	11	8	19
Good†	16	11	27
Fair**	8	1	9
Total	35	20	55

* Functioning 100 per cent.
† 75 to 90 per cent of normal function.
** 50 to 70 per cent of normal function.

TABLE IV.—Muscle Function Status Seven Months After Clinical Illness Associated with ECHO-9 Infection

Early Convalescent Muscle Function Grade	Grade After 7 Months Normal*	Good†	Fair**	Total
Normal	1	1††	0	2
Good	1	3 (2††)	1††	5
Total	2	4	1	7

* Functioning 100 per cent.
† 75 to 90 per cent of normal function.
** 50 to 70 per cent of normal function.
†† Symptomatic (ache or limp) when fatigued.

has been noted by other observers, there is no easy clinical differentiation between mild poliovirus infection and other agents capable of producing the aseptic meningitis syndrome. The mildness of the clinical illness was striking. The headache and stiff neck were often not accompanied by other signs of meningeal irritation, and the symptoms cleared rapidly. Two thirds of the patients were afebrile by the end of the second hospital day.

The presence of a diffuse macular rash resembling that of rubella was the sole means of definite clinical differentiation within this group. Unfortunately for the clinician, this rash was present in only 5, or 24 per cent, of those with the ECHO-9 infection and occurred among children with only 1 exception. This is similar to the larger experience elsewhere.[7] It should be noted that during 1958, when the ECHO-9 infection was prevalent, the vast majority of persons with similar illnesses were not hospitalized. Since the presence of the rash aided in the clinical differentiation from poliomyelitis, it is likely that fewer patients with rash were hospitalized.

Although the great majority of the patients had no apparent weakness on a cursory physical examination and no cranial nerve paralysis was observed, many had definite weakness, of various degrees on careful muscle grading, during early convalescence. The frequency and severity of involvement at the time of the muscle grading in early convalescence are recorded in Table III. It is doubtful that any real difference in their effect on muscle function exists between the ECHO-6 and ECHO-9 infection groups. In the combined experience, mild but definite weakness was found in 36, or 65 per cent, of the cases studied. Two considerations must be stressed in regard to this finding: First, the patients studied represent only the relatively small proportion of the total illnesses occurring in the community during this period, which makes it likely that only the more severe illnesses are represented in this study. Second, although weakness appeared in individual muscle groups, none of these patients developed bulbar manifestations or paralysis of an extremity that was grossly apparent without testing the individual muscle groups involved.

Since some degree of muscle weakness may be part of the debility associated with acute systemic infection, 16 of these patients were re-evaluated after various periods of activity or were followed in established clinics. The functional status of 7 persons determined seven months after the onset of the acute illness associated which ECHO-9 virus (longest follow-up period possible) is noted in Table IV. Of the 5 persons with weakness detected during early convalescence, only 1 has returned to a completely normal status and 3 remain symptomatic, although only when fatigued. One of 2 persons initially regarded as normal now has some weakness and is mildly symptomatic.

Longer follow-up periods are available for the ECHO-6 convalescents, as noted in Table V. All of the 9 persons with initial weakness have returned to completely normal

TABLE V.—Persistence of Muscular Weakness Following Clinical Illness Associated with ECHO-6 Infection in 9 Patients with Weakness Demonstrable in Early Convalescence*

Early Convalescent Muscle Function Grade	Interval Until Return of Normal Function			Total
	<6 months	6 months to 1 year	2 years	
Good†	2	4	2	8
Fair**	0	1	0	1
Total	2	5	2	9

* All patients eventually returned to normal function.

†75 to 90 per cent of normal function.

** 50 to 70 per cent of normal function.

muscle function during the course of a two-year period, 7 of the 9 within one year. These persons represent, as do those recorded in Table IV, the more severe cases of those hospitalized.

Comment

The first question that arises is whether these infections represent mild poliovirus infection not detected at the time of hospitalization. Since poliovirus is not isolated from all paralytic cases with current laboratory technics, and since serologic technics do not yet offer complete accuracy in the diagnosis, it is possible that in some patients poliovirus was present as well as the ECHO viruses. In addition, various ECHO viruses as well as polioviruses and Coxsackie viruses may be prevalent during the summer months.[13,14] However, it should be recalled that ECHO viruses were the only agents isolated from these patients, and in some instances these were recovered from the spinal fluid. Therefore, it seems valid, while recognizing the limitations of etiologic diagnosis, to consider these as illnessess associated with and presumably due to ECHO virus infection.

The association of ECHO virus infection with mild and occasionally severe degrees of muscle weakness has been reported previously.[5–9] In this study the finding of definite, although invariably relatively mild, muscle weakness was confirmed, and the persistence of this weakness for long periods of time, occasionally with symptoms referable to it, was found. The true importance of these viruses as a cause of illness and minor disability has yet to be defined and requires further study. Although limited experience in monkeys suggests that neuronal damage in this species did not occur,[15] this may not necessarily be characteristic for all strains of ECHO viruses or be the case in man.

The principal lesson to be learned from this experience is that careful evaluation of each patient is essential in the proper management of the aseptic meningitis syndrome. Although many of these patients can return to full activity soon after convalescence, some will undoubtedly be benefited by graded exercises and other rehabilitation technics, provided the location and extent of weakness are known. The status of these patients can be identified only by complete and accurate muscle evaluation by an especially-trained orthopedist or physical therapist.

Summary and Conclusions

Cases of aseptic meningitis associated with ECHO virus infection observed between 1954 and 1958 have been reviewed. The similarity of the clinical course to that of viral meningitis due to other causes is apparent, with the sole exception of the rash found with the ECHO-9 infection.

Nearly two thirds of these patients had mild, although demonstrable, muscle weakness in one or more groups during early convalescence. This weakness returned to normal in all cases available for study after the ECHO-6 infection. Since the follow-up period after ECHO-9 infections is considerably shorter, no conclusions can be drawn regarding the ultimate outcome in this group, although 5 of 7 patients have demonstrable weakness after seven months.

These observations again demonstrate the need for careful functional evaluation of persons with aseptic meningitis, regardless of the etiology of the disease, in order to assure optimal functional recovery.

We are indebted to Dr. S. S. Kalter and Mr. Robert LeBeau of the Center for the strains of ECHO virus isolated during 1954 and 1955.

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Discussion

A. Clement Silverman, M.D., *Syracuse, New York.*—The epidemiologist may well suspect early in an outbreak that he is dealing with a viral meningitis rather than polio. A precise etiologic diagnosis in a given case must depend, however, on the virus laboratory, even though it is recognized that extensive facilities are not generally available and that serologic technics do not yet offer complete accuracy in diagnosis.

This paper calls attention principally to the fact that demonstrable muscle weakness, although quite mild, was elicited in a majority of the ECHO cases. This is in line with the judgment that clinical involvement of the central nervous system requires careful observation, rest, and study beyond the febrile period.

It may not be amiss in this connection to refer to one of my cases included in this study. A ten-year-old boy vomited and complained of severe headache. When seen at the office he had neither fever nor stiff neck, but it was elicited that the mother had been "pushing" aspirin. When aspirin was discontinued, both fever and stiff neck appeared, and he was shown to have ECHO-9 meningitis.

The indefatigable pursuit of an unattainable perfection, even though it consists in nothing more than in the pounding of an old piano, is what alone gives a meaning to our life on this unavailing star.—LOGAN PEARSALL SMITH

Antimalarial Preparations in the Treatment of Cutaneous Disorders

FRANKLIN S. GLICKMAN, M.D., AND HARRY SHATIN, M.D., BRONX, NEW YORK, AND ORLANDO CANIZARES, M.D., NEW YORK CITY

(*From the Veterans Administration Hospital, Bronx*)

An article by Page in 1951[1] drew attention to the use of quinacrine hydrochloride in the treatment of chronic discoid lupus erythematosus, a disease which heretofore had been quite resistant to therapy. This paper started off a series of studies on the uses of the synthetic antimalarial drugs in the treatment of cutaneous disorders. These antimalarial drugs have now become important members of the dermatologist's armamentarium and have also been studied quite intensively by the internists as anti-inflammatory drugs.

Even though Page's article called attention to this group of drugs, he was not the first to have used them in such fashion. Unknown to him, Prokoptchuk had already described the use of quinacrine hydrochloride in lupus erythematosus in the year 1940,[2] but because the report had appeared in a Russian journal little attention was attracted to it. The use of this group goes back even further, for in 1928 Martenstein[3] described the treatment of lupus erythematosus with pamaquine naphthoate. His results were good, although the treatment was empiric. However, for practical purposes, one must still come back to Page since it was his article that focused attention on this use of quinacrine hydrochloride.

Within the year reports[4–6] began to appear in the literature confirming the effectiveness of quinacrine hydrochloride in the treatment of chronic discoid lupus erythematosus. In short order investigations of other synthetic antimalarial drugs were undertaken. Both in the United States[7] and in England[8] independent reports appeared in 1953 on the value of chloroquine phosphate in the treatment of this disease. It has since become the most widely used of the synthetic antimalarial group in the treatment of lupus erythematosus and light-sensitivity eruptions.

Research into the possible use of other antimalarial drugs has continued in an attempt to find more effective and less toxic preparations for the treatment of lupus erythematosus. At the same time these preparations have been used also in a great variety of dermatologic conditions to determine their range of usefulness and modes of action.

Hydroxychloroquine sulfate[9,10] and amodiaquin hydrochloride[11,12] were both reported in 1956 as showing some promise as substitutes for chloroquine phosphate in the treatment of lupus erythematosus. Also, a three-drug combination of quinacrine hydrochloride, chloroquine phosphate, and hydroxychloroquine sulfate (first studied under the name APA 5533) known as Triquin was introduced in an attempt to increase effectiveness and decrease toxicity, as has been done with the triple sulfonamides.[13,14]

Chemistry

The antimalarial drugs (Fig. 1) are those drugs which have the property in common of destroying the plasmodium and thus being effective in the treatment of malaria. The parent antimalarial drug is quinine. It is basically a substituted quinoline with a complex quinuclidine radical as a side chain. Pamaquine naphthoate (Plasmochin), one

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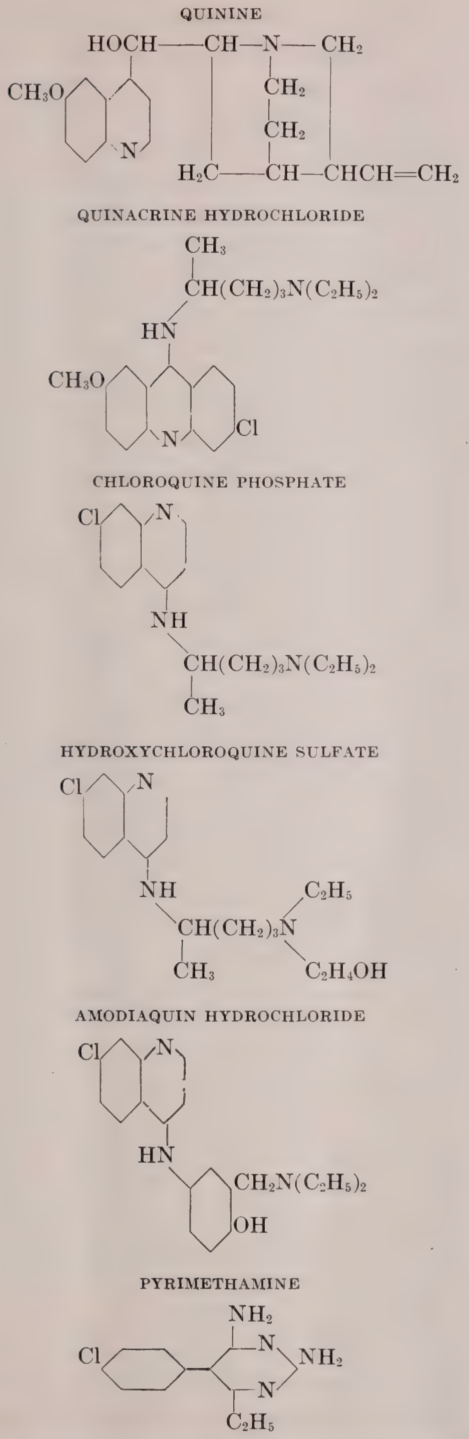
Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, Section on Dermatology and Syphilology, May 12, 1959.



QUININE

QUINACRINE HYDROCHLORIDE

CHLOROQUINE PHOSPHATE

HYDROXYCHLOROQUINE SULFATE

AMODIAQUIN HYDROCHLORIDE

PYRIMETHAMINE

Fig. 1. Chemical structures of antimalarial drugs.

of the first of the synthetic antimalarial drugs, is only of historical interest to the dermatologist. In it the complex quinuclidine radical was dropped and a simpler alkylamino radical was added to the quinoline nucleus. In quinacrine hydrochloride (atabrine, Mepacrine hydrochloride) the side alkylamino radical is retained but the addition of another benzene ring to the quinoline nucleus changes it to an acridine compound. This is the first of the antimalarial drugs to attain wide use by the dermatologist.

In an attempt to attain a less toxic preparation the 4-aminoquinolines were then studied. These show a return to the quinoline nucleus of pamaquine and quinine. Chloroquine phosphate (Aralen phosphate), hydroxychloroquine sulfate (Plaquenil sulfate) and amodiaquin hydrochloride (Camoquin hydrochloride) are the same drug basically but with modifications of a minor degree in the side chain.

Another antimalarial drug, pyrimethamine (Daraprim) a simple pyrimidine, has been found ineffective for dermatologic use.[15] We thus see that it is essentially the antimalarial drugs with the quinoline structure that have been of value to the dermatologist.

Mode of Action

The mode of action of the antimalarial drugs in the various cutaneous conditions is still unknown.

In view of the effectiveness of these drugs in chronic discoid lupus erythematosus, where it is well known that sunlight exposure can be a precipitating or aggravating factor, and in the treatment of polymorphous light eruptions, the apparently obvious conclusion was drawn that the antimalarial drugs reduced the sensitivity of the skin to light. Some authors[1,16] felt that the drugs were deposited in the epidermal cells and actually screened out the noxious wave lengths. In fact, experimental studies in vitro showed that these antimalarial drugs did absorb light in the 2,200 to 3,400 Angstrom wave lengths,[16] these being the wave lengths most prone to produce light-sensitivity reactions.

However, Shaffer, Cahn, and Levy[17] demonstrated that stripped skin from volunteers who had ingested antimalarial drugs had the same ultraviolet absorption curves as did separated skin from normal individuals who had not ingested antimalarial drugs. The amount of drug present in the skin was not sufficient to act as a physical barrier. Further, Cahn, Levy, and Shaffer[18] showed that chloroquine phosphate did not affect the minimal erythema response of the skin to ultraviolet in normal or light-sensitive individuals but would inhibit the papular response to hot quartz ultraviolet in a light-sensitive individual. They therefore concluded that chloroquine phosphate produced its effect by modifying the reaction pattern of the light-sensitive individual so as to suppress the abnormal but not the normal responses to ultraviolet light, rather than by a light-screening effect.

As the antimalarial drugs were tried out on many unrelated dermatoses, they were shown to have a definite anti-inflammatory effect in a variety of conditions in which light sensitivity plays no role.[19] An anti-inflammatory effect has also been demonstrated experimentally in animals. This seems to argue against the idea that antimalarial drugs are effective through a light-screening mechanism. It was also found that the anti-inflammatory effect is not steroidal and that there is no stimulation of the adrenal cortex.[20]

The antimalarial drugs have been shown to inhibit various enzymatic functions and also to interfere with and block the L.E. phenomenon.[21,22] The true explanation for the anti-inflammatory action of these drugs may lie in this direction but as yet the mode of action of these drugs must be considered unknown.

Toxicity of Antimalarial Drugs

Quinacrine hydrochloride, although the first of the series to prove its effectiveness in certain disorders, is potentially the most toxic drug of the series.[23] The minor reactions are vertigo and gastrointestinal upsets. These are sometimes a function of the dose and can be reduced by decreasing the dose. The yellow discoloration developing after quinacrine hydrochloride has been taken for several weeks is well known. Although this discoloration is not dangerous, it is disfiguring and can be quite disturbing to some patients and cosmetically unacceptable to others. Some of the reactions can be much more disabling and among these have been reported cases of exfoliative dermatitis, lichenoid dermatitis with resulting sweat-retention syndromes, polyneuritis, toxic psychoses, and liver damage due to acute hepatitis. Finally, cases of fatal agranulocytosis[24] and aplastic anemia[5] have been reported. Toxic reactions due to quinacrine hydrochloride were well studied during and immediately after World War II when it was used extensively in the prophylaxis and treatment of malaria.

Chloroquine phosphate, currently the most commonly used of the series, is not devoid of reactions although less toxic than quinacrine hydrochloride.[25] Although it does not pigment the skin, drug eruptions do occur, varying from a mild, generalized pruritus or transient maculopapular eruption to erythema multiforme and achromotrichia (or bleaching of the hair). As with quinacrine hydrochloride, lichenoid dermatitis and exfoliative dermatitis have also been reported, but in general the incidence of cutaneous reactions is low. There are several reports of acute porphyria developing during chloroquine therapy.[26] Among minor reactions are gastrointestinal disturbances, dizziness, headaches, and nightmares. Probably the most common minor reaction is a visual disturbance due to accommodation difficulties. This can usually be rapidly controlled in several days by discontinuing the chloroquine phosphate.

Hydroxychloroquine sulfate may produce minor symptoms such as hoarseness, gastrointestinal symptoms of cramping and diarrhea, and some toxic eruptions.[9,10,27]

Amodiaquin hydrochloride has also been reported to produce gastrointestinal upsets (nausea, anorexia, vomiting, diarrhea), melanosis, and double vision. Rarely, cutaneous eruptions have occurred and, among the severe reactions, agranulocytosis has been reported.[28] The toxic minor symptoms of these reactions may disappear with reduction in dosage.

In the group as a whole quinacrine hydrochloride appears to be the most toxic, with chloroquine phosphate far less toxic than quinacrine hydrochloride. There is the impression on the part of some that hydroxychloroquine sulfate and amodiaquin hydrochloride are possibly slightly less toxic than chloroquine phosphate. However, many authors feel that there is little to choose among the latter three as regards toxicity.

A three-drug combination of quinacrine hydrochloride, hydroxychloroquine sulfate, and chloroquine is capable of producing the toxic reactions of each of the individual drugs involved but, because of the lesser dose of each, it was hoped that the incidence of side-reactions would be lessened. Some patients develop mild gastrointestinal disturbances, which clear spontaneously or when the dose is lowered, and develop skin eruptions which disappear when the medication is discontinued. Yellowing of the skin apparently due to the quinacrine hydrochloride content was noted by some.[29] The most important reaction to be considered is some change in liver function studies reminiscent of the hepatitis developing sometimes with quinacrine hydrochloride therapy.[30]

Choice of Drug

Quinacrine hydrochloride is potentially the most toxic and has practically been given up for routine use in the conditions responding to the synthetic antimalarial drugs. Chloroquine phosphate has become the drug of choice, although hydroxychloroquine sulfate and amodiaquin hydrochloride are apparently as effective. These latter three are all of value, and where one is indicated any one of the three can be used.

Choice of the drug to be used will be dictated by tolerance, since a patient may react to one and not react to another of this group. Also, some patients show little response to one drug and yet lesions will clear rapidly with another member of the group. This behavior is similar to that seen with the antihistaminic drugs where the choice depends on the tolerance of the individual and his response to the chosen drug. It is somewhat of a trial and error process. If the patient does not respond to chloroquine phosphate, then hydroxychloroquine sulfate and amodiaquin hydrochloride should be tried in turn.

It has not yet been decided whether the three-drug combination offers any real advantage since not all authors are agreed as to better clinical results. There is also the greater potential toxicity of the quinacrine hydrochloride which may be a drawback to its use.

Preparation Form and Dosages

Quinacrine hydrochloride is available in tablet form, 100 mg. per tablet, and has been prescribed in dosages of 100, 200, or 300 mg. (one, two, or three tablets) per day depending on the particular case and tolerance. The average starting dose for the adult has been 200 mg. daily with a maintenance dose of 100 mg. daily.

Chloroquine phosphate is available in tablets of 125 and 250 mg. The average adult starting dose is 500 to 750 mg. (two or three tablets) daily, and the average maintenance dose is 250 mg. (one tablet) daily.

Hydroxychloroquine sulfate is available in 200 mg. tablets. The average adult dose is 400 to 600 mg. (two or three tablets) daily as a starter with a maintenance dose of 200 to 400 mg. (one or two tablets) daily.

Amodiaquin hydrochloride is available in 200 mg. tablets and is given in doses of 400 mg. (two tablets) daily for adults with a maintenance dose of 200 mg. (one tablet) daily.

Last, there is a combination tablet consisting of quinacrine hydrochloride 25 mg., chloroquine phosphate 65 mg., and hydroxychloroquine sulfate 50 mg. This has been prescribed in doses of two or three tablets daily with a maintenance dose of one or two tablets daily.

Some mention should be made of the local use of quinacrine hydrochloride and chloroquine phosphate by injection into the lesion. A 5 per cent solution is used combined with 2 per cent procaine to minimize the pain of injection and epinephrine to control minor hemorrhage.[31]

Indications

The antimalarial drugs have been used in a host of dermatologic conditions. These can be divided into four groups, depending on the effectiveness of the antimalarial drugs.

I. ANTIMALARIAL DRUGS THE DRUGS OF CHOICE.—Experience and a multitude of reports have shown that the antimalarial drugs are the drugs of choice for certain conditions. These are essentially lupus erythematosus and the light-sensitivity reactions.

Chronic discoid lupus erythematosus is greatly benefited by the use of antimalarial drugs, and there are many reports to that effect. Our personal experience has been in line with these reports. We have treated a total of 24 cases of chronic discoid lupus erythematosus. Three received quinacrine hydrochloride, 11 received a course of the three-drug combination, and 10 received chloroquine phosphate. There was one lichenoid eruption with quinacrine hydrochloride that forced us to stop treatment; the other 2 patients treated with quinacrine hydrochloride showed remission with healing of the lesions. Of the 10 patients treated with chloroquine phosphate, 8 improved and 2 had gastrointestinal upsets that forced us to stop treatment. Of the 11 patients on the three-drug combination, 9 improved, 1 did not improve but did so after changing to chloroquine phosphate, and 1 has shown no improvement with any antimalarial drug. There were no adverse reactions to the three-drug combination.

Our drug of choice in treatment today is chloroquine phosphate although we recently have been working with the three-drug combination. Our dosage with chloroquine phosphate is 250 mg. (one tablet) twice a day as a starting dose to test for tolerance and gastrointestinal upsets. If this is well tolerated we increase the dose after one week to 250 mg. three times a day and maintain this regimen until the lesions have healed. In the average case improvement becomes visible within two to three weeks of treatment and then progresses steadily. Once the lesions have healed we reduce the dosage to two tablets daily for two weeks, next one tablet a day for two weeks, then one tablet a day on alternate days for several weeks, and then finally we discontinue treatment.

In general, severe intolerance and untoward reaction to the drug should be an indication for its discontinuance. Minor reactions such as mild gastrointestinal upsets may be tolerated by reduction in dosage. Change to another member of the group may be of value in case of intolerance but it should be remembered, in the case of true allergic reactions, that the three-drug combination is merely a combination of three other drugs, not a different chemical entity.

It is our impression that a small maintenance dose continued after clinical remission for a period of time will help reduce recurrence rates and delay the recurrence. On the average a complete course of treatment should take about three months, with moderate improvement visible in about three weeks in about 75 per cent of the patients. Duration of the remission is variable and the recurrence will usually respond to retreatment with chloroquine phosphate or one of the other antimalarial drugs.[32,33]

The program as outlined for chloroquine phosphate should be followed when hydroxychloroquine sulfate or amodiaquin hydrochloride are used, although the effective dose for each drug will vary with the patient.

Subacute and acute disseminated lupus erythematosus will also benefit from treatment with the antimalarial drugs.[34] In the milder, subacute form where there is evidence of systematization but the patient is not seriously ill, antimalarial drugs should be considered as first choice, ahead of corticosteroids. There have been reports of exacerbation in the disease process if treatment is initiated too vigorously. Therefore, medication should be introduced at a low dosage, such as 50 mg. chloroquine phosphate daily, and increased slowly.

In the acute and severe systemic disease the corticosteroids are the drugs of choice. However, after the disease process has been brought under control, introduction of the antimalarial drugs in synergistic use with the corticosteroids can permit a lower maintenance dose of the latter. Also, a more rapid weaning process is possible with final maintenance solely with the antimalarial drugs.[35,36]

Mention should be made here of the local treatment of chronic discoid lupus erythematosus lesions by the intracutaneous injections of 5 per cent chloroquine phosphate or quinacrine hydrochloride solution.[31,37] Enough must be injected to produce a wheal. Results are best in the newer nonatrophic lesions although results in general are good. This form of therapy is probably best reserved for the patient with few lesions and when oral dosage is poorly tolerated.

Polymorphous light eruptions and other light-sensitivity manifestations have been favorably influenced by the antimalarial drugs[38–40] which have been used both in the treatment and in the prophylaxis of its manifestations. We have treated 3 cases with the three-drug combination and all 3 patients have shown improvement. The dosage is similar to that for chronic discoid lupus erythematosus although the initial dose can be more rapidly reduced to the maintenance dose level.

II. Antimalarial Drugs Reported Useful.—In a small number of dermatoses the results with antimalarial drugs have apparently been of some interest, although not regularly or unequivocally so, and the conclusions are based on more than a single isolated case report. One should keep in mind the possible use of the antimalarial drugs in these dermatoses.

Granuloma annulare was treated by Cahn and Levy[41] with 3 patients showing a remarkable response out of a total of 6 cases treated. The authors question this effect since they note that this is a capricious and unpredictable disease and feel that further confirmation will be necessary. However, there has been another recent report[42] of a disseminated granuloma annulare responding to treatment with chloroquine phosphate, relapsing two months after cessation of treatment, and clearing after chloroquine phosphate therapy was instituted again.

Rosacea apparently also shows some response. Of 6 cases treated by us, 4 showed a good response along with local therapy, 1 showed no improvement, and in 1 the drug was discontinued because of side-reactions. Cahn and Levy[41] also found some rosacea patients improving with antimalarial therapy but found that the improvement was in those whose skin eruption became worse when it was exposed to summer sunlight. The authors feel that these patients had a light sensitivity complicating their rosacea and that the response was an example of improvement of a light-sensitivity dermatosis with antimalarial drugs.

Lichen planus is reported as responding to antimalarial therapy. One report[19] describes good results in 5 out of 7 patients. Another[41] reports a good response in 10 out of 36 patients with the eruption spreading or becoming worse when the drug was discontinued. We have treated 5 cases with chloroquine phosphate; of these 1 showed improvement, 3 showed no improvement, and 1 had gastrointestinal intolerance that forced us to stop the medication. It has been our experience that lichen planus treated symptomatically or left untreated offers no worse prognosis than the results described. We therefore feel that chloroquine phosphate is not beneficial and that lichen planus should be placed more properly in the third group although we have listed it with the second group because of the contrary findings by authors who have evaluated series longer than ours.

III. Antimalarial Drugs Inadequately Evaluated or not Useful.—Dermatoses in which antimalarial drugs have been given a therapeutic trial have been listed. A number of these dermatoses have been reported as responding to treatment but the evidence for this consists of single scattered reports based on few cases. Although they should be mentioned, judgment should be kept in abeyance until further evaluations and reports are available. Other dermatoses in this group have been reported as not responding to treatment. In a few cases there has been adequate evaluation, but for the most part there can be no real judgment as to lack of effectiveness.

Among the dermatoses responding to treatment have been listed acrodermatitis chronica atrophicans, creeping eruption,[43] lymphocytic infiltration of the skin, pemphigus, cutaneous leishmaniasis, pseudopelade, vitiligo, atopic dermatitis (with striking palliative relief of itching), scleroderma, morphea, lichen sclerosus et atrophicus, and cheilitis. Pustular bacterids have also been reported as being influenced favorably.

Among the dermatoses listed as not responding to treatment are mycosis fungoides and dermatitis herpetiformis. Sarcoidosis seemed to be influenced, according to a few early reports, but a double blind study[41] shows that the antimalarial drugs have no specific value. Verrucae likewise have been reported as responding. However, we had improvement in only 4 out of 15 cases, an incidence of cure that can be obtained with any placebo in the treatment of verrucae.

IV. Antimalarial Drugs Contraindicated.—Psoriasis has definitely not been improved with antimalarial drugs. On the contrary, an ordinary psoriasis is often transformed into a severe exfoliative dermatitis following treatment with antimalarial drugs.[19,44,45]

Chloroquine phosphate has been advocated in the treatment of rheumatoid arthritis.[46] It behooves the physician treating such a patient to examine him carefully since there is a frequent coexistence of psoriasis and arthritis. The arthritic patient treated with chloroquine phosphate runs a great risk of developing an exfoliative dermatitis if there is an associated psoriasis.

It has been reported[47] that porphyria cutanea tarda can be controlled with prolonged chloroquine phosphate treatment. However, it is well known that the antimalarial drugs are concentrated in the liver and are potentially hepatotoxic. Also, as we pointed out earlier,[26] acute porphyria has developed as a result of chloroquine phosphate treatment. Since porphyria cutanea tarda is frequently associated with liver damage and abnormal liver function tests, the use of antimalarial drugs in the control of light sensitization reactions of this disease is hazardous.[48]

Summary

The synthetic antimalarial drugs quinacrine hydrochloride, chloroquine phosphate, hydroxychloroquine sulfate, and amodiaquin hydrochloride have been found to be the drugs of choice in the treatment of chronic discoid lupus erythematosus and light-sensitivity eruptions. They are also of value in the maintenance treatment of subacute and acute systemic lupus erythematosus after initial treatment with corticosteroids.

Granuloma annulare and rosacea may possibly also be benefited by the antimalarial drugs.

Quinacrine hydrochloride is the least used of the antimalarial drugs because of its toxicity, and chloroquine phosphate is possibly the most widely used although hydroxychloroquine sulfate and amodiaquin hydrochloride are probably of equal value.

The choice of drug depends essentially on the tolerance of the patient to the individual drug and its effectiveness. Each patient does not necessarily respond to all members of the group.

The mechanism of the anti-inflammatory action is unknown. It is apparently not a simple light-screening mechanism.

Psoriasis is a definite contraindication for the use of antimalarial drugs since there is a marked tendency for it to be transformed into an exfoliative dermatitis during treatment with such drugs.

The danger of exfoliative dermatitis should be recalled when treating rheumatoid arthritis with chloroquine phosphate because of the frequent association of psoriasis with arthritis.

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Discussion

Joseph J. Hallett, M.D., *Rochester, New York.*—I should like to congratulate the authors on an excellent and timely paper which is quite complete in its text. When a new drug is introduced it must go through a period of therapeutic enthusiasm and then, after a period of years, it will finally find its justified place in therapy. Thus the antimalarial drugs become the drugs of choice in only two diseases, lupus erythematosus and polymorphous light eruptions.

It is timely that the possibility of an exfoliative dermatitis occurring in psoriatic patients given synthetic antimalarial drugs be emphasized in view of the recent popularity of these drugs in the treatment of the rheumatic state. The warning becomes more significant especially in the psoriatic, arthritic patient whose only other evidence of psoriasis may be psoriatic nail changes or psoriasis of the scalp.

Recently Epstein, Forsham, and Friedman[a] demonstrated an increase in the apparent free plasma 17-hydroxycorticoids, with the urinary total of 17-hydroxycorticoids and 17-ketosteroids remaining unchanged, again indicating that there was no increase in adrenal corticoid production. Therefore the anti-inflammatory effect of the synthetic antimalarial drugs may be due to the increase of the apparent free plasma 17-hydroxycorticoids but the exact mode of action remains unknown.

My personal experience in the treatment of lichen planus with these drugs has not been satisfactory. The efficacy of these drugs in pustular bacterids of the hands and feet is quite debatable.

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[a] Epstein, J. H., Forsham, P. H., and Friedman, E.: Effect of chloroquin on adrenal corticoid metabolism, J. Invest. Dermat. **32**: 109 (Feb.) 1959.

Spending of Medical Care Dollar Changes

The publication *Patterns of Disease* notes a change in the way in which a patient's medical care dollar is spent. The physician's share of the medical care dollar has been declining steadily for the past few decades—from 32.6 cents in 1929 to 24.5 cents in 1957. Contrary to popular belief, the amount spent on drugs has remained stable for this period—at approximately 20.6 cents. However, the amount spent on health insurance and hospital care has practically doubled.

General Anesthesia for the Difficult Laryngoscopy

OLGA SCHWEIZER, M.D., AND WILLIAM S. HOWLAND, M.D., NEW YORK CITY

(*From the Memorial Center for Cancer and Allied Diseases*)

IN a hospital with a large head and neck service it is frequently necessary to perform direct laryngoscopy for both diagnostic and therapeutic purposes. The majority of such operations can be carried out without difficulty in the outpatient department employing topical anesthesia. In a few patients, however, psychologic problems or anatomic structure make it impossible to secure adequate visualization of the vocal cords and adjacent structures without the use of general anesthesia. For these patients it was essential to devise a technic of anesthesia which would provide a maximum degree of safety and at the same time insure ideal operating conditions for the surgeon. The present report reviews our experience with a combination topical and intravenous barbiturate anesthesia in 191 difficult patients.

Source of Material

The clinical material included in this study represents 200 procedures performed on 191 patients in the period from 1954 to the present. Eight patients were subjected to two operations and 1 patient to three different procedures. There were 122 male and 79 female patients in the series with ages ranging from twenty-seven to seventy-eight years. Although the majority were healthy individuals in the middle decades of life, the group included a sufficient number of elderly patients and those with serious preoperative complications (Table I) to justify the contention that the technic of anesthesia to be described can be employed with safety in the poor- as well as the good-risk patient. Hoarseness and chronic cough were present in almost every patient in the series. The diagnoses and operative procedures are listed in Tables II and III.

TABLE I.—PREOPERATIVE COMPLICATIONS

Type of Complication	Number of Cases
Hypertensive cardiovascular disease	19
Coronary heart disease	5
Rheumatic heart disease	1
Congenital heart disease	1
Chronic bronchitis	2
Asthma	1
Pulmonary emphysema	1
Diabetic mellitus	2
Hepatomegaly	4
Obesity	4
Lymphatic leukemia	1
Hodgkin's disease	1
Chronic alcoholism	3
Epilepsy	1
Manic-depressive psychosis	1
TOTAL	47

TABLE II.—DIAGNOSES

Pathology	Number of Cases
Polyp of vocal cord	89
Singer's node vocal cord	20
Leukoplakia vocal cord	15
Granuloma intrinsic larynx	12
Cyst of larynx	5
Pachydermia laryngis	4
Cancer of larynx	43
Miscellaneous conditions	12
TOTAL	200

TABLE III.—OPERATIONS

Type of Operation	Number of Cases
Laryngoscopy	4
Laryngoscopy and biopsy	41
Excision of benign lesion of vocal cord	99
Stripping of vocal cord	36
Lysis of webbing of commissure	2
Laryngoscopy followed by major operation	18
TOTAL	200

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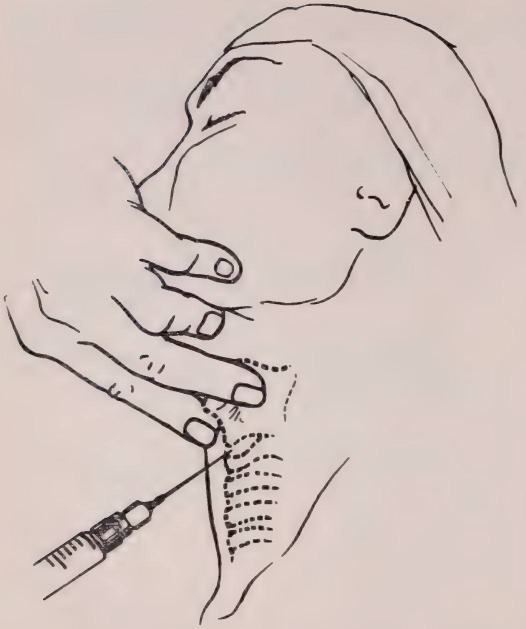

FIG. 1. Instillation of anesthesia into the larynx through the cricothyroid membrane using a 21-gauge needle attached to a 2 cc. syringe.

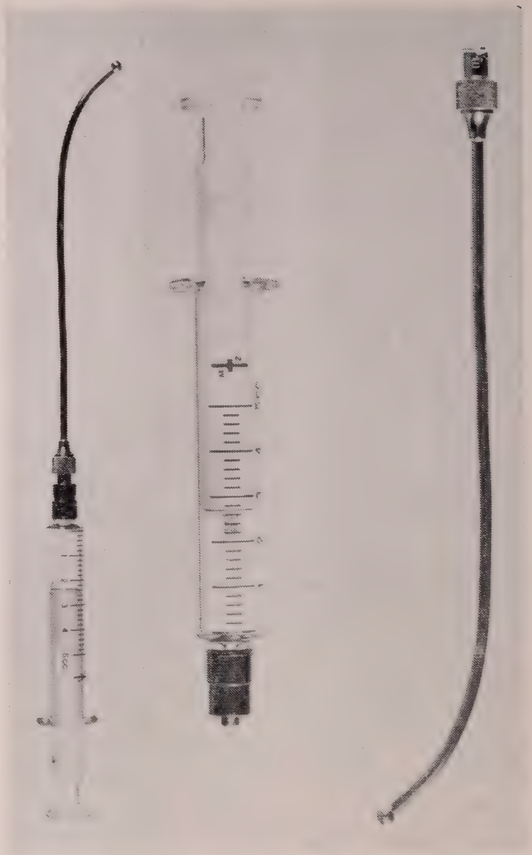

FIG. 2. Malleable cannula and 5 cc. syringe, shown separately and attached.

The duration of operation varied from ten to twenty minutes in the majority of cases but a much longer period of anesthesia was required in a few instances. The maximum length of anesthesia in the present series was forty-five minutes for a combination of laryngoscopy, bronchoscopy, and esophagoscopy.

Technic of Anesthesia

A preoperative visit by the anesthesiologist is an important feature of the safe conduct of anesthesia in patients with partial respiratory obstruction. After careful evaluation of the degree of patency of the airway, including a review of the findings of any previous indirect laryngoscopy, the anesthesiologist decides on the suitability of the patient for the contemplated type of anesthesia. Although the technic to be described can be employed with safety in mild and moderate degrees of respiratory obstruction, it is essential to perform a preliminary tracheostomy in individuals with severe impairment of the airway.

Premedication with an opiate and a belladonna derivative is administered one hour prior to operation. A sterilized tracheostomy set and a syringe filled with 40 mg. of succinylcholine are prepared before induction of anesthesia. After the patient has been anesthetized with a dose of intravenous thiopental sodium sufficient to produce unconsciousness and oxygen has been started by face mask, 2 cc. of 10 per cent cocaine or 5 per cent cyclaine are instilled into the larynx through the cricothyroid membrane, employing a 21-gauge needle attached to a 2 cc. syringe (Fig. 1). The ensuing cough disperses the topical anesthetic agent throughout the larynx and trachea. A brief period of partial laryngospasm may occur in an occasional patient at this time but it disappears as soon as the cocaine becomes effective. After the patient has ceased coughing, thiopental sodium is added in an amount sufficient to insure adequate muscular relaxation for introduction of the laryngoscope. Under direct vision small divided doses of 5 per cent cyclaine are applied to the epiglottis and the vocal cords by means of a malleable cannula attached to a 5 cc. syringe (Fig. 2).

The total dose of cyclaine necessary to produce adequate anesthesia of the vocal cords varies with the individual patient but should not exceed 5 cc. When the anesthesiologist feels that conditions are satisfactory for the institution of the operative procedure, a catheter attached to the anesthesia machine is inserted nasally or orally to facilitate the administration of a high flow of oxygen, the room is darkened, and the patient's head is released to the surgeon. The anesthesiologist, standing at the side of the patient, keeps one hand on the chest and one hand on the radial pulse throughout the procedure to maintain a constant check on respiration and circulation. Additional small doses of thiopental sodium are added as required. Upon termination of the operative procedure, oxygen is again administered by a face mask, and the patient is observed for a few minutes in the operating room to insure the absence of respiratory obstruction before discharge to the recovery room.

Results

The largest total dose of thiopental sodium in the present series was 1,700 mg., the smallest was 400 mg. Forty-three per cent of the patients reacted fully in less than thirty minutes, and 75 per cent reacted fully in less than an hour.

There were no complications either during the operation or in the immediate postoperative period in 192 of the cases. The untoward reactions in the remaining 8 patients fell into two general categories: central nervous system stimulation and respiratory obstruction. Three patients developed twitching of the facial muscles or generalized tremors which responded to additional doses of intravenous thiopental sodium. One of these patients received a total of 10 cc. of 5 per cent cyclaine via a cannula and a transtracheal injection in addition to a cyclaine spray of the oral and nasal pharynx, a second patient had been sprayed in the examining room shortly before admission to the operating room, and the third patient was anesthetized with 4 cc. of 10 per cent cocaine. The other 5 patients showed evidence of respiratory obstruction of varying degrees. Four of these patients developed moderate or severe laryngospasm during the course of preparation for the operative procedure. Although 40 mg. of intravenous succinylcholine was sufficient to relax the spasm in 2 patients, it was necessary to perform an emergency tracheostomy in the others. A fifth patient with lymphatic leukemia, after an uneventful laryngoscopy and biopsy of the vocal cord, developed labored respirations in the recovery room thirty minutes after reacting from anesthesia. Tracheostomy was required to alleviate the obstructive symptoms.

Comment

The necessity for providing a safe and reliable method of general anesthesia for direct laryngoscopy is clearly shown by the large number of patients in the present series who were brought to the operating room following repeated, unsuccessful attempts with topical anesthesia. In addition, several patients were referred to the Memorial Hospital after general anesthesia with an intravenous barbiturate and relaxant had failed to provide satisfactory operating conditions at other institutions.

The technic described in this report affords safe and satisfactory anesthesia for these "difficult" patients by a method which lies within the capabilities of any experienced anesthesiologist and at the same time does not require the use of cumbersome apparatus. The essential feature of the technic is adequate topical anesthetization of the larynx, the intravenous barbiturate serving only to allay apprehension and provide muscular relaxation. Instillation of a topical agent by way of the cricothyroid membrane has been described by Bonica,[1] Hayes,[2] and Harken and Salzberg.[3] At Memorial Hospital 10,000 transtracheal injections have been performed since 1954 with a minimum of untoward reactions. Although 5 per cent cyclaine was employed for both phases of topical anesthesia in some of the early cases in the series, the superiority of 10 per cent cocaine was so evident that the latter agent was used exclusively for transtracheal instillation in all the later cases. No greater incidence of untoward reactions was experienced with 10 per cent cocaine than with 5 per cent cyclaine, provided that the dosage of cocaine was limited to a maximum of 2 cc.

In the present series 3 patients showed evidence of central nervous system stimulation shortly after application of the topical agent. A review of the anesthetic history reveals that a larger than average dose of either cyclaine or cocaine was employed in each case, a factor which may have been responsible for the untoward manifestation.

In the early cases of the series it was felt necessary to employ a 0.1 per cent drip of succinylcholine to assist in obtaining muscular relaxation. This procedure was abandoned when it became obvious that it was difficult to control the depth of anesthesia without producing intermittent periods of cessation of respiration. It is essential, however, that succinylcholine be available in the operating room, since an occasional patient may require the use of a rapidly acting muscular relaxant to relieve a laryngospasm developing during the course of preparation for surgery. Succinylcholine was successfully employed in 2 cases for this purpose.

In addition to succinylcholine, a sterile tracheostomy set must be ready for use prior to the induction of anesthesia. Since almost all patients with lesions of the larynx necessitating laryngoscopy are suffering from some degree of respiratory obstruction, it is inevitable that, sooner or later, an emergency tracheostomy will become necessary. Experience is necessary to determine which patients can be successfully anesthetized by the technic we have described. The 2 patients who required emergency tracheostomy in the present series presented large lesions with marked obstructive symptoms and should not have been attempted without a preliminary tracheostomy. Anesthesia was not a factor in the tracheostomy performed in the postoperative period.

From our experience with the first 200 cases, it is our impression that the combination of topical and intravenous barbiturate anesthesia we have described represents a simple, safe, and satisfactory method of anesthesia for laryngoscopy from the standpoint of both anesthesiologist and surgeon. It must be emphasized, however, that the method is safe only in the hands of á well-trained anesthesiologist. It should not be attempted by anesthetists who are relatively inexperienced in direct laryngoscopy.

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The worst things: To be in bed and sleep not; To want for one who comes not; To try to please and please not.—Francis Scott Fitzgerald

Surgical Management of Testicular Tumors

WILLIAM J. STAUBITZ, M.D., F.A.C.S., IMRE V. MAGOSS, M.D., MELBOURNE H. LENT, M.D., EUGENE M. SIGMAN, M.D., AND JAMES T. GRACE, M.D., BUFFALO, NEW YORK

(From the Departments of Urology and Surgery, Roswell Park Memorial Institute)

THE therapy of testicular tumors at the Roswell Park Memorial Institute has undergone an evolutionary change during the past thirty-six years. Since 1922 over 300 patients with a diagnosis of testicular malignancy have been studied and treated. Reports of two series of these patients in which the technics and results are described have been published. In 1948 Sauer *et al.*[1] issued the results for 202 patients treated by orchidectomy and x-ray, and in 1957 the results in 59 patients treated by orchidectomy, unilateral retroperitoneal lymphadenectomy, and x-ray were reported.[2]

In a further attempt to improve the survival rate from this disease, bilateral retroperitoneal gland dissection was instituted in 1957. Initially this was a two-stage procedure in those cases in which metastatic lymph nodes were found on the side of the primary tumor. In 1958 a new procedure was adopted which enabled the surgeon to do a simultaneous bilateral dissection of the retroperitoneal lymph nodes through a single incision and permitted a more complete and thorough lymphadenectomy.

This paper describes the surgical technics employed in this bilateral retroperitoneal lymph node dissection and gives a preliminary report on 7 patients in whom it was used.

History

Lymphadenectomy for carcinoma of the testicle is not a new procedure. In 1902 Roberts[3] of Philadelphia operated transperitoneally to remove the retroperitoneal lymph nodes in a patient with metastases. In 1906 Cuneo[4] of France also reported a successful operation of this type. In 1914 Hinman[5] reported a successful retroperitoneal lymph node dissection, and in 1919 he reported 5 successful ones.[6] This operation, performed only occasionally, never gained favor with urologic surgeons until after World War II. Lewis[7] in 1948 reported on 250 cases, in 169 of which radical retroperitoneal node dissections were done without operative mortality. Encouraged by the results of this large series, others began employing this method as an adjunct in the treatment of testicular tumors.

For several years many surgeons accepted unilateral lymphadenectomy as sufficient. However, as more experience was gained, tumor-spread to the opposite side became apparent in several patients. This clinical observation made it evident that unilateral node dissection is not sufficient in every case. The classic work of Jamieson and Dobson,[8] published in 1910, gave support to the contention that there is cross-communication of the lymphatic systems of the testes. These workers demonstrated the basic pattern of testicular lymphatics and blood supply by employing the technic of dye injection. By this method they showed that each testis has its own lymph system and that this system communicates with that of the other testis and with those of adjacent structures. Lowry *et al.*[9] in a series of 34 autopsies on patients dying with metastatic carcinoma from tumors of the testes reported bilateral node involvement in 12 patients. Thomas and Bischoff[10] found 15 patients with bilateral metastatic nodes in their autopsy series. Leadbetter[11] reported 5 cases which had contralateral nodes at the time of surgery. In our series of 7 patients who underwent simultaneous bilateral

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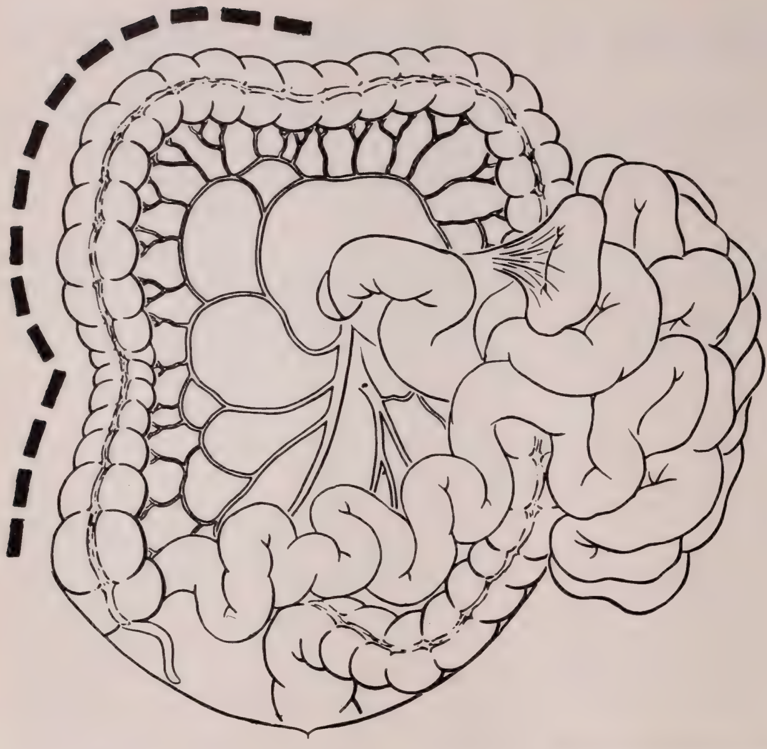

FIG. 1. Exposure of retroperitoneal space by mobilization of entire right side and proximal part of transverse portion of colon. Broken line indicates path of incision along right paracolic gutter.

lymph node dissection, 4, or 57 per cent, had bilateral nodes at the time of exploration.

Technic

Prior to surgery a complete roentgen survey is done. This includes anteroposterior and lateral chest studies and an intravenous pyelogram. If chest metastasis is present, the case is not suitable for this procedure. The intravenous pyelograms are helpful in determining preoperatively if the ureters are displaced by retroperitoneal masses.

The incision is made in the midline of the abdomen from the xiphoid to the symphysis, and the abdomen is explored carefully for evidence of metastatic tumor. The area of the renal pedicle is examined thoroughly. If metastatic nodes can be palpated above the renal vein, the case is inoperable and lymph node dissection should not be attempted. An easily available node is removed for biopsy, and the others are marked with silver clips to aid the radio-

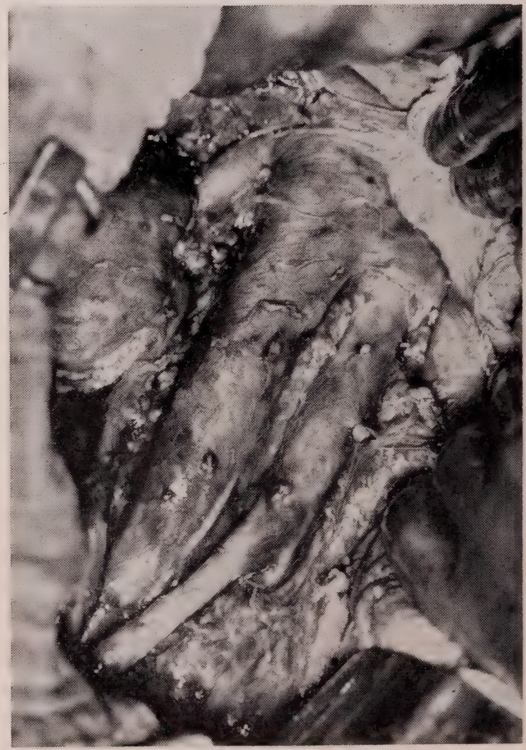

FIG. 2. Exposure of renal pedicles by shift of entire right side and proximal part of transverse portion of colon to the left.

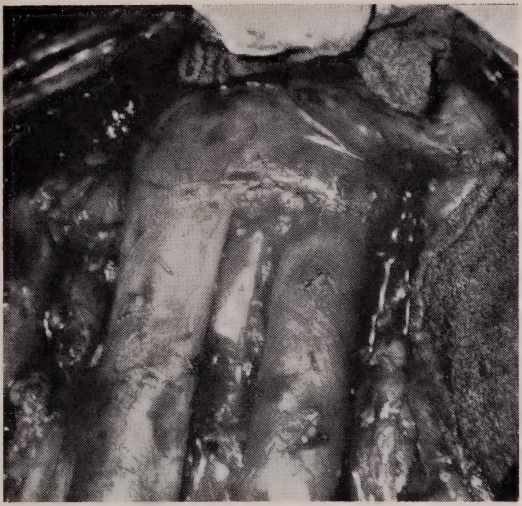

FIG. 3. Vena cava, aorta, and intervening groove completely stripped of lymphatic, areolar, and fatty tissue.

therapist in subsequent irradiation therapy. If no metastatic disease is found above the renal pedicle, the case is considered operable and the procedure is continued.

The retroperitoneal space is exposed by mobilizing the entire right side of the colon and the proximal part of the transverse portion of the colon (Fig. 1). These structures are mobilized to the left along with the duodenum until both renal pedicles are exposed (Fig. 2). This approach provides excellent exposure of both renal pedicles and the vena cava and aorta below them.

Dissection of the right pedicle is begun. The renal vein and artery are cleaned of all lymph and areolar tissue around their entire circumference. This dissection also includes the lymph and areolar fatty tissue in the lateral pocket and the spermatic artery and vein. Following this, the left renal vein and artery are dissected free of surrounding tissue. Here, also, the spermatic vessels are excised and included in the dissection as well as the tissue in the lateral pocket. Both ureters are identified prior to dissection and kept under close surveillance at all times.

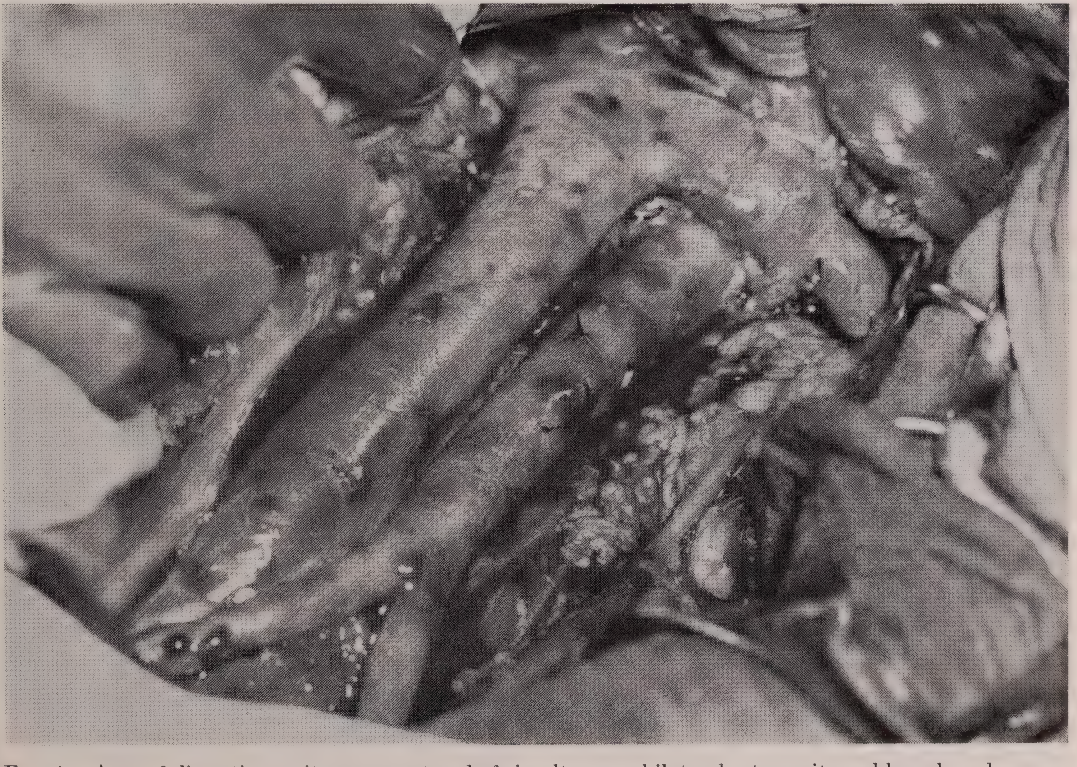

FIG. 4. Area of dissection as it appears at end of simultaneous bilateral retroperitoneal lymph node procedure. Note sacrifice of inferior mesentery artery in this instance.

TABLE I.—FINDINGS IN 7 PATIENTS SUBJECTED TO BILATERAL RETROPERITONEAL LYMPH NODE DISSECTION

					Positive Retroperitoneal Nodes		
Case	Age	Primary Testicular Tumor	Side	Operability	Number	Type	Extent of Retroperitoneal Involvement
1	29	Teratocarcinoma	Left	Yes	0	—	—
2	38	Embryonal carcinoma	Right	Yes	0	—	—
3	43	Embryonal carcinoma	Right	Yes	0	—	—
4	69	Embryonal carcinoma	Right	Yes	2	Embryonal carcinoma	Bilateral
5	15	Teratocarcinoma	Right	Yes	Several	Teratocarcinoma including choriocarcinoma	Bilateral
6	36	Embryonal carcinoma	Right	No	Several	Embryonal carcinoma	Bilateral above renal pedicle; invasion of major vessels
7	33	Seminoma	Right	No	Several	Seminoma	Bilateral above renal pedicle; invasion of major vessels

With both renal pedicles and the lateral pockets and hilum of the kidney completely free of tissue, dissection of the vena cava and aorta is begun. This consists of stripping the aorta, vena cava, and iliac vessels of their areolar, fatty, and lymphatic tissue. The tissue of the intervening groove between the great vessels is also removed as well as those posterior and lateral to these vessels (Fig. 3). The inferior mesenteric artery is identified and dissected free of surrounding tissue for 2 to 3 cm. Every effort is made to preserve this vessel; however, we have been forced to sacrifice it on two occasions without ill effect. Dissection is carried to each internal abdominal ring.

On the completion of this procedure, all areolar, fatty, and lymph tissue has been removed from an area bordered above by and including the renal pedicles, laterally by each ureter, and below by the internal abdominal rings (Fig. 4). The cecum and right side of the colon are returned to their normal positions and sutured to the parietal peritoneum. The small bowel is then replaced in the abdomen, and the wound is closed in layers without drainage.

Results in 7 Patients

Seven patients considered candidates for lymphadenectomy were subjected to this new technic (Table I). Their ages ranged from fifteen to sixty-nine years. Two cases (Cases 6 and 7) were considered inoperable because of extensive lymph node involvement above the renal pedicle as well as invasion of the major vessels. Of the remaining 5 cases, 3 were free of retroperitoneal node involvement and 2 had positive nodes bilaterally. There was no surgical mortality in this series and the postoperative morbidity in these patients was surprisingly low. All 7 had a mild degree of paralytic ileus, which was well controlled by nasogastric decompression for forty-eight hours. The patients were usually ambulatory by the third postoperative day. After discharge from the hospital, they were followed at frequent intervals by means of physical examinations, chest x-rays, and complete quantitative and qualitative Aschheim-Zondek tests.

Conclusion

To what extent in the therapy of testicular tumors retroperitoneal lymphadenectomy will increase the survival rate, only time will tell. However, the authors believe that with this new technic the operator can perform a more adequate retroperitoneal node dissection.

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Discussion

Andrew A. Gage, M.D., *Buffalo, New York.*—Dr. Staubitz and his coauthors have described a practical operative approach for a retroperitoneal lymphadenectomy as part of the surgical management of testicular tumors. This lymphadenectomy is a logical application of the basic principle of cancer surgery: excision of the primary tumor and the related lymph nodes to increase the chances of survival.

Lymphadenectomy for carcinoma of the testis has been practiced by some others in the past sixty years. Nevertheless, the operation, although of value, has not gained general usage, perhaps because of the technical difficulty of performing a lumbar lymphadenectomy and because of insufficient evidence that the extensive operation is successful in eradicating the disease. An improvement in operative technic was described today, and this operative approach will be much more useful than the bilateral flank or thoracoabdominal incisions used in the past. The midline transperitoneal incision has the great advantage permitting a complete bilateral lumbar lymphadenectomy with one operation.

The necessary scope of a lymphadenectomy for cancer of the testis was indicated in a paper written in 1899 by Most,[a] who first established the route of lymph drainage by means of a dye-injection technic. The lymph passes by way of the lymphatics of the spermatic cord to the lumbar lymph nodes along the lower aorta and inferior vena cava. The critical areas, where the first metastatic deposit may occur, are the nodes at the renal pedicle, and removal of these nodes is of prime importance. Occasionally, the only metastasis may be a small collection of cells in a node in this region. The nodes at the renal pedicle and the lumbar lymph nodes in general are the only lymph node barriers between a testicular cancer and cisterna chyli. Hence, when metastatic cancer is present above the renal pedicle, it without a doubt is in the thoracic duct flow, and lymphadenectomy is useless.

The amount of tissue removed in this type of operation, even though no metastatic cancer is found, is surprisingly great. Forty-eight nodes were reported in a specimen shown here with no metastatic cancer present. Removal in continuity is impossible because the tissue thins out over the aorta and inferior vena cava. Because of this, I find it convenient to make the incision in the posterior peritoneum directly over the aorta and extend it upward until the renal pedicles can be exposed. The duodenum is then elevated and retracted. The colon need not be disturbed, except that the cecum and the sigmoid colon must be mobilized to remove the tissue about the iliac arteries.

In the further development of lumbar lymphadenectomy for testicular cancer, the following should be considered:

1. Perhaps the transperitoneal exploration should be performed at the time of orchiectomy after a frozen section has established that a cancer of the testis exists.
2. Perhaps the lymphadenectomy should be performed in testicular cancer of all types, regardless of whether the tumor is radiosensitive.

Dr. Staubitz and associates have described a good method of performing a lumbar lymphadenectomy. The merit of the operation, however, can be determined only by the survival rate in a large number of patients with metastatic cancer in the lumbar lymph nodes at the time of operation.

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[a] Most, R.: Ueber maligne hodengeschulste und ihre metastasen, Breslau, Festschrift gewidmet Herrn Prof. Dr. Emil Pontick, p. 138, 1899.

Clinical Evaluation of Triamcinolone Acetonide in the Topical Treatment of Eczematous Eruptions

JOSEPH J. RUSSO, M.D., AND ANTHONY W. NARDACCI, M.D., ALBANY, NEW YORK

(*From the Department of Dermatology, St. Peter's Hospital*)

THE effectiveness of topically applied corticosteroids, such as hydrocortisone,[1,2] prednisolone,[3,4] and fluorocortisone[5,6] in the control of eczematous eruptions is well known. These drugs have become the principal agents for treating atopic dermatitis, circumscribed neurodermatitis, dermatitis venenata, eczematous eruptions of the hands, anogenital pruritus, infectious eczematoid dermatitis, eczematous eruptions associated with infection (for example, otitis externa), and similar conditions. In most cases their action may be described as antiphlogistic and morbidostatic rather than curative.

The purpose of the present study was to observe the results with a new corticosteroid, triamcinolone acetonide,[7,8] in the topical treatment of a variety of dermatologic conditions including contact dermatitis, eczematous dermatitis, otitis externa, atopic dermatitis, hypostatic dermatitis, seborrheic dermatitis, and neurodermatitis. Ointment, cream, and lotion formulations of triamcinolone acetonide* were employed as was a lotion preparation which contained triamcinolone acetonide plus neomycin and gramicidin.†

Materials and Methods

PATIENTS.—All of the patients included in this series were seen in the dermatologic clinic of St. Peter's Hospital in Albany or in the private practice of the authors. Altogether 65 patients were studied during the course of the investigation.

MEDICATION. The triamcinolone acetonide formulations contained 0.1 per cent of triamcinolone acetonide in an appropriate vehicle. The triamcinolone acetonide plus neomycin and gramicidin lotion contained 0.1 per cent of triamcinolone acetonide and in each milliliter of vehicle there were 25 mg. of neomycin and 0.25 mg. of gramicidin. Generally, the prescribed formulation was applied every two to three hours during the day and just before retiring.

The following cases are reported:

Case Reports

CASE 1.—A fifteen-year-old girl developed bullous contact dermatitis of the thumb following application of thimerosal (Merthiolate) to which she had a known sensitivity. During five days time wet dressings had been applied with indifferent results. Triamcinolone acetonide lotion was applied every two hours. Relief of pruritus was noted in a few hours and acute inflammatory signs and symptoms were controlled in forty-eight hours. All signs and symptoms disappeared in six days. There was no recurrence when topical applications were discontinued.

CASE 2.—A forty-year old plumber had chronic eczematous contact dermatitis of the hands resulting from sensitivity to bichromate. This condition was partially controlled with topical applications of 1 to 2.5 per cent of hydrocortisone preparations. There was rapid improvement when triamcinolone acetonide ointment was applied every three hours. Improvement has been maintained after three months with reduced applications.

CASE 3.—A six-month-old-female infant had atopic dermatitis of the cheeks and antecubital and popliteal areas. Previous treatment had consisted of tar and there had been a moderate improvement. Triamcinolone acetonide cream was applied every two hours for three days; there was a cessation of pruritus in forty-eight hours and in ten days all inflammatory signs were controlled. Medication was reduced to two applications daily, and improvement continued after two months observation.

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* Supplied as Kenalog by the Squibb Institute for Medical Research, New Brunswick, New Jersey.

† Supplied as Kenalog-S by The Squibb Institute for Medical Research, New Brunswick, New Jersey.

The response in this case was typical of that obtained in a large group of atopics of all ages. The response was rapid and was maintained with no breakthrough; there were no toxic symptoms and no evidence of sensitization.

Case 4.—An eighty-year-old patient had hypostatic dermatitis intermittently for four years. Contrast treatment was used, 1 per cent hydrocortisone lotion on the left and 0.1 per cent triamcinolone acetonide on the right. After two weeks the right leg was completely cleared, left leg partly cleared. Triamcinolone was then applied to the left with complete clearing in another week. After two months there was no sign of recurrence with applications twice daily.

Case 5.—A twenty-eight-year-old cosmetician had contact dermatitis of the palms and fingers of two months duration from a hair waving lotion. Hydrocortisone ointment, 1 per cent, was applied to the left side and triamcinolone, 0.1 per cent, was applied to the right side. In six days the right palm was completely cleared and the left about two-thirds cleared. Triamcinolone then was substituted on the left palm with complete clearing in another four days. Medication was stopped in two weeks, and there was no recurrence after one month during which time the employe refrained from work. On resumption of contact with the hair waving lotion, there was a recurrence of the condition. Triamcinolone was reapplied with clearing in one week, and the condition has remained clear with avoidance of the responsible contact.

Case 6.—A thirty-one-year-old female had acute seborrheic dermatitis of the face with intense redness and edema, sparing the eyelids. There had been recurrent episodes for two years and pruritus was intense. Triamcinolone ointment was applied every three hours for forty-eight hours and then was reduced to three daily applications. Pruritus gave relief in twenty-four hours and all inflammatory signs were controlled in seventy-two hours. There was a slight recurrence after two weeks when the frequency of the treatments was diminished; dermatitis was recontrolled on resumption of three applications per day.

Case 7.—A fifty-three-year-old male accountant had purulent crusted otitis externa of three years duration. Eruption was controlled temporarily with topical applications of hydrocortisone, 1 per cent, combined with neomycin; there was a recurrence in spite of continued application. Triamcinolone acetonide lotion was substituted with immediate response (seventy-two hours); there was no recurrence after four months of nightly applications.

Case 8.—A nineteen-year-old female had contact dermatitis of the axillae of one week's duration due to stick deodorant. Hydrocortisone lotion, 1 per cent, was applied to the left side and triamcinolone was applied to the right side. The right side cleared in four days; the left in seven days. There was no recurrence on either side after interruption of the medication.

Case 9.—A forty-five-year-old male had acute vesicular dermatitis of the chin from the application of ammoniated mercury; pruritus, edema, and redness were intense. Triamcinolone was applied every two hours combined with wet dressings three times a day with relief of redness and pruritus in twenty-four hours and complete resolution in ten days.

Results

In all instances relief of itching occurred promptly, often after the first application of the medication. Subsidence of signs of inflammation was generally evident in less than twenty-four hours and was maintained in most cases. One patient showed the well-known "break-through" and acquired resistance to treatment. Generally, when improvement occurred, the frequency of application of the medication was reduced.

A series of 7 infants two to eight months of age was treated with a triamcinolone acetonide preparation for atopic eczema. Generally, the results were good, the itching subsided in twenty-four hours, and the eczematous process was involuted in three to five days. The extent of involvement of the skin in the infants was variable. In 4 of the infants the eczema was confined to the cheeks; in 3 there was involvement of the flexor surfaces of the extremities. Applications of the lotion or ointment were made every two hours for the first two days, then four times daily, and gradually reduced so that applications were made once daily. In no case was there evidence of toxicity or side-reactions.

Comment

As shown by the foregoing cases, in many of the patients improvement was obtained promptly after treatment was instituted. Initially, each case was intensively treated, the medication being applied every two or three hours. Later less frequent application was usually required, although the medication was continued in every patient until the eczematous process "burned itself out." Cure, in the strict sense, was neither expected nor obtained as the result of treatment. The purpose of treatment was, instead, to provide symptomatic relief until the normal repair and recovery processes of the body healed the affected areas.

Summary

The application of triamcinolone acetonide 0.1 per cent, alone in cream, lotion, and ointment formulations or in combination with neomycin and gramicidin as a lotion has been found effective in treating a variety of eczematous eruptions, both objective and symptomatic improvement occurring promptly in essentially all patients. The improvement noted was superior to that usually obtained with 1 per cent hydrocortisone in similar formulations. In some patients triamcinolone acetonide or triamcinolone acetonide plus neomycin and gramicidin were effective in conditions which had failed to respond to topically applied hydrocortisone.

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Infected Pork

Up to 10 per cent of the pork sausage in large city markets has been found infected with trichina larvae.

Trichinosis, the major public health problem resulting from consumption of infected pork, can be prevented if pork is cooked at 140 F. for at least thirty minutes per pound.—*Parke, Davis & Company, Patterns of Disease*

Late Effects of Retained Missile Fragments

GEORGE STRENGER, M.D., F.A.C.S., AND DAVID SCHWARTZ, M.D., NEW YORK CITY

(From the Surgical Clinics of the New York Regional Office of the Veterans Administration)

SINCE 1946 a large number of veterans with retained missile fragments resulting from wounds have been examined in the Surgical Clinics of the New York Regional Office of the Veterans Administration. These combat servicemen were seen for evaluation of compensation and for treatment of their disabilities. We were impressed by the fact that many of these men carrying metallic fragments in their tissues had no complaints while a lesser number had symptoms beginning at varying intervals from the dates of their original wounds.

During a six-month period in 1957 we observed 123 unselected veterans coming to our Surgical Clinics (New York Regional Office, Veterans Administration) for examination and treatment, all of whom had retained metallic fragments as shown by roentgen examination. The evaluation of these cases forms the basis of our study.

Our principle interest was to determine what effects, if any, resulted from the retention of missile fragments. We felt that complaints of pain and discomfort alone should not be accepted as definite residuals unless substantiated by certain objective evidence, since the patients' opinions could be influenced by various extraneous factors. We adopted certain criteria for the determination of disability for the purpose of this study. These were as follows: (1) pain, if relieved by the removal of the foreign body; (2) spontaneous extrusion of metallic fragments; (3) abscess overlying or surrounding a piece of metal; and (4) a discharging sinus leading directly from a retained missile fragment.

Often the removal of such a fragment was followed by the healing of the sinus. Of course, it must be realized that these criteria are arbitrary. An example of the difficulty in evaluation is offered by the case of a patient who suffered an extensive shell fire wound of the left thigh, knee, and leg. His initial treatment consisted of the usual debridement and arthrotomy of the knee for removal of foreign bodies. Several such metallic fragments were left in the tibia and in the soft tissues about the knee joint. He had symptoms which were attributed to traumatic arthritis rather than to the retained pieces of metal. This case could not be considered as an example of the residuals from retained shell fragments. We wish to stress the fact that these criteria are not related to the actual official technics used by the Adjudication Division of the Veterans Administration in granting compensation awards.

The major wars of this century have produced more wounds from shell fragments than from small arms, although the latter are more lethal. In the Korean War fragmentation missiles caused 85 per cent of the casualties, and small arms caused 15 per cent; but 25 per cent of the deaths, killed in action, were caused by small arms fire.[1] The treatment of these wounds by the military surgeon has been adequately described in numerous publications.[2] In general, foreign bodies are removed when they are large (more than 2 cm.) and when they can be located easily, especially if they are impinging on a major nerve or blood vessel or near a vital structure.[3] One can appreciate the problem in the treatment of the wounded during a period of intense military activity when only the most disabling missile fragments can be removed. The pieces of metal which are not extracted during the initial definitive treatment usually become well encapsulated and may cause no further disability.[2,3,4]

TABLE I.—AGE AT TIME OF INJURY

Age (Years)	Number of Men
17 to 19	20
20 to 29	81
30 to 39	22
TOTAL	123

TABLE II.—WAR, COMBAT AREA, AND TYPE OF MISSILE OF 123 WOUNDED VETERANS

Situation	Number of Men
War	
World War I	6
World War II	87
Korea	30
Area	
Europe and Africa	73
The Pacific	18
America	2
Korea	30
Missile	
Bullet	5
Shell	106
Grenade	9
Mine	3

Little has appeared in the literature of the last ten years dealing with late reactions to retained metallic foreign bodies. Botsford and Freni[3] in 1948 described their observations on 40 hospitalized veterans who were wounded during World War II. The authors found that 11 of their 40 patients had symptoms due to retained metallic fragments, all resulting from shell wounds. Secondary symptoms began five to seventeen months after the original date of complete healing. In 10 of their cases the foreign bodies were imbedded in skeletal muscle, while in 1 case the liver was involved.

TABLE III.—LOCATION OF WOUNDS WITH RETAINED MISSILE FRAGMENTS

Location	Number of Wounds
Upper extremity	
Soft parts	46
Bone	9
Lower extremity	
Soft parts	100
Bone	20
Head	
Eye	
Cornea	1
Lens	1
Scalp	4
Neck	4
Skull	1
Nasal sinus	4
Chest	
Wall	18
Heart	1
Lung	10
Lumbar area	4
Abdomen	
Diaphragm	1
Liver	2
Pelvis	
Bone	5
Soft parts	3

TABLE IV.—LATE EFFECTS OF RETAINED FRAGMENTS

Effects	Number of Fragments
Pain	1
Extrusion	1
Sinus and abscess (including 8 from bone)	10

Our unselected series consisted of 123 veterans, varying in age from seventeen to thirty-nine years at the time of injury (Table I). One hundred and six of these men were wounded by shell fire, 9 were wounded by grenades, 5 were wounded by bullets, and 3 were wounded by mines. Action in World War II accounted for 87 of the injured, the Korean War accounted for 30, and World War I accounted for 6 (Table II). These 123 men suffered a total of 234 wounds all resulting in the retention of metallic fragments.

The distribution of the injuries is outlined in Table III. It will be seen that most of the wounds occurred in the lower extremities. Fragments varied in size from 3 mm. to 2 cm. Of these 123 veterans 12 presented late symptoms caused by retained missile fragments, according to the criteria stated in the early paragraphs of this paper (Table IV).

A resume of the history of each of these 12 men follows:

Case Reports

CASE 1.—A forty-two-year-old male, wounded in Africa in 1944, had a shell fragment 1 cm. wide imbedded in the adductor muscle mass of the left thigh. In June, 1956, there appeared an abscess followed by a sinus near the metal fragment. Since conservative treatment was unsuccessful, the foreign body was removed on January, 1957, and the sinus promptly healed.

Case 2.—A twenty-seven-year-old male was wounded by a grenade in Korea in 1951. In 1957 a sinus appeared which led down to several small metal fragments imbedded in the left tarsus. There appeared changes in the bone and persistent sinus on the dorsum of the foot. The culture of the pus showed Escherichia coli.

Case 3.—A thirty-two-year-old male was wounded by a grenade in Europe in 1944. There were retained small metallic fragments along the course of the right ulnar nerve in the forearm. In 1948 he began to have pain along the distribution of the right ulnar nerve. The removal of all foreign bodies gave complete relief.

Case 4.—A forty-one-year-old male was wounded by shell fire in Germany in 1945. Multiple small metal fragments were buried in the right tarsus and the adjacent soft parts. A sinus of the dorsal aspect of the foot developed in 1951 and continued to drain intermittently.

Case 5.—A twenty-seven-year-old male was wounded by a shell burst in Korea in 1950, suffering a fracture of the right radius and ulna. There were multiple metal fragments in the bones and soft parts of the forearm. An abscess of the forearm occurred in 1956, and this was followed by a sinus.

Case 6.—A forty-eight-year-old male was wounded by shell fragments in France in 1944. In 1956 a sinus developed in the left posterior triangle of the neck. The removal of a small underlying metallic fragment effected complete healing.

Case 7.—A forty-five-year-old male was wounded by shell fire in Germany in 1945. Multiple small metallic fragments are still being extruded from the left thigh and buttock.

Case 8.—A twenty-six-year-old male suffered shell fragment wounds in 1952 in Korea, involving the left leg, left knee, and the lower left femur. In 1957 a sinus appeared on the lower outer aspect of the left thigh directly over several small metallic fragments imbedded there.

Case 9.—A forty-year-old male was wounded by shell fire in France in 1944. In 1957 an abscess developed over the crest of the left ilium, the site of several retained metallic bodies.

Case 10.—A thirty-five-year-old male was wounded in Europe in 1944. In 1956 a sinus developed over a metal fragment in the right frontal bone.

TABLE V.—Interval Between Original Treatment and Onset of Late Effects

Number of Years	Number of Late Effects
1 to 4	3
5 to 9	5
10 to 13	4

Case 11.—A twenty-six-year-old male was wounded by shell fire in Korea in 1951. There has been a persistent draining sinus leading to a retained foreign body in the right os calcis.

Case 12.—A twenty-eight-year-old male was wounded by shell fire in Korea in 1951. Metallic fragments were imbedded in the left talus. In 1957 a draining sinus appeared in the region of the left ankle.

Culture of material obtained from abscesses and sinuses yielded a variety of organisms, including Escherichia coli. Systemic effects were rare; and when there was a rise in temperature, control was always maintained by using antibiotics. Veterans would not always agree to hospitalization or surgery for the removal of the offending foreign bodies.

All 12 men presenting residual effects of retained foreign bodies had been wounded by fragmentation missiles. Ten of them developed sinuses, 8 of which were related to metal fragments imbedded in bone. One had symptoms due to the retention of a metallic foreign body along the course of a major nerve trunk. One began to extrude metal fragments from an intramuscular area ten years after his original injury. As in other studies, most of the wounds involved the extremities. Late effects appeared within four years in 3 cases, within nine years in 5 cases, and from ten to thirteen years after the original injury in 4 cases (Table V). It will be noted that we observed no instances of "wandering" of foreign bodies from organ to organ. Migration may occur if a metal fragment is sharp and narrow.[3]

During the course of this study we encountered a veteran who had a bullet imbedded in his right cardiac ventricle. Although he suffered no apparent ill-effects from the retention of this missile in his myocardium, we present a short history of this case because of its general interest:

Case Report

A twenty-seven-year-old male was wounded in December, 1944, by a rifle bullet which entered his right posterior chest, traversed the lung, and ended in the right ventricular wall. He had numerous hospital admissions and several operations for empyema and bronchopulmonary fistula following his initial treatment. Heart sounds and electrocardiograms have always been normal. Repeated fluoroscopic and roentgen examinations have located the bullet in the right posterior ventricular wall near the region of the interventricular septum. Removal was not attempted because of the hazards implicit in such an operation. The last procedure in 1954 consisted of resection of the lower portion of his right lower lobe. He has never had any cardiac symptoms.

Comment

In this study of 123 unselected wounded men, observed during a six-month period, we were able to demonstrate 12 cases, or 9.7 per cent, in whom symptoms could be reasonably attributed to the retention of metallic missile fragments. The most persistent and troublesome late effect of such foreign bodies was the establishment of a sinus. These sinuses were most frequently encountered in relation to metallic fragments in bone. The fragments were never large, usually measuring only 3 to 4 mm. in diameter at the most. In a few instances several were concentrated in a rather constricted area of bone, giving one the impression that it might have been possible to remove them by a more vigorous debridement of the bone at the time of the original treatment. Of course, in accordance with the principles of military surgery, larger missile fragments had been extracted from the injured bone. It is not within the scope of this paper to discuss the problem of low resistance of bone to infection, although this factor must play some part in the establishment of late abscesses and sinuses. It is our impression that a greater effort should be made by the military surgeon to remove metal fragments from bone at the time of the original definitive surgical treatment.

Summary

1. This study concerns itself with the late effects of retained missile fragments in 123 men who sustained 234 wounds in combat.

2. These late effects consisted of pain, spontaneous extrusion of metal fragments, abscesses, and sinuses.

3. Of the 123 cases, 12, or 9.7 per cent, demonstrated these late sequelae, beginning from a few months to thirteen years after the original treatment.

4. Most of the sinuses (8 of 10 sinuses) occurred in relation to metal fragments in bone resulting from fragmentation missiles.

5. It may be advisable to pursue a more vigorous approach to the extraction of missile fragments from bone at the time of the original definitive treatment.

6. An interesting case is cited showing the retention of a rifle bullet in the right cardiac ventricular wall for thirteen years without symptoms, without physical findings, and without electrocardiographic abnormality.

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A man says what he knows; a woman says what will please.—Jean Jacques Rousseau

proceedings

NEW YORK ALLERGY SOCIETY

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MURRAY DWORETSKY, M.D., *Editor*

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SCIENTIFIC SESSION

AARON D. SPIELMAN, M.D., *President, Chairman*

Autoimmune Reactions in Systemic Lupus Erythematosus

HALSTED REID HOLMAN, M.D., *Assistant Professor, Rockefeller Institute*

Physiologic Effects of Adrenal Corticosteroids in Relation to Clinical Practice

J. LESTER GABRILOVE, M.D., *Assistant Attending Physician, Mount Sinai Hospital*

AARON D. SPIELMAN, M.D.: Members of the New York Allergy Society and guests, we have for our first paper this evening one which should prove both stimulating and rewarding. This paper is by Halsted Holman, M.D., who will discuss the evidence for "Autoimmune Reactions in Systemic Lupus Erythematosus."

*Autoimmune Reactions in Systemic Lupus Erythematosus**

HALSTED REID HOLMAN, M.D.: In discussing the possibility of autoimmune reactions in systemic lupus erythematosus, I plan to sketch some of the evidence for such reactions without attempting to imply that this mechanism proceeds with certainty in the disease.

It would perhaps be more accurate to say that evidence is accumulating that such a mechanism of autoimmunization does exist. It remains for the future, however, to prove conclusively that these mechanisms play a role in the disease.

Let us look for a moment at what evidence there is for such an altered immune phase. One might begin with the fact that a sizable number of the patients who have systemic lupus by acceptable clinical and serologic criteria give a family history of an extensive number of common allergies, such as hay fever or asthma to ragweed or grasses. There is some evidence that they also have an increased number of rheumatic diseases of various types in their families.

Patients with systemic lupus have been shown under certain circumstances to develop a high proportion of drug reactivity, particularly to antibiotics. If one takes at random a group of patients who develop a sensitivity, such as penicillin sensitivity, a certain reasonably high proportion of these patients will have systemic lupus.

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* In abstract.

It has been reported that the patient who has the largest number of antibodies to unusual blood types yet recorded has systemic lupus erythematosus.

There is, therefore, a modest body of evidence that not only do these patients have perhaps a higher than usual incidence of a family history of allergies, but also the patients themselves have a tendency to develop sensitivities to various foreign agents. I do not imply by these remarks that the individual patients themselves show a high incidence of common allergies of the atopic variety.

One of the most striking features of the disease, however, has been the appearance of substances in the serums of these patients which react with their own cells. At this point I shall begin to sketch out for you some of the evidence in favor of autoimmune reactivity.

Initially I will discuss autoimmune reactivity, involving probably circulating antibodies, that is an autoimmune reactivity of an immediate type. In addition there is some far more tenuous evidence of the possible existence of a delayed type of autoimmunity.

Patients with systemic lupus erythematosus show a rather high incidence of circulating gamma globulin which will react with their own red cells. That is to say, they will give a positive Coombs test regardless of whether or not they have intravascular hemolysis and a hemolytic anemia. There is also in this group a high incidence of antibodies that result in agglutination of white blood cells, the leuko-agglutinins. Such antibodies are most frequent in patients with systemic lupus, if one excludes persons who have received transfusions.

Patients with lupus will also tend to show thrombocytopenic purpura. There is some, though not conclusive, evidence that there is a circulating antibody responsible for this.

One of the hallmarks of systemic lupus is the appearance of a false-positive Wassermann reaction. As you know, this is due to a gamma globulin which reacts with a substance usually extracted from beef heart but which is also extractable from other tissues.

These patients also show a prolonged clotting time due to a circulating gamma globulin. This has the property of interfering with clotting apparently by virtue of the impairment of the activity of thromboplastin. Precisely how this circulating gamma globulin prolongs the clotting time, however, is not known.

In addition to these factors, if one examines the kidneys of patients with lupus nephritis or lupus nephrosis one finds an unusual deposition of gamma globulin in the altered glomeruli. This suggests that in one way or another there has developed an antibody to some substance in the kidney.

Finally, the reaction which has evoked the greatest interest and study has been the appearance of the lupus erythematosus cell phenomenon. This is the result of an interaction between a circulating substance in the patient's serum and the patient's own white blood cells giving rise to a morphologic change in these cells.

What I shall do in the main is to attempt to sketch out for you some of the thoughts that now exist in the minds of others working in the field and of ourselves about the nature of the L. E. cell phenomenon and its possible relationship to an autoimmune reaction.

(EDITOR'S NOTE: *The following is an abstract of the main body of Dr. Holman's presentation.*)

Patients with systemic lupus erythematosus possess serum factors which react with various constituents of the cell nucleus. Complement fixation technics permit identification of factors reacting with whole nuclei, nucleoprotein, desoxyribonucleic acid (DNA), histone, and material extractable from nuclei with low ionic strength buffers. Any individual serum may possess all or only some of these factors.

The factor which fixes complement with nucleoprotein may be directed against the DNA or histone portions of the molecule, or against combining sites unavailable in the isolated nucleoprotein and only exposed by proteolytic enzyme digestion. The reacting substance in the material extracted from nuclei with low ionic strength buffer appears to be neither DNA nor histone.

The factor which produces the L. E. cell formation reacts specifically with nucleoprotein. It requires both DNA and histone for the reaction. It is distinct from the factors which fix complement with other nuclear constituents and from at least some of those which do so with nucleoprotein itself. A highly purified L. E. cell factor can be recovered from nucleoprotein with desoxyribonuclease digestion followed by elution from the residue. Preparation of a purified L. E. cell factor has permitted exploration of its immunologic properties as well as more detailed examination of the bond formed with nucleoprotein. Inhibition of this reaction by some substances, including atabrine, which appear to combine with different groups on the nucleoprotein molecule, has been studied, as has the reaction of the L. E. cell factor with certain polyacids and basic materials.

All serum factors thus far studied which react with nuclear constituents possess immunologic characteristics similar to normal gamma globulin, and some have been found to react with the patient's own cellular materials. Serum titers of these factors often diminish and may disappear during remissions in the disease.

These results are compatible with the view that one characteristic of systemic lupus erythematosus is an altered immune mechanism frequently producing a group of antinuclear antibodies.

Some preliminary evidence also exists for an unusual skin reaction in systemic lupus erythematosus. Intradermal injection of homogenates of autologous white blood cells often gives rise to erythema and induration beginning after about ten hours and lasting up to forty-eight hours. This has rarely occurred in controls. However, much work remains to be done before this reaction can be judged a result of delayed hypersensitivity of an autoimmune type.

In summary, then, one can say that there is as yet no clear-cut proof that an autoimmune reaction exists in these patients. There are a number of circulating factors which react with the patient's own cell nuclei as well as with those of other species. All the characteristics which these factors possess are similar to and compatible with their being antibody gamma globulin. Nobody has yet succeeded in provoking analogous disease factors in experimental animals, so this kind of proof of an immune reaction is missing.

There is also some evidence, but meager, that there is also a delayed type of hypersensitivity to the patient's own cell elements existing in this disease. In those instances of both an immediate and a possible delayed type of hypersensitivity, the evidence suggests that the reactions are not responsible for the major pathologic changes that occur in the disease.

Whatever the outcome of future experimental work may be, it is perhaps useful to explore these reactions, because they may lead us to an understanding of what appears to be a very radically altered basic immune response in these patients. If these responses are not responsible for the pathologic lesions, perhaps others will turn up in the future which will be.

Dr. Spielman: The advent of adrenal corticosteroids has not produced a solution to the problems faced by practicing allergists. There is little question, however, that in selected cases much has been accomplished by their use. We are fortunate, therefore, in having as our next speaker J. Lester Gabrilove, M.D., who will speak to us on the "Physiologic Effects of Adrenal Corticosteroids in Relation to Clinical Practice."

Physiologic Effects of Adrenal Corticosteroids in Relation to Clinical Practice

J. Lester Gabrilove, M.D.: I would first like to sketch with you some of our underlying knowledge of the adrenal cortex and its production of steroids and the physiologic effect of these steroids in the light of what we know now. Many of the facts that we now possess came to us in a rather jumbled fashion and indeed were available to us in one of nature's own experiments, Cushing's syndrome.

The adrenal cortex surrounds the adrenal medulla and includes three layers known as the zona glomerulosa, zona fasciculata, and zona reticularis. They are important because zonation helps us explain some of the physiologic functions of the adrenal cortex. The zona glomerulosa, or outer zone, which is probably the site of origin of the cells which proliferate to form the two other zones, elaborates two hormones, corticosterone and aldosterone.

The zona fasciculata produces the so-called glucogenic corticoids of which hydrocortisone (cortisol) is the prototype. The zona reticularis is the site of formation of the sexogens: the progesterone compounds, androgens, and estrogens. It seems likely now that as the vertebrate forms came out of the water, they were concerned primarily with adaptation to a land as contrasted with a marine environment. Their most important concern was the regulation of salt, that is, sodium, potassium, and water metabolism. The adrenal cortex therefore produced those hormones which are mostly concerned with regulation of this metabolic function, namely aldosterone and corticosterone.

When the vertebrates had to withstand certain stresses not encountered in the marine environment, they elaborated new cells which put out new enzymes enabling them to produce a compound very closely related to corticosterone, namely cortisol, 17-hydroxycorticosterone. This altered a mostly electrolyte-regulating hormone into one concerned mostly with the conversion of protein into carbohydrate and permitted the organism to adapt to sudden stress.

The inner zone which produces the sexogens has this capacity as a residuum of the common embryologic heritage of the adrenal cortex and gonad from the urogenital ridge.

The close relationship of the various compounds has been shown. Corticosterone is the prototype of all the adrenal corticosteroids. Cortisol, which is the adrenal steroid we use most of the time and from which analogues are commonly derived, is merely 17-hydroxycorticosterone. Cortisone is corticosterone with the 17-hydroxy group, that is, a hydrogen-oxygen group in the 17 position, and a hydrogen removed in the 11 position, that is, 17-hydroxy-11-dehydrocorticosterone. Now, you know that in the body cortisone probably is converted into cortisol and thereby exerts its physiologic effect.

Aldosterone is also closely related to corticosterone. The chief difference is that instead of a CH_3 at one position, it has a ketone group, which is quite unusual for the adrenocorticosteroids. It is remarkable that such minor alterations in the biochemical configuration of the steroids have such a marked effect on function.

You will notice that progesterone, essentially a pure gonadal hormone, is closely related to desoxycorticosterone. The only difference is at the 21 position, where we have an alcohol or hydroxy group in desoxycorticosterone instead of this methyl group in progesterone. This little change alters its physiologic function markedly. Progesterone is probably in the pathway of biosynthesis of the adrenal corticosteroids: from progesterone to 17-hydroxyprogesterone to 17-hydroxy-11-desoxycorticosterone to cortisol.

Thus these compounds are all closely related. If you remove the 20, 21 side chain by oxidation, you convert the compounds into 17-ketosteroids. These are compounds without the 20, 21 side chain with a ketone on this 17 position. By and large they are androgens. We measure these androgens as 17-ketosteroids by extracting this nucleus with lipid solvents then measuring biochemically the ketone group in the 17 position.

We can measure the corticoids by extracting these compounds and using a chemical reaction, or, if we want to measure the breakdown products of some of the corticoids, the side chain can be oxidized off and the residual nucleus measured as the 17 ketogenic steroids.

The adrenal cortex is under control of ACTH produced by the adenohypophysis, the so-called anterior pituitary. It's quite possible that above the anterior pituitary, in the hypothalamus, there is a releasing substance which acts on the adenohypophysis to permit the release of ACTH. A good deal of work is currently being done in this field. Following stress there may be some neural or humoral mechanism acting on the hypothalamus which permits release of ACTH to act on the adrenal cortex. In addition, the release of cortisol by the adrenal acts as a brake on the pituitary release of ACTH.

ACTH does not act particularly on the glomerulosa, and ACTH does not, by and large, affect the production of aldosterone. The production of aldosterone is essentially autonomous. Although we're not sure what mechanisms are involved in its secretion, they seem to be intake of potassium and sodium, perhaps some hypothalamic factor acting directly on the glomerulosa, and some changes in the extracellular or intracellular volumes. The nature of the latter mechanism is not clear.

ACTH, when administered, does increase production of cortisol and the sexogens. Consequently with ACTH we are producing essentially the same effect as if we were giving cortisone directly.

Let us go back some years to the so-called Cushing's syndrome. You will recall that Cushing originally thought the syndrome he described was due to a pituitary basophilic adenoma. We now think that perhaps basophilic adenomas do not produce ACTH. This syndrome, which came to be known as Cushing's disease, is characterized by a buffalo type of obesity; "moon facies"; a cervicodorsal fat pad; purplish striae, which we now know are due to blood vessels shining through the thin skin; hypertension; amenorrhea; impairment of glucose tolerance; osteoporosis; and particular proneness to fracture.

We later learned, when adrenal corticoid therapy was introduced, that the signs of Cushing's disease were due to overproduction of corticoid-like compounds.

However, even before that, it had been learned that Cushing's disease was due either to overactivity per se of the adrenal cortex because of an adrenal cortical tumor, or to adrenal hyperfunction secondary to overstimulation by the pituitary.

Some of the important metabolic changes the adrenal controls are utilized in patients in order to suppress the manifestations of their disease. The first thing I wish to mention is electrolyte regulation, of which aldosterone and corticosterone are the chief adrenal controllers.

Aldosterone is an extremely potent retainer of sodium and a waster of potassium. Apparently the body has some mechanism whereby administration of desoxycorticosterone or overproduction of aldosterone does not induce continuous retention of sodium. Patients with primary hyperaldosterism are usually not edematous. In addition, it was known many years ago that if patients with Cushing's syndrome were treated with desoxycorticosterone and salt, they wasted salt in contrast with normal subjects who retained salt.

This was not explained for many years until it was demonstrated, following the introduction of cortisone and related compounds, that when you gave these compounds there occurred an expansion of the extracellular space for about eight to ten days, followed by a spontaneous contraction even though administration of the drug was continued.

However, in spite of the fact that sodium is not continuously retained, and there is some mechanism for the prevention of its retention, potassium is wasted. One of the effects of these compounds is potassium wastage with its syndrome, so-called hypokalemic alkalosis. As potassium is leached out of the cells, sodium and hydrogen enter the cells, causing an intracellular acidosis and an extracellular alkalosis.

This can be produced very readily with aldosterone and less easily with cortisol since cortisol has a much weaker effect on sodium and potassium metabolism. In Cushing's syndrome, characterized by the spontaneous overproduction of cortisol, hypokalemic alkalosis is a not infrequent occurrence.

ANTI-INFLAMMATORY AND ANTIALLERGIC EFFECTS OF GLUCOGENIC CORTICOIDS.—I wish to discuss the anti-inflammatory and antiallergic effects of the glucogenic corticoids. We know very little essentially about the mechanism by which they exert these effects. However, we do know something about their metabolic effect on protein. The most important effect of cortisone and its related compounds is its catabolic or antianabolic effect on protein. As a result, protein is converted into carbohydrate, and protein cannot be laid down in the tissues.

Protein in subcutaneous tissue is very markedly depleted, and there is a thinning of the skin. The skin tears easily and this is the mechanism responsible for the appearance of purple striae. A similar process occurs in the bones. They do not have enough osteoid tissue laid down, they become thinned out, collapse easily, and undergo pathologic fracture.

As a result of the conversion of protein into carbohydrate, and the interference with the utilization of carbohydrates by these adrenal steroids, patients with Cushing's syndrome often have diabetes mellitus or impaired glucose tolerance. In addition to their effect on electrolyte metabolism and on carbohydrate and protein metabolism, they exert an effect on fat metabolism, the nature of which is not very clear at present.

They suppress both inflammation and allergic phenomena markedly, and it seems likely that these two effects are probably very closely allied.

Whether the antiallergic phenomenon is related to an altering hyaluronidase action or to its effect on histamine is not clear. It appears to have little to do with the production of antibodies or the antigen-antibody reaction. However, we know very little about the basic method by which these compounds reduce inflammation, although almost all the diseases treated with these compounds are characterized either by inflammation or by allergic phenomena, and the suppression of these symptoms is the goal we try to attain.

Cortisol also has effects on the cardiovascular and central nervous systems. However, for our purposes, the most important are the effects on inflammation, in suppressing the allergic reaction, and on the electrolytes.

When we go back to the older studies on Cushing's syndrome, it becomes apparent that when we give cortisone we are producing Cushing's syndrome exogenously or iatrogenically. When we give these compounds in pharmacologic doses, the question arises whether or not the production of Cushing's syndrome is necessary to produce therapeutic results. This question has not yet been completely resolved. It is quite possible that if we give these compounds in doses just sufficient to suppress the disease we might not get Cushing's disease. We are still uncertain on this point.

This raises the question of the so-called side-effects. These side-effects are not really toxic effects in the ordinary sense such as one encounters with many other drugs. We know that almost anybody can get these side-effects if we give these compounds in large enough dosages for prolonged periods of time. There is no one immune to the development of Cushing's syndrome iatrogenically induced.

These common complications or side-effects are essentially the picture we encountered in spontaneous Cushing's syndrome, although hypertension is not so common. We still don't know how hypertension is brought about in Cushing's syndrome.

Strangely enough it is not produced very often by the administration of steroid compounds except in patients with malignant hypertension. Otherwise we do produce the full-blown picture of Cushing's syndrome, including osteoporosis and pathologic fracture. In addition, we do encounter certain other phenomena when treating a patient with cortisone.

It has been found that there may be dissemination of tuberculosis in patients treated with cortisone. Obviously patients with Cushing's syndrome of the spontaneous variety did not have clinical tuberculosis and presumably did not have dissemination. However, we learned that with the administration of these compounds in large doses we are able to decrease the amount of granulation tissue and very often inhibit wound healing. Dissemination of tuberculosis apparently occurs because these compounds interfere with granulation tissue walling off the tuberculous process. Recently it's been advocated that patients with tuberculosis be treated with corticoids as well as with antibiotics to permit the antibiotics better to penetrate the lesion.

Other infections are prone to run riot if patients are given cortisone or its related compounds. Although infection seemed to spread, systemic manifestations were suppressed because the inflammatory manifestations associated with infection were suppressed. Fortunately these drugs were developed following the introduction of antibiotics, and we were able to combat this side-effect. It is of interest that patients with Cushing's syndrome often died of infection.

IATROGENIC ADRENOCORTICAL INSUFFICIENCY.—The one complication of extreme importance that I wish to discuss is the induction of iatrogenic adrenocortical insufficiency. Like many of the endocrine glands, the adrenal cortex has a self-regulating mechanism. ACTH stimulates the formation of cortisol by the adrenal cortex. Cortisol then acts, probably via the hypothalamus or directly on the pituitary, to inhibit the production of ACTH.

If you give sufficient cortisone to anyone, and normally human production is calculated to be about 25 to 50 mg. of cortisone equivalent per day, you will suppress pituitary elaboration of ACTH. As a result, the adrenals themselves may become either anatomically atrophic or functionally insufficient. This becomes important in patients who are subjected to stress either through infection or surgical operation. We know that in patients undergoing operation or subject to an infection the adrenal participates in the reaction to this stress. During prolonged steroid therapy, when the adrenal can no longer participate, we are subjecting these patients to stress on a fixed dose of cortisol and not permitting the adrenal to react to stress. It has been known for years, although not as widely appreciated as it should be, that patients who have been on long-term steroid therapy, on so-called maintenance dose, may develop adrenocortical insufficiency following the induction of such stress.

What is this picture of adrenal insufficiency? Again we can go back to the story of Cushing's syndrome. It was known for many years that in a patient with Cushing's syndrome with an adrenocortical tumor, removal of the tumor within twelve to eighteen hours caused the patient to become very weak. He exhibited a thready pulse, and went into shock. This shock was refractory to all measures such as blood, plasma, or even, more recently, norepinephrine, until large doses of cortisol were administered. This shock is a manifestation of adrenocortical or glucocorticoid failure.

This is the type of shock observed in patients who have been on maintenance doses and who have had iatrogenically induced adrenal corticoid insufficiency because their own regulating mechanisms have been suppressed. When they are subjected to an operative procedure or infection such as pneumonia, they cannot produce sufficient glucocorticoids and they die of glucocorticoid insufficiency.

Furthermore, since we have studied adrenal corticosteroids, we have learned that a new syndrome exists in patients who have had an adrenocortical tumor removed. When we tide them over the acute episode they do not die in shock; but later, when you try to wean them away from steroid therapy within two to six months postoperatively, they exhibit a new syndrome. This syndrome is characterized by severe dermatitis, almost to the point of exfoliation, and severe arthralgias. If they have had sinusitis or allergic rhinitis, there is a severe exacerbation. This is important because it raises the next question I want to discuss with you, namely the problem of the so-called maintenance dose and what the maintenance dose is.

MAINTENANCE DOSAGE.—Many of the diseases for which we give adrenocortical steroids are subject to exacerbations and remissions. Before we had found steroids, we knew, for example, that patients with disseminated lupus erythematosus had exacerbations, then spontaneous remissions, and recurrent exacerbations. They could last for years in a spontaneous remission. In allergic disorders I think it's quite common for people to get exacerbations and remissions.

What are we doing essentially when we treat one of these patients with adrenocortical steroids? When they have an exacerbation of their disease and we give large doses and suppress their manifestations, we keep them on that dosage then gradually reduce it until they are on what we call a maintenance dose. It seems rather strange that you can suppress their symptoms on this maintenance dosage when ordinarily the body secretes the same dose of steroid itself. It's my opinion that this represents a spontaneous remission of the disease associated with iatrogenic adrenocortical insufficiency. If you withdraw their replacement therapy at this point there occurs a flare-up of the disease because you're giving them what ordinarily their own body normally produces.

Many of you, I think, are quite familiar with the fact that when you try to withdraw steroids completely after patients have been on them for a long period of time, a flare-up of the disease often occurs. I think this flare-up of disease in these instances is because the patients are not producing hormones and therefore are not exerting whatever effects these hormones have on collagen and "ground substance."

USE OF NEWER ADRENAL SYNTHETIC STEROIDS.—I'd like to go on from this concept to the use of the newer adrenal synthetic steroids and whether they are better or worse than the "natural" hormones which were synthesized and used at first. Cortisone and cortisol, originally employed, were extracted from the adrenal. The first attempt at obtaining synthetic derivatives was made in order to try to obtain one with anti-inflammatory effects, but with minimal sodium-retaining properties, and possibly free of the other so-called side-effects, as encountered in Cushing's syndrome.

The first breakthrough was the ability to get a nonsalt-retaining hormone. It was found that if you took hydrocortisone and changed its configuration so that you had a double bond instead of a saturated compound, you lost most of the salt-retaining ability. This is known as prednisolone. With this alteration in structure, one got rid of most of the electrolyte-retaining effect of cortisol and enhanced its anti-inflammatory effect.

This was a very important contribution. However, when prednisolone was introduced, it was claimed that it was free of many of the side-effects. It soon became apparent it did not avoid some side-effects of Cushing's syndrome including peptic ulcer, the incidence of which is as high as 30 to 35 per cent in some series, and osteoporosis. The pharmaceutical chemists wanted now to evolve a compound which not only would not cause edema, because we have one in prednisolone, but also one which would dissociate side-effects from therapeutic effects and also perhaps dissociate the acute inflammatory effect from the suppressive effect on the pituitary with resultant iatrogenic cortical insufficiency.

They have not as yet succeeded, although we are informed each time a new compound appears that it will satisfy these criteria. Usually the claims are made after only a few preliminary investigations and before all the facts come in. The so-called side-effects are just as high in most of the newer as they are in the older compounds.

One exception, perhaps, is triamcinolone in which there seems to be a much higher incidence of weight loss and marked muscle weakness. We knew that patients with Cushing's syndrome untreated for many years complained of severe weakness. They couldn't get up because the muscles, especially the quadriceps, became atrophic because of depletion of protein in the muscles. Triamcinolone, for some reason, is particularly prone to produce this type of muscle weakness, and therefore has not found favor.

The chemists have tried all sorts of things to modify the corticosteroid nucleus, producing methylated compounds, hydroxy compounds, 9-alpha-fluoro compounds, and combinations of these.

We can show what has been found by modifying the nucleus with various substitutions at various positions. The influence on glycogen deposition and on anti-inflammatory effect has been estimated by measuring glycogen deposition in the rat and the reduction of the inflammatory process in the granuloma pouch of the rat. In addition, the effects of the electrolytes have also been quantitated.

One can pick out particular compounds for certain desired purposes: one has no effect on retaining sodium, another causes sodium diuresis instead, and others have potent anti-inflammatory effects.

The 9-alpha-fluoro compound which was introduced shortly after prednisolone was very good in respect to its anti-inflammatory effects but unfortunately retained so much sodium that any patient treated with this compound became edematous. Consequently, it wasn't of much value except for sodium retention.

They sought the ones without sodium retention but which had a good anti-inflammatory effect, such as the dehydro compounds like prednisone. The 6-methyl compound (Medrol) is a good one. When 16-hydroxyl is coupled with the 9-alpha-fluoro compound it gives a nice anti-inflammatory effect and blocks out the sodium-retaining effect of the 9-alpha-fluoro. This is triamcinolone.

In a recent compound, dexamethasone (Decadron, Deronil), the 16-alpha-methyl-prednisolone combined with the 9-alpha-fluoro make it an even more potent anti-inflammatory agent without sodium-retaining effect.

Dexamethasone has come into recent prominence. Essentially it is apparent that, once you leave cortisone and cortisol, most of the compounds now being used—namely prednisone, prednisolone, 6-methylprednisolone, triamcinolone, and dexamethasone—have practically no salt-retaining effects. Their anti-inflammatory effect increases so that the effect of prednisone is approximately five times that of cortisone. Triamcinolone and 6-methylprednisolone are apparently equivalent and are perhaps a little more potent that prednisone. The latest one, dexamethasone, is about five times as potent in regard to its anti-inflammatory effect. However, the increase in potency has not reduced the ability to suppress the pituitary and has not reduced the incidence of so-called side-effects which are really physiologic effects. It makes little difference to the patient, who probably pays the same amount, dose for dose, for the more potent steroid as for the less potent. To the doctor it makes no difference because he cannot avoid any of the problems he encountered before by means of these more potent compounds.

The diseases particularly responsive to treatment by these compounds are chiefly rheumatoid arthritis, rheumatic fever, systemic lupus, gout, various allergic disorders, and inflammatory or allergic disorders of the eye. These drugs are also sometimes used, but with unpredictable results, in diseases involving lymphatic tissue. It was known relatively early in our knowledge of adrenocortical physiology that the glucogenic corticoids caused the disappearance of circulating lymphocytes. It was then stated[1] that with the disappearance of the lymphocytes, large amounts of gamma globulin were poured out into the blood. This apparently isn't so, but the lymphocytes do disappear and treatment of the lymphomatous diseases with these compounds is based on the original observation of the destructive effect of these compounds, both on the lymphocyte and on the eosinophil.

Summary.—May I sum up some of the high points we have covered? The adrenal cortex produces a salt-retaining hormone, life-maintaining hormones, and anti-inflammatory hormones. The pharmacologic effects of cortisone have been used in the treatment of various diseases to suppress their manifestations and have not as yet resulted in the cure of any disease. Their administration is best indicated in the short and possibly self-limited illnesses, such as allergic reactions to drugs or ragweed hay fever, where they can be given for short periods until the cause is removed.

Long-term therapy produces Cushing's syndrome and, in addition, produces iatrogenic adrenocortical insufficiency. Such patients, if subjected to stress, may die. Perhaps it may never be recognized that they died of adrenocortical insufficiency since nothing may be found at postmortem except perhaps some adrenocortical atrophy. It is probable that the so-called maintenance dose represents giving the patient what his adrenal ordinarily produces in the remission phase, whereas in the phase of exacerbation you give him large amounts to suppress the disease.

The newer compounds that have been introduced have had the basic beneficial effect of preventing the salt-retaining discomfort of these compounds and the edema. However, we have not been successful as yet in producing their effects without simultaneously suppressing ACTH production and consequent secondary adrenocortical insufficiency, nor can we avoid the induction of Cushing's syndrome and the complications consequent to that disease.

Reference

1 Dougherty, T. F., Chase, J. H., and White, A.: Pituitary-adrenal cortical control of antibody release from lymphocytes. Explanation of anamnestic response, Proc. Soc. Exper. Biol. & Med. **58**: 135 (Feb.) 1945.

Question and Answer Period

Dr. Spielman: These papers are now open for general discussion.

Samuel J. Prigal, M.D.: We were privileged tonight certainly in hearing a very unusual presentation. I'm referring at this moment particularly to Dr. Holman's discussion on systemic lupus erythematosus. It certainly is a challenge to us as allergists because I think sooner or later we must face the problem of the collagen diseases. Just as every specialty broadens, ours will have to broaden into the direction of the various diseases in which we feel allergy, if not perhaps the dominant or primary cause, at least plays an important role.

Would Dr. Holman perhaps give us a little more information on what evidence has accumulated to indicate that there is an immediate type of allergic reaction in the studies he has made? Also, what evidence has he for the delayed kind of reaction? I would also like to ask whether he has attempted to induce in experimental animals sensitivity to nucleoprotein and how that has manifested itself, or in what way he was able to detect it, whether by anaphylaxis or otherwise.

As allergists, we must learn from these studies. You know we have always thought in terms of large molecular-sized molecules. In the case of drug sensitivity, where we've gotten reactions from simple compounds, we have postulated union with a protein in order to produce antibodies. Here we have an unusual picture of a complex protein being broken down into its relatively simpler elements and at that point perhaps producing sensitization.

Dr. Holman: As far as further evidence of an immediate and a delayed type of hypersensitivity is concerned, I'm afraid I can't meet the qualifications that allergists would expect. We don't have any direct evidence of the immunologic reactions that I mentioned causing symptoms in the patient. I perhaps used the word "immediate" incorrectly. What I meant to imply was that there was a circulating antibody which reacted with a substance which appeared to behave as an antigen. When these were brought into contact in a test tube they reacted immediately. I'm not attempting to imply all that an allergist means by an immediate type of reaction, including certain biologic events of which anaphylaxis is an example.

We don't have much evidence of the possibility of inducing anaphylaxis, for example, in a lupus patient. Nobody is willing to inject such patients with these antigens when they have high circulating titers, so nobody has as yet. We can't go much further than I mentioned toward identifying at this point an immediate type of reaction, at least from the standpoint of any biologic or physiologic response on the part of the patient.

Our problem with the delayed type of reaction is very similar. We're in a very, very early stage of exploring this. We have no more evidence than I've indicated. What led us to this approach was simply the widely held view that the circulating antibodies for a variety of reasons don't seem to play a pathogenetic role. For example, one does not find lupus cells in the circulation of a patient except under extraordinary conditions. You can get cells directly from the blood if you occlude the finger flow with a tourniquet, or in a patient who is in extremis and in shock. Otherwise you have to remove the white cell from the body for a short period of time before it becomes permeable to these antinuclear factors. Then they appear to be able to get across cell membranes, across the cytoplasm as well, and gain access to the nucleus.

Another piece of evidence is that at the time of postmortem examination of patients, despite the fact that they had high titers of circulating antinuclear antibodies prior to death, there is no evidence of gamma globulin adherent to the nuclei of their cells.

Also, children born of mothers with high titers of circulating antinuclear antibodies will by placental transfer have the same antibodies as their mothers. Yet they apparently suffer no ill-effects because these antibodies disappear or the serum factors disappear in approximately thirty to sixty days. This is the same disappearance time as for any other antibody transferred via the placenta.

Finally, we tried to grow cells in a tissue culture, in the presence of high titers of antinuclear antibodies. These cells appeared to grow uninhibited by the presence of the antinuclear materials in the growth medium. It appears that the antibodies themselves, from evidence such as this, probably do not play an active role in inducing the pathologic lesions. This plus the pathologic picture on microscopic examination of some of the lesions raised the possibility of delayed hypersensitivity. As far as practical evidence is concerned, I'm afraid we have no more than I just mentioned.

You asked about the animal experiments. I can simply say that we have immunized rabbits and guinea pigs at some length with nuclei, both of other species and of their own species and their own nuclei. We've immunized them with nucleoprotein and with desoxyribonucleic acid. We have obtained only antibodies that react with the protein constituent of the nucleus, as demonstrated by complement fixation, but not by other methods. We have failed completely to induce the nucleic acid-reacting substances of the type we find in the rabbit or in human beings. We have failed to induce an L. E. cell factor.

We have done this both in normal animals and in animals receiving immense doses of hydralazine, which gives rise in human beings to a syndrome similar to lupus. This hasn't affected the animals. They have developed a skin reaction, but this is to a trypsin-sensitive protein and not to the nucleic acid.

Some investigators have evidence for antibodies to DNA through a variety of technics in experimental animals, although there is no proof that the serum antibodies thus obtained are analogous to the lupus factor. There has been no study on this done. Meischer reports he's induced something like the lupus cell factor in a few animals by immunization with nuclei and nucleoprotein, but this has as yet not been a reproducible phenomenon.

Murray Dworetzky, M.D.: I have one short comment and one short question to ask Dr. Gabrilove on his presentation. Dr. Gabrilove has commented on the inadvisability of so-called maintenance therapy with steroids in our allergic patients. Speaking for myself and I think perhaps for most of the allergists present tonight, it is unfortunate that very few of the patients who are on maintenance therapy with steroids follow the intermittent curve which Dr. Gabrilove has described. I think that would be indicated by the fact that most of us are constantly making attempts to reduce steroids to a point at which symptoms would be minimal but certainly would not keep patients absolutely free from symptoms.

The question I'd like to raise has to do with the use of ACTH. It was for a while fashionable among allergists who had patients on steroid therapy to give patients, either alternately or concomitantly, injections of ACTH in the hope that suppression of the adrenals would thereby be ameliorated, at least to some extent. I wonder if Dr. Gabrilove would make a comment as to which would be the lesser of the evils, the suppression of adrenal function with corticosteroid therapy or with ACTH.

Dr. Gabrilove: I didn't mean to imply that the sine curve described their behavior after you treated the patients. If you go back fifteen or twenty years, you know that of the patients with allergy who were given whatever therapy we had, such as epinephrine, some became worse and some better. It was very infrequent that they died. It was known that they remitted. I mention allergy since allergists are present here; but I really think you have a better prototype in rheumatoid arthritis, where exacerbations and remissions are more prominent features of the disease. The point is, once you put the patients on steroids, you'll never see this pattern because you'll never, or very infrequently, be able to withdraw these compounds. Once you've given steroids long enough, you've induced adrenal insufficiency. If in the past their disease became milder, the patients were able to control it with their own adrenal response. Now that you have given steroids for a long enough period of time, their own mechanism has been put to sleep, so that on withdrawal of the hormone the disease flares up. The analogy I gave was of the patient with Cushing's syndrome in whom, after he has his tumor removed and is over the immediate postoperative period, it should be possible to stop all therapy. However, as soon as you stop, he becomes terribly weak, is nauseated, and has aches and pains in his joints. Indeed there are people with an allergic history who improved during the course of active Cushing's syndrome and who became much worse following sudden cure of the Cushing's syndrome.

Now to proceed to the next question, namely the use of ACTH to prevent iatrogenic adrenal insufficiency. Since we knew that in patients with tumor and Cushing's syndrome the contralateral adrenal was atrophic, it was presumed that the trouble was with the atrophic adrenal which was unable to respond to corticotrophin. In the patient with Cushing's syndrome who has been operated on and been given ACTH, even though you know he has an atrophic adrenal that adrenal responds perfectly in a day or two. Similarly, in your patients who are allergic or have rheumatoid arthritis, when you stop steroids and give ACTH, in a couple of days the adrenals will respond very well. Nonetheless, when you stop ACTH, an exacerbation of disease recurs and the patients again develop symptoms of adrenocortical insufficiency. Again you are forced to administer adrenal corticosteroids.

We know the trouble does not reside in the adrenal, for the adrenal responds promptly to the administration of ACTH. The trouble is located either in the pituitary or, as we now believe, in the hypothalamus. It's this area which is being put to rest and which will not awaken for a period of weeks or months. Anybody who has had adrenal corticosteroid therapy for a prolonged period of time (and I can't tell you just exactly how long this is), when subjected to stress goes into adrenocortical crisis within a period of six months to two years following cessation of therapy if not treated with steroids. Once you induce adrenal corticoid insufficiency in a patient, it's very difficult to give him time to come out of it without necessitating resumption of therapy. That's why you really have a tiger by the tail; and once you have it, you can never let it go, or very infrequently.

To come back to the use of ACTH in order to prevent this, obviously if the defect is not in the adrenal ACTH is valueless, although a lot of people have advocated it. I must admit that in the first edition of *Diseases of the Endocrine Glands*[1] we advocated that patients with adrenocortical tumors who were being prepared for operation ought to be given ACTH in order to stimulate the contralateral adrenal. However, if you stop the ACTH, the patients die with large adrenals instead of small adrenals, obviously no great improvement. The use of ACTH will therefore not prevent this untoward reaction.

You can use ACTH instead of cortisone in the treatment of disease. The only difficulty is that nobody knows what the maximum production of adrenocorticosteroids is under the influence of ACTH. There's a feeling that the maximal adrenal output is much less than you can obtain by giving the adrenal corticosteroids themselves. Consequently it seems preferable to use adrenocorticosteroids rather than ACTH, obviating the necessity for daily or bidaily injections. Also, much larger amounts may be given without the uncertainty of what the adrenocortical response to ACTH will be.

Member: Dr. Gabrilove, lately there were reported a number of cases of intestinal infarction in patients who took steroids. They did not reveal any thrombus or embolus.

Dr. Gabrilove: Well, the longer we have any compounds, the more we learn. It's surprising that particularly in rheumatoid arthritis patients with long-term steroid therapy, the incidence of periarteritis nodosa has, apparently, increased. It's been known that sometimes with rheumatoid arthritis you get vascular lesions, but it appears strange that in some patients the administration of a compound which is advocated as the treatment of choice for periarteritis nodosa should be accompanied by an increased incidence of periarteritis nodosa. It's quite possible that the adrenocortical steroids have produced a vascular lesion in the patients you mentioned, and the vascular lesion was missed. It's also been thought that the incidence of thrombosis is increased by the administration of these drugs, but this has never been proved. In fact, some people give these drugs for the treatment of thrombophlebitis. Infarction of the intestines conceivably might be due to one of these two factors.

Member: Can you give us some information on the mechanism of the glycogenic factor? Does it occur with all corticosteroids?

Dr. Gabrilove: It is claimed that the newer corticosteroids have a lesser effect on carbohydrate metabolism. However, that has been said of all the newer corticosteroids when they were introduced. I would predict that in all probability the incidence of impaired glucose tolerance will be exactly the same with the newer corticoids as it was with the older, as soon as enough people have been treated so that statistical comparisons can be made.

Another point that comes out of a discussion of so-called diabetogenicity is this: how do we measure it? The glucose tolerance test is a very crude measurement. We know that these compounds do not induce true clinical diabetes. Conn and Fajans[2] have attempted to predict the future incidence of diabetes on the basis of the response to adrenocorticosteroids among relatives of diabetic patients.

In a small series of patients, who may or may not have diabetic forebears and relatives as compared with a larger series, there may not be an adequate statistical basis for comparison. The reported decreased incidence is probably the result of a combination of several of these factors. When a large enough statistical series is obtained the results will probably be similar. The mechanism of action of these compounds is an increase in the conversion of protein into carbohydrate in the liver, which is why the glycogen deposition test is employed for assay. They also interfere, apparently, in the periphery with the utilization of carbohydrate. Apparently they don't interfere with the uptake of glucose by the muscle itself.

Ely Perlman, M.D.: It has been suggested, and as far as I know it's an explanation for their effect in allergy, that steroids affect the deposition of histamine. In other words, with a dose of steroids continued over a long period of time in animals, free histamine in the tissues decreases to a fixed lower level. As soon as steroids are stopped, the histamine recovers. I would like to ask Dr. Gabrilove if he knows of any studies of a similar nature which showed that this is true in human beings.

Dr. Gabrilove: I hinted at that when I said it was postulated that interference with histamine was one of the mechanisms by which these compounds produce their effects. I don't know that it has been proved one way or another. Histamine has an effect on the vasculature, and cortisone also has a very important peripheral vascular effect, as indicated by this peculiar type of adrenocortical shock, which is refractory to all measures except cortisone.

Whether its effect in allergy is due to its effect on histamine production or by counteracting histamine, I don't know.

Member: I wonder if some comment could be made on the administration of steroids with regard to the diurnal amount of secretion of the cortisone by the adrenal cortex. If the steroids were given during the quiescent stage, would there be atrophy but not if given during the active phase?

Dr. Gabrilove: Forsham has been the advocate for giving differing doses of the steroids at different times of day because there is a diurnal variation in the adrenal secretion of steroid. There's a diurnal variation of almost every parameter that we measure, including sleep. I don't know that giving exogenous steroids in accordance with the diurnal variation in normal subjects would necessarily stop the development of iatrogenic insufficiency. I haven't heard that he's been able to prevent it in this fashion. He has advocated such therapy because he claims you can reduce the dose of steroids given to produce an effect. That is relatively unimportant if it still produces adrenal insufficiency, and I'm pretty sure that it does. I don't think there's any evidence that it does not.

Horace S. Baldwin, M.D.: I'm very much impressed by Dr. Gabrilove's talk. If I understand him correctly, once having started steroid therapy with the asthmatic patient, we are faced with exacerbation whenever we stop it.

In some cases we have given it intermittently for a certain period of time. Then we have taken care of causative factors in the asthma, either infectious factors, or psychosomatic, or whatever, and the patients have done well without steroids. We also have a group such as Dr. Dworetzky mentioned in which we have not been able to cure the asthma by such a routine management of the asthmatic state. We have had to give the patients steroids in maintenance doses. There are a number of instances where we have been able to give it over a period of years and then been able to stop steroids. The patients don't have an acute exacerbation and they get along very much better.

I wouldn't want to give the impression that this happens all the time. On the other hand, it isn't inevitable that once having started steroids there will always be an exacerbation.

I also wonder if you seriously meant that steroids are preferably used in ragweed hay fever. If all ragweed cases received steroids, you might very well have serious results from adrenal suppression in those cases that undergo surgery following the hay fever season.

In the asthmatic patient where we use it so much, our problem is often one of infection. I think that Cushing in his first article wrote on the prevalence of infection in his cases. In the asthmatic patient we are prone to have a patient with chronic infection in the bronchial tree. The anti-inflammatory effect of steroids prevents proper tissue reaction to bacterial infection and tends to favor the development of infection.

Certainly I think one of the great dangers of steroid therapy used too lightly in cases of asthma is the danger of producing infection and the masking of infection at the same time. Some of the worst cases that I have seen have been cases on steroid therapy where treatment for the infection was not given properly and the patients got into very serious trouble.

I certainly want to share your feelings about the seriousness and the serious side-effects of steroids. On the other hand, we observe these patients for a period of years and many of them are helped. We certainly are faced with a problem as to whether or not steroids should be used.

Dr. Gabrilove: I didn't mean to imply that ragweed hay fever should be treated with cortisone. I merely used it as an example of a self-limited illness, occurring only during the ragweed season, which you could treat with impunity because you stopped steroid administration when the offender was already removed from the environment. The patient would then be able to tolerate his environment without steroids because the ragweed was removed.

In patients with bronchial asthma where the offender is not known and symptoms may continue over a period of years, the offender is still there, and it's very difficult to stop therapy with corticoids.

Nonetheless, I know that some of the things I've said tonight are rather unorthodox. I've tried to explain what the so-called maintenance dose represents to me. Not only in allergy, but also in other diseases we are giving cortisone in an amount which we have calculated the average person secretes when he is not under stress. Patients with Cushing's syndrome who have a tumor removed are the prototype of iatrogenic glucocorticoid failure. They develop aches and pains and exfoliative dermatitis. This is almost invariable. When I first saw it, I thought maybe these patients might be sensitive to penicillin, but this reaction has occurred in almost every patient operated on. There must be some reason why it occurs. Maybe a certain amount of hormone is necessary to suppress the disease in those of us who do not have manifestations. Others of us who are perhaps less fortunate do have manifestations when the amount of available cortisone is inadequate.

Member: Does Dr. Holman have any explanation as to why the antimalarial drugs seem to help systemic lupus?

Dr. Holman: Not a direct one. The antimalarial drugs have an anti-inflammatory activity which has been rather ill-defined apparently. There's one interesting lead, but it can't be carried too far. The antimalarial drugs are basic in nature and will combine quite firmly with both nucleic acid and nucleoprotein. If one combines the antimalarial with the particular antigen, either DNA or nucleoprotein, the reaction of these substances with the serum factors will be inhibited, The antimalarial drugs do, therefore, possess the capacity of interfering with these apparent immune reactions by virtue of forming a union with the antigens. Whether that has anything to do with their therapeutic effect is certainly unknown to me.

Dr. Spielman: I think we would all like to hear a comment from Dr. Merrill Chase on either paper if he will.

Merrill W. Chase, Ph.D.: I have nothing to add that would be of moment except to say this: When Dr. Holman speaks of failure because he has not reproduced a lupus factor in an animal, I wonder if he has ever done it with a human being and if he had the intention, would he know what to do.

This is a problem that all in experimental biology face. I'm not suggesting that he ought to do it to a human being, but I'm saying that I don't think he knows how to. We want him to go out and do it in an animal first, because if we have an animal we have something to work with: but the principles are not understood and all of us who work with animals are plagued with this one eternal problem. We must find out how to do that often empirically. There is no clear charted path. Dr. Holman, by putting L. E. nuclei into a rabbit is not, I am sure, subjecting it to stresses like those we human beings encounter, and he cannot produce the symptomatology of human disease. I think we should be patient with Dr. Holman and he should be patient with the allergists.

Member: Do you give only a small maintenance dose to avoid Cushing's syndrome and other side-effects? Do you have any idea as to the least amount of cortisone which can produce this?

Dr. Gabrilove: Those are two questions that are practically impossible to answer at the present time, but I can indicate what we do know about it.

We have no real way of titrating the effect of these compounds in disease except by the suppression of the clinical manifestations. For the sake of argument, if we were to give 100 mg. of cortisone to a patient for a certain period of time, we would induce Cushing's syndrome. If we gave him 75 mg., we probably would take a longer period to induce that disease.

If we have a patient with a disease and 60 mg. were enough to suppress it and 61 mg. a little too much, then if we gave 61 mg. for a long period of time we might also get Cushing's syndrome. Nobody knows why, but once you exceed the normal capacity of the adrenals you induce Cushing's syndrome while you suppress the disease. This question has never been answered, and it's a very difficult but very important one to answer.

People under stress produce larger amounts of cortisone than people at rest and they do not get Cushing's syndrome. Patients with acromegaly often put out increased amounts and they too do not get Cushing's syndrome, so this first question is still impossible to answer.

As to the amounts needed to suppress adrenocortical function, I think we should go by analogy with the thyroid where we have a little better method of measurement. The normal thyroid elaborates the equivalent of 3 grains of thyroid a day. If you give a patient 1 grain, he produces 2 grains; if you give him 2 grains, he produces 1 grain; if you give him 3 grains, he produces nothing. When you stop therapy, the thyroid resumes function. However, thyroid function is really not very important for life maintenance. You can get along with myxedema for long periods of time without dying. Unfortunately, adrenal function is vital.

I have to assume, and there's no simple way of demonstrating it, that once you've given adrenocortical steroids, you reduce the amount which the adrenal is capable of putting out because you have altered the driving force (ACTH) from above. Once you give more than the adrenal normally produces, then I think you have to consider this question: How long do you have to give corticoids in order to put this mechanism to sleep for a long period of time? We don't know. Suppose you give it for a certain period of time to suppress adrenal function so that it resumes, say, in four days. In the presence of disease you may not be able to wait four days. If you suppress it for a long period of time, suppression may persist for two weeks following cessation. You can't tell, because once you suppress it, and you induce the iatrogenic mechanism, you can't wait to see how you can stir it up. So that question is unanswerable at the present time. We will have to try to find out, at least roughly, how long a period of time corticoids must be given before a prolonged period of suppression is induced. The difficulty is we have no way of testing adrenocortical function adequately.

Measurement of the adrenocorticosteroids is very crude. We have to depend on indirect measures which aren't very good. Consequently, we have no answer, in spite of the fact we've had these synthetic compounds now for approximately ten years.

DR. SPIELMAN: I think the hour is getting late. We have time for one more question.

HARRY MARKOW, M.D.: Occasionally we read a report of 385 cases treated with steroids. Recently in Chicago we heard about 89 cases treated with steroids. I would like to know the speaker's opinion about resorting to steroids.

DR. GABRILOVE: I have the feeling that none of the physicians has resorted to steroids without coming to the end of the therapeutic road in trying to obtain relief for the patient. You have to use steroids when necessary, but you must be aware of the problems that you're getting into. Perhaps they didn't want to use these compounds, but they were forced to. The important thing is to know what you're doing and to know what the calculated risk is. I'm sure we all proceed in our daily lives according to these principles.

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The man who never in his life
Has washed the dishes with his wife
Or polished up the silver plate—
He still is largely celibate.—CHRISTOPHER MORLEY

RECENT ADVANCES IN MEDICINE AND SURGERY

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ROBERT TURELL, M.D., *Editor*

Present Status of Surgery of the Colon and Small Bowel

FRANK GLENN, M.D., AND BJORN THORBJARNARSON, M.D., NEW YORK CITY

(*From the Department of Surgery, New York Hospital-Cornell Medical Center*)

SURGERY OF THE COLON

Imperforate Anus

Imperforate anus occurs in about 1 of every 2,500 births. There are four types of this anomaly:

1. Stenosis of the anus or lower rectum.
2. Persistent thin anal membrane.
3. Termination of rectum in a blind pouch at a variable distance from the perineal skin (most common type).
4. Ending of both rectal and anal parts as blind pouches which do not communicate.

Failure of the urorectal septum to divide the cloaca in fetal life gives rise to the formation of fistulas or communications between the rectum and vagina or urinary tract. A communication of some sort is found in 85 per cent of male infants with imperforate anus, and in female children with this anomaly a fistula frequently opens into the vagina.[1] Associated congenital anomalies are common in this group of children.

The diagnosis usually is obvious in Types 1, 2, and 3. The most difficult aspect of the diagnosis is ascertaining how far up the proximal segment of the rectum is, often necessitating delay of surgery in the newborn for forty-eight hours. By that time swallowed air has reached the distal colon and thereby indicates the extent of the defect. The external anal sphincter develops separately from the bowel and is always present. Pin-pricking in the perineal region, by causing contraction of the muscle and puckering of the skin around it, helps to locate the sphincter.

Correction of Types 1, 2, and 3 deformities requires dissection of the fistula and proximal segment and lowering of the bowel or fistula through the sphincter. When the fistulas are high up in the fornix of the vagina or situated in the bladder, an abdominoperineal approach is necessary. When the fistula entering the vagina is large, repair may have to be delayed for four to five months. Secondary megacolon may develop from obstruction at the level of the fistula or after operation, and dilatations have to be carried out systematically for the first two years of life.

Congenital Megacolon

The cause of congenital megacolon is believed by many to be due to absence of the ganglion cells of the myenteric plexus of Auerbach. The diseased segment usually is in the distal portion of the rectum but rarely is the entire colon involved.[2] About 5 per cent of these patients have a similar affliction of the urinary bladder.[3] The treatment of congenital megacolon is exclusively surgical and is urgent because mortality is high in untreated cases.[4] There are causes of megacolon in infancy other than the congenital one, and it is imperative to differentiate the cause. Psychogenic constipation, mental retardation, cretinism, or organic defects from operations may all result in a megacolon.[5,6] The most important point in the differential diagnosis is the history of constipation from birth. Children with congenital megacolon never have a normal bowel movement. The diagnosis is further established by demonstration of a narrow rectal segment and dilatation and thickening of the sigmoid and proximal colon. Confirmation in doubtful cases may be obtained by a biposy of the full thickness of the rectal wall. If ganglion cells normal in number and appearance can be demonstrated in the biopsy, the case is not a true congenital megacolon.

The operation for megacolon can be carried out in a single stage. The two-stage operation, a preliminary decompressing colostomy and subsequent resection, is now reserved for newborn infants and older patients with megacolon of long standing. It is important to remove the entire aganglionic segment, for otherwise recurrence can be expected. The operation devised by Swenson[3] permits the anastomosis to be done outside the anus and is now accepted as the standard procedure for patients with this affliction.

Ulcerative Colitis

The etiology of ulcerative colitis is still unknown. Attempts at isolating an infectious agent have been unsuccessful. Allergy to food has been involved, and systemic diseases with sensitization of the colon and proteolytic enzymes have been implicated. In recent years psychogenic and emotional disturbances have been felt to be an etiologic factor.[7] Study of the earliest lesions in ulcerative colitis suggests that it is unlikely that any specific extrinsic cause of the disease exists. It seems more likely that a variety of stimuli, both intrinsic and extrinsic, may be sufficient to produce spreading ulceration of the colonic mucosa in an individual in whom there is some intrinsic failure of normal epithelial regeneration.[8]

Many, or perhaps most, cases of ulcerative colitis never enter the domain of the surgeon. In acute fulminating ulcerative colitis, surgery may be imperative in the early stages but as a rule surgical therapy is recommended only for chronic cases resistant to medical therapy, which nowadays includes steroid administration.

The patient with chronic ulcerative colitis is an unhappy person and suffers constantly except for periods of remission, which often are brief. There is inanition, anemia, low-grade fever, and toxemia from absorption of products of tissue breakdown and infection in the colon. The frequent watery, often bloody bowel movements sap a person's strength, and infectious arthritis, pyoderma, rectal fissures, and fistulas are common. The early changes in the colon progress from thrombosis of the intramural vessels to superficial ulceration and involvement of deeper layers, often ending in perforation. The alternating process of breakdown and healing results in scarring and narrowing, sometimes segmental, which often ends in the shortened, narrow rigid organ so familiar to radiologists. Catastrophes, from massive bleeding, fulminating progression of the local disease, and perforation, may occur at any time.[9,10] Carcinoma is found in over 16 per cent of those with ulcerative colitis, and deaths from colon cancer are 8 to 9 times more frequent in ulcerative colitis patients than in the average population.[11]

The surgical treatment of ulcerative colitis consists of removing the involved segment of the colon. Most of the time this means total colectomy with the simultaneous establishment of an ileostomy. Sometimes an attempt is made at ileoproctostomy when there is no or minimal involvement of the rectum.[12,13] The operation of total colectomy may be done in one or two stages. Patients in reasonably good condition tolerate the one-stage operation extremely well. Poor-risk patients may have the rectum left in for subsequent removal. Ileostomy alone, as practiced before, has largely been given up; this is especially true for the severely ill patient with fulminating disease, because the process in the colon continues and very little improvement in the toxemia, bleeding, and electrolyte loss takes place until the major portion of the colon is removed. The improvement after colectomy is often rapid and almost miraculous. Rapid gain of weight and strength is the rule, and patients return to gainful employment.

Proper attention has to be given to the establishment of the ileostomy.[14,15] The stoma should be at a distance from the incisions since scars hamper the placement of the bag. Prolapse and serositis of the stoma may be decreased by mucosal eversion or skin grafting. Sutures have to be placed carefully, if at all, at the skin level in order to prevent fistula formation. The mesentery should be sutured to the peritoneum to prevent volvulus formation around the terminal ileum. The receptacle should be applied as soon as possible to provide protection to the skin from the small bowel contents.

The treatment of ulcerative colitis is hindered by the fact that the etiology of the condition is not known. Surgery does not eradicate the etiologic factor but effects cure by removal of the diseased organ. Medical therapy gives best results in early mild cases.[16] Surgery should be suggested to patients with chronic progressive disease and disabling symptoms of more than two years duration. Fulminating symptoms require emergency operations. Long-standing cases with minor symptoms need careful screening for the possible development of carcinoma.

Diverticulosis and Diverticulitis

Diverticulosis of the colon is frequently seen in adults and increases with age. It is estimated that two thirds of those over the age of eighty-five have diverticulosis but only 20 to 25 per cent of all adults.[17] Diverticulosis by itself is not an indication for surgical therapy but complications, in the form of diverticulitis with the possibility of bleeding, perforation, obstruction, and the formation of enterovesical or enterocutaneous fistulas, make surgery advisable or imperative in many cases. Probably about 20 per cent of those with diverticulosis develop complications of sufficient severity to warrant surgery. The diverticula in the colon are usually on the mesenteric side and are mucosal outpouchings through areas weakened by the transmission of vessels and nerves. About 80 per cent of these diverticula are located in the sigmoid colon. Diverticulitis of the colon is usually a recurrent disease and constitutes a major hazard in terms of morbidity.

Surgery is urgently indicated if perforation occurs, fistulas have formed, or bleeding is massive. Free perforation or large abscesses and fistulas require staged operations. The first stage is a decompressing and diverting colostomy with or without drainage, as indicated. Since most of these lesions are in the sigmoid, a transverse colostomy is most frequently employed.[18] Massive bleeding from diverticula or diverticulitis may be a formidable problem with which to cope since the entire colon often is diseased, thus making it quite difficult or impossible to determine the source of the bleeding.[19] If the hemorrhage does not cease by means of conservative measures, surgery may become imperative. If there is segmental involvement of the bowel, resection of this part is indicated. If the location of the bleeding cannot be determined, a transverse colostomy may still be employed because statistically the most frequent site is in the sigmoid. Recurrent attacks of diverticulitis without any of the major complications mentioned are also indications for surgery.

Although the conditions mentioned usually require a three-stage operation, a one-stage operation may be performed with safety under certain circumstances. Localized disease often permits primary resection after adequate preparation if caution is observed. The most important factor is to establish the anastomosis in entirely healthy and uninvolved tissues.[20,21]

Diverticulitis with bleeding, obstruction, and the formation of a mass often is difficult to differentiate from carcinoma of the colon. When the involved area is beyond proctoscopic reach, it may be impossible to be certain of the diagnosis. Even exploration may not give the full explanation. Lately the use of exfoliative cytology has been reported as being helpful in this situation.[17]

Carcinoma

Cancer of the colon is now one of the most common malignant tumors encountered. Histologically, by far the greater majority are adenocarcinomas. Squamous cell carcinoma is found at the anus.[22] The connection between benign polyps and cancer is alluded to later. The distal colon is the most common site for cancer, and the frequency of occurrence decreases as one moves proximally. About 70 per cent of the malignant tumors of the colon and rectum may be seen and felt by digital and sigmoidoscopic examination. The symptoms and signs of colon cancer vary with the site of origin. In the right side of the bowel, bleeding and its consequences are likely to be prominent because the liquid stools lessen the occurrence of obstruction. In the left side of the colon the reverse is apt to be true.

The outlook for patients with carcinoma of the colon and rectum is better than for any other malignant tumor of the intestinal tract. It is estimated that about half of the sufferers of this disease have a chance of being cured by surgery.[23] The reasons for better results in the treatment of colon cancer than for cancer elsewhere probably are not all known, but some credit should be given to the increasing use of endoscopy in suspicious cases. The anatomic arrangement which makes wide removal of lymphatics possible is another factor.

The operations for cancer of the colon and rectum aim at the wide removal of the lesion along with the arterial and venous blood supply to that part of the bowel. The lymphatics follow the veins so that their removal accomplishes both objectives. Lesions in the right colon are customarily removed by a right colectomy, and continuity is re-established by an ileotransverse colostomy. We prefer to do this anastomosis in an end-to-end fashion. Carcinomas in the transverse descending and sigmoid colon also are usually treated by wide removal. In the case of the transverse colon the omentum is removed at the same time. Lesions in the splenic flexure area sometimes metastasize to nodes in the hilum of the spleen. Consequently, removal of the spleen and gastroepiploic vessels at the same time is good surgical practice.

Investigators of the mode of spread of cancer of the colon have emphasized the frequent occurrence of tumor cells in the veins of the involved area. On careful examination tumor cells in the portal blood have been demonstrated in up to one third of operations for cancer of the colon. Histologic sections have shown tumor-filling and obstructing veins in the proximity of the growth in over half of the cases examined.[24] The results of these investigations have prompted fastidious care in the handling of the tumor at the time of operation and early ligation of the veins. Attempts are also being made to inject cancercidal drugs to influence the parts of the tumor already free in the circulation.

The type of treatment of cancer of the rectum, at or below the peritoneal reflection, is always a source of contention. Ever since Miles introduced the combined abdominoperineal resection it has been recognized that there are three zones of spread for cancer of the rectum. Spread in the cephalad direction—the most important pathway—takes place by means of the lymphatics following the superior hemorrhoidal vessels. Lateral spread occurs in the perirectal fat; along the levators ani; and then proceeds to the vagina, prostate, and base of the bladder. Distal spread first goes toward the perianal skin, then into the ischiorectal fat, and finally toward the external sphincter.

The two main approaches in the surgical treatment of rectal cancer are the classic Miles operation and the anterior resection. When the lesion is within 6 cm. of the dentate line, there is hardly any basis for objection to the contention that only the Miles operation is applicable. There are advocates of anterior resection for lesions 6 or more cm. removed from the dentate line.[25] Their argument is that an adequate anastomosis can be done far down in the pelvis on selected patients and that the zone of distal spread is the least important for rectal cancer. The margin felt to be necessary for adequate resection by these authors varies from 2.5 to 6 cm.; the more anaplastic the lesion, the wider the margin. There is no doubt that in the hands of certain surgeons anterior resection is an acceptable operation and results comparable to those of the Miles operation have been reported, but as a standard procedure it is felt to have several disadvantages. Leakage from the suture line is fairly common. Incomplete removal of the tumor is more likely to occur. Recurrence at the suture line happens frequently, even with apparent complete removal of the lesion.[26]

The causes of recurrences at the suture lines may be explained by incomplete removal of the primary lesion, incomplete removal of areas of secondary permeation, potentially malignant mucosa in the vicinity of the tumor, or implantation. By far the largest number of suture line recurrences are probably caused by implantation of tumor cells at the time of surgery, possibly carried into the tissue by the needles fashioning the anastomosis.[26] The occurrence of implantation may probably be lessened by thorough cleansing of the bowel and ligation on both sides of the tumor before manipulation starts.[24] The frequency of local recurrence, however, is so great and the outlook so poor once recurrence has occurred that we believe the Miles operation should be performed whenever possible.

Polypoid Lesions

The signs and symptoms of benign polyps of the colon are bleeding, intussusception, and obstruction. Polyps may be solitary, multiple, or in the form of the familial polyposis. Familial polyposis is a peculiar form of adenomatosis of the large bowel which is transmitted as a nonsex-linked Mendelian dominant and should not be confused with multiple polyps of the colon. Multiple polyps of the large bowel, in the ordinary sense, can always be counted and defined as isolated structures. In the familial polyposis the mucosa is truly replaced with the adenomatous structures. Villous papillomata are structurally different from the polyps mentioned above and need separate consideration.[27]

The relationship of carcinoma of the colon and polyps has not yet been fully elucidated. It is known that polyps and cancer occur most frequently in the same areas of the bowel and that carcinoma is found five times more frequently in individuals with polyps than in those without. It has also been estimated that patients with multiple polyps are twice as liable to develop cancer than those with a solitary one.[28,29] The incidence of polyps in the population is estimated at from 2.3 to 6 per cent, as revealed on autopsy examination, and we know that the incidence increases with advancing age. The method of examination in the search for polyps influences the results, and structures identified microscopically as polyps have been found in 69 per cent of autopsy studies.[29] Although polyps are not infrequently found in children, it is rare to observe associated carcinoma before the age of fifteen.[30]

The methods available for discovering polyps of the colon are digital examination, proctoscopy, and radiologic investigation. Digital and proctoscopic examinations are accurate and are of most value since the incidence is highest in the rectum and sigmoid. Barium examination, particularly with air contrast, is also a useful method for investigating the rest of the bowel but has its shortcomings. Coloscopy and palpation of the colon during laparotomy has, in some instances, revealed 45 per cent more polyps than were discovered by radiologic means.[31]

Familial polyposis has to be considered a malignant disease because over 60 per cent of these patients have carcinoma when first seen and 25 per cent have multiple cancers of the colon.[29] Familial polyposis requires removal of the colon soon after puberty. The choice of operation is between a total colectomy with ileostomy and a subtotal colectomy with ileoproctostomy. If an ileoproctostomy is carried out, the polyps in the rectal stump have to be fulgurated, and frequent proctoscopic examinations must be performed in order to find and remove new lesions.

The polyps seen in childhood are potential sources for bleeding and obstruction and because of this should be removed. Carcinoma of the colon was not found in 104 such cases reviewed by Gordon and coworkers,[30] and these authors therefore recommend that the treatment consist of local excision, or polypectomy.

Polyps found in adult life should be treated according to location. Biopsies may be obtained of those in the rectum and within sigmoidoscopic range. Benign polyps and polyps on a long stalk with malignant change in the mucosa may be locally excised. If there is invasion of the connective tissue stalk, the polyp should be treated as a carcinoma. Sessile lesions with malignant mucosal changes should also be treated radically.

Polyps and polypoid lesions approached abdominally, without the help of a preliminary biopsy, pose a different problem. Again, pedunculated lesions with a grossly normal stalk usually may be removed by means of a colotomy. Sessile lesions considered to be benign should be removed with the full thickness of the bowel wall and a margin on all sides or by a segmental resection. The diagnosis of lesions of the colon by frozen section is difficult and often disappointing. If frozen section, however, reveals invasion of the bowel wall or connective tissue stalk, a wide resection should be performed. When the paraffin section of a colon lesion removed locally reveals invasive carcinoma, another operation with wider removal has to be seriously considered.

Because of the frequent occurrence of multiple polyps, it is of utmost importance to perform a thorough examination of the bowel at the time of surgery. When a colotomy is done, the proximal and distal end should be inspected. Some advocate examination of the bowel by a proctoscope through the colotomy site.[31]

Villous Papillomata

The gross and microscopic structure of villous papillomata sets them apart from the usual polyps and adenomas. These tumors usually occur at a later age than the ordinary polyps and create a problem in diagnosis. Because of the size of these lesions and the broad base, biopsies are notoriously unreliable in giving a true idea of the nature of the neoplasm. Although polyps usually are seen more frequently in men than women, the reverse seems to be true for villous papillomata. The location of occurrence, however, is the same.

The treatment of choice is influenced by size, location, and microscopic structure. From considerable experience in observing the nature of villous papillomata, we choose to consider them malignant until proved otherwise. This opinion has been influenced by finding regional metastases from lesions which microscopically were benign, even after total excision. Biopsies of villous papillomata have to be generous and multiple to give adequate information. Some authors grade these tumors on histologic findings, from entirely benign to infiltrative carcinoma.[27] Whenever carcinoma is found, the question of treatment, of course, is easier to solve. When invasive carcinoma cannot be demonstrated, the lesion should be treated by adequate local excision, which implies bowel resection if necessary. Local recurrences are frequent and are the rule after incomplete removal. Often the recurrence shows a definitely malignant character. We feel that villous papillomata, even in which carcinoma has not been demonstrated, require radical removal, and for the large lesions located in the rectum this implies abdominoperineal resection.

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SURGERY OF THE SMALL BOWEL

Congenital Anomalies

MECKEL'S DIVERTICULA.—Meckel's diverticula occur in 1 to 2 per cent of normal human beings. Over a twenty-year period 100 cases were found in this institution and one-third were symptomatic.[1] The complications of Meckel's diverticula may be bleeding, obstruction, inflammation, and perforation. Bleeding is usually associated with acid-secreting gastric mucosa in the diverticulum which causes an ulceration of the small bowel mucosa. The bleeding usually is intermittent and often massive. Obstruction occurs when the diverticulum is the leading point for an intussusception or when a persistent omphalomesenteric band compresses the bowel. Inflammation or diverticulitis was found in 15 of our cases. Kiesewetter[2] analyzed 84 cases of Meckel's diverticulum and found that 60 per cent were symptomatic. There was bleeding in 23. There were 14 cases of diverticulitis, 11 of obstruction, and 2 of umbilical sinuses.

Meckel's diverticula are difficult to demonstrate radiologically. Therefore, the diagnosis of a Meckel's diverticulum must be made on clinical grounds. The characteristic episodes of bleeding in children usually allow the diagnosis to be made by exclusion before operation. The cause of obstruction is rarely known preoperatively, and diverticulitis is often taken for appendicitis. We remove Meckel's diverticula found incidentally in the course of exploratory laparotomy unless the main procedure is too extensive. Small diverticula may be removed by tangential resection. The bigger ones and those in which inflammation is extensive require small bowel resection with end-to-end anastomosis.

Atresia and Stenosis.—The intestinal tract goes through a cord-like stage in its development. Vacuoles form in this solid cord of tissue which coalesce and ultimately leave behind a patent organ. The cord stage and vacuolization may stop at any stage and the results may be either atresia or stenosis. This developmental process probably is also responsible for the formation of most of the intestinal duplications. Gross[3] described 98 cases of atresia of the small bowel. Prompt diagnosis and treatment may save many of these children, in particular if no other congenital anomalies exist. Atresias or stenoses may be multiple, and the entire bowel distally should always be explored. Ileostomy should be avoided, if possible, because these small patients tolerate the loss of intestinal secretions poorly. End-to-end anastomoses can be accomplished in most instances even though there is disproportion in the size of the bowel proximally and distally.

Duplications of the Intestines.—Duplications usually arise in the mesentery of the small bowel. They may be densely attached to the normal bowel and have one wall in common. Communications may exist between the lumina. Symptoms arise from size, pressure, or secretion of acid-peptic juices. Intestinal obstruction may be the first symptom observed. The mucosal lining of the duplications may be gastric in type, as is sometimes seen in Meckel's diverticula. The treatment of the duplications is excision if the tumor is small. Sometimes, however, the entire or greater part of the bowel is duplicated and excision obviously is not feasible. Creation of an anastomosis between the lower end of the malformation and the normal bowel works quite well except when it is secreting acid-pepsin juices. The small or large bowel mucosa cannot tolerate these secretions, and peptic ulcerations form with all their complications.[4] This problem has been solved by some by anastomosis of the duplication to the stomach, where the effects of the secretions will not be noticed. Another rare occurrence is the development of carcinoma in these malformations, and a case has been reported where the tumor was of the gastric type.[5,6]

Malignant Tumors

Malignant tumors are not commonly observed in the small intestine. Recently a review of the literature revealed 334 cases reported to date.[7] The reviewers reported 26 cases of their own. The tumors in this group were carcinoma, leiomyosarcoma, lymphosarcoma, each of about the same frequency, and carcinoid ones.

There are three types of symptoms: obstruction, perforation, or anemia from bleeding. These tumors may be difficult to detect in the early stages; colicky abdominal pain, otherwise unexplained, and occult blood in the stools may be the only early symptoms. Intussusception in adults usually is caused by an intraluminal mass. This differs from children, in whom a cause rarely is found. Carcinoid tumors[8,9] most frequently are encountered in the appendix but also occur in the small bowel, where Waldenström[10] found 94 as opposed to 23 in the appendix, and may cause flushing of the skin and symptoms of a peculiar nature by virtue of their internal secretion, serotonin. The most typical flush lasts five to ten minutes. There are changes in color from normal to salmon red and bluish white. There is often tachycardia and hyperperistalsis with abdominal colic and diarrhea. A murmur may be heard over the pulmonary area of the heart. Valvular changes in the heart rarely are seen less than five to ten years after the onset of symptoms and are not reversible. In addition, diarrhea, cramps, and other symptoms from bowel tumors may occur.

The diagnosis of a functioning carcinoid tumor, primary or metastatic, is made by demonstrating abnormal quantities of 5 hydroxy-3 indoleacetic acid in the urine. Although carcinoid tumors may be seen anywhere in the intestinal tract they are probably most common in the small bowel. Recently 12 cases were reported and 7 of these tumors were located in the small bowel. The progress of carcinoid tumors and their metastases is often slow and may extend over years. Surgery should consist of extirpation of as much as possible of the tumor if complete removal is not possible.

Chronic Regional Enteritis

Regional ileitis is a nonspecific low-grade inflammatory granulomatous disease of the small bowel.[11–14] There is evidence of familial incidence, and there is almost equal distribution between men and women. The average age at the onset of symptoms is twenty-four years, but patients have been seen from the age of ten to seventy-seven years. Chronic cases above the age of fifty-eight seem to have a better prognosis than when the disease is observed in young people. The etiology of this disease is unknown, but an important factor seems to be lymphatic vessel obstruction in the submucosal part of the bowel wall. This obstruction seems directly responsible for the ulcerations which occur on the mesenteric side of the intestinal wall.[13] The lymph nodes in the mesentery become involved early and the ulcers become infected. The bowel may be involved from the duodenum to the ileocecal valve, and the process often extends over onto the colon. In one series of 126 cases the colon was involved in some way in 43 per cent and in 14 cases the entire colon was involved.[12]

The clinical course of this disease is characterized by low-grade fever and diarrhea. Often there is sweating and weight loss, although some patients look well nourished. Up to 60 per cent have a right lower quadrant mass, and fistula formation is common. Free perforation hardly ever occurs. Rectal abcesses, fissures, and fistulas are often found. Symptoms often are referred to the right lower quadrant, and frequently the patients are operated on for suspected appendicitis. Cutaneous fistulas may occur after appendectomy associated with regional enteritis, and a rule of thumb has been that the appendix can be safely removed only if the iliocecal region and the distal 30 cm. of the ileum are grossly free from disease.[13] In our experience, however, it has been found safe to remove the appendix if the cecum is grossly normal and we have not seen fistulas result.

Regional enteritis may go on in a relatively quiescent stage for a long time, but spontaneous permanent remissions occurred in less than 2 per cent of established cases in Jackson's[12] series. Indications for surgery usually are: (1) hemorrhage, (2) obstruction, (3) perforation, (4) fistulas, and (5) right lower quadrant mass. The finding of a mass is usually considered evidence of an internal fistula or partial obstruction.[13]

The surgical treatment of regional enteritis consists of either excision or a short-circuiting operation. Resection probably is the operation of choice when the disease is localized to a short segment. Jackson[13] analyzed 126 cases of which 104 were operated on. A resection was carried out 86 times with an operative mortality of 4.5 per cent. Excision of the terminal ileum and the right colon gave the best prognosis, and good results were found in 60 per cent of the patients resected. Short-circuiting operations were done 57 times with a mortality of 7 per cent, and good results were observed in about 50 per cent. Jackson feels that resection is preferable in localized cases but that otherwise short-circuiting with complete division of the bowel should be done. Crohn[11] states that there are 20 to 50 per cent recurrences from surgical therapy and that most recurrences occur three to six months after operation. Crohn found better results from short-circuiting operations than from resection. In 232 cases there were good results in 157, or 67.7 per cent, recurrence in 29 per cent, and 8, or 3.3 per cent, deaths. In 116 cases in which primary resection was performed, there were good results in 57.8 per cent, recurrence in 32.7 per cent, and 11, or 9.5 per cent, deaths.

Mesenteric Thrombosis

Mesenteric thrombosis is a term applied to obstruction of the venous or arterial blood supply to the small and large bowel. Usually this obstruction occurs in the superior mesenteric vessels and occasionally in the inferior mesenteric vessels. The nature of vascular arcades and collateral circulation to the bowel is such that a slow, gradual occlusion of these vessels may occur without obvious signs or symptoms. On the other hand, the sudden obstruction to the major trunks is followed by a catastrophic episode, which up to the present resulted in the death of 80 per cent of the people thus afflicted. In the past it was felt that venous thrombosis was more common than arterial thrombosis or embolism. Recently, however, it has appeared that the arterial side more often is involved.[15,16]

The etiologic factors in this disease are probably numerous. The more common ones are disease of the heart, particularly mitral stenosis, atrial fibrillation, and myocardial infarction. These conditions predispose to the thrombus formation and release of arterial emboli. Operative procedures on the abdominal viscera, in particular radical operation for malignant disease, are often involved. Blood dyscrasias such as polycythemia vera may be responsible. Venous thrombosis may be seen following splenectomy for various blood disorders, possibly on the basis of thrombosis propagated from the ligated splenic pedicle and postoperative thrombocytosis. Abdominal sepsis and ascending thrombophlebitis of the portal system sometimes are responsible.[17]

The symptoms and signs vary somewhat. Some observers believe that a differential diagnosis can be made between venous and arterial occlusion before operation, but in our experience this is rare.[18] Occasionally the patient collapses immediately, and subjective symptoms are secondary to those of shock. More often, though, an agonizing generalized abdominal pain is experienced, sometimes radiating to the back. Often the pain and tenderness are most marked over the right lower quadrant, where the bowel is supplied by the terminal branches of mesenteric vessels.[19] Examination at this stage may be singularly unrewarding. Scout films of the abdomen reveal little if any intestinal gas. Hyperperistalsis may be present but this changes to an adynamic ileus. Ascites may form early and is hemorrhagic. There is leukocytosis and dehydration from loss of fluid into the bowel and free peritoneal cavity. There usually is constipation from the onset of the illness, but sometimes the bowels may move and are of a currant-jelly character, as seen in intussusception.

The diagnosis of mesenteric thrombosis should be entertained whenever an episode of excruciating abdominal pain occurs in a patient who harbors the factors involved in its etiology. The suspicion is further enhanced when the physical findings are not commensurate with the subjective symptoms. The diagnosis becomes obvious later on but by then the opportunity for surgical relief may have passed.

There are cases on record in which mesenteric thrombosis was recognized at laparotomy and the patient recovered without any corrective procedure, but these are rare. Venous occlusion has had better prognosis in the past than arterial occlusion. One report of 51 cases cites a mortality of 88.6 per cent in arterial cases but 11.1 per cent in in venous ones.[20] Surgical therapy in the past has been limited mainly to excision of the gangrenous portion of the bowel, and many patients survived the operative procedure only to die from inanition caused by loss of resorptive bowel surface. One case has been reported in which a patient survived with only one foot of the small bowel left, but certainly this is an exception. When patients are subjected to an early operation it usually is possible to determine if the primary involvement is on the arterial or venous side. If no pulsations are felt in the mesenteric artery, it should be explored where it crosses the fourth portion of the duodenum. An arteriotomy may allow the removal of an embolus or the performance of an endarterectomy in cases in which thrombosis on an arteriosclerotic basis is present. We have had brief success with embolectomy in this situation and other cases are being reported.[19]

Antibiotic therapy is essential for survival of the involved bowel, and anticoagulants may prevent further extension of the process to distant branches of the vessels involved. The direct surgical attack on the mesenteric vessels is a recent one but may improve the outlook for some of these patients if properly applied.[21]

Pseudomembranous Enterocolitis

Pseudomembranous enterocolitis has long been a well-known entity.[22] Only recently, however, has attention been drawn toward the occurrence of this disease in postoperative patients and patients treated with broad-spectrum antibiotics. It is becoming clear that although staphylococci are responsible for many of these cases they are not essential and the complication may occur without their presence.[23] The gastrointestinal tract may be involved from one end to the other. Often, however, the lesions are limited to the large or small bowel or both. Coagulase-positive hemolytic Staphylococcus aureus is the organism most often implicated and in these instances is found in large numbers in the stools and on the membranes formed in the bowel. Staphylococci have been cultured from the stools of up to 16 per cent of normal people. When broad-spectrum antibiotics are given, the number rises sharply but still these persons do not get sick and enterocolitis does not result.[23] Enteritis and toxemia do not occur except in few cases and are usually associated with elimination of the flora of gram-negative organisms from the bowel. Under these circumstances resistant strains of the coagulase-positive hemolytic staphylococci invade the mucosa and produce potent toxins which are reabsorbed.

The clinical picture usually develops four days or more after the start of antibiotic therapy and is characterized by profound toxemia, shock, and often profuse diarrhea. Sometimes diarrhea is absent. The occurrence of staphylococcal enteritis is almost confined to institutions and hospitals in which resistant organisms have the opportunity to grow and multiply, and many of the personnel may be carriers. No one drug or antibiotic may be held responsible for these complications and they have occurred after both oral and parenteral administration.

The treatment of this disease has to be prompt and thorough. The patient's need for replacement of fluid and electrolytes is most important and requires immediate correction. Transfusions and steroid therapy help in severe cases. Smears and cultures of the stools will isolate the organism, and sensitivity should be determined. We have given these patients large doses of erythromycin or novobiocin until sensitivity studies are completed. In spite of prompt and vigorous treatment these patients often die. Some of these complications undoubtedly could be avoided by accurate and judicious administration of antibiotics, which should be used only when strictly indicated and preferably only after preliminary bacteriologic and sensitivity studies have been carried out.[24]

Intestinal Obstruction

The most frequent site of intestinal obstruction is in the small bowel. In the present day, adhesions are the most common cause although external hernias still take first place in areas where repair of hernias in youngsters is not the accepted procedure or not possible because of inadequate facilities.[25] A gradual improvement has occurred in all phases of diagnosis and management of intestinal obstruction. A study of 100 consecutive cases in each of the past three decades revealed a mortality of 27 per cent in the first, 21 per cent in the second, and 4 per cent in the third.[26] These authors found no differences in days of hospitalization but a marked decrease in mortality and morbidity. The greatest improvement was in postoperative peritonitis, bronchopneumonia, and shock. The measures judged most important in the improved results were: (1) early diagnosis and treatment, (2) proper correction of electrolyte and fluid imbalance, (3) decompression of the intestinal tract, (4) judicious use of antibiotics, (5) special attention to associated diseases, and (6) earlier surgical intervention.

Mortality usually is highest among the youngest and oldest patients. Wantz[27] analyzed 200 cases of intestinal obstruction in patients sixty-five years and older treated in this institution from 1944 to 1957. The mortality was 17.5 per cent. In this old-age group external hernias were the most common cause of obstruction, adhesions were second, and neoplasms third. The causes of death were shock or peritonitis secondary to distention in 37.2 per cent, cardiovascular disease in 22.9 per cent, and carcinomatosis in 14.3 per cent. The most serious type of intestinal obstruction was caused by mesenteric occlusions. There were 11 patients with this disease and 10 died. The mortality in the series, even though it is over 17 per cent, is the lowest recorded for a series of patients in a comparable age group. The deaths in this old-age group are mainly associated with gangrene and perforation. Fluid replacement, transfusions, and antibiotics all help in the management of these patients, but gangrene and perforations are the result of delay in surgery. Therefore, the importance of early surgery in mechanical intestinal obstruction or in instances in which this is suspected cannot be overemphasized.

Intussusception

About three fourths of all intussusception occurs in children. As a rule, no cause is found for the intussusception in this group although polyps and Meckel's diverticula may be responsible agents. Intussusception in childhood, therefore, is mainly idiopathic. Among adults the idiopathic variety also is the most common, but up to 25 per cent or more are found to have an organic etiologic factor; these may be diverticula, tumors, duplications, and even hypertrophied ileocecal valves.[28] Intussusception causes symptoms by obstruction of the intestinal tract which often are typical: intermittent attacks of colic with complete remissions in between, the passage of bloody stools or mucus by rectum, and palpation of a mass.

The diagnosis often is easily established in children, and a barium examination may be used to confirm the initial impression. All ileocolic or colocolic intussusceptions give a typical appearance on barium contrast examination and often are reduced while the examination is being performed.[29] This finding has been put to use as a method of treatment by many physicians, in particular in the Scandinavian countries. The difficulties associated with this method are that ileoileal intussusceptions are overlooked and no idea is obtained about the viability of the bowel. Because of these factors we prefer to operate on patients with intussusception, although we realize that in selected cases reduction under fluoroscopy will give acceptable results and make an operation unnecessary.

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Not every man is so great a coward as he thinks he is—nor yet so good a Christian.—Robert Louis Stevenson

CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and* WILLIAM B. OBER, M.D.

JANUARY 28, 1959

Discussed by HERBERT S. KUPPERMAN, M.D.

Case History

AURORA RIVERA-BRETANA, M.D.: A forty-six-year-old white woman was admitted to Knickerbocker Hospital on November 3, 1958, complaining of pain in the right lower quadrant and the recent growth of hair on her chin. The abdominal pain had been present for about two weeks and was of moderate severity and intermittent. The facial hirsutism had been present for one month and was growing rapidly.

Her present illness began about six months previously, when she first noted menstrual irregularity. Her menarche had begun at the age of twelve and her periods had been regular, at intervals of about twenty-eight days with the flow lasting five to six days. She had had vaginal bleeding resembling menstrual periods on April 9, April 23, July 25, and August 24, 1958, the flow lasting four to six days. Following her August period she had noted vaginal spotting of three to four days, and there had been no periods or vaginal discharge since. The onset of facial hirsutism had been noted in October, 1958, and concomitantly an acneiform eruption had appeared over her shoulders and back. During the two or three months before admission she had gained 17 pounds, and there was a moderate degree of pretibial edema. She had noted no lowering of her tessitura.

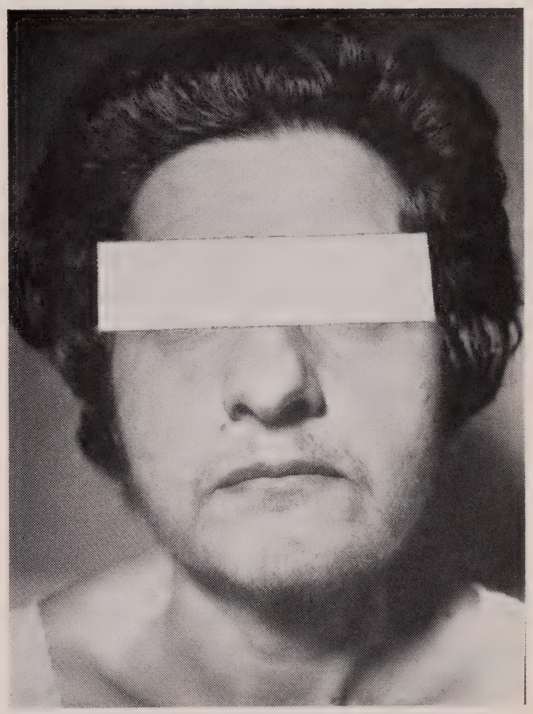

FIG. 1. Preoperative photograph of patient showing facial hirsutism.

She had had her left fallopian tube and ovary removed for ectopic gestation twenty-three years previously and had had no pregnancies since. Eighteen months before admission she had had a subtotal gastrectomy at another hospital for an ulcerating lesion of the stomach.

Physical examination revealed a well-developed, well-nourished adult white woman in no distress. Her temperature was 98.8 F., pulse 78, respirations 20, and blood pressure 110/60. There was a diffuse growth of fine black hair on the chin and cheeks; the hairs were about $^1/_2$ inch long (Fig. 1). Axillary hair was abundant, but a normal female escutcheon was present. A diffuse acneiform eruption was present over the shoulders and back. The heart and lungs were clear to percussion and auscultation. The abdomen was slightly distended in the lower portion, but there was no evidence of ascitic fluid. No abdominal striae were present. Gynecologic examination revealed a prominent, questionably enlarged clitoris. A large, freely movable, grapefruit-sized, ballotable mass was present in the right adnexal area, clearly separable from the uterus, which was small and anterior. The epigastric scar was well healed.

X-ray film of the chest was within normal limits. A preliminary flat film of the abdomen revealed normal renal outlines. A pelvic mass rising to the level of the fourth lumbar vertebra was seen. Intravenous pyelography revealed prompt excretion bilaterally. In the region of the mass the right ureter was slightly dilated and its lower portion was not visualized. The left ureter was apparently normal. The bladder was only partly filled, appearing compressed especially on the left side.

Laboratory studies revealed a urine with a specific gravity of 1.027, an acid reaction, no albumin, sugar, or acetone, and a rare white blood cell. The hemoglobin content of the blood was 12.3 Gm. per 100 ml. The white cell count was 13,000, with 82 per cent polymorphonuclear leukocytes, 13 per cent lymphocytes, and 5 per cent monocytes. Endocrine studies were not done. An operation was performed on the fourth hospital day.

Discussion

Herbert S. Kupperman, M.D.: Irregular menstruation followed by amenorrhea at the age of forty-six is not particularly uncommon. Likewise, it is not unusual for some degree of facial hirsutism to develop at or shortly after the menopause. However, the presence of acne is distinctly unusual in a woman in her fifth decade, and when it is associated with a 17-pound weight gain and amenorrhea a virilizing syndrome is present. In a woman of this age masculinization substantially circumscribes the diagnostic possibilities to neoplasms of either the ovary or adrenal. In view of the fact that a mass was felt in the right pelvic region, an ovarian tumor is the most probable diagnosis. Not only are adrenal tumors, which might be responsible for arrhenomimetic phenomena, quite rare at this age, but they would not present themselves as a pelvic mass.

Had steroid analyses been performed prior to surgery, they would have been of immense help in the distinguishing among the several varieties of tumor which might produce this clinical picture. The value of such determinations is great. They often enable one to decide whether the masculinization is ovarian or adrenal in origin and whether the pathologic condition is a hyperplasia or neoplasia.

The ovarian tumors that might be responsible for causing this type of picture, in order of frequency and in view of the large abdominal mass, are as follows: A Sertoli-Leydig cell tumor of the ovary, particularly the tubular or intermediate type, would be the most likely cause of this clinical syndrome. The undifferentiated type, such as in the arrhenoblastomas, would be less likely in view of the fact that the mass was large and freely movable. The characteristic clinical history and findings in a patient with a Sertoli-Leydig cell tumor would fit those described for this patient. There would be beginning of facial hirsutism, evidence of defeminization, and onset of menstrual irregularities, first characterized by hypomenorrhea, then oligomenorrhea, and eventually amenorrhea. Sertoli-Leydig cell tumors of the tubular or intermediate cell types are usually not fixed, and the prognosis after their removal is relatively good. The prognosis after the removal of an arrhenoblastoma, that is, the Sertoli-Leydig cell tumor of the undifferentiated type, is not so good, and the presence of a fixed mass and metastases could be anticipated.

There are several other types of arrhenomimetic tumors or changes which can duplicate in part the clinical picture presented by this patient. An adrenal rest tumor of the ovary could show essentially the same picture, but one would not expect the ovary to show such a degree of enlargement. Adrenal rest tumors of the ovary usually are small and usually do not increase to the size observed in this patient. The adrenal rest tumor of the ovary, of course, is also classified as one of the lipoid tumors. Another neoplasm producing similar hormonal and clinical alterations is the hilar Leydig cell tumor. Both the Leydig cell tumor and the adrenal rest tumor, although capable of yielding the precise clinical picture seen in this patient, would rarely, if ever, approach the size of the present tumor, and on this basis they can probably be eliminated from the differential diagnosis. A luteoma must also be considered in this group of tumors. However, they are associated with secretory changes in the endometrium or with an elevated pregnanediol excretion.

One must not forget that the granulosa cell tumor, which is known for its feminizing effect due to increased secretion of estrogen, may at times be associated with evidence of androgenicity. Granulosa cell tumors associated with arrhenomimetic changes are rare but have been noted during pregnancy. The granulosa cell tumors are more common in the fifth and sixth decades of life. However, the androgenic variety is unusual and can be eliminated purely on the basis of probabilities.

Another type of ovarian enlargement associated with increased androgenicity is a Stein-Leventhal ovary, in which polycystic changes in the ovary may be associated with hyperthecosis and a thickened tunica. In these patients the ovarian enlargement is usually bilateral and never occurs as acutely as it did in this patient. The androgenicity associated with a hyperthecosis of the Stein-Leventhal syndrome may be moderate or marked. However, the degree of defeminization is slow in onset and will advance over a period of years. The defeminization which one sees in these patients is due, in part, to the androgen production by the ovaries and to the decrease in estrogen production, presumably resulting from the pressure necrosis of the follicular elements responsible for secreting estrogen caused by the enlarging cysts.

In discussing this case I must emphasize the inadequacy of the endocrine work-up. An error in judgment may be avoided by relatively simple steroid analyses. The advantages of doing urinary steroid analyses in a patient such as in this presentation reside in the fact that the common causes of ovarian androgenicity usually are not associated with an increase in 17-ketosteroid excretion, except in the lipoid tumors, namely the hilar Leydig cell tumor and the adrenal rest tumor. In these tumors, as in adrenal tumors associated with masculinization, there will be an increase in 17-ketosteroids without any abnormal excretion levels for both pregnanetriol and pregnanediol. Pregnanetriol usually is increased only in adrenal hyperplasia and in late pregnancy. Its presence in a patient with androgenicity almost automatically would make the diagnosis of adrenocortical hyperplasia the most likely one. If a normal 17-ketosteroid level is found in a patient with an obvious ovarian tumor, as evidenced by rapid clinical changes and signs of defeminization, it can be assumed with a fair degree of reliability that the patient does not have an adrenal rest tumor, lipoid tumor, or adrenal tumor but most likely has a Sertoli-Leydig cell tumor or possibly a granulosa cell tumor. This factor emphasizes the importance of the 17-ketosteroid determination. The ovarian androgen from these tumors is not excreted as 17-ketosteroids even though biologically one can demonstrate active androgenic activity in the urine of these patients. A patient with a lipoid cell tumor invariably has an elevated 17-ketosteroid excretion, and the condition must be differentiated from an adrenal tumor also producing excessive amounts of 17-ketosteroid precursors. Many times a lipoid cell tumor does not show any significant enlargement, and in order for it to be detected it would be wise for the surgeon to use the abdominal approach. In this way, both ovaries and adrenals may be examined bilaterally to determine the precise site of origin of the androgen-producing tumor.

In conclusion, my diagnosis is that of a Sertoli-Leydig cell tumor, probably of the tubular or intermediate cell type.

Benjamin E. Krentz, M.D.: A vagrant thought crossed my mind that if the patient's gastric lesion had been a carcinoma, the ovarian tumor might have been a Krukenberg tumor. However, I am reluctant to make such a diagnosis in view of the fact that the ovarian tumor is not described as stony hard or fixed, nor are there signs of weight loss nor anything else to suggest a disseminated carcinoma.

Michael S. Bruno, M.D.: If this were a Krukenberg tumor, how would you explain the associated endocrine changes?

Dr. Krentz: I suppose I would have to conjecture that there was some reaction in the ovarian stroma that produced the hormones to account for this set of phenomena.

Dr. Bruno: Have you ever heard of a Krukenberg tumor that did this?

Dr. Krentz: No.

Dr. Bruno: Dr. Kupperman, have you ever heard of a Krukenberg tumor with associated endocrine manifestations?

Dr. Kupperman: No.

Dr. Krentz: Could such a lesion be diagnosed by appropriate endocrine assays?

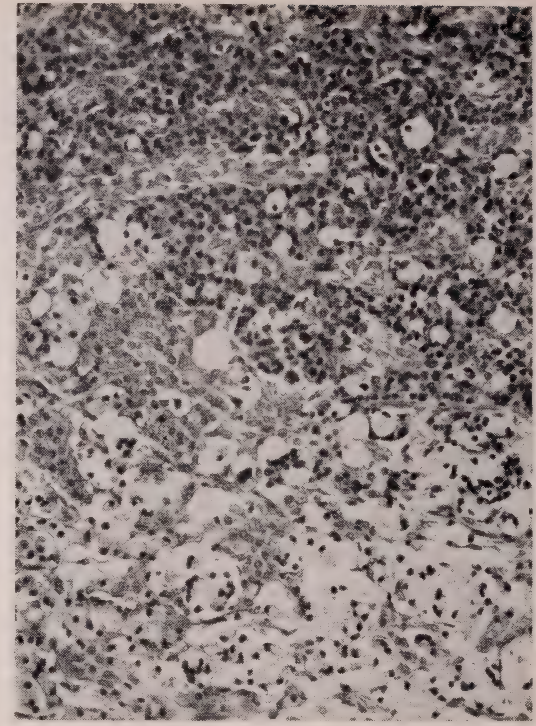

Fig. 2. Zone of transition from signet-ring cell forms to small dark tumor cells.

Dr. Kupperman: I doubt it.

Diagnoses

Clinical.—*Arrhenoblastoma, ovary.*

Dr. Kupperman.—*Sertoli-Leydig cell tumor, ovary, tubular or intermediate type.*

Anatomic.—*(1) Krukenberg tumor, ovary (metastatic adenocarcinoma from stomach), with reactive hyperplasia and luteinization of ovarian theca, (2) decidual reaction, endometrium, and (3) adenomatous hyperplasia and hypersecretion of endocervical glands.*

Pathologic Report

William B. Ober, M.D.: The ovarian tumor measured 18 by 8 cm., was ovoid, and had a smooth external surface with mottled red and yellow areas visible through it. On section it was soft and gelatinous with many areas of degeneration. Microscopic examination showed a typical Krukenberg tumor with many varied histologic patterns showing many transitions from solid adenocarcinoma to typical signet-ring cell patterns

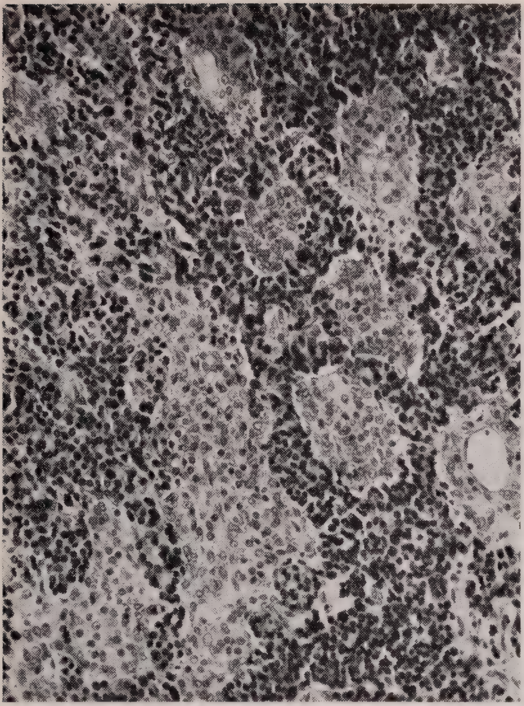

FIG. 3. A plexiform pattern of small dark metastatic tumor cells compartmentalized by nests of plump proliferated stromal cells.

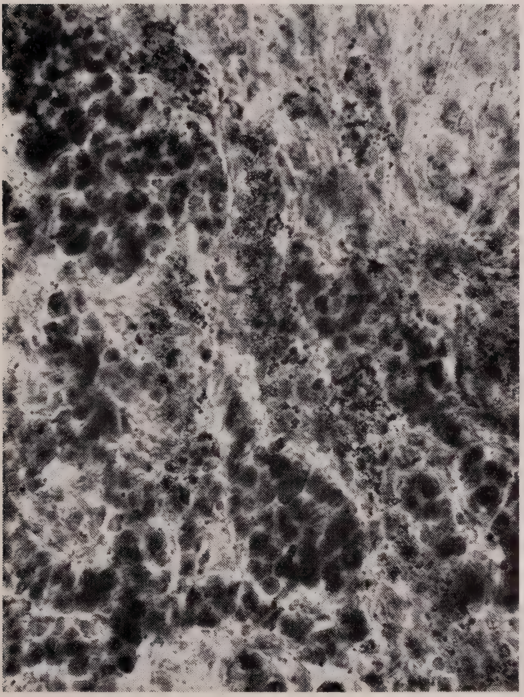

FIG. 4. Fat stain showing sudanophilic material in the proliferated stromal cells.

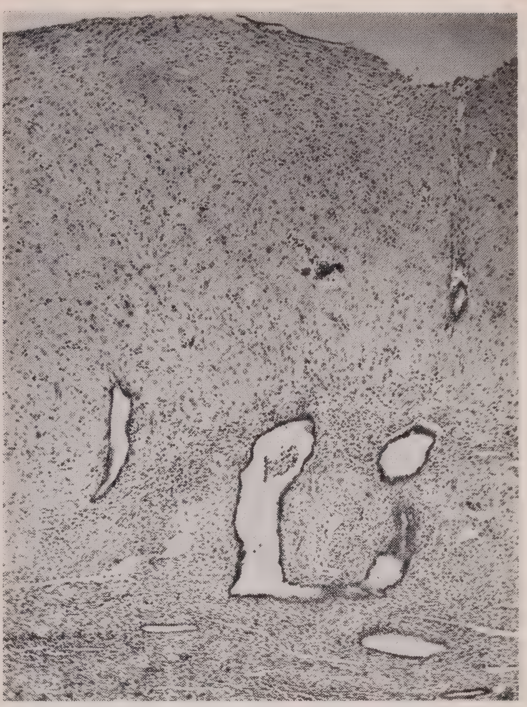

FIG. 5. Endometrium specimen showing decidua reaction.

to a small dark cell type growing in sheets (Fig. 2). Information received from the hospital at which the patient had undergone partial gastrectomy established that the gastric lesion was a carcinoma, and a slide which was graciously sent* showed that it elaborated much mucin and contained many signet-ring cells. In many areas of the ovarian metastasis the small, dark, undifferentiated tumor cells were arranged in a compartmentalized pattern around nests of paler, stromal cells which exhibited an epithelioid form with relatively distinct cell interfaces (Fig. 3). To some extent this pattern mimicked the configuration of a disgerminoma, save that the small dark cells were not lymphocytes nor were the central nests neoplastic germ cells. Actually, these epithelioid stromal cells represent an altered form of theca cell and hold the key to the endocrine riddle. They were rich in sudanophilic material (Fig. 4) and devoid of glycoprotein or mucoprotein.

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* Courtesy of C. E. DeAngelis, M.D., St. John's Riverside Hospital, Yonkers, New York.

In addition to the uncommon nature of the ovarian tumor, the endometrium was lined by relatively prominent plaques of decidua (Fig. 5). There was a degree of adenomatous hyperplasia of the endocervical glands with hypersecretion and some inspissation of mucus. These are the typical effects of progestogens on these target organs.

In view of the reluctance to make a diagnosis of Krukenberg tumor because of the absence of a hard, fixed mass and signs of disseminated carcinoma, I should like to point out that these criteria do not apply. Krukenberg tumor is an eponymic term describing an uncommon and rather special variant of metastatic carcinoma to the ovaries. Usually it implies a primary cancer in the stomach or large bowel which presents itself as bilateral, freely movable ovarian masses. The ovaries usually are symmetrically enlarged, have smooth surfaces, and are not adherent to other pelvic structures. Signs of disseminated carcinoma usually are not present; in fact, one presenting picture of this lesion is the detection and removal of the ovarian tumors with the primary lesion in the gastrointestinal tract, being small and latent, discovered only after microscopic examination of the ovaries. Even in those cases in which the primary gastrointestinal cancer has been previously removed, there usually are not signs of weight loss and cachexia; the ovaries may be the only apparent site of metastasis for a long while. In the present case the usual bilateral feature was absent, one ovary having been removed some two decades previously for ectopic gestation, thus depriving the clinician of a useful clue.

In recent years there has appeared a growing body of literature to indicate that some ovarian tumors which usually are endocrinologically inert may, on occasion, be the site of elaboration of hormones and be responsible for clinical phenomena and histopathologic changes which more usually are associated with the functional ovarian tumors. Current ideas regarding endocrine phenomena in association with Brenner tumors, mucinous cystadenomas and carcinomas, adenofibromas, and Krukenberg tumors are conveniently summarized and documented in the recent monograph by Morris and Scully.[1] Histologically the common denominator in these functional variants of inert tumors is a proliferation of ovarian stroma or theca externa as an intrinsic component of the neoplasm. On close inspection the stroma of the tumor is seen in areas to consist of bundles of plump epithelioid cells which not infrequently contain sudanophilic material. Some observers have called this sort of stroma "luteinized," but the precise denotation of this term in this context leaves much to conjecture. The amount and extent of such active stroma in these neoplasms is variable and inconstant. In the majority of cases within this subgroup the endocrine effects have been estrogenic, such as endometrial hyperplasia and dysfunctional flowing, which certainly is consistent with what would be expected to be the result of overactivity of theca cells. However, in an occasional case virilization has been observed, which merely corroborates the observation that cells which elaborate estrogens can also elaborate androgens under abnormal conditions, or indeed almost any steroid hormone.

With specific regard to Krukenberg tumors of the ovary, the original misnomer for them was "fibrosarcoma ovarii mucocellulare," and it is the proliferation of spindle cells in response to the presence of the metastatic carcinoma that is the key to this aspect of the problem. Turunen[2] studied 12 patients with Krukenberg tumor of the ovary; he observed cystic glandular hyperplasia of the endometrium in 8 of them. The stroma of the tumors in these 8 patients contained plump theca-like cells rich in sudanophilic material. In 2 patients there was a fall of urinary estrogens from elevated preoperative levels to normal levels postoperatively.

Only 2 examples of Krukenberg tumor

with virilism have been previously reported. The first of these was in a twenty-six-year-old woman whose ovarian tumor developed during pregnancy and was mistaken for a twin pregnancy until after delivery of a single child. Following paracentesis, the mass was diagnosed as an ovarian tumor. At laparotomy ten days postpartum, bilateral ovarian tumors were found, and the uterus, tubes, and ovarian tumors were removed. Severe facial hirsutism, which had developed since the first month of pregnancy, regressed following the operation. Microscopic examination of the ovarian tumors showed them to be metastatic adenocarcinomas. She remained in good health for one and a half years and then developed symptoms referable to her stomach and lost weight. A radiologic diagnosis of carcinoma of the stomach was made, but surgical intervention was considered inadvisable. She was readmitted nine months later with pyloric obstruction; exploration revealed a large carcinoma of the anterior wall of the stomach with extensive peritoneal seeding. This was confirmed at autopsy several weeks later. Hirsutism did not recur during her terminal course.[3,4]

The second case was in a twenty-five-year-old woman who developed amenorrhea, ascites, hirsutism of the face, extremities, and abdomen, lowering of her tessitura, skin pigmentation, and pronounced exophthalmos during the four months before exploration. Paracentesis removed 10 to 12 L. of fluid, and laparotomy disclosed bilateral ovarian tumors. The ovarian tumors were removed with the uterus; exploration of the abdomen did not reveal a palpable primary focus of neoplasm. The pathologic diagnosis was metastatic carcinoma to both ovaries. She was treated with estrogens, and the skin pigmentation and exophthalmos regressed, but the hirsutism persisted.[5]

Although neither of these 2 cases is histologically well-documented, and in the second case neither the primary site of the tumor was found nor was long-term follow-up reported, one may accept these as examples of Krukenberg tumor with clinical masculinization. The present case appears to be the first reported in which there was evidence of both androgenic and progestational effects. The inference can be made that under certain conditions proliferated ovarian theca can elaborate a variety of steroid hormones, including estrogens, androgens, and progestogens.

It is interesting to speculate that in such cases there may well be some disorder involving the enzymes which catalyze incorporation of various prosthetic groups into the steroid ring. Either an abnormal enzyme is present in these altered proliferated theca cells to account for luteinization or else an enzyme normally present in theca cells in small amounts has become present in increased amounts.

RAYMOND M. SIMON, M.D.: What happened to the patient's hirsutism following removal of the tumor?

DR. OBER: The patient developed abdominal recurrence and pulmonary metastases, dying six months after the operation. Postmortem examination was not performed.

Following the operation, her acneiform eruption cleared slowly. Shortly after discharge she removed the facial hair with a depilatory cream and it did not grow back except for a trivial amount of fuzz on her upper lip. I would think that removal of the ovarian tumor eliminated the source of her androgenization.

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NUTRITION EXCERPTS

Prepared with the Cooperation of the Faculty of the Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.B., B.S., *Editor*

Protein and Amino Acid Requirements in Man

HAROLD H. WILLIAMS, PH.D., ITHACA, NEW YORK

The modern concept of dietary protein emphasizes the primary function of supplying amino acids for the synthesis of body proteins and other nitrogenous constituents essential to the normal physiologic economy of cellular growth, repair, and metabolism. It is necessary to point out, however, that in order for food protein to serve this primary role satisfactorily, the needs of the organism for calories and other essential nutrients, such as vitamins and minerals, must be fully satisfied. The true measure of the nutritive value of protein lies in its ability to furnish not only sufficient amounts of the amino acids but also in the proper proportions.

The long-recognized superior quality of egg and milk proteins resides in their relatively high content and well-balanced pattern of indispensable amino acids. Other food proteins, such as those of wheat and corn, are inferior because of amino acid deficiencies or imbalances. Wheat protein lacks lysine, and its nutritive value is enhanced after supplementation. Corn is deficient in tryptophan and is imbalanced with respect to leucine and isoleucine.

TABLE I.—AVERAGE MINIMAL DAILY REQUIREMENT OF AMINO ACIDS FOR INFANTS AND YOUNG ADULT MEN AND WOMEN[2]

Amino Acid	Infants (mg. per Kg.)	Young Adults Male (mg. per day)	Young Adults Female (mg. per day)
Histidine	32	...	...
Isoleucine	90	700	450
Leucine	120	1,100	620
Lysine	90	800	500
Phenylalanine	90[a]	1,100[b] (300)[c]	220[d]
Methionine	85[e] (65)[f]	1,100[g] (200)[h]	350[i]
Threonine	60	500	305
Tryptophan	30	250	157
Valine	93	800	650

[a] In presence of 175 mg. of tyrosine per Kg.
[b] In absence of tyrosine.
[c] In presence of 1,100 mg. of tyrosine per day.
[d] In presence of 900 mg. of tyrosine per day.
[e] In presence of 15 mg. of cystine per Kg.
[f] In presence of 50 mg. of cystine per Kg.
[g] In absence of cystine.
[h] In presence of 810 mg. of cystine per day.
[i] In presence of 200 mg. of cystine per day.

The classic studies of W. C. Rose[1] at the University of Illinois established the foundation for our present knowledge of the amino acid needs of animals. He was the first to determine the qualitative and quantitative requirements of humans. The recent work of others has supplemented Rose's

TABLE II.—Pattern of Indispensable Amino Acid Requirements for Humans*

Amino Acid	Number of Units
Histidine	1
Isoleucine	3
Leucine	4
Lysine	3
Methionine plus cystine	3
Phenylalanine plus tyrosine	2
Threonine	2
Tryptophan	1
Valine	3

* Tryptophan = 1.

TABLE III.—Range of Estimates of Protein Requirement*[5]

Age	Range (Gm. per Kg.)
First month	2.1 to 2.5
2 to 5 months	1.5 to 2
6 to 12 months	1.25 to 2
1 to 5 years	0.7 to 1.5
5 years to adolescence	0.6 to 1.5
Adolescence	0.5 to over 1.5
Adults	0.35 to 0.5

* Assuming the nutritive value of the protein to be 100 per cent.

original studies on young adult males with values for young adult females and infants under one year of age. Table I summarizes presently available information on the amino acid requirements of humans.[2]

The values in the table are for those amino acids which are known to be indispensable since they cannot be synthesized by animals. Although these acids comprise less than one-half the usual complement of amino acids found in proteins, all of the other amino acids are designated as dispensable since animal cells can readily synthesize them provided a source of organic nitrogen is available. It is generally agreed that when food protein supplies the amino acids, the total nitrogen supply will be adequate if the demands for the indispensable amino acids are met.

Inasmuch as the source of amino acids in the diet are food proteins and since, as stated previously, the nutritive value of a protein or mixture of food proteins depends primarily on the provision of the proper quantity and proportion of indispensable amino acids, a recent proposal utilizes the pattern of human amino acid requirements as a guide for satisfying protein nutriture.[3] A similar pattern, based on the data in Table I, is given in Table II, using the value for tryptophan as unity.

Thus, an ideal protein would supply 3 units of lysine, 4 units of leucine, 2 units of threonine, etc., for every unit of tryptophan. Comparisons of these proportions with those found from the amino acid analysis of whole egg proteins confirms the experimentally verified observations that the nutritive efficiency of the egg approaches 100 per cent.[4] Sufficient evidence is available to indicate that such a basis offers a practicable guide for the protein nutrition of humans. Those proteins which most closely reflect the pattern of requirements in their indispensable amino acid composition have the highest nutritive value. Consequently, if the amino acid composition of a protein, a mixture of proteins, or the entire diet is known, its ability to satisfy the protein needs can be evaluated.

The quantity of protein required will depend on the physiologic state of the subject, varying in growth, maintenance, convalescence, reproduction, etc. There appears to be a wide divergence of opinion on this quantity, depending on the basis of evaluation and the extent of additions believed to be necessary for safety margins. Table III gives the extremes of the amount of protein intake considered necessary for growth and maintenance proposed recently by several groups.[5]

The values in Table III assume a nutritive efficiency of 100 per cent for the food protein. If the protein has a lower nutritive value, the protein needs may be met by including a larger quantity of the protein or by supplementing it with other food protein or amino acids which will improve its indispensable amino acid pattern. For example, if the food protein was shown to have a nutritive value of only 70 in comparison with egg protein or the pattern of amino acids given in Table II, an additional 0.5 to 0.7 Gm. per kilogram would be required to meet the needs for adults, as listed in Table III. The latter values are calculated by multiplying the values in the table by $^{100}/_{70}$.

Conclusion

The modern emphasis in protein nutriture is on the contribution of indispensable amino acids as the primary function of dietary protein. Inasmuch as the utilization of amino acids for the synthesis and maintenance of tissue proteins is an "all or none" process, it would appear that the use of a properly determined pattern of amino acid requirements in conjunction with nutritional evaluation of protein needs and modern methods of amino acid assay should provide a reasonable basis for formulating practical diets that will promote the desired nutriture of humans.

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(Number nine in a series of Nutrition Excerpts)

ANNOUNCEMENT

Medical Society of the State of New York 1960 Annual Convention

SCIENTIFIC EXHIBITS

Applications for space for the scientific exhibits should be made directly to the Chairman of the Scientific Exhibits Subcommittee of the Convention Committee:

William L. Watson, M.D.
340 East 72nd Street
New York 21, New York

The Annual Convention will be held May 9 to 13, 1960 at the Statler Hilton Hotel, New York City.

No applications can be considered after January 1, 1960.

There will be two groups of awards:

Group I: Awards in Group I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.

Group II: Awards in Group II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of presentation and correlation of facts.

William L. Wheeler, Jr., M.D., *Secretary*
Medical Society of the State of New York

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies in the operating room including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

CHARLES L. BURNSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ELIZABETH J. CRAWFORD, M.D.
LESTER C. MARK, M.D.
ALFRED F. GRANATELLI, M.D.
VALENTINO D. B. MAZZIA, M.D.

Cardiovascular Collapse Due to Hemorrhage

SUDDEN severe hemorrhage from a major artery may occur during surgery. Alertness and prompt, adequate management by the operating team may prevent a fatal outcome when such a disaster occurs, as illustrated in the following case.

Case Report

A forty-two-year-old man was to undergo a left pneumonectomy because of empyema which did not respond to prolonged medical treatment. The empyema and a pleural fistula had developed after several years of treatment with repeated therapeutic pneumothorax for a tubercular lung. In the last five months he had had first- and second-stage thoracoplasties with poor results.

He was chronically ill and debilitated. Although he was six feet tall, he weighed only 121 pounds. His arterial blood pressure was 106/72. His pulse rate was 136 per minute and his respiratory rate was 24 per minute. His breath-holding test lasted twenty-two seconds. His hematocrit was 47 and the hemoglobin content of his blood was 17 Gm. per 100 cc.

For preanesthetic medication he was given morphine 8 mg. and scopolamine 0.4 mg. one hour before the start of anesthesia. He appeared calm when he arrived in the operating room although his blood pressure was elevated to 130/60. His pulse rate was 120 per minute and his respiratory rate was 24 per minute. Anesthesia consisted of nitrous oxide with oxygen in a semiclosed system combined with Fluothane vaporized at a concentration of 0.5 to 1 per cent. A cuffed number 40 endotracheal tube was inserted for an airway.

During surgery, as the apex of the left lung was being freed from adherent scar tissue from the previous thoracoplasty, the left subclavian artery was transected inadvertently 5 cm. from its origin. Bleeding was profuse. The patient's arterial blood pressure become unobtainable and

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Discussed at a conference held at the Hospital for Special Surgery, New York City, June 1, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

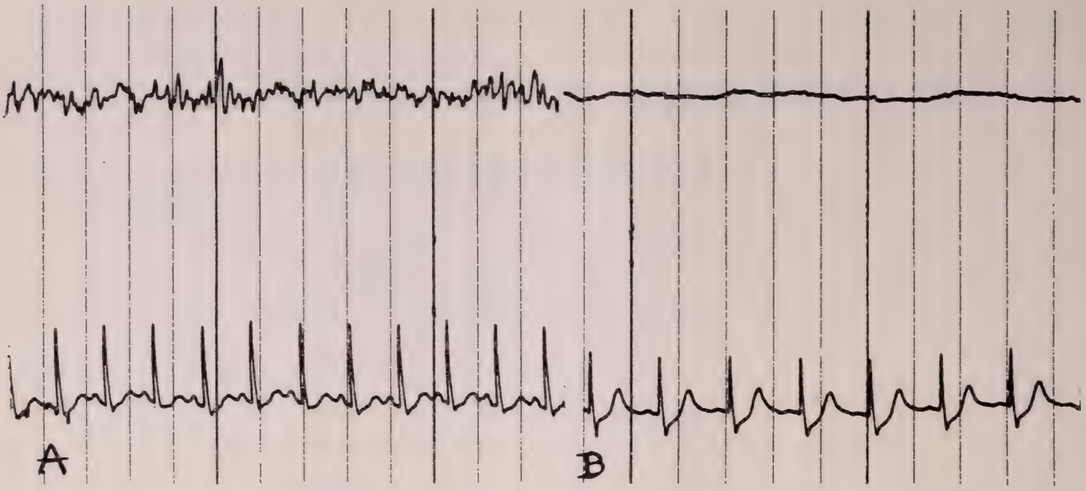

FIG. 1. Electroencephalographic (upper tracing) and electrocardiographic (lower tracing) changes during acute massive hemorrhage. (*A*) Before hemorrhage during nitrous oxide-Fluothane anesthesia. (*B*) Five minutes after massive hemorrhage, with anesthesia eliminated and oxygenation and ventilation provided by means of artificial respiration.

his respiratory efforts ceased. His pulse became barely perceptible, at a rate of 50 per minute, in the space of two minutes. Anesthesia was discontinued and the breathing bag was flushed several times with pure oxygen. A blood transfusion which had been dripping slowly was now administered rapidly by means of a pressure pump. The head of the table was lowered 15 degrees. The peripheral pulse was still unobtainable. The thoracic aorta was practically flaccid. Blood transfusion was started directly into the thoracic aorta as well as into a vein of the left hand, which was entered by a cut-down incision. The severed subclavian artery was ligated, and 3 L. of blood were pumped into the patient within nine minutes. Calcium gluconate 1 Gm. was added to the first liter of blood and calcium chloride 2 Gm. were added to the next 2 L. of blood.

Electroencephalographic and electrocardiographic recordings were taken. During the period of exsanguination the electroencephalogram showed depression of cortical activity, characterized by flattening of the waves (Fig. 1). During this period the electrocardiogram, of which only one lead (lead II) was being registered, showed persistence of a regular sinus tachycardia. Five minutes after the rapid replacement of blood there was resumption of spontaneous respiratory movements at a rate of 32 per minute, and assistance to breathing was maintained by manual bag pressure during the inspiratory phase. Five minutes later an arterial blood pressure of 70 mm. Hg systolic could be obtained by palpation of the right radial artery. The heart rate and pulse rate were both 130 per minute. Surgical intervention was resumed. The planned pneumonectomy was accomplished as well as resections of the left fifth to ninth ribs. A total of 10 pints of blood had been administered.

At the end of the operation the patient's blood pressure was 116/80, pulse rate 140 per minute, and respirations 28 per minute. He regained consciousness rapidly after discontinuance of anesthesia. His postoperative course was satisfactory with stable vital signs. The hematocrit was 36 eight hours postoperatively. There was no evidence of cerebral impairment.

Comment

The survival of this patient following a sudden and intense hemorrhage due to transection of the left subclavian artery was due to prompt treatment by the operating team. In addition, many of the problems involved were resolved by circumstances which we now call "fortunate." A similar but less fortunate accident is recalled by one of us in which a healthy young man was to have a machine-gun bullet removed from the anteromedial aspect of his shoulder. It seemed like a simple procedure, but as the bullet was grasped and removed there was a sudden uncontrollable gush of blood and the lad was exsanguinated in less than one minute with the operating team helpless. There, too, the subclavian artery had been lacerated—by the bullet which was lodged in it—but no blood was available.

Even when adequate blood is available, there are several potential hazards in present-day massive blood transfusion: hemolysis (due to incorrect crossmatching of donor and recipient bloods), air embolism (due to inability to rapidly inject large quantities of blood without introducing air or gas), overloading of the pulmonary circulation, introduction of the viral elements of homologous serum hepatitis, citrate intoxication, and electrolyte disturbances (especially the introduction of excess potassium ions derived from old broken-down red cells which can so increase cardiac irritability as to produce ventricular fibrillation). None of these possible transfusion hazards occurred in this case despite the injection of 10 pints of blood.

Saving the blood lost by hemorrhage during surgical intervention and retransfusing it into the patient may be advisable. At Bellevue Hospital one such method, wherein hemorrhaged blood is suctioned off into bottles containing heparin as an anticoagulant, is being tested. The suction tubing should be pyrogen-free as well as sterile, and a blood filter should be interspersed proximal to the receiving bottle. Provisions for collecting such blood not only make a source of blood available but eliminate many of the hazards of foreign blood transfusion.

Other problems of diagnosis and prognosis were present in this case and were resolved satisfactorily. Severe hemorrhage, with its loss of oxygen-carrying red cells, may cause grave damage to important terminal organs, such as the brain, heart, kidneys, and liver. Although the ultimate result might have been the same without the use of both the electrocardiograph and electroencephalograph, it was assuring to be able to observe the changes that took place and their course. It was the electroencephalogram which exhibited the first manifestations of oxygen-lack whereas the 1-lead electrocardiogram merely showed persistence of a regular sinus tachycardia. When the pulse and blood pressure became unobtainable, despite the elimination of anesthesia and artificial respiration with pure oxygen, the electroencephalogram changed rapidly from a pattern characteristic of light anesthesia with nitrous oxide and Fluothane to one showing suppression of encephalic activity. Following adequate and rapid blood transfusion with effective oxygenation, the electroencephalogram returned to a normal pattern. This was immediately interpreted as good prognosis. Had the hypoxia been severe enough and, what is more important, more prolonged, the electroencephalogram would have shown prolonged suppression of activity and the prognosis would have been estimated as poor.[1,2] Intermediate manifestations of hypoxia may be characterized by a change from a flat to a "file" pattern, characterized by superimposed rapid activity in conjunction with the flat pattern.[3] Although this reflects return of neuronal cortical activity, it still carries a grave prognosis.[2-4]

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(*Number seventy-five in a series of Clinical Anesthesia Conferences*)

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Tranquilizer and Lye Poisonings

The following incidents were recently reported to the New York City Poison Control Center:

Incident 1

Toxic Agent	*Age*	*Sex*
Lye	17 months	Male

The mother borrowed the lye from the grandmother for use in removing stains from sheets. After it was so used it was put on the kitchen table. While the mother was distracted for a moment, admitting the landlord and paying rent, the patient climbed up to the table and swallowed a teaspoonful of lye. The grandmother happened to enter the kitchen while the patient was swallowing the lye and was able to remove some of the contents from the child's mouth. She also applied Vaseline and rushed the child to the hospital.

On admission the patient had burning in the mouth and throat. He remained in the hospital for six days, where he was treated with antibiotics, Nembutal, and esophagoscopy. On discharge the patient still had the burn on his tongue.

The same patient was reported to eat plaster from "holes in walls." Because of the history of pica he was referred for a blood lead determination.

The household use of lye as a detergent is a practice which persists among some foreign-born segments of the population. This use, in view of the availability of effective yet harmless modern detergents, should be discouraged by all concerned with accident prevention. Incidentally, during the current revision of the New York City Sanitary Code a proposal, which is still being studied, was made to ban the use of lye by the householder.

Incident 2

Toxic Agent	*Age*	*Sex*
Pentobarbital	10 years	Female

The patient was suffering from a sore throat and went to the kitchen cabinet for some aspirin. While looking in the medicine cabinet, she was diverted by the attractive small size of the father's medication. She tried 1 tablet, found it very pleasant, and ingested 11 additional ones. She slept for an hour. On being unable to awaken her, the mother summoned an ambulance. On admission to the hospital the patient presented the following symptoms: burning in mouth and throat, abdominal pains, nausea, stupor, and coma. After three days of hospitalization and appropriate therapy she recovered.

This patient may be labeled "accident prone" since it is related that about a year previously she burned her arm with hot water and several months previously her pajama caught fire when she was standing near the stove. She needed medical care in both instances.

Our experience indicates that one facet of the household training of children should be instilling the notion that drugs are intended for the individual for whom they were originally prescribed and are not interchangeable.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Barbiturate	18 years	Female

The patient was in the habit of taking sleeping pills prescribed by her physician because of insomnia. On the day of the accident the patient decided to dissolve one of the sleeping tablets in a glass of water. She left the dissolved medication next to the bottle containing the balance. One of the younger siblings obtained the bottle and dumped its entire contents (22 pills) into the glass. The patient subsequently ingested the contents of the glass.

The patient immediately was taken to a hospital emergency room, where her stomach was lavaged within minutes following ingestion. The only symptom was abdominal pain. After her stomach had been lavaged the patient was given caffein sodium benzoate and Ritalin. Since the patient otherwise was in good condition, she was transferred to another hospital for possible inpatient care.

In the second hospital she was found to be stuporous. Another gastric lavage was done. The gastric contents obtained from the first washings were found to be positive for barbiturate. The patient was again treated with caffein and Ritalin. During her hospital stay she continued to be lethargic but she was conscious. Her blood pressure was 110/60. After several days of hospitalization she fully recovered.

The ineffectiveness of the first lavage was presumably due to the passage of the contents into the intestinal tract.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Perphenazine	2 years	Male

The patient obtained the medicine from the kitchen table. He uncapped the bottle and swallowed 3 2-mg. tablets. Another sibling, ten years old, informed the mother, who was in the living room, of the episode. The child was immediately rushed to Fordham Hospital in stupor. Also, tremors of the upper extremities developed. After nine days of hospitalization, during which time caffein sodium benzoate was administered intravenously, he made a complete recovery.

This incident occurred on December 31, 1958. It is interesting that in the May, 1959, issue of *Pediatrics* and in the May 16, 1959, issue of the *Journal of the American Medical Association* Richard W. Goldsmith, M.D., of Somerville, New Jersey, in a letter to the editor, "The Toxicity of Phenothiazine Compounds," recommends caffein sodium benzoate as a therapeutic agent. In Dr. Goldsmith's patients the response to the caffein sodium benzoate was in a matter of seconds. He makes three points: (1) Toxicity is most likely to occur in severely ill and dehydrated patients, (2) it may occur sixteen hours or so after the last dose of the medication, and (3) symptoms are notably apparent in the younger age group (under four years of age). In the present incident the child was presumably well. He did respond, however, to the caffein sodium benzoate.

A case of prochlorperazine poisoning is reported in the May 15, 1959, issue of the

New York State Journal Of Medicine in a twenty-two-year-old white male.* He exhibited hyperthermia, prolonged wakefulness, and parkinsonism. Symptoms lasted for more than three weeks after the medication stopped. One wonders whether the caffein treatment would not have been more effective than the antiparkinsonism drugs which were administered.

Incident 5

Toxic Agent	*Age*	*Sex*
Aspirin-Acetphenetidin-Caffein Compound	18 years	Female

The patient is separated from her husband, who came to her on the day of the accident to discuss the matter of obtaining a divorce. When the patient's mother returned from a walk she found the patient lying on the kitchen floor. The mother immediately summoned an ambulance, which took the patient to a hospital emergency room. During transport to the hospital the patient vomited. Nevertheless, on admission a gastric lavage was done. The only finding was stupor. The patient apparently ingested 20 5-grain tablets in a suicidal attempt. In spite of the large amount of tablets ingested, she made a complete recovery within twenty-four hours.

Incident 6

Toxic Agent	*Age*	*Sex*
Sleeping Pills	17 years	Female

In order to frighten her mother the patient ingested 24 sleeping pills, obtained from a box in the medicine cabinet. The pills were originally obtained at a municipal hospital about two years previously because of insomnia following a nasal operation. The patient reported the ingestion to her mother. The patient vomited and was taken to the hospital emergency room, where her stomach was lavaged one hour after ingestion.

During her stay in the emergency room the patient's condition became progressively worse. She became dyspneic and comatose. Her blood pressure was 80/60. Fluids were administered intravenously, and Coramine and caffein sodium benzoate were also administered. She was transferred to Kings County Hospital. The patient made a complete recovery from the acute intoxication and is now under psychiatric observation.

Incident 7

Toxic Agent	*Age*	*Sex*
Barbiturates	$7^1/_2$ years	Male

The patient found the medication in his father's bureau drawer, hidden under clothes. No one was at home at the time of the accident. The patient was home because of a cold. When his mother arrived he related that he had taken 3 of his father's tablets because he was tired. The patient was taken to the hospital emergency room, where his stomach was lavaged with saline five hours following ingestion. The only finding on admission was slight stupor. After four days of hospitalization the patient was discharged as recovered.

Incident 8

Toxic Agent	*Age*	*Sex*
Amphetamine	$2^1/_2$ years	Male

The mother kept the medication on a high shelf, presumably out of reach of children. Prior to moving, however, she put the medication in a china closet drawer which was very hard to open. The patient, however, found no difficulty in opening it. He removed and swallowed an unknown quantity of the medication. The mother noticed the strange behavior of the child—incoordination, staggering gait, and nervousness—and took him to a physician, who referred him to a hospital emergency room. The patient was treated with Luminal and given supportive therapy. He remained in the hospital for two days and made a complete recovery.

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* Mason, S. R., Sandt, J. J., and Duggan, J. J.: Acute, transitory, severe central nervous system toxicity following administration of prochlorperazine, New York State J. Med. 59: 2037 (May 15) 1959.

These 2 incidents highlight the fact that the only "secure" place for hazardous products is under lock and key.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Meprobamate	18 years	Female

This medication was prescribed for the patient presumably to allay pain following a fall. She took the medication as prescribed for two days but on the third day she ingested the remainder (approximately 27 400-mg. tablets). She was taken to the hospital, where her stomach was lavaged with water one and a half hours following the last ingestion. On admission she was in coma. The patient remained in the hospital for nine days where she was given appropriate supportive therapy.

This incident is cited because of the favorable outcome with the large number of meprobamate tablets ingested.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Phenobarbital	9 years	Female

This medication is apparently in use at a home for emotionally disturbed children. A worker in the home found a medicine cabinet open, and it was soon disclosed that the patient ingested 2 tranquilizing pills. The patient's stomach was lavaged with saline soon after the incident was discovered, several hours after ingestion. Since the patient was asymptomatic, only emergency treatment was administered.

In this series we previously have cautioned on the inadvisability of allowing medications or other potentially hazardous products to be accessible to institutionalized children, particularly those who are emotionally disturbed.

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Barbiturate	13 years	Female

This patient had been under psychiatric care previously. She was emotionally disturbed because of a facial paralysis following an operation at age one. A recent birth of a normal child in the family presumably increased the patient's anxiety and tension. She informed her mother that she "need not worry about me any more" since she had taken some sleeping pills and was "going to sleep forever." The barbiturate pills were obtained from a drawer in the bedroom, and the patient was said to have ingested 3 of them.

She immediately was taken to a hospital emergency room, where her stomach was lavaged with saline two hours following ingestion. On admission the patient appeared stuporous. No barbiturates were detected in the blood or urine. She was treated with caffein sodium benzoate, 1,000 cc. of glucose intravenously, and other supportive measures. The patient remained in the hospital for two days and was then discharged as asymptomatic.

INCIDENT 12

Toxic Agent	*Age*	*Sex*
Reserpine	2 years	Female

A package of various drugs had just been delivered into the home by a pharmacist. While the mother was holding the package in her lap, the patient grabbed the bottle of Reserpine tablets and ran into another room. She returned several minutes later, crying, with a mouthful of the tablets (25) partially dissolved and a few undissolved in her mouth.

The mother immediately phoned the pharmacist, who called the Poison Control Center. The mother was advised to take the child to her physician. Vomiting was induced with bicarbonate of soda and water prior to the physician's arrival. On examination the physician found the child in good condition.

This episode is related because of the interesting mode of occurrence.

INCIDENT 13

Toxic Agent	*Age*	*Sex*
Prochlorperazine	3 years	Male

The patient's grandmother emptied her pocketbook on the bed in search of a key. She left the room for about a half hour. She later returned the objects into her bag, unmindful of the empty vial—which was not noticed until thirty hours later. The patient apparently had ingested 7 pills (the entire contents of the vial). He had abdominal pains and convulsions. He was taken to the hospital one day following ingestion where milk of magnesia was administered. The mother signed the patient out against the physician's advice one day following admission.

The same patient swallowed a bottle of tranquilizers one year previously while in California. The medication had been prescribed for the mother's nervousness, "caused by the lonesome life I led as the wife of a forest ranger."

Comment

There has been an increasing number of incidents reported from the use of tranquilizers, which is a reflection of the greater availability and use of these products. The consequences of overdoses of nonbarbiturate tranquilizers reported to this Center are far less severe than those of barbiturates.

(*Number forty-one in a series of Briefs on Accidental Chemical Poisonings*)

ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

DINNER DANCE

- Monday evening, May 9
- New Hotel Pierre Ballroom
- Cocktails preceding dinner
- Gourmet menu
- Famous name band

Set aside the date
Bring your family and friends

SPECIAL ARTICLES

Medical Civil Defense Stockpiles

JAMES H. LADE, M.D., ALBANY, NEW YORK

(*Director, Office of Medical Defense, Department of Health, State of New York*)

THE following is a listing of medical civil defense stockpiles in New York State according to location in each target-support area. Included in the enumeration are state aid station outfits (SASO), mobile hospital outfits (MHO), and blood collection outfits (BCO). Allocations of other components of State stockpiles—mobile xeroradiographic outfits, narcotics, dextran and plasma, antibiotics, and mobile radiologic laboratories—are also outlined. In addition, the conditions for release of these allocated supplies are given.

NEW YORK CITY AND THE NASSAU COUNTY TARGET-SUPPORT AREA

Local civil defense jurisdictions within this target-support area are the counties of Nassau and Suffolk and the cities of Glen Cove (Nassau County) and Long Beach (Nassau County).

Depots	*Contents*
Central Islip State Hospital, Central Islip, Suffolk County	156 SASO 29 MHO 12,828 BCO
Pilgrim State Hospital, Brentwood, Suffolk County	186 SASO 16 MHO
Kings Park State Hospital, Kings Park, Suffolk County	182 SASO 5 MHO
Creedmoor State Hospital, Queens Village, Queens County	24 SASO

NEW YORK CITY TARGET-SUPPORT AREA

Local civil defense jurisdictions within this target-support area are the counties of Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester and the cities of New York, Middletown, Mount Vernon, Newburgh, New Rochelle, Peekskill, Port Jervis, Port Chester, White Plains, and Yonkers.

Depots	*Contents*
Westchester County Penitentiary, Grasslands, Westchester County	10 SASO
Sing Sing Prison, Ossining, Westchester County	136 SASO 10 MHO
Rockland State Hospital, Orangeburg, Rockland County	19 SASO 9,000 BCO
Letchworth Village State Hospital, Thiells, Rockland County	141 SASO
Middletown State Hospital, Middletown, Orange County	6 MHO 7,200 BCO
Greenhaven Prison, Stormville, Dutchess County	117 SASO 26 MHO 2,272 BCO
Hudson River State Hospital, Poughkeepsie, Dutchess County	72 SASO 6 MHO
Harlem Valley State Hospital, Wingdale, Dutchess County	23 SASO 3,995 BCO
Walkill Prison, Walkill, Ulster County	2,000 BCO
Wassaic State School, Wassaic, Dutchess County	2 MHO 2,000 BCO

THE CAPITAL DISTRICT

The Capital District includes the Albany, Schenectady, and Troy target-support areas.

Local civil defense jurisdictions within the Albany target-support area are the counties of Albany, Greene, and Schoharie.

Local civil defense jurisdictions within the Schenectady target-support area are the counties of Schenectady, Fulton, Montgomery, Hamilton, Saratoga, and Warren.

Local civil defense jurisdictions with the Troy target-support area are the counties of Rensselaer, Columbia, and Washington and the city of Rensselaer.

Depots	*Contents*
Hudson State Training School, Hudson, Columbia County	38 SASO (Troy) 2 MHO (Troy)
New York State Vocational Institute, Coxsackie, Greene County	34 SASO (Albany)
Saratoga Spa, Saratoga Springs, Saratoga County	50 SASO (Schenectady) 6 MHO (Schenectady) 7 MHO (Albany) 3,000 BCO (Capital District)

Division of Veterans Affairs, Veterans Camp, Mount McGregor, Saratoga County	31 SASO (Albany) 3 SASO (Schenectady) 1,900 BCO (Capital District)
Great Meadow Correctional Institution, Comstock, Washington County	6 SASO (Albany) 4 SASO (Troy) 1 MHO (Albany) 2 MHO (Troy) 3,760 BCO (Capital District)

PLATTSBURGH TARGET-SUPPORT AREA

Local civil defense jurisdictions within this target-support area are the counties of Clinton, Essex, Franklin, and St. Lawrence and the city of Plattsburgh.

Depots	*Contents*
Clinton Prison, Dannemora, Clinton County	1,300 BCO
Dannemora State Hospital, Dannemora, Clinton County	6 SASO 1 MHO
St. Lawrence State Hospital Ogdensburg, St. Lawrence County	10 SASO 1,000 BCO

UTICA-ROME TARGET SUPPORT AREA

Local civil defense jurisdictions within this target-support area are the counties of Herkimer, Lewis, Oneida, and Otsego and the cities of Little Falls, Utica, Sherrill, and Rome.

Depots	*Contents*
New York State Dept. of Public Works, Mexico, Oswego County	1 MHO
New York State Teachers College, Oneonta, Otsego County	15 SASO
New York State Dept. of Public Works, Barge Canal Terminal, Fonda, Montgomery County	41 SASO 5 MHO

SYRACUSE TARGET-SUPPORT AREA

Local civil defense jurisdictions within this target-support area are the counties of Cayuga, Cortland, Jefferson, Madison, Onondaga, Oswego, and Seneca and the city of Oneida.

Depots	*Contents*
Sampson Division—Willard State Hospital, Sampson, Seneca	55 SASO (Syracuse) 4,800 BCO
New York State Department of Public Works, Cortland, Cortland County	40 SASO 7 MHO
New York State Department of Public Works, Mexico, Oswego County	30 SASO 6 MHO 3,600 BCO (Syracuse and Utica-Rome)

ROCHESTER TARGET-SUPPORT AREA

Local civil defense jurisdictions within this target-support area are the counties of Livingston, Monroe, Ontario, Steuben, Wayne, and Yates.

Depots	*Contents*
Willard State Hospital, Willard, Seneca County	50 SASO 4 MHO 2,340 BCO
Newark State School, Newark, Wayne County	41 SASO
Craig Colony, Sonyea, Livingston County	83 SASO 6 MHO 400 BCO
New York State Dept. of Public Works, Newark, Wayne County	16 SASO 9 MHO

BINGHAMTON TARGET-SUPPORT AREA

Local civil defense jurisdictions within this target-support area are the counties of Broome, Chemung, Chenango, Delaware, Schuyler, Tioga, and Tompkins.

Depots	*Contents*
Womens Relief Corps Home, Oxford, Chenango County	10 SASO
Tioga Central School, Tioga Center, Tioga County	6 SASO
Newark Valley Central School, Newark Valley, Tioga County	10 SASO
Tompkins County Memorial Hospital, Ithaca, Tompkins County	15 SASO 5 MHO 4,800 BCO
Bendix Aviation Corporation, Scintilla Division, Sidney, Delaware County	4 SASO

BUFFALO TARGET-SUPPORT AREA

Local civil defense jurisdictions within this target-support area are the counties of Allegany, Cattaraugus, Erie, and Wyoming and the cities of Jamestown, Olean, and Salamanca.

Depots	*Contents*
State University of New York, Agricultural and Technical Institute, Alfred, Allegany County	6 SASO
Newton Memorial Hospital, Cassadaga, Chautauqua County	10 SASO
Gowanda State Hospital, Thomas Indian School, Iroquois, Erie County	42 SASO
Erie County Home and Infirmary, Millgrove, Erie County	43 SASO 10 MHO
Gowanda State Hospital, Helmuth, Erie County	70 SASO 13 MHO 4,800 BCO
Attica Prison, Attica, Wyoming County	67 SASO 10 MHO 9,623 BCO (Buffalo and Niagara Falls)

NIAGARA FALLS TARGET-SUPPORT AREA

Local civil defense jurisdictions within this target-support area are the counties of Genesee, Niagara, and Orleans and the cities of Niagara Falls and North Tonawanda.

Depots	*Contents*
Niagara County Home, Lockport, Niagara County	11 SASO
Oakfield-Alabama Central School, Oakfield, Genesee County	4 SASO 1 MHO
Mount View Hospital, Lockport, Niagara County	19 SASO 4 MHO
Albion State Training School, Albion, Orleans County	153 SASO

TOTALS

State Aid Station Outfits	2,089
Mobile Hospital Outfits	200
Blood Collection Outfits	73,515

OTHER COMPONENTS OF STOCKPILES IN STATE DEPOTS

MOBILE XERORADIOGRAPHIC OUTFITS (37)*

Depot	*Quantity*	*Allocated Target-Support Areas*
Central Islip State Hospital	9	New York City-Nassau County
Hudson River State Hospital	9	New York City
Hudson River State Hospital	1	Troy
Wallkill State Prison	2	Albany
New York State Department of Public Works, Fonda	1	Schenectady
New York State Department of Public Works, Fonda	1	Utica-Rome
New York State Department of Public Works, Cortland	1	Binghamton
New York State Department of Public Works, Cortland	1	Syracuse
New York State Department of Public Works, Mexico	2	Syracuse
Craig Colony, Sonyea	3	Rochester
Gowanda State Hospital	1	Buffalo
Attica Prison	5	Buffalo
Attica Prison	1	Niagara Falls

BULK SUPPLY

NARCOTICS (Morphine syrettes 1/4 grain):

Depot	*Quantity*
Pilgrim State Hospital	37,500
Creedmoor State Hospital	37,500
Rockland State Hospital	75,000
New York State Vocational Institute, Coxsackie	15,000
Great Meadow Correction Institute	15,000
Auburn Prison	36,155
Gowanda State Hospital	45,000
Albion State School	45,000
TOTAL	306,155

DEXTRAN AND PLASMA:

Depot	*Quantity (cases of 24 bottles of dextran)*
Central Islip State Hospital	1,295
Sing Sing Prison	1,000
Saratoga Spa	643 †

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*Allocated to work with 5 mobile hospital outfits on a shared basis.

†In addition, 3,000 cases of 12 bottles of dried plasma.

St. Lawrence State Hospital	25
New York State Department of Public Works, Cortland	200
New York State Department of Public Works, Mexico	400
New York State Department of Public Works, Newark	470
Attica Prison	947
TOTAL	4,980*

ANTIBIOTICS (penicillin, chloramphenicol, streptomycin, aureomycin, and terramycin):

Depot	*Quantity (Cases)*
Central Islip State Hospital	221
Greenhaven Prison	222
Saratoga Spa	86
New York State Department of Public Works, Mexico	105
New York State Department of Public Works, Newark	87
Gowanda State Hospital	174
TOTAL	895

MOBILE RADIOLOGIC LABORATORIES (6)

Location

New York State Agricultural and Technical Institute, Morrisville

New York State Agricultural and Technical Institute, Alfred University, Alfred

Cornell University, Department of Sanitary Engineering, Ithaca

Orange County Community College, Middletown

Vassar College, Department of Physics, Poughkeepsie

New York State Department of Health, Division of Laboratories and Research, Albany

STATE MEDICAL DEFENSE SUPPLIES IN LOCAL CUSTODY

815 state aid station outfits are in the custody of the civil defense organizations in the critical target areas in the State. Within each target area the State requires their dispersal, preferably to points at which initial medical relief operations would begin, so that preferably 1 and in no case more than 4 SASO are at any one location.

Target Area	*Quantity of SASO*
New York City	375
Albany	33
Schenectady	23
Troy	18
Rensselaer	4
Syracuse	54
Utica	25
Binghamton	20
Rochester	82
Buffalo	153
Niagara Falls-North Tonowanda	28
TOTAL	815

46,485 blood collection outfits have been distributed among all the civil defense jurisdictions in the State, target and nontarget. Amounts issued to localities are based on twenty-four-hour quotas for each jurisdiction, as developed in 1953.

Each civil defense jurisdiction has on permanent loan one or more state aid station outfits for training, consisting of replicas of most of the SASO supplies. 520 of these outfits have been issued under the medical defense program.

Conditions for Release of Allocated Supplies

POST ATTACK.—Primary control of allocated supplies (both state aid station outfits and mobile hospital outfits), rests with the Deputy Director of the target-support area to which they are allocated if his target city is attacked. In that event, he is authorized to communicate directly with the Depot Manager of the medical defense supply depot (institution director, warden, superintendent, etc.), if practicable, to direct the movement of allocated supplies. If the supplies are required for other target cities which have suffered attack, they will be ordered out by the State Civil Defense Director at the State Control Center, without reservation of supplies for possible later attacks on the target city of allocation.

The Civil Defense Director of the jurisdiction of a particular supply depot is responsible preattack for locating and assigning the necessary number of trucks required postattack to move the allocated supplies from the depot to the stricken area.

NATURAL DISASTERS.—In the event of natural disasters beyond the facilities of a New York State community, State medical supplies and equipment stockpiled at the medical defense supply depots may be made available by direction of designated State personnel only.

Standing orders have been issued to the 45 State depots directing that supplies may be released in the type and quantity specified by the regional Health Director of the State Health Department or his designated representative, the State Health Commissioner or his staff, or the State Civil Defense Director or his staff.

The State Civil Defense Commission has been designated by the Governor as the official State agency for coordinating the assistance to be furnished by the various State departments and agencies in the event of a natural disaster.

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*In addition, 3,000 cases of 12 bottles of dried plasma.

Disaster Medicine: The Local Problem

EDWARD A. BURKHARDT, M.D., NEW YORK CITY

(*Chairman, Special Committee on Civil Defense and Catastrophe, Medical Society of the State of New York*)

A REALISTIC appraisal of the world situation leads one to demand universal participation in some type of survival insurance. This is succinctly paraphrased in the statement, "Civil defense is everybody's business." It is clearly the duty of civil defense leaders to make this possible.

This paper deals largely with disaster medical care and its relative position in the framework of civil defense. It is necessary to review the programs at the national level and translate them into activities at the local levels if civil defense is to function with some degree of efficiency.

Much of the illustrative material in this article deals with civil defense in New York City, but it is evident that the situation herein described is not endemic to New York City alone but applies to other metropolitan areas as well. Civil defense at the national level must recognize the local deficiencies in our large politically controlled target areas if planning is to be fruitful.

The jet missile atomic age leaves no area in this world safe from the devastation of the battlefield. Military defense is charged with the destruction of the enemy. The speed and destructive power of a war could so thoroughly decimate a nation that victory or defeat could be achieved in a matter of hours. There is no historic precedent to guide us in the next war. In World War II the allies staggered under the blitzkrieg until able to mass superior destructive powers (still tied to speed) to vanquish the enemy. In the next war we will never be offered a second chance.

The quantity and quality of our instruments of war are largely classified information but we have faith in our national leaders when we know that they have consulted military personnel, civilian scientists, and manufacturers in developing our destructive powers.

Future wars will not be fought on a fixed defense line by selected and trained soldiers. Everyone in a warring country will be on the front lines. The only categories that we will be privileged to delineate will be those involving the delivering of destruction to the enemy and the defense of our lives and productive capabilities at home. In the past we carried on our wars with the enemy in his and our allied lands. In this age we are not exempt from enemy action. This demands training and preparation of the "soldiers" at home.

Military defense has had the assistance of civilian scientists in planning the destruction of the enemy. Can we say that we have been equally astute in planning our civil defense at national, state, and local levels? How are we using our physicians, engineers, and other scientists in the local areas of planning? We as physicians are interested in disaster medical care within the framework of civil defense that also includes other forms of survival and property protection. It is our duty to see that disaster medical care receives due consideration in the over-all planning for civil defense in all geographic areas in order to produce better methods for personal survival and to develop the best possible system of group assistance to meet that end.

National civil defense planning is the responsibility of the Office of Civil and Defense Mobilization (OCDM). The general planning and policies of this agency are outlined in the pamphlet, "The National Plan for Civil Defense and Defense Mobilization," published in October, 1958. The American Medical Association is active at the national level in working closely with the OCDM. The A.M.A. Council on National Defense and its committee, Disaster Medical Care, are most helpful in planning informative meetings, such as the National Medical Civil Defense Conference, County Medical Societies Civil Defense Conferences, and Regional States Civil Defense Conferences. In general, the proceedings of these meetings may be divided as follows:

1. Federal officials present the current and projected plans of OCDM, which include congressional appropriations and requested appropriations.
2. The Council on Disaster Care presents its current program and summarizes its relationship to OCDM.

3. The president or another official of the A.M.A. outlines the profession's civil defense responsibilities.

4. A report of civil defense exercises is given.

5. Specialty reports on chemical, biologic, and atomic attacks and their physical and psychologic effects on the population are presented.

6. The technics of handling mass casualties are enumerated.

These proceedings are widely distributed in separate reports or in *The Journal of the American Medical Association* so that every physician may have the advantage of this high-level thinking. The workshop sessions at these meetings allow the county and state society delegates to ventilate their local problems, and, of course, many of these prove to be not so local.

The delegate must digest this material and determine how much of it can be used at the local level. A tranquilizer at this time will offer some assistance. How does a city, county, or state civil defense committeeman operate in the face of a potential 20-megaton burst in his locality? There are several alternatives:

1. Resign from the committee.

2. Develop decerebrate rigidity and do nothing.

3. Do something.

It is presumed that most civil defense committeemen would like to do something. With this assumption, how does one start? The first step should be to review the present civil defense programs at the state, county, city, and hospital levels. He will find many of the local plans in the lower drawer of the hospital superintendent's office or in an equally inaccessible drawer of the local civil defense director's office. He will find these plans worked out in detail. However, from a practical point of view they probably will be read after the atomic burst because the local authorities will have forgotten their directives.

He now realizes that there is much to be done to assign or reassign duties to certain key people who are responsible for preattack training and postattack operations. This is all relatively simple in a small county with 25 to 100 doctors and one or two small hospitals. In spite of the apparent simplicity of this operation one of our upstate members wrote to me and asked the following questions:

1. Is disaster medical care a function of the county medical society or of the local hospitals?

2. Can a physician be excused from civil defense activities because of age, health, or long service to civil defense activity?

These questions seem to ask: "When does one stop or resign from catastrophe care?"

The method by which physicians are assigned to posts of responsibility is immaterial. This could be done through either the county society or the hospitals, but the county society should be in a position to evaluate the assignments and training program. In New York State the "Manual of Hospital Organization for Civil Defense" outlines the pre- and postattack plans for this type of operation. In New York State the less densely populated counties have the best-trained personnel in the State. This is largely a factor of local pride and because everyone knows who is not participating. The woman's auxiliaries of these county societies are active in recruiting and training nonmedical personnel.

The county medical societies' civil defense committees in the large cities have quite a different problem. These target areas represent a complex impersonalized civilization governed by elected and appointed officials at various departmental levels. Inquiry into the structure and operation of a large city civil defense unit leads one into many blind alleys that seem to demand the patience of Job and the cunning of Cassius to extricate oneself from this maze. The city fathers conveniently can avoid any area of responsibility by assuming that a particular area of operation is a state responsibility.

The large city is able to assimilate and care for great numbers of daily individual disasters that would be catastrophic to a small county operation. We soon become complacent in the knowledge that we could probably double this number of disasters and still handle them with dispatch. The fact of being big with reserves for expanding catastrophe care fills us with a sense of adequacy in our numerous departmental operations. This type of thinking is disastrous in this atomic age. Our large urban medical societies are not prepared with technics, personnel, or funds to investigate thoroughly, much less to direct or guide, the activities of disaster care programs in these areas. The average citizen feels relatively secure in delegating all planning and activities to elected or appointed city officials. The official feels equally secure as long as he does not disturb the tranquility of the electorate or jeopardize political patronage.

We as physicians would like to have a case history and some suggestions for therapy. This is the only way we can carry civil defense and disaster medical care from the lessons we learn at the national level back to the citizen, the prospective patient. Following a summary of the upstate civil defense structure is a case history of New York City. It is convenient to separate the upstate activities from those of New York City because of the geographic-political-population boundaries. New York City enjoys autonomy in many areas with State dependency in other areas.

The New York State Department of Health, with headquarters in Albany, is largely responsible for the civil defense activities in the upstate area with the cooperation of eight full-time city health units and, of course, innumerable hospital and voluntary units. The State Health Department is also responsible for obtaining and storing medical emergency supplies throughout the State. This paper is not concerned with the breakdown of these essential tools but recognition is due to the personnel in the State Health Department for the planning, purchasing, and storing of $18,000,000 worth of medical supplies, of which one-half is in or within 100 miles of New York City. No further major appropriations will be needed for supplies.

The New York State Department of Health has prepared a chart entitled "Suggested Preattack Local Organization of New York State Emergency Medical Service." In the organization chart several advisory committees are directly related to the chief medical officer. These suggested advisory committees are composed of representatives of the county medical society, the director of adult education, school-training advisees, publicity advisees, nursing advisory committee members, and representatives of hospitals, dental societies, public health organizations, and veterinarian societies.

At the State level the Department of Health is profoundly interested in obtaining advice from the Civil Defense Committee of the State Medical Society. We assume that it is equally attentive to suggestions from the other committees listed.

In New York City the citizens know that the Civil Defense Organization is on the job because the sirens are blown at 12:00 NOON to allow us to set our watches and general warnings and all-clear signals are sounded perhaps a dozen times a year. The newspapers advise us that the citizens are not to participate.

In the political-geographic area of New York City medical defense is shared by the Department of Health and the Department of Hospitals, the former for public health and first aid and the latter for medical care. The two sections of the medical emergency divisions operate as a single unit at civil defense headquarters under the Civil Defense Director. The Medical Civil Defense Coordinator of the Department of Health functions as Assistant Deputy Director. The last Assistant Deputy Director recently died and he has not been replaced yet. At the present time the General Medical Superintendent of the Department of Hospitals is responsible for the Medical Emergency Division in the New York City Office of Civil Defense. He is paid from the budget of the Department of Hospitals. A position of this magnitude allows him little time to devote to his civil defense duties. His principal post is at the office of the Department of Hospitals, at 125 Worth Street, but he can be seen at the Civil Defense Office by appointment. He admits that his trips to civil defense headquarters are rare. Thus, we find that the directing physician of the New York City Office of Civil Defense performs his duties on a part-time basis, receiving a salary outside of civil defense appropriation.

In 1958 the City had one civil defense coordinator, one medical training officer, one administrative assistant, and one stenographer whose combined salaries were $29,380. They drew their salaries from the Department of Health appropriation and not from the civil defense budget. The other personnel of the medical division were one administration hospital assistant, one clerk, and one part-time nurse training officer. This payroll was $11,340 and was derived from the Department of Hospitals appropriation.

The civil defense appropriation for New York City for the year 1958 to 1959 was $1,382,640, of which $813,020 was for personnel services. The salaries for medical personnel paid out of this appropriation were: one assistant physicist $4,850 and two civil defense aides $9,700. Not one physician is paid out of the civil defense budget.

One cannot deny the lifesaving function of the Fire, Water, and Police Departments and communication services. In addition, however, the citizens of New York certainly associate medical care with civil defense. The Department of Hospitals and the Health Department contribute essential services to the normal operation in their respective areas, and their functions could be expanded to some extent in minor catastrophes.

Adequate civil defense demands planning and training for catastrophes involving thousands of casualties. Let us assume that a portion of the civil defense appropriations of $813,020 is allocated to medical personnel (physicians). Would this help to solve the problem? It would, if these physicians would think and plan in terms of enormous casualties. If the thinking and planning presume that the present facilities of the Department of Hospitals and the Health Department are adequate, we only would be compounding errors in a more expensive manner.

There are hundreds of business and voluntary groups concerned with civil defense. Many man-hours are spent by both salaried and volunteer personnel in this area. Medical defense could be used to illustrate the multiple areas of concern in the City civil defense plan. The Medical Society of the State of New York and the various county components have civil defense and catastrophe committees. The committee members offer their time and services in spite of their busy practices. The organization budget allows only a few dollars for travel to State and national defense meetings with the hope of bringing back some plans that will assist in medical civil defense. How much planning and training can we do without finances? A great deal could be done if responsible elected or appointed officials disturbed the tranquility of the citizens and presented some specific plans which demand citizen participation. Specialty committees are occasionally called in at the federal level but seldom at local levels.

The new federal budget proposes $25,000,000 for civil defense personnel with states, counties, and cities matching funds. This money, of course, is tied to politicogeographic areas and is specifically for salaries. We certainly need little more to add to our stock pile of $18,000,000 in supplies. It is easy to visualize this fund going to compound the present errors in civil defense, namely to hire more people to do the same political planning that leaves functional volunteer organizations out of the planning and training programs. Defense is too big a problem to leave to paid personnel; everyone must participate. We have yet to find a physician who would not donate at least one day a year to civil defense training under adequate guidance.

Harold S. Diehl, M.D., chairman of the Council of National Defense of the American Medical Association states: "Indeed, to meet our responsibilities as physicians, we must expand medical civil defense preparedness to include all members of the medical and health professions in every community." Highly trained specialty citizen groups cannot be ignored in the planning and training for civil defense. We do not mind volunteering but we expect paid people to think, seek our advice, and then to issue directives and provide finances to execute plans that are produced by the best specialty brains.

Carroll Hungate, M.D., of the Council states: "The influence of organized medicine has been effective in guiding the development of civil defense planning regardless of the political complexion of Washington."

The planning by the A.M.A. and OCDM is commendable, but if planning at the local level rejects voluntary specialty groups we find our target areas poorly prepared. The local plans on paper may be adequate to obtain federal matching funds but this does not insure adequate civil defense. Dr. Hungate advises that state medical societies include in their annual budget funds for expansion of their civil defense program. Does this not all go for naught when local civil defense directors neither seek nor desire specialty advice?

A clinical history would not be complete without reviewing the civil defense appropriations. If little or no financial support is going to medical defense, just where is the money going? Table I is developed from the New York City budget.

You will observe from this table that 191 persons receive a total salary of $813,020. This is presented as the payroll of civil defense. The hidden factor that is never mentioned as part of the civil defense payroll is the 100 persons assigned to civil defense on a full-time basis from the budgets of other departments. In studying the budgets of the contributing departments one cannot find the payroll item of these assigned persons. If we divide $813,020 by the number of persons included in the civil defense budget, we arrive at an average salary of $4,256. The individual salaries for the repre-

TABLE I.—Personnel and Salaries in New York City Civil Defense

Service	Number of Positions	Number from Other Departments	Salary Range (dollars)	Total Salaries (dollars)
Executive Management	21		17,500–3,000	121,640
Fire Department		2		
Department of Hospitals				
Administrative services				
Hospital administration	26		5,500–2,750	78,770
Water service, gas, and electric		2		
Fiscal and budget management	31		10,425–2,900	108,140
Water service, gas, and electric (special microfilming)		1		
Volunteer enrollment and publicity	26		8,250–2,825	94,765
Control center operations				
Supervision and training	37		7,500–3,000	171,545
Radio communications	21		8,225–3,200	101,635
Emergency services				
Fire Auxiliary	2		9,250–8,035	17,285
Fire Department		38		
Police	8		9,750–3,075	34,485
Police		25		
Air warden and rescue	9		9,250–2,750	39,115
Public works	3		5,570–3,075	13,225
Department of Public Works		4	19,520–4,000 =	
Medical	3		4,850	14,550
Department of Health		4		
Department of Hospitals				
Welfare				
Department of Public Welfare		20		
Transportation				
Transit Authority		2		17,865
School surveys	4		5,750–3,000	
Department of Education		2		
Total	191	100		813,020

sentatives of special departments assisting civil defense would certainly be no lower than the average of those on defense. We can safely estimate that the salaries of this category of assigned personnel would be 100 × $4,256, or $425,600. Twenty-two employes with a total salary of $71,120 from a special schedule should be added.

A summary of these salaries for civil defense is as follows:

Civil defense appropriations	$ 813,020
Personnel from other departments (estimated)	425,600
Special schedule	71,120
Total	$1,309,740

Thus, we see that the payroll for civil defense is not $813,020, as published, but approximately one-half a million dollars more. This review is not concerned with the expenditure of $569,620 for supplies, materials, equipment, and contractual services, as listed in the civil defense budget, but we can believe that they are equally nonmedical in view of the stock piling of $18,000,000 worth of medical supplies by the New York State Department of Health. No attempt will be made to break down the functions of the various employes but it is of interest to know that 40 secretaries and typists are listed in the civil defense budget. What do they do? It is of equal interest to note that 20 persons are assigned to civil defense from the Department of Welfare. Parkinson's law may have to be revised.

The General Medical Superintendent of the Department of Hospitals (the only physician remotely associated with civil defense) admits that a few demonstration exercises in the past have been poorly attended and have been discontinued. The only medical civil defense activity of any magnitude in New York City has been conducted by the New York State Department of Health. The assembling and operation of the 200-bed emergency hospital has been extensively demonstrated throughout the State.

How can any scientifically trained person begin to cope with this political Frankenstein? The Director of Civil Defense in New York City refuses to make an appointment with this author in spite of letters to him and repeated telephone contacts with his secretary. The refusal of this organization to seek counsel with any scientific know-how group seems, indeed, to be a tragic state of affairs. It is doubtful that this organization could be reformed within the framework of our political empire. Civil defense in New York City should rest in the hands of an independent authority that is devoid of political patronage. On the national level the Rand Corporation was organized as an advisory body on military and civilian defense. The City needs a similar independent body that will seek the advice of scientifically trained persons to guide its defense activities. Adequate disaster medical care cannot be developed by means of the present civil defense authority.

The federal government is currently paying New York City $100,000 a year toward the civil defense budget. Congress plans to increase the appropriation to local civil defense agencies. It would seem that the government would demand minimal services for this added cost.

Why do we find sporadic interest in civil defense? Why does disaster planning go ahead with enthusiasm one year and slump the next for lack of sustained interest, as reported at our national meetings? Could this be a by-product of the feeling that this is a service we may never need? Fortunately we do not oscillate in a similar manner in the purchase of fire insurance. Could this oscillation in civil defense enthusiasm stem from failure to dent the political armor of patronage-dispensing local civil defense officers? What do we basically expect of civil defense? What should we demand of our paid servants?

To be constructive in this appraisal the following minimal requirements are offered:

1. Adequate supplies for disaster care are necessary. We seem to have this in New York State, with $18,000,000 of stockpiled medical supplies and equipment.
2. Organized operational teams at every hospital should have a yearly orientation meeting, with demonstrated flow lines to accommodate enormous casualties. These meetings should be supervised by responsible trained civil defense personnel to see that planning is standardized and adequate.
3. Paramedical and civilian nonmedical personnel should be trained to serve actively with each unit.
4. Each hospital should develop a team to operate the 200-bed emergency hospital in a building other than the hospital. This should be supervised rigidly by civil defense authorities by means of an annual inspection.
5. Civil defense authorities should use government-authorized funds to assist in all training programs and exercises. These funds should also support hospital efforts so that community services could be offered without penalizing hospital budgets.

These procedures would add vitality to voluntary civil defense organizations and would tie them to appropriated government funds. Civil defense could be everybody's business. Unless these local problems are understood by the OCDM and the A.M.A., we are poorly prepared for the application of disaster medicine.

There's something so beautiful in coming on one's very own inmost thoughts in another. In one way it's one of the greatest pleasures one has.—Olive Schreiner

NECROLOGY

Emma Selkin Aronson, M.D., retired, of New York City, died at her home on September 24 at the age of seventy-two. Dr. Aronson graduated in 1910 from Woman's Medical College of Pennsylvania and interned at New York Infirmary. She was a consultant in gynecology at the Bronx Hospital where she had served formerly as chief of gynecology and gynecologist emeritus at New York Infirmary. In 1956 she was a recipient of the New York Infirmary's Elizabeth Blackwell Award for "outstanding contribution to the knowledge of medicine," and in later years she received a special bronze plaque from Bronx Hospital "for many years of distinguished service." Dr. Aronson was a Fellow of the American College of Surgeons and a member of the American Medical Women's Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Clayton Powers Bennett, M.D., of Brooklyn, died on September 7 in his ninety-fifth year. Dr. Bennett graduated from Columbia University College of Physicians and Surgeons in 1890.

Walter Bensel, M.D., of New York City, died in Oxford, Maryland, on September 16 at the age of ninety. Dr. Bensel, who was retired, graduated in 1890 from Columbia University College of Physicians and Surgeons and interned at Bellevue and Sloane Hospitals. He was a consulting physician at Elmhurst General Hospital. In 1907 he was appointed Commissioner of Street Cleaning and in 1908 was named Sanitary Superintendent in the New York City Health Department and retired in 1913. A prime mover in the founding of the New York Cardiological Society, Dr. Bensel served as president from 1940 to 1949 and then as its chairman until his death. Dr. Bensel was a member of the New York Cardiological Society, the Society of Medical Jurisprudence of New York City, and the West Side Clinical Society.

Fred Martin Bintakys, M.D., of Brooklyn, died on September 3 at the age of forty-eight. Dr. Bintakys received his medical degree from the University of Kaunas, Lithuania, in 1940. He was an adjunct physician in general practice at Prospect Heights Hospital. Dr. Bintakys was a member of the Kings County Medical Society and the Medical Society of the State of New York.

Isidor Caplan, M.D., of New York City, died on April 13 at the age of seventy-one. Dr. Caplan graduated in 1909 from Cornell University Medical College. He was a member of the New York County Medical Society and the Medical Society of the State of New York.

Morris Cohen, M.D., of Brooklyn, died on September 25 at the age of sixty-seven. Dr. Cohen graduated in 1916 from Fordham University School of Medicine and interned at Wyckoff Heights Hospital. He was first deputy medical superintendent of the Kings County Hospital Center.

James Herbert Donnelly, M.D., of Buffalo, died on August 31 in Sisters of Charity Hospital at the age of eighty-four. Dr. Donnelly graduated in 1906 from the University of McGill Faculty of Medicine. He was a consultant in tuberculosis at Edward J. Meyer Memorial Hospital and an honorary consultant at Sisters of Charity Hospital. Before Erie County took over the Buffalo Health Department he had held several positions in the department including that of tuberculosis director. From 1918 to 1948 he was an associate professor of diseases of the chest at the University of Buffalo School of Medicine. On his eightieth birthday he received the top honor of the New York Chapter, American College of Chest Physicians, as the recipient of the Lilienthal Medal. Dr. Donnelly was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians and of the American College of Chest Physicians, and a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Abraham S. Elterman, M.D., of East Rockaway, died on September 10 at the age of seventy-two. Dr. Elterman graduated in 1910 from University and Bellevue Hospital Medical College and interned at Sydenham Hospital. He was a member of the Nassau County Medical Society and the Medical Society of the State of New York.

Alexander Leon Evans, M.D., of Brooklyn, died on September 10 at the age of forty-nine. Dr. Evans received his medical degree in 1935 from the University of Bern. He was an assistant physician at Coney Island Hospital. Dr. Evans was a member of the American Academy of General Practice, the Kings County Medical Society, and the Medical Society of the State of New York.

Samuel Simon Feuerstein, M.D., of Long Island City, died on September 3 at the age of fifty-eight. Dr. Feuerstein graduated from University and Bellevue Hospital Medical College in 1925. He was an associate physician in gastroenterology at Triboro Hospital and an assistant physician at Queens General Hospital. Dr. Feuerstein was a Fellow of the American College of Gastroenterology and a member of the New York Academy of Gastroenterology, the Queens County Medical Society, and the Medical Society of the State of New York.

A. Morris Gilden, M.D., of Buffalo, died on August 16 at the age of sixty-three. Dr. Gilden graduated in 1920 from the University of Buffalo School of Medicine. He was a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ethel H. Hitchcock, M.D., of New York City, died on May 22. She was graduated in 1902 from Cornell University Medical College.

Ralph Horton, M.D., of Oneonta, died on September 18 at his home at the age of fifty-eight. Dr. Horton graduated in 1926 from the University of Kansas School of Medicine. He was a consultant in tuberculosis at Aurelia Osborn Fox Memorial Hospital and director of the Homer Folks Tuberculosis Hospital. Dr. Horton was a Diplomate of the American Board of Preventive Medicine, Inc. (Public Health), a Fellow of the American College of Chest Physicians and of the American College of Physicians, and a member of the American Public Health Association, the Otsego County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Paul Kass, M.D., of Richmond Hill, died on May 26 at the age of fifty-seven. Dr. Kass graduated in 1928 from the University of Virginia School of Medicine and interned at Lenox Hill Hospital.

Eli A. Lewis, M.D., of New York City, died on March 7 at the age of sixty-one. Dr. Lewis graduated from Long Island College Hospital in 1921. He was a member of the New York County Medical Society and the Medical Society of the State of New York.

John Lantry Mercer, M.D., of Rochester, died on August 30 in Genesee Hospital at the age of fifty-one. Dr. Mercer graduated in 1934 from McGill University Faculty of Medicine. He was an assistant attending physician at Genesee Hospital and an assistant physician at Strong Memorial Hospital. A past president of the Rochester Academy of Medicine, Dr. Mercer was a member of the Rochester Academy of Medicine, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gottfried Neumann, M.D., of New York City, died on September 26 in Beth Israel Hospital at the age of fifty-eight. Dr. Neumann received his medical degree in 1932 from the University of Leipzig and interned at Beth Israel Hospital. He was an assistant attending in obstetrics and gynecology at University Hospital and an adjunct in obstetrics and gynecology at Beth Israel and Beth David Hospitals. Dr. Neumann was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Obstetricians and Gynecologists and of the American College of Surgeons, and a member of the Rudolf Virchow Medical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gerald F. O'Brien, M.D., of New York City, died on September 19 at his summer home in Croton Falls at the age of fifty-seven. Dr. O'Brien graduated in 1929 from Georgetown University School of Medicine and interned at St. Vincent's Hospital. An honorary police surgeon and medical director of the International Longshoremen's Association, he was senior assistant in surgery at St. Vincent's Hospital and an assistant in surgery at St. Clare's Hospital. Dr. O'Brien was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harold Lese Otto, M.D., of New York City, died on September 9 at the age of sixty-five. Dr. Otto graduated from University and Bellevue Hospital Medical College in 1920 and interned at Bellevue Hospital. He was an associate in cardiology at Beth Israel Hospital. Dr. Otto was a member of the New York Academy of Medicine, the New York County Medical Society, and the Medical Society of the State of New York.

[Continued on page 4034]

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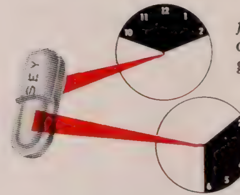

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[Continued from page 4030]

Elmer Lorne Pennock, M.D., of Harrison, died on June 29 at the age of seventy-six. Dr. Pennock graduated in 1912 from Queen's University Faculty of Medicine, Ontario. He was an honorary member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William H. Pound, M.D., of the Bronx, died in Westchester Square Hospital on September 15 at the age of ninety-three. Dr. Pound graduated in 1893 from the University of Maryland School of Medicine and College of Physicians and Surgeons. He was a former Deputy Commissioner of Health of New York City from 1923 until his retirement in 1932.

Elias Rauch, M.D., of New York City and Cedarhurst, died on August 25 at the age of fifty-eight. Dr. Rauch graduated from Long Island College Hospital in 1924 and interned at Gouverneur and Beth Israel Hospitals. He was an associate in gynecologic surgery at Harlem Hospital. Dr. Rauch was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Obstetricians and Gynecologists, and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Joseph Salerno, M.D., of Elmhurst, died at his home on September 10 at the age of seventy-two. Dr. Salerno graduated in 1910 from University and Bellevue Hospital Medical College. Retired in 1957, he was a former staff member in the ear, nose, and throat department at Post-Graduate Hospital. Dr. Salerno was a Diplomate of the American Board of Otolaryngology.

Jacob Schnur, M.D., of the Bronx, died in Memorial Hospital on September 15 at the age of fifty-eight. Dr. Schnur graduated from Columbia University College of Physicians and Surgeons in 1925. He was a Diplomate of the American Board of Anesthesiology, and a member of the American Society of Anesthesiologists, Inc., the Bronx County Medical Society, and the Medical Society of the State of New York.

Henry Schumer, M.D., of the Bronx, died at the Hebrew Home and Hospital for the Chronic Sick on September 22 at the age of eighty-three. Dr. Schumer graduated from Columbia University College of Physicians and Surgeons in 1906. He was a consulting physician in internal medicine at the Bronx Hospital. Dr. Schumer, a founder and former secretary of the medical board of the Bronx Hospital, was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry Jacques Schwartz, M.D., of New York City, died on March 15 at the age of seventy-one. Dr. Schwartz graduated from University and Bellevue Hospital Medical College in 1915. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John A. Timm, M.D., of Brooklyn, died on July 22 at the age of sixty-nine. Dr. Timm graduated in 1918 from the University of Minnesota Medical School. Retired in 1957, he had been a consultant in surgery at Cumberland and Methodist Hospitals. Dr. Timm was a Fellow of the American College of Surgeons and a member of the New York Academy of Medicine and the Brooklyn Surgical Society.

Leon Tshernoff, M.D., of the Bronx, died on March 27 at the age of seventy-two. Dr. Tshernoff received his medical degree from the University of Beirut in 1912 and interned at the New York City Neurological Hospital (now Neurological Institute, Columbia-Presbyterian Medical Center). He was a physician with the New York City Department of Health's Bureau of Preventable Disease.

Edward Varzos, M.D., of New York City and New Rochelle, died in his home on September 29 at the age of forty-nine. Dr. Varzos graduated from Long Island College of Medicine in 1948 and interned at Long Island College, Kings County, and St. Vincent's Hospitals. He was a Member of the American Psychiatric Association and a member of the Society of Medical Psychoanalysts, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry W. Wertheimer, M.D., of New York City, died on September 18 at the age of seventy-nine. Dr. Wertheimer received his medical degree from the University of Vienna in 1906. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Fore Wilkinson, Jr., M.D., of New York

[Continued on page 4036]

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[Continued from page 4034]

City, died on September 30 at the age of forty-seven. Dr. Wilkinson graduated in 1937 from Emory University School of Medicine. He was a consultant in internal medicine at Veterans Administration Hospital and an attending physician and director of medicine at University and Bellevue Hospitals. Dr. Wilkinson was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the American Federation for Clinical Research, the American Therapeutic Society, the Society for Experimental Biology and Medicine, and the New York Academy of Medicine.

Simon Lewis Wronker, M.D., of Fort Lauderdale, Florida, and formerly of Rochester, retired, died on September 1 at the age of sixty-nine. Dr. Wronker graduated from Long Island College Hospital in 1916. He was a junior physician in general practice at Highland Hospital of Rochester. Dr. Wronker was a member of the American Academy of General Practice, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Andrew Arthur Zacher, M.D., of Geneva, died on July 28 at the age of fifty-six. Dr. Zacher graduated from the University of Buffalo School of Medicine in 1931. He was a member of the Ontario County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gregory Zilboorg, M.D., of New York City, died on September 17 at the age of sixty-eight in Lenox Hill Hospital. Dr. Zilboorg graduated in 1926 from Columbia University College of Physicians and Surgeons. He was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry), a Fellow of the American Psychiatric Association, and a member of the American Psychopathological Association, the American Psychoanalytic Association, the New York Academy of Medicine, the New York Society for Clinical Psychiatry, the New York Neurological Society, the New York Psychoanalytic Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

MEDICAL MEETINGS

New York State District Branches of the American Psychiatric Association

The 1959 divisional meeting of the New York State District Branches, American Psychiatric Association, will be held at the Biltmore Hotel, New York City, November 27 through 29.

Scientific sessions and panel discussions will be devoted to the following topics: "Combined Psychotherapy and Drug Therapy"; "Soviet Psychiatry, Analysis of Tape Recorded Psychiatric Interviews"; "Sociologic Aspects of Psychiatry"; "After Care Programs"; "The Status of Hypnosis in Psychiatric Therapy"; and "Office Psychiatry and Prepayment Plans."

Leo Kanner, M.D., retiring professor of child psychiatry, Johns Hopkins University will give the academic lecture, "Child Psychiatry, Retrospect and Prospect."

Symposium on "Sunlight and the Skin"

A symposium, "Sunlight and the Skin," will be a feature of the American Medical Association's thirteenth clinical meeting in Dallas, Texas in early December.

Presented by the A.M.A.'s Committee on Cosmetics, the symposium will be held Wednesday, December 2. It will provide the physician with a survey of current information about all aspects of cutaneous exposure to sunlight. Among the topics to be covered will be the sunlight factor in aging and skin cancer; the effectiveness of various physical and chemical sunscreens; the use and abuse of psoralens; and the physical factors in sun exposures.

Rudolf L. Baer, M.D., New York University College of Medicine, will speak on the problems of solar hypersensitivity and their pathogenesis.

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References: 1. Farah, L.: Internat. Rec. Med. *169:* 379 (June) 1956. 2. Over 200 laboratory and clinical papers from 14 countries.

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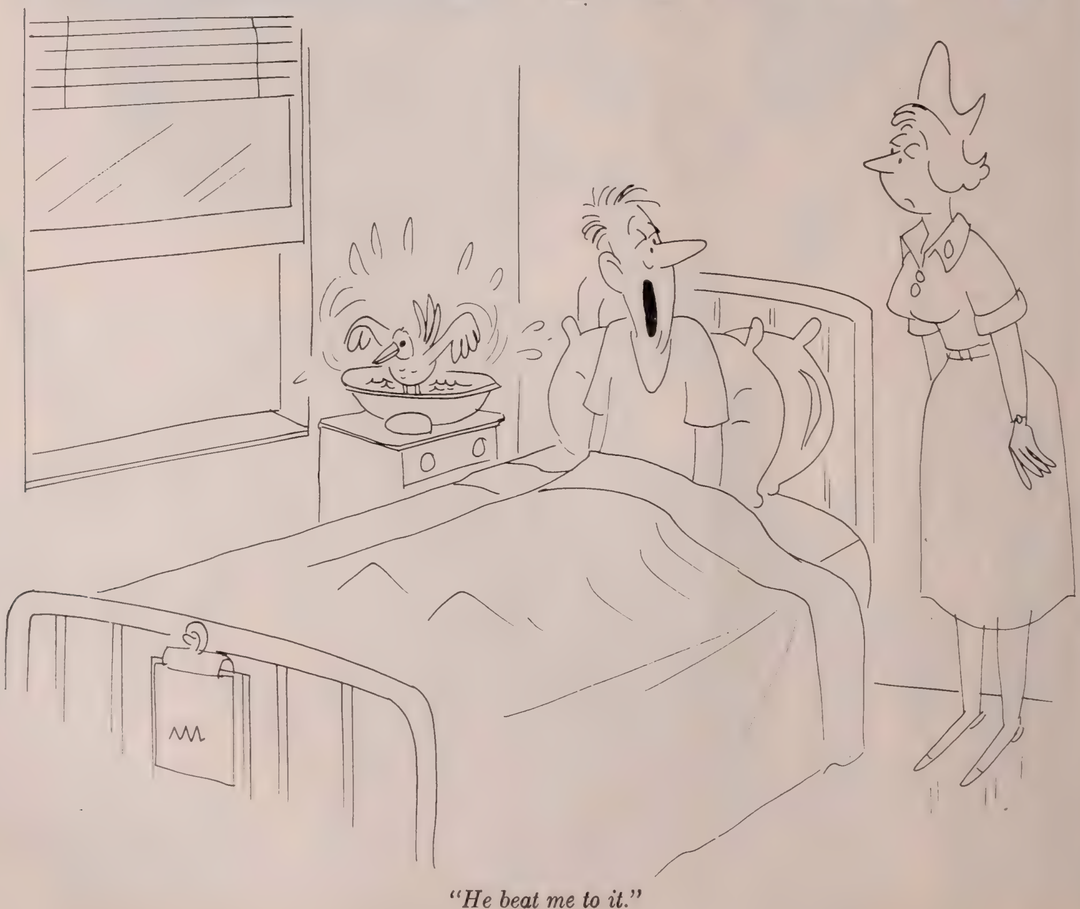

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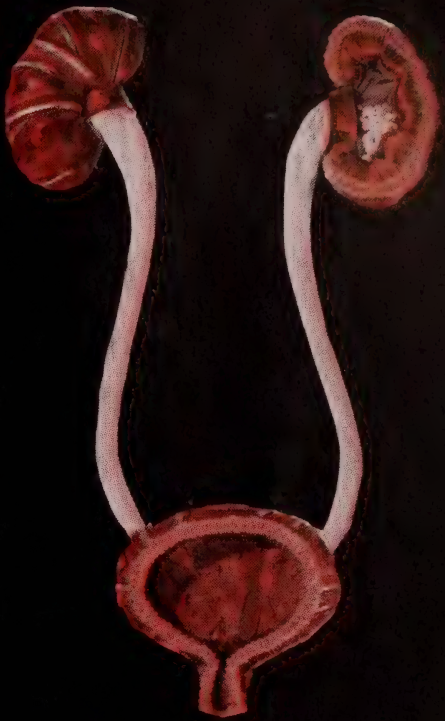

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REFERENCES: 1. Editorial: J.M.A. Georgia **46**:433, 1957. 2. Colby, F. H.: Essential Urology, Baltimore, The Williams & Wilkins Co., 1953, p. 330.

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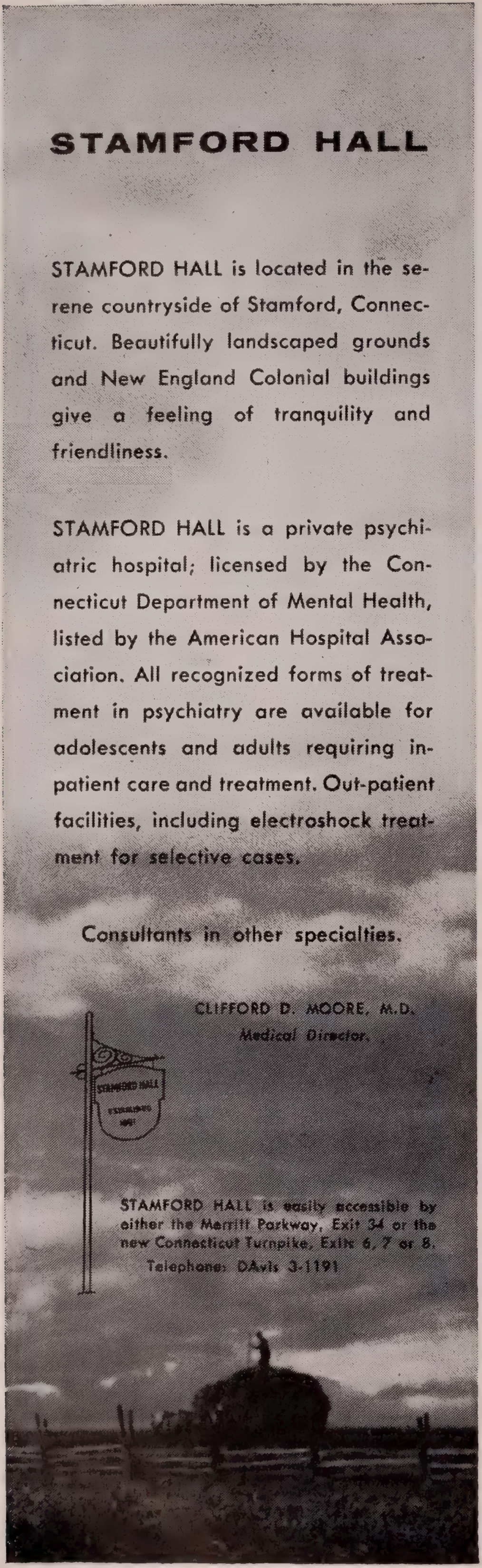
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MEDICAL NEWS

Physician's Name Omitted—The name of George Clinton Andrews, M.D., was inadvertantly omitted from a list of physicians on the organizing committee for the Institute of Tropical Medicine. The original item appeared under Medical News in the October 15 issue of the NEW YORK STATE JOURNAL OF MEDICINE.

Albany Medical College to Hold Seminar on Medical Technology—Albany Medical College of Union University in coordination with the Empire State Association of Medical Technologists will hold a postgraduate seminar on medical technology, November 6 and 7 in the auditorium of the New York State Department of Health, 84 Holland Avenue, Albany.

Registration is open to all medical technologists, whether or not they are members of the Association. For registration contact: Frank M. Woolsey, Jr., M.D., associate dean and director, Postgraduate Medical Education, Albany Medical College, Albany 8, New York.

Doctor Chosen as Outstanding General Practitioner—The Medical Society of the State of New York has named Ralph Baker Post, M.D., Ballston Spa, as "outstanding general practitioner of New York State for the year 1959." The award is made annually for distinguished service to humanity, both through the practice of medicine and participation in community affairs.

The seventy-one-year-old physician will receive the award next May in New York City at the annual meeting of the State Society's House of Delegates. Dr. Post is the Society's nominee for the annual national award as outstanding general practitioner to be given by the American Medical Association at its clinical meeting in December, 1959.

Lecture Course on Hip—A two-day lecture course on the hip, sponsored by the New York and Brooklyn Regional Committee on Trauma of the American College of Surgeons, will be given Friday, December 4 and Saturday, December 5 in the Einhorn Auditorium of the Lenox Hill Hospital, 111 East 76th Street, New York City. Registration will begin at 8:00 A.M. on Friday, December 4 and admission will be by paid attendance.

The course will consist of lectures devoted to the anatomy and surgical procedures of the hip, and

[Continued on page 4046]

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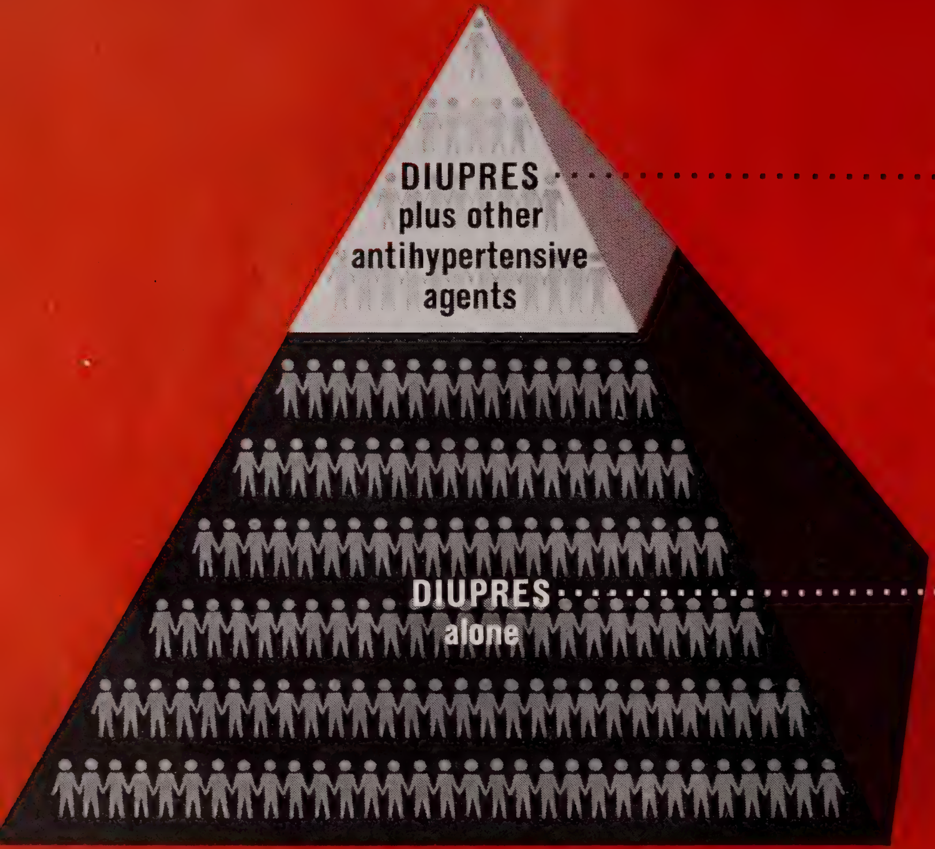
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[Continued from page 4042]

clinical and radiographic evaluation of the diseased and injured hip and other abnormalities. Particular attention will be paid to reconstruction of the hip and the important problem of pyogenic infection.

For further information and application forms write to: Lester Blum, M.D., 101 East 93rd Street, New York 28, New York.

American College of Surgeons Inducts New Fellows—The following physicians from New York State have been awarded fellowships in the American College of Surgeons: *Albany:* Drs. Harry M. Judge and Edward R. Kamen; *Bay Shore:* Dr. Ray A. Haag; *Beacon:* Dr. Herbert J. Leary; *Binghamton:* Dr. Paul M. DeLuca; *Brooklyn:* Drs. Jesse I. Abrahams, Lindo Cione, Alfonso M. Gaimari, Morris M. Goldberg, Cyril J. Jones, Wallace S. Karutz, Irving I. Kurland, Thomas J. Manzo, A. W. Martin Marino, Jr., Rocco D. Masella, Harold C. Menger, Harvey J. Merk, Seymour Nassberg, Albert J. Raphael, Nicholas J. Rose, Emanuel Roth, Sidney Spector, Jackson H. Stuckey, Alexander J. Terrin, Anthony L. Tomao, Herbert I. Tulipan, and Joseph R. Whelan; *Buffalo:* Drs. Murray N. Andersen, Martin A. Angelo, Frank J. Bolgan, Peter A. Casagrande, James C. Dunn, Frederick J. Fleszar, Anthony L. Manzella, and Dogan M. Perese; *Flushing:* Drs. Maccabae Boorstein, Joseph F. Lombard, Vincent A. Parnell, Oscar Schneller, and Warren W. Schoetzau; *Garden City:* Drs. Bertram A. Schneider and John J. Sullivan, Jr.; *Great Neck:* Dr. J. Conrad Greenwald; *Hempstead:* Dr. Strother B. Marshall (Lt. Col.); *Hicksville:* Dr. Victor Alinovi; *Hudson:* Dr. Robert R. Johnson; *Huntington:* Drs. Orson P. Cardon, Alan W. Kaplan, Francis C. Keil, Jr., Frank Moore, Jr., and Ellis D. Rand; *Jamaica:* Dr. Harry Goldberg; *Kingston:* Dr. Elbert H. Loughran; *Levittown:* Dr. A. Malcolm Hetzer; *Lindenhurst:* Dr. Joseph P. Martocci; *Massapequa:* Dr. Robert Bruce Bergmann; *Merrick:* Dr. Milton M. Gardner; *Mount Vernon:* Dr. Dominic Pellillo; *New Hyde Park:* Dr. Merrill Goodman; *New Rochelle:* Drs. Robert F. Morton, George E. Reed, and John R. Williams.

Also: New York City: Drs. George B. Ambrose, Arthur H. Aufses, Jr., Howard Balensweig, William A. Barnes, C. Andrew L. Bassett, Jerrold M. Becker, Louis D. Browning, Jr., Daniel Burman, Jorge N. Buxton, Daniel F. Casten, George H. Chambers (Lt. Col.), Irwin J. Cohen, James F. Connell, Jr., James W. Correll, Anthony L. Danza, John H. Doherty, William P. Doremus, Gordon W. Douglas, Leonard R. Dourmashkin, Alfred Edinburgh, Charles W. Findlay, Jr., Joseph G. Fortner, Robert W. Fraser, Jr., Philip Glotzer, Frederick M. Golomb, Frank Hardart, Jr., John A. Henderson (Lt. Col.), Ralph E. L. Hertz, Robert M. Hui, Harold Kirshner, Walter Lawrence, Jr., Harvey A. Lincoff, Leonidas F. Livisay, Alfred E. Mamelok, Nathan H. Markus, Wiley W. Martin, Paul Muller, Charles A. Perera, Robert B. Pfeffer, Elisabeth Pickett, Joseph Ransohoff, II, Thomas D. Rees, J. Beall Rodgers, Daniel E. Russo, Lewis Schachne, Lucie A. Schoenenberger, Velimir S. Svesko, Ralph J. Veenema, Irwin Weiner, Irving M. Zindler and Adrian W. Zorgniotti.

Also: Patchogue: Drs. John J. McNally and Louis J. Scordamaglia; *Port Chester:* Dr. Jacob Shragowitz; *Poughkeepsie:* Dr. Nellie M. Santiago-Starpoli; *Rochester:* Drs. James A. DeWeese, Edward W. Douglas, Alphonse F. Lucas, Joseph V. McDonald, Edwin D. Savlov, Seymour I. Schwartz, Wheelock A. Southgate, and Robert E. Wolf; *Rome:* Dr. Frederick H. Grabo; *St. Albans:* Dr. William C. Trier (Cmdr.); *Salamanca:* Dr. Charles J. Barranco; *Schenectady:* Drs. Wyllys A. Dunham, Gerald L. Haines, and Alan M. Moodie; *Staten Island:* Drs. Royal M. Howard and Jerome Krant; *Syosset:* Dr. Armand Hensas; *Syracuse:* Drs. James E. Covell, George G. Lerner, George A. Sisson, Clifford J. Straehley, Jr., and Arthur A. Vercillo; *Tonawanda:* Dr. William J. Rogers, III; *Troy:* Dr. Thomas F. D'Aurio; *Watertown:* Dr. William B. Carter; *Waverly:* Dr. Walter R. Gillette, Jr.; *Westhampton Beach:* Dr. Francis Donald Farrell; *West Islip:* Dr. Thomas J. Lyons, Jr.; *White Plains:* Drs. Frank J. Fragala and Raymond M. Williams; and *Williston Park:* Dr. John H. Malfetano.

New Agency Formed to Aid Research in Schizophrenia—The formation of a national voluntary health agency to mobilize public support for research in schizophrenia has been announced. The name of the new organization, RISE, Inc., stands for Research in Schizophrenia Endowment. It is the first publicly supported agency whose sole purpose is to advance research into the cause, treatment, prevention, and cure of schizophrenia.

Paul H. Hoch, M.D., New York State Commissioner of Mental Hygiene, Albany, is a vice-president of the health agency. Other officers include Nathan S. Kline, M.D., director of research, Rockland State Hospital, Orangeburg, and Herbert Spiegel, M.D., clinical psychiatrist, New York City, as trustees, and Frank J. Curran, M.D., child psychiatrist, as a member of the scientific council.

The administrative offices of RISE, Inc., are at 9 Rockefeller Plaza, New York City.

Cornerstone Laid At Deaconess Hospital—On September 27 the cornerstone was laid for the new hospital facilities of Deaconess Hospital, Humboldt Parkway at Riley Street, Buffalo.

[Continued on page 4048]

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[Continued from page 4046]

American Board of Obstetrics and Gynecology—The part I examinations of the American Board of Obstetrics and Gynecology are to be held in various parts of the United States and Canada, on Friday, January 16, 1960, at 2:00 P.M.

Candidates notified of their eligibility to participate in part I must submit their case abstracts within thirty days of notification of eligibility. No candidate may take the written examination unless the case abstracts have been received in the office of the secretary.

Current bulletins outlining requirements may be obtained by writing to: Robert L. Faulkner, M.D., American Board of Obstetrics and Gynecology, 2105 Adelbert Road, Cleveland 6, Ohio.

Governor Appoints Council on Rehabilitation—Governor Rockefeller has appointed a council on rehabilitation which will advise him and the Interdepartmental Health Resources Board on ways to strengthen and expand the State's rehabilitation program.

The following physicians have been appointed to the council: *Binghamton:* Alvin R. Carpenter, M.D.; *Bronx:* Arthur S. Abramson, M.D.; *Rochester:* Ralph T. Collins, M.D.; and *Sands Point:* Theodore G. Klumpp, M.D.

Building Dedicated at Harlem Hospital Center—Mayor Robert F. Wagner was the principal speaker at the dedication of a new nine-story, 233-bed unit of the proposed Harlem Hospital Center on October 5. Also participating in the opening ceremonies were Morris A. Jacobs, M.D., Commissioner of Hospitals, A. Charles Posner, M.D., president of the Harlem Hospital medical board, Aubre de Lambert Maynard, M.D., chairman of a special committee on the replacement of Harlem Hospital, and Bernard B. Nadell, M.D., senior medical superintendent of Harlem Hospital.

Association for Psychiatric Treatment of Offenders—The Association for Psychiatric Treatment of Offenders has obtained a license from the State of New York to operate a clinic at 9 East 97th Street and administrative offices at 444 Central Park West.

Some changes in officers have recently taken place in the Association. Melitta R. Schmideberg, M.D., and Ben Coleman, M.D., have resigned from the board of directors to become respectively, director of clinical services and coordinator of clinical services. Irving Barnett, M.D., will act as assistant director of clinical services. Richard H. Orr, M.D., has resigned as secretary-treasurer and has taken on the duties of chairman of the executive committee.

Clinical Center to Study Stein-Leventhal Syndrome—An investigation of the role of the adrenal gland in the Stein-Leventhal syndrome has been initiated at the Clinical Center, National Institutes of Health. Salient features in this syndrome include oligomenorrhea, hirsutism, and polycystic ovaries.

The cooperation of interested physicians is invited. Referral letters or phone calls will receive prompt attention and should include detailed medical information about the patient.

Accepted patients will be studied for varying periods up to several weeks. Upon completion of their study, patients will be returned to the care of their referring physician, who will receive a detailed narrative summary.

Physicians interested in referring patients should write or telephone: J. E. Rall, M.D., chief, Clinical Endocrinology Branch, National Institute of Arthritis and Metabolic Disease, Bethesda 14, Maryland. Telephone OLiver 6-4000, Ext. 4181.

Physician Heads Division of Fund Drive—Bela Schick, M.D., chairman of the physicians and surgeons division of Muscular Dystrophy Associations of America, will organize support in the medical profession for the 1959 MDAA campaign for funds to increase research into a cause and cure for the crippling, muscle wasting disease.

Film on Handwashing Technics—A new 16 mm. film, in color and with sound, on the aseptic technic of handwashing is available on a short-term loan basis from the Communicable Disease Center, Public Health Service, Department of Health, Education, and Welfare, Post Office Box 185, Chamblee, Georgia.

The film shows a method of handwashing, using cake or liquid soap, that may be used in the hospital, and modified for use in the public health field.

Academy of Psychosomatic Medicine Holds Meeting—The 1959 annual meeting of the Academy of Psychosomatic Medicine was held in Cleveland, Ohio, October 15 through 17. New York physicians participating in the meeting were: Wilfred Dorfman, M.D., senior psychiatrist, Brooklyn State Hospital; Arnold P. Friedman, M.D., physician-in-charge, Headache Unit, Montefiore Hospital; David J. Impastato, M.D., associate clinical professor of psychiatry, New York University College of Medicine; Jacob L. Moreno, M.D., founder and director of the Moreno Institute of Psychodrama and Group Psychotherapy, Beacon; M. Murray Peshkin, M.D., clinical professor of medicine and pediatrics for allergy, Albert Einstein College of Medicine; and Milton Plotz, M.D., associate professor of clinical medicine, State University Medical Center, New York.

[Continued on page 4050]

SUDDENLY

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When migraine that has beset a patient in her twenties suddenly returns in her fifties, a "little stroke" should be suspected.[1] In such migraine attacks, when ushered in by one or more "little strokes," pain may be minimal and the dominant feature may be spells of nausea, dizziness, depression, retching, fatigue, abdominal pain or transient blindness.[1] ■ Early detection of "little strokes" resulting from capillary fragility can gain vital therapeutic time to support capillary resistance and repair.[2]

1. Alvarez, W. C.: Geriatrics 13:647, 1958.
2. Gale, E. T., and Thewlis, M. W.: Geriatrics 8:80, 1953.

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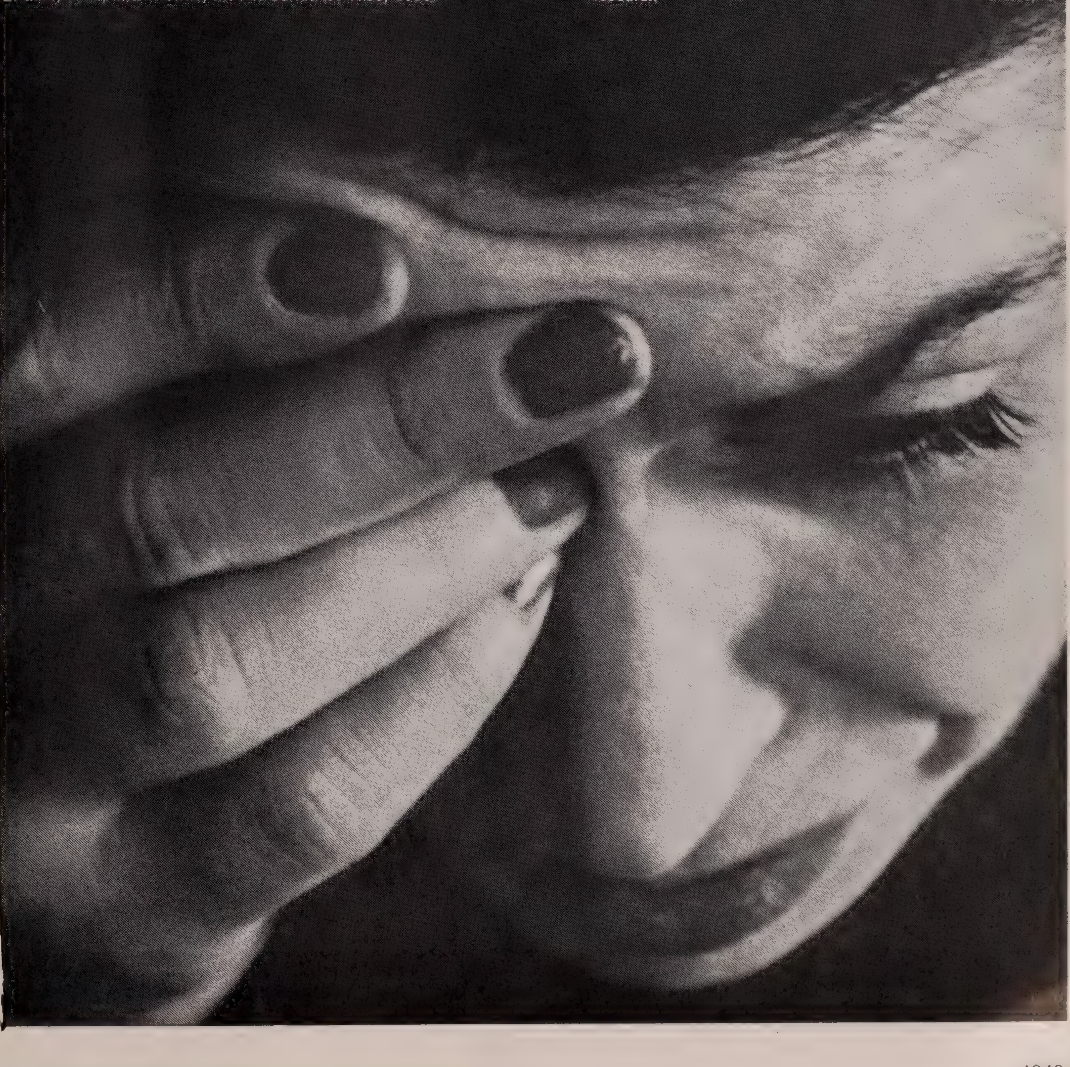

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Also: John C. Saunders, M.D., principal research scientist (pharmacology), Rockland State Hospital, Orangeburg; Jack Sheps, M.D., assistant attending psychiatrist, New York Psychiatric Institute; Bernard J. Wattiker, M.D., assistant professor of surgery, New York Medical College; Felix Wroblewski, M.D., associate professor of medicine, Cornell University Medical College, and chief, Section of Medical Enzymology, Sloane-Kettering Institute, New York; and Burton Zohman, M.D., clinical professor of medicine, State University of New York College of Medicine.

Roswell Park Biologic Laboratory Dedicated—The new $954,000 biologic laboratory of Roswell Park Memorial Institute was dedicated at Springville on September 25. The biologic station at Springville is located about 35 miles from Roswell Park in Buffalo. It was organized as a part of the Institute in 1913.

George E. Moore, M.D., director of Roswell Park presided at the dedication ceremonies. Herman E, Hilleboe, M.D., State Health Commissioner, was the principal speaker.

Life Insurance Medical Directors Meet—The Association of Life Insurance Medical Directors of America held its sixty-eighth annual meeting in New York City October 21 through 23. The following physicians from the New York area participated: Peter G. Denker, M.D., visiting neuropsychiatrist, Bellevue Hospital; Francis R. Dieuaide, M.D., scientific director, Life Insurance Medical Research Fund; Milton Helpern, M.D., chief medical examiner, City of New York; John J. Hutchinson, M.D., medical director, New York Life Insurance Company; Arthur M. Master, M.D., consulting cardiologist, Mt. Sinai Hospital; and William P. Shepard, M.D., chief medical director, Metropolitan Life Insurance Company.

Personalities

Awarded

Karl Meyer, M.D., Columbia University College of Physicians and Surgeons, the second annual T. Duckett Jones Memorial Award of the Helen Hay Whitney Foundation for his pioneer work in the field of mucopolysaccharides . . . Julian A. Sterling, M.D., the first annual humanitarian award of the B'nai B'rith Council of Greater Philadelphia. . . Robert R. Yanover, M.D., F.I.C.S., chairman of the medical advisory board of Abilities Inc., Albertson, a presidential citation on September 3 for his contribution to the advancement of the disabled.

Retired

Willis W. Bradstreet, M.D., as town health officer of Irondequoit, effective as of January 1, 1960.

Appointed

Meredith H. Thompson, M.D., Troy, as director of the Bureau of Environmental Sanitation of the State Health Department.

Elected

Horace E. Ayers, M.D., New York City, and Alexander Brunschwig, M.D., New York City, as first vice-presidents of the United States Section, International College of Surgeons.

Speakers

Robert Chodos, M.D., Fayetteville, at a special conference on iron therapy sponsored by the Yale University School of Medicine, October 30 . . . James T. Grace, Jr., M.D., before the Clinical Congress of the American College of Surgeons, September 29, on the relationship of virus to human cancer. . . Franz J. Kallmann, M.D., professor of psychiatry, Columbia University, College of Physicians and Surgeons, before the staff of the Veterans Administration Hospital, Northport, on September 25, on the subject "Recent Advances in Psychiatric Genetics" . . .Nathaniel E. Reich, M.D., F.A.C.P., before the medical faculty of the University of Lisbon in Portugal, August 11 . . . Alvin Slipyan, M.D., F.A.C.P., medical research director, Human Resources Corp., Albertson, before the staff of the Government Hospital, Tel Hashomer, Israel, July 9 and 10 on the subject of medical rehabilitation, and on September 21, before the supervisors and employes of the Mitchel Air Force Base, Hempstead, on the subject of rehabilitation in industry . . . Robert Turell, M.D., chief, rectal clinic, Mount Sinai Hospital, on the subject of "Office Proctology" at a symposium in Beaumont, Texas cosponsored by the Fifth District Chapter of Texas of the American College of Surgeons, the Tenth District Medical Society of Texas, and the Beaumont Academy of Medicine, on September 19.

who coughed?

WHENEVER COUGH THERAPY IS INDICATED

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THE *complete* Rx FOR COUGH CONTROL

cough sedative / antihistamine / expectorant

- relieves cough and associated symptoms in 15-20 minutes
- effective for 6 hours or longer
- promotes expectoration
- rarely constipates
- agreeably cherry-flavored

Each teaspoonful (5 cc.) of HYCOMINE contains:

Hycodan®		
Dihydrocodeinone Bitartrate (Warning: May be habit-forming)	5 mg.	6.5 mg.
Homatropine Methylbromide	1.5 mg.	
Pyrilamine Maleate		12.5 mg.
Ammonium Chloride		60 mg.
Sodium Citrate		85 mg.

Supplied: As a pleasant-to-take syrup. May be habit-forming. Federal law permits oral prescription.

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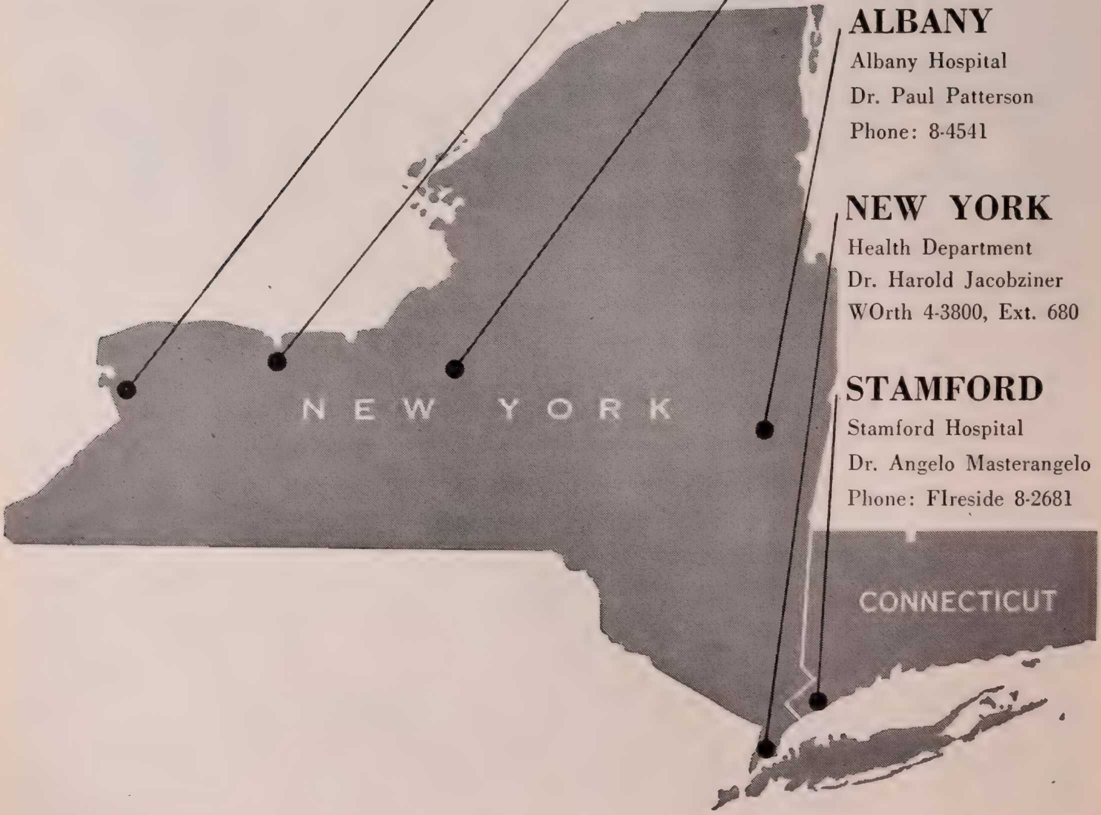
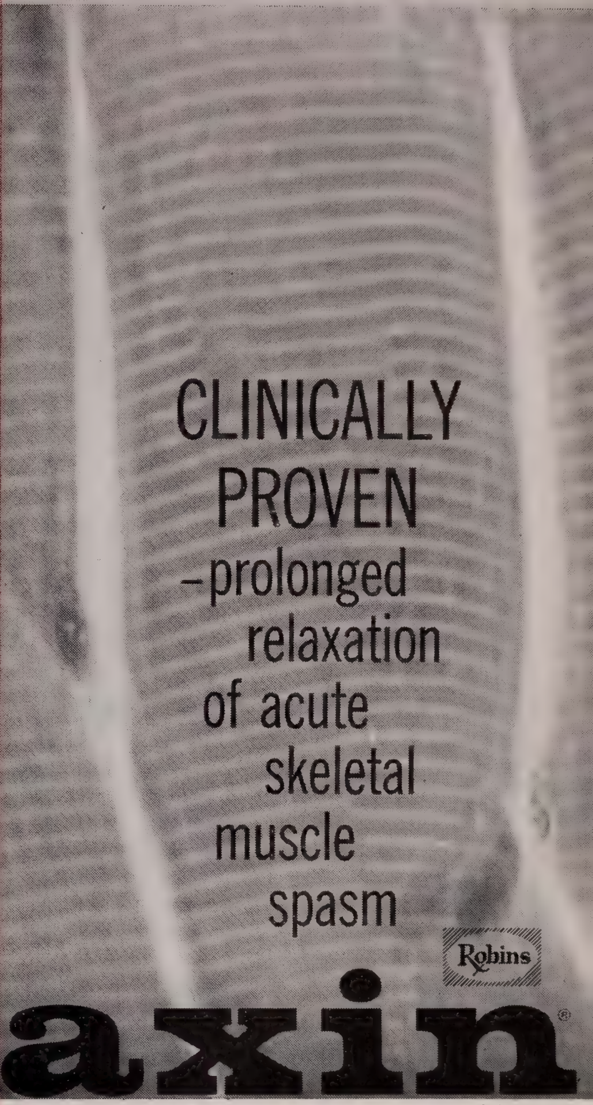


Fiber of skeletal muscle in spasm

Fiber of skeletal muscle relaxed *(photomicrographs)*



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–prolonged relaxation of acute skeletal muscle spasm

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TABLETS

Summary of six published clinical studies:
ROBAXIN BENEFICIAL IN 92.4% OF SKELETAL MUSCLE SPASM CASES

	NO. PATIENTS	RESPONSE			
			moderate	slight	none
Carpenter[1]	33	"marked" 26	6	1	—
Forsyth[2]	58	"pronounced" 37	20	—	1
Lewis[3]	38	"good" 25	6	—	7
O'Doherty & Shields[4]	17	"excellent" 14	2	1	0
Park[5]	30	"significant" 27	—	2	1
Plumb[6]	60	"gratifying" 55	—	—	5
TOTALS	236	184 (78.0%)	34 (14.4%)	4	14

- **Highly potent—and long acting.**[1,2,3]
- **Relatively free of adverse side effects.**[1,2,3,5,6]
- **In ordinary dosage, does not reduce muscle strength or reflex activity.**[1]

REFERENCES: **1.** Carpenter, E. B.: Southern M. J. 51:627, 1958. **2.** Forsyth, H. F.: J.A.M.A. 167:163, 1958. **3.** Lewis, W. B.: California Med. 90:26, 1959. **4.** O'Doherty, D. S., and Shields, C. D.: J.A.M.A. 167:160, 1958. **5.** Park, H. W.: J.A.M.A. 167:168, 1958. **6.** Plumb, C. S.: Journal-Lancet 78:531, 1958.

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25 to 50 pounds	1 teaspoonful	
Over 50 pounds	2 teaspoonfuls	

In more severe infections, these dosages may be doubled.

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Effective in vitro against the following organisms (isolated from clinical infections listed above):

Organism	*Sensitive*	*Resistant*	*% Sensitive*
Staphylococci*	181	1	*99.4*
Streptococci	65	1	*98.5*
D. pneumoniae	14	0	*100.0*
Coliforms	34	3	*91.8*
Proteus	5	5	*50.0*
A. aerogenes	8	0	*100.0*
Ps. aeruginosa	5	4	*55.5*

*Includes many strains resistant to antibiotics.

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Dosage: Average initial dosage: 2 capsules 3 or 4 times daily. Maintenance dosage to be adjusted according to response.

Precautions: All precautions and contraindications traditional to corticosteroid therapy should be observed. The amount of drug used should be carefully adjusted to the lowest dosage which will suppress symptoms. Discontinuance of therapy must be carried out gradually after patients have been on steroids for prolonged periods.

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An extensive bibliography is now available showing the important role of wine in various phases of medical practice. A digest of current findings with specific references to published medical literature is yours for the asking. Just write for your copy of *"Uses of Wine in Medical Practice"* to Wine Advisory Board, 717 Market Street, San Francisco 3, California.

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Note, too, the precise complement of pyridoxine to supply protective amounts of vitamin B_6 to the prenatal diet[2] . . . to guard against infantile convulsions[3] . . . to preserve normal functioning of the nervous system[4] . . . to compensate for increased need in prenatal stress.[5]

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REFERENCES: 1. Shapleigh, J.B. and Montgomery, A.: Amer. Pract. Dig. Treat. *10*:461, March, 1959. 2. Page: West. J. Surg. *64*:196, 1956. 3. Bessey: Pediatrics *20*:33, 1957. 4. Vilter: Am. J. Clin. Nutrition *4*:378, 1956. 5. Bessey: J.A.M.A. *164*:1224, 1957.

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new hope for fetal salvage

DELA

The results of administering Delalutin before the 12th week of gestation to 82 women with habitual abortion were reported recently by Reifenstein[1] in a compilation of data supplied by 45 investigators. Every patient had experienced at least three consecutive abortions immediately preceding the treated pregnancy. More than 68% of these women were delivered successfully and uneventfully following Delalutin therapy.

Boschann.[2] in a study of pregnancies with threatened abortion. found that:

- 37% of 73 pregnancies were carried to term without progestational therapy
- 64% of 42 pregnancies were salvaged by progesterone
- 83% of 73 pregnancies were salvaged by Delalutin

Eichner.[3] found that in Delalutin-treated women, fetal salvage of infants below term weight (1000 to 2000 gm.) was significantly improved. 108 (76%) of 142 babies of this birth weight survived without mothers receiving progestational therapy. while 16 (100%) of 16 babies of this birth weight survived with mothers receiving Delalutin therapy. A comparison study was made of a group of repeated aborters treated with Delalutin, and a group with a similar history treated with bed rest and sedation.[4] Pregnancy salvage with Delalutin was twice that of the control group. Delalutin was found to be "highly active". well-tolerated and long-acting.

According to Tyler and Olson.[5] "These qualities of prolonged action and relative freedom from local reactions make [Delalutin] a generally more desirable therapeutic agent for intramuscular use than progesterone . . . ."

DELALUTIN BABIES WHOSE MOTHERS WERE HABITUAL ABORTERS

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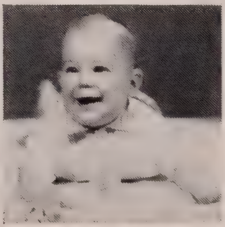

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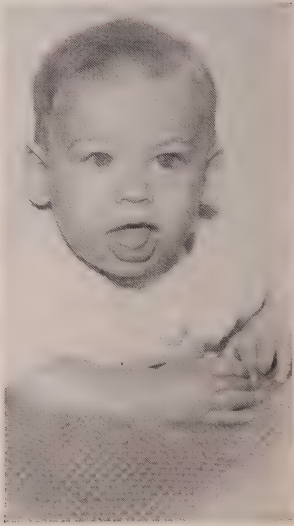
Denver, Colo.



Scott Knudsen
Norwich, Vt.

References: 1. Reifenstein. E. C. Jr.: *Annals N. Y. Acad. Sc.* 71:762 (July 30) 1958. 2. Boschann. H-W.: *ibid.*, p. 727. 3. Eichner, E.: *ibid.*, p. 787. 4. Hodgkinson. C. P.: Igna, E. J., and Bukeavich. A. P.: *Am. J. Obst. & Gynec.* 76:279, 1958. 5. Tyler, E. T.. and Olson, H. J.: *J.A.M.A.* 169:1843, 1959.

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DELALUTIN offers these advantages over other progestational agents:

- long-acting sustained therapy
- more effective in producing and maintaining a completely matured secretory endometrium
- no androgenic effect
- more concentrated solution requiring injection of less vehicle
- unusually well-tolerated, even in large doses
- fewer injections required
- low viscosity makes administration easier

DELALUTIN is also potent and safe therapy for: threatened abortion; postpartum afterpains; amenorrhea, primary and secondary; dysfunctional uterine bleeding not associated with genital malignancy; infertility with inadequate corpus luteum function; production of secretory endometrium and desquamation during estrogen therapy; premenstrual tension; dysmenorrhea; cyclomastopathy, mastodynia, adenosis and chronic cystic mastitis.

Administration and dosage:

Because of its low viscosity, Delalutin may be administered with a small gauge needle (deep intragluteal injection). Complete information on administration and dosage is supplied in the package insert.

Supply:

Delalutin is available in vials of 2 and 10 cc., each containing 125 mg. of hydroxyprogesterone caproate in sesame oil, and benzyl benzoate.

Each of these healthy, normal babies was born by a mother with a documented previous history of true habitual abortion, who was treated during her most recent pregnancy with DELALUTIN.

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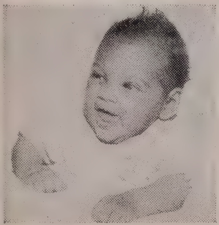

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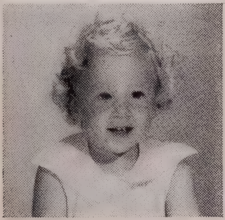

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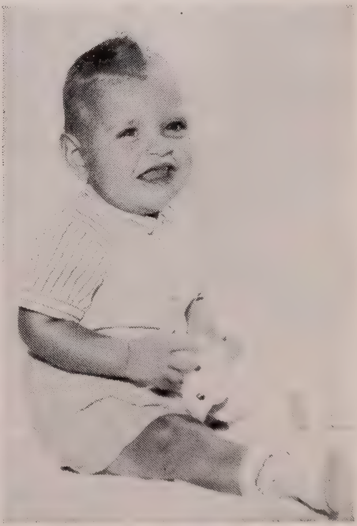

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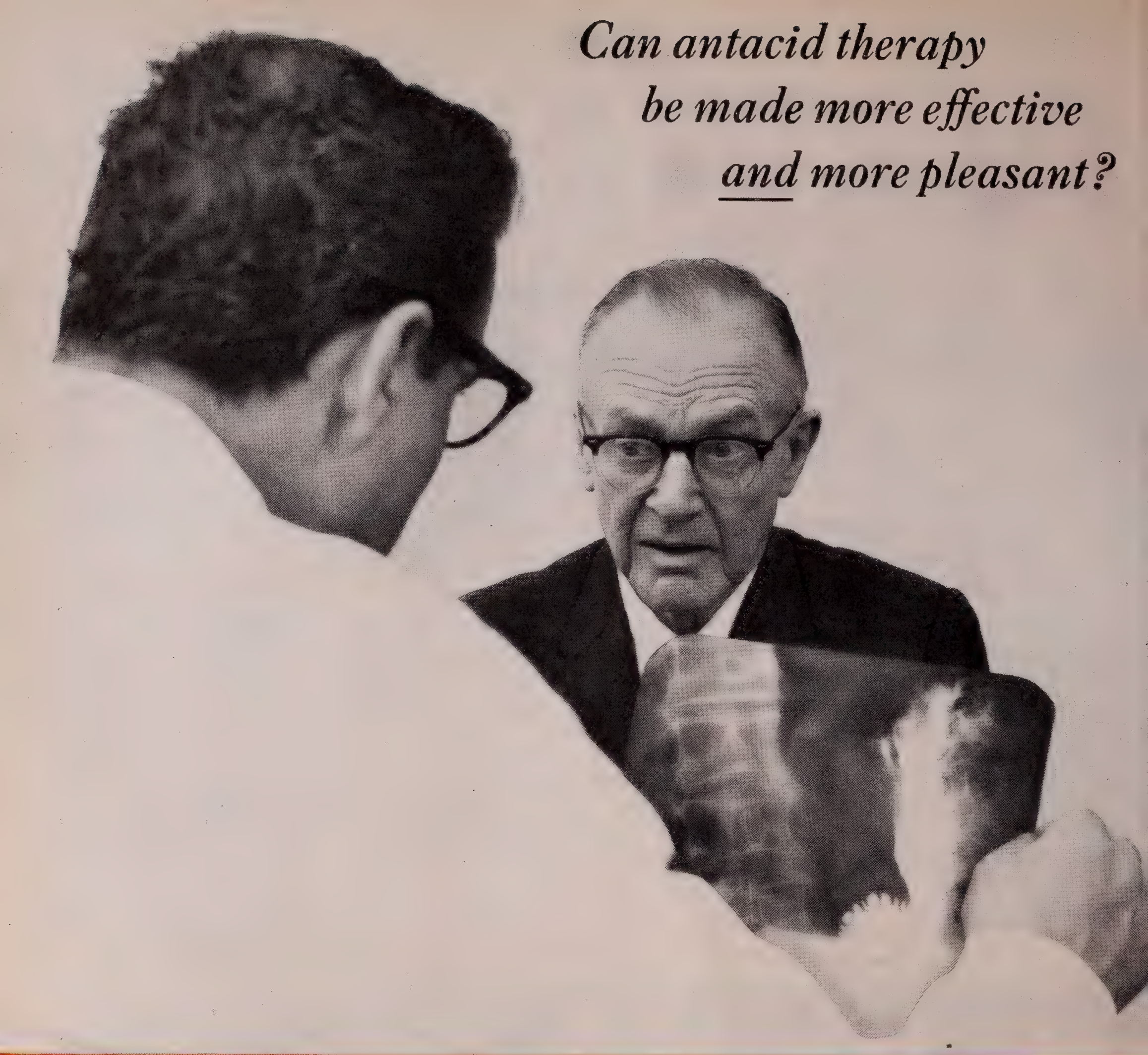
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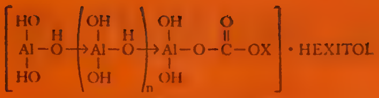

$$\left[\underset{\text{HO}}{\overset{\text{HO}}{\text{Al}}}-\overset{\text{H}}{\text{O}}\rightarrow\left(\underset{\text{OH}}{\overset{\text{OH}}{\text{Al}}}-\overset{\text{H}}{\text{O}}\rightarrow\right)_n\underset{\text{OH}}{\overset{\text{OH}}{\text{Al}}}-\text{O}-\overset{\text{O}}{\overset{\|}{\text{C}}}-\text{OX}\right]\cdot\text{HEXITOL}$$

n is at least 1 and averages less than 6. X is a cation.

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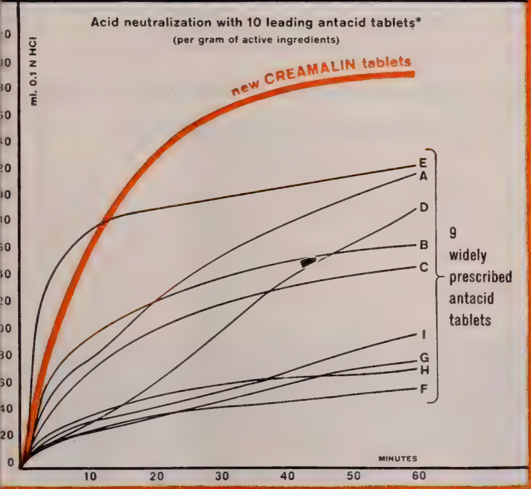

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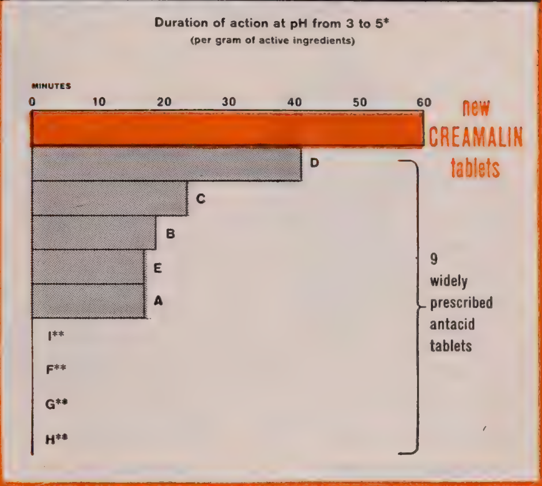

*Hinkel, E. T., Jr., Fisher, M. P. and Tainter, M. L.: A new highly reactive aluminum hydroxide complex for gastric hyperacidity. To be published

**pH stayed below 3.

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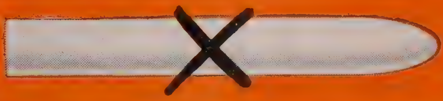

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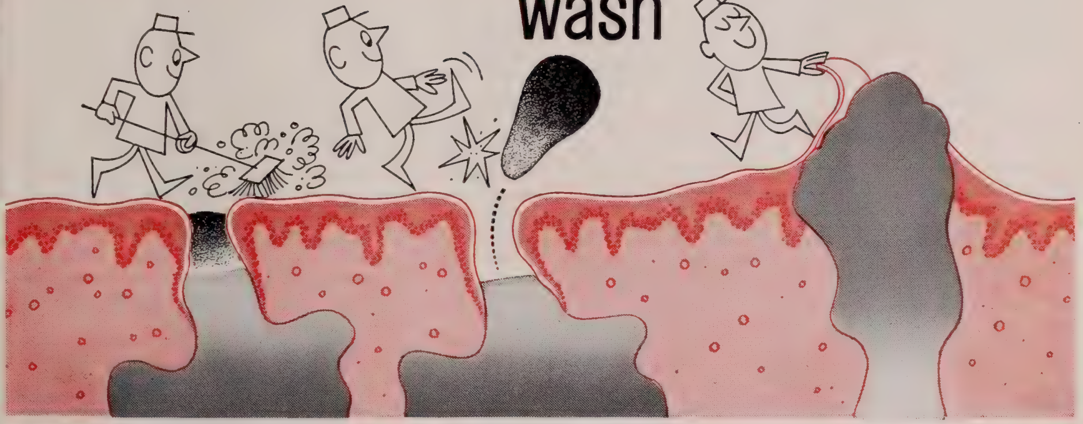

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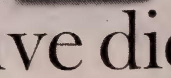
GERALIN-the  one-capsule-dail
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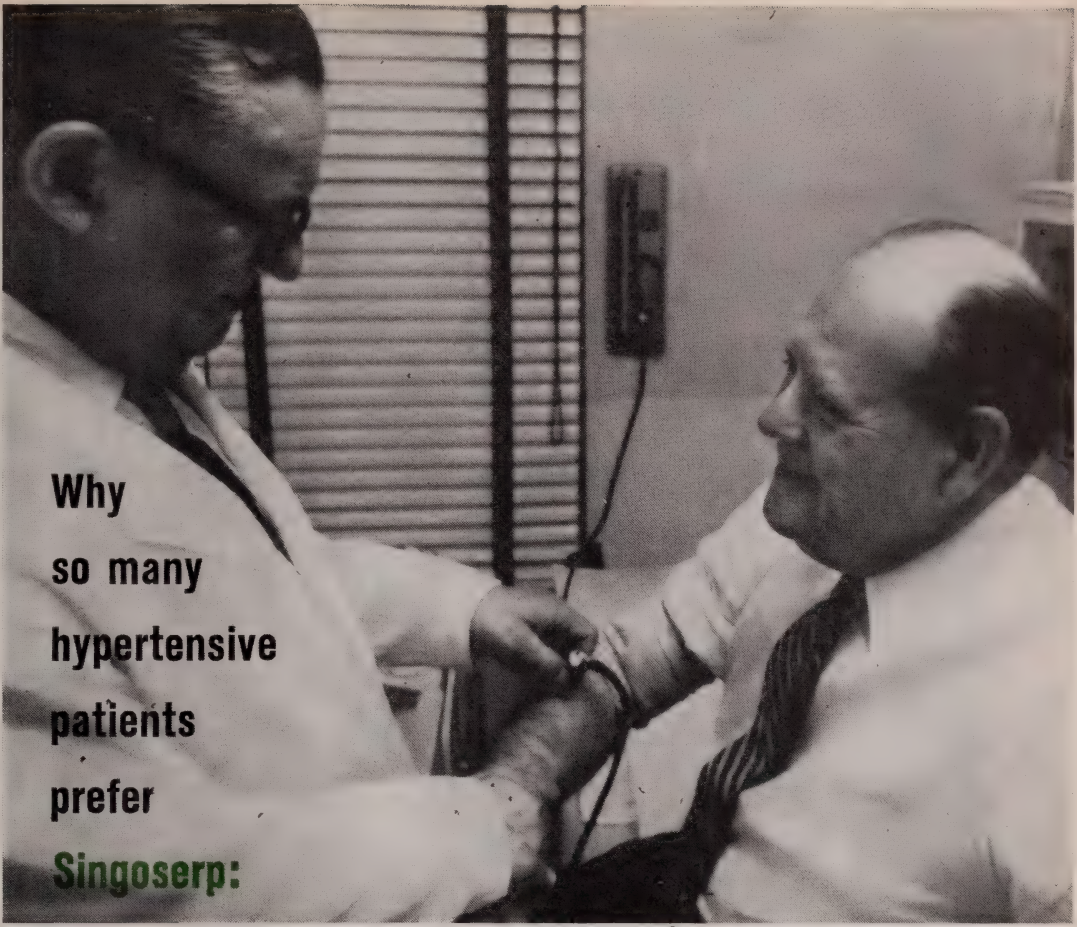

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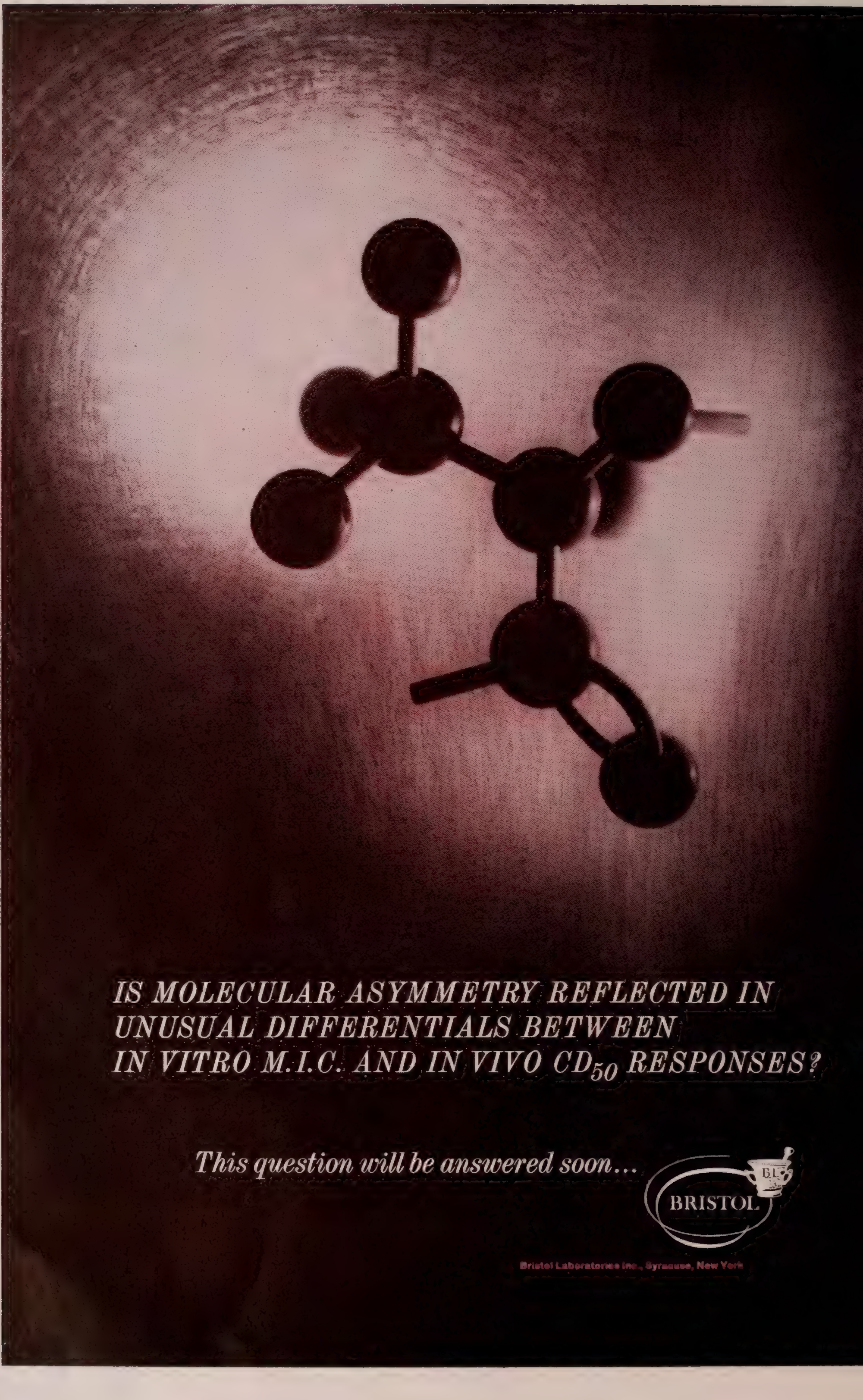

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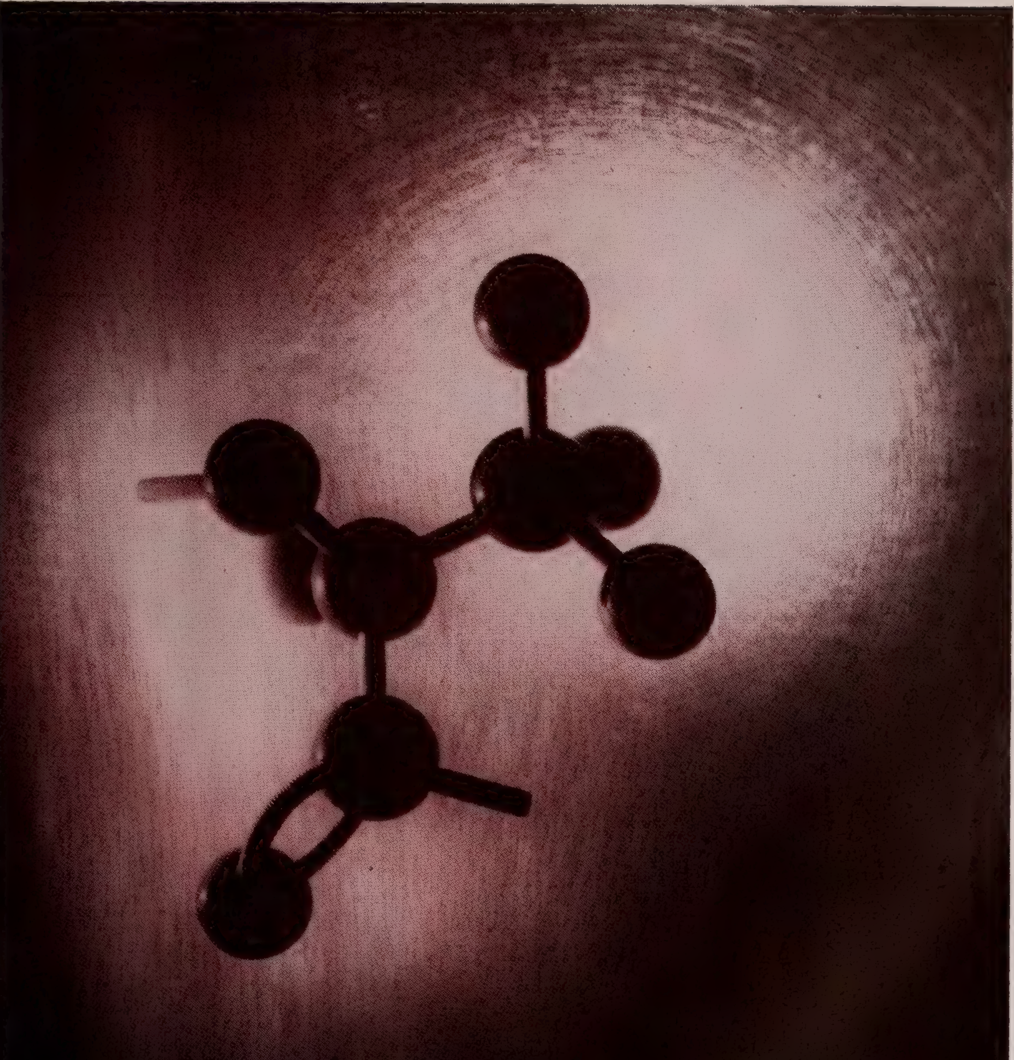

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VOLUME 59 NOVEMBER 15, 1959 NUMBER 22

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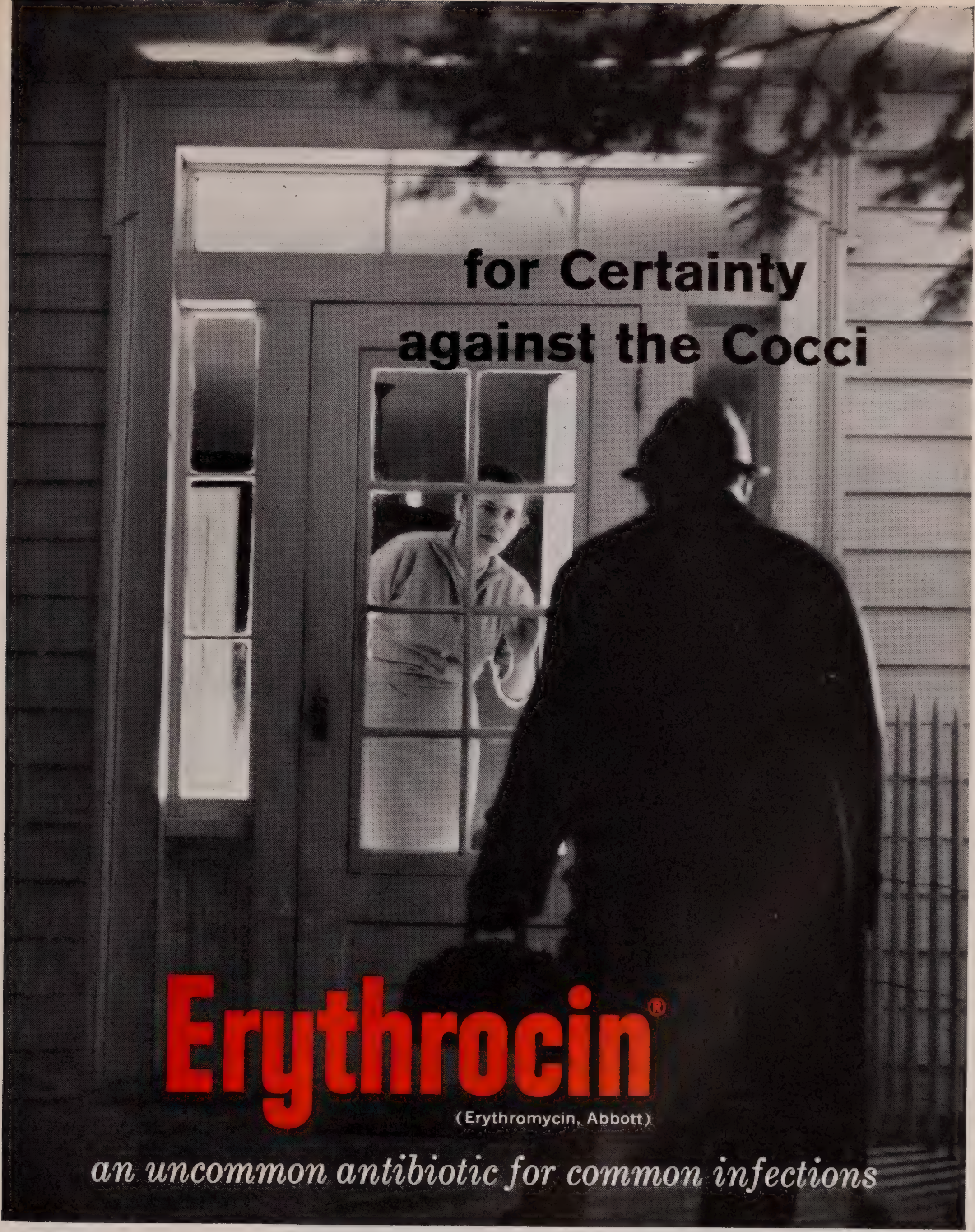
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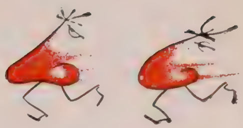

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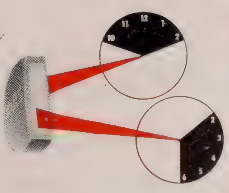

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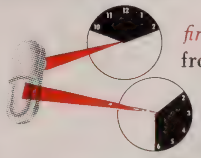

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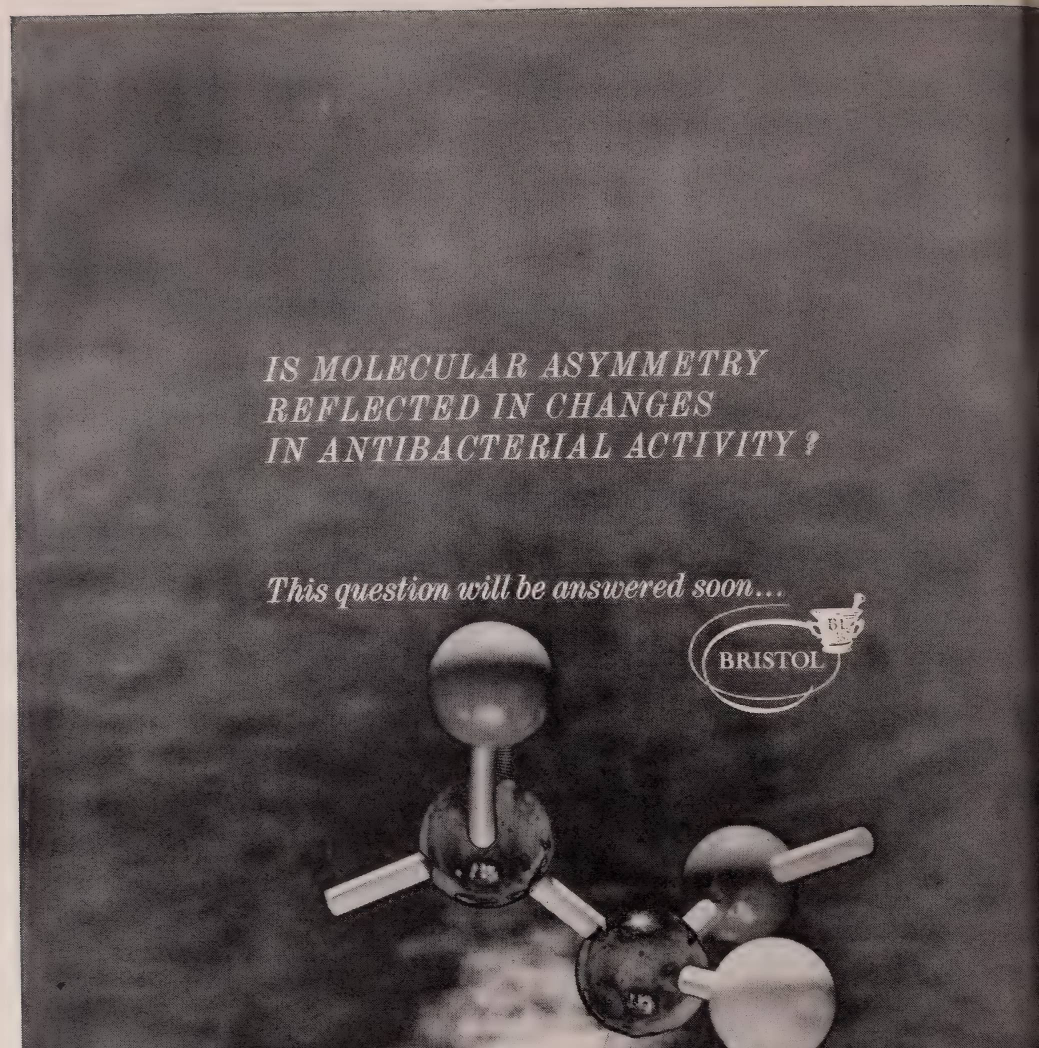

IS MOLECULAR ASYMMETRY
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IN ANTIBACTERIAL ACTIVITY ?

This question will be answered soon...

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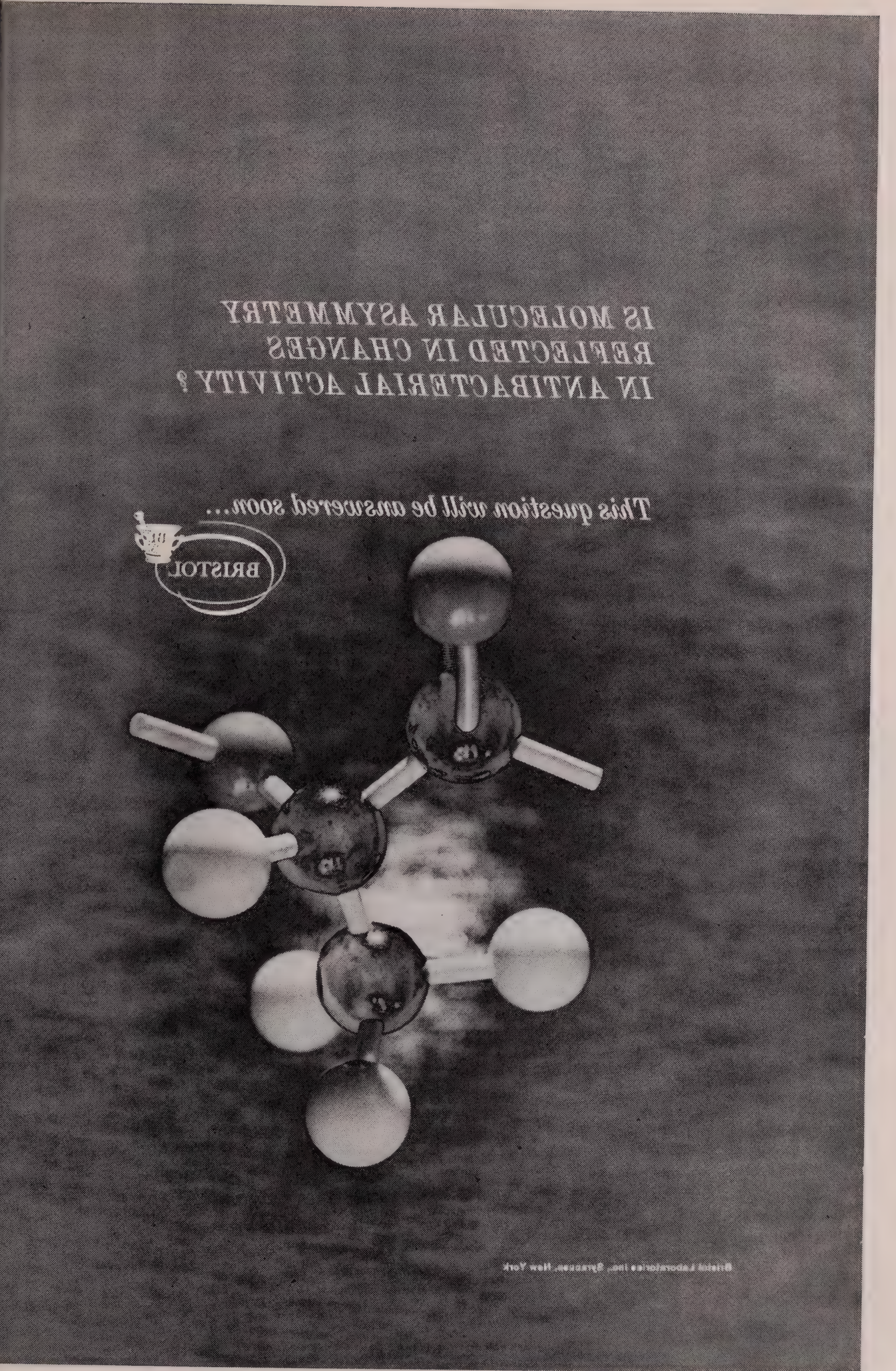
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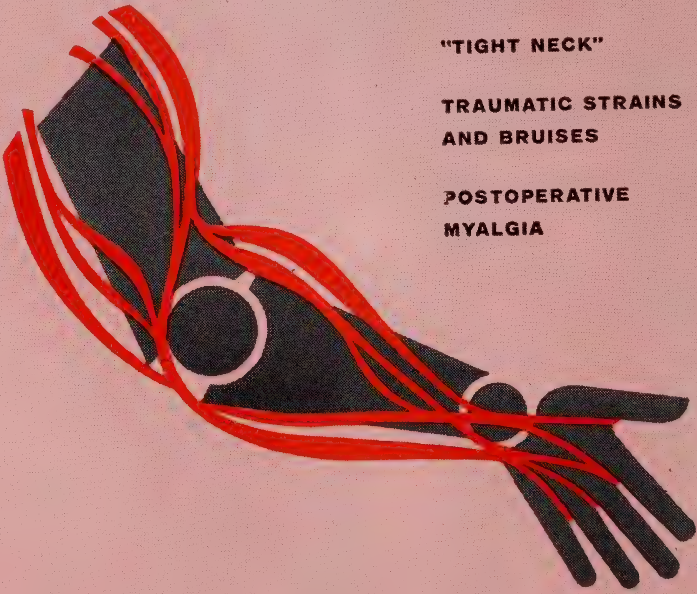

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	True	False
1 Therapeutic corticosteroid action may be explained by the inhibition of antigen-antibody reactions.	☐	☐
2 The enhanced potency of the "Meti" steroids is partly due to a slower metabolic rate.	☐	☐
3 Corticosteroids can alter the triple response to intradermally administered histamine.	☐	☐

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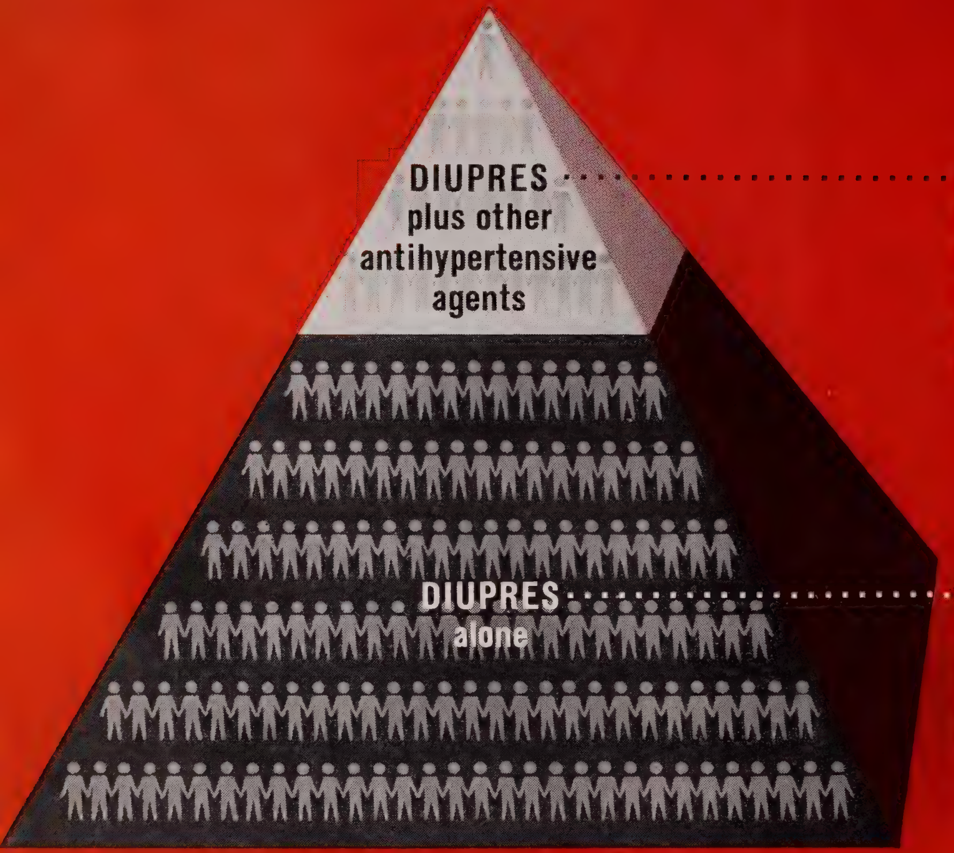
answers: 1. False—corticosteroids act by inhibiting tissue response to cellular injury. 2. True. 3. False—generally corticosteroids do not alter cutaneous reactions that develop rapidly and are associated with the release of histamine-like compounds.

corticosteroid quiz

S-201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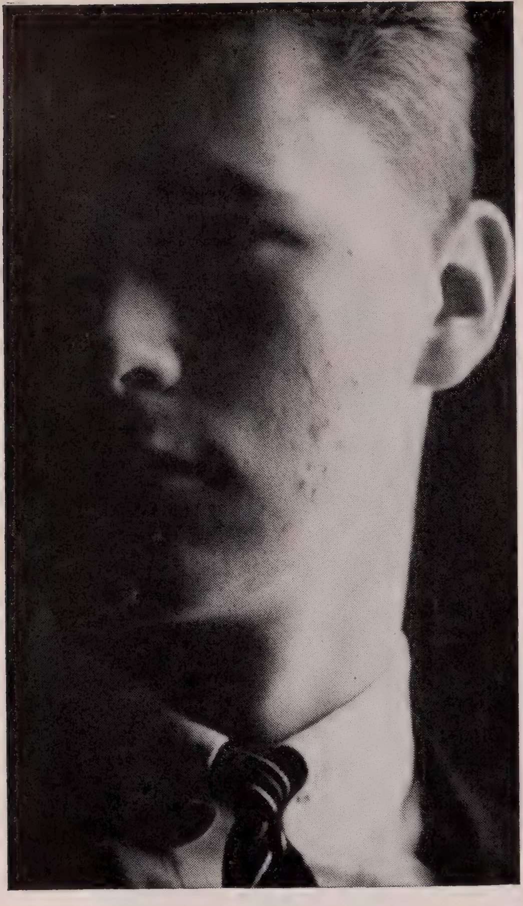

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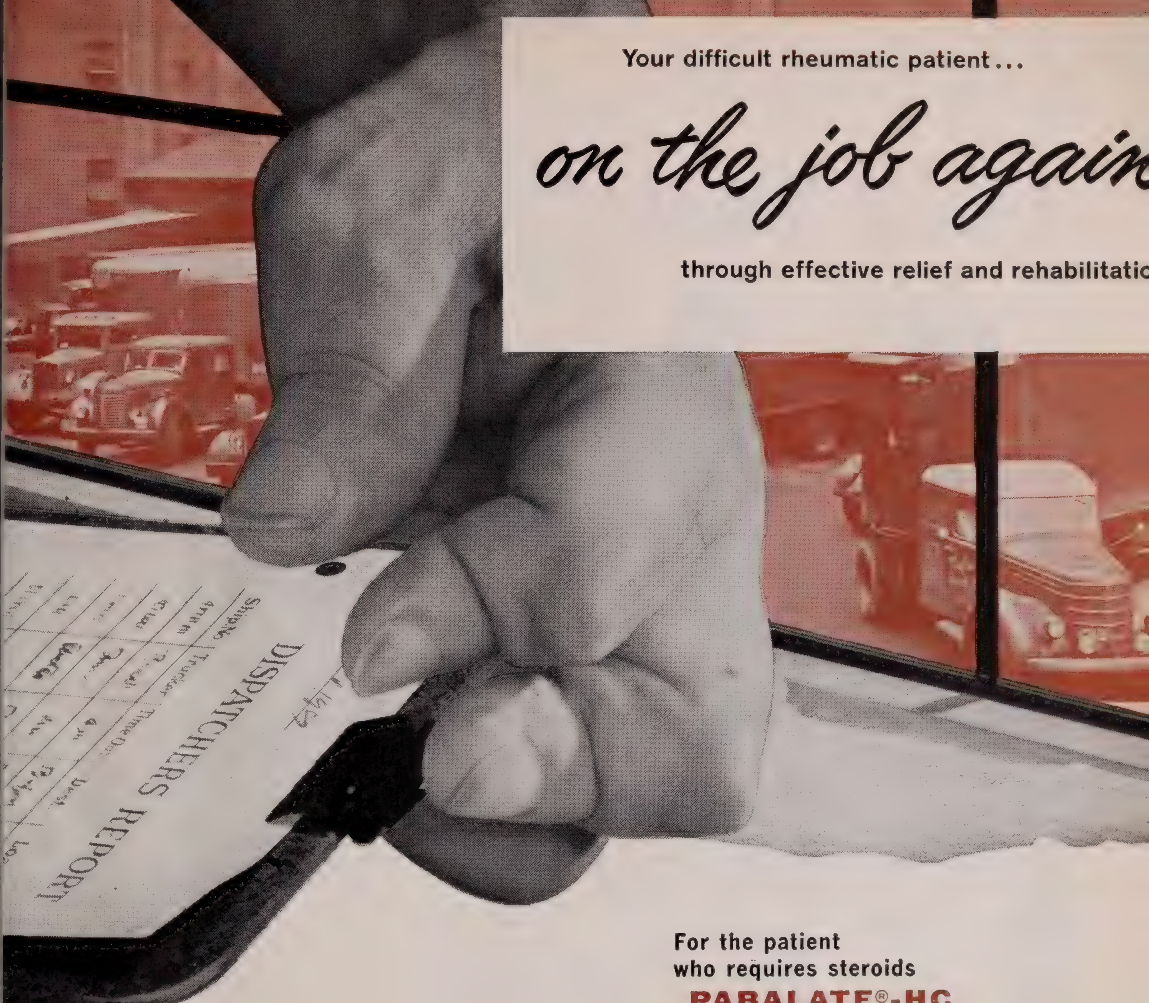

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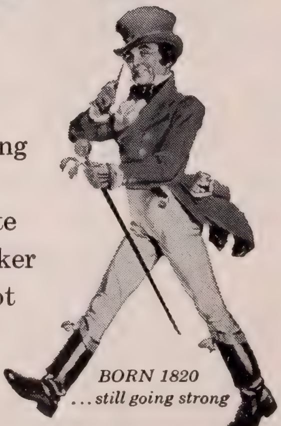

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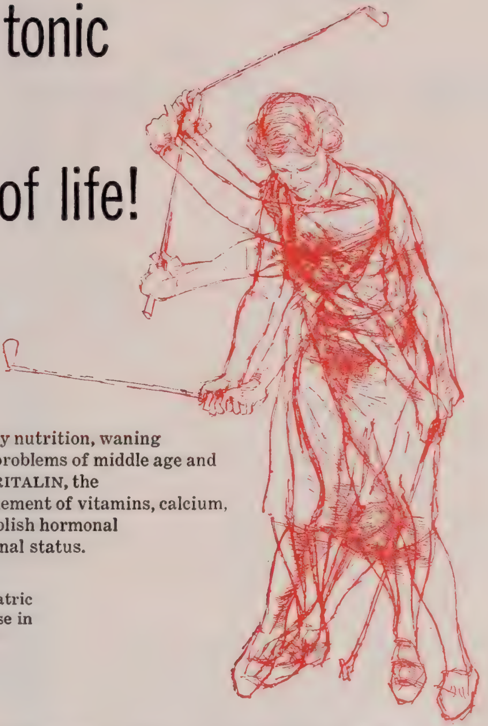

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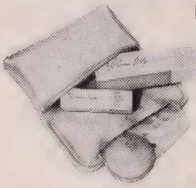

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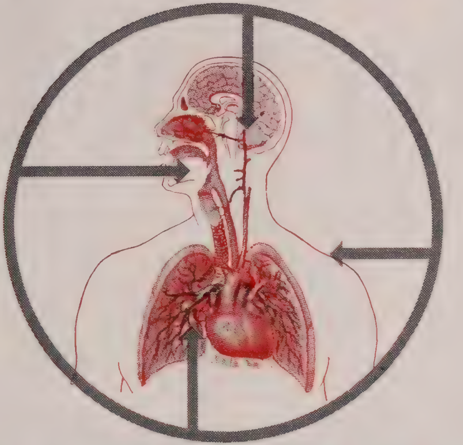

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Terpin hydrate	180 mg.
APAP (N-acetyl-p-aminophenol)	325 mg.

References: 1. Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958. 4. Bonica, J. J.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 272. 5. Dascomb, H. E.: in Current Therapy, Saunders, Phila., 1958, p.78. 6. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p.547.

Controls cough centrally
with non-narcotic Dormethan, possessing "amply demonstrated" antitussive activity,[6] as effective as codeine.

Liquefies tenacious mucus
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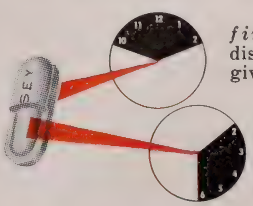
Prompt and prolonged relief because of this special "timed release" design:



first — the outer layer dissolves within minutes to give 3 to 4 hours of relief

then — the inner core releases its ingredients to sustain relief for 3 to 4 more hours

Dosage: One tablet in the morning, midafternoon and at bedtime. Pediatric dosage chart for Tussagesic Suspension available on request.

TUSSAGESIC SUSPENSION provides palatability and convenience which make it especially attractive to children and other patients who prefer liquid medication.

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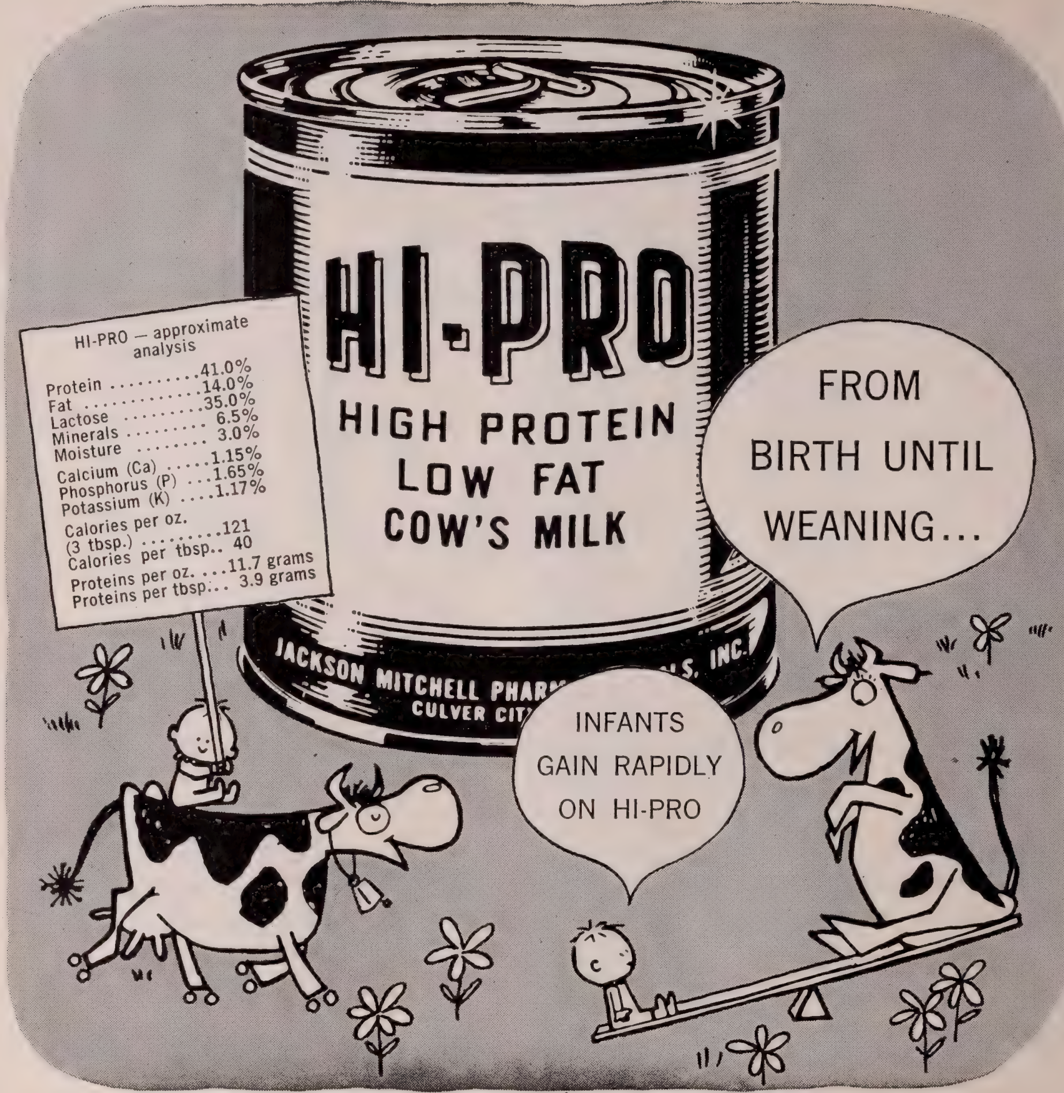
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Calories per oz. (3 tbsp.) 121
Calories per tbsp.. 40
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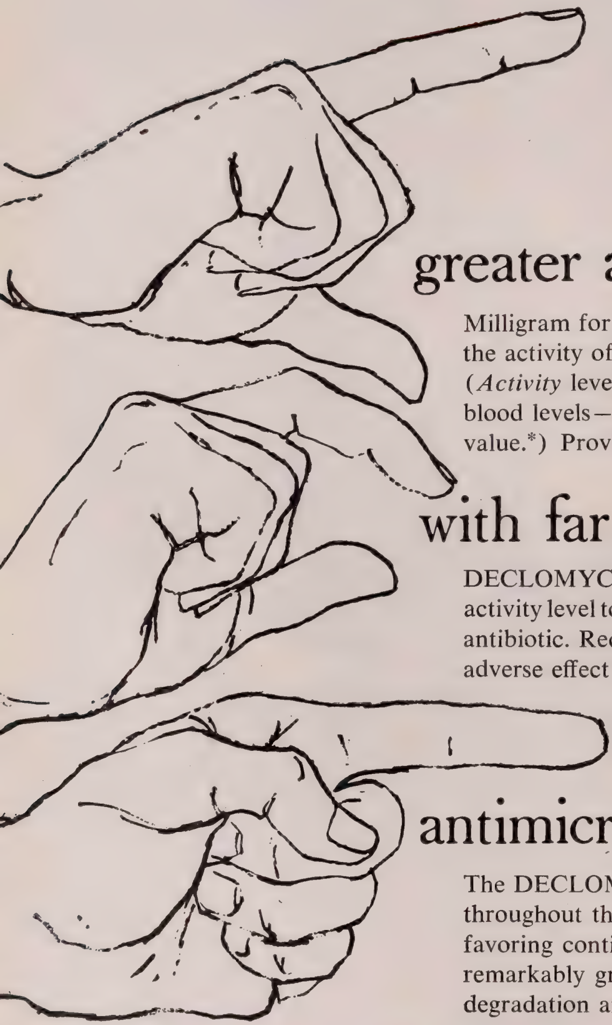

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*Hirsch, H. A., and Finland, M.: *New England J. Med.* 260:1099 (May 28) 1959.

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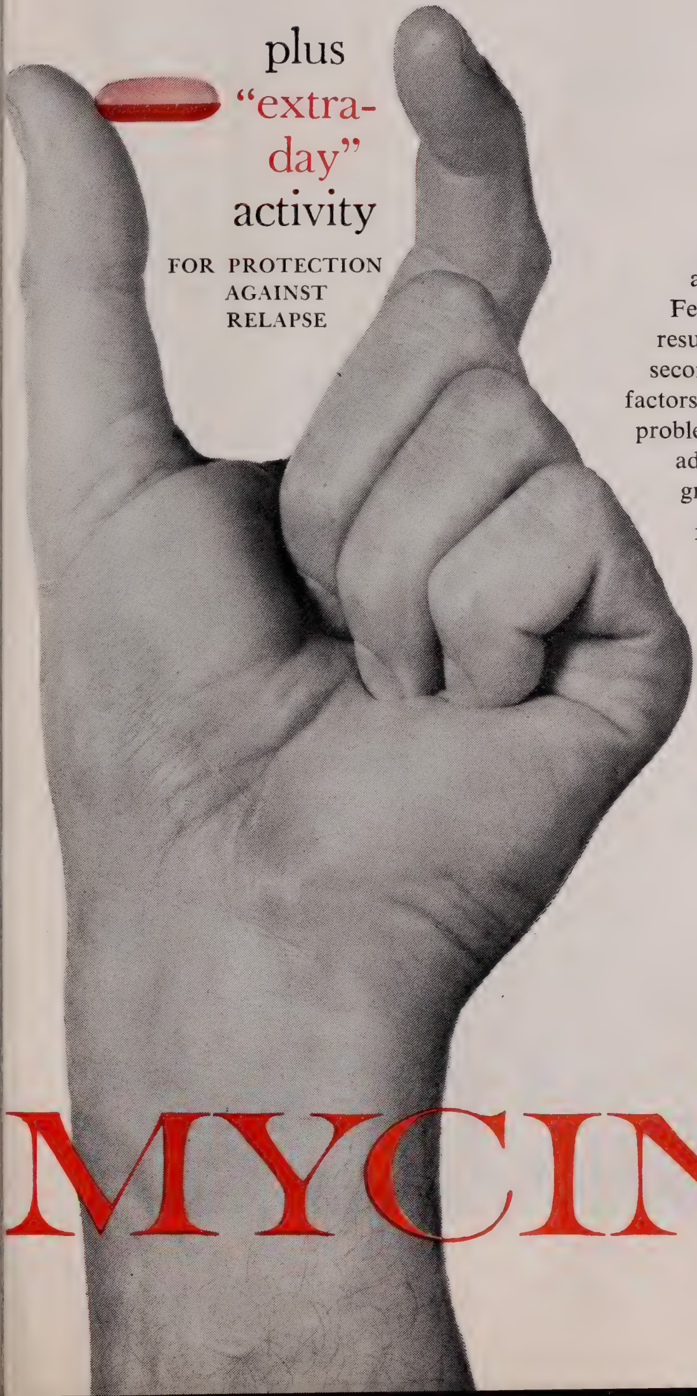
# of antibiotic design



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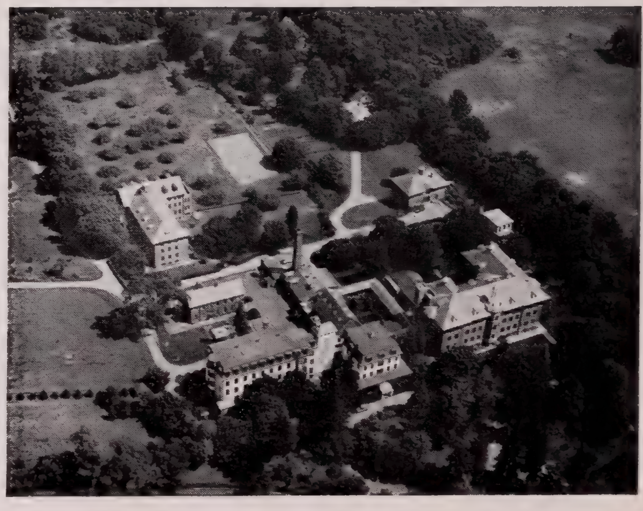

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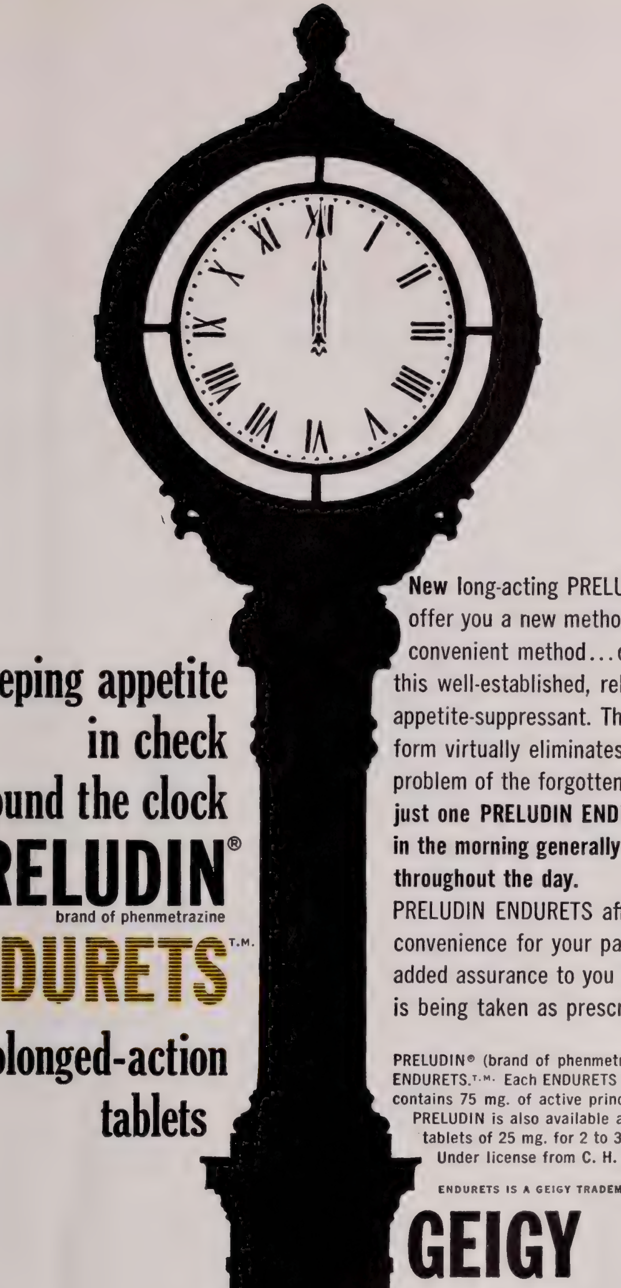

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NIAMID, in clinical tests, proved to have a high degree of safety and to be a valuable adjunct in the management of the anginal syndrome. NIAMID produces striking symptomatic improvement in angina patients...

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DOSAGE: Start with 75 mg. of NIAMID daily in single or divided doses. After a week or more, adjust the dosage, depending on patient response, in steps of one or one-half 25 mg. tablet. Once improvement is seen, gradually reduce dosage to the maintenance level. Many patients respond to NIAMID within a few days, others within 7 to 14 days.

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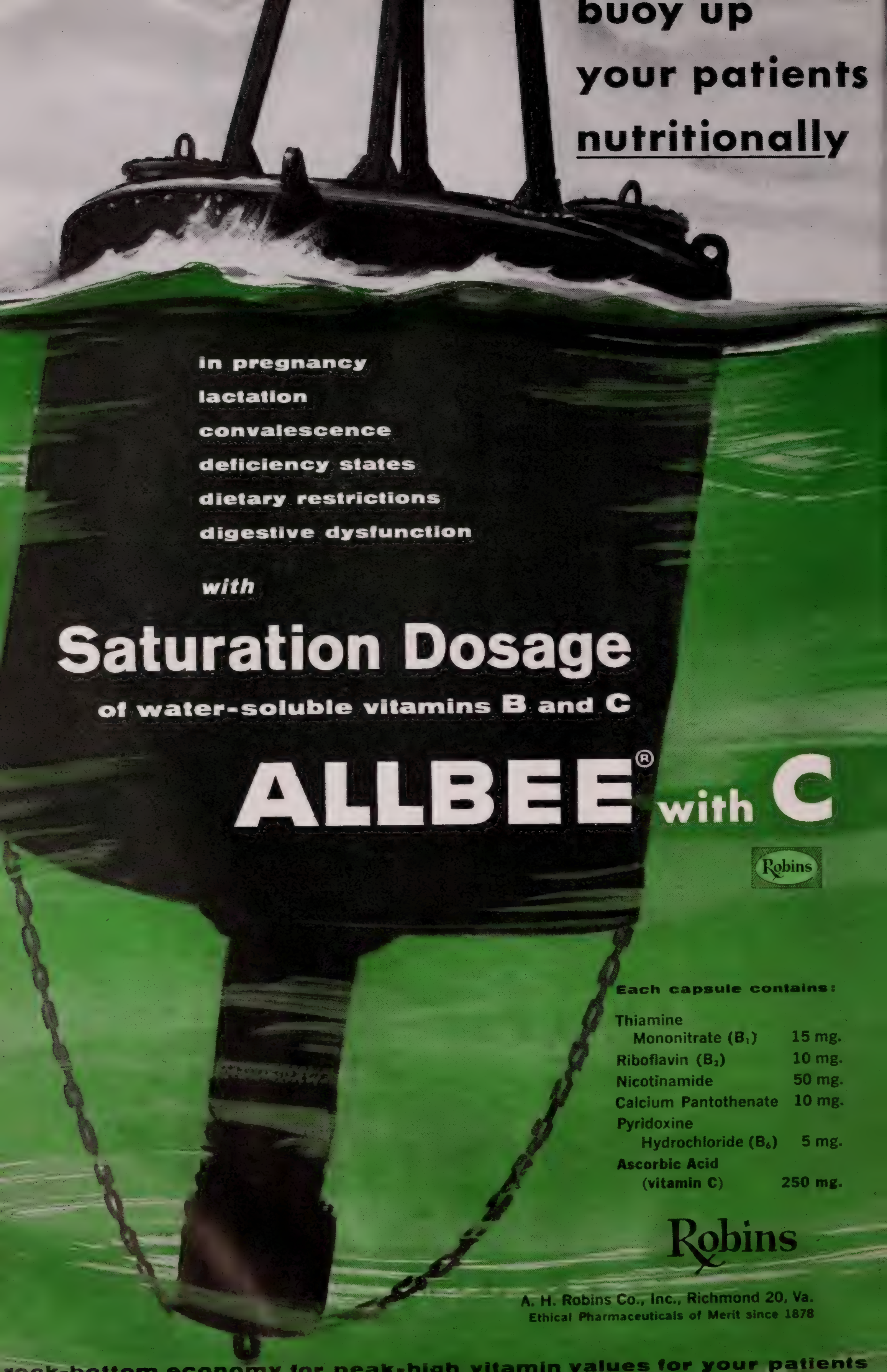

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1. Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958

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1. Gordon, E. E. and Haas, A.: Industrial Medicine & Surgery 28:217, 1959.

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When migraine that has beset a patient in her twenties suddenly returns in her fifties, a "little stroke" should be suspected.[1] In such migraine attacks, when ushered in by one or more "little strokes," pain may be minimal and the dominant feature may be spells of nausea, dizziness, depression, retching, fatigue, abdominal pain or transient blindness.[1] ■ Early detection of "little strokes" resulting from capillary fragility can gain vital therapeutic time to support capillary resistance and repair.[2]

1. Alvarez, W. C.: Geriatrics 13:647, 1958.
2. Gale, E. T., and Thewlis, M. W.: Geriatrics 8:80, 1953.

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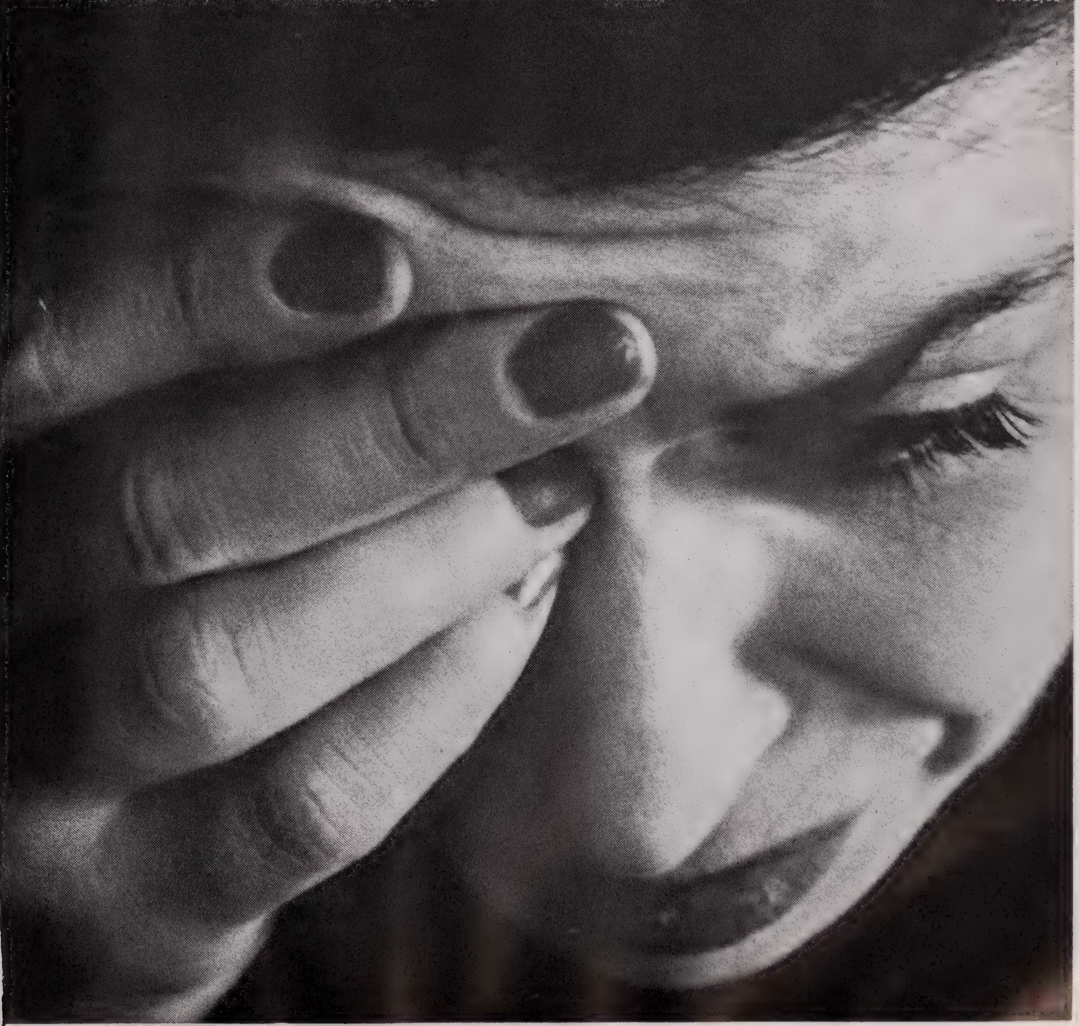

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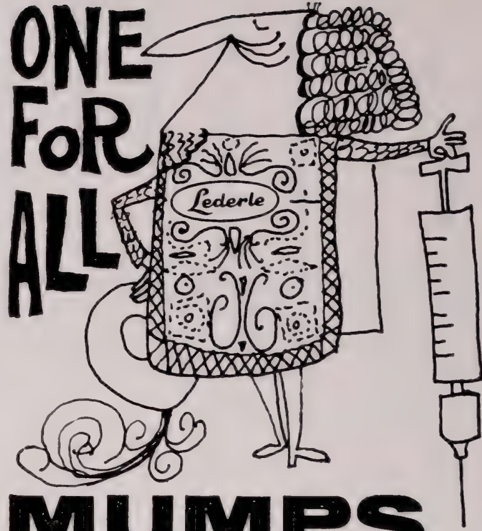

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For 24 hour control: For adults 45 cc. doses before breakfast, at 3 P.M., and before retiring; after two days, 30 cc. doses. Children, 1st 6 doses 0.3 cc.—then 0.2 cc. (per lb. of body weight) as above.

1. Schluger, J. et al.: Am. J. Med. Sci. 233:296, 1957.
2. Bradwell, E. K.: Acta med. scand. 146:123, 1953.
3. Truitt, E. B. et al.: J. Pharm. Exp. Ther. 100:309, 1950.

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Although mode of action has not been exactly defined in either instance, clinical experience has repeatedly proved DIAMOX a well tolerated, efficient means of reducing intraocular pressure in glaucoma and controlling seizures in both young and adult epileptics.

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the complaint: "nervous indigestion"

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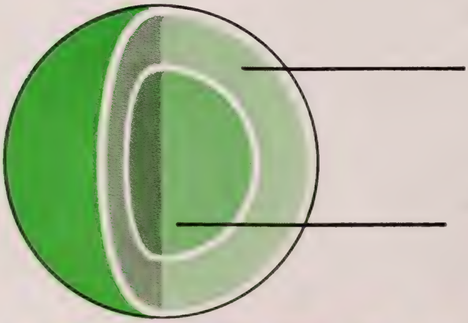

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Atropine sulfate	0.0097 m
Hyoscine hydrobromide	0.0033 m
Phenobarbital (⅛ gr.)	8.1 m
Pepsin, N.F.	150 m

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Pancreatin, N.F.	300 m
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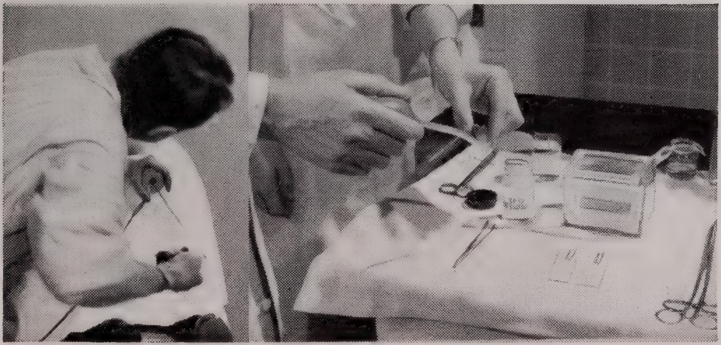

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provides therapeutic levels . . . for 24 hours . . . with low incidence of sensitivity reactions . . .

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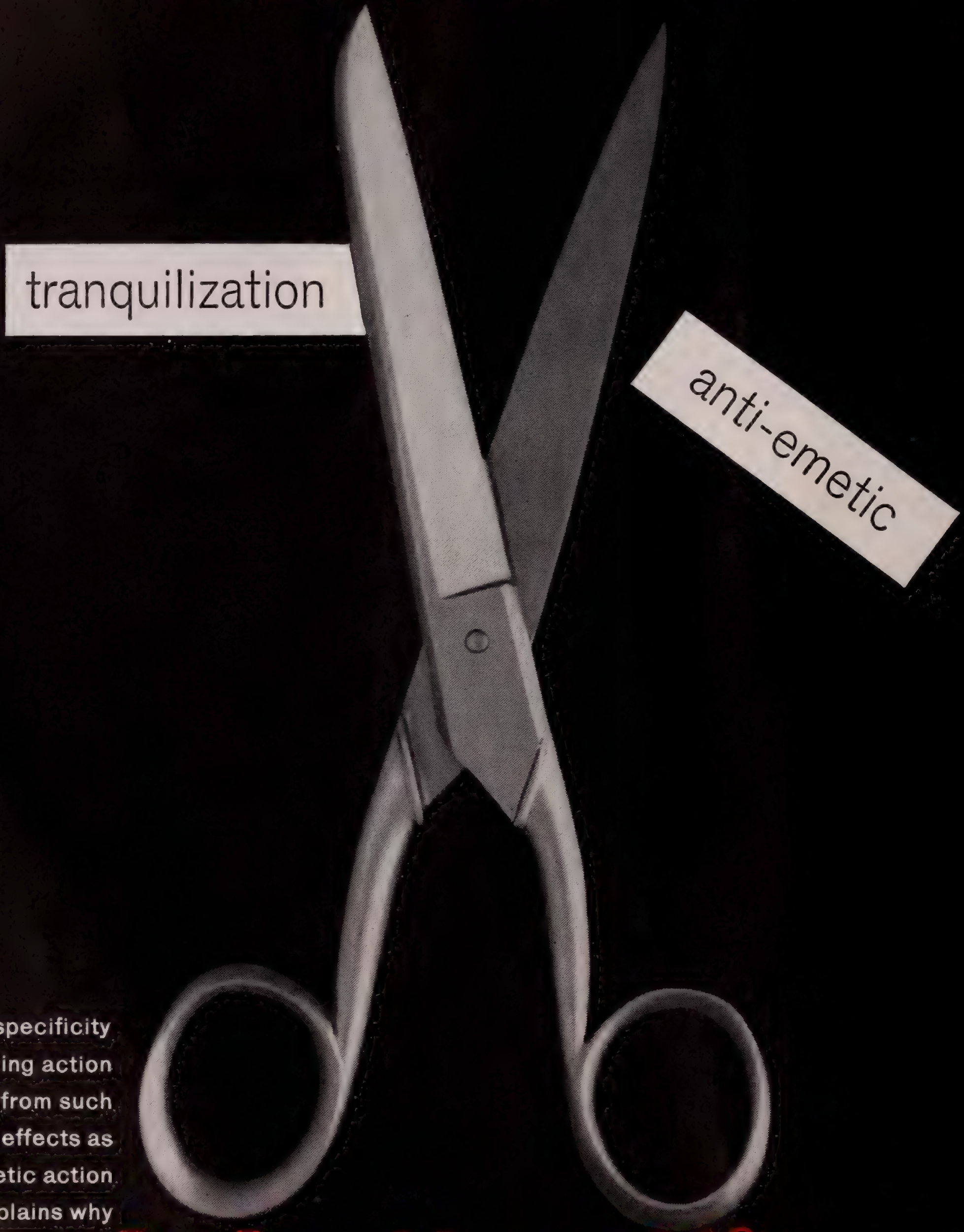

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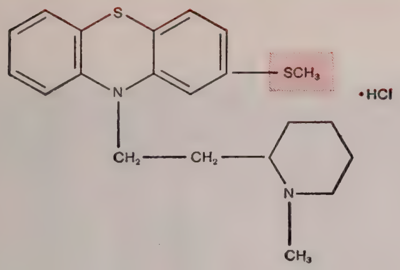
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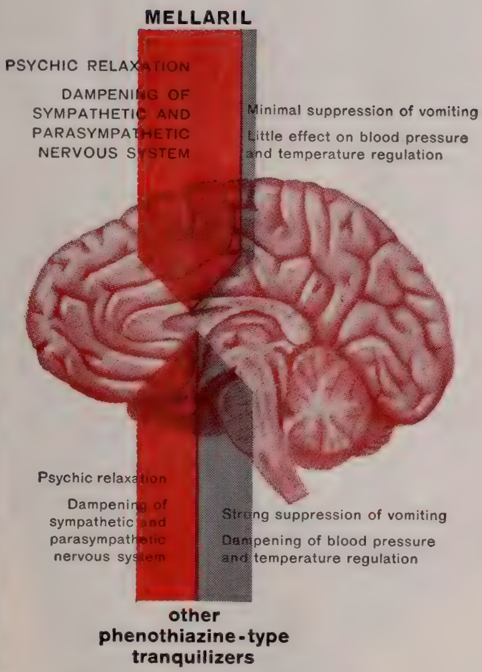
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*Ostfeld, A. M.: Scientific Exhibit, American Academy of General Practice, San Francisco, April 6-9, 1959

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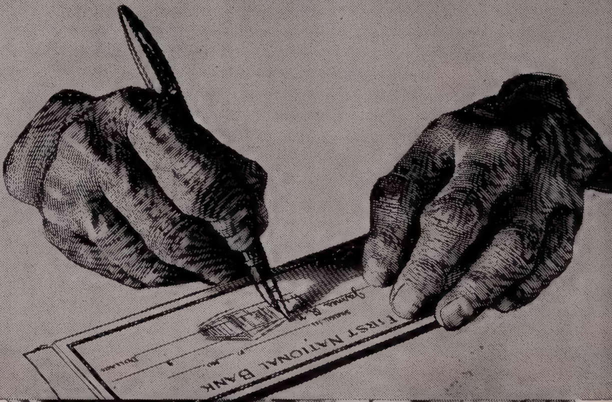
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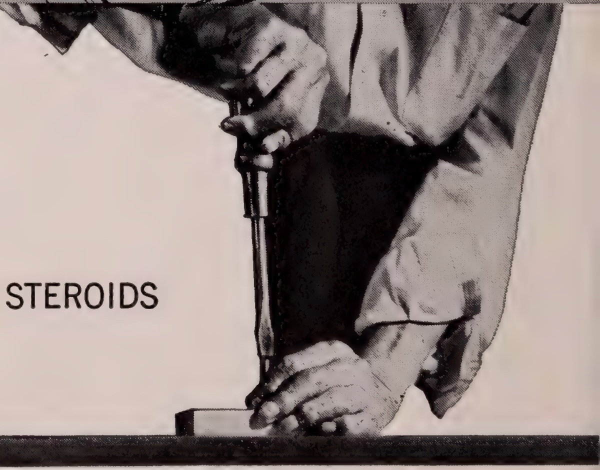

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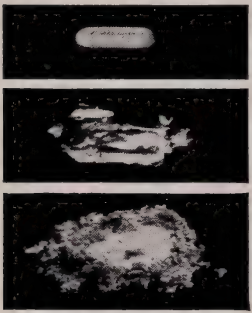

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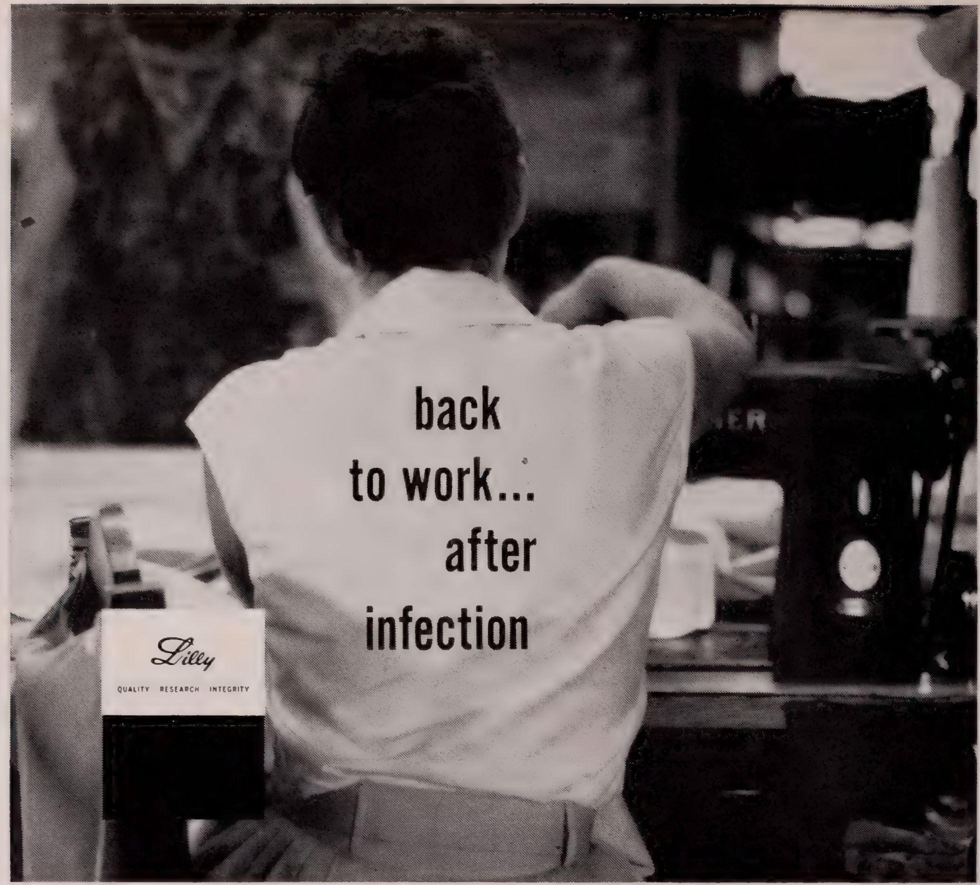

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EDITORIAL

Modern Management of Diabetes Mellitus

A recent survey has revealed that more than one third of the diabetic patients in this country (about 400,000) are now being treated with oral antidiabetic pills.[1] Reports from abroad also indicate wide and rapidly growing acceptance of these drugs in many countries, particularly in South America. Undoubtedly this widespread application is due in large measure to the inherent convenience of administration.

The seemingly overnight development and acceptance of this therapy may have caused some apprehension as to the adequacy of the tests on the pharmacology and toxicity of the available products. It is also not unnatural that some should hesitate to discard their experience with time-honored insulin therapy without evidence of real therapeutic and patient advantages for the newer drugs. Their story is not one of immediate success.

The desirability of an oral agent for the management of diabetes has existed since the etiology of the disease and its control by insulin became known. Indeed, the early failures of Banting and others were due to the oral administration of their crude pancreatic preparations.[2] For more than twenty-five years the ultimate phenomenal success of insulin therapy drastically curtailed incentive and research budgets for investigations of oral agents. Fortunately, the quest was never entirely abandoned.

The chance observation of Janbon and associates[3] (1942) that the newer long-acting and more soluble sulfonamides produced a disorder very similar to hypoglycemia soon led to the farsighted studies of Loubatieres of France (1944 to 1946)[4] on the mechanism of action of the sulfonylureas in diabetes. However, it took another fortuitous observation, this time by German investigators, and another decade until the first such drugs could be introduced into the practice of medicine. During the past few years nearly 1,000 other sulfonylurea derivatives have been evaluated in various laboratories. Of this multitude, four compounds have met the stringent tests of clinical researchers in this country. The known salient pharmacologic features of these are listed in Table I.[5] Their practical application, as with other therapeutic agents, depends on patient characteristics and the pharmacologic activity of the drugs.

By reason of earlier introduction, preceded by some 30 basic publications,[6] clinical experience with tolbutamide is probably most extensive. It is the least potent of the sulfonylureas and requires an initial loading dose. Response may occur only after a week or two; the maintenance dose is usually stable but it is not effective during stressful states. The incidence of side-reactions and of clinical hypoglycemia is very low. Because of these characteristics, tolbutamide has found wide use in the maturity-onset diabetic patient who does not optimally respond to diet regimen.

Chlorpropamide appeared a year or so later, after 70 investigations which covered with remarkable thoroughness the pharmacologic, metabolic, and clinicometabolic aspects of the agent.[7] These studies disclosed that a loading dose is not useful, and that the maintenance dose may decrease. Chlorpropamide is effective and especially valuable in many tolbutamide failures. When the change from tolbutamide is made, however, the relatively high activity of chlorpropamide requires that the lower dosage recommendations be carefully considered. The early high incidence of hypoglycemia and side-reactions with chlorpropamide in

TABLE I.—Reported Nation-Wide Experience with Oral Antidiabetic Agents

Agent	Number of Test Patients	Dose Ranges	Effective Blood Levels	Effective Half-Life (Hours)	Metabolism	Excretion	Incidence of Undesirable Side-Reactions (Total Per Cent)
Tolbutamide (Orinase)	9,168	0.5 to 1.0 Gm. (twice a day)	8 to 18 mg. (per cent)	3.5 to 4	Oxidized by liver	End products by kidney	2.8
Chlorpropamide (Diabenese)	5,000	100 to 500 mg. (per day)	8 to 18 mg. (per cent)	30 to 34	Probably not metabolized	Intact by kidney	3.0 (6.0)
Metahexamide (Melanex or Euglycin)	2,529	50 to 25 mg. (per day)	2 to 7 mg.	20 to 25	Split by liver	End products by kidney	6.2
Phenoformin (DBI)	3,008	25 to 50 mg. (twice or three times a day)	unknown	unknown	unknown	Probably by kidney	20.0

practice was incurred for the most part by a lack of appreciation of its potency. Correction of the original statistics for this factor, and consideration of the new data reduce by half the incidence of undesirable reactions.[8] Of the four available products, chlorpropamide is reported to have the lowest acute oral toxicity in rats.

Pharmacologic and practical experiences with metahexamide[9] and phenoformin[10] are still in the exploratory stage. Accordingly, at this point the occurrence of side-reactions with these substances is high and dosage stabilization is difficult. Both, however, are effective in tolbutamide failures. Phenoformin is useful in sulfonylurea-resistant patients or with insulin in "brittle" patients.

Now, to consider the probable mode of action of the oral antidiabetic agents: Central to the entire subject is the pancreas with its islands of Langerhans which embody two predominant cell types: the alpha cells which produce glucagon, the hyperglycemic-glycogenolytic factor, and the coarse granules of the beta cells which produce insulin, the hypoglycemic factor. For normal function, the islands of Langerhans require a rich vasculature. In diabetes, the islands of Langerhans may be sclerosed, but more frequently they are hyalanized.[11] Hyalanization occurs in from 45 to 72 per cent of diabetic persons over fifty years of age, whereas young patients show chiefly degranulation of beta cells, suggesting an inborn defect in the biosynthesis of insulin.

Considerable physiologic evidence has been accumulated to suggest that the beta cells of the pancreas are the main target for the hypoglycemic action of the sulfonylurea drugs. Loubatieres originally demonstrated that these compounds lower the blood sugar in the normal and in the partially pancreatectomized dog, but not in the completely depancreatized or in the severely alloxan-diabetic animal. Increased insulin output from the beta cells under the influence of these drugs is also indicated by experiments in which systemically ineffective dosages perfused directly through the pancreatic artery caused significant peripheral hypoglycemia. In more recent studies it was shown electrophoretically that there is an increase of insulin in the pancreatic vein blood of calves after the administration of the sulfonylureas. There is evidence of some extrapancreatic hypoglycemic action of these drugs, but the mechanism for this mode of action requires further elucidation.[12]

Morphologically it has been shown unequivocally that prolonged administration of sulfonylureas produces degranulation of the pancreatic beta cells. This degranulation is considered to reflect increased insulin output from the beta cells under the influence of the drugs. When the pancreas is functioning at maximal capacity there is no insulinogenic reserve, as indicated by complete degranulation of the beta cells, and the sulfonylureas do not cause hypoglycemia. This means that in order for the oral drugs to be effective, some pancreatic insulinogenic reserve must be present.

Knowledge of these basic physiologic and morphologic facts provide an insight into the practical limitations of oral therapy in diabetes mellitus. The evidence suggests that in cases where the alpha to beta cell ratio is 50:50, the sulfonylureas are the drugs of choice. Most of the maturity-onset diabetic patients fall in this morphologic grouping. When this ratio falls to 70:30, combined sulfonylurea-insulin therapy is indicated. When the ratio falls to 90:10, or lower, then insulin becomes the drug of choice. Infantile and juvenile diabetic patients obviously fall into this latter category.

There is growing feeling at the clinical level that the use of oral agents in the mild, stable, adult-type diabetic patients, who constitute the major segment of this disease group may afford some advantages over insulin therapy. The oral drugs act to revitalize the beta cells, whereas insulin administration depresses their activity. Thus, with proper medical care, the disease at this stage may be controlled more effectively, and its onward course halted, by the sulfonylureas than with insulin. In many diabetic clinics there is also the feeling that the oral agents are very useful adjuvants for patients requiring more than 40 units of insulin daily, and for the "brittle" patients with a tendency to go either into insulin shock or into diabetic ketosis with changes in insulin therapy.

Since the oral drugs serve primarily to stimulate the endogenous output of insulin, over- or underdosage effects should be offset by procedures similar to those employed in counteracting the familiar over- and underdosage effects of exogenously administered insulin.

In conclusion, there is today a general agreement that "the introduction of practical oral hypoglycemic agents has signalled the beginning of a new era in the history of diabetes. These drugs have done at least two things: (1) They have made the management of diabetes possible for many patients without insulin, and given others a smoother course when the drugs were used in combination with insulin; and (2)—a matter that may prove to be of even greater importance than the first—they have furnished a new approach to the study of diabetes and have stimulated a great deal of important research. Clinicians can look forward to a better understanding of the disease and the patient to a smoother course and perhaps a longer life."[13]

A. A. A.

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PRESIDENT'S PAGE

HENRY I. FINEBERG, M.D.

In our last President's Page we discussed Governor Rockefeller's announcement of the establishment of a committee to study the medical resources of the State of New York. On August 4 we wrote to the Governor and suggested that the Medical Society should be represented on any body selected for this purpose.

Since then, we have heard from Albany. Mr. Rockefeller has expressed his appreciation for our offer to be of assistance. It is his intention to appoint an advisory committee to his cabinet committee, so that the latter will have the full benefit of the knowledge and judgment of the private and professional groups concerned with the problems of medical care. The Governor has stated: "I would be happy to have your suggestions for individuals who might serve on such a group." We have complied with this request.

It is also interesting to note that the Governor has authorized a study to determine the feasability of extending "major medical" or so-called "catastrophic" health insurance to all wage earners of the State. A special task force, headed by Roswell B. Perkins, New York City attorney and former counsel to the Governor, and a 12-man advisory committee, has been selected to investigate this matter. It is gratifying to learn that here again we have representation on the advisory committee—Carl R. Ackerman, M.D., and Carlton E. Wertz, M.D. Herman E. Hilleboe, M.D., State Health Commissioner and a member of our House of Delegates, has been assigned to the task force which is made up of members of the Governor's cabinet.

The Governor proclaimed that "consideration will be given to the practicability of extending the disability benefits law to encompass this kind of protection for all wage earners in the State."

The decisions reached by these committees may not be entirely to our liking. What is important, however, is that our Medical Society is being recognized and consulted by the Chief Executive of our State. We are being given the opportunity to be heard; we have representation in high places. This is a far cry from the situation of yesteryear. We are a nonpartisan organization and do not engage actively in politics. Nevertheless, we sincerely believe that the Governor merits our gratitude for this new approach.

* * * * *

At the House of Delegates meeting in May we talked about our brother and sister professions. We declared that it would be wise for us to cooperate with the dentists, the veterinarians, the pharmacists, the nurses, and others in fields allied to our own. We pointed out that many of their problems are similar to those that confront the doctors. If we are to achieve some of our goals, it is essential that we get together with these people, many of whom have already offered to help us in our fight to keep the practice of medicine free from governmental control.

The American Medical Association reported recently that it has had cordial relations with these groups on a national level. The feeling is that the medical profession should take the lead in seeking mutually dignified relations with the science and health professions. The A.M.A. has demonstrated in various ways that it can cooperate. The program of its annual meeting often includes contributions from representatives of such related organizations. Contacts are maintained throughout the year in one way or another. It is the feeling of our people on Dearborn Street in Chicago that these contacts could be expanded by inviting members of the allied professional groups to attend our national, state, and county medical society meetings. They should be asked to participate to a greater extent.

We know that in a considerable number of areas interprofessional meetings are held in order to promote cordial and mutually respectful understanding among the various members of what we call the health team. This type of program should be extended. In accordance with the recommendation of the A.M.A., we would like to see better interprofessional relationships between all the people "who participate scientifically, technically, or humanistically in the health effort." Promoting good morale in the health field is a worthy undertaking and should be supported by our profession.

* * * * *

During the early part of October, we attended a Medical Legislative Conference in St. Louis, Missouri. It was conducted by the American Medical Association's Council on Legislative Activity. One of the main features of the two-day meeting was a comprehensive discussion of the Forand Bill (HR 4700), which was the subject of much controversy during the last session of Congress. It is certain that this bill will come up for consideration again after the first of the year. The stand of medicine, as far as the Forand proposal is concerned, should be clear to all.

Every doctor of medicine in this State should become acquainted with the bill and its implications. We are sure that your county medical society can supply you with all pertinent information. If not, the headquarters of the State Medical Society in New York City should be contacted. We should keep in mind the statement released by Leonard W. Larson, M.D., chairman of the board of trustees of the American Medical Assocation: "The objectives of the American Medical Association are—and always have been—to work toward the best possible health care for every American. This emphatically includes the older citizen. American Medical Association opposition to compulsory health insurance in any form is simply based on a levelheaded examination of the facts." In very few words, these are some of the reasons why the A.M.A. opposes the Forand Bill.

At St. Louis, we were given the privilege of listening to Governor Robert E. Smylie of Idaho and Congressman Thomas B. Curtis of Missouri, two true friends of medicine. We also heard an address by Congressman T. Dale Alford, a physician from the state of Arkansas. Some of their comments were quite interesting.

It is Mr. Curtis' opinion that physicians have the same duty as other citizens to take political action concerning matters affecting them and their profession. He recalled that doctors had been taken to task by organized labor for opposing the passage of the Forand Bill. At hearings before the House Ways and Means Committee during the month of July, union spokesmen favored passage of the Forand Bill. The A.M.A., of course, vigorously opposed it. Congressman Curtis defended the action taken by the doctors. He declared that all groups affected by legislation should be encouraged to state their viewpoints, in order that the public interest may be served.

Dr. Alford, who is one of five doctors serving in Congress, talked about the fact that physicians should assume leadership in the cultural affairs of their communities as well as in health matters. We personally have been advocating this philosophy for some time.

Governor Smylie urged medical men to show an active and continuing interest in politics at all levels. He even suggested that we contribute regularly to the political party of our choice. Here we have food for thought.

Henry I. Fineberg

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SCIENTIFIC ARTICLES

*Technic with Parallel Flow, Straight Tube Blood Dialyzer**

ARTHUR E. MACNEILL, M.D., JOHN E. DOYLE, M.D., ROLAND ANTHONE, M.D., AND SIDNEY ANTHONE, M.D., BUFFALO, NEW YORK

(From the Departments of Medicine and Surgery, University of Buffalo School of Medicine, the Buffalo General Hospital, and the Medical Foundation of Buffalo)

DIALYSIS has assumed an important place in the therapy of renal disease and electrolyte disorders. The most important benefits of solute exchange by this method have been seen in acute renal tubular necrosis, especially that form complicated by hyperkalemia, severe acidosis, coma, or convulsions. The reduction of the edema of congestive heart failure and other states by ultrafiltration with a dialyzer designed for this purpose has also been rewarding. In patients acutely intoxicated by bromides, salicylates, barbiturates, or other diffusible agents, where the degree of poisoning is severe, the use of hemodialysis can also be lifesaving. In addition, the dialyzer can be used to administer substances needed to restore blood levels to normal. Other indications for clinical hemodialysis in which the effectiveness of the procedure is under continuous evaluation are chronic renal insufficiency, obstructive uropathies (prior to or following surgery), and hepatic coma.

The blood-filled regenerated cellulose tubes† within the MacNeill dialyzer to be described are similar to a capillary network. Viewed as such, the dialyzer can be seen to be of potential usefulness in performing not only some of the functions of the kidneys, but also those of the lungs, intestine, liver, skin, and perhaps other organs of the body where substances diffuse actively to and from the blood.

It has been stated that, aside from inexperience and inadequate apparatus, the chief contraindication to hemodialysis is a bleeding tendency in the patient.[1] In our experience with patients with bleeding tendencies, however, there have been no important problems resulting from heparinization during the period of treatment.

Abel, Rowntree, and Turner[2] in 1913 introduced the term "vividiffusion" and reported the dialysis of blood of animals through celloidin tubes, using hirudin as an anticoagulant. The progress of the next two decades was summarized by Haas[3] in 1935. Delays in clinical application of this method were due at least in part to the lack of an effective, safe anticoagulant and an adequate dialyzing membrane. When heparin and regenerated cellulose tubing (cellophane) in suitable form became

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† Commercially available from the Visking Corporation, Chicago, Illinois.

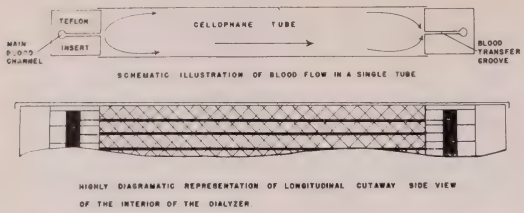
TEFLON
INSERT
MAIN BLOOD CHANNEL
CELLOPHANE TUBE
BLOOD TRANSFER GROOVE
SCHEMATIC ILLUSTRATION OF BLOOD FLOW IN A SINGLE TUBE
HIGHLY DIAGRAMATIC REPRESENTATION OF LONGITUDINAL CUTAWAY SIDE VIEW OF THE INTERIOR OF THE DIALYZER.

FIG. 1. In lower diagram, inserts appear at either end. Heavy solid lines at left and right show main blood channels. Narrow horizontal dotted and solid lines show blood flow through cellophane tubes. Mesh represents nylon screens separating tubes.

available, it became possible to consider clinical application of the dialysis principle. Kolff,[4] in 1947, published results of his use of a dialyzer in the treatment of human uremia. His technic required the use of a radial artery as a source of blood and pressure for the filling of the blood flow pathway of the dialyzer and used a pump to return the blood to an antecubital vein. The dialyzer was bulky and required priming with a large volume of blood.

Other types of clinical dialyzers or artificial kidneys have been developed in this country and abroad, notably by Alwall,[5] Murray,[6] Skeggs and Leonards,[7] and a new type by Kolff.[8] Many reports of technical progress and clinical experience have been published during the past thirteen years. A partial review was published by Kupfer[9] in 1957. With each new refinement in dialyzing apparatus, the general superiority of this method of water and solute exchange over gastrointestinal perfusion and peritoneal lavage has become more apparent.

In the majority of instances, the apparatus necessary for an effective extracorporeal circuit has been rather large and expensive and has required a well-equipped, fixed installation. The lack of portability of most of the available equipment and the necessity for a sizable team of attendants have in the past required that the patient be moved to a large medical center. The current availability of our simplified and portable clinical dialyzing equipment opens the way to the initiation of dialysis services in smaller hospitals.

In 1942, one of us designed several styles of membrane blood oxygenators based on the principle of the transfer by diffusion of dissolved respiratory gases across a membrane, to and from the blood, in the manner of the gills of a fish. Military considerations involved in this synthetic organ mechanism program have been published elsewhere.[10] One of these designs was revived in 1948 for a study of laboratory dialysis. Subsequent scientific exhibits of the MacNeill dialyzing apparatus in 1949 (Association of Military Surgeons Convention) and in 1949, 1953, 1955, 1956, and 1957 (American Medical Association Conventions) have presented the progress of this research.

Since early 1954, clinical models of the MacNeill Blood Dialyzer have been in regular use in our hands. It is our feeling that this equipment exhibits the following valuable features: (1) parallel blood flow as seen in the capillaries, with low resistance to blood flow; (2) sterilization by autoclaving; (3) small capacity of blood (no need for blood priming); (4) adequate dialyzing surface, with high efficiency; (5) optimal blood flows with low blood pressures; (6) wide over-all margin of safety; (7) simplicity not only in design but also in assembly, and ease of maintenance; (8) rigid support of the cellophane membrane within a closed system providing the means for ultrafiltration; (9) flexibility in the volume and composition of the dialyzing fluid so that variable modes of chemical and thermal treatment are possible; and (10) economy of personnel and operating materials.

Materials and Methods

BLOOD CIRCUIT.—*Dialyzer.*—The inner structure of the dialyzer is shown in Figure 1. Each of the cellophane tubes is separated from adjacent tubes by a specially prepared nylon screen, 0.034 inch thick. They are made from monofilament material 18 by 18 mesh, woven in tubular form. This nylon mesh is permanently flattened and is not

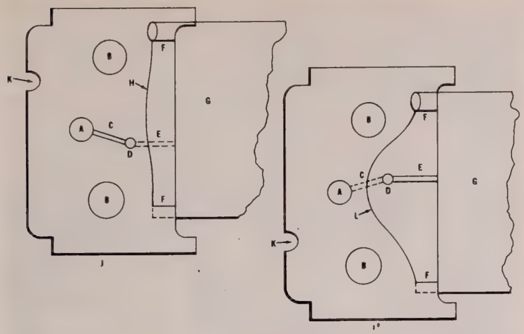

FIG. 2. One side of polytetrafluoroethylene insert (J) shows guide notch (K) to insure proper stacking. A is main blood channel; C is proximal blood transfer groove; D, the blood transfer hole; E is distal blood transfer groove (on opposite side of insert from C). H represents straight cut edge of cellophane tube G. F is slit cut into polytetrafluoroethylene adaptor. Bolt holes are represented by B. Opposite side of insert (J¹) shows other side of cellophane tube cut with "lip" (L). Cut in this fashion, edge of cellophane tube does not contact blood at any point.

altered by subsequent autoclaving. The cellophane tube has a wall thickness, when dry of 0.0008 inch (.002 cm.). Polytetrafluoroethylene (Teflon) inserts at either end of each cellophane tube allow parallel connection of the blood tubes. The blood is in this manner divided into parallel flattened tubular pathways, each of which provides a blood film about 0.3 mm. (0.012 inch) thick and 44 mm. (1.72 inches) wide. Thus, in a sense, the parallel arrangement of the capillary network of the body is imitated. At the inflow end, the main channel of blood passes through the center of the polytetrafluoroethylene inserts, as shown in Figure 1. The inserts are grooved to allow the blood to pass into the cellophane tube with a slight loss in pressure. At the far end of the cellophane blood flow pathway, the blood passes through a similar groove in the distal polytetrafluoroethylene insert and returns to the main blood channel.

The cellophane tubes are cut in a standard fashion to fit the inserts, illustrated in Figure 2.

The screens and assembled tubes are placed alternately in the dialyzer case. When the desired number of tubes and screens has been placed, the stack of polytetrafluoroethylene inserts at either end is compressed into a functionally solid distribution system, as shown in Figure 3. The case is closed and clamped. Once this assembly is completed, the blood passages of the dialyzer are tested with water under 1 M. pressure. At this pressure the amount of ultrafiltration is approximately 80 ml. per square meter per hour.

When it is established that there are no leaks, boiling water is pumped through the blood channels for an hour to remove the glycerine from the cellophane. The dialyzer containing water, with all blood and dialysis ports open, is sterilized in the autoclave at 260 F. (126.1 C.) for thirty minutes and then stored in the refrigerator at approximately 5 C. (41 F.).

The amount of blood exteriorized will depend on the capacity of the particular dialyzer being used. Three models are now in clinical use, the XI-B-26 (1 M.^{2} cellophane surface area), the XI-B-40 (1.5 M.^{2} cellophane surface area), and the XI-D-26 (2 M.^{2} cellophane surface area). The small dialyzer with the associated tubing, pump, cannulas, and flowmeter will hold 325 ml. of blood, the medium-size dialyzer and associated circuit will contain 445 ml., and the large dialyzer and circuit has a capacity of 525 ml. The commercially available MacNeill-Collins blood dialyzer** is similar to model XI-B-26.

Blood Pump.—The blood pump (Fig. 4) of original design is operated by a small air piston which generates pressure and vacuum. The piston is powered by a $^1/_{10}$-horsepower electric motor; it has a displacement of about 3 cubic inches and will produce a maximum air pressure of 900 mm. Hg and a vacuum up to 100 mm. Hg. These extreme pressures are greatly reduced in their transmission to the blood pumping chamber. A pressure of 270 mm. Hg within the blood pumping chamber is not exceeded.

** Commercially available from Warren E. Collins, Inc., 555 Huntington Avenue, Boston 15, Massachusetts.

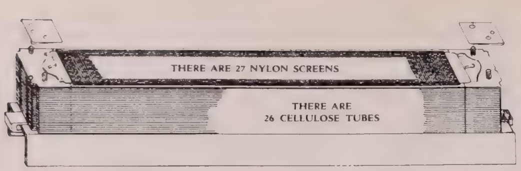

FIG. 3. Assembled blood dialyzer, without case, is shown with cellophane tubes alternating in stack with nylon screens.

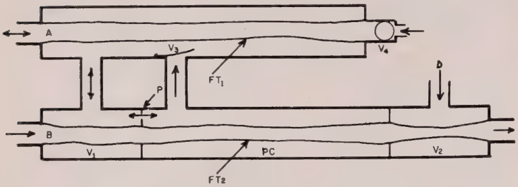

FIG. 4. Diagram of blood pump: A is air pressure compartment, double arrow indicates alternating pressure and vacuum. V_4 is ball valve which allows pressure-vacuum adjustments. FT_1 indicates flexible vinyl tube containing air. B with its adjacent arrow indicates blood tube and direction of blood flow. FT_2 labels flexible vinyl tube containing blood. The three blood chambers in acrylic case are indicated as V_1 (inlet valve area), PC (pumping chamber), and V_2 (exit valve area). Double arrow at P indicates passage of pressure wave from V and PC through the fluid medium surrounding the blood tube. This fluid connects directly with fluid surrounding air tube, as indicated by two vertical arrows at left. V_3 is flap valve which prevents transfer of pressure when tube A is distended but allows escape of pressure from blood chamber when air tube collapses on vacuum stroke. D indicates constant pressure applied to exit valve area.

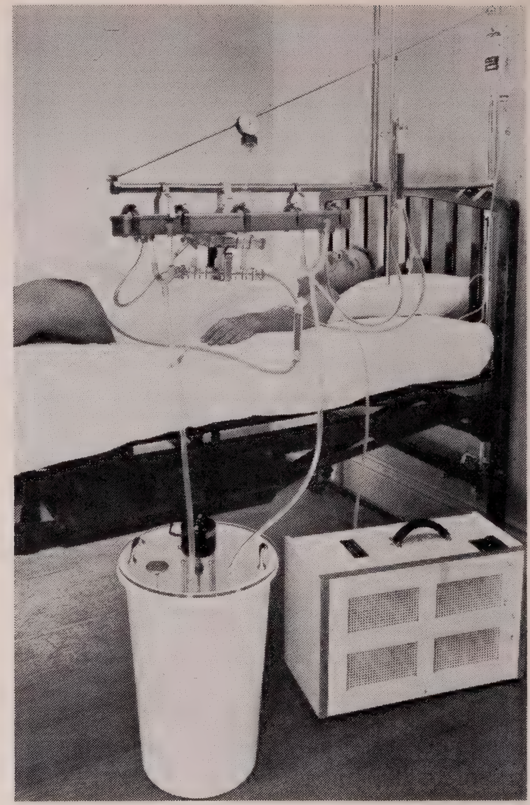

FIG. 5. Photograph of dialyzing apparatus in use at bedside (posed).

The pressure variations generated by the piston are transferred, as sketched in Figure 4, to the blood tube, through a sterile physiologic fluid medium. These pressure variations cause alternate compression and distention of the blood tube causing the blood, with each stroke, to be propelled into the dialyzer. The blood conduit is a simple, seamless, thin wall vinyl tube, which is divided into (1) inlet valve area, (2) pumping chamber, and (3) exit valve area. The pressure first is applied to the inlet valve area, occluding it. A delay mechanism then allows transfer of this pressure to the pumping chamber which is next compressed (Fig. 4). As this pressure is applied to the pumping chamber, the blood within it is propelled forward, opening the constantly pressurized exit valve area. The constant pressure on the exit valve area prevents backflow between pressure strokes. On the vacuum stroke of the piston, the tube within the pressure transfer box collapses; the fluid transfer medium then rushes freely back through the transfer channels. The blood tube then distends and fills prior to the next pressure stroke.

The average speed at which the pulser runs is 180 strokes per minute. Depending on the pressure and vacuum adjustments, the stroke volume of the pump will vary from 0 to 5 ml., giving a total minute output of from 0 to 900 ml. The usual range of flow rates is 200 to 400 ml. per minute. With this pump, blood has been propelled through the dialyzer circuit for from six- to twelve-hour periods. Plasma hemoglobin determinations (for the entire blood pump and

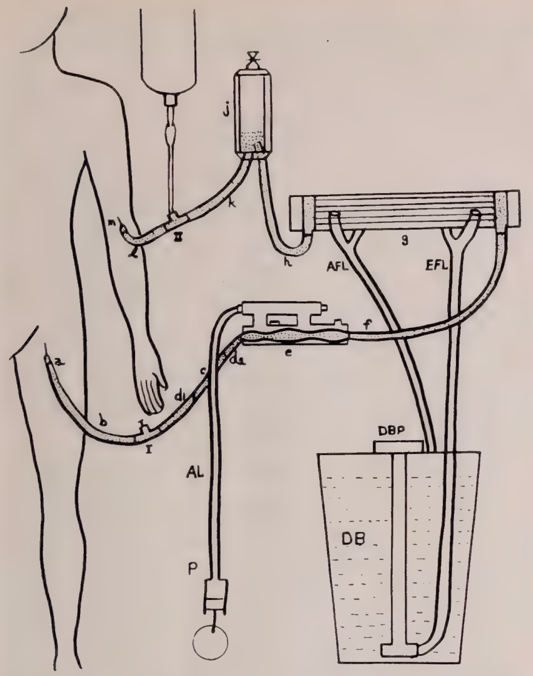

FIG. 6. Diagram of entire dialyzing system. Blood circuit: (a) saphenous vein cannula, (b) vinyl tube, (I) proximal blood access connector, (c) depulser tube, (d_1,d_2) vinyl tubes, (e) blood pump, (f) vinyl tube, (g) dialyzer, (h) vinyl tube, (j) blood flowmeter, (k) vinyl tube, (II) distal blood access connector, (l) vinyl tube, and (m) cephalic vein cannula. (P) Blood pump pulser, (AL) air pressure line, (DB) bath reservoir, (DBP) bath pump, (AFL) return tube for bath, and (EFL) tube from bath pump to dialyzer (control bath flow rate by clamp on this tube).

dialyzer circuit) have shown a slow rise from an initial level of 2 mg. per cent to a maximum of 6.5 mg. per cent at the end of nine hours of pumping.[11] This highest recorded level of plasma hemoglobin concentration in our series represents insignificant hemolysis.

While the vinyl tube, which carries the blood within the pump, is heat resistant, the (Plexiglas) acrylic box in which it is encased (Fig. 5) is not. Therefore, the assembled blood pump cannot be autoclaved but must be sterilized with zephiran for twenty-four hours. Commercial models of this pump†† allow heat sterilization of the vinyl blood tube prior to assembly and use.

Flowmeter.—The flowmeter, shown in Figure 5, is fabricated of polymonochlorotrifluoroethylene (Kel-F) and is autoclavable. This device is an accurately graduated cylinder with an air vent at the top and blood entrance and exit ports at the bottom. A metal scale attached to the side of the flowmeter is graduated in 5 ml. increments. The blood capacity is 50 ml., but the blood level is kept at the 10 to 15 ml. mark during operation. During extracorporeal circulation the air vent is kept securely closed, except when blood flow is being measured. To measure the flow, the exit blood tube is clamped simultaneously with the release of the clamp on the air vent. This allows the blood emerging from the dialyzer to rise in the flowmeter. A stopwatch is used to time the seconds required for a rise of 20 ml. and the calculation of minute flow is then simple. The air vent is again clamped and the distal blood line opened to allow blood flow to continue.

Cannulas and Connecting Tubes.—The cannulas used as indwelling catheters in the vessels are polyethylene or vinyl tubes of $^{1}/_{16}$-inch (1.57 mm.), $^{3}/_{32}$-inch (2.39 mm.), and $^{1}/_{8}$-inch (3.18 mm.) internal diameter. Polyethylene tubes are usually used, since they have thinner walls and a smaller wall thickness to diameter ratio. These tubes are sterilized with ethylene oxide gas or immersion in 1:1,000 aqueous zephiran for twenty-four hours.

The units of the extracorporeal circuit are connected by tubes of $^{1}/_{4}$-inch internal diameter vinyl (Tygon) (Fig. 6). Special polymonochlorotrifluoroethylene blood access connectors may be placed in the lines at the proximal and distal ends of the circuit (Fig. 6) to allow injection or withdrawal of fluid. A depulser tube in the line leading from the patient to the pump absorbs pressure extremes and prevents them from being applied to the withdrawal vein. This is a vinyl tube of .025-inch (0.63 mm.) wall thickness. All of these connecting units are sterilized by autoclaving.

Pressures Within Blood Circuit.—The

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†† Commercially available from Warren E. Collins, Inc., 555 Huntington Avenue, Boston 15, Massachusetts.

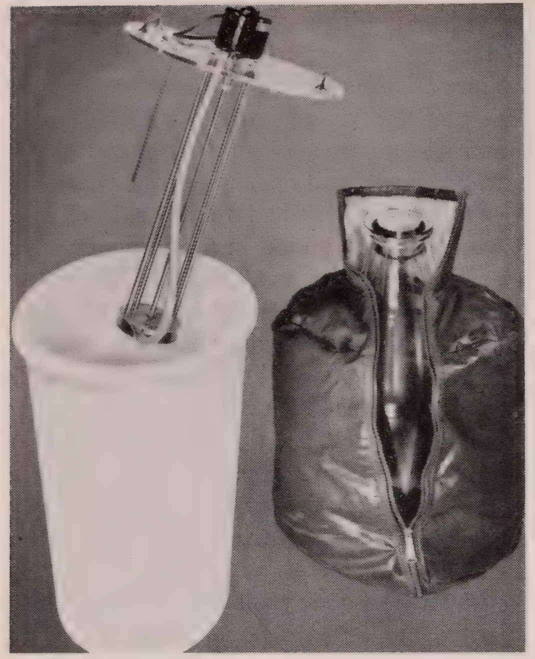


FIG. 7. Dialyzing fluid containers are shown: on left, polyethylene vat with plastic lid and pump insert suspended above. When in operation plastic lid fits snugly against rim of vat. On right is Pyrex bottle with its insulator bag.

mean blood pressure at the entrance to the dialyzer averages 115 mm. Hg. The pressure at the exit is 30 mm. Hg and drops to 10 mm. at the return cannula in the cephalic vein (Hathaway strain gage oscillograph recordings). Pressures recorded within the cephalic vein and the axillary vein indicate a very rapid drop of pressure toward zero. Thus the vein through which the blood is returned to the patient is never subjected to unphysiologic pressure.

Bath Circuit.—The reservoir for the dialyzing bath may be (1) a 20-liter Pyrex glass bottle encased in an insulator bag or (2) an open-mouthed polyethylene vat with a 20-liter capacity (Fig. 7). The bath is made with warm tap water at a temperature of from 100 F. (37.8 C.) to 104 F. (40 C.). The insulated glass container will allow a temperature drop of only 1 F. (0.55 C.) per hour, whereas the fall in temperature of the fluid in the polyethylene container may be as much as 6 F. (3.3 C.) in an hour. The latter decline in temperature is not critical, however, when the initial temperature is 104 F. (40 C.) and when the bath is changed each hour, as it is in our standard procedure.

The advantages of the narrow-necked Pyrex bottle are: (1) A shift in bath fluid volume may be easily detected and (2) the container is easily sealed, allowing a vacuum to be applied when ultrafiltration of the blood is desired. On the other hand, the polyethylene vat is nonbreakable, very easily cleaned, and can be used as a packing container in transporting equipment.

The dialyzing bath is circulated by a small centrifugal pump with a maximum output of 3,000 ml. per minute. It is powered by a $^1/_{20}$-horsepower motor. The shaft connecting the motor to the pump is insulated with rubber against the transmission of electric current into the bath, whence it could be transmitted to the patient.

Any standard tubing, rubber or plastic, may be used to connect the components of the bath circuit (Fig. 6). Routinely, $^5/_{16}$-inch (7.85 mm.) internal diameter vinyl tubing is used.

When the bath circuit is in operation, the dialyzing fluid is propelled by the bath pump into the outer chamber of the dialyzer through a tube having an adjustable clamp to regulate flow. When the bath leaves the dialyzer at the distal end it falls back by gravity into the reservoir.

All parts of the dialyzing bath circuit are made chemically clean before each dialysis. The bath constituents are weighed dry and stand in chemically clean containers. Since the cellophane is impervious to molecules larger than and inclusive of serum albumin, contamination of the blood by the entry of virus or bacteria is not a problem.[12,13] Boiling of the dialyzing bath is then unnecessary.

BLOOD CIRCUIT ASSEMBLY.—Immediately prior to its use, the component parts of the blood circuit are joined, under sterile conditions, in their proper sequence (Fig. 6).

The total length of the exteriorized blood pathway need not exceed 7 feet. To seal the circuit and maintain its sterility, the saphenous vein and cephalic vein cannulas are connected to each other via a sterile vinyl tube. Sterile 0.9 per cent saline is then infused through one of the access connectors (Fig. 6). Two liters of saline are pumped through the circuit and discarded. Next, the circuit is filled to capacity with sterile saline and the fluid is circulated at 500 ml. per minute. Heparin, in the amount of 50 mg. per square meter cellophane surface area, is injected and circulation of the fluid is continued for twenty minutes or more.

The apparatus is then ready to be set up on a bedside stand (Fig. 5). Blood priming is not used since the blood volume in the extracorporeal circuit is small.

PREPARATION OF PATIENT FOR DIALYSIS.—An adequate history and physical examination is necessary not only to evaluate any cardiovascular, renal, or other disease, but also to alert the dialysis team to any potential mechanism or sites of hemorrhage. Clinical and laboratory studies are individualized and are dependent on the indications for dialysis.

A reasonable amount of whole blood, usually not exceeding 1,000 ml., is cross-matched prior to dialysis, but unless the patient has an anemia as expressed by a hemoglobin below 8 to 10 Gm., the blood is seldom used. The design of the dialyzer allows most of the exteriorized blood to be returned to the patient at the end of the dialysis.

The areas where cutdowns are to be performed are shaved and prepared surgically. A nasogastric tube is passed in all patients who are semiconscious or unconscious. To the conscious patient, 50 to 100 mg. of meperidine hydrochloride (Demerol hydrochloride) intramuscularly is given one hour prior to the preparation of the cutdowns and the insertion of the cannulas for dialysis.

VESSEL CANNULATION AND APPLICATION OF DIALYZER.—Inasmuch as the MacNeill XI blood dialyzers were first designed for military use, an artery-to-vein flow was considered valuable to obviate the need for a blood pump in the circuit.

By clinical trial it was found that sufficient blood flow could be maintained through the dialyzer by radial artery cannulation. The blood was returned through the cephalic or basilic vein of the same arm without a blood pump anywhere in the circuit. The advantage, in military and civil defense planning, of a dialyzer that can be operated when necessary without a blood pump or transfusion is obvious.

Since cannulation of the radial artery necessitates sacrificing this artery at the wrist, it is imperative that collateral circulation by way of the ulnar artery be adequate. The arterial cutdown is made over the radial artery at the wrist. Minimal trauma during the exposure is important to prevent undue spasm of the vessel. Lidocaine hydrochloride (Xylocaine hydrochloride) 1 per cent may be infiltrated into the adventitia of the artery to reduce spasm. A $^1/_{32}$-inch (0.78 mm.) to $^3/_{32}$-inch (2.39 mm.) bore polyethylene catheter is inserted 2 to 3 cm. into the proximal portion of the artery. The distal segment is occluded with a fine silk ligature.

An artery-to-vein circuit has been used in 20 patients and it has proved its applicability and simplicity. However, for bedside hospital dialysis a vein-to-vein circuit with inclusion of the MacNeill blood pump has subsequently been used. This setup is usually preferable as it does not necessitate sacrificing an artery and it allows for more adequate regulation of the rate of blood flow through the dialyzer.

The vein-to-vein circuit employs the withdrawal of blood via a saphenous vein cannula and its return to the patient via an antecubital vein. The blood circuit is established by cannulating the venous return channel first. Simple cut-down technic over the cephalic or basilic vein is employed using local 1 per cent lidocaine hydrochloride anesthesia. If the vessel is handled gently, a surprisingly large polyethylene catheter with an internal diameter as great as $^1/_8$ inch (3.18 mm.) can be inserted easily into the vessel. This cannula is connected to the vinyl tube leading from the flowmeter (Fig. 6). Heparinized saline (11 mg. heparin per 500 ml.) is allowed to drip slowly through the blood access connector at the distal end of the circuit and into the return cannula.

A small longitudinal incision is required in the upper thigh over the saphenous vein, 1 to $1^1/_2$ inches below its junction with the femoral vein. A long polyethylene catheter, usually with an internal diameter of $^1/_8$ inch (3.18 mm.), is inserted into the saphenous vein and threaded into the common iliac vein or inferior vena cava where it lies during dialysis.

Just prior to the insertion of the withdrawal cannula, whether it be in the radial artery or the saphenous vein, the initial dose of heparin is given through the venous return cannula in the antecubital space. The total dose of heparin (dialyzer plus patient) is approximately 2 mg. per Kg. body weight. After the withdrawal cannula is in place and all connections are completed, the piston pulser is started and the blood pump begins to circulate the blood through the extracorporeal pathway. The removal of blood from the patient is simultaneously compensated by an equal volume of normal saline solution leaving the extracorporeal circuit and passing into the patient's circulatory system. The blood flow is regulated at 200 to 400 ml. per minute.

An average of 10 mg. heparin per hour is given to the patient after the start of the procedure. Whatever circulating heparin remains at the end of the dialysis is neutralized with protamine sulfate.

During dialysis the wounds are closed snugly about the cannulas. At the termination of the procedure, following removal of the cannulas, the wounds are closed tightly.

TABLE I.—Composition of Dialyzing Bath

Components	Quantities
Sodium	139 mEq. per liter
Potassium	4.2 mEq. per liter
Calcium	4.5 mEq. per liter
Glucose	100 to 200 mg. per cent
Chloride	120 mEq. per liter
Bicarbonate	27 mEq. per liter
Phosphorus	None
Magnesium	1 mEq. per liter
Lactic acid	4.5 ml. of an 85 per cent solution. (This amount adjusts the pH to 7.4 using Buffalo tap water. This must be added prior to the addition of the magnesium and calcium salts. Amount of calcium used depends on calcium content of top water.)

Operation of Bath Circuit.—The dialyzing bath flow should be started five or ten minutes before the blood flow begins. This fluid circulates with considerable turbulence through the outer chamber of the dialyzer filling all of the areas within the nylon screens (Fig. 1). The bath flow rate is maintained at 2,000 to 3,000 ml. per minute and can be checked at intervals using a graduated cylinder. Fluid exchanges between the blood and the bath are prevented by balancing osmotic pressure hydrostatically. The dialyzing bath flowing down into the reservoir from the dialyzer case (Fig. 5) creates a subatmospheric pressure. This added to the blood pressure within the cellophane tubes is adequate to offset the osmotic pressure of the plasma proteins in the blood pathway. Thus any transfer of water from the bath to the plasma by osmotic action is controlled.

Composition of Dialyzing Bath.—Carefully weighed amounts of dry chemicals are added to deionized or plain tap water heated to 104 F. (41 C.). They include 132 Gm. sodium chloride, 45 Gm. sodium bicarbonate, 20 Gm. glucose, 6 Gm. potassium chloride, 4 Gm. calcium chloride, and 2 Gm. magnesium chloride (per 20 L. volume). The pH of the bath is adjusted to 7.4 with an appropriate amount of 85 per cent lactic acid. The resultant concentrations in the bath are shown in Table I. The bath is used in quantities of 20

L. and changed every hour during the six- or eight-hour period of dialysis. Samples of each bath are collected for analysis at the beginning and at the end of each hour.

Conduct of Dialysis.—Vital signs and blood and bath flow rates are checked constantly during the course of the procedure. Occasionally a patient may become moderately anxious or restless during the procedure and be given repeated small doses of meperidine hydrochloride. Specimens of blood are collected at the beginning, at the half-way mark, and at the end of dialysis. Later these samples are subjected to appropriate chemical analyses to determine the efficiency of the dialytic exchange. Electrolyte and other appropriate determinations are carried out on specimens of bath taken at the beginning and at the end of each hour. When poisoning is involved, determinations of levels of the responsible agent are carried out at intervals during the dialysis. If the patient needs a blood transfusion, it is advantageous to administer it through the distal blood access connector (Figs. 5 and 6). The dialyzing apparatus in use on a patient is shown in Figure 5.

Personnel Requirements.—Ordinarily, we have four persons on the dialyzing team: an internist, a surgeon, a technologist, and a registered nurse. The two physicians carry out the cutdowns and direct the entire procedure. The technologist mixes the dialyzing baths, collects blood and bath samples, and supervises other technical details.

Care of the patient is the function of the nurse. Beyond keeping constant records of blood pressure, temperature, pulse, respirations, and satisfying the needs of the patient, she is not burdened with other responsibilities.

A dialysis can be carried out readily with only one physician and one technologist in attendance. We feel that, in a hospital, a nurse is important to the group; adding a second physician serves to lighten the burden on the professional component of the team.

Comments

The parallel arrangement of the blood-filled tubes in the dialyzer has many advantages. Each portion of blood traverses a short exterior route and remains outside the body for a reasonably short period of time, usually not exceeding one minute. This brief period of exposure to an external environment prevents appreciable temperature changes and minimizes the possibility of mechanical damage to the blood. The total amount of blood in a fully distended cellophane tube is constant and major volume shifts in the exteriorized blood cannot occur because each tube is kept rigid and flattened between two nylon screens. Moreover, this parallel, rigid arrangement permits efficient extraction of protein-free fluid from the blood when a vacuum is applied to the outer surface of the tubes (ultrafiltration).

Each cellophane tube has its end cut in such a fashion that the cellophane slips over the polytetrafluoroethylene insert so as to avoid any contact between blood and a raw edge of cellophane. This design plus the use of polytetrafluoroethylene minimizes the hazard of blood coagulation or fibrin deposition.

When the dialyzing bath circuit is operating in the usual way (Fig. 5) pressure relationships such as have been described are such that there is no net fluid loss or gain between the blood and the dialyzing bath. Ultrafiltration is made possible by the fact that the bath chamber of the apparatus can be sealed off completely and made airtight. When a vacuum pump is attached to the circuit, through a port in the rubber stopper of the Pyrex bath reservoir, the pressure within the bath circuit can be reduced up to minus 700 mm. of mercury and fluid can be extracted from the blood in amounts up to 1 L. per hour.

The parallel arrangement of the blood tubes of the dialyzer is not unlike that of the channels of a radiator, and heat exchange occurs here in the same efficient manner. The elevation of the bath temperature slightly above the physiologic norm returns the blood to the patient's vein at body temperature.

The small total area occupied by the apparatus at the bedside (Fig. 5) is a very distinct advantage. The arrangement of the apparatus allows free access to the patient from almost any angle. The portability of the apparatus is another obvious advantage. A special dialyzer room has some advantages but is not essential. The apparatus can be easily packed and readily transported to the patient.

It is to be stressed that all the surfaces with which the blood comes in contact are carefully selected plastic, nonwettable surfaces with the exception of the cellophane membrane itself. These smooth surfaces, which include polyethylene, vinyl, polymonochlorotrifluoroethylene, and polytetrafluoroethylene are all relatively nonreactive and minimize the hazard of clotting and hemolysis. Rubber, stainless steel, and other metals are not used anywhere in the system in contact with the blood, and silicone coating is nowhere necessary.

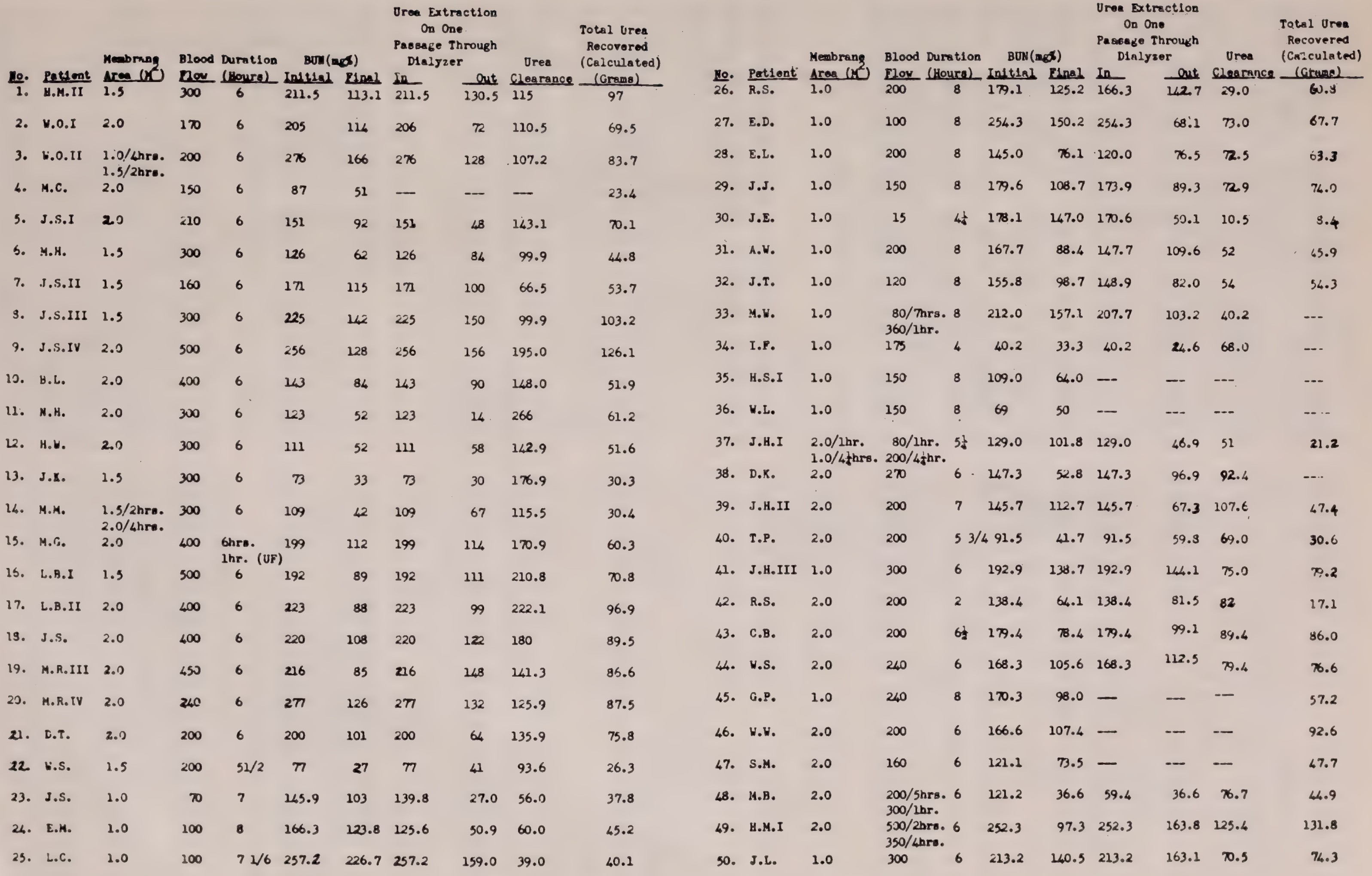
With the polymonochlorotrifluoroethylene blood access connectors, drug administration and infusions can be given and blood samples withdrawn without difficulty, obviating puncture of the tubes. (Vinyl tubes do not seal after puncture.) It should be noted that there are no rotating couplings or mechanical valves in the blood line of this system. Valving is accomplished in the blood pump by changes in pressure exerted from without. This gentle method of valving diminishes the hazard of coagulation and trauma to the blood. The elimination of mechanical valving also reduces turbulence, another important factor in minimizing clotting and hemolysis. The osmotic pressure of the dialyzing bath is always maintained within a range such that it will not create the hazard of contributing to increased lysis of the red cells. Because of the minimal amount of hemolysis encountered in the clinical use of the circuit it may be possible to use the apparatus for very much longer periods than the usual six or eight hours, without causing significant destruction of the formed elements of the blood.

Despite the nonwettable property and the generally low reactivity of the surfaces over which the blood passes, the use of heparin to prevent clotting is nevertheless mandatory. A total initial dose of heparin in the amount of 2 mg. per Kg. body weight is divided between the apparatus and the patient, the patient being given the balance after the apparatus has been heparinized, as has been described previously in "Blood Circuit Assembly." This is a liberal amount of heparin, but it is preferable to give a moderate excess of heparin than to give too little. This amount of heparin will cause considerable prolongation of the clotting time. Nevertheless, it is necessary to give small doses of heparin, usually not exceeding 10 mg. per hour, to the patient during the course of dialysis. At the termination of a standard clinical dialysis, any excess heparin activity is neutralized with protamine sulfate.

It will be noted that there is no need for a filter in the system because the blood passages in the polytetrafluoroethylene inserts are so small that they will retain any clots that may arrive at the dialyzer.

It is of great importance to emphasize that there is no need for priming the apparatus with blood. When blood is not used, the possibility of hemolytic reactions is eliminated. Furthermore, emergency dialyses can be performed without delay for blood typing and cross-matching. Even when a transfusion is indicated, it can be given after the dialysis is started, at the normal slow rate of administration. The dialyzer will remove excess potassium and other abnormal diffusible solutes in the transfused blood.

Some investigators using in vivo dialysis have experienced thermal reactions of un-



No.	Patient	Membrane Area (M²)	Blood Flow	Duration (Hours)	BUN(mg%) Initial	BUN(mg%) Final	Urea Extraction On One Passage Through Dialyzer In	Urea Extraction On One Passage Through Dialyzer Out	Urea Clearance	Total Urea Recovered (Calculated) (Grams)
1.	H.M.II	1.5	300	6	211.5	113.1	211.5	130.5	115	97
2.	W.O.I	2.0	170	6	205	114	206	72	110.5	69.5
3.	W.O.II	1.0/4hrs. 1.5/2hrs.	200	6	276	166	276	128	107.2	83.7
4.	M.C.	2.0	150	6	87	51	---	---	---	23.4
5.	J.S.I	2.0	210	6	151	92	151	48	143.1	70.1
6.	M.H.	1.5	300	6	126	62	126	84	99.9	44.8
7.	J.S.II	1.5	160	6	171	115	171	100	66.5	53.7
8.	J.S.III	1.5	300	6	225	142	225	150	99.9	103.2
9.	J.S.IV	2.0	500	6	256	128	256	156	195.0	126.1
10.	B.L.	2.0	400	6	143	84	143	90	148.0	51.9
11.	N.H.	2.0	300	6	123	52	123	14	266	61.2
12.	H.W.	2.0	300	6	111	52	111	58	142.9	51.6
13.	J.K.	1.5	300	6	73	33	73	30	176.9	30.3
14.	M.M.	1.5/2hrs. 2.0/4hrs.	300	6	109	42	109	67	115.5	30.4
15.	M.G.	2.0	400	6hrs. 1hr. (UF)	199	112	199	114	170.9	60.3
16.	L.B.I	1.5	500	6	192	89	192	111	210.8	70.8
17.	L.B.II	2.0	400	6	223	88	223	99	222.1	96.9
18.	J.S.	2.0	400	6	220	108	220	122	180	89.5
19.	M.R.III	2.0	450	6	216	85	216	148	141.3	86.6
20.	M.R.IV	2.0	240	6	277	126	277	132	125.9	87.5
21.	D.T.	2.0	200	6	200	101	200	64	135.9	75.8
22.	W.S.	1.5	200	51/2	77	27	77	41	93.6	26.3
23.	J.S.	1.0	70	7	145.9	103	139.8	27.0	56.0	37.8
24.	E.M.	1.0	100	8	166.3	123.8	125.6	50.9	60.0	45.2
25.	L.C.	1.0	100	7 1/6	257.2	226.7	257.2	159.0	39.0	40.1
26.	R.S.	1.0	200	8	179.1	125.2	166.3	142.7	29.0	60.3
27.	E.D.	1.0	100	8	254.3	150.2	254.3	68.1	73.0	67.7
28.	E.L.	1.0	200	8	145.0	76.1	120.0	76.5	72.5	63.3
29.	J.J.	1.0	150	8	179.6	108.7	173.9	89.3	72.9	74.0
30.	J.E.	1.0	15	4½	178.1	147.0	170.6	50.1	10.5	8.4
31.	A.W.	1.0	200	8	167.7	88.4	147.7	109.6	52	45.9
32.	J.T.	1.0	120	8	155.8	98.7	148.9	82.0	54	54.3
33.	M.W.	1.0	80/7hrs. 360/1hr.	8	212.0	157.1	207.7	103.2	40.2	---
34.	I.F.	1.0	175	4	40.2	33.3	40.2	24.6	68.0	---
35.	H.S.I	1.0	150	8	109.0	64.0	---	---	---	---
36.	W.L.	1.0	150	8	69	50	---	---	---	---
37.	J.H.I	2.0/1hr. 1.0/4½hrs.	80/1hr. 200/4½hr.	5½	129.0	101.8	129.0	46.9	51	21.2
38.	D.K.	2.0	270	6	147.3	52.8	147.3	96.9	92.4	---
39.	J.H.II	2.0	200	7	145.7	112.7	145.7	67.3	107.6	47.4
40.	T.P.	2.0	200	5 3/4	91.5	41.7	91.5	59.8	69.0	30.6
41.	J.H.III	1.0	300	6	192.9	138.7	192.9	144.1	75.0	79.2
42.	R.S.	2.0	200	2	138.4	64.1	138.4	81.5	82	17.1
43.	C.B.	2.0	200	6½	179.4	78.4	179.4	99.1	89.4	86.0
44.	W.S.	2.0	240	6	168.3	105.6	168.3	112.5	79.4	76.6
45.	G.P.	1.0	240	8	170.3	98.0	---	---	---	57.2
46.	W.W.	2.0	200	6	166.6	107.4	---	---	---	92.6
47.	S.M.	2.0	160	6	121.1	73.5	---	---	---	47.7
48.	M.B.	2.0	200/5hrs. 300/1hr.	6	121.2	36.6	59.4	36.6	76.7	44.9
49.	H.M.I	2.0	500/2hrs. 350/4hrs.	6	252.3	97.3	252.3	163.8	125.4	131.8
50.	J.L.	1.0	300	6	213.2	140.5	213.2	163.1	70.5	74.3

FIG. 8. Urea extraction data for 50 clinical cases.

determined cause.[14] Theoretically, pyrogens could enter the blood stream either from the blood pathway of the dialyzing apparatus or by diffusion into it from the dialyzing fluid. In 1940, however, it was reported[13] that pyrogens do not cross a cellophane membrane. In our early animal studies, pyrogen reactions did not occur when the blood circuit was carefully cleaned and sterilized and when all of the elements of the bath circuit were kept scrupulously, chemically clean. We have not tested directly for pyrogens in the bath at any time, but in our clinical series we have not had a pyrogen reaction in any dialysis.

The ease of sterilization of the components of the blood circuit has been mentioned. The fact that the assembled dialyzer is autoclavable is a distinct advantage. To prevent bacterial growth and drying of the cellophane the dialyzer is stored in a refrigerator at 41 F. (5 C.) after it is autoclaved. Cultures of fluid removed from the blood compartment prepared in this way have repeatedly been negative for bacterial growth, the media having included standard pour plates, blood agar, and thioglycolate.

More than 120 clinical dialyses have been carried out using the MacNeill dialyzers and blood pumps. It can be seen that a dialyzing system which does not require blood priming is of potential usefulness in basic physiologic studies where the presence of extraneous material in the blood circuit is not desirable. The small size and compact parallel arrangement of blood channels, as well as the small capacity, contribute to its adaptability to numerous clinical and laboratory investigations.

EFFICACY OF APPARATUS.—The chief factors influencing the passage of solutes across the cellophane membrane appear to be: the total membrane surface area,[12] the porosity and thickness of the membrane, the rate of blood flow, and the concentration gradient of the solute. Temperature of the blood and of the bath may affect the blood flow. We have observed slowing of the blood flow in several cases where the blood or bath temperature has fallen below normal (37 C.) The more frequently the bath is changed, the greater will be the diffusion gradient.

We have used dialyzers with 1, 1.5, and 2 square meters of cellophane surface area. Figure 8 shows the amounts of urea nitrogen extracted in 50 dialyses carried out with these parallel flow, straight tube dialyzers. Barbiturates, bromides, aspirin, amino acids, and very many other solutes are dialyzable.[15] A detailed report of the results of dialysis, in acute and chronic renal failure during the first three years of the use of the dialyzer at the Buffalo General Hospital, is presented separately.[16] Reports of other types of clinical studies with this apparatus are in preparation.

Summary

A unique, clinically tested bedside dialyzing system, using the MacNeill blood pump and dialyzer, is presented. With this system it is possible to institute dialysis without priming the apparatus with blood.

Factors minimizing the development of blood damage over long periods of pumping and dialyzing are emphasized, and the technic of applying this compact bedside apparatus to selected clinical situations requiring hemodialysis is described. This equipment is also adaptable for direct ultrafiltration of blood.

The design of this dialyzer resembles the arrangement of the natural capillary system. Such a synthetic capillary mechanism may eventually be used in the performance of functions of vascularized organs other than the kidney. The practicability of using this dialyzer and pump, without blood priming, opens the way to more meaningful basic physiologic studies.

The efficacy of the apparatus (three standard sizes) is expressed in terms of urea clearance and total urea removed.

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Treatment of Renal Failure with a Parallel Flow, Straight Tube Blood Dialyzer

JOHN E. DOYLE, M.D.,* ROLAND ANTHONE, M.D., SIDNEY ANTHONE, M.D., AND ARTHUR E. MACNEILL, M.D., BUFFALO, NEW YORK

(From the Departments of Medicine and Surgery, University of Buffalo, School of Medicine, the Buffalo General Hospital, and the Medical Foundation of Buffalo)

THE general indications for dialysis, listed by disease complex, are set forth in the Technic section of this work.[1] There is general agreement as to the situations in which dialysis may be used,[1–6] but the specific symptoms and signs which signal immediate need for dialysis are less generally agreed on.[7] Many who are concerned with the treatment of renal failure are becoming more and more liberal in the use of dialysis.[3,7,8]

The experience reported in the following pages has led us to agree with Salisbury[7] and others that earlier dialysis than has generally been used will reduce the mortality rate in reversible renal failure.

In acute, potentially reversible, renal failure the immediate indications we have now adopted are these: (1) clinical signs

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The apparatus used in this work is commercially available from Warren E. Collins, Inc., 555 Huntington Avenue, Boston 15, Massachusetts.

* Dr. Doyle is now Clinical Instructor in Medicine, Upstate Medical Center, State University of New York, Syracuse, New York.

of uremia (emesis, twitching, convulsions, pulmonary edema) during the first five days of anuria-oliguria; (2) on the sixth day of anuria-oliguria even without the presence of clinical signs; (3) electrolyte abnormalities (serum potassium above 7 mEq. per L., serum bicarbonate below 12 mEq. per L., unusually low sodium or chloride); and (4) blood urea nitrogen above 150 mg. per cent. Whenever clinical symptoms recur or when serum electrolytes or blood urea nitrogen again become distorted as noted previously, dialysis should be repeated, even after the onset of diuresis.

The standard treatment of acute renal failure applied in our hospital is similar to that used in other centers:[7,9,10] (1) Daily water intake limited to measured output plus 500 to 600 cc. for net loss (insensible water loss minus water of oxidation). (2) Nonprotein, no salt, high carbohydrate, high calorie intake. This may be accomplished in nauseated patients with intra venous glucose (5 to 50 per cent) through an indwelling plastic cannula, adding one unit of regular insulin for each 5 Gm. dextrose to prevent hyperkalemia. (3) Careful measurement of intake and output. (4) Daily body weight measurement. (5) Vitamin therapy. (6) Frequent measurements of serum electrolytes and blood urea nitrogen or creatinine. (7) Symptomatic treatment: nasogastric suction, laxation, and oxygen administration. (8) Specific drugs including antibiotics (some are apt to be retained when renal function is impaired). (9) Blood transfusions when indicated. (10) Electrocardiograms and x-ray examinations when indicated. (11) Constant re-evaluation. (12) Use of potassium-absorbing resins by enema or by mouth. To these items we would add (13) Early dialysis. We have not used testosterone in patients with acute renal failure, but have used it with some success in those with chronic uremia. Over-all treatment of chronic renal failure has been well outlined elsewhere.[9,10] When oliguria-anuria supervenes in chronic uremia, measures identical to those listed are indicated. Dialysis may be indicated to relieve symptoms in chronic uremia, especially in polycystic kidney disease[11] even when anuria-oliguria has not occurred.

The technic of dialysis with the MacNeill dialyzer and blood pump circuit is described in the first or Technic part of this work, the preceding article.[1]

It is of interest to note that our team carried the portable MacNeill equipment to the patient at other hospitals in the Buffalo area on three occasions when it was not possible to have the patient moved. On three other separate occasions the team took the apparatus 300 miles round trip by auto to treat a patient at an Air Force Hospital. Once, the team flew with the equipment a distance of 500 miles to treat another patient with the crush syndrome.

The following is a summary of results of treatment of patients with acute and chronic renal failure with the MacNeill parallel flow tubular blood dialyzer. This series is composed of the 42 patients* with renal failure in whom 55 dialyses were performed during the first three years of the use of this equipment. More than one dialysis was performed in 7 patients. Patients 15 and 38 each underwent four dialyses. The other 5 patients (5, 11, 12, 17, and 30) underwent two or three dialyses each.

Acute Renal Failure

Seventeen patients had acute renal failure; 8 recovered and 9 died (Table I). Of the 8 patients who survived, Patients 2 and 7 might have recovered without benefit of dialysis. However, we believe the remaining 6 patients could not have survived without dialysis either because of the duration of the anuria, potassium intoxication, or because of the severity of their clinical conditions. The average duration of improvement after dialysis in those

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* For purposes of convenience the patients have been numbered 1 through 42. Information concerning them will be found in Tables I, II, III, and IV.

TABLE I.—Data in 17 Patients with Acute Renal Failure Treated by Dialysis

Patient Numbers	Category	Patients Recovered	Duration of Renal Failure until Urine Reached 1 L. per Day (Days)	Patients Dead	Principal Cause of Death	Duration of Survival after Onset of Renal Failure (Days)
1	Transfusion reaction	x	21	..	....	....
2		x	11	..	....	....
3		..	..	x	Pulmonary edema. Laryngospasm	21
4	Corrosive mercuric chloride poisoning	..	..	x	Cardiac arrest	12
5		..	..	x		20
6	Carbon tetrachloride poisoning	x	11	..	....	....
7	Sulfonamide intoxication	x	11	..	....	....
8	Eclampsia	x	4	..	....	....
9		x	8	..	....	....
10	Shock Bleeding at delivery	x	9	..	....	....
11	Subphrenic abscess	..	..	x	Cardiac arrest. Liver abscess. Peritonitis	19
12	Perforated gastric ulcer	..	..	x	Perforated gastric ulcer. Peritonitis. Pelvic abscess. Massive pneumonia	13 (5 hours after end of 2nd dialysis)
13	Methyl alcohol poisoning (toxicity not established)	x	10	..	....	....
14	Crush syndrome	..	..	x	Massive pulmonary edema. Laceration of liver. Retroperitoneal hemorrhage	5
15	Inanition (anorexia nervosa)	..	..	x	Aspiration with acute obstructive emphysema. Ileo-ileal intussusception and purulent peritonitis	8
16	Hepatorenal syndrome (coma)	..	..	x	Surgical common bile duct drainage. Cirrhosis of liver. Bile nephrosis. Acute pancreatic necrosis. Aspiration pneumonia.	31
17	Acute glomerulonephritis	..	..	x	Convulsions. Cardiac arrest	53

patients who did not survive was about six days. Patient 4 died during dialysis and Patient 14 only thirty minutes after the termination of dialysis.

Of the group who died, 1 patient (Patient 3) with acute tubular necrosis following a transfusion reaction might have survived had he not been overhydrated and had he undergone dialysis considerably earlier than eighteen days after the onset of oliguria.

Patients 5 and 17 with acute renal failure, who died of cardiac arrest apparently from potassium intoxication, might have survived if more frequent dialysis had been employed. However, in the case of Patient 17, the reversibility of the acute glomerulonephritis was in question.

In Patient 16, referral for dialysis was delayed for too long a time.

In 4 of the other 5 patients (Patients 11, 12, 14, and 15) benefit was seen with each dialysis, but the severity of complicating maladies makes it questionable whether earlier or more frequent dialysis would have changed the ultimate outcome. In Patient 4, who had been in coma for a week following severe mercury poisoning, there was no effect from dialysis.

In summary, of the 9 patients in acute renal failure who did not survive, 4 might have had a better chance of survival with earlier or more frequent dialyses.[8] In 4 of the remaining 5, life was prolonged and temporary clinical improvement was obtained.

Chronic Renal Failure

Twenty-five patients were in chronic renal failure. Of this number, 19 died in the period of hospitalization during which they were dialyzed. One other patient who underwent three dialyses went home between the first and second dialyses and between the second and third, but he died in the hospital six days after his third dialysis. This patient was clinically improved following the first dialysis and the improvement persisted for about six weeks. Five other patients were clinically improved when they were discharged from the hospital. Four of these patients eventually died, but the fifth, who had chronic pyelonephritis and an extreme pelvic prolapse, was improved enough after dialysis to undergo surgical repair of the prolapse. Thereafter, she improved steadily, overcame the pyelonephritis, and has remained reasonably well for the past four years. Aoyama and Kolff[3] have also had encouraging experiences with dialysis in pyelonephritis.

The duration of clinical improvement after dialysis in the other patients with chronic renal failure was not always easy to assess. The estimated average duration of clinical improvement in the 24 patients who ultimately died is two and a half weeks (seventeen days). The shortest period of improvement following dialysis was one day, while the longest period of clinical improvement, excluding the 1 patient who is still alive, was six months. Three patients died in this series of chronic failure during the dialysis procedure.

Our results lead us to the conclusion of others[3] that the prognosis of uremia complicated by malignant hypertension is hopeless. Only 1 patient in this category (Table II) was able to leave the hospital after dialysis, but even so, for only a few weeks. As can be seen in Table II, most patients in all other categories, with the exception of chronic glomerulonephritis, did very badly. Three of the 5 patients with chronic glomerulonephritis, however, improved enough to go home for five, one and a half, and six months respectively. The other 2 patients with chronic glomerulonephritis were terminal cases.

Patient 25, with hydronephrosis due to obstructed ureters, had cancer of the uterus with pelvic extension which probably would not have been amenable to treatment had it been detected. Another patient, Patient 33, with plasma cell leukemia and leukemic infiltrations of the kidney, maintained improvement following dialysis for nearly a month.

We have not yet had the opportunity to treat patients with polycystic kidney disease, with whom Nakamoto and Kolff[11] have had encouraging experiences. It is of interest, however, to note that Patient 21, who had chronic glomerulonephritis and malignant hypertension, showed a most favorable change after dialysis, similar to that described by Nakamoto in polycystic kidney disease, who says, "a single six-hour dialysis may break the spell of continuous vomiting and misery and may be as effective as six weeks of difficult, frustrating medical management." In Patient 21 although the ultimate prognosis was not changed and she died thirteen days after dialysis, most of those thirteen days were the most comfortable she had spent in weeks.

TABLE II.—Data in 25 Patients with Chronic Renal Failure Treated by Dialysis

Patient Numbers	Diagnosis	Improved when Discharged from Hospital	Died in Hospital	Duration of Survival after Last Dialysis in Patients Who Died (Days)
18	Malignant hypertension with or without chronic glomerulonephritis	...	x	14
19		...	x	45
20		x*	x*	60
21		...	x	13
22	Subacute lymphatic leukemia with uric acid renal infarcts	...	x	†
23	Chronic pyelonephritis with prolapsed uterus	x	...	...
24	Hydronephrosis due to obstructed ureters	...	x	1
25			x	6
26	Hydronephrosis due to nephrolithiasis	...	x	27
27	Chronic glomerulonephritis	...	x	1
28		x*	x	150
29		...	x	†
30		x*	x	6
31		x*	x	180
32	Chronic pyelonephritis	x	...	16
33	Plasma cell leukemia	...	x	42
34	Lupus erythematosus with renal infarcts	...	x	2
35	Subacute glomerulonephritis	...	x	6
36		...	x	17
37		...	x	4
38		...	x	3
39	Renal amyloidosis with chronic pyelonephritis	...	x	4
40	Arteriolar nephrosclerosis with hypertensive cardiovascular disease	...	x	†
41		...	x	14
42	Arteriolar nephrosclerosis plus hypertensive cardiovascular disease with ascending pyelonephritis	...	x	7

* Returned to die in hospital. † Died during dialysis.

Responses to Treatment

Anesthesia.—Novocaine 1 per cent or 1 per cent lidocaine hydrochloride (Xylocaine) is injected locally at the site of the venous cutdowns before the cannulations are begun. None of the patients had any untoward reaction from the local anesthesia. In a few instances where localized pain around the cannulas was complained of during the dialysis procedure, additional anesthetic was injected during dialysis. The cut-down areas were again injected at the end of the procedure before the wounds were closed.

Analgesia.—Meperidine hydrochloride (Demerol hydrochloride) was given intramuscularly at the start of the dialysis in 17 of the 25 procedures carried out on the patients with acute renal failure, in the amount of 50 to 75 mg. The average total amount of the drug used in a dialysis in this portion of the series was 140 mg., with a range of from 0 to 425 mg. No meperidine hydrochloride at all was given in eight procedures.

The patients in chronic renal failure by and large seemed to require less meperidine hydrochloride possibly because of higher pain threshold and greater uremic lethargy. This analgesic was given at the start of the dialysis in 17 of the 30 dialyses. The agent had to be given repeatedly throughout the dialysis in several instances. The average total amount of meperidine hydrochloride given during a dialysis was 90 mg., with a range of from 0 to 225 mg. Those patients in chronic renal failure who did not receive the agent (seven dialyses) were either semicomatose or comatose.

OVER-ALL RESPONSES.—Five patients died during dialysis: Patients 4 and 16 were in the acute group and Patients 22, 29, and 40 were in the chronic group. Four were near death before dialysis. The other patient (Patient 29) developed a supraventricular tachycardia during dialysis which was thought not to be due to digitalis and was felt to be unrelated to the digitalis-potassium interaction. An injection of 3 mEq. of potassium a few minutes prior to death was probably coincidental. Since an autopsy was not obtained the cause of her cardiac arrest was not further elucidated.

Clinical improvement was seen in the other patients during and after dialysis. The duration of survival of these patients is found in Tables I and II.

As has been reported by others,[3] stiffness or discomfort in the arm or in the thigh used for cannulation occurs in some patients. Fatigue toward the end of the procedure was mentioned by several patients. An oscillating pressure air mattress was used during several of the dialyses but did not seem to lessen the fatigue experienced by the patient after lying in one position for a protracted period. Perhaps another type of mattress would be of more benefit. Actually, we could have moved the patient more frequently in many instances or could have allowed more active movement in other cases. Increasing experience has indicated that fairly free movement will not disturb the flexible cannulas.

Over-all clinical improvement was seen during or after 15 dialyses in the acute group; not even temporary improvement in the 2 who died. Varying degrees of clinical improvement were seen during or following dialysis in 25 procedures in the chronic group. Four others did not respond. Patient 29 showed improvement initially, only to die suddenly at five and one-half hours.

SPECIFIC SYMPTOMS AND SIGNS.—Twitching, changes in mental state, nausea, and emesis when present, usually improved with dialysis.

MENTATION.—Two of the 8 comatose patients in the acute group showed no improvement in mentation during dialysis; 15 patients progressed during or soon after dialysis from lethargy, stupor, semicoma, or coma to much more responsive levels. This response was especially remarkable in Patients 2, 5, 8, and 9. Of these individuals, Patients 2, 8, and 9 were obstetric patients. Patient 8 was the only patient in the entire group and the only patient extant, as far as we know, who underwent dialysis while pregnant. Patient 2 is presented in detail in the case reports.

In the chronic group, at the start of dialysis, 2 patients were comatose and 8 were semicomatose. As noted, the 2 patients in the former group and one in the latter group died during dialysis. Three of the other semicomatose patients showed a remarkable improvement in their mental status during or shortly after dialysis (Patients 21, 23, and 38).

TWITCHING AND CONVULSIVE ACTIVITY.—Generalized twitching occurred prior to 6 of 30 dialyses in the group with chronic uremia. In 3 patients the twitching disappeared prior to dialysis. In the other 3 patients the tetany disappeared during the procedure. In 2 other patients twitching appeared during dialysis but disappeared again as the maneuver proceeded.

Of the group of 8 patients who showed twitching before or during dialysis, 4 showed convulsive activity prior to the application of the dialyzer one to four days earlier; one of these (Patient 27), had a recurrence of convulsive activity both during dialysis and the day following. Another of this group (Patient 21) had a low serum sodium but a serum calcium of 7.7 mg. per cent at the time of the convulsion, and a third (Patient 34), had a serum calcium of 7.5

mg. per cent with a potassium of 7.4 mEq. per L. when she covulsed.

Two other patients had no recorded twitching at any time but did have convulsions: Patient 26, three months prior to dialysis when her acidosis was corrected in the face of a low serum calcium and then again terminally, four weeks after dialysis; and Patient 28 who had a history of seizures two years prior to dialysis.

There was no consistent relationship between the level of serum calcium and the onset of convulsions.

In the acute renal failure group, prior to dialysis, in 13 instances there was twitching of the extremities or of the face (9 patients). In 3 patients, the twitching disappeared before dialysis (ten dialyses). Patients 7, 8, and 11 had convulsions before dialysis but none after dialysis. In the case of Patient 7 they were probably due to preexisting brain damage, in Patient 8 they were associated with eclampsia, and in Patient 11 with overwhelming infection. In Patient 17 convulsions occurred four hours after the termination of his third dialysis, and he died after having 20 convulsions in ten hours. It was thought in this instance that rapid removal of urea may have caused cerebral edema and thereby contributed to the convulsions.

EMESIS.—Seventeen of the 42 patients vomited before dialysis (7 in the chronic group, 10 in the acute group). Four of these 17 patients vomited during dialysis. Seven in the chronic group and 1 in the acute group had emesis during dialysis where they had not had it beforehand. It usually occurred in the first hour or two.

Only 2 patients in each group had emesis again after dialysis, while still in the hospital (4 out of 42). Vomiting usually disappeared during or immediately after dialysis.

In the acute group, gastric suction was used throughout dialysis in 9 patients which may explain why vomiting was less of a problem during dialysis than in the chronic group where a nasogastric tube was used during dialysis in only 1 patient.

CARDIOVASCULAR CHANGES.—Changes in arterial pressure were measured several times at the start of each dialysis and at least every fifteen minutes during the course of each procedure. Apical pulses were recorded regularly.

BLOOD PRESSURE FALL.—*Acute Renal Failure Group.*—In the acute renal failure group a temporary average decrease of 21 mm. Hg systolic arterial blood pressure was seen early in dialysis (range 0 to 104 mm. Hg). The diastolic blood pressure fell an average of 15 mm. Hg in this group (range 0 to 70 mm. Hg). The systolic blood pressure fell in 16 of 25 dialyses and the diastolic pressure in 14. In all others it was stable. The diminution in blood pressure usually occurred in the first thirty to ninety minutes of the procedure.

It is of interest to note that the amount of cellophane surface area in the apparatus and hence the total exteriorized blood volume seems to have a bearing on blood pressure fall.

Cellophane Surface Area (Square Meters)	Average Fall in Pressure	
	Systolic (Mm. Hg)	Diastolic (Mm. Hg)
1	20	9
1.5	23	17
2.0	21	20

Chronic Renal Failure Group.—In the chronic renal failure group an early and temporary fall in systolic and diastolic pressure was also seen in some of these dialyses:

Average systolic blood pressure fall: 31 mm. Hg (range 0 to 116 mm. Hg)

Average diastolic blood pressure fall: 12 mm. Hg (range 0 to 50 mm. Hg)

Such decreases in blood pressure were seen in 20 of the 30 procedures and occurred, as in the acute group, in the first thirty to ninety minutes of dialysis.

The relationship of blood pressure decreases to cellophane surface area used is shown as follows:

Cellophane Surface Area (Square Meters)	Average Fall in Pressure Systolic (Mm. Hg)	Diastolic (Mm. Hg)
1	8	7
1.5	27	13
2.0	46	23

Of the 55 dialyses, there were 4 instances where levarterenol bitartrate (Levophed bitartrate) was used to maintain the blood pressure, for periods of from two to six hours. Other patients were given blood transfusions, if required, as will be noted.

Blood Pressure Rise.—*Acute Renal Failure Group.*—There was a rise in blood pressure in the acute renal failure group over initial values in the later hours (one and one-half to eight hours) of dialysis in 11 of the 25 procedures. In seven other procedures it was perfectly stable. In three the blood pressure stabilized at a satisfactory level below the initial pressure. In those in whom the pressure rose to higher than original levels, the average sustained level was 28/17 mm. Hg above initial values.

Chronic Renal Failure Group.—There was a blood pressure elevation over initial values in the later hours (one and one-half to eight hours) of dialysis in 17 of the 30 procedures done on the chronic renal failure group. In eleven others it was stable, and in the other two the pressure stabilized at a lower level.

In those in whom the arterial blood pressure rose to higher than original level, the average sustained level was 34/23 mm. Hg above initial values.

In general, one should be prepared for a fall in blood pressure during the first hours and a rise during the later hours of dialysis. It is of interest to note that in only four dialyses was norepinephrine, or levarterenol, bitartrate required to maintain blood pressure. Contrary to the experience of others,[3] no dangerously high blood pressure levels were encountered and antihypertensive drugs were not used at all.

Pulse Variations.—In the acute renal failure series in only 5 of 25 dialyses was there a decrease in the pulse at the start of the procedure, averaging ten beats per minute. In these instances there was later some increase in the pulse but no regular pattern. The more frequent reaction (in 13 dialyses) was a rise in the pulse in the first hour or two, averaging 20 beats per minute (range 4 to 30), later leveling off to about ten beats per minute above the original heart rate (range 0 to 32). The pulse was unchanged during seven dialyses.

The group with chronic uremia revealed a decrease in the pulse early in dialysis in only 2 of the 30 applications, from 110 to 88 and from 100 to 80 respectively. In each case it rose again to the initial level at the end of the dialysis.

The more frequent reaction noted was an increase in the pulse rate in the first one to four hours, ranging from 12 to 32 beats per minute with an average increase of 20 beats per minute. This was seen in 17 dialyses. In these 17, the pulse thereafter leveled off during the latter hours of dialysis at an average rate of 14 beats faster than the pulse had been before dialysis.

In 2 cases the pulse came down to a lower level than the original pulse late in dialysis. The heart rate was stable throughout the procedure in eleven dialyses.

Cardiac Irregularities.—A few patients in the acute group were digitalized before dialysis because of signs of early cardiac failure. Patient 3 was digitalized with 1.5 mg. digoxin intravenously during dialysis because of pulmonary edema (which had been present prior to the use of the artificial kidney) and marked tachycardia.

Several patients in the chronic group had been digitalized for varying periods. None was digitalized during dialysis. Of the group already digitalized, one (Patient 29) developed a supraventricular tachycardia during dialysis which may have been due to digitalis toxicity or relative potassium depletion or some other cause. Another (Patient 41) developed bigeminy after five and one-half hours of dialysis, but this rapidly disappeared. There were no other irregularities. The development of digitalis toxicity during dialysis owing to rapid correction of hyperkalemia and other electrolyte disturbances has been reported by Rubin and others.[12]

Blood Transfusions

ACUTE RENAL FAILURE GROUP.—In 19 dialyses in the acute renal failure group transfusions of whole blood or packed cells were used averaging 825 cc. (range 500 cc. to 1,750 cc.). Ten patients had a blood hemoglobin of 8.5 Gm. per cent or under prior to dialysis. There were slight falls in blood pressure in this group, averaging 11/4. (In 6 the hemoglobin was not recorded, and in 3 it was higher than 8.5 Gm. per cent.) Of the latter 3, 1 had a fall of 50/50 mm. Hg, another 14/8 mm. Hg, and the last 30/0 mm. Hg blood pressure in the first one to one and one-half hours of extracorporeal circulation.

The average blood pressure fall in the first part of dialysis in the entire group of patients who received blood transfusions later was 12/7.

The patients who received transfusions even though they had neither a low hemoglobin nor a substantial blood pressure fall were given blood because of a pulse increase of 20 beats or more in the first hour of dialysis.

There were 6 patients in the acute group who did not receive blood transfusions. Of these, 2 had blood hemoglobin levels under 8.5 Gm. per cent prior to dialysis; 1 was not recorded and 3 were higher. Of the first 2, 1 had a blood pressure fall of 104/50. She was markedly hypertensive. However, she soon stabilized at a pressure of 34/0 over the original level. The other had an initial blood pressure fall of 20/15 but soon returned to the initial level. It is of interest to note that in 5 of the 6 patients who received no blood, the arterial blood pressure rose to satisfactory levels from the second hour onward anyway, and the pulse stabilized. In retrospect, we perhaps might have avoided giving blood infusions to some of these patients had we been fully aware of the usual blood pressure pattern during dialysis.

CHRONIC RENAL FAILURE GROUP.—Twenty-three patients in the chronic group received blood transfusions during dialysis, averaging 515 cc. (range 500 to 1,000 cc.). Nine had blood hemoglobin levels of 8.5 Gm. or under prior to dialysis, 6 were not recorded, and 8 were higher. Of the 8 who had readings of 8.5 Gm. or higher, a diastolic blood pressure drop of 20 mm. Hg or more occurred in only 2, the average diastolic fall being 12 mm. Hg. Systolic blood pressure falls averaged 28 mm. Hg in this group, with 1 patient showing a fall of 50 mm. Hg and another (a hypertensive patient) 106 mm. Hg systolic.

The transfused patients not showing either hemoglobin below 8.5 Gm. or substantial falls in blood pressure (6 patients) received blood because of a rise in pulse of 16 beats or more per minute in the first hour of dialysis.

In retrospect, blood transfusions may not have been necessary in 3 of the patients since pulse increase may not be a sufficient indication for them.

There were 7 patients who did not receive transfusions. Of this group, 3 had hemoglobin levels under 8.5 Gm. per cent prior to dialysis. (Two were not recorded and 2 were higher.) One of these 3 patients, Patient 39, showed a stable blood pressure throughout dialysis; Patient 23 showed a fall of 26/16 during the second hour of dialysis but the pressure then remained stable; and Patient 24 showed a fall of 56/20, but levarterenol bitartrate maintained a satisfactory pressure. Blood was not given because of pulmonary edema. The other 4 patients showed stable blood pressures during the last hours of dialysis.

Thermal Variations

Body temperature was not regularly measured, but chills were recorded when they occurred.

Acute Group.—In the acute group there were chills during each of three procedures. One was associated with a cool dialyzing bath, when the body temperature fell to 97.6 F. (rectal). Another patient experienced a temperature fall to 94.8 F. (oral) when exposed to a cool bath. The third patient had a chill associated with the transfusion of blood. The chills ceased in the latter instance when the transfusion was stopped. In the former instances warmth was restored to normal when the bath was brought to standard temperature.

Chronic Group.—In the chronic group 1 patient had a chill when the dialyzing bath fell to 94 F. Heating the bath dispelled the discomfort. One other dialysis subject (Patient 29) had a frank chill associated with a fall of blood pressure to shock levels in the first hour of the procedure. Infusion of blood corrected the blood pressure and the chill disappeared.

Bleeding Before Dialysis

Acute Renal Failure Group.—There was active bleeding prior to dialysis in 2 patients in the acute group. Each had bichloride of mercury poisoning, 1 with marked gastrointestinal hemorrhage and bleeding from the vagina, rectum, nose, and mouth. The second had moderate gastrointestinal bleeding.

The use of heparin in the first instance did not appear to cause increased bleeding. In the other case heparinization may have contributed to a slight increase but no troublesome bleeding.

Chronic Renal Failure.—There was a history of gastrointestinal bleeding in Patient 39 of the chronic group but none during or after dialysis. Another patient (Patient 26) had hematuria attributed to a renal infarct two months before dialysis. She had no bleeding during the procedure.

Patient 30 had bleeding gums throughout his terminal course. Oral bleeding was noted two hours after the start of one dialysis. Slightly excessive oozing from the cut-down sites was seen at three hours after the start of dialysis and emesis of small amounts of blood at the fourth and fifth hours of the six-hour procedure. He underwent dialysis three times. In the first procedure, the total amount of heparin given was 220 mg.; in the second, 200 mg., and in the third, 180 mg. Protamine sulfate, 100 mg., was used at the end of each procedure. There were no hemorrhagic phenomena between dialyses.

During the second procedure for Patient 30 there was slight, self-limited bleeding from the gums about four hours after the start of dialysis. During the third dialysis there was some excess oozing of blood from the saphenous vein cut-down site which stopped with the termination of the dialysis. But four hours after the cessation of dialysis excessive oozing from the antecubital cut-down area required a pressure bandage. No transfusion was needed. At this time, the clotting time was ten minutes and the prothrombin time was thirteen seconds.

Heparin and Clotting Factors

In both the acute and the chronic groups the average amount of heparin placed in the dialyzer circuit prior to attachment to the patient was as follows: 1.0 $M.^2$ circuit, 60 mg.; 1.5 $M.^2$ circuit, 70 mg.; and 2.0 $M.^2$ circuit, 80 mg.

Acute Renal Failure Group.—The initial dose of heparin to the patient in the acute group ranged from 40 to 100 mg., with an average of 75 mg. Maintenance doses were given during most procedures, the amount depending on the degree of slight oozing at the cut-down sites and on the clotting time. The maintenance dose averaged 50 mg. heparin, and the total dose used in a procedure averaged 192 mg. Most were six- or eight-hour dialyses. In one four-hour dialysis the total amount used was 180 mg. As experience was gathered less heparin was used.

Most of the eight-hour dialyses were done with a 1 $M.^2$ cellophane apparatus; the six-hour dialyses were done with the 2 $M.^2$ or 1.5 $M.^2$ machines. The total amount of heparin used in each procedure was much the same.

Blood for clotting times was usually taken at zero hours and then every two to four hours during the course of dialysis. The clotting time was prolonged longer than thirty minutes in most instances. An extra maintenance dose of 50 mg. was used in each of two procedures where the dialyzer was replaced because of technical difficulties.

Slight oozing from the cut-down sites was allowed during the dialyzing procedure itself and was found to be a good guide to the adequacy of heparinization.

In retrospect, less heparin might have been used. The average amount of protamine sulfate given at the termination of dialysis was 75 mg.

Oozing from the saphenous vein cut-down site after dialysis was seen in 1 patient. This was promptly controlled by application of a pressure bandage.

Bleeding from other sites after the termination of dialysis was seen in 4 patients. Patient 2 had pelvic bleeding, beginning twelve hours after the onset of dialysis (six hours after termination of the procedure). A pelvic hematoma formed. This patient was six days postpartum at the time and had lacerations of the cervix during delivery. She had a normal (Lee-White) clotting time when the bleeding occurred. The second patient (Patient 8) underwent dialysis prior to delivery. She experienced some moderate bleeding after delivery (approximately four and one-half hours after dialysis). The third patient (Patient 5) had small amounts of bleeding from the mouth and evidence of slight gastrointestinal bleeding during dialysis and for five or six hours after the end of the procedure, despite the return of the clotting time to normal at the end of dialysis. The fourth patient (Patient 12) showed minor evidence of gastrointestinal hemorrhage at autopsy which may or may not have been related to heparinization.

CHRONIC RENAL FAILURE GROUP.—The initial dose of heparin to the patient averaged 85 mg. (range 50 to 100 mg.). Maintenance doses of heparin were given in all procedures, the amount depending on the degree of slight oozing at the cut-down sites and on the clotting time. The maintenance dose averaged 60 mg. heparin in this group of six to eight-hour dialyses. The average total amount of heparin given in this series was 220 mg. The total amount was higher in the chronic renal failure group because of a preponderance of 1.5 $M.^2$ and 2 $M.^2$ cellophane area dialyzers.

The clotting time was maintained above thirty minutes in most instances. Blood specimens taken for (Lee-White) clotting time were removed from the patient's venous system and not from the distal end of the dialyzer blood circuit, as practiced by some.[3] This difference in technic may help to explain our somewhat higher clotting time prolongations.

Nine of the 25 patients showed minor but unusual bleeding phenomena during or shortly after dialysis, which may have been due to factors involved in the uremic state, as described by Rath, Mailliard, and Schreiner,[13] or may have been related to heparinization.

Patient 18 showed unusual oozing from the cephalic vein cut-down site for a short period during dialysis. This was controlled by pressure. Patient 32 developed nasal bleeding two hours after the start of dialysis. This was partially controlled by Oxycel and later by a nasal pack. Patient 33 showed bloody urine after three hours of dialysis but this did not occur again. Patient 19 bled slightly from the tongue after three hours of dialysis but this was self-limited. Patient 28 had emesis of coffee-ground material during dialysis. This did not recur. Patient 30's bleeding phenomena have been described. Patient 38 had nasal bleeding during dialysis, controlled with Oxycel. Patient 34 showed dark brown fluid in the nasogastric tube during dialysis; this did not recur. Patient 22 had slight oral bleeding during dialysis. In his case, as well as in the case of Patient 32, the use of oral and nasal suction may have contributed to the bleeding. With Patient

32 the oozing was at best only poorly controlled for days after dialysis. This constant oozing plus inability of the patient to cough up bronchial secretions necessitated a tracheotomy eleven days before she ultimately succumbed.

Of these 9 patients showing somewhat unusual bleeding during dialysis, 4 received a total dose of heparin between 200 and 250 mg. Patient 32 received a total dose of 190 mg. heparin. None of this group, other than Patients 30 and 32, showed bleeding after dialysis.

Two other patients, however, did show unusual bleeding after dialysis: Patient 26 two days after dialysis showed oozing from a cut-down site when the clotting time was normal. A pressure bandage stopped the bleeding. Patient 21 showed oozing from the groin cut-down area four hours after the termination of dialysis. Her clotting time was normal. A pressure bandage stopped the oozing. Each of these patients had received a total dose of 170 mg. heparin. No transfusions were required because of blood loss.

The average amount of protamine sulfate used at the end of the procedure was 75 mg. Recently we have adopted the heparin-protamine titration technic of Perkins *et al.*[14] and we are using less protamine. We have not explored the regional heparinization technic of Gordon *et al.*[15]

Use of Tubes, Catheters, and Suction

ACUTE GROUP.—Nasogastric tubes were used in 7 patients of the acute group during ten dialyses but were not associated with oral or nasal bleeding in any instance. Oxygen was administered by nasal catheter in one instance and was not associated with bleeding. Oral and nasal suction was used in two instances but did not cause bleeding. Indwelling bladder catheters were used for several days in all 17 of the patients; no adverse effect due to their use was recorded.

CHRONIC GROUP.—A nasogastric tube was used in only 1 patient (Patient 34) and here was seen to drain coffee-colored material during dialysis. Oxygen nasal catheters were used in five instances; in one of these (Patient 22) the use of the catheter was associated with nasal bleeding. Oral and nasal suction was used in 4 patients and in 2 (Patients 22 and 32) was associated with fresh blood oozing. Urinary bladder catheters were used in all patients except Patient 30. In no case did the catheter cause undesirable side-effects. The importance of nasal catheters in inducing bleeding is not clear since other factors bear on hemorrhagic phenomena in chronic uremia.[13] However, we feel, with Aoyama and Kolff,[3] that the use of such catheters in patients with chronic uremia is to be avoided.

Blood Flow and Hemolysis

ACUTE GROUP.—The radial artery was used as a source of blood and pressure in 7 of the 25 dialyses in the acute group. The average rate of blood flow in these cases was 150 cc. per minute (range 100 to 200 cc. per minute). In one instance, where the standard cannulas could not be used because of the small size of the vessels in a child (Patient 7), a 20-gauge needle was placed in the radial artery and a blood flow of only 15 cc. per minute was possible.

Once the MacNeill blood pump became available for clinical use, it allowed the use of vein-to-vein flow. In the other 18 patients, then, the pump was used to propel blood from the inferior vena cava via the saphenous vein cannula through the dialysis circuit at an average blood flow rate of 330 cc. per minute (range 170 to 500 cc. per minute).

No free hemoglobin (as visible hemolysis) was seen in any of these patients prior to dialysis nor was it seen grossly during or after dialysis in any of these procedures. In this acute group plasma hemoglobin levels were not measured.

CHRONIC GROUP.—The radial artery was used as a source of blood and pressure in 8 of the 30 dialyses. The average rate of blood flow in these cases was 135 cc. per minute (range 80 to 200 cc. per minute).

In the other 22 dialyses the pump was used

TABLE III.—CHANGES IN BLOOD CHEMISTRY DURING DIALYSIS IN PATIENTS WITH ACUTE RENAL FAILURE

			Miliequivalents per Liter Before and After Dialysis								
Patient Numbers	Age (Yrs.)	Sex	Sodium		Chloride		Bicarbonate		Potassium		Cellophane (Square Meters)
			Before	After	Before	After	Before	After*	Before	After	
1	47	F	104	124	77	92	5.2	9.0	8.0	4.5	1
2	22	F	118	129	88	103	10.3	9.0	6.0	5.3	1.5
3	51	M	132	133	88	96	14.2	18.1	7.7	5.7	2
4	35	F	148	152	113	117	.....	.....	5.1	5.1	1
5 (1st dialysis)	43	F	123	133	84	104	.....	.....	7.0	5.3	1.5
(2nd dialysis)	43	F	120	127	93	104	.....	.....	6.0	3.7	2
6	43	M	122	133	80	100	.....	.....	8.5	5.4	1
7	4	F	134	138	103	105	11.9 volume per cent	30.2 volume per cent	6.7	6.0	1
8	35	F	142†	133	109**	105	9.9	12.5	5.1	5.1	1
9	22	F	130	137	93	109	12.0	14.5	6.5	5.1	1
10	21	F	124†	121	78	102	17.2	17.2	5.6	4.8	2
11 (1st dialysis)	53	F	125†	124	...	...	.....	.....	7.2	5.4	1
(2nd dialysis)	53	F	124	130	96	105	9.9	11.0	6.2	5.0	1
12 (1st) dialysis)	54	M	150†	141	83	99	30 volume per cent	35 volume per cent	7.0	7.0	2
(2nd dialysis)	54	M	154†	147	95	106	28 volume per cent	35 volume per cent	8.2	7.1	1.5
13	31	M	122†	123	74	94	.....	.....	7.1	6.0	1
14	13	F	126	134	90	99	41 volume per cent	45 volume per cent (1 hour)	9.1	5.8	2
15 (1st dialysis)	14	F	133†	126	...	...	12.0	16.8	5.5	4.8	2
(2nd dialysis)	14	F	...	...	...	...	10.3	12.5	...	...	2
(3rd dialysis)	14	F	130†	130	103	106	.....	.....	4.9	4.2	2
(4th dialysis)	14	F	124	130	...	...	.....	.....	5.4	4.3	2
16	54	M	...	...	one hour dialysis			.....	...	...	...
17 (1st dialysis)	18	M	130†	122	95	95	40.9 volume per cent	40.9 volume per cent	6.5	6.6	1
(2nd dialysis)	18	M	123	135	97	110	.....	.....	8.0	6.0	2
(3rd) dialysis)	18	M	118	126	95	99	.....	.....	8.6	6.2	1

* Values for bicarbonate are for the day of dialysis (before) and the day after dialysis (after).

† In these instances, the sodium concentration in the dialyzing bath was kept between 120 and 130 mEq. per L.

** In this instance, the sodium concentration in the bath was kept between 95 and 115 mEq. per L.

in a vein-to-vein circuit, giving an average blood flow rate of 265 cc. per minute (range 150 to 500 cc. per minute). No free hemoglobin was noted as visible hemolysis in the serum in any patient prior to, during, or after dialysis.

Determinations of plasma hemoglobin levels were carried out in 4 patients in this series and revealed increases in plasma hemoglobin in insignificant amounts of from less than 1.8 mg. per cent to a maximum of 6.5 mg. per cent at eight hours.

In each dialysis the serum potassium level fell, providing good suggestive evidence that hemolysis was of no significance.

Bath, Urea, and Electrolytes

The standard dialyzing bath contains the concentration of solutes noted in Table I of the Technic portion of this work.[1]

VARIATIONS IN THE BATH.—Merrill, Legrain, and Hoigne[16] have attempted to attribute the phenomenon of relative postdialysis oliguria to the reduction of osmotic load.

TABLE IV.—CHANGES IN BLOOD CHEMISTRY DURING DIALYSIS IN PATIENTS WITH CHRONIC RENAL FAILURE

Patient Numbers	Age (Yrs.)	Sex	Milliequivalents per Liter Before and After Dialysis								
			Sodium		Chloride		Bicarbonate		Potassium		Cellophane (Square Meters)
			Before	After	Before	After	Before	After	Before	After	
18	43	F	135	138	106	114	8.6	9.0	5.5	5.1	1
19	48	M	128	140	90	101	13.0	14.6	5.2	5.2	2
20	45	M	139	148	103	117	16.0	14.2	6.4	6.1	2
21	34	F	124*	129	81	97	...	...	6.0	5.6	2
22	60	M	106	123	87	...	18.8	...	5.9	4.7	1.5
23	57	F	149	148	108	113	12.5	17.6	5.1	5.6	1
24	62	F	143*	141	108*	111	6.9	10.2	8.7	5.1	1
25	56	F	129	137	97	104	5.0	8.0	7.2	5.1	2
26	62	F	131*	130	97	104	13.0	18.5	2.9	4.2	1.5
27	34	F	125	136	91	108	...	...	6.6	5.1	1
28	24	M	...	...	...	...	9.0	13.0	...	...	1
29	53	F	124	137	104	114	5.6	8.1	6.3	5.9	2
30 (1st dialysis)	32	M	133*	133	76	105	19.4	18.0	4.5	5.4	2
(2nd dialysis)	32	M	128	133	87	104	7.3	12.0	5.3	4.8	1.5
(3rd dialysis)	32	M	136	140	84	103	7.3	12.0	5.4	4.9	1.5
31	19	M	136*	133	115	114	9.0	15.5	6.4	4.9	2
32	52	F	139	140	102	109	4.3	4.3	6.2	4.5	1
33	55	M	136	140	107	114	6.0†	14.2	6.9	5.1	2
34	36	F	122	...	95	...	6.0	...	8.2	...	1.5
35	18	F	116	124	92	103	8.6	12.0	8.8	7.8	1
36	32	M	144	144	94	110	18 volume per cent	20 volume per cent	6.7	6.1	1
37	41	M	133	133	108*	108	10.3	12.0	9.2	7.4	2
38 (1st dialysis)	55	M	121	134	89	104	11.0	12.5	6.1	5.4	2
(2nd dialysis)	55	M	126	129	98	100	...	...	8.7	6.7	1.5
(3rd dialysis)	55	M	120	135	93	106	...	...	8.9	6.1	1.5
(4th dialysis)	55	M	136	135	102	105	9.0	14.7	10.2	6.7	2
39	35	M	145*	138	...	...	...	...	6.1	6.0	1
40	58	F	143	140	...	...	...	...	8.9	7.3	2
41	70	F	127*	131	95	103	5.2	6.9	5.1	4.3	2
42	56	M	130	136	93	113	...	...	5.4	5.0	1

* Sodium and chloride levels in the bath were lowered to a range of 120 to 125 mEq. per liter and 100 to 110 mEq. per liter respectively in these instances.

† The bicarbonate in this instance was measured immediately before and immediately after dialysis with the other electrolytes. In all other instances, the bicarbonate was measured on the day of dialysis and on the day after dialysis.

They have tried to prevent the decrease by the addition of urea to the washing fluid. Aoyama and Kolff[3] tried to correlate decrease in urinary output with the changes in osmolarity of the blood plasma during dialysis and found that with decrease in osmolarity of more than 5 mOsm. per L. during dialysis, urinary output was more likely to decrease during dialysis. Mannitol was sometimes, but in by no means all instances, effective in preventing the postdialysis oliguria.

Acute Group:—Urea was not used in the dialyzing bath in any instance in the acute group. In only 1 patient was there a fall in the urinary output during the twenty-four-hour period in which dialysis was carried out. It is interesting to note that the same phenomenon was observed in each of four dialyses in this same patient. The following are figures for urinary output in this patient (Patient 15) for the volume on the day prior to the procedure, the day of dialysis, and the day following:

Dialysis	Volumes
1	526 cc.— 64 cc.—355 cc.
2	600 cc.—115 cc.—435 cc.
3	415 cc.—195 cc.—355 cc.
4	1,135 cc.—202 cc.—672 cc.

Two days after each dialysis, the urinary output returned to predialysis volume.

Chronic Group:—In only 1 case in the chronic group (Patient 21) was urea added to the dialyzing bath. It was present in a concentration of 50 mg. per cent in each 20 L. bath placed in the circuit at hourly intervals. It is of interest that in this instance there was a decrease in urinary output (600 cc. on the day before dialysis, 120 cc. on the day of dialysis, and 120 cc. on the day after dialysis).

In six other dialyses where urea was not used in the dialyzing bath (of 9 cases where figures of urinary output are recorded) there was a decrease in urinary output on the day of dialysis sometimes persisting to two days after dialysis.

ELECTROLYTE VARIATIONS.—*Acute Group.*—The amount of potassium in the acute group was reduced in the bath in 19 dialyses, where hyperkalemia was a factor, for periods ranging from one to six hours. Potassium was deleted from the bath entirely for a period of one hour in each of two dialyses. Lesser amounts of sodium (120 to 130 mEq. per L.) and chloride (95 to 115 mEq. per L.) were used in a few dialyses, and in these cases (noted by daggers in Table III) the serum changes tended of course in the direction of the bath concentrations.

The chloride levels recorded in Table III are those immediately before and immediately after dialysis. The bicarbonate figures are, except where specified, those on the day of dialysis (before) and on the day following dialysis (after).

Bath glucose concentration was increased to 200 mg. per cent in one dialysis and to 300 mg. per cent in another procedure. Theoretically, increasing the glucose level in the bath should provide an excellent method for giving extra calories to the patient without the transfer of unwanted water. The work of Pierce[17] on ultrafiltration, however, would seem to indicate that there would be limitations to this method of administering sugar.

The 20 L. bath was discarded and a fresh unit placed in the washing circuit each hour, except in one instance (Patient 8) where it was changed every thirty minutes.

Chronic Group:—Because hyperkalemia was a factor involved, the amount of potassium was cut in half in the bath in eleven dialyses of the chronic group of 30, for periods ranging from one to six hours. Potassium was not deleted entirely from the bath in any instance.

Sodium and chloride levels were lowered to a range of 120 to 125 mEq. per L. and 100 to 110 mEq. per L. respectively in a few dialyses. These instances are noted by asterisks in the sodium and chloride columns in Table IV. The serum changes in chloride and bicarbonate tabulated in Table IV are for before and after dialysis (chloride) and day of dialysis and day after dialysis in the case of bicarbonate except as specified.

Potassium-absorbing resin was used as an adjunct to therapy in several cases of hyperkalemia. The results of the use of this material are the subject of another article.[18]

Carbon dioxide-oxygen mixture constantly bubbled by some groups[3,7] through the bath was not used in our series. Considering the relatively high level of chloride in the bath, it is not surprising that great increases in serum chloride were observed in both acute and chronic groups—all desirable here. However, it would appear that the over-all lack of impressive rise in bicarbonate might be attributable to (a) the relatively higher levels of chloride in the bath or (b) the rapid reaccumulation of inorganic acids in the blood during the hours after dialysis. Parsons and McCracken[5] noted that in their series, using a bath level of 120 mEq. per L. of chloride resulted in hyperchloremia and incomplete correction of the carbon dioxide combining power. They substituted acetates to reduce the level of chloride. We are now investigating the effect of chloride reduction in the bath as well as carbon dioxide-oxygen bubbling through the bath during dialysis..

Bath glucose levels were increased to 200 or 300 mg. per cent in a few procedures The 20 L. bath was replaced by an equal quantity of fresh bath at hourly intervals in all procedures.

BATH FLOW.—The dialyzing bath flow rate in the acute group averaged 1,325 cc. per minute (range 600 cc. per minute to 1,800 cc. per minute). In the chronic group the average flow rate was 1,300 cc. per minute (range 1,000 to 2,800 cc. per minute). Experience[19] has shown that more rapid dialyzing bath flows allow greater extraction of urea and other substances. Laboratory studies with the 1 M.² apparatus have indicated optimum urea extractions with a bath flow rate of 3,000 cc. per minute and a blood flow rate of 500 cc. per minute. Greater rates of flow have not been studied.

In one instance (Patient 31) where the blood flow rate was 300 cc. per minute, the bath flow 2,800 cc. per minute, and a 2 M.² cellophane membrane was used, the urea clearance was 266 cc. per minute.

Membrane Area

As may be seen in Table I of the Technic section of this article,[1] the cellophane surface area used was varied.

ACUTE GROUP.—The 1 M.² dialyzer was used in the acute group in 11 instances, the 1.5 M.² dialyzer in 3 procedures, and the 2 M.² machine in 11 dialyses. These different-sized dialyzers were usually used for eight, seven, and six hours respectively.

CHRONIC GROUP.—The 1 M.² dialyzer was used in 10 instances, the 1.5 M.² machine in 7 dialyses, and the 2 M.² apparatus in 13 procedures in the chronic group. These dialyses were usually used for eight, six, and six hours repectively.

Urea Extraction

The highest blood urea nitrogen recorded in the chronic series was 256 mg. per cent and the highest creatinine, 37 mg. per cent. In the acute group the highest blood urea nitrogen was 277 mg. per cent and the highest creatinine level was 29.9 mg. per cent. A tabulation of the urea extraction data in 50 of these 55 dialyses is presented in the companion Technic article.[1] Where a 1 M.² cellophane area was used, the urea clearance averaged 60 cc. per minute. With the 1.5 M.² membrane area, the urea clearance rose to an average of 123 cc. per minute (range 66.5 to 210.8 cc. per minute). With the 2 M.² cellophane area, the urea clearance averaged 135 cc. per minute (range 41.3 to 266 cc. per minute).

The formula used to calculate the urea clearance with this apparatus is as follows:

$$\text{Urea clearance} = \frac{\text{U inflow—U outflow}}{\text{U inflow}} \times \text{minute blood flow rate}$$

$$\text{U} = \text{blood urea concentration}$$

Pressures in the Blood Circuit

In the acute group, pressures within the blood circuit were not recorded. In the chronic group, these pressures were recorded in three dialyses, with a Hathaway strain gauge oscillograph. These recordings revealed maximum readings of 250/130 mm. Hg within the pumping chamber of the blood pump, 200 mm. Hg at the exit valve of the blood pump, and 150/80 mm. Hg in the blood line proximal to the dialyzer. Maximum pressure in the flowmeter was recorded at 25 mm. Hg and within the return cannula, 5 mm. Hg. Beyond the tip of the return cannula in the cephalic vein the pressure fell off rapidly to zero.

Weight Loss and Ultrafiltration

To be able to remove fluid from an overhydrated or edematous patient via ultrafiltration of the blood is a distinct advantage and one which is afforded ideally by a rigidly supported membrane.

Because of technical problems, it was not always possible to weigh the patient immediately after dialysis. Thirteen of the 42 patients were so weighed, however; weight remained the same in 9; there was a 1-pound weight loss in 1 patient, a 2-pound weight loss in each of 2 patients, and a 3-pound weight loss in the other patient. Where weights were recorded then, no increases were seen.

Ultrafiltration was carried out in three dialyses in the acute series and six dialyses in the chronic series:

Patient Numbers	Method	Duration of Ultrafiltration (Hours)	Amount of fluid removed (cc.)
Acute Group			
3	10 to 17 inches vacuum (Hg)	4	1,400
14	Dialyzer elevated	6	750
15	Dialyzer elevated	6	150
Chronic Group			
19	10 to 17 inches vacuum (Hg)	5½	1,785
21*	10 to 17 inches vacuum (Hg)	1	730
22	Dialyzer elevated	3	795
30 (3rd dialysis)	10 to 17 inches vacuum (Hg)	2	600
35	Dialyzer elevated	3	420
38 (1st dialysis)	Dialyzer elevated	1	60

* Two-pound weight loss recorded in this patient.

Thirst after dialysis and ultrafiltration was noted in the case of Patient 19.

The method of ultrafiltration using vacuum on the outer chamber of the dialyzer is mentioned in the Technic section of this work.[1] As noted in the preceding chart, ultrafiltration can also be accomplished with this apparatus simply by raising the level of the dialyzer and increasing the length of the column of bath falling back into the reservoir, thereby creating moderate suction in the outer chamber of the dialyzer. Concentrated glucose solutions were not used in this series in attempts to ultrafiltrate. Another article[20] will describe in detail the use of this equipment to effect ultrafiltration in a series of patients with cardiac edema. It is to be stressed that in the renal failure series herein described, ultrafiltration was carried out at the same time dialysis was being accomplished. That is, dialysis was not stopped while ultrafiltration was being done. When ultrafiltration alone is carried out with this apparatus much larger amounts of fluid can be extracted. Concomitant circulation of the dialyzing bath apparently limits the amount of fluid extracted. A valuable study of ultrafiltration has been published by Pierce.[17] Scackman and Milne[21] point out that the Kolff-Merrill apparatus does not allow ultrafiltration.

Complications

Other than the few adverse effects of dialysis mentioned previously there was only one: infection of the saphenous cut-down area (Patient 19) after dialysis. This rapidly cleared with warm soaks and antibiotic therapy.

Case Reports

ACUTE RENAL FAILURE GROUP.—*Case 1.*—Acute anuria following obstetric complications and administration of mismatched blood. Patient 2, a twenty-two-year-old para 1, gravida 2, was admitted to another hospital in labor. A stillborn infant was delivered by version extraction. There was considerable tissue trauma and profuse bleeding. Cross-matched blood, 500 cc., was infused. When the patient had a shaking chill 100 cc. of a second pint of blood had been infused. The blood was stopped. Immediate studies showed a sensitivity to the "c" factor which was precipitated by the first pint of blood. She had received 2 pints of blood six years earlier for anemia secondary to pneumonia.

The transfusion stopped, her blood pressure fell, and her pulse rose. The treatment included shock blocks, oxygen, and 2 L. of dextran intravenously. Then, 1,000 cc. of scrupulously cross-matched blood were given. She came out of shock and became alert. The urinary output fell, however, to 255 cc. in the next twenty-four hours, then to 51 cc. and 72 cc. in the next twenty-four-hour periods. Five days after delivery she was referred for possible dialysis because of persistent oliguria.

Physical examination was unremarkable save for lethargy and pallor. The blood pressure was 130/70. The uterus was firm and nontender and was 2 cm. below the umbilicus. There was no edema. The blood hemoglobin was 7.7 Gm. and the blood urea nitrogen was 100 mg. per cent. The following day she appeared worse and had a serum sodium of 118 mEq. per L. and potassium of 6 mEq. per L.

She underwent dialysis on her sixth day of oliguria. Chemical changes from dialysis are seen in Table III, and in Figure 8 (No. 6) of the preceding article on Technic.[1]

Marked clinical improvement was seen during dialysis. Careful attention to fluid and electrolytic balance caused the patient to enter the diuretic phase five days later. The urine volume rose to 4,000 cc. eight days after dialysis, then fell to normal levels. Recovery was complicated by the appearance of a large suprapubic abscess representing an infected hematoma. After incision and drainage recovery was prompt. She was discharged five weeks after dialysis in fine condition.

It is of interest to note that she became pregnant again one year later, had an uncomplicated pregnancy, and was delivered by cesarean section of a normal male child.

Comment.—This case gives testimony to the dangers inherent in the use of blood transfusions, especially in females in the childbearing group. The dialysis was carried out early in the course of anuria before her condition became critical.

Case 2.—Acute tubular necrosis due to mercury poisoning. Patient 5, a forty-three-year-old white widow, was referred to us three days after ingesting 37 grains of bichloride of mercury. Nausea and bloody emesis followed ingestion. When she was first seen by a physician, she was given 2 L. of milk by mouth and 1 L. of 5 per cent glucose intravenously. Dimercaprol was given about twenty-four hours after ingestion of the corrosive mercuric chloride, but not continued. There were five or six bloody stools daily. The urine output fell to 30 cc. on the third day. She was transferred for possible dialysis.

Physical examination revealed an alert, coherent woman with pallor and moderate dehydration. The blood pressure was 150/80. There was mild flank tenderness but there were no palpable abdominal organs. There were a few basilar rales in both lung fields. Bloody stools persisted.

Over the next four days, the twenty-four-hour urine output ranged between 0 and 90 cc. On the seventh oliguric day, with a serum potassium of 6.7 mEq. per L. and electrocardiographic changes, she underwent dialysis. Chemical changes during dialysis are noted in Table III, and in Figure 8 (No. 16) of the preceding article on Technic.[1] She was much less lethargic after dialysis. Eleven days after the ingestion of poison, the twenty-four-hour urine output had risen to 330 cc. But hyperkalemia again became a problem. It was temporarily controlled with exchange resin, glucose, and insulin. Fourteen days after the onset of illness, the twenty-four-hour urine output rose to 450 cc., but repeat dialysis became necessary because of hyperkalemia and extreme acidosis. Chemical changes incident to dialysis are seen in Table III, as well as in Figure 8 (No. 17) of the Technic section of this work.[1] She was more alert and felt better after dialysis. Bloody stools and bloody emesis persisted; the twenty-four-hour urine output stayed at 500 cc. for two days and then fell to nothing. Severe anemia appeared and responded to transfusions.

In her terminal state a renal biopsy was done which showed necrotic renal tubules. On the eighteenth day of her illness hyperkalemia became threatening again; while being prepared for dialysis the patient expired. Permission for autopsy was not obtained.

Comment.—Because it was not possible to do an autopsy we do not know whether the nephrons were irreversibly damaged. It is conceivable that more frequently repeated dialyses as advocated by Salisbury[7] would have saved this patient's life.

Case 3: Acute tubular necrosis of uncertain origin. Patient 13, a thirty-one-year-old white male display director, became acutely intoxicated and had severe emesis for two days. He noted oliguria and brandy-colored urine and was admitted to a local hospital. The patient thought he might have gotten "bad liquor." Because of the persistence of oliguria for a week, he was transferred to our hospital for possible dialysis.

Examination revealed a lethargic young man with normal temperature, pulse, and respirations, and a blood pressure of 140/80. Ecchymotic areas were seen about the left eye, thighs, and abdomen. There were bilateral conjunctival hemorrhages. The eye grounds showed very pale optic disks. The lung fields revealed dullness and decreased breath sounds at the right base. There were no cardiac abnormalities. Some abdominal distention existed and the liver was palpable 5 cm. below the right costal margin. There was no edema. The skin was pale.

Laboratory examination revealed red and white blood cells and 1 plus protein in a urine with a specific gravity of 1.012. The hemoglobin was 10.5 Gm., blood urea nitrogen was 118 mg. per cent, serum sodium was 119 mEq. per L., potassium was 6.4 mEq. per L., chloride was 71 mEq. per L., and bicarbonate was 9.0 mEq. per L. The electrocardiogram showed peaked T waves.

The impression was that this was poisoning possibly due to methyl alcohol, with acute renal tubular necrosis.

Despite careful management, in two days the patient was much worse, showing confusion and persistent oliguria. The T waves in the electrocardiogram were much higher. A six-hour dialysis was then carried out. Chemical changes during dialysis are shown in Table III, and in Figure 8 (No. 50) of the preceding article on Technic.[1]

He became more and more alert as the dialysis proceeded. The dramatic clinical improvement continued afterward. Two days after dialysis the urinary output had risen to 1,200 cc. The diuretic phase was uneventful. The patient was discharged twelve days after dialysis and his only complaint was of some diminution of visual acuity.

Comment.—The 1 M.^{2} cellophane area apparatus used for a six-hour period was sufficient in this instance to lower a dangerously elevated serum potassium and effect other improvement in blood chemistry. Large changes in blood chemistry were not necessary to bring about a dramatic clinical improvement.

CHRONIC RENAL FAILURE GROUPS.—*Case 4.*—Chronic pyelonephritis. Patient 23, a fifty-seven-year-old cleaning woman, had noted progressive weakness for several weeks; after a fall she was admitted to the hospital. She had been mentally deficient from birth.

Physical examination revealed a slightly obese middle-aged white female with a small hematoma of the right temple. Neurologic examination showed no abnormalities. The optic fundi showed some slight arterial narrowing. The heart was enlarged. The liver was felt 2 cm. below the right costal margin. There was a complete prolapse of the uterus. The blood pressure was 180/70. No other abnormalities were noted. The laboratory examination revealed many white blood cells in the urine sediment but no red cells or casts. The specific gravity was 1.004 and there was 2 plus protein. The blood showed a red cell count of 4 million, the hemoglobin was 9.3 Gm., and the white cell count was 17,000 with a left shift. The blood urea nitrogen was 169 mg. per cent, the blood bicarbonate was 6.8 mEq. per L., the calcium and potassium were depressed, the phosphorus was elevated, and the sodium and chloride were normal. Cardiac enlargement and pulmonary congestion were seen on chest x-ray films. The electrocardiogram showed left ventricular strain. The skull films and the spinal fluid tap showed normal findings. Complete urologic study showed chronic cystitis and chronic pyelonephritis.

The patient became more uremic and more lethargic during the next four days. Dialysis was then instituted. Marked improvement was noted soon after the procedure was started. Antibiotics were given for the urinary tract infection. Except for a brief period of confusion two weeks later, she was able to sustain the relief afforded by dialyses. Chemical changes during dialysis are noted in Table IV, as well as in Figure 8 (No. 31) of the preceding article on Technic.[1]

A few weeks after dialysis she underwent vaginal hysterectomy. Following recovery from surgery, when the blood urea nitrogen was 90 mg. per cent, she was sent to a nursing home. Six months later, the blood urea nitrogen had fallen to 33 mg. per cent, but the urinalysis still showed 1 plus protein. Three years after dialysis she was living by herself and working again as a cleaning woman.

Comment.—This case demonstrates that one dialysis may be sufficient to tide over a patient until surgery can be done to correct mechanical factors contributing to chronic urinary tract infection.

Case 5.—Obstruction of the ureters. Patient 25, a fifty-six-year-old white housewife, came to the hospital because of anorexia and emesis of several days duration and sudden onset of anterior chest pain on the day of admission. Three months earlier she had been hospitalized because of shortness of breath. Her blood pressure had been 220/110, the blood urea nitrogen was 95 mg. per cent, and the blood hemoglobin was 6.3 Gm. The diagnosis of arteriolar nephrosclerosis was made. A pelvic examination six years earlier had shown normal findings.

A physical examination revealed a thin dehydrated white female. The optic fundi showed marked arteriolar narrowing, arteriole-venule compression, and one small hemorrhage. The heart was not enlarged, but a loud pericardial friction rub was audible over the entire precordium. The blood pressure was 180/100. There were no other abnormalities noted, but a pelvic examination was not done.

The laboratory examination revealed anemia and leukocytosis with a left shift. The urinalysis showed specific gravity of 1.010, 1 plus protein, and a few red blood cells and white blood cells. The blood urea nitrogen was 123 mg. per cent and the bicarbonate was 7.7 mEq. per L.

The impression was of nephrosclerosis with uremic pericarditis. Conservative management of fluid and electrolyte balance afforded no apparent benefit; the patient slipped into a semicoma.

Because of the clinical deterioration and a high serum potassium, dialysis was performed. Chemical changes appear in Table IV, and in Figure 8 (No. 38) of the Technic portion of this work.[1] Despite the marked chemical improvement she remained semicomatose. The urine output remained at low levels despite adequate hydration. She expired six days after dialysis.

Postmortem examination showed extensive carcinoma of the cervix invading pelvic structures and causing bilateral hydronephrosis and hydroureter. There was little evidence of arteriosclerosis or hypertensive heart disease or nephrosclerosis.

Comment.—It is surprising that this patient did not respond better clinically. Most patients with this degree of chemical improvement do respond well clinically. It is also surprising that the lesion causing her uremia was not detected until autopsy. Many physicians saw this patient and none suspected uterine cancer.

Case 6.—Chronic glomerulonephritis. Patient 27, a thirty-four-year-old white housewife, had been known to have hypertension for four years. Six years before the admission to be described she had had a severe sore throat associated with red blood cells in the urine. Since then she had had persistent albuminuria. One year prior to the latest admission, the blood pressure had been 300/200 and she was in acute cardiac decompensation; then she had been receiving Rauwolfia serpentina and digitalis. During the week prior to her final hospital admission she had been cared for in an out-of-town hospital for lethargy, nausea, and vomiting.

Physical examination revealed a pale, unresponsive young female. The blood pressure was 200/120, the pulse 100/regular. The optic fundi showed numerous hemorrhages and exudates. There were rales at the right lung base and 2 plus peripheral edema. The heart was enlarged and a loud pericardial friction rub was heard. There were no other remarkable abnormalities.

The blood urea nitrogen had risen to 180 mg. per cent (50 mg. per cent one year earlier) and the blood hemoglobin was 6.0 Gm.

The patient underwent dialysis the day after admission; chemical changes incident to dialysis are noted in Table IV, and in Figure 8 (No. 27) of the preceding article on Technic.[1]

Immediately after dialysis, she was very much improved and was able for the first time in days to recognize and converse with her family. Despite the persistent oliguria, she remained cheerful and sustained the clinical improvement, free of nausea and emesis. After ten days, however, she gradually lapsed into coma and died on the thirteenth day following dialysis.

Postmortem examination showed the classical findings of chronic glomerulonephritis, severe hypertension, and uremia.

Comment.—The relief of symptoms afforded here by dialysis suggests that although the procedure does not alter the prognosis of chronic nephritis it may benefit the patient in important ways.

Summary

The MacNeill dialyzer-blood pump circuit appears to be a safe, efficient tool in the treatment of blood chemical derangements associated with renal failure. With a trained team, the equipment is very simple to use. The fact that blood is not necessary to prime the apparatus is an outstanding advantage.

Of 17 patients with acute renal failure, 8 recovered. Four of the 9 patients who died might have recovered with earlier or more frequent dialyses. In general, the patients suffering from tranfusion reactions and obstetric complications did well. Those suffering from crush injuries and mercury poisoning did badly. Others[22] have experienced poor results even with dialysis in crush injuries, but Teschan and O'Brien[8] have seen startling recoveries with daily dialysis.

Of 25 patients with chronic renal failure, 21 improved with dialysis. Of these, only 1, a patient with chronic pyelonephritis, ultimately recovered. Some patients with chronic uremia responded well for periods up to six months. Those with chronic glomerulonephritis without severe hypertension showed the greatest benefit.

There were no untoward effects from local anesthesia which was adequate in most cases to prevent pain. In 34 procedures, meperidine hydrochloride was used (average 110 mg.) as an analgesic and was quite satisfactory in relieving pain.

Twitching, changes in mental state, convulsions, and emesis improved or disappeared during or soon after dialysis. We have suggested that in one instance (Patient 17) convulsions following dialysis may have been caused by cerebral edema incident to the rapid removal of urea from the blood.

The data indicate that one should expect a fall in blood pressure during the first one to one and one-half hours and a rise during the later hours of dialysis. Blood transfusions were used when (1) the blood pressure fell 20 mm. Hg diastolic or more, (2) the blood hemoglobin was 8.5 Gm. or less, or (3) the pulse increased significantly. Transfusions might not have been essential in many cases where they were employed. In only four dialyses was levarterenol bitartrate required to maintain blood pressure. No dangerously high levels of arterial pressure were encountered and antihypertensive drugs were not used at all.

Three patients developed cardiac irregularities during the procedure: In 2 the results were benign, in 1 they were fatal.

Heparinization of the blood during dialysis may have contributed to bleeding in 5 patients with acute uremia. It was of no consequence. Slight aggravation of bleeding occurred during or after dialysis in 9 patients with chronic uremia. In 1 patient, nasopharyngeal bleeding may have contributed to the demise. Rath, Mailliard, and Schreiner[13] have emphasized other factors leading to bleeding in uremia. In retrospect, the average total dose of heparin (200 plus mg.) seems excessive. Currently, an average of 130 mg. are being used. Nasal and pharyngeal irritation with tubes and suction during dialysis is to be avoided. We agree with others[3] that bleeding prior to dialysis is not an absolute contraindication to the procedure.

Certain variations in the bath composition are noted. A rapid bath flow rate contributes to increased urea extraction as does increased blood flow rate. The virtual absence of hemolysis is noteworthy.

Average urea clearances were found to be 60 cc. per minute (1 $M.^2$ cellophane area), 123 cc. per minute (1.5 $M.^2$ area), and 135 cc. per minute (2 $M.^2$ area).

The incidental use of ultrafiltration simultaneously with dialysis is discussed.

Six typical case reports are presented.

It has been proposed[9,23] that an experienced physician can, using other available conservative treatment, postpone dialysis or avoid it completely. In view of recent evidence presented,[7] including the cases herein reported, this proposal would not seem wise.

Terminal stages of acute renal failure may evolve rapidly from preterminal stages as shown by our Patients 1, 3, 4, and 14, then moribund states may not be reversible either with or without dialysis. Serious changes in the central nervous system and circulatory system as well as in the kidneys and liver may occur early in the course of anuria as exemplified by Patients 8, 9, and 10.

Our experience with dialysis in acute renal failure has not been as extensive as that of Salisbury[7] and we do not have a control group of patients who did not undergo dialysis (as he did) to compare with our dialysis subjects. The evidence we here present, however, more than suggests that the criteria used to apply dialysis be broadened as outlined in our introduction. Our experience lends heavy support to Salisbury's conclusions.

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(DR. DOYLE)

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The more we love our friends, the less we flatter them; it is by excusing nothing that pure love shows itself.—JEAN BAPTISTE MOLIÈRE

MERIT H. CASH PRIZE ESSAY

1959

Obstruction of the Superior Vena Caval System

An Extensive Review

JOSEPH J. RICCA, M.D., BROOKLYN, NEW YORK

(*From the Departments of Internal Medicine, Long Island College Hospital and St. Peter's Hospital*)

THE clinical picture of obstruction of the superior vena cava may present itself in a most insidious manner but the fully developed syndrome is dramatic in appearance. The problem has always been fascinating because of the many etiologic factors involved. With the availability of newer diagnostic technics and the advancements of chemotherapeutic, radiologic, and surgical modes of therapy, it behooves the practitioner to recognize early the cause of such an obstruction.

William Hunter is credited with the first authentic case report, in 1757, of superior vena caval obstruction, secondary to an aortic aneurysm.[1] A case of severe narrowing was reported in 1806 by Corvisart.[2] A report of complete obstruction appeared in 1819 by Marjolin.[3] Mention of the entity was made in several inaugural dissertations, and shortly thereafter there followed a rash of single case reports.[4–23] Oulmont[24] reported a small series in 1856. Fischer[7] reported 252 cases in 1904. McIntire and Sykes[1] in 1949 reported 250 cases from 1904 to 1946 which they felt filled the criteria. Schechter[25] in 1954 revised the total number to 400.

Additional reports appeared by Ehrlich *et al.*,[26] Hussey *et al.*,[27] Calkins,[28] and Nelson *et al.*[29] Bruckner,[30] in his report on 23 cases in the last ten years, is of the opinion that the incidence is increasing. The age range in the majority of cases was from forty to sixty years, and 80 per cent of superior vena caval obstruction occurred in males.

Anatomy

Familiarity with the anatomic location of the superior vena cava and its surrounding structures is a prerequisite for complete understanding of the clinical syndrome. The superior vena cava is approximately 7 cm. in length and extends from the junction of the right and left innominate vein to the right auricle. Approximately 2 cm. of the vessel lies intrapericardially. The azygous vein enters the superior vena cava just above the pericardial reflection.

The superior vena cava lies very close to the trachea, right main bronchus, right pulmonary artery, aorta, and innominate artery. The posterior surface is adjacent to the peritracheal lymph nodes. It readily can be seen that a pathologic process involving these structures may easily affect the patency of this vessel. Since the azygous vein is a main tributary of the superior vena cava, its patency must be considered in any occlusion of the superior vena cava.

An impressive and complex network of collateral vessels, to be enumerated further on, is readily available and assumes a vital function in any superior vena caval obstruction.

Aside from the symptoms and signs produced by the specific cause of obstruction of this great vessel, the major manifestations of the syndrome are due to interference with the blood flow itself. These manifestations are essentially identical with those in bilateral innominate vein obstruction or in an arteriovenous fistula between the superior vena cava and ascending aorta. The simplest approach to the understanding of the problem is to consider an obstruction of the superior vena cava in relation to the azygous vein. This obstruction may occur at three sites:[1]

1. Above the entrance of the azygous vein with patency of the azygous and proximal superior vena cava.
2. At the junction of the azygous vein and the superior vena cava.
3. Proximally to the entrance of the azygous vein into the superior vena cava.

The superior vena cava possesses four main systems of veins employed in shunting the blood to the heart. Regardless of the location of the obstruction, all four systems are involved and all are interconnected. However, the importance of the role played by each system varies with the location of the block. These systems are:[1,25,31–36]

1. The azygous route, consisting of the main azygous, accessory azygous, ascending lumbar, and lumbar veins. This system establishes a direct communication with the inferior vena cava and plays a very important role when the obstruction is above the level of the azygous vein.
2. Internal mammary route, enabling blood to be drained through the internal mammary veins, then through the inferior and superior epigastric veins, and ultimately emptied into the external iliac veins leading to the inferior vena cava.
3. Lateral thoracic route, consisting of the lateral thoracic, thoracoepigastric, superficial epigastric, and superficial circumflex iliac veins, which conduct the blood to the femoral vein. These can be seen superficially.
5. Vertebral route, consisting of a deep system of vertebral veins which carry blood from the innominate veins through the dural sinuses to the intercostal, lumbar, and sacral veins. These ultimately lead to the inferior vena cava.

It is thus evident that venous blood is able to be returned to the right side of the heart through any or all of the routes, no matter how devious and circumstantial. Involved in such a system of deep anastomosis is a similar set of superficial channels. It is the presence of this superficial system which is obvious to the examiner and makes him suspicious of a deep obstruction. Fischer[7] listed rather completely the external collateral circulation with its communication to the deeper veins:

Jugular vein—external mammary vein—superficial epigastric vein—femoral vein—inferior vena cava
Axillary vein—long thoracic vein—epigastric vein—superficial epigastric or superficial circumflex iliac vein—inferior vena cava
Anterior jugular vein—Luschka's anastamosis to internal mammary vein
Arcus venosus juguli—anastomosis to internal mammary vein
Upper thoracic rami of intercostal vein—descending anastomotic branches along spinal column—deeper thoracic rami—deeper intercostal veins

It can be broadly stated that with a block above the azygous vein, the venous blood returns from the subclavian vein to the azygous vein via tributaries; with a block at the junction of the superior vena cava and the azygous vein or proximal to its entrance, the blood returns via collaterals to the inferior vena cava. These two situations cause a reversal of flow in the azygous-hemiazygous system.

Etiology

The causes of obstruction of the superior vena cava have been compiled from many case reports. Obstruction has been attributed to aortic aneurysm,[4,37–44] primary intrathoracic neoplasms, of which over 90 per cent were bronchogenic carcinoma,[19,45–47] lymphomas, metastatic carcinoma to the mediastinum, mediastinitis secondary to tuberculosis, syphilis, and pyogenic organisms,[12,13,48,49] thrombosis,[16–18,50,51] leukemia, pericarditis, mitral stenosis, pneumothorax, mediastinal emphysema,[52] congenital aneurysms of the superior vena cava,[53] arteriovenous aneurysm,[53,54] and carcinoma of the thymus.[14,15] In the past, 75 per cent were due to primary neoplasms, lymphomas, and aortic aneurysms. However, the etiologic incidence clearly is changing.[56] Public health measures have lowered the incidence of obstruction due to aortic aneurysm and tuberculosis.

Benign tumors cause obstruction merely from their size, producing an increase in intramediastinal pressure. This increase in a closed thorax causes the blood vessel to yield before the trachea and bronchi do. On the other hand, primary or metastatic tumors may cause obstruction not only by compression but also by direct invasion into the venous wall and plugging of the lumen.

Diagnosis

The clinical picture of superior vena caval obstruction depends on the suddenness of the occlusion and the presence of a functioning collateral circulation. When obstruction of the superior vena cava is complete, the patient will present a dramatic and unforgettable appearance. Edema and cyanosis of the face, neck, thorax, and upper extremities are marked. The edema is due to the increased venous pressure and may cause pain from distention of the skin. The horizontal position, in raising the venous pressure, aggravates both the cyanosis and edema. The cyanosis is ruddy in appearance, due to capillary distention and increase of blood volume in the veins distal to the superior vena cava. Subcutaneous venules may appear in the skin. Dyspnea varies in degree, and its exact cause is not known. The most feasible explanation offered is that the venous stasis in the respiratory center results in the accumulation of metabolites which, in turn, stimulate the center to produce dyspnea.[50,57] An increase in dyspnea may also be due to edema of the tracheobronchial tree. Hoarseness and cough may result. Pharyngeal edema may produce dysphagia. The increased venous pressure in the cerebral veins produces drowsiness, stupor, loss of consciousness, and even convulsions. Jacksonian epilepsy has been described in one report.[44] Other findings which may be present are edema of the eyelids, suffusion of the conjunctival vessels, dilatation of the retinal vessels,[32] headache, vertigo, deafness, tinnitus, epistaxis,[58] and Biot breathing.[59] With gradual obstruction the dyspnea, cyanosis, and edema are much less prominent and may be demonstrable only when the patient is recumbent or exercising.

Veins are capable of dilating quickly, and with extensive dilatation a distinctive pattern will appear. This system of visible dilated veins is a major diagnostic sign. The pattern of the collateral veins varies according to the point of obstruction.[25,36,60,61] When the obstruction is above the entrance of the azygous vein, this vessel assumes the function of the superior vena cava and the superficial collaterals are less extensive. However, the deep veins of the neck, shoulder girdle, and upper thorax are prominent. When the obstruction is below the azygous vein, the blood must return to the heart via the inferior vena cava, utilizing the superficial collaterals. These may be seen in the thorax and abdomen. Infrared photography or observation of the body through infrared glasses strikingly intensifies the venous pattern.

Measurement of venous pressure, employing the standard procedures and various maneuvers, may help to localize the point of obstruction.[62–64] The measurement is performed in the standard manner, with a three-way stop clock, a spinal manometer, and a $2^1/_2$ per cent citrate solution through the antecubital vein.[23,65] In a normal subject in the supine position a venous pressure of 50 to 150 mm. is recorded. On inspiration this pressure falls slightly, and on expiration rises. The venous pressure on the femoral vein is in the same range but with an opposite respiratory variation.

In superior vena caval obstruction the respiratory fluctuations of the fluid in the manometer in the antecubital vein are similar to those found in the femoral vein, that is, with inspiration the level rises.[66] This is offered as proof that the collaterals enter the inferior vena cava and that the level of obstruction is below the entrance of the azygous vein. The increased blood volume entering the inferior vena cava via collaterals is not in itself a cause of any elevation of femoral vein pressure. In fact, if the pressure in the femoral vein is elevated, some factor other than superior vana caval obstruction is responsible.

When venous hypertension is present in the upper extremity but is normal in the femoral vein, there is obstruction of the superior vena cava and/or innominate veins. Pressure in both arms may differ because of the difference in the amount of constriction in the innominate veins. A high venous pressure in one arm with a normal venous pressure in the other and in the femoral veins points to an obstruction of the axillary and subclavian vein and/or the innominate vein on that side. Venous hypertension in the internal jugular vein distinguishes innominate vein obstruction from axillary and subclavian vein occlusion.

To measure this pressure, using the "exercise test,"[27,67] the fist is forcefully opened and clenched for one minute. In normal individuals or in those with congestive heart failure, the pressure remains stable. With the presence of obstruction, the pressure rises more than 10 mm. while the pressure in the legs remains normal.

Increase in muscular activity increases the rate and volume of blood flow. If the normal vascular bed is present, the increase of flow is accommodated by dilatation of the vessels. If any obstruction is present, the flow is retarded, the veins become congested, and the pressure increases. After the activity ceases, there is a slow decline in the pressure. Although the initial pressure is elevated in congestive heart failure, the pressure response to muscular activity is the same as in a normal subject.

A further elaboration in pressure measurements consists of encircling the lower thorax with a constricting band. This blocks the superficial veins carrying blood to the inferior vena cava. If the obstruction is below the azygous vein, the main collateral paths are superficial and empty into the inferior vena cava. Therefore, constricting these vessels raises the pressure. If the pressure does not rise after tightening of the band, then the obstruction is above the azygous vein. The deep collateral circulation is not affected by the constricting band.

The circulation time with Decholin has been used as a diagnostic test. It has been found to be prolonged or normal in individuals with caval obstruction. The length of time indicates the devious route necessary for the blood to take in order to reach the heart. If this route is slightly increased, the circulation time may very well be normal.

The superior vena caval system with its collaterals can be outlined by phlebography.[62,68,69] An obstruction in the axillary vein, subclavian vein, or superior vena cava frequently can be clearly demonstrated. About 10 to 15 cc. of 35 to 70 per cent Diodrast is injected rapidly and under force either directly into the antecubital vein or via a catheter passed to the point of obstruction. A catheter may also be passed into the external jugular vein. If the cephalic vein is used, the opaque material may be dispersed throughout the collaterals and may never reach the axillary vein in adequate concentration. An x-ray of the area is taken immediately after the injection. The resulting phlebogram may show the superior vena cava as compressed, displaced, or completely obstructed. Occlusion of other vessels in the vena caval system is very uncommon. Diseases affecting a single innominate vein are rare. All those reported are secondary to aneurysm.

Obstruction of the axillary and subclavian veins produces cyanosis, edema, and pain in one extremity.[70,71] The acute manifestations last a few days and then subside. These vessels do not recanalize, and a residual symptom of fatigue with activity of the extremity is common. This entity is caused mainly by stasis from congestive heart failure and aseptic thrombophlebitis.

Therapy

The dramatic appearance of the patient in superior vena caval obstruction frequently prompts immediate therapy.[47,72,73] It must be emphasized that obstruction of the superior vena cava per se is compatible with long life. One individual with such obstruction has been reported to be alive thirty-eight years after its onset.[74]

It is the etiologic factor which alters the prognosis. The establishment of a collateral circulation is, in actuality, a form of therapy. This alone may promote improvement in the condition of the patient.

The specific modes of therapy are surgery, radiotherapy, and chemotherapy,[75] There are reports suggesting that surgical exploration of the mediastinum should be employed more often for severe obstruction of the superior vena cava in order to decompress the mediastinum and remove adhesions from the vicinity of the vessel.[29,32,50]

Necropsy studies reveal that in obstruction due to neoplastic infiltration the tumor invades the wall and occludes the lumen. In addition, a thrombosis-containing tumor usually is present. This is a type of obstruction not relieved by treatment, and surgery should not be employed. Improvement is due to the existence of collateral circulation.

Compression of the superior vena cava by mechanical pressure may be relieved by therapy, provided a thrombosis has not formed. Aneurysms of the aorta or superior vena cava, constricting bands, and noninvasive tumors may be amenable to surgery. X-ray and nitrogen mustard therapy may effect a decrease in size of a compressing tumor or degree of lymphadenopathy. A caval obstruction may be bypassed by use of various kinds of grafts, especially aortic homografts.[76–78] It is felt that if a patient survives six months or longer, the etiology is benign.

100 Eighth Avenue, Brooklyn 15

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Heart Surgery as Related to the General Practitioner*

GERALD H. PRATT, M.D., F.A.C.S., NEW YORK CITY

(From the Departments of Surgery, St. Vincent's Hospital and New York University-Bellevue Hospital Center)

IN NO field of medical or surgical endeavor have there been more rapid strides in the last ten years than in the field of cardiovascular surgery. This progress has been achieved by the standardization of the use of anticoagulants, introduction of antibiotics, and development of new anesthetic technics which permit surgery on the open chest. In addition, the recognition of the heart and major vessels as organs on which one can operate and correct congenital and acquired defects is a new surgical concept which changes the treatment of cardiac diseases much as the concept of antisepsis and asepsis did for septic and new-growth lesions of the abdomen.

In most instances the acceptance of a new concept in surgery has been delayed or rejected by our internist colleagues. In cardiovascular surgery, however, the advances, to some extent, were delayed by the surgeons themselves. Such eminent men as Billroth and Kocher taught that the heart was sacrosanct and that no surgeon should ever consider touching it. However, other surgical pioneers, such as Morgagni, described the lesion of cardiac tamponade perfectly as a result of surgical intervention, and Napoleon's chief surgeon, Larrey, cured a patient of this previously fatal lesion by inserting a linen drain into the pericardium. Except for the work of Trendelenburg on cardiac embolectomy, there was little done surgically in this field until 1923, when Cutler and Beck[1] attempted the first heart valvulotomy. The first successful digital fracture of a valve was made by Souttar[2] in 1925. Although heart operations for injuries and removal of foreign bodies were done during World War I, the first successful ones date from 1938, when patent ductus arteriosus was successfully ligated by Gross[3] in America and Crafoord[4] in Sweden.

The possibility of heart surgery was made more likely when heparin, prepared in its rough form in 1916, was purified for human use in 1923. This discovery removed, at least in part, the ever-present blood clot problem in cardiac surgery.

The Heart as an Organ

Although the hearts of laboratory animals tolerate handling and surgery poorly, the human heart, healthy or diseased, withstands surgical procedures surprisingly well. This human heart is a remarkable organ, not comparable to any other elsewhere in the body or in any animal. It beats approximately 80 times a minute, or about 42,000,000 times a year, and exerts a force of approximately 10 tons every twenty-four hours for fifty to one hundred years on the average. Thus, in the biblical life span of three score and ten years, the heart pumps 250,000,000 quarts of blood and beats 3,000,000,000 times. This amount of blood would successfully fill a football bowl such as at Yale, and the energy exerted, if expended at one time, would lift a ship the size of the Queen Elizabeth 15 feet out of water.

The study of the heart's circulation and its physiologic functions was one of the first efforts attempted by man. Hippocrates' description of the heart's anatomy was a satisfactory one except for one error—he thought that the arteries carried air and the

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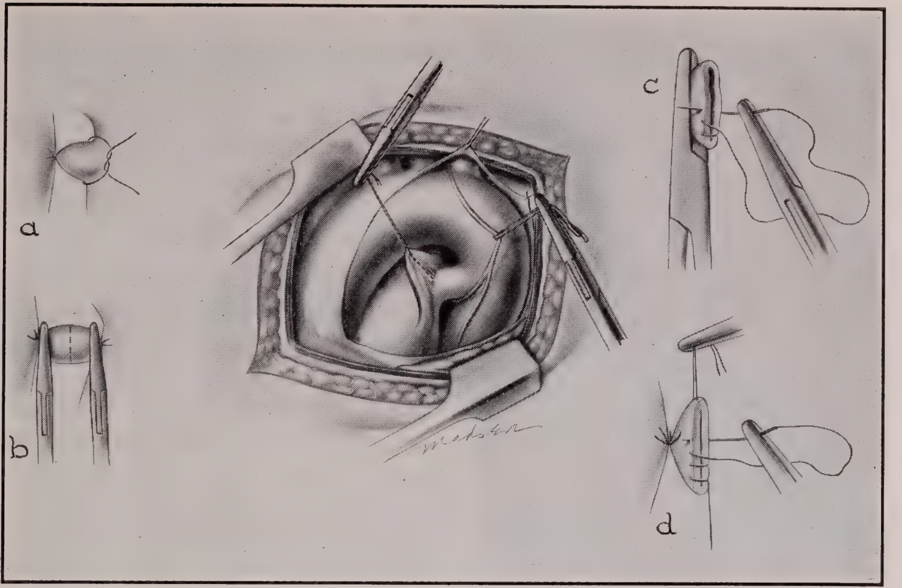

FIG. 1. Patent ductus arteriosus. Recurrent laryngeal nerve identifies ductus. Method of ligation and suture used for large ducts. (*Courtesy of Lea & Febiger.*[24])

veins blood. In 200 B.C. Galen wrote such a good description of the heart that it sufficed for fourteen centuries.

Types of Heart Disease Indicating Surgery

At present, cardiac surgery, as it applies to general practice, may be divided into four categories. The first includes the abnormal shunting and obstructing types of heart and major artery disease which without surgical correction results in death long before the patient should die. In this group are patent ductus arteriosus and coarctation of the aorta, both of which can be operated on by direct methods and without the use of an artificial heart or lung. In the second category are the acquired types of heart disease, such as the valvular deformities, of which at least one can be operated on without a heart-lung bypass with minimal mortality. In the third group are congenital septal and valvular lesions which require the use of an artificial heart and lung machine to be corrected. The fourth group encompasses defects in the blood supply to the heart itself, the coronary artery problems. Much work remains to be done to correct the last type of lesions; the therapy has not been changed greatly, except for anticoagulant drugs, for fifty years. This complex surgical problem is not included in the present discussion.

Shunting and Obstruction

PATENT DUCTUS ARTERIOSUS.—Patent ductus is the persistence of an opening between the aorta and the pulmonary artery normally present during fetal life. This opening should close spontaneously. If it persists after birth, it causes artificial circulation through the lung. Depending on the size of the opening, a large amount of the blood already aerated has a second excursion through the lungs. This shunt acts, therefore, like an arteriovenous fistula. A left-to-right shunt, which may cause cardiac enlargement and eventual death, is created. Later, due to pulmonary hypertension the resistance increases and a right-to-left shunt occurs. These patients should have surgical division and suture of this abnormal opening at an appropiate time (before the irreversible lung and shunt changes occur), usually after the patient is two years of age unless serious complications force an earlier operation

FIG. 2. Nine months after operation for patent ductus arteriosus, performed at nine months of age and dictated by downhill course, with ductus transmitting $1^1/_2$ L. of blood and patient weighing 10 pounds. Normal development and weight postoperatively.

(Figs. 1 and 2). Other shunts distal to the heart are more rare but also have to be surgically closed.

COARCTATION OF THE AORTA.—This congenital occlusion of the aorta usually occurs just distally to the origin of the left subclavian artery from the aorta. It may be complete, in which event the patient dies shortly after birth, or incomplete with an hourglass type of occlusion. There is insufficient blood supply to all the organs below the coarctation, especially in the legs. It may be diagnosed by a marked difference in the pulsations and blood pressures in the leg and the arm. If the patient survives, tremendous collateral circulation develops, particularly through the intercostal arteries, in an effort to bridge the gap in the aortic blood supply. This circulation rarely is sufficient for adequate function, and if it is permitted to continue for too long a period of time it may make the surgical eradication of the coarctation technically difficult and dangerous and sometimes impossible. Ideally, coarctations of the aorta should be operated on when the patient is between the ages of four and twelve years.

Acquired Heart Disease

The second type of heart disease which often can and should be surgically corrected is the acquired type, of which the best example is mitral stenosis. One fourth of the deaths of young people between the ages of five and nineteen years is due to heart disease. Of the one million patients with rheumatic heart disease in the United States, each year 85 per cent will develop mitral valve lesions. Most of these valvular diseases result in death at middle age. Three out of every four deaths of those who survive to thirty years of age will be caused by some cardiovascular lesion. Several thousand operations have now been performed on previously fatal heart lesions by closed methods or with the use of an artificial heart and lung. The first efforts in this direction, with crossed circulation and someone else's heart and lungs, have given way to the use of pumps and oxygenators.

MITRAL STENOSIS.—In mitral stenosis the rheumatic heart disease causes vegetations to develop on and along the mitral valve. When these lesions begin to heal and scar, they retract, as all scars do. A thickened fibrous valve forms which does not open well. This becomes calcified in 25 per cent of these cases. In most cases, if the valve does not open well it will not close completely. Therefore, most patients with predominant mitral stenosis lesions also have some mitral insufficiency and vice versa.

For many years it was noticed at autopsy that patients dying of heart failure from mitral stenosis were mechanically obstructed. For a long time, however, it was considered that the cause of the heart failure was disease in the myocardium and that even if this mechanical obstruction was overcome, the patient would not long survive. This

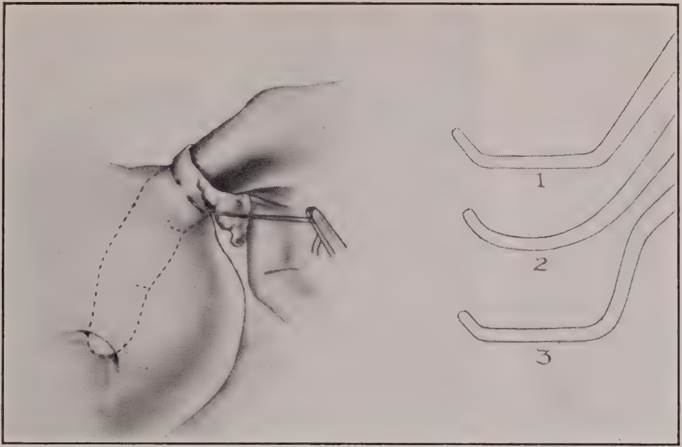

FIG. 3. Mitral commissurotomy. (*A*) Purse-string suture in auricular appendage. (*B*) Amputation appendix application of clamp (various shapes of clamps). (*C*) Finger spreading the mitral valve. (*Courtesy of Lea & Febiger.*[24])

has been proved incorrect. With a mitral stenotic lesion the blood from the lung fills and dilates the left auricle, and since it cannot get into the ventricle through the blocked valve it dams back into the pulmonary veins and secondarily into the lung. The patient has many bouts of pulmonary edema with right-sided heart failure and finally dies in this type of failure.

However, the left ventricle, which is the organ needed to pump blood throughout the heart, is not overworked. It usually is well developed but somewhat atrophic from lack of use because of the relatively small amount of blood that enters it. The symptoms of fatigue, cerebral anemia, and anemia in other organs are due to the fact that not enough blood gets into the left ventricle to be pumped into the outer circulation. The left ventricle, therefore, is actually preserved by a mitral stenotic lesion. If one can correct the stenosis and/or insufficiency early enough in the disease, allowing enough blood to get into the left ventricle, the left ventricle will begin to perform its normal function. The blood will then no longer be dammed back into the pulmonary veins, and the lung and the anemic parts of the body will be more correctly supplied. This repair must be done, however, at a time when the condition is reversible, or when the heart lesion is in the New York Heart Association's classification of Groups II or III. Very few conditions classified as Group IV can have their course reversed because by that time the right side of the heart has had so many failures it probably cannot be restored to normal function. Also, pulmonary capillary hypertension has developed by then. This operation is not technically difficult if performed when the condition is reversible.

Technic.—The operation requires intratracheal anesthesia with the patient in a left lateral position. The pericardium is opened above or below the phrenic nerve at the site at which the auricular appendage can be best approached. This latter organ is lifted into the operative field. It is clamped with an appendage clamp and amputated with or without a purse-string suture, depending on the surgeon's experience and preference. The clamp is then removed and the surgeon's finger inserted into the auricle through the appendage and valve. In this lateral position the anterior commissure is approximately in the left lateral position and the posterior is directly opposite to it. One or both of these commissures are fractured with the finger pressure. If there is calcification, it sometimes is necessary to use a valvutome knife to divide the thickened hard valve. It is of technical importance that the obstruction be divided entirely through the annulus of the valve so that the scar is divided back into natural tissue (Fig. 3). In many cases the insufficiency which accompanies the stenosis is thus overcome. In the hands of experienced cardiac surgeons, the mortality in this type of operation will be under 4 per cent if the cardiac degeneration is not advanced.

Mitral Stenosis with Thrombosis and Embolization.—Some of these patients develop auricular fibrillation with clots forming in the appendage or auricle. There seem to be more clots formed when the valve is both stenosed and insufficient. If the clots are confined to the appendage, they can be surgically removed. If they are fresh in the auricle, they also can be removed. However, if the clots are fibrosed in the auricle, the condition is much more serious. In such instances the auricle is nearly occluded by the fibrosis and only a small amount of blood gets through or around it. The opening into the true auricle can sometimes be forced with the finger, following which the valve is dilated. The mortality in this type of operative intervention, however, is much higher. Mitral stenosis and insufficiency often are both present. Without surgery the condition is quite hopeless. Embolization from such a fibrillating heart often occurs and in most instances is an indication for operation. Taping the cerebral arteries or turning the head to form an acute angle of these arteries can prevent serious brain emboli from developing.

Mitral Insufficiency.—Some mitral insufficiencies are pure and cannot be corrected by fracture of the valve alone. Most of these valves have to be repaired by the open-heart type of operation.

Aortic Stenosis.—The anatomic structure of the aortic valve differs greatly from that of the mitral valve in that it has three cusps and is thick. It is most often damaged by arteriosclerosis. The predominant lesion in aortic stenosis is a thickened, hardened, sclerotic calcified valve which lends itself poorly to surgical intervention. With a Bailey or Brock type of knife or dilator introduced through the left ventricle the valve can be blindly divided.[5] There is a higher mortality rate than in mitral valve surgery. Since this procedure is a blind one, it often gives poor results. Valvuloplasty can also be done by open-heart surgery through the aorta, the operative technic of the future. In some patients the situation cannot await improvement in open-heart surgical technics but requires immediate surgical intervention, with, of course, greater risk. In such instances the operation can be performed through the aorta with a pump oxygenator.

Aortic Insufficiency.—This lesion results from syphilis, although it sometimes occurs in cases of rheumatic heart disease or as the result of arteriosclerotic lesions. The main lesion is coronary anemia. The Hufnagel[6,7] valve is an artificial ball-valve prosthetic which is inserted into the aorta below the point at which the left subclavian and carotid arteries branch off; the aorta is then reunited. Thus, when blood is pumped out of the heart, the blood hits this valve, pools in the aorta, and feeds the coronary arteries. The blood, therefore, is not entirely reverted into the left ventricle, as in a marked aortic insufficiency lesion.

Surgical correction of insufficiency under open-heart technics is also possible and in the future will be the treatment of choice. Plastic repair by suture or prosthetic patch through an opened aorta has been accomplished successfully.

Congenital Defects

The cyanosis of children with pulmonary stenosis was corrected with a bypass by Blalock[8] and Taussig.[9] They connected the right subclavian artery to the pulmonary artery distal to the stenosis. Potts and Riker[10] likewise corrected cyanosis by uniting the aorta to the pulmonary artery side to side. Although these operations helped relieve the symptoms of cyanosis, they created arteriovenous fistulas. Brock[11] subsequently initiated a direct but blind approach to the pulmonary stenotic problem. He introduced a knife (cardiotone) through the right ventricle, divided the valve, and

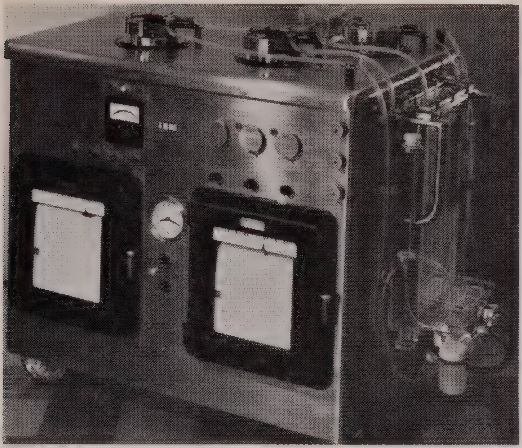

FIG. 4. Gibbon pump oxygenator.

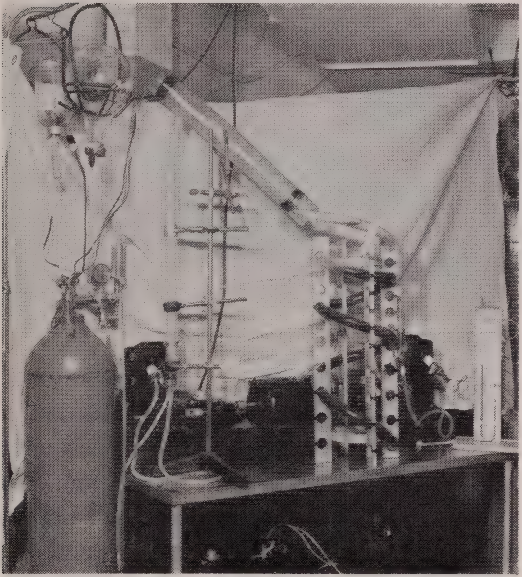

FIG. 5. Modified DeWall-Lillehie pump oxygenator.

then incised it after locating the cardiotone by palpation of the pulmonary artery. These methods have now been replaced by direct open-heart corrections of the lesions of pulmonary stenosis, tetralogy of Fallot, and atrial and ventrical septal defects.

For the correction of many congenital and other heart lesions the heart must be opened. This surgery requires diversion of blood flow for the period of time needed to operate in order to produce a dry heart. The brain must have a continuous supply of oxygen, however, so that artificial oxygenation must

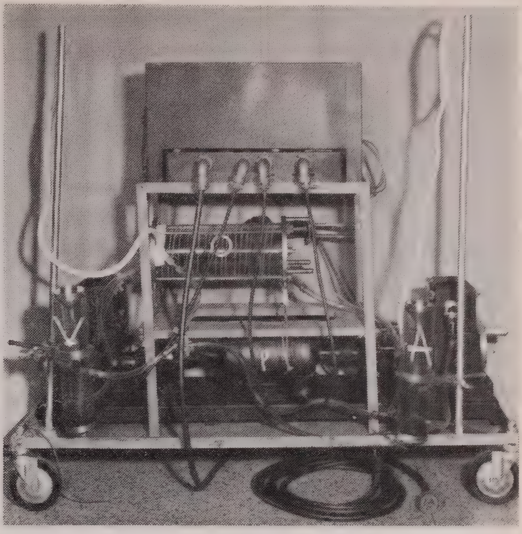

FIG. 6. Modified Kay-Cross oxygenator with Sigma motor. Blood enters venous well (V) by gravitational pull, is oxygenated (at O), enters arterial well (A), and then is pumped into the aorta through canalized femoral artery. Wells can be raised and lowered.

be provided. Oxygenation of all of the circulating blood of the body was first attempted. For twenty-five years John Gibbon in Philadelphia has worked to perfect such an apparatus and procedure.[12] It is now in use by him and in a modified form at the Mayo Clinic and elsewhere.[13] Such an apparatus is complicated to run, and in oxygenating all the blood the complications appear to be multiplied. For those who have perfected its technic, however, it works very well (Fig. 4).

Andreason and Watson[14] in London noted that if the superior and inferior venae cavae of a dog were tied off but the azygos vein left open, the dog would live approximately an hour. Since only one seventh of the blood that is returned to the heart travels through the azygos system, it was apparent that at rest only part of the blood need be oxygenated, a procedure whose success depends on its being short-lived. This resulted in the creation of partial oxygenation apparatuses, of which the DeWall-Lillehei bubble type is perhaps the best known (Fig. 5).[15,16] The Dennis, Dodrill, and other apparatuses were developed

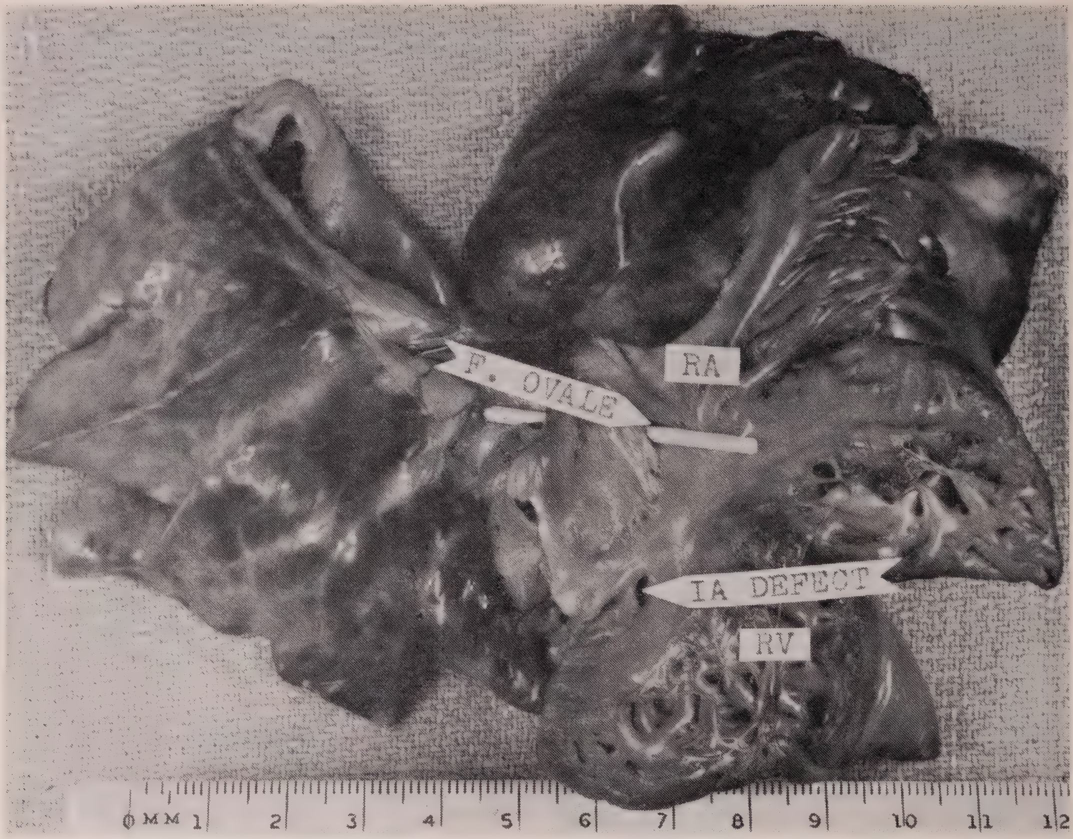

FIG. 7. Intra-atrial septal defect and patent foramen ovale seen from the left side.

later.[17-19] The Kay-Cross disk type (Fig. 6)[20] and the Kay-Andreason screen type of oxygenators are also used in various parts of the country. With such a partial oxygenation procedure, one can shut off all of the blood entering the heart for up to an hour. The membrane type of oxygenator originated by Kolff and Balzer[21] and others has attractive features but it has many management problems, and most clinics have abandoned its use.

PULMONARY STENOSIS.—Pulmonary stenosis, pure and of the infundibular type, is one of the most common lesions, and with tetralogy of Fallot accounts for the cyanosis in 85 per cent of the so-called "blue babies." Although pure stenosis can be corrected without a pump oxygenator, the direct repair of this lesion as well as the subvalvular one is best accomplished by open-heart surgery. Pulmonary stenosis can be corrected, also, by closing the right side of the heart's inflow under hypothermia.

TETRALOGY OF FALLOT.—In this lesion not only is there pulmonary stenosis, but also a ventricular septal defect and an aorta which overrides both ventricles. The aorta delivers blood from both the right and left ventricles. This lesion can now be repaired well with open-heart surgery; the overriding, stenosis, and septal defect can all be corrected. The septal defect is closed by a prosthetic patch. The infundibular tissue can be excised, and in certain instances a prosthetic patch is used to enlarge the pulmonary outflow tract.

SEPTAL DEFECTS.—Atrial septal defects can be closed with a hypothermic occlusion (nine minutes operating time permitted) or by a Gross well.[22] Both auricular and ventricular septal defects are best closed by open-heart surgery since the exact pathologic condition may not be apparent even after cardiac catheterization. Pathologically these defects are much the same as the lesions of patent ductus (Fig. 7), and eventually all such defects which persist will be able to be closed surgically. At the present time those which are of fair size should be closed. The left-to-right shunt tends to reverse itself due to pulmonary-bed hypertension, which may increase as the systemic pressure is transmitted to the right ventricle in ventricular defects and into the auricle in auricular septal defects. Capillary hypertension in the pulmonary bed is an important factor for when it raises the pulmonary artery pressure above 70 mm. the mortality of the operation quickly rises.

Stenotic and insufficiency lesions of the tricuspid valve and ventricular aneurysms can also be surgically corrected by open-heart surgery.

CARDIAC ARREST.—Heart contraction can now be stopped with recovery. To the dry heart is added the quiet heart, which allows the surgeon to work more readily and without the limited time permitted by hypothermia. Potassium citrate is able to stop the heart; 2.5 per cent (in blood) is injected into the coronary arteries by way of the aorta with the aorta clamped. The heart in this way can be arrested for from forty-five to sixty minutes. After the operation is completed the aortic clamp is released; this allows flushing of the drug from the coronary artery and resumption of automatic beating of the heart. Occasionally ventricular fibrillation occurs at this stage, and if so it must be corrected by electric shock, with a defibrillator and manual massage to start the heart action again. Stopping of the heart by electric shock or fibrillation has not been as successful as chemical arrest.[23] Other methods also exist.

HEART BLOCK.—The pacemaker of the heart is near the site of many septal defects, and this node may be injured in the septal defect repair. If this happens, heart block results. A chemical or electrical pacemaker must be applied until the auriculoventricular node's function returns spontaneously.

Comment

Surgery of the heart, both by closed and open technics, has evolved rapidly in the last few years. Many lesions which were incompatible with health or even life can now be surgically eradicated. Since the patient first goes to the family doctor, on the general practitioner is placed the responsibility for deciding whether the patient's heart lesion should be further studied to determine if it can be surgically rectified. Such a decision must be made prior to the time that the changes caused by these cardiac diseases become irreversible.

The use of a cardiopulmonary bypass requires certain hospital facilities; unless the hospital and its staff are so equipped, this type of surgery should not be instituted. The x-ray department and the cardiopulmonary physiology department in such an institution must be excellent, with experience and ability to help in the diagnosis of heart lesions. To this must be added a trained team of surgeons, anesthesiologists, nurses, hematologists, and technicians who have worked as a group in the laboratory for a long time. This time is measured in years since all of the possible defects and dysfunctions in this most complicated surgical problem must have been encountered and overcome on experimental animals, such as dogs, many times before humans are subjected to similar operative procedures. The errors inherent in this procedure are so numerous that without this team training no group is justified in instituting open-heart surgery or in working on living patients.

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Symposium and Panel Discussion

RECENT ADVANCES IN ANTIMICROBIAL THERAPY, PART II

Moderator

CARL MUSCHENHEIM, M.D., NEW YORK CITY, *Attending Physician, New York Hospital; Associate Professor of Clinical Medicine, Cornell University Medical College*

Panelists

EDWARD H. ROBITZEK, M.D., STATEN ISLAND, *Director and Attending Physician, Medical Service, Sea View Hospital; Attending Pneumonologist, Staten Island Hospital*

JULES E. VANDOW, M.D., NEW YORK CITY, *Chief, Division of Social Hygiene, Department of Health, City of New York; Assistant Attending Dermatologist and Syphilologist, Bellevue Hospital*

FREDERICK REISS, M.D., NEW YORK CITY, *Chief, Dermatology Service, Montefiore Hospital; Associate Clinical Professor of Dermatology and Syphilology, New York University Post-Graduate Medical School*

Introduction

Carl Muschenheim, M.D.: I will begin immediately by introducing our first speaker in the continuation of the symposium on antimicrobial therapy. Edward H. Robitzek, M.D., will introduce the subject of the Antimicrobial Therapy of Tuberculosis. Dr. Robitzek:

Antimicrobial Therapy of Tuberculosis

Edward H. Robitzek, M.D.: Until very recently, the total effectual therapy for tuberculosis could be summed up as rest, immobilization, and nutrition. With these measures, plus increasingly effectual isolation and case-finding technics, substantial progress had been made. It was fully expected that with the development of an even mildly effectual antimicrobial agent, control of tuberculosis would be vastly simplified. Many such antimicrobial agents have, indeed, appeared; they have reduced mortality and morbidity sharply but have introduced entirely unanticipated complexities.

One facet of the complexity has been the continuance of a high tuberculosis new-case rate which, in New York City, for example, has dropped a mere 37 per cent in the fifteen-year period of 1940 to 1956. Parenthetically, it may be pointed out that in the same interval the death rate dropped to one fourth of the 1940 level. As an interesting corollary, tuberculin positivity in New York City high schools dropped from over 50 to less than 10 per cent in the same period.

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Factors Responsible for New-Case Rate.—It might be profitable at this point to examine the factors which are responsible for a new-case rate. It will be recalled that for a number of decades there was considerable discussion, often vitriolic, concerning the relative importance of endogenous versus exogenous reinfectivity as the incitant factors in tuberculous breakdown. The case for the former stated that implants of the early primary infection remained dormant until factors, satisfactory for the reactivation of the organism, evolved. Exogenous reinfection required re-exposure to an open case of tuberculosis. Two interlocking observations now achieve special significance: (1) The new-case rate remains high and (2) the tuberculinization of the population has markedly diminished. Since, therefore, the infectivity of the environment has been reduced but the new cases continue to develop, the case for endogenous reinfection has been strengthened. In essence, new-case rates reflect the environmental infectivity of an earlier generation. The practical importance of these observations lies in the knowledge that, barring unanticipated changes, a projection of the present curves will give us a measure of the future problem.

The sustained high, new-case rate and the declining mortality combine to maintain a high "active register." This appears to be true of extrapulmonary as well as of pulmonary tuberculosis. Lattimer[1] has stated recently that the incidence of genitourinary tuberculosis is quite as high as ever in adults but has declined in children. This is at variance with our Sea View Hospital experience where the incidence for 1957 was one-tenth that of 1947! We have seen similar declines in bone and joint, skin, laryngeal, and gastrointestinal tuberculosis. Tuberculous meningitis virtually disappeared in adults and in 1957 there were no deaths at Sea View Hospital from this complication. It must be acknowledged that some extra-pulmonary tuberculosis must go undiagnosed and is incidentally arrested along with the lungs.

It is of interest to correlate these rates with the pathogenesis. It has been widely accepted that extrapulmonary tuberculosis is probably the result of early implantation of tuberculous foci in the primary period with subsequent breakdown due to a variety of possible factors. Others have held that extrapulmonary tuberculosis represents metastatic extension from pulmonary foci. This was a minority view. If, then, the theory of early implantation and later breakdown is correct, the new-case rates for extrapulmonary tuberculosis should parallel the high new-case rates generally. If extrapulmonary tuberculosis is due to metastatic involvement, the rates should decline with those relating to mortality. Since, indeed, they do, the case for the concept of metastatic involvement has been vastly strengthened.

Antimicrobial Agents.—Now to reexamine and review the antimicrobial agents responsible for many of these changes. A gradual but definite reduction in mortality and morbidity has been noted universally for half a century or more but the first real decline was that noted following the introduction of streptomycin in 1945 and, more noticeably, following its widespread use in combination with para-aminosalicylic acid (PAS) in 1948. The bothersome development of resistance of the organism to streptomycin was apparent almost immediately; its delay through the use of PAS in conjunctive combination was also observed, but with the development of resistance to the combined agents, the patient was essentially without antimicrobial help.

Other drugs appeared and were dropped because of ineffectiveness or toxicity or both. The thiosemicarbazones, neomycin, and the sulfa compounds are representative. Viomycin sulfate is in a separate category. It has not been abandoned but there are some of us who have had little success with it. This may be an unfair evaluation since I have tended to restrict its use to the failure cases, preferring to employ the proved drugs first. It is said to be nephrotoxic but at

1 Gm. per day for prolonged periods I have seen neither significant toxicity nor significant therapeutic effectiveness.

In 1951 Pyrazinamide was introduced. It was found to be effectual for brief periods and then it engendered resistance. After seven years its place still appears to be that of adjunct to surgery. It has been recommended in combination with isoniazid because of favorable animal studies but there has been no widespread acceptance. Hepatotoxicity limits its use but doses of 2 Gm. are tolerated and are moderately effectual.

In 1951 isoniazid and iproniazid were introduced; the former continues to hold the position of major agent in pulmonary tuberculosis chemotherapy. It is after this date that we note the truly marked decline in mortality and morbidity from all forms of tuberculosis. At this point, no drug combination offers any superiority to that of isoniazid and PAS.

Of interest at the moment is the revival of iproniazid for use in a wide variety of conditions. This unusual drug was noted early to have a profound effect on nervous tissue of all types. Through cerebral effect it induced euphoria in some patients, psychosis in others. It caused peripheral neuritis. It evoked a voracious appetite, probably through its effect in the hypothalamic area; obstipation due to autonomic effects; failure of micturition due to interference with neurologic control; and dyspnea of an unusual variety, probably due to direct effect on the neurologic motivation of the diaphragm and intercostal muscles but possibly due to interference with the more subtle reflexes such as the Hering-Breuer. Iproniazid causes hypotension, especially of the hypostatic variety. The effect is an acute one. Its capriciousness makes it an unlikely competitor of the established antihypertensive agents. At present it is being recommended for angina pectoris.

Explanations for such effects have been tentatively proposed. Iproniazid appears to inhibit mono-amine oxidase, a substance which reduces serotonin (5-hydroxytryptamine) to the excretion product 5-hydroxyindoleacetic acid. Thus, iproniazid causes an increase in serotonin, a partial explanation for the euphoria and even the psychosis that is occasionally seen. It is of interest that reserpine, the tranquilizer and antihypertensive agent, causes a suppression of serotonin. Since mono-amine oxidase is also apparently responsible for the destruction of acetyl choline inhibitors, an explanation is thereby offered for the potentiation of ephedrine, cocaine hydrochloride, and a few other substances, which we observed and reported on some years ago.[2] On several occasions we observed generalized convulsions in individuals undergoing operative anesthesia while traversing the plane of excitement. With respect to hepatotoxicity, recently reported in the newspapers, we have not observed this reaction.

D. M. Bosworth, M.D., Director of Orthopedic Service at Sea View, has repeatedly asserted that iproniazid is superior to isoniazid in the control of bone and joint tuberculosis, in spite of a hundredfold superiority of isoniazid over iproniazid in the test tube. It is my impression that the remarkable, nonspecific anabolic effects of iproniazid may be responsible for this salutary effect. One unpublished effect of iproniazid that we observed six years ago is its ability, in some instances, to cause sparse growth of hair in hitherto alopecic individuals.

Dosage.—With respect to dosage there is wide divergence of opinion. For iproniazid, 150 mg. per day in divided doses seems satisfactory. With isoniazid, our own studies at Sea View indicate that $^3/_4$ mg. per kilogram of body weight is probably the smallest effectual dose. Almost anyone will tolerate 5 mg. per kilogram although advanced age, severe malnutrition, alcoholism, and a history of earlier psychosis dictate caution. It is also my opinion that previous conditioning with high dosages of isoniazid or toxic dosages of iproniazid will predispose to reactions to subsequent therapy with isoniazid at proper dosage levels. There is reason to believe that this ill-effect may be prevented by the daily administration of 100 to 300 mg. of pyridoxine but it is my feeling that, once started, the neuritis or psychosis it produces is not materially affected by the pyridoxine.

Middlebrook and Dressler[3] have advocated high dosage isoniazid, contending that sputum conversion rates are higher and that, in the absence of conversion, catalase negativity and alteration of organism to a relatively avirulent form may be achieved. Tchertkoff,[4] in our Clinic, has studied high dosage therapy and has reported that at 20 mg. per kilogram occasional previously uncoverted sputa are converted (approximately 15 per cent) and that toxicity is high but may be partially controlled by concomitant use of pyridoxine. The yield is small. With respect to 100 per cent sputum conversion rates, reported in some series by Middlebrook and Dressler,[5] we have been unable to achieve this record. In matching series, however, it is essential that the character of the clinical material be similar. It would not be amiss to reemphasize, in passing, that in anyone's hands the retreatment case is infinitely less responsive than the fresh, new, first admission patient.

The question of dosage and drug combination is an intriguing one. The test tube would suggest that high, even overwhelming, dosages would be desirable. This has not been true in practice. Similarly, reason would suggest that two drugs should be better than one, three than two, four than three, and so on. This, similarly, has not been borne out. The full explanation is not known but, assuming the absence of such factors as faulty absorption, excessive acetylation of the therapeutic agent, or true fresh resistance, the theory of the dormant bacillus will temporarily suffice. This says, in effect, that some organisms are in a dormant, resting, or even encapsulated stage, even though such encapsulation has not been demonstrated, and that the antimicrobial agents are effectual only when the organism leaves this phase and thereby becomes available. This theory, in addition to covering the problems of dosage and drug combination, also points out why prolonged therapy is required. The available organisms are destroyed; the others are destroyed only when they emerge. This may require a year or two. Meanwhile, the host's forces of repair are given an opportunity to restore themselves. This theory would not be at variance with the concepts of open healing nor suffer from the fact that open cavities and positive sputa do occur. Whether or not the word "dormant" may be used interchangeably with "resistant" is moot.

Cycloserine was first studied and reported on by Epstein, Nair, and Boyd[6] in 1955. My associates and I have reported our own results with this drug in two carefully studied series.[7,8] Cycloserine is an effectual drug of an order approaching that of streptomycin. Used alone in doses of 1 or more Gm. per day, neurotoxicity, in the form of convulsions, was seen in 4 of 29 patients. One of these had had prior convulsive episodes. Permanent drug discontinuance was not required, and in the 3 remaining patients, convulsions were not repeated. With a dosage of $^1/_2$ Gm. per day, combined with 200 mg. of isoniazid, no toxicity was encountered. Treatment of previously untreated patients with this drug combination was highly satisfactory.

NEWER DRUGS.—With respect to the newer drugs, the picture still requires considerable clarification. We have had no personal experience with streptovaricin but reports have been less than favorable and the Veterans Administration has dropped it from its study protocol.

Thiocarbinadin is a thiourea derivative which is presently under investigation as a possible substitute for PAS as a resistance deterrent. Its own effectiveness is not high. A substitute for PAS would be most desirable for this drug has a long record of patient hostility. Studies to find an acceptable salt of PAS continue, even though this compound first saw light of day almost twenty years ago. Reports concerning thiocarbinadin are still too meager for evaluation.

Perhaps the most promising of the current crop of antimicrobial agents is kanamycin sulfate, first discovered in Japan and extracted from the Streptomyces kanamyceticus by Umegawa and his colleagues. No large-scale clinical studies have been reported to date but considerable laboratory data are available. In essence it is clear that this is an effectual antimicrobial agent with activity against Bacillus subtilis, Micrococcus pyogenes var. aureus, and a few other organisms but, more importantly, against Mycobacterium tuberculosis. The critical studies indicate activity approaching, but probably not equalling, that of streptomycin in culture tube and test animal. It would be redundant to point out that clinical trials alone tell the story. The remarkable history of cycloserine bears this out. You will recall that this was a substance of no detectable merit in the laboratory but which, when assayed in the tuberculous human being, gave gratifying results. Kanamycin sulfate toxicity is low. Cats have demonstrated equilibratory disturbances at high doses. Thus, even before clinical trial, this drug joins the major antituberculous antimicrobials in one category because of its neurotoxicity. It is of interest that streptomycin, dihydrostreptomycin, isoniazid, iproniazid, and cycloserine, although of entirely individual molecular constituency, exhibit their most striking toxicity in the nervous system. I am told that they also have somewhat similar infrared absorption bands.

There is a continuing need for additional therapeutic agents so long as the definitive bacteriocidal substance eludes us. The reservoir of patients whose organisms are resistant to all antimicrobial agents; who have inelastic, fibrotic lesions interspersed with emphysema; and who are not amenable to surgical measures or medical collapse, is increasing. Even in the absence of a truly bacteriocidal drug, the increasingly large numbers of drugs available increase the possibility of achievement of true synergism, a phenomenon not literally encountered to date. At this point, an additive effect alone has been seen.

Drug Combinations and Duration of Therapy.—A few words concerning drug combinations and duration of therapy are in order. To begin with, the concept of sustained blood levels has been exploded in tuberculosis therapy, at least insofar as streptomycin and viomycin sulfate are concerned. Interrupted therapy is sufficient. Several studies have suggested that this may also be true for isoniazid but ease of administration, lack of toxicity, and easy availability of the drug have limited the scope and number of such studies. PAS, for one, must be administered continuously. It is probably true that a single drug could not be administered satisfactorily on an interrupted basis; it is also probably true that in combined therapy, one of the two agents must be given in a sustained manner. With respect to the numbers of drugs used concurrently, numerous studies and repeated clinical observations have indicated little or no advantage of three drugs over two. Indeed, there may be a disadvantage if resistance develops rapidly to two or more of the three. It seems to me that there should by now be ample awareness that prolonged therapy with an effectual drug is mandatory. This automatically leads to the conclusion that two drugs in combination should be used until "the string has been played out," after which a switch to another pair of drugs or a substitution for one of the major partners with another major drug will perhaps double the duration of effectual therapy. Since, in the final reckoning, it is the human organism that must repair tissue and contain the residual microorganisms, it is imperative that this be accomplished during the period in which such organisms are held in check by the drugs. The phrase "buying time" is entirely appropriate.

Comment.—Isoniazid is our best agent. Unless there is reason to suspect lack of organism sensitivity or an allergic state or other idiosyncrasy, every initial regimen should include isoniazid. So far as I can determine, orthopedic lesions may be the only exceptions here. In these instances, Bosworth feels that iproniazid is the drug of choice.

The isonicotinic acid hydrazides provide anabolic effects which seem to extend beyond their antituberculosis activities. Thus, when resistance develops, I do not automatically discontinue isoniazid since clinical benefit is often still obtained. Conversely, however, when streptomycin has completed its role, I do indeed discontinue it, since experience has indicated its utter ineffectiveness.

Single drug therapy, such as isoniazid alone, has a limited place in the treatment of pulmonary lesions. Small, early exudative infiltrates are occasionally satisfactorily handled thus, but the addition of PAS provides fine insurance. Pleural effusions usually do well. It is possible that closed lesions, which thereby include the orthopedic, may be treated with isoniazid alone. This was proved by the late Bret Ratner, M.D., director of the Sea View Pediatric Service, who successfully treated tuberculous meningitis in children with uncombined isoniazid. The record with respect to cavitary pulmonary lesions is clear. Uncombined chemotherapy would be foolhardy and is not recommended.

General estimates as to the duration of therapy have largely been stabilized. One year seems minimum; longer periods are desirable. This is true irrespective of cavity closure, sputum conversion, or clearing of exudate.

The place of steroids in tuberculosis chemotherapy is entirely obscure. Reports conflict and it would seem that the use of steroids is still on hypothetic grounds. Essentially this is because of the absence of properly controlled studies. One thing is certain. In the presence of a sensitive organism and an effectual drug, there is no danger of provoking tuberculous exacerbation. All other contraindications to the use of steroids must continue to be considered. I am not convinced that steroids add anything to the therapy of pulmonary or meningeal tuberculosis. I have found steroids useful in controlling allergic reactions so that often an effectual but antigenic antimicrobial agent, hitherto contraindicated, can occasionally be used.

From Asia we hear of Tebafen. This is a combination of isoniazid and nicotinaldehyde thiosemicarbazone. The latter drug is not new and has not had a brilliant past record. It is toxic. The results of therapy suggest that the effectiveness mirrors and is directly proportional to the concentration of isoniazid present in the combination and does not exceed it.

Finally, from Dublin, we hear of a compound, a red phenazone dye, which showed remarkable effectiveness in mice. No other data are currently available.

SUMMARY.—Isoniazid and PAS in combination continue to be the drugs of choice for most cases of human tuberculosis. Streptomycin is an excellent second line of defense. Cycloserine is an additional agent of great usefulness. Among the more promising newer agents is kanamycin sulfate, just now entering preliminary clinical trials. Still newer agents are not sufficiently well documented for evaluation.

Prolonged therapy with effectual agents is mandatory. Thus, two drugs, in combination should be utilized first. New combinations may be added as resistance develops. Thus, the longest possible therapy is provided. This approach is superior to the combined use of three or more drugs from the beginning. The place of steroids has not been defined but seems limited. They are useful in instances of drug allergy.

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*Antimicrobial Therapy of Syphilis**

Jules E. Vandow, M.D.: The remarkable therapeutic effect of penicillin in the treatment of syphilis was first demonstrated in 1943 by Mahoney, Arnold, and Harris.[1] For awhile, many physicians were reluctant to substitute penicillin for the heavy metals which had stood the test of time, and there was a tendency to combine both forms of treatment. Soon, however, sufficient evidence was compiled to indicate that the older drugs were not required, and that penicillin alone was effective for all stages of syphilis.

Penicillin is a superior remedy for the treatment of syphilis because it destroys the Treponema pallidum quickly and is relatively nontoxic in the ordinary sense. Furthermore, penicillin resistance has not developed and the drug remains as effective today as when it was first introduced fifteen years ago.

The soluble, rapidly absorbed, and rapidly excreted forms first used have now been replaced by long-acting, repository preparations such as penicillin G in oil with 2 per cent aluminum monostearate (PAM) and benzathine penicillin G. Both of these are recommended for the treatment of syphilis because of the prolonged penicillin blood levels which are produced after they are injected. Detectable amounts of penicillin are found in the blood as long as four days after an injection of 1.2 million units of PAM and as long as fifteen days after an injection of 2.4 million units of benzathine penicillin G. This property makes it possible to treat syphilis with merely a few injections of these drugs.

It has been found that seronegative primary syphilis may be cured by the administration of sufficient penicillin to maintain a blood level of 0.03 units per ml. of serum for five to seven days. For all other stages of syphilis, the same blood level of penicillin should be maintained for about two to three weeks. This can be accomplished either by giving several intramuscular injections of PAM at intervals of from two to four days, each dose consisting of 1.2 million units, or by giving a single injection of 2.4 million units of benzathine penicillin G. Aqueous suspensions of procaine penicillin G may also be used for treating syphilis but it should be noted that an injection of this preparation produces the required serum concentration for only twenty-four hours and, therefore, treatment must be repeated daily for satisfactory results.

Classification of Syphilis.—Thomas[2] classifies syphilis into three main divisions, as follows: (1) early symptomatic, (2) latent or asymptomatic, and (3) late symptomatic.

Early symptomatic syphilis includes seronegative primary, seropositive primary, and secondary syphilis. In this stage, infectious lesions are present on the visible surfaces of the body from which the Treponema pallidum can be isolated by dark-field examination. The seronegative phase of primary syphilis begins with the appearance of the chancre and ends when the serologic test for syphilis shows positive findings. It may last a week or less, depending on the sensitivity of the serologic test used. Seropositive primary syphilis may last about four or five weeks until the eruption of secondary syphilis appears. The findings in the serologic test for syphilis are always positive in secondary syphilis.

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* From the Department of Health, City of New York, and the Department of Dermatology and Syphilology, New York University–Bellevue Medical Center.

After a variable period, the secondary eruption disappears spontaneously so that no external evidence of the infection is apparent. This is the latent or asymptomatic stage which may persist for many years. Diagnosis is based on finding consistently positive serologic test results for syphilis. A past history of infection is helpful but cannot always be elicited. Latent syphilis is usually classified as early or late depending on whether the disease has been present for less than or more than four years or, if the duration is unknown, whether the patient is under or over twenty-five years of age.

Late symptomatic syphilis includes neurosyphilis, cardiovascular syphilis, and other late manifestations such as gummas of the skin, bones, and other organs.

Congenital syphilis occurs when the infection is transmitted during pregnancy from the mother to her unborn child. It is arbitrarily separated into early or late depending on whether the infection is discovered when the child is under or over two years of age. Either stage may be symptomatic or latent.

PENICILLIN TREATMENT SCHEDULES FOR SYPHILIS.—The preparation of penicillin especially recommended for the treatment of syphilis is procaine penicillin in oil with 2 per cent aluminum monostearate (PAM) given intramuscularly. This drug gives adequate blood levels for from seventy-two to ninety-six hours, in the dosages to be indicated, and causes little local discomfort at the site of injection.

The schedules of treatment with PAM in use by the Department of Health, City of New York, are as follows:[3]

Seronegative Primary; Seropositive Primary, Secondary, Early Latent; and Syphilis in Pregnancy.—A first injection of 2.4 million units given intramuscularly; the second, third, and fourth injections of 1.2 million units each given intramuscularly at two- to four-day intervals; with a total dose of 6 million units.

Late Latent, Cardiovascular, Gummaouts, and Osseous.—Five intramuscular injections of 1.2 million units each at two- to four-day intervals, with a total dose of 6 million units.

Neurosyphilis.—Ten intramuscular injections of 1.2 million each at two- to four-day intervals, with a total dose of 12 million units.

Congenital Syphilis.—Early congenital (less than two years), ten intramuscular injections of 150,000 to 300,000 units each at one- to two-day intervals, with a total dose of 1.5 to 3 million units adjusted to the weight of the child.

Late congenital (over two years), same dosage as in comparable manifestations of acquired syphilis. In young children, dosage should be adjusted to weight.

BENZATHINE PENICILLIN G.—Benzathine penicillin G is a benzyl amine penicillin salt in aqueous suspension. A single injection of 2.4 million units gives appreciable blood levels of penicillin for at least fifteen days. Although the blood levels are low when this drug is injected, a single injection of 2.4 million units is adequate for the treatment of primary and secondary syphilis. According to Shafer and Smith[4] such treatment is just as effective as 4.8 million units of PAM given in divided doses over a period of from one to three weeks. Although experience with this drug is based on a small series of cases, the results after several years of follow-up appear to be satisfactory.

Thomas[2] points out that benzathine penicillin G is probably satisfactory for the treatment of most cases of syphilis with the possible exception of relapses and involvement of the cardiovascular and central nervous systems. In these conditions, higher blood levels than are obtainable from injections of this preparation are required, and it is better to utilize PAM in the dosages indicated for these complications. PAM is also preferable for the treatment of patients with latent syphilis when asymptomatic neurosyphilis or cardiovascular syphilis is suspected but cannot be ruled out because it is not possible, for one reason or another, to do a spinal tap or to carry out a complete examination of the cardiovascular system.

Long-term follow-up results of patients with latent and late symptomatic syphilis treated with benzathine penicillin G are not yet available. Its use for these stages of syphilis cannot be recommended at present even though the follow-up results so far, at least, have been satisfactory. Thomas and others believe that eventually this drug will supersede other types of penicillin in the treatment of syphilis.

Benzathine penicillin G injections are somewhat painful. This drawback is of minor importance, since only a few injections are required. Recently, a modification of the drug suspended in oil and aluminum monostearate† has been found to be less painful on injection. This new preparation is under experimental investigation by the venereal disease branch of the Public Health Service and is not yet available for general purchase. A preliminary report by the Public Health Service[5] indicates that it is comparable in effectiveness to benzathine penicillin G for the treatment of early syphilis. There were only 2 failures among 98 treated patients, and 1 of these was questionable. Hypersensitivity reactions, mostly mild urticaria, totalled 2 per cent.

Penicillin Reactions.—Approximately 3 per cent of patients treated with penicillin develop allergic reactions.[6] Most of these reactions are urticarial and are mild. Occasionally serum sickness or severe erythema multiforme-like eruptions may occur. Anaphylactoid reactions are infrequent but their incidence has been increasing.[7]

Among patients treated for venereal disease, penicillin reactions are less frequent than is generally seen. Only 73 reactions, or 0.28 per cent, occurred among 26,067 venereal disease patients treated with PAM in 1957 by the City of New York Health Department. Anaphylactoid reactions were rare, only one for every 8,689 patients treated.

In another survey of venereal disease clinics, Smith *et al.*[8,9] found only 0.6 per cent of 19,510 patients had penicillin reactions, and only 4 patients, or 0.02 per cent had an anaphylactoid reaction. Fewer reactions occurred from benzathine penicillin G (18.5 per 1,000) than from PAM (73.5 per 1,000) among patients treated for syphilis. Delayed reactions from benzathine penicillin G beyond the fourth day following treatment did not occur despite the fact that this drug produced detectable blood levels of penicillin for several weeks.

Treatment of Syphilis in Patients Sensitive to Penicillin.—Oral broad-spectrum antibiotics may be substituted in all cases of penicillin sensitivity. These drugs compare favorably with penicillin in causing spirochetes to disappear from the early infectious lesions and in producing a rapid healing of these lesions.

The following preparations have been found efficacious and are recommended: oxytetracycline hydrochloride (Terramycin), chlortetracycline hydrochloride (Aureomycin), chloramphenicol (Chloromycetin), erythromycin (Erythrocin), and carbomycin (magnamycin). The daily dose of these drugs is 3 to 4 Gm. and should be given in divided doses at six-hour intervals. A total of 40 to 50 Gm. is sufficient for all stages of syphilis except neurosyphilis, when twice this dose is given. If these large amounts are not well tolerated, the daily dose may be decreased to not less than 2 Gm. and the course of treatment correspondingly lengthened.

The recommendations of oral broad-spectrum antibiotics for use in all stages of syphilis is based on their proved effectiveness in the early infectious stages of the disease in experimental animals[10,11] as well as in human beings. New drugs for syphilis have always been evaluated on this basis. It will take many more years of observation before documental evidence of the value of these drugs in latent syphilis will be available. Some evidence is available, however, of their value in the treatment of late symptomatic syphilis. Kierland and O'Leary[12] of the Mayo Clinic reported excellent results in 10 patients with neurosyphilis following the use of 50 to 90 Gm. of chlortetracycline hydrochloride. Plenter[13] also obtained good results with this drug in general paresis with a total dose of 64 Gm. Erythromycin was found to be effective in neurosyphilis by Romansky[14] and Martinez de la Cerda.[15] Oxytetracycline hydrochloride and chlortetracycline hydrochloride reach the spinal fluid in high concentration. Landy[16] found detectable levels of tetracycline twenty-four hours after the drug was administered.

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† Bicillin-Oil-Monostearate (BOM), Wyeth Laboratories, Philadelphia, Pennsylvania.

Although evidence of the value of many broad-spectrum antibiotics continues to mount, longer follow-up periods are still required before any definite conclusions can be made.

Because penicillin remains unchallenged as the therapeutic agent of choice in syphilis, attempts have been made to desensitize hypersensitive patients with gradually increasing doses of penicillin. The procedure, as recommended by Siegal,[17] takes from six to twelve weeks, and in his hands has proved to be of value in selected cases. Desensitization, however, is not feasible for routine practice.[18]

Other types of penicillin, such as penicillin O, have been recommended with claims that they are of value in hypersensitive patients. Unfortunately these claims have not been substantiated and reactions to these so-called hypoallergenic preparations occur as frequently as to penicillin G.[17]

The addition of antihistamines to penicillin has also been recommended to prevent allergic reactions. While such admixtures may prevent some of the mild immediate urticarial reactions, they will not prevent the severe immediate anaphylactoid reactions or the delayed reactions. The same may be said for the use of antihistamines administered prior to an injection of penicillin.

Patients with infectious syphilis who developed urticaria or erythema multiforme-like reactions while receiving penicillin were able to complete the course of treatment by the adjunctive use of ACTH or cortisone.[19] Subsequent follow-up revealed a satisfactory outcome. DeGraciansky and Grupper[20,21] have treated 120 patients in various stages of syphilis with combined cortisone and penicillin and conclude that this combination is of special value in penicillin-sensitive subjects. Fears expressed by some investigators that steroids would depress the body's defense mechanisms in syphilis have not been substantiated by DeGraciansky and Grupper's observations. These investigators also found steroids of value in the treatment of interstitial keratitis, lightning pains, visceral crises, and tabetic anthropopathies.

Prevention of Penicillin Reactions.—As a precaution to avoid reactions to penicillin, each patient must be questioned carefully to determine whether or not there is a history of even a slight sensitivity to the drug and/or whether there is an allergic background, such as asthma, hay fever, urticaria, or atopic dermatitis. In such patients, it is safer to avoid the use of penicillin. Should sensitivity develop during a prescribed series of injections, further penicillin treatment must be withheld. The concomitant use of steroids as described may be considered for use in these cases although additional studies of their value would be desirable. Several allergists[7] recommend skin testing to detect penicillin sensitivity. Unfortunately, negative tests do not exclude penicillin allergy and skin testing is not without danger in hypersensitive patients. De Mello and Mendez[22] recently reported an anaphylactic reaction following an intracutaneous skin test. Greater reliance should be placed on the patient's history than on the results of skin tests, especially if the individual has an allergic background and has previously been treated with penicillin.

Treatment of Penicillin Reactions.—Mild urticarial reactions due to penicillin respond readily to antihistamines. Severe and prolonged reactions may require the use of steroids for variable periods. Recently Becker[23] reported that a single injection of 100,000 to 800,000 units of the enzyme penicillinase reduced penicillin blood levels to zero within one hour in people receiving penicillin. Furthermore, he found that no penicillin could be found in the blood for from four to seven days after the administration of this enzyme despite the fact that penicillin injections were continued twice daily. The enzyme has been used in patients with hypersensitivity reactions to penicillin by several investigators.[24] In some instances it appeared to give dramatic relief within a few hours. In others the symptoms continued and even became more severe for several days in spite of its administration. The use of penicillinase for hypersensitivity reactions due to penicillin appears to be a logical form of therapy. However, its actual effectiveness still needs to be determined and additional experience is required before a definite conclusion or recommendation can be made.

An anaphylactoid reaction requires prompt and energetic therapy. Epinephrine is the most important drug and should always be available. Other valuable drugs are Solu-Cortef, a soluble corticosteroid which may be given intravenously; aminophylline; and norepinephrine. Oxygen is valuable in all cases and essential when there is dyspnea and cyanosis. When the patient reacts, hospitalization is advisable.

POSTTREATMENT OBSERVATION.—The Public Health Service[25] recommends that following treatment, clinical and serologic observation for a period of five years should be carried out according to the following schedules:

1. In primary, secondary, and early congenital syphilis, monthly for six months; then at nine, twelve, eighteen, twenty-four, thirty-six, forty-eight, and sixty months.
2. In latent, cardiovascular, gummatous, osseous, and late congenital syphilis at six, twelve, twenty-four, thirty-six, forty-eight, and sixty months.
3. In neurosyphilis at three, six, nine, twelve, eighteen, twenty-four, thirty-six, forty-eight, and sixty months.

In patients with early syphilis (primary, secondary, and early congenital) the spinal fluid is examined routinely about one year following treatment. In patients with latent or late syphilis the spinal fluid is examined shortly after completion of therapy, and, if negative, the test need not be repeated in the absence of signs of clinical progression. If serorelapse occurs, the spinal fluid should be re-examined. In cases of neurosyphilis, the spinal fluid is examined every three months for the first year and thereafter as indicated.

EVALUATION OF TREATMENT.—*Primary and Secondary Syphilis.*—The quantitative serologic test for syphilis is utilized to indicate the effectiveness of treatment in early syphilis. Immediately following penicillin treatment, the serologic test results may become positive in seronegative primary syphilis. This is temporary, however, and reverts to negative within a few weeks. In seropositive primary syphilis, the quantitative titer falls after treatment and in over 95 per cent of cases becomes negative after a year. A similar decline in titer is seen in secondary syphilis except that 20 per cent or more of these patients remain seropositive in low titer for from one to five years after completion of therapy.[3] Persistently positive tests in low titers of from 1 to 8 or less are not indications for retreatment. If, however, the titer rises above this level and remains elevated or continues to rise rapidly, the patient should be given a second course of treatment. Such treatment is ordinarily adequate for the relapse or reinfection which has occurred. Clinical lesions may develop if treatment is withheld.

Shafer, Usilton, and Price[26] found that 8.2 per cent of patients with primary syphilis and 11.2 per cent of those with secondary syphilis require retreatment during the first twelve months following treatment. Most investigators believe that the largest number of these cases are reinfections rather than relapses.

LATENT SYPHILIS.—The latent stage of syphilis is asymptomatic and a diagnosis of latent syphilis presumes an absence of involvement of the cardiovascular and central nervous systems. Diagnosis is made solely on the basis of positive blood test findings. If the infection has been present less than four years it is considered early latent syphilis. If it is over four years in duration it is diagnosed as late latent syphilis. Most latent syphilitic patients have low-titered blood test findings. If a high titer is discovered, it will usually fall as a result of treatment. Early latent syphilis of less than one year's duration will frequently become seronegative after treatment. If treatment is delayed until the late stages, Wassermann-fastness is the rule. No attempt should be made to reverse a positive finding in a serologic test with additional therapy. Although this is frequently attempted, it is unnecessary and usually futile. As long as the quantitative titer remains below 1 to 8, as determined by periodic testing, additional treatment serves no useful purpose. On the other hand, further treatment is warranted if the titer rises to high levels and is sustained, or if there is evidence of progression of the disease.

Late Syphilis.—By late syphilis is meant late symptomatic syphilis. This includes such conditions as general paresis, tabes dorsalis, meningovascular syphilis, cardiovascular syphilis, and gummas. Most patients with these conditions show seropositive test results even after treatment. Occasionally, negative serologic findings are found notably where there is involvement of the nervous or cardiovascular systems. The TPI test may be helpful in confirming a clinical diagnosis as it often shows positive findings in such cases.

Penicillin treatment arrests the pathologic process and often improves the clinical picture of late symptomatic syphilis. Retreatment is not generally required unless there is evidence of clinical progression or there is unsatisfactory serologic response as indicated by a rise or inadequate fall in titer.

In neurosyphilis, the effectiveness of treatment may be determined by periodic examination of the spinal fluid. The important tests are the cell count, the total protein determination, and the quantitative complement-fixation test for syphilis. Following adequate therapy, an elevated cell count should drop to normal (4 cells or less per cubic millimeter) in three to four months, and the total protein level should fall, reaching normal or nearly normal levels at about one year. The quantitative serologic test titer should also show a tendency to drop during the first year after treatment. Complete reversal of the spinal fluid serologic test results may not occur for several years, however, if at all.

If the spinal fluid cell count remains above normal six months following treatment and the total protein and quantitative serologic test titer do not decline, the patient should be given another course of treatment. Relapse any time, as indicated by a rise in spinal fluid cells, total protein, or quantitative serologic test titer, also calls for additional treatment. Such relapse has not been observed at Bellevue Hospital beyond a period of fifteen months following the administration of adequate treatment.[27]

In cardiovascular syphilis, serologic examinations are of little value as an index for determining the results of treatment since the findings usually remain positive. The patient's progress at this stage is better followed by clinical, fluoroscopic, and roentgen-ray examinations carried out periodically. By the time a diagnosis of cardiovascular syphilis is made, extensive damage in the aorta and aortic valves has already resulted from the infection. Antisyphilitic treatment arrests the inflammatory process and prolongs the life expectancy of these patients. As in the other stages of syphilis, penicillin is the drug of choice. Heavy metal therapy is no longer recommended either as adjuvant therapy or as preliminary treatment in order to prevent Jarisch-Herxheimer reactions.[28] Nevertheless, the occasional report of such reactions as well as that of a therapeutic paradox,[29] sometimes with fatal outcome, suggest the need to individualize each case of cardiovascular syphilis and to consider giving several preliminary injections of bismuth where there is extensive pathologic damage and/or possible imminence of congestive heart failure. Since the prognosis of cardiovascular syphilis is much worse in patients over age fifty, there is an urgent need to locate and treat younger people with this condition.[30]

Syphilis in Pregnancy.—Most states, including New York, require that a specimen of blood be drawn for a serologic test for syphilis at the time of the first prenatal visit. The value of this regulation is suggested by the fact that, annually, almost 1 per cent of the prenatal blood specimens tested by the City of New York Health Department's Bureau of Laboratories show positive findings. Though not legally required, it is good obstetric practice to repeat the blood test in the final month of pregnancy in those whose initial tests show negative results. A negative test result at this time virtually insures the birth of a nonsyphilitic infant, although such cases are occasionally reported.[31]

The birth of even a single child with congenital syphilis is utterly inexcusable nowadays with accurate diagnostic tests and effective drugs for treatment universally available. This was emphasized by Nelson and Struve[32] in a recent report comparing the outcome of pregnancy in a group of women adequately treated for syphilis with a second group who had not been treated. Not a single infant with congenital syphilis was born to the 799 treated women, whereas 13.4 per cent of the children born to the untreated group were infected. According to Laird,[33] congenital syphilis still occurs because of a lack of or inadequate prenatal care, failure to test the blood, unnecessary delay in diagnosis, refusal to accept treatment, and premature labor. To these may be added undetected infection or reinfection in the latter months of pregnancy.

During the heavy metal treatment period it was standard practice, based on sound experience, to treat syphilitic women during each pregnancy, regardless of the duration of the infection, the serologic status, or the amount of previous therapy. Penicillin has made this practice unnecessary. Women who have had previous adequate penicillin treatment and show no evidence of relapse or reinfection do not require further treatment. When, however, satisfactory observation during pregnancy is not possible, it is better to give treatment. Whether treated during the antepartum period or before, each pregnant woman with syphilis should be followed to term with a monthly physical examination and a quantitative serologic test. Should early evidence of clinical relapse develop or should the blood tests reveal either serorelapse or a persistent rise in the quantitative titer, retreatment may be required. In such instances, a complete family investigation is advisable.

Biologic false-positive (BFP) blood test findings may be found in pregnant women and are due to the same conditions as cause these reactions in the general population. Several investigators[34] have found that by using the newer specific spirochetal tests of the blood, pregnancy itself may be responsible for BFP reactions in some women. These tests, the Treponema pallidum immobilization (TPI), Treponema pallidum complement fixation (TPCF), Treponema pallidum immune adherence (TPIA), and so forth, may be helpful for diagnosis when a positive serologic test finding is unexpectedly discovered in a pregnant woman who gives no history of previous syphilitic infection. In the early months of pregnancy, when there is time, a TPI test should be done, and treatment withheld until a diagnosis is made. Toward the end of pregnancy, however, blood may be drawn for the test, but penicillin treatment should be administered without delay as a precautionary measure. A careful history and physical examination, as well as additional laboratory tests may help to determine the actual cause of a positive serologic test finding.

Syphilis of the Newborn.—Early congenital syphilis is readily diagnosed when darkfield positive lesions[29] of the skin and mucous membranes are present at birth or shortly after. Evidence of syphilitic infection may also be found in the long bones by roentgen-ray examination if obvious clinical signs are absent.

A diagnosis of congenital syphilis cannot be made at birth on the basis of positive serologic tests alone. At the beginning of life, the infant's blood may be reactive because of the presence of maternal reagin transmitted through the placenta before birth. Maternal reagin cannot be distinguished from that produced by active infection in the newborn. Since immobilizing antibodies also are transferred across the placental barrier, the TPI test is no more helpful than the serologic test in making a definite diagnosis of congenital syphilis at this time. The cord blood serologic test is also not considered a reliable procedure.

Maternal reagin tends to disappear gradually from the infant's circulation during the first few months of life and is usually absent at about the third month. On the other hand, reagin produced by the infant as a result of syphilitic infection tends to increase in quantity. Thus a gradual fall in titer to seronegativity by the third month rules out infection while a sustained rise in quantitative titer indicates active infection.

Since treatment is of utmost importance for the future welfare of the infected child, diagnosis should be made as early as possible. In arriving at a diagnosis, the following factors must be considered: (1) the status of the mother's infection, (2) any antiluetic treatment that has been received by the mother (type, amount, when given), (3) the quantitative serologic test titer of the mother at term, (4) the quantitative serologic test titer of the infant after birth, and (5) the changes in the serologic titer during the first few months of the infant's life. Treatment should never be given to the infant at birth in a routine manner merely because the mother is syphilitic. Each infant should be evaluated in the manner already indicated earlier before any decision is made regarding a need for treatment.

Preventive Treatment.—The principle of preventive treatment on the basis of epidemiologic evidence is now well established. Penicillin treatment is indicated whenever there is a history of exposure to a person with infectious syphilis. If untreated, many of those exposed develop the disease.[6] A single injection of 2.4 million units of PAM or benzathine penicillin G will prevent this possibility. Although this is almost uniformly successful, a three-to-four-month observation period which includes periodic serologic and physical examinations is advisable as a safeguard. Patients sensitive to penicillin may be give a broad-spectrum antibiotic orally in divided doses of 2 to 4 Gm. daily for a total dose of 20 Gm.

SUMMARY.—Penicillin continues to be the drug of choice for the treatment of syphilis. While all types are effective, two preparations are recommended because of their prolonged effects. These are procaine penicillin G in oil with aluminum monostearate and benzathine penicillin G given intramuscularly.

Treatment schedules and posttreatment follow-up procedures in current use by the City of New York Health Department are described.

Reactions to penicillin have been increasing in recent years. The various types are described and suggestions are made for prevention and treatment.

Alternative methods of treatment for patients who are sensitive to penicillin are given. The broad-spectrum antibiotics have been found to be effective and are recommended as substitutes for penicillin. Attempts to desensitize penicillin-sensitive patients are not practical for general use. So-called hypoallergenic preparations such as penicillin O are not satisfactory. Antihistamines either added to penicillin or given before treatment do not prevent anaphylactoid or delayed reactions. The steroid drugs, on the other hand, may be useful

in selected cases.

The results of treatment and the indications for retreatment are discussed at length. The importance in this respect of following the quantitative serologic test for syphilis periodically is emphasized.

The importance of early diagnosis and treatment of syphilis in pregnancy is stressed and reasons are given why, in spite of the universal availability of accurate diagnostic tests and effective medication, cases of early congenital syphilis occur.

Children born to syphilitic mothers require special observation during the first months of life. Suggestions for such observations are made so that infected children are diagnosed quickly and placed under treatment. A plea is made to evaluate each infant carefully, taking into consideration such factors as the status of the maternal infection, the treatment that has been given to the mother, the quantitative serologic test titer of the mother and the infant, and the changes in the serologic titer occurring during the first few months of the infant's life.

The public health importance of preventive treatment is emphasized. For this purpose, a single injection of 2.4 million units of PAM or benazthine penicillin G should be given to any person who has been exposed sexually to a case of infectious syphilis. Penicillin-sensitive persons may be given a total of 20 Gm. of an oral broad-spectrum antibiotic in divided doses of 2 to 4 Gm. daily.

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*Therapy of Mycotic Infections**

Frederick Reiss, m.d.†: The successful conquest of an infectious disease depends on several factors. Not only is it important to have a thorough knowledge of the metabolic requirements of the infecting agent and to combat the disease with appropriate remedies, but also one should prevent these diseases with prophylactic immunization. These prerequisites have been only partially fulfilled as concerns mycotic diseases.

The constant search for antimycotic remedies is indicative of the fact that the therapy of most fungal infections is still far from satisfactory. The long-chained fatty acids are adequate in the treatment of some infections of the glabrous skin. The therapeutic response, however, is not satisfactory in tinea capitis caused by Microsporum audouini or the large-spored endothrix group or in the onychomycoses. Therefore, a return to the old, time-honored remedies (Whitfield's ointment, iodine tincture, Arning's tincture, ammoniated mercury, Castellani's tincture, and chrysarobin) in persistent cases becomes an unavoidable necessity since none of the newer compounds has emerged superior.

Our experiences in the therapy of onycho- and cutaneous mycoses covering the years 1956 to 1958 follows:

Therapy of Superficial Fungal Infections.—*Tinea Capitis.*—Microsporum audouini was isolated from 86 patients with tinea capitis, or 73.6 per cent of the total number of patients (117) treated for this scalp infection. The susceptibility of males in this series is revealed by the fact that 96 per cent of all scalp infections were in the male. In those patients who failed to respond to local antifungal agents after months of constant application, roentgen-ray epilation was required to effect a cure in 45. Local agents that were administered were: 1 to 3 per cent podophyllin,[1,2] 3 to 5 per cent unguent ammoniated mercury, 2 to 3 per cent salicylic acid, 3 to 5 per cent sulfur in petrolatum, one-half strength Whitfield's ointment, tincture of iodine, zinc undecylenate (Desenex), Salundek (4 per cent mono- and dichloro-salicylanilides, 2 per cent undecylemic acid, 10 per cent zinc undecylenate, 3 per cent salicylanilide), and Decupryl. These local agents were effective when they were applied alone or in combination. Podophyllin, 1 to 3 per cent, used alternately with 3 to 5 per cent ammoniated mercury was effective in 12 cases after from six to ten months of therapy. Similarly, 3 to 5 per cent ammoniated mercury ointment in combination with 3 per cent salicylic acid and 3 to 5 per cent sulfur in petrolatum or Whitfield's ointment established a cure in 12 additional cases. The mercurial ointment was effective when applied for from six to twelve months in 3 cases. Zinc undecylenate was used initially for from four to six months in 5 cases without a response. The same patients responded well to 1 to 3 per cent podophyllin, one-half strength Whitfield's ointment, 5 per cent ammoniated mercury, and to 5 per cent sulfur–3 per cent salicylic acid ointment.

Microsporum lanosum (canis) was isolated from 19 cases of tinea capitis which represents 16.9 per cent of the total number of cases under observation. The same local remedial agents that were used for the Microsporum audouini infections were most effective in this group. In only 1 case that failed to improve with zinc undecylenate and tincture of iodine after many months of application was x-ray epilation necessary. Zinc undecylenate also failed to improve 8 other cases that were subsequently cured with 3 to 5 per cent ammoniated mercury ointment and in 1 patient with half-strength Whitfield's ointment. Podophyllin, 1 to 3 per cent, was effective in 3 patients after from six to ten months of therapy.

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* From the Department of Dermatology and Syphilology of the New York University Post-Graduate Medical School and the Service of Dermatology and Syphilology of Bellevue Hospital.

† Coauthors are Leonard V. Kornblee, M.D., and Mary Elkin, M.D.

Trichophyton tonsurans was isolated from 9 cases of ringworm of the scalp which represents 7.7 per cent of the total number of cases. The combination of 1 to 3 per cent podophyllin and 3 to 5 per cent ammoniated mercury was the most effective therapy in this group. Eight patients responded to this type of therapy within eight months. One case improved but was not cured with zinc undecylenate therapy.

Trichophyton violaceum was isolated from 3 cases of tinea capitis, representing 2.5 per cent of all the cases under investigation. At the start of therapy x-ray epilation was initiated which was augmented with 5 per cent ammoniated mercury, and cure was achieved in from four to six months.

Other Tinea Infections.—Mycotic infections of the glabrous skin were found in 66 cases, including tinea corporis, tinea pedis, tinea cruris, and tinea versicolor. Candidiasis will be discussed as a separate entity.

Tinea corporis was observed in 9 patients. Microsporum lanosum was isolated from 4 cases and responded to zinc undecylenate ointment after three months of therapy in 1 case, and 1 to 3 per cent podophyllin in the remaining 3 cases. Trichophyton rubrum was isolated from 3 patients whose infection responded to half-strength Whitfield's ointment, 1 per cent anthralin ointment, and zinc undecylenate. Zinc undecylenate was effective in two Trichophyton mentagrophytes infections.

Tinea pedis was present in 25 patients. Trichophyton rubrum was isolated from 10 cases. Favorable responses were obtained in 2 cases with zinc undecylenate ointment, in 5 cases with 1 per cent chrysarobin in Whitfield's ointment, and in 3 cases with Whitfield's ointment alone. The local therapy was applied for a period of from four to ten months. Trichophyton mentagrophytes was isolated in 25 infections of the feet. Whitfield's ointment produced a clinical cure in 20 cases, 3 patients showed a less favorable result, and zinc undecylenate elicited a good clinical response in 2 cases.

Tinea cruris was observed in 5 patients. Trichophyton rubrum was isolated in 1 case which responded to Whitfield's ointment after Arning's tincture had failed. The 4 cases caused by Epidermophyton floccosum were treated successfully with Castellani's tincture.

Tinea versicolor was diagnosed in 17 patients who had widespread eruptions of the trunk and the upper extremities. This fungal infection responds most favorably to all of the keratolytic and fungistatic agents. Twelve patients were treated with a 25 per cent solution of sodium thiosulfate and 10 were cured within two months. Five patients were cured with Whitfield's ointment. It is essential that the local therapeutic agents be applied continually for at least one month after the infection has cleared.

Candidiasis.—Candidiasis has been found with increasing incidence in the last decade. The prolonged use of antibiotics and the widespread parenteral and oral administration of corticosteroid hormones have increased the incidence of candidiasis. The incidence of candidiasis is also high in diabetes, pemphigus, systemic lupus erythematosus, and in terminal carcinomatosis.

Candida albicans was isolated from 21 patients with clinical manifestations of paronychial inflammation and intertrigo.

Five patients with paronychia failed to improve with potassium permanganate soaks, zinc undecylenate ointment, and 1 per cent anthralin ointment, while nystatin (Mycostatin ointment) was successful in all these cases. In an additional 6 patients, nystatin was applied from the beginning and brought about a cure in from three to four weeks. Three cases of erosio interdigitalis responded favorably to 1 per cent gentian violet application. In 7 patients with intertriginous candidiasis (submammary, inguinocrural) the response was unsatisfactory with the local application of 3 per cent Vioform ointment, 3 to 5 per cent ammoniated mercury ointment, and 1 per cent gentian violet lotion. Three responded favorably to nystatin although this did not lead to a clinical cure.

Our clinical experience gives evidence that nystatin has been a great aid in the therapy of cutaneous candidiasis. However, relapses after a favorable response have been reported in infants and children with oral candidiasis and also in pregnant women with candida vulvovaginitis. The oral use of nystatin in doses of 0.1 Gm. per Kg. (200,000 units for children and 1 to 2 million units for adults daily) has been reported to be effective in systemic candidiasis but without much effect on the cutaneous eruption or infection of the nails. Amphotericin B, given intravenously to patients with disseminated candidiasis, has been highly effective in rapidly eradicating the infection.[3]

Onychomycosis.—Trichophyton rubrum, Trichophyton mentagrophytes, and Candida albicans are the fungi isolated from infected nails. The problem of therapy of onychomycosis is a difficult and challenging process which has not yet been solved. In the present mode of therapy, a long arduous task confronts both the patient and the physician. This discussion will therefore be confined to infections caused by the Trichophyton group. Trichophyton mentagrophytes destroys the superficial layers of the nail on its initial invasion and as a rule does not invade the surrounding nail wall or nail bed. The diseased nail may be removed mechanically and satisfactory responses have been obtained by the application of 1 per cent chrysarobin in benzoin tincture or in Whitfield's ointment. Trichophyton rubrum is more destructive and more penetrating of the deeper substance than is Trichophyton mentagrophytes. Again, it is advisable to remove the diseased nail by keratolytic agents, by filing, or by dental burring. Various local remedial agents are then applied. Onycho-Phytex, 1 to 3 per cent chrysarobin, Neo-Sebanil, Verdefam, and many remedies have been used. The prognosis of Trichophyton rubrum nail infection is poor with all these agents. For many years x-ray therapy has been given for this condition, although ionizing radiation is certainly not fungicidal. The effects of x-ray therapy are debatable for the treatment of onychomycosis.

THERAPY OF SYSTEMIC AND DEEP FUNGAL INFECTIONS.—Superficial fungal infections cause disability in many patients, with cicatrization of the skin and permanent alopecia. Far more serious is the tissue destruction of deep or systemic fungal infections. According to the statistics of the U. S. Public Health Service over 500 persons die yearly from systemic fungal infections. This is an approximate figure since many cases may remain undiagnosed. On the eastern seaboard, systemic fungal infections are not as frequent as they are in the South or West. However, the incidence of cases of North American blastomycoses, coccidioidomycoses, and chromoblastomycoses are apparently increasing as people travel about the country either for pleasure or in the military service. Cases of sporotrichosis and cryptococcosis are not infrequent; however, histoplasmosis, aspergillosis, mucormycosis, and geotrichosis are relatively rare. In recent years the treatment of systemic fungal infections has undergone a dramatic change and a hopeful prognosis can now be given to hitherto incurable cases.

Actinomycosis.—The treatment of actinomycosis depends on the type of causative microorganism and the organs involved. The cervicofacial actinomycosis generally caused by Actinomyces israeli responds to surgical drainage, large doses of potassium iodide, and penicillin, of which the latter is the drug of choice. Excellent results have also been reported following the use of chlortetracycline, oxytetracycline, and chloramphenicol. Sulfonamides in appropriate doses combined with penicillin may be used and are preferred to prolonged therapy with broad-spectrum antibiotics.[4,5]

Pulmonary and abdominal actinomycosis with bone involvement requires massive penicillin therapy in combination with sulfa drugs.[6] Patients who do not respond to this therapy may have the sulfonamides supplemented by short periods of streptomycin therapy.

Nocardiosis.—Any suppurative fistula-forming cutaneous process may be caused by the aerobic Nocardia, of which several species are known. The mycologic diagnosis is rather important, because Nocardias are resistant to penicillin and respond favorably to a combined sulfadiazine-potassium iodide therapy.[7,8] Sulfadiazine should be administered at a dose of 1 to 2 Gm. every four hours. The treatment should be, as in actinomycosis, continued for several weeks or months. Surgical debridement should be considered only after a favorable initial response to sulfa medication has occurred. The sulfones, such as diasone,[9] are equally suitable in the treatment of this disease. X-ray therapy is a helpful adjuvant.

North American Blastomycosis.—Beside the cutaneous form, the more serious type is the pulmonary and systemic blastomycosis. Primary cutaneous blastomycosis may follow a chronic course, even in untreated cases, but fatal complications are the rule within the first two years of the infection. In the past, painstaking desensitization with blastomycin was followed by potassium iodide and x-ray therapy.[10] In cases which did not respond to this treatment, infusions of 2-hydroxystilbamidine in 5 per cent glucose solution were instituted. Several courses of this drug had to be administered, at times causing severe complications such as nitritoid crisis and facial neuropathy. Stilbamidine is more effective but also more toxic.[11–13] Amphotericin B has proved to be a valuable drug in the treatment of both cutaneous and systemic North American blastomycosis, as well as in 4 stilbamidine-resistant cases.[14–16] The intravenous dose of amphotericin B varied between 25 to 50 mg. daily for from three to five weeks. In some instances oral medication (3 Gm. daily) was given for several months. According to Littman[17] the administration of the drug by the oral route does not produce assayable blood serum levels on several trials. The response to this drug given intravenously is rapid, and the initial experiences with this therapy are most encouraging.

Cryptococcosis.—Cutaneous cryptococcosis is rather uncommon, but involvement of the lung and the central nervous system is more frequent. The cutaneous lesions are just as protean as the pulmonary and central nervous system lesions. Most cases are initially misdiagnosed, but eventually the recovery of the characteristic fungus confirms the diagnosis. This cosmopolitan disease was treated in the past with almost as many drugs as there have been cases recorded. Occasionally, but rather rarely, patients have recovered after sulfadiazine or actidione therapy.[18,19] The recently introduced amphotericin B appears to be superior to any previous therapy. At times relapses occur and the necessity arises to repeat the treatment in order to achieve final cures.[20,21]

Coccidioidomycosis.—With increased communications, coccidioidomycosis is seen more frequently in New York City nowadays than it was prior to World War II. Patients with primary pulmonary coccidioidomycosis are rarely seen in this part of the United States but are more often observed in the endemic areas. Some patients have moderate to severe symptoms with moderate to severe infiltration of the lung accompanied by an extensive eruption of erythema nodosum. Treatment of this stage is symptomatic. Cortisone seems to alter the course of erythema nodosum favorably without aggravating or disseminating the infection.[22] Some of the primary cases disseminate rapidly and sometimes after a latent period of several years. The disseminated lesions may be confined to one[23] or to several bones,[24] with or without cutaneous manifestations. Other than wedge resection or lobectomy[25,26] of persistent cavities, the therapy of disseminated coccidioidomycosis has been rather unsatisfactory. Conversely, the mortality rate has been very high (50 to 90 per cent). Prodigiosin was the only drug used successfully in 6 of 9 patients with disseminated coccidioidomycosis.[27] However, this drug is difficult to prepare and it caused sclerosis and thrombosis of the veins.

On the basis of available clinical investigations, amphotericin B appears to be a promising drug in combination with surgical debridement, and drainage of abscesses and sinuses.[28] Littman[17] summarizes the therapeutic use of amphotericin B in this disease in the following manner:

1. Intravenously 1.0 to 1.6 mg. per Kg. on alternate days in a 5 per cent glucose in distilled water solution over a six-hour period for a prolonged period of time.
2. Intra-articularly, on alternate days, 25 mg. dissolved in sterile distilled water with streptokinase and streptodornase.
3. Intrathecally on alternate days, 0.7 mg. dissolved in sterile distilled water.
4. By intrapulmonary aerosol inhalation every six hours, 5 mg. dissolved in 1 ml. of distilled water.

Prolonged therapy with amphotericin B is essential in this therapy-resistant chronic disease. Excessive and too frequent medications should be avoided.

Sporotrichosis.—Both the cutaneous lymphatic and the systemic types of sporotrichosis respond favorably to intensive potassium iodide therapy, up to tolerance.[29–31] Patients with a strong cutaneous allergic reaction to sporotrichin should first be desensitized with increasing amounts of the polysaccharide fraction of the fungus.[32] A practical approach is to start with 0.5 Gm. of potassium iodide three times daily and to increase it gradually to a daily dose of from 5 to 6 Gm. In refractory cases stilbamidine may be given a trial.[33]

Histoplasmosis.—Patients with subclinical or mild clinical symptoms of histoplasmosis are rarely diagnosed and would hardly require any treatment. Patients with systemic histoplasmosis are a challenging therapeutic problem. Some patients have recovered with intensive ethyl-vanillate therapy (0.5 mg. per Kg.). Up to 80 Gm. have been given over a period of sixty days.[34] This drug not only irritates the oral and gastric mucosa but also is toxic to the liver, and besides that respiratory alkalosis may develop. More hope should be attached to amphotericin B therapy since the majority of investigators reported not only marked improvement but also occasional clinical recoveries.[35,36] For the time being it is too early to evaluate the clinical efficacy of this drug.

Chromoblastomycosis.—Whichever of the Hormodendrums may be the cause of chromoblastomycosis the only successful therapy is the administration of calciferol in weekly doses of 600,000 units.[37,38] This therapy should be combined with a daily 3 Gm. of potassium iodide. Excision of the diseased tissue may enhance therapeutic efforts.

Geotrichosis.—The pathogenicity of the Geotrichum is still debated, although several generalized infections have been reported with positive blood cultures,[39] as well as cultures from the bone marrow.[40] Oral lesions respond readily to 1 per cent gentian violet aqueous solution, and the bronchopulmonary type has been reported to improve under potassium iodide therapy. One case has undergone treatment with neomycin sulfate by Bendove and Ashe[39] with apparent improvement but with severe injury to the acusticus.

Mucormycosis.—Human infections caused by fungi belonging to the family Mucoraceae include two genera: Mucor and Rhizopus. Mucoraceae are very abundant in nature and are the most frequent laboratory contaminants and soil saprophytes. Mucormycosis is known to be one of the most acutely fatal infections and as a rule affects diabetic patients. Mucor has been isolated from paronychia[41] and from papillomatous lesions of the face.[42] These cases do not constitute a therapeutic challenge. However, more serious infections involve the lungs[43] and the gastrointestinal tract.[44,45] The most severe is the acute, diffuse disease of the central nervous system. In most instances the fungus was not cultured and treatment was of little avail. An exception to this is a recently published case of Harris[46] whose patient with a central nervous system involvement recovered on therapy which consisted of rigid control of the diabetes, desensitization against the fungus with Rhizopus vaccine, and administration of potassium iodide.

870 FIFTH AVENUE (DR. REISS)

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Question and Answer Period

Dr. Muschenheim: Thank you very much, Dr. Reiss. We will now have a two- to three-minute intermission and I will ask you all to send your questions up to me so that I can transmit them to the panelists. We have about fifteen to twenty minutes for the discussion which will be based on the questions received from the audience.

The first question is for Dr. Robitzek. What is the best combination of drugs for tuberculosis of the kidney? And in what doses? Dr. Robitzek.

Dr. Robitzek: I am not a urologist, but I understand that effectual therapy would consist for example of isoniazid at 300 mg. a day for the average-weight individual, preferably combined with PAS. What we discussed a little earlier also obtains, that is, using a combination of drugs, possibly switching to another combination at a later date. As you no doubt know, the treatment of genitourinary tuberculosis by surgery has almost disappeared; this was true even with the advent of streptomycin and PAS, and is even more so with isoniazid, so that only infrequently now is it necessary to operate.

As for the duration of therapy, as we pointed out before, I think, in any instance where you're committed to the use of antituberculous agents, you're committed to a minimum of one year of therapy.

Dr. Muschenheim: Thank you, Dr. Robitzek. Dr. Vandow, is gastric syphilis encountered today? If so, what is the best treatment? Is surgical intervention at times required?

Dr. Vandow: We certainly don't see gastric syphilis much today. I recall 2 cases in the days before penicillin, both of whom presented typical gastric ulcer symptoms. The treatment would be the same as is recommended for late syphilis; usually 6 million units of penicillin will cause the lesion to fade away as can be shown by repeat x-ray films. Some people might recommend as many as 10 million units of penicillin. I think that 6 million will do the job.

Dr. Muschenheim: Thank you. Dr. Reiss, amphotericin B seems to be really a broad-spectrum antifungal agent. Would you care to say anything about the toxicity of this remarkable agent?

Dr. Reiss: I could briefly review the principles of the therapy of superficial mycotic infections. In tinea capitis caused by Microsporum audouini x-ray epilation is always indicated if after eight weeks a carefully executed local therapy fails to improve the condition. Tinea caused by Microsporum canis responds as a rule to local therapy. Any of the antifungal agents mentioned previously may be applied. Tinea caused by the large spored endothrix fungi require a long, rather tedious elimination of infected hair combined with local antifungal remedies. We have found $^1/_2$ to 1 per cent podophyllin in petrolatum useful, not only on account of its antifungal properties, but also for the occasional kerionic reaction. A similar effect is that of solid carbon dioxide which we have also tried in several cases.* Onychomycoses constitute a real problem, especially those produced by Trichophyton purpureum. Trichophyton mentagrophytes only invades the superficial strata of the nail plate; therefore, a thorough removal of the diseased portion combined with an application of antifungal remedies, particularly 1 per cent chrysarobin in tincture of benzoin, is just as good as any fancy preparation. Far more difficult is the eradication of a Trichophyton purpureum infection. The treatment of tinea of the glabrous skin raised no great difficulties, except when Trichophyton purpureum is the infecting agent. In all instances keratolytics combined with antifungal remedies are effective. In intertriginous areas tinctures or shake lotions are preferable. Whitfield's ointment is still one of our best remedies and so is 1 per cent tincture of iodine or Castellani's tincture.

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* Reiss, F.: Trichophyton tonsurans ringworm; contribution to the epidemiology and rare clinical manifestations, Brit. J. Dermat. **66**: 239 (July) 1954.

As to Dr. Muschenheim's questions whether amphotericin B is effective on actinomycosis and what the toxic reactions are, may I briefly summarize the following:

Actinomycosis responds favorably to penicillin or sulfonamides. Of course, the old and time-honored potassium iodide should not be forgotten. Nocardiosis, however, does not respond to penicillin, and the drug of choice is sulfadiazine combined with potassium iodide.

Regarding the toxicity of amphotericin B, the most important is azotemia. Whenever the blood urea nitrogen exceeds 50 mg. per cent therapy should be suspended. In such instances treatment should be administered on alternate days, watching carefully for a possible rising azotemia. The less important but more frequent side-effects are occasional vomiting, pain, and chilliness. Febrile reactions may also occur, which can be prevented by prophylactic administration of either salicylates or antihistamine preparations. All these side-reactions can be prevented or reduced to a minimum by remembering that infusions have to be made over a six- to seven-hour period. No toxic effect has been observed after the oral administration of amphotericin B. It is known that the drug is poorly absorbed and therefore has no systemic effect. Oral therapy may be indicated in gastrointestinal candidiasis.

Dr. Muschenheim: Thank you, Dr. Reiss. Dr. Robitzek, I have another question here for you. How many patients were included in your series treated with cycloserine, and if the results were favorable do you still have patients on cycloserine at the present time?

Dr. Robitzek: The original series consisted of a double series of 29 patients each, 58 in all, subsequent to which we have added many dozens of patients which I haven't tabulated lately. Cycloserine is not utilized as widely perhaps as it might be were it a truly competitive drug with isoniazid. In deference to my colleague I'd like to draw the analogy: If you had a case of syphilis to treat, would you use penicillin or would you so use neoarsphenamine? It seems to me you would start with your best drug first and work down rather than up. The same thing is true with this. Isoniazid with PAS represents an excellent combination and cycloserine is a good drug, but if you get a new case who has not been treated before, I think you are wise to give him the best you've got which still happens to be the combination we have discussed with possibly some minor exceptions such as have been voiced in some quarters of the country where additional therapeutic trials are being made with other combinations. That's essentially my feeling. Now, we use it particularly in patients who are treatment failures, that is, to other medications, and who are resistant to virtually anything and everything that's available. This automatically makes a tough case, and it automatically would give any drug a black eye if you took it in that context without recognizing that the so-called retreatment case is invariably half a dozen times tougher than the fresh, new case who responds so well to almost anything. Cycloserine is a good drug; if it were not for the other drugs it would certainly be utilized constantly. As it stands now it is used as a fill-in when the others fail.

Dr. Muschenheim: Dr. Vandow, the question is: You've stated that in latent syphilis, and in instances of Wassermann-fast blood, treatment with penicillin is not warranted. Does this also apply to neurosyphilis?

Dr. Vandow: Once penicillin treatment

has been given as recommended, there is not any need to repeat it when the titer does not show any increase, or there isn't any progression of the actual manifestations of the disease.

Now, the same could also be said for neurosyphilis. If, for example, there has been a reversal in the serologic blood titer and it suddenly becomes positive again, this would be a very important indication to do another spinal trial to determine whether or not there has also been a relapse as far as the central nervous system is concerned. By examining the spinal fluid this information can readily be obtained. If the cells in the spinal fluid, for example, show an elevation or increase above 4, if there's an increase in the titer of the spinal fluid serologic test, or if there's an increase in the total protein, it would certainly be an indication that one should give the patient a second course of treatment. In the same way, if there are relapses as far as clinical symptoms are concerned, or if there's a progression in the signs and symptoms let us say in the general paretic patient who has been treated after the preliminary laboratory tests have been performed, it would still be an indication to give this patient a second course of penicillin.

Dr. Muschenheim: Dr. Robitzek, here's another question for you: Do you use steroids in cases of acute toxicity due to active tuberculosis? I presume this refers to cases of fulminating tuberculosis.

Dr. Robitzek: I do not. It hasn't been recommended. We've been entirely successful with what we have. By and large, you can eliminate acute fulminating toxicity from almost any case with effectual drugs and remove the organism with whatever it is sensitive to.

I think there is one point that I would like to throw in and that is that iproniazid (Marsilid), is probably more effective in overcoming the toxicity associated in some instances with acute fulminating tuberculosis than anything else I know. In some instances, carefully selected and relatively few in number, we may use iproniazid along with isoniazid and PAS in the initial phase. In some instances we use streptomycin. We use triple therapy occasionally when we are concerned that we perhaps might not have an organism sensitive to the isoniazid-PAS combination and the patient is so sick that we don't have time to ascertain this in the test tube; then we may throw the third drug in right away. But as far as the steroid is concerned, the position is not clear. I have not been convinced that it has really affected toxicity in such patients to an extent sufficient for me to draw any conclusions from it.

Dr. Muschenheim: I would like to say a word on this myself, if I may, Dr. Robitzek. I am perhaps in a little disagreement with Dr. Robitzek's point of view. I think one does occasionally encounter patients whose early response, at least to antimicrobial therapy, is very disappointing. We have had several such whom we considered moribund but who responded dramatically to the steroids. Now, there's no objective measurement to determine when a patient is moribund, but these patients were acutely ill, prostrated, hyperpneic, with respirations of 60 or more, who improved dramatically within a matter of eight hours or so after steroid therapy was added. And there are a great number of reports now available of fairly sizable series of cases in which this has been observed. On the other hand, we have never used iproniazid, and I'm interested to hear Dr. Robitzek's comments on that. I would doubt, however, that even iproniazid would produce such a rapid reversal of an unfavorable course as occurs sometimes with the steroids.

Our time is almost up and there is a question for Dr. Robitzek. Dr. Robitzek, could you tell us very briefly, perhaps, of your outline of treatment for tuberculous meningitis? What drugs, and how long, and by what route?

Dr. Robitzek: Briefly the same combination obtains. Isoniazid and PAS is your major combination with isoniazid diffusing freely through into the subarachnoid space so that you have an excellent agent in that respect.

Now, there are different opinions with respect to the use of streptomycin. I think that if you poll the phthisiologists, you'll find that the majority will use streptomycin right away at least twice weekly, and I think also that the same phthisiologists will agree that the intrathecal therapy has been abandoned and is no longer necessary. Since streptomycin does not diffuse readily into the subarachnoid space, the question then is raised why use streptomycin at all? Obviously the answer is that since you don't know where the tuberculosis is and since you may well have a tuberculoma astride the ventricle, it is a useful agent. As far as I'm concerned, the dosage I would use would depend on the agent and the patient. For adults I'd use perhaps 450 mg. a day of isoniazid and PAS, if tolerated, and if the patient were conscious. Streptomycin, of course, is no problem. Iproniazid can be given by needle the same way.

As far as children are concerned, they tolerate isoniazid in tremendous doses, and they can easily tolerate a grain a day in most instances.

Now, with respect to duration of treatment, I think this is most important. The duration of treatment must be in excess of a period of time required to get negative spinal fluid findings, and I mean literally negative. We've all had the unhappy experience of having the clinical response apparently perfect, the spinal fluid virtually perfect, but with perhaps a few additional cells with a little increase of protein or a little reduction in sugar. This is not good enough. Those are the cases in which relapses occur. The spinal fluid must be normal and it should remain so. It seems to me that, by and large, the duration of treatment should be a total of at least a year and a half and probably longer. It is probable in successful cases that you may be getting your subarachnoid space fluid to show negative findings in perhaps as little as six months, but this is the minimum. I think prolonged therapy in these instances is essential. It is very interesting that the tuberculosis organisms in closed lesions, in particular in the subarachnoid space, tend to remain sensitive to the drugs for prolonged periods of time no matter what drug you use; much longer than, let's say, in a pulmonary lesion where resistance develops fairly promptly as compared with other lesions.

DR. MUSCHENHEIM: Thank you, Dr. Robitzek and the other panelists.

Some books are to be tasted, others to be swallowed, and some few to be chewed and digested.—FRANCIS BACON

Medical Management of Recurrent Urinary Calculi

DONALD F. MCDONALD, M.D., ROCHESTER, NEW YORK

(From the University of Rochester Medical Center)

Improvements in prophylaxis and treatment of recurrent urinary calculi based on recent fundamental researches make the outlook for the patient with recurrent urinary calculi less foreboding.

Vermeulen and coworkers[1] have developed an experimental method of producing calculi about a metallic foreign body in rats. Using this method, they have evaluated critically a number of forms of clinical therapy. They discovered that calculi could be completely dissolved by general measures of treatment. Induction of diuresis by offering 10 per cent glucose solution partly dissolved calculi in 75 per cent of the animals.[2] We have confirmed this work using sucrose in drinking water or 5 per cent sodium chloride in the diet. Administration of ammonium chloride cured 70 per cent of the rats, presumably by pH change.[3] A low magnesium diet (the experimental bladder stones were magnesium ammonium phosphate hexahydrate) cured 82 per cent, whereas basal gel only cured 12 per cent.[4] Marshall and coworkers[5] found that hyaluronidase treatment did not effect dissolution of fragments of human calculi implanted into bladders of male Wistar rats. Prien[6] has found that calcium phosphate solubility can be increased by additional glucuronides. He has reported encouraging clinical results of salicylamide therapy, but this has not been experimentally or clinically confirmed.[7] Henneman, Carroll, and Albright[8] have found that oral sodium phytate administration results in a diversion of calcium excretion from the urine to the stool. Boyce[9] has found sodium phytate treatment of great clinical value. We have confirmed and extended these observations experimentally. It appears likely that a phosphate-to-calcium ratio of 9:1 in the diet whether the phosphate is in the form of phytate or of inorganic sodium phosphate markedly reduces the urinary calcium excretion by holding calcium in the intestine. Experimentally, 50 per cent of calculi can be dissolved within four weeks, and an average of 83 per cent of the remaining calculi can be partly dissolved by such treatment.[10] Our studies of endocrine effects on calculogenesis and calculous dissolution implicate pituitary and gonadal hormones particularly androgen as important potentiating causes favoring calculus formation.[11–14] Vermeulen[15] has found citric acid to be the best calcium solubilizer in urine. In human males, normal and stone-forming, urinary citric acid excretion is increased by estrogen treatment and urinary calcium excretion is reduced. This desirable situation has been put to practical use in helping to prevent calculus formation in the paraplegic patient in whom no objection to estrogen treatment on grounds of impotence would exist.[16] So much for the background of our plan. How much of a problem is recurrent urinary calculus?

The patient who passes a urinary calculus has a 15 per cent chance to develop another. The patient who is unable to pass his calculus and must have lithotomy has a 47 per cent chance for recurrence.[17] No one has been more aware of the need for effective nonsurgical methods for managing the chronic stone-forming patient than the urologist. Whereas lithotomy removes dramatically the cause of the patient's symptoms and usually results in cure, there are many patients who develop more stones. As attractive as repeated surgical intervention

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may seem it should be performed as infrequently as possible, for lithotomy when repeated becomes successively more difficult, destructive, and complicated. The more tedious and uncertain medical management imposes a burden on patient and physician, but when predicated on adequate knowledge of the patient it can be more effective than is generally realized.

Essential Data

The data which are essential to good planning for medical management of recurrent calculi are derived as follows. The physical condition and past history of important illnesses which might have contributed to the formation of stones are obtained. An accurate history referrable to the passage or removal of calculi is recorded. Previous medical treatment is carefully documented. All available calculi are subjected to quantitative analysis by x-ray diffraction which gives the crystalline structures and the relative preponderance of each in the calculi. All the x-ray films and pyelograms are obtained to provide an objective indication of the rate of formation or a base line for the dissolution of calculi. Pyelography is an important aid in the selection of cases for medical management. Repeated examination of the fresh urine sediment discloses the presence or absence of crystals, leukocytes, and bacteria. The urinary pH and specific gravity will tell how effectively the patient is following instructions to alter pH and dilute the electrolytes. The urine culture and bacterial sensitivity test results aid in selecting appropriate antibacterial agents.

Chemical determinations on blood and urine are helpful not only in diagnosis and evaluation of renal function, but also in management because they indicate the effectiveness of the measures employed. Hyperparathyroidism is not a common cause of recurrent calculi. Many more patients have hypercalciuria who do not have hyperparathyroidism.

General Management

When is medical management indicated? If a slow-growing or stationary calculus lies in a calyx so that it is not obstructing an important part of the kidney collecting system, and if recurrent acute pyelonephritis is not a problem, the management can be medical. If the calculus recurs a few months postoperatively, probably recurrence will be the rule no matter how many times it is removed. The cause of recurrence should be sought eagerly and active, appropriate medical management instituted. If bilateral recurrent renal calculi are associated with apparent renal damage, surgical intervention should be avoided. Loss of functioning kidney tissue and postoperative scarring are inherent in nephrolithotomy. Nephrocalcinosis, because of the multiple tiny calculi, is best managed medically.

There are several general principles of medical management which apply to all types of calculi. Because it favors calculus formation urinary obstruction of any sort should be relieved. Infection should be controlled by antibiotics and chemotherapeutic agents for many infections are associated with marked alkalinity of the urine which favors calculus formation. The urine volume should be increased by having the patient consume 4,000 cc. of fluids over a period of twenty-four hours. The urine should be kept dilute day and night. Patients must acquire the hydration habit by keeping an accurate record of fluids consumed. If twenty-four-hour urine specimens are measured, the discrepancy between output and supposed intake is made obvious. The point of adequate diuresis is a difficult one to make to the patient. It requires frequent reinforcement.

The concentration of offending crystalloid can be reduced for some varieties of calculi, such as those containing calcium and oxalate, by limiting the dietary intake or by inhibiting absorption. Reducing intestinal absorption of the offending cation is particularly effective in calcium-containing stones. Calcium absorption can be reduced by a 200 mg.

calcium diet. Further reduction in absorption is possible by the administration of phosphatic calcium binders, such as sodium acid phosphate or sodium phytate 9 Gm. per day. A 50 per cent reduction in calcium excretion is not unusual by these means. Boyce's[9] series of observations demonstrate conclusively the value of this method. Twenty-four-hour quantitative studies are essential to accurate management of this phase.

The diet should be supervised by a dietician. The solubility of the offending substance can be increased by altering the pH of the urine around the clock. The consumption of alkalinizers, such as sodium bicarbonate or sodium citrate, in large amounts, prevents formation of uric acid and cystine calculi and has been observed to dissolve them. Calcium- and magnesium-containing stones are better treated by acidifying the urine through administration of sodium acid phosphate. Patients should be instructed in the use of pH paper so that an amount of medication adequate to effect the desired pH change is consumed. During the early management period the pH should be recorded for every voiding. Short-range, easily read test paper facilitates accurate do-it-yourself pH determinations. Vitamin A deficiency as a cause of urinary calculus in the United States must be rare, but overuse of vitamin D because it promotes calcium absorption should be discouraged.

Specific Measures

We now come to specific management of particular types of calculi. The commonest recurrent calculi with which we have to deal are those containing calcium. They comprise 89 per cent of recurrent urinary stones. Over half the calcium-containing stones are mixtures of calcium, ammonium, and magnesium phosphates and carbonates. The remainder of the calcium stones contain oxalate as an anion. Specific medical management of the mixed calcium stones is directed toward reducing the calcium content of the urine by dietary restriction and the reduction of calcium absorption by administration of sodium acid phosphate or sodium phytate. Acidification of the urine to pH 5 doubles the solubility of calcium phosphate at neutrality. For calcium oxalate calculi acidification is not effective. Low calcium and oxalate diet and calcium binders may be helpful.

Uric acid calculi are usually the result of hyperuricaciduria of the gouty diathesis. They may follow treatment for leukemia because of the rapid catabolism of nucleoproteins in the destroyed cells. A common initiating cause for uric acid calculi in patients with gout who never previously formed them is uricosuric drug therapy. Such treatment mobilizes periarticular and soft tissue uric acid deposits with attendant marked hyperuricaciduria. If the urine is acid and concentrated, calculi may form rapidly. The classical prophylactic diet avoids foods rich in nucleoproteins. But a low protein diet (1 Gm. per Kg.) with alkalinizers to render the urine pH 7 or greater has been found to reduce the quantity of the uric acid excreted and increase its solubility. In going from pH 5 to pH 7, the solubility of uric acid is quadrupled. Because of renal tubular damage in gout, alkalinization of the urine may be difficult without the aid of acetazolamide or chlorothiazide to increase sodium excretion.

Cystine calculi can be prevented and sometimes dissolved by urinary alkalinization. Usually, 12 to 16 Gm. of sodium bicarbonate or citrate are required to produce a urinary pH exceeding 8. A dose during the night may be found essential to render the specimen strongly alkaline at this hour. The patient must test his own urine to establish the optimal dose and times for the medication. No dietary restriction is found to help patients with cystinuria. Sulfur-containing amino acids are necessary for adequate nutrition, but all sulfur-amino acids are excreted as cystine by the cystinuric patient.

During the course of medical prophylaxis and treatment, which may be indefinitely prolonged, emergent or elective surgical intervention may become necessary to alleviate suffering and to conserve renal function. Some of the common indications for surgical intervention are: protracted or recurrent stone colic, a disproportionately large ureteral calculus which causes obstruction and cannot pass, recurrent or acute septic pyelonephritis above an obstructing calculus, and obstruction resulting in progressive loss of renal function.

Summary

More than ever before, the informed physician is able to advise sound, experimentally proved measures directed toward prophylactic treatment of recurrent calculi.

Conscientious medical management on the part of both physician and patient is the answer to recurrent calculi.

Repeated surgery is contraindicated, except in emergencies.

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Discussion

Kurt E. Steinborn, M.D., *Buffalo, New York.*—Renal lithiasis has been found in about half of the severely paralyzed poliomyelitis patients studied in respirator centers. Although the pathogenesis of this complication has not yet been fully established its main causes seem to be complete immobilization of the patient leading to severe osteoporosis and hypercalciuria, bladder paralysis with urinary stasis, and the use of indwelling catheters causing urinary tract infections.

At the University of Buffalo Respiratory and Rehabilitation Center we approached this problem three years ago by introducing a combined management to prevent formation of calculi and further growth of stones already present. Preliminary studies demonstrated that sodium phytate reduces the high urinary calcium level of the immobilized patient to a certain degree. We also tested various salicylate derivatives in regard to their tendency to form glucuronides since these compounds were known to chelate calcium and magnesium phosphates. We found that salicylamide yields the highest glucuronide level in the urine. A combined treatment consisting of sodium phytate, salicylamide, and high fluid intake was then applied to 12 patients with kidney stones who entered the Respirator Center during the last three years.

As a result of this management new formation of stones was completely prevented and growth of stones already present was practically inhibited in the entire group. Five of the individuals, all faithfully following the recommended treatment after their discharge, have even demonstrated some slight radiologic decrease in the number and size of their calculi. Since small stones may have been passed spontaneously rather than dissolved we were especially interested in the effect on larger stones. X-ray films of a patient in this group who contracted poliomyelitis many years ago and subsequently used an iron lung at home, demonstrate the effect of our management. When admitted to the Respirator Center for further rehabilitation in June, 1957, he had a large dense calculus in the right pelvis and a smaller stone on the same side. The patient was started on the combined treatment of phytate, salicylamide, and high fluid intake and nine months later demonstrated signs of a slight disintegration along the margin of the larger calculus. The lower stone had become appreciably smaller. Another x-ray film taken after twenty months on the treatment shows a further reduction in the total calculus materials.

These results support the view that renal lithiasis in immobilized patients is preventable and that proper long-term medical management may even lead to a reversal of stone formation.

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Clinical Evaluation of Trimethobenzamide*

New Antiemetic Drug

WILLIAM B. ABRAMS, M.D., IRWIN ROSEFF, M.D., JEROME KAUFMAN, M.D., LESTER M. GOLDMAN, M.D., AND ARTHUR BERNSTEIN, M.D., NEWARK, NEW JERSEY

(From the Medical Research Unit, Newark Beth Israel Hospital)

The vomiting center, stimulated by impulses arising in the gastrointestinal tract and other viscera, the labyrinth via the cerebellum, and by signals descending from the higher brain centers, coordinates the complex responses involved in vomiting. Located in the medulla, the center integrates these afferent impulses and, through the appropriate motor nuclei in this region,[1] discharges the efferent impulses which stimulate the voluntary trunk musculature as well as the motor elements in the gastrointestinal tract and respiratory system. The mechanism by which infections, intoxications, and emetic chemicals such as apomorphine and lanatoside C induce vomiting has been explained by their stimulation of an area in the floor of the fourth ventricle known as the chemoreceptor trigger zone from which impulses are relayed to the vomiting center.[2–6] There is evidence to suggest that the chemoreceptor trigger zone may also be a relay station for impulses from the nuclei of the cerebellum activated by abnormal labyrinthine activity in motion sickness and Meniere's syndrome.[7–9] At any rate, the chemoreceptor trigger zone appears to be an important site of action of antiemetic medications.[2–6,10,11]

In a study of 31 antihistamine drugs, Boyd *et al.*[10] noted greatest antiemetic activity in those compounds which contain a para-chloro, -bromo, or -methoxy-substituted benzene ring attached to a benzene or pyridine ring through a methyl and/or amino group, connected to a dimethyl-ethyl amino or 1-dimethyl-N-propyl group. Trimethobenzamide 4-(2-dimethylaminoethoxy)-N-(3,4,5-trimethoxybenzoyl) benzylamine hydrochloride, is a compound that fits these qualifications (Fig. 1).

The present study is an evaluation of the drug in an unselected series of patients on the Medical Service of the Newark Beth Israel Hospital. In order to evaluate the medication in the treatment of so subjective a symptom as nausea we also introduced a placebo for comparison. It is well known that a placebo, even though inert pharmacologically, will nevertheless produce remission of subjective symptoms in a certain number of patients.[12] It was therefore also necessary to devise a technic for quantitative evaluation of the results, and to delineate differences, if any, between the active drug and the placebo.

Most antihistamines are known to produce somnolence and drowsiness[13–15] because of their depressive action on the central nervous system. This constitutes a troublesome liability of this group of compounds,

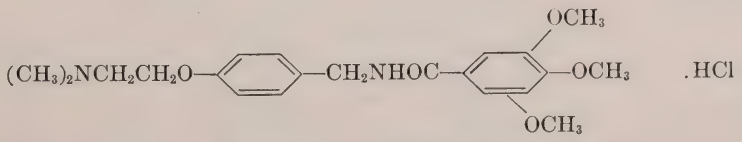

FIG. 1.—Structural formula of trimethobenzamide.

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* Trimethobenzamide is manufactured under the trade mark of Tigan by Hoffmann-La Roche Inc., Nutley, New Jersey.

TABLE I.—DISTRIBUTION OF DIAGNOSES

Diagnosis	Number of Patients
Myocardial infarction	8
Digitalis toxicity	5
Cholecystitis	4
Diabetic acidosis	3
Uremia	3
Lymphosarcoma	3
Bronchogenic carcinoma	3
Lymphoma	2
Duodenal ulcer	2
Renal colic	2
Hepatitis	2
Gastritis	2
Addison's disease	1
Pancreatitis	1
Leukemia	1
Ascites of undetermined origin	1
Tuberculous lymphadenitis of the neck and chest	1
Enterocolitis	1
Intestinal obstruction	1
Pernicious vomiting of pregnancy	1
Carcinoma of testes	1
Carcinoma of ovary	1
Labyrinthitis	1
Congestive heart failure	1
Pulmonary tuberculosis with para-amino salicylic acid administration	1
Bronchial asthma with aminophylline administration	1
Vomiting of undetermined cause	1

and one objective of the current study was to evaluate trimethobenzamide with respect to sedation as a side-effect.

Selection of Patients and Methods

The 54 patients comprising this study were all subject to nausea and vomiting and were generally very ill. The patients ranged in age from twenty-one to eighty years (the average age was 48.5 years). The diagnoses are listed in Table I. The very severity of the illnesses posed a severe test for the medication under study. Eight patients, all of whom had received trimethobenzamide by mouth, were excluded from the evaluation because of insufficient follow-up data.

In 8 of the patients with malignant disease, trimethobenzamide was used for the prevention and/or treatment of nausea and vomiting from the administration of nitrogen mustard and from radiation sickness in 2 other patients. One of the patients with renal colic, 1 patient with cholecystitis, 1 patient with lymphosarcoma, and 1 patient with diabetic ketosis had nausea and vomiting because of opiate administration.

Trimethobenzamide was administered orally to some, by the intramuscular route to others, by both routes to a third group, and rectally to 6 (Table II). This drug alone was administered to 37 patients, trimethobenzamide and a placebo were administered to 13, and 4 were given a placebo only. The inert material was administered as a tablet or parenterally as a saline injection.

The single oral dose of trimethobenzamide was 100 mg., and the single parenteral dose was 100 to 200 mg. The rectal dose was also 200 mg. Eighteen patients who were given trimethobenzamide by mouth received a total of thirty-eight doses, while the 37 who were given trimethobenzamide parenterally received a total of 86 injections. The suppository was used

TABLE II.—SUMMARY OF RESULTS

Medication	Number of Patients	Route	Number of Doses	Effectiveness Complete	 Partial	 Failure
Trimethobenzamide only	37	Orally	22	15	5	2
		Intramuscularly	66	39	13	14
		In suppository form	13	10	1	2
Trimethobenzamide plus placebo	13	Trimethobenzamide				
		Orally	16	7	1	8
		Intramuscularly	20	14	2	4
		Placebo				
		Orally	5	2	...	3
		Intramuscularly	9	2	...	7
Placebo only	4	Orally	1	1	...	
		Intramuscularly	3	2	...	1

13 times in 5 patients. The largest quantity of trimethobenzamide administered to a single patient in this series was 7 Gm. over a period of eighteen days. Nausea and vomiting were present only during the first two days of this period in this patient; therefore, only the first seven doses are included in the over-all evaluation.

Laboratory studies consisted of complete blood counts; urinalyses; and determinations of blood urea nitrogen, alkaline phosphatase, and serum glutamic transaminase. These tests were performed prior to institution of therapy, the day after the drug was administered, and at weekly intervals in the instances when administration was prolonged.

Nausea and vomiting were graded as follows: 0—absent, 1—mild, 2—moderate, and 3—severe.

The degree of effectiveness was expressed by equating the severity of the symptoms before and after trimethobenzamide was administered. Numerical evaluations for vomiting and/or nausea prior to each dose of medication were added and the sum divided by the number of doses to obtain averages. The same procedure was used also to test the effectiveness of placebo medication. The "average severity" of nausea and vomiting prior to the administration of the active drug and the inert substance was then compared with the values obtained after medication.

Results

In the 18 patients who received trimethobenzamide by mouth (thirty-eight doses), the drug was completely effective 22 times, partially effective 6 times, and not effective 10 times. Five of the failures, however, were in one patient. In the 37 patients who were given trimethobenzamide parenterally (86 injections), nausea and/or vomiting were completely controlled on 53 occasions, partially controlled 15 times, and not altered 18 times. In the 5 patients who were treated with trimethobenzamide suppositories (13 administrations), complete relief was obtained in 10 patients, partial relief in 1 patient, and no relief in 2 patients (Table II).

TABLE III.—NUMERICAL REPRESENTATION OF "AVERAGE SEVERITY" OF NAUSEA AND VOMITING BEFORE AND AFTER TREATMENT

Medication	Nausea		Vomiting	
	Pre-medication	Post medication	Pre-medication	Post medication
Trimethobenzamide	1.95	0.71	1.52	0.72
Placebo	1.95	1.30	1.63	1.25

The "average severity" of nausea prior to the administration of trimethobenzamide was 1.95. The postmedication value was 0.71. Similarly trimethobenzamide reduced the "average severity" of vomiting from 1.52 to 0.72. The "average" degrees of nausea and vomiting prior to the administration of a placebo were 1.95 and 1.63 respectively. Placebos reduced these values to 1.30 and 1.25 (Table III).

Placebo medication by the oral route was effective in 3 out of 6 administrations and by the parenteral route in 4 out of 12 administrations. In the 13 patients who received both trimethobenzamide and placebo medication, the results were as follows: In 7 patients trimethobenzamide was effective after a placebo failed to control the nausea and vomiting. Both the placebo and the drug were effective in 4 patients and neither the placebo nor the drug was effective in 2 patients.

Over-all evaluation finds trimethobenzamide effected complete relief of nausea and/or vomiting in 38 subjects, was partially effective in 10, and totally ineffective in 6.

The onset of relief following the oral administration of trimethobenzamide ranged from ten to forty minutes (average time was 25.6 minutes). After the parenteral administration of trimethobenzamide, relief was noted after fifteen to thirty-five minutes (average 24.6 minutes).

No side-reactions whatsoever were encountered in any of the patients whether the drug was given orally, parenterally, or rectally. It is especially noteworthy that there was no evidence of a sedative effect of this compound in any of the cases, regardless of the route of administration.

The premedication laboratory findings were either normal or appropriate to the underlying disorder. There were no untoward changes in the laboratory values after the administration of trimethobenzamide.

Summary

Trimethobenzamide, a new antiemetic, was administered to 54 patients with a wide variety of disorders which are commonly accompanied by nausea and vomiting. To test the effect of the drug the results were compared with those of a placebo in 17 patients.

Trimethobenzamide was administered orally, parenterally, or rectally, and the placebo medication was given by mouth or by injection. The largest quantity of trimethobenzamide administered to a single patient was 7 Gm. over a period of eighteen days.

In contrast to placebo medication, trimethobenzamide significantly reduced the "average severity" of nausea and vomiting, evaluated by means of an arbitrary scale of numerical values.

Onset of relief occurred within an average of approximately twenty-five minutes regardless of route of administration.

It is concluded that trimethobenzamide is an effective antiemetic which does not produce sedation or any other side-effects.

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Our doubts are traitors, and make us lose the good we oft might win, by fearing to attempt.—SHAKESPEARE

Experience with Triamcinolone in the Topical Treatment of Dermatoses

GEORGE J. SPINNER, M.D., BRONX, NEW YORK, LOUIS WEXLER, M.D., NEW YORK CITY,
ROBERT SCHWARTZ, M.D., BRONX, NEW YORK, AND LESTER KLEIN, M.D.,
YONKERS, NEW YORK

(From the Department of Dermatology, Fordham Hospital, Bronx, New York)

ONE of the newest topical corticosteroids in clinical use, triamcinolone acetonide,* has been found materially to benefit pruritic and inflammatory dermatoses when applied in 0.1 per cent concentration.[1–5] Hydrocortisone, the prototype of the topically active agents in this chemical class, exerts a therapeutic anti-inflammatory action on cutaneous eruptions at a level of 1 per cent.[6–8] While the difference in potency is impressive, this in itself does not justify substitution of the new for a well-established medication. Some investigators, however, employing double-blind paired comparison technics, have observed in significant numbers of patients a more rapid and complete response with triamcinolone acetonide than with hydrocortisone.[1–5] The finding of greater efficacy warrants continued clinical appraisal of the new dermatologic agent.

Because mixed infection may be a conspicuous or potential hazard in the common skin disorders, combinations of a topical corticosteroid and potent antimicrobial agents often provide a desired multiple approach to treatment. As a companion to cream, lotion, and ointment preparations containing 0.1 per cent triamcinolone acetonide, an ointment for application where infection is a primary or secondary factor is available containing 0.1 per cent triamcinolone acetonide plus 2.5 mg. neomycin, 0.25 mg. gramicidin, and 100,000 units nystatin per gram.* Both types of preparations were employed, as indicated, during this study.

Methods and Materials

A series of 71 patients with common skin problems were seen in the outpatient dermatologic clinic of Fordham Hospital. Most were adults but 18 in the group were twelve years of age or less, and 2 were under two years of age. One of the infants was treated for diaper rash and the second

TABLE I.—RESPONSE OF COMMON DERMATOSES TO 1 PER CENT TRIAMCINOLONE ACETONIDE AND TO THE CORTICOID COMBINED WITH ANTIMICROBIAL AGENTS

Diagnosis	Number of Patients	Preparation Applied	Results of Treatment			
			Excellent	Moderate	No Change	Worse
Anogenital pruritus	6	Triamcinolone acetonide	5	1	0	0
Atopic dermatitis	12	Triamcinolone acetonide	7	2	3	0
Contact dermatitis	19	Triamcinolone acetonide	16	1	1	1
Eczematoid dermatitis	9	Triamcinolone acetonide	3	3	3	0
Nummular eczema	5	Triamcinolone acetonide	3	0	2	0
Neurodermatitis	4	Triamcinolone acetonide	2	2	0	0
Candidiasis, vulvar	5	Combined agents	4	0	0	1
Candidiasis, other areas	7	Combined agents	7	0	0	0
Intertrigo	4	Combined agents	3	0	1	0
TOTALS	71		50	9	10	2

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* Triamcinolone acetonide was supplied as Kenalog and triamcinolone acetonide combined with neomycin, gramicidin, and nystatin was supplied as Mycolog by E. R. Squibb & Sons, New York City.

infant was treated for contract dermatitis involving the penis, scrotum, and thighs. Cream, lotion, and ointment formulations containing 0.1 per cent triamcinolone acetonide were prescribed for 55 patients. In the remaining 16 cases, where skin disorders were of an infectious nature and a mycotic etiology was suspected, an ointment preparation containing the corticoid in combination with antibacterial and antifungal agents was employed. The appropriate medication was applied to affected areas from two to four times daily and rubbed thoroughly into the skin. Antihistamines and other corticosteroids were employed in some patients concomitantly.

Results

The results of the treatment are given in Table I. Of the 55 patients treated with triamcinolone acetonide alone, 36 showed an excellent response, 9 showed moderate improvement, 9 exhibited no change in status, and in 1 patient the condition became worse. Particularly favorable results were observed in anogenital pruritus, atopic dermatitis, and contact dermatitis. In 2 cases, where the lotion preparation was applied, affected areas became excessively dry. No other side-effects were noted, and no evidence of systemic steroid effects was detected in any of the patients treated in this study.

An excellent response was achieved in 14 of the 16 cases treated with triamcinolone acetonide, neomycin, gramicidin, and nystatin in an ointment base. No change was apparent in 1 patient and in a second patient the condition grew worse with treatment although the irritating effects of the vehicle were considered largely responsible for the difficulty. The presence of Candida albicans in some of these lesions was demonstrated by culture. Two patients previously treated with gentian violet showed varying responses to the corticosteroid-antibacterial-antifungal ointment. One of these, a seventy-one-year-old woman with interdigital erosion between the middle and ring fingers, showed some healing and loss of erythema after one week of ointment applications. The second patient, a fifteen-month-old boy with diaper rash (intertrigo), exhibited very little improvement after applying the ointment twice daily for four days.

Comment

Experience with triamcinolone acetonide in this series of common dermatoses and comparison with earlier observations of the various other topical corticosteroids indicate this new compound to be a highly active agent for direct application to pruritic and inflammatory skin lesions. A moderate to excellent response was achieved in 83.1 per cent of the 71 cases treated, as judged by the promptness with which itching was checked and affected areas cleared of the eruption. In general, 0.1 per cent triamcinolone acetonide was at least therapeutically equal to 1.0 per cent hydrocortisone. In 4 patients the presence of comparable lesions permitted simultaneous assessment of the two corticosteroids on symmetrically paired areas. Three individuals exhibited a better response to triamcinolone acetonide while both substances were found similarly effective in the fourth with no preference expressed by the patient. These findings are essentially in keeping with the reports of other clinicians. Aside from excessive dryness experienced by several patients applying a lotion formulation and 1 patient in whom irritating properties were attributed to an ointment base, no adverse effects were observed in this group of patients. The addition of neomycin, gramicidin, and nystatin to the corticosteroid provides an effective preparation for combatting bacterial and monilial cutaneous infections.

Summary

Triamcinolone acetonide in 0.1 per cent concentration is a highly active topical agent for suppression of pruritic and inflammatory dermatoses, at least equal in therapeutic efficacy to 1 per cent hydrocortisone. The corticosteroid together with neomycin, gramicidin, and nystatin is a strikingly effective combination for application where bacterial or monilial infection is a primary or threatening factor. Systemic steroid effects or evidence of toxic reactions were not observed during this study.

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ANNUAL CONVENTION

Medical Society of the State of New York

Statler Hilton Hotel, New York City

SCIENTIFIC PROGRAM

May 9 to 13, 1960

Any State Society member interested in presenting a paper before a scientific section or a general session is requested to contact the section chairman (see page 4084) or to write to Alfred P. Ingegno, M.D., Chairman, Scientific Program Subcommittee, at 27 Eighth Avenue, Brooklyn 17, New York, before November 15, 1959.

CLINICOPATHOLOGIC CONFERENCE

BUFFALO GENERAL HOSPITAL

BUFFALO, NEW YORK

Conducted by JAMES PHILLIPS, M.D. NOVEMBER 10, 1958

Discussed by DAVID K. MILLER, M.D.*

Case Report

A fifty-four-year-old male was transferred from an out-of-town hospital on September 22, 1958. His present illness began about a week before the present admission with generalized malaise and intermittent fever to 105 F. On September 18 he became irrational and developed cyanosis and coldness of his nose and ear lobes, patches on his lips, and areas about his toes and feet. He was admitted to his local hospital with stiff neck, confusion, and a fever of 103 F. His blood pressure at that time was 90/60. A lumbar puncture revealed cloudy fluid which grew Streptococcus viridans. Therapy was begun with chloramphenicol, erythromycin, and sulfadiazine. Solu-Cortef was administered intravenously. During the next few days he became more rational and his general condition seemed to improve. However, from the day of admission he remained almost totally anuric (20 to 40 cc. per day). There was elevated blood urea nitrogen and depressed carbon dioxide combining power. He was referred for possible hemodialysis.

There was no past history of scarlet fever, kidney disease, or rheumatic fever. In 1956 he underwent surgery for repair of a hiatal hernia following which there was a very stormy course. During surgery the spleen was ruptured and had to be removed. During the postoperative period he was said to have developed hepatitis. He also developed a subphrenic abscess on the left side which was drained on two separate occasions.

Physical examination revealed a critically ill, thin white male who was poorly oriented, hyperventilating, and somewhat difficult to examine. His temperature was 99.6 F., pulse 88, respirations 30, and blood pressure 160/100. There was no scleral icterus, and the fundi showed normal disks and vessels without hemorrhage or exudate. The pupils were constricted but were equal and reacted to light. The tip of the nose was cyanotic, suggesting early gangrene. There were several small cyanotic patches on the lower lip and about the helix of the right ear. The tongue was dry. There were no petechiae noted in the pharynx. The neck was supple. Examination of the chest revealed many fine rales at both bases. Heart sounds were regular and without murmurs; there was no clinical enlargement of the heart. The abdomen was slightly distended and tympanitic but was nontender and had active peristaltic sounds. There were many old scars about the anterior abdominal wall. There were no pal-

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* Professor of Medicine and Chief of the Department of Medicine, Edward J. Meyer Memorial Hospital, Buffalo, New York.

TABLE I.—Pre- and Postdialysis Chemical Values on Second Hospital Day

Dialysis	Blood Urea Nitrogen (mg. per cent)	Sodium*	Potassium*	Chlorides*	Calcium*	Phosphorus*	Carbon Dioxide Combining Power*
Before	218	146	5.6	105	9.6	. .	14.1
After	154	140	5.6	102	9	2.5	12

* mEq. per liter.

pable organs or masses. The genitalia and rectal findings were normal. There was no presacral or pretibial edema, and no splinter hemorrhages were noted. There were purplish cyanotic areas on both arms and feet. The right second toe was gangrenous. The dorsalis pedis pulse was felt only on the left, but posterior tibial pulses were felt bilaterally. Neurologic examination gave normal results.

The impression on admission was that the patient suffered from renal failure due to septic embolization of renal parenchyma following streptococcal meningitis and septicemia.

Urinalysis revealed a specific gravity of 1.021, alkali, protein 4 plus, sugar 2 plus, red blood cells 75 to 100, occasional white blood cells, yeast, and bacteria. The complete blood count showed a hemoglobin of 13.2 Gm. per cent, red blood cells 4.4 million, and white blood cells 29,000, with 4 per cent juvenile forms, 22 per cent band cells, 55 per cent filaments, 2 per cent lymphocytes, 7 per cent mononuclears, and 6 per cent nucleated red blood cells. There were 120,000 platelets. The bleeding time was three minutes and the clotting time three minutes. The electrocardiogram revealed an old posterior wall infarction and gave evidence of hyperkalemia.

The blood film showed marked variation in the size of the blood cells, from polychromatophilic macrocytes to microspherocytes. There was variation in shapes: crenated cells, large and normocytic targets, large spherocytes (transfused cells), and a few microspherocytes. There was a 4 plus polychromatophilia, and Howell-Jolly bodies were present. There was no stippling. There were numerous normoblasts, and karyorrhexis was seen. Hyperleukocytosis was present with a marked left shift to myelocytes. Toxic changes and giant platelet forms were noted. The blood urea nitrogen was 178 mEq., sodium 136 mEq., potassium 6.2 mEq., calcium 4.9 mEq., phosphorus 3.8 mEq., and carbon dioxide combining power 11.6 mEq. per L.

Lethargy increased and anuria continued. On the second hospital day the patient underwent hemodialysis for six hours (Table I). He continued to bleed moderately from the site of the femoral cut-down. This responded only temporarily to pressure and Gelfoam. He remained anuric. One observer heard a soft systolic apical murmur. On September 27 he appeared to be having labored respirations and was noted to have generalized muscular twitching. This was presumed to be due to hypocalcemia and was stopped with intravenous administration of calcium gluconate. Later that day the serum potassium was noted to be 7.4 mEq. He was given potassium exchange resin (SKF, number 648). There had been no weight gain, and he still was producing only 20 to 30 cc. of dark urine per day. That evening a tarry stool was passed but no transfusion was given for fear of raising the potassium to toxic levels. The hemoglobin was 6.4 Gm. per cent and the hematocrit 21.

On the following day he was dialyzed a second time (Table II). Four units of blood were given during the procedure. Late that evening he was noted to be dyspneic and to be bleeding from the nasopharynx.

TABLE II.—Pre- and Postdialysis Chemical Values on Sixth Hospital Day

Dialysis	Blood Urea Nitrogen (mg. per cent)	Sodium*	Potassium*	Chlorides*	Calcium*	Phosphorus*	Carbon Dioxide Combining Power*
Before	300	140	8.2	102	. .	. .	6.9
After	156	148	5.6	103	8.2	7.8	10.3

* mEq. per liter.

Oxygen was administered, with some relief resulting. The bleeding appeared to stop spontaneously. The following morning his hemoglobin was 8.6 Gm. per cent and his hematocrit 29. He expired early that morning.

Throughout his hospital stay he had been under therapy with chloramphenicol and erythromycin. Hydrocortisone hemisuccinate had been given intravenously every six hours in 50-mg. doses. There had been occasional temperature spikes to 101 F.; terminally his temperature was 102 F. Subsequent electrocardiograms were nonspecific but suggestive of electrolyte unbalance. The Weil-Felix reaction had been negative.

Discussion

James Phillips, M.D.: One of the miracles of modern medicine is hemodialysis, wherein patients whom we would have consigned to the grave three or four years ago are now snatched from that grave and restored to life. The operator must be a master diagnostician because many systemic diseases terminate in kidney failure. Thus, the men who operate the dialyzer will frequently be called on to diagnose many obscure and unusual systemic diseases. The present case presents such a problem: a patient suffering from an apparent systemic disease which terminates in kidney failure. David Miller, M.D., is our guest discussant.

David Miller, M.D.: This is the story of a fifty-four-year-old man who apparently was well with, as far as we know, a negative past history, negative from the standpoint of scarlet fever, rheumatic fever, and such diseases which might be pertinent to the subsequent story, until about two years before his present illness, when he was operated on for a hiatal hernia. We are not told much about the symptoms before this operation, but evidently he had a pretty rough time afterwards in that the spleen ruptured and had to be removed. That may be significant for the interpretation of some of the subsequent laboratory findings. We are also told that he had hepatitis, which of course is a broad term and I think one that we use frequently without being certain of the etiology of the condition, and that he developed a subphrenic abscess which had to be drained twice. Aside from that, he was pretty well until about one week before he was admitted to another hospital, when he began to have signs and symptoms of an infection with general malaise and temperatures up to 105 F. When he was admitted to the other hospital, he was mentally confused and his blood pressure was lower than on subsequent examinations. He clinically showed areas of cyanosis of his lips, nose, fingers, ears, and toes. His lumbar puncture revealed a cloudy fluid from which Streptococcus viridans was grown. It was noted at the other hospital that he was anuric, excreting 20 to 30 cc. of urine per day. His carbon dioxide combining power was depressed and his blood urea nitrogen was elevated. He was considered to have meningitis due to Streptococcus viridans and septicemia and was treated with 3 antibiotics: erythromycin, Chloromycetin, and sulfadiazine. Because he continued to be oliguric, he was sent to this hospital for dialysis.

On admission to this hospital it was noted that his blood pressure was 160/100 and that in addition to the antibiotics he had also been given cortisone. The tip of his nose was cyanotic. He had no petechiae. He had what is described as some cyanotic areas—patches on his lips, arms, and legs and gangrene of one toe. He also had a cyanotic area on his ear. The spleen and liver were not felt. He had no cardiac murmurs. His heart appeared to be normal in size. He had no signs of cardiac failure. The hematologic work-up on his admission is interesting in that it showed a marked shift to the left of white cells, with an elevated white count and even some myelocytes. The red blood cells were interesting in that they showed marked variation in size. The red blood cells also showed many target forms. Six nucleated red blood cells were seen in conjunction with 100 white blood cells. The platelets were decreased (120,000), and the bleeding time was normal. His hematocrit, red cell count, and hemoglobin were normal.

As far as his hematologic picture is concerned, we have a patient who shows, in addition to a marked shift to the left with a high white cell count, changes in the red cells. Part of the changes, such as the target cells, we can attribute to being the result of the splenectomy; target cells very often are seen for years after a splenectomy. But, in addition, he had nucleated red cells and a decrease in his platelet count. Also, he was in renal failure. He was dialyzed. The antibiotics, erythromycin, and Chloromycetin were continued and, although bleeding from the main sites of punctures occurred following the dialysis, no transfusions were given because he still was excreting a relatively small amount of urine.

Thus, we have a patient who had a splenectomy two years previously, who apparently was pretty well until he suddenly began to have fever, and in whom organisms were found (Streptococcus viridans) which usually are of low virulence and which usually do not produce the clinical picture with which we are presented: namely severe renal failure with gangrene of one toe and areas on his skin which we presume to be due to some sort of a vascular change.

Could this be subacute bacterial endocarditis? We know that in patients with subacute bacterial endocarditis murmurs are not always heard, and eventually someone did hear a soft systolic murmur. If the lesion is on the right side of the heart, it very often is apt not to produce murmurs or less apt to produce murmurs than a lesion on the left side. But we have no indication that this man had any sort of an endocarditis. We are dealing primarily with a patient who had a severe infection as the result of an organism that we usually think of as producing its symptoms in the peripheral circulation by embolization. These emboli, even though they are infected, usually do not produce metastatic bacterial lesions, such as abscess, and, even if they go to the central nervous system, usually do not produce meningitis, which we know the patient had.

What sort of skin lesions do we see in patients with a bacterial endocarditis due to the green streptococcus? The most common lesion, of course, is petechial hemorrhages, which are seen in the mucous membranes of the conjunctivas and mouth, underneath the fingernails and toenails, and on the ankles, hands, and abdomen. In addition, there are two other fairly common types of lesions which may be seen with bacterial endocarditis: Osler's nodes and Janeway lesions. From the descriptions that are given, none of this patient's lesions was petechial in type. They were not pea-sized, tender, red areas located on the pads of the fingers and toes, such as described by Osler. Nor were they the erythematous macules several millimeters in diameter located on the palms of the hands and balls of the feet which we consider Janeway lesions. Furthermore, he had no petechiae in his conjunctivas or on the mucous membranes. He had gangrene of the toe, cyanosis of the end of his nose and lips, and cyanotic areas on his arms and legs.

Another severe bacterial infection is hemolytic Staphylococcus aureus septicemia. In meningococcemia there are, in addition to petechial hemorrhages, larger areas due to larger emboli which have shut off the blood supply, such as in Rocky Mountain spotted fever in which there are ulcerated areas or gangrene of the skin (usually over the bony prominences), scrotum or penis, or in the fingers or toes. But in any of the severe bacterial infections, such as hemolyticus Staphylococcus aureus or meningococcic infections, there are skin lesions that many physicians do not attribute or believe are entirely due to emboli; rather, these lesions are considered due to intimal involvement in the blood vessels with perivascular infiltration, such as in Rocky Mountain spotted fever. Some even believe that these lesions are hypersensitivity reactions to the organism or to the products produced by the organism and that they resemble the vasculitis or arteritis existing in individuals with one of the connective tissue diseases due to drugs or unknown causes. Should the skin lesions in this man be considered on that basis? With the organism discovered in this patient, such skin lesions are rare, and two possibilities come to mind: one, that the Streptococcus viridans was mistaken for some other organism and, two, that this patient had some other disease of his blood vessels, some other severe arteritis or vasculitis, at which time he got a Streptococcus viridans infection which made the basic disease more evident.

Periarteritis nodosa is a disease that is not as common today as it was during the era of sulfa drugs. A connective tissue disease that is common today is disseminated lupus. But there was a period in American medicine when periarteritis nodosa was much more common. Arnold Rich, M.D.[1] collected the statistics from Johns Hopkins Hospital. Roughly, from 1915 to 1936, before sulfa was a common drug, they had 6 cases of periarteritis nodosa in about 10,000 autopsies. From 1936 to 1946 with half the number of autopsies they had 38 cases of periarteritis nodosa. Dr. Rich, of course, was interested in hypersensitivity reactions of blood vessels and was particularly interested in sulfa drugs as one of the possible etiologic agents responsible for the increased incidence of periarteritis nodosa that was seen in their autopsy material over that ten-year period. The present patient had had an infection before. We do not know what antibiotics he had had, but we are living in an era of wonder drugs and perhaps this patient's basic disease, the disease that manifested itself when he had an infection, was not a severe vasculitis or an arteritis but periarteritis nodosa, manifesting itself in skin lesions and renal failure.

His electrocardiogram is also interesting. The first one that was done in this hospital showed changes that were considered to be the result of coronary blood vessel disease. Also evidence of vascular disease is the fact that he bled—how severely, we do not know. We know that when the first blood count was done in this hospital, his hemoglobin, hematocrit, and red cell count were pretty normal, but in the smear there is evidence of something going on in his red cell picture: an increase of nucleated red cells, spherocytes, and target cells. This cannot be entirely attributed to the splenectomy that he had had two years previously so that perhaps, in addition to bleeding, this patient had one of the other hematologic complications seen in patients with renal failure—hemolytic anemia. He was given on his second dialysis 4 pints of blood. He had had tarry stools and he bled from his nasopharynx. But after the administration of 4 pints of blood before he died, his hemoglobin was still much lower than it had been on entry. His hemoglobin on entry was 13 Gm. per cent, decreased to 6 Gm. and then, after 4 pints of blood, rose only to 8 Gm. Because of the marked number of nucleated red cells, the Howell-Jolly bodies, and the other signs of disturbed bone marrow function, I wonder if this patient had hemolytic anemia as a result of renal failure.

We see kidney lesions in infections. Subacute bacterial endocarditis is, of course, a common infection as far as producing changes in the kidney. We see two types of involvement of the kidney in bacterial endocarditis or in blood-stream infections: one, an embolic lesion and, two, a diffuse glomerulonephritis. An embolic lesion may manifest itself only by scattered red cells in the urine or albumin. This patient was in renal failure and the renal failure was what brought him into this hospital. In spite of the marked change in his electrolyte picture after dialysis, the renal failure certainly contributed to his death for he was still excreting only very small amounts of urine shortly before he died. On the other hand, the sort of renal failure that this patient had could occur with a connective tissue disease, such as periarteritis nodosa or acute disseminated lupus.

The blood vessel changes that are seen in connective tissue diseases such as periarteritis nodosa may be seen in infectious diseases. Dr. Rich, who spent a great deal of time studying these blood vessel changes in patients and producing them in experimental animals, was not able without a definite history of antibiotic administration to separate the ones that were seen in serum sickness in patients with connective tissue diseases from those seen in serum sickness in patients with infectious diseases. It is my opinion that this patient had a severe infection and that the infection was probably Streptococcus viridans. This has to be accepted because that was the organism that was found. It is also my opinion that at death he had severe vasculitis or arteritis, pathologically resembling periarteritis nodosa. Whether the pathologist was able in the morphologic study to find the etiology of the vascular changes—infection or a more severe connective tissue disease—I do not know.

Before I conclude, there are two other possibilities that I would like to mention. Vascular changes that are as dramatic as those in his skin can also be seen in connective tissue diseases other than those due to drugs or bacterial infections. For instance, they can be seen in cryoglobulinemia. It is possible that we are dealing with a patient who had multiple myeloma, and we know that those with multiple myeloma are prone to infection. The infections accompanying this disease are not as responsive to antibiotics as they are in patients with normal gamma globulin. Patients with multiple myeloma have what may be called dysglobulinemia; although they have large amounts of globulins and gamma globulins in their electrophoretic pattern, these are prevented from functioning as antibodies should. It is possible that the present patient's renal failure was the result of multiple myeloma.

Another infection which I think we should consider results from an organism that has become more common recently and that is sometimes confused with Streptococcus viridans (which is the only reason I am considering it). It is a Listerella organism, which is a gram-positive small coccal bacillus that grows on almost any medium and that can produce meningitis. It does not produce the pigment that the green streptococcus does, but in inexpert hands it could be mistaken for Streptococcus viridans. It therefore is possible that such an organism might be responsible for the infection that we are dealing with here.

In summary, I would like to say that this patient has a severe vascular disease and septicemia and that blood vessel changes will be found in his kidneys, skin, and other parts of his body.

Dr. Phillips: Thank you very much, Dr. Miller, for a very profound treatment of a difficult problem. Are there any questions that anyone would like to put to Dr. Miller?

Daniel E. Curtin, M.D.: I wonder if cases of increased susceptibility following a splenectomy have been reported?

Dr. Miller: I don't believe that we can establish that patients without spleens are more susceptible to infection than others. I suppose that since spleens do help other organs in the reticuloendothelial system in killing organisms such as Streptococcus viridans a person without a spleen who has such an organism in his blood stream might have more difficulty removing it. I don't know that I have ever seen a patient with subacute endocarditis who previously had had a splenectomy. Perhaps Dr. Talbott has. I think a splenectomy is of interest only in the target cell and perhaps spherocyte pictures.

David Greene, M.D.: I saw about 50 cases of lesions like this of the nose, ears, and other soft parts of the body fourteen years ago when I visited a typhus camp in Naples. I wonder whether this patient was of Eastern European origin and therefore whether he might have had Brill's disease.

Roland Anthone, M.D.: I think that that was one of the diagnosis at the other hospital, in Toronto, but they ruled it out after meningitis appeared.

Joseph L. Kunz, M.D.: I was wondering, Dr. Anthone, if this degree of drop in hemoglobin is seen very commonly following dialysis.

Dr. Anthone: Yes, if the renal failure persists. The hemoglobin in these patients drops to about 8 Gm. It is the anemia of uremia or whatever you want to call it. This patient also had some tarry stools immediately after the first dialysis. It might have been due to the heparnization, and regardless of how many pints of blood are transfused to raise the amount, it will fall again to 8 to 10 Gm.

Dr. Phillips: Why would he bleed so easily?

Dr. Miller: I think bleeding in renal failure is another of the unknown phenomena. In renal failure there is a normocytic normochromic anemia with a bone marrow that is normal or hypoactive. When these patients bleed their hemoglobin content returns to about its level when the bleeding began. In other words, a bone marrow that can, usually does not react. Occasionally, however, we see a low hemoglobin content in patients with a very active marrow and who are not bleeding but who are hemolyzing, and this is usually accompanied by a positive Coombs test result.

Diagnoses

Clinical.—*Subacute bacterial endocarditis.*

Dr. Miller.—*(1) Severe vasculitis or arteritis and (2) septicemia, probably due to Streptococcus viridans.*

Anatomic.—*Acute vasculitis.*

Pathologic Report

Kornel Terplan, M.D.: I enjoyed the presentation of this case very much, especially since the diagnosis was in the right direction for the first time in this case. The diagnosis which we were given, based on the bacteriologic findings, was subacute bacterial endocarditis.

I want to mention a few of the important findings, because the final analysis of this case, at least for the histopathologist, is not as clear as, for instance, in a case of polyarteritis nodosa. We don't see as many cases of polyarteritis any more. We saw very many at the time Dr. Miller mentioned, even in children, and in several of these cases sulfa was apparently one of the causative agents.

This patient at the time of death still showed the effects of hemorrhage, with a gangrenous-appearing tip of the nose, bluish hard areas on the lips which could not be removed, and a gangrenous toe. The nasopharynx still contained a great amount of dried blood. There were extensive hemorrhages in the mucosa of the stomach, and he had tarry stools in the intestinal tract. The findings in the heart were entirely uninteresting. The heart valves were smooth. He had a few faint scars in the posterior wall of the left ventricle, apparently corresponding with the electrocardiographic findings, but the heart otherwise showed only a considerable degree of anemia and flabbiness, as in some types of strange infection. The most exciting finding was in the kidneys, which were markedly hemorrhagic. In addition to these extensive hemorrhages, there were distinct recent white infarcts involving large areas of the kidney surface. When we saw this picture we tried to look very carefully, with the unaided eye, at the corticomedullary junction, the area in which in polyarteritis nodosa one usually recognizes the vascular changes. But nothing of this sort was seen.

We then thought of another vascular disease. It could not be embolic because there was no source for embolic disseminations. I hoped that the microscopic findings might still prove the presence of polyarteritis in the smaller arterial vessels. We did find vessel changes, although of a somewhat different type from that of polyarteritis.

The other anatomic findings in this case were those of infection and perhaps a shock-like state, with complete lipid depletion in the adrenals. There was anemia of the liver. The lungs showed only the usual recent pneumonic changes with severe inflammatory edema. Then we removed the brain. There was no thickening of the leptomeninges and no cloudy spinal fluid. The brain appeared slightly swollen and distinctly anemic. After formaldehyde fixation a few sections in the frontal plane were made. These revealed almost symmetric hemorrhages in the subcortical white matter, resembling the symmetric changes in the kidneys, except that the kidneys were almost uniformly involved. It was obvious that polyarteritis does not affect the central nervous system in this manner at all and certainly not symmetrically.

In the microscopic study of the brain a very severe lesion of the smallest arterioles and capillaries was evident. The lesion in the arterioles resembled that seen in malignant nephrosclerosis. There was severe swelling, fibrinoid degeneration, and necrosis in the arteriolar walls and small thrombi in glomerular capillaries. We are dealing with a hypersensitivity reaction, belonging to the vasculitis group and affecting largely the arterioles. There were also some small arteries involved, but in a manner different from polyarteritis. There was no segmental medial necrosis nor granuloma formation. There was inflammatory reaction within or outside of the wall. We feel all these changes should be classified under the so-called hypersensitivity reaction vasculitides, in this case affecting largely arterioles and arteriolar capillaries. Had we not examined the brain in this case but only the kidney, we might have a hard time disregarding malignant nephrosclerosis, except that all the larger arteries in the kidney were much less involved than in malignant renal hypertension. But, of course, we do know that the tissue changes in arterial capillaries in cases of so-called malignant nephrosclerosis closely resemble hypersensitivity reactions. This has been pointed out by Klemperer.[2] What relationship infection plays in this case, I don't know.

Dr. Miller: I have nothing to add, Dr. Terplan, except that I would have liked to have seen the section of the spleen.

Dr. Terplan: I forgot to mention that there were dense adhesions in the entire area from which the spleen was removed. Many loops of the small intestine were firmly fused.* I would be greatly surprised to learn that the patient at that time already had acute vasculitis.

John R. Paine, M.D.: There are, I think, 2 cases in which the spleen was removed because of the diagnosis of idiopathic splenomegaly or idiopathic thrombocytopenic purpura in which the diagnosis of thrombotic thrombocytopenia was made in retrospect. The patient eighteen months or two years later developed a thrombocytopenic purpura and on re-examination of the spleen earlier changes than expected were found. The natural history of thrombotic thrombocytopenia in some patients has been a little longer than the few months that we thought from the first cases that were described.

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* It was possible to review slides of the spleen some time after the conference; no changes of polyarteritis or any other type of vasculitis were present.

Dr. Terplan: Perhaps it is only fair to add, for the histopathologist interested in these cases, that our understanding of these blood vessel changes seems to be in some sort of a transitional phase. At the present time, the experts really do not know to what extent some of these conditions mentioned, like certain types of polyarteritis, arteriolitis or vasculitis, and capillaritis are different or interrelated. I just want to call your attention to a paper published by Gitlin[3] in Boston on the thrombotic phenomenon in the kidney. The capillary thrombi in glomeruli can occur from such a large variety of causes that, for the time being, their more specific diagnostic meaning is very restricted, contrary to what was taught in and after Loehlein's time, when such thrombi were associated with the focal type of nephritis in subacute bacterial endocarditis.

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GEORGE WALLACE, M.D.

Cardiovascular Collapse During Induction of Anesthesia

It occasionally happens that a debilitated patient with severe electrolyte imbalance requires immediate surgical intervention without sufficient time preoperatively to overcome the biochemical disturbances. This type of patient may succumb to any minor stress which may act as the proverbial "straw that broke the camel's back." The following case illustrates such an eventuality during induction of anesthesia.

Case Report

A twenty-eight-year-old woman had bleeding esophageal varices requiring radical surgical treatment. She had purpura of the lower extremities for the past five years which had started with fever and malaise of unknown etiology eight months postpartum, when she stopped nursing her first child. Subsequent episodes of purpura occurred a year later, when she miscarried after three months of pregnancy, and two years after that when she stopped nursing her second child, four months postpartum. At that time she had icteric scleras and liver enlargement 3 fingerbreadths below the costal margin together with petechiae and purpura of the lower extremities. Although the purpura seemed associated with hormone level, she showed increasing impairment of liver function with ascites, icterus, hematemesis, and melena.

Six weeks prior to the present admission she had a liver biopsy which showed increasing fibrous tissue, and her condition was diagnosed as probable cirrhosis of the liver. Her bone marrow was abnormal. Her

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Discussed at a conference held at Bellevue Hospital, New York City, May 4, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

blood hemoglobin content was 7.8 Gm. per 100 cc. The hematocrit was 28. The platelet count was 88,000 per cu. mm. Three days later she passed some bright red blood by rectum which was followed by hematemesis and melena. Barium swallow and a roentgenogram confirmed suspicion of esophageal varices. Two weeks later she had massive hemorrhage and vomited 750 cc. of blood. She was treated with the insertion of an esophageal Blakemore tube and 1,000 cc. of blood by transfusion. She was discharged from the hospital as improved, as evidenced by a hemoglobin content of 12.8 Gm. per 100 cc. and a hematocrit of 44.

Two weeks later she was readmitted to the hospital because of recurrence of bleeding. Her hemoglobin was reduced again to 10.4 Gm. per 100 cc. and her hematocrit to 30.9. She now had icteric scleras, and there were multiple pustular lesions of the skin along with the appearance of facial hirsutism. Her abdomen was distended with ascites. The liver edge was palpated 3 fingerbreadths below the costal margin, and the spleen was felt 2 fingerbreadths below the left costal margin. There also was significant pretibial edma present. Her temperature ranged from 100.4 to 101.4 F. Successive values during the week for serum carbon dioxide were: 27, 23.3, 28, and 27.2 mEq. per liter. The chloride content was: 103, 91.9, 89 and 99.8 mEq. per liter. The potassium values were: 3.22, 3.24, 2.94 mEq. per liter (the normal being 4.1 to 5.6). The diagnosis, of course, was portal cirrhosis with bleeding esophageal varices. Since bleeding continued in the hospital and was not controlled with the Blakemore tube, it was decided to perform a gastrotomy to ligate the varices.

The patient was given 1,000 cc. of whole blood the morning of operation and arrived in the operating room at the end of the blood transfusion. On the ward her arterial blood pressure had been 110/70 and her pulse rate 120 per minute. For preoperative sedation she was given 75 mg. of Seconal, 35 mg. of Demerol, and 0.4 mg. of scopolamine at 9:10 A.M. by intramuscular injection. When she arrived in the anesthesia room at 9:45 A.M. she appeared drowsy, incoherent, and disorientated. Her blood pressure was 98/76, pulse rate 128 per minute, and respirations 28 per minute. She was given 75 mg. of thiopental sodium intravenously in order to make her more manageable. Oxygen by mask was administered while 60 mg. of succinylcholine were injected intravenously. The patient's larynx was visualized readily with a laryngoscope and 1.5 cc. of 2 per cent Xylocaine were sprayed on the vocal cords and down into the trachea. A number 9 Portex endotracheal tube was inserted, and its cuff was inflated with 3 cc. of air. Following this procedure the patient's pulse rate slowed from 128 to 104 per minute. The blood pressure was 96/76 and spontaneous respirations at a rate of 20 per minute were resumed in short while. Cyclopropane at a rate of flow of 350 cc. per minute and oxygen at 500 cc. per minute were administered for the next ten minutes, during which time the blood pressure remained stable. The pulse slowed further to 96 per minute while respirations were unchanged.

At this time mechanical difficulty was encountered with the blood pressure cuff. The carotid artery was palpated immediately and its pulsations were of fair quality. A stethoscope on the chest revealed good heart sounds. Cyclopropane was turned off and oxygen continued. Five minutes later the carotid pulse disappeared and heart sounds were no longer heard although the patient was still breathing. The surgeon immediately opened the chest and within one minute was able to see and feel the heart. He reported that the heart was in standstill and flabby.

The heart was injected with 5 cc. of 10 per cent calcium chloride without effect. An artificial pacemaker was attached but this also had no demonstrable effect. Four minutes later another 5 cc. of 10 per cent calcium chloride were injected, and this was followed in three minutes by fibrillation of the ventricular muscles. A defibrillator successfully stopped the fibrillation almost immediately, but the pacemaker was still without effect. Epinephrine 0.8 cc. in a 1:10,000 concentration was injected into the heart, and this was followed by 5 cc. of 10 per cent calcium chloride, all without effect. Manual cardiac massage was, of course, maintained throughout. Stimulation with the pacemaker continued to have no effect on the heart muscle despite full-range settings of the instrument. The pacemaker was tested on an intercostal muscle and did produce twitch of this muscle. Cardiac massage was stopped after thirty-seven minutes because of the total failure of response to any of the therapeutic measures.

The only significant findings at autopsy were a recent thrombosis (within two or three weeks) of the portal vein and a high cardioesophageal ulceration in an esophageal varix.

Comment

This death was classified as one due to the patient's disease with superimposed anesthesia. The continued bleeding and failure of measures for its control made surgical intervention mandatory despite persistent low values of serum potassium during the week before operation. The anesthesiologist chose cyclopropane for anesthesia because of its well-known and well-documented tendency to provide minimum interference with vasomotor compensatory mechanisms, called into play in this situation because of hemorrhage and shock. Of interest is the fact that despite the persistent low level of serum potassium there were no detectable cardiac arrhythmias before or during anesthesia. It is also noteworthy that not only was the heart flabby when thoracotomy was performed but it did not respond at all to the cardiac pacemaker although a demonstrable effect was produced on an intercostal muscle. Since the autopsy shed no information on the cause of cardiac arrest, one must conclude that the severe cardiac disturbance was not anatomic or histopathologic but biochemical.

The first question to consider is the possibility of anesthetic overdose with cyclopropane. It would seem that the administration of cyclopropane in a closed system for ten minutes at a constant rate of 350 cc. per minute could be an overdose for a woman debilitated from frequent hemorrhages and with a significant hypopotassemia. Slowing of the pulse rate from 128 to 96 per minute could indicate a cyclopropane effect. It is assumed that the patient's respirations were assisted manually so that the phase of maintained spontaneous breathing coinciding with nondeterminable pulse or blood pressure could have been due to deep anesthesia. When the carotid pulse and heart sounds disappeared but the patient was still breathing, ventricular fibrillation might have occurred. Had this patient been monitored with continuous electrocardiography and electroencephalography, some important information might have been detected which would have been helpful in determining whether cyclopropane overdosage was a factor in the outcome.

In retrospect, the fact that when the chest was opened a flabby heart was seen coupled with a total lack of response of the heart muscle to the artificial pacemaker during attempted resuscitation makes it obvious that the myocardium was extremely depressed. Therefore, it might have been preferable to maintain this patient in a light depth of anesthesia, and muscular relaxation could have been obtained by the intravenous administration of a muscle relaxant.

Hypopotassemia is a serious disturbance for cardiac function. It was unfortunate that the patient's serum potassium was only 2.94 mEq. per liter (the normal being 4.1 to 5.6) when she came to the operating room, but the operation was urgent in the face of failure of bed rest and an esophageal balloon to control bleeding. Preoperative administration of potassium chloride would have been inadequate to appreciably improve the situation in anything less than a week's time—an impossible delay.

Here again, electrocardiography would

have been desirable since it might have shown the significant changes in S-T, T, and Q-T segments without necessarily manifesting any cardiac arrhythmia.

Although the exact cause of death in this patient remains unknown, this case serves to emphasize several points:

1. Debilitated patients with significant hypopotassemia should be anesthetized in as light a plane as possible.

2. It is preferable that their electrolyte imbalance be corrected preoperatively.

3. Cardiac monitoring from the outset would be desirable in these patients. Specifically, a continuously recording electrocardiograph might depict alarming changes that might have occurred between a relatively normal status and one of cardiac arrest and might enable institution of treatment early enough to prevent a fatal outcome.

(Number seventy-six in a series of Clinical Anesthesia Conferences)

ANNOUNCEMENT

Medical Society of the State of New York 1960 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 7 to 13, 1960, in New York City.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1960*, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

ALFRED A. ANGRIST, M.D., *Chairman*
Committee on Prize Essays

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

A Series of Serious Incidents

The following incidents were recently reported to the New York City Poison Control Center.

This case is cited because of the paucity of overdosage incidents with this drug.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Aspirin and Aspirin Compound	58 years	Female

This patient ingested more than 40 aspirin and aspirin compound tablets with suicidal intent; the exact time of ingestion is unknown. On the following day she was admitted to Bellevue Hospital. On admission the patient appeared acutely ill, restless, slightly hyperpneic, cool, clammy, sweaty, and slightly cyanotic. Rales were heard in the chest on the right side posteriorly. A soft systolic murmur and a systolic gallop were heard at the base. The heart was not damaged. The only neurologic findings were bilateral Babinski reflexes. The pulse rate was 120, respirations 40, blood pressure 140/80, and the temperature was normal. A slight abrasion was noted on the right temple.

The following laboratory findings were noted: The urine had a pH of 5 and a specific gravity of 1.015. It was negative for bile and urobilinogen. Microscopic examination results were also negative. There was a trace of albumin. The TesTape result for glucose was negative; the Clinitest study showed a trace of glucose. The Acetest study showed a trace of acetone. The ferric chloride content of the urine was 4 plus. The hemoglobin content of the blood was 15 Gm. per cent. The white blood cell count was 11,000, with 87 per cent polymorphonuclears, 12 per cent lymphocytes, 5 per cent monocytes, and 2 per cent stab cells. The stools were guaiac positive (1 plus) and appeared brown in color.

The patient was treated with infusions, oxygen, and antibiotics. Nevertheless, her respirations slowed to a range of 24 to 32 and her temperature rose to 104 F. She expired suddenly. The final diagnosis was salicylate intoxication and pneumonia of the right lower lobe.

One wonders whether the pneumonia was a complication of aspiration.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Phenmetrazine (anorexigenic tablets)	23 years	Female

This patient took 23 reducing tablets in a suicidal attempt. She experienced abdominal pains, nausea, and vomiting. She was taken to the hospital, where vomiting was induced and the stomach lavaged within two hours after ingestion. She was treated with sodium sulfate and Coramine. After one day of emergency treatment at the hospital, she was transferred to another hospital for psychiatric observation.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
J-O Rat and Roach Paste	28 years	Male

This patient took 1 or 2 teaspoonfuls of the pesticide with suicidal intent around midnight on April 18, 1959. He vomited spontaneously. He was admitted to the hospital, where his stomach was lavaged with water and mineral oil. On admission the patient had abdominal pains, nausea, vomiting, cyanosis, hematemesis, and early shock. He was treated with infusions of vasopressors and oxygen, but in spite of therapy he expired on the day of admission.

The free sale of phosphorus paste to householders would seem to be outdated by the advent of safer pesticides. The lack of a specific antidote for phosphorus remains a marked handicap in treatment. According to Gleason, Gosselin, and Hodge,* the classic picture of acute phosphorus poisoning develops in three stages:

1. Gastrointestinal symptoms shortly after ingestion.
2. A relatively symptom-free period of several days.
3. Systemic intoxication.

Cellular damage is observed in the kidneys, heart, and brain. The acute fatal dose of phosphorus for an adult has been seen to be between 50 and 100 mg. with marked individual variations. Recovery has been reported after the ingestion of 825 mg., and a fatality in a two-year-old child after ingestion of only 3 mg. The prognosis is poor and case fatality rate over 50 per cent. Within the first two days death generally is due to vascular collapse. If death occurs later, it usually is due to hepatic, renal, or cardiac failure and rarely to postconvulsive central nervous depression. The characteristic garlicky odor of phosphorus should be an identifying tag to the admitting physician.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Benzine Turpentine	2 years	Female

The nurse reported following a home visit that the apartment had been painted recently and that the painter had placed a small bottle containing benzine and turpentine outside on the window sill. The child reached out, obtained the bottle, and ingested a small amount of the liquid. The mother smelled the odor on the child's breath and only then realized what had happened. The child was taken to a hospital emergency room within an hour after ingestion. Her stomach was lavaged immediately and she was given mineral oil by mouth. Following emergency care the patient was transferred to another hospital, where she expired a week following admission.

The same child had a previous history of chemical poisoning. She ingested without sequelae rat poison which had been left on a sliced potato coated with phosphorus in the kitchen.

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*Gleason, M. N., Gosselin, R. E., and Hodge, H. C.: Clinical Toxicology of Commercial Products, Baltimore, Williams and Wilkins Co., 1957.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
J-O Rat and Roach Paste	33 years	Male

This patient ingested $2^1/_2$ ounces of the pesticide with suicidal intent. He vomited spontaneously immediately after ingestion and was taken to the hospital, where vomiting was induced and the stomach lavaged with saline within forty-five minutes after ingestion. The gastric lavage was repeated one hour later and twenty minutes after that. The following symptoms were noted on admission: abdominal pain, nausea, vomiting, cyanosis, and stupor. The blood had a carbon dioxide of 23 volumes per cent and a urea nitrogen of 15 mg. per cent. The patient was treated with fluids and Levophed intravenously, but in spite of the emergency and heroic treatment he expired within five hours after ingestion.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Benzine	1 year	Male

The mother had been painting the dining room and left a can of benzine with other paint on the floor. At about 2:30 A.M. the patient left his bed and was found by his mother with a can of benzine in his hands. It is believed that he drank approximately 3 teaspoonfuls of benzine. A hospital ambulance was immediately called, and the child was taken to the emergency room of a nearby hospital. Symptoms on admission were burning in the mouth and throat, lacrimation, coughing, and dyspnea. His stomach was lavaged with normal saline about one hour after ingestion. The patient was diagnosed as having benzine bronchopneumonia. After two weeks of hospitalization all symptoms subsided and the pneumonia cleared.

On the basis of reports received in this Center on kerosene, benzine, and light oil ingestion, we are impressed with the accompanying bronchial pneumonia in cases in which lavage was done. Until such time as the national joint study* is completed, we strongly recommend that lavage or induction of vomiting not be used in such situations. Unfortunately advice is often requested after lavage already has been performed. Recent animal experimentation by Horace W. Gerade, M.D., Head Toxicologist Esso Research Laboratories, Linden, New Jersey, who is a member of the Poison Control Advisory Committee, presents a very cogent argument against lavage or induced vomiting in poisonings involving kerosine or allied products.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Nonbarbiturate Sedative	35 years	Female

This incident was reported by Barbara Parker, M.D., of New York University-Bellevue Medical Center, who is a member of the New York City Poison Control Advisory Committee. The patient ingested 20 glutethimide tablets (totalling 10 Gm.). She was admitted to the hospital in a state of deep coma with bilateral foot and wrist drop. She also had hyperactive reflexes. Blood pressure and respiration were normal.

She was lavaged with sodium bicarbonate. During the first twelve hours the coma deepened, and then the patient gradually improved. She reacted to verbal stimuli within sixty hours. The diagnosis was severe glutethimide intoxication. The patient was treated with 1,000 mg. of Megimide with a stimulant effect in one hour but, according to Dr. Parker, with doubtful therapeutic value.

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* Sponsored by the American Academy of Pediatrics, American Public Health Association, National Clearinghouse for Poison Control Centers, and other organizations.

Reports about the effectiveness of Megimide still are conflicting.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Antihistamine Tablets	1½ years	Male

An older sibling of the patient claimed that the child ingested an unknown quantity of tripelennamine tablets. The patient refused food, was drowsy, and suddenly turned limp and blue. On the same day he was taken to a hospital emergency room, where a gastric lavage was done. He was then admitted to the inpatient service. He had convulsive seizures which were treated successfully with 2 grains of sodium amytal intravenously. Ten hours following admission the mother signed out the patient against the physician's advice.

This drug is very high on the list of drugs which should be kept out of the reach of children.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Caffein Tablets	20 years	Male

The patient, who is a student at Columbia University, ingested 9 3-grain caffein tablets, a proprietary "over-the-counter" brand, over a period of eleven and a half hours. He was taken to a hospital emergency room (St. Luke's Hospital). The only symptoms on admission were dyspnea and mild upper abdominal tenderness. After twenty-four hours he recovered.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Caffein Tablets	2 years	Male

This child found a box of caffein tablets, the same as in Incident 9, in his father's coat pocket. He ingested 9 of the mint-flavored tablets (totaling 27 grains). One and one-half hours following ingestion his parents noticed that he was hyperexcited and vomited brown material. Two hours following ingestion the patient was taken to a hospital outpatient department, where he was seen by the resident physician. Since he vomited spontaneously and appeared well, the physician sent him home. Two hours later the resident was called by the parents of the child, who stated that the patient was stuporous.

He was admitted to the hospital, where on admission he appeared acidotic and had marked dehydration and hematemesis. He was treated with glucose saline and vitamin B intravenously. Pyridoxine was also administered. The vomiting stopped about twelve hours following admission. The patient also had excoriation of the chin and edema of the pharynx. After four days of hospitalization he recovered.

The stupor and the edema of the pharynx are puzzling since they are not the usual sequelae of caffein intoxication. One wonders if this child ingested an additional agent.

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Caffein capsules	14 years	Female

A noted pediatrician telephoned the Center in order to relate a situation existing in a fashionable private school which her daughter attends. She was very concerned about certain unidentified capsules which the students at the school were freely exchanging and passing among themselves to keep awake at examination time. She sent a sample to the Center to be analyzed at the laboratory.

The laboratory analysis disclosed that each contained 1½ grains of caffein. Although, admittedly, the drinking of coffee to stay awake traditionally is done, caffein capsules used for the purpose of staying awake should be discouraged. We feel that it is much more preferable and safer to use the traditional beverage than the drug. Surely,

TABLE I.—Poisonings (53) Reported During Weekend of June 6 and 7, 1959

Toxic Agent*	Age†	Sex	Reported by**
Buttons (unknown amount)	3	Female	Maimonides Hospital of Brooklyn
Phenolphthalein tablets	8	Male	Long Island Jewish Hospital, New Hyde Park
Borax	19 months	Female	Lebanon Hospital, Bronx
Turpentine	2	Female	Beth-El Hospital, Brooklyn
Dichlorbenzene	2	Male	Physician, Portchester
Waterman's Blue-Black Ink	21 months	Female	Mother
Polystyrene cement	19 months	Male	Mother
All (cleanser)	11 months	Male	Mother
Iodine	49	Female	St. Luke's Hospital, New York City
Para block in diaper can (bitten)	13 months	Male	Mother
Strawberries sprayed with 50 per cent Malathion	2	Female	Physician, Perth Amboy, New Jersey
Clorox	28	Female	Husband
Para nuggets (1 or more)	3	Female	Father
Bar-B-Q Lite	...	...	Philadelphia Poison Control Center
Hoppes gun solvent	2	Female	Policeman, 42nd Police Precinct, New York City
Phenophthalein	6	Male	Physician, New York City
Safety matches	3	Female	Babies Hospital, New York City
Mushrooms (raw)	4	Male	Nyack Hospital
Dry Ice	...	Male	Mother
Dixon red pencil (sucked)	15 months	Male	Mother
Barbiturate and nonbarbiturate sedative	Adult	Female	Easton Hospital, Pennsylvania
Heatabs	2	...	Middlesex General Hospital, New Jersey
Burrow's solution (diluted, 1 mouthful)	2	Female	Mother
Bleach	39	Female	Methodist Hospital of Brooklyn
Thallium	12	Male	Queens General Hospital Center, Jamaica
Drano	17 months	Male	Long Island City Hospital
Boxar liquid cement	$2^{1}/_{2}$	Female	Physician, Allendale, New Jersey
Unknown drug (overdose)	...	Male	Roosevelt Hospital, New York City
Heroin (overdose) Methapyrilene hydrochloride	22	Female	Knickerbocker Hospital, New York City
Vanish cleaner	26	Female	Queens General Hospital Center, Jamaica
Chalk	2	Female	Father
Corn pad	10 months	Male	Bronx Hospital
Black Flag Roach and Ant Killer (inhaled)	15 years	Male	Mother
Sodium cyanide	$4^{1}/_{2}$	Female	St. Peter's Hospital, Brooklyn
Tincture of iodine	17	Female	Physician, Ridgewood, New Jersey
Esquire cleaning fluid	2	Male	Physician, Kew Gardens
Clorox	48	Female	Kings County Hospital Center, Brooklyn
Aladdin bubble solution	$2^{1}/_{2}$	Female	Hackensack Hospital, New Jersey
Perfume	2	Male	Mother
Barbiturate (overdose)	24	Female	St. Vincent's Hospital, New York City
Barbiturate	75	Male	Beth David Hospital, New York City
DuPont fruit spray	2	Male	Father
Mennen's baby powder	1	Male	Mother
Roach killer	2	Male	Coney Island Hospital, Brooklyn
Clorox	1	Male	New York Polyclinic Hospital
Barbiturate (overdose)	23	Male	St. Vincent's Hospital, New York City
VX6 battery additive	3	Male	St. Peter's Hospital, Newark, New Jersey
Benzine	3	Female	Jacobi Hospital, Bronx
Mercury (from wall thermometer)	2	Male	Mother
"Mood-ameliorating" tablets	2	Male	St. Joseph's Hospital, Yonkers
Tranquilizer tablets	11	Male	Elmhurst General Hospital
Varnish	2	Male	Mother
Ear medicine (prescription)	19	Female	Mother

* Ingestion unless other mode of occurrence indicated.
† In years unless other unit is given.
** In New York State unless another state is listed.

the chances for an accidental occurrence is far greater with a capsule than with coffee.

The list of poisonings in Table I, reported during a weekend, illustrates the situations which the practicing physician may encounter in his daily practice.

(Number forty-two in a series of Briefs on Accidental Chemical Poisonings)

MALPRACTICE INSURANCE AND DEFENSE BOARD

Medical Society of the State of New York

JOHN C. BRADY, M.D., *Chairman*

For the second consecutive year, rates have been reduced for doctors who insure in the State Medical Society's Group Plan for Professional Liability Insurance and Legal Defense. The lower rates took effect on September 1.

In announcing the new rates, the Society's Malpractice Insurance and Defense Board notes that they mean a savings to all insured members of from $5.00 to $10. On an over-all basis, they represent about a 4 per cent premium reduction.

The reduced rates were made possible through the acceptance by the Society's House of Delegates of the offer of the insurance carrier of the Group Plan to discontinue the contingent loss factor that has been included in the premium charge for the past ten years.

The Society thus concurred with the insurance company that the Group Plan's loss experience has now become fairly well stabilized and that its rate-making procedure is sufficiently accurate to produce the proper premium rates.

The latest rate reduction contrasts with the action of other insurance companies that have found that their original estimates of the cost of this type of insurance were too low and have accordingly had to raise their rates over the past few years.

During the past year, reports from doctors now insured in the Group Plan disclosed that their former insurance companies have either raised their rates, restricted coverage or imposed deductible features, or have informed doctors with little warning that they no longer wished to carry their insurance.

This unrest also spread to national specialty group programs in the past year.

Two groups retracted official sanction of their programs and 3 others switched from Lloyd's to domestic carriers, in at least one instance at a considerable increase in rates.

The general dissatisfaction with other insurance companies and specialty group programs confirms the validity of the Society's sponsorship of its own Group Plan for the past thirty-eight years. It also helps explain why doctors have been returning to the Group Plan in increasing numbers.

This development reflects the growing awareness that Group Plan protection means a program, not just a policy—a program to which the State Medical Society is fully committed. This protection assures representation by the Society's expert legal defense counsel and provides insurance in keeping with principles stipulated by the Society and accepted by our insurance carrier.

The history of the world is the record of a man in quest of his daily bread and butter.—H. W. Van Loon

NECROLOGY

Leslie Pleasant Adams, M.D., of New York City, died at his home on August 4 at the age of fifty-seven. Dr. Adams graduated in 1931 from Emory University School of Medicine, and interned at Presbyterian Hospital. Retired, he was a Diplomate of the American Board of Psychiatry and Neurology and a member of the New York Society for Clinical Psychiatry, the New York County Medical Society, and the Medical Society of the State of New York.

Benjamin A. Barney, M.D., of Chambersburg, Pennsylvania, formerly of Hornell, retired, died on September 19 at the age of eighty-seven. Dr. Barney graduated from Long Island College Hospital Medical School in 1897. He had been a consultant in ophthalmology and otology at St. James Mercy Hospital, Hornell, and an honorary consultant in ophthalmology at Bethesda. Dr. Barney was a member of the Steuben County Medical Society of which he had also served as president, the Medical Society of the State of New York, and the American Medical Association.

John Anthony Colucci, M.D., of the Bronx, died on September 16 at the age of sixty-nine. Dr. Colucci graduated in 1916 from Cornell University Medical College. He was a consulting physician at Morrisania City Hospital and an associate attending physician at Union Hospital of the Bronx. Dr. Colucci was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edward Joseph Dick, M.D., of Syracuse, died on September 18 at his home at the age of seventy-three. Dr. Dick graduated in 1909 from Syracuse University College of Medicine. He was a senior attending pediatrician at Crouse-Irving Hospital. Dr. Dick was a member of the Syracuse Academy of Medicine, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Warren Herbert Eller, M.D., of Sayville, died on September 30 at his home at the age of sixty-three. Dr. Eller graduated in 1923 from the University of Nebraska College of Medicine. He was chief physician at Southside Hospital, Bay Shore, and a consulting physician at Pilgrim State Hospital. He was a member of the Suffolk County Heart Committee, the Southside Clinical Society, the Suffolk County Medical Society of which he was a former treasurer, the Medical Society of the State of New York, and the American Medical Association.

William John Gibson, M.D., of Hollywood, Florida, formerly of Rochester, retired, died on September 6 at the age of seventy-three. Dr. Gibson graduated in 1917 from the University of Buffalo School of Medicine. He was an associate attending physician at the Monroe County Infirmary. Dr. Gibson was a member of the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Abraham A. Goldstein, M.D., of Richmond Hill, died on September 28 at the age of sixty-five. Dr. Goldstein graduated in 1918 from New York University and Bellevue Hospital Medical College. He was a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry Maximilian Kalvin, M.D., of Passa Grille Beach, Florida, formerly of Brooklyn, died on October 3 at the age of eighty-one. Dr. Kalvin graduated in 1900 from New York University and Bellevue Hospital Medical College. Retired, he was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Welch Karr, M.D., of Jamestown, died on September 17 at the age of fifty-three. Dr. Karr graduated in 1936 from the University of Rochester School of Medicine and Dentistry. He was an attending in radiology at Jamestown General and Woman's Christian Association Hospitals. Dr. Karr was a Diplomate of the American Board of Radiology and a member of the American Society of Clinical Pathologists, the Radiological Society of North America, Inc., the Chautauqua County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Bela Mittelmann, M.D., of New York City, died at his home on October 4 at the age of sixty. Dr. Mittelmann received his medical degree from the University of Prague in 1922. He was an attending in psychiatry at Bronx Municipal Hospital Center. Dr. Mittelmann was a Diplomate of the American Board of Psychiatry and Neurology, a Member of the American Psychiatric Association, and a member of the American Association for Research in Psychosomatic Problems, the American Psychoanalytic Association, the Association for Psychoanalytic Medicine, the Association for Research in Nervous and Mental Disease, the New York Psychoanalytic Society, the New York Society for Clinical Psychiatry, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Holger Carl Nelson, M.D., of Watertown, died on October 2 at the age of fifty-two. Dr. Nelson graduated in 1934 from Western Reserve University School of Medicine. He was an attending in surgery at Mercy Hospital and at the House of the Good Samaritan. Dr. Nelson was a member of the Jefferson County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Howard Frederick Rowley, M.D., of Rochester, died on September 23 at the age of sixty-two. Dr. Rowley graduated in 1920 from the University of Michigan Medical School. He was an honorary staff pediatrician at Rochester General Hospital and an assistant in pediatrics at Strong Memorial Hospital. Dr. Rowley was a Licentiate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the Rochester Academy of Medicine, the Rochester Pathological Society, the Rochester Pediatric Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hermann Vollmer, M.D., of New York City, died on October 11 at the age of sixty-three. Dr. Vollmer received his medical degree from the University of Heidelberg in 1920. He was an assistant in pediatrics at Vanderbilt Clinic. He developed the Vollmer patch test to detect tuberculosis when he was associated with Dr. Bela Schick at the Mount Sinai Hospital. Dr. Vollmer was a Licentiate of the American Board of Pediatrics and a member of the Rudolf Virchow Medical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Warren Harry Williams, M.D., of Syracuse, died on September 15 at Crouse-Irving Hospital at the age of thirty-six. Dr. Williams graduated in 1948 from Cornell University Medical College. He was an associate in radiology at Crouse-Irving Hospital. Dr. Williams was a Diplomate of the American Board of Radiology and a member of the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Merlin Jay Zeh, M.D., of Watervliet, died on September 27 at the age of ninety-two in Leonard Hospital, Troy. Dr. Zeh graduated in 1889 from Albany Medical College.

It is not without good reason said, that he who has not a good memory should never take upon him the trade of lying.—Michel de Montaigne

MONTH IN WASHINGTON

The U.S. Chamber of Commerce and two key Congressmen, all opponents of the so-called Forand bill, recently issued separate warnings that an all-out effort will be made to get the controversial legislation through Congress next year.

In its weekly report to members, the Chamber predicted there will be "a powerful attempt" in the next session of Congress to enact the bill (H.R. 4700) which would increase social security taxes to help pay for the cost of the Federal government providing surgical and hospital care for social security beneficiaries.

The Chamber warned that passage of the legislation would mark "a major break-through into the welfare state." It "probably would lead to a compulsory Federal program providing complete medical care for everyone." There would be "no stopping" of such a program once it got started, the report said.

The Chamber called upon communities to find orderly solutions to the problems of the aging. Otherwise, solutions "will surely be imposed from Washington," the report added.

Similar warnings were voiced by Reps. Richard M. Simpson (R., Pa.) and Thomas B. Curtis (R., Mo.), key members of the House Ways and Means Committee where the bill was put on the shelf last session.

Rep. Curtis urged that the medical profession and other leading opponents make a strong counter-drive in an all-out effort to block passage of the bill next session. Unless there is such action, he said he would have to "regretfully" predict that legislation along the lines of the pending bill probably will be enacted in 1960.

Rep. Simpson said that H. R. 4700, and similar legislation affecting the medical profession, "makes it imperative that every doctor keep informed on legislation issues before Congress." He also urged that physicians "become patriotic political forces" by "giving their informed viewpoint" to lawmakers at all levels of government.

Rep. Simpson said it "is important" that opponents of H. R. 4700 develop "appropriate alternatives" to solve the health care needs of the aged. He promised to continue to cooperate with the medical profession to guard "against the disastrous consequences of compulsory national health insurance."

House Democratic Leader John McCormack of Massachusetts expressed hope that Congress next year will stamp final approval on another bill of particular interest to physicians. He praised the Keogh-Simpson bill (H. R. 10) as "meritorious legislation" and said it "should be enacted into law next year." The measure, which was passed by the House last spring but left hanging in the Senate Finance Committee, would provide income tax deferrals for self-employed persons setting aside money for private retirement plans.

A National Republican Committee on "Program and Progress" proposed a far-reaching health program to be carried out by the Federal government in partnership with states and local governments.

Its goals would include: enlarging the capacity of medical schools so that 3,000 more doctors could be graduated each year; providing more hospital and nursing home beds; and supplementing hospital facilities with clinics, day-care centers, and more visiting nurses to care for patients in their own homes.

The progress of medical science would be furthered by continued Federal support for basic medical research but such Federal support would be given under conditions to encourage maximum non-Federal spending on medical research and to prevent "too great a diversion of doctors required for the equally urgent needs of teaching and medical practice." It was estimated that expenditure of $1 billion a year—equally divided between the Federal Government and non-Federal sources—would be required by 1965.

Other recommendations included vigorous Federal support of preventive health programs, and expansion and greater flexibility of voluntary health insurance programs.

"A free people and a free medical profession can achieve these goals with the wise support of government, without bureaucratic restrictions or interference with the physician-patient relationship which has made American health services a model for the free world," the Republican Committee stated.

The Committee proposed a five-point "partnership" program: (1) Short-term Federal aid for construction of medical school buildings; (2) Changes in the present hospital construction pro-

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Prepared by the Washington Office of the American Medical Association, Washington, D.C.

gram to encourage renovation and repair of outmoded hospitals; (3) Federal guarantees for mortgages to finance construction of private nursing homes on a basis assuring high standards of quality in construction and operation; (4) Encouragement of construction of diagnostic and outpatient facilities in rural areas, and the building of mental health clinics; and (5) Federal aid to cities "in more effective planning and coordination of health services."

MEDICAL MEETINGS

New York Allergy Society

The New York Allergy Society will meet on Wednesday, November 18, at the Hotel Beekman Tower, 49th Street and First Avenue, New York City. There will be a dinner at 7:15 P.M. followed by a scientific session at 8:30 P.M.

Guest speakers will be Frank L. Adler, Ph.D., associate member, Public Health Research Institute, City of New York, who will discuss "Studies on the Competition Between Antigens. Implications for the Allergist," and Abraham G. Osler, Ph.D., associate professor of microbiology, Johns Hopkins School of Hygiene and Public Health, who will speak on "Anaphylotoxin, Passive Cutaneous Anaphylaxis and Complement. Their Relation to Clinical Allergy."

Aaron Brown Memorial Lecture

The Aaron Brown Memorial Lecture, sponsored by Phi Delta Epsilon fraternity, will be held Tuesday, November 24, at 4:30 P.M. in the main auditorium of New York Medical College, Fifth Avenue at 106th Street, New York City.

The lecture will be presented by Ralph A. Reis, M.D. His topic will be "Diabetes in Pregnancy."

Bahamas Conferences

An official certificate of attendance will be issued to physicians taking part in the following Bahamas Conference to be held in Nassau, B.W.I., at the British Colonial Hotel: eighth Bahamas medical conference, November 27 through December 17, 1959; second Bahamas surgical conference, December 28, 1959, through January 16, 1960; and second Bahamas serendipity conference, January 17 through January 30, 1960.

For further information concerning these conferences write to: B. L. Frank, M.D., organizing physician, Bahamas Conferences, P.O. Box 4037, Fort Lauderdale, Florida.

National Society for Crippled Children and Adults

Professional staff members, administrators, and volunteers working with the crippled at Easter Seal centers throughout the nation will attend the 1959 annual convention of the National Society for Crippled Children and Adults, November 29 through December 3 at the Palmer House in Chicago.

For further information concerning the convention contact the Society at 2023 West Ogden Avenue, Chicago 12, Illinois.

National Conference on Medical Aspects of Sports

A national conference on the medical aspects of sports sponsored by the American Medical Association will be held on November 30 in Dallas, Texas, immediately preceding the A.M.A. clinical meeting, December 1 through 4.

Among the topics to be considered at the meeting will be "Physiology and Pharmacology of Exercise," "Training and Conditioning of the Athlete," and "Prevention and Treatment of Injuries."

Metropolitan New York Chapter, American Medical Writers Association

The 1959 annual Awards Meeting of the Metropolitan New York Chapter of the American Medical Writers Association will be held Thursday night, December 3, in the auditorium of the New York University College of Dentistry, First Avenue and 26th Street, New York City.

In addition to the presentation of awards to individuals for outstanding contributions to advancement of medical communications, there will be talks by two guest speakers. Chauncey D. Leake, Ph.D., assistant dean, Ohio State Medical College, and president-elect, American Association for the Advancement of Science, will speak on "The Unity of Science and Scientific Communication," and Walter

C. Alvarez, M.D., Chicago, author of a daily newspaper medical column, will speak on "Telling a Medical Story to the Layman."

The meeting will begin at 8 P.M. and is open to the public.

Midwinter Meeting of Academy of Psychoanalysis

The scientific sessions of the midwinter meeting of the Academy of Psychoanalysis will be held on December 5 and 6, from 9:00 A.M. to 5:00 P.M., at the Hotel Roosevelt, New York City. The theme of the first day's meeting will be "Psychoanalytic Concepts in Allied Fields." Abram Kardiner, M.D., will be one of the discussants.

The second day's meeting will be devoted to a series of clinical papers by members of the Academy as follows: "Moving Picture Demonstration on Family Interview Process" by Nathan W. Ackerman, M.D., discussant, Iago Galdston, M.D.; "Effects of Social Factors in Patient-Doctor Relationship—Observation in an Interview Setting" by Joseph Jaffee, M.D.; "Communication Effectiveness—Objective Measure of the Psychoanalytic Process" by Manuel Zane, M.D., discussant, William V. Silverberg, M.D.; "Social Roots of the Dream" by Montague Ullman, M.D.; "The Influence of North American Culture on Mexican Institutions" by Ramon Parres, M.D., discussant, Harold I. Lief, M.D.

American Society of Facial Plastic Surgery

The American Society of Facial Plastic Surgery will meet on December 9, 1959, at the Hotel Elysee, 60 East 54th Street, New York City. Bernard E. Simon, M.D., New York City, will speak on "Plastic Surgical Management of Facial Lesions." Irwin I. Lubowe, M.D., New York City, will discuss "Dermabrasion—a Reappraisal." Norman Orentreich, M.D., New York City, will be the discussant.

For further information contact: Samuel M. Bloom, M.D., secretary, American Society of Facial Plastic Surgery, 123 East 83rd Street, New York 28, New York.

American Group Psychotherapy Association

The American Group Psychotherapy Association, Inc. will hold its fourth annual institute on January 27 and 28, 1960, at the Henry Hudson Hotel, 353 West 57th Street, New York City. The theme of the institute will be, "The Group Therapist—His Personality, Training, and Functions." The seventeenth annual conference of the Association will follow the institute on January 29 and 30, 1960, also at the Henry Hudson Hotel.

For program information write to: American Group Psychotherapy Association, Inc., Room 516, 1790 Broadway, New York 19, New York.

Institute of Ophthalmology of the Americas

The Institute of Ophthalmology of the Americas will conduct a post-Pan-American congress meeting at the New York Eye and Ear Infirmary February 9 through 17, 1960. A symposium will be held each day from 10:00 A.M. to noon. Each symposium will be composed of two Latin-American ophthalmologists and two staff members of the New York Eye and Ear Infirmary.

The following is a list of the dates and subjects of the symposiums: Tuesday, February 9, "Cataracts"; Wednesday, February 10, "Retinal Detachment"; Thursday, February 11, "Muscle Anomalies"; Friday, February 12, "Glaucoma"; Saturday, February 13, "Uveitis"; Monday, February 15, "Keratectomies and Keratoplasties"; and Tuesday, February 16, "Pleoptics and Macular Function Testing." On Wednesday, February 17, there will be surgical demonstrations on TV from 9:00 A.M. to 5:00 P.M.

For invitations to attend write to: Mrs. Tamar Weber, registrar, Institute of Ophthalmology of the Americas, New York Eye and Ear Infirmary, 218 Second Avenue, New York, 3, New York.

Symposium on Advances in Study of Venereal Diseases

The eleventh annual symposium on "Recent Advances in the Study of Venereal Diseases" will be held April 7 and 8, 1960, in the Palmer House, Chicago. The sessions will be open to all interested physicians and workers in allied fields.

The symposium is sponsored jointly by the American Venereal Disease Association and the U.S. Public Health Service.

Physicians who wish to present a scientific paper on a subject related to venereal diseases should mail preliminary abstracts not later than November 25 to William J. Brown, M.D., program committee chairman, Venereal Disease Branch, Communicable Disease Center, 50 Seventh Street, N. E., Atlanta 23, Georgia.

American Institute of Ultrasonics in Medicine

The American Institute of Ultrasonics in Medicine will hold its second international conference on August 20, 1960, at the Statler-Hilton hotel in Washington, D.C.

Those persons interested in submitting a paper for consideration in the scientific portion of the meeting should send an abstract of not more than 250 words to: Dorothy M. Stillwell, M.D., chairman, Department of Physical Medicine and Rehabilitation, University of Colorado Medical Center, Denver 20, Colorado.

NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Entering Class of 62—The entering class of 62 students was greeted by the College on September 8. Total enrollment is 236 students. The entering class includes representatives from 8 states, and Burma; 39 from New York State, 7 each from Massachusetts and New Jersey, 3 from Ohio, 2 from Rhode Island, and 1 each from Pennsylvania, Indiana, and Washington.

Research Grant—Wilbur A. Thomas, M.D., Cyrus Strong Merrill Professor and chairman of pathology, received a grant of $151,500, from the U.S. Public Health Service. Dr. Thomas has produced heart attacks in rats by feeding them a fatty diet. The grant is to enable him to find the specific ingredients of the diet which caused the attacks.

A grant from the United States Air Force for study of the effects of heat and cold on body functions has been received. Dr. Gerald S. Kanter, associate professor of physiology, is the principal investigator. The amount of the grant is $36,000.

State University of New York Downstate Medical Center in Brooklyn

Faculty Activities—Richard L. Day, M.D., professor and chairman, Department of Pediatrics, has accepted the position of Medical Director of the Children's Hospital of Pittsburgh and Chairman, Department of Pediatrics, at the University of Pittsburgh School of Medicine, effective early in 1960. Patrick J. Fitzgerald, M.D., professor and chairman, Department of Pathology, left September 1 for a year's leave of absence in Europe, where he will conduct a survey ot the teaching of experimental pathology in Europe and the United Kingdom under a Traveling Fellowship Award from the Commonwealth Fund. Chandler McC. Brooks, M.D., professor and chairman, Department of Physiology, and Director, Graduate Educational Program, has been appointed to serve a three-year term on the Selection Committee for the Senior Research Fellowship program of the National Institutes of Health of the U.S. Public Health Service.

Appointments of Visiting Professors—Dr. David R. Curtis, a fellow of the John Curtin School of Medical Research of the Australian National University since 1954, began serving as visiting professor of physiology for one year in September. Sir George W. Pickering, Regius Professor of Medicine at Oxford University since 1957, served as visiting Professor of medicine from September 7 through October 5. Dr. Pickering also delivered two special lectures on hypertension September 14 and 21. Dr. John C. Moir, Nuffield Professor of Obstetrics and Gynecology at Radcliff Infirmary, Oxford, England, was visiting professor of obstetrics and gynecology from October 1 to November 1. Nine new Faculty appointments have announced, as follows: Dr. Brian MacMahon, professor and head, Department of Epidemiology, Harvard University School of Public Health, has been named Professorial Lecturer in Environmental Medicine and Community Health. Appointed to the post of assistant professor of biochemistry was Dr. Alfred Stracher, who has been a Fellow of the National Foundation for Infantile Paralysis since 1956, working for two years at the Rockefeller Institute and for the past year at the Carlsberg Laboratory in Denmark. Isodore Stein M.D., Samuel Rosenfeld, M.D., and Frederick Feldman, M.D., have been appointed clinical assistant professor of medicine. Dr. Stein is associate in medicine at Coney Island Hospital; associate in cardiology at The Jewish Hospital of Brooklyn and attending in cardiology at the Brooklyn V. A. Hospital. Dr. Rosenfeld is attending hematologist at The Jewish Hospital of Brooklyn and at Brooklyn State Hospital and Dr. Feldman is attending hematologist at The Jewish Hospital of Brooklyn. Mortimer J. Cantor M.D., has been appointed clinical assistant professor of dermatology. Dr. Cantor is attending physician in dermatology and syphilology at Maimonides Hospital of Brooklyn. Dr. Asa Friedman, a radiation therapist at Kings County Hospital Center since 1930 and presently

Director of Radiation Therapy at the Cancer Detection Clinic of its John E. Jennings Hospital, has been appointed Professorial Lecturer in Radiology. Dr. Abraham Edel, who was appointed Professorial Lecturer in Psychiatry, is associate professor of philosophy at The City College of New York. He has served as Visiting Lecturer at the University of California, Columbia University, Swarthmore, Sarah Lawrence, and The New School. Stanley L. Lee, M.D., has been appointed associate professor of medicine. He is full-time Director of Hematology at Maimonides Hospital of Brooklyn, a teaching affiliate of the Downstate Medical Center.

Merger—Following the resignation of E. Jefferson Browder, M.D., the Department of Neurosurgery became a division of the Department of Surgery. The Department of Surgery now includes five separate divisions in addition to general surgery: neurosurgery, ophthalmology, orthopedic surgery, otorhinolaryngology, and urology. Clarence Dennis, M.D., is professor and chairman of the Department. Albert Cook, M.D., assistant professor of neurosurgery heads the division of neurosurgery.

New York University College of Medicine

Appointed—Dr. George Y. Shinowara was appointed professor of pathology and assumed directorship of a new laboratory in New York University-Bellevue Medical Center to carry on his research in blood and be director of biochemistry for Bellevue Hospital and New York University Hospital.

State University of New York College of Medicine at Syracuse

1959–60 Academic Session—Classes were begun on September 14 for 84 freshmen. The total fall registration was 339. The orientation program for freshmen was begun on September 11 with greetings from Dr. Carlyle Jacobsen, President, student officers, and a tour of the Medical Center. On September 12 the program included an introductory clinic by the Department of Pediatrics and a luncheon for new students, senior guides, and faculty counselors.

Conference—Dr. Jay Tepperman, professor of experimental medicine, Department of Pharmacology, was cochairman of an international conference on energy balance held at Augusta, Michigan, September 29 to October 1.

University of Rochester School of Medicine and Dentistry

Grants—Two March of Dimes research grants totaling $145,080 to establish a model arthritis evaluation and demonstration center, and to study a puzzling blood factor which is the number one clue to rheumatoid arthritis have been received by the College. Ralph F. Jacox, M.D., associate professor of medicine will conduct the arthritis evaluation and demonstration center and John H. Vaughan, M.D., associate professor of medicine, will direct the study of blood factors.

Those who bring sunshine to the lives of others cannot keep it from themselves—SIR JAMES MATTHEW BARRIE

MEDICAL NEWS

Course in Uropathology at Columbia—The College of Physicians and Surgeons, Columbia University, will present a course in uropathology, preparatory for board examination. The course will be given by M. M. Melicow, M.D., and A. C. Uson, M.D, at the Squier Urological Clinic of the Columbia-Presbyterian Medical Center, 630 West 168th Street, New York 32, New York.

There will be eight sessions which will be held on Mondays and Thursdays, 8:00 P.M. to 10:00 P.M., January 4 through 28, 1960. For registration apply to Melvin D. Yahr, M.D., assistant dean, Faculty of Medicine, Columbia University College of Physicians and Surgeons, 630 West 168th Street, New York 32, New York.

Loan Fund to Aid Interns and Residents—A $400,000 George W. Merck Memorial Loan Fund has been established by the Merck Company Foundation to help meet the need for financial aid to interns and residents. The fund will assist deserving interns and residents to seek the best possible postgraduate training in teaching hospitals before entering practice.

The 18 medical schools participating are associated with the following universities: Boston, California, Chicago, Columbia, Cornell, Harvard, Illinois, Johns Hopkins, New York, Northwestern, Pennsylvania, St. Louis, Tufts, Vanderbilt, Vermont, Virginia, Washington (St. Louis), and Yale.

Graduates of other medical schools also may be eligible for loans if they take the internship or residency at any of the 48 teaching hospitals affiliated with the participating schools.

Medical Film Prize Offered—The annual prize for "Medico-Surgical Cinema," which comprises 100.000 Francs cash (with the posssibility of being divided) and various other awards, will be given during the last session of the course of Actualités Médico-Chirurgicales at the Nouvelle Faculté de Médecine de Paris on April 5, 1960.

The jury will consider the didactic value of the film as well as its cinegraphic quality. Only 16 mm. size film will be admitted. Applications and films are to be sent to: Secretariat, *La Presse Médicale,* 120 Boulevard Saint-Germain, Paris VI, prior to February 29, 1960.

Awards will be given to the authors of the best films. Unlike former years, all films are eligible for awards including those subsidized or produced by a laboratory or firm.

Glaucoma Detection Clinic Opens in Schenectady—On October 21, the first glaucoma detection clinic in the area opened at St. Clare's Hospital, Schenectady. The organization of the clinic was conducted by Peter Sykowski, M.D., chief of the Ophthalmology Department at the hospital. Dr. Sykowski will direct the clinic.

Patients will be seen only by appointment made through the social service director of the hospital.

American Board of Obstetrics and Gynecology Announces Examination—The Part I examinations of the American Board of Obstetrics and Gynecology, are to be held in various parts of the United States and Canada, on Friday, January 16, 1960.

Candidates notified of their eligibility to participate in Part I must submit their case abstracts within thirty days of notification of eligibility. No candidate may take the written examination unless the case abstracts have been received in the office of the secretary.

Current bulletins outlining present requirements may be obtained by writing to the secretary's office: Robert L. Faulkner, M.D., American Board of Obstetrics and Gynecology, 2105 Adelbert Road, Cleveland 6, Ohio.

Board of Estimate Approves Grants—On the recommendation of the Health Research Council, the New York City Board of Estimate approved on October 8, 14 medical research grants which will total $1,023,309 over a five-year period. Under the terms of the grants approved by the Board of Estimate, $270,713 will be spent in the first year, the remaining $752,596 in the following four years.

Research grants were made to six medical schools in New York City for work on specific projects to be conducted in five municipal hospitals. In addition newly created "New York City Investigatorships" were awarded to six university scientists who will do research work in municipal hospitals.

Two-Way Radio Medical Conferences—Albany Medical College inaugurated its fifth season of two-way radio medical conferences on Tuesday, October

6. The conferences will be broadcast to doctors at 24 hospitals in New York, Massachusetts, and New Hampshire. The current season will extend through April, 1960, with one hour conferences scheduled on a three-times-a-week basis.

The radio facilities involved in the conference network consists of the medical college's FM radio station, WAMC, and transmitters located in 24 hospitals. There are radio receivers at the college and the hospitals.

Fight for Sight Awards—The National Council to Combat Blindness, Inc., has announced 1959 Fight for Sight awards to medical colleges, hospitals, research centers, and individual investigators totaling $160,000. The awards include 26 grants-in-aid, eight postdoctoral fellowships, two predoctoral fellowships, 20 summer student fellowships and three awards in support of clinical service projects.

Fight for Sight grants-in-aid and full-time research fellowships are generally awarded for a period of one year and may be renewed with the approval of the Council's Scientific Advisory Committee.

January 1, 1960 has been designated as the closing date for receipt of applications for the 1960-1961 group of awards from applicants not requesting renewal support. Applicants (other than those filing for student fellowships) who wish to apply for continuation support are requested to file no later than March 15. For application forms write to: Secretary, National Council to Combat Blindness, Inc., 41 West 57th Street, New York 19, New York.

Film on Pharmacologic Approach to Mental Illness—A new film "A Pharmacologic Approach to the Study of the Mind" is available for use by the medical profession.

The film borrows the TV technic made popular by Edward R. Murrow on his "Person to Person" program, in which the moderator uses an electronic picture window to bring his viewer in close contact with the subject.

Ralph W. Gerard, M.D., director of laboratories, Mental Health Research Institute, University of Michigan, narrates the film. The subjects are the speakers who participated in a symposium on the same subject last January in San Francisco. Among them are the following authorities from the New York area: Henry V. Agin, M.D., director, Department of Neuropsychiatry, Beth El Hospital, Brooklyn; Nathan S. Kline, M.D., Rockland State Hospital, Orangeburg; and Dr. M. A. Pomeranze, New York Medical College.

The film is available to professional groups upon request from the Medical Education Department, Lakeside Laboratories, Inc., Milwaukee 1, Wisconsin.

Booklet on Educating Epileptic Children—In an effort to broaden educational opportunities for children with epilepsy, the Federal Association for Epilepsy has published a booklet entitled, "Educating Children Who Have Epilepsy." The booklet is a guide for teachers and school administrators in handling children suffering from the condition. Parents may also find it helpful in arranging for their afflicted child's education and training.

Free copies are available from the Federal Association for Epilepsy, 1729 F Street, N. W., Washington 6, D.C. Those requesting copies should be sure to ask for it by its full name.

Personalities

Promoted

L. Eugene Daily, M.D., Norwich, to administrative vice-president of the Norwich Pharmacal Company.

Awarded

Richard Duane Brasfield, M.D., New York City, and Charles D. May, M.D., New York City, fellowships in the American Medical Writers' Association . . . William S. McCann, M.D., Rochester, the annual Gold Medal Award of the University of Rochester Medical Alumina Association . . . Carl H. Smith, M.D., New York City, one of the 26 annual Townsend Harris Medals of achievement given by City College.

Elected

Donald A. Covalt, M.D., New York City, as president-elect, and Jerome S. Tobis, M.D., New York City, as second vice-president, of the American Congress of Physical Medicine and Rehabilitation . . . George M. Wheatley, M.D., New York City, as vice-president of the American Academy of Pediatrics.

Appointed

Abram J. Abeloff, M.D., New York City, as an alumni trustee of Columbia University. . . Frederick Beck, M.D., Ray Brook, as director of the State Health Department's Homer Folks Tuberculosis Hospital, Oneonta . . . Joseph Fenton, M.D., Albany as special assistant for rehabilitation to the executive director of the New York State Interdepartmental Health Resources Board . . . Morris Schaeffer, M.D., Montgomery, Alabama, as director of the Bureau of Laboratories of the New York City Department of Health . . . Irving S. Wright, M.D., New York City, to the editorial board of the

Medical Book Department of Little, Brown and Company.

Speakers

Richard H. Freyberg, M.D., director, Department of Rheumatic Diseases, Hospital for Special Surgery, New York City, on October 6 on the subject "Modern Therapy of Rheumatoid Arthritis" at a postgraduate course given at Long Branch, New Jersey . . . Norman Plummer, M.D., medical director, New York Telephone Company, at a mental health forum sponsored by the Connecticut Mutual Life Insurance Company on October 2 . . . A. C. Ramos, M.D., J. N. Adam Hospital, Perrysburg, on "Surgical Treatment of Tuberculosis in Children" at the Western New York Chest Conference . . . Bernard Rogoff, M.D., Department of Rheumatic Diseases, Hospital for Special Surgery, New York City, on October 6 on the subject "Problems in Anti-Rheumatic Therapy" before the Rockland County Medical Society at the Summit Park Sanatorium in Pomona, New Jersey . . . Charles Ross, M.D., Roswell Park Memorial Institute, Buffalo, on October 22 on the subject "Co-Existent Granuloma and Carcinoma" before the Western New York Chest Conference . . . Howard A. Rusk, M.D., Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, on October 15 at a dinner sponsored by the Society for the Rehabilitation of the Facially Disfigured . . . Alan Austin Scheer, M.D., New York City, on a panel discussion on "Experiences with Mobilization and Two Year End Results" during the 24th annual congress of the International College of Surgeons in September. . . William B. Sherman, M.D., Columbia University, on the subject "Current Views on the Treatment of Asthma" on October 22, before the Western New York Chest Conference . . . Rutherford B. Stevens, M.D., Morningside Mental Hygiene Clinic, on the subject "The 'Baby' in an Activity Group" before the Eastern Group Psychotherapy Society on October 16 . . Robert Turell, M.D., New York City, as guest speaker before the Sociedade Brasileira de Proctologia at their ninth congress to be held November 3 through 7 in Porto Alegre, Brazil, on the subjects "Treatment of Massive Rectal Prolapse" and "Epidermoid Cancer of the Perianus and Anal Canal."

ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

DINNER DANCE

- Monday evening, May 9
- New Hotel Pierre Ballroom
- Cocktails preceding dinner
- Gourmet menu
- Famous name band

Set aside the date
Bring your family and friends

Medical Society of the State of New York

BUREAU OF INDUSTRIAL HEALTH AND WORKMEN'S COMPENSATION

ANTHONY A. MIRA, M.D., *Director*

"R" Is for Rehabilitation

EFFECTIVE September 15, 1959, Colonel Solomon E. Senior, Chairman of the Workmen's Compensation Board, directed that a new form, known as Form "R," was to be utilized by insurance carriers. The form is intended to help return the industrial worker to his job as quickly as possible by urging rehabilitative methods in occupational disabilities as promptly as possible.

Colonel Senior, in developing this form, obtained the advice of many interested parties, including representatives from your State Medical Society. On August 14, 1959, Colonel Senior released the final developed form and a directive relating to its use to all workmen's compensation insurance carriers and self-insured employers.

In a covering letter, Colonel Senior stated the following:

> I have every confidence that the joint effort which led to the creation and use of this form will, in its way, constitute a milestone both in terms of the concept of rehabilitation as a standard procedure to be used in workmen's compensation claims and in terms of cooperative effort arising from a dynamic approach to a problem involving manifold interests.
>
> Again, I want to thank you for joining me in this campaign of education and enlightenment for early and effective rehabilitation. We have taken the first step. Now it is up to all of us to make certain that this same message and purpose is conveyed to those with whom we work on every level.

Below you will find the instructions that were issued to the insurance carriers and self-insured employers concerning the form and a facsimile of the new form (Fig. 1). In addition, there is also reported below the instructions that have been issued to the Workmen's Compensation Board personnel in processing this form.

This information is printed to increase your awareness of the many changes that are taking place under the new administration of the Workmen's Compensation Board.

Instructions to Carriers and Employers

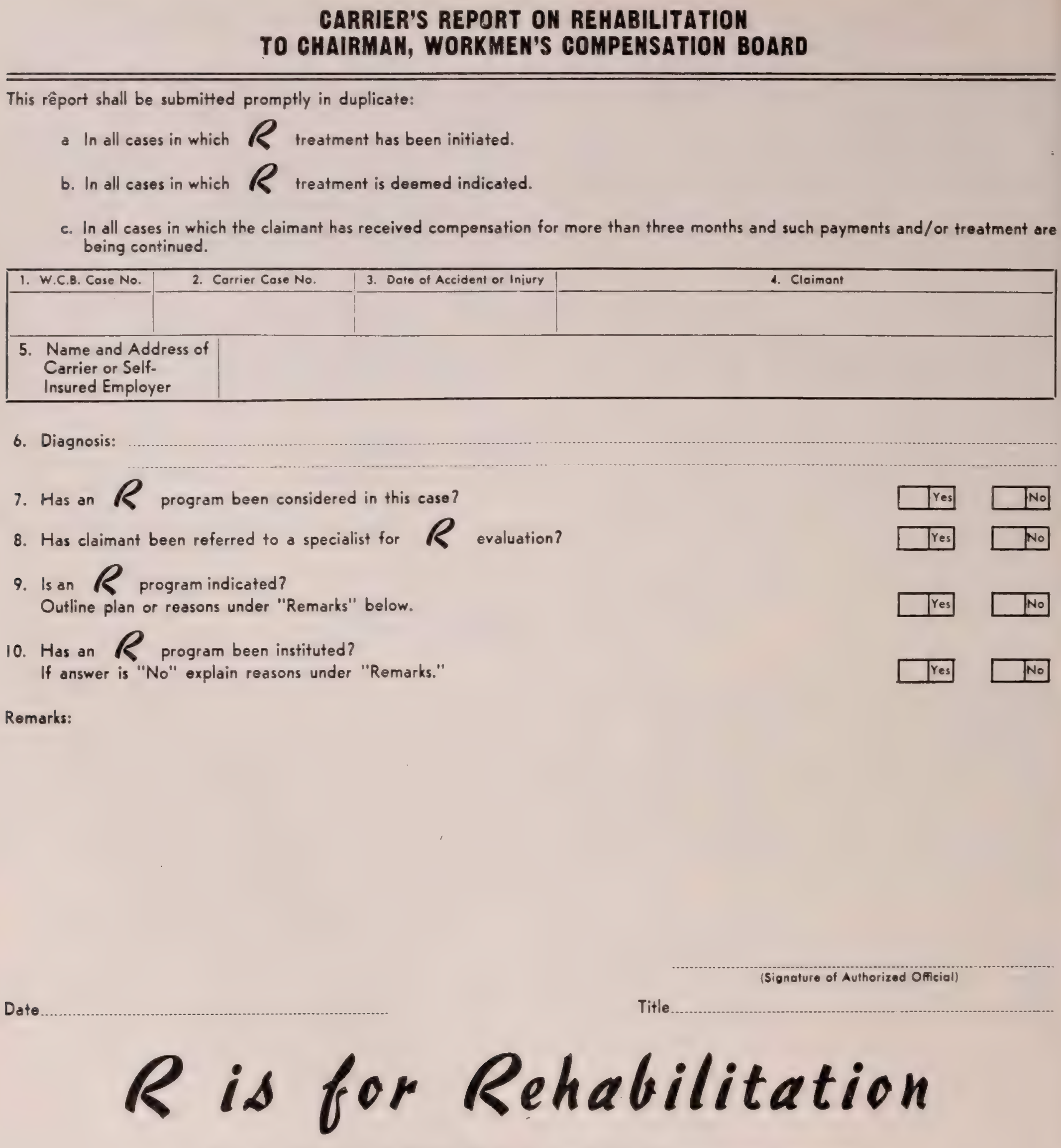
State of New York
WORKMEN'S COMPENSATION BOARD
OFFICE OF THE CHAIRMAN

To: Carriers and Self Insurers Providing Benefits Under the Workmen's Compensation Law — August 14, 1959
Subject: Carrier's Report on Rehabilitation to Chairman, Workmen's Compensation Board, (Form **R**)

Everyone concerned with the best administration of the New York Workmen's Compensation Law has an obligation and a responsibility to do everything possible toward achieving the fastest restoration of the injured workman to employability and employment with a minimum residuum of disability. To discharge this duty you must review every claim as soon as it is filed in order to ascertain whether an **R** program is indicated. If so, cause those **R** procedures to be initiated promptly. This is as much a responsibility of the employer and his insurance carrier as it is a responsibility of the attending physician.

To guarantee the achievement of this objective, I am prescribing a new form (Form **R**) of carrier's report to the Chairman which will reflect the positive steps taken by the carrier or self-insurer toward the consideration and implementation of an **R** program.

Attached is a copy of (Form **R**), "Carrier's Report on Rehabilitation to Chairman, Workmen's Compensation Board" which is prescribed for use by all carriers and self-insured employers. This report



CARRIER'S REPORT ON REHABILITATION
TO CHAIRMAN, WORKMEN'S COMPENSATION BOARD

This report shall be submitted promptly in duplicate:

a In all cases in which R treatment has been initiated.

b. In all cases in which R treatment is deemed indicated.

c. In all cases in which the claimant has received compensation for more than three months and such payments and/or treatment are being continued.

1. W.C.B. Case No.	2. Carrier Case No.	3. Date of Accident or Injury	4. Claimant
5. Name and Address of Carrier or Self-Insured Employer			

6. Diagnosis: ....

7. Has an R program been considered in this case? ☐ Yes ☐ No

8. Has claimant been referred to a specialist for R evaluation? ☐ Yes ☐ No

9. Is an R program indicated?
Outline plan or reasons under "Remarks" below. ☐ Yes ☐ No

10. Has an R program been instituted?
If answer is "No" explain reasons under "Remarks." ☐ Yes ☐ No

Remarks:

....
(Signature of Authorized Official)

Date.......... Title..........

R is for Rehabilitation

FIG. 1. Sample of Form R to be used for rehabilitation reports.

shall be submitted promptly and in duplicate in all cases in which R treatment has been initiated or is deemed indicated, and in any event in all cases in which the claimant has been receiving compensation for more than three months and such payments and/or treatment are being continued.

Carriers and self-insurers are authorized to reproduce the form in quantity according to their needs with their names imprinted thereon in the space provided. In all other respects text and size must be followed.

The form is effective September 15, 1959, and shall be filed in all the instances above described in which the claimant's injury was sustained subsequent to June 15, 1959.

SOLOMON E. SENIOR, *Chairman*

Synopsis of Internal Workmen's Compensation Board Procedure

1. If Form R indicates that a rehabilitation program has been or will be initiated no further action will be taken in this respect by the Board unless further development in the record requires consideration by the Board.

2. If the carrier in such report indicates that no rehabilitation program will be initiated, and upon examination by the claims examiner it appears that a rehabilitation program should be considered, then

a. That examiner will confer with unit supervisor and/or such supervisor's superior and should there be concurrence that a rehabilitation program should be considered and it appears that the claimant may benefit from a rehabilitation program

(*1*) In the New York City district office, case will be referred to the Rehabilitation Unit for review by the rehabilitation specialist. Should the rehabilitation specialist find that a rehabilitation program is indicated, he will contact the claimant's attending physician.

(2) In other district offices the case will be referred to the District Administrator for review of the folder with a Board examining physician, and, based upon such examination, should such Board physician find a rehabilitation program indicated, he will contact the claimant's attending physician.

b. If the carrier, claimant or claimant's physician does not agree with the recommendation made by the Board examining physician, or by the Rehabilitation Unit, to institute a rehabilitation program, the case will be scheduled on the calendar before a referee to develop the record and make a finding on necessity for a rehabilitation program. At such a hearing, and in accordance with the facts in the file, all physicians who are required to appear and testify shall be placed on notice.

c. When a case appears before a referee, pursuant to the above procedure, for the purpose of determining the advisability of instituting a rehabilitation program, he

(1) shall take testimony on the issue of necessary treatment, including rehabilitation.

(2) May, on his own motion or upon request of either party, refer a claimant for physical examination by a Board examining physician, when he deems it necessary for the determination of these issues.

(3) Shall make findings

  (*a*) Whether a rehabilitation program should presently be authorized.

  (*b*) Whether continued treatment of type claimant is receiving is authorized.

  (*c*) If presented with the issue of claimant's refusal of rehabilitation program, whether claimant's refusal is reasonable and such other findings as may be indicated.

The foregoing procedure is designed to give the claimant, his physician, the carrier, and self-insured employer full opportunity for the exploration and consideration of all issues pertaining to the speedy establishment of an authorized rehabilitation program, when deemed necessary.

ANNUAL CONVENTION

Medical Society of the State of New York

Statler Hilton Hotel, New York City

SCIENTIFIC PROGRAM

May 9 to 13, 1960

Any State Society member interested in presenting a paper before a scientific section or a general session is requested to contact the section chairman (see page 4084) or to write to Alfred P. Ingegno, M.D., Chairman, Scientific Program Subcommittee, at 27 Eighth Avenue, Brooklyn 17, New York, before November 15, 1959.

BOOKS RECEIVED

(The following books were received during the month of September, 1959)

Mazer & Israel's Diagnosis and Treatment of Menstrual Disorders and Sterility. By S. Leon Israel, M.D. Fourth edition. Octavo of 666 pages, illustrated. New York, Paul B. Hoeber, Inc., 1959. Cloth, $15.

The Diabetic's Handbook. By Anthony M. Sindoni, Jr., M.D. Second edition. Octavo of 285 pages, illustrated. New York, The Ronald Press Company, 1959. Cloth, $4.50.

Clinical Scalar Electrocardiography. By Bernard S. Lipman, M.D., and Edward Massie, M.D. Fourth Edition. Octavo of 474 pages, illustrated. Chicago, The Year Book Publishers, Inc., 1959. Cloth, $8.00.

Clinical Auscultation of the Heart. By Samuel A. Levine, M.D., and W. Proctor Harvey, M.D. Second edition. Quarto of 657 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $11.

Disorders of the Temporomandibular Joint. Diagnosis, Management, Relation to Occlusion of Teeth. By Laszlo Schwartz, D.D.S., and Eighteen Contributors. Quarto of 471 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $15.

The Arterial Wall. Edited by Albert I. Lansing, Ph.D. Octavo of 259 pages, illustrated. Baltimore, The Williams and Wilkins Company, 1959. Cloth, $7.50.

The Life and Times of Sir Charles Hastings. By William H. McMenemey, D.M. Octavo of 516 pages, illustrated. Edinburgh, E. & S. Livingstone, Ltd. (Baltimore, Williams & Wilkins Company U. S. Agents), 1959. Cloth, $10.

A Cookbook for Diabetics. By Deaconess Maude Behrman. Octavo of 171 pages. New York, The American Diabetes Association, Inc., 1959. Paper, $1.00.

The Modern Family Health Guide. Edited by Morris Fishbein, M.D. Octavo of 1,001 pages. Garden City, Doubleday & Company, Inc., 1959. Cloth, $7.50.

Anatomy of the Human Body. By Henry Gray, F.R.S. Edited by Charles Mayo Goss, M.D. Twenty-Seventh edition. Quarto of 1,458 pages, illustrated. Philadelphia, Lea & Febiger, 1959. Cloth, $17.50.

Psychoanalysis of Today. By S. Nacht. Octavo of 228 pages. New York, Grune & Stratton, 1959. Cloth, $5.75.

Open Reduction of Common Fractures. By Oscar P. Hampton, Jr., M.D., and William T. Fitts, Jr., M.D. Octavo of 212 pages, illustrated. New York, Grune & Stratton, 1959. (Modern Surgical Monographs). Cloth, $8.75.

My Human Zoo. By Walter Juelich. Octavo of 110 pages. New York, Exposition Press, 1959. Cloth, $3.00.

The Annual Survey of Psychoanalysis. Edited by John Frosch, M.D., and Nathaniel Ross, M.D. Octavo of 608 pages. New York, International Universities Press, Inc., 1959. Cloth, $12.

Women are wiser than men because they know less and understand more.—JAMES STEPHENS

BOOKS REVIEWED

Treatment of Internal Medicine. By Harold Thomas Hyman, M.D. Quarto of 609 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1958. Cloth, $12.50.

The author, a lecturer, teacher, and writer of great skill and experience, is well known for his handbook of differential diagnosis.

In this new volume he has brought the same kind of enlightened scholarship to the production of a first rate handbook on treatment in internal medicine. I can think of no one for whom this book will not be useful.—Milton Plotz

Method of Anatomy. Descriptive and Deductive. Sixth edition. By J. C. Boileau Grant, M.B. Octavo of 879 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $11.

This is the sixth edition of a now standard and highly regarded textbook of human anatomy. It is perhaps the most widely accepted textbook designed for medical students which is written from a regional rather than a systemic approach. The advantage of such an approach is obvious to any student of anatomy, since nearly all dissections must of necessity be regional.

Another major advantage of this textbook is that it is considerably shorter than most of the gross anatomy texts which are in common use today. With the strong tendency to cut the hours spent by the student on gross anatomy, which is prevalent throughout the country, it is obvious that use of a more concise textbook is becoming a necessity.

Over 800 illustrations are found in the text, all of which are of the line drawing type. Each of these illustrations does a good job of illustrating a specific point but in many cases the reviewer feels that more detail, which could be brought out best by colored illustrations, would be of considerable value.

This latest edition has adopted the new international anatomic nomenclature (NAP) replacing the BNA and its Birmingham Revision which was used in previous editions. Where the new terms differ substantially from the old the supplanted term is given in brackets.

The new edition has placed additional emphasis on areas and problems which are of particular clinical importance such as lubrication of joints, electromyography, and mechanics of the foot. At the same time there is considerably less description of microscopic structures than was found in previous editions. The latter change is particularly commendable in that microscopic anatomy is almost invariably taught as a separate course in this country for which a separate text is used.

To the professional anatomist this book will continue to be of lesser value than some of the more complete texts but among medical students it will have many adherents primarily because of its direct application in a regional dissection of the human body.—George B. Talbert

Pediatric Neurology. By Stanley S. Lamm, M.-D. Octavo of 495 pages, illustrated. New York, Landsberger Medical Books, Inc, 1959. Cloth, $12.90.

This is a good work on neurologic conditions in children. Let no one feel that it is only for pediatricians. Any one concerned with diseases of children can employ it to good advantage. The general practitioner should like it for the many diagnostic points he will find in some of the border-line clinical entities.

Chapter 10, on "Intracranial Tumors in Children," is well worth studying. This reviewer specially endorses it.

"Convulsive Disorders" is also discussed in detail and in a very practical manner. It speaks for the author's rounded out experience with such problems.

This book is worth studying and owning.—Harry Apfel

Group Psychotherapy—Theory and Practice. Second edition. By J. W. Klapman, M.D. Duodecimo of 301 pages. New York, Grune and Stratton, 1959. Cloth, $6.75.

The author, a psychiatrist with long experience in group psychotherapy, is known for his didactic approach in this type of treatment. His book is more inclusive.

Starting with a good historical review he goes on to describe and illustrate group therapy sessions with patients of various degrees of disorganization. The presentation is clear. His points are illustrated by excerpts from the group sessions.—Edward L. Pinney, Jr.

SUMMARY OF COUNCIL MINUTES

June 4, 1959

The Council of the Medical Society of the State of New York met at the Society's headquarters, 750 Third Avenue, New York City, Henry I. Fineberg, M.D., president, presiding.

Executive Committee

The Council *approved* the following recommendations of the Executive Committee:

1. That Mr. Alexander be authorized to act as alternate signatory for checks signed by Dr. Wagner;
2. That the Council meet on the fourth Thursday of each month, September to June, with the exception of November and December, on the third Thursday;
3. That Drs. John L. Sengstack, Waring Willis, Joseph J. Witt, and Herbert T. Wagner, and Mr. George P. Farrell be authorized to represent the Society at the Washington Conference on Aging, June 12 and 13;
4. That committees be encouraged to meet by second week of each month so that reports may be read by Council before meeting;
5. That Drs. Henry I. Fineberg, William L. Wheeler, Jr., Waring Willis, Carl R. Ackerman, and Herbert T. Wagner, and Mr. George P. Farrell be authorized to attend the Conference on Relative Value Studies July 18 and 19 at Swampscott, Massachusetts.

Secretary

Dues Remissions.—The Council *voted* to remit annual State dues for 10 members for 1959 because of illness and for two members for 1959 because of military service and to request the A.M.A. to remit national dues as indicated.

Referral of House of Delegates Directives.—Acting Secretary Wolff presented matters referred to the Council by the House of Delegates which *were referred* to committees or acted upon, as follows:

1. Study of district branch structure—Planning Committee;
2. Encourage county medical societies to set up committees to study staphylococcal infections in hospitals—secretary to send such a letter;
3. Blueprint for establishment of scientific and educational trust be submitted to counsel for approval and then to Council for implementation—received as information;
4. Civil defense medical stockpiles information be obtained—Committee on Civil Defense and Catastrophe;
5. Fee-splitting by hospitals (resolution 59–59)—Committee on Hospital and Professional Relations;
6. Cancer diagnosis program—Subcommittee on Cancer;
7. Hospital records of Blue Cross subscribers—Medical Care Insurance Committee and legal counsel;
8. Blue Shield payments to interns and residents—Committees on Medical Care Insurance and Hospital and Professional Relations;
9. Blue Shield coverage for over-sixty-five group—Committee on Medical Care Insurance;
10. Podiatrists using "foot specialist" designation—letter to be written to Board of Regents;
11. Legislation to provide licensed optometrists fit contact lenses only under supervision of physician—Committee on Legislation;
12. Cooperation regarding legislation—letter to be sent to each county medical society and district branch quoting resolution 59–18;
13. Amendment of General Municipal Law, Section 50-d (resolution 59–20)—Legislation Committee and legal counsel;
14. Amendment to Lien Law—Legislation Committee;
15. Physician's Lien under Workmen's Compensation—Legislation Committee and legal counsel;
16. Lien law for physicians—Legislation Committee;
17. Cooperation on legislation–Legislation Committee and administration;
18. Opposition to exclusion of psychotherapy from Medical Practice Act—legal counsel;
19. Administration of physiotherapy by written prescription—Committee on Legislation;
20. Unfavorable public announcements by of-

[Continued on page 4260]

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[Continued from page 4258]

ficials—delegates to A.M.A. and Public Relations Committee, to write letter of protest;

21. Time and place of annual convention—Convention Committee.

Treasurer

Maurice J. Dattelbaum, M.D., presented the treasurer's report which *was accepted.*

Executive Director

Herbert T. Wagner, M.D., reported on his activities during the preceding month and meetings scheduled for the future and described several projects under consideration. The report *was accepted.*

Reports of Committees

COMMISSION ON MEDICAL SERVICES

Gerald D. Dorman, M.D., chairman, reported on the organizational meeting of the Commission and introduced committee chairmen for reports, as follows:

Economics.—Waring Willis, M.D., chairman, reported on meetings attended and recommended that the renegotiated contract for Medicare be signed, including a new allowance of $2.38 per claim from the former charge of $2.20, thereby adding $3,808 to the income of the Bureau. The Council *adopted* the recommendation.

Medical Care Insurance.—Carl R. Ackerman, M.D., chairman, reported on the organization of Associated Blue Shield Plans of New York State, with the following officers: John C. Kinzley, M.D., North Tonawanda, *chairman*; H. Dan Vickers, M.D., Little Falls, *vice-chairman*; Leonard J. Raider, M.D., New York City, *secretary-treasurer.* He also reported on studies to provide insurance coverage for those over sixty-five years of age.

Rural Medical Service.—Edward C. Hughes, M.D., chairman, reported on plans for a pilot study in three upstate counties.

The Council *approved* the reports of the Committees on Economics, Medical Care Insurance, and Rural Medical Service.

Workmen's Compensation.—Dr. Dorman presented the report of the first meeting of the Advisory Committee for the Medical Fee Schedule and Allied Problems, and detailed certain points on which the opinion of the Council was requested. The Council discussed each point and *voted* to approve or disapprove.

OTHER COMMITTEES

Budget.—The Council discussed the revised 1959 budget in executive session and *recommended* its enactment by the Board of Trustees.

Constitution and Bylaws.—Ezra A. Wolff, M.D., chairman, reported on proposed changes in constitutions of the Monroe County Medical Society and the First District Branch, which *were approved.*

Legislation.—James M. Blake, M.D., chairman, reported that the Albany office had been closed and that the reorganization of our legislation activites was in process.

Office Administration and Policies.—John J. Masterson, M.D., chairman, reported on personnel matters and recommended that a tabulating card system for the membership department be approved if found practical. The Council so *voted.*

Publication.—Alfred P. Ingegno, M.D., chairman, reported that routine matters had been discussed by the committee. The Council *approved* the actions taken.

Public Health and Education.—Norman S. Moore, M.D., chairman, reported that 23 postgraduate education meetings had been arranged since the previous report to the Council and described the activities of the following subcommittees:

School Health—The Council *approved* the recommendations that local medical societies be advised to urge pre-employment physical examinations including a chest x-ray for school employes and that teaching days on school health be held in large teaching centers. It *was also voted* to send William E. Ayling, M.D., chairman, to the national school health conference in Highland Park, Illinois, in October.

Epilepsy—The Council *approved* the recommendation of the subcommittee that the words "including pneumoencephalogram and/or angiogram" be added to the procedures outlined previously for obtaining a motor vehicle license for a person with a single isolated convulsive seizure.

Operating Room Deaths—The Council *voted* to adopt the report of the subcommittee which included suggested terminology, activities of study committees, and methods for classifying patients.

The report of the Public Health and Education Committee *was adopted.*

Public Relations.—John C. McClintock, M.D., chairman, presented the report of the Public and Professional Relations Bureau, detailing activities during the annual convention and routine work. The Council *approved* the following recommendations of the committee:

1. That the Executive Director be designated as official spokesman for the Society in relations with the press;

2. That the Society sponsor organization of a State-wide medical assistants association, with John Galbraith, M.D., as liaison officer between the State Society and the proposed organization;

[Continued on page 4264]

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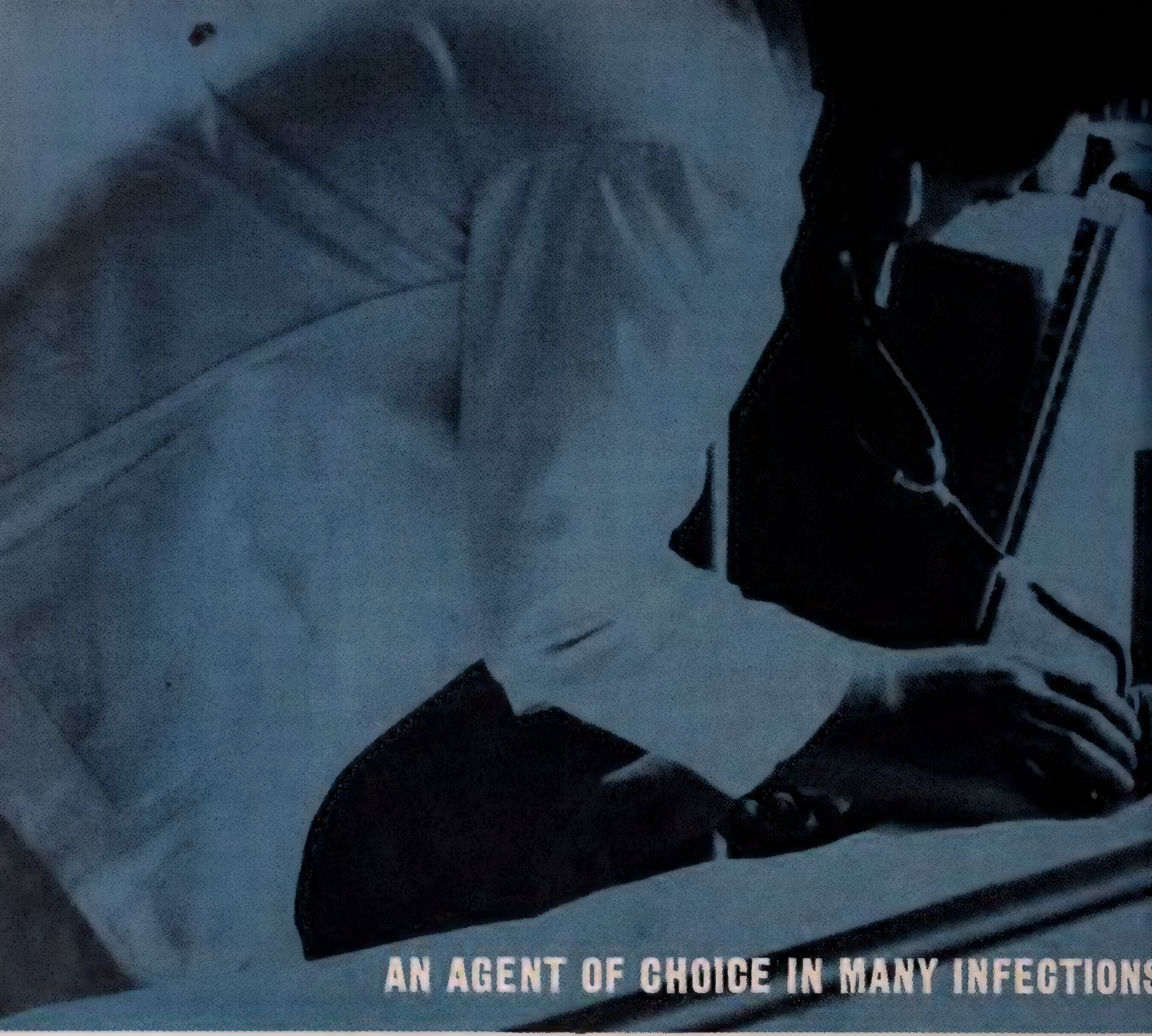
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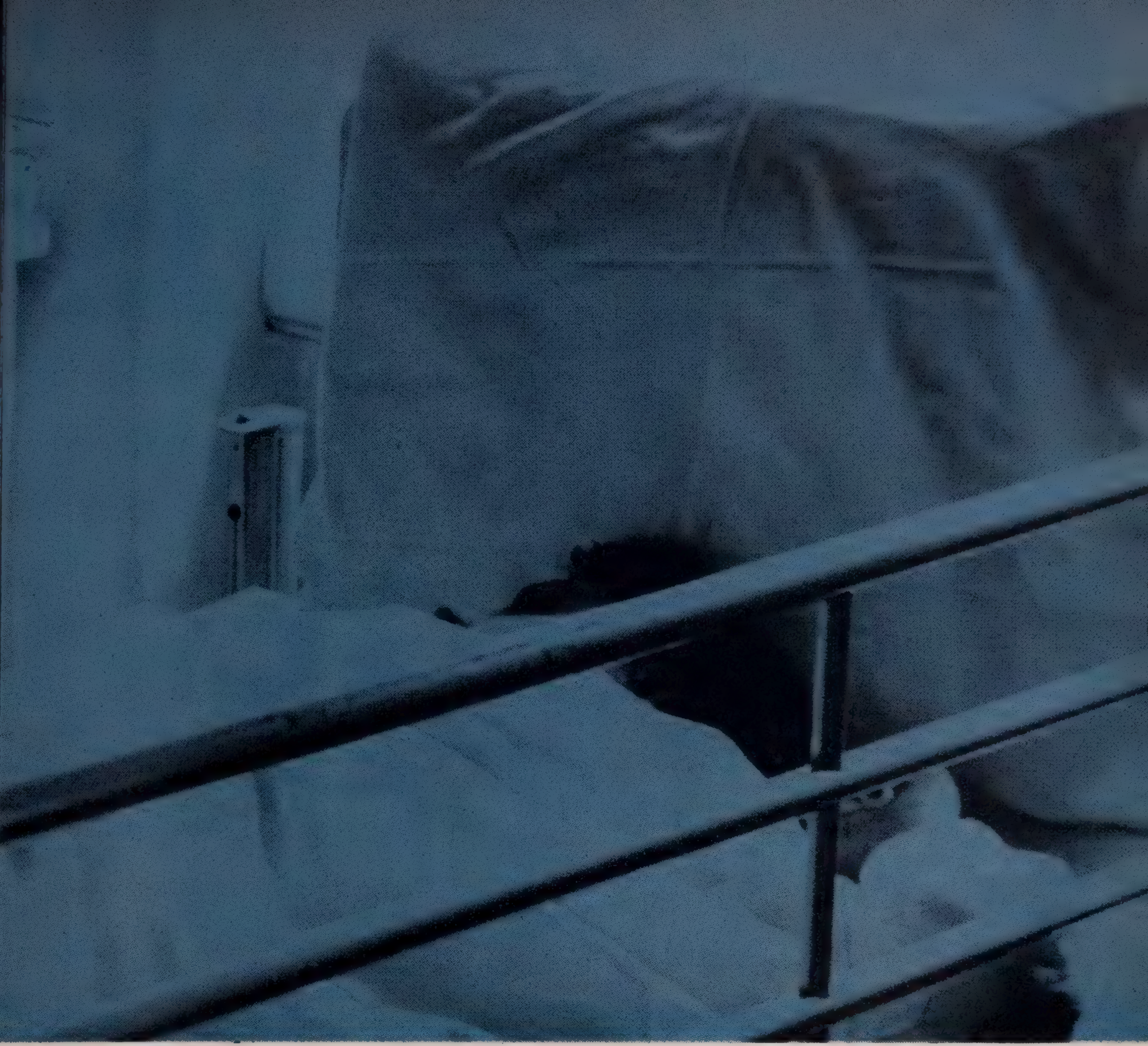
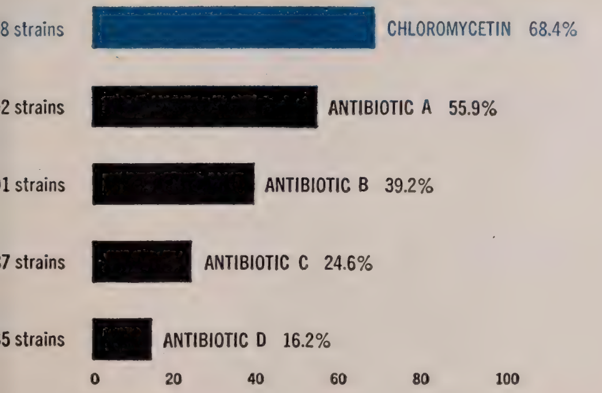
REFERENCES: (1) Holloway, W. J., & Scott, E. G.: *Delaware M. J.* 29:159, 1957. (2) Suter, L. S., & Ulrich, E. W.: *Antibiotics & Chemother.* 9:38, 1959. (3) Murphy, J. J., & Rattner, W. H.: *J.A.M.A.* 166:616, 1958. (4) Rhoads, P. S.: *Postgrad. Med.* 21:563, 1957 (5) Horton, B. F., & Knight, V.: *J. Tennessee M. A.* 48:367, 1955. (6) Seneca, H.: *Am. Pract. & Digest Treat.* 10:622, 1959. (7) Hall W. H.: *M. Clin. North America* 43:191, 1959. (8) Seneca, H., *et al.*: *J. Urol.* 81:324, 1959. (9) Wolfsohn, A. W.: *Connecticut Med* 22:769, 1958.



IN VITRO SENSITIVITY OF PROTEUS SPECIES TO CHLOROMYCETIN AND TO FOUR OTHER ANTIBIOTICS*



*Adapted from Suter & Ulrich.[2]
These antibiotics were tested by the tube dilution method, using a concentration of 12.5 mcg/ml. The percentages represent the total number of sensitive strains found in five *Proteus* species.

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[Continued from page 4260]

3. That all executive secretaries of county medical societies be invited at State Society expense to a meeting at headquarters in September;
4. That an annual conference of county medical society officers and committee chairmen be held in place of the annual public relations and secretaries conferences;
5. That the State Society cooperate with Blue Shield in a proposed radio program over WQXR;
6. That the Bureau be reorganized, including a change in name to Department of Communications;
7. That the public relations staff, the chairman of the committee, and the executive director attend the annual A.M.A. public relations conference in Chicago in August.

Staphylococcal Infections.—James Greenough, M.D., chairman, presented a progress report.

Unfinished Business

Committee Appointments.—President Fineberg presented additional appointments to committees which were approved. (*See complete committee listings at end of minutes.*)

New Business

Appointments.—President Fineberg recommended the following appointments of representatives to meetings of other state medical societies, which *were approved*: *Pennsylvania*—Norman S. Moore, M.D., and Leo E. Gibson, M.D.; *Vermont*—Renato J. Azzari, M.D., and Henry I. Fineberg, M.D.; *Connecticut*—Henry I. Fineberg, M.D., and Herbert T. Wagner, M.D.; *New Jersey*—John L. Sengstack, M.D., and John J. Masterson, M.D. Samuel Z. Freedman, M.D., was named alternate.

Illnesses.—The Council *voted* to send messages to Trustee Stanley J. Kenney and Councillor George J. Burgin, who were recovering from serious illnesses.

The meeting was adjourned at 12:30 P.M.

Council Committees 1959–1960

Budget

Maurice J. Dattelbaum, Brooklyn, *Chairman*
Frederic W. Holcomb, Kingston
Samuel Z. Freedman, New York City

Constitution and Bylaws

Ezra A. Wolff, Forest Hills, *Chairman*
Norman C. Lyster, Norwich
Homer L. Nelms, Albany

Convention

George J. Lawrence, Jr., Flushing, *Chairman*
Maurice J. Dattelbaum, Brooklyn
Merle D. Evans, Rochester
Thomas E. Alexander, New York City, *Adviser*
Charles L. Baldwin, New York City, *Adviser*

DINNER SUBCOMMITTEE

Samuel Wagreich, Bronx, *Chairman*
Jerome L. Leon, Forest Hills, *Cochairman*
Frank J. Borrelli, New York City, *Cochairman*
Philip D. Allen, New York City
Sol Axelrad, Woodhaven
John W. Dill, Yonkers
John J. Flynn, Brooklyn
Samuel Frant, New York City
Abraham W. Freireich, Malverne
Thomas F. McCarthy, Bronx
Warren A. Lapp, Brooklyn
Edward H. Robitzek, Staten Island
Sol Shlimbaum, Bay Shore

GUEST RECEPTION SUBCOMMITTEE

Bernard J. Pisani, New York City, *Chairman*
Norton S. Brown, New York City
Gilbert A. Clark, Troy
Harry H. Epstein, Jamaica
James I. Farrell, Utica
Morris R. Keen, Huntington
David Kershner, Brooklyn
John E. Lowry, Flushing
Charles L. Reigi, Tompkinsville
Paul H. Sullivan, Great Neck
Moses H. Krakow, Bronx
Norman Plummer, New York City
E. J. Murphy, Bronx
Reid R. Heffner, New Rochelle
Irving M. Pallin, Brooklyn
William L. Wheeler, Jr., New York City
Ida Levine, Brooklyn
Frances A. Harmatuk, New York City
E. Craig Coats, New York City
Frederick Lee Liebolt, New York City
Jerome L. Leon, Forest Hills
Marcelle T. Bernard, Bronx
Herbert S. Ogden, New York City

MOTION PICTURE SUBCOMMITTEE

Colgate Phillips, Bronxville, *Chairman*
Walter F. Stafford, Jr., Buffalo, *Cochairman*
E. Dean Babbage, Buffalo
Lester L. Coleman, New York City
William J. Sullivan, Bronxville

SCIENTIFIC AWARDS SUBCOMMITTEE

Thurman B. Givan, Brooklyn, *Chairman*
Harold F. Brown, Buffalo
Morris Maslon, Glens Falls
John G. Masterson, Brooklyn
Louis J. Morse, Kew Gardens

SCIENTIFIC EXHIBITS SUBCOMMITTEE

William L. Watson, New York City, *Chairman*

[Continued on page 4269]

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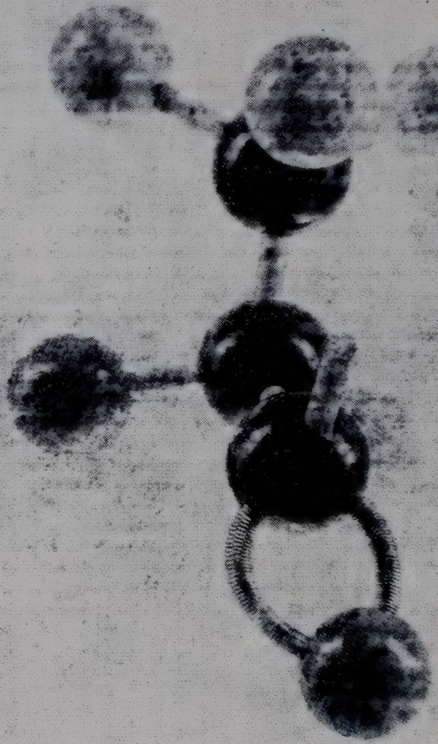

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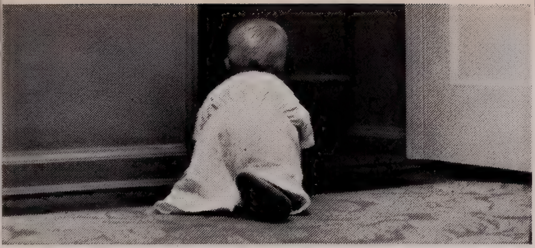

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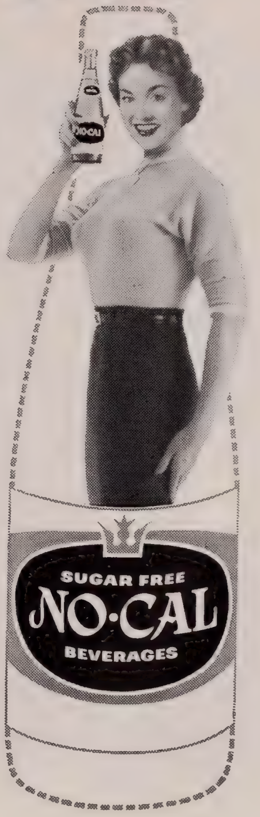

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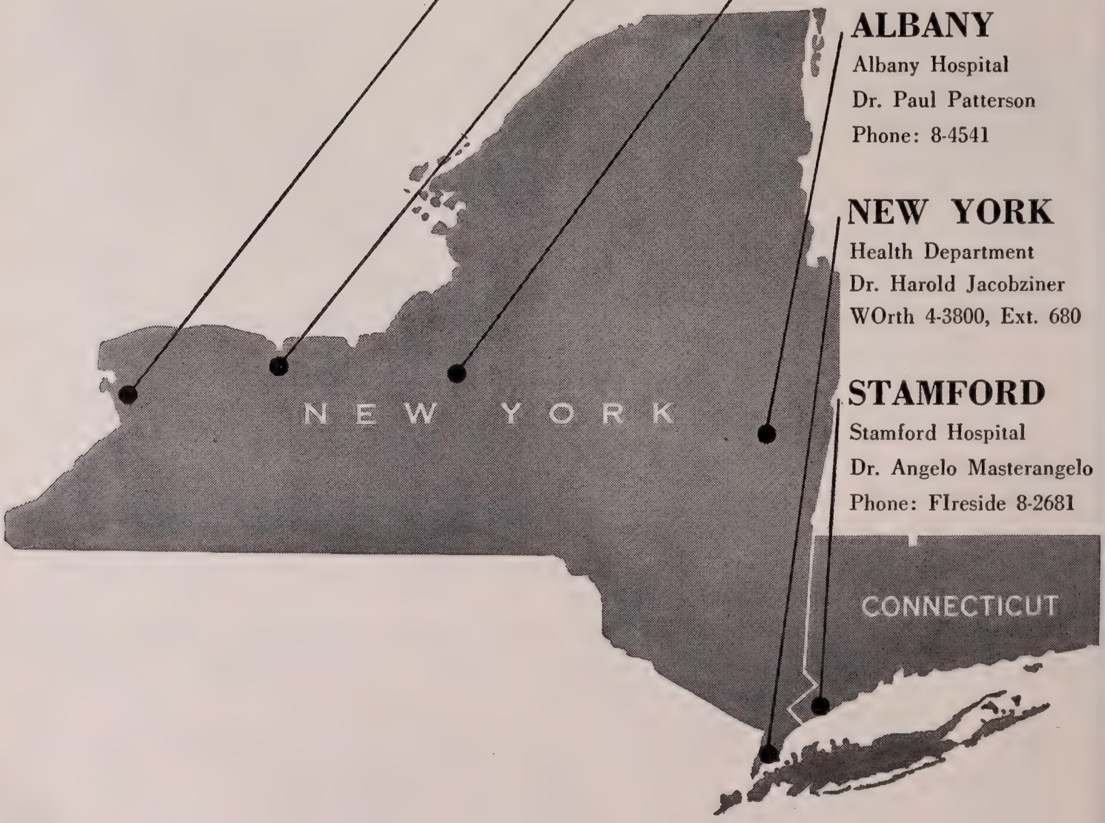

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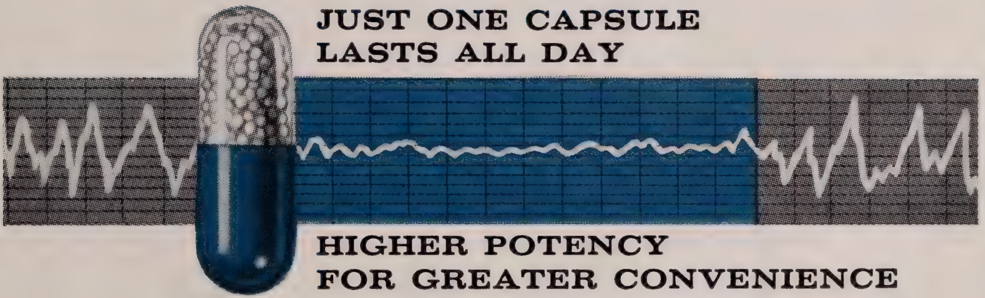

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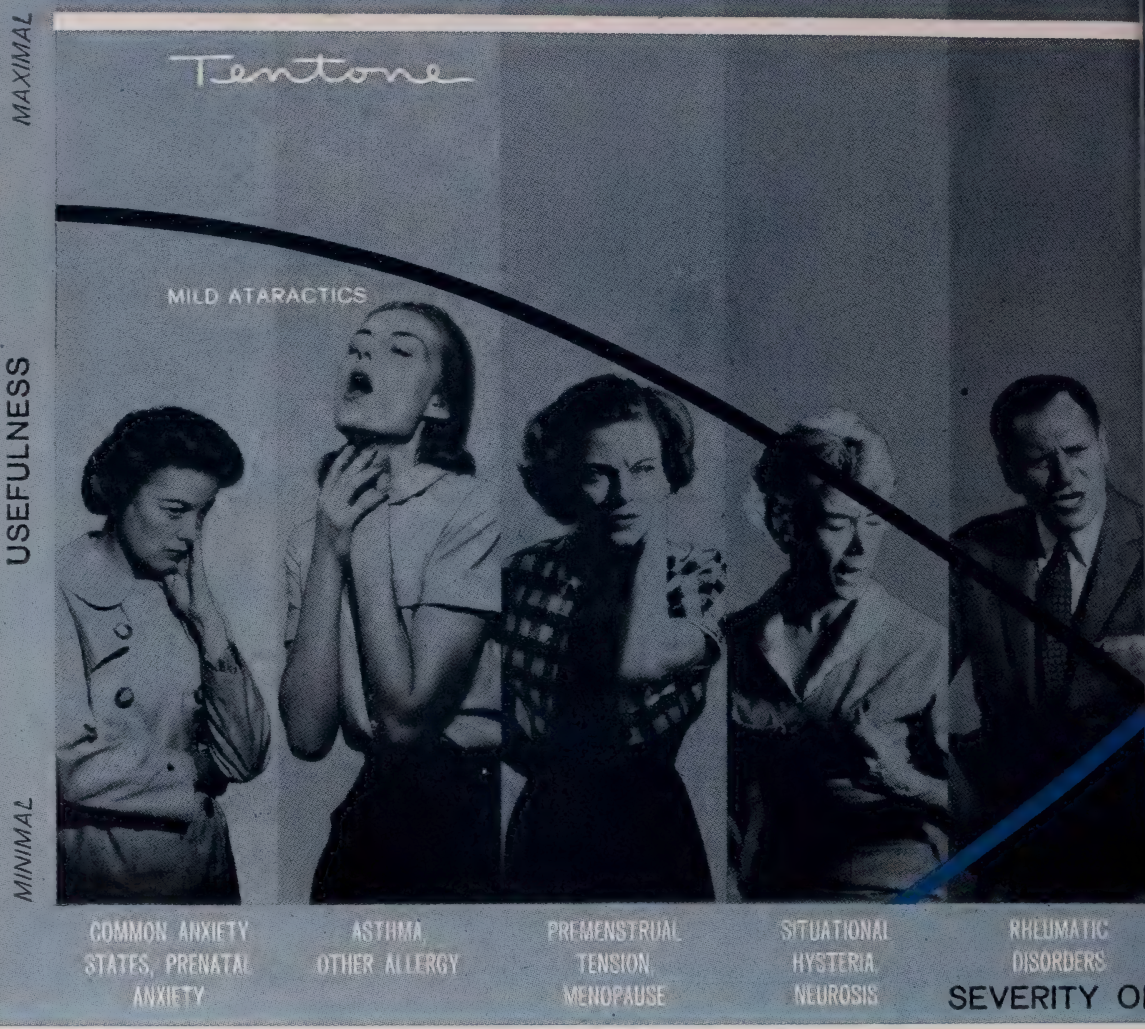

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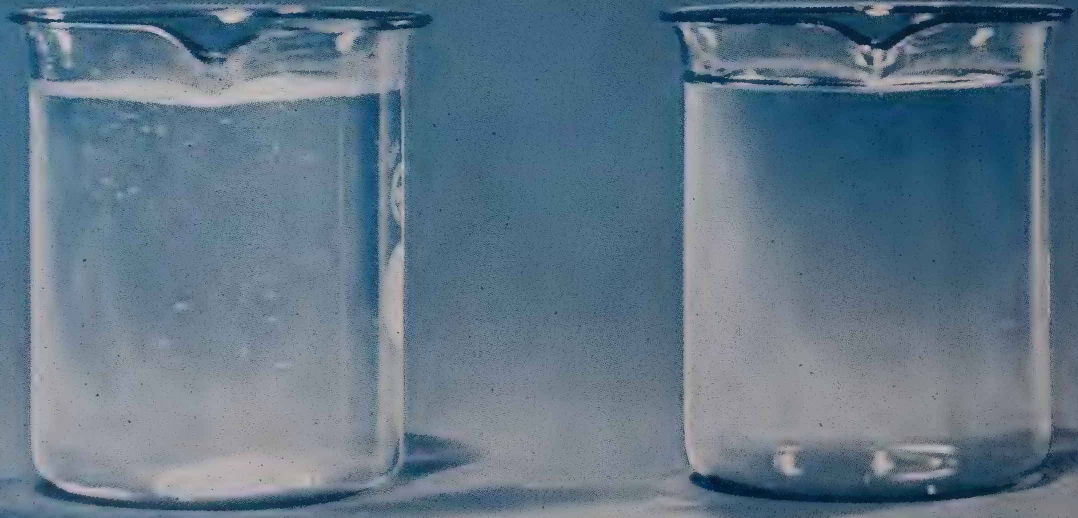
Chief among the drawbacks to aspirin usage is gastric intolerance. This ranges from mild upset and "heartburn" to severe hemorrhagic gastritis.[1-10] Studies performed in conjunction with gastrectomy[4,5] and gastroscopy[2] have shown insoluble aspirin particles firmly adherent to the gastric mucosa and imbedded between rugae. Reactions varying from mild hyperemia to erosive gastritis have been reported to occur in the areas immediately surrounding these adherent particles.[2,4,5] This is reported to be particularly true in patients with peptic ulcer.[4]

CALURIN is the freely soluble, stable calcium aspirin complex. Its high solubility forestalls gastric irritation or damage



Regular aspirin crystals 24 hours after being mixed into water.

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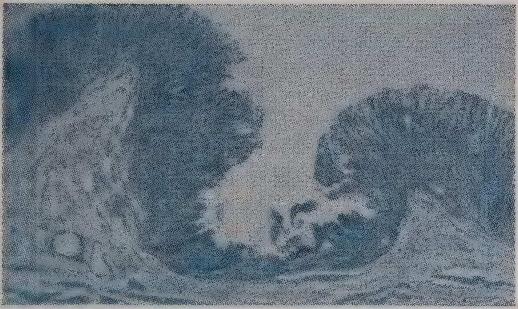
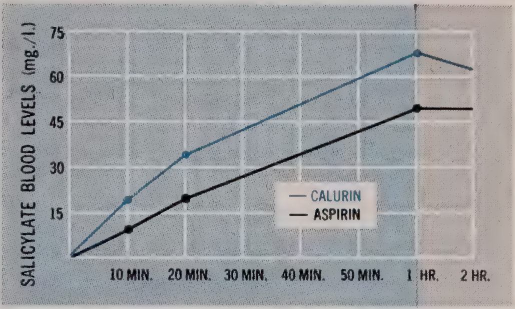


Particle-induced ulceration — section through lesion found in gastrectomy specimen. An aspirin particle was found firmly imbedded in this undermined erosion. Such lesions may be associated with the relative insolubility of aspirin, which remains in particulate form after dispersion in gastric contents.



Calurin, being freely soluble, is promptly available for absorption into the systemic circulation. Salicylate blood levels in 12 subjects receiving both Calurin and plain aspirin were found to rise more than twice as high within ten minutes following Calurin. Also, these levels persisted higher for at least two hours.[11]

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Dosage: Each tablet of Calurin is equivalent to 300 mg. (5 gr.) of acetylsalicylic acid. For relief of pain and fever in adult patients, the usual dose of Calurin is 1 to 3 tablets every 4 hours, as needed; in arthritic states, 2 or 3 tablets 3 or 4 times daily; in rheumatic fever, 3 to 5 tablets 4 or 5 times daily. For children over 6 years, the usual dose is 1 tablet every 4 hours; for children 3 to 6 years, ½ tablet every 4 hours, as required. Not recommended for children under 3.

REFERENCES: 1. Waterson, A. P.: Aspirin and gastric haemorrhage, Brit. M. J. **2**:1531, 1955. 2. Douthwaite, A. H., and Lintott, G. A. M.: Gastroscopic observation of the effect of aspirin and certain other substances on the stomach, Lancet **2**:1222, 1938. 3. Editorial Comments: The effect of acetylsalicylic acid (aspirin) on the gastric mucosa, Canad. M. A. J. **80**:47, 1959. 4. Muir, A., and Cossar, I. A.: Aspirin and ulcer, Brit. M. J. **2**:7, 1955. 5. Muir, A., and Cossar, I. A.: Aspirin and gastric haemorrhage, Lancet **1**:539, 1959. 6. Schneider, E. M.: Aspirin as a gastric irritant, Gastroenterology **33**:616, 1957. 7. Bayles, T. B., and Tenckhoff, H.: Salicylate therapy in rheumatic diseases, Scientific Exhibit, Ann. Mtg. A. M. A., San Francisco, Calif., June, 1958. 8. Batterman, R. C.: Comparison of buffered and unbuffered acetylsalicylic acid, New Eng. J. M. **258**:213, 1958. 9. Cronk, G. A.: Laboratory and clinical studies with buffered and nonbuffered acetylsalicylic acid, New Eng. J. M. **258**:219, 1958. 10. Editorial: Aspirin plain and buffered, Brit. M. J. **1**:349, 1959. 11. Smith, P. K.: Plasma concentration of salicylate after the administration of acetylsalicylic acid or calcium acetylsalicylate to human subjects, Report submitted to Smith-Dorsey from Dept. of Pharmacology, Geo. Washington Univ. School of Medicine, Washington, D. C., Sept. 5, 1958.

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1. Spoor, H.: Proc. Scient. Sec. TGA No. 31, May 1959
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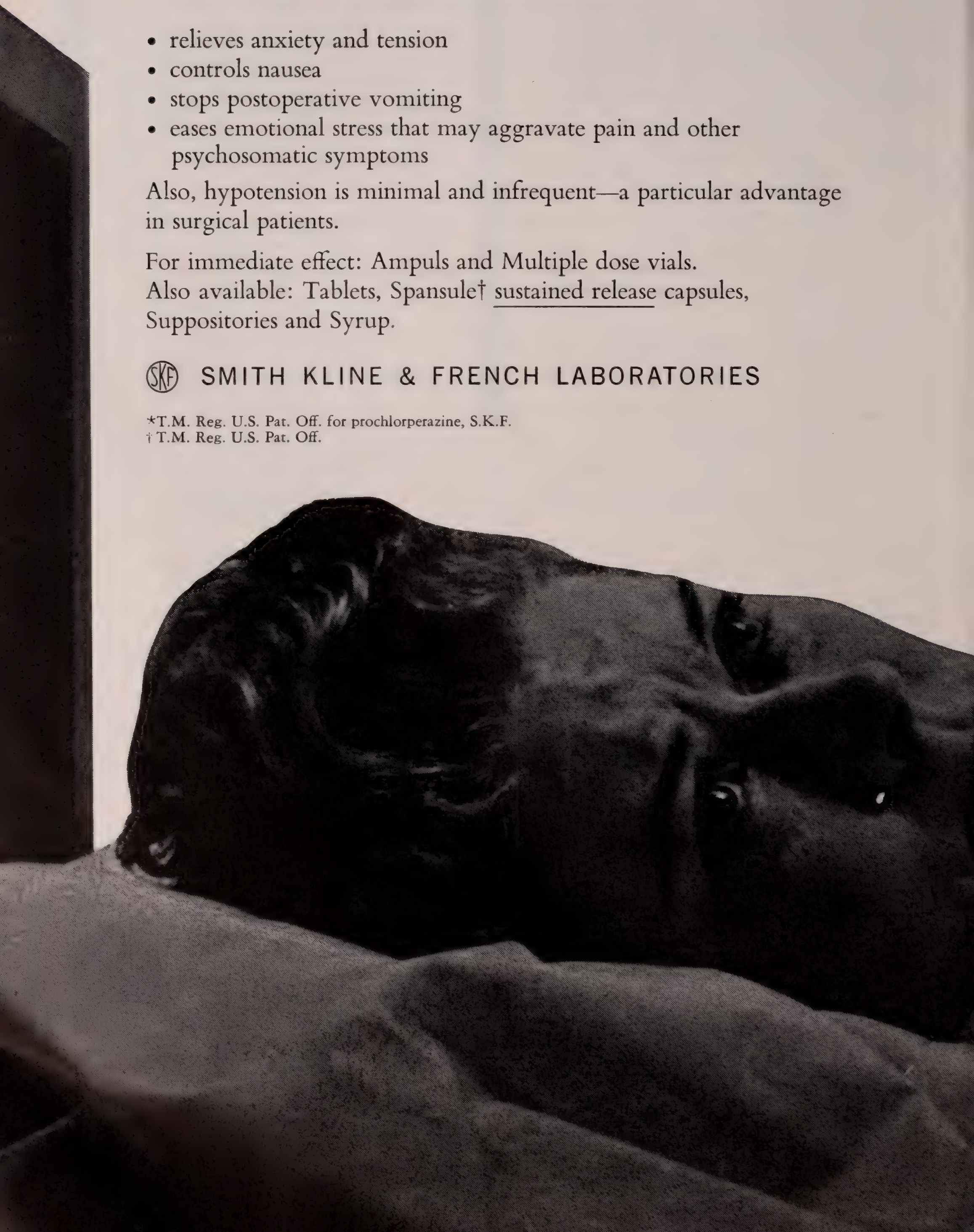

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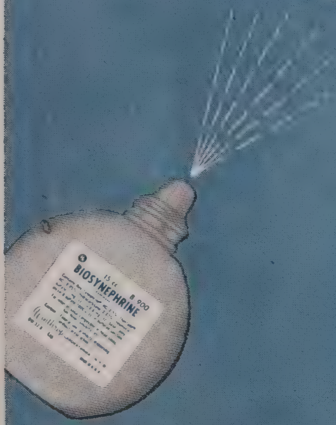

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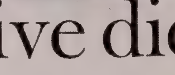
GERALIN-the  one-capsule-daily
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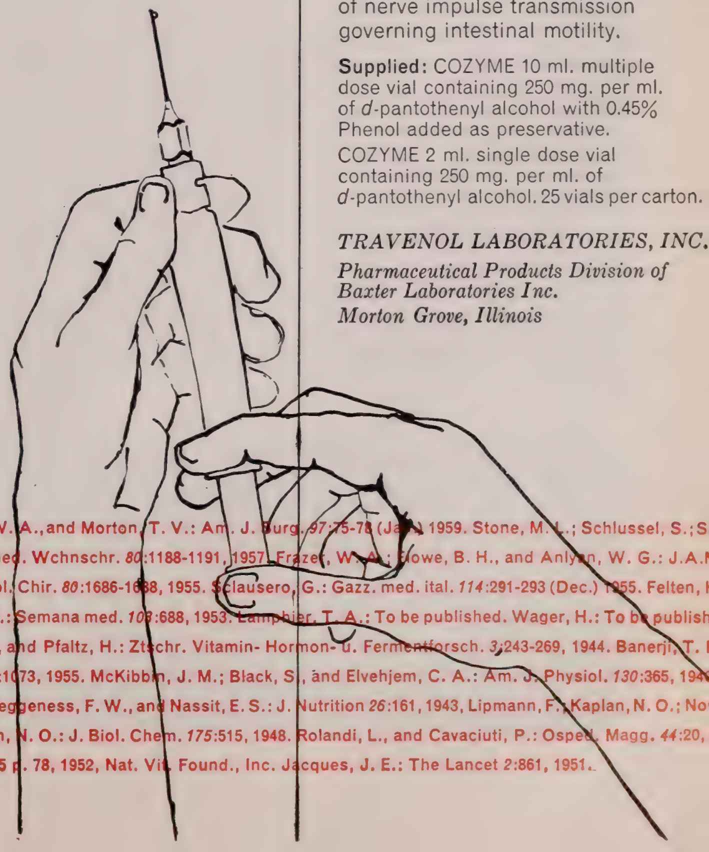

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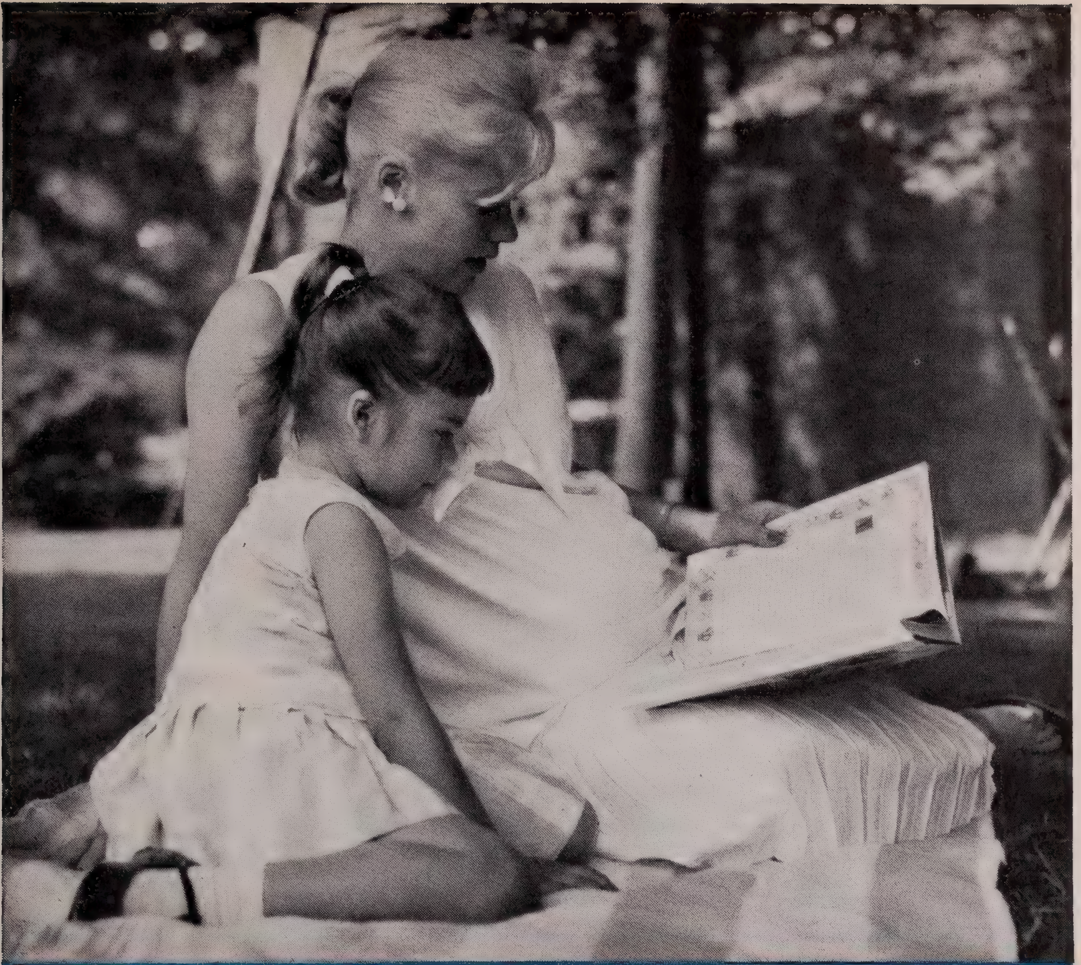

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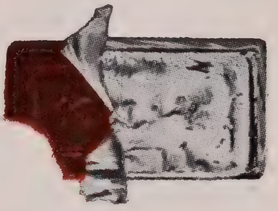

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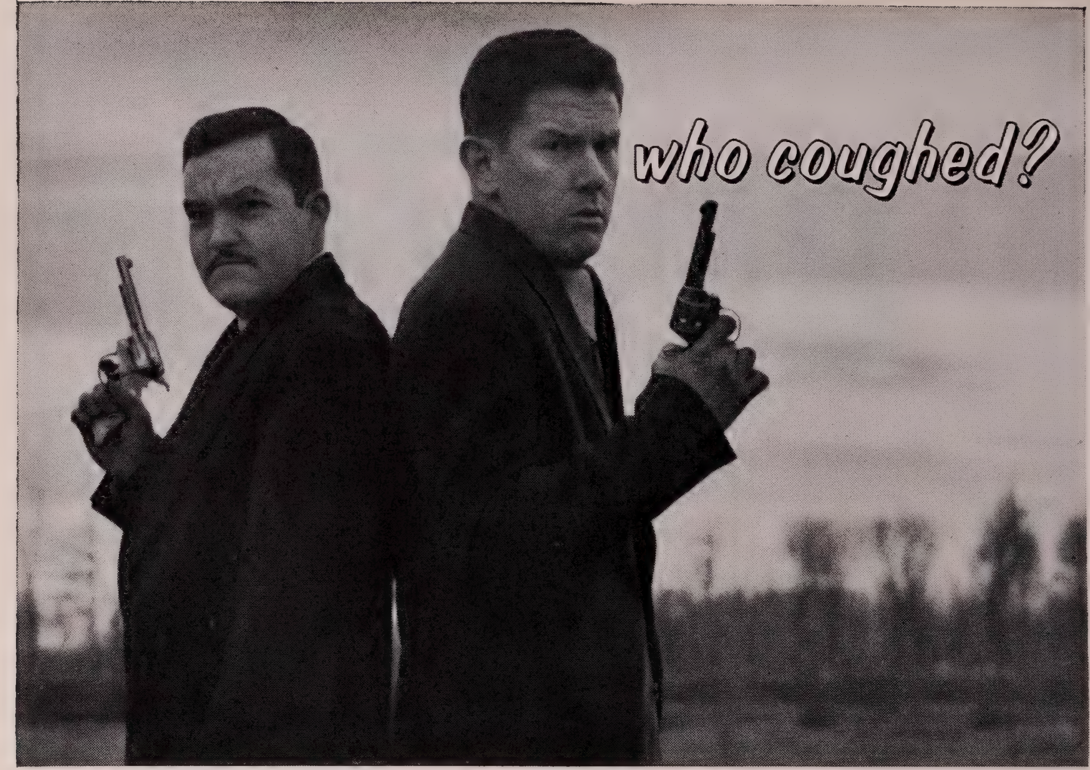
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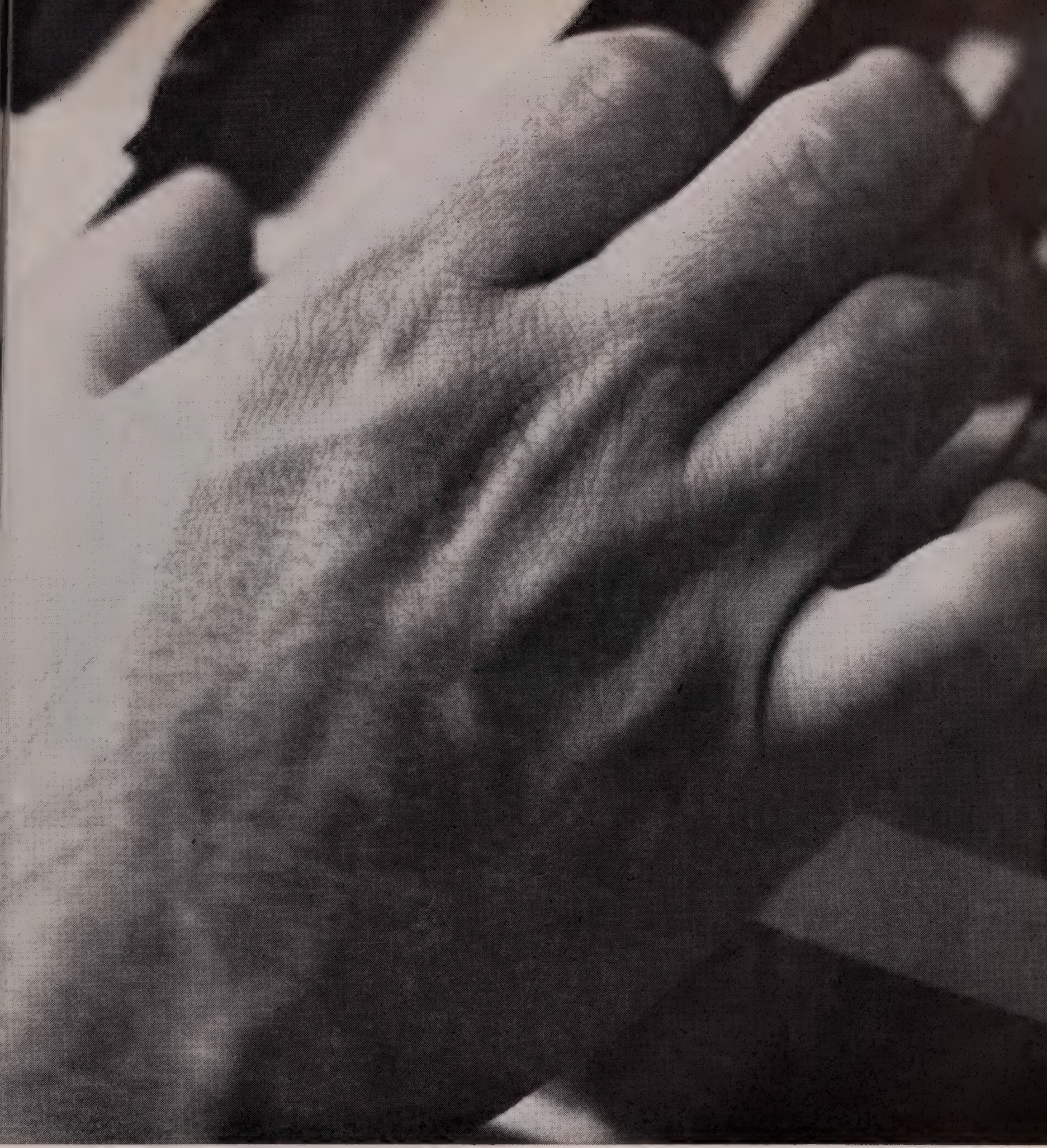

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ch, E. J.: J. Internat. Coll. Surgeons **31**:165, 1959.

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am, W.: Canad. M.A.J. **79**:634, (Oct. 15) 1958.

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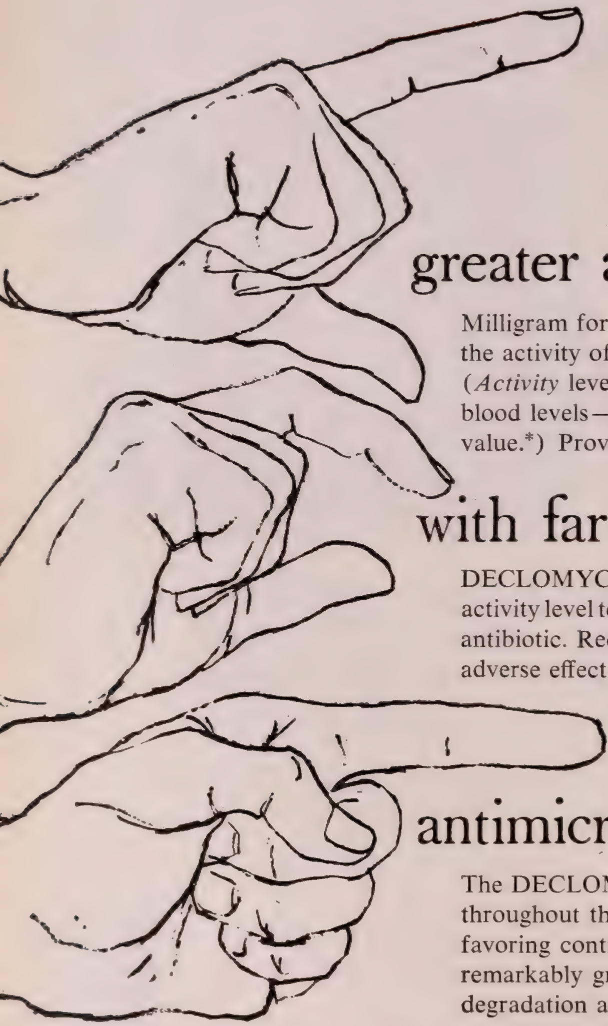

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*Hirsch, H. A., and Finland, M.: *New England J. Med.* 260:1099 (May 28) 1959.

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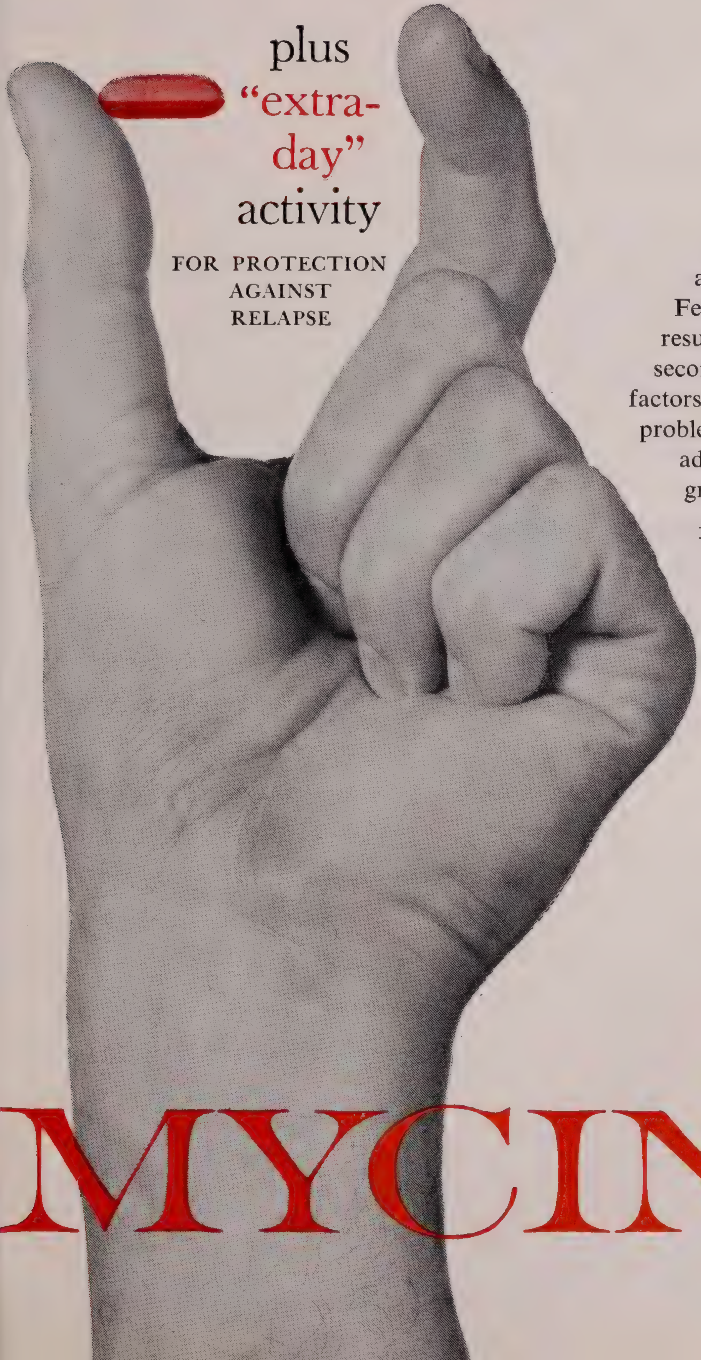

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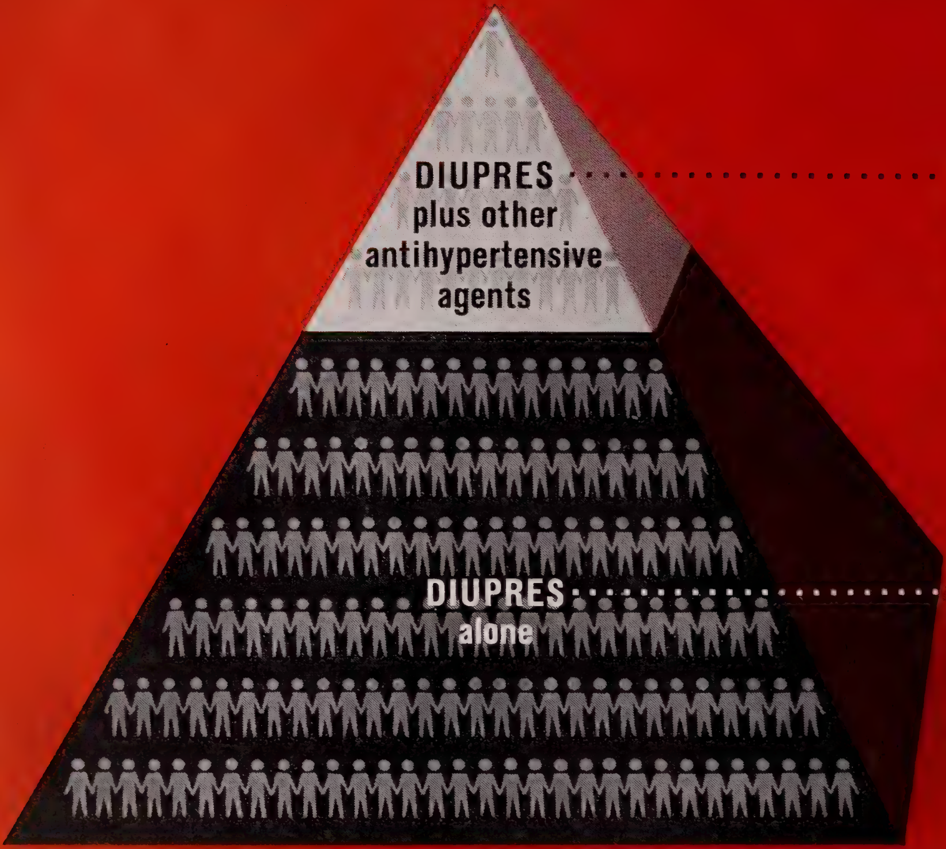
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1. Jones, E. H.: Eye, Ear, Nose & Throat Month. *38*:460, 1959. 2. Lockwood, J. H.: Bull. A. Mil. Dermatologists *4*:2, 1955.

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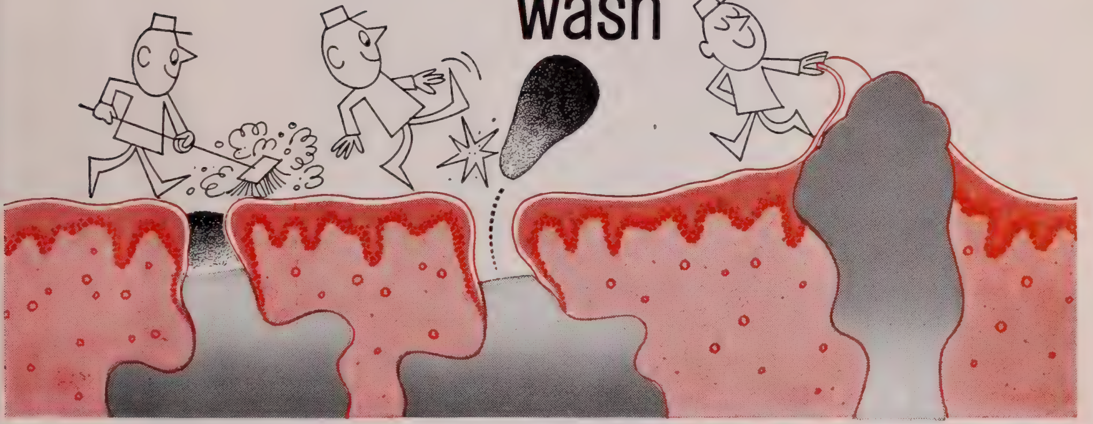

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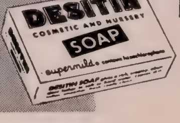

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1. Bleiberg, J.: J. Med. Soc. New Jersey, Aug. 1957.
2. Weissberg, G.: Clinical Medicine, Feb. 1958.

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Both forms taste GOOD.

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*1. Bickerman, H. A.: *In* Drugs of Choice 1958-1959, ed. by W. Modell, Mosby, St. Louis, 1958, p. 562

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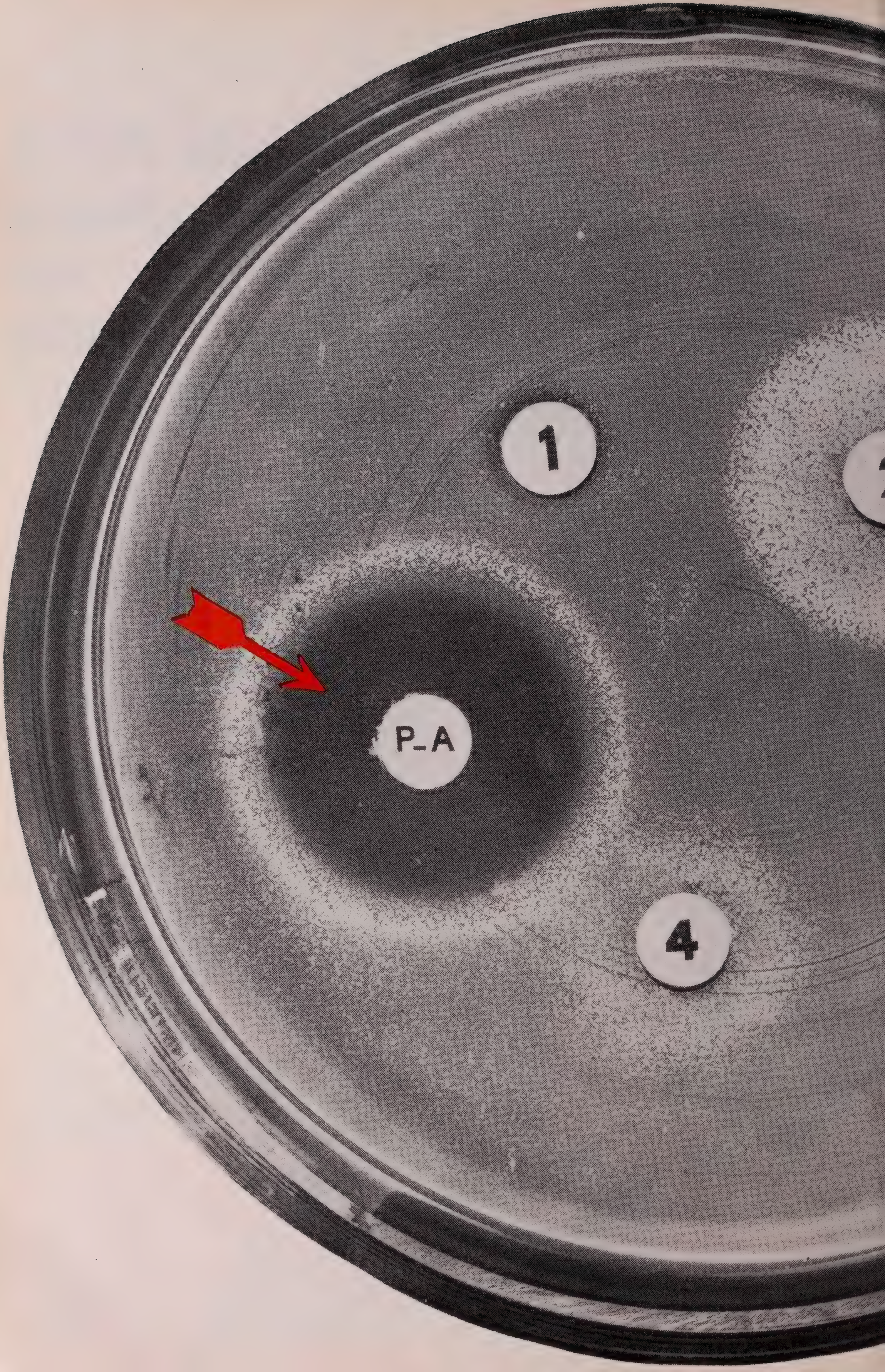
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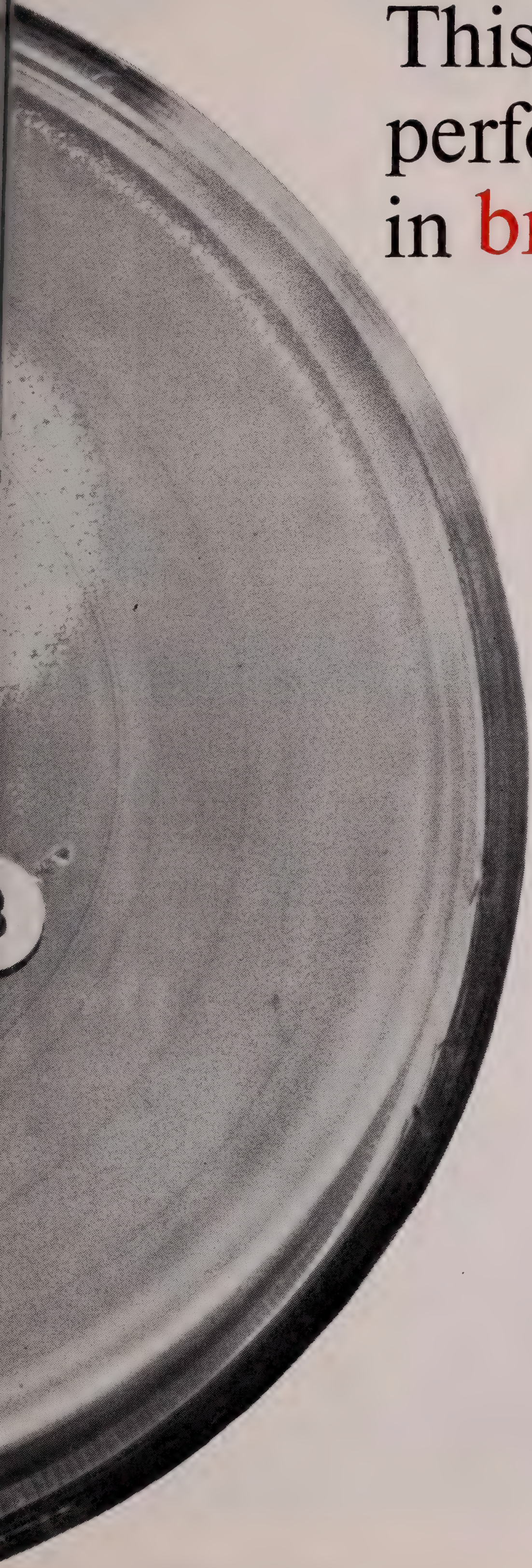

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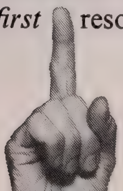

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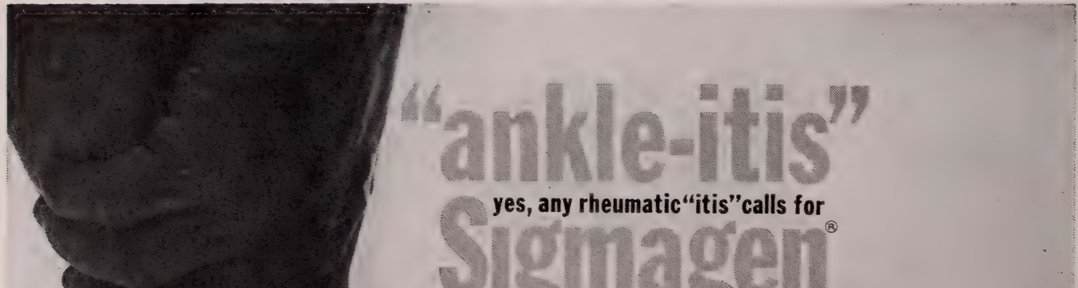
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Source: Skilboe, B.: Am. J. Clin. Path. *30*:252, 1958.

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(1) Beckman, H.: Drugs: Their Nature, Action and Use, Philadelphia, W. B. Saunders Company, 1958, p. 425.
(2) Biliary Tract Diseases, M. Times *85*:1081, 1957.

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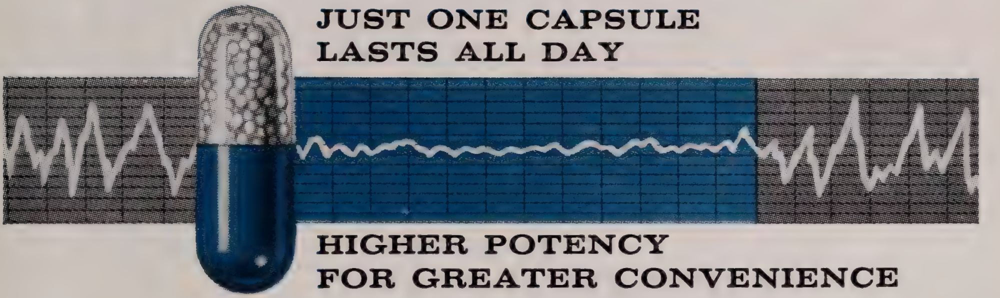

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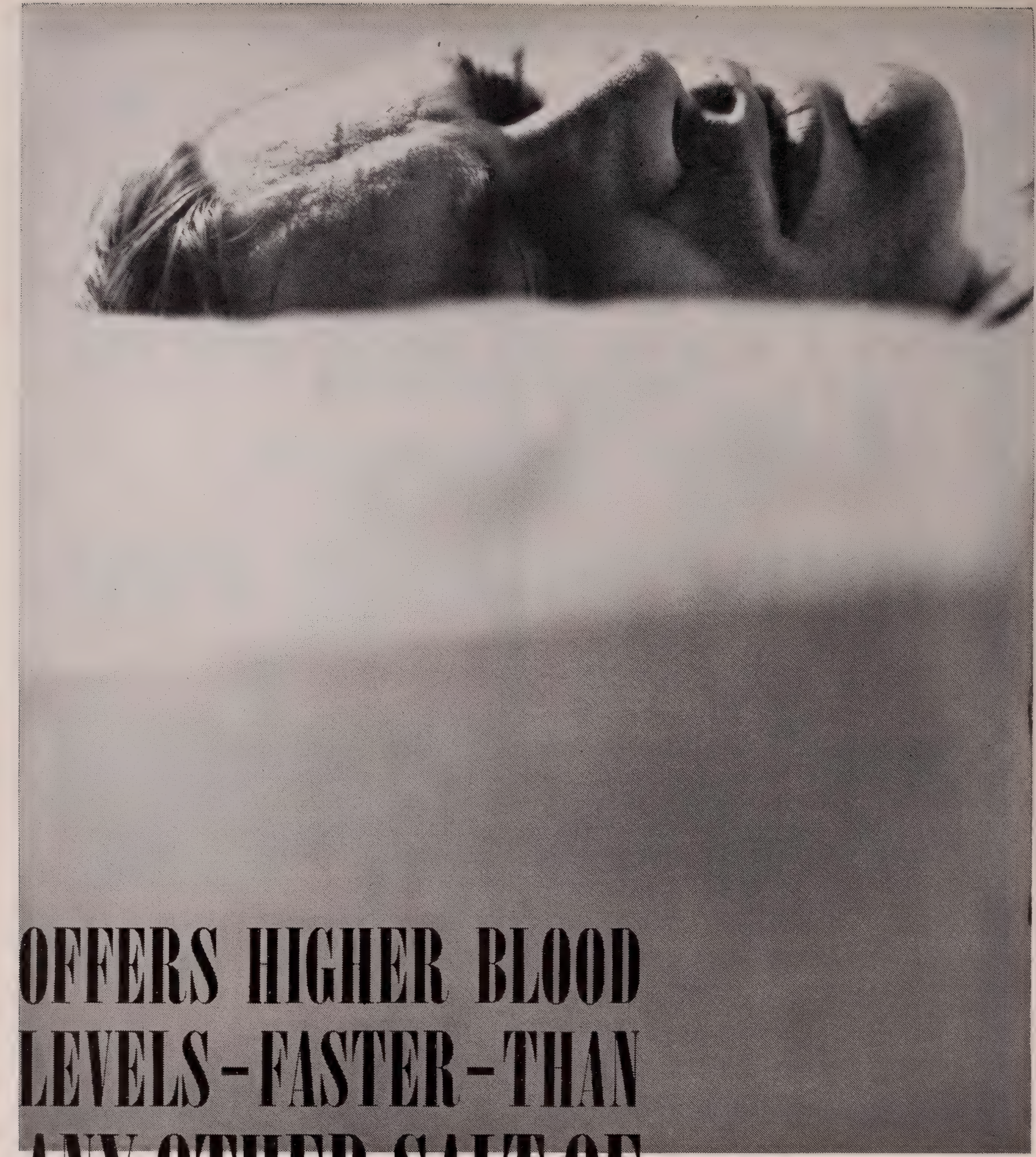

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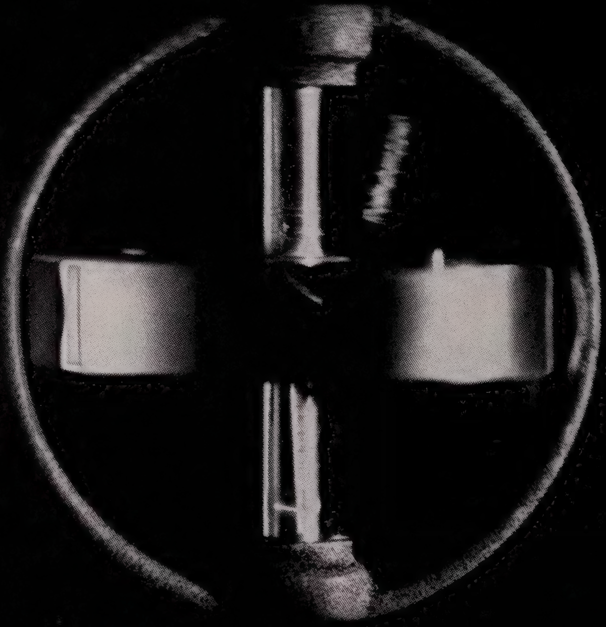

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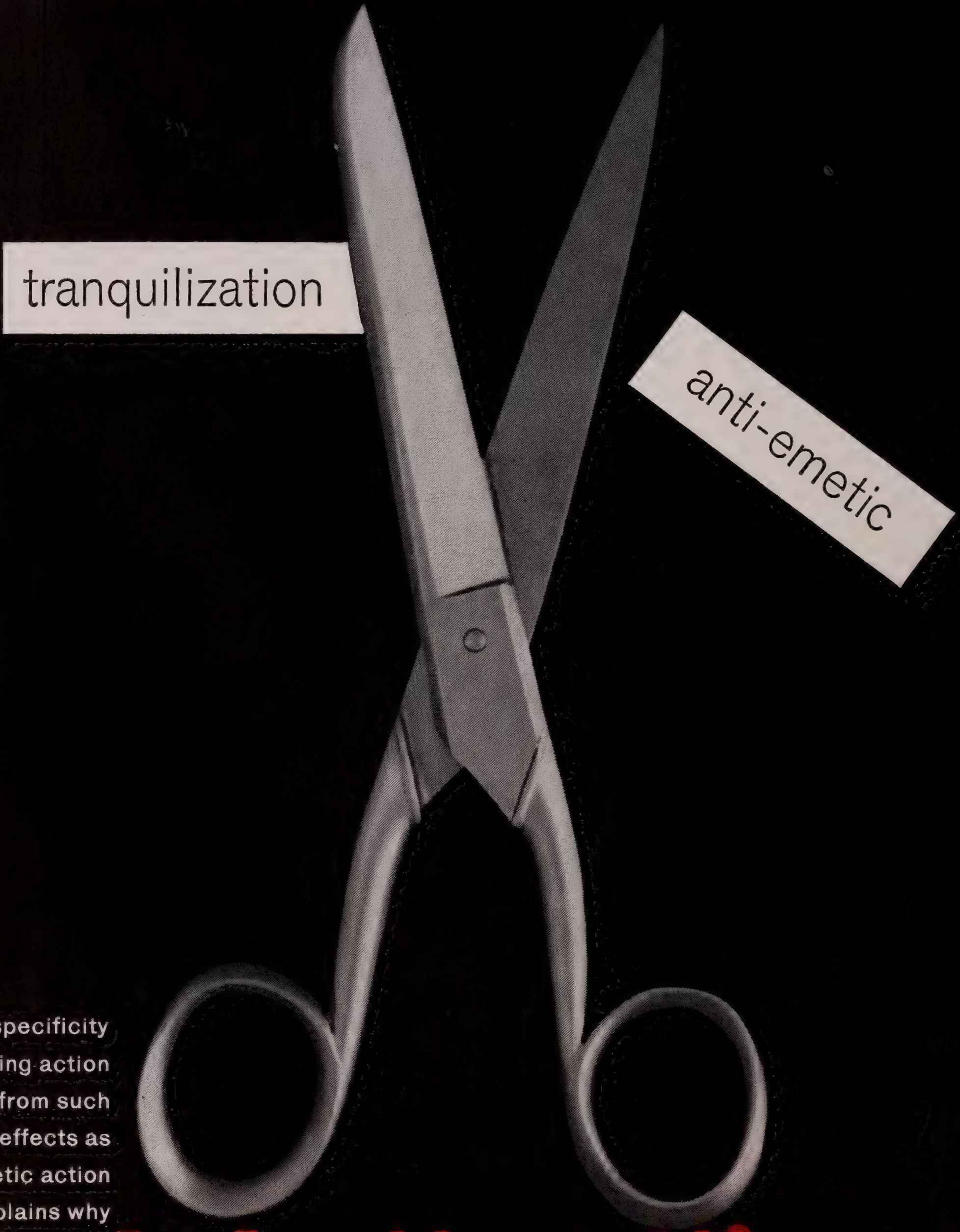

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of tranquilizing action
—divorced from such
"diffuse" effects as
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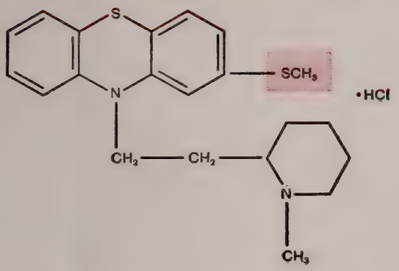
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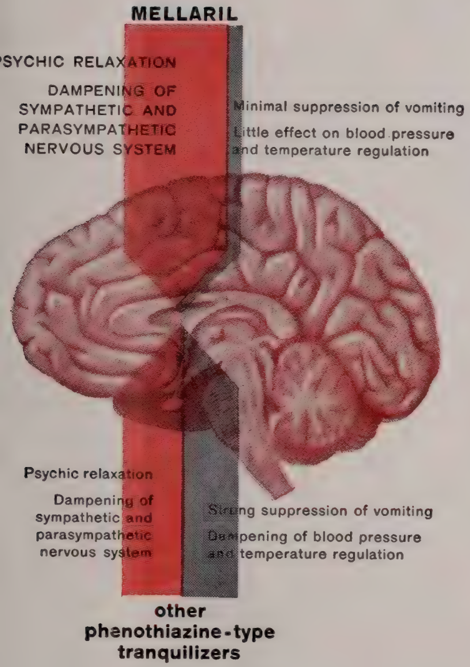
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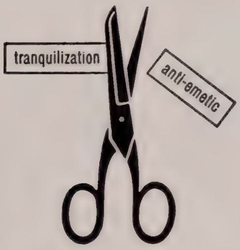
Minimal suppression of vomiting
Little effect on blood pressure and temperature regulation
Psychic relaxation
Dampening of sympathetic and parasympathetic nervous system
Strong suppression of vomiting
Dampening of blood pressure and temperature regulation
other phenothiazine-type tranquilizers


tranquilization
anti-emetic

2 Less "spill-over" action to other brain areas – hence, absence of undue sedation, drowsiness or autonomic nervous system disturbances.

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Indication	Usual Starting Dose	Total Daily Dosage Range
ADULTS: Mental and Emotional Disturbances:		
MILD—where anxiety, apprehension and tension are present	10 mg. t.i.d.	20-60 mg.
MODERATE—where agitation exists in psychoneuroses, alcoholism, intractable pain, senility, etc.	25 mg. t.i.d.	50-200 mg.
SEVERE—in agitated psychotic states as schizophrenia, manic depressive, toxic psychoses, etc.:		
Ambulatory	100 mg. t.i.d.	200-400 mg.
Hospitalized	100 mg. t.i.d.	200-800 mg.
CHILDREN: BEHAVIOR PROBLEMS IN CHILDREN	10 mg. t.i.d.	20-40 mg.

ellaril Tablets, 10 mg., 25 mg., 100 mg.

stfeld, A. M.: Scientific Exhibit, American Academy
f General Practice, San Francisco, April 6-9, 1959

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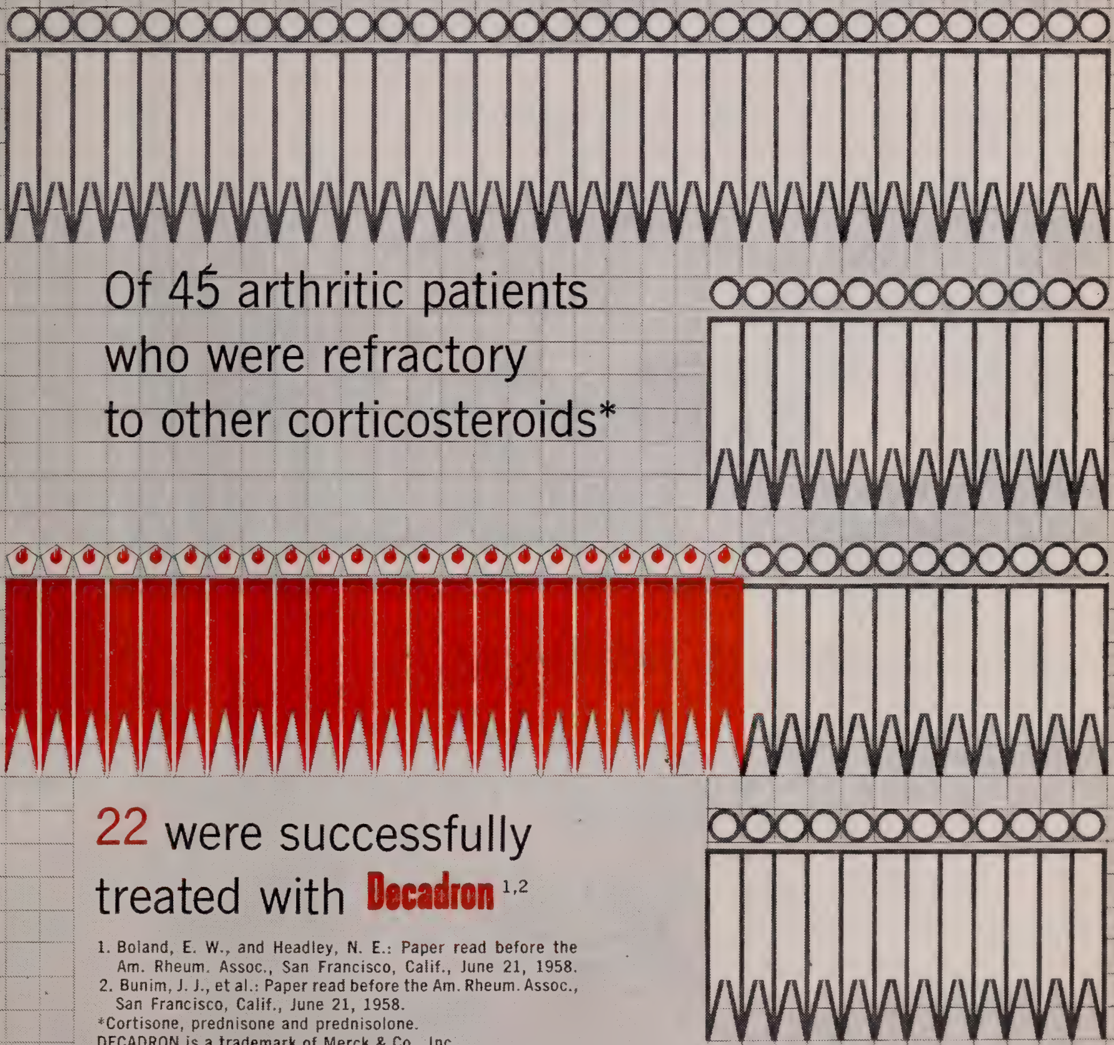

Of 45 arthritic patients who were refractory to other corticosteroids*

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1. Boland, E. W., and Headley, N. E.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.
2. Bunim, J. J., et al.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

*Cortisone, prednisone and prednisolone.

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EDITORIALS

Conflicting Medical Evidence

A very recent decision of an appellate court in New York which reversed a judgment of a lower trial court points up the difficulties which face the courts today because of conflicting medical evidence offered by the opposing parties in a law suit.

A defendant life insurance company appealed from a jury verdict awarding $14,322.60 in an action founded on a claim for double indemnity under two life insurance policies. The double indemnity clause was the usual one and provided for payment on that basis should death result solely from accidental means "directly, and independently of all other causes." Thus if illness or disease contributed in any way to death there could be no recovery under the accident clause.

The deceased, a Chicago businessman, just short of fifty-four years of age at the time of his death, had been suffering from stomach distress and so-called heartburn for some time prior to his application for insurance. He was being treated by his family doctor for what was thought to be a duodenal ulcer, but he did not disclose this medical history when applying for the life insurance.

The deceased was active in both his business and in athletics, playing tennis in the summertime and ice skating in the wintertime. On the day of his death (December 19, 1951) he went to an ice-skating rink in Chicago. At approximately 10:30 P.M. he was observed leaving the ice and proceeding on his skates across a rubber mat toward the rinkside chairs. As he was turning and about to sit on a chair he fell to the floor with his hands outstretched in front of his head. In falling, his face was injured in the vicinity of the right cheekbone. He then rolled over on his back, was unconscious, and was gasping for air. His color had turned from pale to "bluish gray." Within a few minutes he was carried to a first aid station in the rink and shortly thereafter to a nearby hospital. On arriving at the hospital a preliminary examination revealed no sign of life and after oxygen and artificial respiration had been administered for about an hour he was declared dead by a young resident physician.

The resident testified at the trial that on palpating the deceased's neck prior to the administration of the oxygen he had discovered that the larynx had dropped some 2 or 3 inches and was resting on the upper edge of the breastbone, and that he had manipulated it back into its proper position. This, he said, led him to make a note in his report that the larynx was "dislocated or avulsed," although he admitted that this was an impression rather than a diagnosis. He also testified that he found no bruises, abrasions, ecchymosis, or other marks on the deceased's neck.

Another young resident at the hospital testified that he was in the emergency room for a few minutes and saw the decedent. When asked what he had observed he said, "Well, it is a little bit hazy now; I haven't thought of it, but as nearly as I can recall he had an avulsed larynx and trachea; it was pulled loose and pushed down."

Based on the testimony of these young resident doctors, the plaintiff's first medical expert, in response to a hypothetical question which assumed an avulsing of the larynx, expressed the opinion that the cause of the deceased's death was asphyxiation. He also advanced the theory that the deceased in falling and striking his head could have sustained an injury to the carotid sinus process, thus paralyzing the heart and causing death.

The plaintiff's second medical witness offered another theory, stating that in the case of a person who had a "pipe stem coronary with occlusion," a fall such as the one sustained by the decedent could result in a drop in blood pressure which would "compromise his coronary circulation" and could result in death.

In substance, therefore, while the plaintiff's medical testimony was that the deceased died of asphyxiation caused by an avulsion of the larynx, it also indicated that death could result from an injury to the carotid sinus process or a drop in blood pressure although the witnesses did not say that the latter two theories did cause the death. They merely stated that those were things that could cause death.

The defendant's contention was that the death was caused by heart disease, culminating in coronary occlusion. To support this argument, the official report of autopsy was introduced and received in evidence. The coroner's physician stated in the report that in his opinion the death was due to coronary occlusion. In the specific findings the report contained a notation of an abrasion over the right cheek and right eye. There was no evidence of any other injury or trauma. With respect to the heart there was "marked arteriosclerosis with pipe stem coronary with occlusions." The coroner's physician amplified his findings in his testimony and stated that he had made a complete autopsy examination; that he found no marks, abrasions, or bruises on the surface of the skin of the neck; that the condition of the larynx was normal and there was no evidence of trauma; and that there was no hemorrhage or indication that any of the vessels connected with the larynx had been torn.

One of the leading pathologists in the City of New York, an internationally recognized expert in legal medicine and toxicology, testified for the defense. He expressed the definite and unequivocal opinion that the deceased died of "occlusive coronary arteriosclerosis." In answer to a question as to whether, on the facts detailed, the deceased could have suffered an avulsion of the larynx, he stated: "I would say that that is impossible. I would say categorically that a fall of the type you mentioned could not produce an avulsion of the larynx under any circumstances." He was quite emphatic in his view that in order for there to be an avulsion of the larynx there would have to be a blow or injury so severe as to sever the larynx and pull it down into the neck and that any such injury would be clearly evident.

In addition the coroner's physician had testified that the autopsy revealed no evidence of tearing or severance of the larynx, nor was there any mark on the surface of the neck skin which would indicate any blow or injury to that area. The Court noted that the plaintiff's witness, the first resident physician, also had found no marks of any kind on the neck of the deceased.

The Appellate Court, while acknowledging that it was proper for the jury to determine the cause of death, felt compelled to reverse the judgment of the trial court for the plaintiff and to order a new trial. It felt that it was an error for the trial judge to place squarely before the jury the three different theories advanced by the plaintiff to support the claim of accidental death, thereby permitting the jury to find that death might have been caused by (1) avulsion of the larynx, (2) injury to the carotid sinus process, or (3) a sudden drop in blood pressure. The Appellate Court noted that although the defense had requested that the jury be instructed to bring in special findings as to the cause of death, such a request was refused by the trial judge. The jury had found for the plaintiff but there was no way of knowing on what theory.

The Appellate Court went on to say that there was no evidence whatsoever to support a finding that death was caused by either of the latter two theories offered by the plaintiff. Those speculative theories should not have been submitted to the jury at all and since there was a possibility that the jury may have based their verdict on either of those theories, the verdict for the plaintiff had to be set aside.

It also felt that the judgment had to be reversed even if the jury based its verdict on the theory that the deceased died because of an avulsed larynx. The Court said that it considered "such a finding to be clearly against the weight of the credible evidence. It would seem to completely disregard the strong, and indeed conclusive evidence, that the deceased had a serious heart condition which, if it was not the direct cause of death, at least might have been a contributing factor." The deceased's medical history, the details of his sudden collapse with quickly ensuing death, the autopsy finding of marked arteriosclerosis and coronary occlusion, all pointed with certainty to the fact that the deceased had a bad heart condition which must have played some part in his sudden death.

The Court ruled that the uncertain and unconvincing testimony of the two young residents with respect to an avulsed larynx fell far short of the proof necessary to support a finding of death resulting solely from accident; this especially in the face of the positive testimony of the defendant's medical expert that in the circumstances of the case there could not have been an avulsion.

(*Le Glaire* vs. *New York Life Insurance Company, Appellate Division, First Department, June 2, 1959.*)

Medical Assistants Association

On September 11, 1959, a new project was initiated by the Medical Society of the State of New York. The first State-wide association of physicians' assistants in New York came into being with the organization of the New York State Medical Assistants Association. The organizational meeting took place at the headquarters of the Medical Society of the State of New York, 750 Third Avenue, New York City, the new association's sponsor.

The purpose of the New York State Medical Assistants Association is to federate into one organization all the county medical assistants associations in New York, and through this federation help county associations advance the education of their members and allow them opportunities to meet together socially.

Representing the Medical Society at the meeting were John C. McClintock, M.D., of Albany, chairman of the Council Committee on Public Relations; and Herbert T. Wagner, M.D., Executive Director. Thirty representatives of county medical assistants associations throughout the State attended. The county associations are sponsored by county medical societies.

The following county assistants groups were represented: Albany, Broome, Columbia, Dutchess, Erie, Nassau, Orange, and Onondaga. Present as observers were representatives from the following counties: Bronx, Chemung, Kings, New York, Oneida, Queens, Rockland, Suffolk, and Westchester.

This organization seems to be a step in the right direction. Such a federation should promote better and more uniform standards of procedure in physicians' offices throughout the State. In these days of increasing complexity of relationships between the doctors and various paramedical, insurance, and governmental agencies, the physician's assistant can and does relieve him of many procedural burdens.

It is hoped that this new organization will be successful and provide yet another channel of improved communication.

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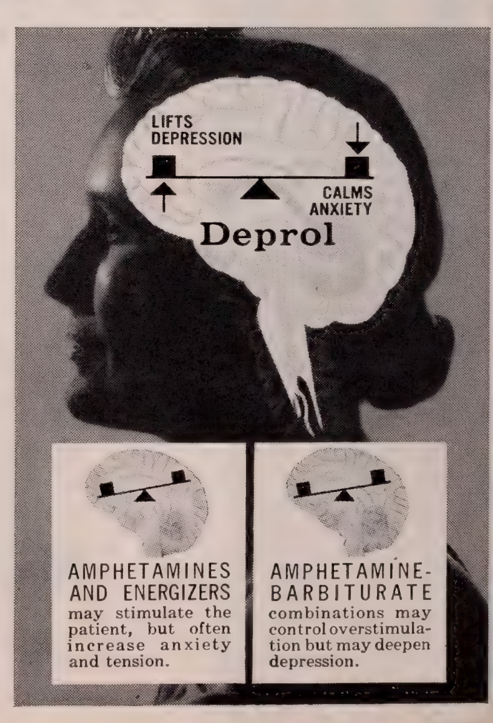

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SCIENTIFIC ARTICLES

Congenital Aortic Stenosis: Diagnosis and Surgical Treatment

IVAN D. BARONOFSKY, M.D., LEONARD STEINFELD, M.D., ISADORE KREEL, M.D., ALVIN J. GORDON, M.D., AND ARTHUR GRISHMAN, M.D., NEW YORK CITY

(From the Departments of Surgery, Pediatrics, and Medicine, Mount Sinai Hospital)

SURGERY for congenital aortic stenosis did not evoke high interest until the advent of hypothermia and extracorporeal circulation. The senior author recalls having operated on a case of congenital aortic stenosis in 1953 using a transventricular approach. Unfortunately at that time the anatomy of congenital aortic stenosis was not too clearly understood, and although a technic similar to that which had been used up to that time on the pulmonary valve was used on the aortic valve, it was obvious that mere dilatation of the fibrous aortic diaphragm is not enough.

Our interest in the surgical treatment of this lesion has existed for a long while. In 1956, at the United States Naval Hospital in San Diego, we operated on 2 patients with congenital aortic stenosis by using hypothermia. These 2 cases emphasized the fact to us that although this operation could be accomplished with hypothermia, extracorporeal circulation, which would allow for more time, would be a much better method.

Our interest in the field has continued and has been heightened because instances of sudden death of children with few preceding symptoms or signs other than electrocardiographic abnormalities and because certain cases of adult calcific stenosis which we are convinced were originally congenital have come to our attention.

Findings

CLINICAL.—*Pressure Gradients.*—Although in most cases there is a high correlation between objective and subjective symptomatology and electrocardiographic findings, it is best to verify these by means of pressure tracings on the left side of the heart. We recently have been taking pressures routinely on the left side of the heart by means of a direct puncture of the left ventricle (Fig. 1A), a technic which has been very well described by Brock *et al.*[1] When accomplished simultaneously with a brachial artery pressure tracing, it gives additional information. There always is the question of what to do with the individual with a diagnosis of aortic stenosis who has little symptomatology and only moderate changes on the electrocardiogram. It is our feeling at this time that if there is a pressure gradient between the left ventricle and the aorta of about 50 ml. Hg, symptoms in all probability will develop and surgery is indicated. The gradients that are obtained by means of this percutaneous puncture of the left ventricle correlate well with those obtained directly at surgery (Fig. 1B). Certainly at surgery these pressures should

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Supported in part by a grant from the National Heart Institute, #HTS-5206, United Public Health Service.

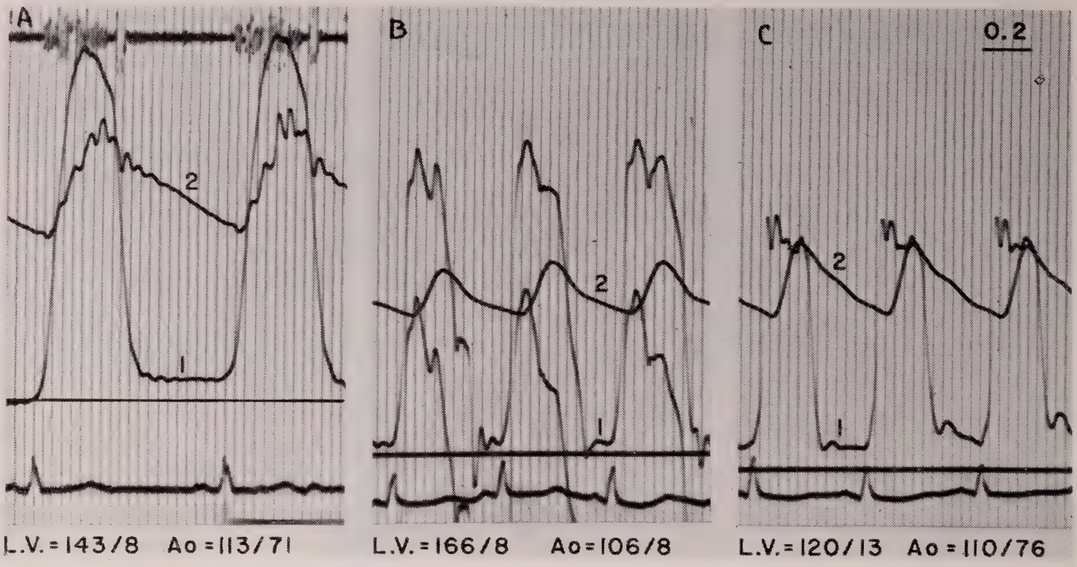

FIG. 1. *Case 4.*—(*A*) Direct left ventricular puncture revealing gradient of about 40 ml. Hg between the left ventricle (1) and brachial artery (2). (*B*) Prevalvulotomy tracings revealing a gradient of 60 ml. Hg. (*C*) Postvalvulotomy tracings showing almost complete disappearance of gradient.

be obtained both before and after the valve has been cut (Fig. 1C).

After some initial experience with direct percutaneous left ventricular puncture, we feel that it is simpler and safer than other more widely employed technics of left-sided heart catheterization. Although we believe that percutaneous left ventricular puncture is useful in the assessment of the severity of aortic stenosis, the aortic gradient may be surprisingly low in the presence of a concomitant stenosis of the mitral valve. In the presence of mitral stenosis the stroke output is so low that only a relatively small gradient need be maintained across the aortic valve.

Angiocardiographic. — Angiocardiography is not necessary for the diagnosis of this condition. Were this procedure indicated, however, we would prefer to do it with a direct percutaneous left ventricular puncture and injection of dye into the ventricle. Angiocardiography might be of some use in the distinguishing of a true valvular stenosis from a subvalvular stenosis but this distinction may not be necessary since the treatment of both lesions is similar.

Phonocardiographic.—The murmur of aortic stenosis has a characteristic configuration when recorded on the phonocardiogram, referred to as "diamond-shaped" (Figs. 2A and 3). It disappears following successful valvulotomy (Fig. 2B). Leatham[2] noted this diamond-shaped cardiographic sound in all of his cases.

Blood Pressure.—The blood pressure in aortic stenosis of the congenital variety may be variable. In the majority of cases the blood pressure readings and pulse readings are within normal limits. In a few instances the systolic pressure gives a low normal reading and there is a low pulse pressure.

Electrocardiographic.—The electrocardiogram offers valuable information for determining the severity of the obstruction. When left ventricular hypertrophy is considered to be present by electrocardiography, it is a reliable sign of the severity of the aortic obstruction. The electrocardiogram is particularly valuable in the patient with no symptoms and a heart that is within normal limits in regard to over-all size. Severe stenosis and hypertrophy of the left ven-

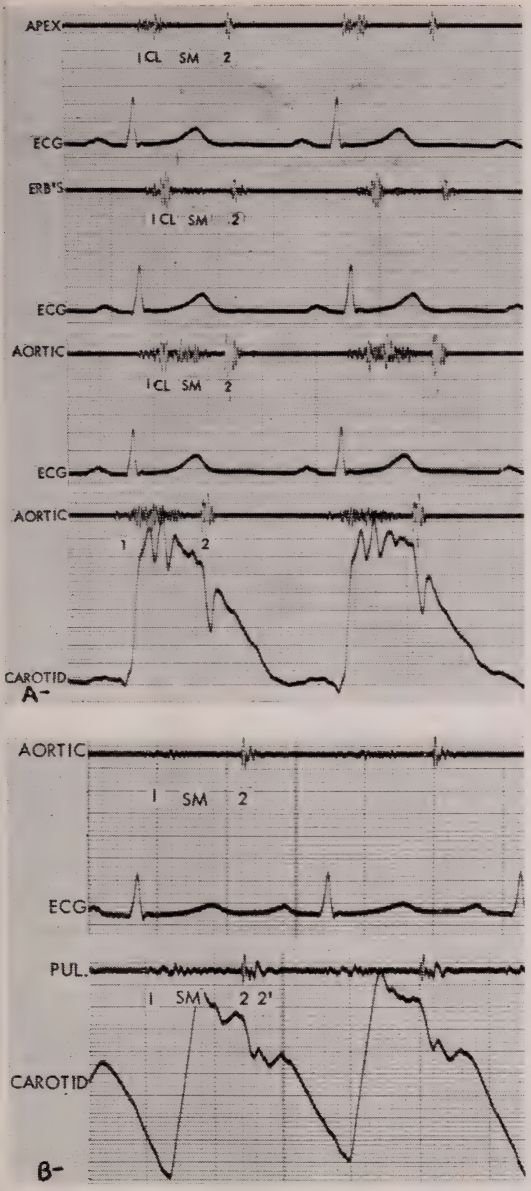

FIG. 2. (*A*) Preoperative phonocardiogram of patient with congenital aortic stenosis of the bicuspid valve. A prominent "diamond-shaped" systolic click is recorded over the apex, Erb's area, and the aortic area; it is best recorded over the aortic area (it does not extend up to the second sound). The carotid pulse tracing shows a systolic plateau and systolic vibrations. (*B*) Postoperative phonocardiogram showing only a negligible systolic murmur over the aortic area. The carotid pulse contour is essentially normal.

tricle may be present yet reflected only by the electrocardiogram. The left ventricular hypertrophy pattern may be progressive over a number of years as the patient is studied.

Varying degrees of S-T depression and flattening or inversion of the T waves over the left precordial leads is present in this disease. The degree of S-T depression and T-wave changes usually is least in the patient in whom the systolic gradient is small (under 50). It is most marked in patients in whom the systolic gradient exceeds 100. The electrocardiogram in infants under one year of age with this disease is variable; tracings may be recorded with right hypertrophy, right and left hypertrophy, or normal characteristics.

Radiologic.—Roentgenography and fluoroscopy show moderate left ventricular enlargement in most cases. In the late cases, of course, great cardiomegaly is observed. Poststenotic dilatation of the aorta is not immediately recognizable in a great percentage of the cases, and its absence, therefore, does not rule out the diagnosis of aortic stenosis. Calcification in the aortic valve is not present in most cases of childhood aortic stenosis. However, it is our conviction that as this disease progresses into adulthood, calcification may be present and does not necessarily mean that there is rheumatic activity.

PHYSICAL.—A very significant physical finding is a loud harsh systolic murmur heard clearly at the base of the heart and usually of maximum intensity in the first or second right intercostal spaces and transmitted into the neck vessels. As stated before, the pulse or pulse pressure is not particularly indicative of aortic stenosis; however, a direct brachial artery tracing may show a slow upswing characteristic of the disease. It has been stated that the body habitus of patients with aortic stenosis is characteristic but this has not been verified.

Symptomatology

Aortic stenosis in an infant under one year of age may give no signs whatsoever. However, the majority of babies who die

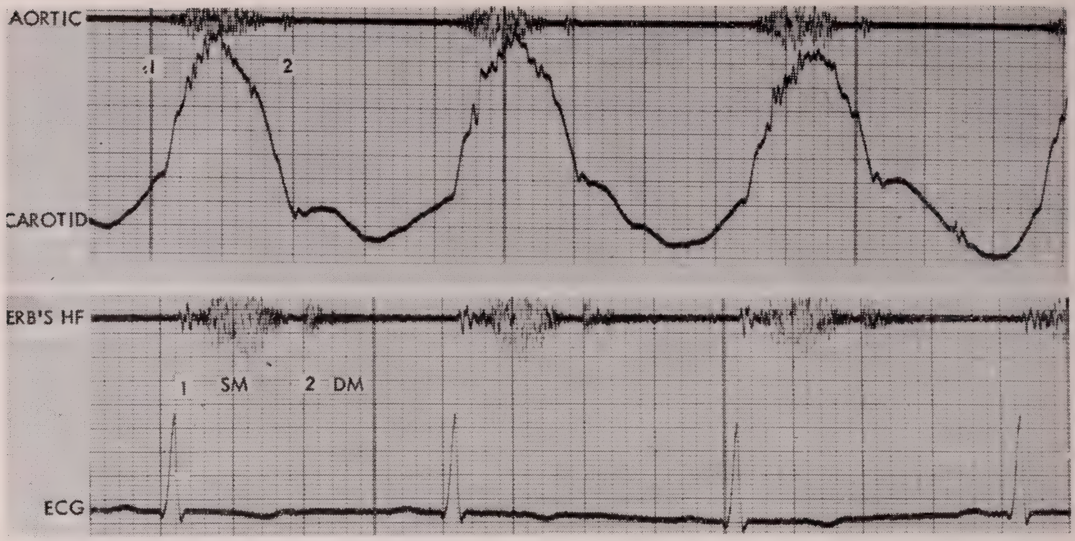

FIG. 3. Phonocardiogram of patient with supravalvular congenital aortic stenosis revealing a "diamond-shaped" systolic murmur over Erb's area. A very high-pitched decrescendo diastolic murmur is also recorded over Erb's area. The carotid pulse tracing shows an anacrotic notch, a delayed rise, systolic vibrations, and a delayed incisura.

have had intermittent dyspnea and cyanosis. Relatively severe obstructions may exist without any symptoms whatsoever. Dizzy spells and bouts of syncope are ominous symptoms and may presage sudden death. On the other hand, it is wise to remember that sudden death may occur without any symptoms whatsoever.

As the disease progresses and the age advances, dyspnea may become exertional and occasional anginal pains even may result. Fatigue is typical in the older age bracket. Congestive failure is uncommon but does occur occasionally. Anginal pain is to be considered a severe symptom since it is of definite import prognostically.

Indications for Surgery

The majority of children who survive infancy with this disease, whose hearts are not grossly enlarged, and who do not have any symptoms have an excellent prognosis. Approximately 15 per cent of adults with this defect have had their lives terminated by sudden death.[3] When patients have symptoms of fatigue, dyspnea, dizziness, and/or chest pain in association with progressive electrocardiographic changes of left ventricular hypertrophy or strain, operation is indicated. The life span will probably be shortest in these cases.

When symptoms are not so severe but severe electrocardiographic changes exist, in all probability there is a marked gradient across the valve and therefore the patient should be operated on. Symptomatology may be masked by enforced limitation of effort by the parents; that is why we have arbitrarily stated that all patients with aortic stenosis should have a left ventricular puncture. If there are no other valvular diseases and there is a gradient of 50 ml. or more across the aortic valve, this is an indication for surgery since the disease will progress. We have not operated on patients with a lesser pressure gradient if symptoms and mitral stenosis were not present. The presence or absence of calcification or the presence or absence of subvalvular stenosis are neither indications nor contraindications for surgery.

Surgical Treatment

CHOICE OF METHOD.—Surgical considerations for the treatment of congenital aortic stenosis are entirely different than those for the acquired form of the disease. The pathologic condition is such that the valve is composed of a membrane with fused commissures of fibrous material. Dilatation, first proposed by Brock[4] in 1948 for the acquired type of this disease, is insufficient in the great majority of congenital cases; the aortic valve diaphragm merely rebounds around the dilator. After some initial experience with hypothermia, the senior author is convinced that the direct approach is the best one surgically. Because of the time limitations with pure hypothermia,[5,6] it also is felt that the pump oxygenator is the procedure of choice. Combinations of both hypothermia and the pump oxygenator, of course, are ideal and are currently being used. As early as 1954 Clowes and Neville[7] used a pump oxygenator for the direct approach to the aortic valve. Since the aorta above the valves must be crossclamped in order for the valves to be approached, various methods for supplying cardiac nourishment during this clamping have been suggested. With the use of cardiac arrest this is not necessary because of the relative shortness of the time required to perform the surgery.

Technic.—The pump oxygenator can be used only by means of a team effort.[8,9] The type of pump oxygenator depends entirely on the preference of the director of the team. The patient is anesthetized in the usual way, with preference given to anesthetics with a high oxygen content. An electroencephalogram is of great value to a pump oxygenator team since it records early changes of decreased oxygenation to the brain. A longitudinal sternal splitting incision, as first suggested by Julian *et al.*,[10] is the incision of choice by most. We deviate somewhat in that we use this incision in males and a submammary bilateral intercostal one in females, a distinction prompted primarily by cosmetic considerations.

The chest is opened and the aorta encircled with tapes, either with or without the pulmonary artery. The fat at the base of the aorta is carefully dissected and removed so that the right coronary artery is clearly distinguished. The superior and inferior venae cavae are dissected and encircled with tapes. The cavae are then catheterized and the patient placed on the pump oxygenator completely. It is best to catheterize the left atrium in order to prevent overdistention of the left side of the heart when the clamps on the aorta are removed.

When the patient has been stabilized on the pump, clamps are placed across the aorta in such a manner that there is adequate space to work through the aortic wall in order to visualize the aortic cusps. The heart is then arrested, either with acetylcholine or potassium citrate. The aortic wall is opened and the aortic valve visualized carefully. If the stenosis is valvular, the commissures are carefully incised but not all the way to the aortic wall. All the commissures that are present should be incised unless the valve is bivalvular. A finger is then inserted to ascertain if subvalvular stenosis is present. If it is, excision of the stenotic area must also be done. Care should be exercised in removing the subvalvular stenosis so that the aortic leaf of the mitral valve is not injured. The heart is now allowed to fill with blood, as is the aorta, by decreasing the intracardiac suction. When all the trapped air is removed, the aortic wall is sewn up quickly.

The clamp across the aorta must now be removed very slowly, since the heart is still in an arrested condition and will dilate greatly owing to the regurgitation of blood through the aortic valve. As the potassium citrate or acetylcholine is washed out, the heart slowly takes over its work. In the event that this does not occur and fibrillation intervenes, electric shock easily will restore normal rhythm to the heart. Occasionally, Isuprel, injected either into the pump or directly into the aorta, has to be used. When stabilization is again present, the catheters are removed and the patient's heart allowed to take over the pumping mechanism. After ascertaining that there are no bleeding points and after giving protamine sulfate to counteract the heparinization, the chest is closed with drainage. It is suggested that pressures be taken before and after the valvotomy in order to estimate the decrease in the pressure gradient.

Postoperative Management.—Postoperatively a special team is necessary to direct management. Much attention to bronchial toiletry, pH, blood volume, and bleeding and clotting times must be given. Constant vigilance is mandatory for success in this type of surgery.

Case Reports

Case 1.—A ten-year-old white male was admitted to Mount Sinai Hospital with a diagnosis of congenital aortic stenosis. A cardiac murmur was first discovered at eighteen months of age. The patient otherwise had been asymptomatic until two years prior to admission, when he began to develop mild exertional dyspnea and frontal headaches. Four weeks and two weeks prior to admission the patient had suffered attacks of paroxysmal nocturnal dyspnea.

Physical Findings.—Physical examination revealed a well-developed white male child. Significant physical findings were restricted to the cardiovascular system. The blood pressure was 104/84 and the pulse was 90 per minute with a regular sinus rhythm. The lungs were clear. There was a diffuse Grade III–IV systolic murmur, loudest at the base with diffuse radiation throughout the precordium, which was associated with a palpable systolic thrill over the precordium transmitted to the neck bilaterally. P_2 was greater than A_2. There was no clinical evidence of cardiomegaly.

Clinical Findings.—The electrocardiogram was within normal limits. X-ray examination revealed the heart to be enlarged to the left in its transverse diameter. No deviation of the barium-filled esophagus was demonstrated. The ascending aorta was somewhat wide and the aortic arch prominent. Urinalysis findings were negative. The hemoglobin was 13 Gm. per 100 ml. and the white cell count was 7,700. Preoperative electrolyte studies gave normal results. The preoperative coagulation profile was entirely within normal limits.

Operation.—On January 14, 1958, the patient underwent surgical correction of his congenital aortic stenosis. The DeWall-type bubble oxygenator was utilized. After induction of anesthesia the chest was opened by means of a median sternotomy incision. After the pericardium was opened, the left ventricle was noted to be somewhat enlarged and obviously hypertrophied. A harsh thrill was palpated easily in the ascending aorta beginning at the aortic valve. There was a moderate amount of poststenotic dilatation of the ascending aorta. The venae cavae and femoral artery were cannulated after heparinization of the patient (1.5 mg. heparin per kilogram of body weight). Cardioplegia was induced with acetylcholine injected into the root of the aorta. The ascending aorta was opened widely. The aortic valve was found to be bicuspid, with a large right-sided cusp and a relatively small left-sided cusp. The posterior commissure was open; however, there was complete fusion of the anterior commissure. The anterior commissure was opened to the annulus of the aortic valve by cutting the fused area with scissors. Following this, air was evacuated from the aorta and the aorta oversewn with 5–0 silk sutures. Following removal of the clamp from the aorta, the heart fibrillated. It was easily defibrillated with electric shock. Normal sinus rhythm ensued. The patient was allowed to take over his own circulation. The perfusion time was twenty-eight minutes, and the period of cardioplegia was twenty-one minutes.

Postoperative Course.—The patient's immediate postoperative course was complicated by the retention of thick viscous secretions, necessitating a tracheotomy and repeated bronchoscopy. The problem of tracheobronchial toilet eased considerably after the first few days, and his postoperative course was uncomplicated from this time. The only additional feature of his postoperative course was the persistence of low-grade fever for approximately two weeks following surgery, which was resolved with antibiotic therapy. The patient was discharged on the twenty-sixth postoperative day in excellent condition. He subsequently has been seen in follow-up clinics for a period of over a year. He has remained well and is completely asymptomatic. X-ray of the chest reveals no evidence of cardiomegaly. The electrocardiogram is normal. A soft Grade I systolic murmur is still heard over the aortic area. There is no evidence of a diastolic murmur.

Case 2.—A three-year-old white male was admitted to Mount Sinai Hospital on June 4, 1958, with a diagnosis of congenital aortic stenosis. A cardiac murmur had been noted at six weeks of age and had persisted until the time of admission. The child was otherwise asymptomatic and had an apparently adequate exercise tolerance.

Physical Findings.—Physical examination revealed a well-developed male child. Pertinent physical findings were restricted to the cardiovascular system. The blood pressure was 100/56 and the pulse was 120 with a normal sinus rhythm. A_2 was absent. There was a Grade IV systolic murmur, loudest over the aortic area with radiation throughout the precordium, back, and neck. Associated with this was an aortic systolic thrill, easily palpated in the entire anterior portion of the chest. Femoral pulses were present. There was no evidence of peripheral cyanosis or hepatomegaly.

Clinical Findings.—The electrocardiogram showed moderate left ventricular hypertrophy. X-ray examination of the chest showed some enlargement of the heart, predominantly to the left side. Pulmonary vascular markings were normal in appearance. The hemoglobin was 13.5 Gm. per 100 ml. and the white cell count was 5,000. Urinalysis findings were negative. A preoperative coagulation profile was normal. Serum electrolyte levels were normal. Right-sided heart catheterization was performed on June 16, 1958. This revealed no evidence of left to right shunting of blood. Right ventricle pressure was 32/6 and pulmonary artery pressure 28/13. There was no evidence of peripheral desaturation.

Operation.—On July 24, 1958, the patient had surgical correction of his congenital aortic stenosis. The DeWall-type bubble oxygenator was utilized. The chest was opened through a median sternotomy. On opening the pericardium, rather marked left ventricular hypertrophy was noted as well as poststenotic dilatation in the ascending aorta. An easily palpable thrill was felt in the ascending aorta. Pressure in the left ventricle was slightly in excess of 200 ml. with a gradient of slightly over 100 ml. across the aortic valve. The venae cavae and the femoral artery were cannulated and total body perfusion was begun. Cardioplegia was induced by the injection of acetylcholine into the root of the aorta. Anterior aortotomy was performed, revealing a bicuspid aortic valve with rather marked fusion of both commissures, the total orifice being approximately 2 ml. in diameter. Both commissures were opened by scissor dissection to a point approximately 1 ml. from the annulus of the aortic valve. Following this, air was evacuated from the aorta and left side of the heart and the aortotomy was closed with continuous 5–0 silk sutures. Total perfusion time was twenty-eight minutes, and the period of cardioplegia was twenty-one minutes. The patient sustained the operative procedure remarkably well.

Postoperative Course.—His postoperative course was unusually benign. He showed no respiratory complications. The wound healed primarily. He was afebrile throughout his postoperative course. He was discharged on the twenty-second postoperative day.

Case 3.—A twelve-year-old white boy was admitted to Mount Sinai Hospital with the chief complaint of chest pain of five months duration. The patient had had a known aortic systolic murmur since three months of age with radiographic evidence of left ventricular enlargement since three years of age. At ten years of age an aortic diastolic murmur was first detected. For five months prior to admission the patient had had episodes of sharp stabbing chest pain while at play and episodes of squeezing retrosternal discomfort while at rest.

Physical Findings.—Physical examination showed normal development. The heart was enlarged to the left with the point of maximum impulse in the fifth intercostal space at the anterior axillary line. A systolic thrill was easily palpated at the left second and third intercostal spaces. Auscultation revealed a harsh Grade III systolic murmur in the second intercostal space at the right sternal border with radiation throughout the chest and into the neck. A Grade II early diastolic murmur was also heard in the third and fourth intercostal spaces at the left sternal border. The pulse was 100 per minute and the blood pressure was 95/45. Peripheral pulses were easily palpable. There was no evidence of congestive failure, cyanosis, or clubbing.

Clinical Findings.—Laboratory studies of the blood and urine gave normal findings. Chest x-ray films showed enlargement of the left cardiac border, suggestive of left ventricular hypertrophy. Electrocardiographic findings were those of left ventricular hypertrophy: a QRS of high voltage, an upright T wave in lead II, and an inverted T wave in leads III and aVf. The S-T segment was depressed and the T wave was diphasic in lead IV. These findings showed progression over the tracings of a year earlier.

A diagnosis of congenital aortic or subaortic stenosis was made.

Operation.—The patient was operated on June 25, 1958, under general anesthesia. The chest was opened through a median sternotomy incision. The left ventricle showed marked hypertrophy. The ascending aorta showed considerable poststenotic dilatation, and a harsh systolic thrill could be palpated in its wall.

The patient was placed on a cardiopulmonary bypass with the DeWall-type oxygenator utilized, and cardioplegia was induced with acetylcholine. The aortic valve region was exposed by an incision in the anterior wall of the ascending aorta. Immediately distal to the cusps of the aortic valve the aorta was found to have a slight annular constriction. This stenosis was reduced by repeated manual dilatation. Inspection of the aortic valve revealed the left coronary cusp and the right noncoronary cusp to be present and of normal dimensions although their borders appeared slightly furrowed and irregular. A normal right coronary cusp appeared to be absent, and the ostium of the right coronary artery could not be located. In the usual location of the right coronary cusp was found a hard fibrous elevation firmly fixed to the side wall of the aorta. Direct manual palpation of the outflow tract of the left ventricle failed to reveal any subaortic stenosis. Further surgery was not undertaken. Air was evacuated from the left side of the heart and aorta, and the aortotomy was closed. Following this, the aortic crossclamp was removed. A spontaneous rhythm was immediately restored in the heart, and perfusion was discontinued.

Shortly after perfusion the heart developed massive dilatation followed by ventricular fibrillation. Effective electrical defibrillation was given, and a normal cardiac rhythm was restored by manual massage. The heart again dilated and fibrillated. This was controlled by defibrillation and manual massage but again recurred. In view of the inability of the heart to maintain effective action, catheters were again placed in the cavae and the patient was returned to the pump oxygenator. A careful search was made for any undiagnosed defects which might account for this picture, but none were found. It was noted at this time that when the aorta was crossclamped the heart would not dilate but that when the crossclamp was removed the heart promptly dilated. After a second perfusion efforts again were made to have the heart assume effective activity, but the heart developed intractible right- and left-sided dilatation, and failed to respond to intensive and prolonged massage. One hour after completion of the second perfusion electrocardiographic waves disappeared and the patient expired.

Postmortem Findings.—Postmortem examination revealed annular supravalvular stenosis. The ridge noted in the region of the right coronary cusp was, in fact, a thickened fibrotic valve cusp which was intimately fused to the side wall of the aorta, completely occluding the right coronary ostium. The patient, therefore, had both supravalvular stenosis of the aorta and gross valvular insufficiency. The insufficiency became hemodynamically severe when the protecting effect of the supravalvular stenosis was removed.

Case 4.—A ten-year-old boy had had a known cardiac murmur from the age of one and a half years. The patient had been asymptomatic until one year before admission, when he began to develop mild dyspnea on exertion, easy fatigability, and frequent headaches. There was no history of syncope, cyanosis, or peripheral edema.

Physical Findings.—Physical examination was noncontributory except for the cardiovascular system. He had a pulse rate of 80 and blood pressures of 92/70 in the right arm and 100/80 in the left. There was evidence of cardiomegaly with enlargement to the left. A harsh thrill could be felt in the aortic area. A loud, low-pitched, harsh holosystolic murmur was heard over the entire precordium, loudest in the aortic area with radiation primarily into the neck. Pulses were present in the lower extremities.

Clinical Findings.—X-ray studies of the chest revealed an increased transverse diameter of the heart and some increase in size of the ascending aorta with no stigmata of coarctation of the aorta. An electrocardiogram showed minimal left ventricular hypertrophy. A percutaneous left ventricular puncture with simultaneous central aortic pressure readings revealed the pressure in the left ventricle to be 154/8 and in the aorta 124/82. Maximum difference was 43 ml., the mean difference 31 ml., and the left ventricle-aortic peak difference 30 ml. The left ventricular pressure curve was peaked and the aortic pressure curve had a delayed peak. The findings were suggestive hemodynamically of significant aortic stenosis. Right-sided cardiac catheterization revealed that all pressures were normal in configuration and amplitude. There was no evidence of a left-to-right shunt. There was full peripheral saturation. Selective biplane angiocardiography with a catheter in the right ventricle revealed the right ventricle and pulmonary artery to be normal in appearance. The left atrium was normal. The left ventricle was somewhat dilated. The aortic valve cusps were not clearly identified but the ascending aorta was markedly dilated. The descending aorta was normal. The appearance was that of outflow tract obstruction of the left ventricle with prominent poststenotic dilatation of the ascending aorta.

Operation.—On July 7, 1959, the patient underwent operative correction of the aortic stenosis. A median sternotomy incision was used, and on direct examination the heart revealed obvious left ventricular hypertrophy and marked poststenotic dilatation of the ascending aorta. A prominent thrill was felt in the ascending aorta immediately beyond the aortic valve. The patient was placed on a cardiopulmonary bypass. Cardioplegia was induced with potassium citrate. Transaortic exposure of the aortic valve revealed it to be a bicuspid valve, the right and left cusps equal in size. The anterior commissure was completely fused from the midline to the annulus of the aortic valve. The posterior commissures was patent. The valve cusps showed some thickening of the edges. Aortic commissurotomy was done under direct vision, following which the aortotomy was closed. Total perfusion time was twenty minutes. The patient sustained the procedure well.

Pressure studies taken across the aortic valve before and after perfusion revealed that before valvulotomy the pressure in the left ventricle was 166/8 and in the aorta 106/81 and that after valvulotomy the pressure in the left ventricle was 120/13 and in the aorta 110/76 (Fig. 1 B and C). There was no evidence of induced aortic insufficiency. The patient sustained the operative procedure well.

Postoperative Course.—Postoperatively he had a transient episode of congestive failure which was easily controlled with digitalis. The patient's postoperative course was otherwise uncomplicated except for low-grade fever of several weeks duration.

Comment

As mentioned previously, there is no question that direct valvotomy with extracorporeal circulation is the procedure of choice in the treatment of congenital aortic stenosis although the condition has been treated by dilatation and by direct valvotomy. Because of the fibrous type of the stenosis, dilatation may merely stretch, instead of actually separating, the tissues at the commissures and, in some cases, actually tear the cusp with resulting insufficiency. The valvotomy accomplished under hypothermia is necessarily limited by the short period of time. Constant care to prevent insufficiency is required, and it is necessary that a careful deliberate incision of the commissures be accomplished and that this commissure not be cut to the actual aortic wall itself. The aortic valve, as it functions normally, does not actually fold back directly against the aortic wall, and this type of action must be maintained. In cases of subaortic stenosis there must be sufficient time for adequate excision. It is our feeling that all these considerations call for a pump oxygenator rather than for other less cumbersome methods.

As far as the indications for operation are concerned, the policy of early operation is well supported by the findings of Braverman and Gibson,[11] Marquis and Logan,[12] and Downing.[13] These authors actually found few symptoms which preceded sudden death in their patients; however, these symptoms are important to note because it is our feeling that they are pertinent. These symptoms are moderate dyspnea, dizziness, and chest pain. Also, electrocardiographic changes of left ventricular hypertrophy or strain are important to note. The incidence of sudden death in their patients was 8, 15, and 8 per cent respectively. We do not at present believe that surgery is justified in a completely asymptomatic patient with minimal left ventricular hypertrophy, and we have desisted from operation on these patients. However, if the pertinent symptoms are present, it is our feeling that the operation should be done since the prognosis in these instances is poor.

Summary and Conclusions

A discussion of the surgical treatment of congenital aortic stenosis has been presented.

The clinical picture of congenital aortic stenosis is reviewed. Cases of successful correction of this disease are presented.

Early operation is indicated in those patients who are symptomatic or who have increased pressure gradients and electrocardiographic evidence of left ventricular strain patterns. Operation is not indicated in those patients who are asymptomatic or who have minimal left ventricular hypertrophy. An arbitrary pressure gradient of 50 ml. Hg between the left ventricle and the aorta is an important indication for surgery, but it must be considered in context with the other clinical findings. Percutaneous puncture of the left ventricle is the method of choice in obtaining left ventricular pressure.

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ANNOUNCEMENT

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MANAGEMENT OF PATIENTS REQUIRING OPERATION

Moderator

IRVING PALLIN, M.D., BROOKLYN, *Director of Anesthesiology, Jewish Hospital of Brooklyn; Clinical Professor of Anesthesiology, State University of New York Downstate Medical Center; and Director of the Department of Anesthesiology, Queens General Hospital*

Panelists

VINCENT J. COLLINS, M.D., NEW YORK CITY, *Attending Anesthesiologist, Bellevue Hospital; Associate Professor of Anesthesiology, New York University Post-Graduate Medical School*

FRANCIS F. FOLDES, M.D., PITTSBURGH, PENNSYLVANIA, *Director, Department of Anesthesiology, Mercy Hospital; Associate Professor of Anesthesiology, University of Pittsburgh School of Medicine*

EMANUEL M. PAPPER, M.D., NEW YORK CITY, *Director of Anesthesiology Service, Presbyterian Hospital; Professor and Chairman, Department of Anesthesiology, College of Physicians and Surgeons of Columbia University*

Introduction

Irving Pallin, M.D.: For the past eleven years we have had excellent attendance at all our section meetings. I think this has contributed in no small amount to the fact that we now have a whole session devoted to anesthesia. Although our title is "Management of Patients Requiring Operation," our central interest is, of course, anesthesia.

We have three speakers this afternoon who are allowed fifteen to twenty minutes each which will bring the total up to about one hour of formal talks. After that, the meeting will be thrown open to questions, and I hope you will have many questions to ask.

I should like to point out again that this is a very important subject to us at this time. As we increase the number of anesthesiologists in the practice of medicine, we find that we are allocated greater responsibility, whether by request or otherwise; we must react to these responsibilities and, at various times, we must react rather quickly. Therefore, these three subjects have been chosen so that we can evaluate the problems that we all meet in the operating room.

The first speaker, Vincent J. Collins, M.D., will speak to you on "The Choice of Anesthesia in Relation to Systemic Status." Dr. Collins is past president of the New York State Society of Anesthesiologists, an office which followed his past "perennial" duties as secretary of that organization. He is now the secretary on the Section of Anesthesi-

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Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, General Sessions, May 11, 1959.

ology of the American Medical Association and your delegate to the Section of Anesthesiology of the Medical Society of the State of New York. I think he has chosen an excellent subject and one that will be of interest to us. Dr. Collins.

Choice of Anesthesia in Relation to Systemic Status

Vincent J. Collins, M.D.: To discuss the subject of the choice of anesthesia, I should like to provide some background information and to consider two terms that have been used rather widely and, perhaps, indiscriminantly. These terms are "operative risk" and "physical condition." Each has had many individual connotations; each has been defined differently. We will attempt perhaps even a different definition, and we will do this so that our subsequent remarks will not be misconstrued.

Operative Risk.—Concerning operative risk, it is obvious that this involves many variables, many of which cannot be pinpointed. Nevertheless, they do fall into three categories: those related to the patient, those related to the surgery and the circumstances of the operation, and those related to anesthetic considerations.

Medical Factors.—As regards the patient and his physical state, it is the job of the internist to estimate the efficiency and the functions of all the systems of the body and, particularly from our standpoint, the efficiency of the cardiac mechanism and the pulmonary system. It is the province of the internist to estimate the individual total physical fitness of the patient and the functional reserve of the systems insofar as is possible. In the course of these evaluations, naturally, laboratory studies may be utilized. If there are any deficiencies they should be corrected. The internist should institute the necessary measures so that he can deliver the patient to the anesthesiologist and to the surgeon in an optimal physical condition. He should state to the anesthesiologist and to the surgeon that the patient is in the best possible physical condition and that certain specific functions have been improved or that they have not been improved. The latter information is very important.

Surgical Factors.—The surgical factors in the determination of operative risk include the magnitude of the procedure and the skill of the surgeon. The chances of survival and the morbidity associated with each of the various surgical procedures are best known to the surgeon, and he must acquaint his teammate, the anesthesiologist, with his requirements.

Some of the hazards of surgery may stem from the deficiencies of the operating room staff. This is one of the variables not often taken into consideration. The expertness of the nurses, including the deftness of the scrub nurse and the capability of the circulating nurse in furnishing drugs, new equipment, the defibrillator, and in preparing the suction, are highly important. When these nurses are attentive and they anticipate the doctor's needs, naturally, they contribute significantly to the safety of the patient.

Anesthesia Factors.—From surgical information, plus the knowledge of the patient's physical condition, the anesthesiologist can select the anesthetic that will be best in his hands. This leads, therefore, to the factors of anesthesia and the skill of the anesthesiologist. When either his skill or his experience is less than maximal, the hazards of surgery are going to be increased out of proportion to the problem. Similarly, the improper choice of an anesthetic technic or anesthetic agent enhances the total risk.

Thus the roles of the team are pretty clearly defined. The anesthesiologist who is aware of all the factors can probably make a more accurate estimate of operative risk, but in arriving at his decision he must consult with the surgeon. The surgeon tells the anesthesiologist the nature of his problem, outlines what he proposes to do, forecasts the amount of time he expects to use, and, together with all the other pertinent requirements, keeps the anesthetist informed.

The internist, of course, has to furnish the anesthesiologist with information concerning the patient's cardiac work capacity, the competence of his vascular system, and an evaluation of the patient's nutritional status and cardiopulmonary reserve. We emphasize the patient's reserve always through the report. Only then does the anesthesiologist make a choice of anesthetic method which in his hands will be safe and adequate.

Let us consider physical status. We have mentioned it several times. It is to be differentiated from operative risk for it is truly a different thing. Physical status consists of the patient's general fitness and the reserve of his specific systems and their functions to withstand stress. It is equivalent in the athletic world to the state usually referred to as the "pink of condition." The boxers have a preliminary physical examination to determine their physical fitness before it is decided that they may go into the ring. Similarly physical status is a classification of the patient's state of preparedness for a competition of sorts; and indeed the patient who is submitted to anesthesia and surgery is a contestant because his physique and his physical condition are going to be put to the test.

Many patients can have various of their physiologic mechanisms brought to a point of maximal efficiency through appropriate medical therapy or, let us call it, conditioning and training. For example, in many patients we can improve the function of respiration. We may clear out the respiratory tract and put the patient on antibiotics and postural drainage. By these measures, actually part of a medical conditioning process, the internist can bring the pulmonary system into a peak of efficiency.

In the entire picture of surgery the patient is actually the only constant factor, albeit a dynamic one. He is presented to the surgical team just as he is when he finally arrives in the operating room. Both the anesthesiologist and the surgeon minister to this patient. Whatever the circumstances, the patient cannot take a poor operation or a poor anesthetic, and I wish to emphasize this. Only the physicians who are involved can provide poor surgery or poor anesthesia.

TABLE I.—Division of Physical State into Seven Grades

Grade	Condition of Patient
1	No disease other than surgical pathologic condition No systemic disturbance
2	Moderate systemic disturbance due to General disease Surgical condition
3	Severe systemic disturbance due to General disease Surgical condition
4	Systemic disorder a threat to life
5	Emergency in patients of grades 1 or 2
6	Emergency in patients of grades 3 or 4
7	Moribund patients

Physical Status.—Using these considerations, patients may be classified into seven grades of physical status. This system actually has been adopted by a committee of the American Society of Anesthesiologists to provide some uniformity in the evaluation of patients who are going to be submitted to surgery. The classification is outlined in Table I.

There are seven grades of physical condition. The first four grades are related to patients who are going to have elective surgery, the last three grades to those who are going to have emergency surgery. In grade 1, the patient is to have an elective operation; the surgical problem neither imposes a burden on the patient nor is there, in addition, an associated unrelated disease state. The patient is in as good condition as is possible, and he is grade 1, or in the "pink of condition."

Grade 2 is a patient who has a moderate systemic disturbance consequent either to an associated disease or to the surgical pathologic condition.

Grade 3 is a patient in whom there is a severe systemic disturbance, and in grade 4 there is actually a threat to life. In the emergency situations a patient would be classified grade 5 if, because of his systemic state, he would be classified as either grade 1 or 2 if the situation were elective. And similarly, in grade 6 the patient would or-

TABLE II.—PHYSICAL STATUS GRADATIONS EXAMPLES

Grade	Conditions
1	No associated disturbances
	Congenital deformities
	Localized infections
	Uncomplicated surgery
2	Moderate systemic disturbance
	Mild endocrine dysfunction
	Mild pulmonary disease
	Moderate anemia
	Cardiac function Ia or IIa
3	Severe systemic disturbance
	Moderate endocrine dysfunction
	Electrolyte imbalance
	Moderate advanced pulmonary disease
	Cardiac function IIb or IIIc
	Renal, hepatic, or hematologic disease
4	Disturbance a threat to life
	Severe pulmonary disease
	Cardiac function III or IV
	Decompensation
	Severe hepatic or renal disease

dinarily, under an elective situation, be in the systemic category of grade 3 or 4.

Our last grade (grade 7) is an interesting one because we encounter many of these patients today. It is the source of many of our fatalities. This is the patient who is moribund, perhaps semiconscious, bleeding, and in severe shock; we have to minister to these patients.

Examples of the clinical conditions encountered and classified according to grade of physical condition are outlined in Table II.

CHOICE OF ANESTHESIA.—Our next consideration is how to select an anesthetic agent. Every case that is presented for anesthesia evaluation should be individualized, and this is our philosophy in choosing an anesthetic. A wide variety of technics and agents are available, and, according to the medical problems and the surgical needs, an anesthetic is chosen to fit the patient. This is in contrast to the use of one technic or agent to fit all patients. We like to tailor an anesthetic to an individual patient. It is truly an individual prescription.

There are certain factors related to this individualization. (1) All agents and methods have their utility and place. (2) One composes a prescription to fit the individual patient. (3) The dictates of physiology and pharmacology are the basis on which a specific agent is picked.

The prerogative in choosing the drugs and the technics, naturally, belongs to the anesthesiologist; it is usually necessary for him to consult with the internist and then the surgeon. After considering the surgical requirements as outlined by the surgeon, along with the information from the internist, and also with the knowledge which the anesthesiologist himself may obtain by examining the patient in a preoperative visit, the anesthesiologist then decides on that method which in his hands will provide the widest margin of safety.

In general the fundamental goal of good anesthesia is to provide a painless operation. To achieve this goal there are four basic considerations. These are (1) safety for the patient; (2) the convenience of the surgeon —whether the anesthetic chosen will enable the surgeon to perform his work; (3) the comfort of the patient; and (4) the skill of the anesthesiologist.

Let us consider a few points. To submit the patient to an unnecessary risk and to jeopardize his life by using unfamiliar and untried or toxic agents is, I believe, beneath the dignity and the moral responsibility of the anesthesiologist. For example, to be facetious, you could obtain a painless state very readily by choking a man, and this has been done in Assyria. You could put a bowl over the head and bang on it and by concussion produce an unconscious state. Of course, you can snow the man under with enough alcohol or enough barbiturate or enough inhalant anesthetic to provide a painless state. But in these instances the question "Is this safe?" must be answered in the negative.

Good working conditions should be provided for the surgeon so that he can complete his work expeditiously and prepare the patient for rapid convalescence; but to provide these conditions at the expense of safety is to be condemned. In achieving the goals that we have mentioned it is desirable, furthermore, to provide a maximum of comfort to the patient. For example, in using regional anesthetic technics, it would be desirable to allay fears and to provide perhaps a hypnotic state, whether by drugs or by words. But if one or the other of our principles must be sacrificed, let me say that comfort should be sacrificed first.

The routine use of an anesthetic for which the physician happens to have a personal preference is also to be abhorred. The choice must not be based on likes or dislikes; the choice must be based on physiologic and pharamacologic considerations. Each drug has its indications, its contraindications, and its field of usefulness.

In diabetes, for example, ether is for all intents and purposes contraindicated because it upsets acid base balance, it depletes the liver of glycogen, and it raises the blood sugar level. These may or may not be disastrous, but they are not good.

Again, to administer cyclopropane to an asthmatic patient is inadvisable, for cyclopropane is a parasympathomimetic drug that may cause bronchoconstriction, and to superimpose its effects on an asthmatic state may be hazardous. For asthmatic patients ether is preferable.

In cardiac disease the choice is likewise based on individualization of the patient and his cardiac condition. It is to be emphasized that there is no single drug preferred for all cardiac conditions. The indications and contraindications vary with the type of cardiac disease the patient has and the effects of the anesthetic agents on the functions of the heart in these diseases.

A final illustration is shock. When shock or hemorrhage or prolonged surgery is anticipated, cyclopropane is the first and preeminent choice. That is not to say that other drugs cannot be employed in such a situation with some measure of success, but others are less than ideal.

The pharmacologic attributes of some agents are more satisfactory in certain situations and for certain patients than they are in others. Their use is accompanied by minimal stress and this is conducive to patient safety.

Along with the considerations we have noted, the ability of the anesthesiologist must be taken into account. There are physicians who are quite expert with one specific agent, namely ether. Another may be quite facile with spinal anesthesia technics. To demand of such men that they employ agents or methods with which they are not familiar would obviously jeopardize the patient's well-being. It is preferable to allow a man to administer that agent with which he is familiar if he is inexperienced with technics or agents that may be advisable on pharmacologic grounds. Situations of this sort do not arise too frequently for today's physician-anesthetists are pretty well rounded and trained. In general, the men who have been trained recently are equally expert with all technics. Thus patients can be individualized in general, and one should attempt to fit the anesthetic to the patient's need rather than to fit the patient to the anesthetic. Every accepted drug and every established technic should be utilized to the advantage of the patient.

Proper analysis of the patient's condition and of the patient and the proficient administration of a properly selected agent is the approach that is most advantageous to the patient.

Dr. Pallin: Thank you, Dr. Collins. The next speaker is Francis F. Foldes, M.D., who has had a broad background. He obtained his degree in medicine at the University of Budapest and his specialized training in anesthesiology at the Massachusetts General Hospital where he was a research fellow, resident, and an assistant at Harvard and at Massachusetts General Hospital. He has spoken widely throughout the world. He has been made an honorary member of five foreign societies. He has decided to "hole up" in the hills of Pittsburgh.

Dr. Foldes will now take you into hazards attending emergency surgery, and, I think, this is also very important from our point of view because it takes us from the ordinary patient with various complications, whom you have just heard about, to the patient who comes to the operating room with severe complicating conditions under emergency situations which do not give you too much time to think about your case. Dr. Foldes.

Hazards to Consider in Recommending Emergency Surgery

Francis F. Foldes, M.D.: I am greatly honored and very much pleased to have the opportunity to speak to the largest state medical society of our country. Without further introduction, I would like to discuss one facet of the problem that we are considering today. If I would have had to choose a motto for my talk, then I would have selected, without any disrespect to anyone, that on occasion "Surgeons rush in where angels fear to tread." And this frequently is the situation which the anesthetist and other members of the operating team have to face before emergency surgery.

Dr. Collins has emphasized that underlying pathologic conditions, related directly or indirectly to the surgical condition to be corrected, increase the surgical and anesthetic risk markedly; and I don't think that these two considerations can be separated from one another. Before surgery is undertaken, therefore, the surgical team, which consists of the internist, the surgeon, and the anesthetist, usually tries to eliminate as many of the pathophysiologic changes as are feasible and to return the patient's condition as close as is possible to his physiologic normal.

Unfortunately, when there is the greatest need for such correction, namely before emergency surgery, there is little or, infrequently, no time available to carry out the most essential corrective changes. Perhaps the thing that might mean the difference between life and death for the patient is the right decision regarding the balance between the time necessary at least to start some of the most urgent corrective measures and the length of time surgery may safely be postponed.

From the point of view of the urgency of surgery, patients may be arbitrarily divided into four groups. The first group consists of true emergencies where no delay is permissible. Such a situation may confront the surgical team under three types of circumstances. One is uncontrollable major hemorrhage. It does not need to be emphasized that in such a situation something has to be done right away. There is no time to take a history, to do a physical examination, or to wait for the results of laboratory tests. The second situation arises when the patient's life is endangered by gross interference with his respiratory exchange. A third true emergency is rapidly increasing intercranial pressure threatening the patient's life.

The second group comprises cases in which early surgery is indicated. For example, patients with an incarcerated hernia or an intestinal obstruction are good examples of those on whom some surgeons would like to operate as soon as they can get the patients on the operating table. This is wrong and such an attitude exposes the patient's life to unnecessary danger and might cause the patient's death. Under these circumstances, delaying surgery one or even a few hours makes possible the correction of much of the physiologic disturbance, and in the long run the patient's chance of surviving surgery will be much better than if surgery had been undertaken immediately.

The third group consists of patients in whom surgery is necessary, but in whom a few days delay doesn't make too much difference, for example, in malignant conditions. Finally, the fourth group is that of elective cases, where there is no limit to the time available for optimal preoperative preparation.

The classification of the patients from the point of view of the operating risk can be dealt with briefly because Dr. Collins has already done it for us. From the point of view of this discussion, I would just like to

TABLE I.—ELECTROLYTE VALUES OF PATIENT BEFORE AND AFTER TREATMENT

Values	Carbonic Acid (mEq. per L.)	Chlorine (mEq. per L.)	Sodium (mEq. per L.)	Potassium (mEq. per L.)	Blood Urea Nitrogen (mg. per cent)
Normal	30.0	100	142	5.0	15.0
January 24	46.5	63	115	3.0	152.0
January 26	50.6	68	127	2.8	...
January 28	31.6	107	...	3.7	19.8
January 29	28.6	100	131	4.1	9.3
January 30	26.3	100	139	4.4	16.0

divide patients into two groups: they are either good risks or bad risks. Patients may be bad risks because of the nature of their surgical condition; because of a generally poor physical condition due to malnutrition, low circulating blood volume, and so forth; or because of some specific underlying disease which complicates the existing surgical condition.

With the exception of the first group discussed, when the surgeon has to proceed without delay, what are the essentials of preoperative work-up that should be carried out? One of the most important is a good history. This does not necessarily include the age the grandparents died and of what disease, but there are certain facts that should be ascertained either from the patient if he is able to communicate or from some friend or close relative. The points to be covered should include: Has there ever been anything wrong with the patient's circulatory, respiratory, or nervous system? Does the patient have any metabolic disease such as diabetes or adrenal insufficiency? Does the patient have any allergies? Is there anything wrong with the kidney or liver function? Perhaps most important, especially in recent years when so many patients take so many drugs, frequently unnecessarily, it should be noted whether or not the patient has had cortisone or related compounds, hypotensive drugs, or tranquilizers recently. If the patient has had cortisone or similar compounds, certain procedures are indicated which I think Dr. Papper plans to discuss.

Besides corticoids, hypotensive drugs and tranquilizers also influence the mode, the duration, and the intensity of action and the side-effects of many drugs used in anesthesiology. Here again I can save a few minutes and leave the details to Dr. Papper.

Another thing which is very important to have information on is the patient's habits. I don't know how other anesthetists are, but I am influenced in the choice of anesthesia by the patient's habits. For example, the agent and method selected for the same procedure may be different in a patient who indulges regularly and excessively in alcohol from that used in an abstinent one. But it may be that this will also be discussed by Dr. Papper, so I'll leave this one out too.

If one has time and if the patient's condition permits it, one should carry out a brief physical examination and on almost every patient certain laboratory tests should also be made. These should include, and this is again a bone of contention in many institutions where the surgeons don't want to wait for it, urine analysis, red count, white count, hemoglobin, hematocrit, typing and cross-matching, and, if possible, rapid determination of the circulating blood volume. Other laboratory tests, if time permits, should be done as indicated by the history and physical examination.

The suggested procedures, as far as possible, should be done simultaneously. You don't have to wait with the urine analysis until you finish taking the history. While taking the history and doing the physical examination, somebody else can start the laboratory work. In a well-organized hospital the most important laboratory tests, physical examination, and history can be carried out within half an hour.

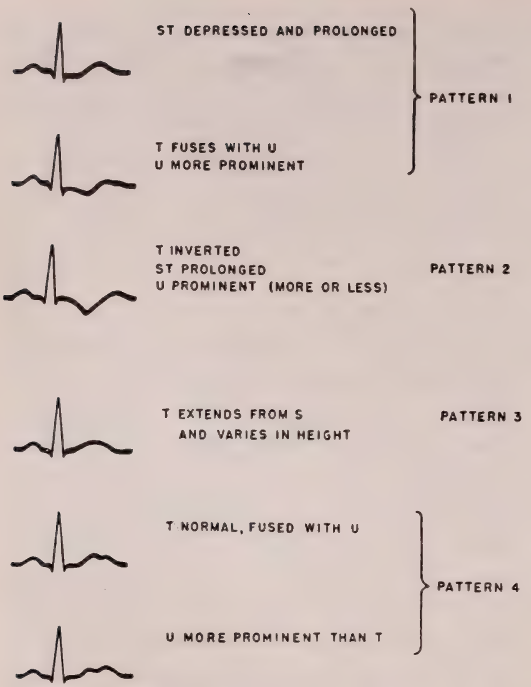

FIG. 1. Electrocardiographic changes of hypopotassemia (From Statland, H.: Fluid and Electrolytes in Practice, 2nd ed., Philadelphia, J. B. Lippincott Company, 1957, p. 80).

On the basis of the history, physical examination, and laboratory findings the indicated corrective measures should be instituted at once. Under emergency conditions deviations from the physiologic normal are frequently encountered in the fluid and electrolyte balance. I would like to select this one aspect and discuss it in some detail and then, before closing would like to mention one or two other topics very briefly.

I would like to start the discussion of the problem of fluid and electrolyte disturbances with the review of the history of a patient (Table I).

CASE REPORT.—A fifty-seven-year-old woman entered the hospital in a moribund condition, with a distended abdomen and a subnormal temperature of 96 F. Her systolic blood pressure was 70. Peripheral pulse could not be palpated and the diastolic blood pressure was unobtainable.

This patient, before being transferred to our hospital from another institution, had been treated conservatively, as a matter of fact too conservatively, for two days. The first day she received 1,500 and the next day 2,000 ml. of fluids and had a total of 20 mEq. of potassium chloride. After her transfer, the anesthesia department was asked to see her in consultation. The laboratory data, seen in the first column next to the normal values, indicated hypopotassemia, hypochloremia, and elevated blood urea nitrogen. The red cell count was 5,250,000, the hemoglobin was 14.5 Gm., and the hematocrit was 47, indicating severe dehydration. The white cell count was 23,250.

On the basis of the history and the laboratory data, we gave this patient 4,500 ml. of 5 per cent dextrose in water the first day with 60 mEq. of potassium chloride and 20 Gm. of ammonium chloride. The fourth column shows that two days after the patient entered the hospital all the biochemical values were brought back to normal. The patient's blood pressure went up to 120 over 80, and she was operated on.

At operation, generalized carcinomatosis was found. The tumor obstructed the pylorus and the ascending colon. The patient tolerated the gastrojejunostomy and ileotransverse colostomy well. Unfortunately one week after operation she had a pulmonary embolus and died.

Electrocardiographic tracings taken on admission showed characteristic signs of hypopotassemia. Figure 1 summarizes the various electrocardiographic patterns encountered in hypopotassemia.

It's interesting that in hypopotassemia the various electrocardiographic changes don't occur in a definite order. Any of the several abnormal patterns can be encountered first and very frequently the degree of abnormality of the electrocardiographic pattern is not in proportion to the degree of potassium deficiency. The electrocardiographic changes that may be seen in hypopotassemia include prolongation and depression of the S-T segment. On occasion prominent U waves are encountered which can fuse with the T waves. The T wave can be normal, inverted, or biphasic.

Figure 2 is this patient's electrocardiogram before and after the correction of the potassium deficiency. The upper tracings are V_2 and the lower are V_5 leads. The ones on the left were taken before and the ones on the right were taken after treatment. You can see marked depression

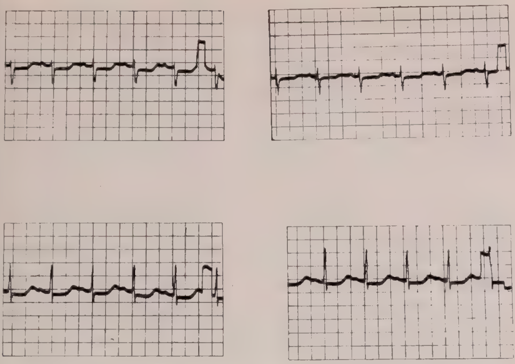

FIG. 2. Electrocardiographic tracings of patient with hypopotassemia before and after correction. The upper two tracings are leads V_2 and the lower ones leads V_5. Tracings on left were made before and those on right after treatment.

of the S-T segment and prominent U waves which seemed to fuse with the P waves before treatment. After correction of the potassium deficiency the electrocardiographic changes improved.

We shouldn't think that it is always hypopotassemia that gives us trouble in emergency patients. Hyperpotassemia can also cause much difficulty. This condition, although encountered quite frequently after serious accidents where there is much tissue damage, is often overlooked. It only became well recognized during the Korean war. Figure 3 shows the nonprotein nitrogen, serum potassium, hematocrit, and urinary output of a severely wounded young soldier before and after treatment with an artificial kidney. Every time the serum potassium level went up the patient was dialyzed. Finally the potassium level was brought back to normal, and you can see that the urinary excretion became normal too.

Figure 4 demonstrates some of the electrocardiographic patterns encountered in hyperpotassemia.

The electrocardiographic changes in hyperpotassemia include high, spiking T waves and shortening of the S-T interval. Later there may be signs of intra-auricular, atrioventricular, or intraventricular block. In extreme cases ventricular tachycardia and ventricular fibrillation may develop.

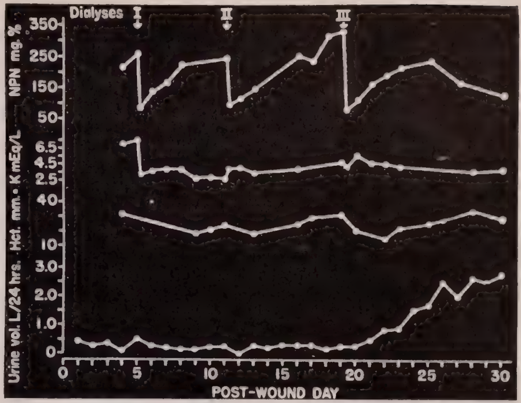

FIG. 3. Serial nonprotein nitrogen, serum potassium, hematocrit, and urinary volume data in severely wounded soldier with renal insufficiency (From Teschan, P. E., and Baxter, C. R.: Future of hemodialysis in military medicine, J.A.M.A. 166: 11 [Jan. 4] 1958).

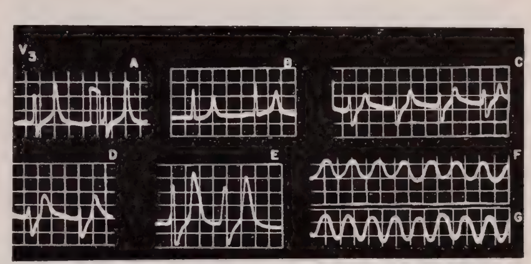

FIG. 4. Electrocardiographic tracings in hyperpotassemia (From Merrill, J. P.: The Treatment of Renal Failure, New York, Grune & Stratton, 1955, p. 144).

Even partial correction of the fluid and electrolyte disturbances, and a great deal can be achieved in this respect in an hour or two, will improve the patient's general condition considerably. The reason for this is that when there is any deviation from the physiologic normal the patient's own homeostatic mechanisms start to compensate for it. Even a little extraneous help will greatly facilitate the functions of the patient's homeostatic mechanisms and can result in surprising improvement in the patient's general condition.

Beside correcting fluid and electrolyte disturbances any interference with the patient's oxygenation or carbon dioxide removal must also be corrected. If necessary, there should be no hesitation to use an endotracheal tube or, if this for some reason is not possible or not advisable, to perform tracheotomy. Many lives have been lost, especially after severe crush injuries of the chest, because tracheotomy was delayed.

It is also very important to correct circulatory disturbances. If there are any mechanical factors which interfere with circulation or respiration, such as ascites or pleural or pericardial effusion, these should be removed. In the presence of cardiac decompensation the patient should be digitalized rapidly. With drugs like acetylstrophanthidin complete digitalization can be achieved in a few minutes. The effect of this drug, however, will only last about two hours. So, as the effect of acetylstrophanthidin is wearing off, a longer-lasting digitalis alkaloid such as digoxin or digitoxin should be substituted.

With regard to digitalization, I would like to go even further. It is our practice to digitalize patients with organic heart disease and a markedly lowered cardiac reserve even if they are not decompensated. It should be realized that surgery and anesthesia mean added stress and patients with organic heart disease may become decompensated during or after surgery. I have never been sorry when patients with organic heart disease were digitalized preoperatively even when they were not decompensated. But I have often regretted talking myself out of digitalizing a patient who had organic heart disease with a decreased cardiac reserve.

Any changes in the clotting mechanism, any hormonal deficiencies in insulin, corticosteroids, or others should be corrected preoperatively.

Another important thing in emergency surgery is the prevention of aspiration of gastric contents. The best way I know of preventing this serious complication is to do an endotracheal intubation under topical anesthesia in the conscious patient.

Naturally there are many other things that could and should be considered and I hope that some of these will come up in the discussion period. To follow Dr. Collins' method of handling his part of the discussion, I would like to summarize the basic principles of the management of patients who require anesthesia for emergency surgery.

The most important thing is to select anesthetic agents and methods which will not increase any existing deviation from the physiologic normal. As many of the pathophysiologic changes as possible should be corrected before surgery. If full correction cannot be achieved before, and this is very seldom possible, the corrective measures should be continued during and after anesthesia and surgery.

It is essential that in our efforts toward correction, overcorrection be avoided. As already pointed out, the homeostatic mechanisms of the body are geared toward correcting an existing deficiency or excess. If in the case of a deficiency overcorrection should produce an excess, or, vice versa, if in case of an excess one overcorrects to the point of deficiency, the patient will in either case usually be worse off than if nothing had been done.

Dr. Pallin: Thank you, Dr. Foldes. We have the honor next of listening to Emanuel M. Papper, M.D., discuss "Problems of Commonly Used Drugs in Patients Who Require Surgery." Dr. Papper has had a long and varied career in anesthesiology, and I hope it will be much longer. He is as you probably know a member of the American Board of Anesthesiologists. He has conducted the New York Post-Graduate Assembly for several years. He has been president of our New York State Society of Anesthesiologists, and during my term as president of the society he has been chairman of the Program Committee and has given us one of the finest programs we have ever had.

Dr. Papper is going to discuss the problems of the "new look," if I may use this once popular term. We are getting patients now who have been taking a variety of drugs for either a long or a short period of time. These drugs contribute to the problem of anesthesia. Some of these drugs are synergistic with our anesthetic agents, some are incompatible, and some may create difficulties for us if we don't anticipate them. This is a very timely discussion, and I give you Dr. Papper.

Problems of Commonly Used Drugs on Patients Who Require Surgery

EMANUEL M. PAPPER, M.D.: A large number of patients either take or are given medications for a variety of clinical disorders. Although no reliable data bear directly on this question in its entirety, the hazards of unrelated drug intake are becoming an increasingly frequent occurrence prior to the administration of anesthesia and the safe conduct of surgical operations. Since approximately 10 per cent of the population will receive anesthesia and have an operation in any given year, the opportunities for difficulties of this kind become increasingly probable. An example has been the comparatively recent emphasis by Lundy[1] on the unexpected circulatory catastrophes that arise in connection with the withdrawal of adrenal steroid substitution therapy prior to operation. It will be useful, therefore, to consider some of the commonly used medications and their effect on anesthesia in operation.

HORMONES AND HORMONE ANTAGONISTS.—Adrenal steroids have already been mentioned and need some further comment. Steroids are used for many diseases including rheumatoid arthritis, nephrosis, asthma, some chronic allergic diseases, and in traceable vascular lesions. If these patients require operation there will be no problem of adrenal cortical insufficiency providing adequate steroid hormonal therapy is maintained before and during operation. With the availability of parenteral and intravenous preparations such as hydrocortisone, safe care is easily managed. The emphasis is on awareness of the fact that steroids have been given and that their use must be maintained. There are some conditions in which steroids are stopped some weeks prior to operation. It is possible with appropriate tests to determine whether or not there is adequate adrenal cortical function, but for practical clinical management it seems more effective and more reasonable to reinstitute substitution therapy with cortisone or hydrocortisone than to attempt the more detailed laboratory determinations.

Patients with thyroid disease may present drug problems in two directions. There are those who are maintained on antithyroid drugs presumably for the control of hyperthyroidism. From time to time, a patient is seen in whom thyroid activity is so reduced that the patient becomes unduly sensitive to narcotics, either natural or synthetic, and also to general anesthetic agents. This problem can be suspected if there are suggestive signs of hypothyroidism. However, in a patient known to be on antithyroid drugs the anesthesiologist should presume that such patients will require smaller doses or omission of the depressant drugs until the actual conduct of anesthesia has been undertaken. On the other hand, patients take thyroid to lose weight, to attempt to gain symptomatic relief during the menopausal period, and to take "a tonic." It is possible that some patients may thus acquire an induced hyperthyroidism, suffer increased demands for oxygen, and possibly even develop cardiocirculatory effects from mild to moderate hyperthyroidism. These manifestations become accentuated by the administration of anesthesia, the anxiety that goes with operation, and the production of pain in the postoperative period. If thyroid is taken it is wiser to cease administration of the drug before operation. If there is not sufficient time for this purpose, it is necessary to determine whether hyperthyroidism has been provoked. If so, the patient must be treated with the expectation that there is hypermetabolism and anesthetic adjustments must be made accordingly.

Diabetic patients treated with insulin may develop loss of control of diabetes associated with infection or may suffer from hyperinsulinism. The sophisticated diabetic patient who knows that he is going to come to operation may take rather large doses of insulin to fortify himself against what he thinks will be a bad period during anesthesia and operation. An occasional patient of this sort may develop severe hypoglycemia which is very difficult to diagnose during general anesthesia. Such a patient may have profuse sweating, a bounding type of pulse, with a widening pulse pressure, and usually a falling diastolic pressure.[2] Treatment is obvious once recognition has occurred. Fifty Gm. of glucose given by intravenous administration take care of this complication effectively.

Antibiotics.—Curiously enough the use of antibiotics, large as it is, has never seemed to provide much of a problem for anesthesia and operation. However, well-established data now are available to show that large doses of neomycin and possibly streptomycin given at operation enhance the effects of curare and ether experimentally and in some clinical cases.[3] There is insufficient information to know whether chronic administration of these drugs, or of other antibiotics, has similar effects on neuromuscular transmission. The anesthesiologist, faced with a patient who has been receiving these medications, should have this information so that he will use agents that do not have marked effects on neuromuscular conduction. The clinical result of failure to recognize this association may be severe and prolonged apnea and occasionally death due to respiratory failure.

Cardiovascular Drugs.—Many patients are on drugs which are useful in the treatment and control of varying forms of heart disease or the consequences of cardiovascular disease. A patient who is overdigitalized may present problems during the use of anesthetics which have vagomimetic effects since marked bradycardia or varying depths of heart block may be expected under these conditions. Rapid digitalization is even more apt to produce disturbance of rhythm and occasionally circulatory collapse. If digitalization must be performed rapidly during anesthesia, the drugs should be administered with caution and electrocardiographic control followed for detection of evidence of overdose. Also, it seems wise with very recent rapid digitalization to avoid anesthetics like cyclopropane and other vagotonic agents. The use of quinidine for the chronic suppression of arrhythmias provides problems of a similar sort in that this drug produces depression of the myocardium and may predispose the patient to the same types of difficulties that either overdose of digitalis or relatively recent digitalization may cause. Finally, some patients with the anginal syndrome are so accustomed to taking nitroglycerine or other drugs of similar action that they will, from time to time during the confusion of preanesthetic medications, take rather large quantities of nitroglycerine and produce hypotension. This is not a serious problem if it is recognized and simply requires appropriate supervision of the drug supply insofar as availability to the patient is concerned.

Narcotics, Barbiturates, and Other Sedatives.—There is no supposition in this discussion that narcotics, barbiturates, and other sedatives have actions that resemble each other in any important respect. The reason for putting them together is that barbiturates are used by many patients for sleep at night and for the suppression of mild anxiety. Narcotics may be used for sustained pain relief in lesions which ultimately require operation. Other sedatives also are employed for reasons of this kind. The important general point to make is that in almost all instances tolerance to these medications may be produced in a relatively short time. What this means to the patient is that it may require a larger dose of a similar compound used for anesthesia to produce its effect; even worse, if consciousness is lost and the clinical condition, such as pain, is removed, then the side-effects of a narcotic may become more prominent. It is not unusual, for example, for severe respiratory or circulatory depression to ensue in a patient who has been pretreated with substantial doses of narcotics for pain when the pain is removed by the induction of general anesthesia.

Addicts to barbiturates and narcotics pose less of a problem than might generally be appreciated. It is worth while, therefore, to make the point that there is this brighter side to the picture of commonly used drugs. Although a large experience in anesthetizing addicts is not available for any one anesthesiologist, it seems to be the pattern that a dose of medication to which the patient is accustomed would be well tolerated and safe if used as part of the preanesthetic preparation. An important security measure which must be taken is the establishment of the proper dose since addicts, even though occasionally honest in their history, may not have an accurate concept of how much drug they are taking since so much of it in the illegal market is adulterated.

The Tranquilizers.—Finally, commentary must be made about the most important group of drugs used commonly in patients who require operation. The tranquilizers of all categories are used in large amounts for a large number of patients. They differ in their action depending on chemical configuration and pharmacologic properties. The point to be made in this discussion is that certain of these drugs have been used advantageously for the potentiation of standard premedicant drugs with good results and with safety. Problems arise in the chronic use of tranquilizing drugs for anxiety or for other psychologic disorders. From the studies reported by Eger and Keasling in 1959,[4] meprobamate (Miltown) seems to be without harmful effect on any important body system during anesthesia. On the other hand, Rauwolfia, according to Coakley, Alpert, and Boling[5] may cause severe hypotension and bradycardia during anesthesia. These effects are enhanced by vagotonic anesthetics. These authors recommend the stopping of Rauwolfia derivatives at least two weeks before operation if operation is elective. If emergency surgery is indicated they recommend the intravenous injection of vagal blocking agents and the one they favor is oxyphenonium bromide. All the tranquilizers, except meprobamate, according to Berger,[6] prolong barbiturate anesthesia. Chlorpromazine is a drug that has important side-effects which may be serious. Moore and Bridenbaugh[7] report 9 cases of severe hypotensive episodes during regional anesthesia which blocks the splanchnic nerves, that is, spinal, epidural, and celiac plexus block. One of these patients died of hypotension. Furthermore, chlorpromazine causes an obstructive type of jaundice in from 1 to 2 per cent of patients to whom it is given.[8] Although there are no secure data, nonvolatile anesthetics and those anesthetics which presumably have a toxic side-effect on the liver may cause complications. Patients who are treated with chlorpromazine should be examined closely for these complications.

Summary.—Attention is called to the fact that a considerable variety of medications for unrelated problems may be expected to have been given to patients who come to operation.

Some of these medications may provide undesirable side-effects when given in conjunction with anesthetic agents during operation.

Certain toxic effects of commonly used drugs which may be detectable in nonoperated patients and successfully treated with ease may become problems of real clinical importance when these actions occur during anesthesia and operation.

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Question and Answer Period

Dr. Pallin: We will now throw this portion of the session open to questions from the floor. Would you please state your name, your question, and to whom you wish to direct the question on the panel. Are there any questions from the floor? If there are no questions from the floor, we shall have to create some here.

Just to start it along, one of the questions that was asked of me when I showed Dr. Collins' paper to a colleague was: What would I do in a situation where the internist and the surgeon decide the anesthesia for the anesthesiologist, especially where he doesn't agree with their recommendation? This particular situation that was brought to my attention happened when the internist and the surgeon decided that their patient should have a spinal anesthetic and the anesthesiologist decided against this decision. How would you act in a similar situation?

Dr. Collins: I have an answer to that inasmuch as we have men faced with the situation. The answer is very simple. Tell the surgeon to do the anesthesia!

Dr. Pallin: Well, let's carry it a little further. There was another case brought up where the patient demanded intravenous anesthesia and the anesthesiologist thought he shouldn't have it. What would you do then?

Dr. Collins: This is still toward me?

Dr. Pallin: Yes.

Dr. Collins: Interestingly enough, I occasionally do a few private cases, and I had a patient recently who had had three operations. They were two cystoscopies followed by a suprapubic or a bladder resection done through the suprapubic route. Each time the patient had had thiopental sodium (Pentathol sodium). He was a sixty-seven-year-old man, with marked emphysema, moderate bronchiectasis, and he was quite fearful.

In my preoperative visit with him, I listened to the information that each time he had coughed for three days, and following the major operation, that is the third operation, he had broken his wound and had had to be resutured under a local anesthetic. He came in for a fulguration of the bladder; the surgeon requested that he be put to sleep and the patient practically demanded it. We discussed the situation and because of his extreme fear I agreed to put him to sleep, but not with thiopental sodium.

And this is my point, there are many ways of accomplishing a job safely, provided you take advantage of the attributes of many drugs in the anesthesiology armamentarium. We simply put him to sleep with continous drip intravenous meperidine hydrochloride (Demerol hydrochloride) and supplemented with nitrous oxide and oxygen. The meperidine hydrochloride has a relaxing effect on the bronchioles and is well tolerated by these patients while thiopental sodium is not. He did not cough postoperatively and he went through the procedure very well.

Dr. Pallin: Are there other questions? Dr. Ingegno.

Alfred P. Ingegno, M.D.: Does everyone agree with Dr. Foldes that you should digitalize a patient because he has impaired cardiac reserve, even though he's not in decompensation? Do all anesthesiologists agree with that?

Dr. Pallin: That's an excellent question, one that has caused considerable controversy. My attitude would be that in the presence of cardiac disease I would be willing to subdigitalize the patients, that is digitalize them subclinically: but I would like to hear some expressions from the floor. We are still talking about digitalizing the patient who has cardiac disease although he's not in decompensation. Does anybody else wish to discuss this problem? Dr. Papper would like to discuss it; he invites trouble.

Dr. Papper: It's of course very difficult to give a yes or no answer to this kind of thing. In general I've not pushed internists or cardiologists to digitalize patients prior to operation unless the patients had some sign of failure. As Dr. Ingegno knows, our people are specific in their indications of when to digitalize.

I have had the experiences that Dr. Foldes has had on some occasions, when it would have been nice if digitalization had been done. But one doesn't have a crystal ball, you don't know what's ahead, and it still seems to me the wisest thing in the absence of quantitative or good clinical data to digitalize for the signs of failure. Since we have rapid-acting drugs, we can still digitalize rapidly for the indications that may arise.

Dr. Pallin: Dr. Collins, do you wish to carry on this discussion?

Dr. Collins: I concur on this point with Dr. Papper. It seems to me that if there's a medical indication, you should handle the medical indication by the appropriate therapy, and it is our attitude that you just don't digitalize a person unless there are specific indications of myocardial insufficiency in existence. And again in the case of acetylstrophanthidin, this is a drug that we like to use. A few milligrams will digitalize a patient within three or four minutes. I believe that the patient should be digitalized only when the indications are present.

I would like to make another comment and that's about smoking. That's one addiction to which Dr. Papper didn't allude. Smoking is an addiction in a psychologic sense but the interesting thing I would like to present to you is some work done in England, republished in Anscomb's book. In analyzing surgical patients who smoke more than ten cigarets a day versus those who smoke fewer than ten cigarets a day, the incidence of pulmonary complications in the group who smoked more than ten cigarets a day was seven times greater than was found in the other group.

Dr. Foldes: I think that there is a little misunderstanding here. I would like to re-emphasize a few points and cite some controlled evidence which has not been published because of the relatively few cases studied.

Naturally, one should not use preoperative digitalization indiscriminately; but it is our clinical experience that there are certain groups of patients who, if they undergo major surgery, and especially if the anesthetic agent used is a cardiac depressant, for example ether, may become decompensated during or after surgery and on occasion may even with rapid digitalization, get into serious difficulties.

Preoperative digitalization has proved to be beneficial in patients over sixty-five years of age, in patients who have had long-standing hypertension with cardiac enlargement, and in cachectic patients due to chronic infection, malignant conditions, or to malnutrition. The diminished cardiac reserve can be demonstrated by simple methods in these patients.

About ten to twelve years ago there was a paper in the Proceedings of the Staff Meetings of the Mayo Clinic which showed that digitalization can improve cardiac function in patients who are not decompensated but who have organic heart disease. There is also considerable experimental evidence to show that digitalization will protect animals against ill-effects of low oxygen tension.

The controlled series I referred to consisted of 34 patients who all belonged to the groups mentioned. According to the cardiologists in none was preoperative digitalization indicated. Taking alternate cases we digitalized 17 and kept 17 others as controls. Of the 17 controls 4 had to be digitalized postoperatively on the recommendation of the same cordiologists who had felt that preoperative digitalization was not indicated in them. Unfortunately the study, which was carried on during World War II, had to be interrupted because of shortage of help.

I would like to emphasize again that I have yet to see any serious difficulty from digitalization of patients with decreased cardiac reserve provided that it is done carefully; the digitalizing dose is given at least in four divided doses, allowing time for each dose to exert its full effect; and that the extent of digitalization is followed with electrocardiography if necessary.

Naturally, I agree with everything that Dr. Papper said about overdigitalization; that's very bad. That again comes into the overcompensation which I warned against. But we have been using preoperative digitalization in the presence of organic heart disease a little bit more liberally, and I have to say that our cardiologists at this institution are, after thirteen years, all agreed with our classification and use of preoperative digitalization.

Dr. Pallin: I might mention in passing that one anesthesiologist who published his work uses acetylstrophanthidin in every case of shock where there was no demonstrable reason for the shock. That's the other extreme, of course. Did you want to ask a question?

Eli Eisenberg, M.D.: I have listened to Dr. Foldes on digitalization now for about five years, at least that I know of, and I have yet to be sorry that I have listened to him.

Now I don't disagree with anyone who wants to be a purist, but I do feel that when a man of his stature gets up and says that he still has not seen any ill-effects and that he has been sorry when he did not do it, I think we can take him at his word.

I still don't understand what is the harm of digitalization in older people, over the age of sixty-five, with organic heart disease. I just don't understand the argument because there is no doubt that a prolonged operation is a terrific, sustained stress to which these people have not previously been exposed. If you go into a careful study, you will find that they have a certain amount of dyspnea and a certain amount of edema. How easy is it to determine early cardiac failure on the operating table? I think when you digitalize the patients, you eliminate exposing them to that one factor.

Dr. Pallin: Thank you. I think we're all grateful to Dr. Ingegno for bringing up this subject. It's been very stimulating and certainly has brought out a lot of comment and a lot of good information. Are there any others who have any questions? Dr. Hershey.

Solomon G. Hershey, M.D.: I got the impression from Dr. Collins that he felt there was little or no place for the use of ether in the diabetic patient or for cyclopropane in the asthmatic patient. I wonder if my impression was correct.

Dr. Collins: I believe the words used were preferable or not preferable. Ether has definite disadvantages in diabetes and is not the preferred agent. It can be given. This we do not deny. I think that the experience at the Massachusetts General Hospital speaks for itself. In noting that they use ether on many diabetic patients with no undue morbidity or mortality one must appreciate the fact that they have one of the best diabetic medical services in the country. When they get into any trouble with diabetic patients they can obtain superior help. They have a good crutch in their medical department. In my opinion it is better to avoid complications.

This type of exception only proves the rule. The fact is that there are adverse effects of ether on the metabolism of carbohydrate. There are derangements that occur from the administration of ether. This is what we feel should be avoided and therefore in this situation it is preferable not to use ether in diabetes.

A similar analysis of the disadvantages of cyclopropane because of its bronchoconstrictor action can be made in the case of asthmatic patients. This is not the drug of choice.

Dr. Pallin: Any other questions? I have a question for Dr. Foldes that I would like to ask. What do you do in the case of a child who comes in with a diagnosis of acute appendicitis—I'm making it a child because this makes it more rigid—and the surgeon insists on immediate surgery, but in the history you find the patient has been vomiting for about thirty hours? What do you do in that situation?

Dr. Foldes: I would try to convince the surgeon that he can wait an hour and during this one hour we can start correcting the fluid and the electrolyte disturbances. I have to say that I have never had any difficulty in convincing the surgeon that within an hour or ninety minutes—usually during the time it takes to get the child up from the emergency room to the operating room, which I consider the longest existing distance between two points because it takes about an hour—I can get enough fluid into the child to start him on the road to recovery. Now, naturally, you don't always have an opportunity to determine the sodium and the potassium levels, but from the child's weight and the child's look and the history, you can take a conservative guess of how much potassium, especially, as well as sodium and fluid have been lost and try to replace them.

I might like to add that, in general, when we measure or, from the history, we calculate the deficiency of fluid, what we usually do is try to replace about one half of the deficiency plus the daily requirement in the first twenty-four hours, giving it more rapidly in the first eight hours and less rapidly in the second and third; then we add one quarter of the deficit the second day and the last quarter on the third day, which may be postoperative. I think in most institutions if you have a good rapport with the research people and a good rapport with the surgeons —and I don't think that any anesthetist can or should stay at an institution where, after a respectable length of time which varies from two to ten years, he cannot get a rapport with the surgeons—these problems will not plague your lives too much.

Dr. Pallin: I'd like to ask Dr. Papper a question. As time goes on we see more and more complicated situations arising. I'm talking now in terms of the alcoholic patient, severely alcoholic, who has been on cortisone and tranquilizers for some time; and I wonder how he would treat this particular type of case.

Dr. Papper: I don't happen to have had any experience with a severely alcoholic person on tranquilizers and cortisone, so I don't know; but when I am faced with a problem that I don't know, like this one, I do the least complicated technic for the problem at hand with the simplest agent management possible. And, if I get into trouble, at least I have a shorter road to come out of.

Irving Yarvin, M.D.: Dr. Papper, you spoke about drug addiction. One of the commonest of drug addictions that we have to deal with today is heroin, and although the addicts get heroin the physicians can't. You suggested how they might be treated with the drug that they get or have become addicted to.

Dr. Papper: This is an important point in criminal activities. I have had no experience with heroin. Judging from what has been published it is possible to substitute morphine or meperidine for heroin in the addict. If it's an acute emergency situation you might have more trouble.

The disability, as I understand it, is not only the addiction problem, but also the grandiosity and aggressive grandiosity that comes with heroin. Possibly, this could be suppressed by the induction of anesthesia.

When in doubt about dose, I think it's perfectly safe to start with 10 mg. of morphine or 6 of morphine or its equivalent and work your way up if your have to in the average adult. This would include, as a guess, a heroin addict too.

Dr. Pallin: I'd like to ask Dr. Papper how he would treat the patient preoperatively and during the operative procedure who has been on cortisone for a long time; that is, from the point of view of dosage.

Dr. Papper: Assuming as a concrete situation a patient who is on a maintenance dose of cortisone, let us say for rheumatoid arthritis, the practice would be to increase the dose of cortisone to 50 to 100 mg. in the twenty-four hours preceding operation. During operation we give by intravenous administration somewhere between 100 and 200 mg. of hydrocortisone dissolved in 500 cc. 5 per cent of dextrose and water. The drip is carried into the postoperative period until it seems safe to go back to whatever is the maintenance dosage.

The one problem that this brings up is

a surgical problem. What happens to the wound and is there a failure to heal? We have had patients who have had no apparent healing that one could detect. But in situations like this, first things first. It's more important to have a live patient who has trouble healing than to have a patient who may heal but who may die in Addisonian crisis.

There is no easy solution to the surgical problem, but it is not as large a problem statistically as one would believe.

Dr. Pallin: Are there any other questions from the floor?

Angelo L. Leoni, M.D.: How would you handle a thirteen- or fourteen-year-old child who abhors anesthesia, who has had repeated skin grafts, and who has to be anesthetized again and fights everything you attempt to do?

Dr. Pallin: I think perhaps you'd like to answer that, Dr. Foldes.

Dr. Foldes: This can be a very complicated problem. The most important thing that should be done is to establish some rapport with the patient. This might need several visits to gain the patient's confidence.

Much depends on the child's previous experiences. If his previous preoperative and postoperative experiences were not unpleasant then it won't be difficult. The situation is more difficult if the child did have previous unpleasant anesthetic experiences. Under these circumstances even the best psychologic approach may fail, and one has to resort to induction by rectal anesthesia. In a burned patient my choice of agent for rectal induction would be thiopental sodium.

Most children are fearful of needles. Therefore, if a child is to receive intravenous anesthesia supplemented with nitrous oxide-oxygen the latter should be administered first and the intravenous needle only inserted when the child is already analgesic from nitrous oxide.

Dr. Pallin: I might just add that in our experience when we obtained the confidence of the child we have sometimes used open cyclopropane, that is having the gas flow directly out of the tube onto the child's face. Children will tolerate that, especially if you let them hold the delivery tube and play with it for awhile before induction. As long as you can lose some of the consciousness and acute anxiety, you can frequently add any other agent to get them to sleep.

We do use pentobarbital sodium rectally to avoid needles. The children are frightened, and if you do use a needle, indeed even if it's done on the ward, they go to the operating room in a very terrified state.

I think Betcher* has demonstrated the best approach to this problem. He uses hypnosis, which requires a great deal of time. You have to see the patient repeatedly preoperatively. However, for the child who is brought to the hospital in the condition you have described, time and repeated visits are a cheap price to pay. You should spend a great deal of time with that child and gain his confidence. If you can hypnotize him, then you can bring him up quietly. This subject will be discussed later.

Are there any other questions from the floor? If not, then I'd like to thank the speakers, Dr. Collins, Dr. Foldes, and Dr. Papper, for their excellent presentations. I know we have all enjoyed them.

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* Betcher, A. M.: Hypno-induction techniques in pediatric anesthesia, Anesthesiology 19:81 (Mar.-Apr.) 1958.

Obstruction of the Vesical Neck in Children

HOWARD T. THOMPSON, M.D., ROCHESTER, NEW YORK

(From the Surgical Service, Rochester General Hospital, Northside Hospital, and the Genesee Hospital)

IN MY search for a cause of so-called nonobstructive pyelonephritis it appeared that minimal vesical neck obstruction is an etiologic factor, not sufficiently recognized, of recurrent infections. While studying this problem and continuing with the evaluation of urologic problems in children, it has become more evident that the most common etiologic factor of urologic difficulty in the child is some type of obstruction of the vesical neck, or, as more widely stated, some type of infravesical neck obstruction.

"Obstruction of the vesical neck in children is a condition poorly appreciated and frequently unrecognized. The true incidence is not known, for as Campbell[1] states, 'most cases in childhood pass unrecognized.' "[2] When I wrote that paragraph some four years ago I was in complete agreement with Campbell but could see little reason for this state of affairs. I felt that the responsibility was ours, in our urologic investigation, teaching, and practice and in the dissemination of urologic thought among our contemporaries.

Diagnosis and Findings

When evaluating pediatric patients referred for urologic evaluation, obstruction of the vesical neck almost always can be suspected from the history. Physical examination contributes little to the suspected diagnosis except in the unusual case in which a distended bladder is palpable. Estimation of the residual urine has not been routinely carried out in the past. The absence of residual urine does not rule out obstructions of the vesical neck, sometimes of even marked degree. The bladder is analogous to the heart and like it undergoes work hypertrophy, compensating for the obstruction and maintaining the absence of residual urine. Like the heart when it decompensates, it dilates and fails to evacuate properly, resulting in bladder failure with residual urine.

In our previous series of 77 cases[2] only 2 proved to have structural abnormalities of the upper urinary tract of clinical significance. In the present series of 87 cases only 4 patients were found to have structural abnormalities of the upper urinary tract requiring surgical intervention (Fig. 1). Cystograms revealed reflux, either unilateral or bilateral, in 9 instances, but this examination was not carried out routinely (Fig. 2).

Findings of cystoscopic examination have been most interesting. The vesical neck appears somewhat narrowed. One cannot look into the bladder with ease since there appears to be a ridge or bar formation, although contracture or narrowing usually involves the entire vesical orifice. There may be a dipping down of the prostatic urethra at this point in the male and of the urethra in the female, which seems to exaggerate the degree of obstruction. After the bladder is entered, the bladder wall seems to drop off more precipitously than normally, forming a true bas-fond.

Trabeculation was present almost invariably in this series, occurring in 94 per cent of the cases. While it was recognized in only 50 per cent of the first series of 82 cases,[2] I believe that further experience has shown that this may be a segmental finding and not existing diffusely throughout the bladder. It may be absent in the region of the bladder neck and trigone but nevertheless be present in the posterior wall, especially in the midline. It has been noted to

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Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, Section on Urology, May 13, 1959.

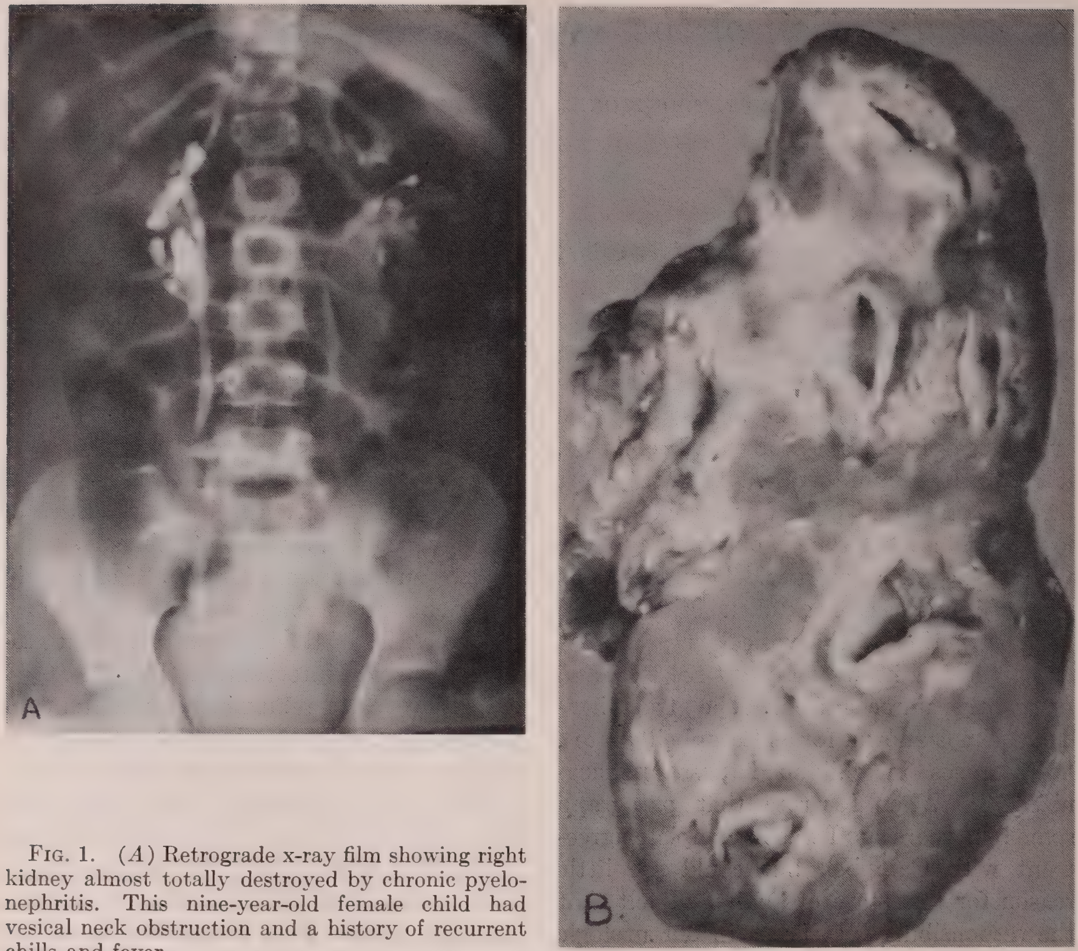

FIG. 1. (*A*) Retrograde x-ray film showing right kidney almost totally destroyed by chronic pyelonephritis. This nine-year-old female child had vesical neck obstruction and a history of recurrent chills and fever.
(*B*) Pathologic specimen after nephrectomy in which there is almost total obstruction of the function tissue.

have a spotty occurrence in the lateral walls towards either fornix.

Ureteral orifices may be normal, but when dilated or appearing fixed, they suggest the presence of reflux. This should be further elucidated by a voiding cystogram. Reflux may be present with normal-appearing ureteral orifices. There may be trigonitis and irritation about the vesical neck as a result of previous infection or the mucosa may be entirely within normal limits. In the female, superimposed recurrent infections frequently result in large edematous mucosal folds at the bladder neck, complementing the previous contracture and obstruction. Diffuse cystitis cystica is not an uncommon finding in the female, especially when a history of recurrent pyuria of long standing is elucidated. Occasionally one encounters the male patient in whom it is impossible to pass the instrument into the bladder, but visualization in the prostatic urethra will reveal the severity of the obstruction. In the female it is frequently necessary to dilate the urethra and vesical neck with sounds before either the baby cystoscope or the number 16 cystoscope can be passed.

The age distribution, as shown in Figure 3, is essentially the same as that in our previous series of 82 cases. In 72 per cent of the original group of 82 cases vesical neck obstruction occurred within the first six

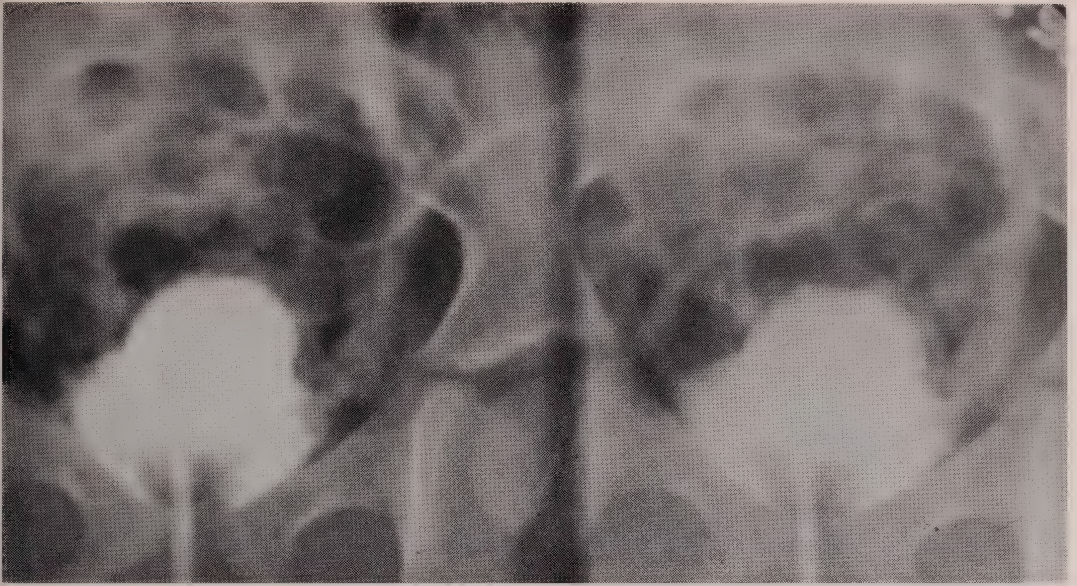

FIG. 2. Cystogram revealing marked trabeculation and cellule formation of the bladder in a four-year-old female child with a history of recurrent fever. Reflux is noted on the left side.

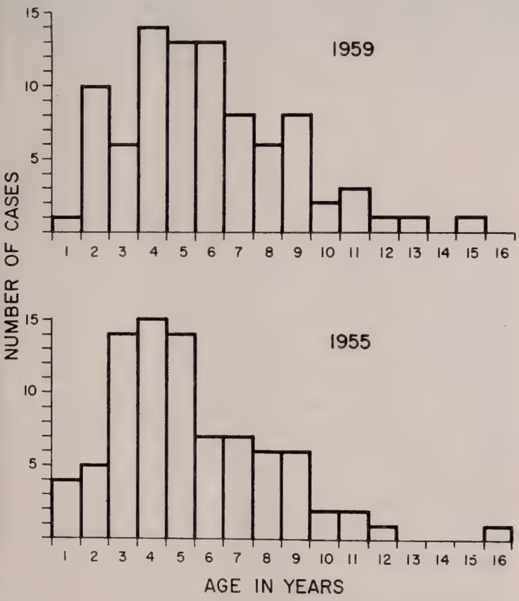

FIG. 3. Age distribution of 87 cases compared to 82 previous cases. Vesical neck obstruction occurred before six years of age in 72 per cent in 1955 and in 65 per cent in 1959.

years of life; 65 per cent of the 87 cases in the present study were in this age group. Unfortunately urinary symptomatology often is disregarded in this age group in the absence of fever or constitutional reaction.

TABLE I.—SYMPTOMS* IN 87 CASES OF VESICAL NECK OBSTRUCTION TREATED IN 1959.

Symptoms	Patients Number	Patients Per Cent
Frequency	63	72
Urgency	43	50
Straining	19	22
Abdominal pain	46	53
Nocturnal enuresis	56	64
Diurnal enuresis	36	41
Dysuria	24	28
Fever	44	51

* Average duration of symptoms was 27.5 months with a range of two weeks to eleven years.

The symptoms noted in the histories are recorded in Table I. Abdominal pain, present in more than half of these cases, is a very important symptom in relation to obstruction. When properly questioned the majority of these children recall relief of abdominal pain with voiding. One of the most significant points elicited in a history, which is not a symptom or a complaint, is early toilet training, frequently at about one year of age. The parents are quite happy about the child who urinates only two or three times a day, who apparently has excellent urinary control, and who is no problem during their excursions in the automo-

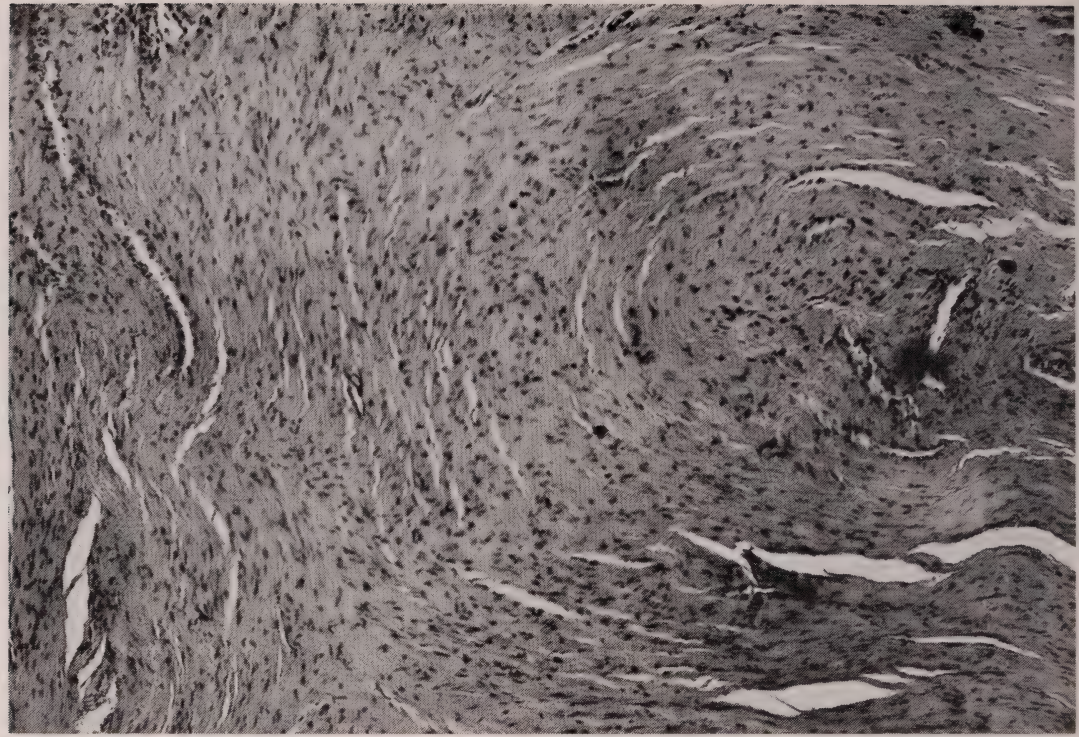

Fig. 4. Microscopic view of tissue specimen from vesical neck of a child with obstruction showing marked fibrosis and hyalirization.

TABLE II.—Type of Treatment Administered in 87 Cases of Vesical Neck Obstruction in 1959

Treatment	Patients Number	Patients Per Cent
Suprapubic resection	13	16
Transurethral resection	22	26
Urethral dilatations	43	52
Urethral dilatations and fulguration	5	6

bile. When this history is obtained, some type of obstruction of the vesical neck is almost invariably present. The child should not have been trained at such a young age, nor should the bladder capacity normally be of such degree as to allow the retention of urine for such prolonged periods of times.

Treatment and Results

The treatment was operative in 42 per cent of the cases, 13 children (all male) having suprapubic resections of the bladder neck and 22 children having transurethral resections (Table II). The remaining 58 per cent were treated with urethral dilatations or with urethral dilatations and fulguration of edematous mucosal folds. The pathologic examination of the tissue revealed pathology varying from diffuse hyalinization and fibrosis (Fig. 4) to hypertrophy of the smooth muscle fibers (Fig. 5). In many instances lymphocytic infiltration was present, but polymorphonuclear infiltration is rarely observed.

At the operating table from the suprapubic approach one is impressed with the degree of thickening of the bladder, the trabeculation, and the marked obstruction of the bladder neck. When grasped with an Allis clamp the bladder neck is thickened and enlarged and forms a very definite ridge posteriorly. When a clamp is placed in the urethra and withdrawn, a definite ridge is noted. After this obstruction is resected, the clamp can be passed from the urethra to the bladder without difficulty. Following the resection of obstructing tissue it has been our practice to

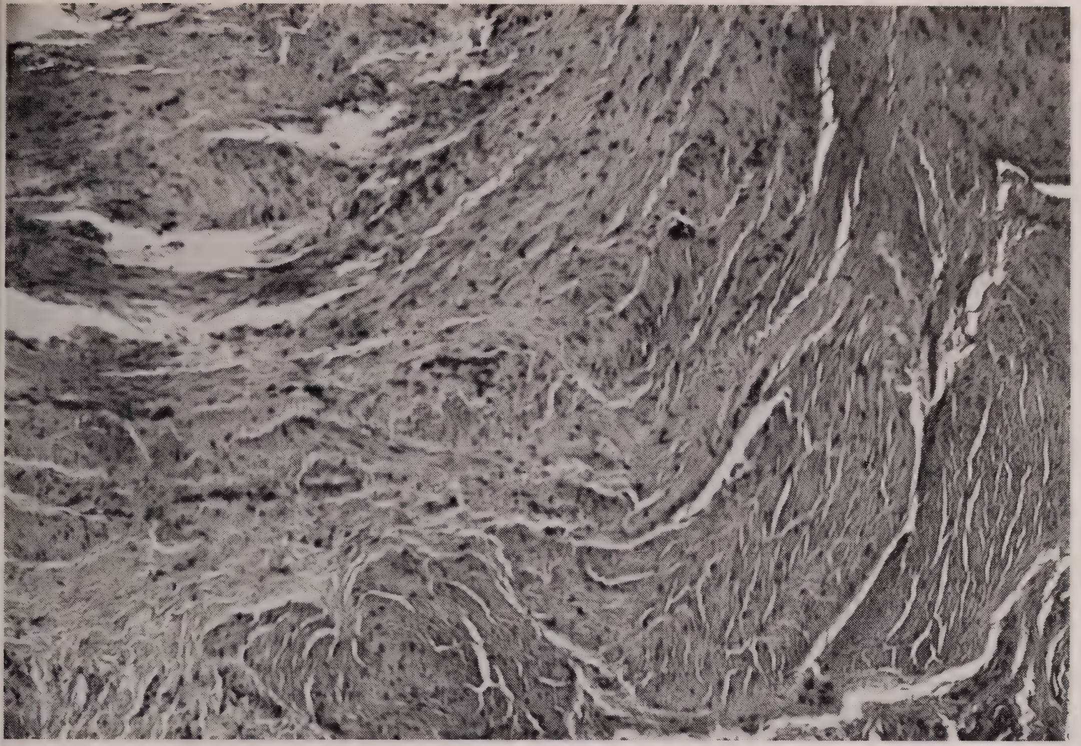

FIG. 5. Microscopic view of tissue specimen from vesical neck of a child with obstruction showing hypertrophy of the smooth muscle.

approximate the urethral mucosa to that of the trigone, in this way covering the defect and enlarging the vesical neck. This reduces postoperative bleeding and decreases the period of healing. All suprapubic resections have been uniformly successful. The only complication has been a urethral stricture in 1 instance, which responded to two urethral dilatations. Transurethral resection has been carried out without complications. To date we have had to perform a second resection in only 2 instances, both female. In both cases the second resection was successful.

Urethral dilatation in the female has been a very rewarding procedure in the absence of residual urine or reflux. Overdilation is attempted, and it is not unusual to dilate a six- or eight-year-old female child with a number 24 or 26 French sound. Occasionally 3 cc. of 1 per cent silver nitrate is placed in the bladder if definite trigonitis or marked chronic cystitis or urethritis has been noted at cystoscopy.

In all instances in which there has been a history of repeated urinary infection, the child is maintained on urinary antiseptics for a period of three to twelve months during therapy. This consists of either $^1/_2$ Gm. of a sulfa compound once a day or a teaspoonful of Furadantin or a sulfa compound once a day. Attention is directed to the bowel habits, and once-a-day evacuation is a desired end. On more than one occasion I have been impressed with the marked distortion of the bladder that occurs in the young female with a bolus of feces in the rectum.

On cystoscopy one may observe the entire floor of the bladder to be elevated and the ureteral orifices forced laterally with partial obstruction of the bladder orifice.

The following cases are presented as examples of vesical neck obstruction.

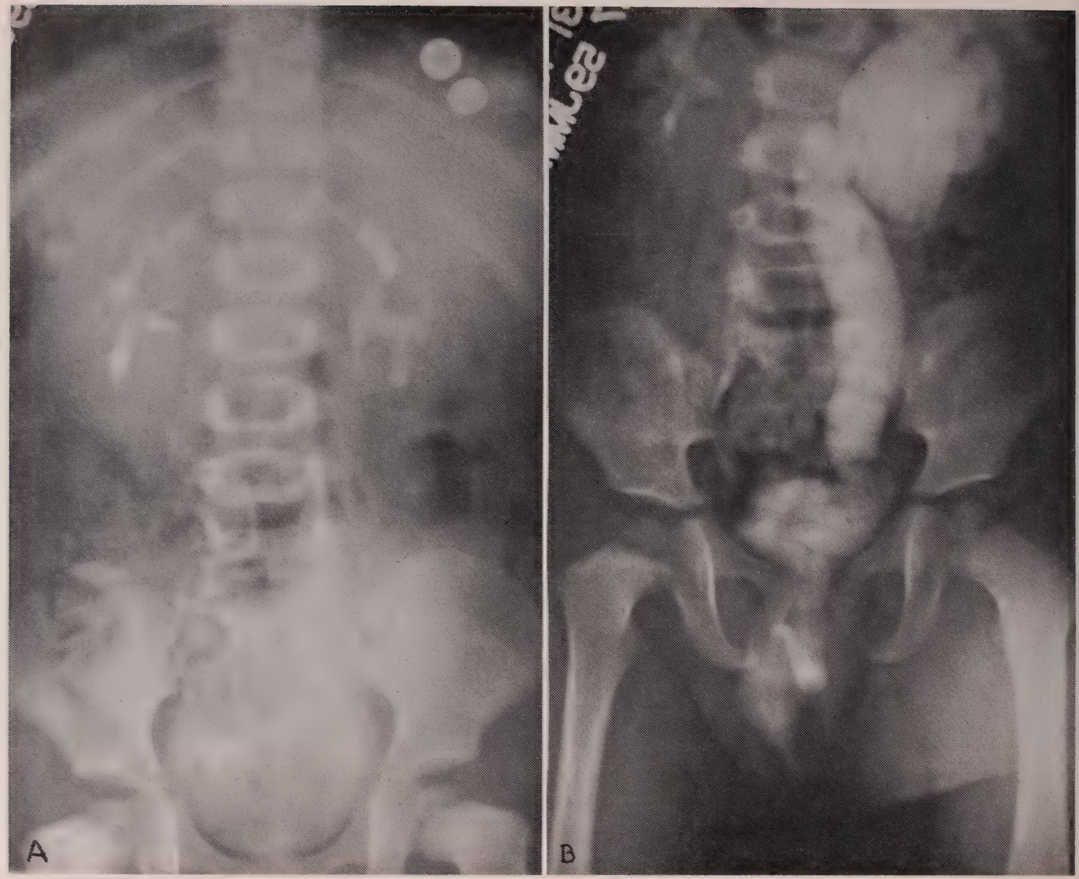

FIG. 6. Case 1.—(*A*) Intravenous pyelogram (reversed) showing mild changes of blunting and dilatation in the right kidney. (*B*) Voiding film (reversed) after upright film of intravenous pyelogram showing tremendous reflux with hydronephrosis and hydroureter.

Case Reports

CASE 1.—A sixteen-month-old white male infant was first seen on February 10, 1959, with the chief complaint of urinary infection. Since September, 1958, he had intermittent fever, with temperatures rising up to 105 F. He was treated symptomatically with sulfa drugs, but recurrence occurred. He became irritable and lost his appetite. The mother noted a foul odor to the urine. In spite of his age he complained of a pain in his right flank. There was no history of urinary difficulty although she had noted he voided less frequently when he was febrile. She stated that he voided well, with a good stream.

Examination in the office at that time revealed the bladder to be palpable up to the umbilicus. A catheter was passed without difficulty, and 210 cc. of clear urine was obtained. The patient was admitted to the hospital on February 16, 1959. The urine and blood examination findings were within normal limits. An intravenous pyelogram revealed some changes in the right kidney consistent with recurrent pyelonephritis (Fig. 6A), but on the voiding cystogram he showed marked hydronephrosis and hydroureter on the right side due to reflux (Fig. 6B). Cystoscopy revealed a markedly dilated bladder. There was diffuse coarse trabeculation. At the vesical neck there was a definite obstructing posterior type of commissure or bar with a marked dropping off as the cystoscope was pulled into the urethra.

Suprapubic resection was carried out. The postoperative course was benign, and the patient was discharged home on the tenth postoperative day. Since that time the child has done extremely well. The wound has healed without difficulty, and the urine is negative.

CASE 2.—On May 10, 1956, a five-year-old white female child was admitted to the hospital with the chief complaint of bladder infection of four weeks duration. At that time she began to experience nausea, vomiting, and diarrhea followed two days later by frequency and dysuria. Gantrisin was prescribed with relief. Ten days before admission she became irritable and anorexic. Her temperature was elevated to 102 F., and vomiting with diffuse abdominal pain, frequency, dysuria, and urgency occurred. Urine examination revealed white blood cells with clumps. Chloromycetin was prescribed with relief of this symptomatology. The night before admission the symptomatology reoccurred. There was no history of urinary difficulties prior to the onset of symptoms. It was stated by the parents that the child had voided well with good control and had not wet the bed day or night.

Physical examination was unrevealing with the findings essentially within normal limits. The urine examination revealed a trace of albumin, one to five white blood cells per high power field, and a rare red blood cell. Blood urea nitrogen was 8 mg. per 100 cc. The sedimentation rate was 15 mm. per hour and the hemoglobin was 11.8 Gm. per 100 cc. The urine culture was sterile. An intravenous pyelogram revealed bilateral double kidneys and double ureters. Cystoscopy revealed minimal hypertrophy of the vesical neck and minimal trabeculation. There was diffuse injection of the trigone and vesical neck and large edematous mucosal folds. The lower ureteral orifices were essentially within normal limits while the upper ureteral orifices on both sides were wide and dilated. A cystogram revealed reflux up both double kidneys to the lower poles. Residual urine persisted and varied between 60 and 80 cc.

On July 18, 1956, transurethral resection of the vesical neck was carried out. Since that time she has had one attack of acute pyelonephritis, on September 29, 1957. On April 8, 1958, she was admitted to the hospital for re-evaluation, at which time cystoscopy, retrograde studies, and a cystogram were performed. No reflux up the lower pole of the right ureter was noted but slight reflux persisted on the left. A urine culture was negative. Differential functions revealed 15 per cent from each of the four components except the lower right, which did not drain well. She has been seen periodically in the office and followed with urethral dilatations. When last seen, on March 31, 1959, the residual urine was 5 cc. The urine was negative on examination, and she was dilated with a number 24 cystoscope with ease.

Case 3.—On December 30, 1957, a seven-and-a-half-year-old white male child was admitted to the hospital with the chief complaint of kidney trouble. For the past two years he had suffered intermittent attacks of abdominal pain. Two years before admission he had had a urinary infection which cleared with sulfa therapy. He strained to urinate. Although he did not wet in the daytime, he wet the bed every night. The child had noted some occasional relief of abdominal pain with urination. The pain was paraumbilical in character and radiated down the back of the legs. Frequency, dysuria, and polyuria were denied.

Physical examination revealed an essentially normal white male child who seemed to be somewhat underdeveloped. The blood and urine findings were essentially within normal limits. A urine culture was negative. Cystoscopy was performed on the day of admission and revealed marked coarse trabeculation and deep cellule formation with contracture of the vesical orifice. A deep ridge formation was present here, especially posteriorly.

On January 7, 1958, suprapubic resection of the vesical neck was carried out. The postoperative course was benign. He was discharged home on his twelfth postoperative day. He voided well with good control. The patient was last seen on September 9, 1958, at which time he was essentially asymptomatic. The urine was negative. He voided with a good stream without difficulty.

Comment

It has been my opinion for some time that obstruction of the vesical neck is as common in the male as in the female. Pediatricians, for some reason, seem to feel that it is much more common in the female, although they have little to support this contention. Campbell[1] originally noted this condition in 80 per cent of males and 20 per cent of females with recurrent infection or urinary difficulty, while in my first study I found it in 13 per cent of the males and 87 per cent of the females. In the present study the percentages are now approaching 50 per cent, with 43 per cent in the male and 57 per cent in the female. The ease with which the fe-

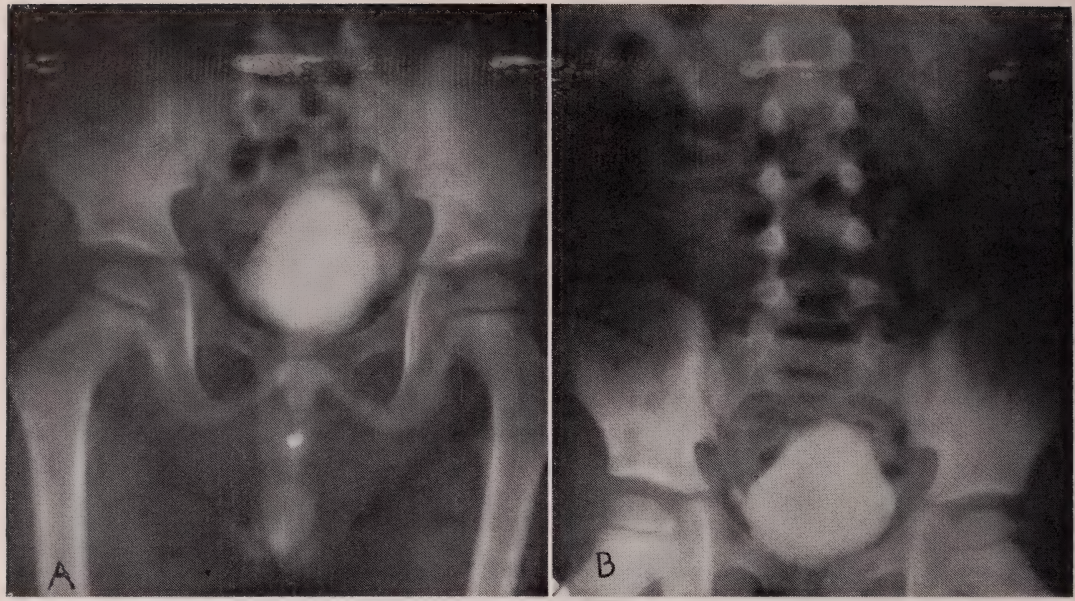

FIG. 7. (*A*) Voiding film after upright intravenous pyelogram showing bilateral ureteral reflux. (*B*) Cystogram one year after suprapubic resection of bladder neck showing marked reduction of reflux.

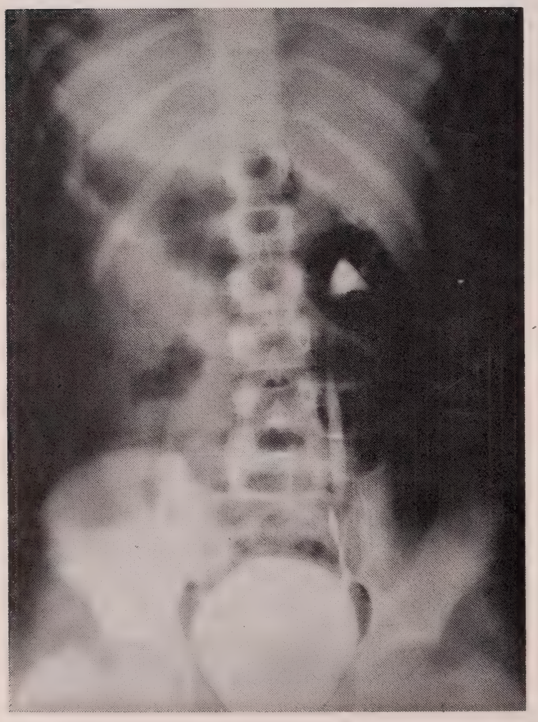

FIG. 8. Voiding cystogram revealing bilateral reflux in a child who did not respond to conservative therapy.

male can be examined or calibrated as well as the more frequent occurrence of urinary infection in the female most likely is a factor in bringing these conditions to the attention of the family and the physician.

Over a period of eight years 169 cases of obstructions of the vesical neck have been reported. It is becoming more apparent that this is the most common etiologic factor in urinary infection in the child. The distribution between male and female is beginning to approach equality and most likely is of equal occurrence. The presence of a vesical neck obstruction can almost invariably be suspected from the history, and the diagnosis is confirmed by urologic investigation. The absence of residual urine does not preclude the presence of vesical neck obstruction, even of moderately severe degree.

Treatment is both operative and nonoperative, depending on the individual findings. Urethral dilatation is never carried out in the male but almost invariably in the female. Reflux has not been operated on primarily but has been evaluated and watched. It has been most rewarding to see it decrease or disappear after the obstruction of the vesical neck has been removed (Fig. 7). At the present time 2 female children are awaiting operation because of reflux (Fig. 8), one because of recurrent infection and the other because of persistent residual urine, or urine which is refluxed up a dilated ureter.

Summary and Conclusions

Obstruction of the vesical neck as seen in children in the private practice of urology has been presented. Not all of these children were subjected to a battery of tests; rather, each case was individualized.

The evaluation and treatment varies from simple calibration of the urethra and urethral dilatation to the entire gamut of urologic investigation, with voiding cystograms and retrograde study.

It is felt that obstruction of the vesical neck is: (1) the most common cause of urinary difficulty in the child, (2) the most frequent cause of pyuria, and (3) the cause of so-called nonobstructive pyelonephritis.

It must be emphasized that normal intravenous pyelogram findings and the absence of residual urine do not rule out obstruction of the vesical neck.

Ureteral reflux should not be operated on primarily but observed after the obstruction of the vesical neck has been removed. The reflux will disappear and an operation will be unnecessary in the majority of cases.

22 South Goodman Street, Rochester 7

References

1. Campbell, M. F.: Clinical Pediatric Urology, W. B. Saunders Co., Philadelphia, 1951.

2. Thompson, H. T.: Obstruction of vesical neck in children, New York State J. Med., 56: 361 (Feb. 1) 1956.

Discussion

Edgar A. Slotkin, M.D., *Buffalo, New York.*—I wish to congratulate Dr. Thompson on presenting an interesting paper on a subject that needs to be called to the attention of general practitioners, pediatricians, and many urologists as well. Dr. Thompson has treated a large series of cases with excellent results.

The subject of vesical neck obstruction in children invariably brings up certain questions for discussion. The first is diagnosis. I find it very difficult to make this diagnosis, particularly in female children. This is not only my opinion, but at the Section on Pediatric Urology at the American Association of Urology meeting at New Orleans in 1958 almost all felt that the diagnosis is made by exclusion rather than based on definite pathologic findings. To quote Dr. D. Innes Williams[a] of the Hospital of Sick Children and the Institute of Urology, London, "Bladder-neck obstruction is a diagnosis of exclusion, reached when there is evidence of a hindrance to the outflow of urine from the bladder, although usually no obstructive abnormality can be found in the urethra." The cystoscopic findings that Dr. Thompson mentions are typical of obstruction, but in many cases these obstructive abnormalities or diagnostic criteria cannot be demonstrated.

In this series of cases Dr. Thompson mentioned that 58 per cent were treated with urethral dilatations or with urethral dilatations combined with fulguration of edematous mucosal folds. I believe that urethral dilatations are helpful if there is a definite stricture present, but if there is no stricture, I wonder how helpful dilatation is. It certainly is not helpful in obstructions in the adult. Burns and coworkers[b] maintain:

> The management of bladder neck obstructions in children involves the same fundamental principles as those involved in obstructions at the bladder neck in adults . . . There is no nonoperative treatment for bladder neck obstructions in children. Dilatation of the bladder neck with bougies is not only impractical but unsound; it is impractical because proper dilation requires some type of anesthesia and the procedure must be repeated at frequent intervals; it is unsound because the benefits from it are questionable, and, at best, only temporary.

The results in Dr. Thompson's series are so excellent that I would like to know more about the open surgical technic that was used. The Leadbetters[c] state that simple dilatation, excision by cold punch, and open cystotomy with posterior wedge excision have not been consistently successful because they allow no means of widening the anterior bladder neck. He describes an operation to accomplish this.

At the recent American Urological Association meeting at Atlantic City Charles Stewart M.D. of Los Angeles described and showed a movie on transvesical operation for congenital bladder neck obstruction. This is an open cystotomy combined with a cold punch wherein the entire vesical neck is encircled. He believes that this is superior to other methods and has a large series of cases with satisfactory follow-up studies. One patient had had two transurethral resections with very poor results followed by open surgery and a posterior V-operation with excellent results. Another had an open operation with excellent results on the bladder neck but still had marked hydroureters and hydronephrosis.

I again would like to thank Dr. Thompson for an interesting and instructive treatment of a very important subject.

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[a] Williams, D. I.: Bladder neck obstruction, Proc. Roy. Soc. Med. **51**: 957 (Nov.) 1958.

[b] Burns, E., Pratt, A. M., and Hendon, R. G.: Management of bladder neck obstruction in children, J.A.M.A. **157**: 570 (Feb. 12) 1955.

[c] Leadbetter, G. W., Jr., and Leadbetter, W. F.: Diagnosis and treatment of congenital bladder-neck obstruction in children, New England J. Med. **260**: 633 (Mar. 26) 1959.

ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 7 to 13, 1960, in New York City.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1960,* and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

ALFRED A. AUGRIST, M.D., *Chairman*
Committee on Prize Essays

Experience with Reporting of Habitual Users of Narcotic Drugs in New York State

EDWARD R. SCHLESINGER, M.D., M.P.H., JOHN J. BELLIZZI, PH.G., AND ELIZABETH PARKHURST,
ALBANY, NEW YORK

(*From the New York State Department of Health*)

THE problem of narcotic addiction is of increasing concern to the medical profession and the public. Nevertheless, information on the extent of this problem is scant and unreliable. Most of the available estimates are based on reports from police and other penal authorities. Reports from different agencies tend to duplicate information on the same individuals. Repeated enumeration of the same individuals in different years further complicates the picture, rendering almost meaningless any attempt to arrive at trends in narcotic addiction.

The reporting of habitual users of narcotic drugs in New York State, in effect since April 12, 1952, provides certain information not available from other sources. Section 3344 of the New York State Public Health Law states that: "It shall be the duty of every attending or consulting physician to report to the State Department of Health, promptly, the name and, if possible, the address of any person under treatment if it appears that such person is an habitual user of any narcotic drug."

Physicians having knowledge of such patients are required to submit reports to the county, city, or district health officer of jurisdiction, whether the patient came to the attention of the physician in his private practice or in his capacity as staff physician to an institution, hospital, or court. The reports are forwarded to the Narcotic Control Section of the State Department of Health in Albany. There they are checked against possible previous reports for the same individual. If the case is being reported for the first time, pertinent information is entered on a punch card for subsequent analysis.

The present report is concerned only with the 10,563 habitual users of narcotic drugs reported to the State Department of Health for the first time from April 12, 1952, through December 31, 1958. No attempt is being made to analyze the multiple reports received for many cases, which may represent reports from different agencies having knowledge of the narcotic user within a short period of time, or which may represent return to the use of drugs after an interval of freedom from narcotic use.

Before presenting the data, certain obvious deficiencies, some of which are inherent in any reporting system, should be mentioned. The physician is required to report any habitual user of a narcotic drug rather than narcotic addicts. No criteria have been established to guide the physician in his determination of habitual use of a narcotic drug. The concept of habitual use, being broader and possibly less readily defined than actual addiction, might tend toward overreporting of habitual use of narcotics. Another complicating factor, not present to as great a degree in reporting of communicable diseases, is the matter of legal implications involved in the use of narcotics. This might tend to discourage reporting of narcotics use.

The breakdown of the 10,563 initial reports of habitual users of narcotics is given by year of report in Table I. There is no clear-cut trend in the number of cases

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Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, Section on Preventive Medicine and Public Health, May 13, 1959.

TABLE I.—INITIAL REPORTS OF HABITUAL USERS OF NARCOTICS BY RESIDENCE AND YEAR OF REPORT, 1952–1958

Year of Report	Residence: New York City	Residence: Upstate New York	Other*	Total
1952†	845	186	16	1,047
1953	1,362	224	16	1,602
1954	1,615	244	22	1,881
1955	1,280	176	23	1,479
1956	1,343	150	11	1,504
1957	1,179	411	11	1,601
1958	1,175	262	12	1,449
TOTAL	8,799	1,653	111	10,563

* Nonresidents of State or residence not known.
† April 12 to December 31, 1952.

TABLE II.—NARCOTICS USERS PER 100,000 POPULATION BY YEAR OF REPORT, 1953–1958

Year of Report	Residence: New York City	Residence: Upstate New York	Total New York State
1953	17.4	2.9	10.2
1954	20.6	3.1	11.8
1955	16.4	2.2	9.1
1956	17.2	1.8	9.2
1957	15.1	4.8	9.7
1958	15.1	3.0	8.7
Average annual rate	17.0	3.0	9.8

TABLE III.—NARCOTIC USERS BY RESIDENCE AND SOURCE OF REPORT, 1952–1958

Residence	Source of Report: Private Physician	Source of Report: Institution, Hospital, or Court	Not Stated	Total
New York City	2,120	6,669	10	8,799
Upstate New York	1,079	574	..	1,653
Other*	28	83	..	111
TOTAL	3,227	7,326	10	10,563

* Nonresidents of State or residence not known.

TABLE IV.—NARCOTICS USERS BY SEX AND RACE, 1952–1958

Race	Sex: Male	Sex: Female	Total
White	2,341	1,763	4,104
Negro	1,796	2,754	4,550
Other	551	294	845
Not stated	683	379	1,064*
TOTAL	5,371	5,190	10,563*

* Totals include 2 cases in which sex was not stated.

reported during the six-year period since the end of 1952, the variation falling within the narrow range of 1,449 to 1,881 reported new cases per year. The bulk of the problem is to be found in New York City from which emanated 84 per cent of the reports with residence specified within New York State. The rate of 17 new cases reported per 100,000 population in New York City, as shown in Table II, contrasts sharply with the rate of 3 cases per 100,000 elsewhere in the State. There is a much greater variation in the annual rates for Upstate New York than in New York City, but this may be explained possibly by the smaller numbers involved.

The sources of the reports by physicians from their private practices or in their capacity as physicians to institutions, hospitals, or courts are given in Table III. Some of the legal implications of the reporting system are brought out by the fact that 69 per cent of the reports come initially from an institutional setting. The contrast between New York City and Upstate New York in the source of the reports points to the qualitative as well as the quantitative difference in the nature of the problem in these major subdivisions of New York State. In New York City more than three times as many cases are first reported from an institutional setting as are reported from private practices of physicians. In Upstate New York the situation is reversed; nearly twice as many are submitted by private physicians as are submitted by institutions, hospitals, or courts.

The breakdown of narcotic users by sex and race is given in Table IV. Of the 9,499 cases in which race was recorded, 4,104, or 43 per cent, were among whites; 4,550, or 48 per cent, among Negroes; and 845, or 9 per cent, among other ethnic groups which include Puerto Ricans. No attempt was made to calculate incidence rates by race because of the absence of reliable recent census figures by racial groups.

Rather unexpectedly, there was only a

TABLE V.—NARCOTICS USERS BY AGE AND RACE, 1952–1958

Age in Years	Race: White	Negro	Other	Not Stated	Total
Under 21	680	783	365	140	1,968
21 to 29	1,092	2,522	304	388	4,306
30 to 44	781	1,047	85	231	2,144
45 to 64	881	68	53	78	1,080
65 and over	400	10	6	38	454
Not stated	270	120	32	189*	611*
TOTAL	4,104	4,550	845	1,064*	10,563*

* Includes 2 cases in which age and race were not stated.

slight preponderance of male narcotic users over female users. Among Negroes there was a 3 to 2 predominance of females over males, in contrast to the predominance of males among the other groups. The preponderance of females over males among Negroes was present during every year from 1953 on, being especially marked since 1955.

The age distribution of narcotic users at the time of initial report is given in Table V. Of those in which age was given, 1,968, or 20 per cent, were under twenty-one years of age at the time of initial report. Narcotic users under thirty years of age at the time of initial report numbered 6,274, or 63 per cent of those with age given. Since there is often a considerable period of time between the start of drug use and the time when the users come to medical or legal attention and subsequent report, these data indicate clearly the importance of the problem among the younger age groups.

The concentration among the younger age groups is not nearly so marked among the whites as the concentration among the Negroes and other ethnic groups. Among the whites, only 46 per cent of those with age stated were under thirty years of age at the time of initial report. In contrast, 75 per cent of the Negroes reported were under thirty years of age, and 82 per cent of the others fell into this age group. Among Negroes, fully 45 per cent were under twenty-one years of age at the time of the initial report, whereas only 18 per cent were under twenty-one years of age in the other racial groups.

A marked difference was noted in the age and sex distribution by race. There was a sharp peak among Negro females in the age group twenty-one through twenty-nine years. This group of 1,807 narcotic users constituted 67 per cent of the 2,713 Negro females for whom age was stated. In contrast, white females in this age group numbered 460, or only 28 per cent of the 1,641 white females reported. Negro males in the age group twenty-one through twenty-nine years numbered 715, or 42 per cent of the total of 1,717 with age stated, and white males in the same age group numbered 632, or 29 per cent of the total of 2,193 for whom age was stated.

In view of the great interest in the problem of drug use among adolescents, an analysis was made by each year of age

TABLE VI.—NARCOTICS USERS UNDER TWENTY-ONE YEARS OF AGE BY YEAR OF AGE AND YEAR OF REPORT, 1952–1958

Year of Age	Year of Report: 1952*	1953	1954	1955	1956	1957	1958	Total
12	..	1	..	..	..	1	..	2
13	1	..	..	..	4	..	..	5
14	1	8	3	2	5	1	2	22
15	10	16	17	18	8	10	6	85
16	21	34	16	25	15	20	18	149
17	25	53	37	45	45	35	30	270
18	38	95	81	54	54	39	41	402
19	66	117	79	77	55	57	50	501
20	81	93	88	84	64	68	54	532
TOTAL	243	417	321	305	250	231	201	1,968

* April 12 to December 31, 1952.

TABLE VII.—NARCOTICS USERS AMONG HEALTH PROFESSIONS BY RESIDENCE, 1952–1958

Residence	Physicians	Nurses	Total
New York City	11	26	37
Upstate New York	15	37	52
Other*	8	1	9
TOTAL	34	64	98

* Nonresidents of State or residence not known.

TABLE VIII.—SAMPLE OF NARCOTICS USERS BY TYPE OF DRUG USED AND RESIDENCE, 1952–1958

	Residence			
Type of Drug	New York City	Upstate New York	Others*	Total
Opiates and Derivatives	3,414	530	30	3,974
Opium	5	2	..	7
Heroin	3,065	224	14	3,303
Morphine	104	85	6	195
Pantopon	17	15	2	34
Codeine	24	58	..	82
Dilaudid	32	17	2	51
Combination of opiates and other drugs	167	129	6	302
Other Drugs	212	195	8	415
Marihuana	46	15	1	62
Cocaine	23	6	..	29
Synthetic drugs	115	156	7	278
Combination of nonopiates	28	18	..	46
Not stated	94	14	..	108
TOTAL	3,720	739	38	4,497

* Nonresidents of State or residence not known.

under twenty-one of the number of cases reported since 1952. There is a steady increase in the number of cases reported at each year of age up to twenty-one. Nevertheless, the number of cases reported under eighteen years of age is impressive, and there were more than 100 cases reported before the sixteenth birthday. Two of the reported cases were twelve years of age, and five were thirteen years of age. Here again the inadequacy of reported cases in defining the nature of the problem by age is apparent, since it does not provide information on the age of inception of drug use nor on the age at which drug use could be said to have become habitual.

The trend in number of reported cases under twenty-one years of age is also given in Table VI. Omitting the initial, incomplete year of reporting from consideration, a steady decline in the number of cases reported each year is apparent. In contrast to a total of 417 cases in 1953, there were only 201 in 1958, a decline of 52 per cent over a period of six years. Whether this is a segment of a long-term, downward trend or only a phase of cyclical variation in incidence must await further experience. There is too much variation by individual year of age and year of report to suggest any trends by individual age within the age group under twenty-one.

Because of the ready availability of narcotic drugs to persons in the various health professions, the number of reported narcotic users among these groups is of interest (Table VII). Of the 34 physicians reported in the seven-year period, 11 were residents of New York City and 15 were residents of Upstate New York. Among the 64 persons stated to be nurses on the reports, 26 were residents of New York City and 37 were residents of Upstate New York. Nine of the physicians and nurses reported were not residents of New York State. Not included in the table are two pharmacists and two dentists. The numbers are too small to provide any reliable annual incidence rates, but there was certainly no indication of any great excess of narcotic users among the health professions.

All the reports for 1958 and a random sample of one third of the reports between 1952 and 1957 were analyzed for type of drug used (Table VIII). Of the total of 4,389 cases in which the type of drug was specified, 3,303, or 75 per cent, listed heroin as the only drug used. An additional 302, or about 7 per cent, mentioned a combination of drugs which included one or more opiates, a large proportion of these being heroin. All the other drugs combined, therefore, constituted a small fraction of the total reported used in New York State. Synthetic drugs, morphine, codeine, marihuana, Dilaudid, hydrochloride, Pantopon, cocaine, and opium followed in decreasing order. The figures for marihuana probably bear little relation to actual use since it is likely that the marihuana user is ordinarily not detected until he has gone on to chronic use of some other drug such as heroin.

The qualitative difference in the nature of the problem in New York City as contrasted with Upstate New York is further brought out by the variation in types of drugs reported as used in the two areas. Whereas only 224, or 31 per cent of the reported cases in Upstate New York with drugs specified were listed as users of heroin, 3,065, or 85 per cent, were so listed in New City. Morphine users, on the other hand, constitute 12 per cent of the group with type of drug specified in Upstate New York in contrast to only 3 per cent in New York City. The synthetic drugs also constituted a much higher proportion of the total in Upstate New York than in New York City, the corresponding percentages being 22 per cent in Upstate New York and 3 per cent in New York City.

Summary

There was a total of 10,563 initial reports of habitual users of narcotics in New York State to the State Department of Health from the start of the reporting system on April 12, 1952, through December 31, 1958. No clear trend is detectable in the annual figures for the total number of cases reported during this period.

The average annual rate of reported new cases for New York State during 1953–1958 was 9.8 per 100,000 population. The rate in New York City was 17 per 100,000, in contrast to 3 per 100,000 in Upstate New York.

Physicians on the staffs of institutions, hospitals, or courts reported 69 per cent of the cases.

Twenty per cent of the cases were under twenty-one years of age, and 63 per cent were under thirty years of age at the time of initial report. A steady decline in the number of initially reported cases under twenty-one years of age was noted during the period of the reporting system. The proportion of reported cases in the younger age groups was higher among Negroes than among whites. There was only a slight preponderance of males over females reported in the total group. The greatest concentration of cases in any age-sex group was reported among Negro females twenty-one through twenty-nine years of age.

Heroin was reported as the drug most frequently used. All the other drugs combined constituted only a small fraction of the total for the State as a whole. Heroin use was concentrated in New York City.

Final Exam

Grandma was in the living room, rocking back and forth reading the Bible. "What's the matter with her," Jimmy inquired. "What's she doin' just sittin' there all day rockin' and readin' the Bible?" Bobbie explained, solemnly, "Grandma's cramming for the finals."

Depression: Recognition and Management

CHARLES E. GOSHEN, M.D., WASHINGTON, D.C.

(*From the General Practitioner Education Project, the American Psychiatric Association*)

By definition a depression is a constellation of complaints or symptoms having as the dominant theme a discouraged, pessimistic outlook on life. Depression may occur in many different psychiatric conditions, or in conjunction with various physical diseases and is, therefore, not diagnostic of any particular syndrome. The importance of recognizing and dealing with depression cannot be overemphasized because each depressed patient is a potential suicide.

Personality.—Depression tends to occur in people who have always been worrisome, perfectionistic, overly meticulous, and sensitive to criticism. Recognizing the kind of people who tend to get depressed makes it possible to take measures to prevent serious depressions.

Precipitating Event.—There is, invariably, some sort of failure or series of failures, or an impending failure, which precipitates a depression. It may be exceedingly difficult to discern the nature of this failure, for the patient will nearly always attempt to hide it. As a matter of fact, depression is really a way by which an individual deals with failure in a concealed fashion. One of the most effective forms of concealment is to complain about some trivial or imagined failure in an effort to direct attention away from the one which is really distressing the patient. A common situation of this order is the case of the middle-aged woman whose son or daughter is about to be married. The complaints of the woman are likely to be along the lines of "nobody wants me anymore," "with my children leaving home, I'm not needed, I'm worthless," and so forth. Actually, this woman may be reacting to her feeling of failure in having lost control over her children.

Indications

Complaints.—About the only generalization which can be made about the nature of the complaints seen in depression is that there are many of them, they are greatly exaggerated, and they do not yield to reassurance. They may range from persistent complaints about sleeplessness, loss of appetite, or constipation to nihilistic ideas of hopelessness or delusional ideas of cancer, and so forth.

Clues.—Serious depression must be suspected when a patient is seen who shows pessimistic complaints out of all proportion to the reality of his apparent situation in life or state of health. Be alert, particularly when the complaints fail to respond to simple and appropriate reassurance.

Course.—Depressions, regardless of how deep or superficial they are, tend to follow a cycle with the patient returning to his usual outlook within a period of a few weeks to a few months. There is always a risk of suicide, and even though the incidence of suicide is not high, depressed people are the ones who are likely to try it. If the patient is helped to learn a new philosophy of life, subsequent depressions can be prevented. The usual story, however, is that the patient is not helped in this way, so that he returns to his former way of living, thus putting himself in a position where the cycle might be repeated.

Management

In general, the management of the depressed patient consists of counteracting the tendency of the patient to become inert and apathetic. This requires doing whatever is effective in keeping him active and interested. He will show a great deal of resistance, but the attention and hopeful attitude of those around him who are making the effort to get him active and interested are likely to have a much greater influence on him than he will admit. The most dangerous role for others to assume is that of neglecting him, for then he is likely to resort to drastic measures to attract attention.

HOSPITALIZATION.—The question of hospitalization is likely to come up in the case of profound depressions, and it may be very difficult to make a decision on the issue. Very often, the decision to hospitalize a patient is based on an estimate of the suicidal risk, assuming that hospitalization would minimize this risk. Experience has shown, however, that suicide is just as likely to occur in a hospital as at home. Nevertheless, hospitalization is sometimes the only alternative left. In itself, the hospital offers nothing of intrinsic value to meet the needs of the depressed patient except insofar as it creates an environment which might be more effective in the patient's recovery than can be offered by the home. The critical issue is the amount and kind of attention which the patient is likely to get in either place. When the home can provide an adequate amount of interest, stimulation, and human attention, there is seldom need for a hospital. If the home, however, cannot provide this, it might be that a hospital is the only available place for the patient to get it. The same criteria would apply to the care of a patient with a coronary attack.

REFERRAL.—The question of referring depressed patients to psychiatrists is, necessarily, a matter of individual judgment. As with any other patient, the family physician will refer patients whom he feels he is not equipped to treat himself. It is wise to prepare each patient for the eventuality so that a referral is not interpreted by the patient as a drastic or desperate measure, which would be likely to increase his attitude of hopelessness.

Sometimes the family physician agrees to refer a patient to a psychiatrist only if he is assured that a particular form of treatment will be employed by the psychiatrist. This is as unrealistic as it would be to send a patient to a surgeon only on condition that the surgeon agree in advance to operate. Psychiatrists, as any other group of medical specialists, need to be judged on the basis of their training, general competence, and success in dealing with patients rather than on the question of whether or not they advocate any particular treatment method.

DRUGS, SHOCK, AND OTHER TREATMENTS.—The various chemical and electrical measures which have been advocated for the treatment of depression have waxed and waned in popularity as new ones have appeared on the market. In general, they have been only as effective as the skill of the physician who administers them.

It is of the utmost importance to realize that no physical procedure will, in itself, alter a patient's outlook on life or change his way of living. It is only through the way in which the patient interprets the procedure, or its effect on him, that any change can take place in this regard. This is why the confidence the physician expresses to the patient in the procedure he is employing has more to do with its effect on the patient than the procedure itself.

There is no chemical substitute for human interest and enthusiasm. The many drugs which are designed to stimulate or sedate people are, and will continue to be, widely used by physicians and if used with discretion can serve a useful purpose. In the long run, it will be found that the most significant action of the drugs will be their placebo effect.

8501 HOWELL ROAD, BETHESDA, MARYLAND

The Effects of an Intramuscular Estrogen Androgen Preparation on the Postpartum Breast

JEROME H. BLUMEN, M.D., BROOKLYN, NEW YORK, SHELDON G. ALTMAN, M.D., LONG BEACH, NEW YORK, AND ALVIN M. SIEGLER, M.D., BROOKLYN, NEW YORK

(From the Department of Obstetrics and Gynecology of the Beth El Hospital, Brooklyn, New York, and the State University of New York, Downstate Medical Center College of Medicine, New York City)

THE theoretic explanation of the physiology of lactation presumes that estrogens and progestogens, which are high in pregnancy, cause a marked development of the mammary alveolar duct system. These hormones also sensitize the glandular tissue and enable it to react to the pituitary lactogenic hormone. When the elevated estrogen titers fall about the third day postpartum, the lactogenic hormone, previously held in check, is released. It has been postulated that, during milking, afferent impulses pass from receptors in the mammary gland to hypothalamic nuclei to initiate the release into the blood stream of oxytocin from the hypothalamus-paranervosa region and thus facilitate the expression of milk.

However, detection of prolactin in the blood and urine of human subjects is difficult,[1] and studies on the oxytocic activity of the blood from lactating and nonlactating mothers do not differ significantly.[2]

Although the use of androgen[3,4] as well as the use of various estrogenic substances[5,6] have had good results for the suppression of lactation and painful postpartum engorgement, no method yet reported is entirely effective.

The present study was designed to evaluate a hormone combination estrogen-androgen on the postpartum breast when the drug was administered intramuscularly in the third stage of labor.

Material and Method

A series of 100 consecutive patients was selected from the obstetric service of the Beth El Hospital. There was no significant difference in the patients in regard to age, parity, or duration of gestation. There was no previous history of unusual nursing difficulties. Alternate women were placed into a control group and into a treated group. Alternate patients who were in the control group received a placebo intramuscularly in the third stage of labor or within ten minutes of its completion, whereas the treated patients received 2 cc. of the estrogen-androgen combination, Deladumone (each cc. contains 90 mg. of testosterone enanthate and 4 mg. of estradiol valerate in 1 cc. of sesame oil). The nature of the medication was unknown to the patient and to the investigators.

Follow-up examinations were made daily on all women for the five or six postpartum days of hospital confinement and at the first postpartum visit six weeks to three months after discharge from the hospital. The patients were observed and examined for painful breast engorgement and lactation. As a routine no adjunctive medication was given beside the drugs tested. Saline cathartics, breast binders, ice packs, restriction of fluid, and analgesics were interdicted. These additional measures were instituted only in patients in whom the breast pain was severe. Pain and engorgement were coded as follows: 0, no symptoms; 1 plus, mild symptoms and tenderness; 2 plus, moderate symptoms; and 3 plus, severe pain and engorgement. Lactation was coded

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The authors wish to thank E. C. Reifenstein, Jr., M.D., for his generous contribution of drugs employed in the study.

TABLE I.—ADJUNCTIVE THERAPY

Medication	Treated	Control
	—Number of Patients—	
Analgesics	2	2
Ice packs	2	6
Saline cathartics	0	2
Combinations	2	4
TOTAL	6	14

as follows: 0, when there was no lactation; 1 plus, when milk was expressed from the breast; and 2 plus, when spontaneous lactation occurred.

Results

There was little painful engorgement of the breast or lactation in either the treated or control groups on the first two postpartum days. However, on the third day in the control group 70 per cent of the patients had painful breasts with tenderness, and 85 per cent had breast engorgement. Lactation had occurred in 76 per cent of these women. Evidence of lactation was present in 32 per cent of the treated women, and painful breast engorgement occurred in 41 per cent. On the fifth postpartum day 54 per cent of the control group had no complaints, whereas 90 per cent of the treated patients had no breast discomfort. Only 8 per cent of the treated patients had persistent spontaneous lactation in contrast to 44 per cent of the control patients. Fourteen of the control patients and 8 of the treated women required adjunctive therapy (Table 1).

In the interval after discharge from the hospital until the initial postpartum visit there were no complaints of subsequent painful breast engorgement and there was no report of late postpartum hemorrhage in either series of women.

Comment

Venous and lymphatic stasis which are marked on the third postpartum day are the most important causes of painful breast engorgement,[7] although the condition is partly due to distention of the alveolar and ducts with milk.[8]

DeLee in 1920[9] stated that drugs are dangerous and useless inasmuch as the breast engorgement gradually disappears without any therapy. Few patients in the control group studied in our presentation required additional measures for relief of postpartum breast pain. Eastman in 1950[10] reported that he abandoned the use of stilbestrol for the purpose of "drying up" the breasts postpartum because estrogen withdrawal often was followed by a return of milk secretion and increased uterine bleeding.

The mechanism by which estrogen acts is not altogether clear. Pickles[11] studied human mammary blood flow by thermometric and plethysmographic methods. He suggested that exogenous estrogen has a direct mammary vasodilator action. Furthermore Pickles stated that the simple engorged breast had a lower blood flow and stilbestrol produced a sharp rise in blood flow a few hours after administration. The direct action of mammary-stimulating hormone has been shown by other investigators.[12] Hesseltine[6] found stilbestrol to be beneficial in a nursing mother since the painful engorgement was avoided, but lactation in many instances is not prevented. The mechanical stimulus of suckling is important to initiate and maintain lactation as well as to maintain the proper hormonal preparation of the breast structure.

A variety of medications have been used to prevent postpartum painful breast engorgement and lactation. Pichette and Sieber[3] employed 100 mg. intramuscularly of a long-acting androgen in 846 women with good results and no untoward reaction. Garry[5] treated 100 patients with an estrogen-androgen combination, and 50 control patients received androgen alone. His conclusions were that the combination was twice as effective in the control of postpartum breast engorgement and lactation.

Although many of the previous studies have presented large numbers of cases, very few of them had control groups of equal numbers which were comparable to the treated series in all respects other than hormone evaluated. Watrous[13] employed the same medication as we did but in varying amounts and at different times postpartum. He found the most effective dosage to be 3 cc. administered intramuscularly at the end of the first stage of labor. LoPresto[14] concluded from his study of 197 patients that the most effective dosage was 3 cc. of the estrogen-androgen combination given intramuscularly after the first stage of labor. However, of the 197 patients only 47 were treated by his suggested regimen. Stein[15] stated that 3.5 cc. of this preparation given intramuscularly immediately after the third stage of labor produced the best results. Only 3.7 per cent of his 136 patients who were thus treated required analgesics. Our regimen of 2 cc. given intramuscularly at the third stage of labor or within ten minutes after its completion gave good results. Two patients, 4 per cent, required analgesics but 4 others needed ice packs, saline cathartics, and other remedies for relief.

Summary

1. One hundred consecutive postpartum patients were selected for treatment with a placebo or estrogen-androgen combination.

2. The medication was administered at the third stage of labor intramuscularly.

3. Eight per cent of the treated patients lactated spontaneously and 10 per cent of them had painful engorgement. Forty-four per cent of the control patients lactated spontaneously and 56 per cent of them had painful engorgement.

4. There were no late postpartum hemorrhages or recurrent breast engorgement in the treated patients.

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A Question of Honor

The mother of a girl in the fifth grade informed her neighbor that her daughter had made the school honor roll that month. The second woman, ignorant of the fact that the honor roll system was only used above the third grade, asked her daughter in second grade why she didn't make the roll.

"Why mama," she replied solemnly, "we have no honor in the second grade."—*Newark News*

Esotropia

WARD L. MOULD, M.D., GARDEN CITY, NEW YORK

(*From Nassau Hospital, Mineola, New York*)

Of all the conditions that afflict children and that are likely to be complicated by permanent functional disability, probably none is more prevalent nor so poorly understood as esotropia—or crossed eyes. Unfortunately, the training students receive in medical school usually does not afford an understanding of this complex condition. As a consequence, physicians are often ill-informed regarding the significance of esotropia and the steps they should take regarding it. Many physicians are not aware of the permanent functional impairment that may result through a delay in treatment until the "child is old enough to cooperate."

This article is a review of the subject and is addressed especially to general practitioners and pediatricians to correct any existing misconceptions concerning esotropia and to serve as a guide to these members of the profession who customarily advise parents in all medical problems relating to their children.

Though estimates of the incidence of esotropia vary, reliable figures published by Scobee[1] and Knapp[2] indicate it occurs in between 1.5 and 2.5 per cent of the children in the United States. Over 400,000 children between the ages of five and nine years are afflicted. Approximately 90,000 babies born each year are destined to have this disfiguring condition.

While the scope of the problem is impressive, even more impressive is the fact that of all the common conditions of childhood this is one of the few which is not self-limiting.

Normal Ocular Function

Before proceeding further, I will review some of the factors in normal ocular function. For an object to be seen normally both eyes must be brought to bear on it. Binocular vision is possible only when this occurs. This accomplishment, which we usually take for granted, is a feat of special skill which requires, among other things, that the extra ocular muscles and the cranial nerves III, IV, and VI to each eye be intact.

A second factor necessary for binocular vision is the ability to fuse. Normally each eye sees the object of attention but only one mental image registers; this is a composite of the images seen by the right and left eyes. As pointed out by Kramer,[3] in order for fusion to occur the images seen by the two eyes must be similar and roughly equal in clarity.

According to Adler[4] there is a natural tendency for the eyes of most people to diverge or converge slightly. This can be demonstrated by special tests. Therefore, if there were not some compensating mechanism to correct alignment, a large percentage of the population would be either cross-eyed or walleyed. Swan[5] states that even when the extraocular muscles are sufficiently powerful to rectify the tendency to malalignment, the correction would not actually occur if there were not also a subconscious compulsion to use the eyes binocularly. This factor is called the "fusion impulse." If the fusion impulse is exceptionally strong, binocular vision is achieved by some even though some paresis of the extraocular muscles exists. On the other hand, according to Duke-Elder,[6] binocular vision is apt to suffer if the fusion impulse is lacking. Obviously if there is no desire for binocular vision, the individual will not expend effort to attain it.

The positioning of the eyes in the orbits by the extraocular muscles is mediated by cerebral centers. Light is refracted by the optical properties of the eye so that normally entering rays come to focus on the retina. In accommodation, the ciliary muscle, acting on the intraocular lens, changes the focus of the eye so that objects near at hand can be seen clearly.

Etiology

From the standpoint of etiology, cases of esotropia may be divided into three principal types: the paralytic type, the accommodative type, and the type which results from an absence of the fusion impulse.

The paralytic type usually manifests itself shortly after the onset of the underlying condition. Disease or tumor of the orbit is sometimes responsible. The most common cause, however, is the minor cerebral trauma which frequently occurs during the birth of the child. When the lesion involves the nuclei of the extraocular muscles, the paresis that follows usually causes one eye to assume an eccentric position.

In some children there is such a marked difference in the refraction of the two eyes that the images seen by each eye are totally dissimilar. In such cases there is no impulse to fuse the images and the image in the poorer eye is ignored. Often this eye assumes an eccentric position, either crossing or diverging. A similar complication may follow if an injury, an operation, or an opacity of the cornea involving one eye so alters the vision of the two eyes in relationship to each other that they can no longer be used together.

Accommodative squint which, according to Sugar,[7] is the commonest of all types, is caused by farsightedness. Burian,[8] Post,[9] and others report a strong familial tendency to accommodative esotropia. Normally, when the eyes accommodate to see an object near at hand, they converge as well, so that both eyes will be directed toward the object. Since the hyperopic child must accommodate more than the child with normal refraction, there is a tendency for him to overconverge. This type of squint seldom occurs before the child is two years old for, as Scobee[10] points out, it is at this age that accommodation begins. In many cases the child is able to resist the tendency to squint as long as the muscle tonus is good but if he becomes fatigued strabismus may become manifest. Illnesses, such as measles or whooping cough, are apt to precipitate the condition because of the general debilitation associated with these diseases.

Initially the child with esotropia has diplopia because the eyes are directed to dissimilar objects, the images of which cannot be fused. To relieve the confusion of diplopia the child suppresses the image of one eye. As a result of this suppression the image received by that eye, though transmitted to the occipital lobe, does not register in the consciousness. (Auditory suppression is a more familiar experience. When we converse in a noisy room we ignore the hubbub around us.) Visual suppression can be demonstrated simply by holding a hand before one eye so that you read only with the other eye. Note that the obstructing hand is seen as a blurred image; none of the details can be discerned.

When the child suppresses the image in one eye, visual acuity in the involved eye usually diminishes rapidly. The amblyopia that develops is a blindness due to disuse. It occurs because the ability to see clearly is an acquired skill which, like other faculties that are not native, deteriorates if it is not used regularly. (The facility with which a foreign language is spoken or problems in algebra are solved is lost rapidly if one does not keep in practice.) Initially there is a sharp decline in visual acuity to a level of 20/70 or even less but then the condition stabilizes with little, if any, further loss of vision. The field of vision is not involved; only the central vision which is concerned with the discrimination of fine details is involved.

Once amblyopia develops the child is incapable of binocular vision and is unable through his own recuperative powers to reverse the process that has taken place. He cannot fuse the clear image seen in the normal eye with the blurred image seen in the amblyopic one. As long as the amblyopic eye is suppressed, the vision in it will be poor. The child will not voluntarily employ the amblyopic eye for acute vision because he sees so much better with the other eye. It is for these reasons that ophthalmologists doubt that "Johnnie will outgrow his condition." According to Worth,[11] when esotropia is "outgrown" it is probable that the condition was diagnosed in error and that epicanthal folds gave the appearance that the eyes were crossed.

One often hears that a child has a "slight cast in one of his eyes." As explained by Costenbader,[12] from a physiologic standpoint there is no such thing as a "slight cross." Either the eyes are both directed to the object of regard so that fusible images are seen, or their eccentric relationship, however slight it may be, will produce retinal images that are dissimilar and therefore cannot be fused. There is no compromise. Though cosmetically acceptable, such a child is, at best, monocular.

Diagnosis

In extreme cases even the untrained observer is able to make the diagnosis with no more than a passing glance. It is when the condition is less severe or intermittent that diagnostic skill is necessary. The type of investigation must be appropriate for the age of the child. Even in babies much can be learned by rather simple means. Older children are able to cooperate in more refined tests that are more accurate.

When dealing with infants and very young children great reliance is placed on the Hirschberg test. In this test use is made of the fact that light will be reflected when it strikes a glistening surface, such as the cornea. When the eyes are straight, the reflex will be seen in corresponding locations in the two corneas. If, however, the eyes are crossed, the position of the reflections will not correspond. If a child with straight eyes looks directly at a light, the reflex should appear at the apex of each cornea. Often it is possible to attract the attention of the child and hold it for a moment or two. During this interval move the light so that its reflection is seen exactly at the temporal aspect of the pupillary border in one eye. Without changing the position of the light, quickly glance to the opposite eye to see if the reflex is situated on the nasal border of the pupil. The test should be repeated if there is any question as to accuracy.

In older children the cover test is a most valuable one and can be mastered easily in a short time. Children of one or two years can often be induced to look for a few moments at a light held in front of them. Place an opaque shield in front of one eye so that the child sees the light only with the other eye. Now move the shield to the opposite eye and note any rotation that may be necessary for the newly uncovered eye to align with the light. As the occluder is moved alternately from one eye to the other note whether a righting motion occurs (and its direction) as each eye is uncovered.

This test is very accurate. Because the two eyes are yolked together, adduction of one eye is accompanied by abduction of the other eye. In a child with esotropia examined by this method, when the occluder is moved from side to side, each eye, as it is uncovered, is found to be adducted. For the child to see the light, a righting motion of the eye will be necessary. From the adducted position the eye must be rotated into the primary, or straight ahead, position.

As previously mentioned, exact alignment of the eyes is unusual and in the cover test even the tendency to eccentric position can be detected. In general, small arc movements are permitted provided that when the occluder is withdrawn suddenly, so that both eyes can be brought to bear on the point of fixation, there is an immediate righting movement causing the visual axes to become parallel.

After the age of three or four some children can be tested by the use of stereoscopic pictures. Such tests determine if binocular vision is present. They are not otherwise diagnostic.

If the findings of the tests reveal esotropia or if the results of the tests are inconclusive, it is strongly urged that the child be referred to a specialist for examination and evaluation.

True esotropia must be differentiated from a pseudocross. In pseudocross the epicanthal folds are prominent so that they create the illusion that a squint exists. These folds occur commonly in babies and young children. Because they cover part of the nasal portion of the sclera, the eye appears to be adducted. This illusion will be heightened when the child rotates his eyes; the one adducted will often appear to "turn right in toward the nose."

Epicanthal folds are obliterated as the child's face matures so that there is no disfigurement caused by them in later life. Their principal importance lies in the confusion they cause in the diagnosis of strabismus.

Treatment

To re-establish a normal binocular relationship it is necessary to reverse the course of the condition. Treatment is not limited merely to straightening the eyes.

Refractive errors present must be corrected to relieve abnormal accommodation. If this is done before suppression has become an ingrained practice and before amblyopia has developed, all the skills needed for binocular vision will be present. In such a situation, the condition may be completely alleviated merely by wearing glasses.

If amblyopia is present the child must be forced to use the suppressed eye to recoup his vision. This is done by occluding the better eye. To be effective, the occluder must be worn through all the waking hours, often over a period of several months.

If vision in the affected eye can be improved so that it roughly equals the vision in the better eye and the visual axes are parallel, young children may start to use their eyes binocularly. Some physicians utilize orthoptic training (frequently referred to as "exercises") to stimulate the fusion impulse, develop muscle power, and assist the child in perfecting his coordination.

The degree to which binocular vision can be developed will be governed to a considerable extent by the age of the patient. We are apt to forget that maturation of the child is such an orderly process, that for each physiologic function there is a well-defined chronologic age for its development. If a child is unable to develop a skill during the portion of his life when it is normally perfected, he may never truly master it.

There is no better illustration of this truism than the development of ocular coordination. The rudimentary mechanisms of the baby are competent to cause coordinate ocular movement even from the beginning of life and though there may be momentary lapses in parallelism, these periods should be definitely exceptional. Normally binocular control is developed and perfected between the ages of eighteen months and four years.

It is well established, as mentioned by Adler,[13] that if there is an absence of normal parallelism of the eyes, the sooner it can be corrected the better the chance the child has to achieve binocular vision. Experience dictates that if the eyes can be straightened before the age of four years, there is a better than even chance that the child can achieve binocular vision. Even up to the age of six years the chances for a favorable result are reasonably good. After age six the chance for successful treatment diminishes rapidly. This does not mean that there is nothing to be done for the older child with strabismus. Though binocular vision may be out of the question, the cosmetic improvement that can be accomplished by the surgical correction of squint is important.

Unfortunately many children will not acquire binocular vision; this includes some who have had the best of care. Amblyopia is frequently resistant to treatment and often recurs as soon as occlusion is discontinued. The result is that the child has but one useful eye.

The parents of such children may be reassured that, though one eye does the work of two, the added strain will not cause weakness of the eyes or predispose them to disease.

Summary

Esotropia is a condition common in children. If it is untreated it frequently causes a permanent impairment of the function of the eyes. The earlier the treatment is instituted the better is the prognosis.

520 Franklin Avenue

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Clinical Aspects and Treatment of Thrombophlebitis

BERNARD SEIDENBERG, M.D., AND LESTER BREIDENBACK, M.D., NEW YORK CITY

(*From the Surgical Division, Beth David Hospital*)

Thrombosis of the veins of the lower extremities represents a potential threat to the patient's life because of the two major complications of the disease. Death may occur abruptly due to a pulmonary embolus or long-term disability may ensue because of the sequelae of the occulsion of the main venous channel of the extremity.

The numerous reports in the literature on different methods of managing thrombophlebitis has resulted in much confusion. Unfortunately the problem has not been completely solved, which accounts for the many conflicting concepts about the clinical aspects and treatment. The purpose of this report is to present succinctly the apparent prevailing opinions.

Etiology

Our knowledge of the basic factors in the development of venous thrombosis in the extremities is still incomplete. The three factors that have been implicated for many years are: (1) a primary lesion in the wall of the vein, such as intimal damage, acting as a nidus for thrombosis, (2) venous stasis, resulting in the adherence of platelets to the intima followed by thrombosis, and (3) increase in the viscosity of the blood or alterations in its chemical constituents, producing increased coagulability.

There are predisposing causes that play a role in initiating venous thrombosis, such as operation, trauma, childbirth, prolonged bed rest, malignancy, infection, shock, congestive heart failure, dehydration, and malnutrition. Anlyan and Hart[1] postulate that following surgical procedures, trauma, or delivery there is a hypercoagulant response much like the metabolic response. However, there are patients who develop thrombophlebitis with no apparent cause.

Classification

The classification of thrombophlebitis should be simple and basic in order to avoid unnecessary confusion and to provide a basis for therapy. The simplest working classification is probably one that is based on the extent of involvement rather than on the type of thrombosis. Venous thrombosis of the lower extremities may be considered clinically in two categories: (1) thrombophlebitis of the superficial veins, and (2) thrombophlebitis of the deep veins. The other subdivision requiring distinct variation in therapy is nonsuppurative and suppurative thrombophlebitis. The further division of deep vein thrombosis into phlebothrombosis and thrombophlebitis by Ochsner and DeBakey[2] is open to question because it is believed by most observers that these divisions represent variations in the degree of the process, such as its extent and rate of formation, rather than two distinct entities.

Clinical Characteristics

Thrombophlebitis of the Superficial Veins.—Usually there is no significant systemic reaction with thrombosis of the superficial veins. A tender, red, warm cordlike mass is present in the subcutaneous tissue of the extremity, which is painful on walking. Edema of the involved extremity is absent because there is no significant impairment in venous return in the main channels. If the process becomes extensive and there is concurrent involvement of the deep veins, edema and a mild systemic reaction become manifest.

Thrombophlebitis of the Deep Veins.—The clinical picture varies depending on the extent of involvement of the deep veins. The incipient stage of the process often starts in the small deep venous plexuses in the calf muscles. This stage is accompanied by a slight increase in temperature, pulse rate, and respiratory rate with no obvious cause in patients who are bedridden or convalescing from an operation. These mild systemic reactions may be associated with apprehension and restlessness. The signs in the lower extremities may vary from none, to mild tenderness on gentle lateral compression of the calf, to aching pain in the calf on rest, and to a positive Homan's sign (pain referred to the calf on dorsiflexion of the foot). Unfortunately at times the first sign of the presence of the early stage of thrombophlebitis of the deep veins is a pulmonary embolus.

When thrombosis of the deep veins is extensive and involves the large main venous channels of the extremity, the diagnosis can be made readily because the clinical findings are definite and characteristic. The patient exhibits fever, tachycardia, mild malaise, and leukocytosis and complains of pain in the extremity or groin which is aggravated by movement of the limb. Edema is present, and its degree and level parallels the extent and site of the venous occulsion. Tenderness of the calf on compression, a positive Homan's sign, distention of the superficial veins, dusky hyperemia, and an increase in skin temperature may be noted. Occasionally there may be signs of associated reflex arterial spasm, such as pallor or cyanosis of the skin, low cutaneous temperature, hyperhidrosis, and diminution of arterial pulsations.

In rare instances the thrombotic process in the deep veins is so massive as to endanger both the life and limb of the patient. This entity, first described by Fabricus Hildanus in 1593,[3] is called phlegmasia cerulea dolens. Severe pain, massive edema, and bluish discoloration of the skin with purpuric areas and cutaneous blebs characterize this process. The foot becomes cold, arterial pulsations in the limb diminish and may disappear, and gangrene has occurred in about half the reported cases. Shock and death are not unusual. The pathogenesis of the gangrene is not clear. Haimovici[4] is of the opinion that it is due to massive thrombosis resulting in complete blockage of venous return and has demonstrated patency of the entire arterial system in amputated specimens. Arterial and venous vasospasm accompanying the massive thrombosis is considered by some to be an aggravating factor.

Therapy

Thrombophlebitis of the Superficial Veins.—This presents a much simpler problem in management than deep vein thrombophlebitis. If the process is limited to a small segment of a superficial vein, the application of an Ace bandage and continued ambulation may be all the therapy that is needed. If pain persists or there is progression, bed rest, elevation of the limb, and hot soaks are indicated. As soon as local tenderness and the signs of inflammation subside, the patient is allowed to resume normal activity. Ace bandages are used until there is complete resolution of the process. Thrombophlebitis occurring in varicose veins is treated initially in the same manner. However, ligation and excision of the great saphenous vein is employed later as definitive therapy.

THROMBOPHLEBITIS OF THE DEEP VEINS.—The management of deep vein thrombosis should be considered in three phases: prevention, treatment of the acute process, and rehabilitation.

Prevention.—Prophylactic measures for deep vein thrombosis are an important adjunct in the management of surgical, postpartum, and bedridden medical patients. These measures attempt to reduce or eliminate the three responsible factors:

1. Local irritation in the wall of the veins may be prevented by avoiding the intravenous administration of fluids and medication into the veins of the legs, if at all possible.

2. Measures to reduce venous stasis include frequent active leg exercises while the patient is confined to bed and avoiding the use of pillows under the knees, constricting bandages, or Fowler's position. Deep breathing exercises every hour increase venous return. The employment of compression Ace bandages from the toes to the groin in bedridden patients past the age of forty-five prevents stasis of blood in the superficial veins by shunting it into the deep veins, resulting in a more rapid flow.[5] Early ambulation, properly utilized, decreases the incidence of postoperative thromboembolic complications.[6] In order to be effective, ambulation should begin within twenty-four hours following surgery, and the patient should be walking. Sitting in a chair at the bedside is not early ambulation.

3. Increased coagulability and viscosity of the blood in surgical patients is reduced by minimizing trauma to tissue and preventing shock and dehydration.

Treatment of the Acute Process.—The treatment of thrombosis in the deep small veins is primarily directed toward the prevention of pulmonary embolism and occlusion of the main venous channels by propagation of the thrombus. Frequently the diagnosis is made only after a nonfatal pulmonary embolus has occurred. Anticoagulant therapy with heparin and Dicumarol is the prime modality used for this form of the disease. If the process does not extend into the main venous channels, there is no significant impairment in venous return. After three days of adequate anticoagulant therapy, the thrombus becomes adherent to the vein wall, no propagated thrombi develop, and ambulation with elastic bandages may be instituted with minimal risk of dislodgment of thrombi followed by a pulmonary embolism. Treatment with heparin and/or Dicumarol should be continued for ten to eighteen days, depending on the clinical response.

Thrombophlebitis of the main deep venous channels accompanied by marked edema and the other signs and symptoms previously described require more vigorous and prolonged therapy. Basically this consists of bed rest, elevation of the lower extremities, anticoagulants, and measures to relieve vasospasm and pain. The marked edema accompanying acute deep thrombophlebitis is due to impaired venous return by thrombotic occlusion of the main venous channels. Complete bed rest and elevation of the foot of the bed to form a 30- to 45-degree angle are essential measures for control of venous stasis. Venous return and the possibility of the development of collateral channels are improved, and the tendency to the late development of chronic venous insufficiency is decreased. Anticoagulant therapy with heparin and Dicumarol is instituted immediately to prevent extension of the thrombosis and subsequent pulmonary embolism. Anticoagulants are administered until the tenderness in the affected vein has disappeared and the patient has been ambulatory for at least three days.[7] Two to three weeks of therapy is usually required. During the first week of treatment the involved limb is wrapped in hot wet towels from the groin to the toes in order to relieve the pain and vasospasm that may accompany the thrombophlebitis. Narcotics, such as codeine, morphine, or Demerol, may also have to be administered in the first few days for pain relief.

Leriche and Kunlin[8] and Ochsner and DeBakey[9] have recommended daily paravertebral lumbar sympathetic blocks with procaine for the relief of vasospasm, which they believe is one of the most important factors producing the pain and edema. The prevailing opinion at present is that paravertebral sympathetic blocks have a limited application and do not have any permanent influence on the course of the disease or in preventing subsequent chronic venous insufficiency.[10] There is a definite risk of bleeding in performing these blocks on patients who are on anticoagulants. However, its use is justifiable in the occasional case of deep thrombophlebitis presenting specific signs of arterial spasm.

Rehabilitation.—The rehabilitation program after the edema and signs of active infection have subsided is of utmost importance. It is the phase of treatment most frequently neglected but if it is properly managed the serious sequelae of chronic venous insufficiency may be prevented. Ambulation must never be permitted without a well-fitting elastic stocking. This is essential in order to prevent recurrent edema due to the residual obstruction of the venous channels and the damaged valves. The well-fitting stocking shunts the blood into the deep channels that are still patent and helps in the development of more deep collateral vessels.

The patient should be instructed that activity will have to be guided for three months to a year to prevent severe edema. Edema is best controlled by bed rest, and during the early period of ambulation the patient should have at least one hour of bed rest in the morning and afternoon. After several months, the period of recumbency may be limited to the afternoon. Elastic stockings and bed rest are required as long as ambulation results in edema. This type of rigid and prolonged rehabilitation program will contribute greatly to the prevention of sequelae of chronic venous insufficiency, such as edema, varicose veins, stasis dermatitis, pigmentation, chronic indurated cellulitis, and ulceration.

SUPPURATIVE DEEP THROMBOPHLEBITIS.—When the thrombus is infected, sepsis and pulmonary emboli resulting in lung abscesses are the likely complications. Immediate ligation of the affected vein above the level of thrombosis and massive antibiotic therapy are the essential features of management of this process. After the infection is controlled, the treatment is the same as for nonsuppurative deep thrombophlebitis.

PHLEGMASIA CERULEA DOLENS.—Therapy of massive venous occulsion is not clearly defined to date. Veal *et al.*[10] advocate high elevation of the legs with rapid passive flexion of the knee and hip until the edema begins to subside. Venous channels are probably opened by this method, but there is the constant danger that pulmonary emboli will be produced by the breaking off of loosely attached thrombi. Lumbar sympathetic block is advocated by those who postulate that vasospasm of the arterial and venous systems is a major factor in the production of the clinical manifestations in venous thrombosis. Edwards[11] uses spinal anesthesia to achieve efficient sympathetic block as well as high leg elevation and constant intravenous administration of heparin drip. DeBakey and Ochsner[12] and Ellis and Windham[13] reported cases successfully treated by thrombectomy soon after the onset of symptoms followed by femoral vein ligation. Mahorner[14] employs the more direct approach of thrombectomy, maintaining the venous patency by suture of the venous incision and heparinization. Time and evaluation of large series of cases will define more clearly which of these methods is most effective.

Comment

It is generally accepted at present that the management of venous thrombosis should be based on anticoagulant drug therapy to prevent further clotting and embolism. Bilateral superficial femoral vein ligation was advocated in 1947 by Allen[15] as a simpler and possibly more effective way to prevent embolism. However, an extensive clinical trial did not confirm this recommendation because it has been shown that emboli in many instances originate in areas not blocked by superficial femoral vein ligation.[16-18] In 1953 Allen[19] summarized his experience and concluded that vein ligation was no more effective than anticoagulant therapy in the prevention of pulmonary embolism. At present vein ligation is reserved for the occasional case in which anticoagulants have failed or are contraindicated and for suppurative thrombophlebitis. Ligation of the inferior vena cava is much more effective in these instances than superficial femoral vein ligation, and complications of this procedure are minor if the postoperative management is aimed at careful prevention of edema.[20]

The aggressive approach in the management of major deep vein thrombosis, as advocated by Mahorner,[21,22] is a very important recent advance. An attempt is made to restore the full functional capacity of the involved vein by removing the occluding thrombus. The lumen is restored by suturing the incision in the vein without ligation. This is followed by regional heparinization administered into a vein on the lateral side of the ankle on the involved extremity so that the infusion will drip into the deep venous system through the popliteal vein. A continuous drip is maintained for seventy-two to ninety-six hours, keeping the coagulation time between fifteen and twenty-five minutes. With the patient in bed the legs are exercised, and graded ambulation with the patient wearing compression bandages is begun soon after the intravenous heparinization is discontinued. Sixteen extremities were operated on with this method with sudden disappearance of the swelling in twelve. It is hoped that this method may result in better function with less postphlebitic edema than occurs with the more conservative measures utilized at present. Further evaluation of this technic is required before any definite conclusions can be reached.

In the past few years there has been much interest in the therapeutic value of trypsin as a thrombolytic and anti-inflammatory agent in the treatment of thromboembolic disease. In 1954 Innerfield[23] reported encouraging results with intramuscular injection of trypsin in 18 cases of chronic recurrent thrombophlebitis. Since then many reports have appeared, and great care is required in analyzing them. The excellent review by Moser[24] gives a careful evaluation of the use of this drug in thrombophlebitis. Trypsin administered intramuscularly in small doses was found to have a nonspecific anti-inflammatory action, but evidence is lacking as to its thrombolytic properties. In the early treatment of acute superficial or deep thrombophlebitis the chief merit of intramuscular administration of trypsin resides only in its ability to hasten resolution of the accompanying inflammatory reaction. No evidence exists regarding effective lysis of deep venous thrombi.

Final emphasis should be placed on the role of the carefully controlled rehabilitation program in the prevention of the sequelae of chronic venous insufficiency following thrombophlebitis of the deep veins. Ambulation must never be permitted without a well-fitting elastic stocking as long as edema results. The degree of activity should be guided for three months to a year to prevent the appearance of severe edema.

Summary

1. The apparent prevailing opinions about the clinical aspects and treatment of thrombophlebitis are presented.

2. The process is classified according to the extent of involvement rather than the

type of thrombosis.

3. Emphasis is placed on the need for a rigid and prolonged rehabilitation program following the acute process in order to prevent the sequelae of chronic venous insufficiency.

4. Recent contributions to the management of venous thrombosis are discussed.

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Doing easily what others find difficult is talent; doing what is impossible for talent is genius.—HENRI-FRÉDÉRIC AMIEL

CLINICOPATHOLOGIC CONFERENCE

KINGS COUNTY HOSPITAL and STATE UNIVERSITY OF NEW YORK
DOWNSTATE MEDICAL CENTER

BROOKLYN, NEW YORK

Conducted by PATRICK J. FITZGERALD, M.D. NOVEMBER 14, 1957

Discussed by WILLIAM DOCK, M.D.

Case History

MARTIN METZ, M.D.: A fifty-four-year-old Negro male, a former slaughterhouse worker, was admitted to the hospital on July 28, 1956, for the fourth time.

His first admission was in February, 1953, because of fever of one month's duration with joint pains and weight loss. During this admission he developed a friction rub over the right side of the lower anterior portion of the chest with electrocardiographic changes initially interpreted as an acute myocardial infarction but later thought to be consistent with pericarditis. He also had evidence of a chronic urinary tract infection due to Proteus vulgaris. There was moderate leukocytosis. An exploratory laparotomy was performed because of persistent abdominal pain, and no abnormalities were encountered. Chest x-ray results were negative except for slight widening of the thoracic aorta. X-rays of the hands suggested possible early rheumatoid arthritis. Numerous blood cultures and sputum examinations gave negative results. During this prolonged hospitalization no definitive diagnosis was made. The patient improved considerably. Because of the possibility of tuberculosis, he was discharged after three and a half months on streptomycin and para-aminosalicylic acid (PASA) as well as penicillin.

He was readmitted in July, 1953, with fever, urinary tract infection, left lower lobe pneumonitis, and recurrent joint pains. The electrocardiogram again suggested acute pericarditis. Physical examination again did not yield particularly remarkable findings. Blood pressure was 120/80 mm. Hg. During this admission the patient developed conjunctivitis. At this time penicillin was administered, and his temperature returned to normal within four days. Again no definitive diagnosis was made, and the patient was discharged after ten days on Gantrisin for his urinary tract infection.

He was again readmitted in November, 1954, with continued joint symptoms, recurrent conjunctivitis, exertional dyspnea, and a cough productive of yellow sputum. Physical examination at that time gave negative findings except for stomatitis and mild hepatomegaly with mild jaundice. There was no evidence of peripheral edema. The heart was normal, as was the blood pressure. Liver function studies suggested hepatocellular jaundice. Other studies, including a muscle biopsy, gave essentially negative results. He was again treated with penicillin with clinical improvement of the stomatitis and conjunctivitis resulting. A tuberculin test result was strongly positive and the patient was again discharged on streptomycin and PASA.

He then apparently did fairly well except for recurrent joint pains. Approximately two weeks prior to his fourth admission he had an abrupt onset of pain in the lumbosacral area. Three days later he developed acute nocturnal dyspnea, and over the next week he had increasing exertional dyspnea and more severe nocturnal dyspnea. He was readmitted primarily because of increasing dyspnea.

Physical examination revealed a well-developed, poorly nourished Negro male appearing acutely and chronically ill. His blood pressure was 140/50 mm. Hg, pulse 100 per minute, and temperature 102 F. The head and neck were essentially negative. The cardiac apex was in the sixth intercostal space in the anterior axillary line. There was a Grade III, high-pitched, decrescendo diastolic murmur, loudest at the third left intercostal space but present along the entire left sternal border and over the primary aortic area. A Grade II, soft, blowing systolic murmur was audible at the apex. Rales were present in both lung bases. The liver was moderately enlarged and tender. The back was limited in its range of motion in all directions. There was moderate atrophy with spasm of the paravertebral muscles. Chest expansion was $^3/_4$ of an inch. The wrists were enlarged and limited in both flexion and extension. Both shoulders were limited in abduction and external rotation, and there was moderate synovial thickening of both knees. Small, firm, freely movable nodules were present over both elbows.

X-rays showed a grossly enlarged heart with a hypertensive configuration and a widened thoracic aorta. There was slight pleural thickening around the lower and middle lobes with increased bronchovascular markings and some pleural fluid present. Films of the sacroiliac joints showed irregularity and narrowing of the joint spaces with some areas of bone production and bone destruction and moderate diffuse osteoporosis. X-ray films of the right wrist and hand were compatible with moderately advanced rheumatoid arthritis.

Urinalysis (of a centrifuged specimen) showed a specific gravity of 1.013, positive acid reaction, and negative albumin, sugar, and acetone reactions. There were one to three white blood cells per high power field. The hemoglobin content of the blood was 11.4 Gm. per 100 ml. The white cell count was 9,500, with 78 per cent polymorphonuclears and 22 per cent lymphocytes. The blood urea nitrogen was 11 mg. per cent. The electrolyte content was normal. A lupus erythematosus preparation on peripheral blood and bone marrow was negative. The C-reactive protein was 2 plus. Repeated serologic tests (Wassermann and Kahn) for lues were negative. The sedimentation rate was 51 mm. per hour (Wintrobe). Sheep cell agglutination was negative. An antistreptolysin titer was less than 50. Serum protein was 7.4 Gm. per 100 ml., with 2.8 Gm. albumin and 4.6 Gm. globulin. As on previous admissions, numerous blood cultures were again negative.

The patient was digitalized and subsequently placed on Meticorten. His back pain disappeared and his temperature became normal. He was discharged to the Medical Clinic on August 12, 1956.

The patient failed to continue his digitalis and was readmitted to the hospital in September, 1956, in acute pulmonary edema. Meticorten had been discontinued also. He was treated in routine fashion with prompt and satisfactory response in his cardiac status. He was discharged after one week.

The patient's final admission occurred in December, 1956, when he entered the hospital with severe shortness of breath and constant severe substernal pain. His blood pressure was 135/60. The cardiac auscultatory findings were characterized by a Grade III decrescendo diastolic murmur and a blowing systolic murmur at the apex (no fundamental change from previous recordings). Vigorous treatment for the acute congestive failure was instituted. Nitroglycerin had no effect on the substernal pain. His electrocardiogram showed left ventricular strain and some delay in conduction through the left bundle. The patient's condition grew rapidly worse, and death occurred five days following this admission. An autopsy was obtained.

Discussion

William Dock, M.D.: This was a fifty-four-year-old man who formerly worked in a slaughterhouse. We don't know what this means. Whether he worked in the slaughterhouse up to the onset of the present illness, in 1953, or whether he had stopped being a slaughter house worker years before and done other jobs, I don't know. But since he had been a slaughterhouse worker, the occupational disease brucellosis, which is acquired from slaughtering pigs, is a possibility. His occupation, therefore, is relevant to his illness.

In 1953 he came here with joint pains, weight loss, and fever, and at that time he already had had a friction rub in his chest which they thought might be acute myocardial infarction. After sizing things up and looking at the tracing, however, they concluded that he had acute pericarditis. There was suspicion of periarteritis nodosa so that periarteritis became an early possibility. They found that he had a chronic urinary tract infection. They don't tell whether it was chronic urethritis or stricture or whether he had any other reason for his Proteus vulgaris infection. He had moderate leukocytosis. A laparotomy was done because of persistent abdominal pain, but we are not told whether he had had a gastrointestinal series, barium enemas, and gallbladder visualization. So I don't know how much study he had had before the laparotomy but the discouraging thing is that they seem to have taken no samples. When you do a laparotomy on anybody suspected of having periarteritis, brucellosis, sarcoid, or any one of a number of chronic diseases, it is always convenient to remove the appendix. Histologic proof of the disease may be present in the appendix. Everybody is better off without his appendix so that an appendectomy at an exploratory laparotomy is always wise.

Removal of a "normal" appendix at exploration of a Filipino patient showed tuberculous peritonitis which was not visible grossly but was very evident in the sections. If exploratory laparotomy is performed something should be removed. If the gallbladder looks abnormal, take that. Periarteritis has been diagnosed in the thickened wall of a chronically diseased gallbladder.

At that time the patient had a little widening of the thoracic aorta, very common in men of fifty-four with or without hypertension, The x-rays suggested possible or early, perhaps no, rheumatoid arthritis. The blood cultures and sputum were negative but I assume that he had a strongly positive tuberculin reaction because he was treated for tuberculosis with penicillin, streptomycin, and PASA. If he had had brucellosis, adequate penicillin and streptomycin or adequate streptomycin and one of the broad-spectrum antibiotics might have made some difference in the course of the disease. He was given these drugs and perhaps he did go into remission.

A few months later he had pneumonitis and recurring urinary tract infection, joint pains, and pericarditis. That is not so common with brucellosis. It does occur with periarteritis, and these joint pains in a man of fifty-four might be due to something else. Any kind of disease might give him joint pains, brucellosis, and periarteritis, and some sort of chronic urinary tract infection might be associated with joint pains. His blood pressure was normal. He had conjunctivitis. This does not help us very much; in brucellosis and in rheumatoid arthritis, iritis is not uncommon. At any rate, he did well on penicillin, which might have brought down his temperature if he had brucellosis or if his urinary tract infection happened to be active. He was also being treated with Gantrisin.

He stayed out of the hospital for over a year with continued joint symptoms and conjunctivitis. These occur in a variety of diseases. The classic combination with urethritis is known as Reiter's syndrome, which in the Massachusetts General Hospital is believed to be due to pleuropneumonia infection. Others think Reiter's syndrome is a virus disease or an allergy disorder.

College students particularly seem to be prone to Reiter's disease. They are embarrassed by having urethritis without a legitimate excuse. Formerly this was always diagnosed as Neisserian urethritis. Nowadays Reiter's syndrome is recognized as a disease mainly of young male adults. At fifty-four Reiter's syndrome is rare. Since we don't know what Reiter's syndrome is, we had better just mention it and go on.

This time he had another kind of trouble. He had hepatitis, apparent from the function studies, with hepatocellular jaundice. Here again no histologic diagnosis seems to have been made. In tubular tuberculosis, a very rare disease which is favored by pathologists and unknown to clinicians, portal spaces are infiltrated with tuberculosis. The patient gets jaundice, and the liver becomes swollen. There is evidence, not of a hepatocellular, but of a cholangiolitic type of liver disease, which on biopsy shows tubercles along the portal triads. That is another unlikely possibility.

Another possibility in a man who had been in and out of hospitals and had had a lot of needle work is ordinary homologous serum jaundice in a mild form.

Another possibility is that he had brucellosis hepatitis. I am sure Dr. Austrian and others remember very well a patient whom we had consigned to a sad death from chronic lymphatic leukemia or Hodgkin's disease with hepatosplenomegaly. After Dr. Austrian got the bug out of the blood stream, it looked more like brucella, the type of which was never definitely identified. On antibiotics, at any rate, he recovered completely and is now well with a normal liver and spleen. Brucellosis can produce very severe hepatitis, and there is a possibility that this man's liver disease was due to brucellosis. The biopsy in the case of the patient who is now well showed a curious pseudogranuloma. The diagnosis might be made by liver biopsy in such a patient.

He again had stomatitis, conjunctivitis, and a strongly positive tuberculin test result and again was treated for tuberculosis on discharge without any known urinary tract, pulmonary, or bone disease. The joint pains kept on bothering him. In Europe in the good old days rheumatoid arthritis was thought of as a form of chronic tuberculous allergy. Gold therapy was introduced originally to treat rheumatoid arthritis because gold therapy had been used for tuberculosis. In this country no one ever associates rheumatoid arthritis with tuberculosis and I think it is rarely done in Europe now. But it is interesting that this patient had a strongly positive tuberculin reaction and seems to have been having more and more joint trouble.

The next time he was admitted was because of severe lumbosacral pain. In the past his pain had been apparent mostly in his wrist and hands. He was getting short of breath and had nocturnal dyspnea. We remember he was normotensive in the past. This time he had a high pulse pressure, 140/50, and looked quite sick. His pulse rate was fast and he had a temperature of 102 F. His heart was enlarged and he had the signs of aortic insufficiency with the classic murmurs as well as the high pulse pressure of that disease. He never had had positive serologic findings in all these admissions, and there was no reason to believe that this was luetic aortitis. Brucellosis produces aortic lesions, such as mycotic aneurysms, and might produce aortitis in the ascending aorta, which would lead to aortic insufficiency. It might be related to brucellosis; it cannot be related to tuberculosis. He had some signs of congestive failure, and he had limitation of back motion with atrophy and spasm of the paravertebral muscles. For the first time they found trouble with his shoulders; the x-ray films show not only an enlarged heart with the aortic shape but also trouble in the sacroiliac joints. I take it that this was bilateral or more or less symmetric.

At this time you might look at all of his x-ray films. We see that for the first time it looks as though this man might have ordinary rheumatoid arthritis because rheumatoid arthritis is associated with aortic disease. Rheumatoid arthritis has been associated with pericarditis, valvulitis, and aortitis. This was discussed in one of the medical journals a couple of years ago. So we now have to think that all the time he had had rheumatoid arthritis, and we will see if Dr. Mellins can help us make a differential diagnosis between brucellosis, arthritis, and rheumatoid aortitis. The fact that he had nodules around the elbows makes us lean towards the rheumatoid etiology.

Harry Z. Mellins, M.D.: We might show the films of the wrist and spine first. There are multiple punched-out areas at the distal ends of the proximal and middle phalanges. You see a similar but much larger area in the right wrist. There are also changes in the distal end of the left ulna and the adjacent portions of the carpal bones. These are the classic punched-out areas that can be seen in sarcoidosis, rheumatoid arthritis, osteoarthritis, and some granulomatous conditions. A very unusual cystic tuberculosis or even brucellosis can give this kind of an appearance. It is by all odds most common in cystic rheumatoid arthritis and osteoarthritis. It is not the characteristic appearance of gout, and, of course, there is nothing in the story to favor that. The first choice on the basis of these films would have to be rheumatoid arthritis of a cystic type. Usually the narrowing of the joint spaces is more marked than this patient showed.

In the lumbar spine there is no evidence of abnormality in the longitudinal ligaments, such as one would expect to see in rheumatoid spondylitis, but there are changes in the sacroiliac joints. In rheumatoid spondylitis the earliest change in the sacroiliac joints is not narrowing. Destruction and widening of the joints, as we see here, are characteristic, and only later is there narrowing and obliteration of the joint space. The sacroiliac joints and the cervical spine are the earliest sites to be attacked by rheumatoid spondylitis. Brucellosis usually simulates tuberculosis in the vertebral bodies and is differentiated from it by the fact that in brucellosis the bodies on each side of the involved vertebra tend to be more osteoblastic. I would not be able to exclude brucellosis here but I would say that rheumatoid spondylitis is certainly completely consistent with these findings. The wrist and hand findings suggest rheumatoid cyst-like changes, and the spine changes suggest rheumatoid arthritis in the sacroiliac joint.

The chest films show no typical findings. They demonstrate at various stages in the course of this patient's illness what looks like pulmonary edema as the result of failure with involvement of the medial portions of the lobes and clear peripheries. The heart outline shows enlargement of the left ventricle which is more suggestive of dilatation than of hypertrophy. The enlargement is downward and is of a flabby type rather than the rounded type of enlargement that we associate with aortic stenosis or hypertension. This is the flabby type of dilatation seen in aortic insufficiency.

In summary, I would favor a diagnosis of rheumatoid arthritis and spondylitis with changes in the heart related to this type of collagen disease.

Dr. Dock: The x-ray review is very helpful because it looks as though the possibilities are narrowed down to rheumatoid arthritis with the visceral lesions which in the last few years have been more and more described as associated with that disease. In the past there were reports that in fatal cases of rheumatoid arthritis, amyloid was not at all rare, but some people gave as little as 5 per cent involvement of the heart valves. In recent years this, for some mysterious reason, has gone up to 40 per cent involvement of the heart valves, and I don't know what we old pathologists were looking at when we got those 5 per cent figures or whether rheumatoid arthritis has changed a great deal in the last generation. At any rate, nowadays this phase of rheumatoid arthritis affecting the viscera and particularly the aorta in men has been stressed.

We have him back in the hospital with a little leukocytosis, a normal blood urea nitrogen, a negative lupus erythematosus preparation, and negative serologic reactions for syphilis. He had the high sedimentation rate that goes with brucellosis or chronic rheumatoid arthritis and had a very high globulin. In colored males we become very suspicious of high globulin levels because a high percentage of them have positive Frei test results and positive complement-fixation results for lymphopathia, and this disease produces a high globulin. When you don't expect any other cause in a patient who turns up with a high globulin level and a high sedimentation rate, a Frei or complement-fixation test should be performed. In this patient we don't need to worry because he had a disease which gives a high sedimentation rate or a high globulin level. There is no report here of any of the sort of test that Dr. Charles Plotz likes to do, no mixing of latex with the serum, no shaking it up with properly adjusted sheep cells. This would have given us another angle because the percentage of those with rheumatoid arthritis who have these changes is higher than of an unselected group of sick people. The patient left the hospital on August 21 and he was back shortly afterwards, in September, obviously in severe heart failure, and this time he did not survive.

This brings up the great risks in managing this type of patient. When you put this sort of a man on Meticorten you have to put him on a low-salt diet. You have to give him about 4 Gm. at least of potassium chloride a day just to keep him out of trouble, for even if he had no heart failure at all at age fifty-four, on Meticorten one of the things he might develop in the next six months is congestive failure as the result of what we call hyperaldosteronism. Although Meticorten is not as bad as cortisone for producing this, I think everybody who puts patients on corticoid therapy should consider a complex set of adjustments. You must change the patient's diet. You give him feedings between meals and before bedtime so that his old peptic ulcer does not become aggravated. You give him potassium in liberal quantities, partly as a diuretic and partly to keep him from depleting his potassium and thereby aggravating his heart failure by increase of sodium. These should become spinal reflexes as you write the orders for chronic corticoid therapy for those with asthma, rheumatoid arthritis, lupus erythematosus, or periarteritis or, in fact, for anyone who is put on this therapy. Some will go into heart failure in spite of this and will have to have mercurial diuretics or chlorothiazide to keep them out of severe congestive failure.

He now was having a lot of substernal pain. The combination of heart failure and substernal pain is common in aortic valve disease and very rare in coronary disease. We therefore assume that this patient had rheumatoid aortitis, that we may find nodules in the myocardium like the nodules described around his joints, and that he will have damage of his aortic leaflets and probably of his aortic valve when the ring stretches, just as in luetic aortitis.

The interesting thing is that he seems to have had not only rheumatoid arthritis of his axial skeleton but also of the appended skeleton. One of the fascinating things about rheumatoid arthritis is that men with this disease usually have no arthritis of the hands and feet and that women rarely get Marie-Strümpell disease, or spondylitis ankylopoietica. In the early stages the radiologist does not see anything in the spine and if he does not take sacroiliac films, the clinician diagnoses the condition as neurasthenia or the aching-back syndrome because there is no evident organic disease. The sedimentation rate may be up but not up very much. A young or middle-aged man with Marie-Strümpell disease is likely to have about a year's bad treatment from his doctor because he seems to be a neurotic with no organic disease, with films of his lumbar spine giving negative results. Those with sacroiliac disturbances usually are the first to show changes, but these too may be missed in the early stages. Ordinarily the Marie-Strümpell cases do not have severe rheumatoid arthritis of the extremities.

We know from observations in dogs and from going to the circus that the axial and appended skeletons have different hereditary backgrounds and probably different biochemical compositions. In a Boston bulldog the legs are all right but the face and tail are squashed in. In a dachshund the appended skeleton is in dreadful shape with achondroplasia but the axial skeleton is lovely. In human achondroplasia the axial skeleton usually is very badly diseased as well as the appended one. In dogs the difference shows that the axial and appended skeletons have different heredity backgrounds. There certainly are very different predispositions to rheumatoid arthritis, with a larger incidence of spine disease in men and a preponderance of women with the appended disease. This patient shows that some unfortunately get both.

This man might have had brucellosis, but the odds are with the clinician in this case because if it was brucellosis the pathologist may not be able to prove it. Diagnosing brucellosis is bad enough with a patient alive. Getting the brucella out of a cadaver is really a tough business. Even if brucellosis did cause this curiously symmetric rheumatoid arthritis, aortitis, and hepatitis, which is theoretically possible, the pathologist will have to bring us the brucella and prove that an infection from the slaughterhouse caused the whole picture. I feel very confident in diagnosing this as rheumatoid arthritis with an enormous amount of visceral involvement. The hepatitis I have never seen in rheumatoid arthritis. In theory the portal radicle can be as involved as the lung, pericardium, or aorta, but I don't know about this complication.

Patrick J. Fitzgerald, M.D.: Dr. Dock has sort of loaded the gun against us, and it is similar to asking us if we still beat our wives on Thursdays. Dr. Long, would you go along with this diagnosis?

Perrin H. Long, M.D.: Yes, I could go along very easily with that. I would have to consider, as Dr. Dock did, the background very much in order to ascertain whether he had some of the odd forms of chronic brucellosis which we have seen from time to time.

John F. Kelly, M.D.: I agree with Dr. Dock. I think that the most likely diagnosis is aortitis associated with rheumatoid disease. This has been described by Bauer, Kulka, and others. I was suprised that more emphasis was not placed on the differential diagnosis of lupus, which rheumatoid disease seems to mimic in many respects, although I am not aware of aortic insufficiency ever complicating lupus.

Dr. Dock: Or spondylitis in lupus.

Dr. Fitzgerald: Dr. Austrian, what do you think of the possibilities of brucellosis?

Robert C. Austrian, M.D.: Small but possible.

David I. Smith, M.D.: The protocol mentioned negative sheep cell agglutinins. Would that change Dr. Dock's diagnosis?

Dr. Dock: I don't know whether this means heterophils with hepatitis or whether this is a Rose test for arthritis. They use sheep cells for all kinds of things.

Charles B. Jones, M.D.: This does not rule arthritis out, but if it turns out to be rheumatoid arthritis, it would chalk one up against the Rose test.

Dr. Kelly: The Rose test usually is positive in rheumatoid arthritis but negative when spondylitis is present. This does go along with the diagnosis.

Hilary H. Holmes, M.D.: How definite is the aortitis in rheumatoid arthritis? Are all the pathologists in unanimity on that?

DR. FITZGERALD: I believe that we can leave that question to Dr. Hennigar.

Diagnoses

Clinical.—*Rheumatoid arthritis with osteoporosis and congestive failure.*

Dr. Dock.—(*1*) *Rheumatoid arthritis with much visceral involvement and* (*2*) *brucellosis* (*?*).

Anatomic.—(*1*) *Rheumatoid spondylitis,* (*2*) *rheumatoid panaortitis or simple rheumatoid aortitis resulting in aortic regurgitation and dilatation and hypertrophy of the left ventricle,* (*3*) *synovial and sacroiliac scarring,* (*4*) *subacute pericarditis, and* (*5*) *a healing subacute rheumatoid nodule.*

Pathologic Report

GORDON R. HENNIGAR, M.D.: Clinically brucellosis was not entertained in this case. It is obvious after Dr. Dock's discussion that it should have been. I am sure we all learned a good deal about brucellosis from his discussion.

The heart weight was 650 Gm. The epicardium and pericardium were adherent. There was no pericardial effusion. There was left ventricular dilatation and hypertrophy with some fine scarring in the subendocardial layers of the heart. The trabeculae carneae were flattened. The left ventricular chamber was clearly dilated. The aortic cusps showed thickening, and the ascending aorta, the ascending arch of the aorta, as well as the remainder of this organ revealed pearly white thickening of the intima. The aortic cusps had rolled margins with little distortion of commissures, and the right coronary artery orifice was elevated to the top of the sinus of Valsalva. It was a little distorted and the orifice was slightly narrowed. The left, on the other hand, had a completely patent orifice. One is struck by the adventitial thickening of the aorta which extends for the entire length of the aorta.

Histologically there was a nonspecific granulomatous change, characterized by hyperplastic arteriolosclerosis and abundant lymphocytes with increased vascularization. Numerous sections of the myocardium were studied. Due to the fact that this patient had questionable peripheral rheumatoid arthritis and radiologic spondylitis, the prosector took numerous sections of the myocardium to look for Aschoff nodules. I would say that the fibrosis was minimal to moderate; taking into consideration the over-all bulk of the muscle mass, one could not call this a very marked diffuse fibrosis of the myocardium.

Although there was no fluid in the pericardial sac, there was fibrinous pericarditis, and histologically there were areas of fibrinoid change in the collagenous ground substance and many inflammatory cells characterized by lymphocytes and large histiocytes but no Aschoff nodules. When we examined the intima of the entire aorta, it was identical in all of the sections, characterized by fibrin, a fibrinoid layer, and very thickened fibrotic matter. The picture was identical to that seen in the pericardium, namely, very acute necrosis and many nuclear fragments and polymorphonuclears.

In sections of the media we found areas of collagenization and inflammatory change which were not particularly characterized by polymorphonuclears. There was increased vascularization with many lymphocytes. The picture was morphologically identical to syphilitic aortitis. In addition, the media showed characteristic foci of necrosis with polymorphonuclear leukocytes which may be considered microabscesses. In addition, there was a disruption of the elastica and linear scars in the media.

The liver showed none of the stigmata of previous hepatitis, either viral or PAS hepatitis. No granulomas suggesting tuberculosis or brucellosis were seen in the liver. Incidentally there were no rheumatoid granulomas in the visceral organs, such as the capsule of the spleen. It has been our experience that in rheumatoid arthritis the capsule of the spleen is a common place to find a granuloma.

A number of joints were examined, including the sternoclavicular joint, the synovia of the elbow and knee joints, and numerous sections of the sacroiliac joint. We were quite suprised to find no positive inflammatory change in these joints and no synovitis whatsoever. However, one sternoclavicular joint cartilage was fibrillated and bare areas of eburnated bone presented themselves.

We have no choice but to interpret the nodule from the elbow, the subcutaneous nodule, as a subacute or healing rheumatoid nodule. There are areas of fibrinoid necrosis, collagenization, a distinctive granuloma-type formation, and a rheumatoid-rheumatic nodule formation. There is also capillary vasculitis with a few inflammatory cells around this vessel. It frequently has been stated that the patient suffering from rheumatoid spondylitis does not have subcutaneous nodules. Here apparently is such a patient who does have such a lesion.

The anatomic diagnosis is rheumatoid spondylitis, rheumatoid panaortitis or simple rheumatoid aortitis resulting in aortic regurgitation and dilatation and hypertrophy of the left ventricle, synovial and sacroiliac scarring, subacute pericarditis, and a healing subacute rheumatoid nodule. The probable cause of death was aortic regurgitation with left ventricular straining, coronary ischemia, and acute myocardial decomposition.

Dr. Fitzgerald: I think that you have heard a fascinating discussion, both from the clinical and from the pathologic standpoints, of what is, at least as far as we are concerned, a relatively newly recognized entity, although there are sporadic cases reported throughout the literature. I think that this case is an excellent example of the extensive involvement of the aorta. As far as I know, it is the first such case reported. Dr. Hennigar has gone through hundreds of cases of luetic aortitis looking for similarities and dissimilarities between these entities. As far as most of us are concerned, his evidence is convincing that one can differentiate between the two.

Dr. Dock: I could make a couple of stump speeches. One of them has to do with whether this patient should have been treated as though he had brucellosis. Dr. Austrian, how would you have treated him believing that there was a finite but almost infinitely small possibility that this was a curable disease, brucellosis, rather than a disease like rheumatoid spondylitis, which in its galloping form in men over forty is a very, very bad disease?

Dr. Austrian: Streptomycin plus tetracycline for eight to twelve weeks.

Dr. Dock: What dose of tetracycline?

Dr. Austrian: 4 Gm. a day.

Dr. Long: I disagree with Dr. Austrian. I would advise 4 Gm. a day for a week and 2 Gm. a day for the next week. I think that most of these chronic infections can be cured in fourteen days if they are the result of brucellosis.

Dr. Dock: The most important point that I would like to make is that it is necessary to determine whether there is any chance at all of it being a curable bacteriologic or luetic disease, and the odds are ten to one that it is something else. It is better to treat for the curable disease than to put the patient on Meticorten and watch his course because in maybe 1 of 20 such slaughterhouse workers we will find out that brucellosis caused the hepatitis and arthritis. We may not have good x-ray evidence.

Another point that I would like to make is that if treponema had not been big enough for it to have been seen you know it has never been cultivated, very little would be known about syphilis, the finest example of a collagen disease known to man. You don't see it in childhood. It comes on when you are a young man, beginning to get your allergy. It has a primary lesion and looks like a fever blister. This could be a little allergy trouble, perhaps allergic dermatitis and then visceral allergy. The whole disease would do beautifully for a collagen disease. It has a nonspecific precipitin and complement-fixation test which has nothing to do with the proteins of the treponema. This is like the nonspecific tests that we have for acute rheumatic fever and rheumatoid arthritis. Nowadays, therefore, when we like to think about collagen diseases as all being allergic, it is good to back off, take a look, and think of the two recurring diseases that we know are infectious. The other is herpex simplex; coming on after pneumonia or after malaria it would give rise to a very nice allergic manifestation. This makes us wonder about other chronic or recurrent viral diseases.

It would be strange, with all the various liver virus, central nervous system, and skin virus diseases, if the whole connective tissue system was immune to virus diseases. The only chronic disease of this sort that we know of is lymphopathia, which produces an elevated serum globulin, some bone marrow changes occasionally, and, for years, scarring. It is a good example of a collagen disease, with microabscesses in the lymph nodes of some patients. Until it is proved that all of these diseases that we refer to as allergic and collagen diseases are allergic, that is, until we can identify the allergens, and antibodies, it is well for us to keep an open mind and suspect that there may be more infectious diseases than we now know about and that among the collagen diseases some of them, like acute rheumatic fever and rheumatoid arthritis, may eventually turn out to be more closely related to herpes or to syphilis than they are to hay fever and asthma.

Dr. Long: I would like to comment on one thing, Dr. Fitzgerald. I remember that thirty years ago Dr. Warthin was stating that all those with coronary disease had syphilis and all those with certain other diseases had syphilis. He made these statements on the basis of the microscopic findings.

If Dr. Warthin could have seen this patient, it would have convinced him without question, especially with such findings in the aorta, that syphilis was the basis for rheumatoid arthritis.

Time to Modernize

Annie has been coming to the surgery for years with a new complaint every time. In my early days I used to hunt for the causes but for some years I have tended, I fear, to treat her rather lightheartedly.

She came in on Friday evening with a story of burning water and a bottle to prove it. To support my intended reassurance I tested some for albumin over the bunsen burner. There was a roar and a spurt of flame and I dropped the lot, shocked and singed. "My God, Annie, you've really got something wrong this time." "Oh Doctor, I'm terribly sorry. I've given you the wrong bottle. That must be my new shampoo."

I have today ordered some of these tablets for urine testing. I am told they are simpler and cleaner, but it's their safety that really attracts me—*The Lancet, September 12, 1959*

NUTRITION EXCERPTS

Prepared with cooperation of the Faculty of the Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.B., B.S., *Editor*

Physiology of Appetite and Hunger

J. H. FRYER, M.B., B.S., ITHACA, NEW YORK

It is a basic concept of the causation of obesity that at the time "excess" adipose tissue is being accumulated, the energy intake of the organism exceeds its energy expenditure. In no other way can the Law of the Conservation of Energy be accounted for, for undoubtedly energy is being stored in the process of the accumulation of fat. It is also apparent that if energy intake is adjusted to meet energy expenditure, no net increase in fat content is likely to take place except, perhaps, by processes of energy exchange with nonfat tissues over a prolonged period of time.

This line of reasoning suggests that knowledge of the mechanisms regulating energy balance would be of great value in the consideration of obesity and perhaps, eventually, in the development of therapeutic measures for it. Since it seems unreasonable that in man energy expenditure should be regulated to balance energy intake, the converse must be true—energy intake is the factor regulated. This means, in effect, the regulation of food intake, since there is no evidence suggesting significant variability in nutrient absorption. The physiology of appetite and hunger therefore becomes the focal point.

It is necessary to briefly consider terminology. "Hunger" has become accepted as having a "classic" meaning, derived from its original use by Cannon and Washburn[1] to designate a painful sensation, hunger pangs, in the epigastrium, occurring cyclically and shown to be coincident with peristalsis. "Appetite" is a mild, almost pleasant anticipatory sensation occurring prior to meals and usually, in the author's opinion, satisfied by the more fortunate people of the world long before "hunger" can develop. The relative significance of the two subjective sensations and of "negative appetite," or satiety, will be touched on later.

There is evidence from work in rabbits, rats, and dogs that some sort of mechanism regulates energy balance in animals. For example, Gasnier and Mayer[2] showed that if the hair of rabbits is shaved off, thus increasing the rabbits' energy expenditure by means of heat loss, there is a corresponding increase in food intake. Adolph[3] showed that the dilution of food given to rats by the addition of nonnutrient materials is followed by an increase in total material eaten, as compensation for the reduced caloric density. Janowitz and Grossman[4] and Share and coworkers[5] demonstrated that, within limits, dogs will reduce their oral intake when given nutrients through a gastric fistula. In man, however, the process is less well documented for obvious reasons. However, a simple experiment, carried out at the Graduate School of Nutrition at Cornell, showed that if a 1,000-calorie liquid supplement was given to a group of students late each night their ad libitum intake at regular meals was reduced, as partial compensation for the supplementary calories.[6] This again suggests the presence of a homeostatic mechanism. Certainly many people eat on an ad libitum basis and maintain a steady body weight for many years without any conscious effort to regulate either food intake or voluntary energy expenditure, and it is hard to believe that this is a matter of chance alone.

Knowledge of physiologic mechanisms which might mediate this control has increased significantly in recent years. The original work of Cannon and Washburn[1] and Carlson[7] established with reasonable certainty that hunger "pangs" are coincident with and no doubt due to marked peristaltic waves in the stomach wall. It has also been shown that these pangs can be relieved by the ingestion of food and temporarily by the introduction into the stomach of an inflatable balloon. The intravenous administration of glucose and glucagon will also inhibit the gastric contractions and the coincident hunger pangs.[8,9] The fact that these modalities have the elevation of the blood sugar in common has suggested to some workers that perhaps a humoral factor mediates an effect on central nervous system centers and thus produces inhibition through autonomic pathways.

The most important step forward was made when new technics made possible the production of minute, highly localized lesions in the brains of experimental animals. By this means it was demonstrated that lesions in the ventromedial part of the hypothalamus of the rat could produce obesity[10] and, conversely, that destruction of a more lateral area results in complete anorexia and ultimate death from starvation even in the presence of plenty.[11] These two areas have been considered to form an "appetite center" in which information is received reflecting, in some way, the energy balance of the organism. Nervous impulses are then initiated which, by complex pathways, signal the need for food by producing appetite, hunger, or both. There also is evidence that in humans hypothalamic lesions can affect food intake and thus body habitus. It is therefore reasonable to suppose that centers similar to those demonstrated in lower animals are present in humans.

Marshall and Mayer[12] have extended this concept by studying the obesity produced in the experimental animal by the injection of gold thioglucose, which is apparently selectively absorbed by cells of the ventromedial hypothalamus and which, by interference with their function, produces hyperphagia and obesity. Mayer[13,14] also studied a hereditary form of obesity in mice and compared the features of hypothalamic obesity, gold thioglucose obesity, and the hereditary obesity syndrome. As a result of these and other experiments, Mayer postulated the so-called glucostatic theory, which reopened the idea that levels of blood sugar contribute significantly to the humoral factor reflecting food or energy intake to which the hypothalamic centers respond. To account for the occurrence of normal or even excessive appetite or hunger in individuals with diabetes, originally considered to be an objection to the theory of such a mechanism, it was proposed that the major portion of blood sugar is unavailable to the cells in its particular chemical state, as demonstrated by low or normal arteriovenous differences in peripheral blood even when absolute blood sugar levels are high. Additional supporting evidence is claimed in the selective effect of gold thioglucose in localized areas of the hypothalamus and other observations indicating that glucose metabolism may be more intensive in one region as compared to other adjacent areas.[15]

However attractive this glucostatic hypothesis may be in the experimental animal, observations in human beings which are not readily explained by it have been made,[16,17] although one must add that essentially all workers are agreed that appetite and satiety, if not hunger, have many components and that psychologic as well as somatic mechanisms are certainly involved. The basic objections to the theory of blood sugar as a significant intermediary are, first, that the blood sugar level reflects only the intake of energy in carbohydrate form and that protein and fat have been shown to have satiety effects as great, if not greater, than carbohydrate and, second, that the blood sugar level poorly reflects the over-all state of energy balance of the organism. For example, a steady level may be demonstrated in spite of relatively prolonged fasting or exercise. Under these conditions, over-all stores of energy, as they exist in liver glycogen and fat depots, are being depleted but the blood sugar level provides no reflection of this. On the other hand, simple observations suggest that food intake is very much affected by these circumstances.

Observations of the direct relationship between blood sugar levels and food intake have been offered as evidence for both sides of the question. Clearly, under normal circumstances we are hungry or at least desire food when our blood sugar is at the so-called fasting level because this occurs only when we have not eaten carbohydrate for several hours. Conversely, a meal almost always contains carbohydrate so that satiety and a raised blood sugar level will be found to coincide in time after we have eaten. But this seems to be a very weak argument for a cause-and-effect relationship, and when changes in the blood sugar level have been induced by intravenous infusion, little effect on voluntary food intake has been noted.[17] Gastric distention undoubtedly plays a role in the early satiety effect of food and, in the author's experience, this is a much more satisfactory explanation than changes in blood sugar. However, since food intake is apparently regulated after total gastrectomy, the role of such a mechanism can be only partial.

It must also be pointed out that the many experiments showing the interrelationship between blood sugar levels (affected by such modalities as the administration of carbohydrate or glucagon), gastric contractions, and classic hunger are probably irrelevant, since these objective and subjective phenomena cannot be quantitative. Hunger, at most, initiates eating, but it is the point at which satiety occurs that is critical in regulating intake and true hunger can be inhibited by the administration of food calories quite inadequate to restore energy equilibrium.

In addition to short-term mechanisms affecting food intake, there are strong grounds to believe that longer term regulation occurs and this is not explainable by such transitory effects as those which occur in blood sugar levels. The need for such mechanisms is exemplified in the situation of humans returning to initial body weight after periods of starvation without any conscious effort to regulate either food intake or energy output. Of course, in these circumstances, energy output does undergo modification since we know that the basal metabolic rate changes to compensate, in part, for the change in food supply. The voluntary expenditure of energy is also affected, in a compensatory way, in starvation and repletion. But other explanations must also be sought for the apparent relative constancy of body mass which seems to exist for many individuals over long periods of time. Rates of fat turnover have been postulated by Mayer[18] and Kennedy[19] as of significance in this regard.

Whether or not investigations into the physiology of appetite and hunger will ultimately bear on problems of health in the human being is uncertain. The relative overeating which causes active obesity is certainly associated with a failure of any homeostatic mechanisms which may exist. This may reflect the weakness of such mechanisms in the face of overriding control from higher centers, that is, those of so-called psychologic origin. There is certainly more evidence for this hypothesis than one dependent entirely on an organic disturbance of a basic physiologic mechanism, but the truth probably lies between the two. Further basic research, probably by the neurophysiologists, is certainly needed. We may discover enough about the process to allow us to control the satiety mechanism by chemical or other therapy and thus prevent or correct obesity. Such a possibility is not in sight at the moment.

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(*Number ten in a series of Nutrition Excerpts*)

Step Right Up

"My father is an Eagle, a Moose, an Elk and a Lion," boasted a junior high school youngster.

"Yeah?" gasped his buddy. "How much does it cost to see him?"—*Air Conditioning News*

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ELIZABETH J. CRAWFORD, M.D.
ALFRED F. GRANATELLI, M.D.
LESTER C. MARK, M.D.
VALENTINO D. B. MAZZIA, M.D.

Cardiovascular Collapse Prior to Anesthesia

WHEN a patient is brought to the operating room in a state of cardiovascular collapse that requires immediate surgical intervention, the anesthesiologist may be confronted with a number of important problems. One such instance is described in the following case report.

Case Report

A fourteen-year-old boy was admitted to the hospital for cardiac catheterization studies. At eight years of age it was detected that he had a cardiac murmur. Two years later he developed congestive cardiac failure which required digitalization. At the time of admission he did not require any digitalis medication although he still manifested dyspnea on exertion.

Recent physical findings were an arterial blood pressure of 130 mm. Hg systolic and 70 diastolic, pulse regular at 86 per minute, respiratory rate 14 per minute, and temperature 98.6 F. His heart was enlarged; the apex beat was felt in the sixth intercostal space at the anterior axillary line. A harsh systolic murmur and thrill could be heard and detected over the aortic area. There were no signs of congestive failure.

Laboratory studies revealed a hemoglobin content in the blood of 15 Gm. per 100 cc. and a blood urea nitrogen of 15 mg. per 100 cc. The urine was normal. The electrocardiogram showed sinus tachycardia. The coagulation time was twenty-seven minutes and the bleeding time was twenty-five minutes. A roentgenogram of the chest confirmed the presence of an enlarged heart.

A diagnosis of subaortic stenosis was made. Although the patient manifested an abnormal bleeding tendency, it was decided to evaluate him further by means of cardiac catheterization. This was performed without any anesthesia being necessary. The catheter was passed through the right hemithorax, and the left ventricle was entered.

At the conclusion of the procedure the patient developed tachycardia at a rate of 160 per minute and his systolic blood pressure fell to 80. The immediate differential diagnosis was acute congestive heart failure or cardiac tamponade. The electrocardiogram confirmed the sinus tachycardia but there was no change in height of the voltage. Rapid intravenous digitalization was effected but there was no improvement in the

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cardiovascular status. The child, who had been conscious during the procedure, now became comatose, dyspneic, and cyanotic. He was taken to the operating room, where positive-pressure oxygen by face mask was immediately administered. He was then connected to an electrocardioscope. His condition deteriorated. His skin became cold and clammy. His blood pressure fell to 70/50 while his pulse persisted at 160 per minute. His respirations were shallow and rapid.

It was decided to aspirate the pericardium under anesthesia. In order to conserve time, preanesthetic medication was not administered. The patient was given nitrous oxide with oxygen 2 L. each in a semiclosed circle system for one minute. This was then changed to a closed circle system with carbon dioxide-absorption and simultaneous administration of cyclopropane and oxygen. Immediately after anesthesia was induced the pulse and blood pressure became unobtainable. The surgeon then decided to do a pericardiotomy. The chest was entered quickly. The blood was cyanotic but there was minimal bleeding from the incision. When the chest was opened, the heart was seen barely to pulsate. By this time the electrocardioscope showed a rapidly progressing bradycardia. On incision of the pericardium, which was under extreme tension, there was an immediate gush of whole blood. Immediately following this the patient's blood pressure rose to 160/70; this was relative hypertension when compared to his precatheterization blood pressure. The heart rate now increased to 120 per minute while respirations slowed to 20 per minute. Endotracheal intubation was performed and the thoracotomy was closed. Platelets and 500 cc. of whole blood were administered intravenously.

At the end of the operation, as anesthesia was discontinued, the patient regained consciousness rapidly. He was sent to the recovery room awake with a blood pressure of 140/70 and a pulse rate of 120 per minute. He was well for several days but serosanguinous fluid reaccumulated in his pericardium and had to be removed again. Following the latter procedure the patient had no further complications.

Comment

From the anesthesiologic point of view this patient was managed well. It may be worth while to review briefly the requirements and choice of anesthesia for a patient in a state of cardiovascular collapse prior to anesthesia.

As soon as surgical intervention is decided for a patient in a state of cardiovascular collapse—whether due to internal hemorrhage, such as following a ruptured ectopic pregnancy or ruptured gastric ulcer or, as in this case, acute hemorrhagic cardiac tamponade—there should be no time lost. When anesthesia is required, certain problems must be dealt with. Preanesthetic medication requirements are minimal. Usually the state of shock depresses the central nervous system to such an extent that no sedation is needed. When general anesthesia is contemplated, the only preanesthetic drug recommended is atropine in order to prevent formation of mucous secretions, which could interfere with respiration. To save time this is best administered intravenously, and induction of anesthesia may be started immediately thereafter. As was done in this case, it is well to connect a cardiac monitoring device to the patient.

There are situations in which it is important for the anesthesiologist to have an assistant. It may be necessary to "cut down" on a peripheral vein in order to start intravenous fluid therapy. To the assistant may then be delegated the duty of administering fluid therapy, as deemed necessary, while the anesthesiologist devotes his attention to the control of anesthesia.

The administration of anesthesia to such patients presents problems different from those of anesthetization for elective operations. There may not be time to secure desired laboratory findings, and in such a situation the anesthesiologist must use his judgment on how to manage the patient without delay. Usually spinal or epidural anesthesia is contraindicated because the vasocirculatory system is in such a state of maximum vasoconstriction that production of vasodilatation in an area of anesthesia would result in aggravation of cardiovascular insufficiency. Local anesthesia may be considered in some circumstances if the surgical procedure and the patient's attitude are amenable to it. When general anesthesia is required, a number of safeguards must be borne in mind. For instance, provision must be made for prevention of aspiration of vomitus. This usually means adequate endotracheal intubation. However, as in the case reported here, sometimes even rapid intubation would take up too much vital time and it therefore may be necessary to delay this procedure.

As to the choice of anesthesia, taking for granted that the anesthesiologist is competent to use all acceptable agents, there are certain anesthetic drugs that generally are not advisable in these conditions because they either are too toxic or cause further circulatory depression. These include chloroform, halothane, and the intravenous rapid-acting barbituric acid derivatives. Ether, which enjoys the reputation of a nontoxic agent, actually does cause cardiovascular depression,[1] and when its concentration is exceeded inadvertently, it may also aggravate circulatory insufficiency.[2] Moreover, although patients in a state of prior cardiovascular collapse require but little anesthesia, even that little amount of ether may take too long to administer when it is most urgent to operate and reach the pathologic lesion immediately. Of the rapid-acting anesthetic gases, nitrous oxide, ethylene, and cyclopropane are usually the ones recommended in the circumstances under consideration. In any case adequate oxygenation is essential. Cyclopropane, in light concentrations so as to avoid attaining a depth of anesthesia beyond the second plane, is recommended in such conditions. It can be administered with high concentrations of oxygen and yet be rapid in its effect. When the anesthetic concentration is kept small enough to avoid a depth beyond the midsecond plane, it depresses cardiovascular function minimally; in fact, in such cases it seems to improve it.[3,4] Deeper planes of cyclopropane can interfere with vasomotor activity,[2] but such deeper planes are not required since muscular relaxation generally is adequate even in the light planes when a state of shock is present. Preferably an intravenous muscular relaxant should be made available to avoid increasing the depth of anesthesia but, as already mentioned, muscular relaxation is seldom a problem, and, if it should become necessary, the amount of a muscle relaxant so used would be a great deal less than in a normal state.

Which drugs to use to improve the cardiovascular status in such situations is controversial at present. There is increasing evidence that vasoconstrictors, such as epinephrine, norepinephrine (Levophed), and Neo-Synephrine, cannot improve shocklike states when the vasomotor elements already are in a state of maximum contraction and that if such drugs do temporarily increase the arterial blood pressure in a large artery they do so at the expense of terminal important organs, such as the liver, kidney, heart, and brain in which vasoconstriction diminishes further vascular permeability and effective circulation. Evidence is also increasing that autonomic ganglion-blocking drugs, such as chlorpromazine and other phenothiazine derivatives, are preferable since they increase vasomotion and vascular permeability and thus improve terminal circulation in vital organs.[5]

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(*Number seventy-seven in a series of Clinical Anesthesia Conferences*)

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Poisonings with Favorable Outcomes

THE following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Aspirin	4 years	Female

This child obtained a bottle of flavored baby aspirin tablets from a dresser drawer and ingested the entire contents of the bottle (about 50 tablets). At the time of the occurrence the mother was in the kitchen and presumed that the child was asleep in the bedroom. The child apparently left her bed and returned with the bottle of aspirin. The mother was unaware of the incident until about one-half hour after the ingestion.

The child immediately was taken to the hospital, where her stomach was lavaged with water. The only symptom on admission was "purple marks" on the face. Since the child showed no ill effects, she was discharged after several hours and referred back to her private physician for indicated follow-up.

Since the establishment of the New York City Poison Control Center, on March 9, 1955, over 2,000 aspirin incidents have been reported. In 1958 alone, nearly 1,000 such incidents were reported, the majority of which were due to flavored baby aspirin. Although it is true that there have been no fatalities due to this type of aspirin, the incidence of accidental ingestions is staggering. Many of the children did suffer the effects of salicylate intoxication.

The reduction in content of each tablet to $1^1/_4$ grain is undoubtedly lifesaving, but the persistent large number of ingestions are unquestionably due to the palatability and attractiveness of the product. One questions why manufacturers and physicians do not promote the use of unflavored baby aspirin. This would impress on children the fact that aspirin is to be taken as medicine and not as candy. Although the general reduction in content of each baby aspirin tablet was an important contribution to safety, the accompanying attractive flavor has diluted the over-all safety picture.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Aspirin	30 years	Male

This patient ingested 100 0.3-Gm. aspirin tablets. He became somnolent and had tinnitus. He was taken to the hospital, where his stomach was lavaged with water four hours after ingestion. The blood had a carbon dioxide combining power of 14 volumes per cent, potassium 3.4 mg. per cent, sodium 141 mg. per cent, and a pH of 7.45. The patient was given fluids intravenously and other supportive therapy. After two days in the hospital he was discharged.

This case illustrates the difficulty of assessing the prognosis in any individual following poisoning. The prognosis varies with individuals and in the same individual at different times.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Lead	18 months	Male

This patient fell in the street and bruised his leg. He continued to complain of pains in the leg from the fall and could not walk. He was therefore taken to the hospital, where the leg was x-rayed. The patient was then sent home. Several days later the mother received a card from the hospital to return with the patient since a possible diagnosis of lead poisoning was made on the basis of the x-ray of the lower bone. The following day the child was admitted to another hospital, where he remained for twenty-one days for treatment of lead poisoning.

The history revealed that this child had chewed on flakes of paint from the walls for an indefinite period. An abstract by the public health nurse who visited the home disclosed that the mother is now under psychiatric care in a city institution.

Lead poisoning is the number one poisoning problem in children from the standpoint of severity and fatality. During 1958, 114 lead poisoning cases were reported, 21 of which terminated fatally. Since its establishment, 560 cases were reported to this Center, of which there were 51 deaths, all in children under five years of age. Contrary to popular belief, none of these incidents occurred from toys or cribs but from the ingestion of flakes of paint from walls, ceilings, and window sills.

In spite of the apparent widespread publicity given to this subject, there still is a remarkable degree of unfamiliarity with the problem. At the June, 1959, annual meeting of the American Medical Association an amazing number of physicians who viewed our exhibit asked the following questions:

1. Is lead poisoning still a problem?
2. How do children contract lead poisoning?

This situation impressed us with the need for an intensive job of orientation and education of the practicing physician as well as of the public, which obviously is even less informed. The need for frequent repetition to alert physicians about this very important problem is evident.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Carbon Tetrachloride	18 months	Male

The mother of the patient was cleaning a coat with a cleaning fluid containing carbon tetrachloride. She then placed the bottle on the kitchen table. The child obtained the bottle from the table and ingested an unknown quantity of the product. He experienced burning in the mouth and throat, nausea, vomiting, diarrhea, and stupor. He was taken to the hospital, where his stomach was lavaged within one hour after ingestion. On the inpatient service the patient was treated with fluids intravenously and given additional symptomatic therapy. Although the poisoning was classified as severe, the patient fully recovered after ten days of hospitalization.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Phenothiazine	4 years	Male

This incident was reported by a physician from New Jersey. This child ingested 6 50-mg. tablets at about 8:00 P.M. and was found in a stuporous condition by his mother. He was rushed to the hospital, where his stomach was lavaged with saline forty-five minutes after ingestion. The blood pressure was 60/30; the pulse, however, was good. Respirations were 18 per minute and muscle tonus was good. There were no clinical signs of shock at the time of admission.

The child was treated with norepinephrine. Blood pressure, respirations, and pulse were checked every thirty minutes. Within twelve hours the patient was very much improved, but on the second day after admission his temperature rose to 103 F. and he developed large cervical glands. His spleen was also enlarged. The blood smear showed the normal proportion of lymphocytes, and the heterophil reaction was positive. A diagnosis of phenothiazine poisoning and coincidental infectious mononucleosis was made, the mononucleosis most likely unrelated to the poisoning.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Chlorothiazide	3 years	Male

This incident was reported by a physician from New Jersey. The patient ingested 30 tablets of this diuretic at 5:00 A.M. Vomiting was induced and the stomach was lavaged. The patient fully recovered.

This case is cited because of the increasing availability of nonmercurial diuretics. Although cases of ingestions of the newer diuretics reported to this Center have not been associated with severe toxic symptoms, maintenance of electrolyte balance is important and always must be kept in mind.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Amphetamine	26 years	Female

This patient ingested 18 anorexigenic-stimulant tablets (dosage per tablet unknown). She was taken to the hospital, where her stomach was lavaged with normal saline. Symptoms on admission were headache and confusion. In the hospital the patient was treated with 1 ampule of caffeine sodium benzoate and then signed herself out at her own risk.

The rationale of many emergency room measures, such as the therapy reported here, is often puzzling.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Drano	5 years	Male

The child obtained the container from a cupboard, which apparently was at a low level and which therefore he was able to reach without the aid of a chair or stool. He ingested an unknown amount of the contents, and he began to cry and foam at the mouth.

This substance had been mistakenly purchased by an older child (the parent had sent him to buy CN, a cresylic type of household disinfectant). The patient would have been familiar with CN but Drano apparently was a new substance to him and he mistook it for salt. The mother stated to the public health nurse who visited the home that she did not realize the substance was in the home until the accident occurred.

On admission to the hospital the presenting symptoms were burning in the mouth and throat, nausea, and vomiting. The patient remained in the hospital for two weeks, during which time he was treated with fluids intravenously and given other appropriate therapy. He was apparently normal, both mentally and physically.

This case again illustrates the danger of storing foods and household products together.

Incident 9

Toxic Agent	*Age*	*Sex*
Effervescent Bromine-Containing Granules	48 years	Female

This patient was a habitual user of these granules for the past two years. After the accident, on the same day, she became stuporous and was taken to New York Hospital. The following history was obtained by the examining physician: The patient was emotionally unstable, and two years prior to admission she began to take immoderate amounts of the patent medicine. The exact reason for this is unknown. About eight months prior to admission she developed symptoms of hypothyroidism. She was treated with thyroid extract for the past two months. About one week prior to the onset of symptoms she began to be increasingly drowsy.

On the day of the accident she responded only to stimulation. Physical examination revealed no specific neurologic signs except stupor. Conjunctiva, nail beds, and lips were cyanotic. The blood bromide level was 400 mg. per cent and the spinal fluid protein was elevated to 128 mg. per cent. A diagnosis of bromism plus methemoglobinemia was entertained. The treatment in the hospital consisted of administration of fluids intravenously, a saline-glucose solution, and methylene blue intravenously. The patient became responsive in less than twenty-four hours and completely oriented in forty-eight hours. However, she developed auditory hallucinations on the third day following admission. These disappeared at the end of the second week.

Unfortunately bromide preparations are freely available and dispensed over the counter not only in drug stores but also in soda fountain establishments. Many puzzling neurologic symptoms could be solved by more thorough questioning by physicians relating to the ingestion of products containing bromides.

Incident 10

Toxic Agent	*Age*	*Sex*
Oil of Wintergreen	3 years	Male

This patient accidentally ingested about 15 cc. of oil of wintergreen. The child came to the mother complaining of burning in the mouth and throat. The mother was entirely unaware of the occurrence until the child related the incident.

He was taken to New York Hospital, where his stomach was lavaged with saline within twenty-five minutes following ingestion. The only symptom on admission was burning in the mouth and throat. The blood and urine were negative for salicylate. The child was hospitalized for two days and was given supportive therapy. He made a rapid and uneventful recovery.

The favorable outcome is perhaps related to the rapid evacuation of the stomach contents.

Incident 11

Toxic Agent	*Age*	*Sex*
Barbiturate	23 years	Female

This patient was found by her husband in a comatose condition. She reputedly had taken an overdose of barbiturate tablets, 8 to 10 of them, mistaking them for other pills taken for menstrual cramps and headaches. After admission the patient insisted that she had ingested 20 tablets.

Laboratory findings included a white blood cell count of 18,200, with 21 per cent lymphocytes, and 12.9 Gm. per cent hemoglobin. The patient was treated with caffeine-sodium benzoate and a saline-glucose solution, and a Foley catheter was inserted. Blood pressure and pulse were normal. After three days of hospitalization and therapy, the patient was discharged in good condition.

This case is cited because it involves one of the lesser-used barbiturates.

Incident 12

Toxic Agent	*Age*	*Sex*
Antiseptic Solution	$2^1/_2$ years	Male

This was an accidental ingestion of a popular "over-the-counter" antiseptic. Although 3 ounces were ingested, no manifesting symptoms were observed. In the hospital the patient's stomach was lavaged within one hour following ingestion.

We repeatedly have been told that lack of sequelae on ingestion of popular household products is useful information to practicing physicians.

Incident 13

Toxic Agent	*Age*	*Sex*
Atropine	Adult	Male
	Adult	Female
	12 years	Female
	$5^1/_2$ years	Male

Israel Miller, M.D., a pediatrician who is associated with the Department of Health in a consultant capacity, called the Center about 7:00 P.M. on May 12, 1959, and reported that someone had just called him and stated that after supper the whole family became "red as lobsters."

Examination about twenty minutes later showed an intense erythema of the face, arms, and trunk of both children and the father; the erythema was less marked on the mother. The pupils of all were dilated, with little or no reaction to light. All had tachycardia (108 to 120), and each complained of dryness in the mouth. The father said that he felt like he had "a jag on"; the mother and daughter felt dizzy. The father also stated that he had had the same peculiar sensation in his mouth after a preoperative injection in a hospital recently.

This led Dr. Miller to mention atropine as a possible cause, whereupon the mother recalled that the boy was getting atropine drops for his eyes from a plastic squeeze bottle. This was a prescription from an ophthalmologist of a 1 per cent solution of atropine sulfate. It later developed that the boy had squirted his eye drops into the iced tea which the family had had with supper. The erythema and other symptoms subsided gradually. The next morning the entire family was well. However, it must be borne in mind that a few more squirts from this plastic bottle might have given a tragic result.

It is worth noting that although the diagnosis came rather dramatically, it did not come as easily as it appears. There were several telephone exchanges with the Poison Control Center in regard to possible toxic agents, symptoms, prognosis, and treatment. Dr. Miller states that he appreciates that the facilities of both the Poison Control Center and the Food and Drug Division of the Department of Health were made immediately available to him, for he found the assistance very helpful and reassuring.

The medications used in the practice of ophthalmology are frequently incriminated in cases reported to the Poison Control Center.

(*Number forty-three in a series of Accidental Chemical Poisonings*)

I am a man, and nothing human can be of indifference to me.—TERENCE

CARDIOVASCULAR SPOTLIGHT

Prepared by the Subcommittee on Heart Disease
Council Committee on Public Health and Education
Medical Society of the State of New York

J. G. FRED HISS, M.D., *Editor*

Medical Information

J. G. FRED HISS, M.D., SYRACUSE, NEW YORK

INFORMING the public about health matters is an essential part of the prevention and control of disease. However, the importance of disseminating such information is often overlooked by physicians as well as by county medical societies.

The public should know something about the etiology of diseases so that they may try to avoid the causes of such as streptococcal infections (rheumatic fever and subacute bacterial endocarditis), tuberculosis, diphtheria, tetanus, poliomyelitis, enteritis, hepatitis, typhoid fever, and others. They should also know some of the more common and characteristic symptoms and signs of many illnesses so that they can seek the physician's help early. This is especially true of symptoms and signs that are not in themselves very uncomfortable, such as swelling of the legs and ankles, slight shortness of breath on exertion, inability to lie flat, unexplained loss of weight, weakness, excessive thirst, painless lumps or swellings, bleeding from a body opening, and others. There are also symptoms that call for prompt investigation, such as pain in the chest or arms on exertion, pain in the eyes, sudden abdominal pain, sudden shortness of breath, sudden weakness of an arm or leg, or sudden loss of speech. The public must also know of specific protective procedures, such as immunizations against smallpox, diphtheria, poliomyelitis, tetanus, whooping cough, and others; and also the value of taking sulfonamides or penicillin over long periods of time to prevent streptococcal infections and possible rheumatic fever recurrences.

In addition there is need to know about proper preservation of foods, methods of rendering contaminated water safe, asepsis in first aid dressings, and a multitude of other procedures that have a direct bearing on health. There should also be some knowledge that some treatments must be prolonged or lifelong, such as the use of insulin, liver extracts, some hormones, digitalis, salt-poor or fat-poor diets, and rheumatic fever prophylaxis. It is also important to correct many erroneous notions and beliefs that are widespread and at times do some harm. Among this group are the following: "Prolonged or hard work produces heart disease"; "One's blood pressure should be 100 plus one's age"; "Heart murmurs are serious"; "It is dangerous for a 'heart patient' to put his hands over his head or to sleep on his left side"; "Electrocardiograms tell everything about a heart, making other examinations unnecessary"; "Electrocardiograms are worthless"; "Blood tests prove or disprove that an illness is rheumatic fever"; and many others.

Physicians and county medical societies, either independently or in cooperation with public or volunteer health agencies, can be most effective in disseminating the right kind of "health information" related to all the above-mentioned areas. It is generally accepted that physicians are indispensable to local health groups in planning activities that involve scientific medical information and medical policies. Unfortunately, at times, these groups find it difficult to enroll enough physicians to serve in this guidance capacity.

Patient information is a special type of lay education given by the physician at a time when the patient or his family is actively seeking true health information. A few minutes spent at this time are frequently most rewarding. Many times circulars and pamphlets available from health departments, voluntary health agencies, insurance companies, and the like can be of extreme value in explaining health problems to lay people in a more understandable way.

A well-informed public may readily increase the efficiency of medical treatment and disease control in a community. If the basic medical knowledge among the general population were great enough it could be an effective barrier to the development or persistence of cults, quacks, and fads. It is admitted that an "unstable" small segment of the population may be upset by any type of information and thereby increase their neurotic, hypochondriac, or psychotic tendencies. There could also be some increase in self-medication in another small segment.

In general, however, the benefits derived by the majority from good lay health education, in which physicians and medical societies have played a part, should greatly outweigh the disadvantages sustained by the "unstable" few.

To facilitate the distribution of basic information on cardiovascular topics both to physicians and to the lay population, the "Heart Committee" of the Public Health and Education Committee of the Medical Society of the State of New York has arranged a coordinated (not combined) program with the two health departments (State and City of New York) and the two heart associations of New York State for the year 1960. Emphasis will be placed on various problems according to the following schedule:

February—Rheumatic Fever and Rheumatic Heart Disease

April—Congenital Cardiovascular Defects

June—Atherosclerosis and Atherosclerotic Heart Disease

August—Hypertension and Hypertensive Heart Disease

October—"Strokes"

December—Cardiac Rehabilitation

Physicians and county medical societies may find it of value to use this schedule in planning their own work or programs in these fields for the coming year. The State Society's Subcommittee on Heart Disease is willing to help in developing local programs, including arrangements for speakers at meetings.

Tale-bearers are as bad as the tale-makers.—RICHARD BRINSLEY SHERIDAN

CASE REPORTS

Intrahepatic Jaundice Produced by Chlorpropamide

FELIX TAUBMAN, M.D., F.A.C.P., AND PANOS PETROPOULOS, M.D., BROOKLYN, NEW YORK

(*From the Medical Service of St. John's Episcopal Hospital*)

THE development of jaundice as a complication of drug therapy is well documented.[1] In some instances the jaundice has been produced through direct hepatocellular damage as in the case of carbon tetrachloride. The dominant pathology in this type of hepatic injury includes fatty metamorphosis and vascular changes. In other instances the liver damage has more nearly resembled a viral hepatitis. Two notable examples of drugs producing this type of injury are cinchophen and iproniazid. Still a third type of hepatic damage has been intrahepatic cholestasis manifested clinically as a form of obstructive jaundice. This was first reported resulting from the use of arsphenamine.[2] Soon other drugs were reported as producing a similar picture. Among these were methyltestosterone,[3] chlorpromazine hydrochloride (Thorazine),[4-6] ectylurea (Nostyn),[7] chlorothiazide (Diuril),[8] and prochlorperazine (Compazine).[9] We have recently seen a case of obstructive jaundice which we feel was produced by chlorpropamide (Diabinese). We believe this may be the first reported case of obstructive jaundice from the use of this drug.

Case Report

A forty-three-year-old Negro female was admitted to the medical service of St. John's Episcopal Hospital with a one-week history of a generalized skin rash, itching, anorexia, epigastric discomfort, nausea, and malaise for the three to four days prior to admission. The patient was discovered to have diabetes mellitus two weeks before her admission and was put on chlorpropamide 250 mg. tablets three times a day. One week later she noticed a generalized macular rash on her trunk and extremities which was accompanied by intense itching. Because of this she was given Benadryl hydrochloride capsules and calcium gluconate tablets. However, she continued to take the chlorpropamide as before. The rash and the itching did not subside and at the end of the second week she started complaining of anorexia, malaise, epigastric discomfort, and nausea. The day prior to admission she vomited twice. No history was elicited concerning any change in the color of her urine and stools. Her past history and habits were not remarkable and in her recent past history there had been no exposure to chemicals and there had been no administration of drugs by injection nor possibility of infection through blood transfusion. The patient had not been in contact with any sick person.

The physical examination on admission revealed a well-developed and well-nourished Negro female, cooperative and in moderate distress, complaining of itching, malaise, and nausea. A generalized maculopapular rash was present on her trunk and extremities. The scleras were jaundiced. There was no enanthema and the throat was clear. A few small nut-sized, cervical and axillary lymph nodes were noted; these were slightly tender and easily movable. The heart and the lungs were not remarkable. The right upper quadrant of the abdomen was tender on palpation. The liver and spleen were not felt. The remainder of the physical examination showed normal findings.

LABORATORY FINDINGS ON ADMISSION.—The white blood count was 13,700, with 35 per cent neutrophils, 60 per cent lymphocytes, and 5 per cent monocytes. No abnormal forms of lymphocytes were seen in the smear. The red blood count was 4,620,000, the hemoglobin was 12 Gm., and the platelet count was 706,860. The sedimentation rate was 45 mm. per hour (corrected).

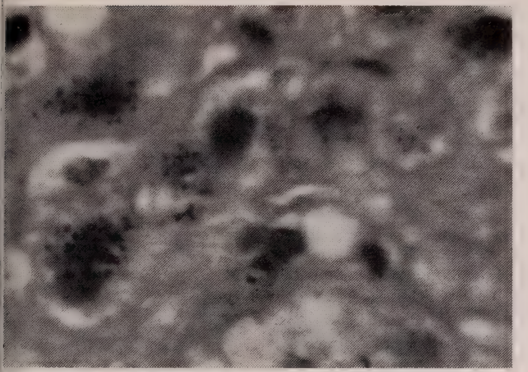

FIG. 1. Microscopic view of liver biopsy.

The blood urea nitrogen was 9 mg. per cent and fasting blood sugar was 102 mg. per cent. Urobilinogen in the urine was positive in a dilution of 1:40. The serum bilirubin was 4.7 mg. per cent, and the alkaline phosphatase was 13.9 Bodansky units. The total serum cholesterol was 222 mg. per cent, the cholesterol esters were 98 mg. per cent, and the thymol turbidity was 14.6 units. The cephalin flocculation was negative in twenty-four hours and 1 plus in forty-eight hours. The total serum protein was 6.12 Gm., albumin 3.71 Gm., and globulin 2.41 Gm. Heterophil antibodies were negative on admission and again one week later.

HOSPITAL COURSE—Chlorpropamide was discontinued and the patient was put on antihistaminics. The rash and the itching gradually subsided and disappeared after one week. A patch test and an intradermal test were done with chlorpropamide. The patient complained of intense itching at the test sites for two days. The jaundice gradually subsided and the serum bilirubin reached normal levels twelve days after admission. A bromsulphalein test done at that time showed 1.8 per cent dye retention. A liver biopsy was also done after the bilirubin reached normal levels (Fig. 1). This showed a normal architecture with a few atrophic polygonal cells and many cells containing retained bile. The liver function tests on the twentieth hospital day showed the following: The bilirubin was 0.8 mg. per cent, the alkaline phosphatase was 5.8 Bodansky units, the thymol turbidity was 7.4 units, the cephalin flocculation was negative in twenty-four hours and 1 plus in forty-eight hours, the total cholesterol was 334 mg. per cent, and the cholesterol esters were 200 mg. per cent. The white blood count on the same day was 8,200 and the differential count showed 50 per cent neutrophils,

TABLE 1.—SUMMARY OF LABORATORY FINDINGS

Date (1959)	White Blood Count	Neutrophils (Per Cent)	Lymphocytes (Per Cent)	Monocytes (Per Cent)	Eosinophils (Per Cent)	Red Blood Count	Hemoglobin (Gm.)	Platelets	Urobilinogen in Urine (Positive)	Alkaline Phosphatase (Bodansky Units)	Serum Bilirubin (mg. per cent)	Cephalin Flocculation (From Negative)	Thymol Turbidity (Units)	Cholesterol (mg. per cent)	Cholesterol Esters (mg. per cent)	Total Serum Protein (Gm.)	Albumin (Gm.)	Globulin (Gm.)	Bromsulphalein Retention (Per Cent)	Heterophil Antibody Titer
January 27	13,700	35	60	5	...	4,620,000	12	706,860	1:40	13.9	4.7	1+	14.6	222	98	6.12	3.71	2.41	...	Negative
February 3	9,400	43	56	...	1	...	...	501,800	...	8.1	2.6	1+	17.5	...	...	...	...	...	...	...
February 9*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.8	...
February 16†	8,200	50	42	...	8	...	...	...	...	5.8	0.8	1+	7.4	334	200	7.75	5.10	2.65	...	1:7

* Date of liver biopsy.
† Date of bone marrow aspiration.

42 per cent lymphocytes, and 8 per cent eosinophils. A bone marrow smear showed eosinophilia but otherwise it was normal. A gallbladder series showed normal findings. Clinically the patient improved markedly in a short period of time and after the first week of her hospital stay she was free of symptoms. Laboratory findings are summarized in Table I.

Comment

Most of the typical features of intrahepatic cholestatic jaundice are found in this case. The early grippe-like symptoms, the pruritus, and the eosinophilia have all been documented in this type of jaundice. The elevated alkaline phosphatase and serum bilirubin, and the negative cephalin flocculation are consistent with intrahepatic obstruction. However, there are definite features of hepatocellular damage also. This can be seen in the elevated thymol turbidity in this case and the reported instances of elevated serum glutamic oxalacetic transaminase in other cases of intrahepatic cholestatic jaundice.[10] Further evidence of hepatocellular damage has recently been reported by the finding of elevated serum bilirubin monoglucuronide in chlorpromazine hydrochloride-produced jaundice.[11] The exact mode of production of this type of jaundice has not been completely delineated. A direct action of the drug on the bile to increase its viscosity, loss of water through rupture of cholangioles causing inspissation of bile, and compression of bile capillaries by swollen hepatic cells have been offered in explanation for the obstructive features. However, the eosinophilia, the maculopapular pruritic rash, and the reaction to the intracutaneous challenge in our case point to a direct allergic factor. In a recently reported case of thrombocytopenic purpura caused by chlorpropamide, Grace[12] also felt that a direct allergic factor was the dominant one. In addition, we feel that with a drug such as chlorpropamide direct interference with enzymatic action within the liver must be considered as the possible source of hepatic toxicity since we are dealing with an agent that has potent enzymatic action.

Summary

A case of intrahepatic obstructive jaundice produced by chlorpropamide has been presented. The various mechanisms by which this can be produced have been reviewed. It is becoming increasingly important for the physician to be aware that the clinical picture of obstructive jaundice does not necessarily result from surgery. It is imperative that physicians be acquainted with the drugs in common use that can cause this complication. To this list we add chlorpropamide.

ACKNOWLEDGMENT.—The authors wish to acknowledge the help given them by Lester Fox, M.D., pathologist, in the interpretation of the bone marrow smear and the liver biopsy.

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Too much rest is rust.—SIR WALTER SCOTT

Extraintestinal Amebiasis Involving the Macula

HARRY EGGERS, M.D., NEW YORK CITY

THE term "central serous choroidosis" is a descriptive designation and not an etiologic one. It undoubtedly includes a number of causally unrelated inflammatory entities which have in common only their location in the macular region.

Braley and Hamilton[1] recently removed one entity from this catchall term when they discovered that extraintestinal Entamoeba histolytica infection may involve the macular region of the eye. They presented 9 cases, all seen at least several months after the onset of visual impairment, and most of them were well advanced.

All of the lesions except two, which were slightly parafoveal, were located directly in the foveal region. They had progressed to a central cystic area partly surrounded by hyperplasia or proliferation of the pigment epithelium. In some of the cases deep retinal hemorrhages also were present peripheral to the pigment accumulations. No ophthalmoscopically visible vitreous opacities were seen, and also there were no signs of anterior uveal irritation. Three patients had bilateral lesions.

The patients were carefully investigated. In 6 cases Entamoeba histolytica trophozoites were found in the stools. Some patients had inflamed and ulcerated areas in the sigmoid colon or rectum. Some had tender livers. A few had mottled coppery pigmentation of the skin. A majority gave a history of previous attacks of diarrhea. A few felt chronically fatigued. Cortisone or corticotropin made the lesions worse. Specific antiamebic therapy resulted in prompt improvement.

Braley and Hamilton[1] believe that central cystic retinitis, associated with amebiasis, represents a direct invasion of the foveal or parafoveal tissues by parasites which have been carried to the retina by the blood stream. The major involvement seems to be in the retinal pigment epithelium with the choroid affected very little.

The Entamoeba histolytica parasites affect primarily the large bowel, but they often pass by way of the portal vein to the liver, and from there they occasionally reach the lungs, the brain, and other regions by way of the blood stream. The over-all rate of infestation in the United States is believed to be about 10 per cent with considerable geographic variation. In the tropics the rate often exceeds 50 per cent. Most cases of amebiasis are asymptomatic. Certainly the clinical course is very variable.

Case Report

A forty-five-year-old Greek man was first seen on April 3, 1959, with the complaint of progressive impairment of central vision in the left eye of about three weeks duration.

Ophthalmoscopic examination revealed a pronounced, oval edematous swelling in the macular region of the left eye. No hemorrhages or exudates were visible. Vision was less than 20/200 with correction. Haidinger's brushes could not be recognized by the patient. The vitreous was clear ophthalmoscopically. The slit lamp revealed no signs of anterior uveal irritation.

The patient admitted to having resided in both Mexico and Italy for many years, but could recall no attacks of dysentery. He refused hospitalization and investigation. Having Braley and Hamilton's report in mind, I decided to try a therapeutic test. I prescribed chloroquine phosphate 250 mg. four times a day for two days, thereafter 250 mg. twice a day; and tetracycline 250 mg., combined with 250,000 units nystatin (Mysteclin) 2 capsules initially, thereafter 1 capsule four times a day.

One week later the edema definitely had decreased and vision had improved to 20/100, with correction. One month after the initial visit, the macular region looked normal and showed a small foveal reflex. Vision was 20/20 with correction, and the patient readily recognized Haidinger's brushes.

Comment

It can be argued that the origin is unproved in this case. Only the histopathologic finding of amebas in the retinal tissues could establish the cause beyond a doubt. The presence or absence of ameba in the stools, while suggestive, nevertheless would prove nothing.

Because of the dramatic, prompt reversal of a progressing condition by specific therapy, I believe that a presumptive diagnosis of amebiasis affecting the macular region is justified in this case. In view of the generally protracted course and unsatisfactory response to therapy of so-called central serous choroidosis, it is suggested that patients with relatively benign-looking edema of the macular region be given a combined diagnostic and therapeutic trial with amebacides for a two-week period. The tetracycline is virtually harmless, and the chloroquine phosphate, in the small dose recommended (which is much smaller than the amount commonly used for arthritis) also is most unlikely to produce any toxic effects. If no improvement occurs after two weeks, the medication should be discontinued.

There is another term, central angiospastic retinopathy, that frequently is used synonymously with central serous choroidosis. Both terms are merely designations for conditions of macular edema of unknown pathogenesis. Ophthalmoscopically, all that can be seen at first is a loss of the foveal reflex, followed within a few days by a clear, non-exudative swelling of the whole macular region. Later, pigment changes and also some retinal atrophy appear. The posterior vitreous remains clear throughout the course of the disease. Toxoplasmic and tuberculous macular involvements, soon after their onsets, are accompanied by posterior vitreous haze and white or yellowish-white exudation into the edematous area. Brucellosis usually is manifested by multiple lesions, much larger in size, which are exudative and have hemorrhagic margins. Histoplasmosis is slow in onset and shows disseminated lesions over a large posterior area of the retina.

There is no recognized effective treatment for central serous choroidopathy or central angiospastic retinopathy. Usually the condition lasts for many months or even years and terminates with impaired central vision. Vasodilators and corticosteroids are the most frequently used drugs. Results generally have been ineffective. I do not believe by any means that all cases of macular edema are caused by Entamoeba histolytica infection. However, where this is the case the therapeuticr esponse seems to be dramatic and prompt with specific therapy which is relatively harmless systemically. It must be remembered that in Braley and Hamilton's cases, adrenal corticosteroid therapy definitely made the conditions worse.

30 East 40th Street, New York 16

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Dogs Can Catch Mumps

When Johnny has the mumps, Fido better stay away. He may catch them, too. Two cases of mumps in dogs were reported in the September *Journal of Diseases of Children*, an American Medical Association publication. The transmission of mumps in animals other than man or monkeys has previously been considered to be rather improbable and little has been reported on its appearance in other animals.

The dogs, pets of two different families, were a six-month-old dachshund and a three-month-old Boston terrier. They developed mumps after being in contact with family members who had the disease. The dogs were allowed on the beds of the patients during their illness and convalescence. The dachshund died a few days after he became sick, but the terrier recovered within fourteen days.

Standard laboratory tests revealed the presence of the mumps virus in the saliva of both dogs who displayed the usual symptoms of mumps—swollen parotid glands and difficulty in swallowing.

The report was made by Frank Noice, Ph.D., F. M. Bolin, D.V.M., and D. F. Eveleth, Ph.D., D.V.M., of the Department of Veterinary Science, North Dakota Agricultural College, Fargo.

Primary Ovarian Pregnancy

Report of Case with Brief Review of Literature

LOUIS A. GENTILE, M.D.,* AND JAMES P. PERRINE, M.D., BROOKLYN, NEW YORK

(*From the Obstetric and Gynecologic Service, Ireland Army Hospital, Fort Knox, Kentucky*)

Although it has been estimated that there are from 90[1] to 200[2] cases of primary ovarian pregnancy reported in the literature, the presentation of the following case seems justified because of its dramatic and clear-cut clinical symptoms and because of its perfect alignment with the four criteria of Spiegelberg.

Ovarian pregnancies comprise 0.7 to 1.07 of all ectopic pregnancies. The incidence of ectopic pregnancy is 1 in every 250 pregnancies.[3] Therefore, multiplying these two figures, the theoretic incidence of ovarian pregnancy is approximately 1 in 25,000 pregnancies.

A pregnancy can be considered primarily ovarian when it satisfies the criteria set down by Spiegelberg in 1878.[4] They are: (1) that the tube, including the fimbria ovarica, must be intact and clearly separate from the ovary; (2) that the gestational sac definitely occupy the normal position of the ovary; (3) that the sac be connected with the uterus by the utero-ovarian ligament; and (4) that ovarian tissue be present in the walls of the sac.

In 1952 Baden and Heins[1] reviewed 90 cases of primary ovarian pregnancy. The average age was thirty years. Sterility was a common complaint; 35 (49.3 per cent) of 71 patients, with adequate histories, had no previous pregnancies. Many were relatively infertile, and only 64 of 97 pregnancies reached a viable stage.

The preoperative diagnosis is usually 60 per cent of that of ectopic pregnancy. In the other 40 per cent every conceivable diagnosis is entertained. Seventy-five per cent of ovarian pregnancies terminate in the first trimester. Twenty-five per cent last to the second trimester, half of which last to the third trimester or beyond. Sixty-six per cent of the viable fetuses are stillborn, and 18.2 per cent are malformed.

The etiology of these rare ectopic implantations of the fertilized ovum is unknown.[5] Leopold[6] proposed that the ovum was retained therein. Curtis[7] was of the opinion that the egg was fertilized in the oviduct and for some unknown reason found its way back to the ovary.

Novak[8] states; "The ovum, as it exists in the ovary, is incapable of fertilization until it has undergone certain maturation changes which are completed only during its passage through the tube." However, Hertig and Rock in 1944[9] have shown that the follicular egg undergoes mitosis as part of the reduction division process in preparation for its subsequent fertilization and does not require maturation in the oviduct.

Another point of contention is the site of implantation, whether it is in the original follicle or implanted in the cortex of the ovary. Since the corpus luteum is essential for implantation, many feel the implantation is extrafollicular. To bolster their argument, they point to the great frequency with which endometrial tissue is found on the ovary and state that this provides an ideal nidation site for the fertilized ovum.

The entire subject needs basic investigation. The simplest explanation is that the ovum, ready for fertilization as it leaves the ovary, meets a spermatozoon which has migrated to the peritoneal cavity. It is then fertilized and, solely by chance, implants itself in the ovary or on the peritoneum or migrates to the tubal lumen.

Case Report

A thirty-year-old white female, para 1, gravida 2, was first seen at the infertility clinic at Ireland Army Hospital on August 21, 1957. She had given birth to a normal living male child two years previously, and she had had an early spontaneous incomplete abortion in September, 1956. She greatly desired children. The past history was essentially negative except that a Smith-Hodge pessary had been inserted six months previously for dyspareunia.

Examination at that time revealed a Smith-Hodge pessary in place. The corpus was smooth, small, firm, anterior, and freely movable. The adnexa and the remainder of the examination

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* Present address: Department of Obstetrics and Gynecology, State University of New York Downstate Medical Center and Kings County Hospital, Brooklyn, New York.

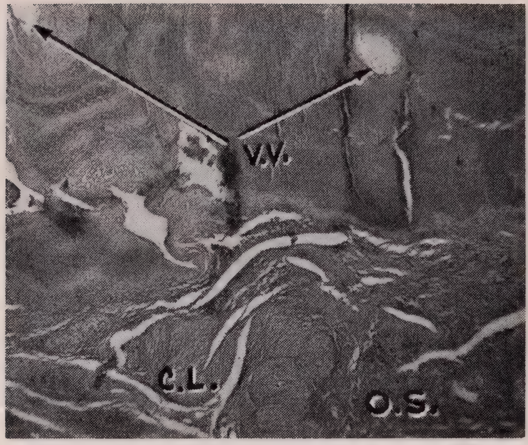

FIG. 1. Section showing wall of corpus lutem (C.L.), ovarian stroma (O.S.), and two villi (V.V.) embedded in blood clot (×30).

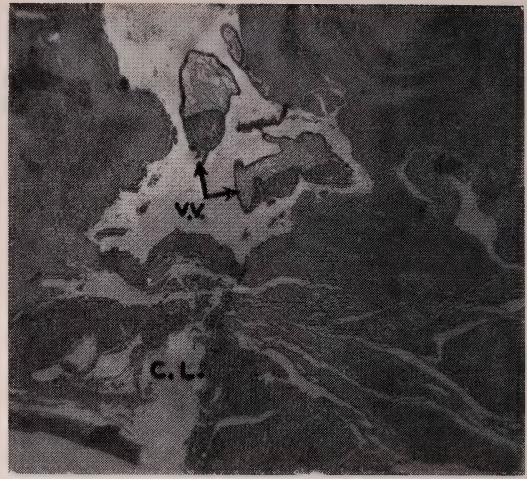

FIG. 2. Section showing villi (V.V) and corpus luteum (C.L.) in proximity (×30).

were within normal limits. The basal metabolic rate was plus 8 per cent, and the cholesterol was 300 mg. per cent. The hemogram and urinalysis were normal. The pessary was not replaced.

She was seen again on October 4, 1957, and at this time she stated that without the pessary she felt better than ever. She was placed on liothyronine (Cytomel) 10 micrograms orally. Her basal temperature was extremely erratic. The liothyronine did not affect her physically nor did it effect a change in the basal temperature. She ran out of liothyronine in February, 1958, but did not renew her prescription.

On May 5, 1958, she was seen in the emergency room at the Ireland Army Hospital. On admission she stated that she had just finished teaching her evening class and on sitting down experienced an excruciating pain in the lower abdomen and some nausea. She had no symptoms of pregnancy and had what she termed a normal menstrual period on April 27, April 13, and March 31; all of these periods lasted six days and were heavy. This was not unusual, as this was the typical pattern of her catamenia.

Examination revealed an apprehensive woman obviously with acute abdominal pain. There was a small amount of colostrum expressed from her breasts. The abdomen was protuberant with marked rebound tenderness. The cervix was pink and closed and there was marked bulging in the cul-de-sac and both fornices. Pelvic examination was attended with exquisite pain.

The diagnosis was eccyesis with hemoperitoneum and it was decided to do an immediate laparotomy. She was taken to the operating room and blood transfusion was started immediately. Culdocentesis was performed, and dark blood and old clots were obtained. Under satisfactory general anesthesia a lower midline incision was made, and 1,500 to 2,000 cc. of old blood and clot were removed from the peritoneal cavity. The pelvis was clean and normal except for the left ovary. The left ovary was attached normally and freely movable, but distal to its point of attachment there was a 2.5 by 2.5 by 3.5 cm. hemorrhagic cyst. A diagnosis of ovarian pregnancy was entertained at this time, but because of its rarity it was felt to be a ruptured corpus luteum cyst. Nevertheless, the tube and ovary were carefully inspected and the criteria of Spiegelberg were discussed and demonstrated. The tube, including the fimbriated end, was intact and distinctly separate from the ovary. The hemorrhagic cyst was definitely in the ovary and was not attached to any other structure. The ovary and cyst were attached to the uterus by the utero-ovarian ligament. The mass was excised with a generous portion of the ovary and was sent to the laboratory. The defect in the ovary was closed with a 00 plain atraumatic catgut suture. A transfusion of 1,000 cc. of whole blood was given. Prior to surgery the hematocrit was 42 per cent; after surgery it was 43 per cent. The postoperative course was uneventful and she was discharged home on the tenth postoperative day.

Pathologic Diagnosis

Gross.—A hemorrhagic cyst within the ovarian tissue has been presented. The entire specimen measures 4 by 4 by 3.5 cm. The evident cystic portion measures 2.5 by 2.5 by 3.5 cm. The actual cyst wall is gray-white and measures approximately 0.2 cm.

Microscopic.—Examination reveals numerous chorionic villi in the blood clot (Figs. 1 and 2). The stroma of the villi is loose and there is minimal proliferation of the trophoblast. In one area the blood clot and villi encroach on a cyst made up of multilayered eosinophilic cells. This is interpreted as being a corpus luteum. Elsewhere corpora albicantia and cortical primordial follicles are seen. In several areas the ovarian stromal cells show nuclear hypertrophy and eosinophilic cytoplasm suggesting pseudodecidual or decidual reaction.

Comment

It is felt that the case reported satisfies the criteria of Spiegelberg. On microscopic examination unquestionable ovarian tissue was found in the wall of the sac. At operation the sac occupied the position of the ovary and was connected to the uterus with the utero-ovarian ligament. The tube, including the fimbria ovarica, was normal, intact, and freely movable on the affected side.

Summary

A case of primary ovarian pregnancy and a short discussion of the literature has been presented.

Addendum

We are indebted to Lt. Colonel Edward J. Fadell, Medical Corps, U. S. Army, Chief of Pathology, for the photographs and interpretation of the pathology.

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Increase in Number of Persons Covered by Health Insurance

The number of persons in New York State with health insurance increased by 229,000 last year to reach a total of 14,780,000 at the end of 1958, the Health Insurance Institute has reported.

Some 84.4 per cent of the state's estimated current population now have some form of health insurance designed to help pay hospital and doctor bills.

The report is founded on the 13th annual Health Insurance Council survey of health insurance coverage in the U.S., which revealed that 123 million persons, or 70 per cent of the total civilian population, were protected by health insurance as of December 31, 1958.

The survey, based on reports of insurance programs of insurance companies, Blue Cross-Blue Shield and other health care plans, disclosed that the 14,780,000 persons covered by hospital expense insurance in New York at year's end surpassed the 1957 total of 14,551,000.

The number of persons with surgical expense insurance, which helps to defray the cost of physicians' charges for operations, climbed to 13,200,000 from the 1957 figure of 12,739,000.

Persons protected by regular medical expense insurance, providing for doctor visits for non-surgical care, increased to 9,151,000 from 8,302,000.

1959 MEDICAL DIRECTORY ERRATA

Corrections of erroneous biographic material in the 1959 *Medical Directory of New York State* are listed below. Changes have been made in material received prior to the closing date of July 1, 1958.

Δ★**BAIR, George,** 3 E 74 St. New York, N.Y. by appt. Tel Regent 7-7779. Also Scarsdale. Kings Coll Lond 1935. Asso Ped Beth David; Asst Ped Flower & Fifth Ave.

Δ★**BAIR, George,** 78 Stratton Rd. Scarsdale, N.Y. by appt. Tel Scarsdale 3-7776. Also Manhattan. Kings Coll Lond 1935. Asso Ped Beth David; Asst Ped Flower & Fifth Ave.

★**BANGEL, Maurice Bruce,** 529 Ocean Pkway. Brooklyn, N.Y. 1–2:30 Tues Thurs Sat by appt. Tel Gedney 6-2232. Med Col Va 1925. SA. FACG. D-ICS. FICS. Milit Sur US; Ind Med; Am Ger; Kings Co Sur; Al City; Al Lying-In. Asso Sur Cumber.

Δ★**BERTRAND, Charles A.,** 280 Mamaroneck Av. White Plains, N.Y. by appt. Tel White Plains 6-1824. Also Manhattan. LIC Med 1948. NB. D-IM. SM-4. Am Trudeau; Exp Biol & Med; Am Fed Clin Res; Johns Hop Med & Sur; Al St Vin; Al Univ; Al Bell; Al Johns Hopkins. Cons Int Med Roosevelt; Asso Phy Cardiol St Agnes; Phy Cardiol Dobbs Ferry; Adj Phy Cardiol Grasslands; Cons Cardiol Peekskill; Phy Cardiol White Plains OPD.

Δ★**BERTRAND, Charles A.,** Roosevelt Hospital, 428 W 59 St. New York, N.Y. by appt. Tel Judson 2-1700. Also White Plains. LIC Med 1948. NB. D-IM. SM-4. Am Trudeau; Exp Biol & Med; Am Fed Clin Res; Johns Hop Med & Sur; Al St Vin; Al Univ; Al Bell; Al Johns Hopkins. Cons Int Med Roosevelt; Asso Phy Cardiol St Agnes; Phy Cardiol Dobbs Ferry; Adj Phy Cardiol Grasslands; Cons Cardiol Peekskill; Phy Cardiol White Plains OPD.

★**BROSS, Rachel Boris,** 315 Central Park W. New York, N.Y. by appt. Tel Endicott 2-4626. Kharkov 1921. D-PN(P). Am Psych(M); Ac Psychoan; Am Group Psychother; Med Psychoan; Am Med Wom; Rus Med. Asst Psych Flower & Fifth Ave; Clin Asst Psych Mt Sinai.

Δ★**DRAGO, Rosario Philip,** 1750 Bussing Av. Bronx, N.Y. by appt. Tel Fairbanks 4-8350. Ill 1944. NB. L-P. X. Am Ac Ped; Bx Ped; Al Jersey City NJ; Al St Clares. Dir Ped St Francis; Ped Misericor.

★**DUNEWITZ, Alla Litvak,** 1145 Eastern Pkway. Brooklyn, N.Y. 12–3 except Wed Fri. Tel Slocum 6-3335. LIC Hosp 1924. Am Ac Ped; Ac Med. Ped Beth-El.

Δ★**ENSELBERG, Charles D.,** 889 Lexington Av. New York, N.Y. by appt. Tel Regent 7-1527. Univ. & Bell 1931. D-IM. SJM-4. FACP. Ac Med; Al Monte. Cons Cardiol Gouver; Dir Cardiol Poly; Asso Phy Monte.

Δ★**FELDMAN, Morris,** 358 Hinsdale St. Brooklyn, N.Y. 1–3, 7–8. Tel Dickens 2-2829. Ia 1930. X. Asst Phy Beth-El & Beth-El OPD.

Δ★**FIERER, Leon Egon,** 2660 Bedford Av. Brooklyn, N.Y. 1–2, 6–8, except Wed Sat Sun. Tel Gedney 4-6615. Cinn 1937. X. MACC. Asst Phy Jew.

Δ★**FRANCIS, Kenneth Coulter,** 654 Madison Av. New York, N.Y. by appt. Tel Templeton 8-1375. Colo 1949. XB. Milit Sur US; Ac Med. Asst Orth Sur Presby; Clin Asst Sur Bone Tumor Ser Meml; Cons Orth Sur NY Inf.

Δ★**FRIEDMAN, Eugene Warren,** 715 Park Av. New York, N.Y. by appt. Tel Regent 7-8757. NY Univ 1943. NB. D-S. SAC. FACS. Ewing Soc; Ac Med; NY Ca; Al Mt Sinai; Al Morrisania; Al Meml. Sur Head & Neck Man State; Asso Sur-in-chg Head & Neck Sur Mt Sinai; Asso Sur Head & Neck Beth David & Leb.

Δ★**GOLDBERG, Harry,** 88-02 150 St. Jamaica, N.Y. by appt. Tell Olympia 8-0115. Also Albertson. Dalhousie 1941. D-O. SE. Am Ac Ophth & Otolar; Bkln Ophth; Al Met; Al Sea View; Al Michael Reese. Asst Sur Ophth NY E&E Inf & Jamaica; Asso Ophth Sea View.

Δ★**GOLDBERG, Harry,** Albertson, N.Y. by appt. Tel Pioneer 6-0562. Also Jamaica. Dalhousie 1941. D-O. SE. Am Ac Ophth & Otolar; Bkln Ophth; Al Met; Al Sea View; Al Michael Reese. Asst Sur Ophth NY E&E Inf & Jamaica; Asso Opth Sea View.

★**HERMAN, Bernard Edward,** 1176 Fifth Av. New York, N.Y. by appt. Tel Lehigh 4-0314. Minn 1951. XAC.

Δ★**HOCHMAN, Louis,** 77 Park Av. New York, N.Y. by appt. Tel Murray Hill 5-7373. Also Jamaica Estates. Univ & Bell 1919. D-OL. SF. D-ICS. FICS. Am Otorhin Plast Sur. Otolar Gouver; Chief ENT Gouver OPD.

Δ★**HOFFMAN, Sidney,** 1 Plaza St. Brooklyn, N.Y. Wed Thurs Sat by appt. Tel Ulster 7-2467. NY Med 1937. NB. D-D. SH. Am Ac Derm & Syph; Bkln Derm; Al P-G; Al Coney Isl; Al Cumber; Al Kings Co. Asso Derm St Johns & Coney Isl.

Δ★**HOLMAN, Marguerite,** 15 Lovall Av. Jamestown, N.Y. Tel 90-806. Boston 1920. Am Pub Health.

Δ★**HOTT, Louis R.,** 7 Park Av. New York, N.Y. by appt. Tel Murray Hill 3-1025. Also Great Neck. Bern 1937. D-PN(P). QP. SI-2. Am Psych(F); Ac Psychoan; NY Clin Psych. Psych Bell; Med Dir Horney Clin.

Δ★**HOTT, Louis R.,** 7 Nassau Dr. Great Neck, N.Y. by appt. Tel Hunter 7-9501. Also Manhattan. Bern 1937. D-PN(P). QP. SI-2. Am Psych(F); Ac Psychoan; NY Clin Psych. Psych Bell; Med Dir Horney Clin.

Δ★**IZZO, Gerard Nicholas,** 90-07 169 St. Jamaica, N.Y. by appt. Tel Applegate 7-4191. Also Brooklyn. NY Med 1944. NB. L-P. X. Am Ac Ped; Bkln Ac Ped; Al St Marys; Al St Clares; Al St Cath; Al NY Found. Asso Ped St Marys, Luth, Evang Deaconess & St Cath; Asst Ped Mary Immac.

Δ★**IZZO, Gerard Nicholas,** 125 Hendrix St. Brooklyn, N.Y. by appt. Tel Applegagte 7-4191. Also Jamaica. NY Med 1944. NB. L-P. X. Am Ac Ped; Bkln Ac Ped; Al St Marys; Al St Clares; Al St Cath; Al NY Found. Asso Ped St Marys, Luth, Evang Deaconess & St Cath; Asst Ped Mary Immac.

★**KLEBAN, Leo,** 221 Maujer St. Brooklyn, N.Y. 12–2; 6–8 Mon Wed Fri. Tel Evergreen 7-4127. NY Univ 1935. XM-5.

Δ★**KOPROWSKA, Irena,** Kings County Hospital, 451 Clarkson Av. Brooklyn, N.Y. 9–5. Tel Ingersoll 2-4000, ext

6119. Warsaw 1939. D-PA(PA). MCAP. Asso Path Kings Co.

Δ★**KUNTZE, C. Donald,** 4 E 88 St. New York, N.Y. by appt. Tel Atwater 9-5782. NY Med 1946. NB. D-OG. SL. FACS. Al Flower & Fifth Ave. Asst Attd Obs & Gyn Flower & Fifth Ave; Asst Obs & Gyn Met; Dir Obs & Gyn St Marys Hoboken NJ.

LEVINE, Seymour, 14-10 154 St. Whitestone, N.Y. Tel Independence 3-3361. Chicago Med 1947. NB. D-PA(PA). XM-5. Jr MCAP. Am Path & Bact; Am Bact; Am Clin Path. Asst Path Monte; Asso Neuropath Beth Israel; Path & Dir Lab St Francis Jersey City NJ.

Δ★**LIPPMANN, Heinz I.,** 1192 Park Av. New York, N.Y. by appt. Tel Atwater 9-7606. Also 597 Sunderland Rd. West Englewood NJ. Tel Teaneck 6-5622. NJ State Soc. Berlin 1931. SJM-16. FACA. Am Cong PM & Rehab; NY PM & Rehab; R Virchow Soc; NJ Ac Med; Al Mt Sinai. Asso Phy Periph Vas Dis Monte; Chief Periph Vas Dis Sid Hill; Asso PM & Rehab Bx Munic.

Δ★**MALEV, Milton,** 67 E 82 St. New York, N.Y. by appt. Tel Trafalgar 9-1740. Yale 1926. Am Psych(M); Am Psychoan; NY Psychoan; Al Ford; Al Psych Inst. Asso Psych Elmhurst Genl.

Δ★**MEAD, John James, 3rd.,** 340 E 53 St. New York, N.Y. by appt. Tel Plaza 9-2143. Georgetown 1947. NB. D-IM. SJ. Intl Int Med; Al Hosp Univ Penn. Phy New York OPD.

★**NAPPO, Silvio V.,** 556 Lafayette Av. Brooklyn, N.Y. Tel Main 2-7766. Naples 1950.

Δ★**NUSSBAUM, William,** 82-31 Austin St. Kew Gardens, N.Y. by appt. Tel Liggett 4-8545. Also Manhattan. Frankfurt 1920. D-OG. SL. D-ICS. FICS. Am Ger; NY Ac Med; R Virchow Soc. Asst Obs & Gyn Syden.

Δ★**NUSSBAUM, William,** 103 E 86 St. New York, N.Y. by appt. Tel Liggett 4-8545. Also Kew Gardens. Frankfurt 1920. D-OG. SL. D-ICS. FICS. Am Ger; Ac Med; R Virchow Soc. Asst Obs & Gyn Syden.

★**PENNISI, Joseph Anthony,** 147-02 Elm Av. Flushing, N.Y. by appt. Tel Independence 1-2277. State Univ Bkln 1953. NB. Asst Obs & Gyn Flushing; Clin Asst Obs & Gyn Queens Genl.

★**POWER, William Redmond,** 625 Madison Av. New York, N.Y. by appt. Tel Plaza 4-1144. Cornell 1936. XM-5. Am Pub Health.

Δ★**RUSNACK, Theodore J.,** 150 Forest Av. Glen Cove, N.Y. by appt. Tel Oriole 1-0070. Cornell 1951. D-OS. SB.

★**SANGER, Bertram Julian,** 20 E 76 St. New York, N.Y. 3–5 by appt. Tel Endicott 2-8020. Johns Hopkins 1917. FACP. Al Johns Hopkins. Asso Phy (Inactive) Presby.

Δ★**SCHICK, Robert,** Brentwood, N.Y. by appt. Tel Brentwood 3-3000. NY Med 1952. NB. Am Trudeau. Clin Asst Phy Bell; Asst Phy Southside Bay Shore.

Δ★**SCHNEIDER, Keith Morton,** 936 Fifth Av. New York, N.Y. by appt. Tel Butterfield 8-2217. NY Univ 1951. NB. D-S. NY Ped; Bx Ped. Asst Sur Bx Munic; Adj Ped Sur Beth Israel; Asst Adj Ped Sur Jew Meml; Staff Ped Sur LI Jew.

Δ★**SEAMAN, George Joseph,** 99 Lafayette Av. Brooklyn, N.Y. afternoons by appt. Tel Ulster 2-4290. St. Louis 1940. NB. D-OS. SBC. Milit Sur US; Am Ac Orth Sur; Ac Psychosom Med; Al Jew; Al Met; Al Flower & Fifth Ave. Chief Orth Sur Menorah; Asso Orth Jew Chronic Dis, Swedish & Coney Isl.

Δ★**SELZER, Claire,** 8 E 83 St. New York, NY.. by appt. Tel Lehigh 5-1899. Vienna 1938. NY Psychoan. Asso Psych Bx Munic.

Δ★**THEODORE, Frederick H.,** 667 Madison Av. New York, N.Y. 9–12 by appt. Tel Templeton 8-8390. P&S NY 1931. D-O. SE. FACS. Res Ophth; Am Ac Ophth & Otolar; Ac Med; NY Clin Ophth; Al Mt Sinai. Sur Eye Man EE&T; Asso Ophth Sur Mt Sinai; Asst-in-Ophth Univ.

Δ★**TRAUTMAN, Edgar Charles,** 57 E 88 St. New York, N.Y. by appt. Tel Atwater 9-6839. Munich 1921. D-PN(P). QP. SI. Am Ac Neur; Am Psych(F); Adv Psychother; R Virchow Soc. Neuropsych Lin; Asst-in-Neur Univ.

Δ★**WESTON, Sydney Donald,** 133 E 58 St. New York, N.Y. by appt. Tel Plaza 5-6433. Also Brooklyn. Univ & Bell 1920. SM-8. FACG. D-ICS. FICS. Am Proct; NY Proct. Proct Jew Chronic Dis & Prospect Hghts; Cons Proct Rockaway Beach; Sur-in-Chg Proct Sur Maimonides; Chief Proct Maimonides OPD.

Δ★**WESTON, Sydney Donald,** 1 Hanson Pl. Brooklyn, N.Y. Mon Wed Fri by appt. Tel Sterling 9-3838. Also Manhattan. Univ & Bell 1920. SM-8. FACG. D-ICS. FICS. Am Proct; NY Proct. Proct Jew Chronic Dis & Prospect Hghts; Cons Proct Rockaway Beach; Sur-in-Chg Proct Sur Maimonides; Chief Proct Maimonides OPD.

Employment for the Disabled

The State Employment Service, observing the twenty-fifth year of its pioneer program of placing the physically handicapped in jobs, reported that placements of disabled job-seekers had grown from 100 in 1934 to more than 30,000 in 1958.

Over the past twenty-five years, the selective placement unit of the State Employment Service has placed more than a half million disabled workers in jobs.

Many more disabled workers are in the labor market today than years ago, partly because of their increased acceptance by employers, and partly because working conditions are physically easier today than in the past.

MEDICAL NEWS

American College of Gastroenterology Presents Ames Awards—The American College of Gastroenterology has announced the 1959 Ames Awards for the best papers published during the past year in its official publication, *The American Journal of Gastroenterology*.

First prize went to Edward J. Nightingale, M.D., New York City, for his paper, "Gastroenterological Aspects of Periarteritis Nodosa." The second prize was awarded to Abraham J. Brenner, M.D., Adolf Kornstein, M.D., Martin Bandler, M.D., and Milton J. Matzner, M.D., Brooklyn, for their paper, "Present Status of Gastric Cytology." The third prize was given to Burrill B. Crohn, M.D., New York City, for his paper, "Regional Ileitis: Ileojejunitis: Combined Ileocolitis."

Department of Social Welfare to Crack Down on Pseudo Nursing Homes—The New York State Department of Social Welfare will crack down on facilities which profess to be nursing homes or which undertake to care for the chronically ill but which do not provide nursing services.

According to Mr. Robert Shulman, deputy commissioner of the Department, among the approximately 700 nursing homes supervised by the Department in New York State are some homes which, for one reason or another, do not provide nursing care by a licensed nurse as the law requires. From now on all such facilities will be regarded as private proprietary homes for adults which may only care for persons who do not require medical or nursing care and who only need the services of attendants to assure their safety and comfort.

Discussion of Therapy of Sterility in the Female—On Monday, December 7, at 8:30 P.M., in the Masin Pavilion, lower level, the gynecologic service of the Jewish Chronic Disease Hospital, East 49th Street and Rutland Road, Brooklyn 3, New York, will present a discussion of "Recent Advances in the Therapy of Sterility in the Female." The discussant will be S. Leon Israel, M.D., professor of obstetrics and gynecology, Graduate School of Medicine, University of Pennsylvania. Members of the profession are invited to attend.

Exhibit on French Hospital—An exhibit of old documents, reports, and photographs of the French Benevolent Society and French Hospital, New York City, are on display at the New York Academy of Medicine, 2 East 103rd Street, New York City.

The French Benevolent Society is celebrating its one hundred fiftieth anniversary this year. The Society was responsible for the founding of the original French Hospital on West 14th Street in 1881. The present day 237-bed French Hospital is located on West 30th Street.

Course in Medical Uses of Radioactive Isotopes—A four-month course entitled "Medical Uses of Radioactive Isotopes" will be offered at the Queens Hospital Center by the Radiation Medicine Department.

The course will begin on Tuesday, February 9, 1960, and will consist of weekly five-hour sessions covering lectures, laboratory exercises, and clinical management of patients. Enrollment will be limited.

Apply to: Philip J. Kahan, M.D., supervising medical superintendent, Queens Hospital Center, 82–68 164th Street, Jamaica 32, New York.

Physician Examines Physician—Physician examined physician when the Medical Society of the County of Monroe held its third quarterly meeting on October 20. A group of ophthalmologists examined the doctor members for glaucoma in a premeeting examination and teaching session. The tonometer, a device used for measuring the tension of the eyeball, was used. The primary reason for this approach was to familiarize the family physician with the use of the instrument and encourage its use in regular health examinations.

Gastroenterologists Elect—The American College of Gastroenterology elected new officers during its annual meeting on September 20, in Los Angeles. Physicians from the New York area who were elected to office are: Frank J. Borrelli, M.D., New York City, chairman of the board of trustees; William C. Jacobson, M.D., New York City, treasurer; Milton J. Matzner, M.D., Brooklyn, as a trustee; and Libby Pulsifer, M.D., Rochester, as chairman of the board of governors.

Physicians Speak at Meeting of Life Insurance Medical Directors—The Association of Life Insurance Medical Directors of America held its sixty-

[Continued on page 4444]

SUDDENLY

"...after 30 years my headaches returned..."

When migraine that has beset a patient in her twenties suddenly returns in her fifties, a "little stroke" should be suspected.[1] In such migraine attacks, when ushered in by one or more "little strokes," pain may be minimal and the dominant feature may be spells of nausea, dizziness, depression, retching, fatigue, abdominal pain or transient blindness.[1] ■ Early detection of "little strokes" resulting from capillary fragility can gain vital therapeutic time to support capillary resistance and repair.[2]

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2. Gale, E. T., and Thewlis, M. W.: Geriatrics 8:80, 1953.

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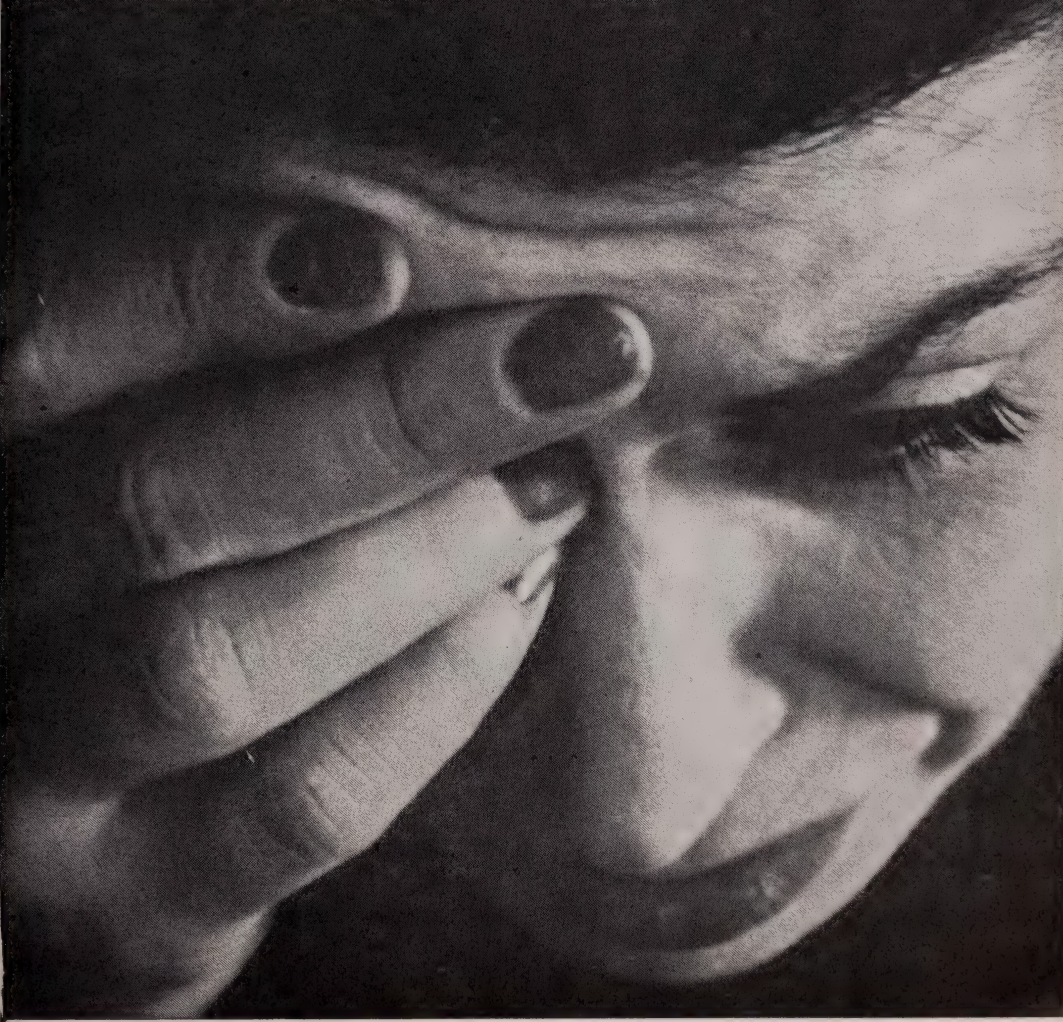


[Continued from page 4442]

eighth annual meeting in New York City in October.

Among the speakers at the meeting were the following physicians from New York City: Peter G. Denker, M.D., visiting neuropsychiatrist, Bellevue Hospital—"The Neurotic Claimant"; Francis R. Dieuaide, M.D., scientific director, Life Insurance Medical Research Fund—"Accomplishment and Needs of Cardiovascular Research"; John J. Hutchinson, M.D., medical director, New York Life Insurance Company—"Highlights of the New Build and Blood Pressure Study"; and William P. Shepard, M.D., chief medical director, Metropolitan Life Insurance Company—"A Review of the Total Problem."

Society of Nuclear Medicine to Publish Journal—The Society of Nuclear Medicine has announced the forthcoming publication of its official organ, *The Journal of Nuclear Medicine*. The first quarterly issue will appear in January, 1960.

George E. Thoma, M.D., of St. Louis has been appointed editor. The editorial content of the *Journal* will be directed towards those members of the medical and allied professions who are interested in the diagnostic and therapeutic application of radioisotopes and in human radiobiology.

Manuscripts and books for review should be sent to the *Journal* in care of the editor, George E. Thoma, M.D., Southwest Medical Center, 3915 Watson Road, St. Louis 9, Missouri.

Postgraduate Course on Cancer—The University of Buffalo School of Medicine and the Roswell Park Memorial Institute will hold a postgraduate course on cancer at the Roswell Park Memorial Institute on Thursday, December 10.

The course has been designed to give the physician an understanding of modern practice in diagnosis and management of cancer. Special attention will be given to complications of malignancy, cytologic diagnosis, chemotherapy, and reports of current research.

For information contact: Department of Postgraduate Education, University of Buffalo School of Medicine, 3435 Main Street, Buffalo 14, New York.

New Booklet on Vital Statistics Available—The State Department of Health has announced the publication of the latest edition of the booklet, *Basic Vital Statistics, New York State, (exclusive of New York City, 1900–1958)*. Copies are available without charge from the Office of Biostatistics, New York State Department of Health, 84 Holland Avenue, Albany 8, New York.

New York Academy of Medicine Presents Postgraduate Radio Programs—The New York Academy of Medicine is presenting its forty-second series of postgraduate radio programs over station WNYC-FM 93.9 megacycles on the FM dial from 9:00 to 10:00 P.M.

The programs scheduled for December are as follows: December 3: "Clinical Implications of Cerebrospinal Fluid Lactic Dehydrogenase Activity"—Felix Wroblewski, M.D., assistant professor of clinical medicine, Cornell University Medical College. Discussant: Gerald H. Klingon, M.D., assistant attending neurologist, Memorial Center for Cancer and Allied Diseases.

December 10: "Early Treatment of Ruptured Intracranial Aneurysms with Special Clip Technic"—J. Lawrence Pool, M.D., professor of neurologic surgery, Columbia University College of Physicians and Surgeons. Discussant: Melvin D. Yahr, M.D., associate professor of clinical neurology, Columbia University, College of Physicians and Surgeons. Also, "Early Recognition of Neurologic Conditions in a Psychiatric Hospital"—Curtis T. Prout, M.D., assistant medical director and clinical director of The New York Hospital, Westchester Division. Discussant: Robert B. McGraw, M.D., attending psychiatrist, Presbyterian Hospital.

December 17: "Prophylactic Use of Antibiotics" (panel)—Perrin H. Long, M.D., moderator, professor and chairman, Department of Medicine, State University of New York, Downstate Medical Center; Robert Austrian, M.D., professor of medicine, State University of New York Downstate Medical Center; and David E. Rogers, M.D., professor of medicine, Vanderbilt University, Nashville, Tennessee.

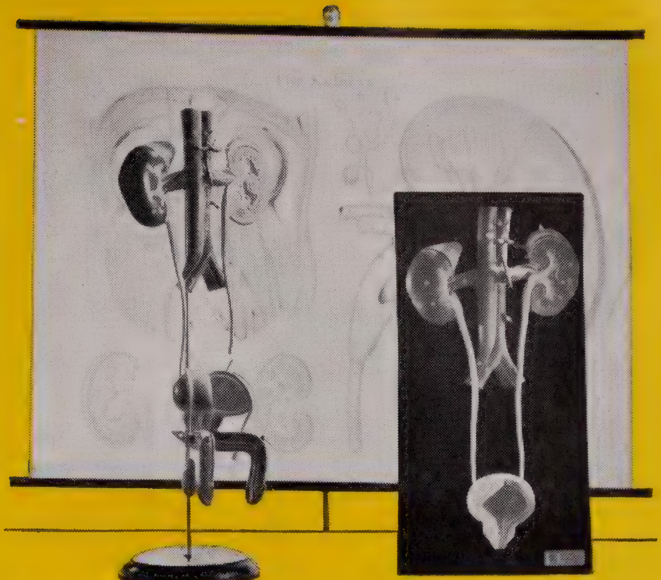
Medical Students, Residents and Interns Invited to Compete for Awards—Medical students and residents and interns are invited to prepare scientific exhibits to be displayed at the tenth annual convention of the Student American Medical Association in Los Angeles, May 4 through 8, 1960.

The three exhibits judged most outstanding in both the student and resident-intern categories will win SAMA-Lakeside Awards. The top winners in each category will be further honored by having their exhibits featured at the scientific exhibit assembly of the American Medical Association during the annual A.M.A. convention in Miami Beach, Florida, in June, 1960.

In addition to a prize of $500 and an award certificate, the top winners will receive an expense-free trip to the A.M.A. convention. Second and third prize winners will receive $250 and $100, respectively, and an award citation.

Applications must be received prior to January 1, 1960. For application forms write to: Executive

[Continued on page 4448]



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courses of treatment* and still negligible development of bacterial resistance with

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Waisbren, B. A., and Crowley, W.: A.M.A. Arch. Int. M. 95:653, 1955.

Available as Tablets, 50 and 100 mg.; Oral Suspension, 25 mg. per 5 cc. tsp.

*Conservative estimate based on the clinical use of FURADANTIN Tablets and Oral Suspension since 1953.

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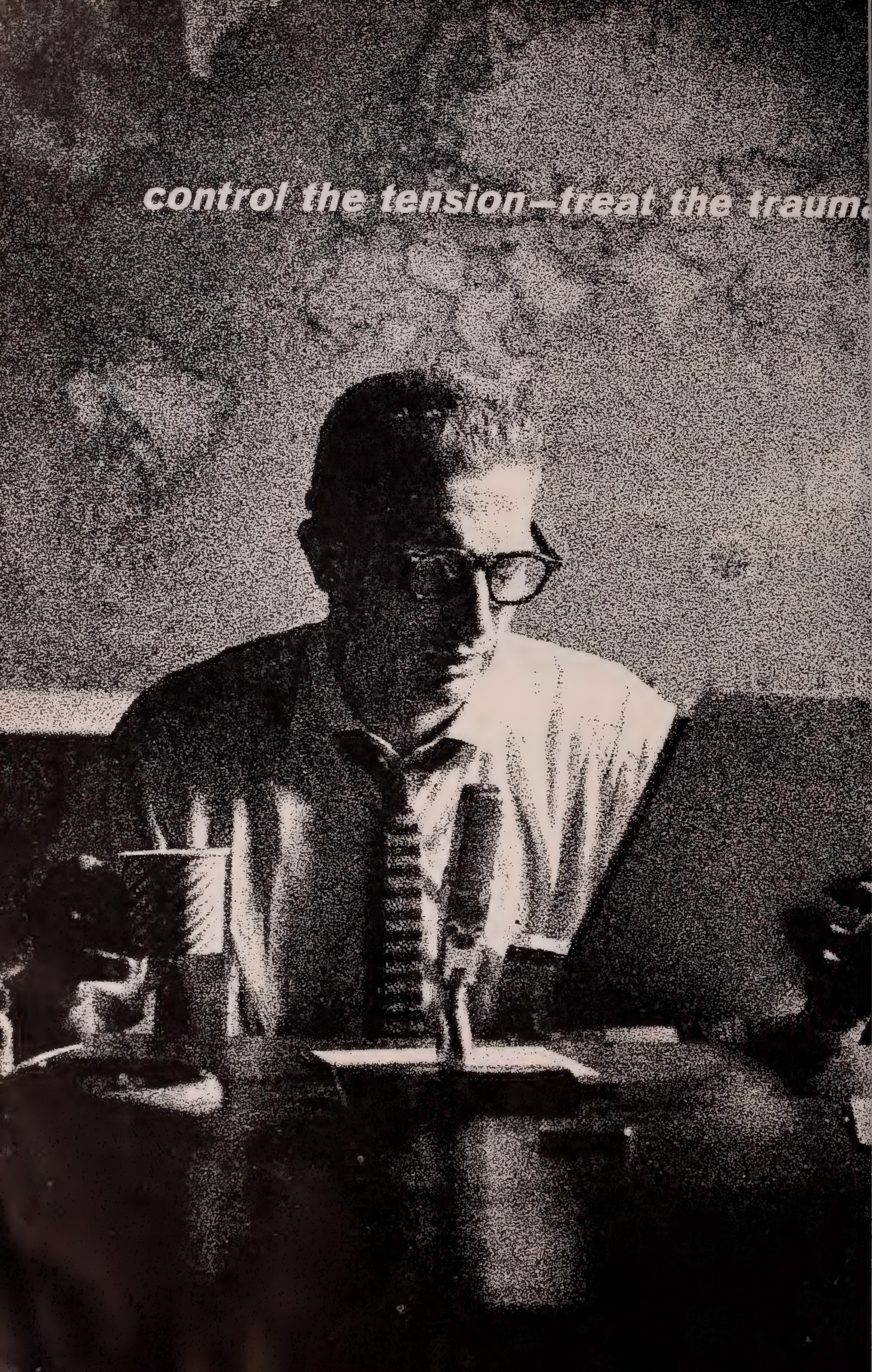
control the tension—treat the trauma

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greater flexibility in the control of tension, hypermotility and excessive secretion in gastrointestinal dysfunctions

PATHIBAMATE combines two highly effective and well-tolerated therapeutic agents:

meprobamate (400 mg. or 200 mg.) widely accepted tranquilizer and . . .

PATHILON (25 mg.) — anticholinergic noted for its peripheral, atropine-like action, with few side effects.

The clinical advantages of PATHIBAMATE have been confirmed by nearly two years' experience in the treatment of duodenal ulcer; gastric ulcer; intestinal colic; spastic and irritable colon; ileitis; esophageal spasm; anxiety neurosis with gastrointestinal symptoms and gastric hypermotility.

Because of individual variation in the intensity of stimuli in gastrointestinal disorders, adequate dosage for optimum control may be expected to vary as well. The dosage strengths of PATHIBAMATE-400 and PATHIBAMATE-200 facilitate individualization of treatment in respect to both the degree of tension and associated G.I. sequelae, as well as the response of different patients to the component drugs.

Supplied: PATHIBAMATE-400 — Each tablet (yellow, 1/2-scored) contains meprobamate, 400 mg.; PATHILON tridihexethyl chloride, 25 mg.

PATHIBAMATE-200 — Each tablet (yellow, coated) contains meprobamate, 200 mg.; PATHILON tridihexethyl chloride, 25 mg.

Administration and Dosage: PATHIBAMATE-400 — 1 tablet three times a day at mealtime and 2 tablets at bedtime.

PATHIBAMATE-200 — 1 or 2 tablets three times a day at mealtime and 2 tablets at bedtime.

Adjust to patient response.

Contraindications: glaucoma; pyloric obstruction, and obstruction of the urinary bladder neck.

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[Continued from page 4444]

Director, Student American Medical Association, 430 North Michigan Avenue, Chicago 11, Illinois.

Commonwealth Fund Reports Grants—In its forty-first annual report the Commonwealth Fund reported grants totaling $3,803,325 in the fiscal year 1958–1959. About 84 per cent of the amount appropriated was directed toward the general area of health. Medical education and community health activities received grants of $1,353,993; medical research grants were $990,959; and fellowships and awards in the health field were $848,923.

The chief concern of the Commonwealth Fund has been to stimulate and encourage efforts in the direction of strengthening medical teaching and of better and more comprehensive health care.

Revised Booklet on Immunization Available—The newly-revised (June, 1959) booklet, *Immunization Information for International Travel,* is now available at a slight charge from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.

Monograph Prizes—The American Academy of Arts and Sciences has announced the opening of the 1960 competition for monograph prizes in the humanities, the social sciences, and the physical and biologic sciences.

A monograph is defined for the purposes of these awards as a "scholarly contribution to knowledge, too long for an article in a learned journal and too specialized for a general book." Recipients of the prizes will be expected to make their own arrangements for publication.

The final date for receipt of manuscripts by the committee on awards is October 1, 1960. Announcement of the awards will be made in December, 1960.

Details concerning these prizes may be secured by sending a stamped self-addressed envelope to the committee on monograph prizes, American Academy of Arts and Sciences, 280 Newton Street, Brookline Station, Boston 46, Massachusetts.

Personalities

Installed

Louis Bush, M.D., Baldwin, as president of the New York State Academy of General Practice.

Honored

Abraham B. Tamis, M.D., for his "diligence and devotion to the New York Community" at the opening dinner of the Bronx Division of the Federation of Jewish Philanthropies.

Elected

J. Scott Butterworth, M.D., New York City, associate professor of medicine, New York University Post-Graduate Medical School, and A. Wilbur Duryee, M.D., New York City, clinical professor of medicine, New York University Post-Graduate Medical School, as vice-presidents of the American Heart Association . . . James R. Gudger, M.D., New York City, medical director of Mutual Life Insurance Company of New York, as president-elect of the Association of Life Insurance Medical Directors of America.

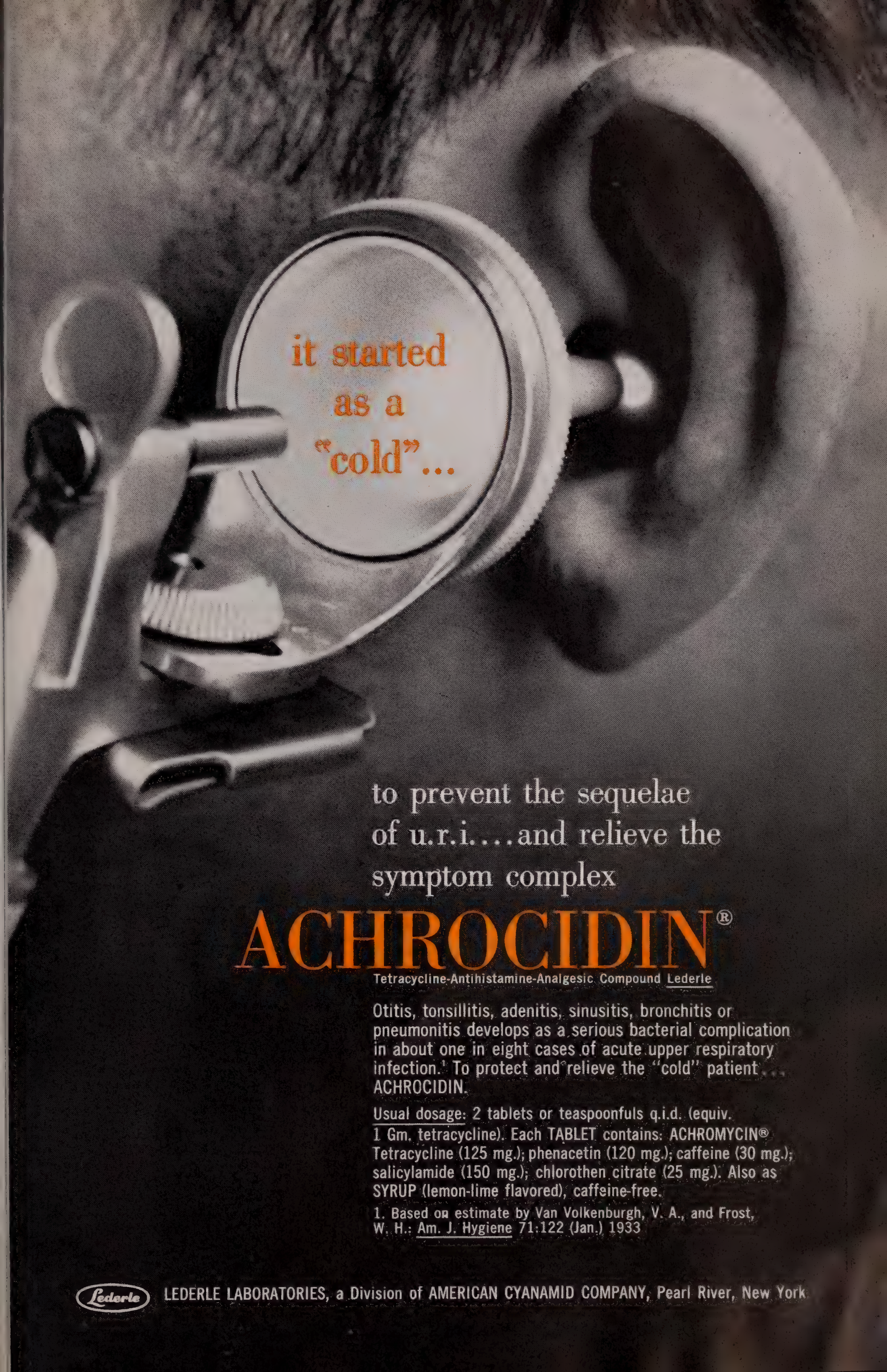
Appointed

Orren D. Chapman, M.D., Syracuse, as professor emeritus, microbiology, of the State University of New York Upstate Medical Center . . . Donald V. Cooney, M.D., Garden City, as director of the new Pre-Hospitalization Home Care Program at the Jewish Chronic Disease Hospital, Brooklyn . . . Aims C. McGuinness, M.D., Washington, D.C., as executive secretary for Medical Education of the New York Academy of Medicine . . . Cornelius H. Traeger, M.D., New York City, professor of neurology, Cornell University, as a member of a special committee to study the Federal Government's participation in medical research . . . Harry E. Ungerleider, M.D., New York City, as medical director of Standard Security Life Insurance Company of New York . . . Samuel Wagreich, M.D., Bronx, as chairman of the Bronx Hospital Physicians Division of the Federation of Jewish Philanthropies.

Awarded

Nicholas I. Ardan, Jr., M.D., Niagara Falls, the Henry W. Meyerding Award for the best thesis by a fellow in orthopedic surgery at the thirty-fifth annual meeting of the Alumni Association of the Mayo Foundation, Rochester, Minnesota, on October 8 . . . Gilbert Dalldorf, M.D., New York City, an Albert Lasker Award for outstanding achievement in medical research and public health . . . Jules Freund, M.D., New York City, an Albert Lasker Award for outstanding achievement in medical research and public health . . . Herman E. Hilleboe, M.D., New York State Commissioner of Health, the Arthur T. McCormick Award in recognition of his efforts to further medical education and research . . . Robert S. Siffert, M.D., New York City Department of Health, an award from

[Continued on page 4450]



it started
as a
"cold"...

to prevent the sequelae
of u.r.i....and relieve the
symptom complex

ACHROCIDIN®

Tetracycline-Antihistamine-Analgesic Compound Lederle

Otitis, tonsillitis, adenitis, sinusitis, bronchitis or pneumonitis develops as a serious bacterial complication in about one in eight cases of acute upper respiratory infection.[1] To protect and relieve the "cold" patient... ACHROCIDIN.

Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline (125 mg.); phenacetin (120 mg.); caffeine (30 mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP (lemon-lime flavored), caffeine-free.

1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

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[Continued from page 4448]

the New York Philanthropic League for his aid to the orthopedically handicapped.

Speakers

William Faloon, M.D., associate professor of medicine, Upstate Medical Center, Syracuse, before the Medical Society of Jefferson County on October 20 . . . Alvan R. Feinstein, M.D., of the Irvington House After-Care Clinic, Tarrytown, before the American Heart Association, October 23 in Philadelphia . . . Joseph Hirsh, Ed.D., New York City, associate professor, Albert Einstein College of Medicine, Yeshiva University, before the hospital staff of the Veterans Administration Hospital, Northport, on October 20, on the subject "The Dimensions and Dynamics of Suicide" . . . Harold Jacobziner, M.D., Assistant Health Commissioner for New York City, at a conference on "Narcotic Addiction and the Teen-Ager" sponsored by the New York City Youth Board, October 28 . . . Edith Klemperer, M.D., New York City, on the topic "The Forbidden Wish in Hypnoanalysis" on October 11 at the annual scientific assembly of the American Society of Clinical Hypnosis in Chicago . . . John C. McClintock, M.D., Albany Medical College, at the annual meeting of the American Cancer Society, October 27 . . . Hyman Pleasure, M.D., director of Middletown State Hospital, before the eleventh annual mental hospital institute in Buffalo on October 21 . . . William H. Rubin, M.D., Brooklyn, clinical instructor, Department of Psychiatry, State University of New York Downstate Medical Center, at a meeting of the Association for Psychiatric Treatment of Offenders, November 18 . . . Herbert T. Wagner, M.D., New York City, executive director, Medical Society of the State of New York on the subject, "The State Medical Society and You" on October 20 before the Monroe County Medical Society.

ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

SCIENTIFIC EXHIBITS

Applications for space for the scientific exhibits should be made directly to the Chairman of the Scientific Exhibits Subcommittee of the Convention Committee:

William L. Watson, M.D.
340 East 72nd Street
New York 21, New York

The Annual Convention will be held May 9 to 13, 1960 at the Statler Hilton Hotel, New York City.

No applications can be considered after January 1, 1960.

There will be two groups of awards:

Group I: Awards in Group I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.

Group II: Awards in Group II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of presentation and correlation of facts.

William L. Wheeler, Jr., M.D., *Secretary*
Medical Society of the State of New York

"Doctor, I get so mad at everyone when I diet."

'Dexamyl' *Spansule* capsules provide single-dose daylong appetite control and an often remarkable mood improvement. A feeling of serene optimism frequently replaces the tension and irritability so characteristic of the dieting patient.

When your overweight patient is listless and lethargic, 'Dexedrine' *Spansule* capsules will, in addition to curbing appetite, provide gentle stimulation.

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CLIFFORD D. MOORE, M.D.
Medical Director.

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Dosage: One tablet one-half to one hour before each meal.

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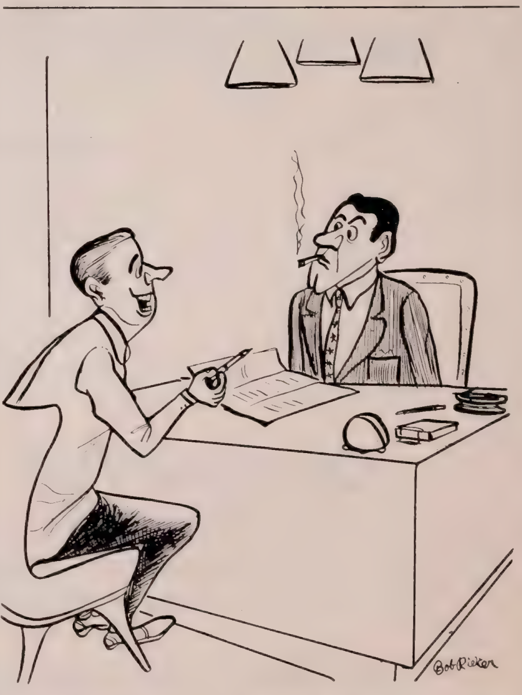

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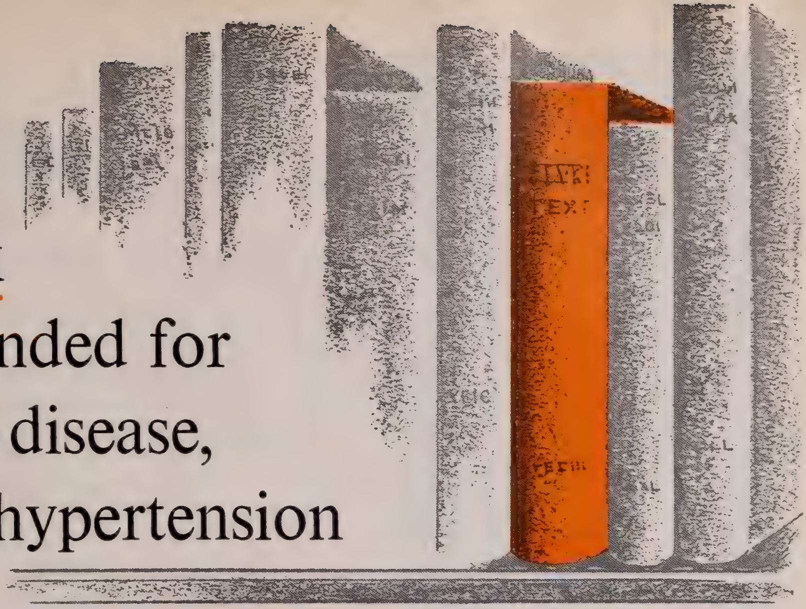
text book recommended for coronary disease, essential hypertension



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A product or treatment must survive the test of clinical usefulness before it is admitted to the pages of authoritative text books.

Theobromine Sodium Acetate (often by its trade name Thesodate) is regularly included in standard text books for classical therapy of coronary heart disease, essential hypertension and for diuresis.*

THESODATE

The original enteric coated tablet of Theobromine Sodium Acetate.

Supplied in flexible dosage forms:

Thesodate 0.5 Gm. (7½ gr.) or 0.25 Gm. (3-¾ gr.)
Thesodate 0.5 Gm. (7½ gr.)
  with phenobarbital 30 mg. (½ gr.)
    or with phenobarbital 15 mg. (¼ gr.)
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  with phenobarbital 15 mg. (¼ gr.)
Thesodate 0.3 Gm. (5 gr.)
  with potassium iodide 0.12 Gm. (2 gr.)
    and phenobarbital 15 mg. (¼ gr.)
R.S. Thesodate 0.5 Gm. (7½ gr.)
  with Rauwolfia Serpentina 50 mg. (¾ gr.)

*Paul Dudley White, "Heart Disease" 1951 (Macmillan) page 480;
William D. Straud, "Current Therapy," 1955 (W. B. Saunders) page 102;
Cecil & Loeb's Textbook of Medicine, 1955 (W. B. Saunders) page 1,326;
Wilson & Gisvold, "Textbook of Organic Medicinal and Pharmaceutical Chemistry," 1956 (Lippincott) page 262;
Goodman & Gilman, "The Pharmacological Basis of Therapeutics," 1941 (The Macmillan Co.) page 281;
Albrecht, "Modern Management in Clinical Medicine," 1946 (Williams & Wilkins) page 254;
Friedberg, "Diseases of the Heart," 1956 (Saunders) page 285;
Walter Modell, "Drugs of Choice," 1958-1959 (C. V. Mosby) pages 100, 475, 615.

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MEDICAL MEETINGS

New York State Society of Industrial Medicine

The annual meeting of the New York State Society of Industrial Medicine, Inc., will be held at the New York University Club, 123 West 43rd Street, New York City (Town Hall Building) on Tuesday, December 1, 5:00 P.M.

The program is as follows: 5:00 P.M., "Workmen's Compensation is Rehabilitation"—speaker, Colonel Solomon E. Senior, chairman, Workmen's Compensation Board, State of New York; 5:20 P.M., "Current Developments in Malpractice Litigation"—speaker, William F. Martin, Esq., of the firm Martin, Clearwater and Bell, counsel, Medical Society of the State of New York; 5:40 P.M., discussion until 6:30 P.M., followed by the annual business meeting of the Society.

For further information contact: Anthony A. Mira, M.D., director, Bureau of Industrial Health and Workmen's Compensation, Medical Society of the State of New York, 750 Third Avenue, New York 17, New York. Telephone YUkon 6–5757.

Postgraduate Assembly in Anesthesiology

The thirteenth annual postgraduate assembly in anesthesiology will be held at the Hotel New Yorker, December 9 through 12. It will be sponsored by The New York State Society of Anesthesiologists.

Among the guest speakers will be Seymour S. Kety, M.D., chief of the Laboratory of Clinical Sciences, National Institute of Mental Health, Bethesda, Maryland, who will conduct a panel discussion on "Cerebral Circulation."

Among the features of the assembly will be clinics held in various hospitals throughout the Metropolitan area, luncheon conferences, and a closed circuit television program showing the latest advances in anesthesiology.

For further information contact the secretary: Edwin J. DePolo, M.D., New York State Society of Anesthesiologists, 131 West 11th Street, New York 11, New York.

33rd Spring Congress at Gill Memorial Eye, Ear and Throat Hospital

The Gill Memorial Eye, Ear and Throat Hospital will hold its thirty-third annual spring congress in ophthalmology and otolaryngology, April 4 through 9, 1960.

Among the guest speakers will be John F. Daly, M.D., and Edward A. Dunlap, M.D., both of New York City.

For further information write to: Superintendent, P.O. Box 1789, Roanoke, Virginia.

Date Changed for Symposium at Long Beach, California

The date of the second annual scientific symposium of the medical staff of the new Seaside Memorial Hospital of Long Beach, Long Beach, California, will be May 4, 1960, instead of December 2, 1959, as previously planned due to construction delays on the new hospital. The theme of the symposium will be "New Horizons in Medicine."

Interested physicians are invited to attend. Inquiries should be addressed to: George X. Trimble, M.D., director of Medical Education, Seaside Memorial Hospital of Long Beach, Long Beach, California.

104th Annual Meeting of Hawaii Medical Association

The Hawaii Medical Association will hold its one hundred fourth annual meeting in Honolulu May 12 through 15, 1960. An exceptional program of scientific and social events has been planned to celebrate the occasion of the Association's first meeting under statehood.

For further information concerning the meeting write to: Toru Nishigaya, M.D., president, Hawaii Medical Association, 510 South Beretania Street, Honolulu 13, Hawaii.

The best doctors in the world are Doctor Diet, Doctor Quiet, and Doctor Merryman.—JONATHAN SWIFT

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No. 2

Acetophenetidin	gr. 2½
Acetylsalicylic Acid	gr. 3½
Caffeine	gr. ½
Codeine Phosphate	gr. ¼

No. 3

Acetophenetidin	gr. 2½
Acetylsalicylic Acid	gr. 3½
Caffeine	gr. ½
Codeine Phosphate	gr. ½

No. 4

Acetophenetidin	gr. 2½
Acetylsalicylic Acid	gr. 3½
Caffeine	gr. ½
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BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

...providing the desired gradation of potencies for relief of varying intensities of pain

IN

- simple headache
- rheumatic conditions
- arthralgias
- myalgias
- common cold
- toothache
- earache
- dysmenorrhea
- neuralgia
- minor trauma
- tension headache
- premenstrual tension
- minor surgery
- post-partum pain
- trauma
- organic disease
- neoplasm
- muscle spasm
- colic
- migraine
- musculo-skeletal pains
- postdental surgery
- post-partum involution
- fractures
- synovitis/bursitis

relief of pain of all degrees of severity up to that which requires morphine

AND IN

- fevers
- dry, unproductive coughs

NECROLOGY

Marcus I. Blank, M.D., of New York City, died on August 2 at the age of eighty-four. Dr. Blank graduated in 1897 from New York University Medical College and interned at French Hospital. He was a consultant in surgery at French Hospital. Dr. Blank was a Fellow of the American College of Surgeons and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Herbert Burwig, M.D., of Buffalo, died on April 16 at the age of sixty. Dr. Burwig graduated in 1923 from the University of Buffalo School of Medicine and in 1940 the University of Pennsylvania School of Medicine. He was an attending in obstetrics and gynecology at Deaconess and Millard Fillmore Hospitals, an assistant in obstetrics and gynecology at Children's Hospital, and an associate in obstetrics and gynecology at Buffalo General Hospital. Dr. Burwig was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, a Diplomate of the International College of Surgeons, and a Fellow of the American College of Obstetricians and Gynecologists, a Fellow of the International College of Surgeons, and a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Moses Carnes, M.D., of Forest Hills, died on September 7 at the age of sixty-four. Dr. Carnes graduated in 1921 from Columbia University College of Physicians and Surgeons. He was an associate in pediatrics at Brooklyn Jewish Hospital and staff pediatrician at Long Island Jewish Hospital. Dr. Carnes was a Licentiate of the American Psychiatric Association and a member of the American Academy of Pediatrics, the Brooklyn Academy of Pediatrics, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Natale Salvatore Carrozza, M.D., of Brooklyn, died on July 19 at the age of fifty-six. Dr. Carrozza graduated in 1932 from the University of Dalhousie Faculty of Medicine, Halifax. He was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edmund Carter-Rosenhauch, M.D., of New York City, died on October 29 at his home at the age of seventy-seven. Dr. Carter-Rosenhauch received his medical degree from the University of Cracow in 1906. He was a former professor of ophthalmology in Poland and from 1945 to 1947 was with the United Nations Relief and Rehabilitation Administration University in Munich. Dr. Carter-Rosenhauch was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leonard Duszynski, M.D., of Buffalo, died on June 12 at the age of sixty-nine. Dr. Duszynski graduated in 1913 from the University of Buffalo School of Medicine. He was a member of the Erie County Medical Society and the Medical Society of the State of New York.

Reuben Johan Erickson, M.D., of Albany, died on June 5 in an automobile accident near Sante Fe, New Mexico, at the age of seventy. Dr. Erickson graduated in 1916 from Johns Hopkins University School of Medicine. He was former director of the Department of Tuberculosis and Pulmonary Diseases at Albany Hospital and former medical director of the Albany County Tuberculosis Association, from which post he retired in 1955. Dr. Erickson was a Fellow of the American College of Chest Physicians and a member of the American Clinical and Climatological Association.

Clyde Leo Nagle, M.D., of Elmira Heights, died on October 7 at his home at the age of forty-three. Dr. Nagle graduated in 1943 from the University of Buffalo School of Medicine. He was an attending in obstetrics and gynecology at Arnot Ogden Memorial and St. Joseph's Hospitals. Dr. Nagle was a member of the Chemung County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Neuland, M.D., of New York City, died on June 29 at the age of sixty-eight. Dr. Neuland received his medical degree from the University of

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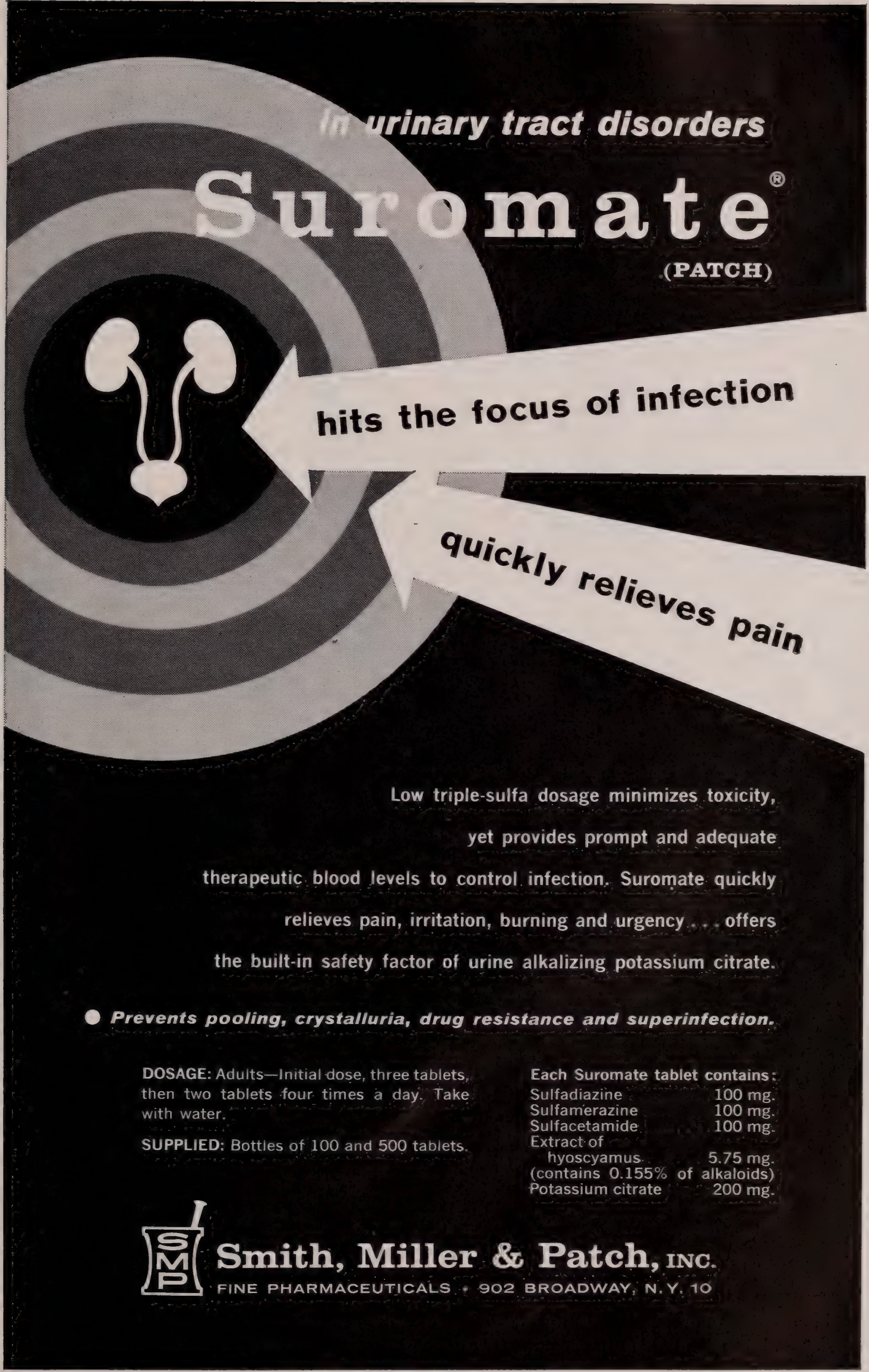

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hits the focus of infection

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Low triple-sulfa dosage minimizes toxicity, yet provides prompt and adequate therapeutic blood levels to control infection. Suromate quickly relieves pain, irritation, burning and urgency . . . offers the built-in safety factor of urine alkalizing potassium citrate.

- ***Prevents pooling, crystalluria, drug resistance and superinfection.***

DOSAGE: Adults—Initial dose, three tablets, then two tablets four times a day. Take with water.

SUPPLIED: Bottles of 100 and 500 tablets.

Each Suromate tablet contains:	
Sulfadiazine	100 mg.
Sulfamerazine	100 mg.
Sulfacetamide	100 mg.
Extract of hyoscyamus	5.75 mg.
(contains 0.155% of alkaloids)	
Potassium citrate	200 mg.

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[Continued from page 4456]

Berlin in 1914. He was a member of the New York Allergy Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alfred Townsend Osgood, M.D., of New York City, died on June 20 at his home at the age of eighty-six. Dr. Osgood graduated in 1899 from Columbia University College of Physicians and Surgeons and interned at Presbyterian Hospital. Retired, he was formerly chief of the Department of Urology at New York University-Bellevue Medical Center and from 1912 to 1936 was professor of urology at New York University Medical School. He was a consultant in urologic surgery at Bellevue and French Hospitals. Dr. Osgood was a Diplomate of the American Board of Urology, a Fellow of the American College of Surgeons, and a member of the American Association of Genito-Urinary Surgeons, the American Urological Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Philip J. Rafle, M.D., of Riverhead, died on October 13 at the age of fifty-eight. Dr. Rafle graduated in 1926 from the University of Buffalo School of Medicine. He was a consultant in epidemiology at the John T. Mather Memorial (Port Jefferson), Huntington (Huntington), and Southside (Bay Shore) Hospitals, and Central Suffolk Hospital Association (Riverside). In 1949 he was named Suffolk Health Commissioner after having served seventeen years as regional director of the New York State Health Department's New York City region. Dr. Rafle was a Diplomate of the American Board of Preventive Medicine, Inc. (Public Health), a Fellow of the American College of Preventive Medicine, and a member of the American Public Health Association, the Suffolk County Medical Society of which he was first vice-president, and the Medical Society of the State of New York.

Aaron Roth, M.D., of Brooklyn, died on September 9 at the age of seventy-two. Dr. Roth graduated in 1908 from New York University and Bellevue Hospital Medical College and interned at Jewish Hospital. He was an associate in ophthalmology at Brooklyn Women's Hospital. Dr Roth was a Diplomate of the American Board of Otolaryngology and of the American Board of Ophthalmology, a Fellow of the American College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, the New York Society for Clinical Ophthalmology, the Brooklyn Ophthalmological Society, the Kings County Medical Society, and the Medical Society of the State of New York.

Asher Harry Rubenstein, M.D., of Syracuse, died in Memorial Hospital on October 2 at the age of sixty-five. Dr. Rubenstein graduated in 1919 from Syracuse University College of Medicine. He was attending otolaryngologist at Syracuse General and Memorial Hospitals, and senior consultant in otolaryngology at University Hospital. Dr. Rubenstein was a Diplomate of the American Board of Otolaryngology and a member of the American Academy of Ophthalmology and Otolaryngology, the Central New York Eye, Ear, Nose and Throat Society, the Onondaga County Medical Society, the Medical Society of the State of New York and the American Medical Association.

Howard Townsend, M.D., of Poughkeepsie, died on October 23 at the age of fifty-nine. Dr. Townsend graduated in 1935 from Cornell University Medical College. He was a founder of the Visiting Nurse Service for Poughkeepsie and a former senior attending physician at Vassar Brothers Hospital where he directed a clinic during World War II. Dr. Townsend was a member of the Dutchess County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William H. Upton, M.D., of New York City and Asbury Park, New Jersey, died on July 14 at the age of ninety-one. Dr. Upton graduated in 1893 from New York University Medical College.

Weyer L. Vermeer, M.D., of Tarrytown, died on September 28. He received his medical degree from the University of Leiden in 1952. Dr. Vermeer was an attending in orthopedics at Bellevue Hospital. He was a member of the American Rheumatism Association.

C. Berenda Weinberg, M.D., died at St. Barnabas Hospital on June 9 at the age of seventy-two. Dr. Weinberg graduated in 1909 from Jefferson Medical College of Philadelphia.

Roy Henry Wixson, M.D., of Niagara Falls, died on September 10 at his home at the age of eighty-one. Dr. Wixson graduated in 1901 from the University of Buffalo School of Medicine. He was an honorary member of the staff of Niagara Falls Memorial Hospital. Retired, Dr. Wixson was a member of the Niagara County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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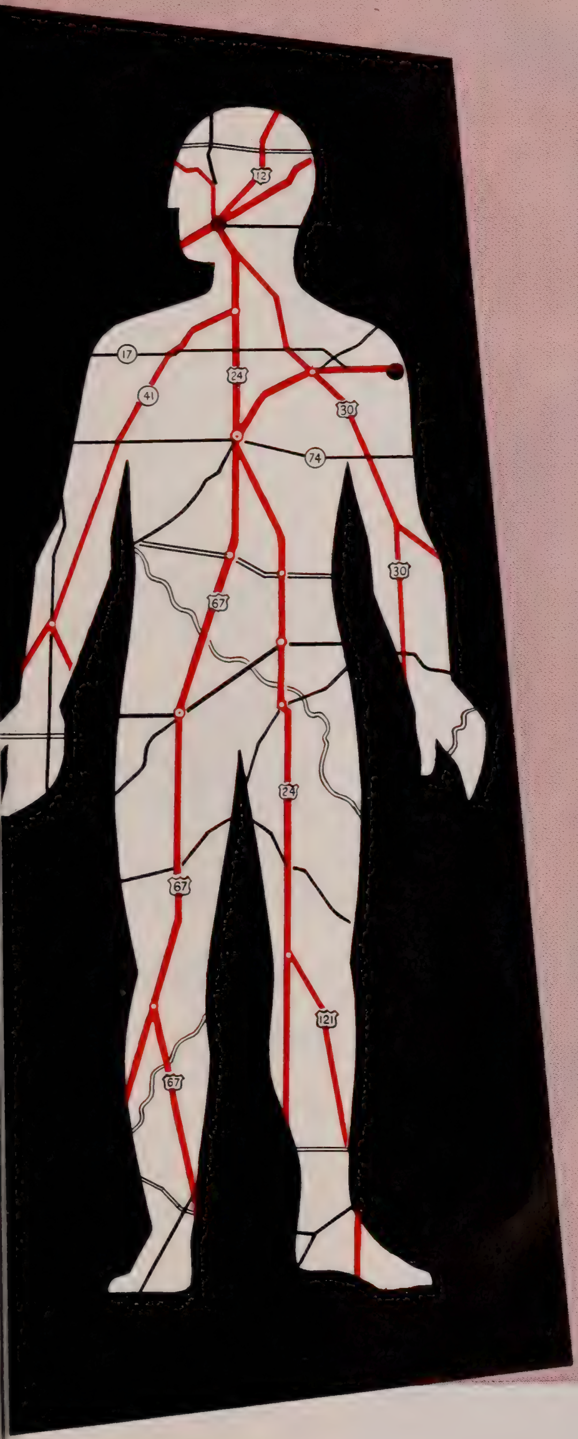

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Woman's Auxiliary

to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

Health Careers

GOAL of the Woman's Auxiliary to the Medical Society of the State of New York for this year is "Safeguarding today's health for tomorrow." The Auxiliary Committee on Health Careers takes an important part in helping to achieve this objective. As wives of physicians, keenly aware of the growing need for health workers, we have expanded our work in recruitment to include all the paramedical careers in addition to our major recruitment work in nursing.

For approximately fifteen years we have been very active in encouraging young women to choose nursing as a career. Most of our county auxiliaries have been instrumental in setting up Future Nurse Clubs in local schools, where girls from twelve to sixteen are given the opportunity to determine whether or not they are suited for the nursing profession. The program includes trips to hospitals where volunteer duty is sometimes available to the students. Auxiliary members plan and supervise stimulating and educational club meetings. We believe that the value of these clubs is not only in securing good material for the nursing profession but in weeding out those who might prove unsatisfactory early in their training. In some counties the Future Nurse Clubs are now expanding to become Health Career Clubs, with boys as well as girls participating.

Scholarships and loan funds further this work; last year, for example, the Auxiliary granted 11 loans totaling $3,050, 40 scholarships totaling $8,851, and beneficences to schools of nursing totaling $750, for a grand total of $12,631.

The Auxiliary has also worked closely with other health agencies and parent-teacher organizations. We have provided films, speakers, and panels to inform parents as well as students about physicians, nurses, therapists, technicians, nutritionists, and others in a list of over 150 health career choices. Good recruiting takes place during special Career Days in the senior high schools, at which the Auxiliary ascertains that material on all health careers is available.

We in the Auxiliary have worked to inform ourselves about the many opportunities available in the health field and to see that material about this is within reach of young people and their parents. In addition, we have given many hours to money-raising projects, such as fashion shows, silver teas, and dinner dances, and to screening applicants from young people interested in serving in the health field.

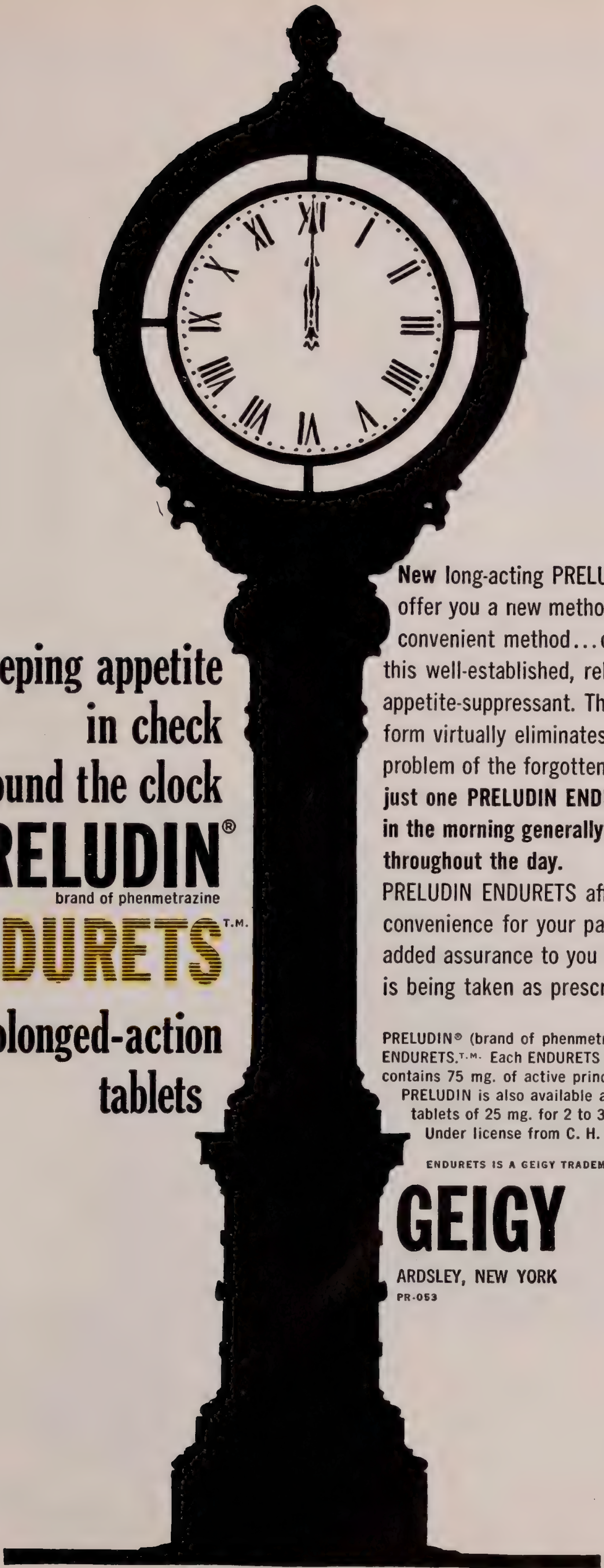
Mrs. Carleton A. Heist, *Chairman*
Committee on Health Careers

61 North Portage Street
Westfield, New York

The Practical Side

A man stopped to chat with a farmer putting up a building. "What are you putting up?"

"Well," answered the farmer, "If I can rent it, it's a rustic cottage, and if I can't, it's a cow shed."—*Phone Magazine*



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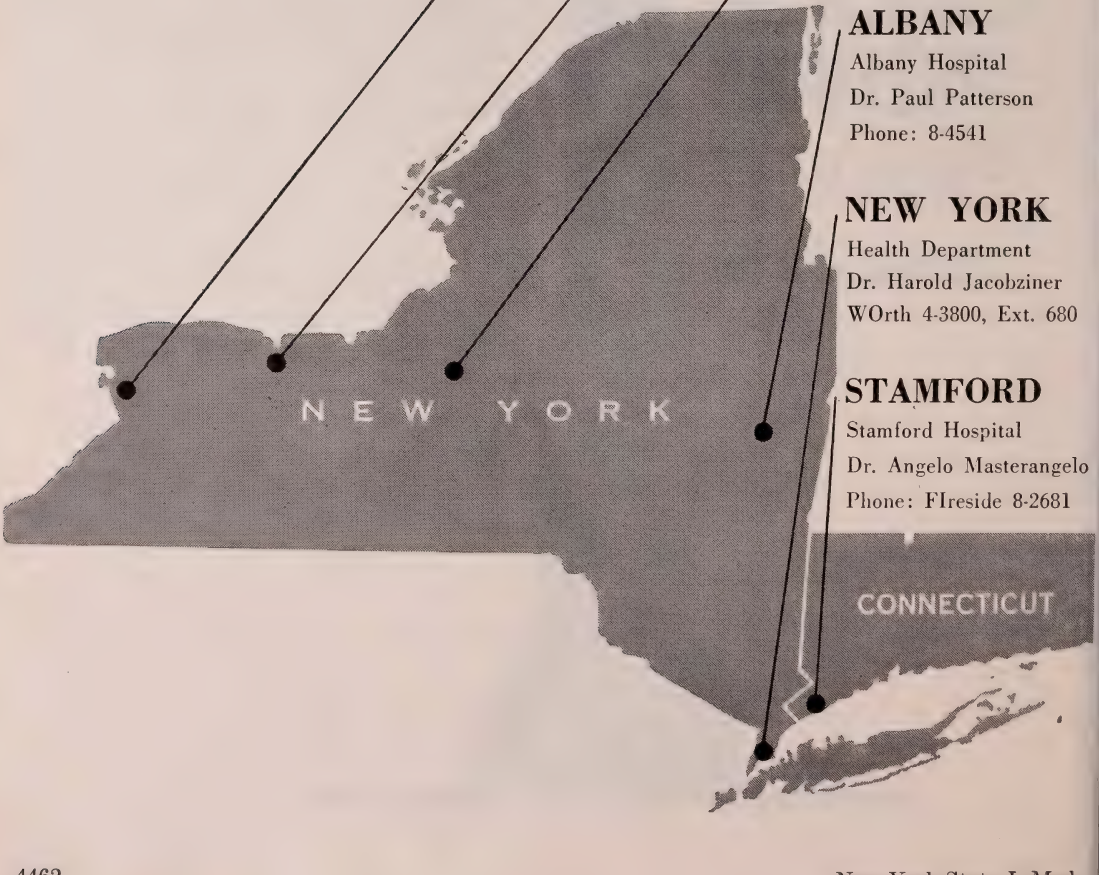

NEW...to control the pain and the pathogen in acute G. U. infection

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Adds fast-acting analgesia of phenylazodiaminopyridine HCl. Relieves burning, urgency and pain-spasm. Eases voiding and retention of infected urine.

...to unexcelled sulfa control of KYNEX. Lower dosage of just ½ Gm. daily... prolonged action without hazard of crystalluria... reduced toxic potential... not surpassed by any other sulfa drug, singly or in combination.

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WORKS
FOR CHILDREN TOO!

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LAURYL SULFATE
SUSPENSION

(propionyl erythromycin ester lauryl sulfate, Lilly)

Deliciously flavored • Decisively effective • Exceptionally safe

FORMULA

Each 5-cc. teaspoonful provides Ilosone Lauryl Sulfate equivalent to 125 mg. erythromycin base activity.

USUAL DOSAGE

10 to 25 pounds	5 mg. per pound of body weight	every six hours
25 to 50 pounds	1 teaspoonful	
Over 50 pounds	2 teaspoonfuls	

In more severe infections, these dosages may be doubled.

SUPPLIED in bottles of 60 cc.

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LAURYL SULFATE

Formula: Each drop provides Ilosone Lauryl Sulfate equivalent to 5 mg. erythromycin base activity.

Supplied in bottles of 10 cc.

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Allegany	Vincent Ciampa	Cuba	George E. Taylor, Jr.	Cuba	Frederick H. McCarty	Wellsville
Bronx	Carl R. Ackerman	Bronx	Frank La Gattuta	Bronx	Walter Einhorn	Bronx
Broome	Harold C. Schulman	Binghamton	Charles L. Shute, Jr.	Binghamton	Judson S. Griffin	Binghamton
Cattaraugus	Desmond Moleski	Ellicottville	Cedric L. Mather	Olean	Ruth R. Knobloch	Little Valley
Cayuga	William H. Havill	Auburn	Charles E. Bikle, Jr.	Auburn	Alfred E. Dooley	Auburn
Chautauqua	Fitzgerald H. Clark	Jamestown	Joseph V. Karnes	Dunkirk	C. Otto Lindbeck	Jamestown
Chemung	David Kaplan	Elmira	William M. Kelly	Elmira	Frank V. Hertzog	Elmira
Chenango	Thomas M. Flanagan	Norwich	Paul MacLeod	Norwich	Paul MacLeod	Norwich
Clinton	Francis F. Baker	Plattsburgh	Harold Singer	Plattsburgh	William L. Ladue	Plattsburgh
Columbia	Algird F. White	Philmont	Roger C. Bliss	Hudson	Roger C. Bliss	Hudson
Cortland	Nicholas J. Gabriel	Cortland	Lawrence Z. Shultzaberger	Cortland	Lewis H. Berk	Cortland
Delaware	Paul Kearney	Delhi	Philip Hust	Sidney	Philip Hust	Sidney
Dutchess	Reuben T. Lapidus	Poughkeepsie	James K. Keeley	Poughkeepsie	Philip V. Buckley	Poughkeepsie
Erie	Thomas S. Bumbalo	Buffalo	Lois J. Plummer	Buffalo	Francis W. O'Donnell	Buffalo
Essex	Oscar Greene	Mineville	Harold J. Harris	Westport	Harold J. Harris	Westport
Franklin	Carl P. Sherwin, Jr	Malone	Daisy H. Van Dyke	Malone	Daisy H. Van Dyke	Malone
Fulton	Kurt Kaiser	Gloversville	Robert L. Kemp	Gloversville	Arthur Howard	Johnstown
Genesee	Sydney L. McLouth	Corfu	Sawyer A. Glidden	Batavia	Emil Kimaid	Le Roy
Greene	Robert N. Blakeslee	Windham	John A. Vosburgh	Coxsackie	Mahlon H. Atkinson	Catskill
Herkimer	Daniel C. Shaughnessy	Herkimer	Margarete E. Kotrnetz	Herkimer	Margarete E. Kotrnetz	Herkimer
Jefferson	H. Louis George, Jr.	Watertown	Charles A. Prudhon	Watertown	Lawrence E. Henderson	Watertown
Kings	Warren A. Lapp	Brooklyn	Leslie H. Tisdall	Brooklyn	James L. O'Leary	Brooklyn
Lewis	William S. Reed	Lowville	Allan S. Ellis	Port Leyden	Allan S. Ellis	Port Leyden
Livingston	John D. Mould	Geneseo	G. Emerson Learn	Mount Morris	G. Emerson Learn	Mount Morris
Madison	John D. George, Jr	Verona	Felix Ottaviano	Oneida	Gareth S. West	Chittenango
Monroe	Merle D. Evans	Rochester	James E. Segerson	Rochester	Charles R. Mathews	Rochester
Montgomery	Michael Kizun	Fonda	Rene H. Juchli	Amsterdam	Robert W. Dunlap, Jr.	Amsterdam
Nassau	Harvey L. Myers	Cedarhurst	Lyon Steine	Valley Stream	Robert Park, Jr.	Garden City
New York	Samuel Frant	New York	William L. Wheeler, Jr.	New York	George W. Fish	New York
Niagara	Robert M. Rose	North Tonawanda	William C. Niesen	Niagara Falls	Robert D. Glennie, Jr.	Niagara Falls
Oneida	Robert W. Hurd	Utica	Irving Cramer	Utica	Fel G. Davies	Utica
Onondaga	William O. Kopel	Syracuse	Robert O. Gregg	Syracuse	Clayton H. Hale	Syracuse
Ontario	James L. Blanton	Clifton Springs	James A. Stringham	Canandaigua	James A. Stringham	Canandaigua
Orange	Paul M. Traub	Newburgh	Earl C. Waterbury	Newburgh	Earl C. Waterbury	Newburgh
Orleans	James G. Parke	Albion	Harvey J. Blanchet, Jr.	Medina	Salvatore Dispenza	Albion
Oswego	Hugh M. McChesney	Pulaski	Kenneth A. Kurtz	Fulton	Kenneth A. Kurtz	Fulton
Otsego	J. Herbert Dietz, Jr.	Oneonta	Eugene D. Rames	Cooperstown	Eugene D. Rames	Cooperstown
Putnam	Robert A. Seitz	Cold Spring	John Simmons	Brewster	Eugene J. Lusardi	Cold Spring
Queens	Louis J. Morse	Kew Gardens	Charles C. Mangi	Woodhaven	Victor S. Lait	Flushing
Rensselaer	John J. Keenan	Troy	David R. Tomlinson	Troy	John J. Noonan	Troy
Richmond	George W. McCormick	Staten Island	George E. Pittinos	Staten Island	Charles H. Thom	Staten Island
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Schoharie	Peter J. Sacket	Schoharie	Donald R. Lyon	Middleburg	Duncan L. Best	Middleburg
Schuyler	Francis C. Ward	Odessa	Fritz Landsberg	Watkins Glen	Fritz Landsberg	Watkins Glen
Seneca	Donald P. Polan	Seneca Falls	Charles M. Smith	Waterloo	Charles M. Smith	Waterloo
Steuben	Marion J. Chimera	Corning	Milton Tully	Hornell	Milton Tully	Hornell
Suffolk	Morris R. Keen	Huntington	Jesse W. Mahoney	Patchogue	John J. Murphy	Bay Shore
Sullivan	Luther F. Grant	Liberty	Deming S. Payne	Liberty	Deming S. Payne	Liberty
Tioga	Henry Kaine	Spencer	George F. Pritchard	Owego	George F. Pritchard	Owego
Tompkins	Edward F. Hall	Ithaca	Robert Broad	Ithaca	R. Wendell Davis	Ithaca
Ulster	Irving J. Josephson	Kingston	Herbert F. Schwartz	Kingston	Gerald P. Gorman	Kingston
Warren	Byron C. Tilotson	Glens Falls	Robert W. Lineham	Glens Falls	Francis X. Dever	Glens Falls
Washington	Newton Krumdieck	Cambridge	Henry D. Crane, Jr.	Cambridge	Roy E. Borrowman	Fort Edward
Wayne	David Ennis	Lyons	Leman W. Potter	Newark	Leman W. Potter	Newark
Westchester	Donald R. Reed	Irvington	James M. Jones	Bronxville	Thomas C. Jaleski	New Rochelle
Wyoming	James D. MacCallum	Warsaw	Newland W. Fountain	Warsaw	Newland W. Fountain	Warsaw
Yates	Paul C. Johnson	Penn Yan	Robert W. McLaughlin	Penn Yan	Robert W. McLaughlin	Penn Yan

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270 tablets
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VITAMIN-MINERAL
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Specific in Depression

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Produce remission or improvement in 70-85% of cases

Act effectively in all types of depression

Afford equally good results in severe as in mild cases

Achieve therapeutic benefit with minimal risk
serious side reaction

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......not a MAO inhibitor

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Inhibit monoamine oxidase either in brain or liver with its associated risks

Produce dangerous potentiation of other drugs such as barbiturates and alcohol

Act by producing undesirable central nervous stimulation leading to agitation and excitement

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Each coated tablet (pink) contains: meprobamate, 400 mg.; d-amphetamine sulfate, 5 mg.
Dosage: One tablet one-half to one hour before each meal.

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SEASON'S GREETINGS

Physicians' Home extends cordial Holiday Greetings to the members of the Medical Society of the State of New York. With these go also the heartfelt thanks from the many elderly colleagues, their wives or widows, who through your contributions have been assured happiness and security throughout the year.

Merry Christmas to All

PHYSICIANS' HOME
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in eight years Novahistine hasn't cured a single cold—but it has brought prompt relief of symptoms to almost 8,000,000 patients*

With the introduction of Novahistine, a better and safer way to relieve symptoms of a cold became available to physicians. The synergistic action of the Novahistine formula... combining an orally-effective vasoconstrictor with an antihistamine...promptly clears the air passages and checks irritant nasal secretions. NOVAHISTINE can eliminate the problem of rebound congestion and damage to nasal mucosa in patients who misuse topical applications.

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*Based on National Prescription Audits of new Novahistine prescriptions since 1952.

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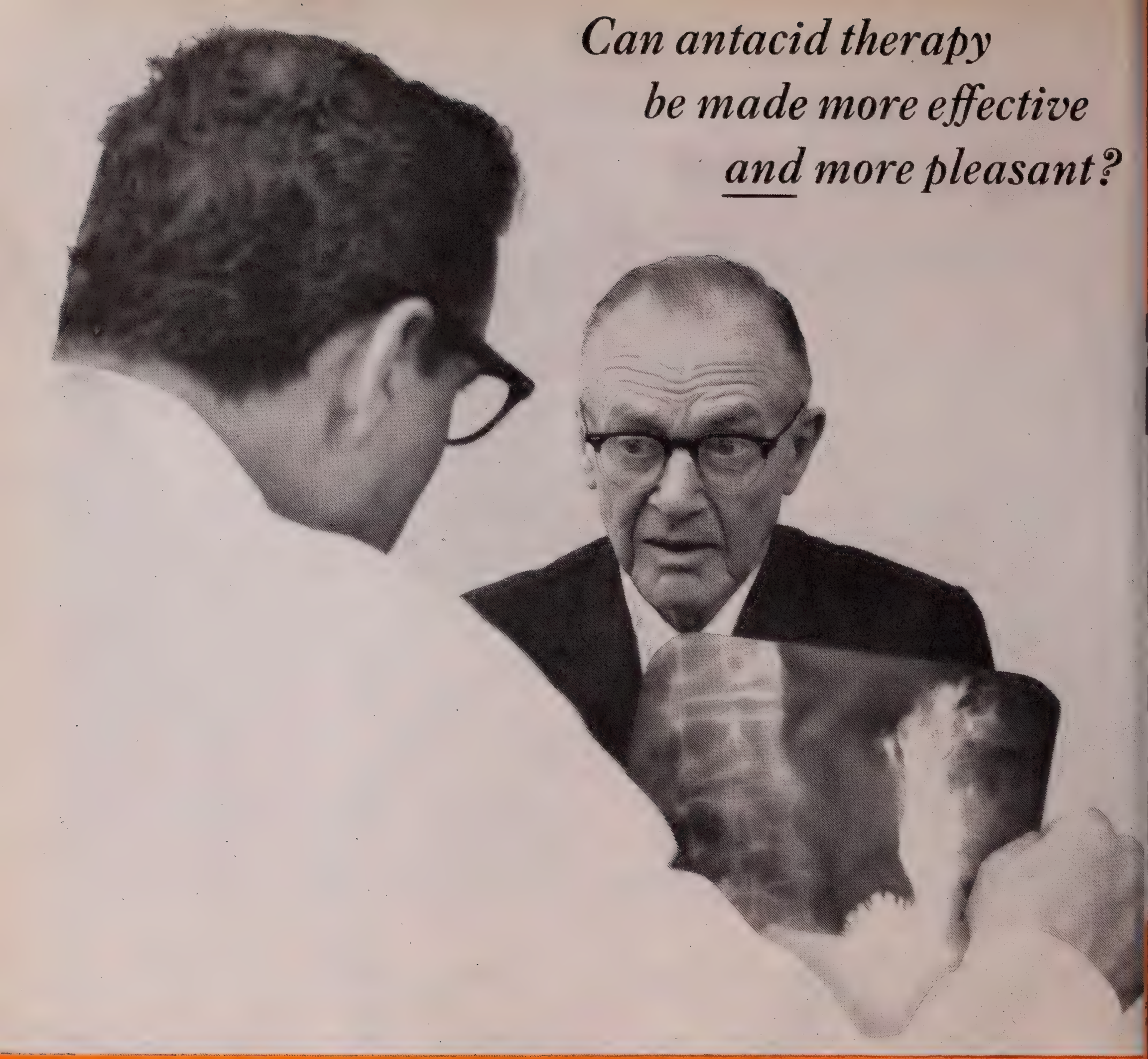

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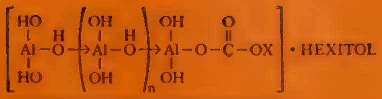
a new high in effectiveness and palatability

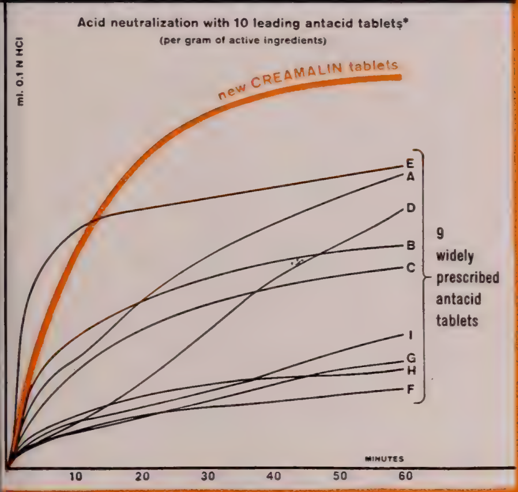


$$\left[\underset{HO}{\overset{HO}{Al}}{-}\overset{H}{O}{\rightarrow}\left(\underset{OH}{\overset{OH}{Al}}{-}\overset{H}{O}{\rightarrow}\right)_n\underset{OH}{\overset{OH}{Al}}{-}O{-}\overset{O}{\overset{\|}{C}}{-}OX\right]\cdot \text{HEXITOL}$$

n is at least 1 and averages less than 6. X is a cation.

REAMALIN NEUTRALIZES *MORE* ACID *FASTER*

Quicker Relief • Greater Relief



were powdered and suspended in distilled water in a constant temperature
r (37°C) equipped with mechanical stirrer and pH electrodes. Hydrochloric
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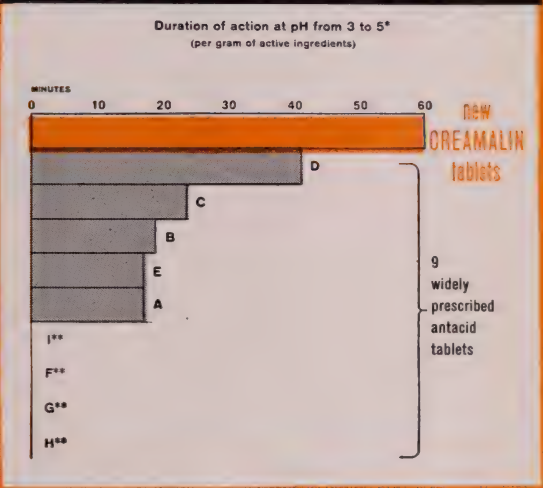

*Hinkel, E. T., Jr., Fisher, M. P. and Tainter, M. L.: A new highly reactive aluminum hydroxide complex for gastric hyperacidity. To be published

**pH stayed below 3.

Do antacids have to taste like chalk?

No chalky taste. New CREAMALIN tablets are not chalky, gritty, rough or dry. They are highly palatable, soft, smooth, easy to chew, mint flavored.

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Supplied: Bottles of 50, 100, 200 and 1000.

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. . . a new way to relieve pain and stiffness in muscles and joints

INDICATED IN:

MUSCLE STIFFNESS
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■ Exhibits unusual analgesic properties, different from those of any other drug ■ Specific and superior in relief of SOMAtic pain

■ Modifies central perception of pain without abolishing natural defense reflexes ■ Relaxes abnormal tension of skeletal muscle

SOMA T.M.

N-isopropyl-2-methyl-2-propyl-1, 3-propanediol dicarbamate

■ More specific than salicylates ■ Less drastic than steroids

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SOMA has an unique analgesic action. It apparently modifies central pain perception without abolishing peripheral pain reflexes. SOMA is particularly effective in relieving joint pain. Patients say that they feel better and sleep better with SOMA than with any previously used analgesic, sedative or relaxant drug.

SOMA also relaxes muscle hypertonia, with its stresses on related joints, ligaments and skeletal structures.

ACTS FAST. Pain-relieving and relaxant effects start in 30 minutes and last 6 hours.

NOTABLY SAFE. Toxicity of SOMA is extremely low. No effects on liver, endocrine system, blood pressure, blood picture or urine have been reported. Some patients may become sleepy on high dosage.

EASY TO USE. Usual adult dose is one 350 mg. tablet 3 times daily and at bedtime.

SUPPLIED: Bottles of 50 white sugar-coated 350 mg. tablets.

Literature and samples on request.

WALLACE LABORATORIES, NEW BRUNSWICK, N. J.

Classic
Treatment in
Hypertension*

just two tablets at bedtime

Rauwiloid®

alseroxylon, 2 mg.

**Because*

Rauwiloid provides effective Rauwolfia action virtually free from serious side effects ... the smooth therapeutic efficacy of Rauwiloid is associated with a lower incidence of certain unwanted side effects than is reserpine...and with a lower incidence of depression. Tolerance does not develop.

Rauwiloid can be initial therapy for most hypertensive patients...Dosage adjustment is rarely a problem.

When more potent drugs are needed, prescribe one of the *convenient single-tablet combinations*

Rauwiloid® + Veriloid®
alseroxylon 1 mg. and alkavervir 3 mg.

or

Rauwiloid® + Hexamethonium®
alseroxylon 1 mg. and hexamethonium chloride dihydrate 250 mg.

Many patients with severe hypertension can be maintained on Rauwiloid alone after desired blood pressure levels are reached with combination medication.

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An Active Treatment Hospital, located one hour from New York

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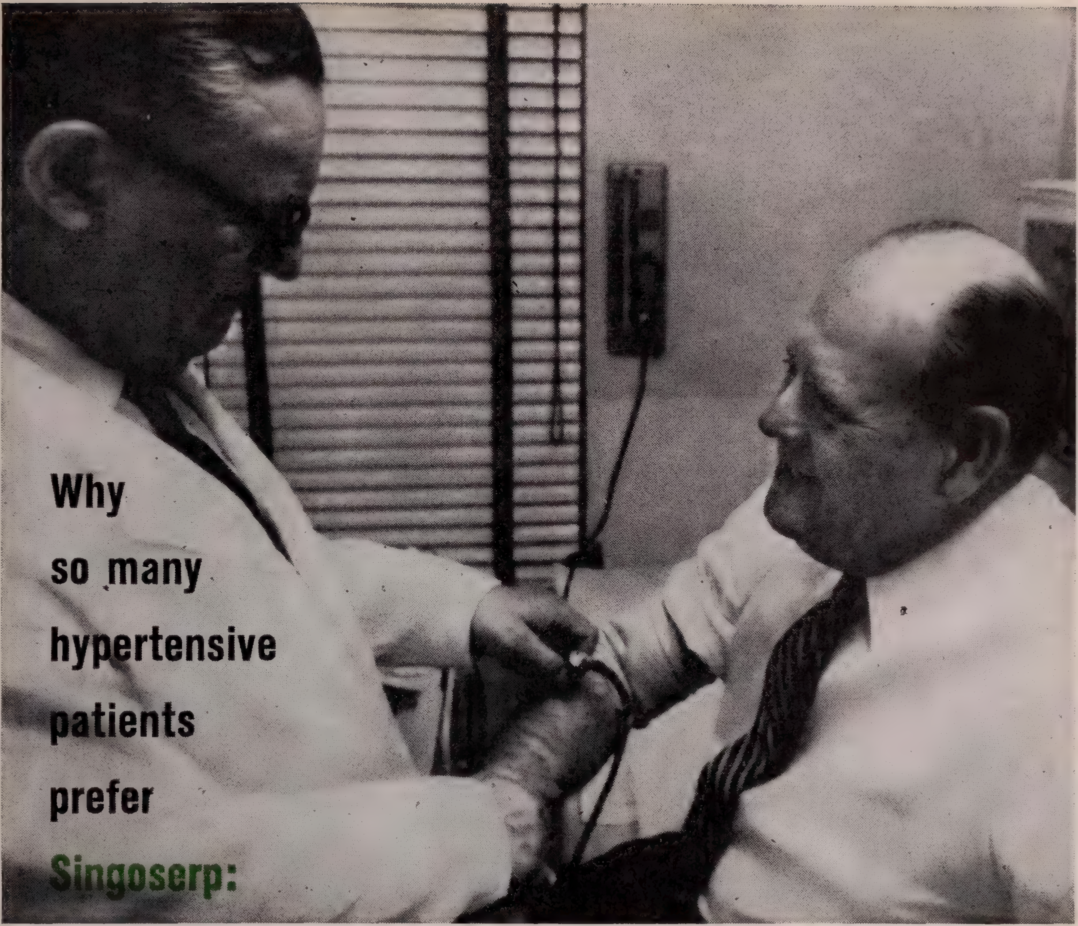

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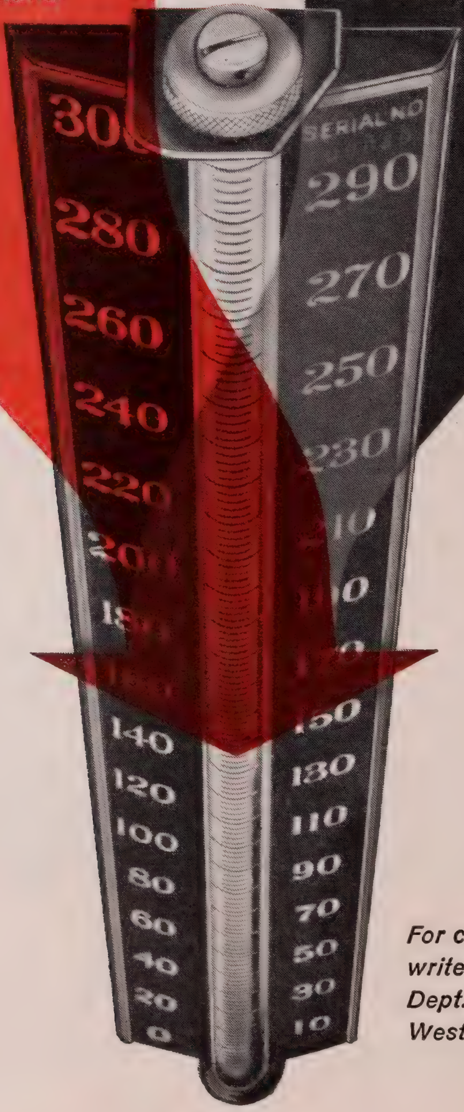
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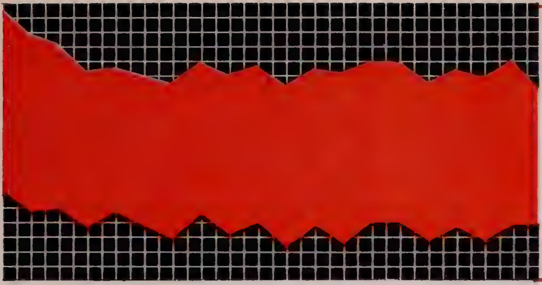

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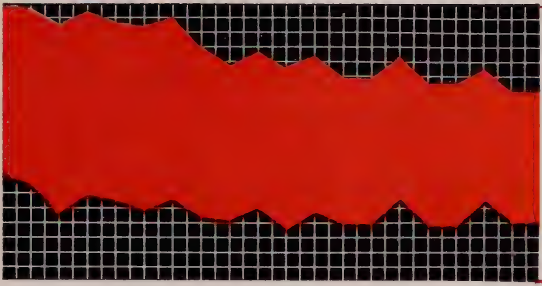

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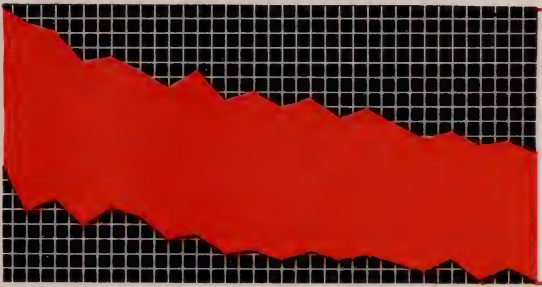

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Tetracycline-Triple Sulfa Combination (TETREX® c̄ T/S) in the Treatment of INFECTION

It is generally agreed that it is ideal to withhold antibiotic and chemotherapeutic drugs until after sensitivity tests show which antibacterial agent will be most effective. But very often, in actual practice, the physician knows that delay in starting antibacterial treatment may be detrimental to the welfare of his patient. He must then select the therapy to meet the most serious and immediate threats to the patient.

Why Combination Therapy?

Certain infections do not respond as well to a single agent as to a combination. *Hemophilus influenzae* infections, which are frequent in children, are a particularly serious threat to infants and children up to about 3 or 4 years of age since they have not yet built up any appreciable immunity. Serious complications such as influenzal pneumonia, empyema, or meningitis may develop, especially in this age group. In fact, except for those periods when meningococcal meningitis is epidemic, *H. influenzae* is the most frequent cause of meningitis.[1] This gram-negative organism is highly susceptible both to the tetracyclines and to the sulfonamides. Even in severe infections, therapeutic failure can be virtually eliminated by giving sulfonamides plus tetracycline.[1] These two agents together constitute the treatment of choice, and give better results than either alone.[2]

Sulfonamides remain the drugs of choice for all meningococcal infections, including meningitis. They readily penetrate the blood-brain barrier and pass into the cerebrospinal fluid in good concentrations.[3] In treating overwhelming meningococcal infections, and complicating infections of the upper respiratory tract caused by other organisms, the addition of tetracycline to sulfas can be valuable.[4]

In recent years the sulfonamides have again been prescribed more and more frequently. In certain serious infections, better results can be obtained with a combination of antibiotic and sulfonamide than with either drug alone (e.g., severe pneumococcal pneumonia or pneumococcal meningitis[5]). Furthermore, mixed infections, to which young children are particularly susceptible, often respond only to combination therapy such as tetracycline with sulfonamides (TETREX c̄ T/S).

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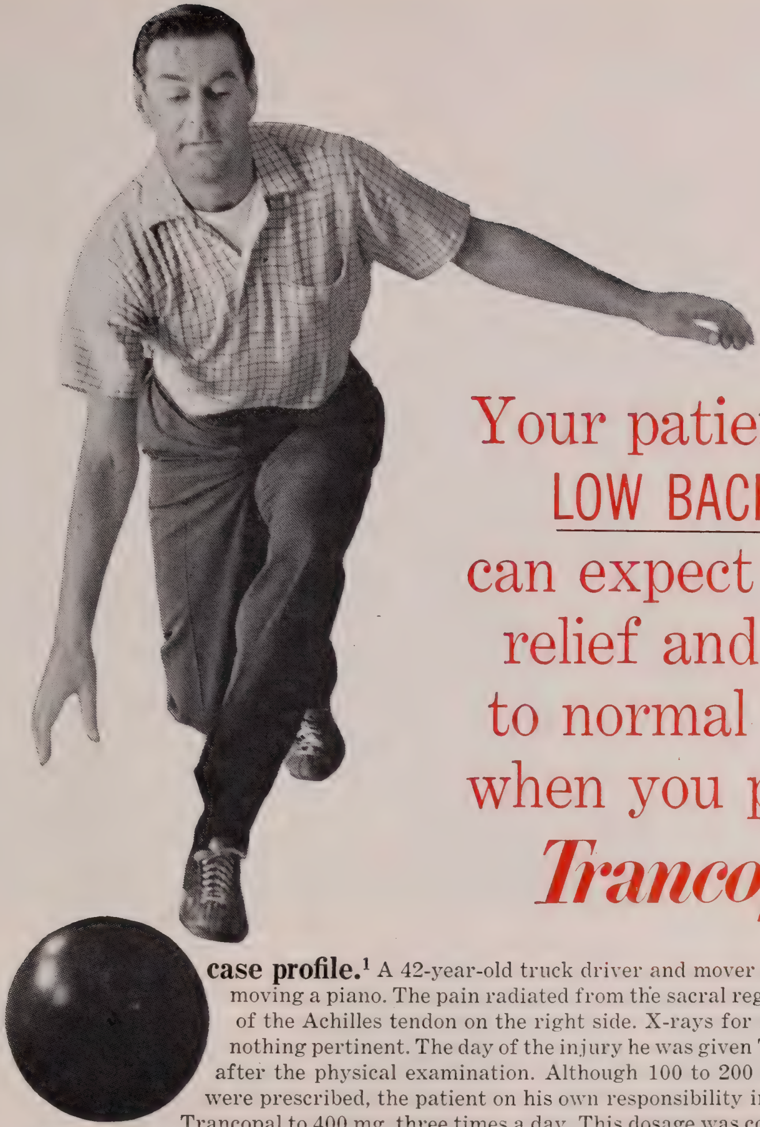

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1. Lehrer, H. W., et al.: Northwest Med. 75:1249, 1955.
2. Smith, Richard T.: New York Med. 8:16, 1952.

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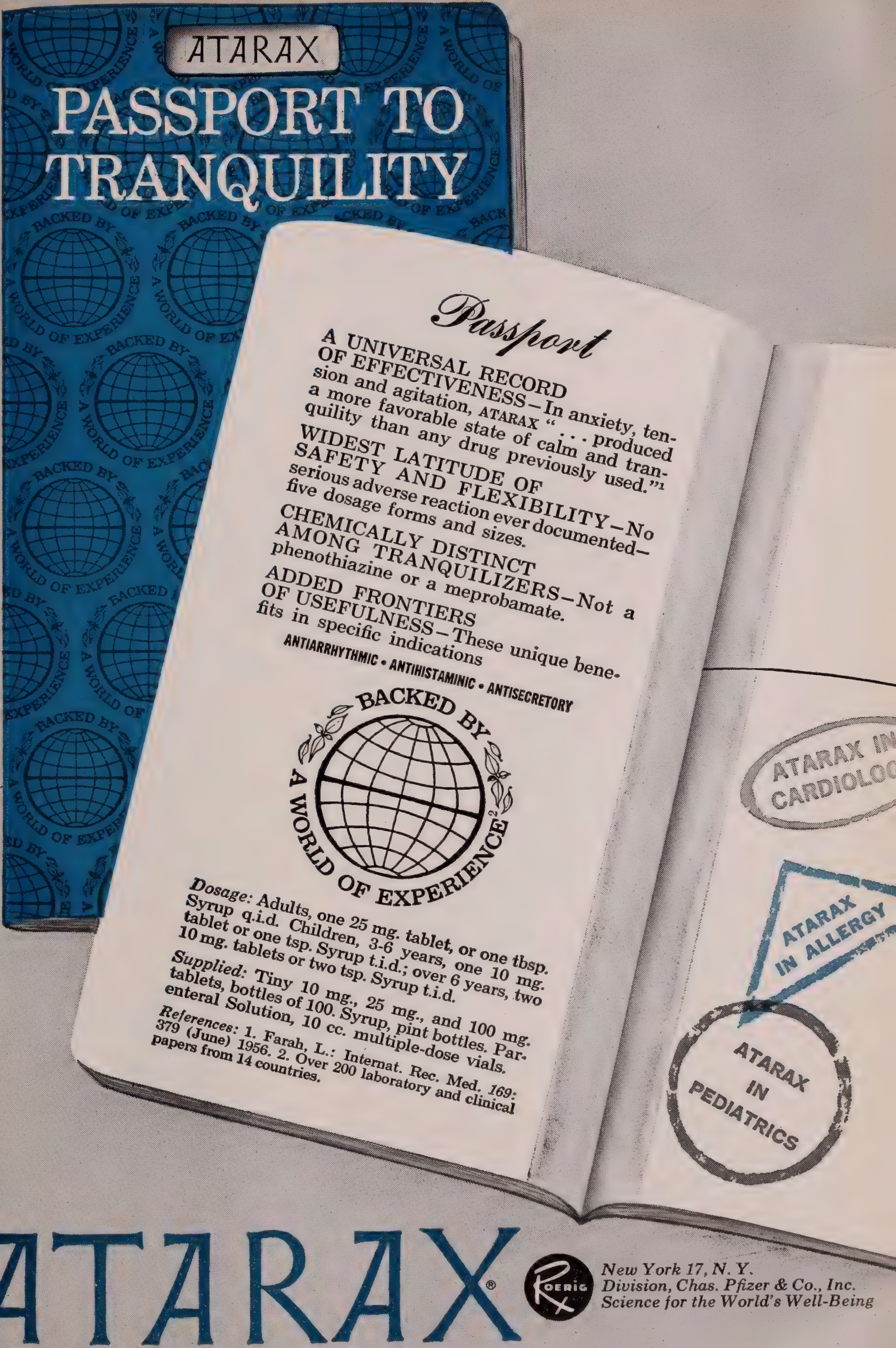

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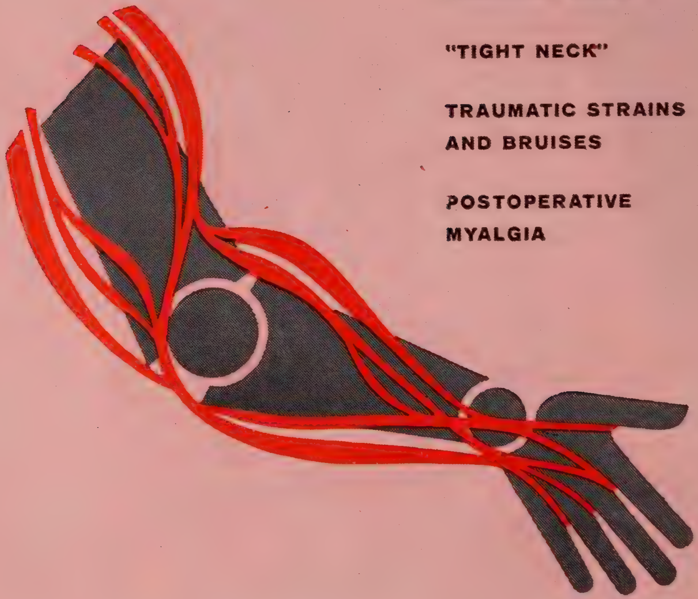

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bibliography: (1) Green, J. R., & Steelman, H. F.: Epileptic Seizures, Baltimore, Williams & Wilkins Company, 1956, p. 136. (2) Bray, P. F.: *Pediatrics* **23**:151, 1959. (3) Davidson, D. T., Jr., in Conn, H. F.: Current Therapy 1959, Philadelphia, W. B. Saunders Company, 1959, p. 512. (4) Smith, B., & Forster, F. M.: *Neurology* **4**:137, 1954. (5) Zimmerman, F. T.: *New York J. Med.* **55**:2338, 1955. (6) Lemere, F.: *Northwest Med.* **53**:482, 1954. (7) Perlstein, M. A.: *Pediat. Clin. North America*: **4**:1079 (Nov.) 1957. (8) Livingston, S., & Pauli, L.: *Pediatrics* **19**:614, 1957. (9) Carter, C. H., & Maley, M. C.: *Neurology* **7**:483, 1957. (10) Keith, H. M., & Rushton, J. G.: *Proc. Staff Meet. Mayo Clin.* **33**:105, 1958.

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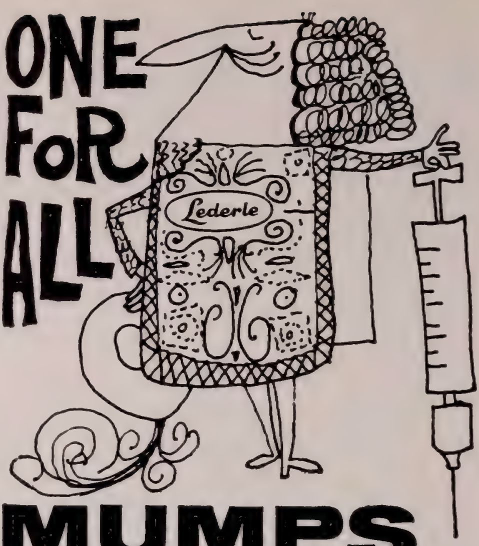

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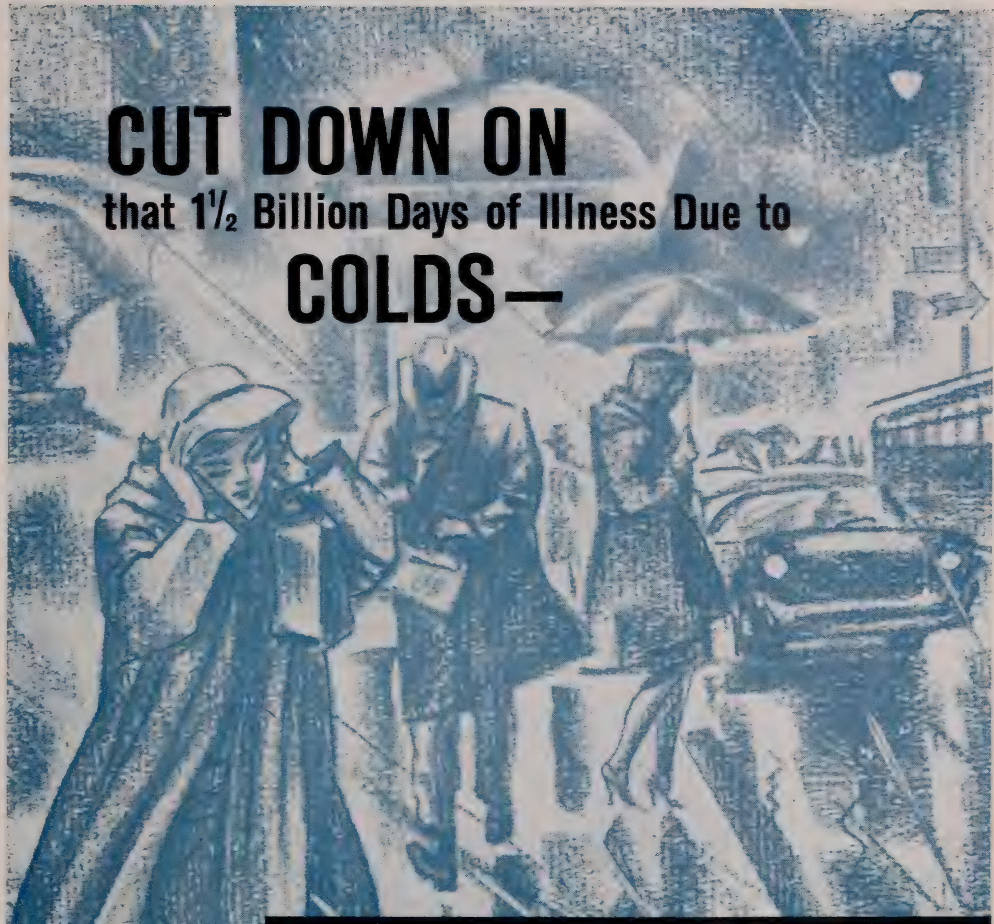

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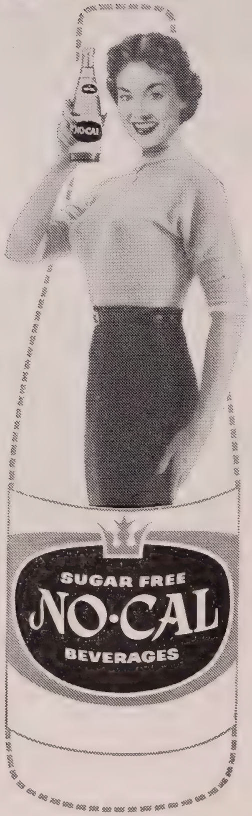

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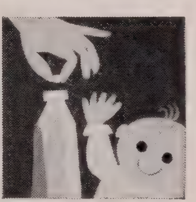
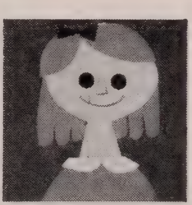


can be dissolved in water, juice or milk



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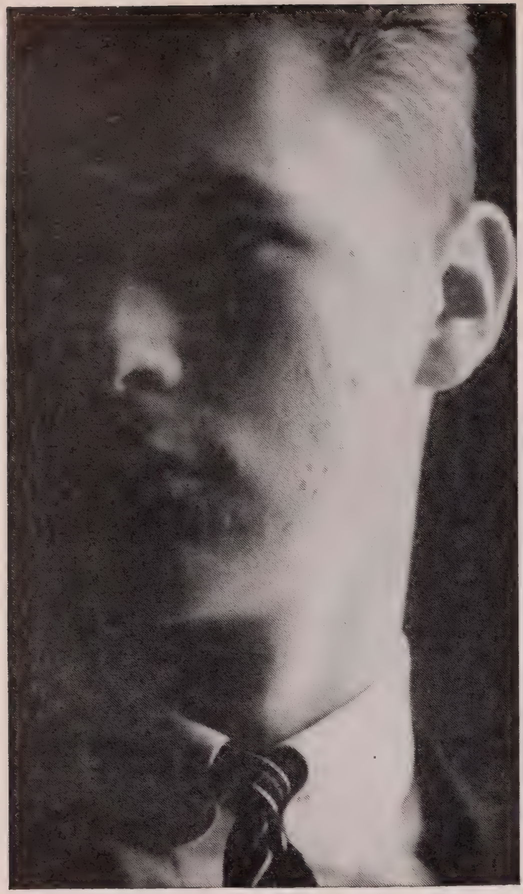

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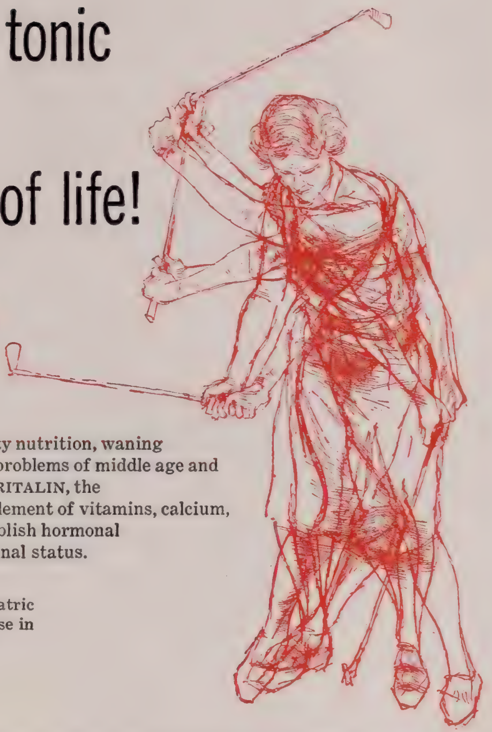

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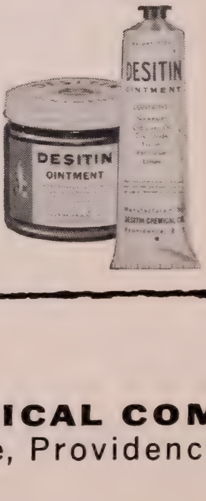
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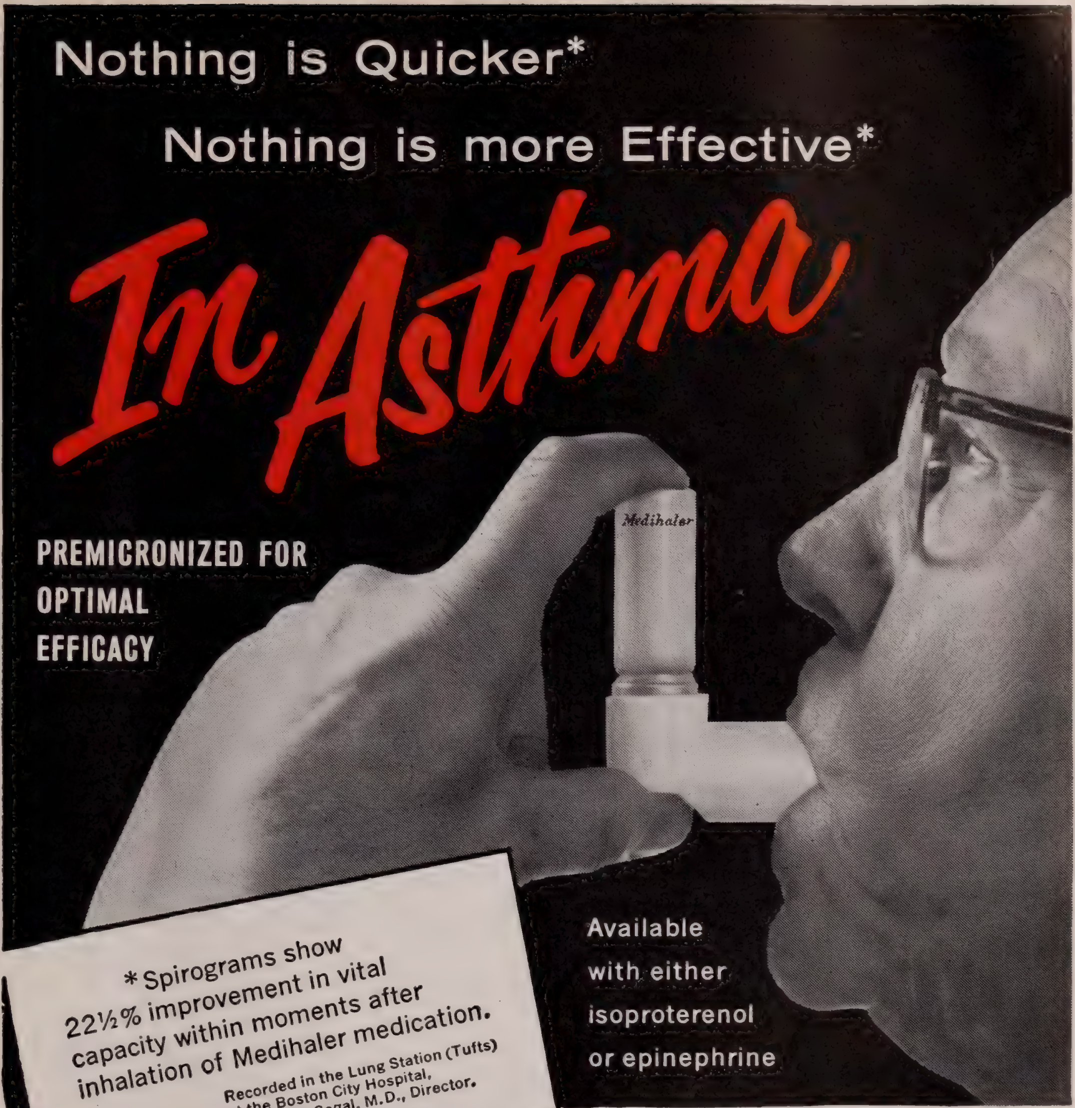

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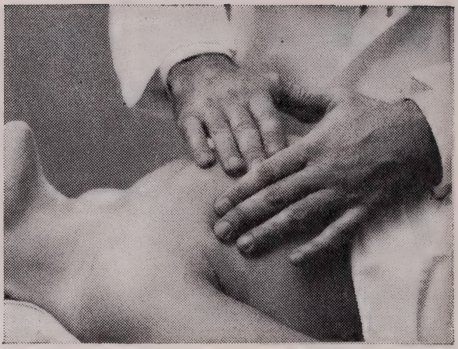

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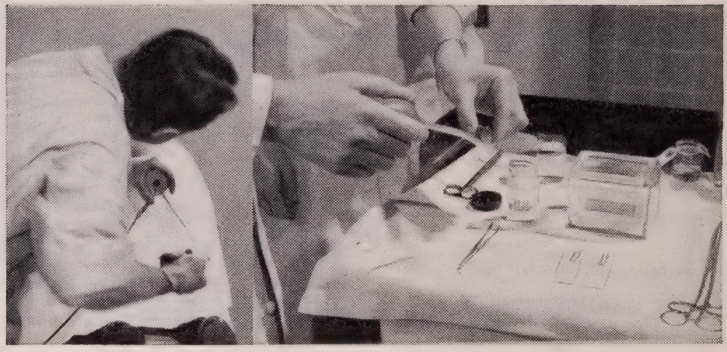

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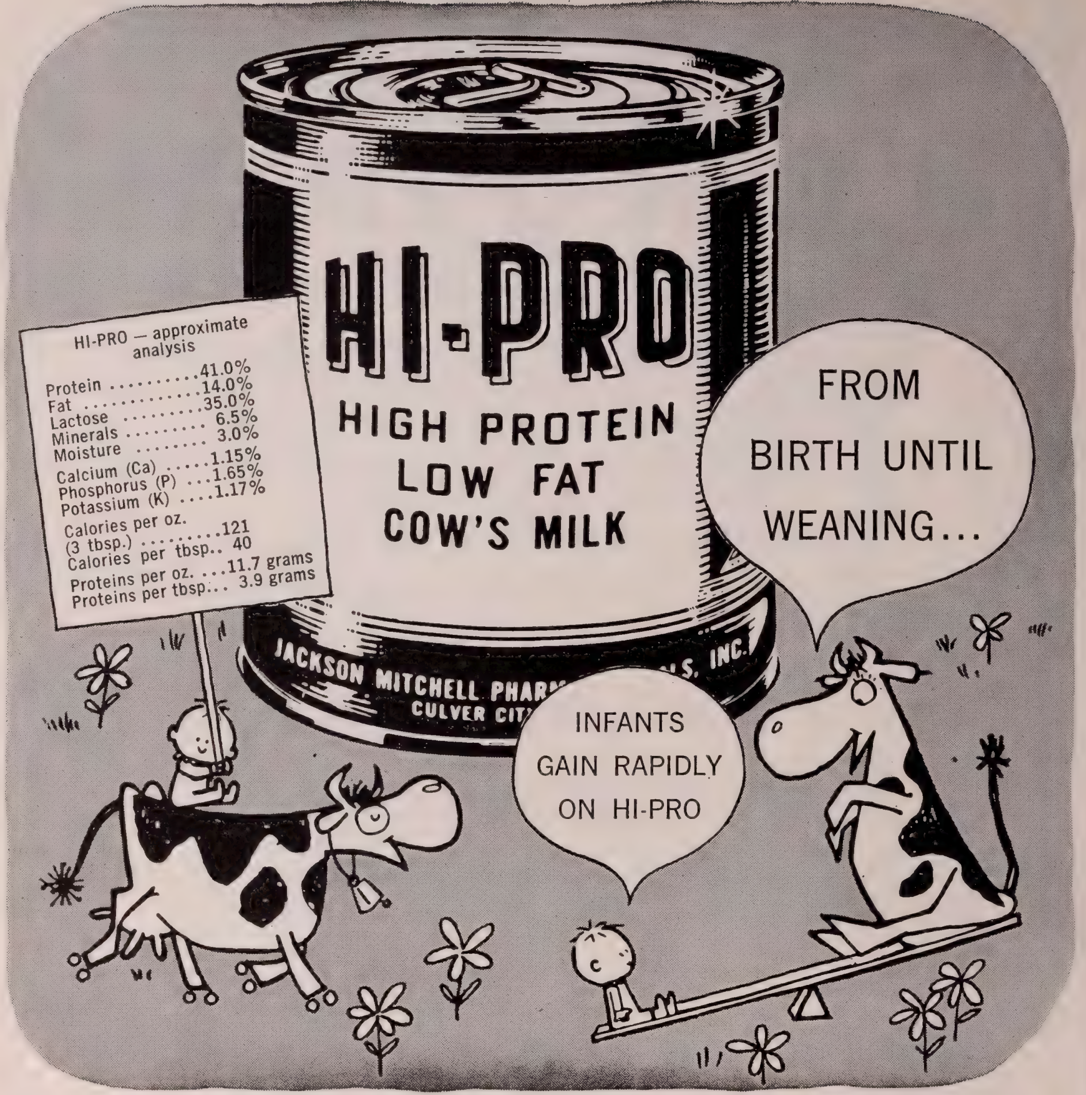
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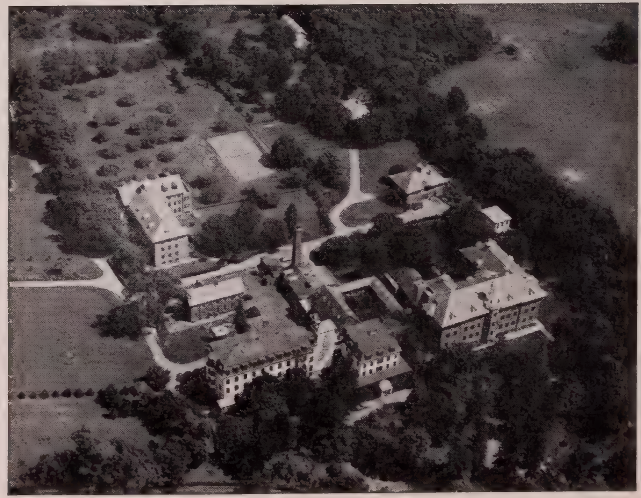

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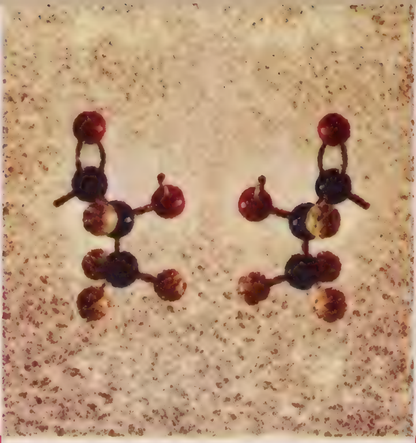

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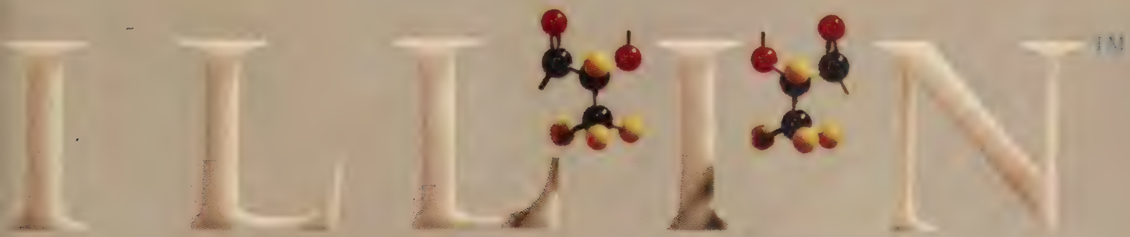

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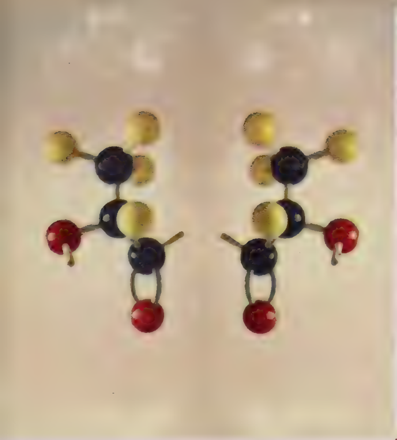

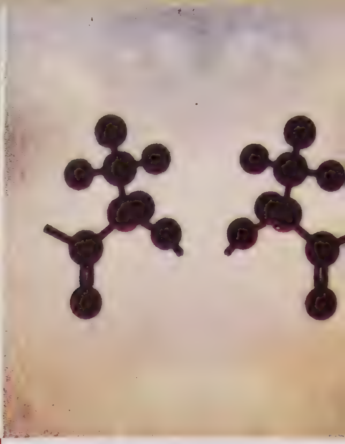

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MANY STAPH STRAINS MORE SENSITIVE TO SYNCILLIN

BRISTOL

ORIGIN OF A NEW SYNTHETIC PENICILLIN

In March, 1957, Dr. John C. Sheehan of the Massachusetts Institute of Technology announced the total synthesis of penicillin from common raw materials, thus solving a problem which had baffled research workers for more than 15 years. Although total synthesis was not commercially practicable, this work, sponsored by Bristol Laboratories, made possible the subsequent synthesis of new penicillins not occurring in nature. Later scientists at Beecham Laboratories in England discovered that a key intermediate (6-aminopenicillanic acid) could be produced by a fermentation process. With these achievements, large scale production of synthetic penicillins became feasible.

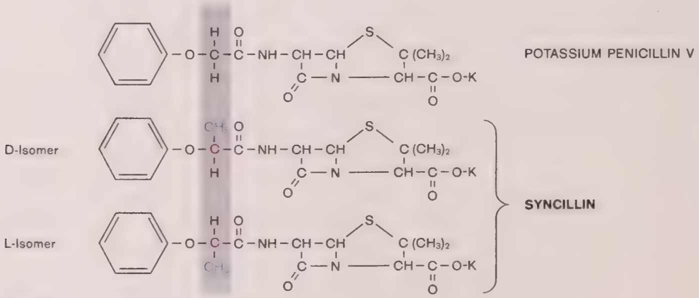
Organic chemists at Bristol then embarked upon an intensive program to develop better penicillins. Over five hundred were synthesized and underwent preliminary screening. Forty-six showed sufficient promise to warrant further investigation. Extensive microbiological, pharmacological, and clinical screening indicated that one compound, SYNCILLIN, had advantages of major importance over other penicillins.

SYNCILLIN is the N-acylation product of 6-aminopenicillanic acid and α-phenoxypropionic acid (the phenylether of lactic acid). It is freely soluble in water and remarkably resistant to decomposition by acid. The acid stability of SYNCILLIN is equivalent to that of penicillin V at pH 2 and pH 3 at 37° C.[1]

SIGNIFICANCE OF MOLECULAR ASYMMETRY AND ISOMERIC COMPLEMENTARITY

SYNCILLIN has a molecular configuration similar to penicillin V, but contains an additional CH_3 group so positioned as to render the adjacent carbon atom asymmetric. (In the formulae below, the added CH_3 group is shown in blue and the asymmetric carbon atom in red.) As a result, SYNCILLIN occurs as a mixture of two isomers.

Each isomer has been synthesized in essentially pure form and found to possess distinctive chemical and biological properties. The L-isomer is 2 to 17 times more active than the D-isomer against many of the organisms tested. As produced, SYNCILLIN is a mixture of the L-isomer and the D-isomer. As will be shown later, the antibiotic effect of the clinically available mixture, SYNCILLIN, is greater than either isomer alone against many organisms. This phenomenon is referred to here as *isomeric complementarity*.



ISOMERIC COMPLEMENTARITY DEMONSTRATED IN VITRO

The *in vitro* minimum inhibitory concentration (MIC) of SYNCILLIN and of each of its two component isomers was determined for a variety of common pathogens and laboratory test organisms. As may be seen from Table 1, all three are highly effective against penicillin-susceptible staphylococci and against pneumococci, streptococci, gonococci, and corynebacteria; all are ineffective against Salmonella, *E. coli,* and other gram-negative coliform bacilli.

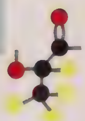
SYNCILLIN was more active against many of the test strains including some streptococci and staphylococci than either of its components. This demonstrates *in vitro* the phenomenon of isomeric complementarity.

TABLE 1

Minimum Concentrations of SYNCILLIN and Components Required to Inhibit a Wide Range of Bacteria

	Minimum Inhibitory Concentration (MIC) in Micrograms per Milliliter		
	L-Isomer	**D-Isomer**	**SYNCILLIN**
Bacillus anthracis	0.06	0.25	0.03
Bacillus cereus	12.5	100	25
Bacillus circulans ATCC 9961	6.25	6.25	6.25
Corynebacterium xerosis	0.06	0.125	0.03
*Diplococcus pneumoniae	0.06	0.06	0.06
Escherichia coli ATCC 8739	>100	>100	>100
Gaffkya tetragena	0.015	0.03	0.015
Micrococcus flavus	0.015	0.125	0.015
Salmonella paratyphi A	25	50	25
Salmonella typhosa	>100	>100	>100
Sarcina lutea ATCC 10054	0.007	0.12	0.007
Shigella sonnei	100	100	100
Staphylococcus aureus 209P	0.06	0.125	0.03
Staphylococcus aureus var. Smith	0.03	0.125	0.03
Streptococcus agalactiae ATCC 1077	0.03	0.06	0.03
Streptococcus dysgalactiae ATCC 9926	0.03	0.06	0.03
Streptococcus faecalis PCI 1305	6.25	25	6.25
*Streptococcus pyogenes 203	0.06	0.06	0.06
*Streptococcus pyogenes Digonnet	0.03	0.15	0.06
Streptococcus pyogenes 2320	0.06	0.06	0.03
Streptococcus pyogenes 23586	0.06	0.06	0.06
Vibrio comma	50	25	25

Serial dilution technique in heart infusion broth   *10% serum added



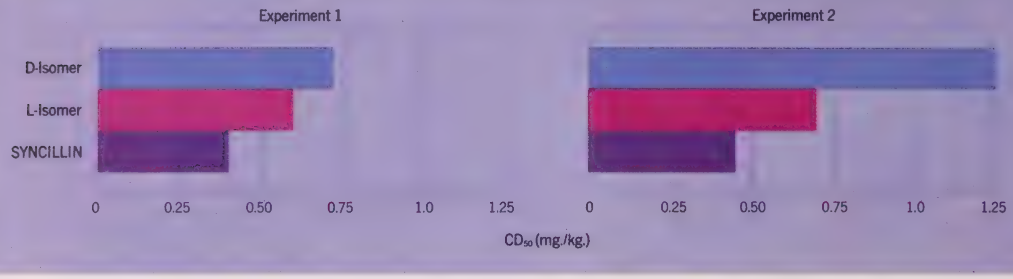
SYNCILLIN

major therapeutic advantages accompany molecular asymmetry

ISOMERIC COMPLEMENTARITY CONFIRMED *IN VIVO*

To determine the median curative dose (CD_{50}) mice were infected with 100 times the lethal dose of *Staphylococcus aureus*. Each penicillin being tested was administered intramuscularly at the same time, and the dose required to cure half the animals determined. The greater effect of the mixture of the two isomers (SYNCILLIN) is shown in two independent experiments. (See Figure 1.) Note that isomeric complementarity is thus confirmed *in vivo*.

FIGURE 1 — Median Curative Dose (CD_{50}) for *Staphylococcus aureus* (var. Smith) Infections

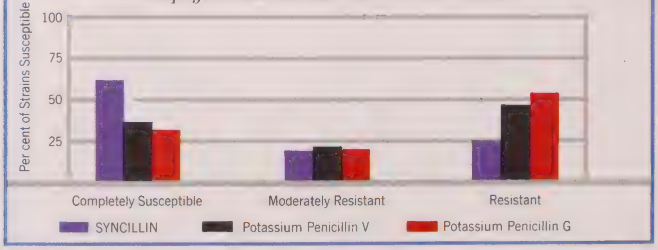


MANY STRAINS OF STAPHYLOCOCCI MORE SENSITIVE TO SYNCILLIN

SYNCILLIN has been tested against a large number of strains of *Staphylococcus aureus* isolated from clinical sources. Many organisms resistant to potassium penicillin G and potassium penicillin V proved sensitive to SYNCILLIN.

Wright[2] performed sensitivity studies on 54 strains, the majority of which were resistant or moderately resistant to penicillin V and penicillin G. Thirty-two (60%) of the strains were sensitive to SYNCILLIN, approximately twice as many as with the other penicillins. (See Figure 2.) In two-thirds of the isolates, SYNCILLIN produced inhibition at concentrations lower than those required for either of the other antibiotics. One strain was more sensitive to penicillin G.

FIGURE 2 – *In Vitro* Sensitivity of 54 Strains of Coagulase-Positive *Staphylococcus aureus* from Clinical Sources



Adapted from Wright[2]

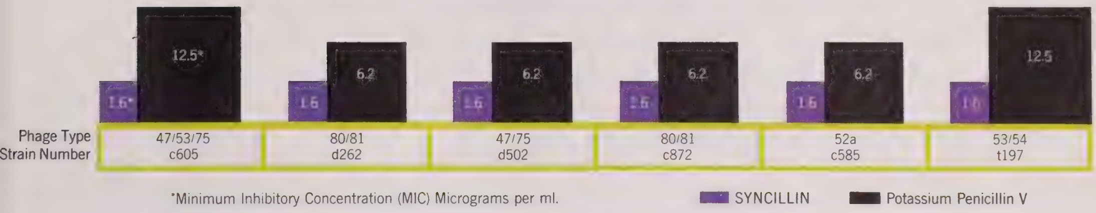
SYNCILLIN

major therapeutic advantages accompany molecular asymmetry

Of equal interest are the findings of White.[3] Six penicillin-resistant strains of staphylococci were isolated from hospital infections. None was sensitive to potassium penicillin V. All were sensitive to SYNCILLIN. (See Figure 3.)

FIGURE 3

Minimum Concentrations of SYNCILLIN Required to Inhibit Hospital Strains of *Staphylococcus aureus* Resistant to Potassium Penicillin V



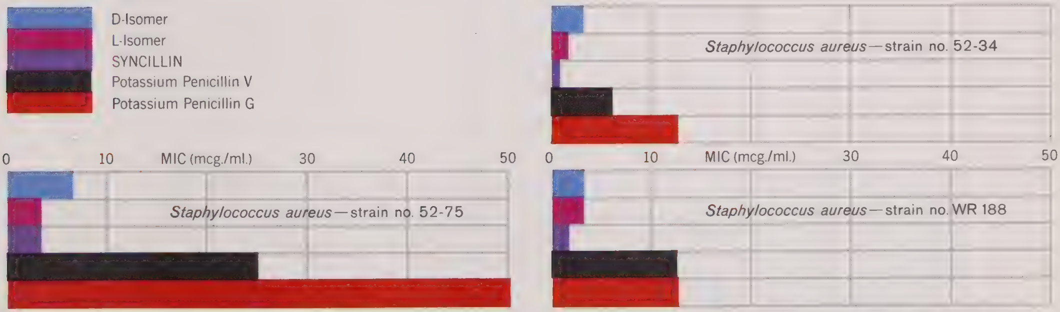
*Minimum Inhibitory Concentration (MIC) Micrograms per ml.

The efficacy of SYNCILLIN against the type 80/81 Staphylococcus (dangerous and widespread in hospitals) is worthy of special attention.

The complementary action of the component isomers is also seen with strains of staphylococci resistant to penicillin. Note that SYNCILLIN is more effective than either isomer against strains 52-34 and WR 188. (See Figure 4.) Against all three strains, SYNCILLIN is effective at concentrations below serum levels, while penicillins V and G are ineffective.

FIGURE 4

Minimum Inhibitory Concentrations (MIC) for Coagulase-Positive Penicillin-Resistant Strains of *Staphylococcus aureus*



Isomeric complementarity has thus been demonstrated for:

- *certain penicillin-susceptible streptococci, staphylococci and corynebacteria* in vitro *(Table 1)*
- *penicillin-susceptible staphylococci* in vivo *(Figure 1)*
- *penicillin-resistant staphylococci* in vitro *(Figure 4)*

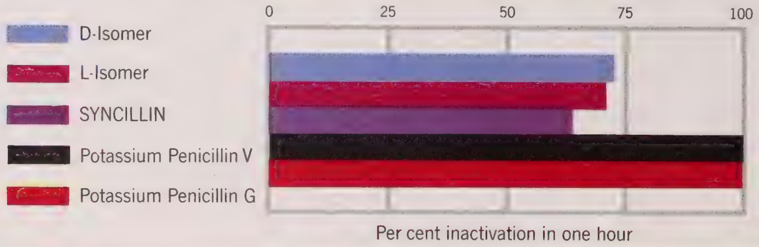
SYNCILLIN

major therapeutic advantages accompany molecular asymmetry

ISOMERIC COMPLEMENTARITY SHOWN BY REDUCED RATE OF INACTIVATION BY PENICILLINASE

Bacterial resistance to penicillin has been attributed to the action of penicillin-inactivating enzymes produced by the invading organisms.[4] As shown in Figure 5, SYNCILLIN is less affected by staphylococcal penicillinase than either of its component isomers—a further demonstration of isomeric complementarity. Further, SYNCILLIN is shown to be less inactivated by this enzyme than penicillin V and penicillin G. Resistance to SYNCILLIN develops in a slow, step-wise manner characteristic of other penicillins, in contrast to the usually rapid development of resistance to streptomycin.

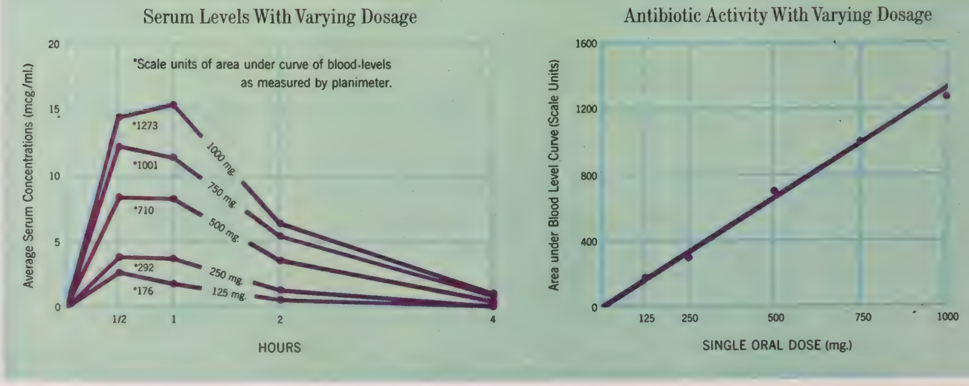
FIGURE 5—Effect of Staphylococcal Penicillinase on Different Penicillins



ANTIBIOTIC ACTIVITY DIRECTLY PROPORTIONAL TO ORAL DOSAGE

Cronk[5] studied the blood levels after administration of varying amounts of SYNCILLIN. (See Figure 6.) Total antibiotic activity (obtained by measuring the areas under the curves with a planimeter) increases rapidly as the dose is doubled. These data show that increased dosage markedly increases serum concentration and thus may enhance the drug's effectiveness.

FIGURE 6



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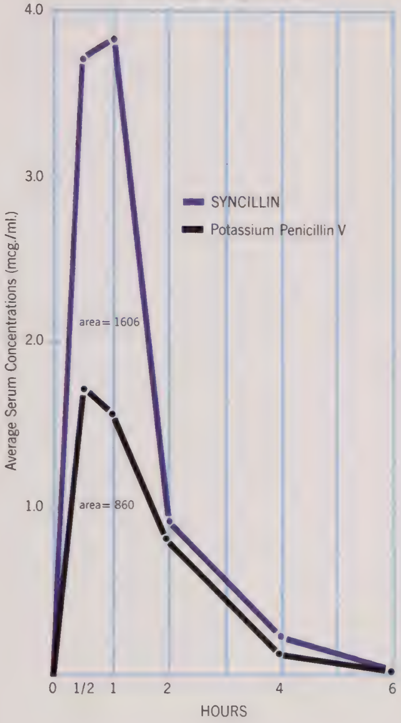
BLOOD LEVELS TWICE AS HIGH AS WITH POTASSIUM PENICILLIN V AFTER ORAL ADMINISTRATION

Wright[6] performed comparative crossover blood level studies on volunteer subjects receiving equivalent amounts of potassium penicillin V and SYNCILLIN. The peak concentrations attained during the first hour after administration were twice as high with SYNCILLIN.

The total antibiotic activity as measured by the area under the curves (see Figure 7) indicates an almost 2 to 1 superiority of SYNCILLIN (1606) over potassium penicillin V (860).

The higher blood levels may be of value with organisms of only moderate penicillin-sensitivity where doubling the blood concentration may be essential for effective bactericidal action. In addition these higher levels may be necessary where there is infection in areas with a poor blood supply.[7] Under these circumstances a higher blood concentration may provide the increased diffusion pressure required to deliver adequate amounts to the tissue.

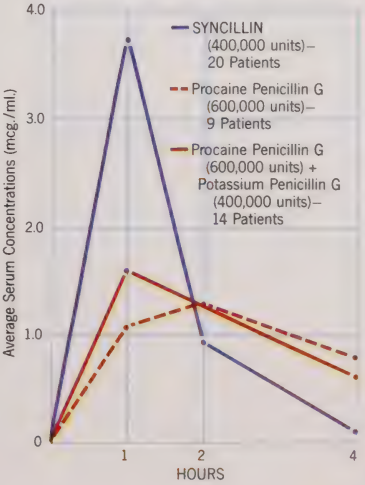
FIGURE 7
20 Subject Crossover—
250 mg. Single Dose



BLOOD LEVELS MUCH HIGHER THAN WITH INTRAMUSCULAR PENICILLIN G

In addition, blood levels attained with oral SYNCILLIN[6] are much higher than those with intramuscular penicillin G.[8a, b] (See Figure 8.) Note that the level at one hour for SYNCILLIN (3.8 mcg./ml.) is more than twice as high as with procaine penicillin G, even when reinforced with potassium penicillin G (1.6 mcg/ml.). Since penicillins are *bactericidal,* these intermittent high serum levels can be clinically significant. Thus, SYNCILLIN offers the promise of superior efficacy via the safer oral route.

FIGURE 8—Serum Levels after Oral Administration of SYNCILLIN (250 mg.) and after Intramuscular Injection of Penicillin G



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REDUCED HAZARD OF SERIOUS ALLERGENICITY BY SAFER ORAL ROUTE

SYNCILLIN has been administered to approximately 550 patients and volunteers. One patient developed itching during therapy, possibly an allergic side effect. Another had a purpuric rash, but no relationship to SYNCILLIN was established. No reactions were observed in 9 patients with a known history of sensitivity to penicillin.

While the above data suggests the possibility of reduced allergenic hazard, no definite conclusions may be drawn at this time. The usual precautions for oral penicillin therapy should be observed. Patients with histories of asthma, hay fever, urticaria, or previous penicillin-sensitivity should especially be watched carefully. Since SYNCILLIN is administered orally, it may be expected to be safer than parenteral penicillin.

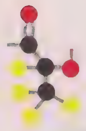
As Flippin[9] recently stated, ". . . it is well established that serious allergy to the drug [penicillin] is most likely to occur following parenteral administration, especially after repeated intramuscular injections; the oral route is least likely to initiate severe hypersensitivity reactions. This can be explained partly by the fact that when reactions develop following oral medication, they are usually slow enough to treat symptomatically; thus the progression of the reaction can usually be interrupted. . . . In view of the relatively high incidence of severe allergy to injectable penicillin, it would seem advisable to employ oral penicillin routinely, except in the control of infections involving the blood stream, endocardium, meninges, etc., in which cases the parenteral route remains the preferred treatment."

SYNCILLIN, like other penicillins, is essentially free of other toxicity. No hematopoietic, hepatic, or renal toxicity was observed in 210 volunteers receiving 1 gm. daily for 2 to 3 weeks.[10]

CLINICAL EFFICACY DEMONSTRATED IN PENICILLIN-SENSITIVE INFECTIONS

Clinical trials conducted by Blau and Kanof,[11] White,[12] Prigot,[13] Robinson,[14] Dube,[15] Ferguson,[16] Rutenburg,[17] Richardson,[18] Bunn,[19] Cronk,[5] Kligman,[10] and Yow[20] demonstrated the efficacy of SYNCILLIN in a variety of streptococcal, staphylococcal, pneumococcal, and gonococcal infections. Conditions treated included respiratory, skin, soft tissue, wound, and chronic urinary tract infections; acute gonorrhea; cellulitis; septicemia; otitis media; gingivitis; and Vincent's angina. In a few patients SYNCILLIN was used for rheumatic fever or gonorrheal prophylaxis.

One hundred seventy-two of one hundred ninety-six patients responded favorably to SYNCILLIN. The failures included 1 patient with pustular dermatoses, 10 elderly patients with chronic urinary tract infections, 1 patient with gonorrhea, 1 patient with a gram-negative infection, and 10 patients with staphylococcal infections. Lack of response of staphylococcal infections was attributed to the presence of resistant organisms or local suppurative foci requiring drainage.



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Relatively few side effects were encountered. One patient experienced moderate itching of the skin which was controlled by an antihistamine. Another reported pruritis ani which did not interfere with therapy. Diarrhea occurred in 4 instances. There was one purpuric rash, but no relationship to SYNCILLIN could be established.

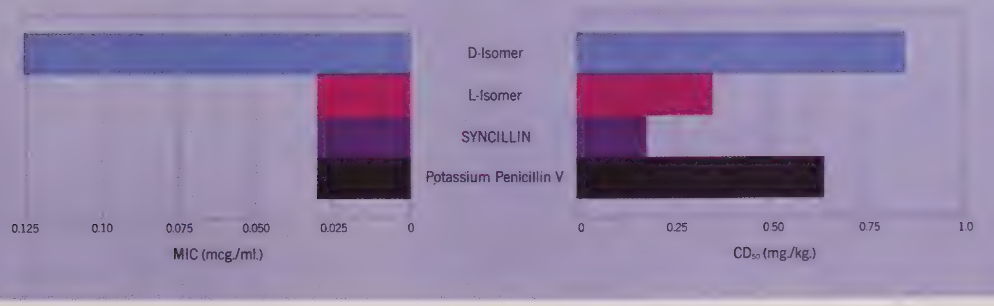
Clinical response usually begins within 24 hours in infections susceptible to SYNCILLIN. Recovery occurs in 4 to 7 days depending upon the severity of the infection. Gonorrheal infections respond very promptly to SYNCILLIN; 500 mg. b.i.d. for two days usually produce bacteriologic cures.

IMPROVED ANTIBIOTIC EFFECT FROM COMPLEMENTARY ACTION OF ISOMERS

SYNCILLIN is a mixture of isomers. The L-isomer is 2 to 17 times more active than the D-isomer against many of the organisms tested. Furthermore, the D- and L-isomers have other distinguishing chemical, pharmacological, and microbiological properties. Their *in vivo* and *in vitro* activities differ for many important pathogens. *Against many of the organisms tested, the combination of isomers* (SYNCILLIN) *is much more active than the stronger isomer alone.* This phenomenon of isomeric complementarity is not always demonstrable, for in a few instances SYNCILLIN is slightly less active.

Isomeric complementarity has previously been demonstrated *in vitro* (Figure 4) and *in vivo* (Figure 1). Figure 9 reveals a third form of superiority related to isomeric complementarity. Equal concentrations of SYNCILLIN and penicillin V were required to inhibit this growth of staphylococci *in vitro*. But, *in vivo*, a much smaller amount of SYNCILLIN *(one-third that of penicillin V)* was effective in an experimental infection with the same strain. These observations on complementary action indicated the advantage of producing the mixture of isomers as the medication to be made available for clinical therapy.

FIGURE 9—Comparison of CD_{50} and MIC Values Against *Staphylococcus aureus* (var. Smith)



Isomeric complementarity has thus been demonstrated for:

——certain penicillin-susceptible streptococci, staphylococci and corynebacteria in vitro *(Table 1)*

——penicillin-susceptible staphylococci in vivo *(Figures 1 and 9)*

——penicillin-resistant staphylococci in vitro *(Figure 4)*

——staphylococcal penicillinase antibiotic inactivation (Figure 5)

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Indications: SYNCILLIN is recommended in the treatment of infections caused by pneumococci, streptococci, gonococci, corynebacteria, and penicillin-sensitive staphylococci. In addition, SYNCILLIN is effective against certain strains of staphylococci resistant to other penicillins.

SYNCILLIN, like other oral penicillins, is not recommended at the present time in deep-seated or chronic infections, subacute bacterial endocarditis, meningitis, or syphilis.

Dosage: 125 mg. or 250 mg. three times daily, depending on the severity of infection. Larger doses (e.g., 500 mg. t.i.d.) may be used for more severe infections. SYNCILLIN may be administered without regard to meals.

Beta hemolytic streptococcal infections should be treated with SYNCILLIN for at least ten days.

Precautions: While present data suggest the possibility of reduced allergenic hazard, no definite conclusions may be drawn at this time. *Therefore the usual precautions with oral penicillin therapy must be observed.* Patients with histories of asthma, hay fever, urticaria, or previous reactions to penicillin should be watched with special care.

Diarrhea has been reported occasionally following heavy dosage. If this occurs, the interval between dosages should be lengthened.

If superinfection occurs during therapy, appropriate measures should be taken.

Since some strains of staphylococci are resistant to SYNCILLIN as well as to other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment. As is true with all antibiotics, clinical response does not always correlate with laboratory bacterial sensitivity reports.

Supply: 125 and 250 mg. tablets, bottles of 25 and 100. 125 mg. powder for oral solution, 60 ml. vials.

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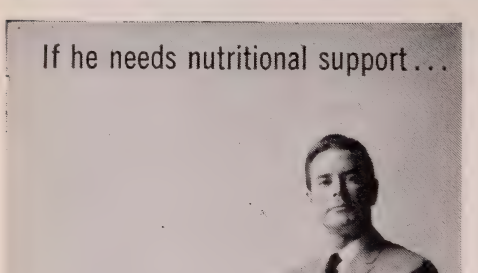

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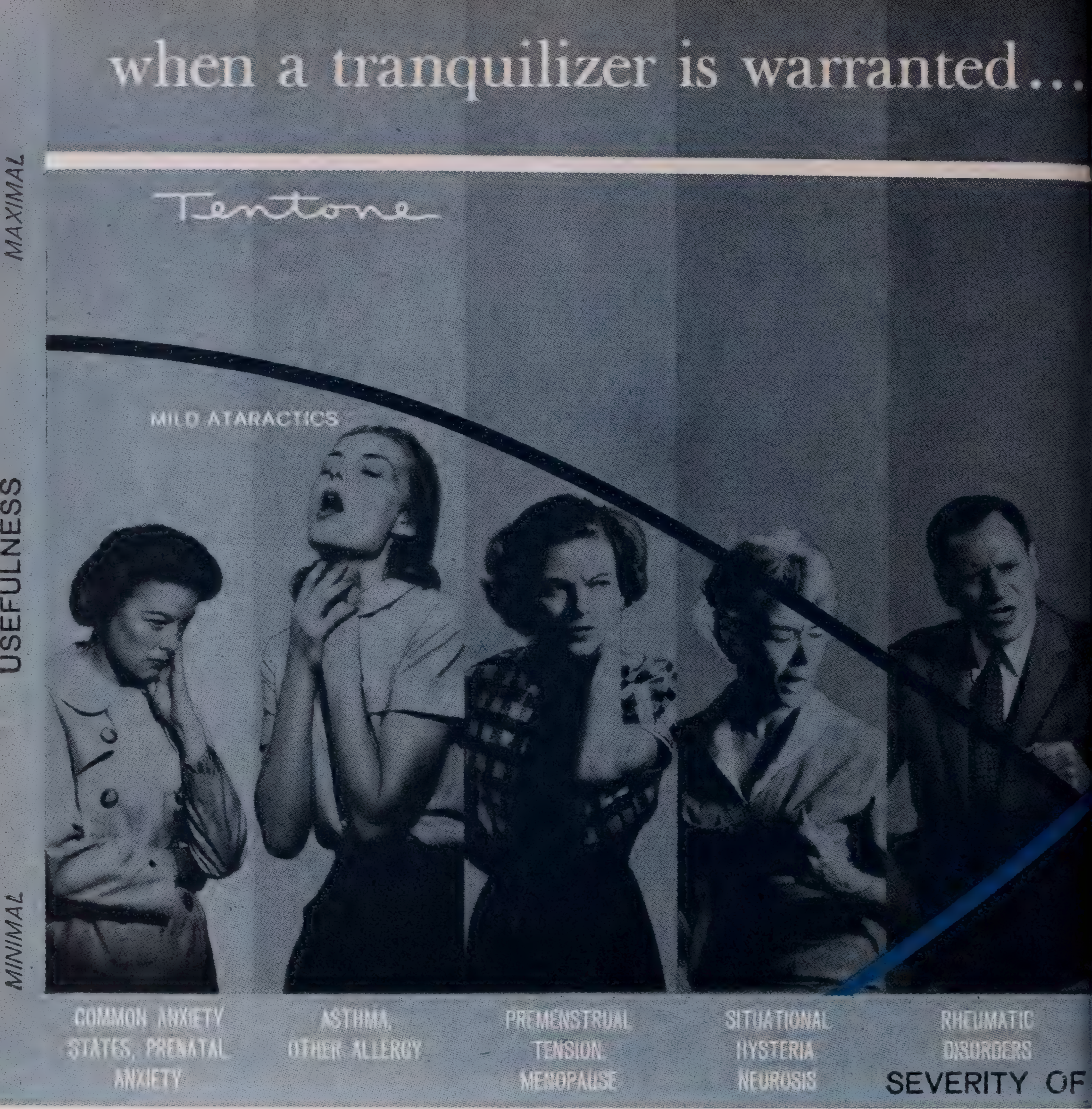

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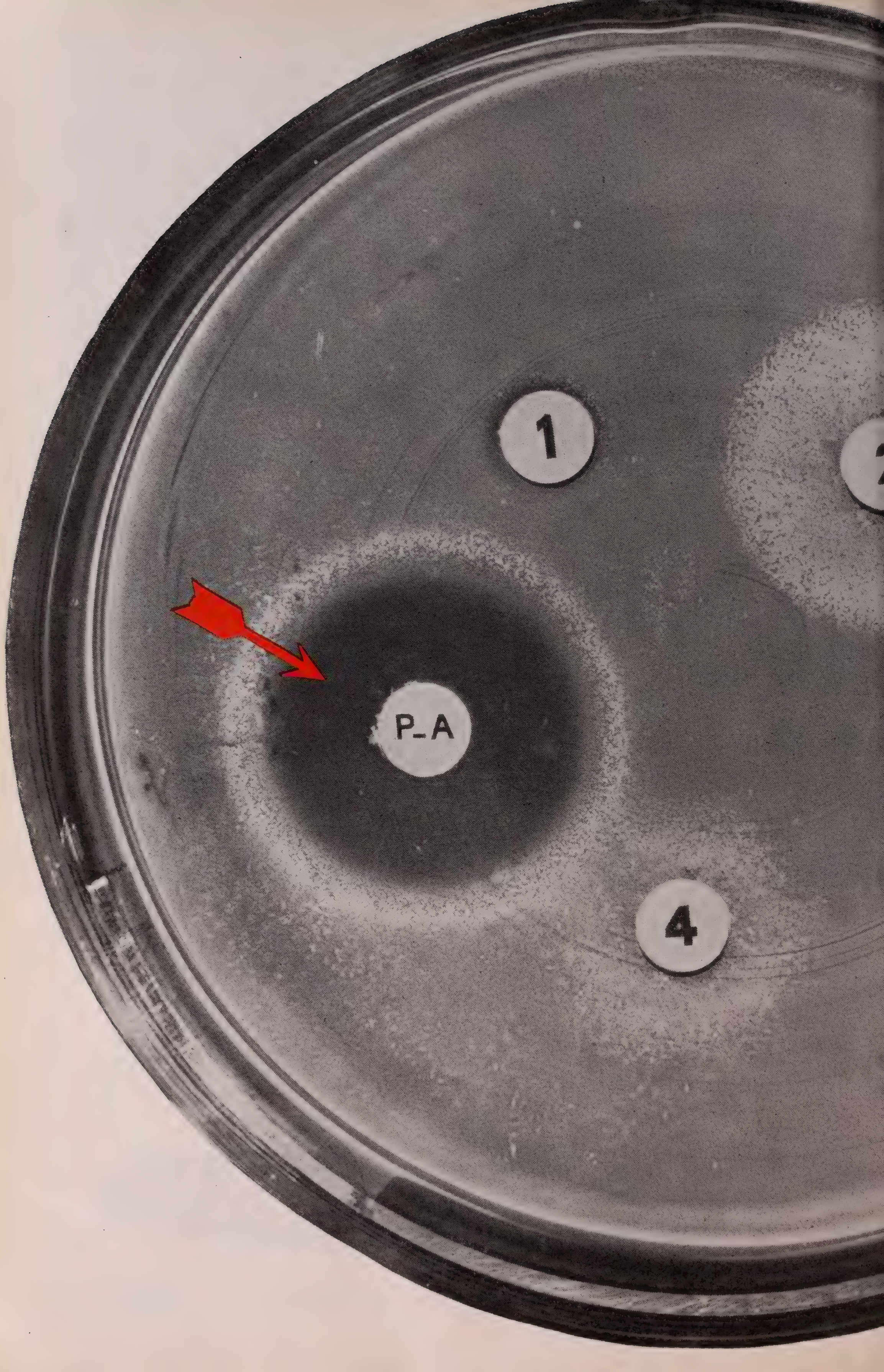
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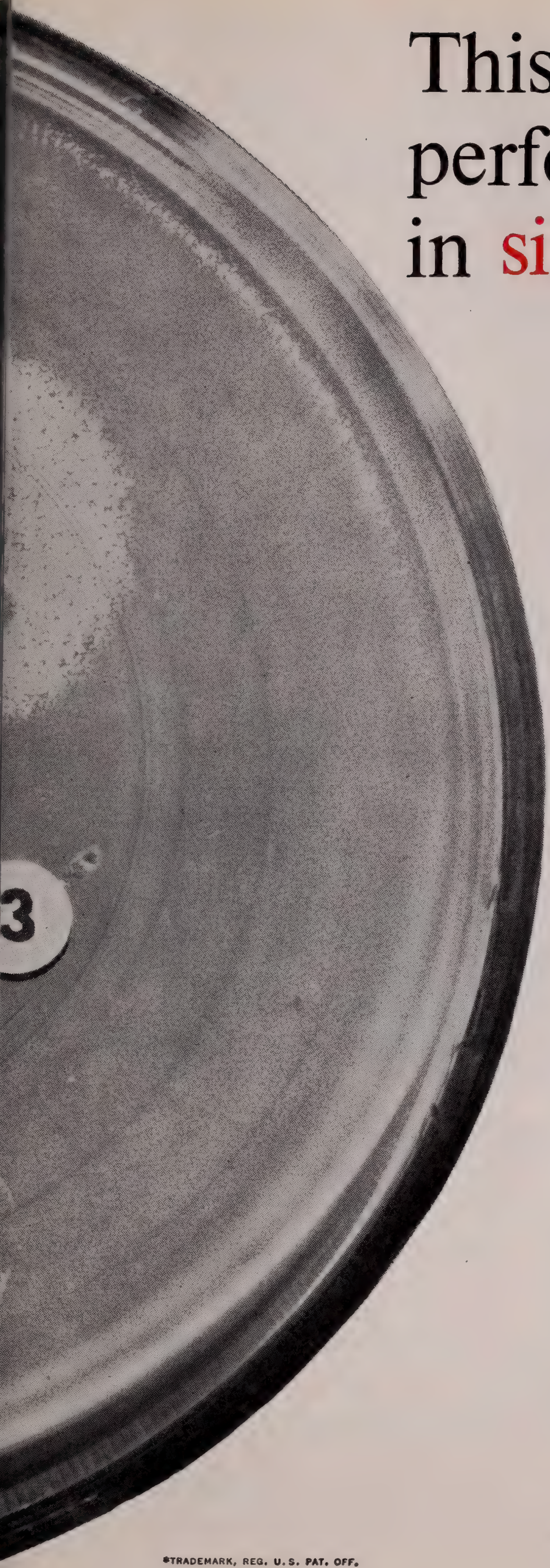

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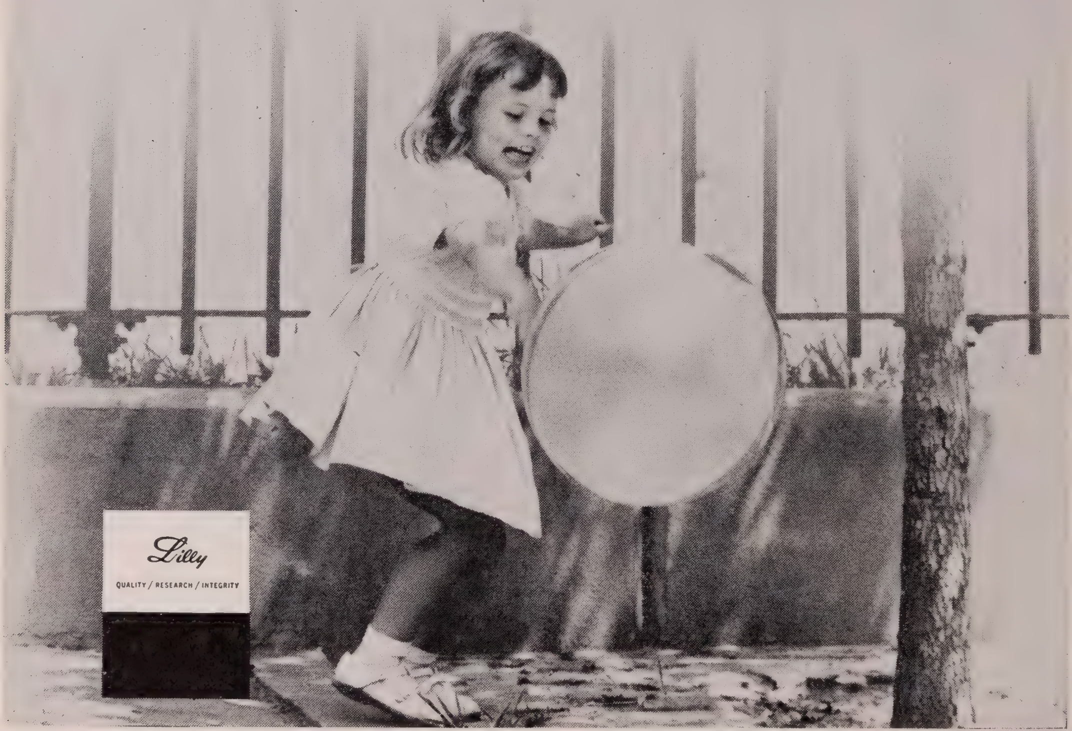

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EDITORIALS

A Christmas Recipe

> "Take a bushel of tinsel, sprinkle well throughout the house. Add two dozen stars and one graceful Christmas tree. Take a generous spray of mistletoe, an armload of holly, and a full measure of snow laid in curved hills along the window sills. Toss in a Christmas carol, and season well with good will and friendly laughter. Light the candles, 'one for adoration, two for celebration.' Let the first burn brightly, and may those you love be near. The yield: One Happy Christmas."*—CLEMENTINE PADDLEFORD

As you lay aside your burdens to prepare your own recipe for this brightest of days, we on the JOURNAL wish that you may savor it well.

We add a special heartfelt greeting to all those who keep the complex gears of modern medical care running smoothly . . . to those who serve their county and State medical societies . . . to those who serve in doctors' offices . . . to those who serve in hospitals—to the interns and residents, to the nurses and their aides, to all those who are available at any and all times—the operating room crews, the x-ray and laboratory technicians, the ambulance drivers—to the chaplains, to the social workers, to the pharmacists, to the physiotherapists, to the volunteers, to the hidden ones—the dieticians and their staffs, to the appliance makers, the laundry and maintenance workers, the record room and business office staffs, and by no means least to the admitting office people who gallantly strive to fit a small supply to a large demand . . . to those who serve in nursing and convalescent homes.

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American Medical Education Foundation

The financial distress in which many of our American medical colleges find themselves is due to the ever-widening gap between the cost of providing educational facilities for students of medicine and receipts from tuition, fees, and contributions. This must forcibly remind every thinking physician in this State of his responsibility to contribute as much as he can each year to the support of medical education in this country.

At present, when the Federal government is providing financial support for everything from highway construction to peanut farming, it is a temptation to side-step our obligations to our medical schools in favor of government aid. Such an attitude is understandable, but it completely ignores the ominous and inescapable fact that the provision of Federal funds for medical education also implies governmental direction as to the utilization of such funds. A brief review of bitter past experience, both in this country and abroad, should convince all but the most shortsighted of us that such a course would rapidly lead to complete political control of our medical colleges and eventually to similar political control of American medicine.

It was in order to counter this threat that the American Medical Education Foundation was set up some years ago, and, in typical fashion, American physicians have responded wholeheartedly to its appeal, contributing over 4 million dollars in 1958 to our medical colleges, both through the American Medical Education Foundation and by direct contribution to their own medical schools.

But New York State has no reason to point with pride to its standing in the list of states contributing to the American Medical Education Foundation. Year after year we have been far outdistanced by such states as California and Illinois in total amount contributed as well as in number of donors and per capita contributions. For example, in 1957 and 1958, New York State physicians contributed $40,000 and $42,000, respectively, to the American Medical Education Foundation. In those same years Illinois contributed $198,000 and $199,000 and California $153,000 and $165,000, although both of the states named have a smaller medical population than does the State of New York.

Why should we consistently trail the other states of comparable size in such a deserving undertaking? Is it that the spirit of individual initiative and imagination which motivated our pioneering forebears is dying out here in the East, and that the concept of service to one's fellows is becoming the exclusive possession of our Western colleagues? Surely this cannot be true, and we should so demonstrate by increasing the amount of our contributions in this and subsequent years.

In this era of increasing dependence on government in nearly every walk of life, our profession is the last sizable group which has remained true to the basic American tradition of independence of thought and action. We have steadfastly refused to surrender this precious privilege in exchange for what amounts to governmental subsidization. Our medical colleges, however, have their backs to the wall, financially speaking, and unless other means of assistance are forthcoming, will soon be forced to accept Federal aid. With socialization threatening on all fronts, this is one area where we can and must stem the tide by contributing to the American Medical Education Foundation.

It should be stressed, however, that the American Medical Education Foundation was not conceived primarily as a high-powered fund-raising organization, but to stimulate contributions by physicians to medical education whether they were made through the medium of the Foundation or direct to the medical schools themselves. That this has come to pass is shown by a look at the statistics for 1958, during which physicians not only contributed $1,120,000 to the Foundation, but slightly over $3,000,000 directly to medical schools. At the risk of being repetitive, it should also be pointed out that any contribution to the American Medical Education Foundation can be allocated to the medical school of the donor's choice, and the school in question will be notified of the donation by the Foundation.

Some years ago, the House of Delegates of this Society mandated the formation of a Special Committee on the American Medical Education Foundation, to include one member from each of the district branches of the State. A meeting of this committee was held at the Society's offices in New York on September 10, at which time methods of increasing the participation of the physicians of the State in the American Medical Education Foundation were discussed, and plans were made for the current campaign for funds. At that meeting it was suggested that the individual county medical societies be encouraged to vote to change the current "voluntary" contribution of $10 to the

American Medical Education Foundation to an assessment on the members. This has already been done in certain counties of the State. Another suggestion which had merit was that physicians who wished to reimburse other physicians for professional attendance on themselves or their families be encouraged to do so by contributing to the American Medical Education Foundation in the name of the attending physician. The committee will welcome any other comments or suggestions from the members.

With our modern somewhat materialistic outlook, many of us are inclined to regard the Hippocratic oath with smiling tolerance as the relic of a bygone age. In the present situation, the phrase "Him who taught me this art I will esteem even as I do my parents; *he shall partake of my livelihood and, if in want, shall share my goods,*" comes with almost shocking relevance. Perhaps the precepts of a millennium ago should more often serve as guides in the troubled world of today.—J.W.L.

When Is A Physician Disabled From Practicing His Profession?

A recent decision of the United States Circuit Court of Appeals for the Second Circuit, affirming a judgment of $24,977.03 for a physician against an insurance company, deals with a subject of great interest to the medical practitioner.

The plaintiff physician brought an action in Federal court to recover monthly benefits under the terms of a noncancellable income policy of insurance against disability from injury or sickness resulting in loss of business time. The trial jury awarded the doctor a verdict for $24,977.03, and the insurance company appealed.

In 1927 the defendant insurance company issued to the plaintiff doctor a policy which in substance insured against disability resulting from sickness and which described him as "by occupation a physician and surgeon." There was evidence produced at the trial that in 1927 the doctor was engaged in the general practice of medicine and surgery, but even then was tending to specialize in surgery. He also performed obstetric, gynecologic, rectal, and prostatic examinations. In 1933 he was admitted to the American College of Surgeons to qualify for which "in Brooklyn at that time it was necessary for 70 per cent of his practice to be surgical and the man should be known as a surgeon in the community." Since 1941 his practice had been exclusively in surgery. During World War II he was chief of the surgical service in an Army general hospital.

In 1949 the plaintiff doctor developed dermatitis of the hands. For about three years he continued to practice except for periods in which the disease would flare up occasioned by necessary surgical sterilization procedures such as vigorous scrubbing of the hands, use of soaps, and the wearing of rubber gloves. In 1949 he consulted a well-known dermatologist and again in September, 1951, consulted another dermatologist because of a further attack. He was under constant treatment by the latter for some nine months. The condition improved when he did not engage in sterilization technics but the dermatitis was not cured.

In October, 1952, the plaintiff doctor gave up his practice and notified the insurance company that he was unable to attend to it because of his condition. Thereafter he sought other employment. In March, 1953, he applied for and, in August, 1953, received an appointment as chief of physical medicine and rehabilitation at a Veterans Administration hospital. His dermatitis condition was observed on his physical examination for that position. In 1956, after a course of training in administrative medicine, he was assigned to another veterans hospital as director of professional services and administrative chairman of the research committee. The work was somewhat analogous to that of a hospital superintendent. Although the plaintiff was technically practicing medicine in both positions (the positions required a licensed doctor), he did not examine, diagnose, or treat patients except for an occasional sprain or bruise.

The defendant insurance company argued, in support of its refusal to pay the benefits claimed by the plaintiff doctor, that it had insured him as a physician and surgeon; that his position at the veterans hospitals could only have been filled by a licensed physician, and that, therefore, he was still functioning as a physician, and hence was not totally disabled.

The Appeals Court looked beyond this attempt at oversimplified logic and, while conceding that its contention at first impression was most compelling, decisively demolished the insurance company's arguments. It said in part that "Quite frequently, however, cold logic can be most unrealistic. Carried to its extremes it could be asserted that so long as plaintiff retained his license to practice he was not totally disabled. The policy and the word 'occupation' cannot be so narrowly construed. Occupation is the occupation of the individual policyholder. It is the ability to continue in his particular occupation for which he seeks protection by insurance. If his occupation has become that of a recognized specialist in surgery, and he suffers from a physical impairment or disease which causes an uncontrollable tremor of the hands or an infection, such as dermatitis. resulting in the forced discontinuance of his practice, for all practical purposes there is total disability. He can no longer pursue his real occupation. Against this possibility he may seek insurance protection."

The Court went on to say that "over the last several decades there has been an increasing tendency in the field of medicine to specialize. Even in surgery there are many fields. If a physician has spent his life as a neurosurgeon or an ophthalmic surgeon, he is effectively deprived of his occupation if illness prevents his continuing in that particular field. Technically he is still a physician, and theoretically an insurance company could argue that an affliction which would disqualify him from surgery would not prevent him even at advanced years from becoming a general practitioner."

The Appeals Court in its opinion ruled in favor of the doctor on several collateral issues not germane to this discussion. Most important, however, it ruled that since the plaintiff doctor had been forced to discontinue the practice of the specialty which was his real occupation, there was total disability, and he was entitled to benefits under the policy of insurance involved. (Dixon *v.* Pacific Mutual Life Insurance Company, U. S. Circuit Court of Appeals for the Second Circuit, June 19, 1959.)

Poliomyelitis

The failure of many people to avail themselves of the benefits of inoculation against poliomyelitis through private and publicly supported channels cannot be laid at the door of the medical profession, which developed the means of such protection, or to the media of public information which broadcast its availability. At this time with sources of supply ample, with standards for manufacture and control well established, with cost well within the reach of all and as low as nothing whatever through publicly supported agencies, it is a little hard to understand.

When vaccination against smallpox by inoculating persons with cowpox was published by Edward Jenner in 1798 ("An Inquiry into the Cause and Effect of Variolae Vacciniae") the state of the public mind respecting the profession of medicine and the means of public information and instruction were far different from what they are today. It is understandable that even considering the morbidity, mortality, and disfiguration of smallpox, public distrust of the means of protection was great. Means of communication then were slow and much information or misinformation was handed on from person to person. Many could not read and some were incapable of grasping the content if they could read and write. The sciences were just at the beginning of their future enormous growth and the medical profession following the Revolution was surrounded by quacks of all kinds.

The state of public education now and the almost limitless media of communication would seem to have created a more favorable climate for the acceptance of protection against poliomyelitis than was the case for smallpox in the last century. And yet there seems to be somewhat less than full utilization of the benefits of inoculation against poliomyelitis. This is no reason to be discouraged but a good one to continue and to intensify the educational campaign to stamp out this scourge. It will take time but we believe it can be done.

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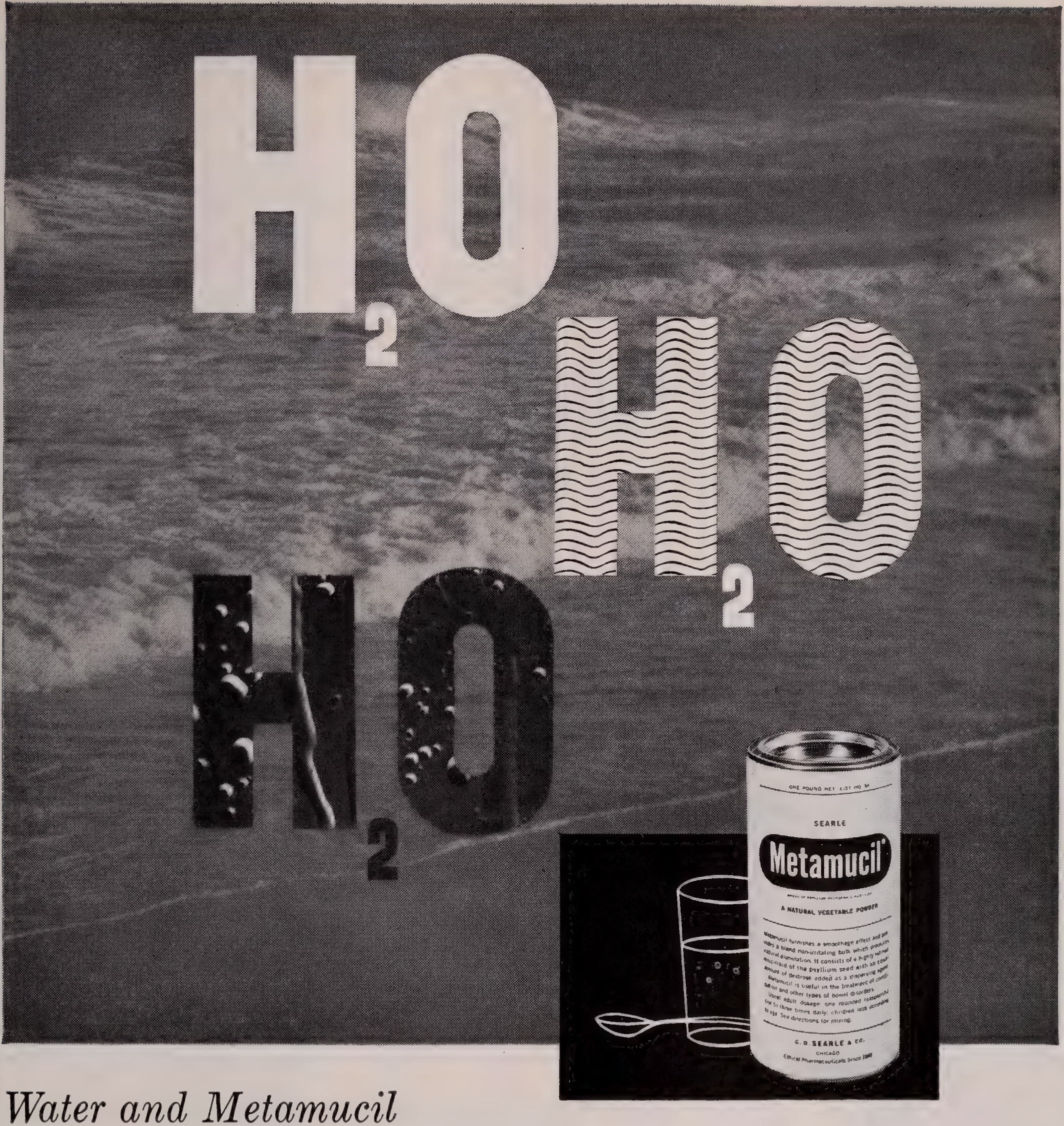
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SCIENTIFIC ARTICLES

*Physiologic Management of Ventilation During Anesthesia**

JAMES O. ELAM, M.D., JOHN L. EVERS, PH.D., AND CLINTON D. JANNEY, PH.D.,
BUFFALO, NEW YORK

(*From the Department of Anesthesiology, Roswell Park Memorial Institute*)

ALTHOUGH blood pressure and heart rate are measured routinely during anesthesia, the only respiratory variable entered in the record is the patient's respiratory rate. The need for objective measurements of tidal volume by a simple means is readily apparent.

Another vital respiratory parameter frequently escapes observation when relaxant drugs and controlled ventilation are used. The patient's spontaneous respiratory activity is often eclipsed for hours as a result of the inhibitory effects of hyperventilation. While it may seem impractical to interrupt controlled ventilation at intervals to observe the breathing bag for spontaneous respiration, the advantages of maintaining independent respiration functionally intact cannot be disputed.

If spontaneous respiratory activity could be observed conveniently every few minutes, many of the prolonged apneas from hypocapnia or overdosage of relaxant could be avoided.

Several technics of ventilatory management which approach this ideal will be described.

Tidal Volume Indicator

A tidal volume indicating device (Ventimeter)† is available for use in anesthetic breathing circuits (Fig. 1). The volume, pressure, and pattern of each inspiration and expiration are visible directly in the excursion of a volumetrically calibrated bellows and an aneroid manometer. The bellows does not replace the breathing bag. Rather, the patient's respirations produce excursions of both reservoirs simultaneously. The expiratory impedance added by the indicator is almost negligible.**

The patient's tidal volumes are monitored without interruption during (1) spontaneous respiration, or (2) positive pressure breathing by manual bag compression or mechanical ventilator. Inadequate or excessive ventilation can be recognized promptly during inhalation anesthesia by closed, semiclosed, or nonrebreathing systems. The indicator incorporates a phased "pop-off" valve which, in all of these technics, remains closed during inspiration. Conventional pop-off valves are kept closed. The overflow of gas from the system occurs at low

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† Supplied by Air-Shields, Inc., Hatboro, Pennsylvania.

** The manometer continually indicates this impedance which amounts to the order of 0.5 to 1 cm. of water at peak expiratory flows. Since the inverted bellows collapses downward with inspiration, this slight force tends to overcome resistances of this order in the inspiratory system.

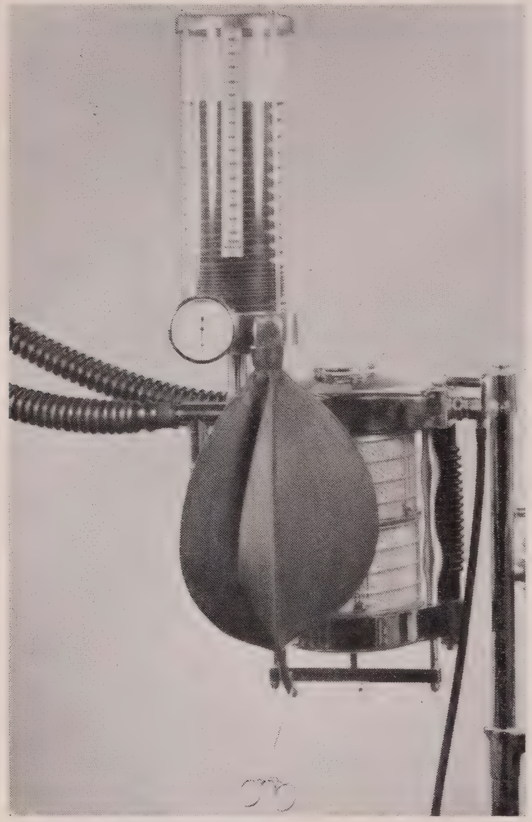

FIG. 1. Tidal Volume Indicator Mounted on Model 20 Absorber. Both the calibrated bellows and the standard reservoir bag move with each breath, whether spontaneous or controlled. Pressure values read from the aneroid manometer on the indicator and tidal volumes read from the bellows scale provide for continuous estimation of the patient's thoracic compliance. The attachment of the indicator replaces the standard pop-off valve. Instead, the indicator pop-off valve automatically opens as the bellows reaches full position to let excess gas overflow.

"back" pressure and is limited to a short interval immediately after expiration. Even when flows of 50 to 75 L. per minute are suddenly introduced (by oxygen bypass valve) into the circuit, the total pressure never exceeds 3 cm. of water during expiration. Gross leaks are indicated by a falling end-expiratory rest position of the indicator bellows. In addition, the need for readjustment of gas flows is immediately apparent when the bellows either falls or remains at the fully extended position.

Direct reading of the tidal volume requires only that the gas circuit be connected without leaks to the patient's airway. The indicator does not interfere with the customary use of the breathing bag. It is practicable, by gauging the assist or control technic according to observed tidal volumes, to maintain the patient's ventilation within any limits desired, for example, within plus or minus 5 per cent of that measured during a control or induction period.

To assist the ventilation manually one watches the indicator and compresses the bag synchronously with the inspiratory excursion of the bellows. With a closed system, the start of an active inspiration can be detected with the first 10 cc. that are inspired. The cardiac pulsations which are sometimes transmitted to the bellows are of lesser magnitude.

At intervals, the patient's spontaneous unassisted tidal volume should be compared with the assisted tidal volumes, corrected.* Several schedules of assisting technic have been used to provide ventilation to match the patient's requirements.

1. Assisting each breath with increasingly larger tidal volumes until apnea is noted, waiting for the return of spontaneous breathing and repeating.
2. Assisting alternate breaths sufficiently to elicit and maintain a decrease in the spontaneous tidal volume.
3. Assisting every breath and interspersing one or more controlled breaths between assists to elicit and maintain a relatively decreased spontaneous rate or tidal volume.
4. Assisting every breath sufficiently to

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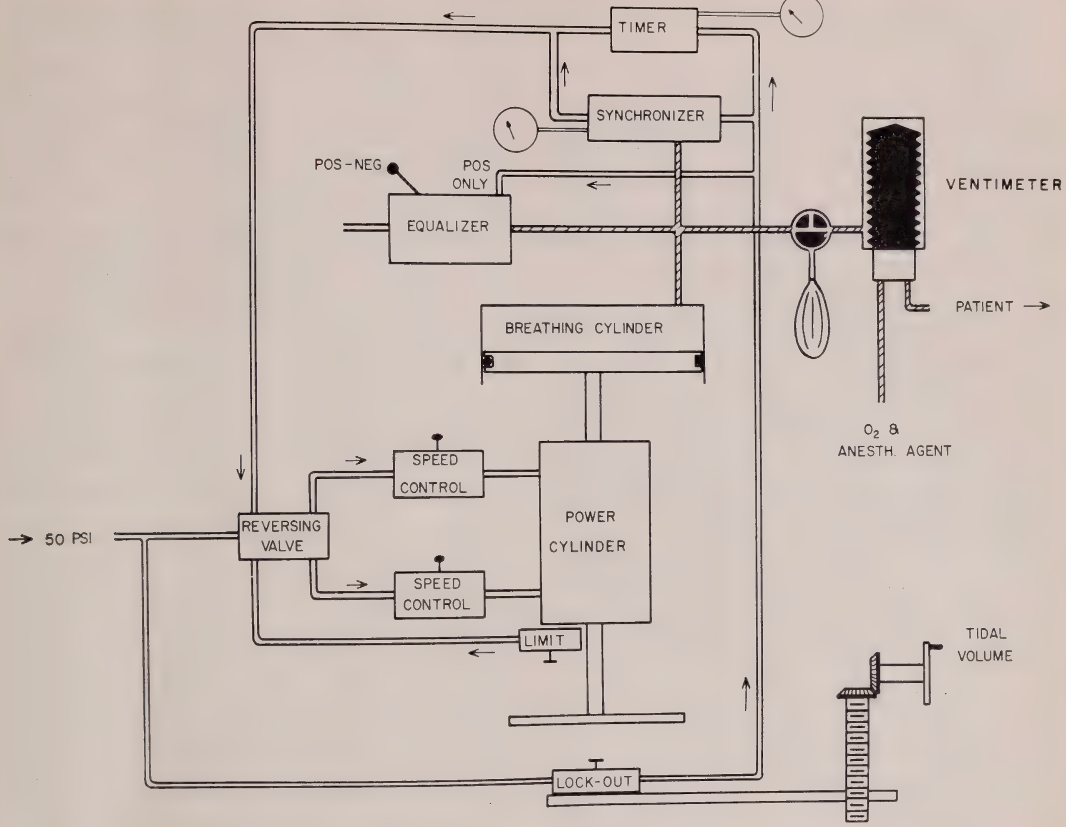
* Corrections of the indicator readings are made for pressure and for anesthetic gas inflow. For each centimeter of water inspiratory pressure (positive), 10 cc. of tidal volume are subtracted from the observed travel of the indicator bellows. With a closed system, no other corrections are necessary. With a semiclosed system, 20 cc. of tidal volume are added to the observed bellows travel for each liter of gas inflow per minute. Example: the observed bellows travel is 500 cc. tidal volume as produced by 10 cm. of positive pressure (bag compression) with nitrous oxide-oxygen mixture, 5 L. per minute in a semiclosed system. Pressure correction: 10 × 10 cc. = 100 cc. (subtracted). Flow correction: 5 × 20 cc. = 100 cc. (added). Since the two corrections cancel in this example, the "corrected" value remains 500 cc.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SPEED CONTROL
LIMIT
TIDAL VOLUME
LOCK-OUT

FIG. 2. Functional Design of Experimental Ventilator. The tidal volume indicator remains in the breathing circuit and the ventilator pumps gas into and out of the space surrounding the indicator bellows As an assister-controller of the preselected volume type, the stroke of the ventilator's piston is activated either by the patient or, in apnea, by a pneumatic timer. The indicator dials or function indicators show separately the incidence of control and assist operation during the previous minute.

decrease the patient's spontaneous unassisted tidal volume, observed every few minutes.

5. Assisting until spontaneous rate or tidal volume is reduced, then assisting with relatively less tidal volume until the patient's rate or volume increases, then repeating.

The common feature of these technics is the attempt to approach or reach, repeatedly, the patient's apneic threshold.

During periods of intentionally controlled ventilation, occasional interruptions to watch the indicator bellows inform the anesthesiologist whether or not he is "keeping ahead" of the patient's respiratory efforts. Static volume and pressure readings, noted on the indicator after flow ceases, serve for estimations of pulmonary compliance. Corrections for compliance of the breathing circuit are determined by positive pressure in the gas circuit which is momentarily blocked at the patient's attachment.

Ventilator

An experimental assister-controller,* operated by compressed gas, utilizes a piston, the stroke volume of which is preselected by the anesthesiologist. Controls include volume, rate, inspiratory time, expiratory time, and the option of negative pressure during expiration. The tidal volume indicator remains coupled into the breathing circuit (Fig. 2).

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* A prototype device developed in these laboratories by C. D. Janney, Ph.D.

Operating as an assister during the induction, the piston stroke synchronizes with the patient's inspiratory efforts. Assist triggering is so sensitive and rapid that the indicator does not usually show any volume excursion before the ventilator starts its inspiratory stroke. The synchronizer is sensitive to the patient's inspiratory effort during only the pause phase, which is usually one third or more of the total cycle. By using an inspiratory time of a second or less and a passive exhalation phase (without negative pressure), the ventilator assists smoothly with spontaneous respiratory rates ranging from 8 to 35 per minute.

The stroke volume is adjusted by means of a crank and a screw mechanism. The stroke determines only the patient's minimal tidal volume. A valve system in the equalizer permits him to inspire or expire faster or with greater volumes than those provided by the preselected piston stroke. The patient can also exhale more slowly than the piston descends when the ventilator is used without negative pressure during expiration. This system accommodates irregular hyperpnea during induction, larger volumes with sighing or coughing, and avoids provoking the "bucking" that is common when the fixed stroke of a ventilator arbitrarily delivers a preset volume and flow rate out of phase with the patient's effort.

In Operation.—In operation, the compressed nitrogen (lower left, Fig. 2) passes through the reversing valve and the lower speed control to the lower chamber of the power cylinder. The power cylinder drives the piston in the breathing cylinder to compress the indicator bellows and produce inspiration. Inspiratory time is determined by the adjustment of the lower speed control.

At the top of the stroke, the limit valve is actuated, so as to shift the reversing valve. Compressed nitrogen then passes through the upper speed control into the upper chamber of the power cylinder and causes the piston in the breathing cylinder to return, producing a negative pressure in the patient's airway. In case negative pressure is not desired during expiration the equalizer control is shifted so as to provide for expiration at ambient pressure. The expiratory time is determined by the adjustment of the upper speed control. During the post expiratory pause, the equalizer equilibrates the patient's airway pressure with ambient pressure.

The synchronizer senses the negative airway pressure associated with the patient's inspiratory effort and signals the reversing valve to start inspiration. If no negative pressure signal occurs within a preselected interval, the timer starts an inspiration. When the patient is apneic, the timer controls the respiratory rate.

The lockout desensitizes the synchronizer during negative pressure expiration and also prevents the timer from cycling too fast to permit completion of each inspiratory-expiratory phase.

Two gauges attached to the synchronizer and timer respectively indicate whether the ventilator is providing assisted or controlled respiration. These function indicators "remember" and show separately whether assist or control cycles have occurred within the last minute.

Recurring Hyper- Hypoventilation Sequence (Servocycle).—A schedule alternating between hyper- and hypoventilation will not result in significant departures from the required ventilation for the anesthetized patient provided each phase is of short duration. An alternation between hyper- and hypoventilation can frequently be attained with the ventilator after it has been adjusted to "hunt" between the assist and the control operation. Such a recurring interplay between the patient's own regulation of respiration and the operation of the assister-controller is, for convenience, referred to as a servo operation. Usually servocycling is produced by an alternation between (1) hyperventilation with large fixed tidal volumes during the assist operation and (2) hypoventilation with a reduced cycling rate but with the same tidal volumes during the control operation.

An assist operation is preferable as the starting technic. Since the patient's spontaneous respiratory rate may accelerate during induction and then tends to become regular during maintenance, the controller rate is first set much slower than the patient's respiratory rate. This prevents interference between the patient's and the ventilator's cycles. To establish the servocycle, a mild hyperventilation is induced purposely during the initial assist operation. As soon as the patient loses consciousness, the tidal volume is increased successively by from 50 to 100 cc. increments every dozen breaths until apnea results, a step usually requiring a few minutes. Before apnea is reached, the patient's spontaneous rate is counted and the ventilator's rate of cycling, regulated by the timer, is now set slow (80 to 90 per cent of the patient's respiratory rate). With the onset of apnea, this slower rate, without change in the piston stroke, is intended to produce hypoventilation. Such a period of mild hypoventilation during the control operation completes the servocycle, and the return of spontaneous breathing initiates the assist operation to start again the next cycle.

If anesthesia and circulation are stable, a continuation of servocycling may often be maintained without further adjustment of the ventilator. Since each servocycle depends on the inhibition and then reactivation of spontaneous breathing, the patient's apneic threshold is determined repeatedly by the ventilator with each recurring cycle. It follows that the patient cannot develop a prolonged postoperative apnea. Nor can gross carbon dioxide accumulation occur unless his carbon dioxide threshold is elevated as a result of central depression by anesthetic agents.

A schematic diagram of the servocycle is shown in Figure 3. Let us assume that a patient maintains a mean arterial carbon dioxide pressure of 40 mm. Hg (plus or minus 2 mm.), becomes apneic at 38 mm. Hg, and reinitiates spontaneous breathing again at 42 mm. Hg. As soon as the assist operation of the ventilator reduces the carbon dioxide pressure to 38, the patient becomes apneic. The control operation then supervenes and allows carbon dioxide to accumulate until spontaneous breathing again elicits the assist operation.

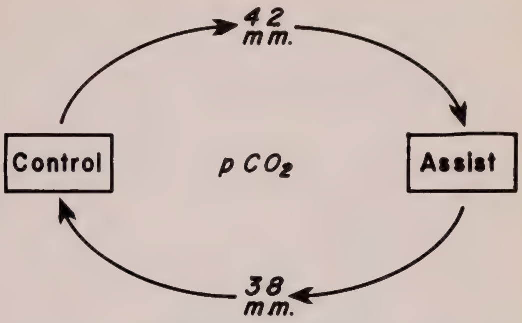

Fig. 3. Hypothetical Excursions of Carbon Dioxide Pressure During Alternately Assisted and Controlled Ventilation. Using an assister-controller adjusted for larger stroke volume than the patient's spontaneous tidal volume, the assist operation produces hyperventilation and decreases the carbon dioxide pressure below the apneic threshold, say to 38 mm. Hg and the patient no longer activates the assister. The controller then operates at the same stroke volume but at a slower rate to produce slight hypoventilation and thereby to return the carbon dioxide pressure above the apneic threshold, say to 42 mm. Hg. As the patient breathes again, he initiates the next servocycle.

To keep track of whether or not servocycling is being maintained, the function indicators of the ventilator are read at intervals. When both indicators read upscale, this shows that both the assist and the control operation have occurred within the previous minute, and so the ventilator adjustments are not altered. If servocycling has been interrupted, this fact is promptly confirmed by inspection of the function indicators. One indicator then reads zero. Two simple rules are used routinely to readjust the ventilator to re-establish servocycling: (1) When the function indicators show only a control operation for several minutes, the controller rate is slowed, and (2) when the function indicators show only an assist operation for several minutes, the piston stroke is increased.

Another hyper- hypoventilation sequence sometimes used with an assister-controller is

TABLE I.—ARTERIAL pH AND END-EXPIRED CARBON DIOXIDE MEASUREMENTS DURING MANUAL ASSISTING TECHNIC (ETHER-OXYGEN ANESTHESIA)

Time	Technic	Arterial pH	End-Expired Carbon Dioxide Concentration (Per Cent)
9:20	Induction	7.34	4.8
10:00	Assist	7.42	4.2
10:30	Control	7.39	4.0
11:00	Control	7.41	3.9
11:30	Spontaneous breathing	7.34	4.7
12:00	Assist	7.27	5.1
12:30	Assist*	7.33	4.2
1:00	Assist†	7.39	3.7
1:30	Assist†	7.35	3.8
2:00	Assist*	7.31	5.0
2:30	Assist	7.32	4.7
3:00	Assist	7.32	4.9
3:30	Assist	7.33	5.0
4:00	Assist	7.30	4.9

* Assisting volume decreased; unassisted spontaneous tidal volume: 400 cc.

† Assisting volume increased; unassisted spontaneous tidal volume: 250 cc.

Respiratory rate: 24 to 28 per minute.

to start with hypoventilation by using the controller to impose rapid shallow breaths and to attempt to "take over" the patient's respiration. If this rapid shallow pattern provides inadequate alveolar ventilation, one may expect the patient to take occasional larger breaths to prevent carbon dioxide accumulation. With the experimental ventilator, he can increase his tidal volume in phase with the ventilator. The tidal volume indicator shows such periodically increased excursions each time the patient takes his own deeper breath. A single large tidal volume every ten to thirty seconds amounts to brief hyperventilation, punctuating the hypoventilation produced by the ventilator. While this scheme of management possesses less merit physiologically, it is useful to assess the relative effects of carbon dioxide levels and the physical stretch of the chest on spontaneous breathing.

When repetitive inflations by the ventilator elicit vagal inhibition and apnea despite a decrease in alveolar ventilation, the relative influence of carbon dioxide in regulating respiration must be presumed to be reduced.

Observations

TIDAL VOLUME INDICATOR.—During the past year, tidal volumes routinely have been metered visually and entered at intervals on the patient's chart during a wide variety of technics of inhalation anesthesia. The indicator is not only a continuous aid for the responsible anesthetist, but also it serves to inform the anesthesia supervisor and to reassure the surgeons of the status of the patient's respiratory exchange. A conspicuous advantage is the visibility of these tidal excursions from any point in the operating room. During use of the indicator, the tidal volume of an adult is rarely allowed to fall below 500 cc. for more than several breaths because the anesthetist immediately recognizes respiratory depression as soon as it occurs and tends to restore adequate tidal volumes and rate almost automatically.

In Table I, serial determinations of arterial pH are tabulated together with end-expired carbon dioxide concentrations during manual control and assist technics. When the assist was increased progressively to elicit apnea, the arterial pH changed from 7.34 to 7.42. As long as the pH was maintained in this range, apnea persisted and a control technic was used for an hour with the end-expired carbon dioxide concentration falling from 4.8 to 3.9 per cent.

Then the tidal volumes were gradually decreased until spontaneous breathing returned at an arterial pH value identical with that at induction. It would appear that ether anesthesia had not produced any gross change in this patient's apneic threshold.

During the next half hour, the other common practice of assisting was used, namely, merely to synchronize compression of the bag with each detectable inspiratory effort with no attempt to elicit a specific response in the patient's spontaneous respiratory activity. The result was an increase in end-expired carbon dioxide concentration to 5.1 per cent and a trend in arterial pH toward acidosis, 7.27.

Between 12:30 and 2 P.M., the assist

TABLE II.—SPONTANEOUS AND ASSISTED TIDAL VOLUMES READ ON VENTILATION INDICATOR (NITROUS OXIDE-MEPERIDINE HYDROCHLORIDE ANESTHESIA)

Number of Patients		Average Tidal Volume After Induction Before Assist or Curare	Average Spontaneous Unassisted Tidal Volume (cc.)
D-tubocurare	No Relaxant		
27		710	170
	19	625	300

method was changed to determine the effects on arterial pH and the end-expired carbon dioxide of approaching the patient's apneic threshold without progressing to apnea. The assist tidal volume was increased until the patient's spontaneous unassisted value was reduced from 400 to 250 cc., while the arterial pH increased from 7.27 to 7.39, and carbon dioxide decreased from 5.1 to 3.7 per cent. At this juncture, the assist tidal volume was decreased for the next hour. The result was reversals of the previously increasing arterial pH (7.39 to 7.31) and a decreasing carbon dioxide (3.8 to 5 per cent) at 2:00 P.M. Subsequently, these measurements were repeated while assisting was based on monitoring of the end-expired carbon dioxide so as to maintain the range between 5 and 4.7 per cent. The resulting effect on arterial pH was to permit again a trend toward acidosis.

As in almost all patients given ether in these studies, the end-expired carbon dioxide had to be maintained near 4 per cent to keep the arterial pH to a normal range, probably as a result of the concurrently accumulating lactic acid typical of this agent.

From this study (Table I) we conclude that a ventilatory technic that approaches the apneic threshold by eliciting a reversal response* in the patient's unassisted tidal volume achieved more physiologic maintenance of arterial pH than any other of the technics used, such as:

1. Hyperventilation to apnea, then controlling, or
2. Assisting without seeking a ventilatory reversal response, or
3. Assisting on the basis of continuously monitored end-expired carbon dioxide concentrations.

Table II summarizes the tabulated values accumulated during 46 general anesthetic procedures in which the tidal volume indicator readings were recorded at two- to five-minute intervals. In all instances, the technic of assisted ventilation was designed to produce a decrease in the patient's unassisted tidal volume. Assist cycles were interrupted every one to five minutes and the indicator was observed to read and record the patient's unassisted tidal volumes. This reversal response produced by assisting could be followed despite the use of such relaxant drugs as are required for surgical exposure. A slightly greater average tidal volume was used in 27 patients given d-tubocurare as compared with the tidal volumes used in 19 patients not given a relaxant. This difference may reflect a slight increase in compliance.

VENTILATOR.—In all but a few instances, it was possible to establish either servocycling with intermittent apnea or a recurring pattern of periodic hyperventilation with diminished spontaneous respiratory activity. This inhibition of spontaneous breathing approaches but does not proceed to apnea. Rather, it consists of a decreased spontaneous unassisted tidal volume with little or no change in the respiratory rate.

Once the servo operation was established under stable conditions of anesthesia it usually persisted for the duration of the procedure. When servocycling was interrupted by a sustained control operation, this change was associated with (a) a deeper plane of anesthesia, (b) complete curarization, or (c) severe hypotension. When a brief period of rebreathing was purposely introduced by bypassing the absorber, servocycling was usually interrupted by a sustained assist operation, a change also observed routinely with the emergence from anesthesia.

The incidence of total apnea as a result of

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* Reversal response is the alternating increase and decrease in spontaneous tidal volume elicited by a corresponding decrease and increase in assisted tidal volume.

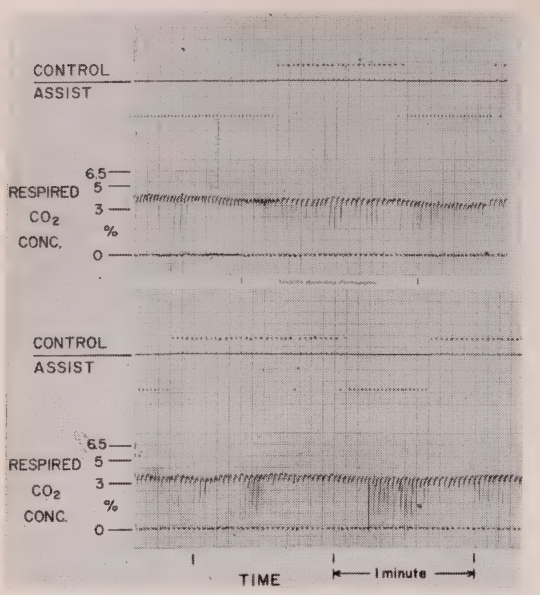

Fig. 4. Continuous Record of End-Expired Carbon Dioxide Concentration During Servocycling (or "Hunting") by Assister-Controller (Ether-Oxygen Anesthesia). The upper tracings are produced by the function indicators shown in Figure 2. The assist cycles by the ventilator are downward deflections; the control cycles are upward deflections. The tidal volumes and a tabulation of the consecutive assist and control breaths are given in Table III.

The simultaneous respired carbon dioxide concentrations are recorded in the lower tracings. The peaks of these deflections show end-expired carbon dioxide values which range from 3.4 to 4.2 per cent. There is a tendency for expired carbon dioxide values to fall gradually, by 0.5 to 0.8 per cent, during the assist-hyperventilation intervals and to reverse promptly during the alternating control-hypoventilation intervals.

anesthetic or relaxant dosage during this series of observations was much less frequent than had been expected, even with relatively large doses of anesthetic or relaxant drugs. Two- and threefold the doses of d-tubocurare ordinarily used for intubation failed to abolish totally the slight inspiratory activity required to activate the assister. This permitted a remarkable interplay between the patient and the ventilator in which the patient appeared to retain the central control of his ventilation despite near-total paralysis of his respiratory muscles. Thus, the ventilator substituted for his motor function but not for his regulatory mechanisms. If his central regulation remained intact, it follows that arterial pH and carbon dioxide levels should be maintained within normal range. Therefore, preliminary measurements were made to assay the maintenance of carbon dioxide tension and of arterial pH during servocycling.

Specific examples of servocycling were documented with the assister-controller during general anesthesia with ether, cyclopropane, nitrous oxide, and nitrous oxide-meperidine hydrochloride. Establishing and maintaining these recurring cycles could be achieved without difficulty with these agents. However, servocycling was difficult to establish and to maintain in patients given nitrous oxide-thiopental sodium. The need for relaxant drugs during cyclopropane anesthesia has disappeared entirely with the use of the ventilator.

An example of servocycling is illustrated in Figure 4, and was obtained in a patient during ether-oxygen anesthesia. The upper record shows a recording derived from the function indicators differentiating assist from control operation of the ventilator; upward deflections indicate control breaths and downward deflections indicate assist breaths. The patient's rate during the assist operation is 38 per minute; the rate during the control

TABLE III.—Typical Respiratory Data Available by Direct Observation During Anesthesia Using Ventilation Indicator and Experimental Ventilator

Parameters (Average Values)	Respiratory Rate (Per Minute)	Tidal Volume (cc.)	Minute Volume (L.)	Estimated Alveolar Ventilation (Assuming 100 cc. Dead Space) (L.)	Sequence of Servocycling (See Fig. 4) (Consecutive Cycles)
Assist operation	38	600	22.8	19	41 ↘ 32 ↘ 21 ↘
Control operation	32	600	19.2	16	25 ↗ 33 ↗ 19

TABLE IV.—SERIAL ARTERIAL pH DETERMINATIONS DURING USE OF EXPERIMENTAL VENTILATOR*

Time	pH	Ventilator Procedure
8:00	7.38	Induction
8:45	7.34	Control
9:30	7.41	Assist
11:00	7.41	Assist
11:30	7.41	Control
12:00	7.36	Assist-Control
12:30	7.39	Assist-Control
1:00	7.39	Assist-Control
1:15	7.41	Assist-Control
1:30	7.39	Assist-Control
2:00	7.36	Control
2:30	7.38	Assist-Control
2:35		Extubation—No Apnea

* Female, aged sixty-six years, abdominoperineal resection procedure, with ether-oxygen anesthetic agents.

TABLE V.—RANGE OF ARTERIAL pH VARIATION DURING USE OF EXPERIMENTAL VENTILATOR WITH SERVOCYCLE OPERATION

Anesthetic (Primary)	Hours on Ventilator	Arterial pH at Induction	Arterial pH Range During Servocycling
Nitrous oxide	3.7	7.37	7.32 to 7.35
Nitrous oxide	3.8	7.36	7.27 to 7.29
Cyclopropane	1.2	7.31	7.28 to 7.30
Cyclopropane	7.8	7.31	7.27 to 7.32
Cyclopropane	2.0	7.47	7.40 to 7.44
Ether	4.0	7.35	7.31 to 7.33
Ether	3.0	7.29	7.35 to 7.38
Ether	3.2	7.33	7.39 to 7.41
Ether	5.0	7.31	7.46 to 7.47
Ether	3.0	7.41	7.45 to 7.49
Ether	6.8	7.38	7.36 to 7.39
Ether	4.7	7.37	7.45 to 7.47
Ether	2.5	7.35	7.44 to 7.49
Ether	4.5	7.27	7.32 to 7.38

operation falls to 32 per minute. The tidal volume was maintained at 600 cc. (Table III). The minute volume during assist was 22.8 L.; during control it dropped to 19.2 L., with corresponding estimated alveolar ventilations of 19 and 16 L. All of these ventilation values are large so that the end-expired carbon dioxide would be expected to be even lower than the 3.4 to 4.2 per cent recorded (Fig. 4). An excursion in alveolar concentration of 0.5 per cent carbon dioxide should correspond with an excursion in arterial carbon dioxide pressure of 3.5 mm. Hg. Thus, these measurements of expired carbon dioxide changes are of the order of magnitude postulated in Figure 3 for a hypothetic servocycle.

This record shows a tendency for the end-expired carbon dioxide value to fall by 0.5 to 0.8 per cent during the periods of assist operation and then to increase rather promptly during control operation. The record shows in succession 41 assist, 25 control, 32 assist, 33 control, 21 assist, and 19 control cycles. The periods of the servocycles ranged from 12 to 70 seconds. Measurements of arterial pH taken during this anesthetic, given in Table IV, demonstrated that maintenance was within a normal range, 7.36 to 7.41 during one and one-half hours of servocycling. Only a single determination, following induction, was outside this range during the entire procedure. Once established, no adjustments of the ventilator were needed to maintain servocycling.

Table V summarizes the arterial pH measurements in 14 patients whose ventilation was managed by servocycling. In this series, the patients were able, by means of servocycling, to maintain their arterial pH variations within 0.01 to 0.06 pH units, averaging, as a group, an over-all variation of only 0.03 pH units. All but 2 of the patients given ether regulated their arterial pH during servocycling in a range which was on the alkaline side of their value at induction. The patients given nitrous oxide or cyclopropane regulated their arterial pH during servocycling in a range slightly acid in comparison with their arterial pH at induction.

The striking conclusion for the series, however, is the fact that none of the arterial pH values reflect serious departures from the normal range. This evidence, per se, affords a basis to challenge the generality that these agents necessarily produce a significant depression of the central regulation of respiration. Were this effect the inevitable concomitant of general anesthesia, the arterial pH values would be expected to reveal more acidosis. Obviously, more comprehensive acid-base blood studies are required to elucidate whether the normal arterial pH ranges described actually involve compen-

TABLE VI.—Raneg of Variation in End-Expired Carbon Dioxide Concentration During Servocycling Using Experimental Ventilator

Anesthetic Agent (Primary)	Range End-Expired Carbon Dioxide Concentration (Per Cent)
Nitrous oxide	5.5 to 5.7
Ether	4.1 to 4.7
Ether	4.6 to 4.8
Ether	4.6 to 5.0
Ether	4.8 to 5.2
Ether	4.8 to 5.2
Ether	4.3 to 5.1

sated acidosis.

In 7 of the 14 patients of Table V, end-expired carbon dioxide concentrations were measured during servocycling. Table VI shows the range of variation from 0.2 to 0.8 per cent carbon dioxide and averaging 0.4 per cent. This average variation is consistent with that postulated for theoretic servocycling, assuming maintenance of arterial carbon dioxide pressure at 40 mm. Hg plus or minus 2 mm.

Summary

A tidal volume indicator (Ventimeter) affords breath-by-breath monitoring of both the volume of ventilation and of the status of spontaneous respiratory activity. As a simple clinical tool the indicator can provide convenient assessment of respiratory management either by conventional bag compression or by mechanical ventilator. The primary theme of these several technics has been to approach or reach, repeatedly, the patient's apneic threshold. Two patterns of recurring cycles were employed: (1) hyperventilation to apnea, alternating with hypoventilation to the return of spontaneous breathing; and (2) hyperventilation until spontaneous tidal volume was reduced, then hypoventilation until spontaneous tidal volume was relatively increased. These reversal responses were the basis for a servo-type operation of an assister-controller. During assist intervals, the stroke volume was adjusted to exceed that required and thereby to hyperventilate the patient gradually to apnea. Then the ventilator continued to cycle at its own slower rate, but without change in tidal volume, so as to hypoventilate the patient gradually until the return of spontaneous breathing. Such "hunting" between hyper- and hypoventilation results in the maintenance of arterial carbon dioxide pressure apparently within a normal range, averaging a variation of only 0.03 pH units during the servocycling. The corresponding excursions in end-expired carbon dioxide concentration averaged 0.4 per cent.

The methods of respiratory management which continually approach or reach the patient's apneic threshold provide a simple sound basis which appears to provide the anesthetized patient with ventilation which matches quite precisely his exact requirements.

Discussion

Duncan A. Holaday, M.D., *New York City.*—Dr. Elam, Dr. Evers, and Dr. Janney deserve congratulations for their contributions to several poorly developed areas relating to the respiration of anesthetized patients. A simple, reliable, and easily understood continuous monitor of respiration is probably the most urgently needed instrument in clinical anesthesia today. The tidal volume indicator appears to give direct information of tidal volume and airway pressure without significantly impeding respiratory exchange. It has the additional very desirable feature that it is most conveniently left permanently mounted on the anesthesia machine. Portable monitoring devices fail to serve their intended function most frequently simply because they are not available and in use when they are needed.

That we have been assuming a greater knowledge of the nervous regulation of respiration than we are entitled to has also been amply demonstrated by the authors. Some recent studies of this same problem which I have participated in with B. Raymond Fink, M.D., Shih-Hsun Ngai, M.D., and Edgar C. Hanks, M.D., at the Presbyterian Hospital corroborate the observation that anesthesia induced by various commonly employed agents is not accompanied by important elevations of the threshold to carbon dioxide of the respiratory center. Even thiopental sodium, which when injected rapidly can cause apnea at a time when end-expired gas carbon dioxide pressure is 60 mm. Hg, has an evanescent effect, and respiratory center sensitivity to carbon dioxide returns in a very few minutes. These same studies yielded information contrary to the conclusion implied by Dr. Elam's data that apnea may occur at a carbon dioxide pressure 2 mm. Hg below that which the patient would normally sustain. We observed that anesthetized subjects quite consistently became apneic only after their carbon dioxide pressure had been reduced 10 mm. Hg below that which they sustained by their own unassisted and unimpeded respiratory efforts. And respiratory efforts reappeared, on the average, 5 mm. Hg above that carbon dioxide pressure at which they became apneic. A full understanding of the implications of these observations has not been reached. However, it is clear that hypoventilation of anesthetized patients probably results most frequently not from medullary depression per se but from impedances imposed on free respiratory exchange for which the anesthetized subject is not able to compensate.*

Another area which requires further clarification concerns the efficiency of respiratory gas exchange between alveolar gas and blood within the lung. According to the alveolar gas equation, if an adult has an alveolar exchange of 19 L. per minute and an alveolar carbon dioxide concentration of 4 per cent, then the patient must be excreting 760 ml. of carbon dioxide per minute. Since this implies an unlikely metabolic rate for an anesthetized adult, there must be something wrong with the other figures. Such aberrations of normal respiratory gas exchange no longer surprise us. In a study which we completed recently with M. Jack Frumin, M.D., and others at the Presbyterian Hospital, we observed that patients whose end-expired gas carbon dioxide pressure and arterial blood carbon dioxide pressure were between 25 and 40 mm. Hg by actual measurement and who were being respired with oxygen concentrations between 25 and 35 per cent could become unsaturated and could exhibit alveolar-arterial oxygen tension differences as great as 50 mm. Hg. One must conclude that because of potential errors in the distribution of gas in the lungs and uneven perfusion of the pulmonary capillaries—resulting perhaps from the manner in which we force air into the lungs, together with the supine position imposed on patients for long periods, external encumbrances to chest expansion, elimination of sighing, accumulation of secretions, alteration of vagal and thoracic sympathetic activity, and sudden variations in blood volume and cardiac output—perfect gas exchange cannot be expected to occur simply by providing nominally adequate lung ventilation.

Before we can achieve the ultimate in respirator design, and before we can learn to use with optimal effectiveness the respiratory equipment we already have, we must know considerably more about the physiology of respiration of anesthetized patients and be aware of the ways in which and to what extent their respiratory efficiency can deviate from the normal.

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* Fink, B. R., Ngai, S.-H., and Holaday, D. A.: Effect of air flow resistance on ventilation and respiratory muscle activity, J.A.M.A. **168**: 2245 (Dec. 27) 1958.

Telltale Signs of Cerebral Palsy in Infants

How can you tell if a baby has cerebral palsy? *Patterns of Disease*, a Parke, Davis & Company publication for the medical profession, lists certain telltale signs to watch for in infants. Generally speaking, a cerebral palsied baby's development pattern is much slower than that of a normal baby. For instance, the normal baby can raise its head at two months, reach at four months, sit without support at nine months and crawl at seven and a half months. But the cerebral palsied baby is approximately one year behind in the ability to perform these actions.

Cerebral palsied children can be distinguised from the mentally deficient by their contrasting patterns of physical development. Mentally deficient infants develop motor patterns in normal order but at delayed rates, whereas in cerebral palsied patients the order of acquisition of these patterns is distorted.

Idiopathic Hypoplastic Anemia

RICHARD F. PLATZER, M.D., CLIFTON SPRINGS, NEW YORK, AND LAWRENCE E. YOUNG, M.D., ROCHESTER, NEW YORK

(From the Clifton Springs Sanitarium and Clinic and the Department of Medicine, The University of Rochester School of Medicine and Dentistry)

HYPOPLASTIC or aplastic anemia is not a disease entity but rather a syndrome of heterogeneous etiology. At least six major forms can now be recognized on clinical grounds:

1. Congenital hypoplastic anemia associated with developmental defects (Fanconi's syndrome)[1]
2. Congenital hypoplastic anemia associated with abnormality in metabolism of tryptophan[2]
3. Hypoplastic anemia associated with thymoma[3,4]
4. Hypoplastic anemia induced by drugs, toxic materials, or irradiation (Table I)[5–7]
5. Hypoplastic anemia as a phase in development of leukemia,[8] lymphoma, or myeloma[9]
6. Hypoplastic anemia without apparent cause.

Pancytopenia is present in many instances while in others a pure erythroid hypoplasia is found. The marrow, while usually hypoplastic, may be in some instances hyperplastic, at least in some areas of the marrow.[10–13] Hypoplastic anemia has been reported in association with platelet thrombi,[14] myeloid metaplasia of the spleen,[15] hookworm disease,[16] and agammaglobulinemia.[17] No immunologic mechanism has been demonstrated as a cause of hypoplastic anemia, although it may be suspected particularly in cases responding to corticosteroids or to splenectomy.

TABLE I.—DRUGS CAUSING HYPOPLASTIC ANEMIA

- Hydralazine hydrochloride (Apresoline)
- Arsenobenzols
- Phenylbutazone (Butazolidin)
- Carbon tetrachloride
- Chloramphenicol (Chloromycetin)
- Phenothiazine (Diparcol)
- Gold
- Methylphenylethyl hydantoin (Mesantoin)
- Mercurial diuretics
- Nitrophenols
- Phenothiazine-type antihistamine (Phenergan hydrochloride)
- Phenacemide (Phenurone)
- Pyrithyldione (Presidon)
- Procaine amide (Pronestyl hydrochloride)
- Pyramidon (Aminopyrine)
- Tripelennamine hydrochloride (Pyribenzamine)
- Quinacrine hydrochloride (Mepacrine, atabrine)
- Quinidine
- Allyliso prophylacetylurea (Sedormid)
- Streptomycin
- Sulfonamides
- Methiomazole (Tapazole)
- Thiouracils
- Thorotrast
- Thiosemicarbazone (Tibione)
- Trimethadione (Tridione)
- Trinitrotoluene
- Urethane

Twenty-two cases of the idiopathic type are reviewed in this report (Table II). The range of age was from five to eighty-four years. Anemia was the presenting symptom in 15 of the 22 cases and hemorrhage was the presenting symptom in 7 cases. The average hemoglobin concentration was 6.8 Gm. per 100 ml. Leukopenia was present in 16 cases and thrombocytopenia was present in 11 cases. The marrow was hypoplastic in 15 cases and it was hyperplastic in 7 cases. The spleen was enlarged in only 3 cases and the liver was enlarged in 7 cases. None of the 22 cases was of the congenital type. None of the cases proved to be due to drugs. Leukemia developed after a long period of observation in 1 case.

The degree of hypoplasia was determined in a quantitative manner in 1 patient (Patient 13) by means of differential agglutination of erythrocytes.[18] Since the patient had received transfusions before the study was undertaken it was not known whether his blood type was M, N, or M-N. The patient, a fifty-year-old man, was transfused exclusively with blood of O-M type until all O-N cells had disappeared. He was

TABLE II.—PRINCIPAL LABORATORY AND CLINICAL FINDINGS, TREATMENT, AND OUTCOME IN PATIENTS OBSERVED

		Minimal Figures in Each Case							
Patient Number	Age (Years) At Onset of Symptoms	Hemoglobin (Gm. per 100 ml.)	White Blood Count (per mm.)^3	Platelets (per mm.)^3	Cellularity of Marrow (Erythroid)	Size of Spleen	Size of Liver	Treatment	Results
1	5	4.8	3,100	Normal	Hyperplastic			Transfusion, cobalt	Recovered in four months; no recurrence
2	5	4.2	2,000	24,000	Hypoplastic			Transfusion, liver extract, cortisone	No improvement
3	7	5.8	5,800	Increased	Hypoplastic	Enlarged	Enlarged	Transfusion, prednisone	No improvement
4	9	9.0	1,350	Decreased	Hypoplastic			Prednisone, splenectomy	Fewer transfusions after splenectomy
5	20	7.4	4,100	Decreased	Hyperplastic		Enlarged	Transfusion, prednisone	Fewer transfusions after prednisone
6	21	7.5	4,100	20,000	Hypoplastic			Transfusion, vitamin B_{12}, folic acid, prednisone	Death due to hemorrhage after two years observation
7	22	10.0	2,500	Reduced	Hyperplastic			Prednisone	No improvement
8	23	8.7	480	38,000	Hypoplastic			Transfusion, cortisone	Fewer transfusions after cortisone
9	35	3.8	3,650	Reduced	Hypoplastic		Enlarged	Transfusion, hydrocortisone, prednisone, x-ray induction of menopause	Died after eighteen months observation
10	38	8.1	3,800	?	Hypoplastic			Transfusion, splenectomy	Fewer transfusions after splenectomy
11	64	9.0	9,800	Normal	Hyperplastic			Transfusion, cortisone, splenectomy	Fewer transfusions after splenectomy
12	58	7.4	5,200	Normal	Hypercellular	Enlarged		Transfusion, liver extract, cobalt	Unknown
13	59	2.5	4,000	126,000	Hypoplastic			Transfusion, crude liver extract, folic acid	Died after fifteen months observation
14	64	8.5	2,700	Normal	Hyperplastic		Enlarged	Transfusion, liver extract, splenectomy	Fewer transfusions after splenectomy
15	65	3.2	850	Reduced	Hypoplastic			Transfusion, liver extract, folic acid	Unknown
16	72	9.0	3,000	Normal	Hyperplastic		Enlarged	Transfusion, iron	Unknown
17	74	6.0	4,300	44,010	Hyperplastic		Enlarged	Transfusion, adenocorticotrophic hormone	Unknown
18	76	9.8	1,300	Reduced	Hypocellular		Enlarged	Transfusion, liver extract, iron, vitamin B_{12}, cortisone, cobalt	Died after two years observation
19	78	5.4	5,000	?	Hypocellular	Enlarged		Transfusion, cobalt	Died after six weeks observation
20	82	9.3	4,100	Normal	Hypoplastic			Transfusion	Unknown
21	84	6.8	5,200	Normal	Hyperplastic			Transfusion, iron, liver extract	Unknown
22	75	4.5	11,800	Normal	Hypoplastic			Transfusion, prednisone	Died after one year observation

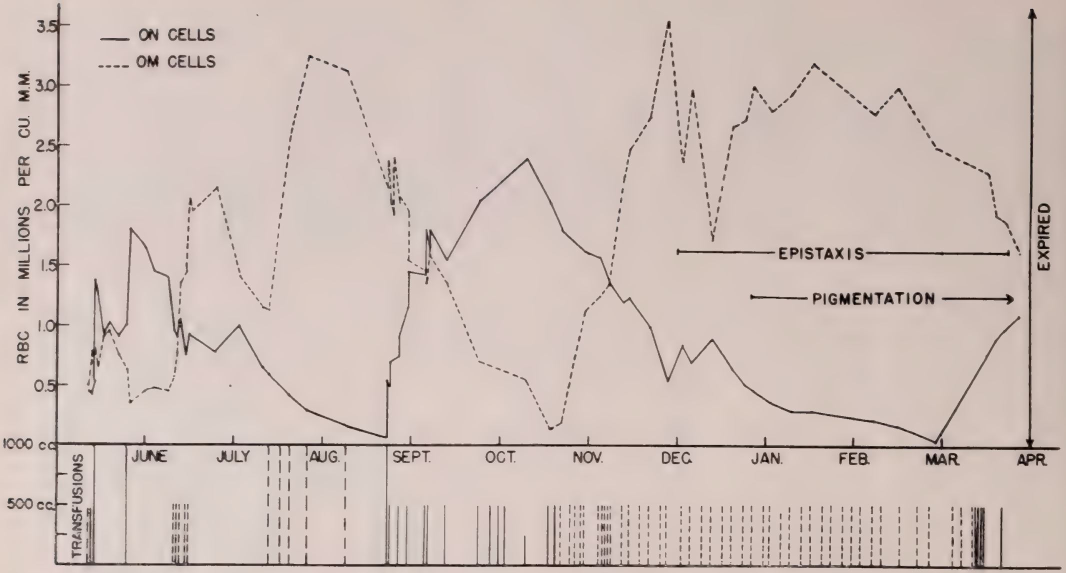

FIG. 1. Counts on O-N and O-M red cells as determined by differential agglutination of red cells in peripheral venous blood of Patient 13. The fact that the counts of both types of cells fell nearly to zero reveals that there was very little erythropoiesis and that nearly all of the circulating red cells were donor cells.

then transfused with only O-N cells until all O-M cells were absent and then again given O-M cells until O-N cells were absent. The patient thus was known to be producing very few red cells demonstrable by the technic of differential agglutination, employing anti-M serum. Had he produced cells containing either M or N factor or both during the period of study, they would have been revealed by this technic. The lack of erythropoiesis revealed by this study is shown graphically in Figure 1.

Weinstein and Beutler[19] found delayed Fe^{59} plasma clearance, poor utilization of radioiron, and relatively normal erythrocyte survival as determined by Cr^{51} in their patients with aplastic anemia.

The course of the syndrome is unpredictable. Spontaneous remissions sometimes occur.[7] However, most patients require repeated transfusions and eventually succumb to hemorrhage or infection. One or 2 units (500 ml. each) of whole blood or sedimented red blood cells were required approximately every fourteen days to keep our patients free of severe symptoms of anemia at a level of about 8 to 10 Gm. of hemoglobin. Hemosiderosis developed in patients surviving long enough to receive 30 or more transfusions.[20] Many hematinic substances were tried in the patients studied without benefit. We found iron, liver extract, both crude and refined, folic acid, and vitamin B_{12} to be ineffective. Prolonged administration of iron is actually contraindicated since these patients tend to absorb from the gut an abnormally large portion of the iron ingested. Moreover, iron derived from transfused red cells is retained in the body and stored as hemosiderin or ferritin. Cobalt may have been of some help in a few cases but further trial is necessary to evaluate this agent. Fountain and Dales[21] report 1 case successfully treated with cobaltous chloride 50 mg. twice daily. Cortisone and prednisone appeared to be beneficial in several of our patients chiefly by reducing the requirement for red cell transfusions and by reducing bleeding associated with thrombocytopenia. A trial of the corticosteroids is recommended by other observers.[22,23]

Splenectomy was performed in 4 out of our 22 patients, 2 of whom had hypoplastic marrow and 2 of whom had hyperplastic marrow. Transfusion requirement was reduced in each of the 4 patients who had splenectomy, but there was no other objective evidence of improvement. A growing number of reports of benefit from splenectomy in aplastic anemia are to be found in the recent literature.[24–28] To the patient who faces a "transfusion existence," splenectomy may offer some hope. Dameshek[29] has recently reported improvement in 4 out of 12 patients receiving transplanted bone marrow, but details of these studies are not yet available.

Summary

Twenty-two cases of idiopathic aplastic anemia are reviewed. Lack of erythropoiesis was demonstrated in 1 patient by means of differential agglutination of O-M and O-N red cells given in alternate series of transfusions. Transfusion continues to be the mainstay of therapy. No specific treatment is available but trial of cobalt, corticosteroid, splenectomy, and possibly bone marrow transplantation may be indicated in certain cases.

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TWO-WAY RADIO CONFERENCES FOR POST-GRADUATE MEDICAL EDUCATION

Albany Medical College
Albany, New York

Editor

WILLIAM P. NELSON, III, M.D., *Assistant Director of Postgraduate Education, Assistant Dean, and Associate Professor of Medicine*

Management of Cardiopulmonary Emergencies

A two-way radio discussion, December 5, 1958, between the Yale University School of Medicine, New Haven, Connecticut, the Albany Medical Center, Albany, and:

ST. PETER'S HOSPITAL, ALBANY
CONCORD HOSPITAL, CONCORD, MASSACHUSETTS
BENEDICTINE HOSPITAL, KINGSTON
ST. FRANCIS HOSPITAL, POUGHKEEPSIE
VASSAR BROTHERS HOSPITAL, POUGHKEEPSIE
GLENRIDGE HOSPITAL, SCHENECTADY

Discussants

ALBERT S. FIELD, JR., M.D., *Instructor in Medicine, Yale University School of Medicine*
FRANK D. GRAY, JR., M.D., *Associate Professor of Medicine, Yale University School of Medicine*

Moderators

ARTHUR EBBERT, JR., M.D., *Assistant Dean in Charge of Postgraduate Medical Education, Yale University School of Medicine*
FRANK M. WOOLSEY, JR., M.D., *Director of Postgraduate Education, Associate Dean, and Associate Professor of Medicine, Albany Medical College*

FRANK D. GRAY M.D.: The cardiopulmonary emergency can be anything from an acute obstruction to the pulmonary circulation caused by a pulmonary embolism to ventilatory obstruction caused by an aspirated ping-pong ball. We will be concerned with those cardiopulmonary emergencies related to asphyxia. By asphyxia I mean an impairment of oxygen and carbon dioxide exchange between the body and the atmosphere.

The most prominent cause of asphyxia

is inadequate ventilation of the alveolar air sacs. In alveolar underventilation, total ventilation, which we can readily estimate by watching the patient, may be low, normal, or increased. The increase occurs when the dead space of the lung becomes so large that most of the total ventilation is wasted on dead space, with very little exchange occurring at the alveolar level.

One observes this alveolar underventilation in a number of conditions. Examples include neuromuscular diseases such as poliomyelitis, barbiturate intoxication, and asthma and acute exacerbations of chronic bronchitis, emphysema, extreme obesity, myxedema, and severe kyphoscoliosis. Alveolar ventilation decreases because the tidal volume or rate decreases, as in neuromuscular disease, or because the dead space increases, as in emphysema. As a result of alveolar underventilation the arterial blood carbon dioxide rises, the arterial blood oxygen drops, and the pH becomes more acid. Since the large carbon dioxide molecule diffuses poorly in a gas phase, the rise in carbon dioxide is often more impressive than the anoxia in these conditions. Cyanosis, therefore, is not a reliable clinical guide.

Complicating factors which must be expected include heart failure or cor pulmonale, frequently found in chronic respiratory insufficiency. Fever associated with the underlying disease often complicates the picture, and, in the case of neuromuscular disease, vasomotor instability may lead either to acute pulmonary edema or to shock. Since many of these diseases are associated with the inability adequately to expectorate secretions and exudates, further bronchial obstruction leads to increased asphyxia; a vicious cycle may thus be started.

One of the most important sequelae is carbon dioxide narcosis. This develops following depression of the respiratory center. The latter has a natural rhythmicity with a very low activity level, but it is responsive to oxygen want and carbon dioxide excess, both of which stimulate the respiratory center to initiate greater ventilation. However, a persistently high blood concentration of bicarbonate ion diminishes the center's responsiveness to carbon dioxide, thus diminishing ventilation and leading to even higher carbon dioxide levels and greater anoxia. At this stage the center, and the central nervous system generally, become poisoned, and a state of coma and shock ensues. If oxygen is administered the process is hastened since this eliminates anoxia, the one remaining stimulus to breathing.

After underventilation, the most important group of diseases causing asphyxia is the group characterized by an increased oxygen pressure gradient from the air-containing alveolus to the blood in the systemic arteries—an increased "A-a gradient" as it is called. The usual cause of increased A-a gradient is a liquid or tissue barrier at the alveolar membrane-blood capillary level, the so-called capillary block. This is seen in pulmonary sarcoidosis, berylliosis, interstitial fibrosis including the Hammond-Rich syndrome, congestive heart failure and acute pulmonary edema, multiple pulmonary emboli, and hyaline membrane disease. In all of these diseases either the capillary membrane becomes very thick, fluid collects in the alveoli, or, in some cases, blood perfusion so far outstrips ventilation that blood reaches the pulmonary veins without becoming fully saturated with oxygen.

As a result of the block anoxia develops to a severe degree, but there is no carbon dioxide retention since carbon dioxide diffuses rapidly through tissue and fluid in contrast with its diffusion in air which is slow. In fact, the blood carbon dioxide may be abnormally low in congestive heart failure because overventilation tends to eliminate carbon dioxide even though anoxia may be present.

Complicating factors in capillary block are similar to those in underventilation. Cor pulmonale is most prominent, with injury to the respiratory center from anoxia occurring frequently and vasomotor collapse occasionally. Cardiac arrhythmia is a complication that must be kept in mind. Carbon dioxide narcosis does not occur, since arterial carbon dioxide levels are not greatly altered, unless poor ventilation secondary to anoxic damage to the respiratory center leads to carbon dioxide retention.

The other major cause of increased alveolar oxygen to systemic arterial oxygen gradient, the A-a gradient, is a venous admixture of the arterial blood caused by a shunt of venous blood from the right heart directly into the left heart. Congenital causes of each shunt, such as cyanotic congenital heart disease and pulmonary arteriovenous fistulas, are not likely to become cardiopulmonary emergencies. The so-called physiologic shunts, however, usually are emergencies and include spontaneous pneumothorax and massive collapse, resulting from sudden, complete bronchial obstruction. These conditions lead to a venous shunting mechanism because blood still perfuses the affected lung although it is reduced in amount and, of course, has no chance of contacting air. When the blood reaches the left side of the heart this constitutes a venous admixture because the blood is low in oxygen and, in contrast to the condition in the capillary block, it is high in carbon dioxide. Carbon dioxide cannot escape since the blood does not come into contact with ventilated alveoli. Because of the high carbon dioxide level, the arterial pH becomes more acid. In this condition breathing oxygen alone only corrects part of the difficulty since it does not relieve the carbon dioxide accumulation.

The sequelae of large, sudden, pulmonary-artery-to-pulmonary-vein shunts are chiefly referable to the central nervous system which is easily damaged by anoxia and high carbon dioxide concentration. Coma, periodic or depressed respiration, and vasomotor collapse are likely.

Asphyxia may develop because of atmospheric conditions. Examples include high altitude, where the partial pressure of oxygen is low, and carbon monoxide poisoning, wherein the hemoglobin is unable to carry sufficient oxygen because of its greater affinity for carbon monoxide. The latter is a simple displacement effect which may be overcome if an adequately high concentration of oxygen is brought into contact with the pulmonary capillary blood quickly enough.

I have not attempted to cover all of the cardiopulmonary emergencies. Drowning, electrocution, smoke inhalation, and many others come to mind. I have chosen some of those common in the growing population of patients who have chronic lung disease. One should be aware of the mechanisms underlying these conditions to understand the treatment and rehabilitation of the patient. Treatment varies greatly from group to group, even though groups may superficially be similar. To illustrate this point, we have listed the clinical and laboratory data and indicated the treatment for 2 patients (see Table I).

Patient A had a diagnosis of chronic bronchitis, emphysema, and carbon dioxide narcosis. Patient B had a diagnosis of recurrent, multiple pulmonary emboli established by autopsy. Reference to their charts indicated that both patients presented with extreme dyspnea, cyanosis, productive cough, depressed ventilation, and vasomotor collapse. In the past histories we found that the patient with emphysema had had a gradual increase in cough and dyspnea over many years, whereas the patient with multiple pulmonary embolism had had a rapid increase in dyspnea with episodes of dizziness and actual syncope.

The patient with emphysema had a residual volume that occupied 64 per cent of the total lung capacity whereas the patient with the embolism had a residual volume constituting only 40 per cent. The carbon dioxide tension in the arterial blood in the emphysematous patient was greatly ele-

TABLE I.—Data and Treatment for Two Patients

Description	Patient A	Patient B
Clinical picture on admission	Extreme dyspnea, cyanosis, somnolence, productive cough, depressed ventilation, vasomotor collapse	Extreme dyspnea, cyanosis, somnolence, productive cough, depressed ventilation, vasomotor collapse
Clinical history	Gradual increase in cough and dyspnea over the years	Rapid increase in dyspnea. Episodes of dizziness and actual syncope
Electrocardiogram	Right ventricular hypertrophy	Right ventricular hypertrophy
Chest x-ray	Fibrosis, emphysema	Fibrosis, emphysema
Laboratory data		
Residual volume to total lung capacity (per cent)*	64	4
Arterial carbon dioxide tension (mm. Hg)†	90	58
pH	7.19	7.30
Arterial oxygen saturation (per cent)**	81 to 100	49 to 96
Alevolar-arterial oxygen pressure difference (mm. Hg)††	5	54
Ventilation of alevolar spaces (L. per minute)***	2	2.2
Physiologic dead space ventilated but not perfused (ml.)†††	345	235
Physiologic evaluation	Hypoventilation	Alveolar-capillary block
Diagnosis	Bronchitis, emphysema, early carbon dioxide narcosis	Recurrent multiple pulmonary emboli, moderate emphysema
Crucial treatment	Mechanical respirator (oxygen dangerous)	Oxygen

* Normal under 30 per cent.
† Normal 40 to 45 mm. Hg.
** Normal 95 per cent reaching 100 per cent on breathing pure oxygen.
†† Normal 5 mm. Hg.
*** Normal 4 L. per minute.
††† Normal 150 ml.

vated to 90 mm. of mercury whereas in the case of the patient with embolism, it was only 58 mm. Similarly, the pH was more acid, 7.19, in the emphysematous patient as against 7.30 in the patient with embolism. The arterial saturation was only slightly lowered in the patient with emphysema, 81 per cent, against 49 per cent in the patient with embolism. This was reflected in the A-a gradient which was a normal 5 mm. of mercury in the emphysematous patient but was greatly elevated to 54 mm. in the patient with embolism. The alveolar ventilation was reduced in the case of the emphysematous patient because of the high dead space; in the case of the patient who had multiple pulmonary emboli it was reduced because severe anoxia had poisoned the respiratory center. The physiologic dead space was almost twice normal in the patient with emphysema, but only slightly elevated in the patient with pulmonary emboli.

In spite of the similar presenting picture, these were quite different patients. In emphysema, the crucial treatment was a mechanical respirator since oxygen alone would have been very dangerous. In the case of the patient with multiple pulmonary emboli, the crucial treatment was oxygen.

Albert S. Field, M.D.: In considering the treatment of cardiopulmonary emergencies we are concerned first with making a diagnosis. An acute situation superimposed on chronic pulmonary disease will show an exacerbation of symptoms over a period of several days. The previously noted chronic cough becomes severe and more productive. The color of the sputum changes from white to yellow, gray, or green, and the breath becomes short and incapacitating. There may be difficulty in staying awake during the day, and even sudden onset of coma may occur.

The temperature is usually elevated. The blood pressure may drop to shock levels; the neck veins may become distended and the trachea may show deviation. The accessory muscles of respiration are used to assist the labored breathing. The lungs are tight as one hears evidence of bronchial narrowing characterized by wheezing and ronchi, and, in spite of extreme efforts made by the patient, little air moves within the lungs. At the lung bases one hears rales and there may be signs of pleural fluid; elsewhere the lungs are hyper-resonant; poor descent of the diaphragm may be demonstrated. The heart sounds are distant at the base. An accentuated pulmonic second sound resulting from pulmonary hypertension may be present, along with a gallop rhythm. Cardiac enlargement usually is not evident. The liver is palpable and may be tender with a smooth edge. The presence of a fluid wave or shifting dullness will call attention to the existence of ascites. Edema can involve the ankles or the entire lower extremities, including sacrum and scrotum. The nail beds are cyanotic, and the fingers may be clubbed.

Laboratory tests will show an increase in hematocrit and hemoglobin and, if infection is present, an elevated white count. The electrocardiogram will show the pattern of "P pulmonale"—a tall P wave in leads II, III, and aVf, with a small P wave in lead I. Right ventricular hypertrophy will be characterized by an R wave in aVr and V_1, with S-T depression and T inversion in V_1, S wave in V_6, and a delayed precordial transition. The chest x-ray film will show the increased radiotranslucency, increased AP diameter and flattened diaphragms of pulmonary emphysema, and, if pneumonitis is present, a pulmonary infiltrate. Hilar enlargement, pulmonary vascular congestion, and pleural fluid will call attention to increased pulmonary artery pressure and congestive failure. The cardiac failure will show the contour of right ventricular enlargement. The carbon dioxide-combining power will be elevated, and the pH of the blood will be below 7.35 but not lower than 7.00 unless metabolic acidosis is also present. This is the clinical picture of poor alveolar ventilation complicated by related factors of infection, cor pulmonale, and congestive failure.

Cardiopulmonary emergencies without a history of chronic cardiopulmonary disease result from exposure to an irritant gas, such as ammonia, producing acute bronchitis, alveolar congestion, and pulmonary edema. The oxides of nitrogen produced by fermentation of silage, the cause of silofillers disease, also produce immediate irritation of bronchial and alveolar membranes. Carbon monoxide poisoning, overdosage of sleeping pills, and patients with multiple pulmonary emboli fall into this group. Here the x-ray film of the chest shows the diffuse pattern of increased vascular markings and hilar enlargement. The electrocardiogram may show the RSR prime in V_1, V_2, and V_3, with depressed S-T segments and widening of the QRS. The resting arterial oxygen saturation will be low in these situations. In all these conditions, except in carbon monoxide poisoning, it will rise to 100 per cent when the patient is breathing 100 per cent oxygen. However, blood carbon dioxide-combining power and serum pH will vary depending on alveolar ventilation and renal compensation.

For acute cardiopulmonary problems, whether or not chronic disease is in the background, rational treatment is directed toward restoring adequate gas exchange. Little can be done to alter a chronic pulmonary condition in a short time, but the events which precipitated the acute situation can be modified. Important features in the impairment of ventilation which are amenable to therapy include airway obstruction, respiratory center depression, infection, and cardiac failure.

It would be impossible to say which of these is the more important. Each is dependent on the other. For example, by relieving airway obstruction, the work of breathing is reduced and ventilation is improved; if the depressed respiratory center is then supplemented with mechanical ventilation, removal of carbon dioxide from alveoli and blood is improved, with improvement in the respiratory acidosis. Antibiotics may reduce the pneumonitis, resulting in an increased area of lung available for gas exchange and with further reduction in carbon dioxide retention. After several days of lower carbon dioxide-combining power levels, the sensitivity of the respiratory center returns, and narcosis is relieved.

This is a simplified picture of the approach to the problem; important details need to be filled in. The removal of secretions from the upper respiratory tract and trachea can be accomplished by the use of a catheter, a plastic "T" tube, and suction. The usual measures are taken to prevent introduction of new infection. The "T" tube is placed between the catheter and the suction line. With the side arm open, the catheter is inserted into the larynx and trachea. When it is in position the side arm is closed and suction is accomplished. The catheter is not moved without again uncovering the side arm to prevent injury to mucosal tissue inadvertently drawn into the holes in the catheter tip.

Bronchial dilator drugs such as Isuprel hydrochloride or Vaponefrin are most important in improving the airway. They may be administered by a nebulizer along with aqueous superinone (Alevair) which contains a detergent and glycerine to assist in liquefaction and mobilization of secretion. Potassium iodide given orally in a saturated solution is also effective. Secretions may be thick, tenacious, and copious enough to cause obstruction at the bronchial level. If examination of the chest suggests that obstruction is present, bronchoscopy should be carried out; skillfullyp erformed this is a benign procedure and may be performed, as indicated, several times. When the patient has previously received such preparations adrenal cortical steroids should be given before bronchoscopy to prevent serious reaction. Secretions may be so difficult to handle that such measures are not sufficient; tracheostomy is then required. In placing the tracheal opening adequate room should be left for a neck ring of a tank respirator to fit below the tracheostomy in the event this is needed later. One should provide adequate humidification of the inspired air to prevent drying of the tracheal secretion and formation of crust. Water vapor should be delivered to the tracheal opening as a very fine nebulized mist.

A respiratory center which is depressed by high carbon dioxide retention can be stimulated for a short time by Coramine, 1 to 3 cc. intravenously. This drug, accompanied by 100 ml. of hydrocortisone intravenously, may be lifesaving for a patient who has stopped breathing. Salicylates have been used effectively for respiratory stimulation; 6 to 8 Gm. of sodium salicylate are given in 300 cc. of normal saline intravenously over an hour. Morphine, barbiturates, Demerol hydrochloride, and similar drugs should be avoided to prevent further respiratory depression. When one plans to depend entirely on mechanical ventilation and one cannot obtain adequate cooperation from the patient in a tank respirator, morphine is deliberately used in doses large enough to knock out the respiratory center.

Artificial respiration is indicated when the patient cannot maintain adequate ventilation. Manual artificial respiration is a valuable procedure until such time as a mechanical respirator is available. There are two mechanical types, the inspiratory positive pressure breathing machine and the familiar tank respirator used for poliomyelitis victims. The first of these delivers a respiratory gas at a positive pressure of about 20 cm. of water during inspiration. The breathing rate can be regulated either by demand of the patient's respiratory rate, using a pressure-sensitive valve, or by a self-cycling device incorporated in the valve mechanism. The latter is used for the patient with more severe depression of the respiratory center. These units have nebulizers attached to act as bronchial dilators during pressure breathing.

The tank respirator ventilates its patient by applying alternate positive and negative pressures to the chest at a rate determined by the operator. The pressures and rates vary according to the individual situation, but, in general, 5 cm. of water positive pressure and 15 cm. of water negative pressure are used at a rate of 15 to 20 cm. per minute. Respiratory poliomyelitis patients in a tank respirator may develop pulmonary edema if the positive pressure is too high or shock if the negative pressure is too low. If signs of these conditions appear, pressures are readjusted. The patient with emphysema, however, usually does not develop pulmonary edema, and a higher positive pressure may be helpful in reducing overdistention. The tank respirator reduces the work of breathing for the patient but increases nursing care of a specialized type. If the patient is obese with a short, thick neck, the fit of the neck ring in the presence of a tracheotomy may leave much to be desired. It should be emphasized that oxygen can be administered to the patient with poor pulmonary gas exchange and carbon dioxide narcosis without danger of producing coma when mechanical ventilation is provided at the same time.

Treatment of infection means adequate quantities of an antibiotic whose selection is determined by the sensitivity of the organisms cultured. As this information may not be immediately available, penicillin is given when the patient is first seen in doses of 1 million units or more daily since most respiratory tract pathogens are penicillin sensitive. Overwhelming infections have been treated successfully by antibiotics and steroids in combination. Steroids can be used to help control status asthmaticus in conjunction with aminophyllin and bronchodilators.

Management of congestive failure involves the usual measures of rest, low salt diet, mercurial diuretics, and digitalis. Rest may be provided in part by mechanical ventilation. Digitalis should be used with caution in a patient with combined congestive failure and cor pulmonale. As a full digitalizing dose is reached, cardiac output improves and pulmonary artery pressure rises, with resulting increase in the stiffness of the lung; the work of ventilation then increases and may be sufficient to threaten seriously an already compromised situation. Once this point is passed, however, the patient with chronic respiratory disease is better off digitalized. It is our opinion that a rapidly acting preparation such as Cedilanid should be given intravenously if the physician has positive pressure breathing equipment available to handle increasing respiratory distress.

*Questions Received by Radio from Participating Hospitals**

ST. PETER'S HOSPITAL, *Albany:* Many of the tests mentioned take hours or even a day or two to perform; when seeing a new case for the first time, what rapid, simple methods are available for determining whether or not artificial respiration or just simple oxygen is necessary?

DR. FIELD: That is usually based on one's evaluation of whether the patient is suffering from anoxia without carbon dioxide retention such as is found in congestive failure and some cases of fibrosis, or whether there is also carbon dioxide retention of significant proportions as in severe emphysema and bronchitis. Also, of course, in neurologic diseases such as poliomyelitis the problem is both of anoxia and of carbon dioxide retention. Whenever our clinical judgment tells us that carbon dioxide retention may be present, then artificial respiration should be considered along with oxygen. The artificial respiration can be either manual or any of the apparatus that have been described.

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* Only selected questions from participating hospitals are included.

Concord Hospital, *Concord, New Hampshire:* Will you comment on the evaluation of the patient with chronic pulmonary disease who is undergoing surgery?

Dr. Field: That depends on the type of surgery; in thoracic surgery one is largely concerned with what the effect of the surgery will be on residual function, and what the loss of lung tissue, in the event of resectional lobectomy, will mean to the patient. The more laboratory tests are available, the more sophisticated the evaluation will be. We have found that, as a rule-of-thumb, a maximum breathing capacity of over 50 L. per minute and a timed vital capacity that shows not more than a three-second delay with 90 per cent expiration are good evidences that the patient will withstand chest surgery. However, there is no single rule; one has to evaluate every patient individually. Some patients may have a very marked obstruction on the side of the chest that is going to be operated. Removing such a lung might actually make the pulmonary function better; so the surgeon and the internist must consider why this function is below normal, if it is, before considering it a contraindication to surgery.

Abdominal surgery usually leads to some impairment of diaphragmatic motion during the postoperative period. This is particularly true following gallbladder surgery. When a patient with emphysema has difficulty in raising secretion, abdominal surgery can lead to serious pulmonary complications. One is concerned not so much with eventual lung function as with what has to be done in the immediate postoperative period. We feel that almost all patients who have gallbladder surgery in the presence of emphysema should be given positive pressure breathing or at least breathing exercises in the immediate postoperative period.

Benedictine Hospital, *Kingston:* Please discuss the advantages and disadvantages of portable chest respirators.

Dr. Field: Portable chest respirators are very good for the patient who has a neurologic lesion but who still retains some measure of voluntary respiration. They are not as good, of course, as a tank respirator because one does not get complete expansion of the entire chest. Most of the chest respirators are somewhat uncomfortable. Most of them depend not only on raising the rib cage but also on moving the diaphragm down, which involves sliding the abdomen up into the lower part of the chest respirator; this may be uncomfortable. The longer-type respirators that encompass the chest and abdomen are more comfortable but tend to be a little more difficult to fit. The chest pieces are portable. There is at present one chest piece that is flexible, made of a sort of chicken wire material over which is laid a flexible piece of plastic for a seal. This is easy to fit and functions quite well in most neurologic disorders. In the apneic patient who has pulmonary disease which often results in rigidity of the lung, the chest respirators have not been very satisfactory. Whenever possible, a tank respirator or mouth-positive pressure should be used. If the latter two are not available, or if the patient will not fit into a tank, then a chest respirator may be quite useful.

St. Francis Hospital, *Poughkeepsie:* Please comment on the relative effectiveness of saturated solution of potassium iodide, aqueous superinone, and enzyme preparations in liquefying tenacious bronchial secretion.

Dr. Gray: As far as potassium iodide is concerned, this serves to liquefy secretion in two ways. It is an irritant in the stomach and sets up sympathetic reflexes that lead to increased bronchial secretions which are generally thinner in nature; the iodide is excreted to a large extent through the bronchial mucosal glands carrying with it some water. These two mechanisms tend to make the secretion easier to raise. We use potassium iodide quite frequently for our patients unless gastric irritation, or sensitivity, or iodism contraindicates its use.

As to aqueous superinone, we find that this is also a useful way of thinning secretions since the detergent lowers the surface tension and liquefies them. There have been some complaints of foaming when it is administered with positive pressure machines; we have not used it in these machines for that reason. A new and similar material, Defoamair, may become available which apparently does not do this. There are several other similar substances on the market, all of which are about the same. Some of these have glycerol in them which is a dessicating agent and may tend to dry the bronchial mucosa.

Regarding enzymes, I have little to say. Their function is to lyse certain types of mucoproteins. They may be irritating and occasionally allergic responses appear.

CONCORD HOSPITAL: Will you further delineate the meaning of cor pulmonale? Do you include right ventricular hypertrophy and right ventricular failure, or do you refer only to changes in the electrocardiograms?

DR. GRAY: That is a very good question because the older textbooks refer to cor pulmonale as right-sided heart failure due to lung disease. More recently, with the development of better ways of studying cardiovascular physiology, it has become popular to think of cor pulmonale as any situation in which one has first lung disease, then pulmonary hypertension, then right ventricular hypertrophy, and finally failure. The term "cor pulmonale" applies at any stage in this process since all of the first 3 stages begin concomitantly. The diagnosis can be made when one hears a markedly accentuated pulmonic second sound, with radiologic or electrocardiographic evidence of right ventricular hypertrophy, or with clinical evidence of right-sided heart failure associated with relatively clear lungs by auscultation and with relatively little orthopnea.

GLENRIDGE HOSPITAL, *Schenectady:* Do you feel that steroids have any place in the treatment of uncomplicated, chronic obstructive emphysema?

DR. FIELD: No. We feel that the disadvantages outweigh the advantages. We are concerned with the possibility of the development of infection without the usual warning signs, the possibility of fluid retention, and so forth.

VASSAR BROTHERS HOSPITAL, *Poughkeepsie:* What studies differentiate hypoxia due to alveolar capillary block from hypoxia due to arteriovenous shunts?

DR. FIELD: Hypoxia due to capillary block and hypoxia due to what we describe as venous admixture both produce a low resting arterial oxygen saturation. In the case of a diffusion defect where, for example, there is a thickening of the alveolar capillary wall, the administration of 100 per cent oxygen for seven minutes will cause an increase in the arterial oxygen saturation to 100 per cent. This is not true when there are shunts since venous blood is added to the arterial circulation without passage through the lung. Shunts may be either physiologic, where the blood is circulating through areas of the lung that are not receiving oxygen for one reason or another, or they may be due to an actual anatomic connection between the venous and arterial side which bypasses the lung. Do you want to say anything about that, Dr. Gray?

DR. GRAY: I think that the test, using 100 per cent oxygen which you have discussed is a precise method of differentiation and the one usually used in distinguishing these conditions. One might indicate, however, that there is a very simple way of distinguishing them. With a pure capillary block there is no carbon dioxide retention, although frequently emphysema is combined with capillary block in which case there might be carbon dioxide retention. If there is a physiologic or anatomic venous admixture, the arterial blood will have a carbon dioxide increase equivalent to the amount of venous blood which has been added to the arterial blood.

CONCORD HOSPITAL: We understood you

to say that an excess of positive pressure in the tank respirator leads to pulmonary edema while excessive negative pressure leads to shock. Could you please discuss the mechanism of these changes?

Dr. Gray: Increasing intrathoracic pressure interferes with blood flow into the chest and therefore interferes with cardiac filling and cardiac output. This results in a fall in systemic blood pressure and in potential shock. Therefore, the application of pressure to the mouth during inspiration will cause some drop in systemic pressure. The intermittent positive pressure machine will do this but not to an alarming extent. Now, a positive pressure at the mouth with an intermittent positive pressure breathing machine is equivalent to a negative pressure with the tank respirator. So, too high a negative pressure in a tank respirator also interferes with cardiac filling and with output. Conversely, positive pressure with a tank respirator may produce congestion and pulmonary edema instead of a shock state.

Dr. Field: Another reason that tank pressure effects are opposite from intermittent positive pressure at the mouth is that negative tank pressure expands the relatively flexible abdomen more than the relatively rigid chest so that blood tends to pool outside the chest. Shock may follow. Positive pressure in the tank does the opposite, compressing the relatively flexible abdomen more than the relatively rigid chest. Splanchnic blood is then pushed back into the chest, predisposing to pulmonary edema.

Glenridge Hospital: In intermittent positive pressure breathing in emphysema do you use oxygen or air?

Dr. Gray: In the acute cardiopulmonary emergency one wants to give oxygen under mechanical ventilation. If the questioner had in mind chronic emphysema, however, and not an emergency, then one would use compressed air because oxygen is an irritant to the bronchial mucosa and leads to collapse of the bronchial segments. Also, if the patient receives twenty minutes or more of treatment he becomes well oxygenated and will hypoventilate afterward, which will possibly lead to difficulty.

Concord Hospital: In congestive heart failure, would you use intermittent positive pressure breathing or would this interfere with cardiac output?

Dr. Gray: It would diminish cardiac output which is already low in congestive failure, and therefore I would hesitate to use it in severe failure; in mild failure I probably would not be too worried about its use.

Vassar Brothers Hospital: Will you discuss etiologic factors in the production of chronic pulmonary insufficiency with reference to dysfunction of bronchial secretions. Is this due to vascular or to hormonal disturbances, or to both?

Dr. Gray: Bronchial secretion problems are to some extent presumably congenital defects of the bronchial mucosa. I think there is a growing feeling that many of these disorders are related to the disease called "mucoviscidosis." This is probably hormonal in origin and is closely associated with cystic fibrosis in children. One sees many adults who have the characteristics of mucoviscidosis with both gastrointestinal and bronchial difficulties, and one wonders whether much of the bronchiolitis and bronchiectasis which we see may not be due to inadequate or inappropriate secretory ability of the mucosa. As to vascular changes altering bronchial secretions, I have no reason to believe that altered bronchial secretions are a very prominent factor in severe pulmonary arteriosclerosis and in the various periarteritides that affect the lung. In serious, severe emphysema there may be some attenuation of the bronchial circulation leading to impaired secretion although this does not seem to be an important problem.

Cellular Study of Respiratory Secretions in Allergic Diseases

HARRY MARKOW, M.D., BROOKLYN, NEW YORK

(From the Department of Allergy, Beth-El Hospital)

EOSINOPHILIC nasal smears have been recorded in the literature as confirmatory evidence of an allergic reaction. While the eosinophils have been reported and emphasized, other cellular elements in the smears have been ignored. Yet a report, for example, of 10 per cent eosinophils in a smear indicates that 90 per cent of the cells are not eosinophils but some other type of cell. Repeated examinations of many smears have revealed that the other type of cell mostly consisted of neutrophils, although lymphocytes, mononuclears, or basophils also were found in small numbers. We regard the neutrophilic secretions as indicative of infection. Thus, while the cellular examination of respiratory secretions has been helpful in confirming a diagnosis of allergy, it has become of great importance in the diagnosis of infection. In fact, in the study of our first series of smears in 200 consecutive cases of allergy, neutrophils were plentiful or predominant in 88 per cent of these cases, whereas purely eosinophilic smears occurred in only about 5 per cent.

Although infection plays an important role as a causative factor in acute and chronic allergic diseases, bacterial sensitivity cannot be demonstrated immunologically by means of the skin test. How infection acts etiologically in these cases is not entirely clear. Some refer to it as a trigger mechanism in precipitating attacks in established cases of allergy. Moreover, the elimination of infection may be followed by relief of symptoms in many cases. While there are those who depend on bacterial cultures of secretions or the presence of bacteria in the smears for the diagnosis of infection, it is admitted that bacterial flora may change from examination and this basis for diagnosis is not regarded as a reliable. Pecora[1] states that any conclusions based on bacteriologic examination of expectoration, for example, may not be valid as they may represent the flora of the mouth.

It is of importance, therefore, to be able to differentiate between allergy and infection. It is equally important to recognize the presence of infection alone or superimposed on an allergy. Despite the aid of various diagnostic procedures and examinations, such a differentiation is often difficult without the cellular study of various secretions. Eosinophilic smears indicate the presence of an allergic reaction, and neutrophilic smears indicate the presence of an infective process.

Since neutrophilic secretion is indicative of some degree of infection, it is important even in the absence of nasal symptoms to study the cells of the nasal secretion in every case of allergy at the first examination and at each subsequent visit. In addition, the result of a cellular study has proved helpful as a guide in taking a history of allergy. To make a smear the secretion is obtained by blowing the nose into waxed paper or by inserting a platinum loop or a cotton applicator into the nasal chamber. Slides are prepared and stained with Hansel stain, an eosin-methylene blue stain, and they are examined under low-power and oil-immersion lens. Hansel's system of reporting cells as one-, two- , three- , or four-plus has been found to be more revealing than that of the percentage method. In asthma, sputum smears are similarly examined in addition to nasal

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smears. Smears can be stained in one minute and can be interpreted within five minutes.

The character of the secretion is no indication of the type of pathology that is present in the tissues. That applies to the sputum as well as to the nasal secretion. At times we have found that thin watery secretions may contain many neutrophils while a thick purulent-appearing secretion may be eosinophilic. The cellular elements may change with the change in tissue pathology. It is not uncommon for neutrophils to replace the eosinophils in the secretion, for an infection complicates an allergic reaction, and, conversely, the eosinophils reappear as the infection subsides. The examination of the smear is interpreted as showing the presence of an allergy, or of an infection, or of an infection superimposed on an allergy. Occasionally a negative smear will be present during an asymptomatic period.

In the management of allergic patients the cellular study of respiratory secretions will aid both in the diagnosis and in the therapy. In acute episodes it is important to know that the symptoms are the result of an allergic reaction or of an intercurrent infection. It will help to distinguish between an acute allergic flare-up in the hay fever season and an acute infection, indicating the use of either antibiotics or antihistaminics. It will confirm a true attack of pollenosis requiring antihistamine drugs. It will help to distinguish between allergic rhinitis and infection involving the nasal chamber and para-nasal sinuses. It may aid in determining that polyps are of allergic origin. In cases of chronic nasal symptoms, repeated neutrophilic smears will indicate antibiotics as the therapy of choice and these neutrophilic smears may be the determining factor in the decision for surgical intervention in sinusitis. In asthma an eosinophilic smear will not only aid in the diagnosis of the allergic nature of the symptoms but it will direct the search for the cause of the attack, such as a new air-borne environmental allergen or a food. Questioning will then reveal the fact that the patient is using a new hair or insecticide spray, or is eating a forbidden food, or has acquired a house pet. These clues are often forgotten or are not mentioned by the patient. In addition, asthmatic patients with eosinophilic sputa have responded to aerosol antihistaminics with excellent results despite the previous failure to respond to other medication. On the other hand, I regard a persistent neutrophilic sputum in a chronic asthmatic patient with less optimism. Antibiotic therapy in these chronic cases gave only partial relief and aerosol antibiotics have not been too successful. The cellular examination in such cases will be of prognostic value.

An interesting finding in this study was the frequency of neutrophilic nasal smears, even without nasal symptoms, in cases of chronic urticaria and eczema. Local therapy was directed toward the nasal infection and it proved beneficial in the management of these cutaneous allergies. We have seen cases of atopic eczema respond when, as an adjunct to systemic hyposensitization, the nasal infection was treated and controlled.

Our latest cellular study of respiratory secretions consisted of 360 smears of allergic patients during 1957. There were 232, or 65 per cent neutrophilic smears, 95, or 26 per cent eosinophilic smears, and 33, or 9 per cent, negative smears. In order to rule out common colds and seasonal infections, we further studied those smears that were taken only during the pollenating seasons. Symptoms due to pollenosis should be associated with eosinophilic smears and the incidence of common colds is at the lowest level during these seasons.

The results were very similar to the results noted: neutrophilic smears, 62 per cent; eosinophilic smears, 26 per cent; and negative smears, 12 per cent. Apparently infection is far more prevalent in allergy than has hitherto been suspected and it can be diagnosed readily by the cellular study of the respiratory secretions.

Conclusion

The cellular study of the respiratory secretions is an important procedure in cases of allergy, not only as an aid in the diagnosis of allergy but also in differentiating allergy from infection. It has proved extremely useful as a guide in the treatment of both allergic and infective cases.

163 Eastern Parkway, Brooklyn 38

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ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 7 to 13, 1960, in New York City.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1960,* and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

Alfred A. Angrist, M.D., *Chairman*
Committee on Prize Essays

Incidence of Appendiceal Pinworms in the Population of the Mid-Hudson Valley

DAVID S. GERBARG, M.D., AND HERBERT DERMAN, M.D., KINGSTON, NEW YORK

(From the City of Kingston Laboratory; the Department of Pathology, Benedictine Hospital; and the Departments of Medicine and Pathology, Kingston Hospital)

TO MEASURE the incidence of Enterobius vermicularis in the general population of the Mid-Hudson Valley region of Upstate New York, 100 appendectomy specimens which had been removed for various reasons were examined. A modification of the technic of Schenken and Moss[1] was used. The material was received from several hospitals and was examined at the City of Kingston Laboratory which serves a mixed urban and rural population of 90,000.

Technic

The appendices taken from the operating rooms were received in formalin in closed containers. Sixty-two consecutive specimens were examined in 1955 and 38 additional consecutive specimens were examined in 1956.

The appendices were opened longitudinally with scissors. The entire contents of the appendix was scraped and washed out with formalin into a large test tube. The material was emulsified, diluted with additional formalin, and allowed to stand overnight so that sedimentation would take place. It was found that this technic produced a clear, supernatant fluid. The supernatant fluid was examined grossly and microscopically. In order to provide a large examining surface, the sediment was studied grossly with a magnifying glass in a Petri dish. Only suspicious material was pipetted off and examined microscopically since Schenken and Moss[1] have shown with their meticulous technic that when adult pinworms are not found the number of additional infections by ova alone is an insignificant 1.5 per cent.

TABLE I.—CASE DISTRIBUTION BY AGE*

Age (Years)	Total Number	Pinworms Number	Pinworms Per Cent
0 to 19	43	8	19
20 to 39	31	2	6
40 to 59	20	3	15
60 to 79	5	0	0
80 to 99	1	0	0
TOTAL	100	13	13

* No significant age difference as tested by Chi-square method.

TABLE II.—CASE DISTRIBUTION BY HISTOPATHOLOGIC DIAGNOSIS

Diagnosis	Total Number	Pinworms Number	Pinworms Per Cent
Normal appendix	49	11	23
Acute appendicitis	40	1	3
Chronic obliterative appendicitis	10	1	10
Metastatic carcinoma	1	0	0
TOTAL	100	13	13

Results

All percentage figures are rounded to the nearest whole number. Adult forms of Enterobius vermicularis with or without ova were found in 13 per cent of the specimens examined. Thirty-nine male and 61 female patients' appendices were examined. Case distribution by age is shown in Table I. There was no significant correlation with age or sex when tested by the Chi-square method. Since there was only one nonwhite individual in the sample, no statement can be made on this parameter. There was no correlation with the pathologic diagnosis of the removed appendix. It is a notable side point that 49 of the 100 appendices examined were pathologically normal in this series, and that there was a tendency for Enterobius vermicularis to be five times as common in these normal appendices as in the pathologic appendices. Since the group is too small for valid statistic differentiation, this must be considered a trend rather than a fact. A summary of case distribution by histopathologic diagnosis is shown in Table II.

Conclusions

In the Mid-Hudson Valley region of New York State, the incidence of Enterobius vermicularis infection was 13 per cent of 100 consecutively examined, surgically removed appendices. The tendency for these infections to occur more frequently in normal appendices than in pathologic appendices would seem to make the significance of this parasite in the pathogenesis of acute appendicitis questionable.

ACKNOWLEDGMENT.—The authors wish to express their appreciation to David Rosenthal, M.D., who, as a medical student, rendered technical assistance.

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ANNOUNCEMENT

Medical Society of the State of New York 1960 Annual Convention

SCIENTIFIC EXHIBITS

Applications for space for the scientific exhibits should be made directly to the Chairman of the Scientific Exhibits Subcommittee of the Convention Committee:

William L. Watson, M.D.
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The Annual Convention will be held May 9 to 13, 1960 at the Statler Hilton Hotel, New York City.

No applications can be considered after January 1, 1960.

There will be two groups of awards:

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William L. Wheeler, Jr., M.D., *Secretary*
Medical Society of the State of New York

A Simplified, Safe, and Satisfactory Method of Preparation for Barium Enema Studies

ROCCO P. BEVILACQUA, M.D., JAMAICA, NEW YORK

(*From the Department of Roentgenology, Mary Immaculate Hospital, and the Department of Radiation, Queens General Hospital*)

To THE radiologist, one of the most frustrating and, unfortunately, one of the most frequently encountered problems is inadequate preparation of the colon for study. This condition occurs in both the ambulatory and in the hospitalized patient.

Successful routine barium enema studies necessitate a thoroughly cleansed bowel containing a minimum of artifacts due to residual normal bowel content. The bowel should also be devoid of secondary interferences such as rectal spasm, retained fluid from multiple enemas, or the irritable segments occasionally observed after certain preparation procedures.

The purpose of this paper is twofold: to report some of the factors that contribute all too frequently to inadequate preparation of the colon; and to describe a procedure that has been found to be simpler than other preparation routines, that produces completely satisfactory results, and that is both highly acceptable as well as suitable to all patients.

Admittedly, the usual method of cleansing the colon prior to a barium enema study is extremely time-consuming. From 1 to as many as 3 soapsuds or tap water enemas are administered.[1] Considering the fact that it takes twenty-five to thirty minutes to prepare, administer, evacuate, clean up, and sterilize for a single 2-quart enema[2] and that the process must often be repeated, this procedure presents a real problem to the hospital suffering from a shortage of trained nursing personnel.

One obvious solution to the problem is to delegate the routine preparation of patients to nonprofessional personnel. However, it has been my observation that there may be a sharp increase in rectal trauma when enemas are administered by an untrained person. This may range from mild abrasion of the mucosa to laceration or actual perforation of the rectal wall. In the recently published textbook, *Lesions of the Lower Bowel*,[3] Jackman, of the Mayo Clinic, points out the danger of scraping the rectal wall with the enema tip.

Proper preparation of the colon is frequently inadequate when done on an outpatient basis owing to the inability of the patient or his family to carry out the radiologist's instructions. This situation is widely prevalent among patients who live alone and who must prepare themselves for the enema without assistance.

But perhaps the most important factor to consider in the entire preparation problem is the mental attitude of the patient. He is usually ordered to take castor oil the night before the examination. His bowel is drenched with quarts to gallons of water in the morning and he then faces the ordeal of having several pints of contrast medium inserted into an already insulted rectal and bowel area. Is there any wonder that the patient is often in a highly apprehensive state when reporting for examination?

In the light of these several factors I decided to acquaint myself with any procedure that would effectively prepare the colon while reducing preparation time,[4] minimizing discomfort and embarrassment to the patient, and avoiding the complica-

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Material for this study was furnished through the courtesy of C. B. Fleet Company, Inc., Lynchburg, Virginia.

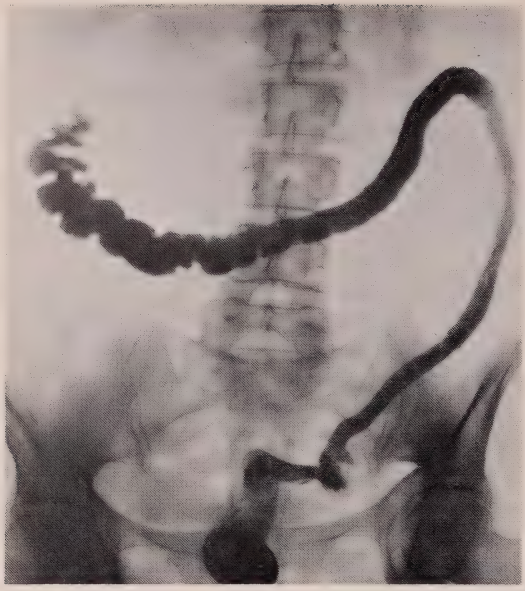

FIG. 1. X-ray film taken between five to ten minutes after the administration of contents of disposable enema unit mixed with 2 tablespoonsful of barium sulfate.

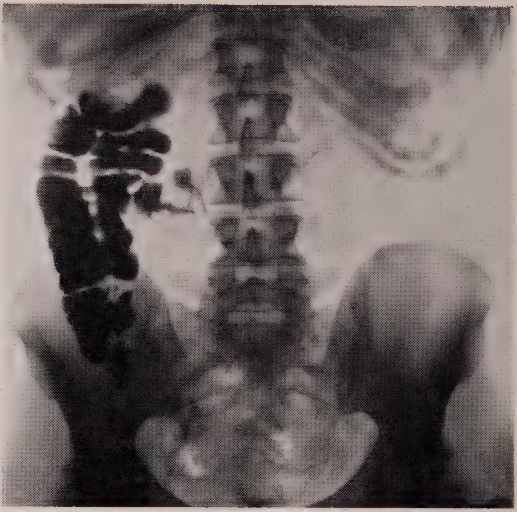

FIG. 2. Postevacuation x-ray film taken after administration of the contents of disposable enema unit with barium sulfate added.

tion of irritative trauma.

The Fleet Enema disposable unit* appeared to offer interesting possibilities for preparing the colon for barium enema studies, but there was a question as to how far an enema containing only $4^1/_2$ fluid ounces could traverse the bowel. In fact, there had previously been a feeling that only the distal segment of the colon, consisting primarily of the sigmoid, could be thus cleansed.

To determine this factor, 2 tablespoonsful of barium sulfate were added to the $4^1/_2$ fluid ounces of solution contained in the disposable enema unit and the mixture was then administered to a few patients. Patients were not selected and frequently there was no previous preparation. After an interval of about five minutes, a 14 by 17 inch x-ray film was taken of the abdomen with the patient in the prone position. It is interesting to note that the solution was frequently observed to be well into the proximal aspect of the transverse colon (Fig. 1) and that on several occasions, it reached the cecum.

Actually, with only $4^1/_2$ fluid ounces of solution (plus the 2 tablespoonsful of barium sulfate) administered to the patients, the roentgenograms that were made were equivalent in quality to fairly satisfactory barium enema studies of the colon, and were completely satisfactory as studies of the distal half of the colon. Films following evacuation (Fig. 2) often showed the barium to have progressed in retrograde manner to the ascending colon and cecum, thus indicating that the solution did bathe the entire colon.

It was the success of this preliminary study with the disposable enema unit in combination with barium sulfate that led me to compile a series of cases prepared in the manner described in the following paragraphs.

Presented here is an explanation of the preparation procedure for a barium enema used with both hospitalized and private practice patients. Its simplicity and its adaptability to hospitalized or to office patients, ambulant or bedridden, makes it, in my opinion, a highly satisfactory procedure.

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* This unit contains 16 Gm. sodium biphosphate and 6 Gm. sodium phosphate per 100 cc. of solution, in a hand-sized collapsible polyethylene squeeze bottle of $4^1/_2$ fluid ounces with a prelubricated, nontraumatic rectal tip.

Preparation on Day Prior to Examination

DIET.—*Breakfast:* Juice, coffee or tea, toast, or cereal (small serving). *Lunch:* Juice, soup with crackers or a small sandwich, coffee, or tea. *Following lunch:* Force fluids such as water, diluted juice, tea, or coffee. (Whole milk tends to constipate and is not advised except for a small amount in coffee or tea.) *Supper:* 6:00 P.M.: Juice, preferably diluted, plain consomme, gelatin dessert (if desired), coffee, or tea.

MEDICATION.—7:00 P.M.: 1 $^1/_2$ ounces of a sodium biphosphate-sodium phosphate solution (Phospho-Soda [Fleet])* diluted in a glass of water is taken, followed shortly by a second glass of water. After taking the sodium biphosphate-sodium phosphate solution fluids are freely permitted unless contraindicated by the attending physician.

Preparation on Morning of Examination

On awaking, and while still in bed, the patient is given the contents of the disposable enema unit (or he may administer it to himself). When self-administering the enema the patient lies on his left side and inserts the rectal tip of the enema unit. The flexible tip is anatomically correct and is 5 cm. (2 inches) long which permits it to pass through the interior anal sphincter while averting danger of perforating or penetrating the rectal wall. It takes less than a minute to insert the tip and instill the contents of the unit into the rectum. Following administration, the patient then lies on his left side or abdomen for about five minutes or until he feels a strong urge to defecate. He should then evacuate.

It is preferable to administer the enema about two hours prior to the roentgenographic examination in order to allow the bowel to become as nearly quiescent as possible after evacuation.

Although some radiologists may disagree, I permit my patients to have a small breakfast on the morning of the examination (juice, coffee or tea, and a slice of toast). While this may set up a gastrocolic reflex which is objectionable to some examiners, in my experience this has not proved to be the cause of undue complicating factors. Instead, a small meal aids considerably in alleviating the patient's apprehension about the forthcoming examination.

Results

At this writing 600 barium enema studies have been completed using this procedure, including 250 hospitalized cases and 350 ambulatory cases, and not a single repeat study has been necessary because of inadequate preparation. Some mottling of the cecum, probably due to the contents of the small bowel, has occasionally been noted. However, the percentage of these cases is considerably lower than is encountered when patients have been prepared by the castor oil-multiple enema method.

In every instance patient reaction has been most satisfactory. The usual adverse comments encountered after preparation with castor oil and multiple enemas have been conspicuously absent.

Summary

1. A simplified, safe, and satisfactory method of preparation for barium enema studies is reported.

2. Phospho-Soda (Fleet) is substituted for castor oil on the evening prior to examination. One Fleet Enema disposable unit is substituted for multiple tap water or soapsuds enemas on the morning of the examination. This can be administered with safety by untrained personnel or by the patient.

3. The procedure described saves a considerable amount of time, particularly in hospitals where there is often a shortage of trained personnel.

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* Phospho-Soda (Fleet) contains 48 Gm. sodium biphosphate and 6 Gm. sodium phosphate per 100 cc. of solution.

4. Patients preparing themselves for a barium enema find the described procedure much simpler to carry out; as a result, inadequate preparation is minimized.

5. The patient's attitude is considerably improved by the elimination of unpleasant cathartics and multiple enemas.

6. The filled colon study, the post-evacuation or mucosal relief study, and the air contrast study all demonstrate that the described procedure produces studies equivalent in quality to those made after any other method of preparation.

90–20 150th Street, Jamaica 35

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RECENT ADVANCES IN MEDICINE AND SURGERY

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Present Status of Surgery of the Pancreas and Spleen

BJORN THORBJARNARSON, M.D., AND FRANK GLENN, M.D., NEW YORK CITY

(*From the Department of Surgery, New York Hospital-Cornell Medical Center*)

SURGERY OF THE PANCREAS

Pancreatitis

ETIOLOGY.—There are broadly two types of pancreatitis, primary and secondary. Although numerous etiologic or inciting factors are recognized for each type, nothing is truly known to explain the occurrence of the majority of clinical cases. Secondary pancreatitis occurs, for instance, in conjunction with cholelithiasis and following operations on the biliary tract,[1] and it was on the basis of a stone impacted in the sphincter of Oddi that Opie in 1901[2] formulated the theory of a common channel to explain reflux of bile into the pancreatic duct.

The common channel theory still has many adherents but it is not universally accepted. In refutation, in particular, is the fact that pancreatitis sometimes occurs in aberrant islands of pancreatic tissue where no common channel exists.[3] Also, some doubt has been cast on the ability of bile to pass up the pancreatic duct against the pressure gradient of the pancreas, although it has been shown to occur experimentally under a very slight pressure head if the bile is first properly admixed and incubated with pancreatic juice.[4] The duct of Wirsung, which in 90 per cent of cases drains the main portion of the pancreas, opens in about 95 per cent of cases into the lower common duct or with it into the papilla of Vater. It is probably rare, however, that the opening is high enough in the common duct or above the sphincter to form a common channel. The common channel theory assumes that if the ampulla of Vater becomes obstructed by a stone, spasm of the sphincter of Oddi, or tumor—causing an increase in pressure within the extrahepatic biliary duct system—the bile is forced into the pancreatic duct. It is evident from the relative frequency by which the pancreatic duct is outlined on cholangiograms that a common channel often exists.

Other theories suppose that bile is not essential for the production of acute pancreatitis. It has been demonstrated in animals that ligation of the pancreatic duct followed by forced feeding will lead to an acute episode, and a case is on record in which acute pancreatitis developed in a young person when a heavy meal followed starvation and physical exercise.[5] Spasm of the duodenal musculature has been involved in causing obstruction of the pancreatic duct and thus predispose to pancreatitis. We have observed repeated attacks of acute pancreatitis apparently caused by a very small carcinoma of the ampulla of Vater in an individual in whom the pancreatic duct opened into the papilla. Rich and Duff[6] formulated a theory that epithelial hyperplasia in the pancreatic duct system causes obstruction.

Infectious processes, such as mumps and scarlet fever, may cause this disease. Alcohol is often very prominently involved, usually as the agent stimulating the pancreas to acute massive secretion which in the presence of some obstruction, possibly formed by dry inspissated material in the ducts, will rupture the parenchyma and set the process in motion. Hyperlipemia is an etiologic agent, and familial cases are known.[1] There are varieties of acute pancreatitis, ranging from apparently mild catarrhal-like swelling to the acute hemorrhagic type leading to a shock-like condition with a rapid downhill course and demise.

Diagnosis.—Pancreatitis should be suspected in persons with a relatively acute onset of upper abdominal pain radiating to the back and sometimes to the left shoulder. There often is a rather marked ileus, and scout films of the abdomen may show gas in the portion of the colon near the splenic flexure, where it is cut off. An isolated loop of small bowel is also often seen in the left upper quadrant. There is marked upper abdominal tenderness over the course of the pancreas. Serologic tests are important in establishing the diagnosis since the amylase is almost always elevated early in the disease.

Treatment of Acute Pancreatitis.—The treatment of acute pancreatitis is not surgical. A patient with pancreatitis should be maintained on bed rest. Nothing should be given by mouth, and gastric suction should be instituted to prevent the gastric contents from reaching the duodenum and releasing secretin, which would further stimulate the pancreas. Opiates, in particular morphine, should not be given since they create spasm of the ampulla of Vater. Atropine should be given in adequate dosages to reduce vagal stimulation. Banthīne may also be used. Intravenous feedings are administered. Blood transfusions are of value in the more severe cases, and serum albumin given intravenously has been reported helpful. Broad-spectrum antibiotics support the seriously ill patients against secondary infection. Marked lowering of serum calcium occurs from its precipitation in the soap-like formation of fat necrosis and leads to tetany.

Sequelae.—Pancreatitis often is a chronic recurrent disease. One survey found 39 recurrent cases in 100 acute cases studied. The natural history of chronic recurrent pancreatitis is gradual destruction of the pancreatic parenchyma, which produces the external secretions of digestive enzymes, and the islet cells responsible for the production of insulin. The direct results of fibrosis and destruction of the gland lead to steatorrhea and diabetes mellitus. Large bulky foul stools containing excessive amounts of undigested protein and fat are characteristic of steatorrhea. Recurrent episodes of pain are caused by both true episodes of acute pancreatitis and distention of the ducts from areas of narrowing and stenosis.

Calcifications occur in the ducts and parenchyma of the gland and show up on scout films of the abdomen. Calcification is characteristic of alcoholic pancreatitis; it rarely, if ever, is seen in other types.[7]

Pseudocyst formations occur after acute attacks. Pseudocysts are collections of fluid and pancreatic enzymes outside the gland; the organs in the vicinity help to form the walls. Most often the cysts project into the lesser sack and displace the lesser curvature of the stomach to the left, downward, and anteriorly. These cysts mainly form from the body and tail of the organ and are palpated in the midline and to the left of the epigastrium. Pain usually is associated with pancreatitis but not always.

Several cases with extensive calcification have been reported in which there was no history of pain.[8]

TREATMENT OF CHRONIC RELAPSING PANCREATITIS AND SEQUELAE.—The treatment of chronic relapsing pancreatitis aims at preventing recurrent attacks. It serves to emphasize how little is known about the true etiologic factors. Pancreatitis associated with biliary tree diseases may subside, never to recur if the biliary tract disease, mainly cholelithiasis, is eradicated soon enough. Similarly, the pancreatitis associated with peptic ulcer or resulting from acute infectious diseases usually subsides when the primary agent is overcome. Chronic pancreatitis with recurrent attacks of pain, calcification, pseudocyst formation, and pancreatic insufficiency is more difficult to handle. Usually this type is associated with various degrees of alcoholism, but elimination of this source may not suffice if the process is far enough advanced.

Pseudocysts usually persist once they are formed until they are surgically treated. Various methods of surgery are advocated, varying from sphincterotomy to extirpation of the lesion.[9–12] We have had best results from internal drainage of these cysts although some located in the body and cauda of the organ preferably should be excised. We believe that internal drainage by way of a Roux Y segment of the jejunum is the method of choice for internal drainage, although cystogastrostomy often has given excellent results.

Repeated attacks of pancreatitis in the chronic form usually are associated with areas of stricture and ectasia of the main duct. Operations designed to relieve this condition vary from total pancreatectomy[13] in the worst cases, to leaving a rim of pancreatic tissue adjacent to the duodenum, to internal drainage. Resection of the cauda of the pancreas along with splitting the organ along the main duct and anastomosing the open pancreas to the small bowel or stomach has been reported, apparently with good results.[14] Advocates of this method maintain that some regeneration of pancreatic tissue may be expected once adequate drainage is established, with consequent improvement in excretion of digestive ferments.

If the obstruction in the pancreatic duct is confined to the body and cauda, resection of it with anastomosis to the jejunum in Roux Y fashion is attempted, and if the obstructing factor is felt to be at the outlet, caused by the sphincter of Oddi or duodenal musculature, sphincterotomy or sphincteroplasty is performed, also with good results reported.[15–17]

Surgical methods for the control of pain in chronic recurrent pancreatitis consist of thoracolumbar sympathectomy and splanchnicectomy, as described by Ray and Console[18] of this institution. The authors found that sympathectomy for the relief of pain is effective until the process extends to adjacent structures with somatic innervation. Pfeffer and Hinton[19] reported on 5 patients who experienced relief of pain from sympathectomy, but in only 1 of these cases was there some evidence of improvement in function or regeneration. Recently, Japanese authors have reported on a method for removing the sympathetic innervation of the pancreas by the abdominal route.[20] In this method the plane is developed between the head of the pancreas and duodenum and the vena cava. The celiac ganglion with the innervation to the pancreas is found in the angle between the vena cava and the left renal vein superiorly. The authors divide all the sympathetic fibers and report good results. They warn, however, of complications which may occur if the fibers going to and surrounding the superior mesenteric artery are removed.

In spite of the many glowing reports in the literature on the treatment of pancreatitis, the outlook is not as good as it may seem. Acute hemorrhagic pancreatitis is almost as deadly now as when it was first accurately described, by Reginald Fitz in 1888. Secondary pancreatitis often may be cured by attacking the etiologic factor but no dependable solution exists for the primary type. The various methods give satisfactory results in selected cases but the answer to the basic problem still remains to be found.

Injuries to Pancreas

The pancreas is a retroperitoneal organ lying across the vertebral column in a relatively fixed position. The main part of the organ is well shielded by the bony structures and by the depth of the abdominal cavity. Penetrating wounds and blunt trauma which thrust the pancreas against the vertebral column, however, may occasionally lead to injury, which may vary from localized contusion or hemorrhage to complete transsection. The signs and symptoms of injuries such as these to the pancreas proper become manifest one or two days later as acute pancreatitis followed by elevation of serum amylase.[21] Often other organs are damaged concomitantly, and in 31 cases reported by Culotta and coworkers[22] the 5 deaths were caused by damage to other organs. The surgical treatment of the pancreatic injury itself consists of simple drainage. External fistulas frequently develop but usually close by themselves. Abscess and cyst formation may also be observed as late sequelae.

Congenital Anomalies

Annular pancreas is a condition which sometimes is found incidentally, having never given the individual harboring it any trouble. More often, however, symptoms develop in early life although some do not become manifest until adulthood.[23–25] Division of the ring has a high morbidity and mortality since pancreatitis and fistulas may result. The treatment recommended is duodenojejunostomy for children and gastric resection for adults.

Elevated Serum Amylase

Amylase, a digestive ferment, is produced by the pancreas. It also is produced by the salivary glands, which are of a structure similar to the pancreas. In cases of pancreatitis and obstruction to the excretory channels of the pancreas there is an escape of abnormally high amounts of amylase into the blood stream, and this phenomenon has been utilized as a test for acute pancreatitis. It has now become apparent, however, that significant elevation of serum amylase may occur in diseases of organs other than the pancreas. In epidemic mumps, for instance, this increase is regularly observed. It is often seen with duodenal and marginal ulcers. Cholecystitis and common duct stones may be accompanied by elevated amylase levels.[26] Although slow chronic obstruction to the pancreatic duct is not supposed to give rise to elevated values, we often have observed this rise in patients with cancer of the pancreas or ampulla of Vater. Intracranial injuries may give rise to elevation of serum amylase, perhaps as a part of a stress reaction, without any evidence of pancreatic disease. Smolik and coworkers[27] reported on 109 patients in whom significant elevation, from 150 to 950 clinical units, occurred in 26. It should also be understood that in the most acute form of hemorrhagic pancreatitis there is sudden total destruction of pancreatic parenchyma so that an elevation may never become apparent.[26]

Serum amylase determinations, therefore, are helpful in diagnosing acute pancreatitis, but only if it is kept in mind that extra- and intrapancreatic conditions may give the same results and that the clinical picture should coincide with the serologic findings.

Aberrant Pancreas

Aberrant pancreas may be found in many locations, the most common ones being the duodenum, stomach, and jejunum in order of frequency.[28] The heterotopic pancreas may undergo any of the changes of the normal pancreas—acute and chronic pancreatitis, benign and malignant growth, and harbor hyperfunctioning adenomas. When the ectopic pancreas is located in the stomach it is almost solely in the pyloric or prepyloric region.[29] In this location it may give rise to bleeding by erosion of the superimposed gastric mucosa. Occasionally it may cause obstructive symptoms. A filling defect on radiologic examination has led to operation revealing ectopic pancreas.

Tumors

Cystadenoma.—The noninsulin-producing ulcerogenic tumors of the pancreas were described in this series of the Journal in the October 1, 1959, issue. In addition, there is a variety of benign and malignant neoplasms which arise both in the glandular and hormone-producing elements and the supporting stroma of this organ. Glenner and Mallory[30] studied 35 cystadenomas and related tumors of the pancreas and reached the conclusion that the cystadenoma always is a potentially or actually malignant tumor which often shows early recognizable evidence of invasive spread.

Carcinoma.—Carcinoma of the pancreas is one of the tumors in which modern medicine has failed to make marked progress. According to Cliffton,[31] the most common symptom in carcinoma of the pancreas is pain; this is in contrast to the old concept of silent jaundice as pathognomonic for cancer in this location. Cliffton also states that carcinoma often suggests chronic pancreatitis rather than tumor. The proximity of the ampulla of Vater, lower end of the common duct, pancreatic duct, and duodenal mucosa often makes it difficult to ascertain the exact origin of some of these tumors. The difficulty in establishing a histologic diagnosis prior to radical surgery is also well recognized. A dilated common and pancreatic duct, however, is a sign of malignancy.[32] Transduodenal exploration of the ducts, however, often will enable the establishment of the diagnosis.

The mortality from radical surgery on the pancreas is still formidable. Halsted performed a wedge resection for carcinoma of the ampulla of Vater, but it remained for Whipple to plan and carry out the first radical pancreatic duodenectomy in 1935.

The long-term survivors from carcinoma of the pancreas are few but these few are found only among those treated by radical surgery. Craighead and Lien[32] reported on 78 patients who underwent pancreaticoduodenal resection. The entire pancreas was removed in 13 with a mortality of 60 per cent. Partial resection of the pancreas was carried out in 65 with a mortality of 51 per cent. Others report a mortality of only 20 per cent.[33] The most common cause of death was disruption of anastomotic lines between the pancreas, common duct, and bowel. It is important to drain the bile and pancreatic secretions into the bowel proximal to the gastroenterostomy since otherwise there is danger of peptic ulceration. Among Craighead's patients there were 5, of whom 2 with pancreatic carcinoma, survived for more than six years.

Child from this institution showed that the portal vein in human beings could be resected in two stages and applied this knowledge to radical pancreaticoduodenectomy. Other investigators have tried to extend this operation by performing a portacaval shunt in the presence of a patent portal system, but this has been shown to result in demise in a few months from fatty infiltration of the liver and hypoalbuminemia.[34] Waugh and Giberson[33] reported a 20 per cent mortality in 85 pancreatoduodenectomies for cancer. Of those patients who survived, 37 were followed, and 10, or 27 per cent, were found to be alive five or more years after operation.

Islet Cell Tumors.—Insulin-producing tumors of the pancreas are rare lesions but may be more common than expected because the bizarre symptoms often may cause difficulty in diagnosis. The symptoms result from hypoglycemia and may vary from attacks of weakness and hunger to loss of consciousness with epileptiform seizures. As a matter of fact, some of these patients have been found in mental homes, to which, of course, they had been erroneously assigned. Howard and coworkers[35] found almost 400 cases of these tumors reported in the literature up to 1950. The diagnosis is grossly based on the following criteria:

1. The attacks must occur after a period of fasting or after extreme physical exercise.
2. Blood sugar values during an attack must be 50 mg. or less per 100 cc.
3. Symptoms must be relieved by oral or intravenous administration of sugar.

These tumors usually are small, the average diameter being 1 to 2 cm. They occur in all age groups. Howard found 14 cases in children under fifteen. Marshall[36] found 90 per cent of his 19 patients to be less than thirty years old. Of these 19 cases, 2 were malignant and 8 were questionably malignant.

When patients are encountered who fulfill the criteria for diagnosis, exploration of the pancreas should be thorough. Up to 5 per cent of these tumors are multiple, and adenomatosis[37] has been reported. If no tumor can be palpated, a subtotal pancreatectomy should be carried out. Howard and coworkers[35] found 81 patients in whom tumors were never demonstrated. Of these patients, 56 had partial pancreatectomy, and satisfactory results occurred in 40 per cent.

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SURGERY OF THE SPLEEN

In the normal state the spleen weighs about 150 Gm. and is not accessible to palpation. In fetal and neonatal life the spleen takes part in hematopoiesis, but later the only corpuscles produced by this organ are the lymphocytes. In addition to producing lymphocytes the normal spleen is an important place for destruction of normal and abnormal red cells. The cells are trapped in the splenic pulp, where they are fragmented and destroyed and where through stasis an increase in plasma proteins and lowering of glucose content occurs. A milieu is provided which is essential for the action of the autoimmune bodies of certain hemolytic anemias.[1] Some evidence has been found in experimental animals that the spleen may give protection against radiation injury.[2] The spleen also appears to play a part in immunization reactions and to afford protection against infectious processes, as will be explained.[3,4]

Splenectomy is being utilized in the treatment of various hematologic disorders. In some of these diseases the operation is well established and the results range from good to excellent; in others the results are less predictable since the indications have not been adequately established. Table I lists some of the hematologic disorders for which splenectomy is being utilized.

Traumatic Rupture

Although the spleen usually is well protected by the bony thorax from external violence and injury, traumatic rupture is not uncommon. Injury to the spleen may occur through blunt or penetrating trauma. In the present day of hazards on the road, automobile injuries are the cause of most cases of splenic rupture, most often by blunt trauma. A small spleen is less likely to suffer trauma than a large one. During the Middle Ages it was well known by professional assassins in Italy that a well-aimed nudge with the elbow to the victim's left hypochondrium was as likely to cause demise through rupture of a malaria-enlarged spleen as more drastic and obvious measures. Spontaneous ruptures are also recorded in infectious diseases involving the spleen, such as infectious mononucleosis.[5]

The signs and symptoms of a ruptured spleen are internal bleeding and peritonitis in the left upper quadrant. Pain may be experienced in the left shoulder. Radiographic examination may reveal immobility of the left side of the diaphragm and depression of the gastric gas bubble. There often is tenderness in the left upper quadrant with a feeling of resistance. Shock from blood loss is found in over half of the cases reported.[6] Parsons and Thompson[6] found 5 cases of delayed rupture in 26 patients. Delayed rupture of the spleen may occur up to a month and a half or more after the accident. It may be caused by a subcapsular hematoma, which enlarges through recurrent bleeding until rupture into the free peritoneal cavity occurs.[7] A clot may

TABLE I.—Hematologic Disorders for Which Splenectomy Is Utilized

Disease	Basic Disorder	Spleen Factor	Splenectomy Indication	Splenectomy Results
Hereditary spherocytosis	Structurally abnormal erythrocytes	Abnormal corpuscles trapped and lysed by normal spleen	In early childhood	Excellent
Idiopathic thrombocytopenic purpura (chronic)	Platelet autoantibodies (?)	Production of the antibodies (?) Clearing of damaged platelets (?)	Chronic cases	Good
Acquired hemolytic anemia	Autoantibodies on red cells	Production of the antibodies (?)	If steroids are ineffective	Improvement in 50 per cent
Cooley's anemia	Intracorpuscular hemoglobin metabolism defect	Secondary acquired extracorpuscular hemolytic factor	If extracorpuscular hemolytic factor is excessive	Uncertain
Hypersplenism (splenic cytopenias)	Overactivity of spleen	Increased destruction of formed elements (?) Inhibition of marrow (?)	All cases	Good in primary form
Chronic congenital aregenerative anemia	Not known; suppression of marrow by splenic action (?)	Basic disorder (unknown)	If steroids are ineffective	Occasional improvement
Hypoplastic bone marrow	Miscellaneous	Inhibition or suppression of remaining marrow	If steroids are ineffective	Unpredictable

also form over the site of primary rupture and stanch bleeding until liquefaction and dislodgment of the clot occurs with resultant delayed bleeding. Rupture does not always occur. Liquefaction of the intrasplenic hematoma may occur and cyst formation may result. Some of these cysts reach enormous size and initially have been mistaken for ascites.[8]

Most of the time it is not possible to establish the diagnosis of splenic rupture before operation, and verification should not be waited for. Blood replacement is of the utmost importance when there is reasonable cause to suspect rupture, and splenectomy should be expedited. Parsons and Thompson[6] performed 23 splenectomies for rupture, and all patients survived. In the same series the 3 deaths occurred before operation could be carried out.

Hereditary Anemia

Familial Hemolytic Anemia.—Hereditary spherocytosis is transmitted in the same way as Cooley's anemia, to be described. The peculiar structure of the erythrocytes allows them to be trapped and destroyed in the spleen, and splenomegaly is the rule. Abnormal fragility to hypotonic saline solution always can be demonstrated. Symptoms may be present from childhood, and occasionally crises occur which are followed by abdominal pain, fever, increased hemolysis, and jaundice. Bilirubin cannot be demonstrated in the urine, hence the term acholuric jaundice. Hemolysis and increased excretion of products of erythrocyte destruction lead to gallstone formation, which is the rule if the patient lives long enough.

Splenectomy cures individuals with this affliction, performed not because the spleen is diseased but because of the abnormality of the red cells. This is demonstrated by the fact that although there is no change in the shape or fragility of the erythrocytes following operation hemolysis ceases. Because of the excellent results obtained by splenectomy in this group, it is a recommended procedure. It should be performed early, probably in the first two years of life, to prevent the complication of gallstone formation.[2, 9–11]

Cooley's Anemia.—Cooley's, or Mediterranean, anemia is a hereditary disease transmitted through either mother or father as a mendelian dominant. Both parents of a severely afflicted child always are found to show the characteristic blood changes. Patients with the mild asymptomatic form can be detected only by blood examination but the severely anemic patient presents a typical appearance.[9]

The inherited defect is believed to be an inability to change the fetal hemoglobin, which always is present in an exaggerated amount, into the adult form. In addition to the inherited intracorpuscular factor, these patients also exhibit the acquired phenomenon of increased destruction of transfused exogenous red cells, and this process takes place in the spleen. It has been shown that this hemolytic factor is not present at birth but is acquired and increases during life with progressive decrease in the expected life span of transfused red cells. This phenomenon often is eliminated by splenectomy, and it has been shown that the survival time of transfused red cells tends to return to normal after splenectomy, with consequent reduction in the number of transfusions required to maintain the preoperative hemoglobin levels. The spleen in Cooley's anemia often is large and causes symptoms by pressure on adjacent organs, and this may prompt removal. The improvement in hemoglobin levels after splenectomy is due to elimination of the extracorpuscular hemolytic factors residing in the spleen and to increased production of fetal hemoglobin by the patient, which was suppressed by repeated transfusions. The improvement in hemoglobin levels often is not permanent, and long periods of observation are needed to assess the benefits derived since the congenital inherited factor is in no way changed by the operation. It is suggested that the benefits, such as decreased need for transfusions, are more evident the older the children are at the time of operation. Although the value of splenectomy in Cooley's anemia usually is a palliative one, there is evidence suggesting that selected patients may derive greater benefit from it.[2, 9, 10, 12–14]

Idiopathic Thrombocytopenic Purpura

Idiopathic thrombocytopenic purpura is primarily characterized by excessive bleeding from mucous membranes as well as into numerous tissues of the body, is more common in the female than in the male, and is more common in the young than in the old. Laboratory studies reveal that the bleeding time is increased but that the clotting time is normal and that there is no clot retraction. The platelets of the peripheral blood are reduced to 50,000 per cubic millimeter or less but bone marrow examination shows normal or increased megacaryocytes.

The cause of the diminished number of circulating platelets is not fully known. There are theories of excessive platelet destruction by the spleen, inhibitory action on the bone marrow by the spleen, and destruction of the platelets by an autoantibody produced by the spleen. Idiopathic thrombocytopenic purpura cocurs in acute and chronic forms. The acute form often is seen in children and is associated with an infectious process. The acute type in children is often self-limiting and may not require treatment. On the other hand, the chronic form and the disease in adults is less likely to show spontaneous remission and more likely to require surgical therapy.

The therapy of idiopathic thrombocytopenic purpura consists mainly of administration of cortisone, splenectomy, or both; ACTH is also used. It is our feeling that many of the cases seen in childhood and acute cases do not need surgery and will either subside spontaneously or by the use of corticotropin or cortisone. If a case is chronic or in an adult, surgery may be needed and will often cure the patient even though a prompt rise in platelets is not always observed. Emergency splenectomy for idiopathic thrombocytopenic purpura is now rarely necessary since the adrenal cortical hormones usually bring about at least a temporary remission.[2, 9–11]

Hypersplenism

One of the normal functions of the spleen is to eliminate the formed corpuscular elements from the blood stream in due time and/or exert an inhibitory or regulatory effect on the bone marrow. Occasionally the spleen seems to become overactive in either one of these aspects and the result is cytopenia, either selective or pancytopenic. In these instances the spleen usually is enlarged and the bone marrow is hyperplastic. There are primary and secondary forms of this condition. In the primary form no associated disease is found; in the secondary form another disease causes the splenic enlargement and initiates the vicious cycle. The symptoms will depend on the type, and care has to be exercised in ruling out secondary, or symptomatic, types of hypersplenism. Surgery is indicated and gives good results in the primary form. The prognosis in the secondary, or symptomatic, types depends on the primary disease.[2,10,11]

Acquired Hemolytic Anemia

Acquired hemolytic anemia is a disorder with signs and symptoms similar to hereditary hemolytic anemia. The differences are that in the acquired type spherocytosis is found in less than half of the patients, that the spleen is rarely palpable, and that the onset is usually later in life. There are primary, or idiopathic, and secondary, or symptomatic, types of this disease. The Coombs test usually is positive, and this also serves to separate it from the hereditary type. Hemolysis is attributed to autoantibodies on the red cells; the titer of these antibodies will vary and its assessment may be useful in following the course of the disease.

Splenectomy is a useful tool in the treatment of this condition if steroids fail to sustain remission, in particular in the idiopathic type. The prognosis in the secondary type, of course, depends on the primary disease. When splenectomy is effective, a drop in the titer of the antibodies may sometimes occur. On the other hand, an improvement may occur with no drop in the titer.[2,10,11] There is evidence that some prediction as to the results of splenectomy may be ventured after studying these patients preoperatively after injection of chromium-5 tagged red cells.[15]

Chronic Aregenerative Anemia

Occasionally a syndrome is encountered in children in which erythropoiesis fails to occur in the bone marrow. This is most often found in infancy. Steroid therapy is administered along with transfusions. When steroids fail to promulgate an improvement, splenectomy is considered and the operation is carried out with the possibility of a splenic factor, suppressing erythropoiesis, in mind. Occasional good results have been observed.[10]

Hypoplastic Bone Marrow

Hypoplasia or aplasia of the bone marrow from various causes have also been offered as an indication for splenectomy. When the causative agents by themselves drastically limit the life span, results may not be dramatic, but when proper precautions are observed, as reported by Heaton and coworkers,[16] improvement or good results may be seen in half the cases. This operation is also proposed because of the possibility of a bone marrow-suppressing factor produced by the spleen.[16]

Splenectomy

Considerations.—Many patients undergoing splenectomy for hematologic disorders are seriously ill from the primary disease. Whenever a patient of this kind is prepared for and brought to surgery, the anomalies secondary to the process which are already present have to be accurately estimated and considered. Anesthesia and major operations are not without hazards in the average population, and these dangers are doubled in those with severe anemia, decreased red cell volume, and impairment of vital organs, as may be expected in many of these patients. When elective operations are to be carried out, the advantageous moment should be chosen—when the disorder is in a remission, the blood volume as close to normal as possible, and vital organs sufficiently prepared. Close cooperation between hematologist, anesthetist, and surgeon is essential.

TRAUMA.—The splenectomy carried out for trauma does not allow for too much deliberation or preparation. As mentioned, speed of blood replacement and prompt surgery are the two factors essential for recovery. Bleeding from a ruptured spleen usually is massive, and control of it is of importance as soon as the abdomen is opened. Because of the spleen's location, direct exposure often is difficult but the hand should be passed over the organ immediately and the pedicle compressed until the blood can be evacuated and the operation completed in the routine way.

OPERATION.—The technical features of the operation may be made easier by proper placement of incisions. The spleen of average enlargement may be removed easily through a long left subcostal incision or a left rectus incision. The huge spleens sometimes encountered in cases in which adhesions have formed between the spleen and the diaphragm may often be easier removed through a left thoracoabdominal incision. The normal-sized or moderately enlarged spleen often is hidden from view by the stomach. Any dilation of the stomach makes exposure of the spleen difficult. Nasogastric intubation and decompression, therefore, is of the utmost importance during operation.[9]

ACCESSORY SPLEENS.—Whenever splenectomy is carried out for hematologic disorders, in particular thrombocytopenic purpura, it is imperative that the operator carry out a systematic search for accessory spleens. A recent report on 2,250 consecutive autopsies in which such a search was made revealed that 222, or 10 per cent, accessory spleens were found, of which 1 of every 6 or 7 was located in the tail of the pancreas.[17] The most common location of accessory spleens is in the splenic pedicle in the greater omentum and bowel mesentery.

COMPLICATIONS.—*Bleeding.*—One of the main hazards of splenectomy is bleeding. The splenic artery usually is a single vessel but may branch off a considerable distance from the spleen. To insure hematosis it is not enough to ligate the splenic pedicle en masse; it is essential to dissect the main vessels and secure these by individual ligation.

Fulminating Infections.—It has become apparent from reports in the literature that there is more than a fortuitous connection between splenectomy and fulminating infections. The role of the spleen in resistance to infection and immunologic processes is not entirely understood but the frequent occurrence of severe pneumococcal infection, most often with a meningeal location, following splenectomy deserves close attention. Severe infection following splenectomy in 19 cases, of which 6 terminated fatally, has been reported from this institution. Although most of these cases were in children with severe hematologic disorders, there were 2 patients for whom splenectomy was carried out for traumatic rupture. Although reports of this type should not be considered a deterrent to splenectomy when proper indications exist, it is necessary to emphasize close follow-up and prompt treatment of infections in the postoperative period. Although these complications have occurred as late as sixteen years following operation, the majority have been observed during the first two years following surgery.[3,4] The frequent presence in hospitals of resistant brands of hemolytic staphylococci[18] should prompt fastidious care of these patients. Pneumococcal infections are relatively susceptible to modern antibiotics and sulfa drugs, but an infection with resistant strains of staphylococci may cause a bad prognosis for these youngsters.

Corpuscular Rise.—Usually after splenectomy there is a temporary rise in the corpuscular elements of the peripheral blood. Occasionally this rise becomes excessive. Thrombocytosis of 1 million platelets per cubic millimeter or more has been implicated in postoperative venous thrombosis. It has been our practice to use anticoagulants when this excessive rise has occurred. On the other hand, some observers believe this danger is greatly exaggerated and that anticoagulation is not necessary.[19]

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Malignant Irradiation for Benign Conditions

A review of 165 cases admitted for surgery for treatment of tissue damage due to irradiation (137 had been exposed intentionally for "therapy" of some benign lesion and 28 had been accidentally exposed) showed that 22 per cent developed cancer, an outcome that can be predicted in others more recently exposed. Prompt and thorough prophylactic excision of the damaged areas may prevent development of carcinoma.

The authors found that contrary to previous teaching, carcinoma developing in the irradiated skin of the face is usually of the basal cell type. In reviewing these cases, the writers found that a latent period of several decades between exposure to irradiation and tissue breakdown is common. These findings, which support those of other investigators, suggest that only those fully qualified should be permitted to attempt therapeutic use of x-rays.—*New England Journal of Medicine, January 29, 1959, Bradford Cannon, M.D., Judson G. Randolph, M.D., and Joseph E. Murray, M.D., Harvard University, Boston, Massachusetts*

CLINICOPATHOLOGIC CONFERENCE

ROSWELL PARK MEMORIAL INSTITUTE

BUFFALO, NEW YORK

Conducted by C. LENORE SIMPSON, M.D. MARCH 15, 1958

Discussed by WILLIAM REGELSON, M.D., *and*
FRANZ LESSMAN, M.D.

Case History

A seventy-two-year-old white male was well and active until three and a half months prior to death. He then developed generalized weakness, dyspnea on exertion, and swollen knees and ankles. He had had nocturia, three times nightly, for an indefinite period and had lost 25 pounds of weight during the previous year. His physician noted generalized lymphadenopathy and referred him to Roswell Park Memorial Institute.

On admission, physical examination revealed generalized lymphadenopathy. The liver and spleen were not enlarged. Extensive varicose veins, a left-sided varicocele and hydrocele, and 2 plus edema of the left leg and 1 plus edema of the right leg were noted. A lichenified, violaceous, eczematous area was located above the left ankle. There was questionable enlargement of the heart and a blowing apical systolic murmur. An electrocardiogram showed a low-voltage QRS with nonspecific S-T and T changes. The blood pressure was 120/70 mm. Hg and pulse was 68 per minute. The chest was emphysematous and showed right-sided dullness. The chest roentgenogram showed evidence of a right pleural effusion and a rounded shadow of increased density in the right hilar region. A nodular mass palpable above the prostate constricted the rectum.

The urine was negative for sugar and albumin but contained an occasional white blood cell. Blood studies revealed a nonprotein nitrogen of 45 mg. per 100 ml., acid phosphatase of 3.6 King-Armstrong units, alkaline phosphatase 13.6 King-Armstrong units, albumin 2.98 Gm. per 100 ml., globulin 2.45 Gm. per 100 ml., and hemoglobin 12.8 Gm. per 100 ml. There were 10,500 white blood cells per cu. mm. with a differential of 15 per cent stab cells, 71 per cent polymorphonuclears, 2 per cent lymphocytes, and 12 per cent monocytes. Biopsy of a left inguinal nodule was reported as revealing a mass composed of spindle cells with cigar-shaped nuclei. These cells were arranged to form whorls with a very definite vascular stroma in some fields. Mitoses occurred infrequently. Intravenous pyelograms showed moderate inferior displacement of the left kidney, but both kidneys excreted well. A gastrointestinal series showed a large duodenal diverticulum. The gallbladder and common bile ducts were not visualized on a cholangiogram.

The edema increased progressively until it involved the whole lower half of the body two weeks after admission. At that time the liver was enlarged to 13 cm. below the costal margin, cephalin flocculation was 3 plus, the bromsulphalein test showed 5 per cent retention in thirty minutes, and the phenolsulfonphthalein test showed 40 per cent excretion in two hours. The edema responded to Mercuhydrin, and the patient's weight dropped 10 Kg. in a week. Two thoracenteses yielded approximately 2 L. of clear yellow fluid from the right side of the chest. No malignant cells were seen. Two further biopsies showed a picture similar to the original one. His condition continued to deteriorate. Nitrogen mustard 7 mg. were given daily for six days. The white cell count reached a peak of 20,000 during mustard administration but fell to 6,500 at the end of treatment. Hemoglobin fell to 8.4 Gm. per 100 ml., and a blood transfusion was given. The nonprotein nitrogen gradually rose to 78 mg. per 100 ml.

On the last day of treatment there was increasing dyspnea. Chest roentgenograms showed increase in the right pleural effusion and areas of increased density over the left lung field. The patient died the following day, during his sixth hospital week.

Discussion

William Regelson, M.D.: In discussing this case I should like to bring out some of the findings and later tie them together. First is the left-sided varicocele and hydrocele. Most hydroceles are of inflammatory origin, but a sudden onset of a varicocele or hydrocele after age thirty may indicate retroperitoneal disease or congestive heart failure. Therefore, one must ask whether these defects were of recent or of long-standing duration before deciding the etiology.

He had 2 plus edema of the left leg and 1 plus edema of the right one, which may result from venous stases secondary to varices or congestive failure. He had symptoms and signs suggesting both of these etiologies. In addition, a lichenified, violaceous, eczematous area above the left ankle was present. Again, stases secondary to varices or congestive failure might well produce these skin changes. The questionable enlargement of the heart and a blowing apical systolic murmur may be related to mitral disease and congestive failure. The x-ray films might be helpful to separate these two possibilities. The electrocardiographic finding of a low-voltage QRS with nonspecific S-T and T changes may be related to pericardial effusion, myxedema, or other heart disease. Since the edema described in this patient is not that characteristically seen in myxedema nor are there other symptoms or signs suggesting hypothyroidism, I shall discard this diagnosis.

A blood pressure of 120/70 and a pulse of 68 are not suggestive of pericardial effusion with tamponade. However, if he previously was hypertensive, pericardial effusion can cause a fall in blood pressure. Do we have any history that this man was ever hypertensive?

C. Lenore Simpson, M.D.: No.

Dr. Regelson: In that case I would not suggest that disease. The chest was emphysematous and showed right-sided dullness. Chest roentgenograms showed evidence of a right pleural effusion. In congestive failure, pleural effusions usually manifest themselves at first on the right side, the explanation for which is not fully established. Many of the facts so far indicate congestive failure from heart disease. In addition, a rounded shadow of increased density in the right hilar region was found. Generalized lymphadenopathy, which was his presenting symptom, may result from tuberculosis, sarcoidosis, or lymphoma. In my experience pleural effusion rarely occurs in sarcoidosis. A lymphoma may cause pleural effusion by involving the pleura. At this point I should like to see the x-ray films.

Franz Lessman, M.D.: The chest film of the patient on admission revealed bilateral effusion, more on the right side than on the left, that extended to the interlobar fissures on the right. Some bronchopneumonic infiltration was present at the base of both lower lobes. The heart was slightly enlarged to the left due to hypertrophy and dilatation of the left ventricle. The thoracic cage and mediastinum were within normal limits. A control film of the chest after three weeks revealed some minor decrease of the pleural effusion; otherwise there was no essential change. A portable chest film taken prior to the patient's death revealed a moderate increase of the pleural effusion on the right and left sides and bilateral bronchopneumonic infiltration. An infarct of the left upper lobe could not be excluded.

The intravenous pyelogram revealed on the scout film enlargement of the liver. The spleen was not defined since the area was overlapped by gas and fecal material of the bowel. The psoas shadows were blurred. After injection of contrast medium the kidney system showed bilateral function with slight distention of the right kidney, suggesting hydronephrosis. The left kidney was in a low position, possibly displaced. Since the left psoas shadow was not visualized, the displacement might have been the result of retroperitoneal lymph node involvement.

The colon examination was not satisfactory owing to inadequate preparation. Grossly there was no evidence of obstruction. Some irregularities of the mucosal folds with slight impression of the posterior margin were noted in the sigmoid colon. Such findings may be caused by an extraluminal space-consuming process. The upper gastrointestinal series revealed some diverticula of the third portion of the duodenum and the proximal jejunum. The antral region of the stomach demonstrated a moderate degree of antral gastritis. The intravenous cholangiogram did not show visualization of the common bile duct or of the gallbladder on the one- and two-hour films. Since Cholografin makes for a good liver function test, it may be assumed that there was some liver function disturbance present.

In summarizing the findings of the abdomen, there was enlargement of the liver with evidence of retroperitoneal nodes and a questionable mass in the true pelvis with displacement of the sigmoid. Multiple diverticula of the small bowel were present, and there was possible parenchymal involvement of the liver.

Dr. Regelson: Things are always a lot simpler without x-ray films. When one's mind is made up on the basis of the written report, it is disturbing to see that the film findings are nonspecific. Certainly in a man with varicose veins and edema of his legs, multiple pulmonary infarction may develop. Do we have any history of hemoptysis or pain in the chest?

Dr. Simpson: He had nosebleeds and occasionally spat blood, but the time factor is very vague. There is no history of pain.

Dr. Regelson: Tuberculosis is a possibility. Pleural effusion often occurs in this disease. A tuberculous abscess may produce a retroperitoneal mass, but in the absence of vertebral involvement it is unlikely.

What is the nodular mass palpable above the prostate which constricted the rectum? The x-ray films are a disappointment. I would have thought that on these films I would have seen some mass jutting out of the lumen, perhaps some polypoid mass. It would have helped to pinpoint this. One would have thought that perhaps this was a rectal carcinoma. Since the colon studies and the chest films are not suggestive of carcinoma of the rectum with metastases to the lung, I feel we can exclude this possibility. What did proctoscopy show?

Dr. Simpson: It showed a constricting lesion in the wall.

Dr. Regelson: Was it extrinsic or intrinsic?

Dr. Simpson: Extrinsic.

Dr. Regelson: An extrinsic lesion certainly excludes a primary carcinoma of the rectum. The laboratory data are not too revealing. There is elevation of the nonprotein nitrogen, normal acid and alkaline phosphatase, reversal of the albumin and globulin ratio, a normal leukocytic pattern, and slight depression of the hemoglobin. These findings indicate possible liver damage. They are helpful in excluding leukemia and acute infection.

The report on the biopsy is very helpful. The section revealed a mass composed of spindle cells that had "cigar-shaped" nuclei. These cells were arranged to form whorls in a vascular stroma. My assumption is that this biopsy is a biopsy of a malignant tumor. What tumors are composed of spindle cells? Most of the sarcomas and occasionally spindle cell epithelial neoplasms. However, the very definite vascular stroma in some fields narrows the possibilities somewhat. Such a pattern of growth is present in Kaposi's sarcoma. To support this diagnosis is the lichenified, violaceous, and eczematous lesion of the extremity.

Although two thoracenteses yielded approximately 2 L. of yellow fluid from the right side of the chest, no malignant cells were present. Their absence can be explained by the well-know difficulty in interpretation of lymphosarcoma cells in effusions.

The patient had a retroperitoneal mass, as noted by the roentgenographic studies. This mass may consist of enlarged lymph nodes. Their enlargement could be caused either by Kaposi's disease or lymphosarcoma. It is well known that Kaposi's disease is often associated with lymphosarcoma, in approximately 15 per cent of the cases. In addition to the retroperitoneal mass, evidence of extrinsic involvement of the rectum also is indicative of neoplastic involvement. Patients with Kaposi's disease may have on occasion involvement of the rectum, but it is rare and involvement is characteristically submucosal. These patients may die from hemorrhage because of the vulnerability of these polypoid vascular masses to trauma. Since the studies seem to indicate serosal or muscular involvement, I feel that it is more likely that the lymphoma was the etiologic factor for the extrinsic rectal lesion.

Enlarged retroperitoneal lymph nodes may explain the edema of the lower extremities. Although it is true that most responses occur in patients with congestive failure, the edema of obstruction can also be readily eliminated by the administration of Mercuhydrin.

The enlargement of the liver in association with lowered serum albumin indicates some liver dysfunction. Involvement of the liver by the lymphoma would explain this difficulty, although one needs to exclude liver dysfunction based on passive congestion. At this point I should like to know whether the patient gave a history of nodules on the leg.

Dr. Simpson: No. The lesion was first noted, as far as we can determine, by doctors.

Dr. Regelson: Kaposi's disease is found in Eastern Europeans, particularly Jews and Italians, and in the African Bantu, but I don't feel this racial and ethnic association is a true one. I feel that with the bowel involvement, retroperitoneal disease, liver dysfunction, and the lesion in the leg, Kaposi's disease associated with lymphosarcoma better explains these difficulties than any other disease. The biopsy report supports this thesis.

Against the diagnosis is the history. Kaposi's disease is characterized by growth and disappearance of the lesions, and the average survival of the patient is eight years. Some patients live for twenty-five to thirty years with the disease.

Diagnoses

Clinical.—(*1*) *Kaposi's disease associated with lymphosarcoma;* (*2*) *bronchopneumonia, terminal.*

Dr. Regelson.—(*1*) *Kaposi's disease associated with lymphosarcoma;* (*2*) *bronchopneumonia, terminal.*

Anatomic.—(*1*) *Kaposi's disease associated with lymphosarcoma;* (*2*) *bronchopneumonia, terminal.*

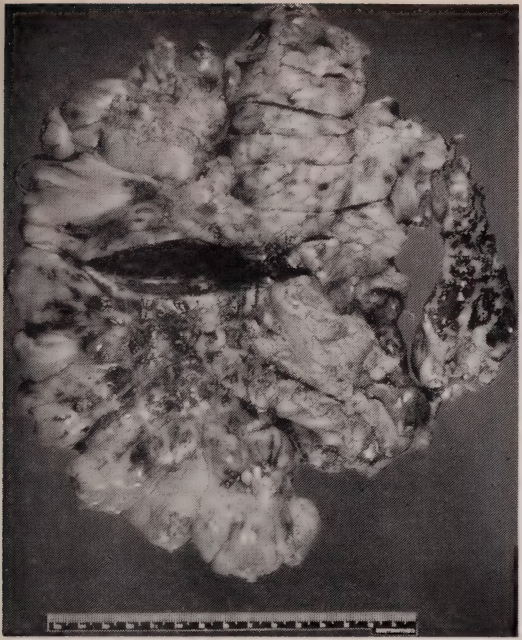

FIG. 1. Large masses of hemorrhagic nodules involving the omental fat.

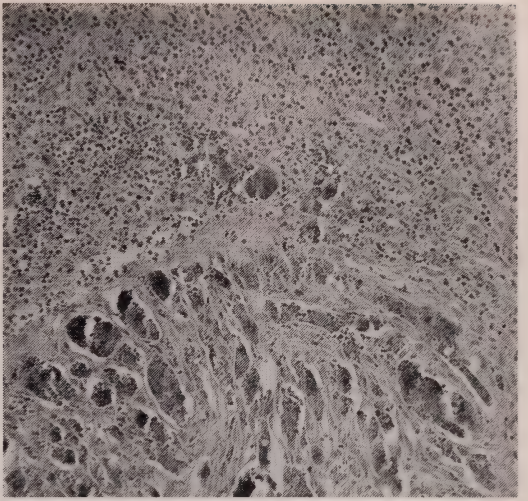

FIG. 3. Field of lymphosarcoma adjacent to Kaposi's sarcoma in a mediastinal lymph node.

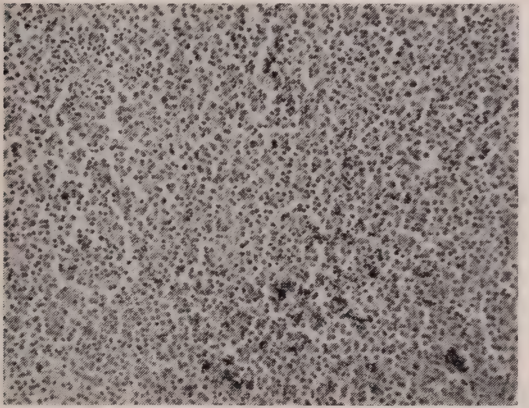

FIG. 2. Typical pattern of lymphosarcoma involving retroperitoneal lymph nodes.

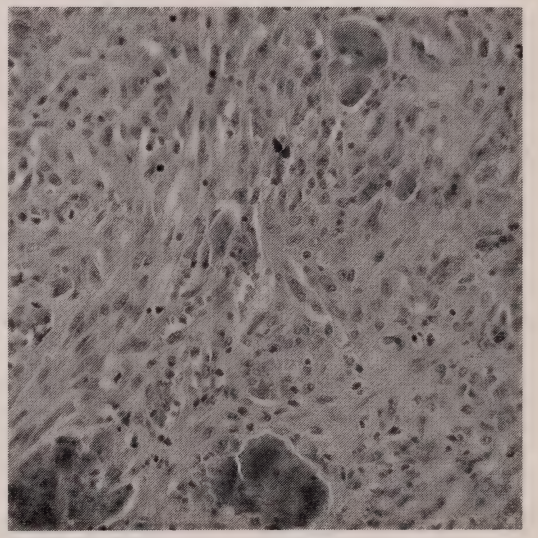

FIG. 4. Kaposi's disease of peritoneum. Note fibrin thrombi in vessels.

Pathologic Report

DR. SIMPSON: The original biopsy diagnosis was benign vascular leiomyoma. Repeated biopsies were done because the patient's condition did not support this benign diagnosis. After the second biopsy the pathologists visted the patient and noted the rather vague bluish patch of his extremity. The patient stated that it had recently developed and had gradually enlarged while he was in the hospital. He did seem vague about this point. The second biopsy of a lymph node revealed the same neoplastic pattern, but it appeared as a metastasis in the lymph node. At this time the correct diagnosis of Kaposi's disease was established. Afterwards the dermatologist viewed the skin lesion and would not accept the diagnosis of Kaposi's sarcoma.

At autopsy the patient was a wasted old

man with petechiae and ecchymotic hemorrhages which were a result of treatment. The purplish discoloration involving the outer aspect of the left leg was larger than when first seen. The tip of one toe was gangrenous. He had 2 L. of fluid in the right side of the chest and 1 L. in the left side and a slight amount of fluid in the abdomen, all of which was slightly blood-tinged. The heart weighed 350 Gm., which I don't think is abnormal for a man over 6 feet tall. There was terminal bronchopneumonia. The striking finding was enormous masses of hemorrhagic nodules covering the peritoneum (Fig. 1), scattered on the pleura, and involving lymph nodes of the inguinal iliac regions. A large mass involved the iliopsoas, rectum, and bladder. These nodules were all on the serosa; none of them involved the mucosa.

The histologic examination of the autopsy material confirmed the diagnosis of lymphosarcoma and Kaposi's disease. In some lymph nodes only lymphosarcoma, lymphocytic-type, was present (Fig. 2). In other lymph nodes both Kaposi's disease and lymphosarcoma were encountered (Fig. 3). In the omentum typical Kaposi's disease was seen (Fig. 4). The lesion on the leg also had a histologic picture, suggestive of Kaposi's disease.

Avery Sandberg, M.D.: How about the liver?

Dr. Simpson: The liver was enlarged to 2,300 Gm. with very early cirrhosis but there was no involvment by tumor.

Ellen Lessman, M.D.: Did the treatment result in increased uric acid excretion and kidney damage?

Dr. Simpson: No. In the few things I looked up, nitrogen mustard didn't seem to have much effect on the disease. What did you find?

Dr. Regelson: I didn't find anything particular about it. I don't think there has been much experience with it.

ANNOUNCEMENT

Medical Society of the State of New York
1960 Convention

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CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies in the operating room including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
ELIZABETH CRAWFORD, M.D.
ALFRED F. GRANATELLI, M.D.
LESTER C. MARK, M.D.
VALENTINO D. B. MAZZIA, M.D.

Cardiovascular Collapse Due to Hemolysis

BLOOD transfusions to overcome severe blood loss during surgical interventions permit successful completion of major operations. However, there are certain imperfections in present-day methods of blood transfusion that occasionally create serious complications. The following case report illustrates one such hazard.

Case Report

A forty-five-year-old woman had tuberculosis of the spine for which it was proposed to do a spinal fusion. Her preoperative physical examination gave essentially negative findings. She weighed 90 pounds. Her cardiovascular and respiratory systems were normal. She had no known allergy. The hemoglobin content of her blood was 11.5 Gm. per 100 cc. Tests for sugar and albumin in the urine gave negative results. She was being treated medically with para-aminosalicylic acid, Isoniazid, and hexavitamins.

For preanesthetic medication she was given 8 mg. of morphine sulfate and 0.4 mg. of scopolamine hydrobromide by intramuscular injection. Fifty minutes later anesthesia was induced by the intravenous drip infusion of a 0.4 per cent solution of sodium thiopental until she was drowsy, and then cyclopropane was administered in a closed circle, carbon dioxide absorption filter system for three minutes at the rate of 500 cc. per minute together with an equal amount of oxygen. Succinylcholine 50 mg. was then injected intravenously, and the patient's trachea was intubated with a number 36 plastic tube under direct laryn-

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Discussed at a conference held at the Hospital for Special Surgery, New York City, June 1, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

goscopy. Administration of anesthesia was then changed to a semiclosed carbon dioxide absorption system with nitrous oxide 4 L. per minute and oxygen 2 to 3 L. per minute. The patient was turned from a supine to a prone position, and surgery was started twenty minutes after induction of anesthesia.

Two hours after surgery was started blood loss was estimated at 500 cc. Packed blood cells, which had been prepared for this patient by the laboratory, were administered intravenously in a slow drip after having been reconstituted to a volume of 500 cc. with Plavolex. The patient's blood pressure had remained quite steady at a level of 110 mm. Hg systolic and 70 diastolic; the pulse rate was 64 per minute and the respirations, which were assisted manually, were at a rate of 24 per minute. At this time osteotomy of the vertebrae was started. Five minutes later neither pulse nor blood pressure could be obtained. Surgery was stopped. Five minutes later the patient's blood pressure was 90/70, pulse rate 84 per minute, and respirations 30 per minute. During the next twenty-five minutes, while surgery was continued, the blood pressure fluctuated between 90 and 80 systolic with a diastolic of 60 and the pulse rate increased from 84 to 110 per minute. The surgical procedure was completed thirty-five minutes later, at which time the blood pressure was 100/80, pulse rate 120 per minute, and respiratory rate 60 per minute. Another unit of prepared reconstituted packed blood cells was started, and its administration was completed in ten minutes. When the patient was replaced supine, her blood pressure diminished to 90/80 and the pulse rate continued at 120 per minute. A half hour later it was noticed that considerable bleeding had occurred through the dressing, and another pint of whole blood was given intravenously.

The patient was taken to the recovery room, where she regained consciousness. Her blood pressure remained at 80 systolic and her pulse rate rose to 136 per minute. The dressing was reinforced but bleeding continued so that 10 pints of prepared type A, Rh-positive blood were deemed necessary to compensate for the continued oozing of blood, which took place over a period of ten hours. A sample of blood was taken from the patient's vein at this time; after it was centrifuged, it revealed severe hemolysis. By this time the patient, who had previously regained consciousness, now lapsed into coma, and she died two hours later.

Comment

This patient's hemolysis was detected too late.

Although progress has been made in differentiating various human blood groups and in methods of cross-matching donor with recipient bloods to allow full-scale transfusion methods of banked blood, present technics still constitute serious hazards. Even directors of blood banks warn against dangers in administration of banked blood and recommend that patients who have sustained a considerable amount of blood loss should not receive any banked blood until the amount of blood lost is greater than 500 cc. (in adults) and that the total amount of such blood transfused be at least 500 cc. less than the total amount of blood lost by hemorrhage.[1] Better methods of blood preservation are being developed. By one method in particular blood would be preserved in a viable state indefinitely without admixture of citrate or another anticoagulant solution. When this technic is perfected, it will enable each person to accumulate his or her own blood bank supply by periodic small-quantity bleedings; in this way, if he should ever need blood for a surgical procedure, his own blood could be retransfused.

In the meantime we must try to prevent hemolysis due to blood tranfusion. Preventive measures are applied generally. These consist of proper determination of blood groups by competent laboratory personnel, proper labeling of blood bottles, and constant vigilance that the right blood bottle is used for the particular recipient. Except for the anticoagulant solution initially placed in the donor bottle, nothing should be added to the blood bottle. Care should be exercised from the time blood is collected until it is administered. It should be remembered that blood cells, particularly red blood cells, may be injured and become disrupted. It generally is known that collected blood should be kept cool and that warming should be avoided. Although it is recommended that the blood be agitated in order to be homogeneous before being administered, it is preferable to do this by means of a continuous rotatory movement instead of by shaking it since shaking may disrupt some of the red blood cells. Another recommendation in administering blood is to maintain a level in the drip observation chamber so that each drop of blood will fall on a fluid level rather than on the hard surface of the filter; better yet is to have the blood flow along the surface of the drip chamber so as to minimize trauma to each drop of blood.

In addition to these measures to prevent disruption of transfused red blood cells, a prolonged hemolytic reaction, as in the case reported, might be prevented. Since hemolysis can be detected quickly by centrifuging a small quantity of blood, this should be done as soon as any questionable blood transfusion reaction occurs. It would be well to establish a policy of collecting a sample of blood from a recipient's vein when 50 to 100 cc. of a unit of banked blood have been transfused and to centrifuge a tube of this blood until the serum is separated in order to observe directly whether the serum is a pale straw color and clear or whether it is blood-tinged. Should the latter condition be observed, administration of the remainder of the contents of the blood should be stopped at once; this may prevent progression of the reaction to a state of irreversible shock or fatal uremia.

Another worth-while measure is to catheterize the urinary bladder of the blood recipient and collect the urine when a blood transfusion reaction is suspected. If the urine is frankly red due to hemoglobinuria, renal damage has already occurred. However, the situation may respond to treatment if the damage is not severe when detected. Even when the urine is clear, it is well to attempt to measure urinary volume formation since this may lead to recognition of the early phase of oliguria of a hemolytic reaction. Such measurements of urinary volume formation are recommended by some for all major surgical procedures since it is a good functional test of a patient's general condition.[2]

References

1. Unger, L. J.: Personal communication.
2. Bishop, H. F.: Personal communication.

(Number seventy-eight in a series of Clinical Anesthesia Conferences)

From the Doctor's Mailbag

"I am glad to tell you the gastic has left me, but today one of my awful heads has come back."—*The Lancet, August 1, 1959*

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Miscellaneous Poisonings in Children and Adults

The following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Quinine	53 years	Male

The patient, who is an employe in the promotion department of a prominent daily newspaper, telephoned the Center to complain about a "poisoning" from the ingestion of quinine. He was very indignant because a generalized dermatitis had been precipitated by the innocent ingestion of a cocktail. The patient reported that he had been sensitive since infancy to quinine and religiously abstained from it.

In an attempt to determine the cause of the onset of a generalized urticaria, which caused a work restriction of several days duration, it was finally discovered that the patient had been given a drink consisting of gin and tonic. This mixer is widely used at the present time, and although the amount of quinine in it is extremely small, it apparently was sufficient to cause the moderately severe allergy manifestation.

This incident is cited since it is believed that it may be helpful in the diagnosis of allergy manifestations. There is not a very sharp clinical line of demarcation between poisonings and so-called sensitivity as a result of drug ingestion.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Chlordane	47 years	Male

This patient applied from 3 to 5 cc. of this chlorinated hydrocarbon insecticide to his scalp as a treatment for dandruff. He developed erythema, Quincke's edema, cyanosis of the lips, palms, and soles, and burning in the mouth and throat. He was taken to the hospital but refused to stay there and signed himself out on the day of admission with the same symptoms as when admitted.

Although DDT, which is also a chlorinated hydrocarbon insecticide, has been very widely used with a good history, it should be pointed out that it is a dry powder and that Chlordane is an oily liquid; the permeability of skins to oily components is far greater. Should DDT be dissolved in kerosene, its hazard would become accelerated; for that reason only the dry DDT is recommended for pediculosis. In spite of the layman's wide apprehension about DDT, the documentation on DDT poisoning in humans has been minimal.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Vitamin B_{12}	$2^3/_4$ years	Female

The child apparently liked the sweet taste of the vitamin tablets and ingested 20 of them. She was taken to the hospital thirteen hours after ingestion. Since she did not present any symptoms, she was discharged soon after admission to the emergency room.

This incident is just another in a long series of symptomless episodes involving overdoses of vitamins. Although the massive accidental ingestion of vitamins has not been a serious problem in the incidents reported to this Center, the iatrogenic-type incidents, particularly from vitamin A preparations, pose a serious problem.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Boric Acid	9 years	Female

The child visited with her maternal aunt, who had boiled some water with boric acid to be used as an eyewash. The patient did not realize that the water contained boric acid and used it for the purpose of preparing a cup of coffee. She experienced abdominal pains and was taken to the hospital, where her stomach was lavaged with normal saline about thirty minutes after ingestion. She was then transferred to another hospital, where her mother was instructed to give her milk. The child was then discharged.

Since the enactment of strict labeling requirements within hospitals, fatalities in children have been reduced. Although New York City has strict requirements about the permanent labeling of containers of boric acid in hospitals, deaths still needlessly occur from mishandling, mostly by nurses on the newborn nurseries. A death and several illnesses were reported recently from another state. Boric acid ingestion in such instances usually occurs because boric acid was used in the preparation of the formula or boric acid solution instead of water was fed to the infant. At present such instances are completely unwarranted.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Auto Plastic Hardener	3 years 4 years	Male

Two children ingested a solution of 10 per cent dimethylaniline in dioctylphthallate and developed generalized purpuric spots, to the deep concern of the physician.

There is a steadily increasing use of both aliphatic and aromatic amines as catalysts for setting of plastic resins for repair and handyman purposes. Ingestion and in some cases inhalation of these chemicals are hazardous.

A suicidal death from dimethylaniline previously has been reported.* This product was used as one of the ingredients of a dental plastic. Manufacturers of chemicals used in industry and the home must always bear in mind the possible hazard of accidental ingestion, and products should be labeled accordingly.

The new Sanitary Code of the New York City Health Department, which became effective October 1, 1959, contains the following new concept in the definition of hazardous substances: "The reasonably anticipated use of a substance includes its

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*Jacobziner, H., and Raybin, H. W.: NEW YORK STATE J. MED. **58**: 3326 (Oct. 15) 1958.

use in a manner not intended by the manufacturer, such as its ingestion by children."

Incident 6

Toxic Agent	*Age*	*Sex*
Camphor Oil	50 years	Male

The patient requested 2 ounces of castor oil but was given camphor oil instead by the pharmacist. He had convulsions and became comatose, and he was taken to Bronx Municipal Hospital. Forty-five minutes after ingestion the patient was lavaged with saline and was admitted to the in-patient service, where he was treated with sodium amytal and antibiotics.

The patient remained on the critical list for several days, after which time he began to improve. In addition to the symptoms mentioned, he also had hyperpyrexia for several days. After eleven days of hospitalization he was discharged as fully recovered.

One of the most common instances of mistaken identity of drugs is mistaking camphorated oil for castor oil or cough syrup in the medicine cabinet. Fortunately such drug store errors are exceedingly rare.

Incident 7

Toxic Agent	*Age*	*Sex*
Ethyl Alcohol	2 years	Male

This case was reported from Yonkers and is cited because of the surprisingly mild symptoms. The patient obtained a bottle of rubbing alcohol and ingested 4 to 8 ounces. Vomiting was attempted without success. The child could be roused but would fall asleep again when left alone. He was in mild stupor and therefore was given black coffee. He slept through the entire night (the accident had occurred at 6:45 P.M.) and awakened at the usual time the next morning, entirely asymptomatic and without a "hangover."

The surprising mildness and happy outcome in this case should not inspire complacency in incidents involving ingestion of alcohol by children. There is no specific antidote for alcohol. The recommended treatment for ethyl alcohol poisoning is gastric lavage and supportive therapy with special attention to maintenance of circulation. Antabuse is not a specific antidote for alcoholic beverage intoxication.

Incident 8

Toxic Agent	*Age*	*Sex*
Ferrous Sulfate	22 months	Female

The baby was left with a neighbor while the mother went shopping. The neighbor had her medicine box on top of the refrigerator. The child climbed onto a chair and obtained the box of ferrous sulfate 5-grain tablets; she ingested 33 of them. The child was found vomiting and holding the empty pill box.

The patient had abdominal pains, vomited, and became cyanotic and stuporous. She was taken to the hospital, where vomiting was induced and the stomach lavaged with saline and sodium bicarbonate in the emergency room. The urine contained a trace of albumin. The patient was admitted to the hospital and was treated with bismuth of carbonate and given other supportive therapy. She recovered after four days of hospitalization.

Although nearly 100 incidents of ferrous sulfate poisoning have been reported to this Center, no fatalities have as yet occurred.

Incident 9

Toxic Agent	*Age*	*Sex*
Turpentine	2 years	Female

The patient, who has a congenital cardiac condition, obtained the turpentine in the kitchen and ingested from 1/2 to 3 ounces of it. She was immediately rushed by her parents to the hospital, where her stomach was lavaged with saline and bicarbonate thirty minutes after ingestion.

The gastric contents had a frank turpentine odor. The patient was admitted to the hospital, where she was treated with fluids intravenously and antibiotics and was digitalized. Since on admission she also showed signs of dyspnea and coarse rales, the chest x-ray film was interpreted as questionable pneumonia. On the third day the patient developed diarrhea, which cleared spontaneously several days later. She responded well to therapy and was discharged after eight days as recovered.

TABLE I.—Poisonings About Which Information Was Requested Over a Recent Weekend*

Product Ingested	Age of Patient†	Sex
4-Way Cold Tablets (10 or more)	2	F
Clorox (?)	$1\frac{1}{2}$	F
Pride (cleanser)	16 m.	F
Nicotine (?)	2 m.	F
Flit Bug Killer with Chlordane	24	F
Bleaching solution	4	M
Turpentine	Kitten	. .
Antimony	. . .	. .
Oxalic acid	20	. .
Diaperene Lotion	3 m.	F
Cactus plant	36	M
5-10 and 5 fertilizer	43	M
Mennen's Baby Magic	9 m.	F
Mennen's Baby Magic	11 m.	M
Rinse Away Dandruff	$4\frac{1}{2}$	F
Baby aspirin	$2\frac{1}{2}$	M
Gasoline	34	M
Algin (belladonna cascara strychnine)	3	F
Aspirin (14 grains)	22	F
Dorothy Gray Hot Weather Cologne	$2\frac{1}{2}$	M
Iodine	20	F
Hexadecadrol	2	. .
Mr. Clean	2	F
Scotts 4×D (2,4,D)	6 m.	M
Hydroxyzine hydrochloride (7 tablets)	21 m.	F
Thyroid extract (12 grains)	2	. .
White paint	4, 3	M
707X (rodenticide)	1	F
Hibitane Lozenges	$2\frac{1}{2}$	M
Indiscret Perfume	3	F
Vel (cleanser)	2	M
Varnolene	2	F
Clorox	23 m.	F
Iron compound (25 tablets)	$1\frac{1}{2}$	F
Meprobamate	35	M
2,4,D	child	. .
Calamine lotion	3	M
Lestoil	2	M
Baby aspirin	3	. .
Vitalis (2 ounces)	2	M
Paradichlorobenzene ($\frac{1}{4}$-inch square)	$2\frac{1}{2}$	M
Baby aspirin (31)	3	M
Windex	15 m.	F
Barbiturate (overdose)	46	F
Copperbrite (cupful)	2	F
Matches ($\frac{1}{2}$ book)	11 m.	M
Pan Dry-Fry	. . .	. .
Iodine (small bottle)	57	M
Ban Deodorant	8	M
Black Widow spider bite (?)	12	M

* Minor events, on which complete information is unavailable, not included.

† In years unless months (m.) is indicated.

Incident 10

Toxic Agent	*Age*	*Sex*
Turpentine	17 years	Female

This patient swallowed a cupful of turpentine to make her period "come around" since she was pregnant. She was taken to the hospital, where her stomach was lavaged with saline. The gastric contents did not have the odor of turpentine; neither did the patient's breath. Although the Ascheim-Zondek test result of the urine was positive, no violet odor was noted. Other laboratory findings were 80 mg. per 100 ml. of glucose in the blood and 12 mg. per 100 ml. of blood urea nitrogen. The white blood cell count was 8,400 with 55 per cent lymphocytes; the hemoglobin content was 8.9 Gm. per cent. The urine contained hyaline casts and a few epithelial cells.

The patient was treated with Thorazine and vitamin B complex. After four days she was discharged in good condition with a diagnosis of turpentine intoxication and pregnancy.

In turpentine ingestions the formation of a flowery fragrance, as reported in the literature, has not been included in reports to this Center. Marked erythema and irritation and burns of the skin have been the most prominent symptoms reported.

Table I is a listing of poisonings about which information was requested from the Center over a recent weekend. It is a representative picture of telephone calls received at the Center, illustrating the diversity of products incriminated in accidental poisonings, which may serve as a guide for the treatment of poisonings.

(*Number forty-four in a series of Briefs on Accidental Chemical Poisonings*)

CASE REPORTS

Acute Myeloblastic Transformation After Busulfan Treatment of Chronic Myelocytic Leukemia

NORTON D. RITZ, M.D., AND MENDEL KRIM, M.D., BROOKLYN, NEW YORK

(*From the Department of Medicine, Maimonides Hospital, and the State University of New York College of Medicine Downstate Medical Center, Brooklyn*)

SINCE the introduction of busulfan (Myleran)* for the treatment of chronic myelocytic leukemia by Haddow and Timmis in 1953,[1] much has been published concerning its effectiveness.[2-5] The undesirable side-reactions which have been mentioned include: (1) thrombocytopenia and its sequellae, (2) gastrointestinal upset,[6] (3) darkening of skin pigmentation in some individuals,[7] (4) amenorrhea,[8] (5) the hazard of renal damage due to hyperuricemia,[9] and (6) marrow aplasia.[10]

One of the early investigators of this drug in 1953 suggested that an acute myeloblastic stage might be initiated by busulfan therapy.[11] This has been refuted by other authors since then.[12,13] Louis, Best, and Limarzi[12] felt that this change, which occurred in 12 out of 140 patients in their first series, was due to the natural course of the disease. In a later publication,[13] they stated that 59 per cent of pre-busulfan-era patients with chronic granulocytic leukemia and 55 per cent of busulfan-treated patients died of acute exacerbations. The difference was not statistically significant.

This is a report of the frequency of acute myeloblastic conversion in a series of 12 patients with chronic granulocytic leukemia who were treated with busulfan.

Methods

The diagnosis of chronic granulocytic leukemia was established by the usual criteria in the peripheral blood and bone marrow. No person was considered "chronic" who had more than 10 per cent myeloblasts in the peripheral blood prior to starting busulfan therapy. An acute myeloblastic stage was diagnosed when there was a rise in the leukocyte count and a marked increase in the number of myeloblasts in the peripheral blood and bone marrow.

Seven out of 12 individuals had no other treatment prior to busulfan therapy. The other 5 had been treated with various agents including Fowler's solution (Case 4), 6-mercaptopurine (Cases 1 and 5), phosphorus 32 (Cases 1 and 10), triethylene melamine (Cases 1 and 10), and urethane (Case 6). Busulfan therapy was usually initiated in amounts of 4 to 10 mg. daily in divided doses. The dose of 6 to 10 mg. was used when the leukocyte count was above 50,000 per cu. mm. As the count dropped below 50,000, the busulfan was reduced to 4 mg. daily. Below levels of 25,000 cu. mm., a dose of 2 mg. daily was employed. If the leukocytes dropped below 10,000 per cu. mm., the medication was discontinued. This dosage regimen was lowered more quickly if the leukocyte count fell rapidly or if nausea occurred. Lower dosage schedules were also used when the patient could not be seen at weekly intervals.

Patients were encouraged to revisit every week while on therapy. At each visit a hemoglobin determination, a leukocyte count, and differential and platelet counts were done. Repeat bone marrow aspirations were performed only if drug resistance was encountered. An attempt was made to establish a maintenance dose in those individuals whose leukocyte count began to rise again after the initial response. This usually consisted of 2 mg. of the drug daily or every two days. In some cases the patient

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* Manufactured by Burroughs Wellcome & Co., Tuckahoe, New York.

TABLE I.—Busulfan Treatment in 12 Patients with Chronic Myelocytic Leukemia

Case	Age	Sex	Estimated Duration of Illness Prior to Busulfan Therapy (Months)	Previous Therapy	Initial Hemoglobin (Gm. Per Cent)	Initial Leukocyte Count (Per cu. mm. in Thousands)	Differential Count	Total Dose of Busulfan (mg.)	Months Under Busulfan Control	Survival Time from Start of Busulfan Therapy (Months)	Total Duration of Illness (Months)	Mode of Termination
1	29	F	24	Triethylene melamine 6-mercaptopurine Phosphorus 32	9.8	135	1 myeloblast, 5 myelocytes, 27 metamyelocytes, 27 stabs, 36 segmented neutrophils, 1 basophil, 3 lymphocytes	1,028	31	31	55	Pneumonia
2	31	F	4	None	8.5	215	29 myelocytes, 16 metamyelocytes, 20 stabs, 33 segmented neutrophils, 1 eosinophil, 1 basophil	732	23	25	25	Myeloblastic change
3	43	F	6	None	7.8	390	3 myeloblasts, 4 promyelocytes, 4 myelocytes, 9 metamyelocytes, 40 stabs, 33 segmented neutrophils, 6 lymphocytes, 1 monocytes	490	8	22	22	Myeloblastic change
4	48	F	18	Fowler's solution	11.0	111	10 myelocytes, 10 metamyelocytes, 58 segmented neutrophils, 22 lymphocytes	252	14	Alive	32	Alive
5	51	M	2	6-mercaptopurine	9.0	284	3 myeloblasts, 4 promyelocytes, 40 myelocytes, 40 segmented neutrophils, 3 eosinophils, 8 basophils, 2 lymphocytes	1,180	28	30	32	Myeloblastic change
6	53	M	2	Urethane	11.9	74	8 myelocytes, 15 metamyelocytes, 21 stabs, 31 segmented neutrophils, 8 eosinophils, 10 basophils, 1 monocyte, 6 lymphocytes	368	12	32	34	Myeloblastic change
7	58	M	3	None	9.5	240	2 myeloblasts, 4 promyelocytes, 4 myelocytes, 7 metamyelocytes, 10 stabs, 59 segmented neutrophils, 4 eosinophils, 5 basophils, 5 lymphocytes	488	17	Alive	18	Alive
8	63	F	3	None	9.4	236	87 segmented neutrophils, 12 eosinophils, 1 lymphocyte	961	18	26	25	Myeloblastic change
9	64	F	12	None	10.6	50	4 myeloblasts, 6 myelocytes, 1 metamyelocyte, 54 stabs, 24 segmented neutrophils, 1 eosinophil, 1 monocyte, 9 lymphocytes	912	21	22	22	Myeloblastic change
10	70	M	54	Triethylene melamine X-ray Phosphorus 32	10.0	188	1 myeloblast, 5 myelocytes, 2 metamyelocytes, 35 stabs, 38 segmented neutrophils, 1 eosinophil, 14 basophils, 4 lymphocytes	516	12	12	66	Septicemia and cardiac failure
11	75	F	3	None	9.5	160	2 myeloblasts, 10 myelocytes, 15 metamyelocytes, 5 stabs, 56 segmented neutrophils, 2 eosinophils, 2 basophils, 8 lymphocytes	244	3	12	12	Myeloblastic change
12*	43	M	2	None	13.0	250	32 myelocytes, 15 metamyelocytes, 13 stabs 29 segmented neutrophils, 3 eosinophils, 8 lymphocytes	610	25	25	27	Myeloblastic change

* The authors are indebted to Victor Ginsberg, M.D., for information regarding the early course of this patient.

was taken off busulfan during alternate weeks. In those patients in whom a sustained remission was obtained, therapy was discontinued until there was evidence of a beginning relapse.

Results

In general our results parallel those of previous investigations concerning the usefulness of busulfan in the treatment of chronic myelocytic leukemia. An improvement in well-being, appetite, and strength and often a defervescence of fever occurred after one or two weeks of therapy. Hematologic improvement and regression of hepatosplenomegaly usually began several days later. Subsequently the leukocyte counts continued to fall toward normal values, while the hemoglobin, when initially diminished, began to rise. In this group of patients, with the dosage levels employed, thrombocytopenia was not encountered unless the patient was entering an acute myeloblastic stage. The only immediate side-effects observed were nausea in 2 patients and darkening of skin pigmentation in 1 patient of Puerto Rican extraction.

Of the 12 patients with chronic myelocytic leukemia who were treated in this manner and followed for periods exceeding one year (most of them for two years), 8 died of acute myeloblastic exacerbation. Two who have been followed for fourteen and eighteen months respectively are still alive and in fairly good health. One individual (Case 1) died of pneumonia at another hospital; another (Case 10) died with generalized organ infiltration, sepsis, and cardiac failure. Thus 8 out of 10 deaths were due to myeloblastic crisis. The mean survival time for the 10 persons who died was thirty-one months. Six of the 10 (Cases 2, 3, 8, 9, 11, and 12) received busulfan as the initial type of therapy. Four patients had been treated by other methods before receiving this drug. Of the 2 patients living, both received busulfan as primary treatment. A summary of all the cases studied is given in Table I.

Reports

Case 2.—This thirty-one-year-old white female was hospitalized because of spontaneous ecchymoses and left upper quadrant discomfort.

Physical Examination.—Ecchymoses were present on the lower extremities. The liver edge was palpable 4 cm. below the right costal margin. The spleen extended to the level of the umbilicus. No lymphadenopathy was present.

Laboratory Data.—Hemoglobin was 8.5 Gm. per cent and the leukocytes numbered 215,000 per cu. mm. The differential count consisted of 33 segmented neutrophils, 20 nonsegmented neutrophils, 16 metamyelocytes, 29 myelocytes, 1 eosinophil, and 1 basophil. There were 3 normoblasts per 100 leukocytes. The platelet count was 269,000 per cu. mm. The Coomb's test was negative. The bleeding time was two minutes, and the coagulation time was six minutes. The bone marrow appeared to be hyperplastic and was consistent with a diagnosis of chronic myelogenous leukemia.

Course.—It was felt that the left upper quadrant pain was probably due to splenic infarcts. The patient was started on busulfan and discharged for a follow-up in the clinic.

Doses of 6 mg. of busulfan were given for twenty-eight days. There was little response until the twenty-first day. The dose was reduced to 2 mg. daily when the leukocyte count fell to 25,000 per cu. mm. The drug was discontinued on the fifty-ninth day of treatment when the leukocyte count reached 11,800 per cu. mm. The count continued to fall to normal levels. Four months after therapy had been initiated the hemoglobin was 10 Gm. The leukocyte count was 5,800 per cu. mm. The differential revealed 9 nonsegmented neutrophils, 71 segmented neutrophils, 2 eosinophils, 1 basophil, and 17 lymphocytes. The platelet count was 600,000 per cu. mm. The liver was felt 1 cm. below the costal margin, and the spleen tip was just palpable. The patient had no complaints at this time. This remission was maintained for seven months. She was retreated when the leukocyte count rose to 25,000 per cu. mm. Busulfan was administered for two months, and it was discontinued when the white blood count was 7,500 per cu. mm. This remission lasted for eight months. A third remission occurred after giving busulfan for three weeks. A relapse occurred two months later. A fourth remission was then induced by giving busulfan for three weeks, thereby reducing the leukocyte count from 80,000 per cu. mm. to 3,900 per cu. mm. Four mg. of busulfan were given daily for one week and then increased to 6 mg. daily for six weeks. The patient relapsed six weeks after therapy was discontinued. Retreatment was of no avail. The hemoglobin dropped to 7 Gm. per cent and the platelets fell to 50,000 per cu. mm. when the patient entered a blastic stage. The leukocytes rose to 159,000 per cu. mm. with 80 per cent blasts. She was treated with 6-mercaptopurine, steroids, and blood. Death occurred six weeks after the onset of the acute blastic stage.

Case 7.—A fifty-eight-year-old white male was hospitalized in April, 1957, for hematemesis requiring 4 blood transfusions. He had had a subtotal gastrectomy for a duodenal ulcer seven years previously. During his hospital stay a routine blood count revealed 250,000 leukocytes per cu. mm. Subsequently he was referred for treatment.

Physical Examination.—The liver and spleen were each palpable below the costal margins. There were no other significant findings.

Laboratory Data.—The hemoglobin was 9.5 Gm. per cent; the hematocrit was 27. The leukocyte count was 240,000 per cu. mm. The differential count consisted of 59 segmented neutrophils, 10 band forms, 7 metamyelocytes, 6 myelocytes, 4 promyelocytes, 2 blasts, 4 eosinophils, 3 basophils, and 5 lymphocytes. Platelets were 350,000 per cu. mm. A bone marrow aspiration revealed myeloid hyperplasia.

Course.—Busulfan was started in a dosage of 6 mg. daily. On the eighth day, the busulfan was reduced to 4 mg. daily because of the early fall of the leukocytes to 180,000 per cu. mm. On the twenty-eighth day the busulfan was further reduced to 2 mg. daily when the leukocyte reached 33,000 per cu. mm. Subsequently it was increased to 2 mg. alternating with 4 mg. daily because the leukocyte count did not decrease below 29,000 per cu. mm. by the fifty-seventh day of treatment. The leukocyte count was 20,000 per cu. mm. on the eighty-seventh day of busulfan therapy. The dosage was reduced to 2 mg. daily. On the one hundred and eighth day of treatment the busulfan was stopped. At this time the hemoglobin was 10.5 Gm. per cent and the leukocyte count was 8,000 per cu. mm. The liver and spleen were no longer palpable. A remission ensued lasting seven months during which no treatment was required. The leukocytes then rose to 30,000 per cu. mm. and the spleen enlarged. Busulfan therapy was recommenced in dosage of 2 mg. daily. The white blood count gradually fell to a level of 10,000 per cu. mm. After one month the drug was then continued as maintenance therapy for four months during which the patient received 2 mg. daily for one week alternating with one week without medication. At the end of this time the white blood count was 12,000 with a differential consisting of: 1 myelocyte, 3 metamyelocytes, 2 bands, 75 segmented neutrophils, 1 eosinophils, 3 basophils, 12 lymphocytes, and 3 monocytes. The hemoglobin had stabilized at 12.5 Gm. per cent. The platelets numbered 220,000 per cu. mm. The patient felt fine. There was no palpable enlargement of the liver or spleen.

Although the leukocytes rose to 22,000 per cu. mm. two months after treatment was stopped, up to the present time he has remained in good condition without further therapy.

Case 9.—A sixty-four-year-old Puerto Rican female was referred to the Hematology Clinic in November, 1953, because of a persistent unexplained anemia. The hemoglobin was 10 Gm. per cent and the leukocyte and differential counts were normal. Physical examination and laboratory tests were also normal except for the presence of a slightly enlarged spleen observed on x-ray film. During the next twelve months the hematologic findings of chronic granulocytic leukemia gradually appeared.

Physical Examination.—There was evidence of recent weight loss. The liver was palpable 2 cm. below the right costal margin, and the spleen extended 6 cm. below the left costal margin. No lymphadenopathy was noted.

Laboratory Data.—The hemoglobin was 10.6 Gm. per cent. The white blood count was 45,700 per cu. mm. The differential count consisted of 40 segmented leukocytes, 30 non-segmented leukocytes, 3 metamyelocytes, 8 myelocytes, 10 myeloblasts, 2 eosinophils, 4 basophils, 2 lymphocytes, and 1 monocyte. The platelet count was 675,000 per cu. mm. The blood uric acid was 6.3 mg. per cent. The bone marrow was normally cellular, with a myeloid to erythroid ratio of 5:1. The Wassermann test was positive.

Course.—The patient was treated with 1 million units of procaine penicillin intramuscularly daily for ten days because of the positive serology. Four mg. of busulfan were given daily for twenty-one days with no improvement in the blood findings. The dose was increased to 6 mg. daily during the next thirty-eight days, producing a fall in the leukocyte count to 12,500 per cu. mm. The busulfan was reduced to 2 mg. daily over the next fourteen days until the leukocyte count reached 7,400 per cu. mm. The hemoglobin did not rise above 11 Gm. per cent. The liver edge was palpable 1 cm. below the costal margin. The spleen receded in size to 2 cm. below the left costal margin. At this time the patient had an excellent appetite and felt well. No treatment was required for nine months until the leukocyte count rose to 31,000 per cu. mm. Now the spleen was felt 3 cm. below the left costal margin. Four mg. of busulfan were given daily for two weeks and then reduced to 2 mg. daily when the leukocyte count reached 15,800 per cu. mm. The 2 mg. dose was stopped after four weeks. At this time the white blood count was 8,400. Increased brownish pigmentation of the skin was noted. The spleen again diminished in size. The second remission lasted for six months after which the leukocytes rose to 29,000 per cu. mm. and the spleen extended to the umbilicus. Busulfan was restarted. However, her disease responded poorly even when the dosage was increased to 8 mg. daily. The patient entered an acute blastic stage and was readmitted to the hospital. She was treated with prednisone, 6-mercaptopurine, antibiotics, and blood. The leukocyte count rose to 165,000 per cu. mm. with 80 per cent blast forms in the differential count. The platelets fell progressively. The patient developed generalized bleeding and expired after two weeks in the hospital.

Discussion

Opinion is still divided regarding the possible role of busulfan in stimulating a myeloblastic transformation of chronic myelocytic leukemia. Louis, Best, and Limarzi[13] stated that out of 27 deaths in pre-busulfan treated patients with chronic myelocytic leukemia observed between 1936 and 1953, 16 died from acute exacerbation. Of 21 cases treated with busulfan since then, 11 patients have died. Six of these 11 deaths were due to acute exacerbation. These authors did not feel that busulfan-treated patients had a greater incidence of myeloblastic termination than the control series.

In another series[14] of 12 patients with chronic myelocytic leukemia treated with busulfan for an average of twenty months, 6 developed myeloblastic reactivation. These were treated by a maintenance program with an average dose of 3 mg. per day over a mean treatment period of twenty months. Another study[15] of cases reported from Great Britain indicated that 7 out of 13 deaths were due to acute relapse. These authors comment on the high incidence of acute relapse as compared to a group treated by irradiation in which 4 out of 16 terminated acutely. A similar experience was noted by Frelick.[16] Out of 13 patients treated with busulfan 4 out of the 6 who died terminated with acute leukemia. A group of 25 similar patients who were treated with radiophosphorous had a mean survival time of thirty months from presumed date of onset.[17] Twelve of these died from acute exacerbation.

Although our group of patients is not large enough to subject to statistical analysis, it appears that the incidence of acute myeloblastic transformation is greater than previously reported. Since the mean survival time for these individuals was approximately the same as noted in larger groups,[18] we cannot ascribe the greater incidence of acute blastic change to the natural course of the disease resulting from increased longevity.

It is our impression that 2 other patients with subacute myelocytic leukemia described below, who were treated with busulfan, pursued a rapid progression into an acute phase. Since subacute myelocytic leukemia is always difficult to evaluate, we can note this observation only as an impression. However, in view of the possibility that busulfan may be a contributing factor in the development of a myeloblastic phase, we believe that this drug may be contraindicated in the treatment of subacute myelocytic leukemia.

CASE A.—A fifty-year-old female had developed left upper quadrant pain and "abdominal heaviness" about three years previously. Ten months prior to admission she had been treated at another hospital where a diagnosis of chronic myelocytic leukemia had been made. She was treated with blood transfusions and antibiotics before she signed a release two weeks later.

On her admission to Maimonides Hospital on March, 22, 1955, the hemoglobin was 7.2 Gm., the red blood count was 2 million per cu. mm., the white blood count was 390,000 per cu. mm. with a differential count consisting of 25 per cent myeloblasts, 28 myelocytes, 19 metamyelocytes, and 28 segmented neutrophils. The liver and spleen were greatly enlarged, both extending to the iliac crest. She was treated with busulfan 8 mg. daily, with gradual lowering of the dose as the white blood count fell over the next month. On April 18, she was placed on a maintenance dose of 2 mg. daily. The leukocyte count reached a low of 28,000 on April 27, and then began to rise progressively despite a large dose of busulfan with increasing numbers of blast forms. On May 5, the white blood count was now 206,000 with 27 per cent blasts. Busulfan was discontinued. She responded favorably to 6-mercaptopurine, but then signed herself out on May 25, 1955. She expired at another hospital two months later with a white blood count of 300,000 and 95 per cent myeloblasts.

Case B.—A forty-six-year-old man was admitted to the hospital on November 27, 1958, with complaints of headaches, fever, and painful legs of several weeks duration. The liver and spleen were not enlarged. A superficial thrombophlebitis involved the saphenous system of both lower extremities.

The initial blood studies showed a hemoglobin of 8.9 Gm. per cent, a leukocyte count of 201,000 per cu. mm., and a platelet count of 100,000 per cu. mm. The differential revealed 36 myeloblasts, 28 myelocytes, 8 metamyelocytes, 10 bands, 10 segmented neutrophils, and 8 lymphocytes. He was treated with 8 mg. of busulfan daily. This dose was increased to 10 mg. daily after one week when the white cell count rose to 389,600 and the hemoglobin fell to 7.6 Gm. per cent. The blood uric acid was 9.8 mg. per cent. Blast forms remained about 31 per cent. Eleven days later, as the leukocyte count began to fall, the busulfan daily dosage was diminished to 8 mg. daily. Subsequently, he was discharged on December 20, 1958, with a leukocyte count of 28,900. The differential count at this time consisted of: 26 myeloblasts, 20 myelocytes, 15 metamyelocytes, 7 band forms, 20 segmented neutrophils, 2 monocytes, and 10 lymphocytes.

He was continued on a maintenance dose of 4 mg. of busulfan daily. However, within two weeks after his discharge, the leukocyte count began to climb steeply with a marked increase in the number of blasts. The liver and spleen enlarged. He expired on January 19, 1959, in an acute myeloblastic relapse.

We feel that busulfan remains a valuable drug in treating chronic myelocytic leukemia[19-21] because of its ease of administration, general lack of toxicity, salutary effects, and usefulness in cases refractory to other modes of therapy.[22] It has even been successfully used during pregnancy without harm to the fetus.[23] However, until further experience is accumulated on the long-term effects of this drug in accelerating myeloblastic transformation, it should be used with caution. This is all the more important because of the recent use of busulfan in treating polycythemia vera.[24]

Summary

1. Twelve patients with chronic granulocytic leukemia were treated with busulfan (Myleran) for periods ranging from three to twenty-one months.

2. There were 10 deaths in this group. Eight of these were due to acute myeloblastic transformation.

3. The mean survival time for the 10 persons who died was thirty-one months. Life expectancy did not appear to be prolonged by busulfan treatment.

4. Busulfan was found to be a useful drug for the treatment of chronic granulocytic leukemia because of ease of administration and infrequent occurrence of side-reactions.

5. Acute myeloblastic transformation may occur with greater frequency in patients treated with busulfan than by other modes of therapy.

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Mushroom Workers Develop "Farmer's Lung"

Commercial mushroom growing carries a peculiar hazard—at least for some of the workers, who develop a lung condition similar to "farmer's lung" and "silo-filler's disease."

Writing in the September 5 *Journal of the American Medical Association,* 3 West Chester, Pennsylvania, physicians reported 16 cases of the disease among migrant Puerto Rican mushroom workers.

The Puerto Ricans seem to be susceptible to some substance in the compost beds used in growing mushrooms which does not affect the workers of local origins.

Symptoms include cough; pain in the chest, stomach or muscles; difficulty in breathing; nausea and vomiting; headache; chill; rapid weight loss; loss of appetite, and tiredness. An attack lasts from four to forty-six days, subsiding within one to six weeks after the patient is removed from exposure. No immunity appears to develop, since acute symptoms reappear with each exposure. The symptoms sometimes resemble those of tuberculosis.

The physicians are unsure of the cause of the condition, but it could be the inhalation of molds or organic dusts during the laying or cleaning of damp compost beds which contain moldy hay and silage. Such dusts are believed to cause farmer's lung. However, the symptoms also resemble those of silo-filler's disease, which is believed to be caused by the inhalation of certain gases, especially nitrogen dioxide, liberated in recently filled silos. It is possible that some of the gases which collect above the mushroom beds in poorly ventilated buildings contain nitrogen dioxide.

The symptoms of their patients could fit either farmer's lung or silo-filler's disease, the doctors said, adding that after reviewing the medical literature, they cannot make any sharp differentiation between the two diseases.

The authors are Louis S. Bringhurst, M.D., Robert N. Byrne, M.D., and Jacob Gershon-Cohen, M.D., of the Chester County Hospital, West Chester, Pennsylvania.

Spontaneous Perirenal Hematoma

EDWIN J. ADLERMAN, M.D., F.A.C.S., NEW YORK CITY, AND EUSEBIUS J. MURPHY, M.D., F.A.C.P., BRONX, NEW YORK

(From the Urology Service, Department of Surgery and the Department of Medicine, Misericordia Hospital, Bronx).

RETROPERITONEAL hematoma, whether confined within the renal capsule, Gerota's fascia, or the theoretic space between peritoneum and Gerota's fascia, stems from spontaneous or traumatic origins. A massive hemorrhage is almost uniformly fatal, whereas small hemorrhages tend to resorb unless hematogenous or adjacent sources of infection lead to abscess formation. Stimulation of fibrous tissue production from dissolution of retroperitoneal fat and blood elements may lead to fibrocystic encapsulation of the hematoma.

The causations of retroperitoneal hemorrhage, excluding traumatic varieties, are many: Hemorrhage of renal origin may occur from calculi, cysts, hydronephrosis with chronic pyelonephritis, tuberculosis, neoplasm, nephritis, and blood vessels; of perirenal nature hemorrhage may occur from the adrenal, the fatty tumors, or from the aortic or ovarian aneurysm. Systemic causes include hypertension, blood dyscrasias, periarteritis nodosa, septicemia, scarlet fever, and arteriosclerosis. Many hemorrhages fall into the "unknown cause" category.

Case reports in the literature are numerous (Table I) and serve to emphasize the varied etiology and symptomatology of this entity. The classic picture of sudden flank pain, collapse, and tachycardia with evidence of an increasing mass in the lumbar area is often absent. Abdominal pain referred to any quadrant, ileus, nausea, emesis, low-grade fever, change in bowel habits, and progressive decrease in hemoglobin and hematocrit readings may provoke the examiner's suspicion of systemic or intraperitoneal pathology.

Excretion urography, retrograde pyelography, and particularly retroperitoneal pneumography with or without tomography are of inestimable value diagnostically.

Abnormal radiographic findings vary from case to case. An enlargement of renal outline with changes in the pelvicalyceal system and medial or lateral displacement of the kidney and ureter are often present. Failure of the presacral oxygen injected to penetrate the affected side is often noted.

In most instances complete medical and urologic surveys are desirable. Lateral or medial displacement of the ascending or descending colon, or superoanterior displacement of the greater gastric curvature, all noted on radiographic gastrointestinal studies, point to extraintestinal causation. The time involved in attaining diagnosis is often of utmost importance, and combined investigation often expedites matters. A case report illustrating these factors follows.

Case Report

A fifty-five-year-old white male was admitted on March 26, 1959, complaining of severe recurrent, colicky pain of four days duration originating in the left hemiscrotal area, and radiating superiorly into the left upper quadrant and left flank without any urinary symptomatology. On March 23 the pain referred to the left hemiscrotum had become more severe and had been accompanied by several episodes of emesis and left lower quadrant pain. Concomitant constipation had been noted since March 22.

The past history was essentially negative for gastrointestinal or genitourinary symptoms prior to the present illness. An upper respiratory infection had terminated on March 12 with only a residual moderately productive cough present. Blood count on admission was reported as follows: hemoglobin, 13.4 Gm. per cent; hematocrit, 41; white blood cell count, 12,000 per cubic millimeter with a differential of 71 polymorphonuclear leukocytes, 25 lymphocytes, 10 basophils, 2 monocytes, and 1 eosinophil. The sedimentation rate was 47 mm. per hour. The urine contained no abnormal elements grossly or microscopically, and it was acid in reaction with a specific gravity of 1.012. Blood chemistries were as follows: fasting blood sugar, 100 mg. per cent; blood urea nitrogen, 13.7 mg. per cent; phosphorus, 3.7 mg. per cent; calcium, 9.9 mg. per cent; and

TABLE I.—REVIEW OF REPORTED CASES

Year	Author	Diagnosis, Preoperative	Etiology
1926	Schloss[1]	Perirenal hematoma, spontaneous	Nephrolithiasis, pyelonephritis
1933	Polkey and Vynalek[2]	Spontaneous perirenal hematoma	Renal and extrarenal causes
1934	Heritage[3]	Spontaneous perirenal hematoma	Rupture of carcinoma of adrenal
1935	Le Comte[4]	Spontaneous perirenal hematoma	Rupture of a renal cyst
1935	Abeshouse[5]	Nephrolithiasis	Renal pelvic rupture due to calculi
1935	Beatty[6]	Obstructive hydronephrosis	Hydronephrosis, rupture of
1935	Wever and Perry[7]	Periarteritis nodosa	Periarteritis nodosa, arterial rupture
1936	Counseller and Emmett[8]	Obstructive hydronephrosis	Rupture of hydronephrotic sac with pyelonephritis
1938	Coppridge[9]	Diabetes mellitus	Intercapillary glomerular nephritis
1938	Moore[10]	Renal atrophy, unilateral	Atrophic kidney, rupture of
1938	Massachusetts General Hospital[11]	Renal carcinoma	Renal cell adenocarcinoma
1939	Carver[12]	Essential hypertension	Rupture of hydronephrotic kidney with pyelonephritis
1939	Elmer and Wyngarden[13]	Spontaneous subcapsular hematoma	No pathologic disease found in kidney
1940	Jewett[14]	Primary carcinoma of the ureter	Rupture of hydronephrotic kidney with pyelonephritis
1940	Price[15]	Retroperitoneal hemorrhage	Renal angioma
1942	Keefer[16]	Periarteritis nodosa (1 case)	Nephrolithiasis (2 cases), severe pyelonephritis, hydronephrosis (3 cases), Hypertension
1943	Irwin[17]	Ruptured peptic ulcer	Chronic pyelonephritis with renal rupture
1944	Longmire[18]	Perirenal hemorrhage	Rupture, idiopathic, of an intrarenal artery
1946	Nystrom[19]	Renal tumor	Renal tumor with hydronephrosis ruptured during pole vaulting
1946	Ekman[20]	Perirenal hematoma (2 cases)	Hypernephroma (1 case), Chronic myeloid leukemia (2 cases)
1947	Scrivner[21]	Perirenal hemorrhage	Perirenal lipoma, rupture of
1948	Herman[22]	Perirenal hemorrhage	Perirenal lipoma, rupture of
1948	Fort[23]	Perirenal hematoma	Periarteritis nodosa, ruptured interlobular artery
1948	Jentzer[24]	Perirenal hematoma	Perirenal lipoma, rupture of
1949	Powell and Clark[25]	Retroperitoneal hemorrhage	Renal sarcoma, rupture of
1949	Miller and Cordonnier[26]	Perirenal hematoma	Essential hypertension
1950	Powell[27]	Solitary renal cyst	Rupture of renal cyst
1950	Councill and Councill[28]	Nephrolithiasis with perirenal hematoma	Rupture of kidney, nephrolithiasis
1951	Massachusetts General Hospital[29]	Perirenal hematoma	Hemorrhage into simple cyst with cyst rupture
1951	Aschner and Klinger[30]	Perirenal hematoma	Pyelonephritis with rupture
1951	McFarland and Bliss[31]	Right adrenal tumor	Rupture of adrenal pheochromocytoma
1951	Murphy and Harney[32]	Intra-abdominal hemorrhage	Renal rupture, no pathologic disease found in kidney
1953	Link[33]	Bilateral perirenal hematoma	Periarteritis nodosa
1954	Stearns and Hershman[34]	Intra-abdominal hemorrhage (2 cases)	Rupture of renal tumor (1 case) Rupture of adenoma of atrophic kidney (2 cases)
1954	Persky and Joelson[35]	Rupture of renal pelvis	Impacted ureteral calculus
1955	Steinbach and Smith[36]		
1959	Uson, Knoppenberger, and Melicow[37]	Renal tumor or retroperitoneal tumor (7 cases)	Ruptured carcinoma of kidney (2 cases) Lipo sarcoma of kidney (1 case) Pyelonephritis (1 case) Polycythemia with tetralogy fallot (1 case), No diseased condition found (2 cases)

blood uric acid, 4.3 mg. per cent. The serum alkaline phosphatase (King-Armstrong units) was 3.5 units and the serum acid phosphatase was 0.4 Gutman units. The thymol turbidity test was 7.6, the cephalin floculation test showed negative results, and the total cholesterol esters were 178 mg. per cent.

The initial physical examination revealed a

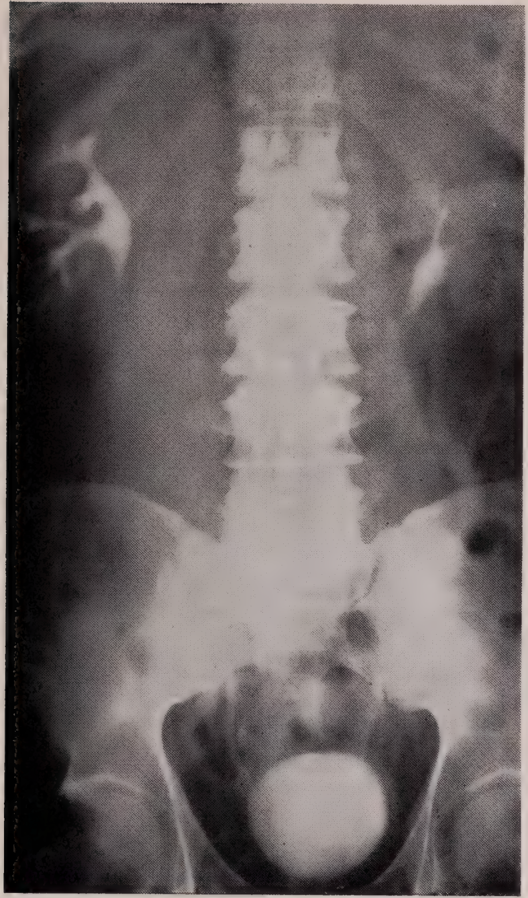

FIG. 1. Intravenous pyelogram, left, demonstrating lateral renal pole and proximal ureteral deviation with mass surrounding kidney.

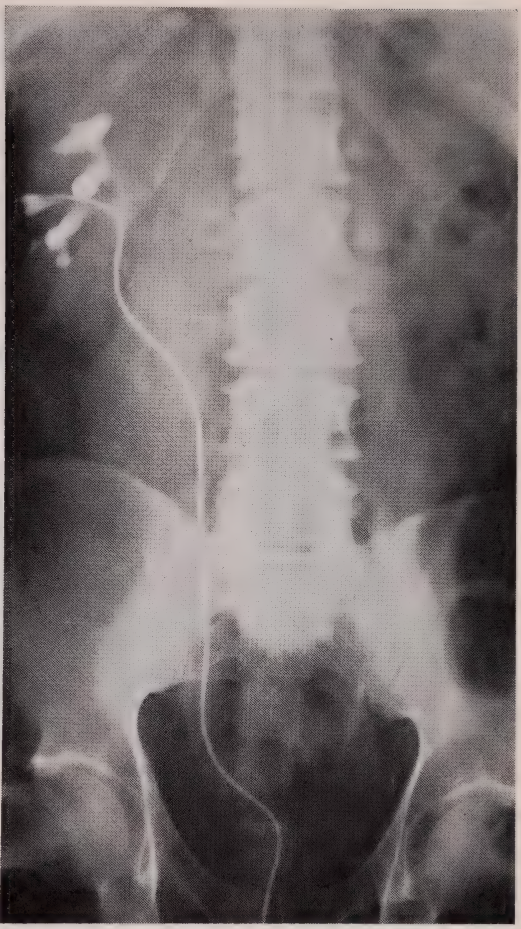

FIG. 2. Retrograde pyelogram, left, showing proximal ureteral and lower polar deviation laterally.

well-developed, well-nourished white male in no acute distress. The blood pressure was 145 systolic over 90 diastolic, and no abnormalities of the ocular, otic, nasal, pharyngeal, or cardiopulmonary systems were noted. The abdomen was obese with no masses present. Tenderness to deep palpation in the area of the descending colon was noted. The external genitalia were normal and rectal examination of the prostate revealed it to be of normal size and consistency.

From March 26 to March 28, 1959, a slight, lower left quadrant pain was present. On this latter day relief of the pain was obtained by catharsis and a low tap water enema. An impression of diverticulitis was not confirmed by proctoscopy, sigmoidoscopy, and barium enema on March 29. The intravenous pyelogram on April 1 (Fig. 1) indicated a slight dilatation of the left ureter with some lateral deviation of its upper segment together with the lower renal pole. No opaque mass shadow was readily visualized due to intestinal gas formation.

On April 2, 1959, a left retrograde pyelogram revealed lateral displacement of the left kidney by a mass with a curved inferior border at the level of the fourth lumbar vertebrae and with obliteration of the homolateral psoas shadow (Fig. 2). A minimal dilatation of the left renal pelvis and a blunting of the calyces were noted. Left renal urine contained 4 plus albumin and 25 red blood cells per high-power field. On April 4 an episode of gouty arthritis occurred which was well controlled by colchicine.

On April 6, the uric acid was 6 mg. per cent and urine culture was reported as having no growths of organisms.

Retroperitoneal pneumography performed on April 6 via the left presacral route and using

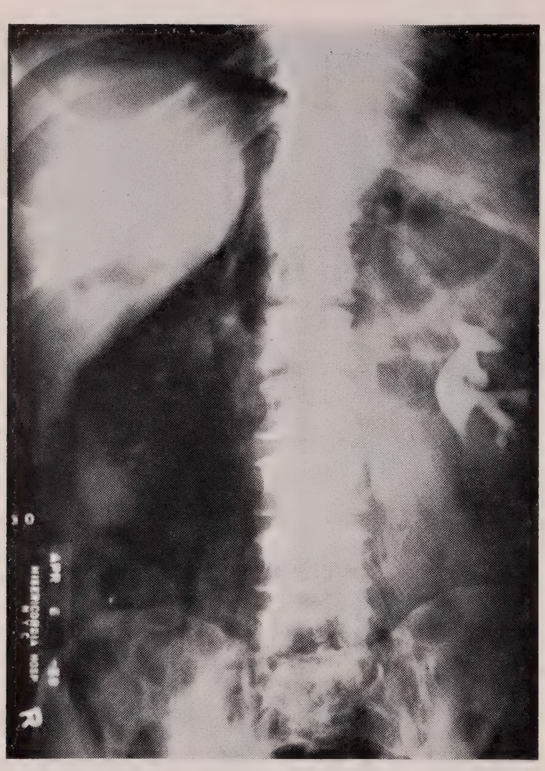

FIG. 3. Retroperitoneal pneumogram demonstrating nonpenetration of oxygen into left retroperitoneal space.

1,000 cc. of oxygen demonstrated that the gas had diffused along the entire right retroperitoneal space and had not diffused at all into the left space (Fig. 3). Films with simultaneous excretion urography to sixty minutes showed no further oxygen penetration. The left kidney emptied slowly and both lateral and anteroposterior films indicated lateral deviation of the left ureter and kidney due to a mass which obliterated the upper psoas outline and produced pressure on the ureter. The impression at this time was that there was a left-sided inclusion cyst, a retroperitoneal lymphoma, or a sarcoma.

An upper intestinal barium series on April 7 confirmed the presence of a retroperitoneal, retrogastric mass by demonstrating anterior displacement of the stomach and duodenal bulb and caudal shifting of the ligament of Treitz.

On April 9 exploration through a left lumbar incision was performed. A large retroperitoneal mass was noted rendering indistinguishable any lines of cleavage between kidney, perinephric fat, Gerota's fascia, and peritoneum. The mass surrounded the kidney, extending superiorly to the diaphragm and inferiorly into the pelvis. The posterior aspect of this apparently encapsulated mass contained freshly clotted blood. The mass was opened in this posterior aspect and appeared to be grossly composed of yellowish fat and clot with trabeculae of fibrous nature dispersed throughout. The kidney was visualized by further incision of the mass superiorly and appeared grossly normal as was the spleen by palpation. Several Penrose drains were inserted and the wound was closed in layers. The postoperative diagnosis was liposarcoma or spontaneous retroperitoneal hemorrhage.

Pathologic Report

HARRY H. BUCALO, M.D.: *Gross.*—Received partially fixed in formalin are four irregularly shaped, slightly firm, grayish-brown fragments of tissue, the largest being about 4 by 4 by 2.5 cm. On section they are soft and dark red with a number of variously sized small islands of fatty tissue throughout the tissue giving a mosaic appearance. No evidence of tumor formation is seen grossly. Portions are submitted.

Microscopic.—Sections of material submitted reveal fibroadipose tissue, scattered throughout which is a large amount of blood. In the major portions of the section an ingrowth of fibroblast capillaries and a more mature stage of granulation tissue is seen organizing the hemorrhage. In other areas large macrophages containing hemosiderin granules are observed. There is no evidence of tumor in the sections studied.

Diagnosis.—Organizing hemorrhage.

The patient made an uneventful recovery and was discharged free of symptoms on April 19, 1959. Subsequent office examination revealed a well-healed wound, normal blood pressure, and a void urine devoid of gross or microscopic abnormalities. A follow-up intravenous pyelogram was contemplated for July, 1959.

Summary

1. Retroperitoneal hematoma stems from a variety of causes—renal, perirenal, and systemic. A large percentage of cases are classified as idiopathic in orgin.

2. A classical picture of intra-abdominal hemorrhage and resultant shock syndrome is often absent. The diversity of symptoms often leads to diagnosis of intraperitoneal pathology.

3. Excretion urography, retrograde pyelog-

raphy, and retroperitoneal pneumography are of great value diagnostically.

4. A summary of existing literature and a case report are presented.

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He who wears his morality but as his best garment were better naked.—KAHLIL GIBRAN

ANNOUNCEMENT

from

New York State Department of Labor
Division of Employment
New York City

Editor's Note: *The following is printed for the information of our readers, with the suggestion that it be studied carefully for possible application to many physicians in New York State. The Division of Employment of the New York State Department of Labor will furnish any further information desired.*

Extension of Unemployment Insurance Coverage To Affect Many Professional Men

THOUSANDS of professional men with "one-girl" offices will become subject to the New York State Unemployment Insurance Law January 1, 1960.

This results from a change in law extending coverage to all employers who pay wages of $300 or more in any calendar quarter. Liable as of January 1, 1960, will be employers who had payrolls of at least $300 in the October-November-December, 1959, quarter. Employers whose quarterly payrolls reach $300 at a later date will come under the law at that time.

The change will affect the doctor or dentist who employs a receptionist, secretary, nurse, or other office assistant, part- or full-time. Similarly, any lawyer, architect, optometrist, pharmacist, or other professional man with a single employe will also come under the law for the first time in 1960.

Most of these professional men will be automatically notified of their liability through the mail by mid-January. In the event notice is not received, the employer who thinks he may be liable should advise the Unemployment Insurance Accounts Bureau of the Division of Employment in Albany. He will then either be registered or sent forms to complete, clarifying his status under the law.

Generally, the professional man can tell easily enough whether or not he has a payroll of $300 or more in any calendar quarter. There are some circumstances, however, where the matter may be in doubt. For example, in checking to see if he is subject, he should not disregard payments to the person who cleans his office. In most cases, cleaning help are considered employes and their wages are counted for unemployment insurance purposes. Even when the cleaner works only part-time in the employer's office and does the larger part of her work in his home, the office work cannot be overlooked. The dual employment arrangement should be reported to the Division's Unemployment Insurance Accounts Bureau for advice on how it affects the employer's potential liability under the law.

In some other situations, an employe's salary would definitely not be counted toward the $300 criterion. Wages paid to a day student employed in an office after school, Saturdays, or summers are not taxable and do not count, for example, because day school students do not receive unemployment insurance protection.

Also, a man's wife or minor child working in his office is not considered an employe and salary paid under such conditions should not be included in the test of a $300 payroll. However, if the professional man is in partnership or has incorporated his operations, salary paid to a wife or minor child is not distinguished from payments made to other employes.

Very often, two professional men jointly share the services of an employe. Where this happens, the Unemployment Insurance Accounts Bureau should be used to clarify the status of each.

Once subject to the law, an employer must pay a quarterly tax on his payroll. Payment is due by the end of the month following each calendar quarter. The employer who becomes liable for tax next January 1 must make his first payment for the January-March period by April 30.

The tax is fixed at 2.7 per cent of payroll for at least the first seven quarters an employer is in the system. Thereafter, under an experience rating formula, he may qualify for a lower rate if he has had little or no turnover of personnel.

Tax liability continues until the employer can show that in 4 consecutive calendar quarters his payroll has been less than $300.

More information on the change in the law and the responsibilities of professional men coming into the system can be obtained from the booklet, *Facts for Employers*, available on request from the Public Relations Office of the Division of Employment, 500 Eighth Avenue, New York 18, New York.

Motor Vehicle Accidents

Motor vehicle accidents killed more people in the United States in the first six months of this year than acute poliomyelitis, measles, scarlet fever, whooping cough, and diphtheria, all lumped together, have killed in the last six years, it is reported by statisticians of the Metropolitan Life Insurance Company.

The motor vehicle accident toll of approximately 17,100 was about 5 per cent above that for the first six months of 1958, and marked a reverse in the trend of the last few years. Beginning with the January-June period of 1956, when about 18,000 were killed, traffic deaths for the period had dropped to 17,500 in 1957 and to about 16,300 in 1958.

This year's increase is due largely to a rise in the volume of travel, the statisticians point out. The mortality rate remained at the record low established a year earlier—5.1 per 100 million vehicle miles.

Records of the circumstances surrounding motor vehicle accident deaths in 1957 indicate that intensified efforts toward greater highway safety are needed. Collisions between motor vehicles resulted in almost 12,000 deaths that year; they accounted for over one fourth of all motor vehicle accident deaths among males and for about two fifths of those among females. Pedestrians hit by motor vehicles comprised one fifth of the total victims, the number of such deaths totaling close to 8,000.

Other collision victims included nearly 2,000 drivers and passengers in motor vehicles which hit fixed objects, such as trees and poles; and another 1,400 dead were in vehicles which collided with railway trains.

Non-collision accidents also account for a considerable loss of life in the United States. In 1957, more than 7,500 motor vehicle deaths resulted from cars running off the roadway, and another 1,300 persons died in vehicles which overturned on the road.

LETTERS TO THE EDITOR

Comment on "Anxiety Neurosis"

To the Editor:

Dr. Altschule's well-referenced study on the diagnosis of "anxiety neurosis" and the presence of other motivations besides anxiety[1] warrants comment—and two more references.

In both psychiatry and medicine in general, a diagnostic entity is something created by doctors from what they see in the patients they deal with. The earliest diagnostic entity is the "syndrome," a collection of signs or symptoms appearing together. A syndrome becomes a "disease" when some chemical, bacteriologic, or pathologic changes are shown to be significantly associated with the clinical picture.

By these definitions, Altschule is correct, I believe, in denying that "anxiety neurosis" is a disease. I do not, however, believe it is correct to imply that it is not even a syndrome. We have few true "diseases" in psychiatry, aside from general paresis, and the different diagnoses of neurosis and psychosis are really only diagnoses of syndromes. If this is clearly understood, groups of patients suffering from the same syndrome *can*, however, validly be compared, even in psychiatry, as Wheeler, White, Reed, and Cohen[2] did so brilliantly with "anxiety neurosis."

Dr. Altschule is again correct, I believe, in pointing out that anxiety is not the only motivation in human or animal behavior. Unfortunately, however, he seems to slip into anthropomorphizing, by postulating "curiosity" and "boredom" as additional primary motivating forces.

Lilly[3] recently pointed out that there are apparently "two kinds of powerful 'motivational' brain systems . . . the first of which functions as if a reward, and the second as if a punishment." These two systems can be seen as the motivational systems underlying pleasure-approach and pain-avoidance movements respectively.

Anxiety or fear are the anticipations of future pain. Avoidance of pain is usually a far more important motivating factor at any given moment than is approach to pleasure, but the priority of painful responses does not deny the existence of pleasurable ones. Curiosity, boredom, and sexual activities can, I believe, all be described as combinations of inborn and learned approach-pleasure and avoidance-pain responses.

One final note about Dr. Altschule's fine paper. Please include translations when quoting in another language, even in French. High school is, after all, a long way behind us.

NATHANIEL S. LEHRMAN, M.D.

15 Canterbury Road
Great Neck, New York

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Reply by Author

Dear Dr. Lehrman:

I thank you for your kind comments and for letting me see a copy of your letter to the JOURNAL.

I cannot agree with your idea that neurosis and psychosis are different forms of one mental disease. There is no evidence for any such concept except for a few superficial similarities between neurosis and mild depressions or early schizophrenia. However, time will give us the answer, and I hope that we will both be on hand to hear it.

Similarly, I cannot agree with your definition of anxiety as anticipation of future pain. I can find no basis for this definition in experimental anxiety and none in clinical medicine either. I believe that for the present we had best consider anxiety as a feeling whose mechanism has not been worked out and whose etiology is so diverse as to defy any attempt to formulate a unitary theory of its occurrence. The occurrence of anxiety as one symptom in neurosis is no reason for naming the syndrome after it and certainly no reason for calling the other symptoms of the syndrome "anxiety equivalents." The idea that anxiety itself is of secondary importance in neurosis is supported by the fact that giving tranquilizing drugs to severely neurotic patients may cause the anxiety to disappear without producing any improvement in the patients' disability.

I am not willing at this point to support the creation of an entire system of psychiatric theory on the basis of fragmentary neurophysiologic data such as Lilly summarized in his 1958 paper. It is probable that neurophysiology will some day provide a verifiable explanation of human behavior and of diseases that modify it, but that day is not close at hand.

On the other hand, your letter indicates that we are in substantial agreement about many points, which, to me at least, is encouraging.

Thank you again for your most interesting comments.

Mark D. Altschule, M.D.

Federal Agencies Plan Research in Removing Strontium-90

A joint research effort to develop dairy-plant methods of removing strontium-90 from milk is being planned by the U.S. Atomic Energy Commission, the U.S. Public Health Service, and the U.S. Department of Agriculture.

The levels of radioactive fallout from past nuclear testing do not justify action to decontaminate milk supplies. The research is designed to provide practical answers to problems that might arise in the future.

The proposal to develop practical dairy-plant scale methods of removing strontium-90 from milk grew out of laboratory studies sponsored by the Atomic Energy Commission at the University of Tennessee as well as by Canadian and British scientists. These showed that it is possible, on a laboratory scale, to remove strontium-90 from milk through the use of certain chemicals known technically as ion exchange resins.

Ion exchange resins duplicate a natural phenomenon in soils. Strontium-90 that enters the soil is absorbed on soil particles and enters into reactions between the soil and plant root. However, only a little strontium-90 gets into the plant in this way. It is now known that much of the strontium-90 that does get into plants is absorbed through their leaves. This can be ingested by ruminants. The best evidence is that the animals take into their systems about 5 per cent of the strontium-90 ingested and that a dairy cow secretes in her milk about 1 per cent of the strontium-90 she consumes each day. The laboratory tests already done indicate that more than 90 and possibly more than 95 per cent of the strontium-90 that gets into milk can be removed by ion exchange resins.

The research will be conducted in a pilot plant at the Agricultural Research Center at Beltsville, Maryland.

NECROLOGY

John Martin Gibbons, M.D., of Great Neck, died in New York Hospital on November 6 at the age of fifty-five. Dr. Gibbons graduated in 1929 from the University of Pennsylvania School of Medicine. A former instructor in medicine at Cornell University Medical College, he was an attending physician at North Shore Hospital (Manhasset). Dr. Gibbons was a Diplomate of the American Board of Internal Medicine and a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James T. W. Granady, M.D., of New York City, died in Mount Morris Park Hospital on November 12 at the age of seventy. Dr. Granady graduated in 1920 from Howard University College of Medicine. Retired from active staff work in 1956 he continued as a consulting physician in hematology at Harlem Hospital and was also an attending physician at Mount Morris Park Hospital. For some time Dr. Granady was director of research into sickle-cell anemia at Harlem Hospital and the author of many papers on this special subject. Among placques, citations, and other awards, he received a Selective Service Medal and a Congressional Certificate of Merit for his work in World War II. Dr. Granady was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

S. Mortimer Hill, M.D., of Vernon, died on August 25 at the age of eighty-one. Dr. Hill graduated in 1905 from the University of Buffalo School of Medicine.

Arthur James Leonard, M.D., of Saratoga Springs, died in Albany Hospital on October 22 at the age of seventy-nine. In 1903 he graduated from Columbia University College of Physicians and Surgeons. He was an honorory surgeon at Saratoga Hospital. Dr. Leonard was a member of the Saratoga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gerald Frank Machacek, M.D., of Long Island City, died in Roosevelt Hospital on November 8 at the age of sixty-two. Dr. Machacek graduated in 1922 from Columbia University College of Physicians and Surgeons and interned at Roosevelt Hospital. He was an associate in dermatology at Elmhurst General Hospital and an attending in dermatology at Columbia-Presbyterian Medical Center and associate professor of histopathology at Columbia University College of Physicians and Surgeons. Dr. Machacek was a Diplomate of the American Board of Dermatology, Inc., and a member of the New York Academy of Medicine, the New York County Medical Society, and the Medical Society of the State of New York.

Henry Earl McGarvey, M.D., of Bronxville, died on November 7 at Lawrence Hospital at the age of seventy-one. Dr. McGarvey graduated in 1914 from Vanderbilt University School of Medicine. He was an attending in surgery at Lawrence Hospital, chief surgeon of the Westchester County Parkway Police, former president of the Westchester County Medical Society, and for many years had served as a vice-president of the United Medical Service. Dr. McGarvey was a member of the New York Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Calvin Weed Sherman, M.D., of Clyde, died on October 26, at his home at the age of seventy. Dr. Sherman graduated in 1914 from Syracuse University College of Medicine. He served seven years as district health officer and for a short time had also served as Wayne County coroner. Dr. Sherman was a member of the Wayne County Medical Society and the Medical Society of the State of New York.

Frederic Samuel Weil, M.D., of New York City, died on November 5 at the age of fifty-nine. Dr. Weil received his medical degree from the University of Basel in 1927. He was a Diplomate of the American Board of Psychology and Neurology (Psychiatry), a Fellow of the American Psychiatric Association, and a member of the American Psychoanalytic Association, the Association for Psychoanalytic Medicine, the New York Psychoanalytic Society, the New York Society for Clinical Psychiatry, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

MONTH IN WASHINGTON

A SPECIAL committee of consultants to the Federal government has recommended what was termed an urgent, essential program designed to maintain the present ratio of physicians in a sharply expanding population.

Leroy E. Burney, M.D., Surgeon General of the Public Health Service, gave his personal approval to recommendations made by his 22-member Consultant Group on Medical Education after about a year's study. But he said he couldn't indicate yet "the extent to which they can be incorporated" in next year's proposals of the Department of Health, Education, and Welfare.

The Consultant Group recommended expansion of existing medical schools and construction of 20 to 24 new ones with Federal help, Federal scholarships for medical students, and greater efforts in the field by states, local communities, foundations, individuals, industry, and voluntary agencies.

The Group said the present ratio of 133 doctors of medicine and 8 doctors of osteopathy per 100,000 population is "a minimum essential to protection of the health of the people of the United States."

To maintain this ratio the Group said, "the number of physicians graduated annually by schools of medicine and osteopathy must be increased from the present 7,400 a year to some 11,000 by 1975—an increase of 3,600 physicians graduated.

"To meet the country's need for physicians for medical care, teaching, research, and other essential purposes will require an immediate and strenuous program of action by the nation as a whole," the Group's 95-page report stated.

"This program must safeguard and improve the quality of medical education as well as bring about the needed substantial increase in the number of physicians."

The number one recommendation of the Group was for the Federal government to appropriate funds over the next ten years, estimated at about $500 million "on a matching basis to meet construction needs for medical education," including necessary teaching hospitals.

"The Consultant Group is convinced that the nation's physician supply will continue to lag behind the needs created by increasing population unless the Federal government makes an emergency financing contribution on a matching basis toward the construction of medical school facilities," the report said.

The Group also said research grants to medical schools "should cover full indirect costs so that medical schools are properly reimbursed for the contribution of medical education to medical research."

These two recommendations were in line with American Medical Association positions on the matters.

The group also urged "more generous public and private support for the basic operations of medical schools." Such support, the report added, "must come from many sources, including state and local appropriations, endowments, gifts and grants, universities, and reimbursement for patient care."

Most of the consultants were physicians or educators. They included Julian Price, M.D., of Florence, South Carolina, a member of the A.M.A. Board of Trustees, and Edward L. Turner, M.D., Chicago, director of the A.M.A. Division of Scientific activities.

Highlights of the Group's report included:—To maintain the present physician-population ratio, the expected 1975 population of 235 million will require a total of 330,000 doctors of medicine and osteopathy.—There also must be 12,000 entering students in 1971, as against the 7,600 a year entering now.—"In a very real sense, the needs for physicians cannot be met by numbers alone. They will be met only as an expanded program maintains and enhances the quality of medical education."—The entry of more physicians into research, industrial medicine, and similar activities "has made possible much of the progress of modern medicine," but it also has resulted in "relatively fewer physicians devoting full time to patient care."

Prepared by the Washington Office of the American Medical Association, Washington, D.C.

Everything is sweetened by risk.—ALEXANDER SMITH

MEDICAL NEWS

Cancer Researchers Form Organization—The directors of cancer research institutes in America have formed an organization, The Association of Cancer Institute Directors, for the purpose of exchanging information among the various institutes. The organizational meeting was held at Roswell Park Memorial Institute in Buffalo.

The organization is composed of the senior scientific executives of those institutions and autonomous divisions and departments whose principal activities are concerned with the study of malignant disease and the treatment of cancer patients.

Officers elected at the first meeting held in October at Memorial Center for Cancer and Allied Diseases, New York City include: George Moore, M.D., director, Roswell Park Memorial Institute, president; Sidney Farber, M.D., director of research, Children's Cancer Research Foundation, Boston, vice-president; and R. Lee Clark, Jr., M.D., director and surgeon-in-chief, The University of Texas M.D. Anderson Hospital and Tumor Institute, Houston, Texas, secretary-treasurer.

University of Rochester Opens Radiation Center—The University of Rochester has opened its new $400,000 radiation center at Strong Memorial Hospital, University Medical Center. The center is one of the most complete privately-sponsored facilities of its kind in Upstate New York and one of the most fully equipped in the nation. It will serve a population of about 1 million persons in Western New York. It is designed for diagnosis, therapy, teaching, and research in the problems of cancer and related diseases.

Philip Rubin, M.D., chief of the Division of Radiation Therapy, is director of the radiation center, and George H. Ramsey, M.D., is chairman of the Department of Radiology, under which the division functions.

Physician Conducts Free Eye Clinic in India—William C. Caccamise, M.D., Rochester, conducted a free eye clinic for the medical missionary nuns of the Kurji Holy Family Hospital in Bihar, India, November 17, 1959, through January 17, 1960.

Conference on Aging Held at Ann Lee Home—The eighth annual capital district conference on aging sponsored by the Albany County Department of Public Welfare, was held on November 19 at the Ann Lee Home, Watervliet. The theme of the conference was "New Trends in Care of the Aged." Among the physicians who spoke were: John J. Phelan, M.D., medical director, and Raymond Harris, M.D., assistant medical director, Ann Lee Home; and Robert P. Whalen, M.D., Commissioner, Albany County Department of Public Welfare.

Long Island Ophthalmological Society—The Long Island Ophthalmological Society held a meeting for school nurses on October 28.

The following physicians spoke at the meeting: Arthur E. Merz, M.D., introductory remarks; Eugene T. Buckley, M.D., "The Role of the Ophthalmologist in the School Health Program"; Gerald M. Branower, M.D., "Visual Screening Programs"; William L. Donnelly, M.D., "The Ophthalmologist's Viewpoint of Reading Difficulties"; Jesse L. Michaelson, M.D., "School Lighting and Vision"; Frank M. Green, M.D., "The Treatment of Crossed Eyes"; John R. Roche, M.D., "Aspects of the Visually Handicapped Child"; and Anthony A. Scimeca, M.D., "Educational Aspects of the Conservation of Good Vision."

Course in Gynecologic Endocrinology at NYU—New York University Post-Graduate Medical School will present a five-day, full-time postgraduate course in gynecologic endocrinology April 18 through 22, 1960.

The course (number 563R), is to be given under the direction of Herbert S. Kupperman, M.D. It will consist of a practical, didactic, and clinical presentation with emphasis on the therapeutic management of endocrine disorders in the female, including a discussion of the diagnosis and management of intersex. Among the topics to be emphasized will be endocrine therapy for menstrual abnormalities and ovulatory defects, and adrenocortical, thyroid, ovarian, and pituitary abnormalities. Practical diagnostic tests as well as the therapeutic use of the newer progestational, gonadal, and corticoid steroids will be discussed and demonstrated.

For further information contact: Office of the Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

New Journal on Neurology—The World Federation of Neurology, an international group representing neurology societies in 42 countries, has announced the inauguration of its official medical journal, *World Neurology.*

Scheduled for monthly publication beginning July, 1960, *World Neurology* medical papers will be printed in four languages—French, German, English, and Spanish. Editorial offices will be in the United States. Charles M. Poser, M. D., University of Kansas School of Medicine, is editor-in-chief.

Upstate Physician Speaks in California—Lytt I. Gardner, M.D., professor of pediatrics at the Upstate Medical Center, Syracuse, presented the Brenneman Memorial Lectureship to the Los Angeles Pediatric Society during the week of November 13. The lectureship consisted of a series of 4 lectures on genetics. Dr. Gardner also conducted ward rounds at the Cedars of Lebanon Hospital and the Children's Hospital Society of Los Angeles. While in California he also addressed the San Diego Academy of Medicine on the topic "Genetics and Human Disease."

Postgraduate Courses at University of Michigan—The annual short postgraduate courses in internal medicine, neurology, obstetrics and gynecology, ophthalmology, otolaryngology, pediatrics, psychiatry, and radiology will be given in February, March, and April, 1960 at the University Hospital, Ann Arbor, Michigan.

Medical Schools to Benefit from Brewery's Gift—This Christmas the nation's medical schools will again benefit from an unusual program of group giving. A brewing company will donate $12,000 in the name of its wholesalers to the National Fund for Medical Education instead of spending that sum on individual presents for its 680 distributors. The contribution will be included in the approximately 3 million dollars to be awarded this year to the medical schools by the fund in unrestricted grants.

The corporate giving plan was initiated last year by The Carling Brewing Company of Cleveland, with the cooperation of its distributors. The 1958 contribution totaled 10 thousand dollars.

Course in Diabetes to be Held in California—The Committee on Professional Education of the American Diabetes Association will present its eighth postgraduate course on diabetes and basic metabolic problems, January 20 through 22, 1960, at the Ambassador Hotel, Los Angeles, California.

The course will be given with the cooperation of the schools of medicine of The College of Medical Evangelists, University of California at Los Angeles, and the University of Southern California. The American Academy of General Practice will give eighteen hours of category II credit for the course.

Solomon A. Berson, M.D., chief, Radioisotope Service, Veterans Administration Hospital, Bronx, will be on the faculty.

For further information contact: American Diabetes Association, Inc., 1 East 45th Street, New York 17, New York. Telephone MUrray Hill 7–3930.

Filmstrips of Outstanding Exhibits—Outstanding exhibits from 1958 meetings of the American Medical Association and the World Conference of Gastroenterology are featured in Issue III of "Exhibits-on-Film," a service of Lakeside Laboratories, Inc., to the medical profession.

The filmstrip series is designed to provide medical students and physicians with the opportunity to view a selection of distinguished medical exhibits from the major conventions. A staff of medical journalists and photographers prepare the series.

Issue III of "Exhibits-on-Film" includes the following filmstrips: Filmstrip 7, Part I: "Chemopallidectomy for Dystonia and Other Juvenile Involuntary Movement Disorders" by Irving S. Cooper; Part II: "Care of Minor Hand Injuries" by Adrian E. Flatt. Filmstrip 8: "The Hemodynamic Concept of Atherosclerosis" by Meyer Texon. Filmstrip 9, Part I: "The Intestinal Biopsy Steatorrhea" by Margot Shiner and Israel Doniach.

The filmstrips are available to all medical colleges and county, state, and regional medical societies. They may be obtained free of charge from Helen Martin, Executive Secretary, "Exhibits-on-Film," Lakeside Laboratories, Inc., 1707 East North Avenue, Milwaukee 1, Wisconsin.

Laity Lectures at New York Academy of Medicine—The New York Academy of Medicine is presenting a series of laity lectures at 8:30 P.M. at the Academy, Fifth Avenue and 103rd Street. Admission is without charge and the public is invited. The following is a schedule of the lectures to be presented in January and February: January 6—"Tranquilizers and Stimulants, Their Use and Abuse," Francis J. Braceland, M.D., psychiatrist-in-chief, Institute of Living; January 20—"Narcotics Use by Teen-Age Boys, the Perspectives," Dr. Isidore Chein, professor of psychology, New York University; and February 3—"Obesity, Prevention and Treatment," Herbert Pollack, M.D., New York University Post-Graduate Medical School.

The laity lectures are broadcast by station WNYC and WNYC–FM.

Personalities

Honored

David Kershner, M.D., Brooklyn, retiring president of the Medical Society of the County of Kings and the Brooklyn Academy of Medicine, at a dinner on November 11.

Appointed

Paul V. Newland, M.D., Oxford, as director of the Medical Research and Professional Services Section of the Eaton Laboratories Division of the Norwich Pharmacal Company . . . Coleman B. Rabin, M.D., New York City, as expert consultant in dust diseases to the Workmen's Compensation Board.

Awarded

Howard A. Rusk, M.D., New York City, an award for outstanding public service from the New York Fashion Designers . . . Carl H. Smith, M.D., New York City, a Townsend Harris Medal for postgraduate achievement at the seventy-ninth annual dinner of City College's Alumni Association.

Elected

William Goldring, M.D., New York City, as president of the New York Heart Association . . . Robert A. Moore, M.D., Brooklyn, as a member of the Comitia Minora and the Board of Trustees of the Medical Society of the County of Kings . . . Armand M. Patella, M.D., Brooklyn as ship's surgeon of the Rudder Club.

Speakers

David F. Brown, M.D., Albany, at the annual meeting of the American Heart Association held in Philadelphia in October . . . James A. Brussel, M.D., Assistant Commissioner, New York State Department of Mental Hygiene, as an invited witness before the Congressional Committee on Education and Labor on proposed legislation for the handicapped, on October 28 . . . Joseph Buchman, M.D., New York City, on the subject of "Bone and Joint Infections" before the Westchester Chapter of the American College of Surgeons on December 2 . . . Joseph H. Burchenal, M.D., New York City, at a Conference on Experimental Clinical Cancer Chemotherapy held in Washington, D.C. on November 12 . . . William M. Chardack, M.D., Buffalo, on November 5, before the Greater New York Chapter of the Professional Group on Medical Electronics of the Institute of Radio Engineers . . . Isadore H. Cohn, M.D., New York City, speaker, and William S. Davis, M.D., Brooklyn, discussant, on the topic "Intrapsychic Changes in the Adolescent During Group Psychotherapy" before the Eastern Group Psychotherapy Society on November 20 . . . Jan Ehrenwald, M.D., New York City, as a discussant on the topic "The Network of Communication" before the 168th scientific meeting of the Association for the Advancement of Psychotherapy, November 20 . . . Wladimir G. Eliasberg, M.D., New York City, on the subject "Authoritarian Personality and the Obscenity Threshold" at the twenty-first scientific meeting of the Eastern Psychiatric Research Association, December 8.

Richard H. Freyberg, M.D., New York City, the Pemberton Lecture on the topic, "The Benefits, Limitations, and Problems of the Treatment of Rheumatoid Arthritis with Corticosteroids, Gold Salts, and Salicylates: Analysis of Ten Years of Study" before the Philadelphia County Medical Society, on October 28 . . . . George A. Friedman, M.D., New York City, before the Long Island Industrial Nurses Association on the topic "Law for the Industrial Nurse" on October 22 and before the annual meeting of the Jefferson County Medical Society on November 17, on the topic "Pathology and the Law" . . . Norman J. Goldfarb, M.D., Forest Hills, in Miami, on October 27 at a two-day symposium sponsored by the School of Medicine of the University of Miami . . . Joost A. Meerloo, M.D., New York City, before the 168th scientific meeting of the Association for the Advancement of Psychotherapy, on November 20, on the topic "The Network of Communication" . . . Jacob L. Moreno, M.D., Beacon, before the members of the hospital staff of the Veterans Administration Hospital at Northport, Long Island, on November 9 on the topic, "The Treatment of Alcoholics with Psychodrama" . . . Julius Pomeranze, M.D., New York City, November 5, at a conference of skin specialists held at the University of Cincinnati.

Algernon B. Reese, M.D., New York City, on November 23, on the topic "Seeing Eye to Eye with the Russians" before the scientific session of the Long Island Ophthalmological Society . . . Harold Rifkin, M.D., New York City, on November 10, at Bronx Municipal Hospital on the subject "Diabetic Acidosis" . . . John Scudder, M.D., New York City, before the annual meeting of the American Association of Blood Banks in Chicago on November 6 . . . Reginald Steen, M.D., Hempstead, at the first of a series of 6 lectures held at the Nassau County Academy of Medicine . . . Marion B. Sulzberger, M.D., New York City, in Miami on October 27 at a two-day symposium sponsored by the School of Medicine of the University of Miami.

MEDICAL MEETINGS

Three-Day Conference in California

The University of California School of Medicine and U. C. Extension will present a three-day conference on "Man and His Environment: The Air He Breathes," January 16 through 18, 1960, in San Francisco.

The conference will emphasize a multidisciplinary approach to the problems of man in his environment. Further information about the program and application for enrollment may be obtained from Seymour M. Farber, M.D., Department of Continuing Education in Medicine and Health Sciences, University of California Medical Center, San Francisco 22, California.

Blue Shield Professional Relations Conference

The 1960 Blue Shield Professional Relations Conference will be held February 1 through 3 at the Drake Hotel in Chicago. The theme of the conference is "Facing the Facts—in the Future of Blue Shield."

Third Annual Oklahoma Colloquy on Advances in Medicine

A program of adrenal steroids has been developed for the Third Annual Oklahoma Colloquy on Advances in Medicine to be held March 24 and 26, 1960, at the University of Oklahoma Medical Center, Oklahoma City.

Louis J. Soffer, M.D., clinical professor of medicine, State University of New York, and chief, endocrinology, Mount Sinai Hospital, New York City, will be among the speakers.

Additional information may be obtained by writing to the Office of Postgraduate Education, University of Oklahoma Medical Center, 801 NE 13, Oklahoma City, Oklahoma.

Experience with Arterial Replacement

Since early 1954, arterial grafting has been performed in 183 patients. A freeze-dried homologous homograft was used in 149 patients and a synthetic prosthesis in 34 patients. There were 25 deaths in all; 21 in the homograft group and 4 in the synthetic prosthesis series. The surviving patients have been followed up for periods up to four and a half years. These studies have generally shown no recurrence of symptoms and a good maintenance of function. The incidence of thrombosis in grafts has been low—less than 5 per cent in the homograft series and about 10 per cent in the synthetic prosthesis series. Instances of thrombosis have been limited primarily to grafts in small vessels (as carotid, popliteal, and femoral arteries). There has been no evidence of femoral dilation of any of the grafts. Aortograms performed as late as three years after graft implantation have shown maintenance of structural integrity of the arterial substitute. While the freeze-dried implants have functioned well, the authors say it is likely that the improved synthetic prostheses now available will largely replace homografts as arterial substitutes.

—Journal of the Tennessee State Medical Association, January, 1959, H. William Scott, Jr., M.D., James A. Kirtley, M.D., Robert A. Carlson, M.D., and John H. Foster, M.D., Vanderbilt University, Nashville, Tennessee

SUMMARY OF COUNCIL MINUTES

September 24, 1959

THE Council of the Medical Society of the State of New York met at the Society's headquarters, 750 Third Avenue, New York City, Henry I. Fineberg, M.D., president, presiding.

Executive Committee

The Council *approved* the recommendations of the Executive Committee, including the following:

1. That Edward A. Burkhardt, M.D., represent the Society at the Tenth County Medical Societies Civil Defense Conference in Chicago on November 7 and 8;
2. That the resolution regarding free choice of physician submitted by the Medical Society of the County of Queens be referred to the State Society delegates to the American Medical Association House of Delegates;
3. That the Society continue its membership in the Empire State Health Council;
4. That the Society join the Pharmaceutical Society of New York State in submitting briefs in a court action questioning the constitutionality of the State Board of Pharmacy and also some of its decisions;
5. That the "Guide for Cooperation for Doctors, Hospitals, and Reporters" be mailed to all members of the Society;
6. That the policy be established that the State Society letterhead not be used for any commercial purpose unless approval is given by Council or House of Delegates;
7. That five representatives, Henry I. Fineberg, M.D.; George J. Lawrence, Jr., M.D.; Herbert T. Wagner, M.D.; Gerald D. Dorman, M.D., and James M. Blake, M.D. be authorized to represent the Society at the American Medical Association legislative conference in St. Louis on October 2 and 3;
8. That A. C. Schuyler, field representative, be authorized to attend as an observer the meeting of the Council on Medical Television at the National Institute of Health, Bethesda, Maryland, on October 15 and 16.

President

Henry I. Fineberg, M.D., president, reported the following actions and activities which *were approved* by the Council:

1. Meetings and conferences in addition to Society committee meetings;
2. Meetings of a committee of the American Medical Association Council on Medical Service for the purpose of discussing an intraprofessional relationship study, held at Society headquarters September 19, apparently first time an A.M.A. committee has held a formal meeting in offices of a state society;
3. Appointment of Carl R. Ackerman, M.D., Bronx; James M. Blake, M.D., Schenectady, and Merrill D. Evans, M.D., Rochester, as State Society representatives to Associated Blue Shield Plans of New York State;
4. Appointment of Carl R. Ackerman, M.D., Bronx, as suggested advisory consultant on medical care insurance in reply to request from Mr. Roswell B. Perkins, counsel to Governor Rockefeller;
5. Correspondence with Governor Rockefeller pledging cooperation with Governor's committee to study State's medical resources;
6. Information concerning controversy over recognition of chiropractic certificates of illness for two New York City teachers;
7. Meeting of State Society delegates to American Medical Association on August 14, at which Dr. Fineberg was chosen chairman of the delegation and Gerald D. Dorman, M.D., was endorsed as nominee for A.M.A. trustee.

Secretary

William L. Wheeler, Jr., M.D., secretary, presented the following report:

Dues Remissions.—The Council *voted* to remit annual State dues of one member for 1958 and 25 members for 1959 because of illness; three members for 1959 because of service in the Armed Forces, and two members for 1959 because of financial hardship.

Nominations.—The Council *approved* the nominations of Clarence R. Pearson, M.D., Scottsville; William A. Cooper, M.D., New York City; and Calvin C. Torrance, M.D., Jamestown, to the Board of Regents for possible appointment to the Nurse Advisory Council; of William L. Wheeler, Jr., M.D., Philip G. C. Bishop, M.D., and Francis M. Benedetto, M.D., all of New York City, to the Board of Regents for possible appointment to the New York State Medical Grievance Committee.

Treasurer

Maurice J. Dattelbaum, M.D., presented the treasurer's report, including requests for additions or reductions to the 1959 budget, which *was approved.*

Executive Director

Herbert T. Wagner, M.D., reported on his activities during the summer and scheduled meetings and conferences during the coming month, and described special activities, including work against the Forand Bill, counteracting the telephone listings of psychotherapists, organization of State association of office assistants, conferences of county society executive secretaries and of county society officers, and others. The report *was approved.*

Reports of Committees

COMMISSION ON MEDICAL SERVICES

Gerald D. Dorman, M.D., chairman, reported on the work of the Commission and introduced committee chairmen for individual reports, as follows:

Economics.—Waring Willis, M.D., chairman, reported on meetings attended by himself, members of his committee, and by Mr. George P. Farrell, director of the Bureau of Medical Care Insurance, including the following:

1. Joint Council to Improve the Health Care of the Aged, Washington, D.C., June 12 and 13;
2. Regional Conference on Relative Value Studies, Boston, Massachusetts, July 18;
3. Symposium, Life Assurance Association of America, New York City, July 28;
4. Associated Blue Shield Plans of New York State, Syracuse, August 29.

The chairman reported that the committee had reviewed the schedule of allowances submitted to it as a uniform schedule for the medical rehabilitation program of the State Department and the vocational rehabilitation program of the State Department of Education.

The report *was approved.*

Ethics.—Harold F. Brown, M.D., chairman, reported on several inquiries that had been presented to the committee and reiterated the viewpoint of the committee that it is a reference committee and not an investigative committee, that it has no power of its own but only power to recommend to the Council.

The report *was approved.*

Industrial Health.—Dr. Dorman reported for Peter J. Di Natale, M.D., chairman, including the following:

1. That discussions with labor and management representatives should be continued, as experience in Nassau County showed value of informal meetings;
2. That the State Medical Society should participate in the International Congress on Occupational Health to be held July 25 to 29, 1960, in New York City;
3. That teaching programs on industrial medicine be held at the county society level;
4. That the Governor's Committee on the Employment of the Physically Handicapped utilize the State Medical Society's Committee on Industrial Health as a medical advisory group;
5. That Dr. Di Natale and Anthony A. Mira, M.D., director of the Bureau of Industrial Health and Workmen's Compensation, be authorized to attend the Cornell Off-Campus Conference on "Labor Relations Aspects of Industrial Medicine" at Saratoga on October 21 through 23.

The report *was accepted.*

Medical Care Insurance.—Dr. Dorman presented the report submitted by Carl R. Ackerman, M.D., chairman, which included the following:

1. That the State Medical Society cooperate with Associated Blue Shield Plans of New York State, and that the chairmen of the respective legislation committees discuss mutual problems;
2. That the State Medical Society make a relative value study regarding the payment of fees under a schedule of allowances for services rendered by doctors and disseminate information to county medical societies.

The report *was approved.*

Rural Medical Service.—Edward C. Hughes, M.D., chairman, reported that the educational program set up in Onondaga, Oswego, and Cortland Counties was well underway, that the county medical societies planned to present several public forums with over-all title, "Successful Steps to Security and Good Health"; that short articles pertaining to medicine were being planned for farm and lay journals, with the assistance of the Committee on Public Relations; that plans are being made to work with the 4-H Clubs in suggested programs, such as one on medical careers.

Dr. Hughes reported that the woman's auxiliaries in these pilot counties were cooperating in carrying out the program.

The report *was accepted.*

Workmen's Compensation.—Dr. Dorman presented the report on behalf of William E. Pelow, M.D., chairman, including the following:

1. Summary of recommendations and actions of the Advisory Committee to the Chairman of the Workmen's Compensation Board on the Medical Fee Schedule and Allied Problems and action taken by the Council Committee on Workmen's Compensation, including opposition to proposed schedule changes, conferences held with representatives of several specialty groups for the purpose of making recommendations, opposition to expansion of the scope of podiatry under the Workmen's Compensation Law;

2. Meeting of the Advisory Committee to the Chairman of the Workmen's Compensation Board, to which Gerald D. Dorman, M.D., is the representative of the Medical Society of the State of New York.

The report *was approved.*

OTHER COMMITTEES

American Medical Education Foundation.—John W. Latcher, M.D., chairman, submitted a report of the committee meeting held on September 10 at which ways to increase New York State's contributions to the American Medical Education Foundation were discussed. The report *was approved.*

Autopsy and the Dead Human Body.—Alfred A. Angrist, M.D., chairman, reported on the National Conference on Legal Environment in Medical Science which he had attended at the Society's request, and that the committee planned no action this year on any proposed autopsy law.

The report *was approved.*

Civil Defense and Catastrophe.—Edward A. Burkhardt, M.D., chairman, submitted a report for information, which *was approved.*

Convention.—George J. Lawrence, Jr., M.D., chairman, reported on plans for the 1960 convention, including the following:

1. That the dinner dance will be held Monday night, May 9, 1960, in the ballroom of the Hotel Pierre, Fifth Avenue, to be preceded by the President's Reception open to all dinner guests; that Louis H. Bauer, M.D., has accepted the invitation to be toastmaster, and that Ben Cutler's orchestra will play for dancing;

2. That the Scientific Exhibits Awards Subcommittee be empowered to make its awards later than the Monday of convention week and not be required to submit their report for approval of the House of Delegates;

3. That scientific exhibits which are sponsored by pharmaceutical companies be permitted if they do not carry advertising.

The report *was approved.*

Samuel Z. Freedman, M.D., former chairman, reported on the 1959 convention, as follows:

1. The 153rd Annual Convention of the Medical Society of the State of New York was held at the Statler Hilton Hotel, Buffalo, May 9 through 15, 1959, with the attendance of 1,445 physicians, 438 guests (including members of allied professions), and 394 industrial exhibitors, for a total attendance of 2,277;

2. That the House of Delegates convened for the first time on a Saturday, adjourning on Monday, and had a total of 68 resolutions introduced for consideration and action;

3. That five general sessions, 21 section meetings, and two session meetings were held from Monday through Friday;

4. That there were 55 scientific exhibits, with six chosen for special recognition by the Scientific Exhibits Awards Subcommittee (*see House of Delegates minutes, page 140, section 228*):

5. That there were 90 industrial exhibits, with all available space sold;

6. That 279 attended the annual meeting and dinner dance, at which guest speaker was Gunnar Gunderson, M.D., president of the American Medical Association, who spoke on "Don't Fence Them In";

7. That the Woman's Auxiliary to the Medical Society of the State of New York held its convention simultaneously with that of the State Society.

The report *was approved.*

Cults.—James M. Blake, M.D., chairman, reported that the committee had been active in investigating several matters on the activities of chiropractors. The report *was adopted.*

Legislation.—James M. Blake, M.D., chairman, reported on conferences held during the summer with legal advisers, that resolutions referred from the House of Delegates were being reviewed by legal counsel and would be discussed at a future meeting, and that the first fall meeting of the Legislation committee would be on October 8 in Albany.

The report *was approved.*

Malpractice Insurance and Defense Board.—Joseph A. Lane, M.D., chairman, reported that a contract would be presented to the Board of Trustees which eliminates for all members the contingent reserve fee and recommended that the Trustees be authorized to sign the contract. The report *was approved.*

Management Survey Report.—Renato J. Azzari, M.D., chairman, reported that a memorandum had been sent to presidents of all county medical societies, requesting an expression of opinion as to the reorganization of the Council and Board of Trustees, as recommended in the Management Survey Report, and that a report of the replies would be made at a later date.

Nursing Education.—John M. Galbraith, M.D., chairman, reported that a joint meeting of the committee with the Committee on Hospital and Professional Relations and the Joint State Committee was scheduled for October 9.

Office Administration and Policies.—John J. Masterson, M.D., chairman, reported on routine personnel matters and a study of certain items on expense vouchers.

The report *was approved.*

Publication.—Alfred P. Ingegno, M.D., chairman, reported on routine matters concerning the NEW YORK STATE JOURNAL OF MEDICINE and the *Medical Directory* which had been discussed by the committee, and recommended approval of the following appointments for one year to the associate editorial board of the JOURNAL: John M. Beal, M.D.; Vincent J. Collins, M.D.; Edmund B. Dombrowski, M.D.; Alfred A. Hartmann, M.D.; Gertrude M. Hyde, M.D.; George E. Moore, M.D.; Arthur Q. Penta, M.D.; Paul Reznikoff, M.D.; Philip M. Winslow, M.D., and William T. Boland, M.D.

The report *was approved.*

Planning for Medical Policies.—Peter J. Di Natale, M.D., chairman, submitted through the secretary a request for additional budget appropriation, which *was approved.*

Public Health and Education.—Norman S. Moore, M.D., chairman, reported on a joint meeting of the committee with Herman E. Hilleboe, M.D., State Commissioner of Health, and his staff, at which the following were discussed:

1. Rehabilitation programs of the State government;
2. Revision of fee schedules for Medical Rehabilitation and Vocational Rehabilitation programs;
3. Pilot program being conducted by Mary Imogene Bassett Hospital, Cooperstown, in providing panels of specialists to present programs at county medical society meetings;
4. Panel from Cornell University School of Nutrition to aid Health Department in speaking on vitamins, fad diets, etc.;
5. Work of Onondaga County Medical Society in voluntarily staffing polio clinic at State Fair in August, with recommendation to Council that, because of evidence that poliomyelitis is still a decided threat to the health of the people, the State Society reaffirm its position in favor of pursuing an active campaign to effect the proper immunization of the population of the State by inoculation with Salk vaccine;
6. Legal position of the physician when he is requested by police to draw blood from a driver involved in an accident to determine whether or not he is intoxicated. It was decided that complaints to the police would be made available to the committee for reply to the individual physician and that the legislation on this subject would be further publicized;
7. Adequate treatment for primary streptococcal infections. It was agreed to reaffirm the policy of the Subcommittee on Heart Disease (approved by the Council in June, 1957) that adequate amounts of penicillin as established by the American Heart Association should be administered in cases of bacteriologically proved streptococcal infection.

Subcommittee on Addiction to Alcohol and Narcotics—As the result of a meeting of this subcommittee to discuss projectedc losing of Riverside Hospital by New York City authorities, it was recommended that the chairman crystallize the discussion of the committee, that the city authorities be petitioned to maintain adequate facilities, or at least facilities equal to those provided by Riverside Hospital, for the study, treatment, and rehabilitation of narcotic addicts, and that these be assured before Riverside Hospital is abandoned.

Postgraduate Education—Dr. Moore reported that nine meetings for postgraduate education had been arranged since the last report to the Council.

What Goes On—Dr. Moore reported a plan worked out with the financial sponsor of *What Goes On,* Lederle Laboratories, to incorporate listings of postgraduate education meetings in New Jersey with the New York publication, with the added sponsorship of the New Jersey State Medical Society and the New Jersey Academy of Medicine.

Subcommittee on Accident Prevention—Dr. Moore reported on discussion with the State Department of Health and the State Bureau of Motor Vehicles on the wording of the medical question on operators' licenses and his conferences with various committee members and chairmen concerning this. It was agreed to submit the wording to counsel for a recommendation at the next Council meeting.

Subcommittee on Aging and Nursing Homes—Dr. Moore submitted a report from Joseph J. Witt, M.D., chairman, on the Second Regional Conference on Aging held in Boston September 16 and 17.

The report of the Council Committee on Public Health and Education *was approved.*

Public Relations.—John C. McClintock, M.D., chairman, presented the report of the Department of Communications which outlined routine activities, including the aid in the organization of the New York State Medical Assistants Association. The council *approved* the following recommendations of the committee:

1. That the Council take a strong stand that physicians use the letters "M.D." after their names instead of the customary "Dr." before;

2. That Ralph B. Post, M.D., Ballston Spa, be named New York State's Outstanding General Practitioner of 1959;

3. That the Public Relations Committee be authorized to explore further an association of professionals;

4. That the State Society communicate with the New York Society of Internal Medicine objecting to the participation of one of its members at the hearings on the Forand Bill in Washington, wherein he made remarks which were contrary to the dignity of the practice of medicine and suggesting that, in future, situations of this nature, involving the entire practice of medicine or at least on a State-wide basis, should result in consultation between a society and the State Society as such.

Resolution 58–49.—George J. Lawrence, Jr., M.D., chairman, reported that the committee had decided to confine its activities to the betterment of medical care for all the people of New York State through the medium of some form of medical insurance. The Council *approved* the following recommendations of the committee:

1. That a campaign be held in New York State for the accreditation of proprietary hospitals and nursing homes during which approaches would be made to both groups to have them improve their standards so that people would get the best possible medical care;

2. That the problem of overutilization of hospital care be studied with the possible use of "admissions review groups" to help bring down increasing hospital costs;

3. That a series of regional meetings, with one to be held first as a pilot project, similar to those being conducted by the American Medical Association, be held in New York State by the State Society to acquaint doctors with problems facing the profession in regard to adequate medical care for the people of the State;

4. That a communication be sent to the Blue Shield plans in New York State, to Associated Blue Shield Plans of New York State, and to the Health Insurance Council, suggesting that irregularities in practice be referred to the doctor's county medical society.

Staphylococcal Infections.—James Greenough, M.D., chairman, reported on a meeting held in July at the State Health Department in Albany, where the proposed change in the Sanitary Code was discussed and it was agreed to combine the two pamphlets, "The Guide for the Prevention and Control of Infections in Hospitals" and "The Control of Staphylococcal Infections in Hospitals," into one booklet, to be edited and distributed by the State Health Department. It was decided that the committee had completed its work and could be discharged.

The report *was accepted.*

New Business

Presentation of Certificates.—President Fineberg presented certificates to the immediate past president, Leo E. Gibson, M.D., and to Walter W. Mott, M.D., retired chairman of the Board of Trustees.

Physicians' Day and Family Doctor Week.—President Fineberg announced that Governor Rockefeller had issued proclamations designating Sunday, October 18, as Physicians and Surgeons Day, and the week of October 18 to 24 as Family Doctor Week in New York State.

The meeting adjourned at 4:45 P.M.

Late Sequelae of Saddle Block Anesthesia in Obstetrics

The obvious advantages of saddle block anesthesia in obstetrics—and its consequent wide use—make the possibility of late neurologic sequelae an important consideration. Several reports have appeared implicating saddle block anesthesia in permanent neurologic damage. Although the authors of this report had not observed any serious acute complications, they thought that possibly some of the late complications had been missed because patients had not been followed for long enough periods of time. Accordingly, they devised a follow-up study of the records of obstetric patients getting this type of anesthesia from 1946 to 1951.

Of the 1,077 who came in for examination, 96 were referred for complete neurologic examination, and of these only 6 had findings in which the saddle block anesthesia might possibly be implicated. The findings were altered reflexes, sensory reflexes, sensory changes in the legs, headaches, and dizziness. None of these were classified as major sequelae. The authors concluded that in this series any disadvantages of the procedure were far outweighed by its safety, effectiveness, and acceptance both by patients and physicians.—*Journal of the American Medical Association, January 31, 1959, Eva F. Dodge, M.D., Willis E. Brown, M.D., and William K. Jordan, M.D., University of Arkansas, Little Rock*

BOOKS RECEIVED

(The following books were received during the month of October, 1959)

The Emergency Syndromes In Pediatric Practice. By Alfred J. Vignec, M.D. Octavo of 382 pages, illustrated. New York, Landsberger Medical Books, Inc., 1959. Cloth, $9.00

Planning Homes for the Aged. Edited by Geneva Mathiasen and Edward H. Noakes. Quarto of 119 pages, illustrated. New York, F. W. Dodge Corporation, 1959. Cloth, $12.75

The Foot and Ankle. By Philip Lewin, M.D. Fourth edition. Octavo of 612 pages, illustrated. Philadelphia, Lea & Febiger, 1959. Cloth, $14.

Master Your Tensions and Enjoy Living Again. By George Stevenson, M.D., and Harry Milt. Octavo of 241 pages. Englewood Cliffs, N. J., Prentice-Hall, Inc., 1959. Cloth, $4.95.

Heroic Sanctity and Insanity. By Thomas Verner Moore, Carthusian. Octavo of 243 pages. New York, Grune & Stratton, 1959. Cloth, $5.00.

The Fluids of Parenteral Body Cavities. By Paul D. Hoeprich, M.D., and John R. Ward, M.D. Octavo of 98 pages, illustrated. New York, Grune & Stratton, 1959. (Modern Medical Monographs) Cloth, $4.75.

The Megaloblastic Anemias. By Victor Herbert, M.D. Octavo of 162 pages, illustrated. New York, Grune & Stratton, 1959. (Modern Medical Monographs) Cloth, $6.00.

Medical Management of the Menopause. By Minnie B. Goldberg, M.D. Octavo of 98 pages, illustrated. New York, Grune & Stratton, 1959. (Modern Medical Monographs) Cloth, $4.50.

Childbirth Without Fear. By Grantly Dick-Read, M.D. Second revised edition. Octavo of 361 pages, illustrated. New York, Harper & Brothers, 1959. Cloth, $4.00.

Memory and Hypnotic Age Regression. By Robert Reiff, Ph.D., and Martin Scheerer, Ph.D. Octavo of 253 pages. New York, International Universities Press, Inc., 1959. Cloth, $5.00.

Hypnosis and Related States. By Merton M. Gill, M.D., and Margaret Brenman, Ph.D. Octavo of 405 pages. New York, International Universities Press, Inc., 1959. Cloth, $7.50.

A Doctor's Life of John Keats. By Walter A. Wells, M.D. Octavo of 247 pages, illustrated. New York, Vantage Press, 1959. Cloth, $3.95.

Ciba Foundation Study Group No. 1. Pain and Itch. Edited by G. E. W. Wolstenholme, M.B., and Maeve O'Connor, B.A. Duodecimo of 120 pages, illustrated. Boston, Little, Brown and Company, 1959. Cloth, $2.50.

Ciba Foundation Study Group No. 2. Steric Course of Microbiological Reactions. Edited by G. E. W. Wolstenholme, M.B., and Cecilia M. O'Connor, B.Sc. Duodecimo of 115 pages, illustrated. Boston, Little, Brown and Company, 1959. Cloth, $2.50.

Clinical Disorders of Hydration and Acid-Base Equilibrium. By Louis G. Welt, M.D. Second edition. Octavo of 336 pages, illustrated. Boston, Little, Brown and Company, 1959. Cloth, $7.00.

Handbook of Poisoning: Diagnosis and Treatment. By Robert H. Dreisbach, M.D. Second edition. Duodecimo of 467 pages, illustrated. Los Altos, Calif., Lange Medical Publications, 1959. Cloth, $3.50.

Current Medical References. Edited by Paul J. Sanazaro, M.D. Duodecimo of 535 pages. Los Altos, Calif., Lange Medical Publications, 1959. Cloth, $3.50.

Synopsis of Gynecology. By Robert James Crossen, M.D., Daniel Winston Beacham, M.D., and Woodard Davis Beacham, M.D. Fifth edition. Duodecimo of 340 pages, illustrated. St. Louis, C. V. Mosby Company, 1959. Cloth, $6.50.

Living Beyond Your Heart Attack. By Eugene B. Mozes, M.D. Octavo of 212 pages, illustrated. Englewood Cliffs, N. J., Prentice-Hall, Inc., 1959. Cloth, $3.50.

The Medical Clinics of North America. Nationwide Number. September, 1959. Viral and Rickettsial Diseases. Chester S. Keefer, M.D., Consulting Editor. Octavo. Philadelphia, W. B. Saunders Company, 1959. Published Bi-Monthly (six numbers a year). Cloth, $18 net; Paper, $15 net.

The Physician and the Law. By Rowland H. Long. Second edition. Octavo of 301 pages.

New York, Appleton-Century-Crofts, Inc., 1959. Cloth, $5.95.

The Acute Medical Syndromes and Emergencies, Diagnosis and Treatment. By Albert Salisbury Hyman, M.D. Octavo of 442 pages. New York, Landsberger Medical Books, Inc., 1959. Cloth, $8.75.

Biopsy Manual. By James D. Hardy, M.D., James C. Griffin, Jr., M.D., and Jorge A. Rodriguez, M.D. Quarto of 150 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $6.50.

Handbook of Circulation. Compiled by Philip L. Altman. Quarto of 393 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Paper, $7.50.

Metabolic Care of the Surgical Patient. By Francis D. Moore, M.D. Quarto of 1,011 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $20.

Growth Diagnosis. By Leona M. Bayer and Nancy Bayley. Quarto of 241 pages, illustrated. Chicago, The University of Chicago Press, 1959. Cloth, $10.

BOOKS REVIEWED

The Medical Clinics of North America. Veterans Administration Hospitals Number. January, 1959. The Major Pulmonary Diseases. Benjamin B. Wells, M.D., and Marc J. Musser, M.D., Consulting Editors. Octavo. Philadelphia, W. B. Saunders Company, 1959. Published Bimonthly (six numbers a year). Cloth, $18 net; Paper, $15 net.

The Medical Clinics of North America have recently brought out a very comprehensive and illuminating volume dedicated to the study of the major pulmonary diseases. Indeed this issue presents about as complete a symposium on diseases of the chest as has been presented within the past five years.

The subjects range from the clinical evaluation of pulmonary function tests through diseases of allergic origin, pulmonary sarcoidosis, carcinoma of the lung, and pulmonary tuberculosis. The papers have all been contributed by staff members of the many Veterans Administration Hospitals throughout the country. This fact alone vouches for the authenticity and thorough documentation of each contribution.

Your reviewer strongly recommends this volume to all practitioners of medicine.—Foster Murray

The Essentials of Roentgen Interpretation. By Lester W. Paul, M.D., and John H. Juhl, M.D. Quarto of 839 pages, illustrated. New York, Paul B. Hoeber, Inc., 1959. Cloth, $25.

The authors state that their aim in writing this text is to bridge the gap between the elementary and the multiple volume reference work. This they succeed in doing but create a work that is at times incomplete. This is the inevitable result of the effort undertaken. The authors apparently are aware of this and recommend the text for nonradiologists and medical students. This purpose is well served. Whether or not a need exists for such a text is, however, a moot point. There are other equally well-written texts available for medical students and nonradiologists are generally not interested in the entire field of radiology but limit themselves to more detailed texts dealing with their specific specialties.

The writing is precise and with rare exceptions the illustrations are excellent. There is an annoying tendency of failure to refer to illustrations in the text proper.

There are some overt errors. The os peroneum is incorrectly localized in the text although properly shown in the diagram. The anatomy of paraesophageal hernia is incorrectly shown. The section on necrotizing renal papillitis is in need of extensive revision.

[Continued on page 4632]

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In some sections, notably those dealing with bone, the normal is either not discussed or is discussed too briefly.

In summary then, with very minor exceptions, the authors accomplish their purpose to introduce a text for which there is only questionable need.—Solomon Schwartz

Public Health and Welfare. Selected Papers of Homer Folks. Edited by Savel Zimand. Duodecimo of 475 pages. New York, The Macmillan Co., 1958. Cloth, $7.00.

This is a collection of 49 principal addresses by one who, probably more than any other, is identified with the evolution and maturation of social work into its present, rightly esteemed position. Occasionally abridged but with the theme always preserved, they represent a well-selected, well-edited, chronologically arranged exposition of the philosophy, objectives, and generic methodology of this profession at its undoubted best.

As the outstanding, idealistic, yet ever practical and effective leader of one of the major social developments in this country of constant, orderly change, Homer Folks depicts the problems, purposes, and aspirations of over a half century of organized community service. Here, in wonderfully simple, logical, and realistic terms is the authentically distilled essence of a perspective and program that, in accentuating the fundamental indivisibility of health and welfare, enthusiastically and unequivocally identifies medicine as a social science.

If there is a bible of social work—a documented succession of revelations from which its creed (but, hopefully, not dogma) derives—this book well may be it. Social workers will read and reread these words of its most renowned and prophetic spokesman. Others in the health professions who have long acclaimed this distinguished social statesman will find in his message reassurance, guidance, and inspiration—a timely reaffirmation of a timeless perspective, by a sensitive, sensing, and at all times sensible human being.—Robert W. Hillman

Navy Surgeon. By Rear Admiral Lamont Pugh, M.D. Octavo of 459 pages. New York, J. B. Lippincott Co., 1959. Cloth, $5.00.

The autobiography of the retired Navy surgeon is an interesting tale. Here is the life and times of Lamont Pugh set down in detail with a flair for the colorful and unusual. It is an interesting journey from its beginning in the hills of Virginia to all parts of the world. The author gives credence to the posters of the Navy. "Join the Navy and see the world."

The book contains numerous anecdotes and many shrewd observations concerning the passing scene. Interesting sidelights of life in the Navy are depicted and it is a story of a most interesting career by a very intelligent man. It is an odyssey of an American. This book makes an excellent companion during a doctor's holiday from everyday practice.—Alan A. Kane

Principles of Self Damage. By Edmund Bergler, M.D. Duodecimo of 469 pages. New York, Philosophical Library, 1959. Cloth, $6.00.

The author is a well-known analyst and a member of the American Psychoanalytic Association. He is a prolific writer and has published many books which stress the subject matter of psychic masochism. He believes this to be the inner defense against the libidinized guilt emanating from the unconscious conscience. His theory is that neurotics unconsciously provoke disappointment, refusal, and humiliation by misuse of an external situation and then identify the outer world with the "refusing" pre-Oedipal mother.

The book is written for the analytically oriented psychiatrist and may be too technical for the nonpsychiatric physician. The newcomer to Bergler will be furnished an erudite scholarly treatise of psychic masochism enhanced with interesting anecdotes of clinical histories. Those who have read Bergler's previous offerings may find this one merely a repetition of the old theme of "pleasure in displeasure."

The author reiterates his clinical conviction that human actions can only be understood by revealing the hidden, self-damaging factor unconsciously present in every individual. He believes that this concept is connected with the earliest level of psychic development (the oral phase) and becomes the basic end result of the infantile conflict. Psychic masochism neutralizes the super ego by unconsciously making pleasure out of displeasure.—Morton M. Golden

Preventive Medicine. Principles of Prevention in the Occurrence and Progression of Disease. Edited by Herman E. Hilleboe, M.D., and Granville W. Larimore, M.D. Octavo of 731 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $12.

The practicing physician is playing an increasingly important role in public health. This work on preventive medicine is geared to public health aspects of health problems he meets in his daily practice.

In editing this work, Hilleboe and Larimore have taken various disease entities and applied the

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principles of preventive medicine to their "occurrence and progression." Stress is placed on screening programs for such chronic illnesses as cancer, heart diseases, and diabetes.

The work is very well organized and gives a rounded picture of public health. The contributors—all specialists in their fields—are mainly staff members of the New York State Department of Health.

This volume is of value as a public health guide for the medical student and student of public health as well as for the practicing physician. It will serve well as a reference work for health officers.—Samuel Minowitz

Problems of Addiction and Habituation. By Paul H. Hoch, M.D., and Joseph Zubin, Ph.D. Duodecimo of 250 pages, illustrated. New York, Grune & Stratton, 1958. Cloth, $6.50.

We are indebted again to this notable team of editors and critical reviewers for making available this meaty volume incorporating the proceedings of the Forty-Seventh Annual Meeting of the American Psychopathological Association for 1957.

The theme of the meeting, "Problems of Addiction and Habituation," is very timely in view of the growing menace of the misuse of narcotic drugs with their addictive potentialities.

The contents reveal the significant and discriminatory choice of topics assigned for presentation with the object of furthering understanding and research as well as pointing up more effective therapeutic methods. The personality characteristics and hospital treatment of narcotic addicts by Robert W. Rasor, M.D., U.S. Public Health Service Hospital, Fort Worth, Texas, is followed by a very practical expose of the direct treatment of a symptom (alcoholism) Harry M. Tiebout, M.D. Sandor Rado, M.D., in a trenchant psychoanalytic approach reveals the degree and extent of narcotic bondage. Physiologic and sociologic effects of the use of coffee as well as a study of the etiology of pica in young children adds breadth to the total problems under discussion. Dr. Kalinowski presented facts concerning withdrawal convulsions and withdrawal psychoses in the light of current pharmacologically and chemically oriented psychiatry. The statistical aspects of psychoses due to drugs are delineated by Drs. Malzberg and Brill. Experimental pharmacologic investigations are pursued by Jules H. Masserman, M.D. The Presidential address: "A Biological Basis for Psychopathology," was masterfully presented in longitudinal section, together with personal research work at Cornell University, by Howard Liddell, M.D.

An approach toward integration by way of summary discussion of all the chapters made for clarity, better focused perspective, and challenging needs which have yet to be studied and solved.

This handy volume is a must for all those interested in the above problems.—Frederick L. Patry

Cancer. Diagnosis and Treatment. Edited by John B. Field, M.D. With 28 Contributors. Octavo of 796 pages, illustrated. Boston, Little, Brown & Company, 1959. Cloth, $18.50.

All contributors to this work are cancer experts and active practitioners and teachers at major medical centers throughout the country. Each of them has written about cancer from the point of view of this particular specialty.

Information concerning recent developments in diagnosis and treatment of various kinds of cancer is presented in orderly fashion. Surgical and radiation therapy are objectively presented. Chapters on chemotherapy and radiotherapy of cancer are particularly informative.

This is a clinicians guide to cancer condensed into one concise volume. It is highly recommended to all practicing physicians.—Milton J. Matzner

Therapeutic Electricity and Ultraviolet Radiation. by Sidney Licht, M.D. Octavo of 371 pages, illustrated. New Haven, Elizabeth Licht, 1959. Cloth, $10.

The editor and 8 contributors have completed the fourth volume in the Physical Medicine Library. It attempts to follow the previous 3 volumes in its encyclopedic scope. This book commences with an introductory but thorough historical account of the evolution of electrotherapy, delves into the various circuits, terminologies, and forms of electric energy, and discusses methods in generating electricity. The clinical application of electric energies are well illustrated. The chapter on electrosleep is of particular interest to those awaiting the results on its use in obstetric deliveries. Electric stimulation and iontophoresis are well covered from the point of view of clinical use, method of application, and some personal experiences. It is interesting to note the enthusiasm expressed for silver and potassium citrate iontophoresis in arthritis of the hands and in the use of resistance in electric stimulation.

Part two of the book concerns itself with ultraviolet radiation. The history, instrumentation, physiologic effects, and clinical uses of U.V. occupy an equal number of pages to therapeutic electricity. A practical and realistic approach could have equated the space allocation more appropriately, but then this volume is encyclopedic.

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Streptococci	65	1	*98.5*
D. pneumoniae	14	0	*100.0*
Coliforms	34	3	*91.8*
Proteus	5	5	*50.0*
A. aerogenes	8	0	*100.0*
Ps. aeruginosa	5	4	*55.5*

*Includes many strains resistant to antibiotics.

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[Continued from page 4634]

The editor and publisher have attempted the gigantic task of compiling the knowledge heretofore obtained and available in the field of physical medicine and have successfully produced the Physical Medicine Library. Though the volume does not contribute anything new to the field, it does present all in the field to date. It therefore belongs on the reference shelf of libraries and of those using these modalities.—EUGENE J. ROGERS

Communicable Diseases. Volume 4. Medical Department, United States Army. Preventive Medicine in World War II. Edited by Ebbe Curtis Hoff, M.D. Octavo of 544 pages, illustrated. Washington, D.C., Office of the Surgeon General, Department of the Army, 1958. Cloth, $5.50.

This volume of the series comprising a review and revaluation of the methods used as prophylaxis against communicable diseases of the respiratory and intestinal tracts in the U.S. Army during World War II is most instructive.

Many subjects come up for discussion. First, the location of a camp site may involve prophylaxis —for example—the northern-located camps had much more streptococcic infections and rheumatic disease. The Air Force camp in San Joachim Valley exposed the trainees to coccidioidomycosis. Second, the rapid transfer of inductees from induction centers to training centers frequently prevented the accurate recording of smallpox vaccination takes; also at times broke into prophylactic injection series and made for confusion with regard to the proper follow-through.

At the other end of things—the period after the victory—the letdown in strict sanitary precautions with respect to proper isolation from the native community, together with a failure to follow through on continuing prophylaxis, gave rise to small but serious epidemics of cholera and smallpox. The mortality rate of these diseases ran from 30 to 50 per cent of the personnel affected. At times the vaccines were found to have been rendered impotent by failure to provide proper refrigeration.

It is interesting to note that in several camps where a specific pneumococcus was the chief producer of pneumonia, prophylaxis by immunization with the specific polysaccharide prevented continuation of the epidemic.

These are a very few of the interesting matters given consideration but should whet the intellectual appetite of anyone interested in communicable diseases, especially in their prophylaxis.

Each disease is elucidated by an expert so that the information imparted is authoritative and up to date. The tables and charts provided are many and very helpful for rapid review of each disease discussed. An adequate index is appended.—KENNETH G. JENNINGS

Diseases of the Nose, Throat, and Ear. Edited by Chevalier Jackson, M.D., and Chevalier L. Jackson, M.D. Second edition. Quarto of 886 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $20.

Diseases of the Nose, Throat, and Ear has fulfilled the need in otolaryngology texts for one that embodies the newer advances in this field in the past fifteen years. The editors have drawn on the experience of 61 outstanding American otolaryngologists to cover the entire field of otology, rhinology, laryngology, and bronchoesophagology.

Each subject is discussed in an orderly manner with excellent descriptions of anatomy, physiology, pathology, and clinical course. Particularly excellent are the sections on sinus disease and rhinoplasty. They have included very clear descriptions of the newer concepts of surgery of the temporal bone for the improvement of hearing in otosclerosis; namely, the Lempert novovalis fenestration operation and the stapes mobilization operation. All of the operative procedures are very well illustrated by excellent drawings.

This book is a distinct contribution in the field of general otolaryngologic texts and will be, because of its clarity, of special value to the resident and practitioner of otolaryngology. The general practitioner should also find it to be of great help.—SIDNEY SPECTOR

Industrial Carcinogens. By Robert E. Eckardt, M.D., Duodecimo of 164 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $6.50.

Industrial Carcinogens is one of a series of monographs in industrial medicine. It was written by Robert E. Eckardt, M.D., Director, Medical Research Division, Esso Research and Engineering Company, and was edited by A. J. Lanza, M.D., one of the early pioneers in occupational medicine.

The book succeeds in its intended purpose of putting the subject of industrial cancer in its proper perspective from a practical standpoint. It discusses in some detail the methods used in experimental carcinogenesis and gives understandable details of procedure. The complicated chemistry involved is well handled and at no time becomes overwhelming to the practitioner who is not adept at formulas. The historical anecdotes in the opening chapter as well as those woven into numerous portions of the text make interesting reading. A discussion of industrial cancers and protective programs forms the bulk of the book, while medicolegal considerations are also reviewed in a superficial manner.

[Continued on page 4640]

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[Continued from page 4638]

Simple, straightforward language makes this an easy and comfortable book to read. It offers a lot to those who will read it.—BERNARD S. POST

Hypertensive Disease. Diagnosis and Treatment. By Sibley W. Hoobler, M.D. Octavo of 353 pages. New York, Paul B. Hoeber, Inc., 1959. Cloth, $7.50.

This is a very comprehensive work on the management of hypertensive disease and should be especially useful to physicians because it contains detailed directions for the institution of modern methods of treatment. In this reviewers opinion the author gives an over-sanguine picture of the results in the management of hypertension and seems too certain that we are able to prevent the serious consequences of this disease by treatment. Nevertheless, his position as Director of the Hypertension Unit at the University of Michigan Hospital has given him unusual experience. It also appears that the book would be more helpful if the diastolic blood pressure rather than the systolic were used as a guide to classification and therapy.

The chapters on "curable" hypertension are excellent and emphasize the necessity of thorough study of every young or middled aged person with *diastolic* hypertension. The principles underlying the treatment of primary hypertension and its complications are very well stated. The differential diagnosis of cerebral vascular complications, hemorrhages, thrombosis, or insufficiency is well presented and the problems of treatment clearly stated.

This book should be a valuable guide to those who treat hypertension and should stimulate careful and critical observation of the results of therapy.—EDWIN P. MAYNARD, JR.

The Ecology of Human Disease. By Jacques M. May, M.D. Octavo of 327 pages, illustrated. New York, MD Publications, 1958. Cloth, $7.50.

This is one of the more impressive expansions of the recently reestablished biologic beachhead that, in its farthest penetrating assault, has reclaimed virtually the entire scientific domain for the accommodatingly broadened (inevitably "liberating") concept of modern epidemiology. An enthusiastic, exciting, even enchanting lecturer and author, Dr. May now embraces the broadest possible strategic perspective while somehow sacrificing little at the tactical level of descriptive operations. With generally good and always admirable effect he first depicts the essentially familiar epidemiologic approach, then applies it to a succession of selected disorders. Consideration is given to the reigning triumvirate of host, agent, and environment, with the last subdivided into organic and inorganic components. Some chapters include exhaustive—almost exhausting—details concerning the geographic distributions of specific diseases together with an analysis and interpretation of these multitudinous data.

While meriting great praise, the book is not without shortcomings readily amenable to improved editing. Reportedly intended for nonmedical as well as medical readers, it is pitched both high and low, at times sweeping and superficial, at times overwhelmingly comprehensive (e.g. brucellosis). It troubles to define the term, eosinophilia while detailing masses of microbiologic minutiae. In reaching for the lay (nonphysician) as well as the professional audience it inevitably satisfies neither. As light reading it is heavy, as a text it is uneven, as a reference work it is sometimes incomplete and possibly superfluous (in the light of the availability of such resources as the several volumes on Global Epidemiology). In making its timely obeisance to the epidemiologic crest, it presents—almost as if obligated—basic concepts, which, while promising and provocative, are scarcely revolutionary and suggest inspiration in the not uncommon conviction that improvement is necessarily redundant in innovation. The concept of "terrain" is effectively (though, for a medical geographer, paradoxically) developed as another term for the constitutional factor, only to be abandoned for the more conventional synonym of host in the balance of the text. The reader is somehow impressed that the author may be trying almost too hard on a mission which might be more readily accomplished with less deliberate commitment of his immense, conscientiously deployed capabilities if he had done it in his own highly respected way without conforming to patent, pedagogic prescription.

Despite these seeming, minor imperfections, Dr. May has produced a basically fine book, interesting and informative—disappointing only in the sense that it appears not to fully exploit the author's immense potential. The prospective second and third volumes will doubtless more perfectly reflect his unique scholarly attributes of experience, dedication, and rare talent.—ROBERT W. HILLMAN

Patient Care and Special Procedures in X-Ray Technology. By Carol H. Vennes, R.N., and John C. Watson, R.T. Octavo of 302 pages, illustrated. St. Louis, The C. V. Mosby Co., 1959. Cloth, $5.75.

In this work the authors propose to discuss (1) the technicians role as part of a medical team caring for the sick, (2) specific information on care of the patient in relation to diagnostic radiology, and (3) practical technical help in many special x-ray procedures.

[Continued on page 4644]

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[Continued from page 4640]

This text is admirably suited for instruction of technical and nursing personnel performing in hospitals, especially those with large all-purpose x-ray departments. To a lesser extent the principles elucidated will be of value in the private practice of radiology.

There are very few objections which one can find. The discussion of preparation of barium mixtures is too brief, avoiding the importance of preparation by weight and volume. The procedures outlined for neuroradiography are by no means employed everywhere as described in the text. Otherwise the discussion of technician and nurse roles with respect to all routine specialized diagnostic procedures in the x-ray department, on the patient floors, and in the operating room is well handled.

Because most technicians will be trained by their radiologists in technics as done in individual departments, the text is applicable to them with respect to the general principles of patient-technician relationships, cleanliness, and asepsis. It seems to this reviewer that the complexities of modern x-ray diagnosis and the relationship of nursing service to this important hospital function are so well handled that this book ought to become a required text for all nursing schools.—SOLOMON SCHWARTZ

The Medical Clinics of North America. New York Number. Volume 43, No. 3. May, 1959. Diseases of the Skin. Monthly book series. Octavo of 335 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $18 per year.

The May, 1959 issue on *Diseases of the Skin* contains a collection of 21 papers dealing with some of the new in dermatology.

The contributors are largely drawn from the Department of Dermatology at the New York University-Bellevue Medical Center. The editor is Marion B. Sulzberger, M.D.

The range of subjects includes those conditions which are so frequently seen in practice such as psoriasis, acne, the atophic skin, nevi, and so forth. Besides these, such timely subjects as x-ray therapy with special reference to safety factors, the pyodermas, hand eczemas, and the fungous diseases are thoroughly presented. For the resident in dermatology and the specialist, the articles on water and electrolyte content of the skin, disturbances of melanin pigmentation, and the genodermatoses should be interesting.

Each article is followed by a comprehensive bibliography.

This volume can be highly recommended.—ARTHUR M. PERSKY

Hearing. By Norton Canfield, M.D. Duodecimo of 214 pages. New York, Doubleday & Co., 1959. Cloth, $3.50.

The author is an authority on problems of the hard of hearing. The publication of this work was inspired "by a desire to provide understanding of and relief from the anxiety caused by the handicap of impaired hearing." Dr. Canfield has had a great deal of experience in not only the medical and surgical aspects of the hearing handicap but also in its psychologic, economic, and social implications.

Although this book was prepared and written primarily for laymen, its content is extremely valuable and informative to the otologist, audiologist, and social worker. The subject matter is clearly presented and is interesting and informative. Canfield presents the subject in such a masterful way that all will benefit by reading and studying it.

The book is divided into 16 chapters which cover every phase of the hearing problem. One needs but to look at the table of contents to realize the detail which has gone into the preparation of it. Its publication is indeed an event for there is nothing available at the present time which presents the subject as clearly and as sympathetically. This book is recommended not only to the patient but also to all workers in the field, and no medical library will be complete without it. Dr. Canfield is to be congratulated and given a sincere vote of thanks for his efforts will indeed serve the welfare of the nearly 17,000,000 Americans who suffer from some form of hearing impairment.—SAMUEL ZWERLING

Your Mind Can Make You Sick or Well. By Curt S. Wachtel, M.D. Octavo of 244 pages. New York, Prentice-Hall, Inc., 1959. Cloth, $4.95.

Curt S. Wachtel M.D., has written another one of the books containing a mixture of reassurance and incomplete psychiatric and medical information. This is for the use of the lay reader. The book is obviously not written for the trained psychiatrist. It appears to be for those who hope to cure themselves by reading a book instead of seeing a doctor (psychiatrist, preferably).—E. L. PINNEY, JR.

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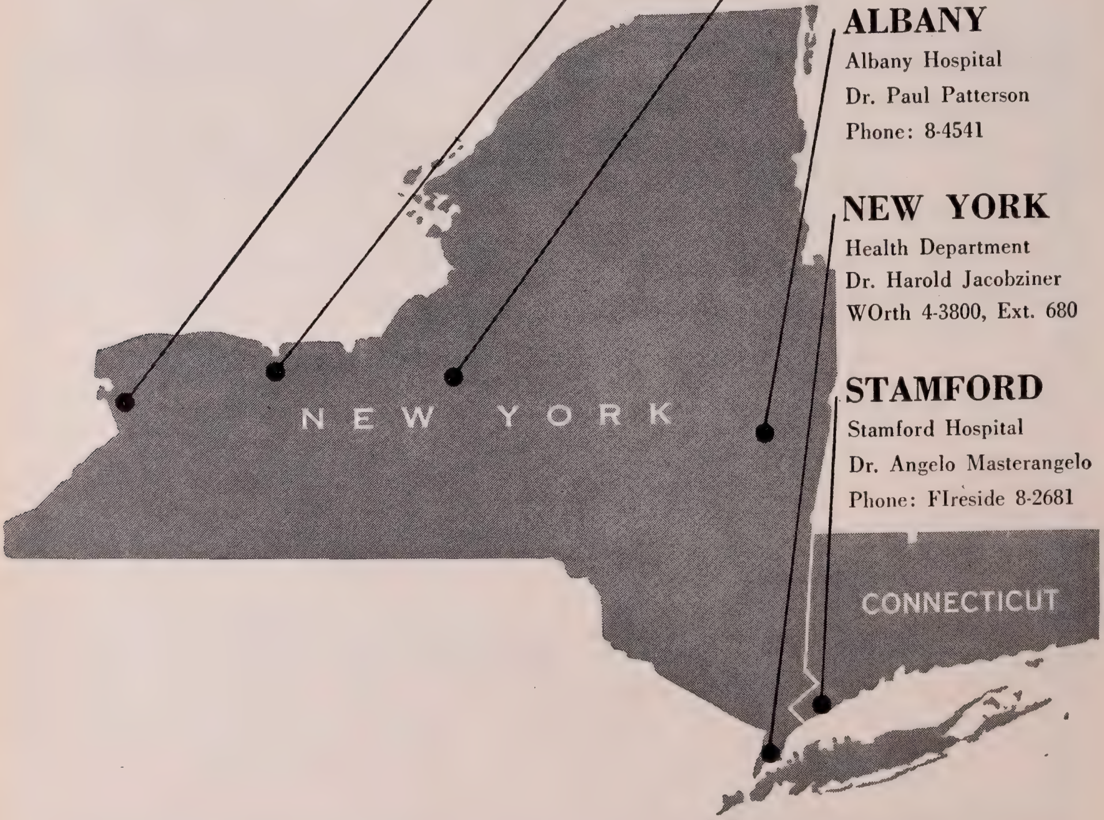

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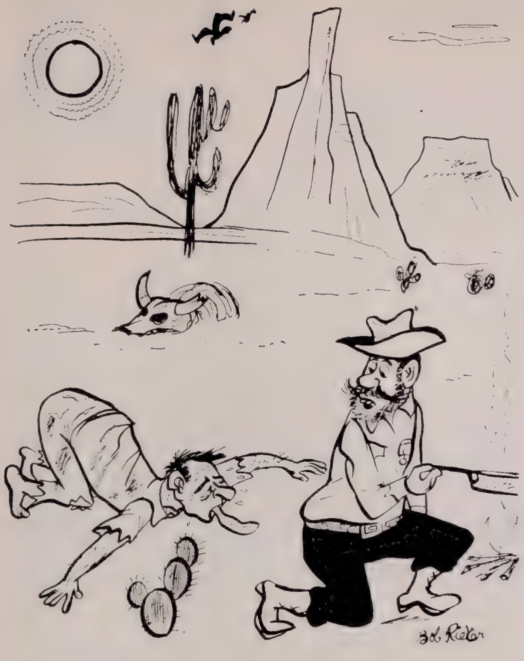

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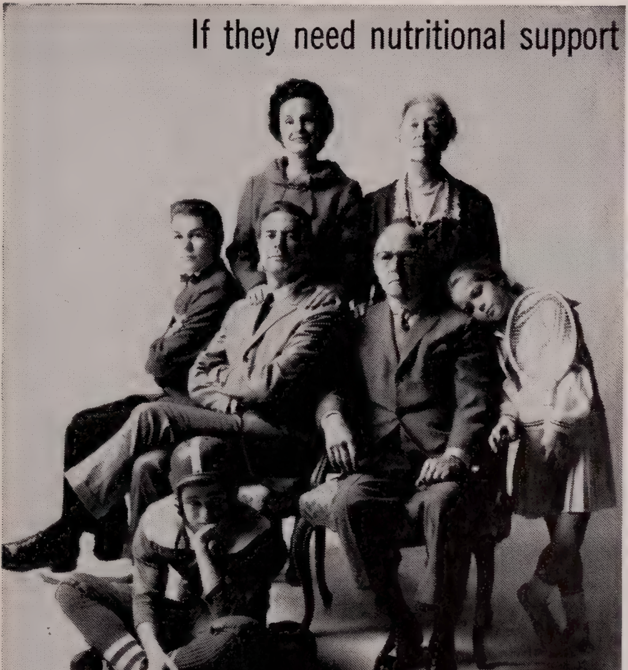

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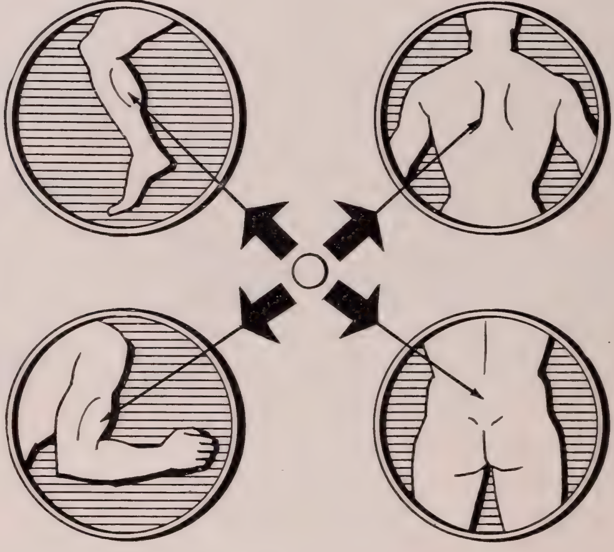

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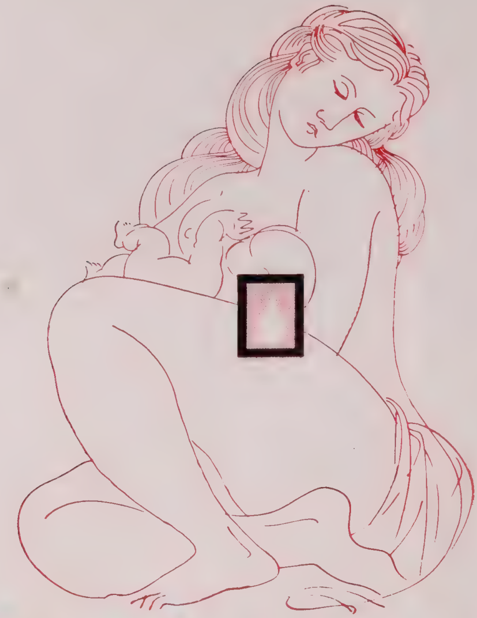

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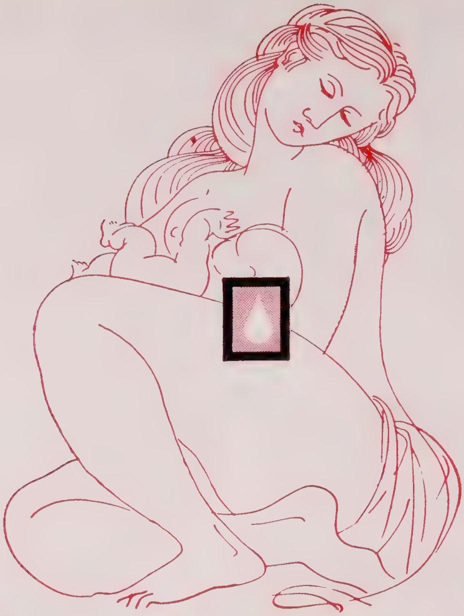

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